

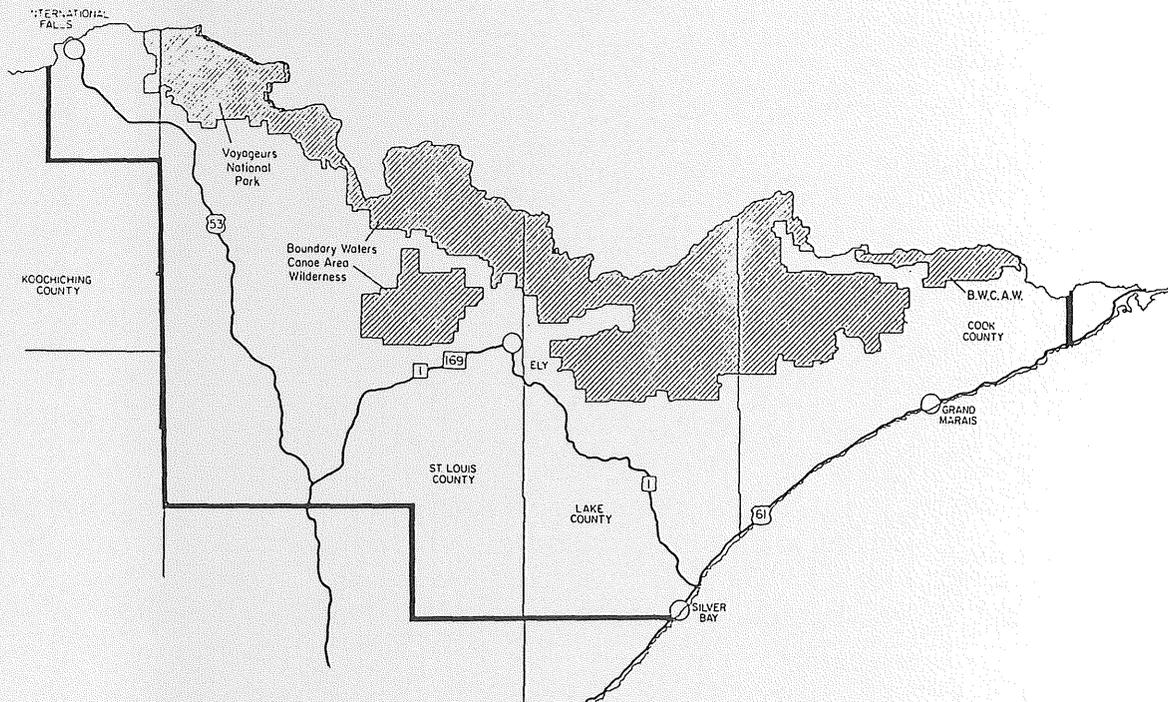


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RECREATION DEVELOPMENT OPPORTUNITIES

EDGE-OF-THE-WILDERNESS AREA



Final Report

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

OFFICE OF PLANNING

July 1985

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Minnesota Department of Natural Resources
Office of Planning

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INTRODUCTION

INTRODUCTION

This report was prepared to address a need for comprehensive information on recreation development opportunities on lands and waters administered by the Department of Natural Resources in northeastern Minnesota. The abundance of natural resources in this region, much of which are in public ownership, has long made it a popular destination for recreationists from Minnesota and surrounding states. Residents of the area traditionally have had a strong dependence on natural resources for their livelihoods--primarily through timber harvest, mining and recreation-based industries such as resorting and outfitting.

With recent declines in the region's mining industry, no growth in the wood products industry and technological changes that have made wood products less labor intensive, more attention is being focused on the economic importance of recreation. At the same time, uses of public lands have been affected by boundary and management changes. A considerable area of land came under federal management with the establishment of Voyageurs National Park in 1975, and the Boundary Waters Canoe Area was redefined in 1978 when it became part of the National Wilderness Preservation System. Restrictions on use of motorized vehicles in the BWCAW have affected outfitting and resort operations and other businesses in the periphery area. As a result of these and other developments, the Department of Natural Resources is more frequently called upon to identify and develop recreation opportunities that contribute to local economies and help promote the area's attractiveness to in-state and out-of-state tourists.

To address these concerns, the following approach was taken in this report:

1. Generate a list of recreation development ideas through interviews and brainstorming sessions with DNR staff from St. Paul, Grand Rapids, Ely, Grand Marais and International Falls; Superior National Forest staff from Duluth and Grand Marais; and Voyageurs National Park staff from International Falls.
2. Gather and synthesize existing information on recreation use, recreation facilities, recreation-related natural resources and current recreation-related management from a variety of sources within the DNR (divisions of Fisheries and Wildlife, Forestry, Parks and Recreation, the Trails and Waterways unit, and the Office of Planning).
3. Research available information on recreation management in the area, trends in recreation use and the economic importance of recreation to the region from sources within the DNR and outside the department (Superior National Forest, Voyageurs National Park and organizations such as the University of Minnesota Agricultural Extension Service).

In meetings to brainstorm development ideas, DNR staff were asked not to let their thinking be influenced by consideration of current funding or management policies. In compiling ideas for this report, no judgements were made with respect to their value or the feasibility of implementing them. As a consequence, the reader may encounter conflicting ideas and suggestions for developments that would not conform to the current management practices of any DNR division (for example, the idea that modern campgrounds should be provided on state land).

This report is not intended to be a plan for recreation development on state land in the area. Its purpose is to present recreation development ideas and compile the kinds of information that would assist in evaluating ideas. With this background, further steps may be taken to identify prime development opportunities and evaluate their feasibility in relation to funding and management considerations.

CHAPTER ONE
THE STUDY AREA

THE STUDY AREA

For purposes of this report, the Edge-of-the-Wilderness area has been defined as a band approximately 30 miles wide extending roughly from Voyageurs National Park to slightly south of McCarthy Beach State Park and east to Lake Superior (map 1). It encompasses all of Cook County and portions of St. Louis, Lake and Koochiching Counties, but excludes land within the boundaries of the BWCAW and Voyageurs National Park. While the Iron Range is closely tied to the study area in many respects, it was not included because its land use and topography do not correspond with the northwoods and lakes character of the BWCAW and Voyageurs periphery area. Many of the same recreation opportunities exist in the periphery area as are found within the BWCAW and Voyageurs National Park, but without restrictions on motorized use and with a greater level of development permitted.

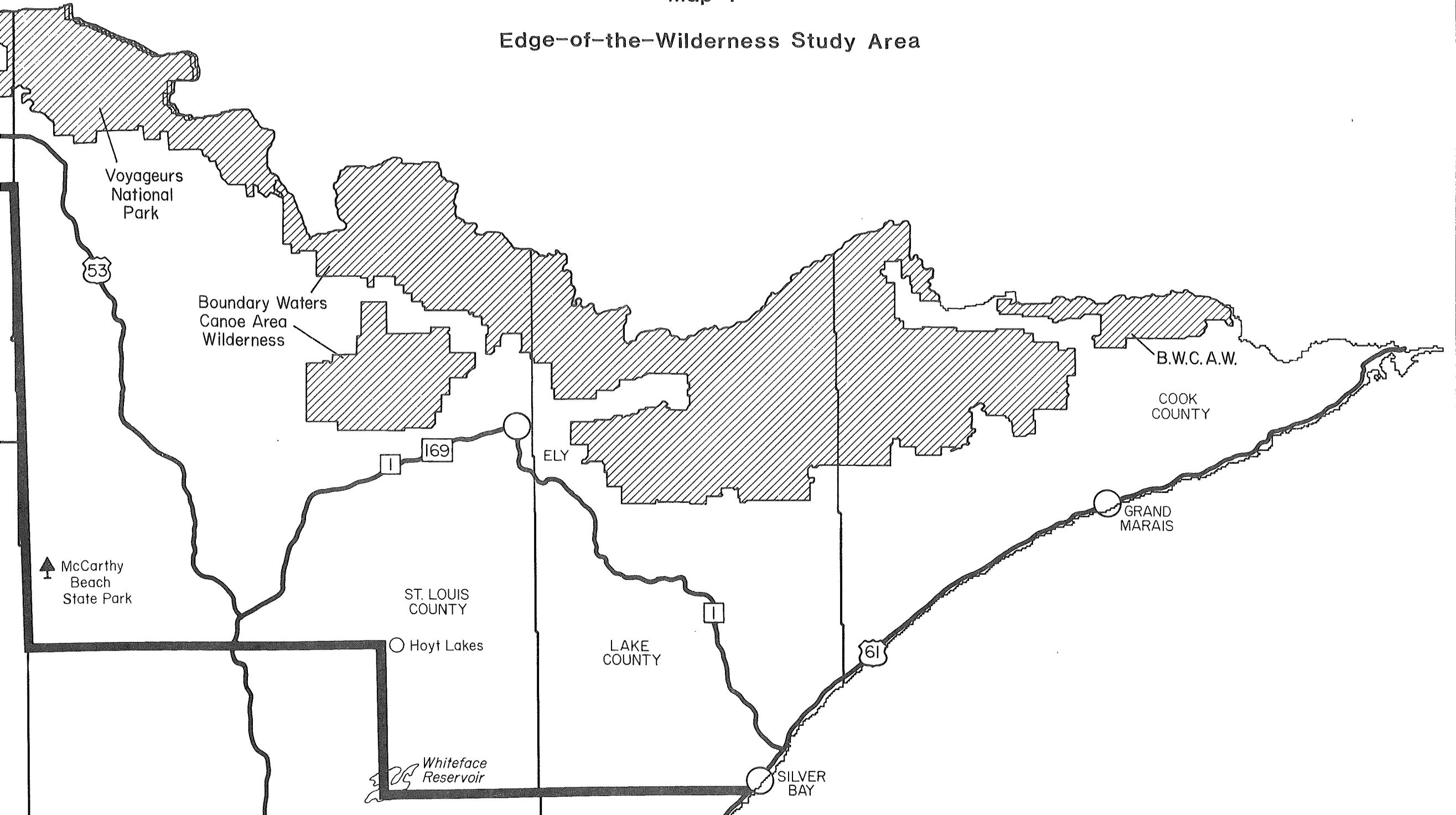
Population

Population of the study area in 1980 was 42,755 people, about 1 percent of total Minnesota population. The 1980 average population density of 6.75 persons/square mile of land area is indicative of the area's rural, northwoods character. In comparison, the state's average population density is about 50 persons/square mile. Major population centers in the study area include Grand Marais, Ely, International Falls, Cook, Tower, and Orr. Of these, International Falls is the largest, with a population of 5,611 in 1980.

In contrast to the projected 7.2 percent increase in population statewide by 1990, the population of the four counties that the study area is within is projected to decrease by 4 percent (a population loss of 10,180 people).

Map 1

Edge-of-the-Wilderness Study Area



Land Ownership and Administration

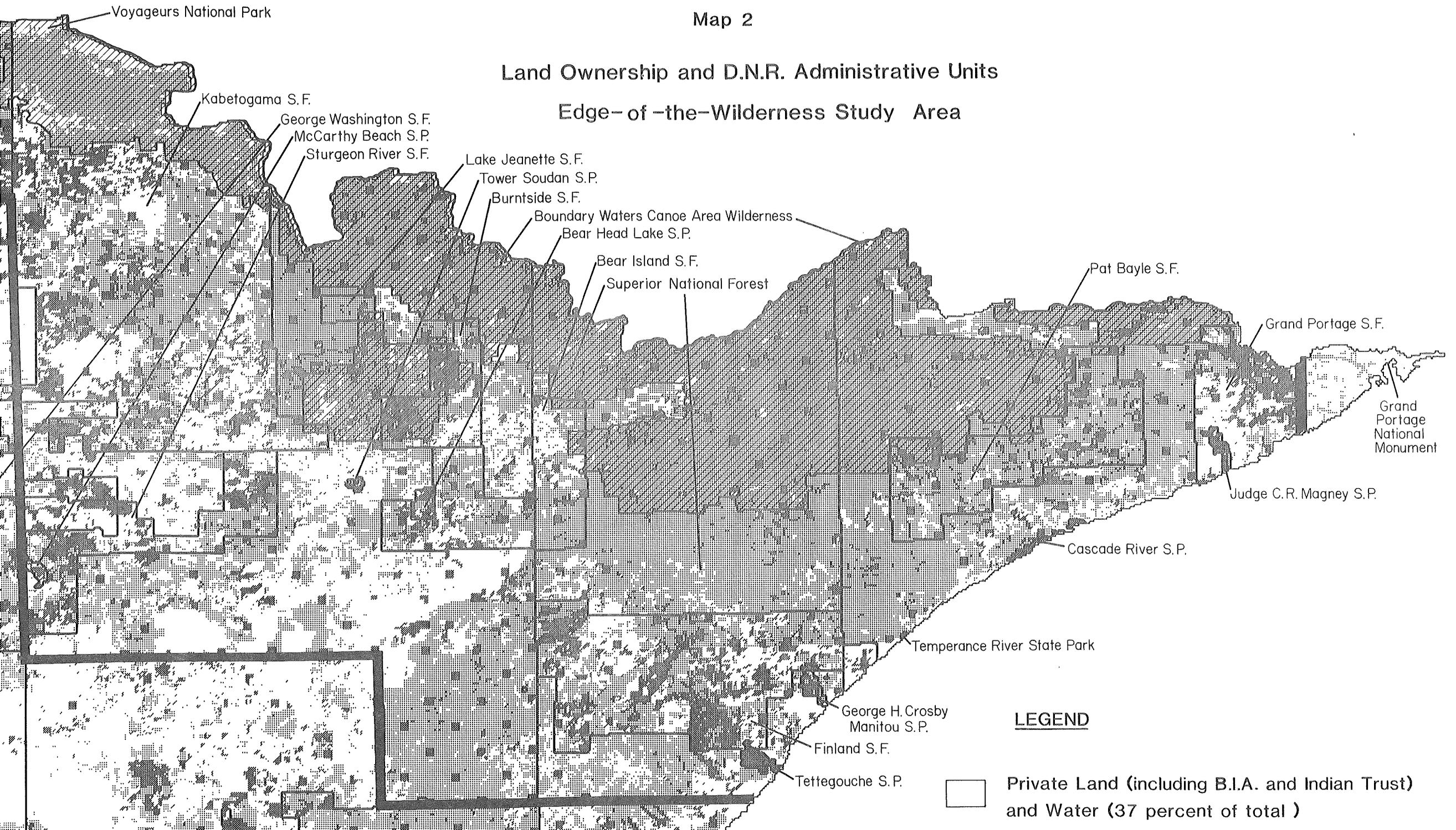
The Edge-of-the-Wilderness area comprises a total of about 3.7 million acres, of which 2.5 million acres (67.5 percent) are in public ownership. The federal government administers the majority of public land--about 39 percent of the total, most of which is within the Superior National Forest. The state administers 18 percent of the total land area and other public agencies, such as counties, 10.5 percent. Map 2 shows land ownership in the study area, along with DNR-administered recreation lands.

