Significance of Water-Related Outdoor Recreation To the State and Regional Economies in Minnesota

Report to the

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Office of Planning

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SIGNIFICANCE OF WATER-RELATED OUTDOOR RECREATION TO THE STATE AND REGIONAL ECONOMIES IN MINNESOTA

a

report for the

Water Allocation Project

Division of Waters

Minnesota Department of Natural Resources

Funded by

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Minnesota Department of Natural Resources
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SUMMARY

Managing water for outdoor recreation has economic implications in the same sense that managing water for other uses, such as consumptive industrial uses, has economic implications. In other words, water for outdoor recreation generates economic impacts (e.g., impacts on employment) that are no different in type from the impacts generated by many other uses. The purpose of this study is to measure the economic impacts of water for outdoor recreation.

Consumer purchases associated with water-related outdoor recreation were used with the IPASS Input-Output Model to derive the significance of these purchases to the Minnesota economy and sub-state regional economies. Water-related outdoor recreation includes on-water activities as well as other activities that depend on water resources for their enjoyment.

Statewide

Annual consumer purchases associated with water-related outdoor recreation totaled nearly $1.2 billion (1985 dollars), of which $512 million was resident travel expenses, $351 million was nonresident travel expenses and $311 million was resident equipment purchases. These consumer purchases had direct plus indirect impacts of $1.9 billion on total gross output (total sales by Minnesota businesses) and $844 million on total value added (total income to Minnesotans). The impacts on gross output represented 1.6% of Minnesota's total gross output, and the impacts on value added represented 1.5% of Minnesota's total value added. Stated differently, 1.5% to 1.6% of the Minnesota economy depended on water-related outdoor recreation.

The direct plus indirect impacts of the consumer purchases were linked to 37,600 jobs in the state, which was 2.1% of Minnesota's total employment. Nearly 12,000 of the jobs were export-based, which means they were linked to travel expenditures of visitors to Minnesota.

Most of the gross output, value added and employment impacts were concentrated in three major sectors: manufacturing, wholesale/retail trade and services.

Another effective way to view these impacts is to place them on a water-resource basis. The economic impacts per acre of lakes with permanent fish populations, which are the state's prime water resource for outdoor recreation, were as follows:

	1985 Dollars per Acre*
Consumer purchases (direct impacts)	509
Direct and Indirect Impacts on:	
Total Gross Output	830
Total Value Added	371

Direct and Indirect Impacts on:	Jobs per Thousand Acres
Total Employment	16.5

* Acreage is 2,274,669: excludes acreage of Lake Superior, Upper and Lower Red Lake and any portion of a lake outside the state; includes acreage of river lakes and pools. There are 1948 water bodies included.

The state received annually, through fees and taxes, an estimated $127 million from water-related outdoor recreation expenditures. Fees for licences and park entrance accounted for nearly $16 million. Another $46 million was received through the sales tax on recreator purchases, and another $27 million was received through the petroleum tax on recreator gasoline purchases. In addition, the state derived nearly $39 million from "indirect taxes". Indirect taxes are the income and sales taxes expected to be paid because of the income (and the spending of that income) generated for Minnesotans by these recreation purchases.

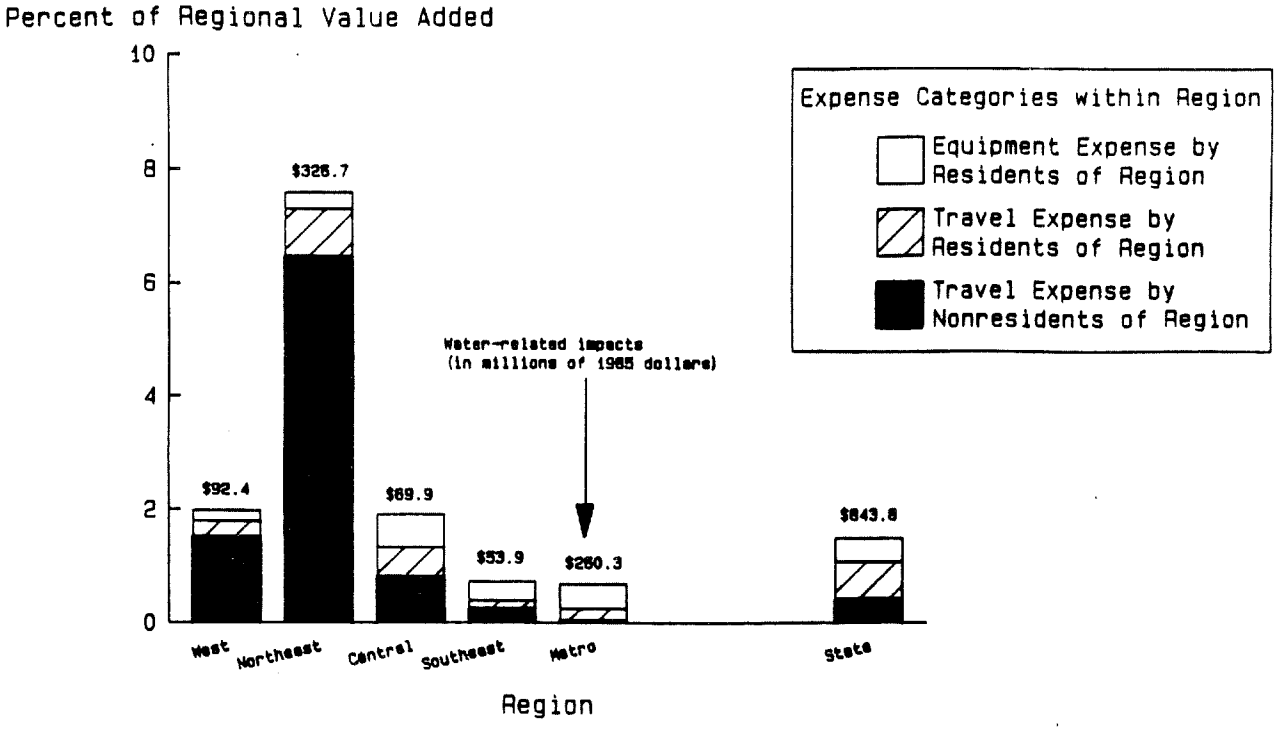
Regional

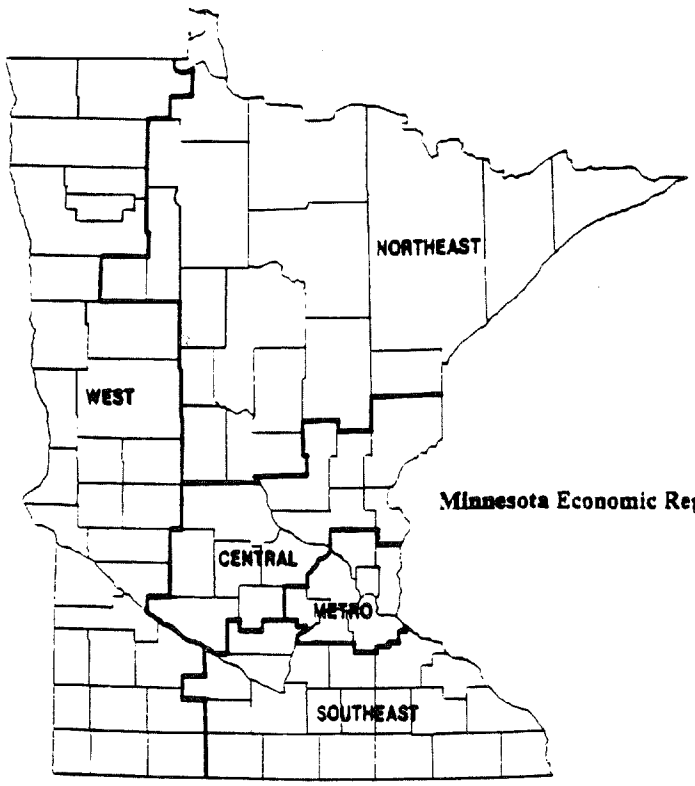
The annual contribution of water-related outdoor recreation to regional economies is well described by the following statistic: percent of regional income (value added) due to the direct plus indirect impacts of the recreation expenditures. This percent is the proportion of regional income that depended on water-related outdoor recreation. Value added is the most effective of the impact measures in capturing the benefits that accrue to residents of the regional economy. Regional patterns for gross output and employment were similar to those for value added.

Water-related outdoor recreation accounted for between .7% and 2.0% of total value added in each region, with the exception of the Northeast (see diagram on next page). In the Northeast, the portion of regional value added was 7.6%, far above the portions in the other regions and the statewide portion of 1.5%. The Southeast and Metro Region showed the smallest portions. The impact in the Metro Region was roughly near that of the Northeast in terms of dollar value, but was a small percent of the much-larger Metro economy.

The West and Northeast derived about 80% of their value-added impact from nonresident travel expenses, which represent export-based income for the regional economies. Metro residents and non-Minnesotans were the principal geographic sources of these nonresident impacts. Nonresident impacts were smaller in the Central Region, and were smaller still in the Southeast and Metro Region.

Percent of Regional Value Added Accounted for by Direct Plus Indirect Impacts of Water-Related Outdoor Recreation Expenditures





Minnesota Economic Regions

INTRODUCTION

One objective of the Water Allocation Project, funded by the Legislative Commission on Minnesota Resources, is to determine the value of Minnesota water for outdoor recreation. To that end, information on purchases by consumers engaged in water-related outdoor recreation was assembled. Consumer purchases were subsequently used with the IPASS Input-Output Model to derive the significance of the purchases to the state economy and to regional economies within the state.

The effect of consumer purchases on the economy is referred to as economic impact. Impact is one of the measures commonly used in the economics of outdoor recreation. Comprehensive treatment of outdoor recreation economics goes beyond impact and incorporates the various components of "economic value". Economic value is the subject of a different study in the Water Allocation Project (see: NRRI, Chapter 6, "The Value of Water for Economic Production and Recreation in Minnesota"). It includes the benefits that users of the resource gain, above their expenses, from the direct enjoyment of the resource. And it includes the benefits that both users and nonusers gain from the existence of the resource and from options for future use of the resource. The first of these benefits (benefits gained from users' direct enjoyment of the resource) is quantified in the NRRI document referenced above.

