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SIGNIFICANCE OF OUTDOOR
RECREATION EXPENDITURES TO THE
STATE AND REGIONAL ECONOMIES
IN MINNESOTA

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EXECUTIVE SUMMARY

PURPOSE: To determine the economic impact of outdoor recreation expenditures on the state and regional economies. Economic impact includes jobs, income and business sales.

STATEWIDE RESULTS

- Annual expenditures totaled \$1.82 billion (1985 dollars), consisting of:
 - \$854 million for resident travel expenses
 - \$386 million for nonresident travel expenses
 - \$583 million for resident equipment purchases

- Expenditures produced direct and indirect economic impacts in the private sector of:
 - \$2.92 billion on gross output (total sales of MN businesses),
or 2.5% of state gross output

 - \$1.31 billion on value added (total income to Minnesotans),
or 2.3% of state value added

 - 57,700 full- and part-time jobs, or 3.3% of state employment

- Most of impacts were concentrated in 3 major sectors:
 - manufacturing
 - wholesale/retail trade
 - services

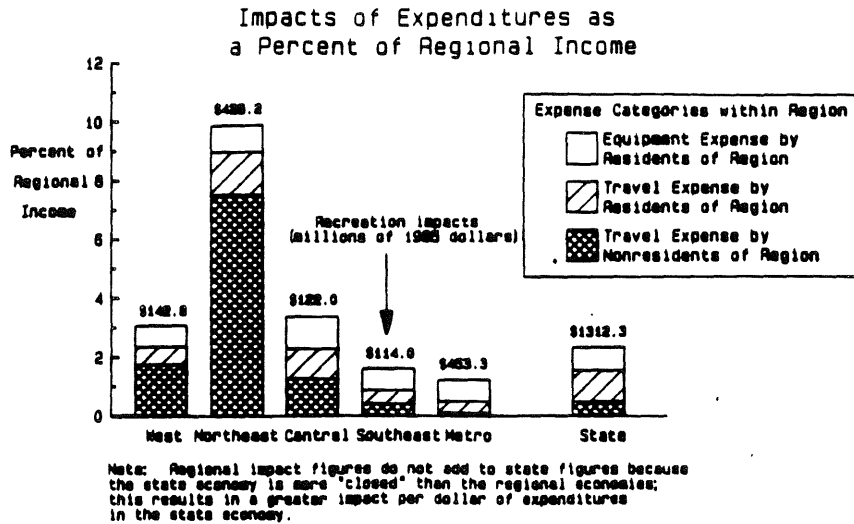
- The State annually received revenues of \$218 million from fees and taxes due to spending for outdoor recreation

REGIONAL RESULTS

- Annual contribution of outdoor recreation to regional economies can be described by the percent of a region's total income (value added) in the private sector attributable to the impacts of recreation expenditures

The Northeast region showed by far the largest percent of regional income accounted for by the recreation expenditures, but the Metro region had the largest impact in dollar terms (see chart below)

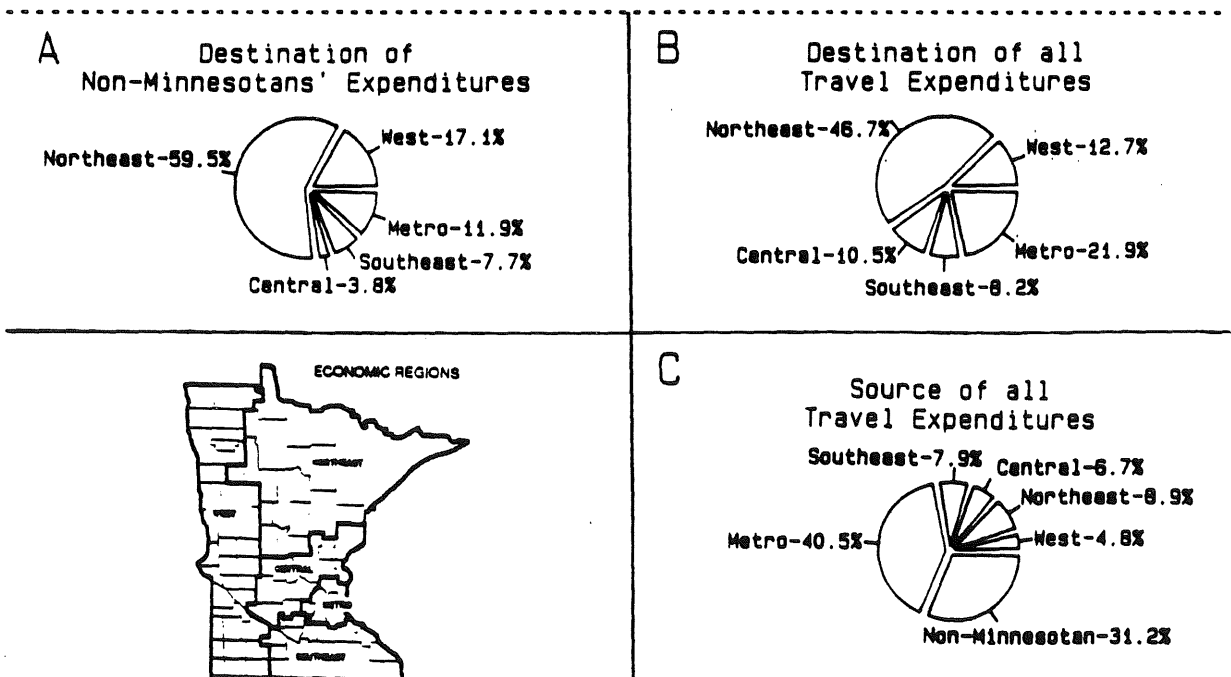
Regional patterns for gross output and employment were similar to that of income



- Residents redistributed dollars between regions within the state; non-Minnesotans brought "new" dollars into the state, with some regions gaining more than others

59.5% of non-Minnesotans' expenditures ended up in the Northeast region (chart A)

The Northeast region received 46.7% of all travel expenditures (chart B), while the Metro region was the source of 40.5% of all travel expenditures (chart C)



INTRODUCTION

The opportunities for outdoor recreation in Minnesota are an important part of the quality of life in the state. In pursuit of these opportunities, Minnesotans and non-Minnesotans make purchases that have an impact on the state and local economies. These purchases include items such as food, transportation and recreational equipment. The purpose of this study is to estimate these expenditures and measure their economic impact statewide and in regions of the state.

Expenditures were estimated with data from two major outdoor recreation surveys and a variety of other sources. These expenditures were used with the IPASS Input-Output Model to determine the significance of the expenditures to the Minnesota economy and regional economies within the state.

This paper is organized in the following manner. First, input-output analysis is described. Next, the survey information on consumer purchases for outdoor recreation is presented. To use the consumer purchases in an input-output model, the purchase information must be prepared for processing through the input-output model; this is described in the section titled "Allocation of Consumer Purchases to Input-Output Model Sectors: Bridging and Margining". After allocating the consumer purchases to input-output model sectors, the purchase information is processed through the IPASS Input-Output Model, and the economic activity (impact) generated by the consumer purchases is measured. The way in which the purchase information is processed through IPASS and the meaning of the measures of economic impact are presented in the section titled "Measuring Economic Impact".

Finally, the economic impacts of outdoor recreation expenditures are presented in two sections. The first section covers the contribution of expenditures to the state economy, and the second section covers the contribution to the five regional economies in Minnesota (see Figure 10, page 33, for regional map). Readers interested in only the results may want to turn directly to these two sections, which begin on page 17.

INPUT-OUTPUT ANALYSIS

Purchases made by consumers in conjunction with their participation in outdoor recreation generate economic activity in the state. This economic activity is the economic impact attributed to outdoor recreation. An input-output model converts the consumer purchases into the economic activity caused by them. The input-output model represents the dollar linkages between businesses in the economy. For a business to provide the goods and services consumers buy, it must purchase goods and services from other businesses which, in turn, must purchase from still other businesses. Tracing interbusiness transactions and accounting for the economic activity generated by the transactions are two primary applications of input-output models.

An input-output model represents the transactions that take place within a local economy and between the local economy and the broader economy, through imports and exports. For the IPASS Input-Output Model¹, the "local economy" is either the state or one of the five economic regions in the state. The separation of the local economy from the broader economy creates an important distinction between local and outside consumers, both of whom purchase goods and services in the local economy. This distinction between local and outside consumers is maintained throughout the discussion that follows.

¹ IPASS data sources can be found in the following Water Allocation Project document: Richard W. Lichty, NRRI, "The Value of Water for Economic Production and Recreation in Minnesota: IPASS Data Preparation." The general capabilities of IPASS can be found in the user manual: Doug Olson, Con Schallau and Wilbur Maki, 1984. IPASS: An Interactive Policy Analysis Simulation System, U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

Local residents who spend within the local economy are trading dollars with members of the same economy. Such trading of dollars generates economic activity. Specific spending patterns by local residents at any one time are linked to specific income streams (e.g., employment) at that time. A shift in local resident spending patterns leads to a shift in income streams, with the new income streams providing an economic offset for the old income streams.

Consumers from outside the local economy provide basic (export-related) income to the residents of the local economy. No economic offset exists for spending by consumers from outside the local economy, so their expenditures bring "new" dollars into the economy. For this reason, the distinction is drawn between export-related economic activity (or the purchases made by outside recreators in the local economy) and local-related economic activity (or purchases in the local economy by recreators from the local economy).

SOURCES OF INFORMATION ON OUTDOOR RECREATION CONSUMER PURCHASES

Outdoor recreation as defined in this study includes all recreation out-of-doors, away from home. Two general types of consumer purchases cover outdoor recreation applications: travel-related purchases and equipment purchases. Travel-related purchases include all expenditures made from the time the recreator leaves home until the recreator returns home. Transportation, food and lodging are normally major expense items. Equipment purchases (e.g., boats, fishing tackle) are only included with travel purchases when the equipment is bought while on a trip. Most types of equipment, especially big ticket items, are purchased prior to the trip, usually near home. All expenses were placed in the region where they were incurred.

Outdoor recreation expenditures were collected from a number of sources. Information on travel-related consumer purchases was taken from two surveys: a nonresident auto-traveler survey, and a resident general-population survey. The resident survey also covered some non-travel equipment purchases, but the majority of these were collected

from a national sporting goods survey. The other equipment sources are listed in the NOTES at the end of Appendix C.

Nonresident Survey

During the summer of 1978, visitors traveling to Minnesota by motor vehicle, for other than business purposes exclusively, were sampled at major highway entrances to the state. The survey probably captured the bulk of the nonresident contribution to Minnesota recreation for a number of reasons: the highway entrances sampled covered 80 percent of noncommercial traffic coming into the state; motor vehicles are the primary mode of travel to the state for outdoor recreation; and summer is the principal recreation season in Minnesota (see Appendix A for survey details).

Visitors in the target group were given trip diaries in which to record, among other items, the origin of the vacationing party, the location and type of outdoor recreation activities, and the location and type of travel expenses. Approximately 16,000 diaries were distributed, and 4000 were returned. The 25 percent return rate is reasonable for this type of survey. Travel expenses were collected in 10 major categories (e.g., groceries, lodging, shopping). There was sufficient detail in a sufficient number of diaries to permit the allocation of the 10 expense categories to 41 detailed categories. Having expenses in such detailed categories is important in preparing the expense data for input-output models, as explained in a following section.

The 1978 nonresident sample was originally expanded by MnDOT traffic flow data for that year. To update the survey, 1984 traffic flow data (the most recent data available at the time) were used to reexpand the sample. This resulted in an apparent 25 percent increase in nonresident outdoor recreation between 1978 and 1984. A 25 percent increase, however, was not consistent with indices of nonresident outdoor recreation in the state. The indices showed little change between 1978 and 1984. Indices examined were nonresident fishing licenses (fishing is the major activity of nonresidents) and attendance figures at facilities in the primary

recreation areas of nonresidents (northeastern Minnesota state parks and the BWCA). Given the inconsistencies between the trend derived from these indices and the trend derived from traffic flows, the decision was made to follow the indices and treat the 1978 data as representative of current conditions. Expense amounts were inflated to current dollars using adjustment factors specific to each of the 74 economic sectors used in IPASS.

Resident Survey

During 1985-86, a year-long random telephone sample of 5,700 Minnesota households was conducted. Each night a quota of households was reached. The quota was raised during the summer, because summer is the major recreation season. A knowledgeable spokesperson in a household was asked to comment in detail on the outdoor recreation of each household member over the last seven days, a recall period short enough to get reliable data from this type of survey (see Appendix B for survey details).

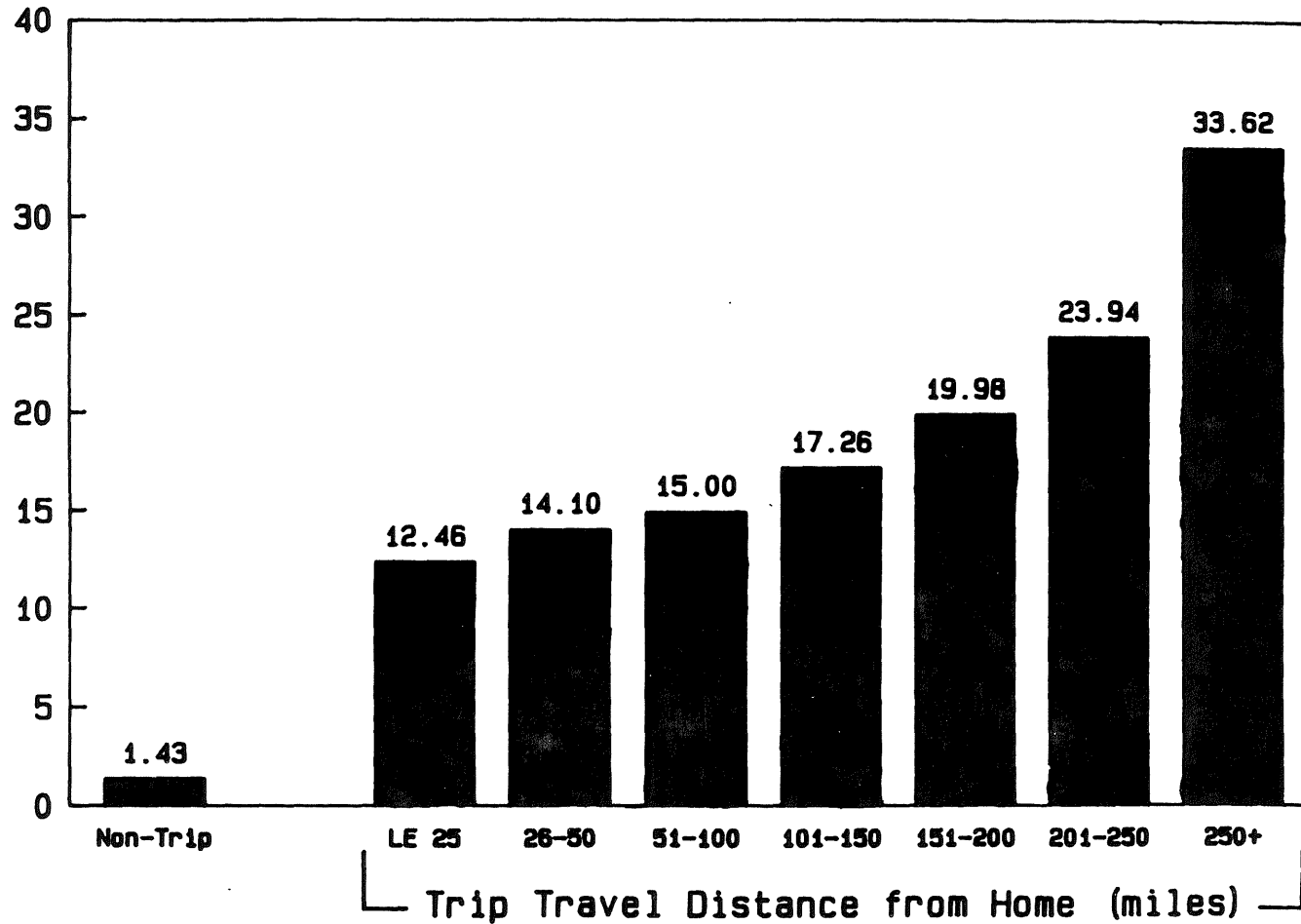
The information collected included, among other items, location of the household and location and type of each household member's outdoor recreation. Because this survey focused on water-related recreation, only expenses for those types of activities were collected. Water-based activities, which of course are water-related, include fishing, boating, canoeing, and so on. Whether land-based activities were water-related was determined by the respondent's answer to the following question: was a lake or river important in the decision of where to recreate? If the answer was yes, the land-based activity was categorized as water-related. Travel expenses were then collected by location in 10 categories (the 10 categories were subsequently allocated to the 41 detailed categories using the nonresident data discussed above).

The preceding only covered travel expenses for water-related activities. To derive travel expenses for the non-water-related activities, water-related expenses were used as a surrogate. Daily expense amounts by travel distance (Figure 1) were allocated to purchase items according to expense profiles by travel distance (Figure 2). 'Non-trip' in Figures 1 and

Figure 1

Travel Expenses of Minnesotans for Water-Related Outdoor Recreation in Minnesota

Dollars per Person-Day

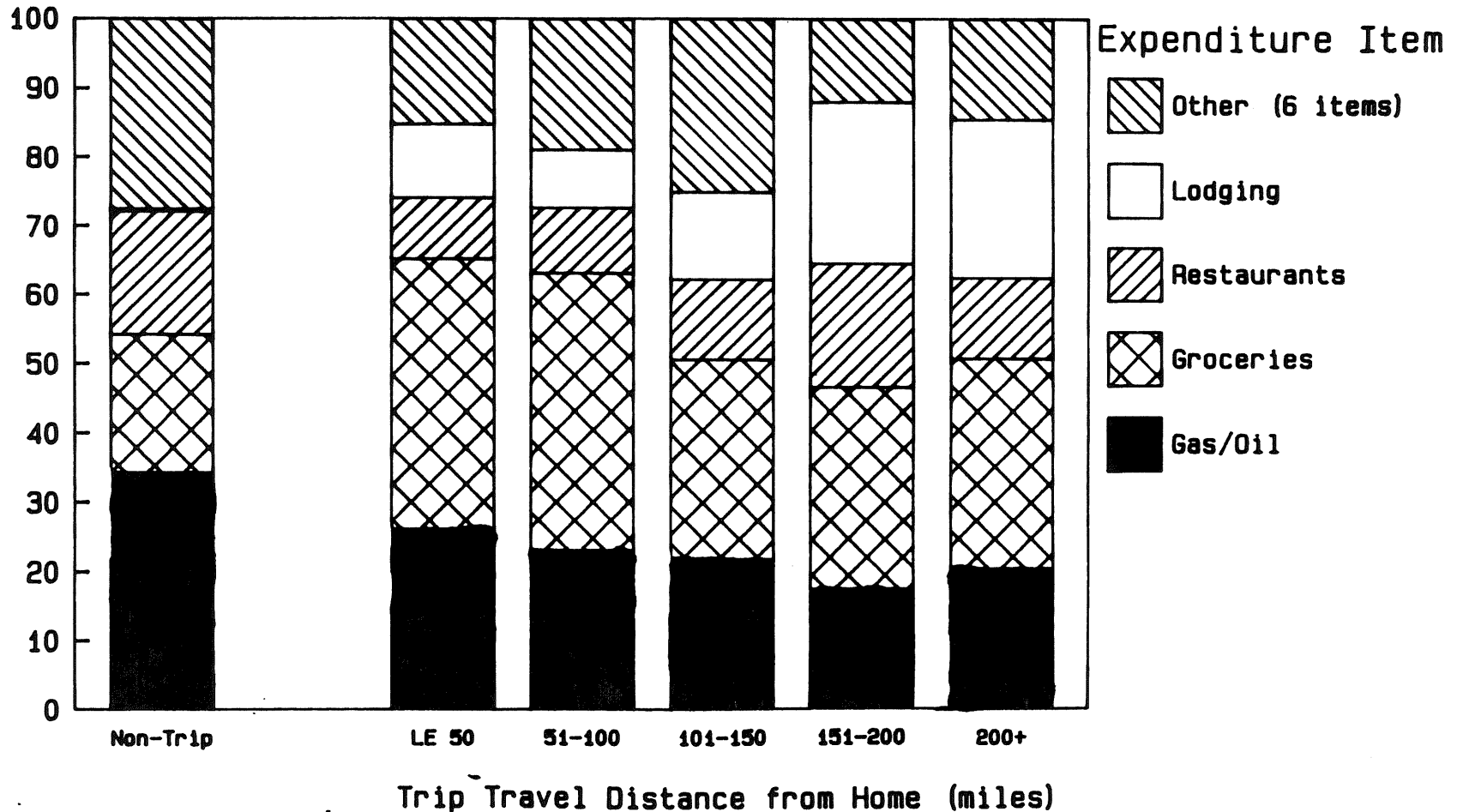


Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents; 1985-86, conducted by Minnesota Center for Social Research, University of Minnesota, under contract with the DNR.

Figure 2

Profile of Expenditure Items Purchased by Minnesotans Traveling for Water-Related Outdoor Recreation in Minnesota

Percent



Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents; 1985-88, conducted by Minnesota Center for Social Research, University of Minnesota, under contract with the DNR.

2 is near-home recreation as defined by survey respondents; 90 percent of 'non-trips' are within a half hour drive of home. The use of expenses associated with water-related activities as a surrogate for expenses associated with other activities appears reasonable, because 70 to 90 percent of expenses are for basic items (food, lodging, transportation) that are not specific to any activity. Travel distance was selected as a basis for travel expense calculations because it captures a major source of variation in both expense amounts and items purchased. This method yielded an estimate of \$277 million for non-water expenses, which is 32.5 percent of the total resident travel-related expenditures.

Also collected from the household spokesperson was information on purchases over the last 12 months of major equipment items (costing over \$100) used primarily for water-related outdoor recreation. The \$100 cutoff was intended to capture the bulk of equipment purchases while not placing unrealistic demands on the respondent's recall of less expensive purchases. Nineteen categories of equipment were collected. Purchases of new equipment were separated from used equipment, and the data on new equipment was used with the data described in the next section to determine total equipment expenditures. The reason new equipment was separated from used equipment is explained in the next section.

Equipment

In order to estimate the expenditures for new outdoor recreation equipment made by Minnesotans, information was gathered from three surveys and four other reports. Most of the information was obtained from a survey prepared by the National Sporting Goods Association (all sources in NOTES at end of Appendix C). For a few types of expenditures, information was taken from two other surveys because they provided more comprehensive and detailed data than the Association survey. Results of a U.S. Fish & Wildlife Service survey were used for fish and wildlife-related expenditures, and data from a Minnesota Department of Natural Resources survey were used for some water-related equipment expenditures. All three surveys report expenditures for new equipment. The other four reports were used to derive estimates for three items not included in any of the surveys: trail bikes, three-wheelers and 4X4 trucks. Details of the estimates can be found in Appendix C.

Because the equipment data collected represent total statewide sales, the final estimate of equipment purchases included some of the expenditures accounted for by the travel-related equipment purchases. Therefore, to avoid double counting, fishing sales statewide were reduced by 29.8 percent, and all other items were reduced by 8.5 percent, based on the types of purchases made by travelers. Thus, these equipment purchases (\$66.2 million) are accounted for in travel-related expenditures and not in equipment expenditures. The remaining equipment purchases were then allocated to 36 categories for use in the input-output models.

In order to allocate these purchases to the regions of the state, three methods were used. For the bulk of the expenditures, the regional shares of state personal income were used to allocate the purchases. The water-related equipment purchases from the resident survey above were collected by expense location, so these were allocated accordingly. Finally, angling and hunting expenditures were allocated based on the distribution of anglers and hunters around the state. It is assumed that all of these purchases were made within the home region of the buyer.

Used equipment purchases are not included in this estimate. Only the retail margin of used equipment purchased through retail businesses would be included in the input-output model, because the sale of used equipment does not involve current production. This omission does result in low estimates for all equipment sales and their impacts in the economy, but the loss is not large. Based on the water-related equipment data, even if all the used equipment reported in the survey were purchased retail (which it was not), and assuming a normal retail margin of one-third, the equipment total processed by the input-output model would be raised just 12 percent.

ALLOCATION OF CONSUMER PURCHASES TO INPUT-OUTPUT MODEL SECTORS: BRIDGING AND MARGINING

For input-output model applications, a dollar spent on a consumer item needs to be allocated among the goods-producing and services-producing industries (sectors) that account for the item's value. The allocation is done according to each industry's share of the purchase price of the item.

The allocation to industry sectors is accomplished by using a table for each purchase category. There are 41 travel-expense categories and 36 equipment categories in this study. The recent work for PARVS and past work for IMPLAN were available to help accomplish the allocation task. Examples of the allocation of consumer spending to industry sectors are shown in Table 1. For lodging, all of the expense goes to one sector. For gasoline and boats, however, expenses are allocated to a number of industries. The industry sectors in Table 1 refer to the IMPLAN Version 2 (1982) Input-Output Model, an input-output model with national and regional applicability. The 528 IMPLAN Version 2 sectors have a one-to-one correspondence with the 74 sectors used in IPASS and with sectors used in other models. Thus, allocation of data for IMPLAN Version 2 provides the allocation for IPASS and REMI, an input-output model used in the 'State Revenues' section of this report.