The Department of Natural Resources administers 99 percent of state land in the study area. The majority of the DNR lands are administered by the Division of Forestry. State trails, the grant-in-aid trail program, canoe and boating routes and water accesses in the study area are administered by the Trails and Waterways Units. State parks are administered by the Division of Parks and Recreation. The Division of Fish and Wildlife manages the fisheries resources of lakes and streams in the area, assists in management of wildlife habitat on public lands, administers one wildlife management area and one scientific and natural area, and has regulatory authority over wildlife populations on both public and private land. Other DNR divisions, such as Minerals and Waters, also administer resources in the study area, but their management responsibilities do not focus on outdoor recreation.

The prime recreational property in the study area is lakeshore. The largest share of shoreland on large lakes (those over 145 acres in size outside the BWCAW) is in the public domain (55 percent of 2,900 shore miles), an ownership pattern largely consistent with the region's overall land ownership pattern. The federal government is the dominant public lakeshore administrator, with 75 percent of public frontage, followed by the state, with 17 percent. Most state-owned lakeshore is administered by the DNR and most federal lakeshore by the U.S. Forest Service.

Map 2

Land Ownership and D.N.R. Administrative Units Edge-of-the-Wilderness Study Area



CHAPTER TWO
DEVELOPMENT IDEAS

DEVELOPMENT IDEAS

In meetings held to gather development ideas, one common theme appeared repeatedly: more could be done to capitalize on the study area's recreational resources, both by developing a greater diversity of opportunities and by providing more and better information about them. Many of the ideas involve building upon existing opportunities for such activities as fishing, camping and boating, which form the mainstay of the area's recreation base. At the same time, a number of people identified a need to round out opportunities in these base activities with opportunities for such things as naturalist-guided hikes, boat tours, visiting interpretive centers and other packaged activities. There was widespread consensus that more comprehensive information on state, federal and private recreation opportunities in the study area is needed. In addition, many people identified a need for better knowledge about the area's recreational market; such knowledge would help decide the kind of information that should be packaged and would assist in targeting promotional efforts.

For purposes of discussion, the development ideas have been grouped in the following categories: Information, Marketing and Promotion; Fisheries/Access; State Parks, Campgrounds and Resorts; Trails; Boating and Canoeing; Interpretive and Education Programs; Wildlife Observation and Hunting; and Other Ideas.

Information, Marketing and Promotion

The needs for better information on existing recreational opportunities in the study area and for better marketing and promotion of those opportunities were dominant themes at all meetings held to gather development ideas. Individuals in the DNR, the U.S. Forest Service and National Park Service said there is a particular need to coordinate the marketing and promotion efforts of different agencies and the private sector and to provide "packaged" information on facilities and activities available on public and private lands. In general, people expressed the opinion that joint, public-private promotional efforts would increase use of all facilities, whatever their ownership or administration.

Information

A number of people said that many simply are not aware of the numerous recreational opportunities available in the study area. This was attributed in part to a lack of comprehensive maps, brochures and other informational literature to identify and promote opportunities but also to the fact that in many areas there is not adequate signing to indicate the location of lakes, trails, water accesses, campgrounds and other facilities. In the Ely area alone, it was estimated that more than 100 signs could be placed to mark the location of facilities. The suggestion was made that volunteer support could be enlisted to make and place signs.

In addition, the information that is available is not always readily accessible to visitors. For example, information on recreation opportunities in Superior National Forest is available from the USFS Recreation Opportunity Guide and on Superior National Forest maps, but this information must be requested from the agency or obtained from forest headquarters. (A number of the Recreation Opportunity Guides have been distributed to resorts and are updated as more

information becomes available.) Also, there is a \$1 charge for forest maps. A Forest Service official said that the agency believes lack of knowledge about opportunities in the national forest affects campground use; the highest occupancy rate of national forest campgrounds in the Grand Marais area, for example, is 57 percent.

While a number of maps and brochures are available on DNR campgrounds, parks, trails and other facilities, in many cases the maps or brochures show only one type of facility or only the facilities within a small area. The need to provide information on educational/interpretation programs and other opportunities in the public and private sectors along with facility information was also stressed.

There were several suggestions for ways comprehensive information could be provided:

- a) Develop an index system for all of the opportunities and facilities available on public and private lands (possibly a computerized system with terminals in such places as rest areas and visitor information centers).
- b) Develop information packages that segment opportunities in the study area by road network (i.e. opportunities and facilities associated with the Echo, Sawbill, Caribou, Gunflint and Arrowhead trails).
- c) Provide oversized maps showing public-private recreation facilities and opportunities at rest areas, information centers and key intersections. The maps could be under roofs or in hut-like structures, with space for brochures, printed maps and other promotional literature.
- d) Publish maps with comprehensive information.

While the need for additional information was clearly stated, concern was also voiced about the quality of that information. Some felt that if a large amount of information were generated, users may be presented with too many choices.

Considering this, it would be important to focus on quality opportunities and package information that anticipates users lodging and eating needs as well as outdoor recreation interests.

Marketing/Promotion

Specific needs were identified for promotional information on: fishing opportunities, accesses, scientific and natural areas, state trails and other trails, and canoe routes (particularly if individual rivers are further promoted). People expressed opinions that fishing opportunities, the North Shore Trail, and cross-county skiing, in particular, could be better promoted.

The suggestion was made that day trips to mining areas and historic sites of the Iron Range should be included in promotional efforts. While such opportunities are outside the study area boundaries, the Iron Range region is closely tied to the study area, is rich in history, and is near enough to accommodate one-day tours.

Several individuals expressed the need to better identify the study area's recreational market in order to better direct promotional efforts. The "Recreation Use and Expenditures" chapter of this report provides statistics on level of participation in different recreation activities, resident and nonresident participation in key activities, and resident and nonresident recreation markets. Research that would provide a profile of recreational users in the study area was suggested.

The state's Office of Tourism is involved in several programs to provide marketing and financial assistance to Minnesota resorts, and is developing a computerized information system on private recreational facilities statewide. DNR maintains a computer data base on public recreation facilities, through the Trails and Waterways Unit and divisions of Forestry and Parks and Recreation.

Fisheries/Access

Most ideas for developments that would benefit recreational fishing in the Edge-of-the-Wilderness fall within two categories: those pertaining to lake and stream management and those dealing with access. Individuals from the field, region, and central office emphasized the interrelationship between access and management and expressed concern that additional access to lakes and streams should be backed up with resources for more intensified management to accommodate increased fishing pressure. The need for better information on fishing opportunities was also identified.

Access

Central office staff and field personnel throughout the study area expressed a need for increased road and trail access to perimeter lakes and for increased funding to maintain existing access. A number of access needs involving varying levels of development were identified: providing ramps at large lakes, brushing out existing trails to small lakes, constructing new trails, improving and better maintaining existing accesses, constructing spurs off existing roads, building new water access sites. Existing access priorities could help guide access development efforts.

The Trails and Waterways Unit is particularly concerned with problems created by multiple land ownership. Multiple land ownership creates a barrier to access development, and intergovernmental agreements, land exchanges and other cooperative efforts are often needed to develop access. Actions to streamline and facilitate such cooperative arrangements would permit more rapid development of access in the area.

Lakes and Streams: In the International Falls area, the particular need for trail access to trout streams was identified. In the Ely and Grand Marais

areas, there is concern for the availability of access to good fishing lakes, particularly lake trout lakes and lakes offering quality alternatives to lake trout fishing.

Most of the region's good lake trout waters are within the BWCAW, where motorized access is now limited. This has created greater demand for lake trout fishing outside the BWCAW, where there are fewer opportunities. The majority of this demand is from area residents: an estimated 90 percent of winter lake trout fishing in the Ely area is from local anglers; in the Grand Marais area, about 45 percent is from local anglers. Fisheries personnel voiced concern that providing access to lake trout lakes outside the BWCAW would invite overfishing and said that special regulations may be necessary to maintain the quality of the fishery (see Fisheries/Access "Management" section for further discussion).

Other ideas included:

- a) brushing out trails to small lakes;
- b) providing access that would permit people to trailer boats from one lake to another;
- c) seeking cooperation from the Forest Service to make more lakes within Superior National Forest accessible by snowmobile and road; and
- d) developing trailered boat access on the larger lake trout lakes.

Lake Superior: With the Lake Superior lake trout population increasing, there is greater interest in this fishery resource. Charter services will be in greater demand, and the suggestion was made that more could be done to make the lake accessible from shore. Sportsmen's clubs and DNR personnel could provide ideas on good locations for additional piers. Needs for more boat access and harbors of refuge on Lake Superior also were identified.

Access Priority Lists: DNR regional and field personnel have worked with local residents and Superior National Forest staff to identify water access priorities in the region, excluding Lake Superior. Because of the different water access development programs of the agencies, separate DNR and USFS lists were established, with agreement that on a short-term basis DNR will work toward developing sites outside Superior National Forest and the USFS on developing sites within the forest. Because of budget limitations, efforts to develop access to priority lakes will take a number of years. With increased funding, these efforts could be accelerated. The priority lists appear in Appendix A.

Management

Fisheries personnel throughout the area suggested that lakes and streams could be managed for a greater diversity of fishing opportunities and that these opportunities could be better promoted. While the area's walleye, lake trout and northern pike draw thousands of anglers a year, creating more fishing opportunities and awareness of bass, panfish, trout species and other fish would add to the area's appeal. A number of people felt that while the region is a popular fishing destination, not all recreationists in the area are on a serious fishing vacation. A greater diversity of opportunities would be particularly appealing to people who want to fish but who don't come to the area only to fish.

Diverse Opportunities/Special Regulations: In the Ely and Grand Marais areas, rainbow trout, brook trout and splake have been stocked to provide opportunities for snowmobilers displaced from lake trout lakes in the BWCAW, and these efforts have been well received. Opinions were voiced that lake trout fisheries in the periphery zone could be managed as "trophy" waters, with special regulations on the size and number of fish taken. This would help preserve the quality of the fishery and provide a unique fishing opportunity that could be promoted.

Opinions were also expressed that more smallmouth bass and northern pike lakes could be managed with liberalized limits on stunted fish. At the Grand Marais meetings, the example was cited of a resort that last year took children on afternoon bass fishing excursions. The activity proved surprisingly popular with adults as well as children; it provided an opportunity for the inexperienced and not-so-serious angler to have some good fishing action and catch fish fairly easily. The idea was raised that warm-water streams could also provide similar fisheries for existing species or species such as rock bass, which could be introduced.

In the International Falls area, there are adequate fishing opportunities for northern pike, smallmouth, crappie, sauger and walleye--but these fisheries could be better promoted.

Intensified Management: A number of fisheries personnel expressed the need for intensified management (stocking, reclamation and special regulations) at individual lakes where improved access has resulted in greater fishing pressure. This is true of walleye and stream trout lakes as well as lake trout lakes. Creel censuses and surveys to find out where people are fishing and what they're catching would help identify waters that should be managed more intensively. (In the Ely area, an aerial survey to identify heavily used lakes was suggested; in a past survey, five flights were made each week from May 15 - October 15 at a total cost of \$10,000.)

To support plans already in place for walleye management, fisheries personnel in the Grand Marais area identified the need for local hatching capacity. A small 2-battery walleye hatchery was suggested for the Gunflint Trail area. In the Ely area, more large walleye fingerlings are needed. (Fingerlings need to be transported from southern Minnesota because fry grow slowly in Ely area nurseries and have a low rate of survival.)

In the International Falls area, fisheries personnel expressed needs for stream improvement to control beaver in trout streams and for trail access to those streams. The streams mentioned are: Ash River, Lost River, Beauty Creek, Black Duck River, Kenmont Creek, Ninemile Creek and Fawn Creek.

Information on Opportunities

A number of people were of the opinion that more could be done to promote the area's fisheries resources and that there is a need for comprehensive information on fishing opportunities. The area fisheries supervisor in the Ely area has compiled information on the location, fish species, access and facilities of lakes in St. Louis County, along with comments on the quality of fishing anglers might expect. Such information is well suited to publication and is included as Appendix B to this report. Similar publications are available for Lake and Cook counties.

State Parks, Campgrounds and Resorts

The opinion was expressed that more could be done to offer a broader range of overnight accommodations in the periphery area and that recreational opportunities at state parks could be further developed. While there are many opportunities for primitive camping experiences in the area, many people identified the need for more developed campsites, and felt that the state, as well as private campground operators, should provide such opportunities. Greater development of some campgrounds, along with diverse recreation opportunities in and around state park and state forest campgrounds, would add to their appeal and attract the type of user who may be looking for more amenities and activities than are presently found at the majority of DNR or National Forest campgrounds. The need for more high-quality resort accommodations in the private sector was also identified.

Campground Development

In the International Falls area, the need for a campground in Kabetogama State Forest off Highway 53 between Cook and the Canadian Border was identified, especially to serve people traveling to and from Voyageurs National Park. Because there is no clearly identified camping facility along this route, it is believed that a number of people travel through to Canada. Even if Canada is their ultimate destination, they may stop to spend time in the area if a camping facility were available. A clearly-marked campground that is easily accessible from a main road and that has electrical hookups, water and flush toilets would help meet needs for RV and destination-type camping opportunities.