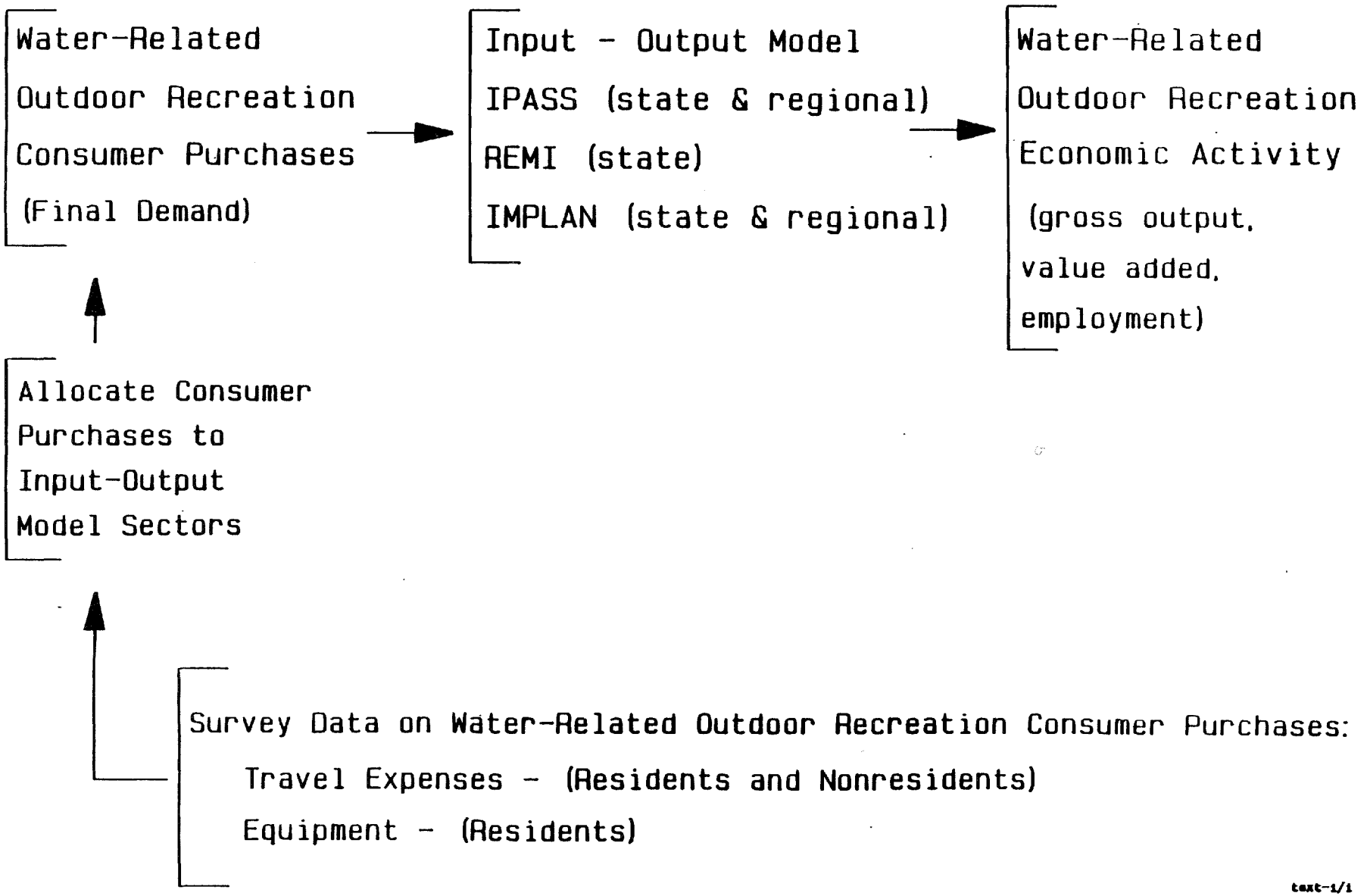
The uses of economic value and economic impact depend on the question being addressed; neither value nor impact is inherently of greater importance. A question on economic activity, such as personal income generated by the use of the resource, is solely in the domain of economic impact. Another question on benefits to society (Minnesotans and all other people) from the use of the resource is solely in the domain of economic value. Both economic value and impact can be employed in questions on benefits that accrue to residents of a local economy (such as all or some Minnesotans) from the use of the local resource. For example, local residents receive benefits from their enjoyment of the local resource (economic value) and from nonresident spending in the local economy, which generates income for local residents (economic impact).

The organization of the remainder of the paper follows the flow on Figure 1. First, input-output analysis is described. Next, the survey information on consumer purchases for water-related 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, and 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 (impacts) 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 is presented in the section titled "Measuring Economic Impact". This latter section does not contain a description of the capabilities of IPASS nor the data sources that form the core of IPASS. 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.

Finally, the economic impacts of water-related outdoor recreation are presented in two sections. The first section covers the contribution of water-related outdoor recreation to the state economy, and the second section covers the contribution to the five regional economies in Minnesota (see Figure 8, page 34, for regional map). Each section also includes information on types of puchases and activities of recreators, both of which are directly related to the economic impacts.

Figure 1

INPUT – OUTPUT ANALYSIS



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INPUT-OUTPUT ANALYSIS

Purchases made by consumers in conjunction with their participation in water-related outdoor recreation generate economic activity in the state (Figure 1). The economic activity so generated is the economic impact attributed to the use of water for outdoor recreation. An input-output model mediates between the consumer purchases and concomitant economic activity. 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 a primary application of, and reason for, 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 Model, 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 who purchase goods and services in the local economy. This distinction between local and outside consumers is maintained throughout the discussion that follows.

Consumers from outside the local economy provide basic (export-related) income to the residents of the local economy. Local residents who spend within the local economy, on the other hand, are trading dollars with fellow 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. No similar economic offset exists for spending by consumers from outside the local economy. For this reason, the distinction is drawn between export-related economic activity (which means the import into the local economy of outside recreators and their associated purchases) and local-related economic activity (which means purchases in the local economy by recreators from the local economy).

SOURCES OF INFORMATION ON WATER-RELATED OUTDOOR RECREATION CONSUMER PURCHASES

The amount of economic activity generated by consumer purchases depends directly on the amount of consumer purchases used to drive the economy through the input-output model (Figure 1). Two general types of consumer purchases cover outdoor recreation applications: travel-related purchases and equipment purchases. Travel-related purchases include all expenses made from the time the recreator leaves home until the time 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 and usually near home.

Information on consumer purchases come from two surveys: a nonresident auto-traveler survey, which covers travel-related purchases; and a resident general-population survey, which covers both travel-related purchases and non-travel equipment purchases.

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 is believed to have captured the bulk of the nonresident contribution to Minnesota water recreation: the highway entrances sampled covered 80 percent of noncommercial traffic into the state; motor vehicles are the primary mode to travel to the state for outdoor recreation; and summer is the principal water 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, origin of vacationing party, the location and type of outdoor recreation activities, and the location and type of travel expenses. Some 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 (see "Allocation of Consumer Purchases to Input-Output Model Sectors: Bridging and Margining").

The survey covered all types of outdoor recreation. For the purpose of this study, only water-related recreation is of interest. Water-related trips were identified by examining the outdoor recreation activities on the trip. If any water-based activity (e.g., fishing, boating) or camping (which is a water-related activity for vacationers in Minnesota) was participated in on the trip, then all trip recreation and all trip expenses were categorized as water-related. This procedure, by design, is intended to produce a high estimate of recreation and expenses related to water resources. Ninety-one percent of all trip expenses were thusly categorized as water-related. A corresponding low estimate of expenses is given in a subsequent section (see "High and Low Estimates of Consumer Purchases").

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) were used to reexpand the sample. That 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, all of which exhibited no such marked change since 1978. 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 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, of course, were inflated to current dollars.

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 water 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. If the outdoor recreation was water-based or otherwise water-related, then travel expenses were collected by expense location in 10 categories (the 10 categories were subsequently allocated to the 41 detailed categories using the nonresident data discussed above). Water-based activities include fishing, boating, canoeing and so on. Water-related land-based activities were 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, then the land-based activity was categorized as water-related, and travel expenses were collected. Whole outings and their associated expenses were taken as water-related if any outdoor recreation activity on the outing was water-related. This categorization procedure, by design, is intended to produce a high estimate of recreation and expenses related to water resources. A corresponding low estimate of expenses is given in a subsequent section (see "High and Low Estimates of Consumer Purchases").

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 is intended to capture the bulk of equipment purchases while not placing unrealistic demands on the respondent's recall of lesser-cost purchases. Nineteen categories of equipment were collected. Purchases of new equipment were separated from used equipment. The full value of new equipment is associated with current annual production, which the input-output model simulates. Used equipment, by definition, was produced in the past. Only the current annual retail margin of used equipment

purchased through retail businesses can be included in the input-output model. No data, however, were collected on whether the used equipment was purchased retail, a clear oversight in the survey methodology. Purchases of used equipment, therefore, are not incorporated in the input-output model. Fortunately, the dollar loss is not large. Even if all the used equipment was purchased retail (which it was not), and assuming a normal retail margin of one-third, the equipment-purchase total processed by the input-output model would be raised just 12 percent.

High and Low Estimates of Consumer Purchases

As noted previously, the amount of economic activity generated by consumer purchases depends directly on the amount of consumer purchases used to drive the economy through the input-output model. High estimates of resident and nonresident travel-related expenses were derived above. Corresponding low estimates are derived below. Resident equipment purchases are a point estimate (neither a high nor a low estimate), collected in response to a question on equipment bought primarily for water recreation.

An example illustrates the difference between a high and a low estimate of travel expenses incurred for water-related outdoor recreation. The high estimate is derived as follows: if someone goes on a recreation outing, spends $100, and participates in any water-related recreation, then all $100 is categorized as water-related. The corresponding low estimate is: for the same $100 outing above, if the recreator allocates, say, 60 percent of total outdoor recreation time to water-related activities, then $60 (=60% of $100) is categorized as water-related. Water-based activities and camping are considered water-related activities for nonresidents. For residents, water-related activities include (i) water-based activities and (ii) land-based activities that, according to the household spokesperson, had water resources as an important determinant in the selection of activity location.

The differences between the low and high estimates of travel expense are within the range of uncertainty in either estimate. For the state as a whole, the low estimate of travel expenses is 83.7 percent of the high estimate for nonresidents and 84.2 percent for residents. Similarly high percents are found in each region:

STATEWIDE

	High Estimate	Low Estimate	Low as a Percent of High
	(millions of 1985 dollars)		
Travel-Related Expenses			
Nonresidents	$350.6	$293.6	83.7
Residents	$511.7	$431.0	84.2
TOTAL	$862.3	$724.6	84.0
Equipment Expenses			
Residents	($310.8 - point estimate)		not applicable
GRAND TOTAL	$1173.1	$1035.4	88.3

REGIONAL

		Low Estimate as a Percent of High Estimate
West:	Total Travel-Related Expenses	76.7
	Grand Total (Travel and Equipment)	78.7
Northeast:	Total Travel-Related Expenses	84.4
	Grand Total (Travel and Equipment)	85.0
Central:	Total Travel-Related Expenses	88.8
	Grand Total (Travel and Equipment)	92.0
Southeast:	Total Travel-Related Expenses	86.9
	Grand Total (Travel and Equipment)	92.4
Metro:	Total Travel-Related Expenses	85.1
	Grand Total (Travel and Equipment)	93.4

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 service-producing industries (sectors) that account for the item's value (see Figure 1). The allocation is done according to each industry's share of the purchase price of the item.

The allocation to industry sectors is performed using a table for each purchase category. There are 41 travel-expense categories and 19 equipment categories in this study. The recent work for PARVS and past work for IMPLAN were fortunately available to accomplish the allocation task. Examples of the allocation of consumer spending to industry sectors are given in Table 1. For lodging, all of the expense goes to one sector. For gasoline and boats, however, expenses are allocated among a variety of industries. Note that the industry sectors on 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 input-output models. Allocation of consumer purchase data for IMPLAN Version 2, in effect, is allocation of data for other input-output models.

TABLE 1

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

Purchase Item (examples)	Industry Sector Number	Percent	Description
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	22.144	Petro and coal prd nec
	446	.288	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
		100.000	
Motorized Boats, not rubber	409	54.67	Boat build. & repair
	331	9.39	Outboard engines
	446	.05	Rail related trans.
	448	.52	Motor freight trans.
	449	.18	Water trans.
	450	.07	Air trans.
	460	5.15	Rec.-related wholesale trade
	462	29.97	Rec.-related retail trade
		100.00	

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 interbusiness purchases 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, in turn, must purchase inputs for their output from still other businesses which, in turn, must purchase inputs for their output from . . . . . and so on throughout the economy. The economic activity generated by these interbusiness 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. Resultant 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 (supply) of an industry (business), sales both within and outside the local economy. It double accounts the value of sales for the entire local economy, because it accounts for sales between industry sectors each time they are made. As a raw material, for example, moves between industries for processing up to the point of final delivery of the raw material-containing product to the customer, the value of the raw material is accounted each time it is sold.

Total value added, a portion of total gross output, is the income generated by the local economy's production and sale of products. 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 overrepresent 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, nonetheless.

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

The measure of economic impact makes a difference when viewing the relative impacts on economic sectors by water-related outdoor recreation expenditures (Table 2). Manufacturing, for example, accounts for 46 percent of direct impacts, 42 percent of direct plus indirect impacts on gross output, 24 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 Water-Related Outdoor Recreation
by Type of Impact for Major Sectors
(1982 Dollars)

MAJOR SECTOR	Type of Impact: DIRECT	DIRECT & INDIRECT: GROSS OUTPUT	DIRECT & INDIRECT: VALUE ADDED	DIRECT & INDIRECT: JOBS
		(column percents)		
Agriculture, Forestry & Fisheries	.7%	5.1%	3.9%	4.3%
Mining	(<.05)	(<.05)	(<.05)	(<.05)
Construction	0	1.1	1.2	.3
Manufacturing	46.4	42.0	24.0	14.9
Transportation, Communications & Utilities	1.2	5.9	6.6	3.5
Wholesale & Retail Trade	24.3	18.5	29.8	32.5
Finance, Insurance & Real Estate	(<.05)	4.2	6.9	1.7
Services	27.1	22.5	26.9	42.1
Other	.3	.8	.8	.8
TOTAL PERCENT	100.0%	100.0%	100.0%	100.0%
ABSOLUTE TOTAL	$1087 million	$1753 million	$760 million	37,533 (Jobs)

Source: Derived from processing data in Figure 2 (same data as "Direct" column here) through the IPASS Input-Output Model.