TABLE 1

PARVS Bridging and Margining to IMPLAN Version 2 (then to IPASS & REMI)

<u>Purchase Item</u> (examples)	<u>Industry</u> <u>Sector Number</u>	<u>Percent</u>	<u>Description</u>
Privately owned lodging	471	100.0	Hotels and lodging
Auto or RV gas and oil	235	22.144	Petro refining
	236	22.144	Lube oils and greases
	237	22.114	Petro and coal prd, nec
	446	.228	Rail related trans.
	448	1.013	Motor freight trans.
	449	.922	Water trans.
	450	.004	Air trans.
	451	.898	Pipe trans.
	461	15.266	Other wholesale trade
	463	15.176	Other retail trade
		<u>100.000</u>	
Nonmotorized boats, not rubber	409	59.65	B&W, color, mpr, still film
	446	.03	Rail related trans.
	448	.53	Motor freight trans.
	449	.17	Water trans.
	450	.03	Air trans.
	460	4.76	Rec.-related wholesale trade
	462	34.84	Rec.-related retail trade
		<u>100.00</u>	

SOURCES: Dr. Alan E. Watson, member, Public Area Recreation Visitors Survey team. 1987. Georgia Southern College, Department of Recreation and Leisure Studies, Statesboro, Georgia. Tables for bridging and margining also taken from: Charles Palmer, Eric Siverts and Jay Sullivan. U.S. Department of Agriculture, Forest Service, Land Management Planning Systems Section. 1985. IMPLAN Analysis Guide, Version 1.1. Fort Collins, Colorado.

MEASURING ECONOMIC IMPACT

The selected measures of economic activity generated by consumer purchases are the purchases themselves (direct impact), and the direct plus indirect impacts on gross output, value added and employment. Indirect impact is the economic activity generated by the inter-business purchases that are needed to supply the directly impacted business with the inputs required to produce the consumer product. The directly impacted business, in other words, must purchase inputs for the consumer product from other businesses, which must purchase inputs for their output from still other businesses, and so on throughout the economy. The economic activity generated by these inter-business purchases is the indirect impact.

To obtain direct and indirect impacts by sector of the economy from the consumer purchases, the IPASS Input-Output Model was used as follows. Direct plus indirect impacts on gross output were derived by multiplying the consumer purchases by the Leontief Inverse, a matrix containing the dollar amount each economic sector must produce so that any single sector can deliver a dollar's worth of its output to the consumer. The resulting gross output impacts were then multiplied by sector-specific ratios of value added (and of employment) to gross output in order to derive direct plus indirect impacts on value added (and on employment).

Total gross output represents all sales of all industries (businesses), sales both within and outside the local economy. It over-represents the value of sales for the entire local economy because it counts sales between industry sectors each time they are made. For example, when measuring gross output, the value of a raw material is counted each time it is sold, as it moves from industry to industry for processing and on to the final consumer of the product.

Total value added, a portion of total gross output, is the income generated by the production and sale of products in the local economy. It is the most effective of the four impact measures in capturing the benefits that accrue to residents of the local economy. It is composed

of employee compensation, indirect business taxes and property-type income. Employee compensation and property-type income (e.g., profits, rents, etc. that accrue to owners of property and business) go directly to people. Indirect business taxes (e.g., excise and sales taxes paid by businesses) go indirectly to the people through government.

Total value added would over-represent income for the local economy if either of two situations, common to outdoor recreation/tourism economies, occurs: if employees are seasonal and return to permanent residences outside the local economy after earning their income, or if owners of property and businesses are from outside the local economy. For the statewide economy, these two situations pose less of a problem than for regional economies. Neither of these two situations can probably be handled well with hard data, but they are noted for consideration.

Employment is the jobs associated with the income (value added) generated by the production and sale of products by the local economy. Seasonal and part-time jobs are counted the same as full-time jobs.

Which measure of economic impact is being considered makes a difference when viewing the relative impacts on economic sectors of outdoor recreation expenditures (Table 2). Manufacturing, for example, accounts for 44 percent of direct impacts, 40 percent of direct plus indirect impacts on gross output, 23 percent of direct plus indirect impacts on value added, and 15 percent of direct plus indirect impacts on employment. Other sectors also exhibit large changes between the measures. No single measure of impact, in other words, is a good surrogate for all the measures.

TABLE 2
 Impact Profiles due to Outdoor Recreation Expenditures
 by Type of Impact for Major Sectors
 (1985 Dollars)

MAJOR SECTOR	----- Type of Impact ----- (Column percents)			
	--DIRECT-- <u> </u>	----- <u>GROSS OUTPUT</u>	----- <u>VALUE ADDED</u>	----- <u>JOBS</u>
Agriculture Forestry & Fisheries	.7%	5.0%	3.7%	4.2%
Mining	(<.05)	(<.05)	(<.05)	(<.05)
Construction	0	1.1	1.1	.3
Manufacturing	44.3	39.8	23.0	15.4
Transportation, Communications & Utilities	1.3	6.4	6.8	3.5
Wholesale & Retail Trade	27.5	20.4	31.8	36.0
Finance, Insurance & Real Estate	(<.05)	4.5	7.1	1.7
Services	25.9	22.2	25.7	38.1
Other	<u>.3</u>	<u>.6</u>	<u>.8</u>	<u>.8</u>
TOTAL PERCENT	100.0%	100.0%	100.0%	100.0%
ABSOLUTE TOTAL	\$1,824 million	\$2,922 million	\$1,312 million	57,657 (Jobs)

Source: Derived from processing data in Figures 3 & 4, excluding fees & licenses, through the IPASS Input-Output Model.

RESULTS: STATEWIDE

Recreator Purchases

Over \$1.8 billion was spent by outdoor recreators in Minnesota in 1985. Most of the expenditures were made on recreation trips (68%), with the remainder made for equipment items not purchased on trips (32%). Looking at the trip (or travel) expenditures, Minnesotans accounted for 69 percent and non-Minnesotans 31 percent (Figure 3). The bulk of the travel expenses was made for food, lodging and transportation (primarily gas). Non-Minnesotans allocated a much smaller share of their food expenditures to groceries than residents, and they spent a larger share of their overall travel dollars on lodging, shopping and personals than residents.

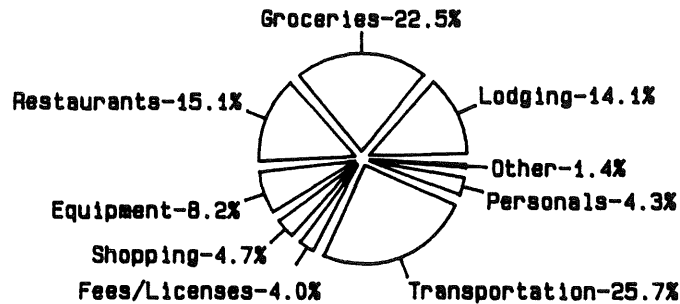
Boats, motors and accessories was the largest category of resident equipment purchases (Figure 4). The next largest category was large recreational vehicles, followed by sports equipment and clothing (including footwear). The equipment expenditures in Figure 4 do not include the equipment purchases made while travelling, which are included in Figure 3 as 'travel-related' expenditures.

'Export' Activities and Expenditures

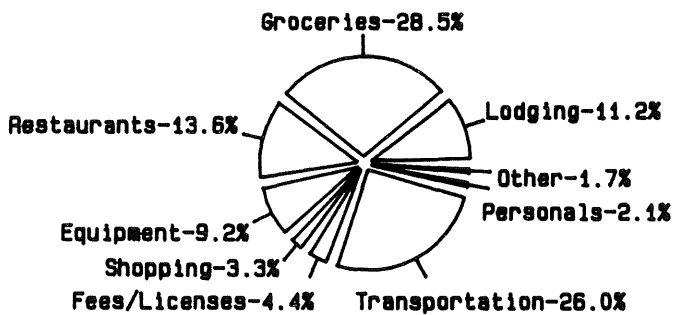
It is important to look at 'export' expenditures -- or expenditures made by nonresidents of a region or the state -- separately from all expenditures, because these exports have a different impact on the economy. When non-Minnesotans make purchases in Minnesota, they bring "new" dollars into the state, which fuels growth in the economy. Similarly, when Minnesotans travel to another region from home and spend money there, they are bringing "new" dollars into that region's economy. In contrast, when residents make purchases within their home region, they are recirculating dollars within that region's economy.

Figure 3

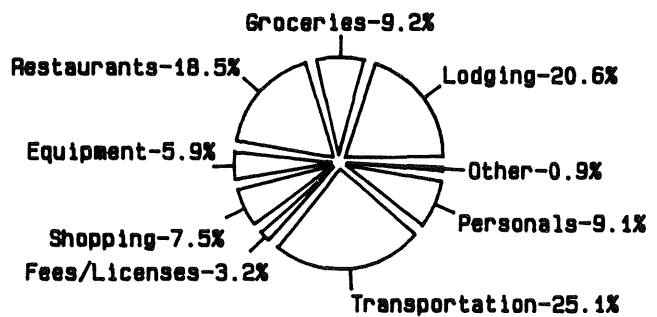
Statewide Annual Travel-related Outdoor Recreation Expenditures by Type of Purchase (1985 dollars)



All Spenders
Total = \$1,240.3 million



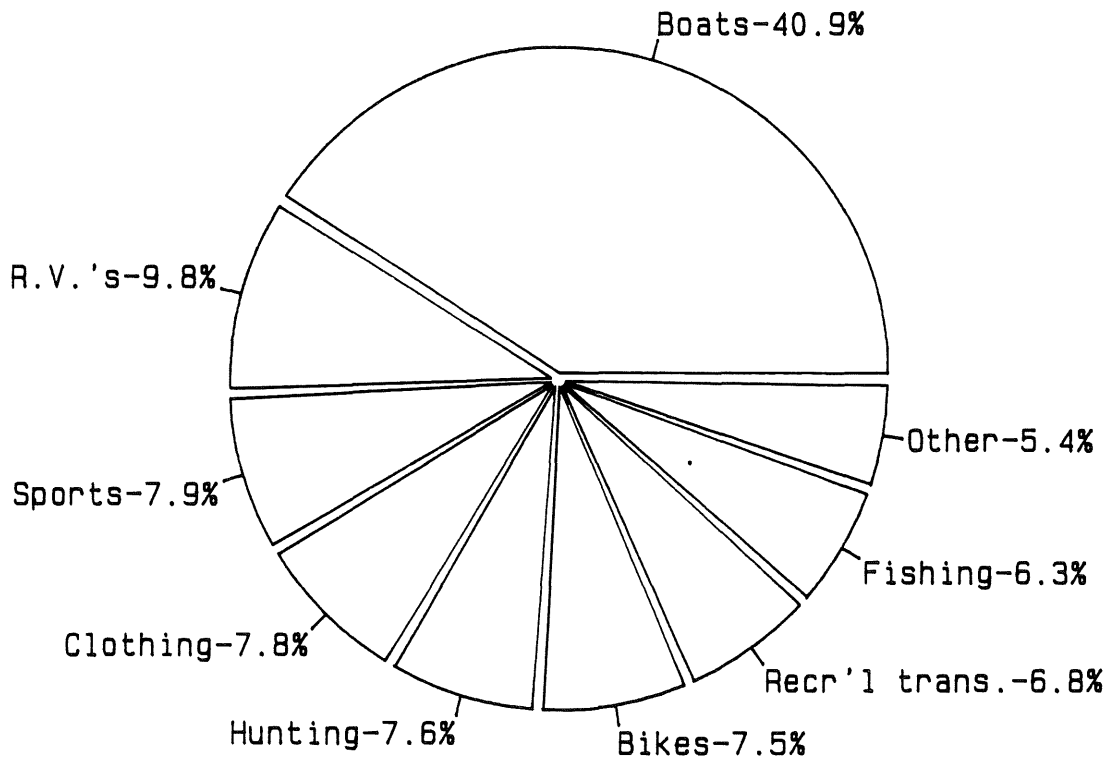
Minnesotans
Total = \$853.8 million



Non-Minnesotans
Total = \$386.5 million

Source: Minnesota DNR, 1985-86 Outdoor Recreation and Expenditure Survey of Residents and 1978 Summer Outdoor Recreation and Expenditure Survey of Visitors to Minnesota.

Figure 4
 Statewide Annual Outdoor Recreation
 Equipment Expenditures by
 Type of Purchase (1985 dollars)



Minnesotans
 Total = \$583.3 million (excluding the \$66.2 million
 included in travel-related
 equipment in Figure 3)

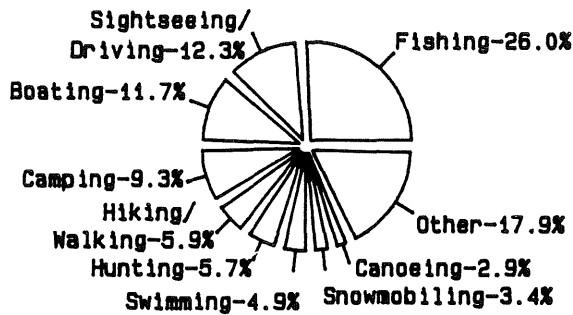
KEY			
Boats:	boats, motors and accessories	Recr'l trans.:	snowmobiles, 3-wheelers and 4x4 trucks
R.V.'s:	large recreational vehicles	Fishing:	equipment and clothes used exclusively for fishing
Sports:	equipment for sports not elsewhere listed	Other:	equipment for camping and non-consumptive fish & wildlife activities (field guides, binoculars, etc.) and sunglasses
Clothing:	all clothing and footwear except those for hunting & fishing		
Hunting:	equipment and clothes used exclusively for hunting		
Bikes:	traditional and trail bikes		

Source: Primarily, "The Sporting Goods Market in 1986," prepared for the National Sporting Goods Association by Irwin Broh & Associates, Inc., 1986; for others, see NOTES at end of Appendix C.

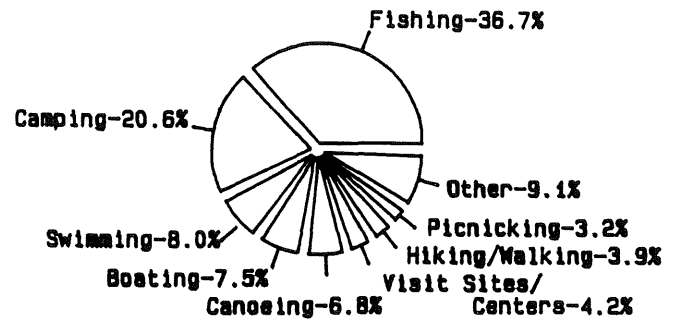
Figure 5

Statewide Annual Outdoor Recreation Export Activity Time and Associated Expenditures (1985 dollars)

Export Activity Time

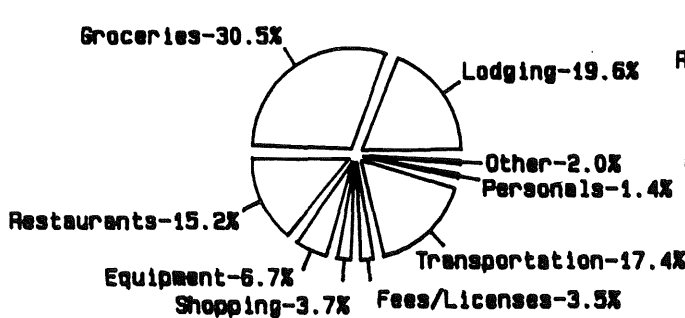


Minnesotans
Total = 172.9 million hours

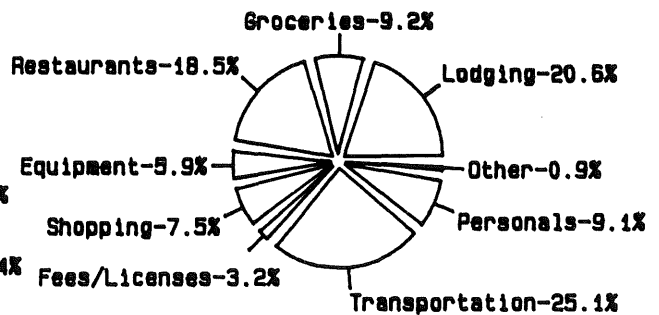


Non-Minnesotans
Total = 83.2 million hours

Export Expenditures



Minnesotans
Total = \$390.0 million



Non-Minnesotans
Total = \$386.5 million

Source: Minnesota DNR, 1985-86 Outdoor Recreation and Expenditure Survey of Residents and 1978 Summer Outdoor Recreation and Expenditure Survey of Visitors to Minnesota.

Note: For Minnesotans, only activity hours for which people traveled between regions are included (and associated expenditures made away from home). For non-Minnesotans, all activity hours in MN are included (and associated expenditures made in MN).

The types of activities undertaken and the associated purchases made in other regions by Minnesotans, and the activities and purchases of non-Minnesotans, are shown in Figure 5. The primary activity that took Minnesotans to other regions in Minnesota was fishing (26%). The next most popular activity was sightseeing/driving, followed by boating and camping. These recreators spent \$390 million away from home in other regions while pursuing these activities, which is 46 percent of all resident travel-related expenditures. By far the largest share of the purchases was for food, followed by lodging and transportation.

The non-Minnesotans also spent the most time fishing of all their activities in Minnesota (37%). (Note: the nonresident survey only included summer activities.) Camping, swimming and boating were the next three most popular activities; non-Minnesotans spent more than twice as much time camping as residents, in relative terms (20.6% versus 9.3%). Of the \$386 million spent by non-Minnesotans, less went to food and more to transportation than did for residents.

Direct Impact

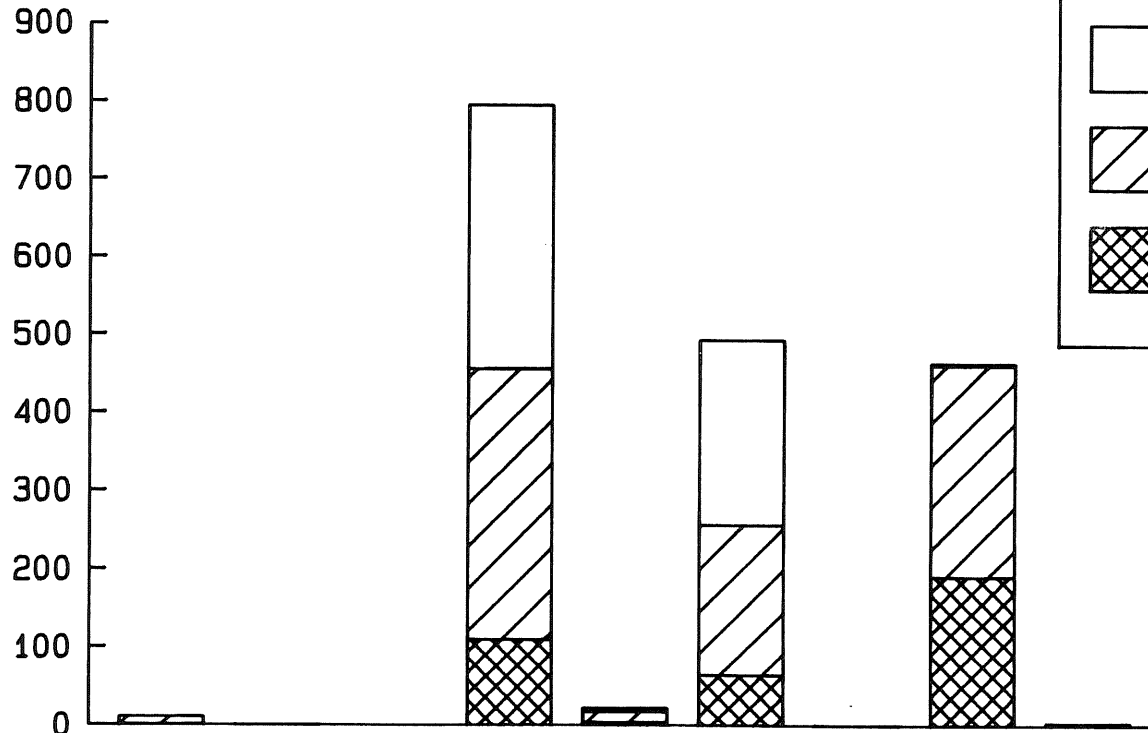
Direct impact is the impact of the consumer purchases once they have been allocated among the sectors that account for their value. Manufacturing was the primary sector impacted, followed by wholesale/retail trade and services (Figure 6). The impacts of the equipment purchases occurred in the manufacturing and wholesale/retail trade sectors, while the impacts of the travel expenses occurred mainly in these two sectors plus services. A larger share of the nonresident travel dollar went into services than the resident travel dollar, while a larger share of the resident travel dollar went into manufacturing than the nonresident dollar.

In IPASS, the economy is broken down into 74 detailed sectors, which are aggregated into nine major sectors in Figure 6. Seven of the detailed sectors, each accounting for at least 5 percent of the total direct impact, contained 75 percent of the total direct impact from all types of expenditures.

Figure 6.

Statewide Annual Direct Impacts of Outdoor Recreation Expenditures by Major Sector (1985 dollars)

Direct Impacts (millions)



Expense Category	Total (millions)
Resident Equipment	\$583.3
Resident Travel	\$835.7
Nonresident Travel	\$380.7
Total	\$1,799.7

Major Sector

Source: Minnesota DNR, 1985-86 Outdoor Recreation and Expenditure Survey of Residents and 1978 Summer Outdoor Recreation and Expenditure Survey of Visitors to Minnesota; see NOTES at end of Appendix C for equipment sources. Printing and Margining Tables taken from PARVS & IMPLAN.

Note: Direct Impacts exclude payments to government for fees and licenses.

<u>MAJOR SECTOR</u>	<u>IPASS SECTOR</u>	<u>PERCENT OF TOTAL IMPACT</u>
Wholesale/Retail Trade	Retail Trade (63)	21.0
Manufacturing	Petro. Refining (33)	11.2
Transportation	Other Transport (49)	10.7
Services	Eat & Drink Establ. (68)	10.3
Services	Hotels, etc. (66)	9.9
Wholesale/Retail Trade	Wholesale Trade (62)	6.6
Manufacturing	Misc. Manufacturing (52)	<u>5.3</u>
		75.0

Direct Plus Indirect Impacts on Total Gross Output

Total gross output is all sales of the businesses in the economy, including sales made outside the geographic boundaries of the economy. Indirect impacts on total gross output were 62 percent of direct impacts overall, and they ranged from 57 percent for nonresident travel to 66 percent for resident travel, with equipment at 60 percent. Over \$2.9 billion in gross output, or 2.5 percent of Minnesota's total private sector gross output, was accounted for by the recreation expenditures (Figure 7). Gross output impacts were concentrated in the same three sectors as direct impacts (manufacturing, services and wholesale/retail trade). Each of these sectors accounted for more than the average share (2.5%) of their respective state gross output.

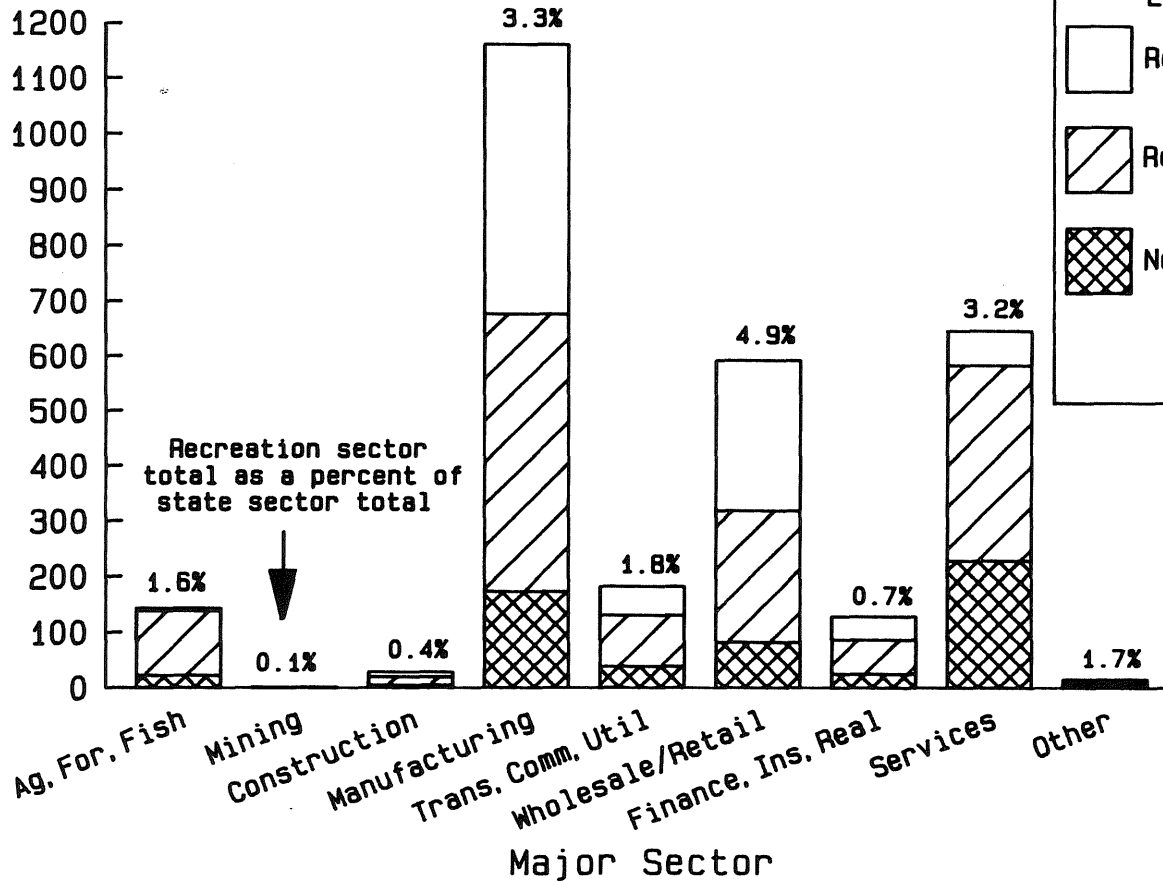
Indirect impacts are particularly evident in agriculture/forestry/fisheries, transportation/communications/utilities and finance/insurance/real estate sectors (compare Figure 5 with Figure 4). The indirect impact of the large resident travel-related purchase of groceries on the agriculture/forestry/fisheries sector is particularly large.