Voyageurs National Park and DNR Forestry Division personnel have discussed the need for these types of facilities at Woodenfrog Campground on Lake Kabetogama, but Forestry Policy does not permit this level of development in forest

campgrounds. The park has plans for a more developed campground on Ash River Trail, but this development would not take place for 5-10 years and would depend on the availability of funding.

It was felt that such a campground did not need to be in a particularly scenic or special area--its most important features would be easy access and some conveniences. (While improvements have been made at Woodenfrog Campground near Voyageurs and facilities there have been expanded, it still has no flush toilets and is located some distance from Highway 53.) The suggestion was made that a campground along this route--and perhaps other campgrounds in state parks and state forests--could be operated by concessionaires. Last year concessionaires operated several Superior National Forest campgrounds, and this year they will operate 11 or 12 national forest campgrounds. Forest officials believe this will save on operating costs and provide better service to campers.

The presence of such a facility on state land in the area would complement development efforts underway at Voyageurs National Park. Construction begins this year on phase one of a \$5 million visitor center on Rainy Lake that will be completed in 1987, and \$3 million is being put toward remodeling and additions at the Kettle Falls hotel complex within the park.

The need for campground development at Tower Soudan State Park and further campground development at Bearhead State Park was also identified. Staff in the Ely area say that Bearhead is frequently filled to capacity in July and August and with additional facilities could accommodate more users.

The suggestion was made that concessionaires could offer food, ice and other types of specialized services to tent campers in some DNR campgrounds.

More Diverse Opportunities in State Parks and Forests

In addition to a greater range of camping opportunities, a number of people felt that a wider variety of activities should be available at state parks and forests. For example, state forests have a good road network that could be developed as access and used as ATV and snowmobile trails. Trail opportunities in state forests will be evaluated in the Orr Unit Plan. With additional funding or volunteer efforts, more naturalist-guided hiking tours could be offered in state parks.

Resort/Hotel Accommodations

Ely area staff identified the need for a first-rate resort or hotel facility in that portion of the study area. They say that because of the present lack of such a facility, many people now get accommodations in Eveleth. Burntside Lake was suggested as a lake that would be particularly suitable to such a development because of its size and scenic beauty. Office of Planning staff have also identified DNR-administered lakeshore in the study area suitable for development of a facility such as a resort, based on criteria that have influenced recreational development in the private sector. The "Conclusions" chapter of this report contains further discussion of lakes with high resort-development potential.

While there are an estimated 248 resorts in the study area, many of these are small "ma and pa" operations with housekeeping cabins and marina and outfitting services. Through it's BWCAW resort buy-out program, the Forest Service has purchased 15-16 resorts in the study area, and it is anticipated that a total of 25-30 may eventually be purchased by the fall of 1985, when the buy-out program ends.

The availability of a diversity of opportunities on public lands near resorts enhances their promotional efforts; in like manner, the availability of

high-quality accommodations attracts more recreationists to public lands. A number of small resort operations throughout the study area have gone out of business in recent years. Others are working to upgrade their facilities, to provide a greater diversity of services and to extend their season into the spring and fall months by catering to meeting and convention business and promoting such activities as fall fishing, hunting and interpretive programs.

There are successful winter resort operations in the study area, and several resorts are reported to have more winter use than summer use. Some resorts in the vicinity of Voyageurs Park have started offering snowmobile vacations, and resort associations have been formed to jointly promote that area for both summer and winter recreation.

Trails

It was generally agreed that the study area has the framework of a good trail system, but that more could be done to build a more extensive and higher quality trail network for both winter and summer use and to promote trail opportunities.

Mark and Maintain Trails

A number of individuals at meetings in Duluth, Grand Marais and Ely said there is a need to better identify and maintain trails. While there are a number of trails in Superior National Forest, many are not marked or maintained. In the Grand Marais area, the comment was made that national forest trails are maintained by being used, and it is the users (most of whom are local residents) who groom trails and clear brush. While the DNR has brushed out trails to some small lakes, it was felt that further efforts to clear and mark trails on both DNR- and USFS-administered land would encourage more use.

Further Develop Trail Opportunities

Central office staff identified the need to develop and promote high-quality weekend trail experiences. The Trails and Waterways Unit has identified and is evaluating such opportunities (candidate routes for designation as Explore Minnesota Trails). These trails, which will serve skiers, bicyclists, snowmobilers, hikers, and horseback riders, will represent the best of trail opportunities in three landscape regions that are all or partially within the study area (the North Shore Highlands, Border Lakes and Agassiz Lowlands). They may cross lands under different jurisdictions and are along routes where user services are available. Appendix E shows candidate backpacking, bicycling and snowmobiling trails.

The need for more loop trails in state parks and more connecting trails that would accommodate ski-through, hike-through and town-to-town snowmobiling use was also identified. While these activities have been promoted, many felt that the opportunities are not adequate to support the promotion.

The particular need for development of hiking trails along the North Shore was identified. While the North Shore Trail provides an excellent framework for a trail system in the area, it was felt that constructing trails that would connect with the North Shore Trail would create a better trail network, make the North Shore Trail more accessible and provide opportunities for a broader base of users. Rerouting of the North Shore Trail to provide more scenic views of Lake Superior was also suggested.

Field personnel also identified the need for more snowmobile routes, especially in the Ely-International Falls area. When the Tower to International Falls State Trail is completed, there will be additional opportunities for town-to-town snowmobiling, and snowmobile opportunities in the periphery area will be linked with those in Voyageurs National Park. The Park Service has constructed more than 100 miles of snowmobile trails in Voyageurs, and over the next three years will direct \$8 million toward development of a major trail system in the park. Some resorts in the area of the park are offering snowmobile rentals, and trails in Voyageurs are being linked with DNR-administered Grant-in-Aid trails.

Mixed land ownership in the area has presented problems with completing the Tower to International Falls trail. The DNR Division of Forestry is addressing some of these problems in its Orr Unit Plan. A group in Crane Lake would like the trail to go near their town, and a Grant-in-Aid trail may be proposed by local groups to link the state trail with the community of Crane Lake.

The need for a link over the Tomahawk Trail for snowmobilers was also identified. This trail would link the North Shore Trail with the Tower-to-International Falls and Taconite trail systems.

Public/Private Cooperation

Many expressed the opinion that because of the complexities of land ownership and the benefits of trails to the private sector, efforts at trail development and promotion should be joint public-private efforts. For example, the ski-through concept would best be served by concentrating trail development near resorts. This is the approach the Forest Services has taken, and in many cases trails that have been constructed to serve resorts are maintained by resorts and citizen groups. (The Forest Service is constructing 52 miles of ski trails, primarily near resorts.)

Public-private cooperative efforts have been very successful in the Grand Marais area. The suggestion was made that volunteers (such as the Rovers hiking group or resort associations) could help with trail construction and be insured by the state, with the Forest Service supervising work efforts.

In addition, the private sector could use trails on public land to provide unique recreational opportunities. The example was given of an individual who obtained a special use permit from the Forest Service to offer overnight dogsled/winter camping trips to remote areas.

Promotional Information

A need for more comprehensive information on trail opportunities was also identified. Agencies, resort associations, community groups and other organizations offer a number of maps, but many show only isolated trail opportunities--for example, only the trails in a particular area, only one type

of trail, only the trails of a particular agency or group. In addition, many maps show only trail opportunities and not other private and public recreation opportunities and facilities in an area. The DNR's area services guide for the North Shore Trail is an example of the kind of information that is needed. It identifies private lodging and restaurant opportunities along with trail and places where snowmobile repair is available.

Boating and Canoeing

Canoeing

In the Ely area, the idea of resort-to-resort canoeing was popular. Field personnel identified a series of connecting lakes that are particularly suited to development of such an opportunity: a trip could begin at the north arm of Burntside Lake and continue through Little Long and Shagawa Lakes and, via a creek, to Fall, Garden, Farm, White Iron, and possibly Birch and Bear Island Lakes. At least one resort is situated on most of these lakes, and some have as many as six resorts.

The suggestion was also made that more connecting canoe routes could be identified in the periphery zone and that motorized portages could be offered in some places to provide opportunities for people who would not otherwise be able to manage portages.

Opportunities were also identified for canoeing and kayaking on the Brule River and for white-water rafting on the Vermilion, Stony, Cloquet and St. Louis Rivers. Staff felt that providing brochures and other types of information on these opportunities would be critical to their promotion, but pointed out that to be promoted with canoe and boating route program funds, rivers must be legally designated as canoe and boating routes, a process that can be complicated and time consuming. Trails and Waterways staff would like to be able to promote canoe and boating routes that are not legally designated.

It has been suggested that the border waters between Grand Portage and Lake of the Woods, also known as the Voyageurs Highway, should be designated a National Historic Trail (waterway). This may serve as another major attraction in the

region and provide opportunities for interpretation and education. The suggestion was also made that a grants-in-aid program could be established for canoe and boating routes.

Boat Tours

Boat tours were introduced at Voyageurs National Park last year, with tours of Rainy and Kabetogama Lakes tied in with activities such as hiking, river canoeing, picnicking, and nature interpretation. These types of combined-activity trips were very popular among park visitors, and there was 95 percent occupancy of the 15-person boat throughout the summer. The boat is operated by a concessionaire.

A similar opportunity for combining a boat tour with hiking and other opportunities was identified for the DNR's Gold Portage Wildlife Management Area on Black Bay (see discussion of ideas in "Wildlife Observation and Hunting" section).

Houseboating

The success of houseboating operations on Lake Vermilion, Rainy Lake, and Birch Lake spurred discussion of further development of this opportunity. Field personnel felt that Vermilion Lake is the only lake that is large enough to accommodate additional houseboats. There is substantial local opposition to houseboating, and the local planning and zoning commission is currently studying the situation. Opposition is in part attributed to the fact that the lake has few sandy beaches where boats can be brought to shore, and those that do exist are on private land. It was suggested that no further recommendations should be made regarding houseboating opportunities until the local study is completed. Other large lakes were also discussed, but their lack of suitable shoreline would limit development opportunities.

Lakeshore Recreation Areas

It was suggested that DNR should expand its array of lakeshore recreation areas to include public shoreland waysides. The waysides would provide picnic areas and rest facilities for boaters and canoers. Development of such facilities should be carried out in conjunction with existing state programs for development of public access to lakes and rivers, waysides, portages and campsites. The idea of shoreland waysides was also presented in SCORP (1985).

Lake Superior Harbors/Marinas

A number of individuals identified the need for marina and docking space on Lake Superior and for more harbors of refuge. More people are being attracted to the area through promotional efforts, but there is concern that facilities will not be adequate to accommodate the growing number of vacationers who are interested in boating.

Interpretive and Education Programs

Many individuals believe that the study area's cultural resources and the uniqueness of the boreal forest ecosystem provide excellent opportunities for interpretive and education programs--and that there is substantial interest in these types of programs. Guided nature hikes, wildlife observation, lectures, and educational displays providing information on the area's history and ecosystem would add diversity to the opportunities available and satisfy one of the criteria commonly identified as being important in choosing a vacation site: the desire to be educated and informed about the area visited.

Programs of this type that are already in place in the study area have met with much popularity. For example, last year the Forest Service started a program in which it recruited volunteer naturalists to work for resorts in the Grand Marais area. The naturalists guide activities such as wolf howling excursions, night canoeing, and moose observation. Forest Service officials said the program has been extremely popular, and it gives people visiting the area opportunities to do things they ordinarily wouldn't do. There is now more demand for naturalists than the agency can accommodate. (This year 11 naturalists will serve area resorts through the program.) The naturalist-guided boat/hike/canoe tours at Voyageurs Park also have been popular (see "Boating and Canoeing" section).

The suggestion was made that the DNR could start a program for training guides who could be knowledgeable about the study area's history, culture and natural environment. The Forest Service is working to establish a work-study/ intern-type program with schools as part of its resort naturalist program.

Field staff say there is a great deal of interest in wildlife. Last winter, a talk on moose in the Ely area drew 500 of the area's residents, and in the Grand Marais area, 115 people attended one Forest Service program on moose last year.

Staff in the Ely area said they had received a request for hatchery tours, but while this was not a practical development idea because such an opportunity would only exist for a short time each year, people may be interested in an aquarium and interpretive information on fisheries. An indication of the interest such an opportunity might attract may be seen in the popularity of the fish pond and aquaria at the Minnesota State Fair.

A search is in progress for a permanent home for the Minnesota Science Museum's wolf exhibit, and the suggestion was made that the exhibit could be placed somewhere in the study area. Other interpretive-education programs and displays, such as a fish aquarium, could be offered in the same place.

Wildlife Observation and Hunting

There was widespread agreement among field personnel that more could be done to provide additional hunting opportunities and to promote viewing of animals and their habitat, particularly unique species such as timber wolf and moose. The point was made that there are more moose, wolf and deer in the periphery zone than in the BWCAW, and that these species have great public appeal.

Wildlife managers expressed concern that aspen forest types are being replaced by spruce-fir/balsam types, which do not provide the seral-stage vegetation many of the area's wildlife species are dependant upon. Increased cutting or regeneration of aspen would benefit a variety of species and increase hunting opportunities. More controlled burning would also help achieve large-scale habitat conservation. With more intensive habitat management, managers say, unique, quasiwilderness hunting opportunities could be better promoted. Investments in habitat improvement could also benefit the local economy by providing jobs.

Wildlife Observation

The suggestion was made that special viewing areas could be identified for moose and wolf, with guided naturalist tours provided, and that those areas should be managed for purposes of wildlife observation. Moose and wolf also could be promoted through naturalist/education exhibits in visitor information centers.

There also is opportunity to promote places in the study area that have concentrations of diverse species and habitat. One such area identified is Gold Portage Wildlife Management Area, at the east end of Black Bay on Kabetogama Lake. It was suggested that 4- to 5-hour combination boat/hiking tours could be offered there in the afternoon and evening. People could be taken into the area

by boat, then hike a portage to Kabetogama Lake and back to a creek and bog area, with opportunities for nature study, berry picking and photography. A picnic dinner could be offered while the sun set on Kabetogama. Northern Lights Lake in the Grand Marais area was also suggested as an area that could be promoted for wildlife observation.