RESULTS: STATEWIDE

All of the following data are "high" estimates of water-related outdoor recreation and attendant travel expenses. Equipment purchases by Minnesotans are a point estimate; high and low estimates are not relevant. Because the low and high estimates are not greatly different, relative to the uncertainty in either estimate, only the high estimates of travel expenses and corresponding economic impact values are presented. See the preceding section titled "High and Low Estimates of Consumer Purchases" for further discussion of this topic.

Recreator Purchases

Nearly $1.2 billion, or nearly $300 per Minnesota citizen, was spent annually by recreators in the pursuit of water-related activities (Figure 2). Most was spent for travel (74%), with the remainder for equipment (36%). Residents made up 59 percent of travel expenses, nonresidents 41 percent. The bulk of travel expenses was accounted for by food, lodging and transportation (mainly gas). Nonresidents allocated a much smaller share of the food dollar to groceries than residents, and a greater share to restaurants. Nonresidents spent a larger share of their travel dollar on shopping and personals than residents.

Resident equipment purchases were dominated by boats, trailers and boat accessories (77% of total equipment dollars). The next largest expense category was boat motors (6.9%).

Recreation Activities

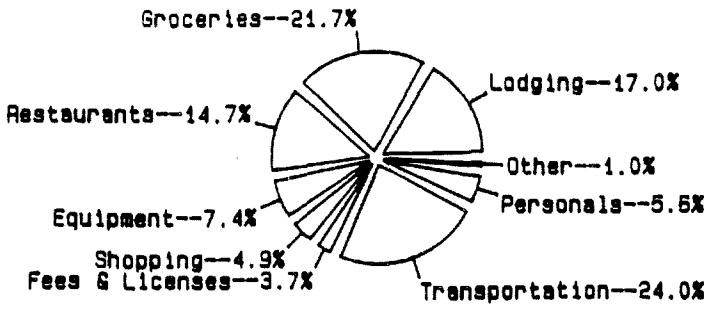
Most of the water-related recreation activity time was spent, not surprisingly, on water-based activities (Figure 3). For all recreators, fishing was the largest activity. It was followed by swimming, boating and camping. Fishing was also the largest activity for both residents and nonresidents. Nonresidents spent a greater share of activity time on fishing, camping and canoeing than residents. Residents spent a greater share of activity time on remaining activities, especially swimming.

Figure 2

Statewide Annual Water-Related Outdoor Recreation Expenditures by Type of Purchase (1985 Dollars)

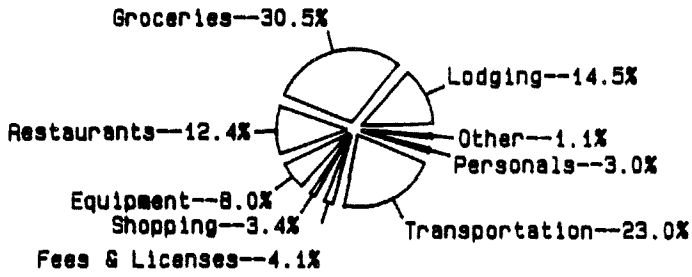
Travel-Related

All Spenders



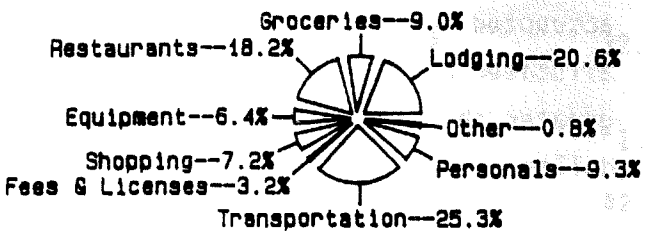
Total = $862.3 million

Minnesota Spenders



Total = $511.7 million

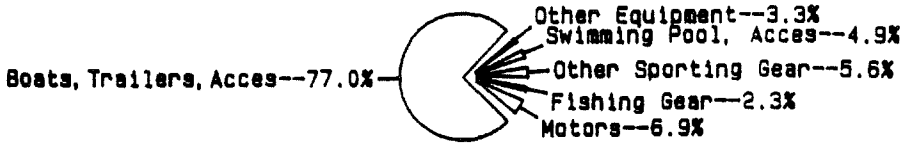
Nonresident Spenders



Total = $350.6 million

Equipment

Minnesota Spenders



Total = $310.8 million

Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents (1985-86) and Nonresident Summer Motor Vehicle Visitors to Minnesota (1978). (Note: 1978 nonresident expenditures were inflated to 1985 dollars using inflation factors that are specific to each of the 74 economic sectors that represent the Minnesota economy in the IPASS Input/Output Simulation Model.)

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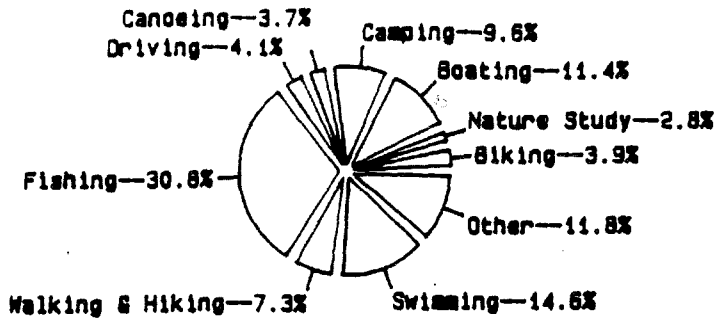
Figure 3

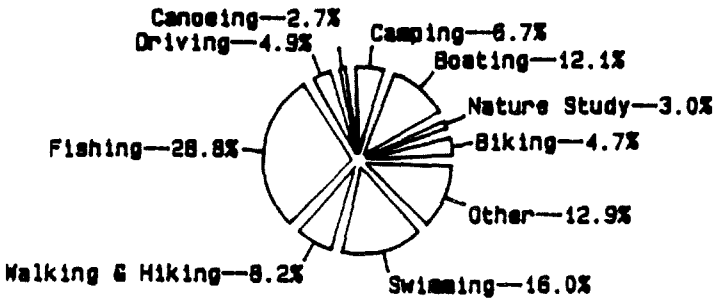
Statewide Annual Water-Related Outdoor Recreation Activity Time

All Recreators



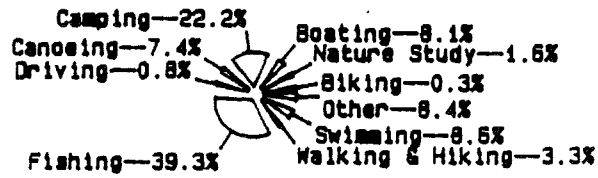
Total = 408.2 million hours

Minnesota Recreators



Total = 330.6 million hours

Nonresident Recreators



Total = 77.6 million hours

Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents (1985-86) and Nonresident Summer Motor Vehicle Visitors to Minnesota (1978).

pie-2/1

Residents accounted for 81 percent of statewide activity time, a much larger percent than they accounted for of travel expenses (59%). The closer-to-home recreation trips of residents were less expensive, for the same amount of recreation, than the longer-distance trips of nonresidents.

Direct Impact

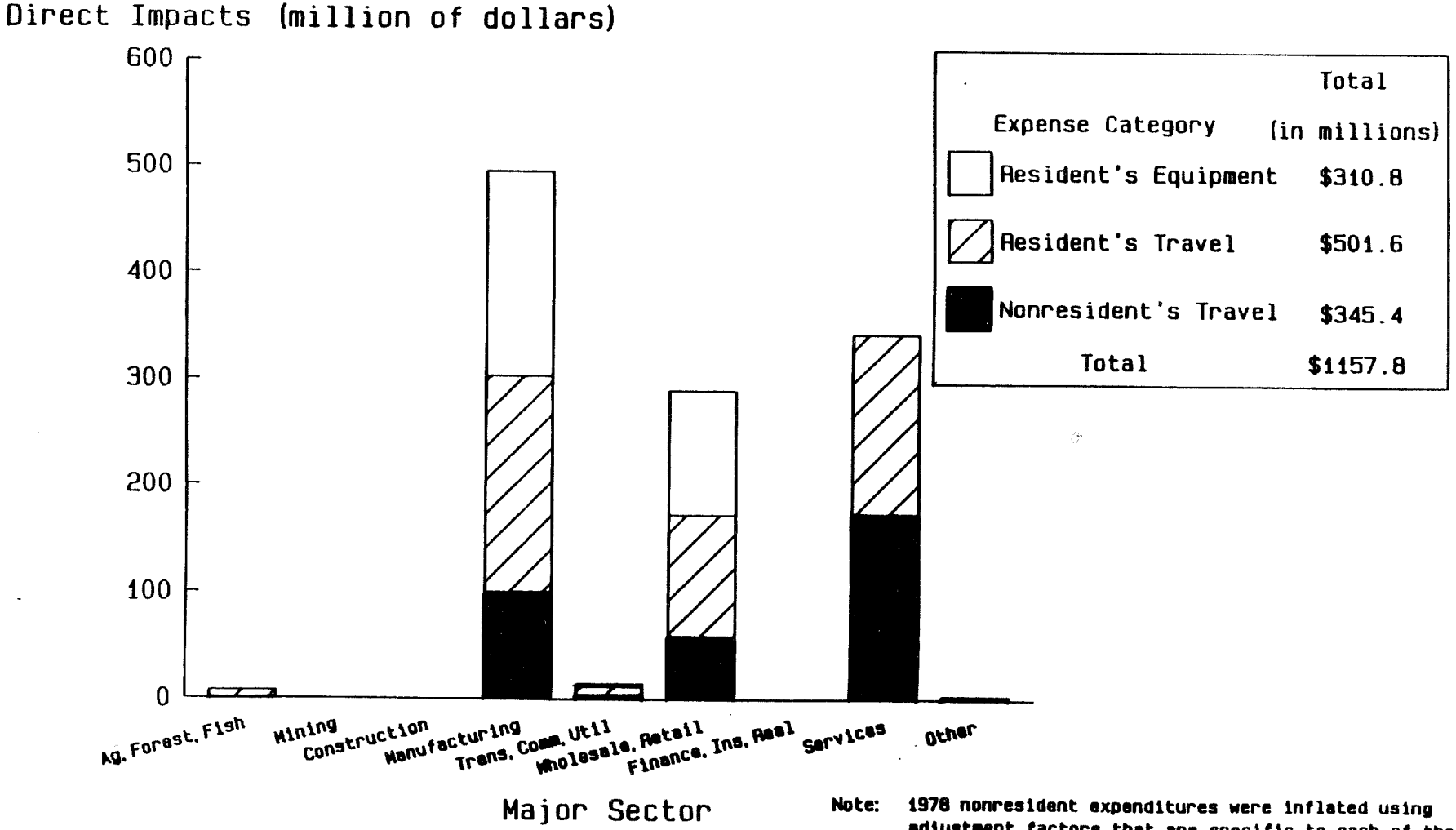
Direct impact is the consumer purchases themselves, after the value of each purchased item is allocated among the sectors that account for its value. Manufacturing was the primary sector impacted, followed by services, and wholesale/retail trade (Figure 4). The impact of equipment purchases occurred in the manufacturing and wholesale/retail sectors. The impact of travel expenses occurred mainly in these same two sectors as well as in the service sector. More of the nonresident travel dollar went into services than the resident travel dollar, while more 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 collapsed into nine major sectors on Figure 4. Six of the detailed sectors, each accounting for at least 5 percent of total impact, contain 71 percent of the total impact from all types of expenditures:

MAJOR SECTOR	IPASS SECTOR	PERCENT OF TOTAL WATER-RELATED OUTDOOR RECREATION IMPACT
Wholesale/Retail Trade	Retail Trade (63)	18.8
Services	Hotels, etc.(66)	12.9
Manufacturing	Petro. Refining (33)	11.2
Manufacturing	Other Transport (49)	11.0
Services	Eat and Drink Establ.(68)	10.8
Wholesale/Retail Trade	Wholesale Trade (62)	6.3
		71.0

Figure 4

Statewide Annual Direct Impacts of Water-Related Outdoor Recreation Expenditues by Major Sector (in 1985 Dollars)



Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents (1985-86) and Nonresident Summer Motor Vehicle Visitors to Minnesota (1978). Bridging and Margining Tables Taken from PARVS and IMPLAN.