In IPASS, the economy is broken down into 74 detailed sectors, which are aggregated into nine major sectors in Figure 7. Six of the detailed sectors, each accounting for at least 5 percent of the total impact on

Figure 7

Statewide Annual Direct and Indirect Impacts on Gross Output of Outdoor Recreation Expenditures by Major Sector (1985 dollars)

Gross Output (millions)



Expense Category	Total (millions)
Resident Equipment	\$934.9
Resident Travel	\$1,388.6
Nonresident Travel	\$598.6
Total	\$2,922.1
Percent of State	2.5%

Source: Derived from processing data in Figures 3 & 4, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

gross output, contained 49 percent of the total impact on gross output from all types of expenditures. These are the top six detailed sectors that accounted for 70 percent of direct impacts.

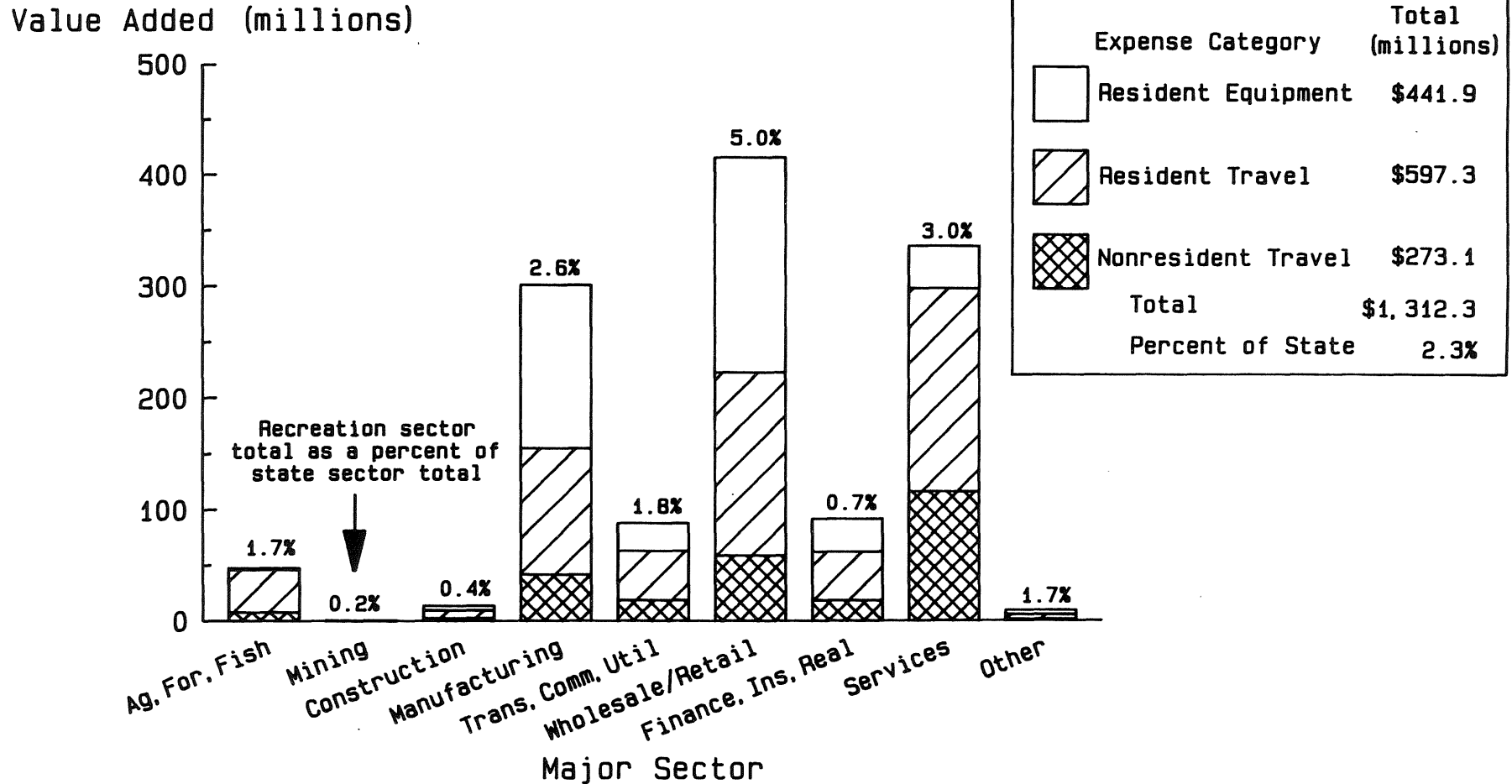
<u>MAJOR SECTOR</u>	<u>IPASS SECTOR</u>	<u>PERCENT OF TOTAL STATE PARK IMPACT</u>
Wholesale/Retail Trade	Retail Trade (63)	13.1
Manufacturing	Petro. Refining (33)	7.9
Services	Eat & Drink Establ. (68)	7.3
Wholesale/Retail Trade	Wholesale Trade (62)	7.2
Transportation	Other Transport (49)	6.9
Services	Hotels, etc. (66)	<u>6.6</u>
		49.0

Direct Plus Indirect Impacts on Total Value Added

Total value added, a portion of gross output, is the income generated by the production and sale of products in the local economy. It is the most effective of the four impact measures in capturing the benefits that accrue to residents of the local economy. The portion of gross output that went into value added was 45 percent overall, and it was roughly the same for all three expense categories. Over \$1.3 billion of value added, or 2.3 percent of Minnesota's total private sector value added, was accounted for by recreation expenditures (Figure 8). Value added impacts were concentrated in the same three sectors as gross output impacts (manufacturing, services and wholesale/retail trade). Each of these three sectors accounted for more than the average share (2.3%) of their respective state value added. Compared with gross output impacts, however, manufacturing impacts on value added were considerably decreased, while wholesale/retail trade and service impacts were increased. Manufacturing returned only \$.26 of value added for each dollar of gross output, whereas wholesale/retail trade returned \$.70, and services \$.52.

Figure 8

Statewide Annual Direct and Indirect Impacts on Value Added of Outdoor Recreation Expenditures by Major Sector (1985 dollars)



Source: Derived from processing data in Figures 3 & 4, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

The resident equipment impacts on value added occurred primarily in wholesale/retail trade and manufacturing. Impacts on value added for both resident and nonresident travel were greatest in the service sector, followed by wholesale/retail trade and manufacturing. Nonresident travel impacts were more concentrated in services and somewhat less concentrated in wholesale/retail trade and manufacturing than resident travel impacts.

In IPASS, the economy is broken down into 74 detailed sectors, which are aggregated into nine major sectors in Figure 8. Five of the detailed sectors, each accounting for at least 5 percent of the total impact on value added, contained 53 percent of the total impact on value added from all types of expenditures. These detailed sectors are the same as those that appear in the gross output table, except the two sectors affected by gas purchases (Petroleum Refining and Other Transport) have been replaced by Business Services.

<u>MAJOR SECTOR</u>	<u>IPASS SECTOR</u>	<u>PERCENT OF TOTAL IMPACT</u>
Wholesale/Retail Trade	Retail Trade (63)	21.0
Wholesale/Retail Trade	Wholesale Trade (62)	10.7
Services	Hotels, etc. (66)	8.1
Services	Eat & Drink Establ. (68)	6.6
Services	Business Services (67)	<u>6.4</u>
		52.8

Direct Plus Indirect Impacts on Total Employment

Total employment is jobs associated with the income (value added) generated by the production and sale of products in the local economy. Seasonal and part-time jobs are counted the same as full-time jobs.

About 44 jobs were created for each million dollars of total value added, overall, with 44 jobs per million dollars for resident travel expenditures, 48 jobs for nonresident travel expenditures and 41 jobs

for equipment expenditures. Nearly 58,000 jobs, or 3.3 percent of Minnesota's total private sector employment, were accounted for by recreation expenditures (Figure 9). Employment impacts were concentrated in the service and wholesale/retail trade sectors, both of which accounted for more than the average share (3.3%) of their respective state employment. Compared with value added impacts, service impacts on employment were greatly increased, wholesale/retail impacts were somewhat higher, and manufacturing impacts were greatly decreased. This change from value added occurred because 65 service jobs were created for each million dollars of service sector value added, while 50 wholesale/retail jobs were created, and 29 manufacturing jobs.

The largest equipment impacts were in wholesale/retail trade, followed by manufacturing. Both resident and nonresident travel expenditures had by far their largest impacts on employment in the services sector, followed by the wholesale/retail trade sector and then manufacturing, a distant third.

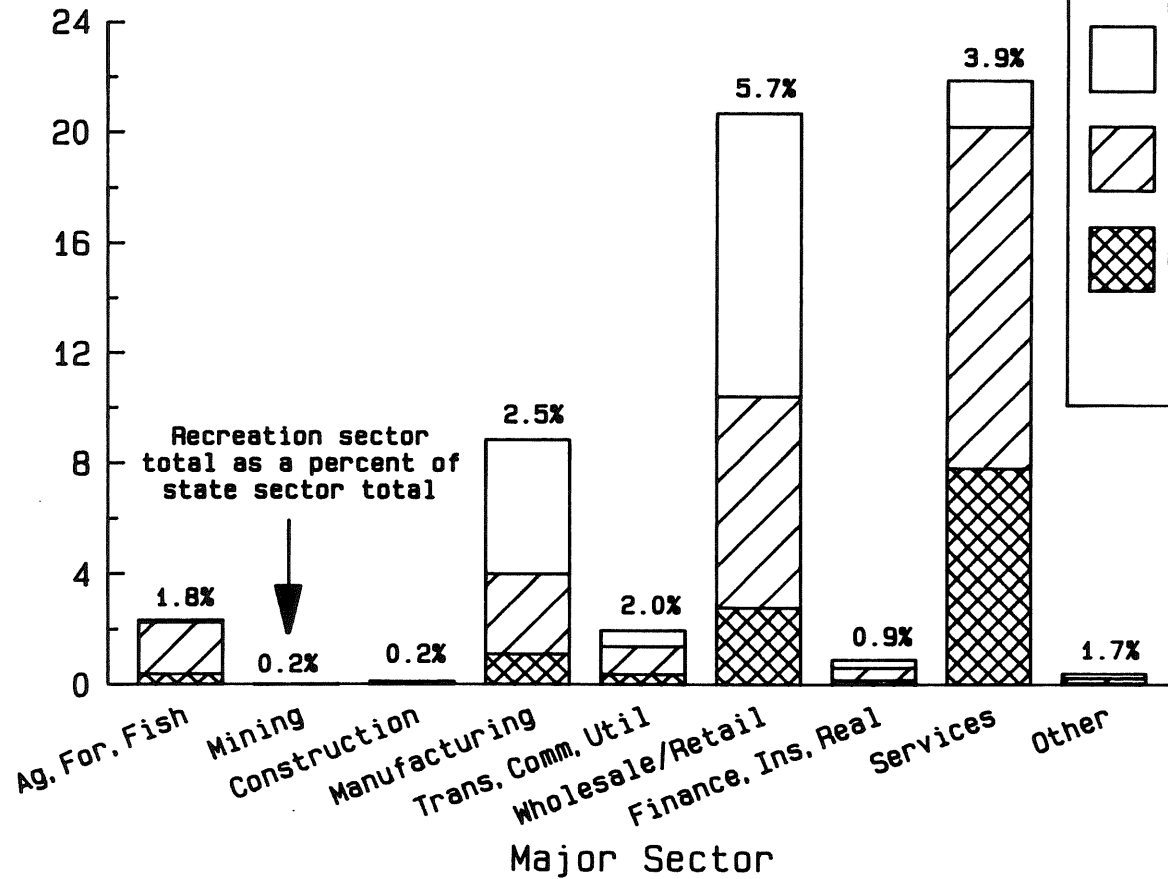
In IPASS, the economy is broken down into 74 detailed sectors, which are aggregated into nine major sectors in Figure 9. Six of the detailed sectors, each accounting for at least 5 percent of the total impact on employment, contained 73 percent of the total impact on employment from all types of expenditures. All of these detailed sectors are in the services and wholesale/retail trade sectors, and all are in the table on value added with the exception of Films & Recreation, which is added here.

<u>MAJOR SECTOR</u>	<u>IPASS SECTOR</u>	<u>PERCENT OF TOTAL IMPACT</u>
Wholesale/Retail Trade	Retail Trade (63)	29.5
Services	Eat & Drink Establ. (68)	12.9
Services	Hotels, etc. (66)	12.9
Wholesale/Retail Trade	Wholesale Trade (62)	6.5
Services	Films & Recreation (70)	5.4
Services	Business Services (67)	<u>5.3</u>
		72.5

Figure 9

Statewide Annual Direct and Indirect Impacts on Employment of Outdoor Recreation Expenditures by Major Sector (1985 dollars)

Employment (thousands)



Expense Category	Total (thousands)
Resident Equipment	18.0
Resident Travel	26.6
Nonresident Travel	13.1
Total	57.7
Percent of State	3.3%

Source: Derived from processing data in Figures 3 & 4, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

State Revenues

The state receives revenues as a result of the expenditures made for outdoor recreation. Fees such as fishing licenses and state park fees flow directly to the state, along with sales taxes paid on equipment and on some travel purchases. The personal income generated by these expenditures in turn generates more "indirect" taxes, including personal and corporate income taxes and additional sales taxes. Table 3 lists these revenues and shows that total revenues in 1985 amounted to over \$218 million, of which \$31 million came from non-Minnesotans.

Total fees paid in 1985 for licenses and state park use came to over \$28 million. Most of the license sales of \$24.2 million were reported as a resident or a non-Minnesotan purchase, but the split for three types of 'stamps' was estimated (see footnote at bottom of table). State park fees, which include entrance and camping fees, came to almost \$4.0 million in 1985. This was split between residents and non-Minnesotans based on visitation rates of the two groups.

Sales taxes paid on gasoline are separated from those paid on other travel items because the gasoline taxes were fairly substantial. Gas taxes accounted for \$42.7 million, with all 'other travel' sales taxes accounting for \$37.4 million. These taxes are split between residents and non-Minnesotans, as shown in Table 3, but the equipment taxes of \$36.9 million (6% on all purchases except clothing and footwear) were all paid on residents' purchases. Total sales taxes in 1985 came to \$116.9 million.

The indirect taxes were derived with the help of the Minnesota Department of Revenue and the REMI Input-Output Model used by Revenue. That model reports the personal income resulting from these recreation expenditures. To estimate the individual income, sales and corporation taxes resulting from this personal income, the following was done: the ratio of each type of tax collection to Minnesota personal income in 1985 was applied to the personal income reported by the REMI Model. The total indirect taxes of \$72.9 million were composed of \$39.5 million for individual income taxes, \$27.7 million for sales taxes and \$5.7 million for corporation taxes.

TABLE 3
State Revenues From Outdoor Recreation
(1985 dollars)

<u>Fees</u>	<u>Minnesotan</u>	<u>Non-Minnesotan</u>	<u>Total</u>
Game & Fish Licenses	\$ 19,449,720*	\$4,797,770*	\$24,247,490
State Park Fees	3,199,820**	799,960**	3,999,780
<u>Sales Taxes</u>			
Gas	31,324,600***	11,333,350***	42,657,950
Other Travel	23,326,100+	14,041,430+	37,367,530
Equipment	36,920,240	-----	36,920,240
<u>Indirect Taxes</u>			
Individual Income	39,542,650++	-----	39,542,650
Sales	27,701,000++	-----	27,701,000
Corporation	<u>5,709,370++</u>	<u>-----</u>	<u>5,709,370</u>
TOTAL	\$187,173,500	\$30,972,510	\$218,146,010

* Reported revenues for three 'stamps' (trout, pheasant & migratory waterfowl) were not split between residents and non-Minnesotans; this was accomplished by using the split of specific types of anglers and hunters from the Minnesota volume of the U.S. Fish & Wildlife Service's "1980 National Survey of Fishing, Hunting and Wildlife - Associated Recreation."

** Split between Minnesotan and non-Minnesotan based on the 1987 Summer Use Survey of Minnesota State Park Visitors, MN DNR (80% of visitors were residents).

*** MN gas tax was \$.17/gallon in 1985.

+ Determined by applying 6% sales tax to estimated taxable purchases.

++ Percentages applied to increased personal income of \$1,057.29 million were 3.74%, 2.62% and .54% for individual, sales and corporate taxes, respectively.

RESULTS: REGIONAL

Recreator Purchases

The \$1.8 billion spent for outdoor recreation was not distributed uniformly among the regions (see Figure 10 for map of regions). Regional expenditures ranged from a low of \$175.0 million in the Southeast to a high of \$633.2 million in the Northeast (Figure 11). The Central and West regions were at the low end of the range (\$186.6 million and \$203.0 million, respectively), while the Metro region was at the high end of the range (\$625.8 million).

For the state as a whole, the majority of the expenditures were made for travel (68%), with the remainder made for equipment (32%) (Figure 12). Expenditures in the regions varied considerably, however; over 92 percent of the expenditures in the Northeast were for travel, while less than 44 percent in the Metro were for travel. The Central and West regions were above the statewide split (70% and 78% for travel, respectively), while the Southeast had a smaller share spent on travel (58%) (Figure 11).

Minnesota residents accounted for the majority of travel expenditures within the state. Within each region, the share of travel expenditures accounted for by regional residents ranged from a high of 77 percent in the Metro to a low of 17 percent in the Northeast. Similar to the Northeast was the West, where 23 percent of travel expenditures came from regional residents. The Central and Southeast regions were in the middle of the range, with 46 percent and 54 percent of travel expenditures coming from regional residents.

Visitors to Minnesota accounted for 21 percent of statewide expenditures for outdoor recreation. Within regions, the percent of expenditures non-Minnesotans accounted for ranged from highs in the Northeast (36%) and the West (33%) to lows in the Central (8%) and the Metro (7%). The Southeast was in the middle of the range, with 17 percent of regional expenditures coming from non-Minnesotans.

Residents of the Metro region have a major influence on recreation expenditures. Metro residents accounted for almost 50 percent of the expenditures in the state (Figure 12). They accounted for 90 percent of the expenditures in their own

Figure 10

Minnesota Economic Regions

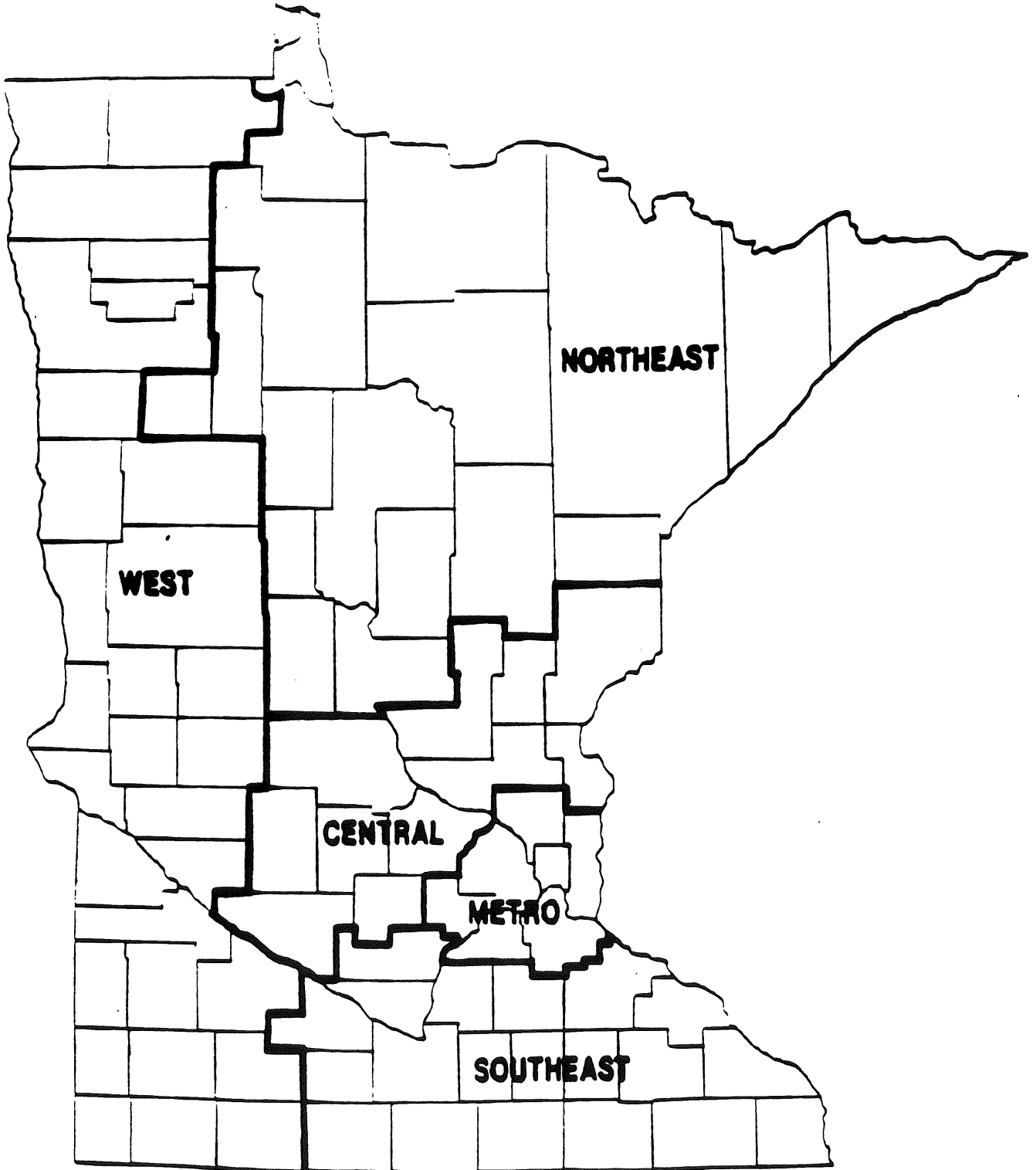
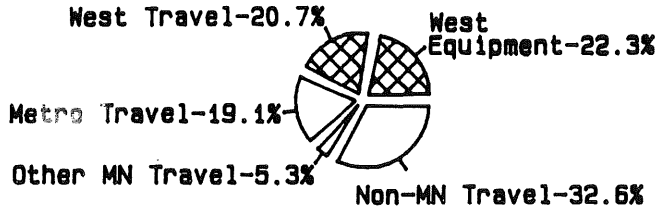
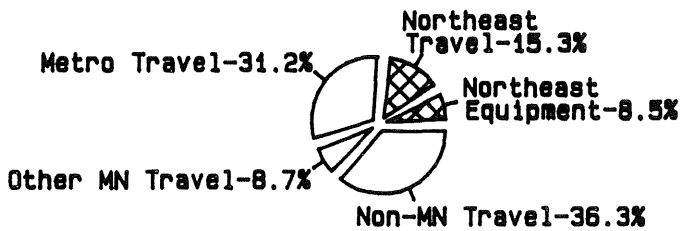
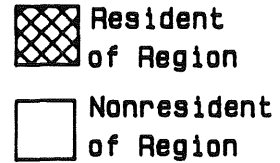


Figure 11

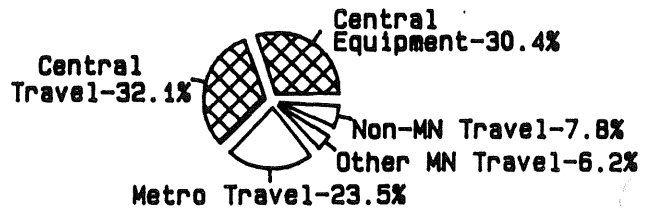
Annual Outdoor Recreation Expenditures by Region (1985 dollars)



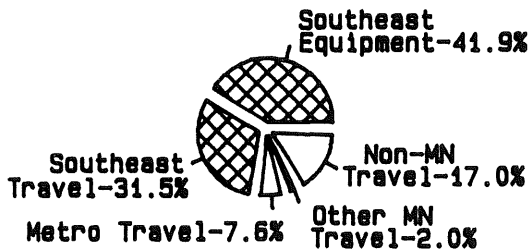
West Region
Total = \$203.0 million



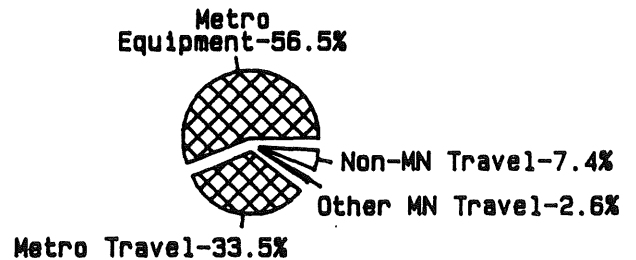
Northeast Region
Total = \$633.2 million



Central Region
Total = \$186.6 million



Southeast Region
Total = \$175.0 million

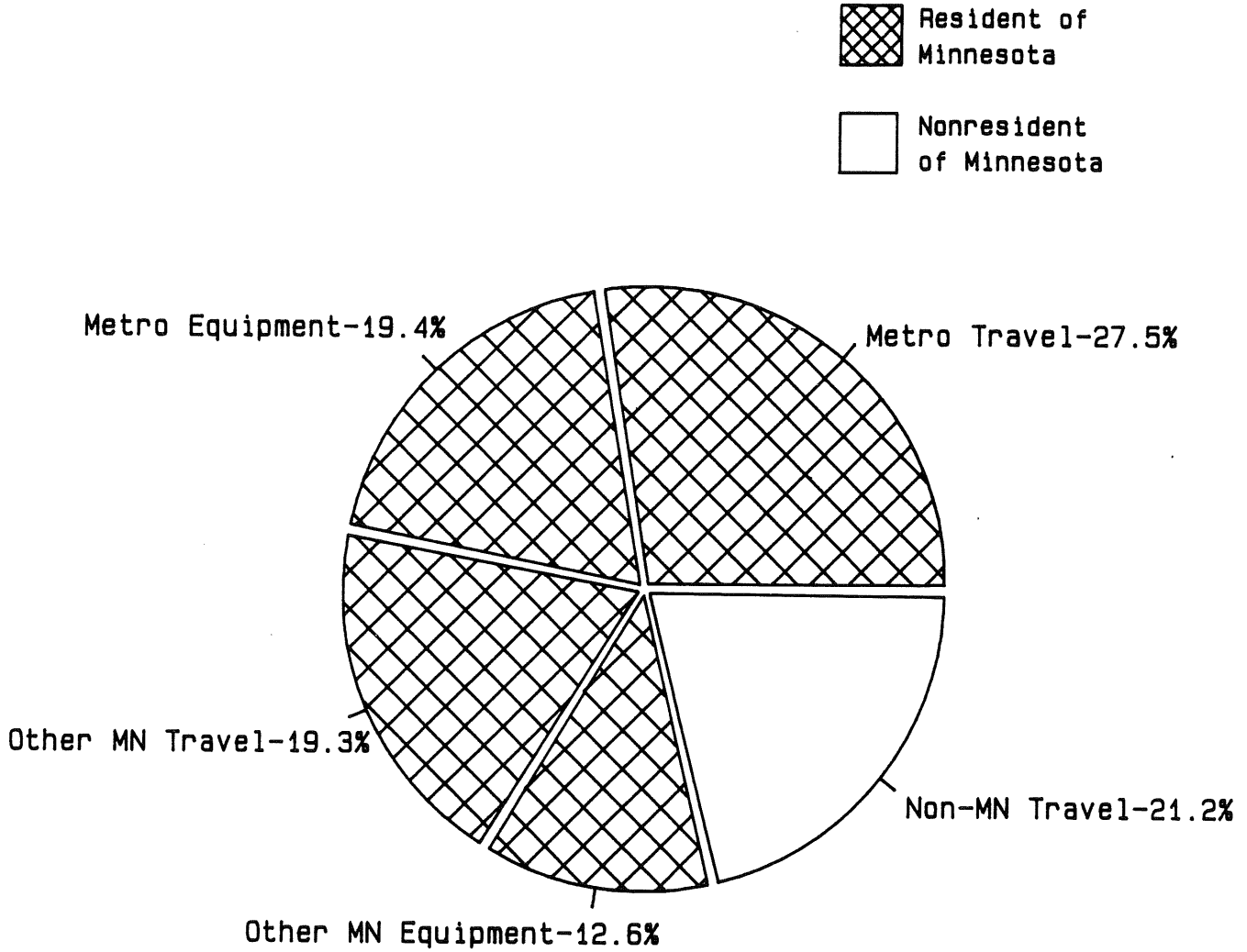


Metro Region
Total = \$625.8 million

Source: Minnesota ENR, 1985-86 Outdoor Recreation and Expenditure Survey of Residents and 1978 Summer Outdoor Recreation and Expenditure Survey of Visitors to Minnesota; see NOTES at end of Appendix C for equipment sources.