Wildlife observation in winter could also be promoted. For example, skiers can observe tracks and activity of snowshoe hare, beaver, otter, moose and other animals. Wildlife personnel felt that the North Shore deer yards are an important resource that should be maintained--and one that offers viewing opportunities.

Hunting

Wildlife personnel in the central office and in the field felt that greater attention could be focused on moose management and identifying moose management areas. Wildlife biologists at Ely have provided statistics on the economic value of moose hunting in northeastern Minnesota, along with information on critical moose habitat and the cost of habitat management (Appendix C, map on file with report). They pointed out that in addition to offering a unique wildlife-viewing opportunity, the area's moose population also provides an economically significant hunting opportunity.

The moose is one of the most sought-after big-game animals in North America, and Minnesota has one of the few huntable moose populations of significance in the lower 48 states. The state is second only to Alaska in number of U.S. moose hunters. The Ely wildlife biologists cite figures that put the value of a moose to hunters at from \$800-\$836 and that put direct expenditures for moose hunting in northeast Minnesota at an estimated \$360,000 in 1983. When indirect expenditures are also considered, they say, the economic value of moose hunting in northeastern Minnesota is much greater.

Central office staff identified opportunities for deer habitat management in the western and southern portions of the study area and along the North Shore.

In the Ely area, opportunities for ruffed grouse habitat management and hunting were identified. A map containing existing and potential grouse management units was submitted by field personnel, along with suggestions on habitat management and trail opportunities that would be required to create better hunting opportunities (Appendix C). Most grouse hunting in the area is done from roads, and to provide more opportunities there is a need to construct or brush out trails through the woods.

Field personnel also thought that habitat in the Ely area could be managed for woodcock, and that woodcock hunting could be promoted more. The suggestion was made that this promotion could be done in conjunction with field trials during the annual woodcock migration.

Ely staff also suggested that waterfowl hunting opportunities could be expanded by seeding lakes with wild rice. There are many lakes in the area suitable for growing wild rice, they say, and hand seeding of rice in similar lakes has produced rice and attracted huntable populations where there were none before. They estimate that the cost of seeding 100 acres/year would be \$1,000 to \$2,000 (Appendix C).

Other Ideas

A number of ideas that do not fall within any of the previous categories of topics were brought up at meetings. In general, they are ideas for unique types of opportunities that draw on some of the area's special qualities and that would help add diversity to the recreational options available.

Berry Picking

Throughout the study area, opportunities exist to manage and promote areas for berry picking. There is already interest in this activity. Ely has a blueberry festival in conjunction with an arts and crafts fair (this year, July 27 and 28), and the Forest Service is managing areas for blueberry picking in the Grand Marais area. It is an activity that could be promoted by itself or in conjunction with such activities as nature hikes and guided interpretive tours.

Staff in the Ely area have submitted suggestions for blueberry management (Appendix C). They suggest that areas should be 10 acres in size and should be burned in five-year rotations. With this type of management, areas this size would produce an estimated 200 pounds/acre/year of blueberries, which would support harvest of about 2 pounds of blueberries for approximately 100 tourists in a season. Such areas should have good road access and be clustered around resort areas for the convenience of tourists.

Road Touring Routes

Automobile, bus and bicycle tour routes could be identified in the study area to provide a framework for road touring. Picnic areas, historic sites, unique shops, restaurants and other stopping-off points could be identified to help direct people to areas of interest. Fall color tours could also be offered. There is already substantial interest in fall touring in the area, and many area resorts and hotels are occupied to capacity at this time of year.

ATV Areas

Trails or scramble areas could be designated for use by motorized vehicles. Several people expressed the opinion that while establishing such areas may not be desirable to many people, the use of 3- and 4-wheel vehicles is growing, and there is a genuine demand for ATV areas. Designating areas for ATV use would help accommodate these demands and direct use, which would help confine resource damage to particular areas. Identifying such areas may also help ward off use conflicts. In the Orr Unit Planning process, DNR's Forestry Division is examining the demand for ATV areas; recommendations may be made to develop Grant-in-Aid trails for ATV users. The suggestion was also made that portions of the existing forest road system could be designated for ATV use, with signs placed to mark motorized trails.

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CHAPTER THREE
EXISTING RECREATION FACILITIES



EXISTING RECREATION FACILITIES

The Edge-of-the-Wilderness Area is one of the state's prime outdoor recreation regions. Its forests and waters offer abundant opportunity for a wide variety of recreational activities. Private landowners and public land management agencies provide numerous trails, campgrounds, parks, picnic areas and other facilities that serve thousands of users each year. Resorts provide accommodation and guide services to many of the area's visitors and often have marinas and other facilities that complement facilities on public land. Together, the private- and public-land facilities in the study area provide a diversity of outdoor recreation opportunities that enhance those available at two of the region's major attractions, Voyageurs National Park and the Boundary Waters Canoe Area Wilderness.

In comparison with other lake regions of the state, a noticeably high percentage of recreation facilities in the study area are publicly administered. For example, 84 percent of hiking trail miles in the periphery zone are publicly administered as compared with 47-58 percent in other lake regions of Minnesota (table 1). Sixty-two percent of campgrounds in the study area are under public administration, compared with 17-28 percent in other regions.

The DNR supplies a significant share of publicly-administered recreation facilities in the study area, particularly park land and water access, camping and picnicking facilities. Tables 2 and 3 display detailed information on administration of key recreational facilities in the study area; these facilities are discussed in greater detail in the remainder of this chapter.

TABLE 1

Percent of Key Recreation Facilities Under Public Administration;
Edge-of-the-Wilderness Study Area and Other Lake Regions

<u>Facility Type</u>	AREA				
	<u>Study Area</u> ¹	<u>RDC 3</u> ²	<u>RDC 2</u> ³	<u>RDC 4</u> ⁴	<u>RDC 5</u> ⁵
Water Access (parking spaces)	57%	57%	42%	51%	47%
Swimming Beach (frontage)	16	19	8	11	9
Campground (campsites)	62	51	28	17	26
Picnic Ground (tables)	64	62	49	43	42
Hiking Trail (miles)	84	81	58	47	48
Snowmobile Trail (miles)	94	95	89	90	91
Cross-county Ski Trail (miles)	95	98	100	87	100

¹ Study area is within RDC 3

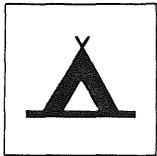
² Arrowhead Region

³ Itasca Region

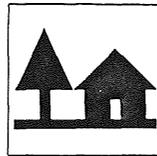
⁴ West Lakes Region

⁵ Brainerd Region

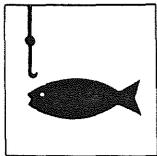
Figure 1
 Recreation Facilities in the
 Edge-of-the-Wilderness Study Area
 (All Ownerships and Administrative Units)



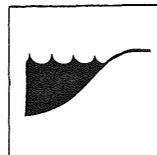
147 Campgrounds
 (2,666 campsites)



248 Resorts
 (2,308 lodging units)



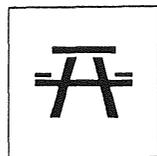
699 Lakes
 Managed
 for Fishing



390 Water
 Access Sites
 (5,234 parking spaces)



84 Designated
 Trout Streams



151 Picnic Areas
 (1,023 picnic tables)



63 Designated Stream
 Trout Lakes



174 Beaches
 (30,726 feet of
 beachfront)



191 Marinas
 (3,632 rental watercraft)



23 Parks
 (24,028 acres)



1,046 Miles of Trails



8 State Forests
 1 National Forests
 (close to 1.3 million acres)

TABLE 2. Recreational Facilities in the Edge-of-the-Wilderness Study Area;
Number of Operations by Administrative Agency (Excluding BWCAW and Voyageurs National Park)¹

	Federal	DNR	State Other	County	Other Public	Private	Unknown	Total
<u>Campgrounds</u> (# of campgrounds/% of total)	50.0 34.97	17.0 11.89	0.0 0.00	0.0 0.00	5.0 3.50	71.0 49.65	0.0 0.00	143.0 100.00
<u>Picnic Areas</u> (# of areas/% of total)	32.0 21.19	22.0 14.57	22.0 14.57	1.0 0.66	10.0 6.62	64.0 42.38	0.0 0.00	151.0 100.00
<u>Golf Courses</u> (# of courses/% of total)	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	1.0 14.29	6.0 85.71	0.0 0.00	7.0 100.00
<u>Wildlife Management Areas</u> (# of areas/% of total)	0.0 0.00	5.0 100.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	5.0 100.00
<u>Scientific & Natural Areas</u> (# of areas/% of total)	0.0 0.00	1.0 100.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	1.0 100.00
<u>Group Camps</u> (# of camps/% of total)	0.0 0.00	0.0 0.00	1.0 4.00	0.0 0.00	0.0 0.00	24.0 96.00	0.0 0.00	25.0 100.00
<u>Resorts</u> (# of resorts/% of total)	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	248.0 100.00	0.0 0.00	248.0 100.00
<u>Beaches</u> (# of beaches/% of total)	11.0 6.32	7.0 4.02	0.0 0.00	1.0 0.57	6.0 3.45	149.0 85.63	0.0 0.00	174.0 100.00
<u>Marinas</u> (# of marinas/% of total)	1.0 0.52	2.0 1.05	0.0 0.00	0.0 0.00	2.0 1.05	186.0 97.38	0.0 0.00	191.0 100.00
<u>Water Accesses</u> (# of sites/% of total)	141.0 36.25	55.0 14.14	8.0 2.06	40.0 10.28	13.0 3.34	132.0 33.93	0.0 0.00	389.0 100.00
<u>Tennis Courts</u> (# of courts/% of total)	0.0 0.00	0.0 0.00	1.0 1.37	0.0 0.00	24.0 32.88	48.0 65.75	0.0 0.00	73.0 100.00
<u>Parks</u> (# of parks/% of total)	1.0 4.35	15.0 65.22	0.0 0.00	1.0 4.35	6.0 26.09	0.0 0.00	0.0 0.00	23.0 100.00

Source: SCORP data (1985)

¹ For each facility type the top row of numbers indicates the number of operations.
The second row of numbers indicates the percent of total operations.

NOTE: Because of the way in which facility data is compiled for SCORP, a few operations which cross county lines or county highway map sheets may be counted twice.

TABLE 3. Recreational Facilities in the Edge-of-the-Wilderness Study Area;
Quantities of Facility Units by Administrative Agency (Excluding the BWCAW and Voyageurs National Park)¹

	Federal	State		County	Other Public	Private	Unknown	Total
		DNR	Other					
<u>Campsites</u> (# of sites/% of total)	781.0 29.80	451.0 17.21	0.0 0.00	0.0 0.00	384.0 14.65	1005.0 38.34	0.0 0.00	2621.0 100.00
<u>Picnic Tables</u> (# of tables/% of total)	166.0 16.23	345.0 33.72	29.0 2.83	4.0 0.39	108.0 10.56	371.0 36.27	0.0 0.00	1023.0 100.00
<u>Golf Courses</u> (# of holes/% of total)	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	9.0 14.29	54.0 85.71	0.0 0.00	63.0 100.00
<u>Wildlife Management Areas</u> (# of acres/% of total)	0.0 0.00	720.0 100.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	720.0 100.00
<u>Scientific & Natural Areas</u> (# of acres/% of total)	0.0 0.00	140.3 100.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	140.3 100.00
<u>Group Camps</u> (# of lodging units/% of total)	0.0 0.00	0.0 0.00	187.0 4.91	0.0 0.00	0.0 0.00	3618.0 95.09	0.0 0.00	3805.0 100.00
<u>Resorts</u> (# of lodging units/% of total)	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	2308.0 100.00	0.0 0.00	2308.0 100.00
<u>Beaches</u> (feet of beach front/% of total)	1205.0 3.92	1160.0 3.78	0.0 0.00	400.0 1.30	2124.0 6.91	25837.0 84.09	0.0 0.00	30726.0 100.00
<u>Marinas</u> (# of rental watercraft/% of total)	12.0 0.33	23.0 0.63	0.0 0.00	0.0 0.00	18.0 0.50	3579.0 98.54	0.0 0.00	3632.0 100.00
<u>Water Accesses</u> (# of parking spaces/% of total)	1858.0 35.63	513.0 9.84	51.0 0.98	321.0 6.16	219.0 4.20	2252.0 43.19	0.0 0.00	5214.0 100.00
<u>Tennis Courts</u> (# of courts/% of total)	0.0 0.00	0.0 0.00	4.0 16.00	0.0 0.00	11.0 44.00	10.0 40.00	0.0 0.00	25.0 100.00
<u>Parks</u> (acres of land/% of total)	710.0 2.95	23200.0 96.55	0.0 0.00	24.0 0.10	94.1 0.39	0.0 0.00	0.0 0.00	24028.1 100.00

Source: SCORP data (1985).

¹ For each facility type, the top row of numbers indicates the number of facility units.
The bottom row indicates the percent of total units.

Forests

The majority of forested land in the Edge-of-the-Wilderness area is federal land within Superior National Forest. Ten state forests with a total of about 457,444 DNR-administered acres are in the study area: Kabetogama, Lake Jeanette, Burntside, Bear Island, Pat Bayle, Grand Portage, Finland, Sturgeon River and portions of George Washington and Cloquet Valley.

Many of the state forests contain campgrounds, boat accesses, trails, swimming beaches and other facilities that provide opportunity for such activities as camping, fishing, boating, canoeing, picnicking, hiking and snowmobiling. The state forest road network provides access for hunting, fishing and a number of other activities. Further discussion of campgrounds, trails, accesses and other types of facilities in the study area appears later in this chapter.

The Division of Forestry currently is preparing a unit plan for the Orr Area, all of which is included in the study area. The plan will set forth the specific goals and objectives for management, protection, development and production of forest resources in the unit, including programs relating to forest recreation.