Note: 1978 nonresident expenditures were inflated using adjustment factors that are specific to each of the 74 economic sectors that represent the Minnesota economy in the IPASS Input/Output Simulation Model. Direct Impacts exclude payments to government for fees and licenses.

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Direct Plus Indirect Impacts on Total Gross Output

Total gross output is all sales (supply) of the businesses in the economy, including sales made outside the geographic boundaries of the economy. Indirect impacts on total gross output were 63 percent of direct impacts, overall, and were not much different from 63 percent for any of the three expense categories (nonresident travel, resident travel and resident equipment). Nearly $1.9 billion in gross output, or 1.6 percent of Minnesota's total gross output, was accounted for by water-related outdoor recreation expenditures (Figure 5). Gross output impacts were concentrated in the same three sectors as direct impacts (manufacturing, services and wholesale/retail trade). Each of these three sectors accounted for more than the average share (1.6%) of their respective state gross output.

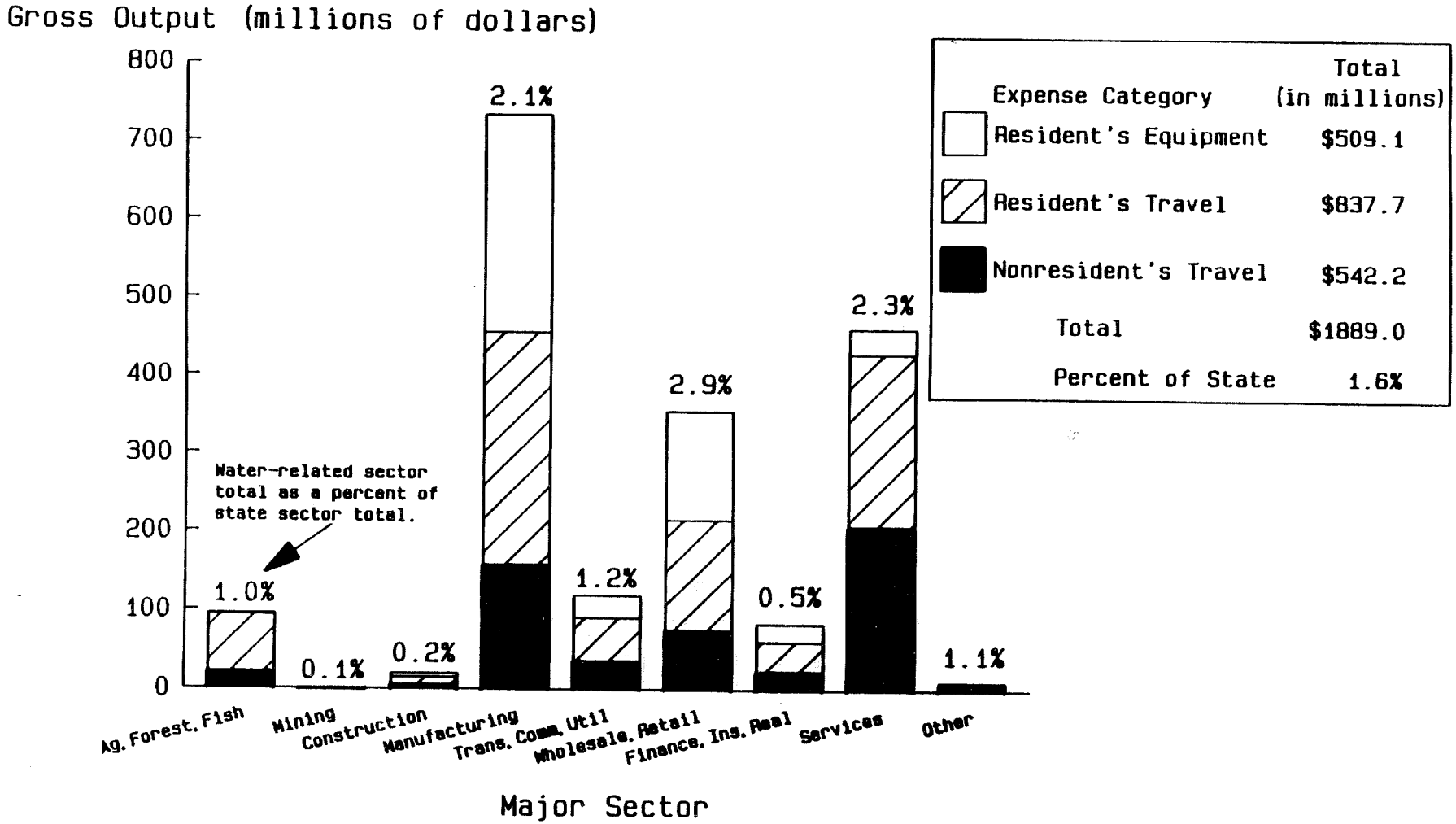
Indirect impacts are particularly evident in agriculture/forestry/fisheries, transportation/communications/utilities and finance/insurance/real estate sectors (compare Figure 5 with 4). Noteworthy is the indirect impact of the large resident travel-related purchase of groceries on the agriculture/forestry/fisheries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

In IPASS, the economy is broken down into 74 detailed sectors, which are collapsed into nine major sectors on Figure 5. Six of the detailed sectors, each accounting for at least 5 percent of total impact, contain 50 percent of the total impact from all types of expenditures. These are the same six detailed sectors that account for 71 percent of direct impacts:

MAJOR SECTOR	IPASS SECTOR	PERCENT OF TOTAL WATER-RELATED OUTDOOR RECREATION IMPACT
Wholesale/Retail Trade	Retail Trade (63)	11.8
Services	Hotels, etc. (66)	8.4
Manufacturing	Petro. Refining (33)	7.8
Services	Eat and Drink Establ.(68)	7.6
Manufacturing	Other Transport (49)	7.0
Wholesale/Retail Trade	Wholesale Trade (62)	7.1
		49.7

Figure 5

Statewide Annual Direct Plus Indirect Impacts on Gross Output of Water-Related Outdoor Recreation Expenditures by Major Sector (in 1985 Dollars)



Source: Derived from processing data in Figure 2 through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

Bar-1/1

Direct Plus Indirect Impacts on Total Value Added

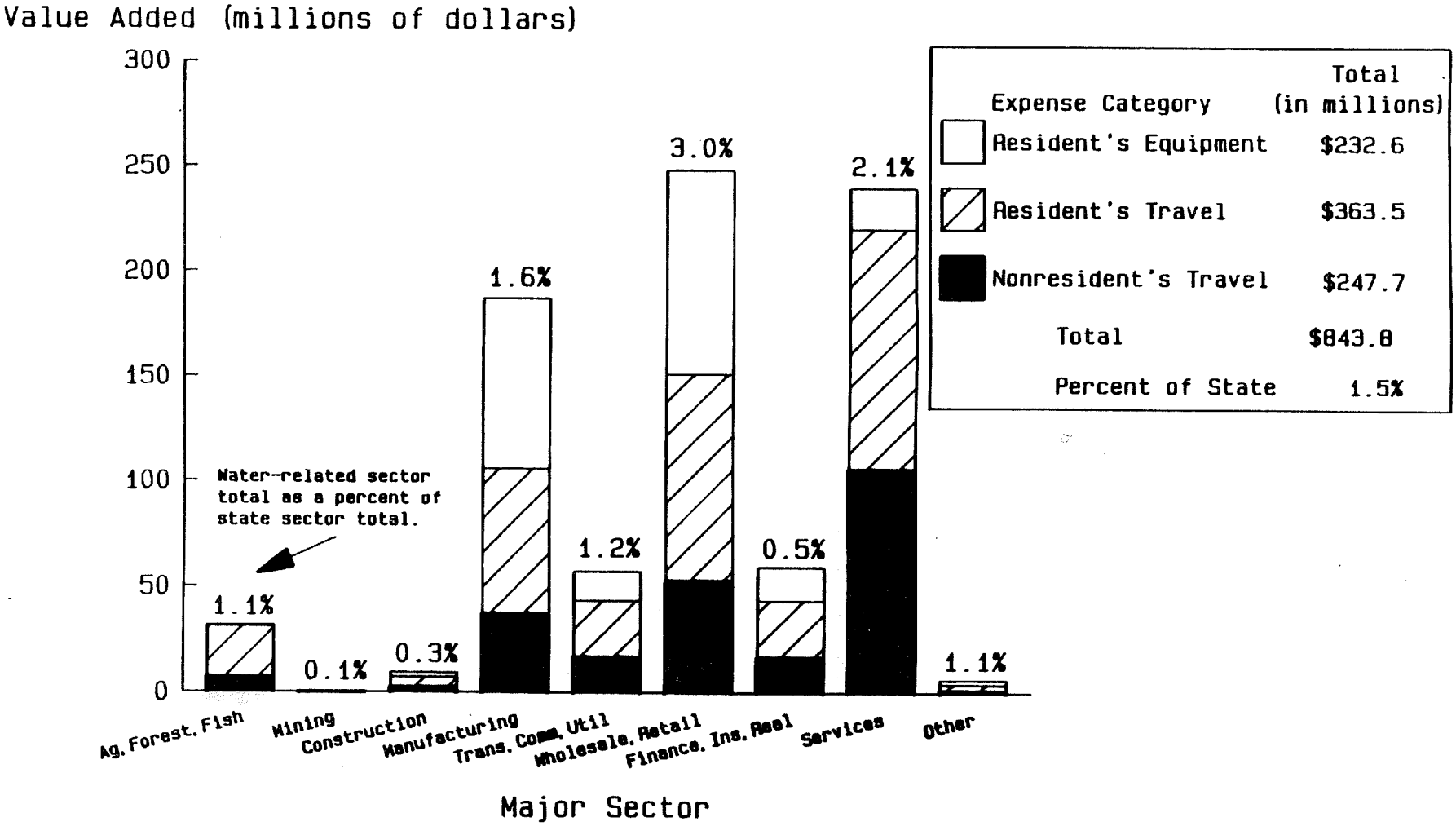
Total value added, a portion of total gross output, is the income generated by the local economy's production and sale of products. It is the most effective of the four impact measures in capturing the benefits that accrue to residents of the local economy. The portion of gross output that went into value added is 45 percent, overall, and it was not much different from 45 percent for any of the three expense categories (nonresident travel, resident travel and resident equipment). Nearly $845 million of value added, or 1.5% of Minnesota's total value added, was accounted for by water-related outdoor recreation expenditures (Figure 6). 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 (1.5%) 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. This change from gross output occurred because manufacturing returned only $.26 of value added for each dollar of gross output, whereas wholesale/retail trade returned $.70 and services $.52.

Resident equipment impacts on value added were largest in wholesale/retail trade, followed closely by manufacturing. Travel expense impacts for both residents and nonresidents were greatest in the service sector, followed by wholesale/retail trade and manufacturing. Nonresident travel-expense impacts were much more concentrated in services, and somewhat less concentrated in wholesale/retail trade than resident travel-expense impacts.