Figure 12

Statewide Annual Outdoor Recreation Expenditures by Origin of Recreator (1985 dollars)



Total = \$1,823.6 million

Source: Minnesota DNR, 1985-86 Outdoor Recreation and Expenditure Survey of Residents and 1978 Summer Outdoor Recreation and Expenditure Survey of Visitors to Minnesota; see NOTES at end of Appendix C for equipment sources.

region, and 31 percent, 24 percent and 19 percent of the expenditures in the Northeast, Central, and West regions (Figure 11). Metro residents were less important in the Southeast (8%).

The distribution of travel expenses among expenditure categories for each region was similar to the distribution for the state. Between 36 and 40 percent was spent on food, 23 and 34 percent on transportation, and 6 and 13 percent on lodging (except in the Northeast, where 20 percent was spent on lodging). Within each region, roughly 60 percent of the food dollar was spent on groceries and 40 percent on restaurants. Nonresidents of each region, compared with residents, spent a smaller share of their food dollar on groceries and a larger share on restaurants (except in the Central region, where the same share was spent by residents and nonresidents on groceries and restaurants).

Equipment expenditures were somewhat different in the regions than statewide. Boats, motors and accessories was still the largest category in all of the regions, but hunting and fishing were much more important in the outstate regions (all but the Metro) than they were statewide. The Metro region expenditures more closely resembled the statewide expenditures, except less was spent on hunting and fishing there than statewide.

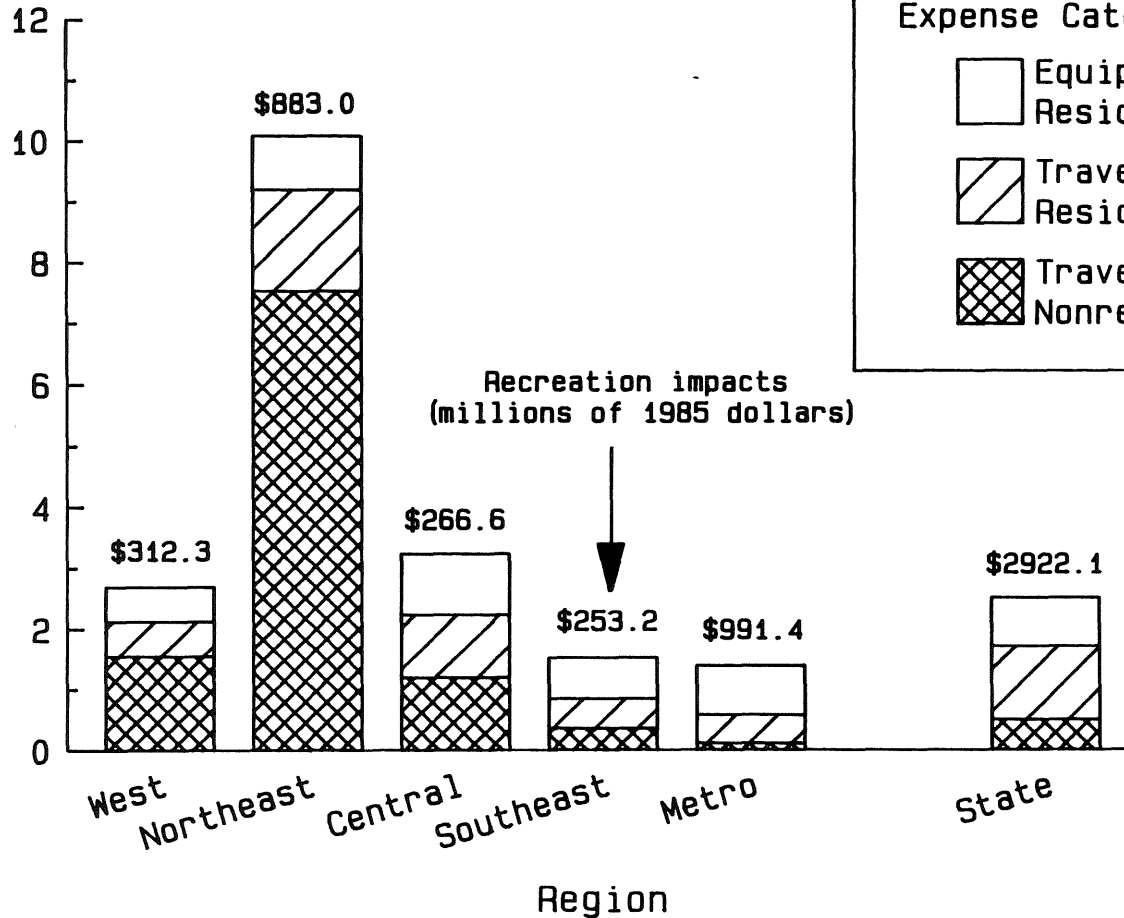
Direct Plus Indirect Impacts on Total Gross Output

Gross output is all sales of businesses in the regional economy, including sales made outside the geographic boundaries of the economy. Outdoor recreation expenditures accounted for between 1.4 and 3.3 percent of gross output in all of the regions, except the Northeast (Figure 13). There, the share of regional gross output was 10.1 percent, which is a fairly substantial share of the economy and well above the statewide share of 2.5 percent. The smallest impacts were found in the Southeast and Metro regions. In terms of the dollar value of the gross output impact, the Metro impact was slightly more than the Northeast impact (\$991.4 million versus \$883.0 million); as a percent of regional gross output, however, these expenditures had a much smaller impact on the much larger Metro economy.

Figure 13

Percent of Regional Gross Output Accounted for by Direct and Indirect Impacts of Outdoor Recreation Expenditures

Percent of Regional Gross Output



Source: Derived from processing data in Figure 11, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded.

Nonresident travel expenditures, which represent export-based sales for the regional economy, accounted for the majority of the impact on regional gross output in the West and the Northeast (58% and 75% of the impact, respectively). Nonresident impacts were smaller in the Central region and were considerably smaller in the Southeast and Metro regions.

Direct Plus Indirect Impacts on Total Value Added

Value added is the best measure for identifying the benefits to a region from the outdoor recreation expenditures, because it represents that portion of gross output that remains as income for residents of the region. As a percent of total value added in each region, these expenditures accounted for between 1.2 and 3.4 percent, except in the Northeast (Figure 14). The share of Northeast value added was 9.9 percent, far above the other regions and the statewide share of 2.3 percent. The Southeast and Metro regions again showed the smallest impact. The Metro impact on value added was greater than the Northeast impact in dollar terms (\$453.3 million versus \$426.2 million), but it was small in relation to the much larger value added of the Metro economy.

The West and the Northeast derived the majority of the value added impact from nonresident travel expenses, which represents export-based income for the regional economy. Nonresident impacts were smaller in the Central region, and were smaller still in the Southeast and Metro regions.

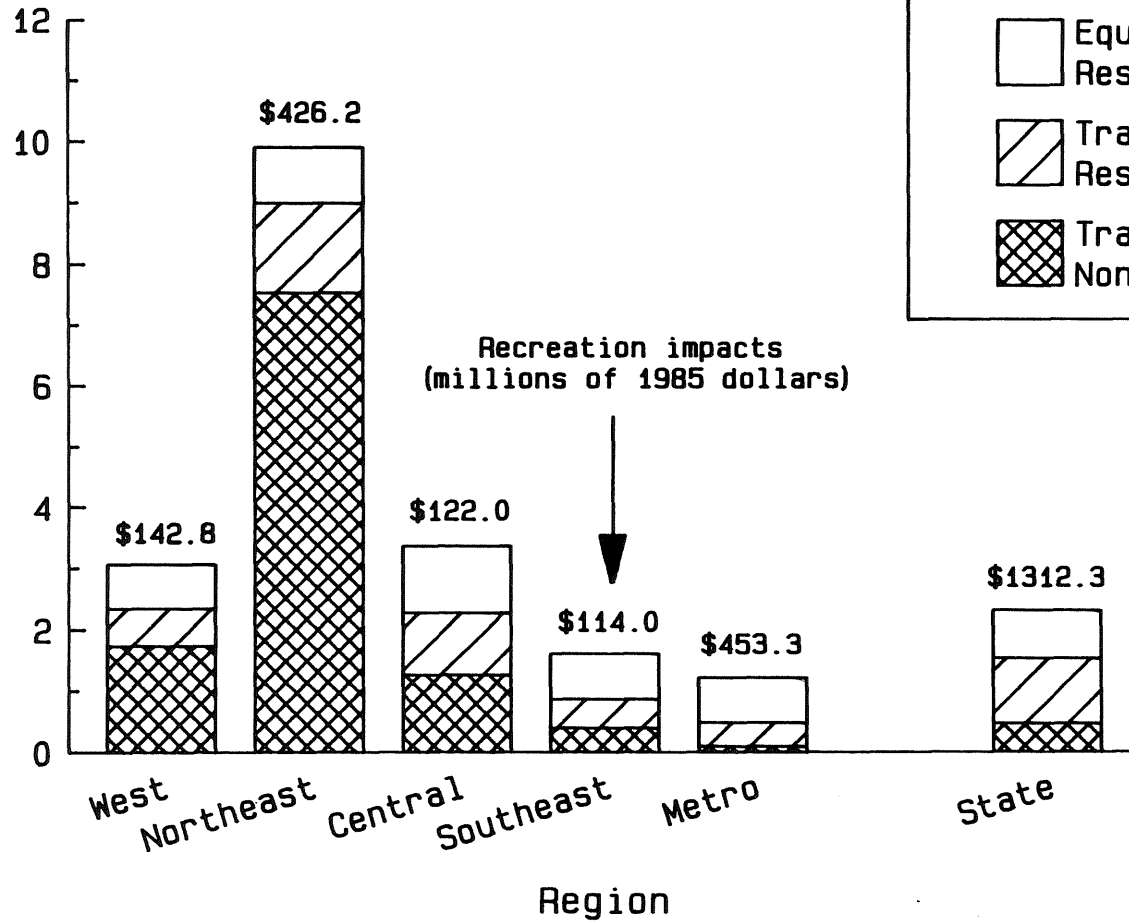
Direct Plus Impacts on Total Employment

Employment is the jobs associated with the income (value added) generated by the regional economy's production and sale of products. Seasonal and part-time jobs are counted the same as full-time jobs. Outdoor recreation expenditures accounted for between 1.8 and 4.5 percent of total employment in each region, except in the Northeast, where they accounted for 14.2 percent of total employment (Figure 15). The Northeast, once again, was far above the other regions and the state; the state had 3.3 percent of total employment accounted for by these expenditures. Although the number of Metro jobs due to these expenditures was near that in the Northeast (19,000 and 20,300 jobs,

Figure 14

Percent of Regional Value Added Accounted for by Direct and Indirect Impacts of Outdoor Recreation Expenditures

Percent of Regional Value Added



Expense Categories within Region

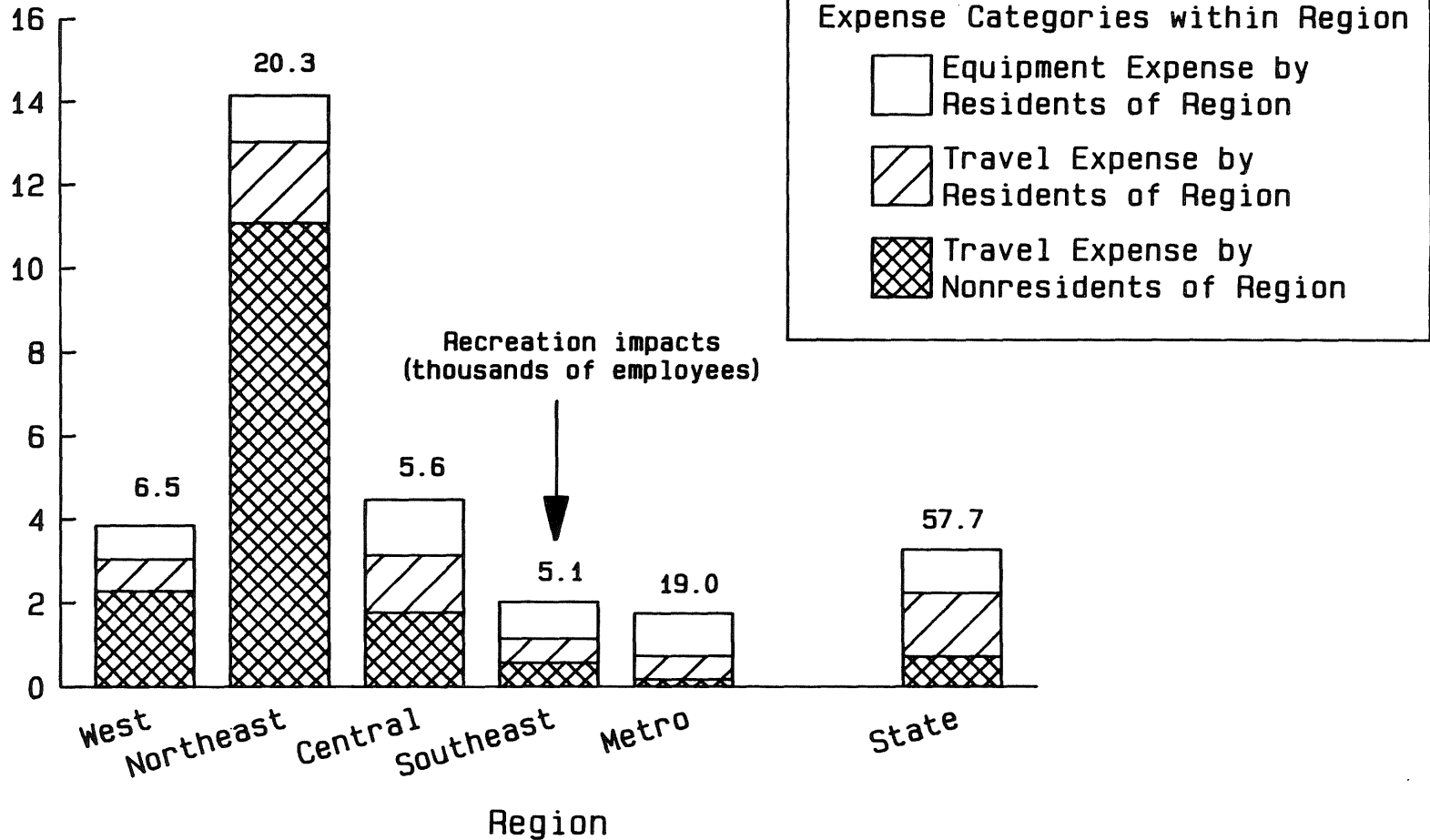
- Equipment Expense by Residents of Region
- Travel Expense by Residents of Region
- Travel Expense by Nonresidents of Region

Source: Derived from processing data in Figure 11, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded.

Figure 15

Percent of Regional Employment Accounted for by Direct and Indirect Impacts of Outdoor Recreation Expenditures

Percent of Regional Employment



Source: Derived from processing data in Figure 11, excluding fees and licenses, through the IPASS Input-Output Model. Administrative Government is excluded.

respectively), the larger total employment in the Metro resulted in a much smaller relative impact.

As with value added and gross output, most of the employment impact in the West and Northeast was derived from nonresident travel expenses, which represents export-based employment for the regional economy. Nonresident impacts were smaller in the Central region, and were considerably smaller in the Southeast and Metro regions.

OR/LINDA



APPENDIX A

Nonresident Survey Methodology

SUMMER MOTOR VEHICLE VISITOR SURVEY

OBJECTIVES:

- 1) To ascertain the origin of recreational visitors to Minnesota.
- 2) To ascertain the destination of recreational visitors to Minnesota.
- 3) To measure the recreation load placed on Minnesota recreation resources by motor vehicle visitors to the state.
- 4) To measure the economic impact of recreational motor vehicle visitors to Minnesota.

SAMPLE UNIT:

Visitor party.

CONTACT METHOD:

Random road blocks of major routes into Minnesota.

SAMPLE SELECTION METHOD:

All non-resident, non-commercial vehicles are sampled.
Non-recreational parties are allowed to pass. All recreational parties are given diaries to complete during their stay in the state.

Sample dates are stratified by entrance, day of week and month (June, July and August). Sample periods are designed to minimize total variance of incoming recreational parties.

SAMPLE SIZE:

Expected 14,000 parties.

EXPECTED LEVEL OF RESOLUTION:

Minnesota Development Region.

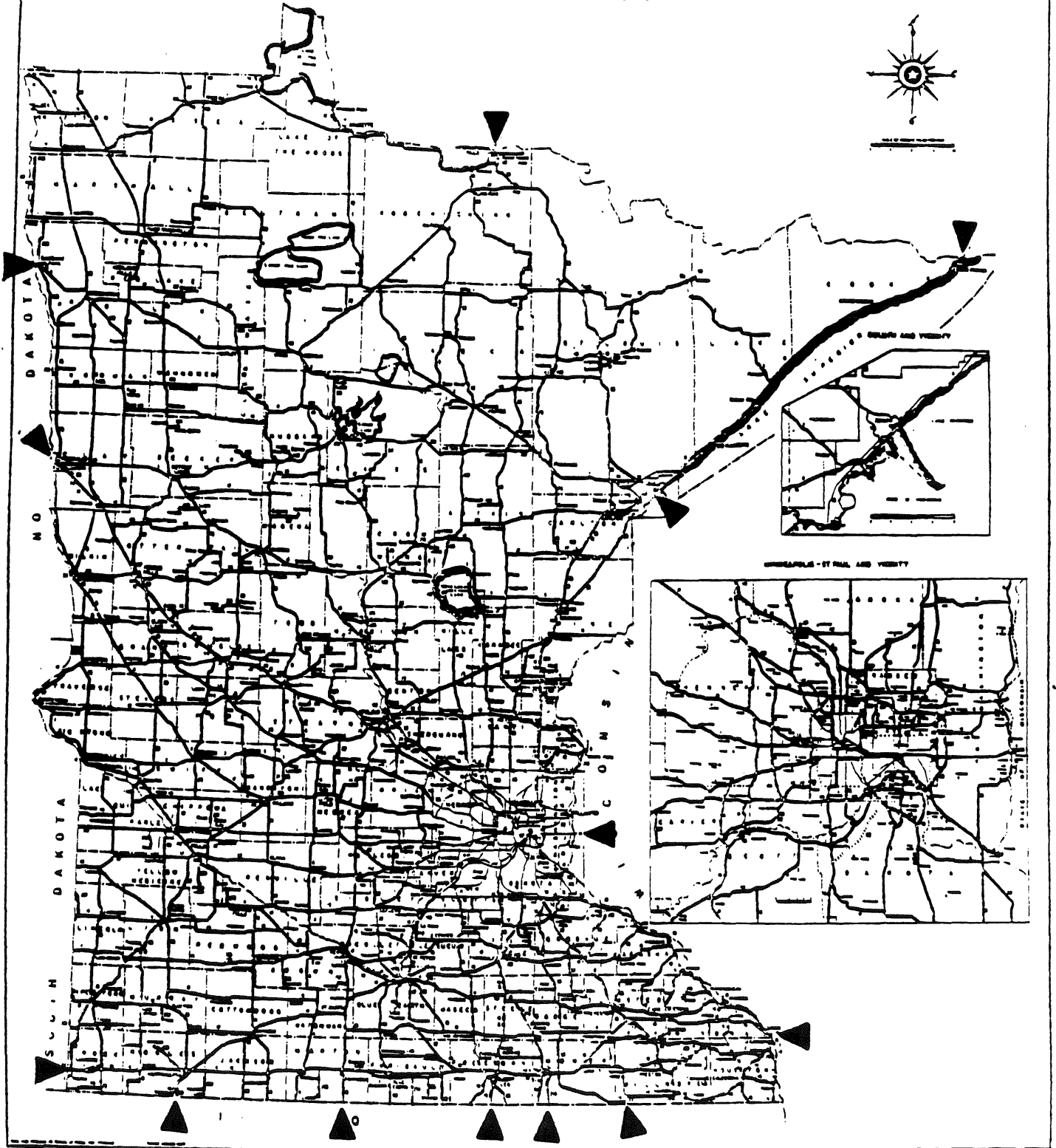
RESPONDENT:

Head of visiting party.

RECALL PERIOD:

None - diary technique.

SAMPLE SITES
Motor Vehicle Visitor Survey
Summer 1978



TRAFFIC COUNT/CLASSIFICATION FORM

DATE: / /

RECORDER: I.D.# / /

TIME: / /

LOCATION: _____

CODE # / /

PAGE _____ OF _____

		NO TRAILER		BOAT TRAILER		CAMPER/TENT TRAILER		UTILITY TRAILER	
		No boat/canoe	Boat/canoe	No boat/canoe	Boat/canoe	No boat/canoe	Boat/canoe	No boat/canoe	Boat/canoe
NON-COMMERCIAL	IN								
	State	14	17	20	23	26	29	32	35
1	OUT								
	of State	28	41	44	47	50	53	56	59
13									
VAN	IN								
	State	16							
2	OUT								59
	of State								
13									
Pickup Camper Cabover	IN								
	State	16							
3	OUT								59
	of State								
13									
Pickup Shell	In								
	State	16							
4	OUT								59
	of State								
13									
Pickup	IN								
	State	16							
5	OUT								59
	of State								
13									
Motor-	IN								
	State	16							
6	OUT								59
	of State								
13									
		Motorcycle		Commercial Truck/Bus		Commercial Cars, vans, etc.		Other	
		42 53 16		42 53 16		42 53 16		71 72 73	

TIME OF CONTACT	SEQUENCE NUMBER	VEHICLE CLASSIFICATION	BOAT		MOTOR	HOME OF PARTY (ZIP CODE)	PURPOSE OF TRIP		# IN PARTY		# OF OVERNIGHTS	OVERNIGHT ACCOMMODATIONS	QUESTIONNAIRE NUMBER																												
			1st	2nd			R	B	A	TN				CP	U																										
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

VEHICLE

- Passenger car/station wagon
- Pickup
- Pickup camper shell
- Pickup camper over cab
- Motor home
- Van
- Motorcycle
- Motorcycle
- Bicycle
- Other

TRAILER

- Travel trailer
- Tent camper
- Fifth wheel camper
- Boat trailer
- Motorcycle trailer
- Horse trailer
- Utility trailer
- Other
- NONE

CARRIER/CARTOP

- Boat
- Canoe/kayak
- Bicycle
- Motorcycle
- Luggage
- Other
- NONE

BOATS

- Outboard
- Inboard
- Canoe/kayak
- Sailboat
- Houseboat
- Pontoon boat
- Other
- NONE

MOTOR

- Less than 25 hp
- 25 - 75 hp
- Over 75 hp
- NOT ABLE TO DETERMINE hp
- NONE

PURPOSE OF TRIP

- Recreation
- Business
- Visit friends or relatives
- Other
- None

OVERNIGHT ACCOMMODATIONS

- Resort
- Hotel/motel
- Campground
- Private cabin
- Private residence
- Other

CODES:

- 1 - Mentioned
- 5 - Not mentioned
- 0 - Refused

The University of Minnesota is conducting a Summer Visitor Outdoor Recreation Study for the Minnesota Department of Natural Resources. Your party is part of a scientific sample of visitors to Minnesota. You can help in the revision of the Minnesota Outdoor Recreation Plan by providing us with the following information.