Parks

There are more than 24,000 acres of designated park land in the Edge-of-the-Wilderness area. State parks comprise 23,200 acres, and approximately 118 acres are administered by counties and other public agencies. Grand Portage National Monument (710 acres) is in the extreme northeast corner of the study area.

Eight state parks are in the area. Five of these are on or near Lake Superior: George Crosby-Manitou, Temperance River, Cascade River, Judge C.R. Magney and Tettegouche. The other are Bear Head Lake, near Ely; Tower Soudan, on Lake

Vermilion, and McCarthy Beach, north of the Iron Range cities of Hibbing and Chisholm. These parks provide facilities such as campsites, trails, picnic areas, swimming beaches, water accesses and boat and canoe rentals.

The Parks and Recreation Division has been preparing comprehensive management plans for each of the state's parks, an effort that will be completed in the summer of 1985. At this writing, plans have been completed for all state parks in the study area except Judge C.R. Magney; a plan for that park is in progress. Specific goals for management of individual parks can be found in the plans.

Campsites

A total of 143 campgrounds with 2,621 campsites are situated in the Edge-of-the-Wilderness area; the largest share of campsites (about 38 percent) are on private land. Thirty percent of campsites are on federal land (Superior National Forest), and approximately 17 percent are on DNR land. In addition, 50 group camps in the study area provide accommodations for 3,805 people; 95 percent of these accommodations are on private land and 5 percent are on state land not administered by the department. (Source: SCORP data.)

Of campsites on DNR land, 207 are within state forest campgrounds and 289 are within state parks. The majority of state forest campgrounds have primitive campsites; some, but not all of these sites have grills, picnic tables, tent pads, pit toilets and water access. Most state park campgrounds contain similar facilities, and four state parks (Bear Head Lake, Cascade River, McCarthy Beach and Temperance River) have showers and flush toilets. None of the state forest or park campgrounds has hookups for electricity.

Map 3 shows distribution of campgrounds in the Edge-of-the-Wilderness. More specific information on the level of development of state park and forest

Voyageurs National Park

Map 3

Distribution of Campgrounds Edge-of-the-Wilderness Study Area (Campsites /Section)

Boundary Waters Canoe Area Wilderness

Arrowhead Trail

Gunflint Trail

Grand Marais

Cook Co.

Taconite Harbor

Lake County

Silver Bay

Isabella

Hoyt Lakes

Biwabik

Virginia

Tower

Ely

Cook
St. Louis County

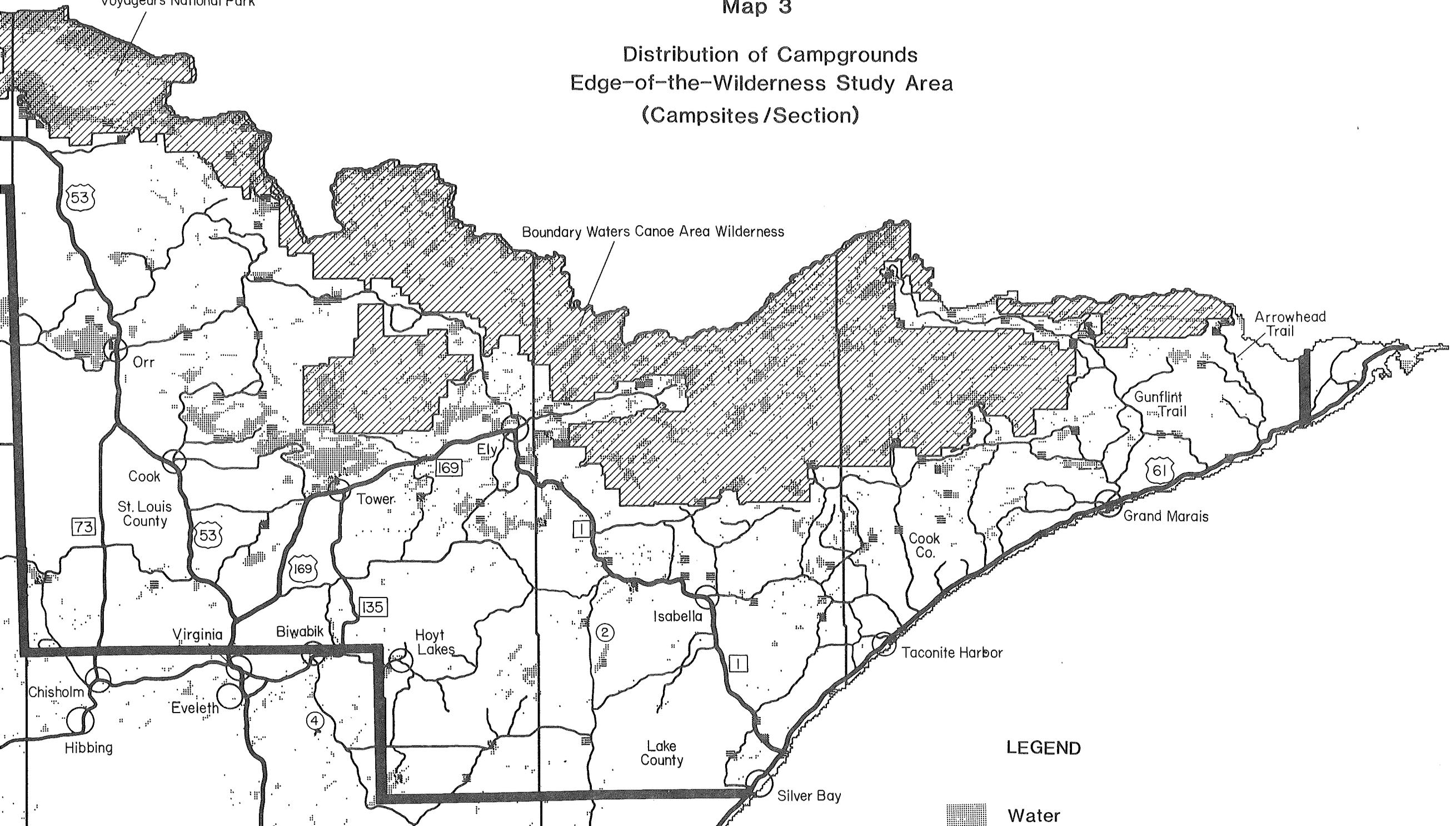
Orr

Chisholm
Hibbing

Eveleth

LEGEND

Water



campgrounds is contained in state forest campground and park brochures on file with this report.

The Legislative Commission on Minnesota Resources (LCMR) appropriated \$800,000 for the 1984-85 biennium for state forest campground rehabilitation, including \$187,000 for rehabilitation of Woodenfrog Campground. Woodenfrog, an 80-acre site on Lake Kabetogama near Voyageurs National Park, is the most heavily used of all state forest campgrounds. Funds will be spent on redevelopment of existing facilities, with no increase in the number of campsites proposed. Construction will begin in fall 1985. Near the North Shore, redevelopment is planned for Finland and Eckbeck campgrounds near Silver Bay.

A list of DNR and Superior National Forest campgrounds is on file with this report. Over the last several years, several hundred dispersed campsites have been created in the BWCAW periphery area of Superior National Forest. Most are individual campsites with canoe and boat access only, although some have road access.

Trails

The study area contains about 1,022 miles of trails; 502 of these miles are intended for hiking use, 404 miles for snowmobile use and 382 miles for cross-country skiing.¹ A substantial share of these trail miles are on publicly-administered land (table 4). There are also 32 trail miles intended for use as interpretive trails, about 8 miles intended for horseback riding, and 3 miles intended for off-road vehicle use.

¹ Because some trails are used for more than one purpose, the total miles of trails intended for specific uses is greater than the figure shown for total trail miles.

TABLE 4
Miles of Trails (by Trail Type)
Edge-of-the-Wilderness Study Area
(Excluding BWCAW and Voyageurs National Park)¹

	<u>State</u>					<u>Private</u>	<u>Unknown</u>	<u>Total</u>
	<u>Federal</u>	<u>DNR</u>	<u>Other</u>	<u>County</u>	<u>Other Public</u>			
<u>Hiking</u> (# of miles/% of total)	234.5 46.72	126.8 25.26	0.0 0.00	56.1 11.18	2.5 0.50	82.0 16.34	0.0 0.00	501.9 100.00
<u>Snowmobiling</u> (# of miles/% of total)	95.6 23.64	176.6 43.67	0.0 0.00	105.7 26.14	1.5 0.37	25.0 6.18	0.0 0.00	404.4 100.00
<u>Cross-Country Skiing</u> (# of miles/% of total)	193.0 50.48	81.4 21.29	0.0 0.00	86.9 22.73	1.0 0.26	20.0 5.23	0.0 0.00	382.3 100.00
<u>Horseback Riding</u> (# of miles/% of total)	0.0 0.00	2.8 35.90	0.0 0.00	0.0 0.00	0.0 0.00	5.0 64.10	0.0 0.00	7.8 100.00
<u>Off-Road Vehicle</u> (# of miles/% of total)	3.0 100.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	0.0 0.00	3.0 100.00
<u>Interpretive</u> (# of miles/% of total)	6.0 18.99	9.0 28.48	0.0 0.00	0.0 0.00	1.5 4.75	15.1 47.78	0.0 0.00	31.6 100.00

Source: SCORP data (1985).

¹ For each trail type, miles are shown in the top row and percent of total is shown in the second row.

NOTE: Total trail miles = 1,021.6 miles (total miles, not overlapping miles).

Portions of two state trails are within the study area; approximately 60 miles of the 153-mile-long North Shore Trail extends from Silver Bay to Grand Marais. About 100 miles of the 165-mile-long Taconite Trail from Ely to Grand Rapids are in the area. A management plan has been written for a state trail from International Falls to Tower, and segments of this trail are under construction. A state trail is proposed from Ely to Grand Marais, but no management plan has been written.

DNR's Trails and Waterways Unit has identified candidate Explore Minnesota Trails for each of 13 recreational landscapes in the state. These trails would serve bicyclists, horseback riders, hikers, cross-country skiers, and snowmobilers. All or portions of three recreation landscapes are in the study area: the North Shore Highlands, Border Lakes and Agassiz Lowlands. The Explore Minnesota Trails will traverse land that characterizes the unique scenic and cultural qualities of each landscape region. They will be suitable for a two-day trip with overnight use and may utilize parts of existing state trails or part of the trail system of some other public agency. (State Trail Plan.) Appendix E contains maps of the candidate trails.

Many of the snowmobile and cross-country ski trails in the area are grant-in-aid trails, which are developed and maintained through the efforts of local user groups with DNR assistance. These trails, provided through the Minnesota Trails Assistance Program, are being developed in response to the identified need for trails in and around the BWCAW and Voyageurs National Park. Grant-in-aid trails, along with state trails, are administered by the Trails and Waterways Unit.

Over 100 miles of snowmobile trails have been constructed in Voyageurs National Park in the last several years, and over the next three years the park is putting \$8 million toward development of a major trails system. Some ski trails

in the park are linked with Grant-in-Aid trails. The Forest Service is developing 52 miles of ski trails in Superior National Forest; resorts will assist in maintaining these trails. Brush-cutting has been done along Forest Service trails to enhance viewing. Aside from these trail development and improvement activities, Forest Service officials have indicated that management plans call for little, if any, additional construction of trails in the future.

Water access

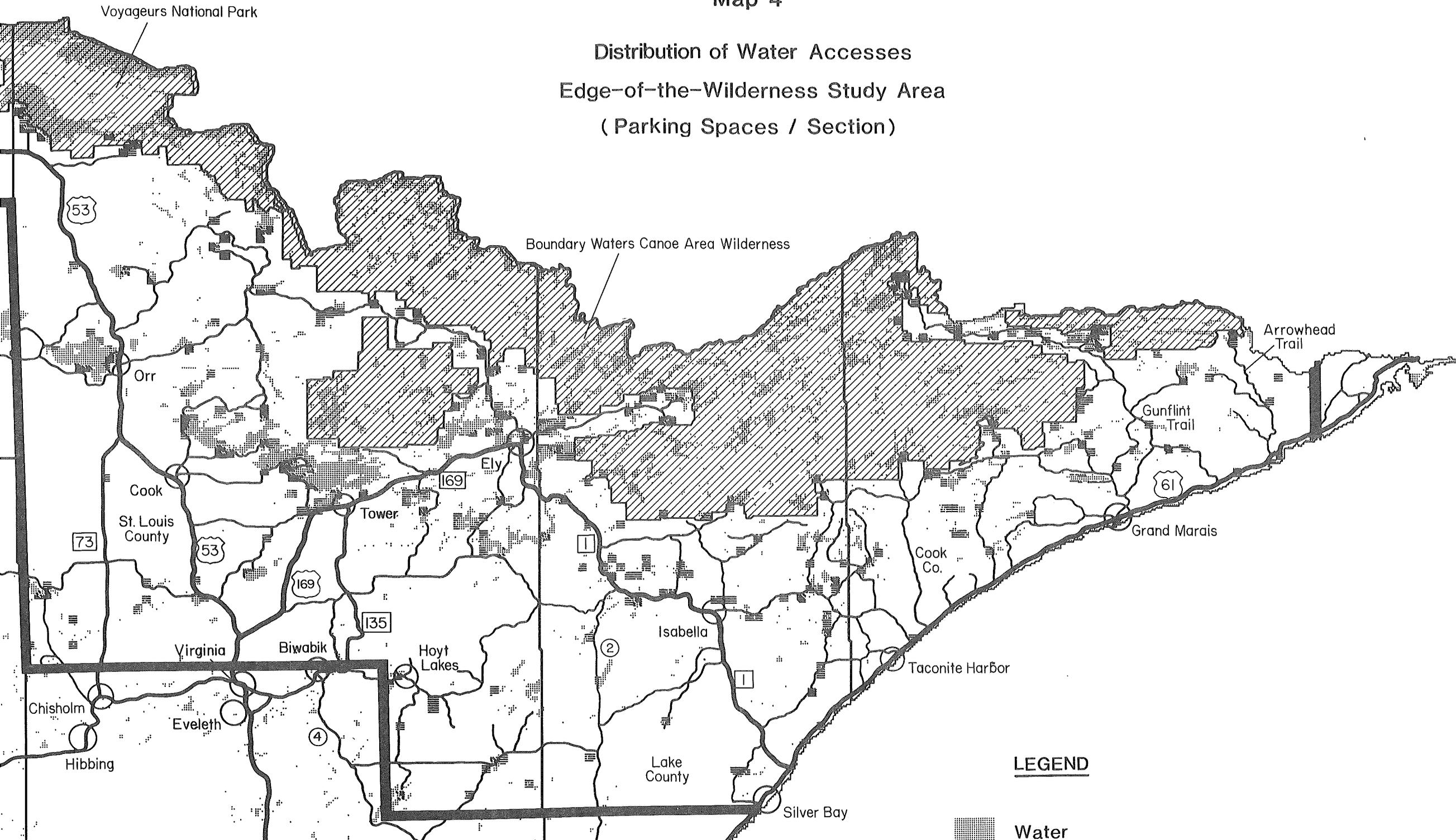
There are 389 water access sites in the study area, 55 of which are DNR-administered. These sites provide 5,214 parking spaces, 43 percent of which are privately administered. Thirty-six percent of water access parking spaces are administered by the federal government and 10 percent by the DNR. The remaining 11 percent are on lands administered by other public agencies.