In IPASS, the economy is broken down into 74 detailed sectors, which are collapsed into nine major sectors on Figure 6. Five of the detailed sectors, each accounting for at least 5 percent of total impact, contain 53 percent of the total impact from all types of expenditures. Four of these five detailed sectors are in a companion table on gross output, while service sector (67) is new, and the two manufacturing sectors in the gross output table are absent:

Figure 6

Statewide Annual Direct Plus Indirect Inpacts on Value Added of Water-Related Outdoor Recreation Expenditures by Major Sector (in 1985 Dollars)



Source: Derived from processing data in Figure 2 through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

Bar-2/1

MAJOR SECTOR	IPASS SECTOR	PERCENT OF TOTAL WATER-RELATED OUTDOOR RECREATION IMPACT
Wholesale/Retail Trade	Retail Trade (63)	18.9
Wholesale/Retail Trade	Wholesale Trade (62)	10.5
Services	Hotels, etc. (66)	10.4
Services	Eat and Drink Establ.(68)	6.9
Services	Business Services (67)	6.2
		52.9

Direct Plus Indirect Impacts on Total Employment

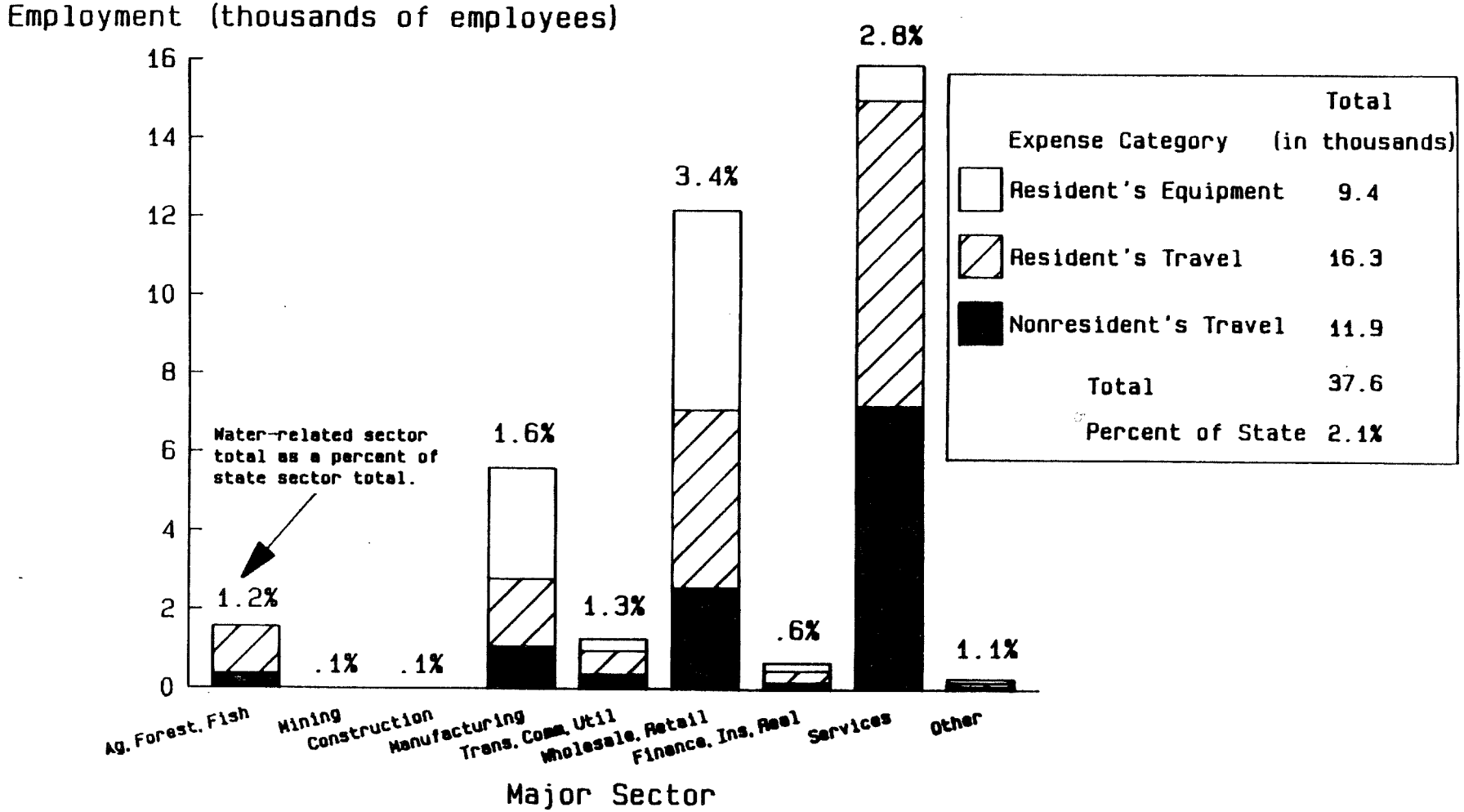
Total employment is jobs associated with the income (value added) generated by the local economy's production and sale of products. Seasonal and part-time jobs are counted the same as full-time jobs.

Nearly 45 jobs were created for each million dollars of total value added, overall, with 40 jobs per million dollars for resident equipment purchases, 45 jobs for resident travel expenses and 48 jobs for nonresident travel expenses. Nearly 38,000 jobs, or 2.1 percent of Minnesota's total employment, was accounted for by water-related outdoor recreation expenditures (Figure 7). Employment impacts were concentrated in the service and wholesale/retail sectors, both of which accounted for more than the average share (2.1%) of their respective state employment. Compared with value added impacts, service impacts on employment were much increased, wholesale/retail impacts were slightly higher and manufacturing impacts were much decreased. This change from value added occurred because 66 service jobs are created for each million dollars of service-sector value added, while 49 wholesale/retail jobs were created and 30 manufacturing jobs.

Largest equipment impacts on employment were in wholesale/retail trade, followed by manufacturing. Both resident and nonresident travel expenses had their largest

Figure 7

Statewide Annual Direct Plus Indirect Impacts on Employment of Water-Related Outdoor Recreation Expenditures by Major Sector



Source: Derived from processing data in Figure 2 through the IPASS Input-Output Model. Administrative Government is excluded from major sector Other.

Bar-3/1

impacts on employment in the service sector, by far, followed by the wholesale/retail trade sector and manufacturing, which was a distant third.

In IPASS, the economy is broken down into 74 detailed sectors, which are collapsed into nine major sectors on Figure 7. Six of the detailed sectors, each accounting for at least 5 percent of total impact, contain 73 percent of the total impact from all types of expenditures. All of these detailed sectors are in the service and wholesale/retail trade sectors, and five of the six are in a companion table on value added:

MAJOR SECTOR	IPASS SECTOR	PERCENT OF TOTAL WATER-RELATED OUTDOOR RECREATION IMPACT
Wholesale/Retail Trade	Retail Trade (63)	26.2
Services	Hotels, etc. (66)	16.3
Services	Eat and Drink Establ. (68)	13.4
Wholesale/Retail Trade	Wholesale Trade (62)	6.3
Services	Films & Recreation (70)	5.5
Services	Business Services (67)	5.1
		72.8

State Revenues

The state receives revenues as a result of the expenditures made for water-related 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 individually and shows that total revenues in 1985 amounted to over $127 million, of which $26 million came from non-Minnesotans.

The fees relevant to water-related outdoor recreation include fishing licenses, waterfowl hunting licenses, and state park entrance and camping fees. The license fees for 1985 totaled $12.8 million, with $10.3 million coming from residents and $2.5 million from nonresidents. Water-related state park fees for 1985 were estimated by reducing total 1985 fees by the ratio of water-related travel expenditures to all outdoor recreation travel expenditures. This left $2.8 million in state park fees, $2.2 million for residents and $.5 million for nonresidents (split based on the split for licenses). Total revenues from fees in 1985 were $15.5 million.

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 $27 million in 1985, with all 'other travel' sales taxes accounting for $27.1 million. These taxes are split between residents and nonresidents, as shown in Table 3, but the equipment taxes of $18.6 million (6% on all purchases) were paid solely by residents. Total sales taxes in 1985 came to $72.8 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 $38.7 million were composed of $21 million for individual income taxes, $14.7 million for sales taxes and $3 million for corporation taxes.

TABLE 3

State Revenues From Water-Related Outdoor Recreation

	Resident	Nonresident	Total
Fees			
Water-Related Licenses	$10,294,883	$2,496,832	$12,791,715
State Park Fees	2,237,219 *	542,625 *	2,779,844
Sales Taxes			
Gas	16,710,594 * *	10,326,581 * *	27,037,175
Other Travel	14,330,222 +	12,793,297 +	27,123,519
Equipment	18,645,973	-----	18,645,973
Indirect Taxes			
Individual Income	21,018,800 + +	-----	21,018,800
Sales	14,724,400 + +	-----	14,724,400
Corporation	3,034,800 + +	-----	3,034,800
TOTAL	$100,996,891	$26,159,335	$127,156,226

* Estimated by applying ratio (of water-related travel expenditures to total travel expenditures) to total park fees, and splitting resident/nonresident based on the split for licenses.

* * MN gas tax is $.17/gallon.

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

\+ \+ Percentages applied to increased personal income of $562 million were 3.74%, 2.62% and .54% for individual, sales and corporate taxes, respectively.

RESULTS: REGIONAL

All of the following data are "high" estimates of water-related outdoor recreation and attendant travel expenses. Equipment purchases by regional residents are a point estimate; high and low estimates are not relevant. Because the low and high estimates are not greatly different, relative to the uncertainty in either estimate, only the high estimates of travel expenses and corresponding economic impact values are presented. See the preceding section titled "High and Low Estimates of Consumer Purchases" for further discussion of this topic.

Recreator Purchases

The approximately $1.2 billion spent annually in Minnesota for water-related outdoor recreation was not distributed uniformly among the regions (see Figure 8 for map of regions). Regional expenditures ranged from a low of $87.2 million in the Southeast to a high of $488.2 million in the Northeast (Figure 9). The Central and West were at the low end of the range ($106.3 million and $131.2 million, respectively), while the Metro Region was at the high end of the range ($360.2 million).

For the state as a whole, most of the expenditures were on travel (74%), with the remainder spent on equipment (26%) (Figure 10). In contrast, the West and Northeast had over 90% of expenditures spent on travel, while the Metro Region had only 41% spent on travel. The Southeast and Central were in the middle (58% and 71% spent on travel, respectively) (see Figure 9).

State residents accounted for the majority of travel expenses within the state. Within each region, the share of travel expenses accounted for by regional residents ranged from a high of 74% in the Metro Region to a low of 12% in the Northeast. Similar to the Northeast was the West, where only 16% of travel expenses came from regional residents. The Central and Southeast were in the middle of the range, with about 40% of travel expenses coming from regional residents.

Visitors to Minnesota accounted for 30% of statewide expenditures for water-related outdoor recreation. Within regions, the percent of expenditures

Figure 8

Minnesota Economic Regions

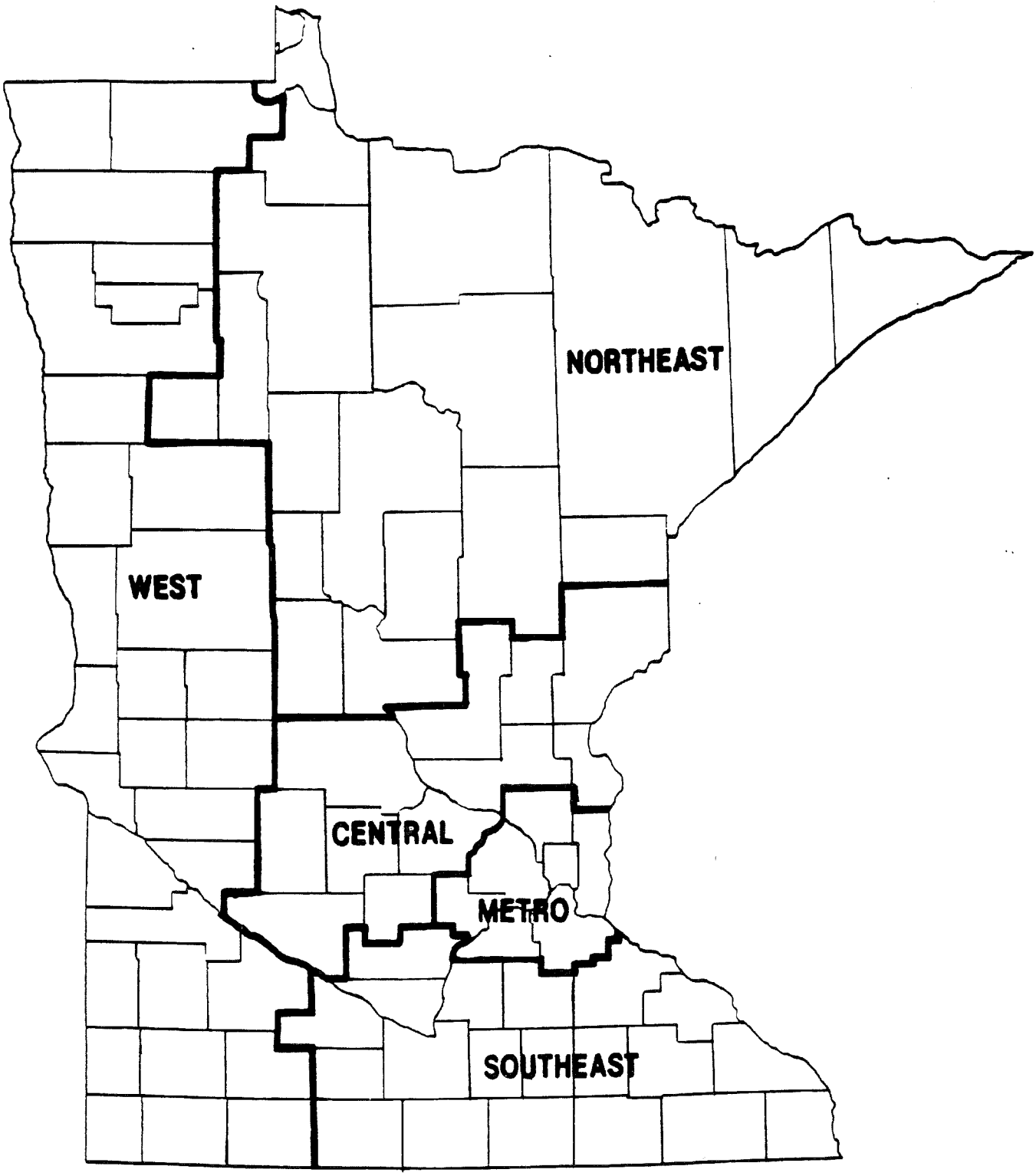
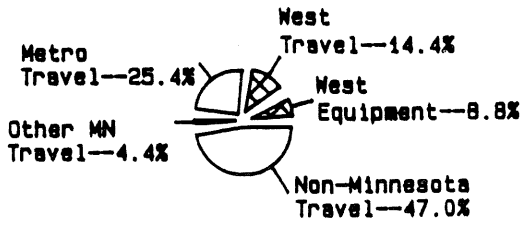