DATE ENTERING MINNESOTA / / RECORD ODOMETER MILEAGE AT POINT OF ENTRY TO MINNESOTA
mo day
 HOME TOWN STATE ZIP CODE

WHERE DID YOU STAY THE NIGHT BEFORE YOU ENTERED MINNESOTA? CITY/TOWN STATE
WIS IOWA S. DAKOTA N. DAKOTA CANADA
 AT WHICH STATE BORDER DID YOU ENTER MINNESOTA? () () () () () WHICH HIGHWAY? #

List the FIRST NAME, AGE AND CIRCLE M OR F for the SEX of each member of your Party.

1. <u> </u> <u> </u> <u> </u> <u> </u>	4. <u> </u> <u> </u> <u> </u> <u> </u>	7. <u> </u> <u> </u> <u> </u> <u> </u>
2. <u> </u> <u> </u> <u> </u> <u> </u>	5. <u> </u> <u> </u> <u> </u> <u> </u>	8. <u> </u> <u> </u> <u> </u> <u> </u>
3. <u> </u> <u> </u> <u> </u> <u> </u>	6. <u> </u> <u> </u> <u> </u> <u> </u>	9. <u> </u> <u> </u> <u> </u> <u> </u>

OUTDOOR RECREATION ACTIVITIES

We would like to know about your party's recreation activities while in Minnesota. Enclosed is a list of activities. Each time one or more members of your party participates in one of the activities listed, complete a line in the block below. Make sure that you enter all of the information: DATE, ACTIVITY NUMBER, PERSON(s), LOCATION, TIME OF DAY and LENGTH OF TIME. (DO NOT include CHILDREN UNDER SIX (6) YEARS).

DATE mo/day	ACTIVITY Enter the <u>number</u> of the activity from the activity list	PERSON(s) Enter the <u>first name</u> of each person participating in the activity	LOCATION Give the <u>name</u> of the <u>nearest</u> town - if at a park, historic site, etc. give the name, if on a lake give the name of the lake and the county or nearest town	TIME OF DAY Time activity began-specify am or pm	LENGTH OF TIME Duration of activity in hrs & min.

EXPENDITURES

If, during your stay in Minnesota you purchase any of the following kinds of GOODS (gas or oil, etc/meals eaten out/ food or groceries/lodging/clothing/fees or licenses/transportation/personal or miscellaneous items) record the DATE OF PURCHASE, the KIND OF GOOD PURCHASED, the AMOUNT SPENT, and the TOWN (or nearest town) where the purchase was made.

DATE mo/day	KIND OF PURCHASE	AMOUNT SPENT \$	LOCATION OF PURCHASE	DATE mo/day	KIND OF PURCHASE	AMOUNT SPENT \$	LOCATION OF PURCHASE

For EACH OVERNIGHT you spend in Minnesota, please indicate the TOWN OR NEAREST TOWN, CAMPGROUND OR LAKE where you spent the night. Indicate also the TYPE OF ACCOMMODATIONS (camper, tent, travel trailer, motorhome, cabin, hotel/motel, resort, or private residence).

DATE mo/day	OVERNIGHT FACILITY NAME OR LAKE AND NEAREST TOWN	TYPE OF LODGING (CAMPER, MOTEL, FRIENDS, ETC.)	DATE mo/day	OVERNIGHT FACILITY NAME OR LAKE AND NEAREST TOWN	TYPE OF LODGING (CAMPER, MOTEL, FRIENDS, ETC.)

IN WHICH BROAD CATEGORY DOES YOUR 1977 HOUSEHOLD INCOME FALL (before taxes)? Less than \$5000; \$5000 thru 9999;
\$10,000 thru 14,999; \$15,000 thru 19,999; \$20,000 thru 24,999; \$25,000 thru 29,999; \$30,000 & over

WHAT WAS THE LENGTH OF YOUR STAY IN MINNESOTA ON THIS TRIP? (# of Days) _____
WIS IOWA S. DAKOTA N. DAKOTA CANADA

AT WHICH STATE BORDER DID YOU EXIT FROM MINNESOTA? () () () () () WHICH HIGHWAY # _____

RECORD THE ODOMETER MILEAGE AT THE POINT OF EXIT _____

WHERE WILL YOU SPEND YOUR FIRST NIGHT AFTER LEAVING MINNESOTA? CITY/TOWN _____ STATE _____

IF YOU HAVE ANY COMMENTS RELATED TO MINNESOTA'S OUTDOOR RECREATION FACILITIES OR RESOURCES, WE ENCOURAGE YOU TO USE THIS SPACE FOR THOSE OR ANY OTHER COMMENTS YOU WISH TO MAKE.

The University of Minnesota is an equal opportunity educator and employer.

THANK YOU FOR YOUR ASSISTANCE. HAVE A SAFE AND PLEASANT STAY IN MINNESOTA.

PLEASE DROP THE COMPLETED SURVEY IN THE NEAREST MAILBOX AFTER COMPLETING YOUR VISIT TO MINNESOTA.

FIRST CLASS
Permit 692
Duluth, MN 55812

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Lake Superior Basin Studies Center
311 A. B. Anderson Hall
University of Minnesota, Duluth
Duluth, Minnesota 55812



ACTIVITY LIST

INSTRUCTIONS: Each time you or a member of your party participates in some outdoor recreation in Minnesota, enter the information on the Activity Inventory section of the Travel Diary. Be as specific as you can. Indicate the activity by using the code number listed below. For example, if someone went waterskiing, the code number to use is 4. If you camped in a campground, the number is 13.

BICYCLING

1. On trails or paths
2. On roads or highways
3. On city/town streets

BOATING

4. Waterskiing
5. Power boating (under 25 hp)
6. Power boating (25 hp and over)
7. Sailing
8. Canoe/Kayak, on stream
9. Canoe/Kayak, on stream (overnight trip)
10. Canoe/Kayak, on lake
11. Canoe/Kayak, on lake (overnight trip)
12. Other boating

CAMPING

13. In a campground (at designated campsite)
14. In the open (at designated campsite)
15. In the open (no designated campsite)

CLIMBING

16. Technical, with ropes

FISHING

17. Stream
18. Lake, from shore
19. Lake, from boat

FOUR WHEELING

20. On trails or 4 wheel roads
21. Cross-country or in the open

GAME PLAYING (other than golf or tennis)

22. On play ground equipment
23. On marked-off fields
24. In open space

GOLF

25. All except miniature
26. Miniature golf

HIKING (1 Day only-not overnight)

27. Across open country
28. On trails
29. On roads or side walks

HIKING (overnight trips)

30. Across open country
31. On trails

HORSEBACK RIDING

32. Along roads
33. On trails
34. Across open country

NATURE STUDY/BIRDWATCHING

35. With camera
36. Without camera

ORIENTEERING

37. With organized groups or independently

PICNICKING

38. At a designated picnic area
39. Other than designated picnic area

SHOOTING

40. Trap
41. Skeet
42. Range/target

SWIMMING

43. Lake
44. Stream
45. Pool-outdoor
46. Pool-indoor

TENNIS

47. Indoor court
48. Outdoor court

TRAIL BIKING

49. On trails
50. Across open country

VISITING HISTORIC SITES, MUSEUMS OR INTERPRETATIVE CENTERS

51. (Please give site or facility name for location.)

OTHER

52. (Please specify)

EXPENDITURE RECORD

Dear Visitor:

Keeping track of expenditures during a trip may be for some of us a bit of an inconvenience, but in these times of increasing costs it may be useful for budgeting. We have provided this form for your records. It may also help you to complete the enclosed diary for us. Please use it if you wish. This form is for your records. All we need is the Information Transferred to the Visitors Recreation Diary before you mail the Diary to us upon completion of your visit to Minnesota.

ENTERING DATE _____ LEAVING DATE _____

ENTERING ODOMETER MILEAGE _____ LEAVING ODOMETER MILEAGE _____

TOTAL MILES IN MINNESOTA _____

DATE mo/day	KIND OF PURCHASE (gas, oil/food/lodging,etc)	AMOUNT SPENT	LOCATION OF PURCHASE

UMD/78

APPENDIX B

Resident Survey Methodology

**A CONTINUOUS SURVEY OF PARTICIPATION AND EXPENDITURES
IN OUTDOOR RECREATION BY MINNESOTA RESIDENTS**

-Year End Summary Report-

February 1, 1987

Submitted by the

**MINNESOTA CENTER FOR SURVEY RESEARCH
University of Minnesota
2122 Riverside Ave
Minneapolis, MN 55454
627-4282**

in association with the

**CENTER FOR URBAN AND REGIONAL AFFAIRS
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Prepared by: R. Michael Madell

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

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MINNESOTA CENTER FOR SURVEY RESEARCH

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

INTRODUCTION

Executive Summary

The Continuous Survey of Participation and Expenditures in Outdoor Recreation by Minnesota Residents (DNR Continuous Survey) was conducted for the Minnesota Department of Natural Resources (DNR) by the Minnesota Center for Survey Research (MCSR) in association with the Center for Urban and Regional Affairs (CURA). Both MCSR and CURA are administrative divisions of the University of Minnesota.

Interviewing on the DNR Continuous Survey began on September 28, 1985 and ended on September 30, 1986. The sample for the survey was drawn from Minnesota telephone exchanges using a method of random digit dialing. Respondents were asked to detail their household's recreation activities in Minnesota for the seven days prior to the interview date. The DNR Continuous Survey is organized in a manner that will allow the data collected to be analyzed in conjunction with the 1978 State Comprehensive Outdoor Recreation Plan (SCORP).

During the first year of interviewing, a total of 5,736 Minnesota households participated in the survey. Of these households, a sub-sample of 1,538 were asked to report information on expenditures which were related to their recreation activities.

Objectives

The DNR Continuous Survey had three major goals. The first of these goals was to provide the DNR with useful and technically sound information regarding the recreational use of the state's natural resources. Accurate data on recreation participation and related expenditures will provide a base for the Department's resource planning programs. The survey may also indicate the need for additional, more specific studies to explain various trends that appear in the data.

The second goal of the DNR Continuous Survey was to update the 1978 SCORP, which was conducted internally by the DNR. Longitudinal comparison of the two data bases may also indicate a need for more in-depth study of certain trends.

Finally, the third goal of the study was to provide the DNR with an estimate of recreation-related expenditures, especially those which are associated with water-based recreation. To qualify for the portion of the survey which asked expenditure information, at least one member of the household must have participated in a water-based activity (eg. swimming, fishing, boating) or felt that a lake or river was important in their decision to participate in at least one recreation activity during the past week. Information on the amount and type of expenditures that are associated with water-related recreation was collected to

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allow the DNR to estimate the value of the state's surface water resources (or, at least, the recreation value of those resources). Geographical analysis of expenditure data may also be valuable for economic or tourism planning.

MANAGEMENT PLAN

Executive direction for the DNR Continuous Survey was provided by Dr. William J. Craig (Director of MCSR) and Dr. Ronald E. Anderson (Department of Sociology, University of Minnesota). Dr. Craig, who is also the Assistant Director of the Center for Urban and Regional Affairs, has worked extensively on technical and policy issues for federal, state, and local governments. He was one of the founders of the Minnesota Land Management Information System (MLMIS), which is a world class geographic information system. The MLMIS system of geographic coding was used in the DNR Continuous Survey to identify the locations of recreational activities and expenditures.

Dr. Anderson has taught social research methods in the Department of Sociology for the past seventeen years. Dr. Anderson also served as Director of MCSR for over four years, and was serving in that position at the beginning of the DNR Continuous Survey. During his tenure as Director of MCSR, Dr. Anderson directed numerous omnibus policy-oriented research projects including the annual Twin Cities Area Survey, the annual Minnesota State Survey, and the Twin Cities Low Income Survey.

The Survey Manager for the project was Rossana Armson. Ms. Armson is an advanced graduate student at the University of Minnesota and has been associated with MCSR for the past four years. Ms. Armson assisted in the designing of the DNR questionnaire and provided the overall coordination for the project.

Nancy Davenport-Sis, Data Collection Manager was responsible for the hiring and training of interviewers, managing and assessing the status of the sample, co-authoring the quarterly methods reports, and providing overall daily management for the study. Ms. Davenport is a graduate student in Sociology and has worked on numerous projects at MCSR.

Michael Madell, Data Manager, was responsible for quality control of the completed interview schedules. This entailed checking for improper or inadequate data, errors in branching, and illegible entries. The coding and geographic coding of the completed surveys were also major responsibilities of the data manager. Mr. Madell, who is a graduate student in Recreation, Park, and Leisure Studies, also assisted in interviewer training and monitoring, co-authoring the quarterly methods reports, and in end-of-quarter computer data cleaning.

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The computer programmer for the DNR Continuous Survey was Terry Schmidt, who holds a joint appointment with the Center for Urban and Regional Affairs and with the Department of Sociology. Mr. Schmidt's responsibilities included end-of-quarter computer data cleaning and overall data file management.

QUALITY CONTROL

Quality control for the DNR Continuous Survey began with the selection of interviewers. A total of sixteen interviewers participated in the first year of the study. These sixteen were recruited from a pool of experienced interviewers who had previously worked at the Minnesota Center for Survey Research. They were chosen for the DNR study because they had demonstrated superior interviewing ability, integrity, and responsibility on previous MCSR projects. An average of five interviewers were employed at any given time. Most of the interviewers worked on the project for approximately three to four months.

All interviewers were required to attend a training session which covered the nature of the project, question content, and survey format. In addition, they were provided with standard protocols for dealing with anticipated questions about the survey. Procedures for encouraging respondents who were reluctant to participate in the survey were also discussed. Before beginning the actual surveying, all interviewers were required to complete at least one "practice" interview with an MCSR staff member. Supplemental training sessions were held occasionally to update the interviewers on changes in the survey instrument and procedures and to discuss any concerns that had developed.

Interviewers were also monitored periodically. In monitoring, a staff member observed the interview, completed an evaluation form, and provided immediate feedback to the interviewer on how to improve interviewing quality. The Data Manager also provided feedback to the interviewers on issues concerning data consistency, appropriateness, and integrity.

Each interviewer who worked on the DNR Continuous Survey was required to sign a statement of professional ethics, which contained explicit guidelines about appropriate interviewing behavior and the confidentiality of all respondent information.

SURVEY INSTRUMENT

The survey instrument was organized into six separate, but interrelated, sections: household composition, trips, recreation activities, expenditures, major recreation-related purchases, and demographics. The information that was included in each of these sections is summarized beginning on the following page:

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

A) Household Composition: The section on household composition collects details on each household member, including sex, age, and whether that person had been fishing, hunting, or had possessed a valid Minnesota fishing license in the past year.

B) Trips: Information was collected only on those trips which contained at least one recreation activity. Details recorded included the destination of the trip, the major purpose of the trip, the major activity on that trip, when the trip started, the total number of days the trip lasted, and the total number of people on the trip.

C) Recreation Activities: Respondents were asked to tell about their household's outdoor recreation participation during the seven days prior to the date of the interview. Interviewers obtained a listing of all recreation occurrences, who participated in each, on which day, for how long, and where they occurred. A schedule of those recreation activities that were measured appears in Appendix D.

D) Expenditures: The expenditure section included questions about the amount of money that was spent on a given trip or recreation activity. To qualify for these expenditure questions, at least one recreation occurrence must have been water-based (swimming, boating, etc.) or water must have been important in the decision to participate in at least one activity. Information was collected for several expense categories and included the amount of the purchase, as well as specific information about where the money was spent. If a member of the respondent's household had taken a recreation trip in the past seven days, a question was asked to determine how much additional money they would be willing to spend if they were to take the same trip again. A schedule of expenditure categories can be found in Appendix E.

E) Major Recreation-Related Purchases: Each household was asked to list certain major purchases that were made during the past year. Each of these purchases must have cost more than \$100 and have been related to water-based recreation (for example boats, motors, depth finders, or windsurfers) or hunting (such as guns or dogs).

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F) Demographics: The final section of the survey collected general demographic information such as county of household residence, zip code, household income, education, and occupation.

The content of the survey was generally consistent throughout the first year of the study. However, certain changes in the instrument were implemented at the beginning of the third quarter. These changes are summarized in the following section.

CHANGES IN SURVEY INSTRUMENT

The specific content of the survey instrument was consistent through the first two quarters of the study (September 28, 1985 through March 31, 1986). However, beginning with the third quarter, four alterations were made in form and in content. These changes were maintained through the end of the first year of the project. The question which allowed a respondent to branch to the expenditures questions ("Was a lake or river important in the decision to recreate at any of the places you went on the trip?") was moved from the end of the recreation activity section to two separate sections of the survey. Beginning with the third quarter, this branch question was asked both within the trip section and the recreation activity section. This was done to let a respondent consider the question for each trip or recreation occurrence individually. It was thought that this might allow for more accurate recall, and thus qualify more households for the expenditure questions.

Also in the trip section, the number of days spent on a trip was replaced with the total nights spent away from home. With this change, data analysis will be able to determine that a "zero" response for this question actually reflects a day trip. Under the old format, it was not possible to determine if a trip had lasted over-night or just a few hours.

In the recreation activity section, a question was added which inquires as to the concurrence of the various activities. For example, if a household member had gone boating, and while he was boating also participated in fishing and wildlife observation, this would be concurrent recreation. The added question will allow the DNR to differentiate between several hours of separate activity and several hours of activity that actually occurred at the same time (and thus represents fewer total hours spent recreating).

The final change in the survey instrument was in the demographics section. As of April 1, 1986 (the start of the third quarter) respondents were asked to report their gross household income for 1985 (as opposed to 1984). This date was selected as it was thought that the majority of households would have filed

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their 1985 tax returns and would be more likely to recall that figure than the 1984 total.

Copies of the original and revised survey instruments (which are dated 9/29/85 and 4/1/86 respectively) can be found in Appendix A and Appendix B at the end of this report.

SAMPLE SIZE AND DESIGN

The sample for the DNR Continuous Survey was drawn solely from Minnesota residents. A total of thirteen interviews were completed each day of the survey. This was done in order to allow for accurate longitudinal comparison of the data by month or by season. There were 363 interviewing dates for the survey, making a total of 4,719 completed interviews for the main sample. In addition, an oversample of nine completions per day was collected from May 18, 1986 through September 8, 1986 (or 113 days). The oversample was implemented in order to obtain a larger database for the busy summer recreation season. The start date for the oversample was selected to immediately follow the opening of the Minnesota game-fishing season. The end date was the last interviewing day that could reflect recreation activities from the Labor Day weekend (the traditional end of the summer season). The total size of the oversample was 1,017 completions. Thus, the size of the sample for the total survey was 5,736 completions.

The selection of respondents for the survey occurred in two stages. First, a household within the state of Minnesota was selected by a method of random digit dialing. The sample, which was provided by Survey Sampling, Inc., consisted of an exhaustive list of operating telephone exchanges and trunk lines within the state which were combined with randomly generated numbers (which were appended to the exchange and trunk line as the last three digits of the phone number). By using a method such as this it is possible to reach those residents with new or unlisted telephone numbers. The second phase of respondent selection occurred once a household had been contacted. An adult household member, who was informed about the household's recreation participation over the week prior to the date of contact was self-selected.

INTERVIEWING

All interviews were conducted by telephone from a central phone bank at the Minnesota Center for Survey Research. Interviewing was organized into one four-hour shift each day of the week. On weekdays this shift typically ran from 5:30 p.m. until 9:30 p.m. On weekends, the shifts ran from 10:30 a.m. through 2:30 p.m. Also, an occasional weekday afternoon shift was conducted in order to attempt to contact those numbers which had not been reached in at least ten attempts. During each shift interviewers attempted

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

to contact scheduled appointments, recalled those numbers that had no answer on the previous shift, completed any partial interviews, and initiated telephoning to new sample households.

Every telephone number was attempted at least ten times over a two-week period. If no contact was made during this period, the number was tried one final time on a weekday afternoon shift. The number was then eliminated from the sample if no contact was made.

Numbers to be called were recorded on contact records (see Appendix C), which were picked up by the interviewers at the beginning of each shift. On the back of these contact records was a form for the scheduling of appointments and the recording of refusals. Appointment information included the name of the respondent (if one had been selected) and the date and time for a call-back. The details on refusals included the reason(s) for declining to participate and any information that might be helpful to prevent future refusals.

The disposition of each attempted contact was recorded on the contact records as follows (there were eleven possible dispositions):

1. "Completed" means that all questions in the interview schedule had been asked of the respondent.
2. "Partial" means that the interview schedule had been started, but was not completed. In such a case, interviewers were instructed to schedule an appointment to finish the survey. If the respondent declined to complete the interview, the interview was considered a refusal and dealt with accordingly.
3. "Busy signal" means that every attempt to contact the household during the shift had resulted in a busy signal.
4. "No answer" means that all attempts during a shift had resulted in the telephone ringing ten times without being answered.
5. "Not a working number" means that the number was not in operation or that it had been changed. All such numbers were eliminated from the sample.
6. "Not a home phone" means that the number was not for a residential phone. All of these numbers were eliminated.
7. "Physical/language problem" means that a respondent had been selected, but could not complete the interview. For example, the respondent may have been ill, could not speak English, was hearing impaired, or was developmentally disabled. Such respondents were not recontacted and the number was eliminated from the sample.

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8. "1st refusal" means that someone in the household declined to participate in the study. Interviewers were instructed to be very specific in recording details of the refusal.
9. "Callback to contact respondent" is a contact that had been made with someone in the household, but the targeted respondent had not been determined. Interviewers were instructed to suggest a more convenient time to call back and to fill out the appropriate information on the back of the form.
10. "Appointment with respondent" means that a respondent had been selected and he/she had scheduled a time to complete the interview.
11. "Other" is reserved for contingencies not covered by any of the previously mentioned dispositions. For example, no one in the household was at least eighteen years of age.

All data that was collected in the DNR Continuous Survey was recorded on traditional paper survey forms. An attempt was made to develop a Computer Aided Telephone Interviewing (CATI) system for use in this study. This would have allowed data to be recorded directly into a rectangular file while the survey was being conducted, which would have expedited the cleaning and delivery of the data. However, it was discovered that the complex nature of the various rosters (i.e., household composition, trips, recreation activities, expenditures, and income contributors) made the CATI system extremely difficult to implement. These rosters would have had to been recorded on paper and later merged with that portion of the survey which could have been directly entered into CATI. Thus, the decision was made not to implement the automated system.

CODING

Coding for the DNR Continuous Survey occurred at two levels. Completed survey instruments were reviewed immediately by interviewers for missed questions, errors in branchings, and insufficient detail in geographic locations. The interviewers recorded the appropriate codes for variables such as recreation activity, day of occurrence, expenditure category, etc. Following these initial procedures, the instruments were sent to the Data Manager for a more detailed and rigorous examination. The Data Manager prepared the completed instruments for data entry by (1) making certain that every question had been answered and coded properly, (2) assuring that branching had been followed, and (3) coding geographic variables.

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Throughout the instrument, several types of "missing" responses were allowed and coded as follows:

	Number of Digits in Code						
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
DK (Don't Know)	8	88	888	8888	88888	888888	8888888
RA (Refused Answer)	9	99	999	9999	99999	999999	9999999
NA (Not Applicable)	0	00	000	0000	00000	000000	0000000

GEOCODING

Geographic coding (geocoding) of recreation activities and expenditures has been done in a seven digit format that is compatible with the Minnesota Land Management Information System (MLMIS). That system is based on the Public Land Survey (Craig, 1976) and allows for easy computer mapping of data. The purpose of this system is to locate the activities and expenditures to the township level (thirty-six square miles).

All geocodes can be classified as either map locations, lakes, or special facilities. These classifications can be identified by their unique first digit as summarized below:

<u>First Digit</u>	<u>Classification</u>
1	Map Location
2	Lakes
3	Special Facilities

Map Locations represent normal range and township grids. These codes are determined by use of a map overlay which is an adaptation of the range/township system. The seven digit map locations codes require a one-to-one table transformation to be equal to the MLMIS code scheme. Each digit of the map location codes can be defined as follows:

$\frac{1}{a} \frac{0}{b} \frac{2}{c} \frac{0}{d} \frac{2}{e} \frac{0}{f} \frac{5}{g}$

- a=identifier digit ("1" designates map locations)
- b=justification digit (always is "0")
- c & d=county code (range=01-87)
- e=sub-county code (range=1-7)
- f & g=township code (range=01-40)

In the above example, "1" designates the code as being a "map location". The "0" is a justification digit and has no analytical significance. The third and fourth digits denote the county. In this example "2-0" identifies Dodge County. The remaining digits

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are taken from the map overlay. These digits represent the specific sub-county and township where the recreation activity or expenditure occurred.