The DNR access sites are located in state parks, state forest campground, at other locations within state forests, and along canoe and boating routes. All are administered by the Trails and Waterways Unit, but most are maintained by other divisions. The DNR has conducted an inventory of water access sites with parking, ramps and conditions adequate for launching. These sites have been mapped on county map sheets and are on file with this report. Map 4 shows distribution of access sites in the study area.

Through its Water Access Program, the Trails and Waterways Unit has intensified efforts to locate suitable access sites on state land bordering high-priority lakes in the BWCAW and Voyageurs perimeter area. This effort was undertaken in response to public demands for increased boating opportunities in the perimeter area and to replace opportunities lost as a result of restrictions on motorized use in the BWCAW. Working in conjunction with the Division of Fisheries, the Trails and Waterways Unit has identified sites with high priority for access development. A list of these sites appears in Appendix A.

Map 4

Distribution of Water Accesses Edge-of-the-Wilderness Study Area (Parking Spaces / Section)



Picnic Areas

The study area contains 151 picnic grounds with 1,023 picnic tables, the majority of which (36 percent) are on privately-administered land. Thirty-four percent of picnic tables are on DNR-administered land, 16 percent are under federal administration and 14 percent are on other public land. The majority of picnic facilities on DNR land are within state forests and state parks.

Canoe and Boating Routes

Short stretches of four rivers designated as canoe and boating routes run through the study area: the St. Louis, Cloquet, Vermilion and Little Fork. These waterways are administered by the Trails and Waterways Unit. Recreation sites on canoe and boating rivers include primitive campsites, rest areas and access points.

Resorts and Related Facilities¹

Resorts in the study area provide an estimated 2,300 lodging units and opportunities for activities such as fishing, boating, swimming, golf and tennis. All resort operations are on privately-administered land. The majority of marinas, swimming beaches, tennis courts and golf courses in the area are provided by the private sector, primarily in association with resort operations. Map 5 shows distribution of resorts in the study area.

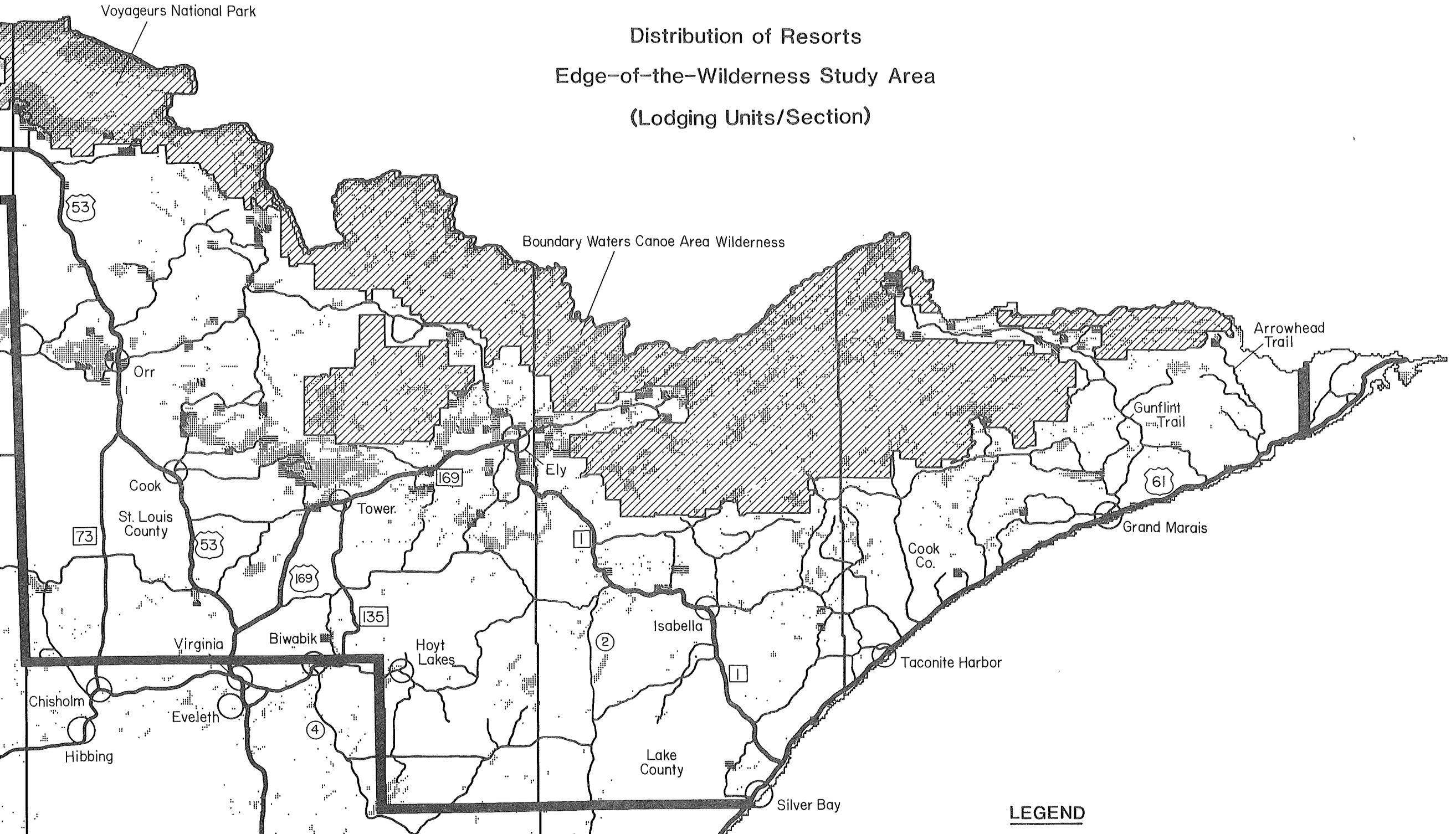
Fisheries

The area's lakes and streams provide a wide diversity of productive fisheries and are the focus of a substantial share of the region's recreation. Walleye, northern pike and lake trout are the major game fish; bluegills, crappie and

¹ Because the majority of marinas, beaches, tennis courts and golf courses are associated with resorts on private land, they are discussed in combination.

Map 5

Distribution of Resorts Edge-of-the-Wilderness Study Area (Lodging Units/Section)



smallmouth and largemouth bass are also common. Other popular fish include rainbow and brook trout, splake and several nongame species.

Within the study area, 699 lakes, including 63 designated stream trout lakes, and 84 trout streams are managed for fishing. In addition, several stream systems and streams that connect lakes provide fishing opportunities for species other than trout. Eight major lakes are unique in that they comprise 116,070 acres of the total 243,600 acres of lake area. These lakes are noted for walleye, northern pike, lake trout and smallmouth bass fishing.

Trout streams in the study area that empty into Lake Superior are recognized for their brook trout and steelhead fishing and annual runs of salmon. The boundary waters area also has the largest group of high-quality lake trout waters in the contiguous United States. Motorized access to many of the lake trout lakes as well as other lakes has been limited by restrictions on use of motorized vehicles in the BWCAW.

The nature of DNR fisheries management varies from one lake to another, depending on its biological characteristics. The Section of Fisheries has an extensive data base with information on individual lakes in the area. This information is on file in DNR area, regional and central offices. The Fisheries Division is in the process of transferring this information to computer files for integration with the department's comprehensive computerized information system. It is expected that this effort will be completed at the end of 1985.

Historically, fisheries management in the region has focused primarily on walleye and lake trout, but in recent years has shifted toward management for a greater diversity of species. Rainbow trout, brook trout and splake have been introduced in some waters, to some extent offsetting opportunities lost because

of BWCAW motorized-use restrictions. Access has been provided to encourage use of more fisheries. The availability of access and greater use of some fisheries have created a need for further intensified management.

Ely and Grand Marais area fisheries personnel have identified lake trout lakes in need of immediate management attention and access improvement. They have also identified cool-water lakes where improved access is needed. Appendix A contains a list of these lakes with a description of the type of management and access needed.

Wildlife

The boreal forest ecosystem of the Edge-of-the-Wilderness area provides habitat for a variety of big game, small game, furbearers, waterfowl, and other birds. The area is prime habitat for moose and timber wolf, species of national significance. Minnesota has two distinct moose populations, one in the northwestern portion of the state and one in the northeast. The northeast population, which numbered 4,900 in 1983, is concentrated within the study area. The entire study area is prime range for the Eastern timber wolf, a threatened species. Other major big-game species in the area include deer and black bear. Information on big-game hunter harvest in the study area appears in Appendix D.

The southern portion of the study area is considered good to excellent ruffed grouse habitat, particularly where disturbance of the forest ecosystem has created diverse aspen age classes. Spruce grouse are common in the northern portions of the study area, especially where the aspen-balsam forest type has been replaced by spruce-fir. Other small-game species inhabiting the study area are snowshoe hare and woodcock.

Furbearers in the area include beaver, otter, lynx, bobcat, fisher, marten, mink, muskrat and weasel. Nongame species include bald eagle and osprey. While the study area is not known as a waterfowl production area, mallards, wood ducks, and goldeneye are present as nesters.

The Wildlife Section administers one designated wildlife management area in the periphery zone--the 720-acre Gold Portage area at the eastern end of Black Bay on Kabetogama Lake. The area provides habitat for a wide variety of wildlife, including eagles, osprey, terns, hawks, cormorants, waterfowl and beaver. It is managed primarily for production of nongame wildlife species and for public hunting and trapping.

As a result of fewer fires and less timber harvesting, the composition of the area's forests is becoming more mature and providing less diverse habitat. Aspen-birch forest types, which had increased as a result of timber harvest, are now declining and being replaced by later-successional spruce-fir types. This transition is affecting wildlife populations in the study area. As the forest matures, there is less browse; this, along with severe winters, has resulted in declining populations of deer and wolf. The moose population has increased with the decline in wolf numbers, but continued growth of the moose population will probably be influenced by availability of browse. The availability of browse and herbaceous vegetation associated with young hardwood stands will also affect hare and ruffed grouse populations, along with populations of their predators. (Superior National Forest Plan.)

As a general policy, the Division of Fish and Wildlife encourages harvesting of timber types that will benefit wildlife and harvesting in locations that will create habitat components. In response to Phase II of the department's Forest Inventory, the division is in the process of conducting a Forest Wildlife Habitat Evaluation.

Scientific and Natural Areas

The periphery area contains one scientific and natural area, Purvis Lake, on state land near Bearhead Lake State Park. A two-mile trail provides access to this 140-acre old-growth pine and northern hardwood forest. The area is managed by the Division of Fish and Wildlife for purposes of scientific research and education.

The Division of Fish and Wildlife is in the process of identifying boundaries for a SNA in Cascade River State Park, on the North Shore. Susie Island, in Lake Superior east of Grand Portage Indian Reservation, has been nominated as a SNA, and application has been made to the Bureau of Land Management to obtain islands in Lake Superior and Lake Vermilion that are suitable for SNA designation. In conjunction with forest planning for the Orr Unit, the Division of Fish and Wildlife recently nominated a small bog area for designation as rare species habitat. In addition, the division has identified 100 acres of old-growth northern hardwood forest near Hovland, in Cook County, to be proposed as a SNA.

The Minerals Division, through its Peat Program, has proposed that three areas in the Edge-of-the-Wilderness be designated Peatland Scientific Protection Areas. The areas are: West and East Rat Root River Peatlands, southeast of International Falls; Lost Lake Peatland, west of Lake Vermilion; and Sand Lake Peatland, southwest of Isabella. These areas would be preserved primarily for scientific and educational purposes, with mineral exploration allowed under conditions approved by the Commissioner.

CHAPTER FOUR

RECREATION USE AND EXPENDITURES

RECREATION USE AND EXPENDITURES

In-State and Out-State Tourism Market

In 1978 the study area, along with the BWCAW and Voyageurs National Park, captured one-third of all summer tourist recreation in the state of Minnesota, approximately the same amount as the North-Central Lakes Region (DNR Office of Planning)¹. Nonresident recreation comprises the largest share of the study area's tourism market; in 1978, out-of-state visitors accounted for 78 percent of total summer tourist hours spent in the area, while tourists from Minnesota accounted for 22 percent of time (table 5). (Tourist hours are hours spent in summer outdoor recreation by persons traveling 100 miles or more by road from home.)

DNR SCORP data indicates that the majority of out-of-state tourism comes from the Midwest states of Illinois, Indiana, Ohio and Michigan, which together accounted for 56 percent of study area use in 1978 (table 5). The majority of tourist recreation by Minnesotans comes from the Twin Cities area (12 percent) and the Arrowhead Region (4 percent).