Figure 9

Annual Water-Related Outdoor Recreation Expenditues by Region (1985 Dollars)

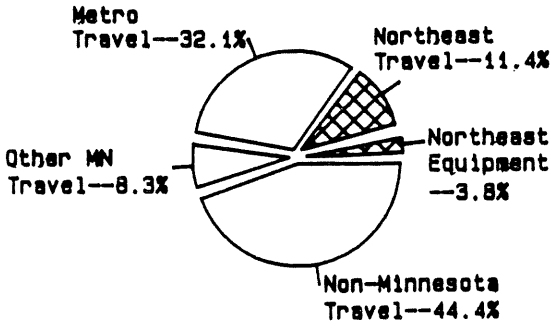


West Region
Total = $131.2 million

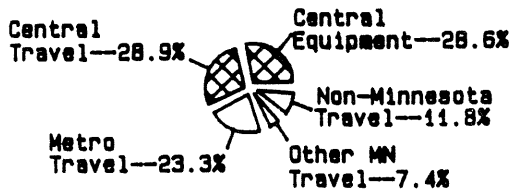
Legend:

Resident of Region

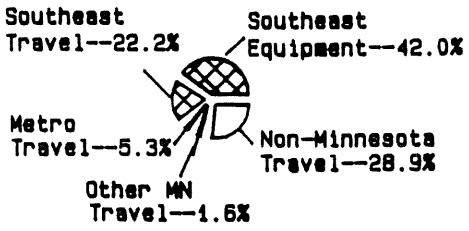
Nonresident of Region



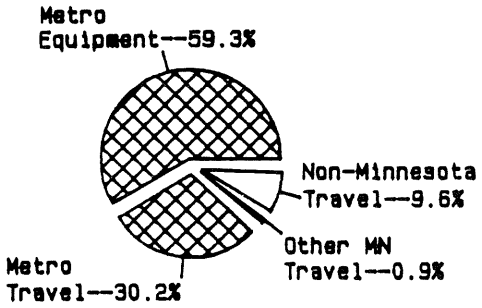
Northeast Region
Total = $488.2 million



Central Region
Total = $106.3 million



Southeast Region
Total = $87.2 million



Metro Region
Total = $360.2 million

Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents (1985-86) and Nonresident Summer Motor Vehicle Visitors to Minnesota (1978). (Note: 1978 nonresident expenditures were inflated to 1985 dollars using inflation factors that are specific to each of the 74 economic sectors that represent the Minnesota economy in the IPASS Input/Output Simulation Model.)

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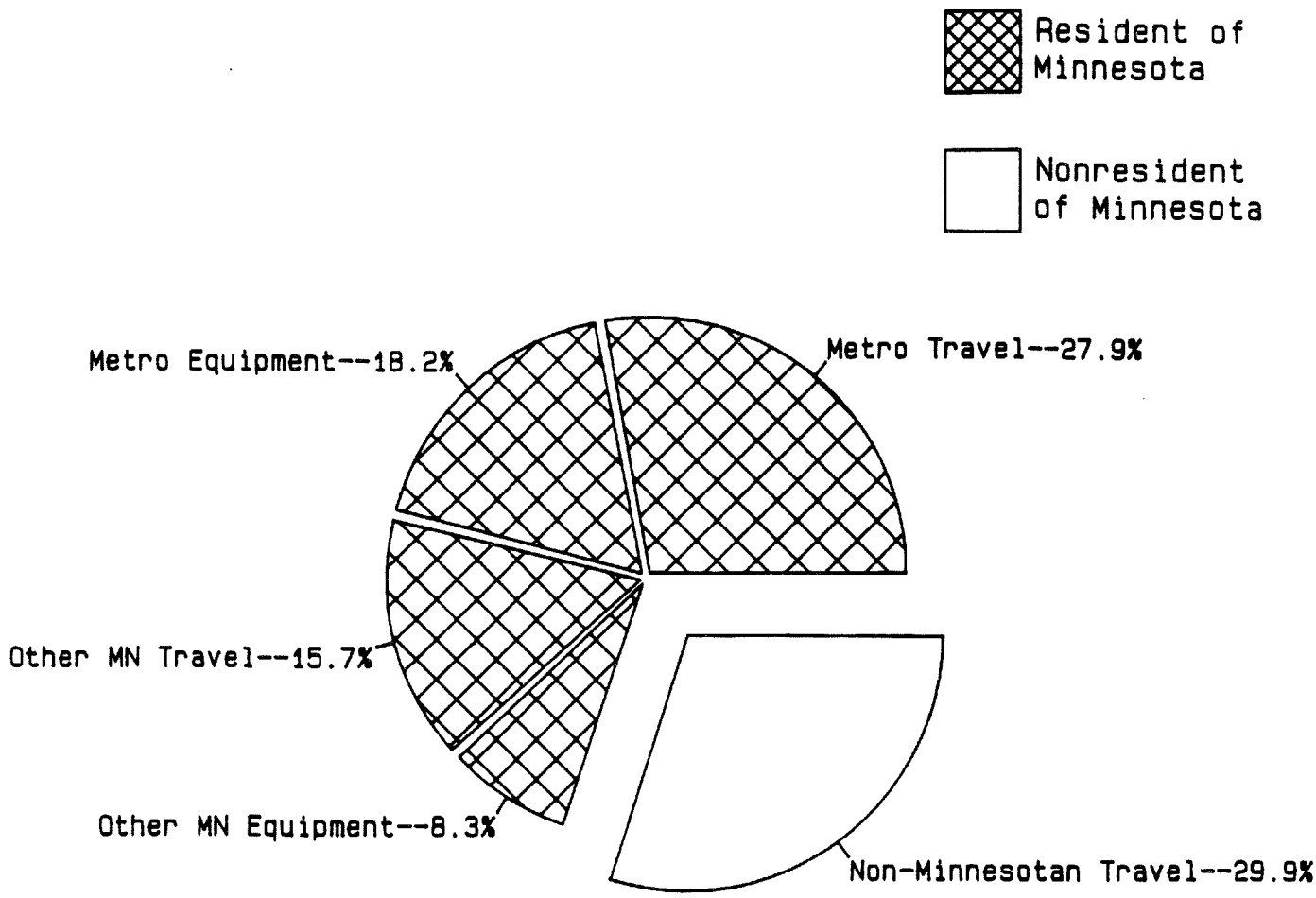
Figure 10

Statewide Annual Water-Related Outdoor Recreation Expenditures by Origin of Recreator (1985 Dollars)



Total = $1,173.1 million

Source: Minnesota DNR Outdoor Recreation and Expenditure Survey of Residents (1985-86) and Nonresident Summer Motor Vehicle Visitors to Minnesota (1978). (Note: 1978 nonresident expenditures were inflated to 1985 dollars using inflation factors that are specific to each of the 74 economic sectors that represent the Minnesota economy in the IPASS Input/Output Simulation Model.)

Pie-3/1

non-Minnesotans accounted for ranged from a high in the West (47%) and Northeast (44%) to a low in the Central (12%) and Metro Region (10%). The Southeast was in the middle of the range, with 29% 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% of the expenditures in the state (Figure 10). They accounted for 90% of the expenditures in their own region, and between 25% and 33% of the expenditures in the Central, West, and Northeast (Figure 9). It was only in the Southeast that the influence of Metro residents was small (5%).

The distribution of travel expenses among expenditure categories for each region was similar to the distribution for the state. Between 30% and 40% was spent for food, 10% to 20% for lodging, and 20% to 25% for transportation (except in the Southeast, where 40% was spent for transportation). Within each region two-thirds of the food dollar was spent on groceries and one-third was spent on restaurants. Nonresidents of each region, compared with residents, spent a smaller share of their food dollar for groceries and a larger share for restaurants.

Equipment purchases within each region mirrored that for the state. Boats, trailers, and motors accounted for over 80% of equipment purchases.

Recreation Activities

Water-based activities, as expected, dominated the total activity time spent on water-related outdoor recreation. Consistent with the state, the primary recreation activity for each region, except the Metro Region, was fishing. In the Metro Region, fishing was the second most popular activity following swimming. Recreational preferences varied somewhat among regions, and between residents and nonresidents of each region. Details of these preferences are too numerous to report here, but are available for further work on this topic.

Minnesota residents accounted for four times as many activity hours as nonresidents of the state. The splits of activity time between residents and nonresidents of a region varied considerably. In the Northeast, nonresidents of

the region spent three times as much activity time as residents. In the Central and West, residents and nonresidents of the region spent equal amounts of activity time. Southeast residents spent two times as many hours recreating compared with nonresidents of the region. Metro residents spent 16 times as many hours recreating compared with nonresidents of the region.

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. Water-related outdoor recreation expenditures accounted for between 0.7% and 1.8% of gross output in all of the regions, except the Northeast (Figure 11). There, the portion of regional gross output was 7.6%, which is a fairly substantial portion of the economy and well above the statewide portion of 1.6%. Smallest impacts were found in the Southeast and the Metro Region. In terms of the dollar value of the gross output impact, the Metro Region was not far behind the Northeast ($260.3 million versus $326.7 million); as a percent of regional gross output, however, these expenditures had a smaller impact on the much larger Metro economy.