Lakes are coded in reference to DNR Bulletin #25, An Inventory of Minnesota Lakes. This document assigns a unique identification number to each lake in the state. This coding system is linked to the seven digit survey format as follows:

$$\frac{2}{a} \frac{6}{b} \frac{2}{c} \frac{0}{d} \frac{0}{e} \frac{1}{f} \frac{3}{g}$$

a=identifier digit ("2" designates lakes)
b & c=county code (range=01-87)
d-g=lake number (from Bulletin #25)

In the example, "2" designates the code as being that of a lake. The county code (the second and third digits) is "6-2", or Ramsey County. The lake number "0013" is taken from Bulletin #25. When used in conjunction with the county code, this number will differentiate the lake from every other lake in the state. The lake in the example is Lake Phalen in St. Paul.

Unlike map location codes, lake codes may require a one-to-several table transformation to be equal to the MLMIS coding system. This is necessary as many lakes fall within several townships.

Numerous lakes in the state share a name with one or many others. To ensure accurate coding, interviewers were instructed to record as much detail as possible on the locations of the lakes. Typically this detail included a close city or highway and the distance and direction from that point. This information was used to select the correct lake from Bulletin #25.

Special facilities include such areas as state parks, metro-regional parks, national wildlife refuges, national Park Service properties, and the Boundary Waters Canoe Area (BWCA). Coding for these areas was determined by reference to a detailed list of facilities which was provided by the DNR Office of Planning, Recreation Facilities Inventory System. A copy of this list can be found in Appendix F. Definition of facility codes is as follows:

$$\frac{3}{a} \frac{6}{b} \frac{2}{c} \frac{1}{d} \frac{3}{e} \frac{6}{f} \frac{8}{g}$$

a=identifier digit ("3" designates special facilities)
b & c=county code (range=01-87)
d-g=facilities code

In the example, "3" designates a special facility. The remaining digits identify the specific county and facility. The

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

"6-2" denotes Ramsey County and "1368" Lake Phalen Regional Park.

As with lake codes, a one-to-several table transformation may be necessary to make the codes equal to the MLMIS coding scheme.

Every effort has been made to code recreation activities and expenditures to the exact township, lake, or facility of occurrence. When this was not possible, an effort was made to code the activity or expenditure to within a mean distance of twelve miles (two townships) from the true point of occurrence. For example, if a respondent could only remember that he had been hunting somewhere in northeastern Freeborn County, a township that is approximately central to the northeast quadrant of that county was coded.

If the respondent could not provide this level of detail, but could remember the county, the occurrence was coded as follows:

1 0 6 2 8 8 8
or
1 0 6 2 9 9 9

Here, the "888" and "999" suffixes denote "don't know" and "refused answer" responses respectively. The first four digits of the code are identical in definition to that of a regular map location.

When a respondent failed to provide any geographic detail, the occurrences were coded as follows:

8 8 8 8 8 8 8 8
or
9 9 9 9 9 9 9 9

These codes represent "don't know" and "refused answer" responses.

Craig, Will, MLMIS Geocoding Procedures, Minnesota Land Management Information System, Publication #4005, Center for Urban and Regional Affairs, University of Minnesota, 1976.

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

SPECIAL CODING ISSUES

Throughout the survey special situations occurred which required arbitrary coding decisions. A summary of these decisions is listed below:

Recreation in the BWCA

Recreation within the Boundary Waters Canoe Area was coded, as best as possible, to the county where the activity occurred. The entry point for the wilderness trip, together with the distance and direction from that point was asked of each BWCA recreation occurrence. Each county that the BWCA lies in has a special facilities code (see Appendix x).

Recreation on Lake Superior

Recreation on Lake Superior was coded to the township where the activity originated. For example, if a respondent went boating, and launched from Two Harbors, the geocode would be that of the township where Two Harbors is located.

Recreation Involving Linear Travel

Recreation involving linear travel (i.e. travelling from one point to another) was coded to the point of destination. For example, a bicycling trip from St. Paul to Rochester would be coded to Rochester. Activities such as biking, driving for pleasure, canoeing, etc. were typically coded in this fashion.

Extended linear travel activities (i.e. those lasting more than one day) were broken into separate components by day. Thus, each day's activities represent a separate recreation experience.

Recreation on the St. Croix, Mississippi, and Minnesota Rivers

Recreation on the major rivers of the state was coded to the township that was nearest to the point where the recreation occurred. If the river recreation involved travelling from one site to another, the activity was coded as per the convention for linear travel (see preceding paragraph).

Camping

All camping activity was coded as lasting four hours for each day of occurrence.

Coding of Activities that are Concurrent with Camping

The decision was made that camping should not be listed as being concurrent with any other activities. Thus, if a give activity was concurrent only with camping, it is listed as not being concurrent recreation. If that activity was concurrent with camping and at least one other activity, then it is listed as being concurrent recreation (as well as the other, non-camping activities). This convention is only applicable to the third and

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

fourth quarter data, as the concurrency question was not asked during the first two quarters of the survey.

Addition of Coding Variable to Question 5 (Original Survey Form)

On the original survey form (used for the first and second quarters) question 5 was a branching question which either took the respondent to the expenditure section or to the demographic questions. The manner in which the question was structured on the original form did not allow for the differentiation between two types of "zero" responses on the expenditure survey. If the respondent qualified for the expenditure survey, any zeros in the "dollars spent" field would be valid (denoting no money spent). If the respondent did not qualify for this survey, any zeros in the "dollars spent" field would be invalid (denoting missing data). To make it possible to determine the difference between these two types of "zeros", an additional variable was added to the valid responses. If the respondent had listed any water-based recreation on the activities grid (thereby qualifying them for the expenditure survey) question 5 was assigned the code "3". This convention is not applicable to the revised instrument that was used in the third and fourth quarters of data collection (as question five was restructure and relocated).

Adjustment of Ages for Household Members

An adjustment was made for the ages of those household members who were either 88 or 99 years old. One year was subtracted from these ages, making the individuals "87" or "98" years old respectively. This was necessary because of the convention of using "88" and "99" to denote missing responses.

Visits to Zoos

Visits to zoos have been coded to recreation activity #48 (see Appendix D) - "Visiting historic, prehistoric, or archaeological sites, museums, or interpretive centers".

Special Member Code for use with Household Income Questions

A special household member code, "50", was used in the fourth quarter data file. This code represents a person who is no longer a member of the household, but who had contributed to the household income the previous year. The response is only valid for the contributing member variable in the household income questions. Examples of situations where this code might be appropriate include: recent divorces, deaths, and moves from the household. If more than one contributor fit into this category, each was designated as "50".

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

REPORTING OF RESULTS

The results of the Continuous Survey were delivered to the Department of Natural Resources in four quarterly installments which consisted of (1) a methods report, (2) computer generated table of frequency, and (3) four rectangular data files. The start and end dates for each of the four quarters are listed below:

<u>Quarter</u>	<u>Start Date</u>	<u>End Date</u>
1st	Sep. 28, 1985	Dec. 31, 1985
2nd	Jan. 01, 1986	Mar. 31, 1986
3rd	Apr. 01, 1986	Jun. 30, 1986
4th	Jul. 01, 1986	Sep. 30, 1986

The methods reports contained a summary of the methodologies used for the collection, coding, and cleaning of the data; a brief content analysis of the data; and a discussion of special or unique issues that had surfaced during that quarter.

The data for the study was divided into four rectangular files: household, trip, recreation activity, and expenditures. This division was made to allow the data to be analyzed using the SPSS statistical package. A table of frequencies was also provided for each of these files.

SAMPLE STATUS

As Table 1 on page 15 shows, a total of 5,736 interviews were completed during the first year of the study. In addition, 1,290 potential respondents could not be interviewed for the following reasons: (1) 1,183 refused to participate and (2) 107 had a physical or language problem which prevented them from participating. The overall completion rate for the survey was 82%. This figure was calculated by dividing the number of completions by the sum of the total completions, refusals, and physical/language problem categories. If those telephone numbers which could not be reached in ten or more tries is added to this calculation, the response rate becomes 76%. Each of these rates is comparable to the 1978 SCORP Survey, and is much better than the 70% response rate which is typical in omnibus social surveys.

DATA TRENDS

Each completed instrument for the survey was classified into one of three recreation code categories. These categories were "recreation/no expenditures", "recreation with expenditures", and "no recreation". Table 2 on page 15 illustrates the break-down, by quarter, of the number of completions in each classification.

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

Table 1

FINAL SAMPLE STATUS-BY QUARTER

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>Total</u>
Completions	1209	1144	1579	1804	5736
Refusals	223	206	365	389	1183
Not a Working Number	367	297	483	500	1647
Not a Home Phone	166	130	172	178	646
Physical/Language Problem	20	19	27	41	107
Ten or More No Answer	<u>73</u>	<u>105</u>	<u>156</u>	<u>167</u>	<u>501</u>
TOTALS	2058	1901	2782	3079	9820

Table 2

COMPLETIONS BY RECREATION CODE

	<u>Rec/No</u> <u>Expenses</u>	<u>%</u>	<u>Rec w/</u> <u>Expenses</u>	<u>%</u>	<u>No Rec</u>	<u>%</u>	<u>Qtr</u> <u>Total</u>
1st Qtr	481	.40	172	.14	556	.46	1209
2nd Qtr	422	.37	129	.11	593	.52	1144
3rd Qtr	680	.43	524	.33	375	.24	1579
4th Qtr	<u>682</u>	<u>.38</u>	<u>713</u>	<u>.39</u>	<u>409</u>	<u>.23</u>	<u>1804</u>
TOTALS	2265	.39	1538	.27	1933	.34	5736

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

From Table 2 it is possible to determine that of the 5,736 households that were surveyed, a total of 3,803, or 66% of the total sample, had at least some recreation activity during the week prior to the interview date. Of these 3,803 households, 1,538, or 27% of the total sample, qualified for the expenditure questions. Only 1,933 households, or 34% of the sample, did not participate in any outdoor recreation the week prior to their interview.

The average interview length varied with the number of questions that were actually asked of each respondent. If a household had no recreation, the interview took an average of 4.7 minutes. If the household had recreation, but did not qualify for the expenditure survey, the mean length of the survey was 6.5 minutes. And, if the household had recreation and qualified for the expenditure survey, the length was 8.8 minutes. The average length for those surveys with recreation (both with and without expenditures) varied somewhat from season to season. As might be expected, the survey took a bit longer during the summer recreation season when most households were more active. The length of those surveys which did not reflect recreation activity was fairly consistent throughout the study.

SUMMARY

The first year of the Continuous Survey of Participation and Expenditures in Outdoor Recreation by Minnesota Residents began on September 28, 1985 and ended on September 30, 1986. During this year 5,736 respondents were asked to relate the details of their household's recreational activities and expenditures for the week prior to the date of the interview. The survey has provided a large data base of useful and technically sound information for the Minnesota Department of Natural Resources to use in their recreation and resource planning efforts.

The DNR Continuous Survey has been extended beyond September 30, 1986. Thus, information will continued to be collected and added to the existing data base. This will not only allow more precise data analysis, but may also eventually enable the DNR to conduct year-to-year longitudinal comparisons of recreational activity.

Questions on the methods and policies used in data collection on the DNR Continuous Survey may be directed to the Minnesota Center for Survey Research, 2122 Riverside Ave., Minneapolis, Minnesota 55454 (or phone 612-627-4282).

A P P E N D I X A :

S U R V E Y I N S T R U M E N T
(Q U A R T E R S 1 & 2)

9/26/85

DNR OUTDOOR RECREATION AND EXPENDITURE SURVEY

- A. Hello, my name is _____. I'm calling from the University of Minnesota for the Department of Natural Resources. We are asking Minnesota residents to tell us about their household's outdoor recreation activities.
- B. I would like to speak to an adult in your household who knows about the outdoor recreation of your household in the last seven days. Do you know about the recreation activities that were done or should I speak to someone else?

(IF RIGHT PERSON IS ON THE LINE, GO TO C.)
 (IF RIGHT PERSON IS NOT ON THE LINE, SET UP CALLBACK TIME.)

TIME _____ DATE _____ RESPONDENT NAME _____

- C. We are interested in a variety of outdoor activities, and would like to know who participated in them, where they took place, and how long they lasted.
- D. Your answers will be grouped with a lot of other people's so you can't be identified in any way. If there are any questions you don't care to answer, we'll skip over them. Okay ... we'll begin.
- E. (ONLY IF RELUCTANT TO PARTICIPATE) This is an opportunity for you to have a direct influence on how your tax money and the resources of Minnesota are used. Since only a few households are being asked to participate, it is very important for all of these households to answer our questions.
- F. (IF RESPONDENT REFUSES) Please just answer one quick question for me.

Did anyone in your household participate	Yes.	1
in any outdoor recreation activity in	No	2
Minnesota in the <u>last seven days</u> ?	DK	8
	RA	9
	NA	0

- 1a. Later in this survey, I will be asking who participated in several different recreation activities. Before we get to that, I need to ask some questions about the members of your household. First, who are the members of your household besides yourself?
- 1b. (ASK ONLY IF UNSURE) Is this person male or female? (M=1 F=2)
- 1c. How old were you on your last birthday? (How old was s/he on her/his last birthday?)
- 1d. Who in your household went fishing in Minnesota in the last 12 months?
 1d-1. (IF YES) Did he/she/they have a valid Minnesota fishing license at any time in the past year?
- 1e. Who in your household went hunting in Minnesota in the last 12 months?

Household Member	Member Code	Sex	Age	Fishing			License			Hunting		
				Yes	No	DK	Yes	No	NA	Yes	No	DK
RESPONDENT	0	___	___	1	2	8	1	2	0	1	2	8
_____	1	___	___	1	2	8	1	2	0	1	2	8
_____	2	___	___	1	2	8	1	2	0	1	2	8
_____	3	___	___	1	2	8	1	2	0	1	2	8
_____	4	___	___	1	2	8	1	2	0	1	2	8
_____	5	___	___	1	2	8	1	2	0	1	2	8
_____	6	___	___	1	2	8	1	2	0	1	2	8
_____	7	___	___	1	2	8	1	2	0	1	2	8
_____	8	___	___	1	2	8	1	2	0	1	2	8

You have just told me that the members of your household are (READ ALL MENTIONS ABOVE) and yourself. Does this include everyone living there at the present time? (IF NO, CORRECT ABOVE.)

CODER USE ONLY	
# Adults	___
# Children Under 18	___

2. Did anyone in your household (you) take any trips which involved recreation in Minnesota within the last seven days? Yes 1
 No 2
 (IF NO, GO TO 3) DK 8
 RA 9
 (A TRIP TAKES YOU AWAY FROM YOUR LOCAL COMMUNITY)

2a. (IF YES) How many trips did anyone in your household (you) take? DK 88
 RA 99
 NA 00

2b. (IF YES) Where did you go on each trip?

2c. (FOR EACH TRIP) Was recreation the main purpose of the trip?
 (IF NO, ACTIVITY CODE=77 NON-RECREATIONAL TRIP, AND GO TO 2d)

2c-1 (IF RECREATIONAL TRIP) Was there one recreational activity that was the major purpose of the trip?

(IF YES) What activity was that?
 (IF NO, ACTIVITY CODE = 66 RECREATIONAL MULTIPURPOSE TRIP)

2d. (FOR EACH TRIP) Did the trip start within the last seven days?

2d-1 (IF NO) When did the trip start? (SPECIFY MONTH AND DAY)

2e. (FOR EACH TRIP) How many days did the trip last? (FROM THE TIME YOU LEFT HOME UNTIL YOU GOT BACK HOME)

2f. (FOR EACH TRIP) How many people went on the trip?

TRIP	DESTINATION	PLACE CODE
01	_____	_____
02	_____	_____
03	_____	_____
04	_____	_____
05	_____	_____

TRIP	2c. REC TRIP		2c-1 MAJOR ACTIVITY	ACTIV. CODE	2d. LAST 7 DAYS		2d-1 WHEN STARTED	2e. TOTAL DAYS	2f. TOTAL PEOPLE
	Yes	No			Yes	No			
01	1	2	_____	___	1	2	___/___	___	___
02	1	2	_____	___	1	2	___/___	___	___
03	1	2	_____	___	1	2	___/___	___	___
04	1	2	_____	___	1	2	___/___	___	___
05	1	2	_____	___	1	2	___/___	___	___

(IF TRIPS, GO TO 4)

3. Did anyone in your household (you) participate in any outdoor recreation activity in Minnesota in the last seven days?

Yes. 1
 (IF YES, GO TO 4)
 No 2
 DK 8
 RA 9
 NA 0

3a. (IF NO) Our definition of outdoor recreation is quite broad and includes boating, walking and driving for pleasure, nature study, fishing, swimming, biking around the block and picnicking. Did anyone in your household (you) participate in any of these types of outdoor recreation in Minnesota in the last seven days?

Yes. 1
 No 2
 (IF NO, GO TO 8 Pg. 8)
 DK 8
 RA 9
 NA 0

4. Now I'm going to read a list of several different outdoor recreation activities. For each one, I'd like to know if anyone in your household (you) participated in that specific activity in Minnesota in the last seven days.

(INTERVIEWER: REFER TO RECREATIONAL ACTIVITIES LIST ON SEPARATE PAGE)

4a. Did anyone in your household (you) go (play) _____ in the last seven days?

4b. (IF YES) Who did this? (USE MEMBER CODE FROM PAGE 2; EVERYBODY = 9)

4c. (IF YES) What day of the week did this activity take place? (SUNDAY=1, MON=2, TUES=3, WED=4, THURS=5, FRI=6, SAT=7, EVERYDAY=8)

4d. (IF YES) How long did this activity last in hours? (FOR EACH PERSON ON EACH DAY) (NOTE: CAMPING ONE DAY = 08)

4e. (IF YES) Where did this activity take place, for example, what lake or river were you at?

(INTERVIEWER: obtain (1) lake and county OR
 (2) facility name and county OR
 (3) distance & direction to nearest town and town name)

4f. (IF YES) Was this activity done on a trip that you mentioned?
 (IF YES) Which trip? (IF NON-TRIP RECREATION, CODE = 77)

Activity	Activity Code	Who	Day	How Long	Where	Place Code	Trip Code
_____	01	---	---	---	_____	---	---
_____	02	---	---	---	_____	---	---
_____	03	---	---	---	_____	---	---
_____	04	---	---	---	_____	---	---
_____	05	---	---	---	_____	---	---
_____	06	---	---	---	_____	---	---
_____	07	---	---	---	_____	---	---
_____	08	---	---	---	_____	---	---
_____	09	---	---	---	_____	---	---
_____	10	---	---	---	_____	---	---
_____	11	---	---	---	_____	---	---
_____	12	---	---	---	_____	---	---
_____	13	---	---	---	_____	---	---
_____	14	---	---	---	_____	---	---
_____	15	---	---	---	_____	---	---

(USE ADDITIONAL PAGES IF NECESSARY)

5. (IF FISHING, BOATING, CANOEING, SWIMMING, WATER-FOWL HUNTING, OR TRAPPING WAS MENTIONED AS AN ACTIVITY, GO TO 6)

Was a lake or river important in the decision to recreate at any of the places where anyone (you) participated in recreation?

Yes 1
No 2
(IF NO, GO TO 8 Pg. 8)
DK 8
RA 9
NA 0

6. We need to get an estimate of all out-of-pocket expenses that were related to the trips (non-trip recreation). This would include things like lunch at MacDonalds, an ice cream cone, souvenirs, and gas and oil. Did anyone in your household (you) spend money on this trip to _____ (non-trip recreation)? YES / NO

(IF NO, REPEAT FOR NEXT TRIP)
(IF NON-TRIP RECREATION, TRIP CODE = 77)

(INTERVIEWER: REFER TO EXPENDITURES LIST ON SEPARATE PAGE)

6a. (IF YES) Did anyone in your household (you) spend money on _____ that was related to this trip (non-trip recreation)?

6b. (IF YES) How many people including yourself, did this expense cover?

6c. (IF YES) Where did your household (you) spend this money, for example, what lake were you at?

(INTERVIEWER: obtain (1) lake and county OR
(2) facility name and county OR
(3) distance & direction to nearest town, and town name)

6d. (IF YES) How much did you spend there?

Trip Code	6a. Exp. Code	6b. # of People	6c. Place	Place Code	6d. \$ Spent
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
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---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----

7. (FOR EACH TRIP OUT OF TOWN) What is the most additional amount of money you would be willing to pay if you were to take that recreation trip again? (PROBE: You actually spent \$ _____ REPEAT QUESTION)
(IF NO MORE, PROBE: For instance, would you be willing to pay \$25 or \$50 or more to take that trip again?)

Trip Code	Additional \$	None	DK	RA	NA
01	-----	77777	88888	99999	00000
02	-----	77777	88888	99999	00000
03	-----	77777	88888	99999	00000

(AFTER FINISHING FIRST TRIP, GO BACK TO QUESTION 6 AND REPEAT 6-7 FOR EACH OTHER TRIP. IF NO OTHER TRIPS, ASK QUESTION 6 for non-trip recreation.)

8. Was any equipment that is used primarily for water-related recreation and cost more than \$100 purchased by your household (you) in the last 12 months? Yes 1
 No 2
 (IF NO, GO TO 9)
 DK 8
 RA 9

8a. (IF YES) What was purchased? (CIRCLE YES ON LIST BELOW FOR EACH ITEM MENTIONED)

8b. (IF YES) Was it purchased new or used?

8c. (IF YES) How much did it cost?

	WHAT WAS PURCHASED					NEW/USED			COST AMOUNT	NA
	Yes	No	DK	RA	NA	New	Used	NA		
8a-1 Boat	1	2	8	9	0	1	2	0	___	0000
8a-2 Motor	1	2	8	9	0	1	2	0	___	0000
8a-3 Rod and reel	1	2	8	9	0	1	2	0	___	0000
8a-4 Ice fishing house	1	2	8	9	0	1	2	0	___	0000
8a-5 Depth finder	1	2	8	9	0	1	2	0	___	0000
8a-6 Windsurfer	1	2	8	9	0	1	2	0	___	0000
8a-7 Other (SPECIFY)	1	2	8	9	0	1	2	0	___	0000
8a-8 Other (SPECIFY)	1	2	8	9	0	1	2	0	___	0000
8a-9 Other (SPECIFY)	1	2	8	9	0	1	2	0	___	0000

(SPECIFY OTHER HERE)

9. Was any equipment that is used primarily for hunting and cost more than \$100 purchased by your household (you) in the last 12 months? Yes 1
 No 2
 (IF NO, GO TO NEXT SECTION)
 DK 8
 RA 9

9a. (IF YES) What was purchased? (CIRCLE YES ON LIST BELOW FOR EACH ITEM MENTIONED)

9b. (IF YES) Was it purchased new or used?

9c. (IF YES) How much did it cost?

	WHAT WAS PURCHASED					NEW/USED			COST AMOUNT	NA
	Yes	No	DK	RA	NA	New	Used	NA		
9a-1 Gun	1	2	8	9	0	1	2	0	___	0000
9a-2 Boat	1	2	8	9	0	1	2	0	___	0000
9a-3 Dog	1	2	8	9	0	-	-	-	___	0000
9a-4 Hunting vehicle	1	2	8	9	0	1	2	0	___	0000
9a-5 Other (SPECIFY)	1	2	8	9	0	1	2	0	___	0000

(SPECIFY OTHER HERE)

A P P E N D I X B :

S U R V E Y I N S T R U M E N T
(Q U A R T E R S 3 & 4)

4/1/86

DNR OUTDOOR RECREATION AND EXPENDITURE SURVEY

- A. Hello, my name is _____. I'm calling from the University of Minnesota for the Department of Natural Resources. We are asking Minnesota residents to tell us about their household's outdoor recreation activities.
- B. I would like to speak to an adult in your household who knows about the outdoor recreation of your household in the last seven days. Do you know about the recreation activities that were done or should I speak to someone else?

(IF RIGHT PERSON IS ON THE LINE, GO TO C.)
(IF RIGHT PERSON IS NOT ON THE LINE, SET UP CALLBACK TIME.)
- C. We are interested in a variety of outdoor activities, and would like to know who participated in them, where they took place, and how long they lasted.
- D. Your answers will be grouped with a lot of other people's so you can't be identified in any way. If there are any questions you don't care to answer, we'll skip over them. Okay ... we'll begin.
- E. (ONLY IF RELUCTANT TO PARTICIPATE) This is an opportunity for you to have a direct influence on how your tax money and the resources of Minnesota are used. Since only a few households are being asked to participate, it is very important for all of these households to answer our questions.
- F. (IF RESPONDENT REFUSES) Please just answer one quick question for me.

Did anyone in your household participate	Yes	1
in any outdoor recreation activity in	No	2
Minnesota in the <u>last seven days</u> ?	DK	8
	RA	9
	NA	0

DNR RECREATION PARTICIPATION SURVEY

- 1a. Later in this survey, I will be asking who participated in several different recreation activities. Before we get to that, I need to ask some questions about the members of your household. First, who are the members of your household besides yourself?
- 1b. (ASK ONLY IF UNSURE) Is this person male or female? (M=1 F=2)
- 1c. How old were you on your last birthday? (How old was s/he on her/his last birthday?)
- 1d. Who in your household went fishing in Minnesota in the last 12 months?
- 1d-1. (IF YES) Did he/she/they have a valid Minnesota fishing license at any time in the past year?
- 1e. Who in your household went hunting in Minnesota in the last 12 months?