A 1980 report on tourism-dependent firms in the BWCAW vicinity² also showed the majority of periphery-area use coming from other midwestern states. The report, prepared by the University of Minnesota Agricultural Extension Service,

¹ While use in the BWCAW and Voyageurs National Park inflates the use figure for the study area, existing surveys do not permit separating use in these two areas from use in the periphery zone. Although this may skew use figures for the study area, it does give an indication of the area's high visibility. In addition, use statistics predate BWCAW motorized restrictions, and it may be assumed that some motorized use formerly occurring in the BWCAW has been displaced to the periphery area.

² University of Minnesota Agricultural Extension Service. May 1980. A Needs Assessment of Tourism Firms Serving the Boundary Waters Canoe Area Wilderness Vicinity. Blank, Uel and Simonson, Larry, study team co-leaders.

Figure 2

Minnesota Economic Development Regions

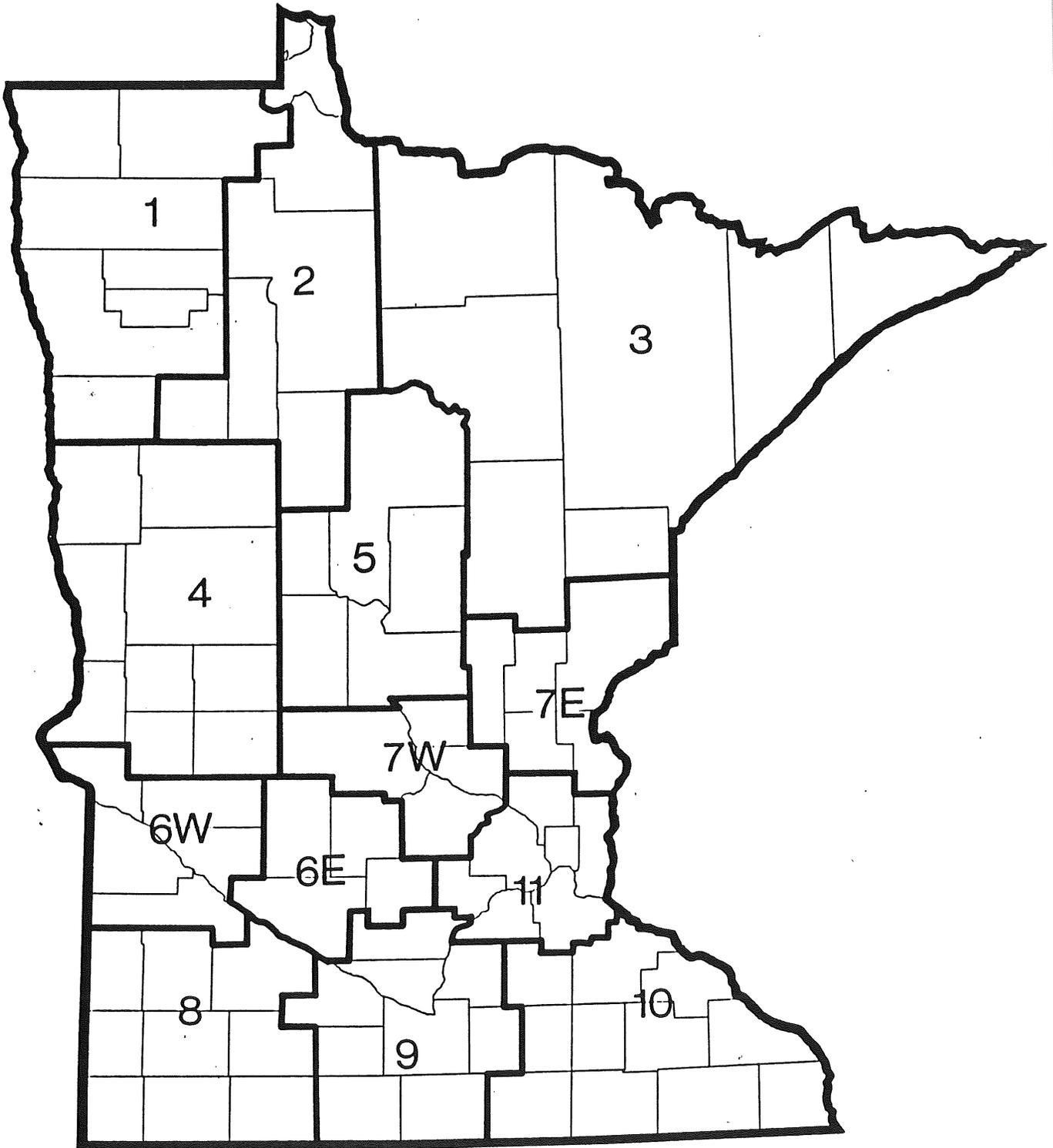


TABLE 5
Origins and Destinations of Summer Outdoor Recreation Tourists
in the Edge-of-the-Wilderness Study Area and Other Regions of Minnesota

ORIGINS	Hours ¹	DESTINATION AREAS				Minnesota Total
		Study Area 1923.	North-Central ² Lakes Region	Western ³ Lakes Region	Other Minnesota	
Region 3:						
	Hours ¹	1923.	1338.	172.	655.	4088.
Distribution of Use Originating in Region 3		47.04	32.73	4.21	16.02	100.00
Region's Share of Use at Destination		4.04	2.88	.81	2.10	2.79
Percent of Total		1.31	.91	.12	.45	2.79
Region 9:						
	Hours	957.	1007.	526.	721.	3211.
Distribution of Use Originating in Region 9		29.80	31.36	16.38	22.45	100.00
Region's Share of Use at Destination		2.01	2.17	2.49	2.32	2.19
Percent of Total		.65	.69	.36	.49	2.19
Region 10:						
	Hours	281.	1987.	135.	1164.	3567.
Distribution of Use Originating in Region 10		7.88	55.71	3.78	32.63	100.00
Region's Share of Use at Destination		.59	4.28	.64	3.74	2.44
Percent of Total		.19	1.36	.09	.80	2.44
Region 11:						
	Hours	5504.	21694.	6099.	7049.	40346.
Distribution of Use Originating in Region 11		13.64	53.77	15.12	17.47	100.00
Region's Share of Use at Destination		11.55	46.73	28.85	22.65	27.57
Percent of Total		3.76	14.82	4.17	4.82	27.57
Other Resident:						
	Hours	1719.	3753.	2749.	3698.	11919.
Distribution of Use Originating Other Minnesota		14.42	31.49	23.06	31.03	100.00
Other Resident's Share of Use at Destination		3.61	8.08	13.00	11.88	8.14
Percent of Total		1.17	2.56	1.88	2.53	8.14
RESIDENT SUBTOTAL:						
	Hours	10384.	29779.	9681.	13287.	63131.
Distribution of Use Originating In State		16.45	47.17	15.33	21.05	100.00
Resident Share of Use in Destination Area		21.80	64.14	45.79	42.69	43.14
Total Percent		7.10	20.35	6.62	9.08	43.14
North Dakota:						
	Hours	255.	2077.	5415.	708.	8455.
Distribution of Use Originating in North Dakota		3.02	24.57	64.04	8.37	100.00
North Dakota's Share of Use at Destination		.54	4.47	25.61	2.27	5.78
Percent of Total		.17	1.42	3.70	.48	5.78
Iowa:						
	Hours	543.	4226.	859.	4207.	9835.
Distribution of Use Originating in Iowa		5.52	42.97	8.73	42.78	100.00
Iowa's Share of Use at Destination		1.14	9.10	4.06	13.52	6.72
Percent of Total		.37	2.89	.59	2.87	6.72
Wisconsin:						
	Hours	6362.	1154.	410.	2822.	10748.
Distribution of Use Originating in Wisconsin		59.19	10.74	3.81	26.26	100.00
Wisconsin's Share of Use at Destination		13.35	2.49	1.94	9.07	7.34
Percent of Total		4.35	.79	.28	1.93	7.34
Mid-Central U.S.: ⁵						
	Hours	1366.	1377.	787.	982.	4512.
Distribution of Use Originating in Mid-Central U.S.		30.27	30.52	17.44	21.76	100.00
Mid-Central U.S. Share of Use at Destination		2.87	2.97	3.72	3.15	3.08
Percent of Total		.93	.94	.54	.67	3.08
Midwest U.S.: ⁶						
	Hours	26815.	5479.	1651.	4018.	37963.
Distribution of Use Originating in Midwest U.S.		70.63	14.43	4.35	10.58	100.00
Midwest U.S. Share of Use at Destination		56.28	11.80	7.81	12.91	25.94
Percent of Total		18.32	3.74	1.13	2.75	25.94
Southwest U.S.: ⁷						
	Hours	304.	968.	653.	1563.	3488.
Distribution of Use Originating in Southwest U.S.		8.72	27.75	18.72	44.81	100.00
Southwest U.S. Share of Use at Destination		.64	2.09	3.09	5.02	2.38
Percent of Total		.21	.66	.45	1.07	2.38
Other Nonresident:						
	Hours	1614.	1366.	1686.	3539.	8205.
Distribution of Use Originating in Other Nonresident		19.67	16.65	20.55	43.13	100.00
Other Nonresident's Share of Use at Destination		3.39	2.94	7.97	11.37	5.61
Percent of Total		1.10	.93	1.15	2.42	5.61
NONRESIDENT SUBTOTAL:						
	Hours	37259.	16647.	11461.	17839.	83206.
Distribution of Use Originating Out-of-State		44.78	20.01	13.77	21.44	100.00
Nonresident Share of Use at Destination		78.20	35.86	54.21	57.31	56.86
Percent of Total		25.46	11.38	7.83	12.19	56.86
GRAND TOTAL:						
	Hours	47643.	46426.	21142.	31126.	146337.
Distribution of Use Originating All Sources		32.56	31.73	14.45	21.27	100.00
All Sources Share of Use at Destination		100.00	100.00	100.00	100.00	100.00
Percent of Total		32.56	31.73	14.45	21.27	100.00

¹ Hours are in thousand.

² Lake concentrations in Mille Lacs, Crow Wing, Aitkin, Cass, Itasca, Hubbard and Beltrami Counties.

³ Lake concentration areas in Polk, Clearwater, Mahnomon, Becker, Ottertail, Todd, Douglas and Pope Counties.

⁴ Percent of total originating in region and reaching destination area.

⁵ States of Nebraska, Kansas and Missouri.

⁶ States of Illinois, Indiana, Ohio and Michigan.

⁷ States of Colorado, New Mexico, Utah, Arizona, Nevada, California and Hawaii.

indicated that 44 percent of the customers of BWCAW edge firms came from 11 midwestern states and about 25 percent from the Twin Cities. These figures are based on surveys administered to 156 private operators directly serving the BWCAW¹, 21 group camps, and retail firms in the BWCAW vicinity that make sales to tourists but do not directly serve the BWCAW².

While the study area does receive substantial use from Minnesotans, it is not the major outdoor recreation destination within the state. In 1978, it captured 16 percent of resident tourist use, about the same amount as the West Lakes Region (table 5). In contrast, the North-Central Lakes Region, the most popular destination of Minnesota residents, captured 47 percent of all in-state tourist travel. The study area does, however, attract more nonresident tourists than any other area of the state. In 1978, 45 percent of all nonresident tourist use occurred in the study area; 20 percent of nonresident use took place in the North-Central Lakes Region and 14 percent in the Western Lakes Region. The heavy use by nonresidents indicates the high visibility of the area in out-of-state markets.

Current and Projected Recreation Use

(Please note: figures for current and projected recreation use indicate total time spent in all SCORP-defined year-round recreation activities. These figures are different from figures for tourist recreation time, which indicates time

¹ 97 resorts, 24 outfitters and 35 firms that combine resort, outfitting and marina services.

² Grocery, gasoline, sporting goods and miscellaneous retail services; resorts, motels and restaurants in area communities and along the North Shore.

spent in summer outdoor recreation by persons traveling 100 miles or more from home. Summer tourists account for 80 percent of annual outdoor recreation time in the area.)

In 1978, recreationists in the Edge-of-the-Wilderness Area (including the BWCAW and Voyageurs Park) spent about 60 million hours pursuing a variety of year-round outdoor recreation activities. The majority of 1978 recreation use in the area (63 percent) came from out-of-state recreationists; Minnesota residents accounted for 37 percent of total use (figure 3). Projections indicate that by 1995 the nonresident share of use will increase slightly to 66 percent.

Fishing, camping, canoeing, boating, hiking and swimming are the most popular recreation activities in the study area. In 1978, these six activities accounted for 79 percent of all recreation hours in the area. Of these activities, fishing is by far the most popular, accounting for over 21 million recreation hours in 1980, 35 percent of total use (figure 4 and table 6). Camping is the second most popular activity, receiving about 11 million hours of participation in 1978 (19 percent of total use). Canoeing accounted for about 10 percent of use; boating, 6 percent; hiking, 5 percent; and swimming, 4 percent.