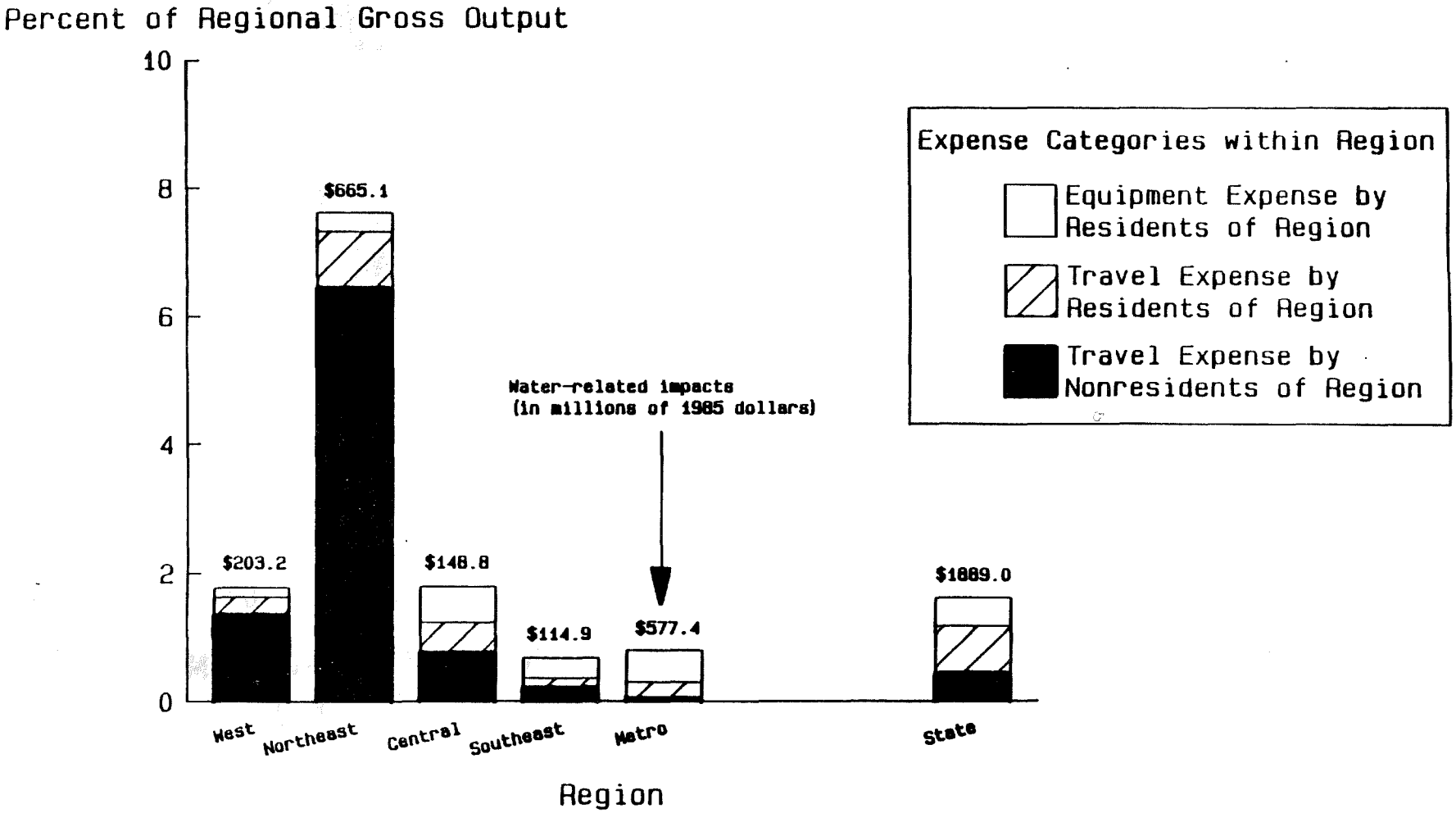
Nonresident travel expenditures, which represent export-based sales for the regional economy, accounted for the majority of the impact on regional gross output in the West and the Northeast (77% and 85% of the impact, respectively). Nonresident impacts were smaller in the Central Region, and were considerably smaller in the Southeast and Metro Region.

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 .7% and 2.0%, except in the Northeast (Figure 12). The portion of Northeast value added was 7.6%, far above the other regions and the statewide portion of 1.5%. The Southeast and Metro Region again showed the smallest impact. The Metro Region impact on value added was near the Northeast's in absolute value ($260.3

Figure 11

Percent of Regional Gross Output Accounted for by Direct Plus Indirect Impacts of Water-Related Outdoor Recreation Expenditures

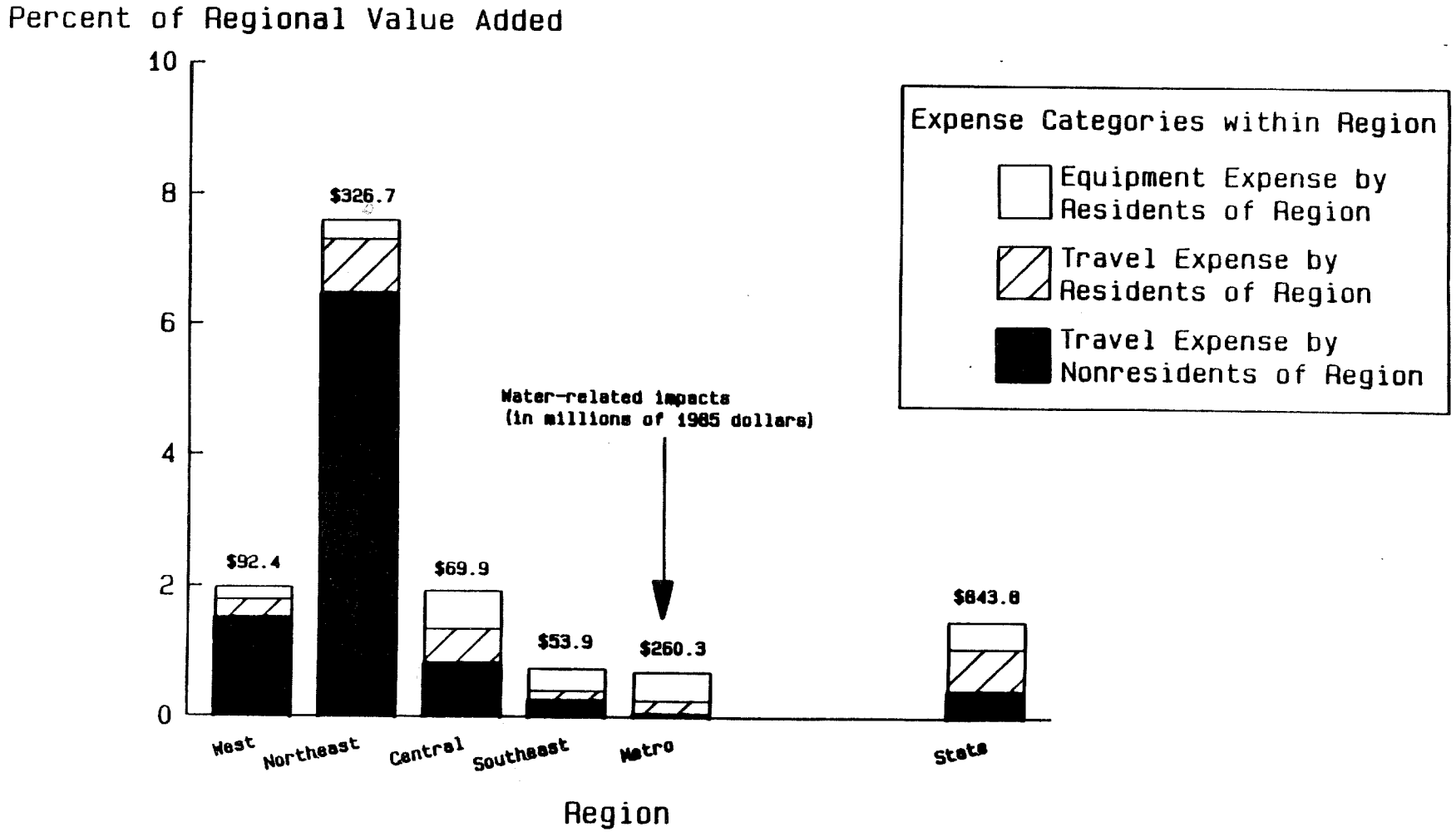


Source: Derived from processing data in Figure 9 through the IPASS Input-Output Model.

Bar-5/1

Figure 12

Percent of Regional Value Added Accounted for by Direct Plus Indirect Impacts of Water-Related Outdoor Recreation Expenditures



Source: Derived from processing data in Figure 9 through the IPASS Input-Output Model.

Bar-6/1

versus $326.7 million), but 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 represent export-based income for the regional economy. Nonresident impacts were smaller in the Central Region, and were smaller still in the Southeast and Metro Region.

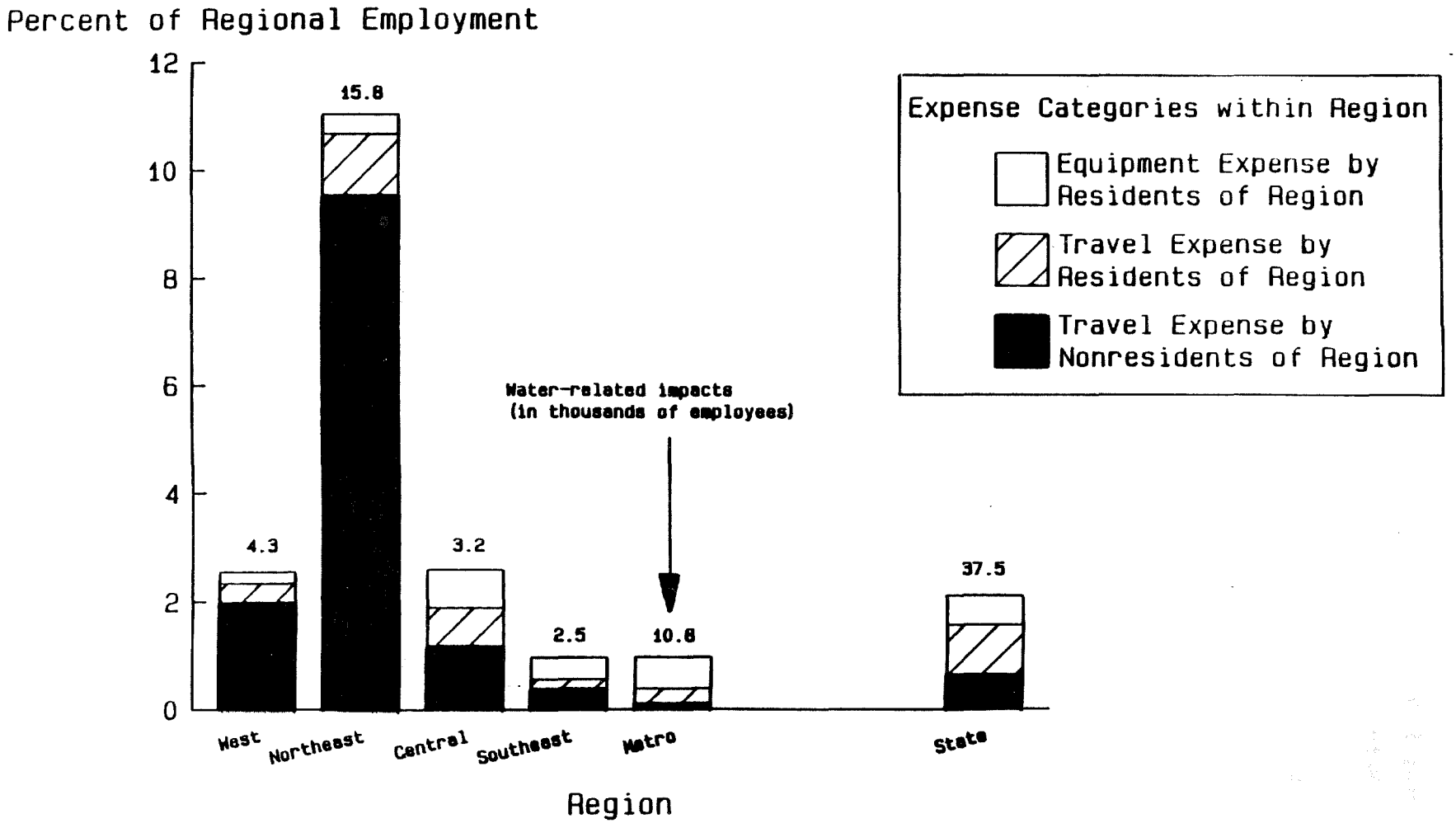
Direct Plus Indirect Impacts on Total Employment

Employment is 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. Water-related outdoor recreation expenditures accounted for between 1.0% and 2.6% of total employment in each region, except in the Northeast, where they accounted for 11.0% of total employment (Figure 13). The Northeast, once again, was far above the other regions and the state, the latter of which had 2.1% of total employment accounted for by these expenditures. Although the number of Metro jobs due to these expenditures was near that of the Northeast (10.8 thousand and 15.8 thousand jobs, respectively), the larger total employment in the Metro Region gave a much smaller relative impact.

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

Figure 13

Percent of Regional Employment Accounted for by Direct Plus Indirect Impacts of Water-Related Outdoor Recreation Expenditures



Source: Derived from processing data in Figure 9 through the IPASS Input-Output Model.

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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.