Household Member	Member Code	Sex	Age	Fishing			License			Hunting		
				Yes	No	DK	Yes	No	NA	Yes	No	DK
RESPONDENT	0	___	___	1	2	8	1	2	0	1	2	8
_____	1	___	___	1	2	8	1	2	0	1	2	8
_____	2	___	___	1	2	8	1	2	0	1	2	8
_____	3	___	___	1	2	8	1	2	0	1	2	8
_____	4	___	___	1	2	8	1	2	0	1	2	8
_____	5	___	___	1	2	8	1	2	0	1	2	8
_____	6	___	___	1	2	8	1	2	0	1	2	8
_____	7	___	___	1	2	8	1	2	0	1	2	8
_____	8	___	___	1	2	8	1	2	0	1	2	8

You have just told me that the members of your household are (READ ALL MENTIONS ABOVE) and yourself. Does this include everyone living there at the present time? (IF NO, CORRECT ABOVE.)

CODER USE ONLY	
# Adults	___
# Children	___
Under 18	___

2. Did anyone in your household (you) take any trips which involved recreation in Minnesota within the last seven days? Yes. 1
 No 2
 (IF NO, GO TO 3) DK . . . 8
 RA . . . 9
 (A TRIP TAKES YOU AWAY FROM YOUR LOCAL COMMUNITY)
- 2a. (IF YES) How many trips did anyone in your household (you) take? DK . . .88
 RA . . .99
 NA . . .00
- 2b. (IF YES) Where did you go on each trip?
- 2c. (FOR EACH TRIP) Was recreation the main purpose of the trip?
 (IF NO, ACTIVITY CODE=77 NON-RECREATIONAL TRIP, AND GO TO 2c-2)
- 2c-1 (IF RECREATIONAL TRIP) Was there one recreational activity that was the major purpose of the trip?
 (IF YES) What activity was that?
 (IF NO, ACTIVITY CODE = 66 RECREATIONAL MULTIPURPOSE TRIP)
- 2c-2 (IF FISHING, BOATING, CANOEING, SWIMMING, WATER-FOWL HUNTING OR TRAPPING WAS MENTIONED AS MAJOR PURPOSE, GO TO 2d.) Was a lake or river important in the decision to recreate at any of the places you went on this trip?
- 2d. (FOR EACH TRIP) Did the trip start within the last seven days?
 2d-1 (IF NO) When did the trip start? (SPECIFY MONTH AND DAY)
- 2e. (FOR EACH TRIP) How many nights did you stay away from home? (FROM THE TIME YOU LEFT HOME UNTIL YOU GOT BACK HOME)
- 2f. (FOR EACH TRIP) How many people went on the trip?

TRIP	DESTINATION	PLACE CODE
01	_____	____
02	_____	____
03	_____	____
04	_____	____
05	_____	____

TRIP	2c REC TRIP		2c-1 MAJOR ACTIVITY	ACTIV. CODE	2c-2 LAKE/RIV IMPORTANT			2d LAST 7 DAYS		2d-1 WHEN STARTED	2e TOTAL DAYS	2f TOTAL PEOPLE
	Yes	No			Yes	No	NA	Yes	No			
01	1	2	_____	__	1	2	0	1	2	___/___	___	___
02	1	2	_____	__	1	2	0	1	2	___/___	___	___
03	1	2	_____	__	1	2	0	1	2	___/___	___	___
04	1	2	_____	__	1	2	0	1	2	___/___	___	___
05	1	2	_____	__	1	2	0	1	2	___/___	___	___

(IF TRIPS, GO TO 4)

3. Did anyone in your household (you) participate in any outdoor recreation activity in Minnesota in the last seven days?
 Yes. 1
 (IF YES, GO TO 4)
 No 2
 DK 8
 RA 9
 NA 0
- 3a. (IF NO) Our definition of outdoor recreation is quite broad and includes boating, walking and driving for pleasure, nature study, fishing, swimming, biking around the block and picnicking. Did anyone in your household (you) participate in any of these types of outdoor recreation in Minnesota in the last seven days?
 Yes. 1
 No 2
 (IF NO, GO TO 8 Pg.8)
 DK 8
 RA 9
 NA 0

DMR RECREATION PARTICIPATION SURVEY

4. Now I'm going to read a list of several different outdoor recreation activities. For each one, I'd like to know if anyone in your household (you) participated in that specific activity in Minnesota in the last seven days.

(INTERVIEWER: REFER TO RECREATIONAL ACTIVITIES LIST ON SEPARATE PAGE)

- 4a. Did anyone in your household (you) go (play) _____ in the last seven days?
- 4b. (IF YES) Who did this? (USE MEMBER CODE FROM PAGE 2; EVERYBODY = 9)
- 4c. (IF YES) What day of the week did this activity take place?
(SUNDAY=1, MON=2, TUES=3, WED=4, THURS=5, PRI=6, SAT=7, EVERYDAY=8)
- 4d. (IF YES) How long did this activity last in hours? (FOR EACH PERSON ON EACH DAY)
(NOTE: CAMPING ONE DAY = 04)
- 4e. (IF YES) Where did this activity take place, for example, what lake or river were you at?
(INTERVIEWER: obtain (1) lake and county OR
(2) facility name and county OR
(3) distance & direction to nearest town and town name)
- 4f. (IF YES) Was this activity done on a trip that you mentioned?
(IF YES) Which trip? (IF NON-TRIP RECREATION, CODE = 77)
- 4f-1 (IF NON-TRIP RECREATION AND IF ACTIVITY WAS NOT FISHING, BOATING, CANOEING, SWIMMING, WATER-FOWL HUNTING OR TRAPPING) Was a lake or river important in the decision to go (play) (ACTIVITY)?
- 4g. (IF ONE PERSON HAD MULTIPLE ACTIVITIES ON ONE DAY) Did any of these activities take place at the same time? 4g-1 (IF YES) Which ones?

Activ. Code	Who	Day	How Long	Where	Place Code	Trip Code	Lake/River Important			Concurrent Recreation	
							Yes	No	NA	Yes	No
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2
---	---	---	---	---	---	---	1	2	0	1	2

(USE ADDITIONAL PAGES IF NECESSARY)

5. (WERE FISHING, BOATING, CANOEING, SWIMMING, WATER-FOWL HUNTING, OR TRAPPING MENTIONED AS ACTIVITIES OR WAS A LAKE OR RIVER IMPORTANT TO ANY RECREATIONAL ACTIVITY?)
 Yes 1
 No 2
 (IF NO, GO TO # P 7)

DNR RECREATION EXPENDITURE SURVEY

6. We need to get an estimate of all out-of-pocket expenses that were related to the trips (non-trip recreation). This would include things like lunch at MacDonalds, an ice cream cone, souvenirs, and gas and oil. Did anyone in your household (you) spend money on this trip to _____ (non-trip recreation)? YES / NO

(IF NO, REPEAT FOR NEXT TRIP)
(IF NON-TRIP RECREATION, TRIP CODE = 77)

(INTERVIEWER: REFER TO EXPENDITURES LIST ON SEPARATE PAGE)

6a. (IF YES) Did anyone in your household (you) spend money on _____ that was related to this trip (non-trip recreation)?

6b. (IF YES) How many people including yourself, did this expense cover?

6c. (IF YES) Where did your household (you) spend this money, for example, what lake were you at?

(INTERVIEWER: obtain (1) lake and county OR
(2) facility name and county OR
(3) distance & direction to nearest town, and town name)

6d. (IF YES) How much did you spend there?

Trip Code	6a. Exp. Code	6b. # of People	6c. Place	Place Code	6d. \$ Spent
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
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---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----
---	---	---	-----	-----	\$-----

7. (FOR EACH TRIP OUT OF TOWN) What is the most additional amount of money you would be willing to pay if you were to take that recreation trip again? (PROBE: You actually spent \$_____ REPEAT QUESTION)
(IF NO MORE, PROBE: For instance, would you be willing to pay \$25 or \$50 or more to take that trip again?)

Trip Code	Additional \$	None	DK	RA	NA
01	-----	77777	88888	99999	00000
02	-----	77777	88888	99999	00000
03	-----	77777	88888	99999	00000

(AFTER FINISHING FIRST TRIP, GO BACK TO QUESTION 6 AND REPEAT 6-7 FOR EACH OTHER TRIP. IF NO OTHER TRIPS, ASK QUESTION 6 for non-trip recreation.)

DNR RECREATION EXPENDITURE SURVEY

8. Was any equipment that is used primarily for water-related recreation and cost more than \$100 purchased by your household (you) in the last 12 months? Yes. 1
 No 2
 (IF NO, GO TO 9)
 DK . . . 8
 RA . . . 9

8a. (IF YES) What was purchased? (CIRCLE YES ON LIST BELOW FOR EACH ITEM MENTIONED)

8b. (IF YES) Was it purchased new or used?

8c. (IF YES) How much did it cost?

	WHAT WAS PURCHASED					NEW/USED			COST AMOUNT	NA
	Yes	No	DK	RA	NA	New	Used	NA		
8a-1 Boat	1	2	8	9	0	1	2	0	_____	0000
8a-2 Motor	1	2	8	9	0	1	2	0	_____	0000
8a-3 Rod and reel	1	2	8	9	0	1	2	0	_____	0000
8a-4 Ice fishing house	1	2	8	9	0	1	2	0	_____	0000
8a-5 Depth finder	1	2	8	9	0	1	2	0	_____	0000
8a-6 Windsurfer	1	2	8	9	0	1	2	0	_____	0000
8a-7 Other (SPECIFY)	1	2	8	9	0	1	2	0	_____	0000
8a-8 Other (SPECIFY)	1	2	8	9	0	1	2	0	_____	0000
8a-9 Other (SPECIFY)	1	2	8	9	0	1	2	0	_____	0000

(SPECIFY OTHER HERE)

9. Was any equipment that is used primarily for hunting and cost more than \$100 purchased by your household (you) in the last 12 months? Yes. 1
 No 2
 (IF NO, GO TO NEXT SECTION)
 DK . . . 8
 RA . . . 9

9a. (IF YES) What was purchased? (CIRCLE YES ON LIST BELOW FOR EACH ITEM MENTIONED)

9b. (IF YES) Was it purchased new or used?

9b. (IF YES) How much did it cost?

	WHAT WAS PURCHASED					NEW/USED			COST AMOUNT	NA
	Yes	No	DK	RA	NA	New	Used	NA		
9a-1 Gun	1	2	8	9	0	1	2	0	_____	0000
9a-2 Boat	1	2	8	9	0	1	2	0	_____	0000
9a-3 Dog	1	2	8	9	0	-	-	-	_____	0000
9a-4 Hunting vehicle	1	2	8	9	0	1	2	0	_____	0000
9a-5 Other (SPECIFY)	1	2	8	9	0	1	2	0	_____	0000

(SPECIFY OTHER HERE)

DEMOGRAPHICS

BEFORE ENDING THIS INTERVIEW THERE ARE A FEW REMAINING BACKGROUND QUESTIONS.

1. What county do you live in?

Anoka	02
Dakota	19
Hennepin	27
Olmsted	55
Ramsey	62
St. Louis	69
Stearns	73
Washington	82
Other =	

(SPECIFY OTHER COUNTY HERE)

DK . . . . .	.88
RA . . . . .	.99

1a. (ASK OF EVERYONE) What is the name of the town you live in? (IF OPEN COUNTRY, NAME OF NEAREST TOWN)

DK . . . . .	.88
RA . . . . .	.99

2. What is your zip code?

DK	88888
RA	99999

3. Was your total household income in 1985 before taxes above or below \$20,000?

Above	1
(IF ABOVE, GO TO 3b)	
Below	2
(IF BELOW, GO TO 3a)	
DK	8
RA	9

3a. (IF BELOW) I am going to mention a number of income categories. When I come to the category that best describes your total household income in 1985 before taxes, please stop me.

Under \$5,000 . . . . .	.05
5 to 10,000 . . . . .	.10
10 to 15,000 . . . . .	.15
15 to 20,000 . . . . .	.20
DK . . . . .	.88
RA . . . . .	.99
NA . . . . .	.00

3b. (IF ABOVE) I am going to mention a number of income categories. When I come to the category that best describes your total household income in 1985 before taxes, please stop me.

20 to 25,000 . . . . .	.25
25 to 30,000 . . . . .	.30
30 to 40,000 . . . . .	.40
40 to 50,000 . . . . .	.50
50 to 60,000 . . . . .	.60
More than \$60,000 . . . . .	.61
DK . . . . .	.88
RA . . . . .	.99
NA . . . . .	.00

DEMOGRAPHICS

4. How many persons contributed to this household income?

DK . . .88
RA . . .99

5. Who contributed to the household income?

5a. (FOR EACH OF THESE PERSONS) How many years of school have you (has this person) completed, not including schooling such as business college or technical and vocational school.

INTERVIEWER: RECORD AS FOLLOWS

Grade school	01 - 08 years
High school	09 - 12 years
Some college	13 - 15 years
College grad.	16 years
Some post graduate work	17 - 21 years
Professional degree	22 years

5b. (FOR EACH OF THESE PERSONS) Are you (Is this person) currently employed?

5b-1 (IF YES) What is your (this person's) current occupation?
(INTERVIEWER: RECORD AS FOLLOWS:

- 01 Managerial and professional
- 02 Technical, sales, and administrative support
- 03 Service
- 04 Farming, forestry, and fishing
- 05 Precision production, craft, and repair
- 06 Operators, fabricators, laborers
- 10 Other (SPECIFY)
- 88 DK
- 99 RA
- 00 NA

5b-2 (IF NO) Are you (Is this person) retired, unemployed, on relief, laid off, or a homemaker?

- 07 Retired
- 08 Unemployed, on relief, laid off
- 09 Homemaker
- 10 Other (SPECIFY)
- 88 DK
- 99 RA
- 00 NA

PERSON	MEMBER CODE	EDUC.	EMPLOYED		OCCUPATION	OCC. CODE
			Yes	No		
_____	___	___	1	2	_____	___
_____	___	___	1	2	_____	___
_____	___	___	1	2	_____	___

THOSE ARE ALL THE QUESTIONS THAT I HAVE FOR YOU. THANK YOU FOR YOUR TIME AND COOPERATION.

(IF RESPONDENT WANTS TO TALK TO A SUPERVISOR, REFER THEM TO: Nancy Davenport-Sis 373-0236 or Rossana Armson 373-0150)

(IF RESPONDENT WANTS TO TALK TO SOMEONE AT THE DNR, REFER THEM TO: Tim Kelly 296-4892 or Bill Becker 296-3093)

COMMENTS: (PUT ON BACK OF PAGE)

A P P E N D I X C :

C O N T A C T R E C O R D

CALLBACK TIME:

DNR SURVEY
CONTACT RECORD

CODER USE ONLY	
ID	_____
Do C	_____
# Min	____
I-ID	____
# Con	____
C-ID	____
Rec.	
1 = Yes	Rec
2 = No	Rec

ENTER DATE - _____

ENTER TIME - _____

- | | |
|-----------------------------|-----------------------------|
| 01 Completed | 01 Completed |
| 02 Partial | 02 Partial |
| 03 No answer | 03 No answer |
| 04 Busy signal | 04 Busy signal |
| 05 Not working | 05 Not working |
| 06 Not home phone | 06 Not home phone |
| 07 R not avail* | 07 R not avail* |
| 08 Phys/lang prob** | 08 Phys/lang prob** |
| 09 1st refusal | 09 1st refusal |
| 10 Callback to contact R*** | 10 Callback to contact R*** |
| 11 Appointment with R*** | 11 Appointment with R*** |
| 12 Other* | 12 Other* |

CONTACTS PER SHIFT - _____

INTERVIEWER - _____

ENTER DATE - _____

ENTER TIME - _____

- | | | |
|-----------------------------|-----------------------------|-----------------------------|
| 01 Completed | 01 Completed | 01 Completed |
| 02 Partial | 02 Partial | 02 Partial |
| 03 No answer | 03 No answer | 03 No answer |
| 04 Busy signal | 04 Busy signal | 04 Busy signal |
| 05 Not working | 05 Not working | 05 Not working |
| 06 Not home phone | 06 Not home phone | 06 Not home phone |
| 07 R not avail* | 07 R not avail* | 07 R not avail* |
| 08 Phys/lang prob** | 08 Phys/lang prob** | 08 Phys/lang prob** |
| 09 1st refusal | 09 1st refusal | 09 1st refusal |
| 10 Callback to contact R*** | 10 Callback to contact R*** | 10 Callback to contact R*** |
| 11 Appointment with R*** | 11 Appointment with R*** | 11 Appointment with R*** |
| 12 Other* | 12 Other* | 12 Other* |

CONTACTS PER SHIFT - _____

INTERVIEWER - _____

- * Discribe
- ** Complete refusal form
- *** Complete callback form

TIME START _____

TIME END _____

LENGTH IN MINUTES _____

EDITING TIME (MINUTES) _____

SUPERVISOR _____

INTERVIEWER # _____

CALLBACK FORM

Was respondent selected? Yes / No
Did you talk to respondent in person? Yes / No
Respondent is: Male / Female
Who arranged callback? Respondent / Someone Else
Callback time: _____ Date: _____
Was this a: Firm Appointment / Probable / Shot-in-the dark
Was respondent open and cooperative? Yes / No / Uncertain
Other comments and information: _____

REFUSAL FORM

Was respondent selected? Yes / No
Respondent is: Male / Female
Was respondent person who refused? Yes / No
Person answering phone was: Male / Female
At what point was the interview terminated? _____

What reasons were given for refusal? _____

What arguments were employed by the interviewer? _____

Other comments or information: _____

CALLBACK TIME: _____

DNR SURVEY
CONTACT RECORD

CODER USE ONLY	
ID	_____
Do C	_____
# Min	_____
I-ID	_____
# Con	_____
C-ID	_____
Rec.	
1 = Yes	Rec
2 = No	Rec

ENTER DATE - _____

ENTER TIME - _____

- | | |
|-----------------------------|-----------------------------|
| 01 Completed | 01 Completed |
| 02 Partial | 02 Partial |
| 03 No answer | 03 No answer |
| 04 Busy signal | 04 Busy signal |
| 05 Not working | 05 Not working |
| 06 Not home phone | 06 Not home phone |
| 07 R not avail* | 07 R not avail* |
| 08 Phys/lang prob** | 08 Phys/lang prob** |
| 09 1st refusal | 09 1st refusal |
| 10 Callback to contact R*** | 10 Callback to contact R*** |
| 11 Appointment with R*** | 11 Appointment with R*** |
| 12 Other* | 12 Other* |

CONTACTS PER SHIFT - _____

INTERVIEWER - _____

ENTER DATE - _____

ENTER TIME - _____

- | | | |
|-----------------------------|-----------------------------|-----------------------------|
| 01 Completed | 01 Completed | 01 Completed |
| 02 Partial | 02 Partial | 02 Partial |
| 03 No answer | 03 No answer | 03 No answer |
| 04 Busy signal | 04 Busy signal | 04 Busy signal |
| 05 Not working | 05 Not working | 05 Not working |
| 06 Not home phone | 06 Not home phone | 06 Not home phone |
| 07 R not avail* | 07 R not avail* | 07 R not avail* |
| 08 Phys/lang prob** | 08 Phys/lang prob** | 08 Phys/lang prob** |
| 09 1st refusal | 09 1st refusal | 09 1st refusal |
| 10 Callback to contact R*** | 10 Callback to contact R*** | 10 Callback to contact R*** |
| 11 Appointment with R*** | 11 Appointment with R*** | 11 Appointment with R*** |
| 12 Other* | 12 Other* | 12 Other* |

CONTACTS PER SHIFT - _____

INTERVIEWER - _____

- * Describe
- ** Complete refusal form
- *** Complete callback form

TIME START _____

TIME END _____

LENGTH IN MINUTES _____

EDITING TIME (MINUTES) _____

SUPERVISOR _____

INTERVIEWER # _____

CALLBACK FORM

Was respondent selected? Yes / No
Did you talk to respondent in person? Yes / No
Respondent is: Male / Female
Who arranged callback? Respondent / Someone Else
Callback time: _____ Date: _____
Was this a: Firm Appointment / Probable / Shot-in-the dark
Was respondent open and cooperative? Yes / No / Uncertain
Other comments and information: _____

REFUSAL FORM

Was respondent selected? Yes / No
Respondent is: Male / Female
Was respondent person who refused? Yes / No
Person answering phone was: Male / Female
At what point was the interview terminated? _____

What reasons were given for refusal? _____

What arguments were employed by the interviewer? _____

Other comments or information: _____

APPENDIX D:

RECREATION ACTIVITIES LIST

RECREATIONAL ACTIVITIES**DNR RECREATION PARTICIPATION SURVEY****FREQUENT ACTIVITIES*****BICYCLING**

- 01 Bicycling to a specific destination
- 02 Bicycling just for the fun of it or for exercise
- 03 Bicycling for both reasons

04 Camping**05 Driving for pleasure*****FISHING**

- 06 Bass or other panfish
- 07 Muskie
- 08 Northern
- 09 Salmon or trout
- 10 Walleye
- 11 Other fishing (Ex: catfish, bullheads SPECIFY)

12 Football, soccer, basketball or any other athletic field event**13 Sightseeing*****14 Jogging or running**

Now I am going to read a list of other outdoor recreation activities. Please stop me when I mention one that anyone in your household has participated in during the last seven days.

SUMMER ONLY (MARCH 15 - NOVEMBER 15)**WINTER ONLY (OCTOBER 10 - MARCH 15)*****15 Baseball or softball*****BOATING**

- 16 Power boating, motor boating, or waterskiing
- 17 Sail boating (not sailboarding)
- 18 Other boating (e.g., oaring)

19 Sailboarding or Windsurfing**20 Collecting wild mushrooms, berries and so forth*****CANOEING**

- 21 Lakes
- 22 Rivers or stream
- 23 Lakes, rivers, streams

24 Golf**25 Picnicking*****26 Rollerskating*****SWIMMING**

- 27 Outdoor pools
- 28 Lakes or rivers

29 Tennis**30 Volleyball*****31 Cross-country skiing*****32 Dog sledding*****33 Downhill skiing*****34 Ice boating*****35 Ice skating*****36 Sledding or snow tubing*****37 Snowshoeing*****38 Snowmobiling****YEAR ROUND, BUT IMPREQUENT ACTIVITIES*****39 Archery*****40 Backpacking*****41 Day hiking*****42 Walking for pleasure*****43 Wildlife observation, birdwatching or wildlife photography*****44 Other nature study (not wildlife observation)*****45 Horseback riding*****46 Orienteering*****47 Non-wildlife photography*****48 Visiting historic, prehistoric or archaeological sites, museums, or interpretive centers*****HUNTING****49 Big game (deer, moose, bear)****50 Waterfowl (ducks, geese)****51 Upland game birds (pheasant, grouse, partridge, etc.)****52 Small mammals (rabbits, squirrels, etc.)*****OFF-ROAD VEHICLE DRIVING****53 3-wheel or 4-wheel all terrain vehicle****54 Motorcycle (two-wheels)****55 4-wheel drive pickup or jeep*****56 Shooting (trap, skeet, target)*****57 Trapping*****58 Gardening*****59 Other (SPECIFY ON QUESTIONNAIRE)**

APPENDIX E :

EXPENDITURE CATEGORIES LIST

EXPENDITURES CATEGORIES

DNR RECREATION EXPENDITURE SURVEY

EXPENDITURES CATEGORIES

<u>CODE</u>	<u>CATEGORY</u>	<u>EXAMPLES</u>
01	Lodging	(hotel, motel, reservations, camping, cabin lake home, condominium, resort, trailer park)
02	Food or groceries	(picked fruit, non-alcoholic beverages, alcoholic beverages)
03	Meals eaten out	(including liquor with meals)
04	Recreational equipment	(bait, tackle, boat/motor rental, boat fuel, equipment purchase - camping, boating, tennis racket, etc.)
05	Shopping	(clothing, hardware, jewelry, furniture, plants and flowers)
06	Fees or licenses	(entrance fees to zoo/museum, fishing/hunting license)
07	Gas or oil	
08	Other transportation	(maintenance/repair, public transportation, car rental, parking, air fare, taxi)
09	Personal or miscellaneous items	(necessities, souvenirs/gifts, phone calls, medical services, household goods, laundry, drugs/medicine, church donations, camera supplies)
10	Entertainment	(reading material, tours, toys, movies, plays, amusement park rides)

COMBINATIONS

- 11 Food and lodging
- 12 Food or groceries and meals eaten out
- 13 Recreational equipment and shopping
- 14 Fees or licenses and entertainment
- 15 Gas or oil and other transportation
- 77 Trip total (all categories)

A P P E N D I X F :