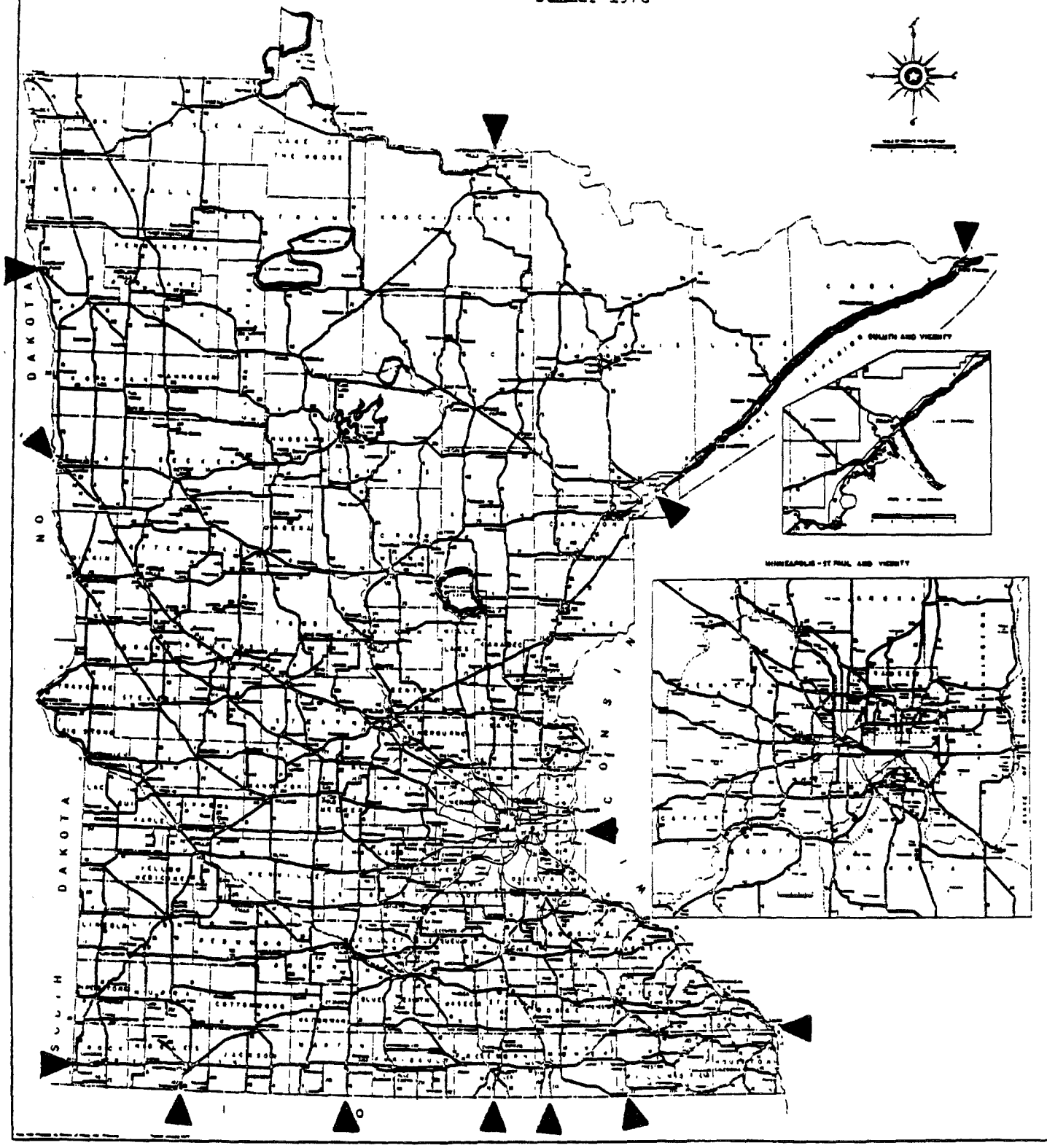
SAMPLE UNIT:	Visitor party.
CONTACT METHOD:	Random road blocks of major routes into Minnesota.
SAMPLE SELECTION METHOD:	All non-resident, non-commercial vehicles are sampled. Non-recreational parties are allowed to pass. All recreational parties are given diaries to complete during their stay in the 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 POST

DATE: ___/___/___/___ (1 2 3 4) RECORDER _____ I.D.# ___/___ (5 6) TIME: ___/___/___/___ (7 8 9 10)

LOCATION _____ CODE # ___/___ (11 12) PAGE _____ OF _____

NON-COMMERCIAL		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
Sedans and Wagons 1 (13)	IN State	14	17	20	23	26	29	32	35
	OUT of State	38	41	44	47	50	51	56	59
VAN 2 (13)	IN State	14							
	OUT of State								59
Pickup Camper Cabover 3 (13)	IN State	14							
	OUT of State								59
Pickup Shell 4 (13)	In State	14							
	OUT of State								59
Pickup 5 (13)	IN State	14							
	OUT of State								59
Motor-home 6 (13)	IN State	14							
	OUT of State								59
		Motorcycle 61 62 63		Commercial Truck/Buses 64 65 66		Commercial Cars, Vans, etc. 67 68 69		Other 70 71 72 73	

INITIAL CONTACT FORM

PAGE ___ OF ___

DATE ___/___/___ (1 2 3 4) INTERVIEWER _____ ID # ___ (5 6) LOCATION _____ ___/___ (7 8)

TIME OF CONTACT		SEQUENCE NUMBER				VEHICLE CLASSIFICATION V	TR	C/CT		BOAT 1st	2nd	MOTOR 1st	2nd	HOME OF PARTY (ZIP CODE)					PURPOSE OF TRIP R	B	VFR	O	# IN PARTY A	TN	CLD	# OF OVER NIGHTS		OVERNIGHT ACCOMODATIONS R	H/M	CC	PC	PR	O	QUESTIONNAIRE NUMBER					
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

VEHICLE
1. Passenger car/station wagon
2. Pickup
3. Pickup campershell
4. Pickup camper over cab
5. Motor home
6. Van
7. Motorcycle
8. Bicycle
9. Other

TRAILER
1. Travel trailer
2. Tent camper
3. Fifth wheel camper
4. Boat trailer
5. Motorcycle trailer
6. Horse trailer
7. Utility trailer
8. Other
0. NONE

CARRIER/CARTOP
1. Boat
2. Canoe/kayak
3. Bicycle
4. Motorcycle
5. Luggage
6. Other
0. NONE

BOATS
1. Outboard
2. Inboard/ stern drive
3. Canoe/kayak
4. Sailboat
5. Houseboat
6. Pontoon boat
7. Other
0. NONE

MOTOR
1. Less than 25 hp
2. 25 - 75 hp
3. Over 75 hp
4. NOT ABLE TO DETERMINE hp
0. NONE

PURPOSE OF TRIP
R. Recreation
B Business
VFR. Visit friends or relatives
O. Other

CODE:
1 = Mentioned
9 = Not mentioned
0 = Refused

OVERNIGHT ACCOMODATIONS
R Resort
HM Hotel/motel
CC Campground
PC Private cabin
PR Private residence
O Other

WELCOME TO MINNESOTA

VISITOR'S RECREATION DIARY

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 _____ / _____ (mo / day) RECORD ODOMETER MILEAGE AT POINT OF ENTRY TO MINNESOTA _____

HOME TOWN _____ STATE _____ ZIP CODE _____

WHERE DID YOU STAY THE NIGHT BEFORE YOU ENTERED MINNESOTA? CITY/TOWN _____ STATE _____

AT WHICH STATE BORDER DID YOU ENTER MINNESOTA? WIS ( ) IOWA ( ) S. DAKOTA ( ) N. DAKOTA ( ) CANADA ( ) WHICH HIGHWAY? # _____

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

	FIRST NAME	AGE	SEX		FIRST NAME	AGE	SEX		FIRST NAME	AGE	SEX
1.			M F	4.			M F	7.			M F
2.			M F	5.			M F	8.			M F
3.			M F	6.			M F	9.			M F

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 number of the activity from the activity list	PERSON(s) Enter the first name of each person participating in the activity	LOCATION Give the name of the nearest 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
		$				$	

CONTINUED ON REVERSE SIDE

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 ACCOMODATIONS (camper, tent, travel trailer, motorhome, cabin, hotel/motel, resort, 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) _____.

AT WHICH STATE BORDER DID YOU EXIT FROM MINNESOTA? WIS ( ) IOWA ( ) S. DAKOTA ( ) N. DAKOTA ( ) CANADA ( ) 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.

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

BUSINESS REPLY MAIL No postage stamp necessary if mailed in the United States

Postage will be paid by

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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Minneapolis, MN 55455
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Prepared by: R. Michael Madell

DNR CONTINUOUS SURVEY-YEAR END SUMMARY REPORT

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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

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.

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:

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).

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

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

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 of 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.

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.

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

	Number of Digits in Code						
	1	2	3	4	5	6	7
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:

First Digit	Classification
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:

1	0	2	0	2	0	5
a	b	c	d	e	f	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

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:

2	6	2	0	0	1	3
a	b	c	d	e	f	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:

3	6	2	1	3	6	8
a	b	c	d	e	f	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

"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.

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

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".

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:

Quarter	Start Date	End Date
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.

Table 1

FINAL SAMPLE STATUS-BY QUARTER

	1	2	3	4	Total
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	73	105	156	167	501
TOTALS	2058	1901	2782	3079	9820

Table 2
COMPLETIONS BY RECREATION CODE

	Rec/No Expenses	%	Rec w/ Expenses	%	No Rec	%	Qtr Total
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	682	.38	713	.39	409	.23	1804
TOTALS	2265	.39	1538	.27	1933	.34	5736

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).

APPENDIX A:

SURVEY INSTRUMENT

(QUARTERS 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 in any outdoor recreation activity in Minnesota in the last seven days?

Yes. 1
No 2
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 Yes	No	DK	License Yes	No	NA	Hunting 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?

(A TRIP TAKES YOU AWAY FROM YOUR LOCAL COMMUNITY)

Yes 1
No 2
(IF NO, GO TO 3)
DK . . . 8
RA . . . 9

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 Yes	2c. REC TRIP No	2c-1 MAJOR ACTIVITY	ACTIV. CODE	2d. LAST 7 DAYS Yes	2d. LAST 7 DAYS No	2d-1 WHEN STARTED	2e. TOTAL DAYS	2f. TOTAL PEOPLE
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
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __
__ __	__ __	__ __	________	__ __ __ __ __ __ __	$__ __ __

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?

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

	WHAT WAS PURCHASED								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)

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 1984 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 1984 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 1984 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

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 Yes	No	OCCUPATION	OCC. CODE
_____	___	___	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)

APPENDIX B:

SURVEY INSTRUMENT

(QUARTERS 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.)

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 in any outdoor recreation activity in Minnesota in the last seven days?

Yes 1
No 2
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 Yes	Fishing No	Fishing DK	License Yes	License No	License NA	Hunting Yes	Hunting No	Hunting 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 Yes	2c REC TRIP No	2c-1 MAJOR ACTIVITY	ACTIV. CODE	2c-2 LAKE/RIV IMPORTANT Yes	2c-2 LAKE/RIV IMPORTANT No	2c-2 LAKE/RIV IMPORTANT NA	2d LAST 7 DAYS Yes	2d LAST 7 DAYS No	2d-1 WHEN STARTED	2e TOTAL DAYS	2f TOTA PEOP
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

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 = 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 Yes	No	NA	Concurrent Recreation 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

(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 8 P 7)

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
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __
__ __	__ __	__ __	____________	__ __ __ __ __ __ __	$__ __ __ __

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?

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

	WHAT WAS PURCHASED								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)

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

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 Yes	No	OCCUPATION	OCC. CODE
_____	___	___	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)

APPENDIX C:

CONTACT RECORD

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 - _____ _____

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

TIME START _____

TIME END _____

LENGTH IN MINUTES _____

EDITING TIME (MINUTES) _____

SUPERVISOR _____

INTERVIEWER # _____

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)

*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

WINTER ONLY (OCTOBER 10 - MARCH 15)

*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 INFREQUENT 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

CODE	CATEGORY	EXAMPLES
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)

APPENDIX F:

SPECIAL FACILITIES CODES

Facility Group	FACILITY Code	FACILITY Name	COUNTY Name	COUNTY Number
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 WLIFE 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

Facility Group	FACILITY Code	FACILITY Name	COUNTY Name	COUNTY Number
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	KITTSON	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

Facility Group	FACILITY Code	FACILITY Name	COUNTY Name	COUNTY Number
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