S P E C I A L F A C I L I T I E S C O D E S

<u>Facility Group</u>	<u>Code</u>	<u>FACILITY</u>		<u>Number</u>
		<u>Name</u>	<u>COUNTY</u> <u>Name</u>	
BWCA - U.S. FORT SERV	160001	BWCA - COOK CTY	COOK	16
	380001	BWCA - LAKE CTY	LAKE	38
	690001	BWCA - ST LOUIS CTY	ST.LOUIS	69
NAT'L WILD REFUGE	452005	AGASSIZ NAT. WILDLIFE R.	MARSHALL	45
	61005	BIG STONE NAT'L WLFIE R.	BIG STONE	6
	481003	MILLE LACS NAT.W.REFUGE	MILLE LACS	48
	701060	MN VALLEY WILDLIFE REF	SCOTT	70
	11005	RICE LK NAT WILDLIFE REF	AITKIN	1
	582005	SANDSTONE NAT WLDLF REF.	PINE	58
	711005	SHERBURNE NAT'L. W. REF.	SHERBURNE	71
	31001	TAMARAC NAT WILDLIFE REF	BECKER	3
	281005	UPPER MISS. WILDLIFE REF	HOUSTON	28
NAT'L PARK SERV	162055	GRAND PORTAGE NATL MON.	COOK	16
	591005	PIPESTONE NATL. MONUMENT	PIPESTONE	59
	697029	VOYAGEURS NATIONAL PARK	ST.LOUIS	69
STATE WMA	22010	CARLOS AVERY WMA	CA ANOKA	2
	61017	LAC QUI PARLE WMA	LQP BIG STONE	6
	481010	MILLE LACS WMA	ML MILLE LACS	48
	42035	RED LAKE WMA	RL BELTRAMI	4
	681005	ROSEAU RIVER WMA	R ROSEAU	68
	171010	TALCOT LAKE WMA	TAL COTTONWOOD	17
	452010	THIEF LAKE WMA	THL MARSHALL	45
	551010	WHITEWATER WMA	WW OLMSTED	55
	STATE PARK & REC	821010	AFTON STATE PARK	WASHINGTON	82
582070		BANNING STATE PARK	PINE	58
694080		BEAR HEAD LK. STATE PARK	ST.LOUIS	69
281040		BEAVER CRK VALLEY ST PRK	HOUSTON	28
61067		BIG STONE LAKE STATE PK.	BIG STONE	6
671010		BLUE MOUNDS STATE PARK	ROCK	67
141048		BUFFALO RIVER STATE PARK	CLAY	14
421103		CAMDEN STATE PARK	LYON	42
791045		CARLEY STATE PARK	WABASHA	79
161083		CASCADE RIV STATE PARK	COOK	16
491033		CHARLES A LINDBERGH ST P	MORRISON	49
181070		CROW WING STATE PARK	CROW WING	18
481030		FATHER HENNEPIN ST. PARK	MILLE LACS	48
81033		FLANDRAU STATE PARK	BROWN	8
231009		FORESTVILLE STATE PARK	FILLMORE	23
521035		FORT RIDGELY STATE PARK	NICOLLET	52
272008		FORT SNELLING STATE PARK	HENNEPIN	27
363014		FRANZ JEVNE STATE PARK	KOOCHICHING	36
251030		FRONTENAC STATE PARK	GOODHUE	25
382109		GEO.H.CROSBY-MANITOU SP	LAKE	38
611075		GLACIAL LAKES STATE PARK	POPE	61
381017		GOOSEBERRY FALLS ST PK	LAKE	38
682030		HAYES LAKE STATE PARK	ROSEAU	68
241030		HELMER MYRE STATE PARK	FREEBORN	24
131030	INTERSTATE STATE PARK	CHISAGO	13	

<u>Facility Group</u>	<u>FACILITY</u>		<u>COUNTY</u>	
	<u>Code</u>	<u>Name</u>	<u>Name</u>	<u>Number</u>
STATE PARK & REC (continued)	151136	ITASCA STATE PARK	CLEARWATER	15
	91055	JAY COOKE STATE PARK	CARLTON	9
	162155	JUDGE C.R.MAGNEY ST.PARK	COOK	16
	321056	KILEN WOODS STATE PARK	JACKSON	32
	371088	LAC QUI PARLE ST.REC.AR.	LAC QUI PARLE	37
	41120	LAKE BEMIDJI STATE PARK	BELTRAMI	4
	351018	LAKE BRONSON STATE PARK	KITTSOON	35
	211124	LAKE CARLOS STATE PARK	DOUGLAS	21
	501020	LAKE LOUISE STATE PARK	MOWER	50
	861110	LAKE MARIA STATE PARK	WRIGHT	86
	511107	LAKE SHETEK STATE PARK	MURRAY	51
	441071	LITTLE ELBOW LK ST. PARK	MAHNOMEN	44
	561123	MAPLEWOOD STATE PARK	OTTERTAIL	56
	313183	MCCARTHY BEACH STATE PK.	ITASCA	31
	481037	MILLE LACS KATHIO ST.PK.	MILLE LACS	48
	71050	MINNEOPA STATE PARK	BLUE EARTH	7
	761061	MONSON LAKE STATE PARK	SWIFT	76
	91059	MOOSE LK STATE REC. AREA	CARLTON	9
	661043	NERSTRAND WOODS STATE PK	RICE	66
	851022	O. L. KIPP STATE PARK	WINONA	85
	451010	OLD MILL STATE PARK	MARSHALL	45
	201021	RICE LAKE STATE PARK	DODGE	20
	401077	SAKATAH LAKE STATE PARK	LE SUEUR	40
	691048	SAVANNA PORTAGE STATE PK	ST.LOUIS	69
	313185	SCENIC STATE PARK	ITASCA	31
	312149	SCHOOLCRAFT ST REC AREA	ITASCA	31
	341069	SIBLEY STATE PARK	KANDIYOHI	34
	591040	SPLIT ROCK CR STATE PARK	PIPESTONE	59
	381015	SPLIT ROCK LIGHTHOUSE SP	LAKE	38
	131023	ST CROIX WILD RIV ST PRK	CHISAGO	13
	822031	ST. CROIX ISL. REC. AREA	WASHINGTON	82
	581062	ST. CROIX STATE PARK	PINE	58
	161089	TEMPERANCE RIV STATE PK	COOK	16
	381013	TETTEGOUCHE STATE PARK	LAKE	38
	696060	TOWER-SOUDAN STATE PARK	ST.LOUIS	69
	871082	UPPER SIOUX AGENCY ST PK	YELLOW MEDICINE	87
851025	WHITewater STATE PARK	WINONA	85	
822018	WILLIAM O'BRIEN STATE PK	WASHINGTON	82	
392016	ZIPPEL BAY ST. REC. AREA	LAKE OF THE WOODS	39	

<u>Facility Group</u>	<u>FACILITY</u>		<u>COUNTY</u>	
	<u>Code</u>	<u>Name</u>	<u>Name</u>	<u>Number</u>
METRO REGIONAL PARK	621029	BALD EAGLE-OTTERLAKE RP	RAMSEY	62
	273021	BAKER PARK RESERVE	HENNEPIN	27
	621067	BATTLE CREEK REG. PARK	RAMSEY	62
	101073	BAYLOR COUNTY PARK	CARVER	10
	271053	BIG ISLAND PARK RESERVE	HENNEPIN	27
	272030	BRYANT LAKE REG. PARK	HENNEPIN	27
	21050	BUNKER HILLS REG. PARK	ANOKA	2
	272368	BUSH LAKE CITY PARK	HENNEPIN	27
	102085	CARVER PARK RESERVE	CARVER	10
	861200	CLEARWATER-PLEASANT R.PK	WRIGHT	86
	702061	CLEARY LAKE REGIONAL PRK	SCOTT	70
	621412	COMO REGIONAL PARK	RAMSEY	62
	21065	COON RAPIDS DAM REG PARK	ANOKA	2
	21063	COON RAPIDS DAM REG PK	ANOKA	2
	273015	CROW-HASSAN PARK RESERVE	HENNEPIN	27
	274035	EAGLE LAKE PIKE ISLND RP	HENNEPIN	27
	274036	ELM CREEK PARK RESERVE	HENNEPIN	27
	274037	FISH LAKE REG.PARK	HENNEPIN	27
	621028	GRASS-VADNAIS REG PARK	RAMSEY	62
	272062	HIAWATHA MUNICIPAL PARK	HENNEPIN	27
	272023	HYLAND-BUSH-ANDRSN PRK R	HENNEPIN	27
	702068	JAMES WILKIE PARK RES	SCOTT	70
	621051	KELLER REGIONAL PARK	RAMSEY	62
	192047	LAKE BYLLESBY REG PARK	DAKOTA	19
	272042	LAKE CALHOUN CITY PARK	HENNEPIN	27
	821025	LAKE ELMO REGIONAL PARK	WASHINGTON	82
	21042	LAKE GEORGE REG. PARK	ANOKA	2
	272054	LAKE HARRIET CITY PARK	HENNEPIN	27
	272063	LAKE NOKOMIS CITY PARK	HENNEPIN	27
	272125	LAKE OF THE ISLES M. PK.	HENNEPIN	27
	273019	LAKE SARAH CO. REC. PARK	HENNEPIN	27
	193037	LEBANON HILLS REG. PARK	DAKOTA	19
	621024	LILYDALE HARRIET ISL RP	RAMSEY	62
	102069	LK MINNEWASHTA REG PARK	CARVER	10
	273017	LK. REBECCA PARK RESERVE	HENNEPIN	27
	621003	LONG LAKE REGIONAL PARK	RAMSEY	62
	22038	MARTIN ISL LINWOOD RG PK	ANOKA	2
	274033	MEDICINE LAKE PUBLIC ACC	HENNEPIN	27
	272027	MEDICINE LAKE REG. PARK	HENNEPIN	27
	21043	MISS ISLANDS OF PEACE RP	ANOKA	2
	621060	MISSISSIPPI RIVER BLUFFS	RAMSEY	62
	702065	MURPHY-HANREHAN PARK RES	SCOTT	70
	271050	NOERENBERG MEM. GARDENS	HENNEPIN	27
	621368	PHALEN REGIONAL PARK	RAMSEY	62
	22050	RICE CR CHAIN O LAKES RP	ANOKA	2
	21036	RUM RIVER CENTRAL REG PK	ANOKA	2
	821027	SOUTH WASHINGTON REG PK	WASHINGTON	82
	192045	SPRING LAKE PARK RESERVE	DAKOTA	19
	702062	SPRING LAKE REG. PARK	SCOTT	70
	822056	SQUARE LAKE REG PARK	WASHINGTON	82
	271045	WILD GOOSE CHASE IS.PARK	HENNEPIN	27
	272053	WILLIAM BERRY PARK	HENNEPIN	27

APPENDIX C

Outdoor Recreation Equipment Expenditures

Outdoor Recreation Equipment Expenditures

In order to estimate the expenditures for new outdoor recreation equipment made by Minnesotans, information was gathered from three surveys and four other reports. Most of the information was obtained from a survey prepared by the National Sporting Goods Association (see footnote 1 at end of attached table). For a few types of expenditures, information was taken from two other surveys because they provided more comprehensive and detailed data than the Association survey. Results of a U.S. Fish & Wildlife Service survey (see footnote 2) were used for fish and wildlife-related expenditures, and data from a Minnesota Department of Natural Resources survey (see footnote 3) were used for some water-related equipment expenditures. All three surveys report expenditures for new equipment.

The other four reports were used to derive estimates for three items not included in any of the surveys: trail bikes, three-wheelers and 4X4 trucks. These reports are cited in footnotes 4-6.

National Sporting Goods Association Survey

The National Sporting Goods Association survey covered a sample of 80,000 households nationwide, of which approximately 71% responded. The sample distribution of households was structured to mirror the distribution of households nationwide. Thus, 7.5% of the households sampled live in the West North Central region (Minnesota, North Dakota, South Dakota, Nebraska, Kansas, Missouri and Iowa), because 7.5% of U.S. households live in this region.

Data from this survey were not available for Minnesota, so a number of methods were used for estimating the state's share of national sales. First, for many items in the survey, the West North Central region's share of national sales was provided. In order to estimate Minnesota's share of the regional sales, the ratio of Minnesota total personal income to the region's total personal income (25.34%) was applied to the regional sales. Total personal income was used because it is a good indicator of the purchasing power of the state.

For those items for which the regional percentage of national sales was not known, three different methods were used. If an item were part of a larger group in which the regional percentage was known for a number of other items, then the average of the known percentages was used as an estimate for the unknown percentage. If an item were part of a group in which only one item's regional share was known, then that known percentage was used for all the unknowns in that group. Last, if there were no good basis for determining an estimate for a regional percentage from the known percentages, the ratio of the region's total personal income to national total personal income (7.0%) was used. Once a regional percentage was determined, the Minnesota share was determined as above, using Minnesota's share of the region's total personal income.

This survey covered all sporting goods, so those items that are not used outdoors were excluded here. In addition, many of the equipment items reported are not used exclusively for outdoor recreation. Hiking boots, for example, may be used for hiking during the summer, but during the winter they may serve as everyday winter boots. Another example is sports that are played both indoors and outdoors (basketball, skating, tennis, etc.). For these items, it was assumed that $\frac{1}{2}$ of the sales was directly related to outdoor recreation, and the Minnesota sales were reduced by half.

This survey does not cover all clothing items, but it is the best available source for clothing. A few items reported in this survey were excluded because better sources of information existed. These are described below.

U.S. Fish & Wildlife Service Survey

Data from the U.S. Fish & Wildlife Service (USF&WS) survey were used instead of the data on hunting and fishing equipment provided in the Association survey because the former were much more comprehensive. Using the method for deriving Minnesota sales from the Association data that was applicable (from those described above), \$42.9 million and \$12.8 million for hunting and fishing equipment, respectively, from the Association survey were excluded. These expenditures were replaced by \$48.2 million and \$52.0 million for hunting and fishing from the USF&WS survey. In addition, the USF&WS survey provided data on expenditures for non-consumptive fish and wildlife activities (\$17.2 million for Minnesota).

The USF&WS survey focused on fishing, hunting, and wildlife-related activities, so the data are understandably more detailed and comprehensive than the Association's data. Only the USF&WS data on equipment used specifically for hunting, fishing and non-consumptive activities were included here, however; the USF&WS survey included all sorts of related equipment for these activities, such as camping gear and recreational vehicles, but it was assumed these were all covered more adequately in the Association survey.

Equipment expenditures for fishing and hunting were reported directly for Minnesota in the USF&WS survey (based on a sample size of 940 hunters and/or anglers), but the expenditures for non-consumptive activities were reported at the national level, with regional shares of total national expenditures provided. The West North Central region's share (same region as above) was 5.1% of the total. Minnesota's share was determined in the same way as for the Association data: Minnesota's share of regional total personal income (25.34%) was applied to the regional sales. All of the data from this survey were inflated from 1980 to 1985 dollars using the inflator for durable goods for that time period (1.15).

One other adjustment was made. Expenditures for binoculars were reported for hunters, anglers and wildlife viewers. According to this survey, 37% of the wildlife viewers were also either hunters or anglers, so 37% of the binocular sales for wildlife viewers were removed. No other figures were adjusted because no other overlap was noted.

Minnesota Department of Natural Resources Survey

Minnesota sales of \$110.1 million for boats, motors and accessories from the Association survey were replaced by \$260.8 million of expenditures from the Minnesota Department of Natural Resources (DNR) survey, because the DNR survey was much more narrow in scope and provided information specifically for Minnesota. The DNR survey covered expenditures for water-related outdoor recreation, with a sample of 6500 Minnesota households.

Other Sources

After pulling the relevant information from the three surveys discussed above, sales for three types of recreational equipment were still missing: trail bikes, three-wheelers, and 4X4 trucks. Estimates for these three were drawn from four reports, as described below.

The estimate for trail bike sales was derived from two reports, a U.S. Consumer Product Safety Commission report and a Motorcycle Industry Council, Inc. report (see footnote 4). Estimates for 1985 nationwide sales of off-highway and dual purpose motorcycles were derived from the first report. Two percent of these sales was then attributed to Minnesota. The second report provided information on the amount of off-road use for each type of motorcycle. Off-highway motorcycles are used 85 percent of the time off-road. Assuming that on-highway use was not recreational, sales were reduced by 15 percent to reflect only recreational use. The dual purpose motorcycle sales were reduced by half for the same reason. This resulted in an estimate of \$4.56 million in 1985 sales in Minnesota, \$3.65 million for off-highway motorcycles and \$909,900 for dual purpose motorcycles.

The estimate for three wheelers (including comparable four wheelers) was derived primarily from a 1985 DNR report (see footnote 5). The U.S. Consumer Product Safety Commission report provided the average price figure for 1985, and this was used with the DNR report's projected number of vehicles sold to obtain 1985 Minnesota sales. The DNR report also states that 82.2 percent of these vehicles purchased are used at least partially for recreation, and of those vehicles, 86.2 percent of their use is recreational. The sales figure was reduced accordingly, so the \$15.22 million reflects only recreational use.

The estimate for 4X4 trucks was derived from a 1984 DNR report (see footnote 6) and a discussion with a dealer. The DNR report estimated there would be 54,000 of these trucks used off-road in 1985. Assuming a 10 year life and an average price in 1985 of \$9400 (both obtained from the dealer), a sales figure was estimated. This figure was then cut in half to account for non-recreational use; this is consistent with the methodology for dual purpose motorcycles and most of the other equipment that had non-recreational uses. The resulting sales figure is \$25.38 million for 1985.

MINNESOTA EXPENDITURES FOR OUTDOOR RECREATION EQUIPMENT¹

	A 1985 U.S. Sales (million \$)	B West No. Central % of Sales	C MN Sales (thousand \$) (A X B X 25.34%)	
Athletic & Sport Clothing			\$26,831.3	
Athletic Socks	\$412.3	5.7 *	\$2,977.6	**
Bathing Suits	694.5	5.7	5,015.6	**
Golf Clothing	216.4	6.5	3,564.3	
Parkas (Down/Fiber Filled)	224.3	5.7 *	1,619.9	**
Shorts (Elastic Waist)	210.1	5.7 *	1,517.3	**
Skiwear	303.1	4.6	3,533.1	
Sweatshirts	315.2	5.7 *	2,276.3	**
Tennis Clothing	138.2	5.7 *	998.1	**
Vests (Down/Fiber Filled)	153.9	5.7 *	1,111.5	**
Warm-up Suits	564.2	5.9	4,217.6	**
Athletic & Sport Footwear			23,208.7	
Baseball Shoes	102.8	7.4	1,927.7	
Basketball Shoes	185.4	10.1	2,258.9	**
Football Shoes	40.0	7.1 *	719.7	
Golf Shoes	109.1	6.5	1,797.0	
Gym Shoes/Sneakers	655.5	5.7	4,734.0	**
Hiking Shoes	97.6	7.8	964.5	
Jogging/Running Shoes	572.0	6.9	5,000.6	**
Soccer Shoes	67.6	4.9	839.4	
Tennis Shoes	469.7	7.8	4,641.9	**

Notes at end of Table.

	A 1985 U.S. Sales (million \$)	B West No. Central % of Sales	C MN Sales (thousand \$) (A X B X 25.34%)	
Archery	\$212.0	7.0 +	\$1,431.9	***
Baseball & Softball			3,523.3	
Gloves	122.0	7.9	\$2,442.3	
Baseballs	22.0	7.9 ++	440.4	
Aluminum Bats	32.0	7.9 ++	640.6	
Basketball			768.9	
Basketballs	38.5	7.8	380.5	**
Backboards	39.3	7.8 ++	388.4	**
Camping			15,539.4	
Backpacks	90.5	7.6	871.4	**
Tents: 1-2 person	52.6	9.9	1,319.6	
3 or more	138.6	8.4	2,950.2	
Sleeping Bags	178.0	9.8	4,420.3	
Slumber Bags	17.9	10.4	235.9	**
Camp Stoves	40.8	9.2 *	951.2	
Lanterns	40.6	9.2 *	946.5	
Ice Chests	154.4	9.2 *	3,599.5	
Heaters	10.5	9.2 *	244.8	
Football	53.5	7.0 +	949.0	
Golf			13,531.8	
Clubs	423.2	7.5	8,042.9	
Balls	179.6	7.2 *	3,276.8	
Bags	105.3	6.8	1,814.4	
Carts	21.8	7.2 *	397.7	

Notes at end of Table.

	<u>A</u> 1985 U.S. Sales (million \$)	<u>B</u> West No. Central % of Sales	<u>C</u> MN Sales (thousand \$) (A X B X 25.34%)	
Ice Skates & Hockey			\$1,025.4	
Hockey Skates	\$36.9	9.5	\$444.1	**
Hockey Sticks	14.8	9.5 ++	178.1	**
Figure Skates	33.5	9.5 ++	403.2	**
Optics (Sunglasses)	308.9	7.4	1,565.5	**
Roller Skates	40.0	7.0 +	354.8	**
Skin Diving + Scuba Gear	78.0	7.0 +	1,383.6	**
Cross-Country Skiing			793.6	
Skiis	55.2	2.4	335.7	
Boots	40.1	2.4 ++	243.9	
Bindings	18.8	2.4 ++	114.3	
Poles	16.4	2.4 ++	99.7	
Downhill Skiing			7,383.4	
Skiis	186.1	6.3	2,970.9	
Boots	185.0	6.3 ++	2,953.4	
Bindings	74.6	6.3 ++	1,190.9	
Poles	16.8	6.3 ++	268.2	
Soccer	27.7	10.0	701.9	
Tennis			1,697.4	
Tennis Racquets	160.3	4.9	995.2	**
Tennis Balls (cans)	113.1	4.9	702.2	**
Volleyballs and Badminton Sets			253.6	
Badminton Sets	11.0	7.2	100.3	**
Volleyballs	16.8	7.2 ++	153.3	**

Notes at end of Table.

	<u>A</u> 1985 U.S. Sales (million \$)	<u>B</u> West No. Central % of Sales	<u>C</u> MN Sales (thousand \$) (A X B X 25.34%)
Water Skis	\$125.0	11.6	\$3,674.3
Athletic Goods Team Sales	1,477.4	7.0 +	13,103.1 **
Recreational Transport			414,430.1
Bicycles & Supplies	2,109.0	8.1	43,288.1
Pleasure Boats, Motors & access. ³	-	-	260,761.2
Recreational Vehicles#	3,515.0	7.0 +	62,349.1
Snowmobiles	162.0	7.0 +	2,873.6
Trail Bikes ⁴	-	-	4,558.1
3-Wheelers ⁵	-	-	15,220.0
4X4 Trucks ⁶	-	-	25,380.0
Subtotal			<hr/> \$532,151.0

Notes at end of Table.

FISH AND WILDLIFE-RELATED EXPENDITURES²

1985 MN Purchases
(thousand \$)

Fishing	\$52,014.9
Freshwater Rods	\$8,163.0
Freshwater Reels	7,711.6
Saltwater Reels	142.3
Lures, Lines, Hooks, etc.	14,064.7
Depth Finders & Fish Finders	4,205.7
Tackle Boxes	1,834.5
Minnow Seines & Traps	253.5
Minnow Buckets & Other Bait Holders	975.5
Scales	60.0
Knives	1,355.9
Prepared Bait	1,870.0
Rod Holders	161.2
Spear Fishing Equipment	248.4
Creel, Stingers & Fish Bags	403.0
Landing Net	847.3
Seines & Other Nets	272.6
Ice Fishing Equipment	1,836.8
Other Equipment	4,464.5
Special Fishing Clothes	2,169.5
Rubber Boots & Waders	715.0
Binoculars, Field Glasses, etc.	104.3

1985 MN Purchases
(thousand \$)

Hunting	\$48,192.0
Guns & Rifles	\$9,028.4
Bows & Arrows	2,328.6
Telescopic Sights	1,774.8
Decoys & Game Calls	1,347.3
Game Carriers	119.7
Ammunition	13,536.8
Hand Loading Equipment	2,497.0
Equipment Cases & Carriers	1,255.8
Hunting Dogs & Associated Costs	5,917.2
Other Equipment	1,585.5
Special Hunting Clothes	5,034.5
Rubber Boots & Waders	636.5
Hunting Boots & Packs	2,374.2
Binoculars, Field Glasses, etc.	755.7

^A
1980 U.S. Purchases
(million \$)

MN Purchases (1985 thousand \$)
(A x 5.1% x 25.34% x 1.15)

Non-consumptive fish and wildlife activities	17,162.2
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Field guides	\$17.96	266.9
Binoculars	79.34	742.8 ##
Cameras, lenses & other equ.	347.34	5,162.1
Film & developing	739.50	10,990.4

Fish & Wildlife Subtotal	\$117,369.1
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TOTAL	\$649,520.1
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Notes at end of Table.

NOTES

- * : Actual % unknown and estimated based on average for that group
 - ** : Either related to indoor/outdoor sports (activities), or could be used outdoors for non-recreation, so only $\frac{1}{2}$ of total sales applied to outdoor recreation.
 - *** : Archery sales reduced by \$2,328,600 to reflect the amount reported in the USF&WS survey for bows and arrows.
 - + : Actual % unknown, so region's % of national total personal income is used as an estimate (7.0%).
 - ++ : % is known for one item in this group and is applied to whole group because of similarity.
 - # : Includes travel trailers, motor homes, folding campers, truck campers and van conversions.
 - ## : 37% of sales removed because 37% of users were also anglers or hunters.
-
- 1 : Source: Except for Fish and Wildlife and as noted, The Sporting Goods Market in 1986, prepared for the National Sporting Goods Association by Irwin Broh & Associates, Inc., 1986.
 - 2 : Source: Minnesota and U.S. Volumes of 1980 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, U.S. Department of the Interior, Fish and Wildlife Service; and U.S. Department of Commerce, Bureau of the Census. Dollars inflated from 1980 to 1985 dollars using the inflator for durable goods for that time period (1.15).
 - 3 : Source: 1985-86 Outdoor Recreation and Expenditure Survey of Minnesotans, Minnesota DNR.
 - 4 : Sources: "Market Sketch: All Terrain Vehicles", U.S. Consumer Product Safety Commission, 1985; "Annual and Accumulated Motorcycle Mileage", prepared by Burke Marketing Research, Inc. for the Motorcycle Industry Council, Inc., 1981.
 - 5 : Source: "Three-Wheeled Off-Road Vehicle Gasoline Consumption in Minnesota", prepared by Environmental Resources Management-North Central for the Minnesota DNR, 1985.
 - 6 : Source: "Off-Road Vehicle Use in Minnesota", Minnesota DNR, 1984.