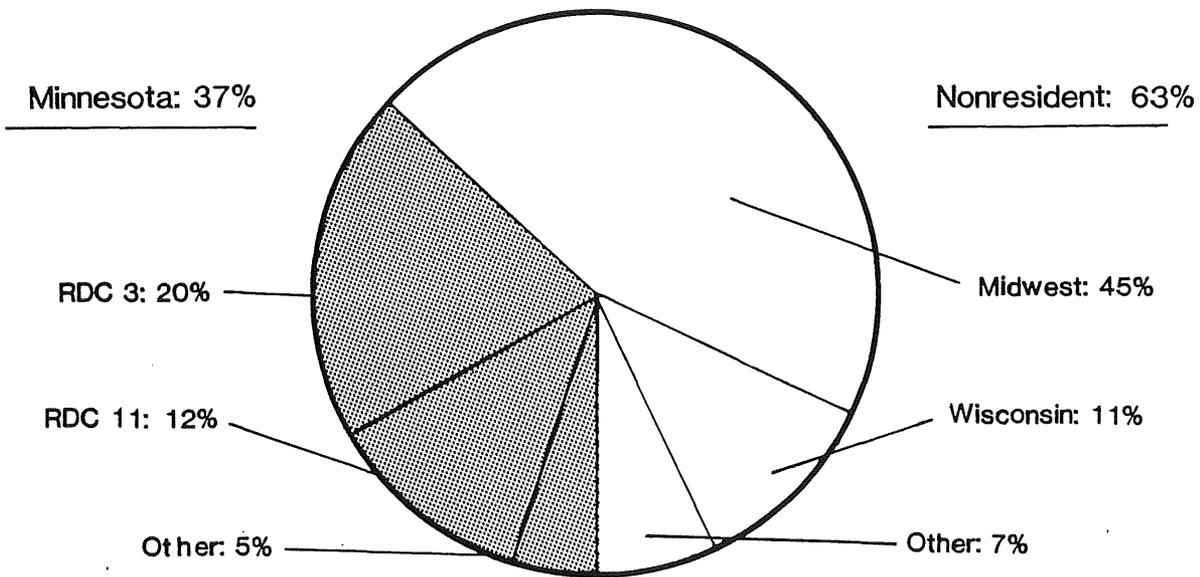
The largest share of 1978 participation in all of these activities except boating came from nonresidents (figure 5). Nonresidents accounted for 78 percent of all hours spent fishing, 63 percent of hours spent camping, 85 percent of canoeing hours, 65 percent of hiking hours and 79 percent of swimming hours. Minnesotans accounted for 54 percent of hours spent boating, and 36 percent of total boating use came from residents of the Arrowhead Region.

With a few exceptions, little change is projected for participation in most activities in the study area between 1978 and 1995. Total use (time spent in all

Figure 3

Origin of Recreation Use (All Activities),
Edge-of-the-Wilderness Study Area: 1978 and 1995
(Including BWCAW and Voyageurs National Park)

1978 59,359,000 Hours



1995 62,214,000 Hours

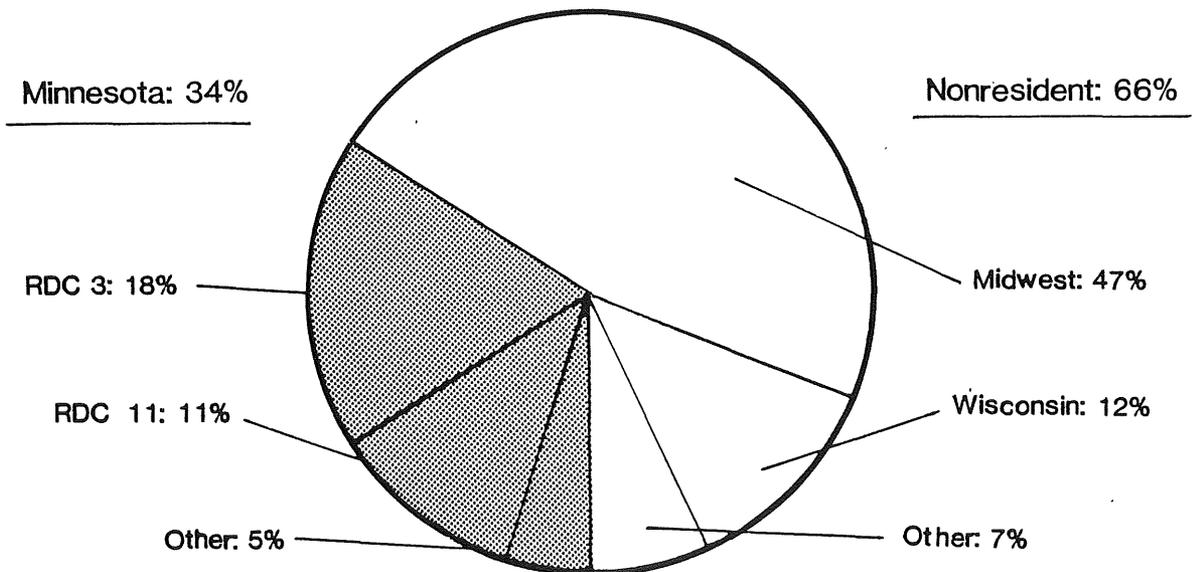
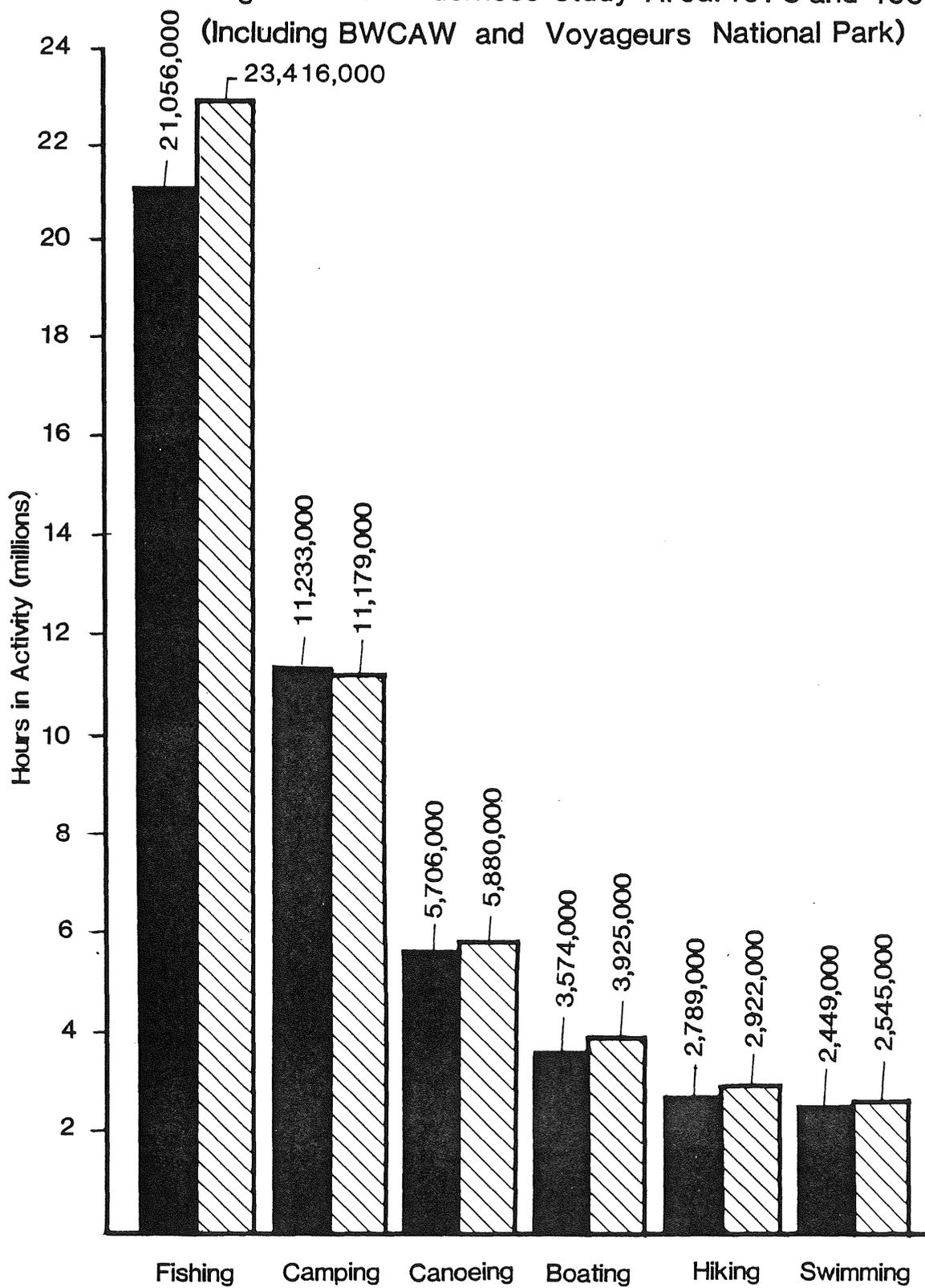


Figure 4

Participation in Major Recreation Activities,
Edge-of-the-Wilderness Study Area: 1978 and 1995
(Including BWCAW and Voyageurs National Park)



Source: SCORP Data (1985).

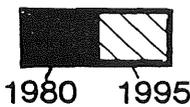


TABLE 6

Annual Participation in Outdoor Recreation Activities, Edge-of-the-Wilderness Study Area
(Including BWCAW and Voyageurs National Park); 1978 and Projected
(Hours in Thousands)

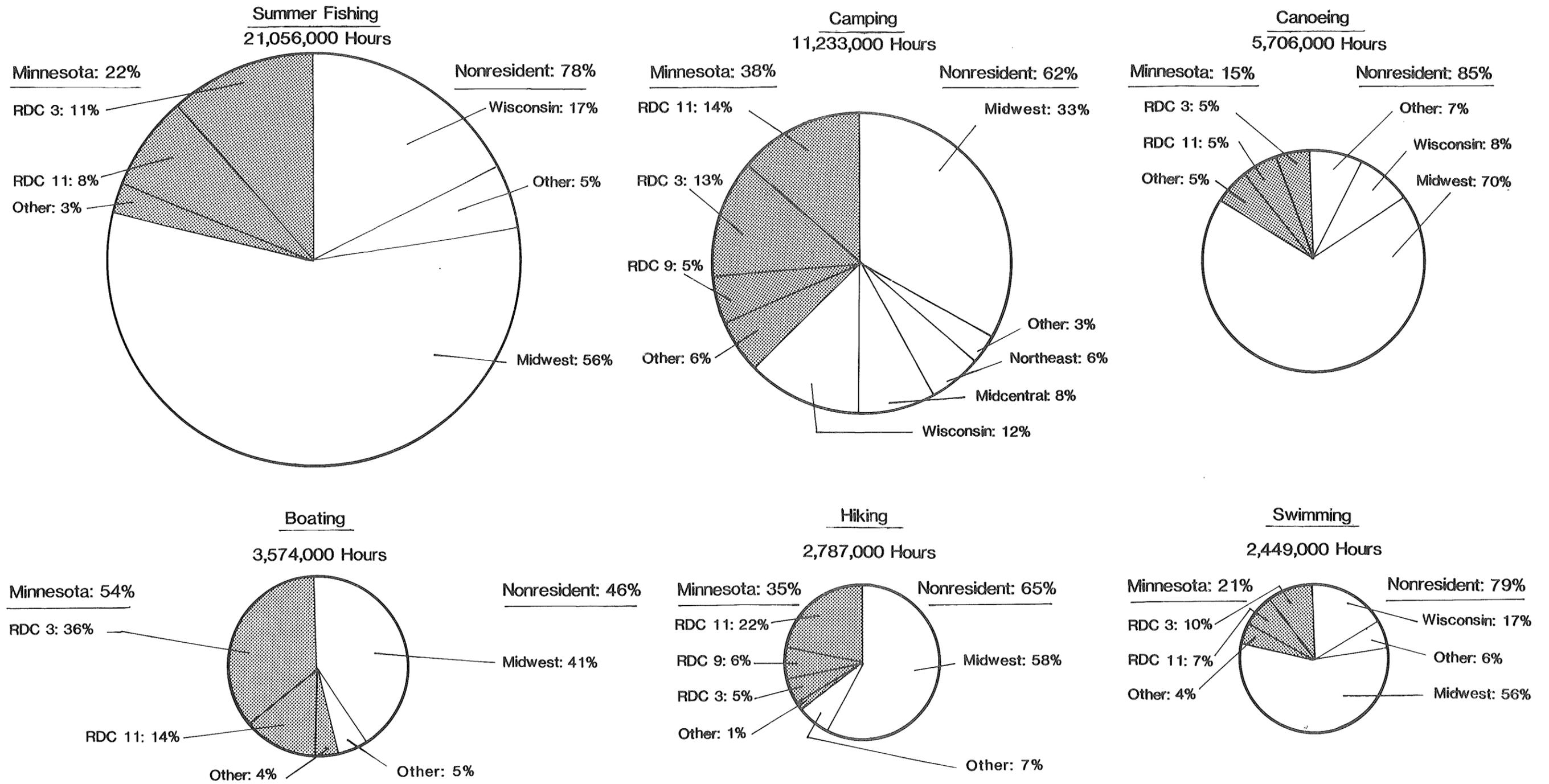
Activity	Edge-of-the-Wilderness Area			Statewide		
	1978		1995		1978 - 1995	1978 - 1995
	Hours	Percent of Total Use	Hours	Percent of Total Use	Change in Hours	Change in Percent of Total Use
Summer Fishing	21056.	35.47	23416.	37.64	2360.	11.21
Camping	11233.	18.92	11179.	17.97	-53.	- .47
Canoeing	5706.	9.61	5880.	9.45	174.	3.06
Boating	3574.	6.02	3925.	6.31	351.	9.83
Hiking	2787.	4.70	2922.	4.70	135.	4.85
Swimming	2449.	4.13	2545.	4.09	96.	3.92
Hunting	1661.	2.80	1727.	2.78	66.	3.99
Backpacking	1536.	2.59	1293.	2.08	-243.	-15.83
Picnicking	1216.	2.05	1255.	2.02	39.	3.21
Nature Study	1145.	1.93	1402.	2.25	257.	22.40
Down-skiing	1063.	1.79	965.	1.55	-98.	-9.18
Orienteering	1034.	1.74	752.	1.21	-282.	-27.28
Snowmobiling	838.	1.41	952.	1.53	114.	13.61
Ice Fishing	828.	1.40	796.	1.28	-33.	-3.95
Driving	609.	1.03	699.	1.12	90.	14.74
Bicycling	553.	.93	505.	.81	-48.	-8.67
X-skiing	401.	.67	377.	.61	-23.	-5.86
Other Winter ¹	846.	1.42	827.	1.33	-19.	-2.25
Other Summer ²	826.	1.39	798.	1.28	-28.	-3.45
TOTAL	59359.	100.00	62214.	100.00	2855.	4.81

Source: Minnesota Department of Natural Resources, Office of Planning, SCORP (1978).

¹ Includes skating, snowshoeing, sledding, snowtubing, dog sledding.

² Includes visiting historic sites, baseball, shooting, (trap, skeet, target, archery), 4-wheel, tennis, golf, trail bike, horseback.

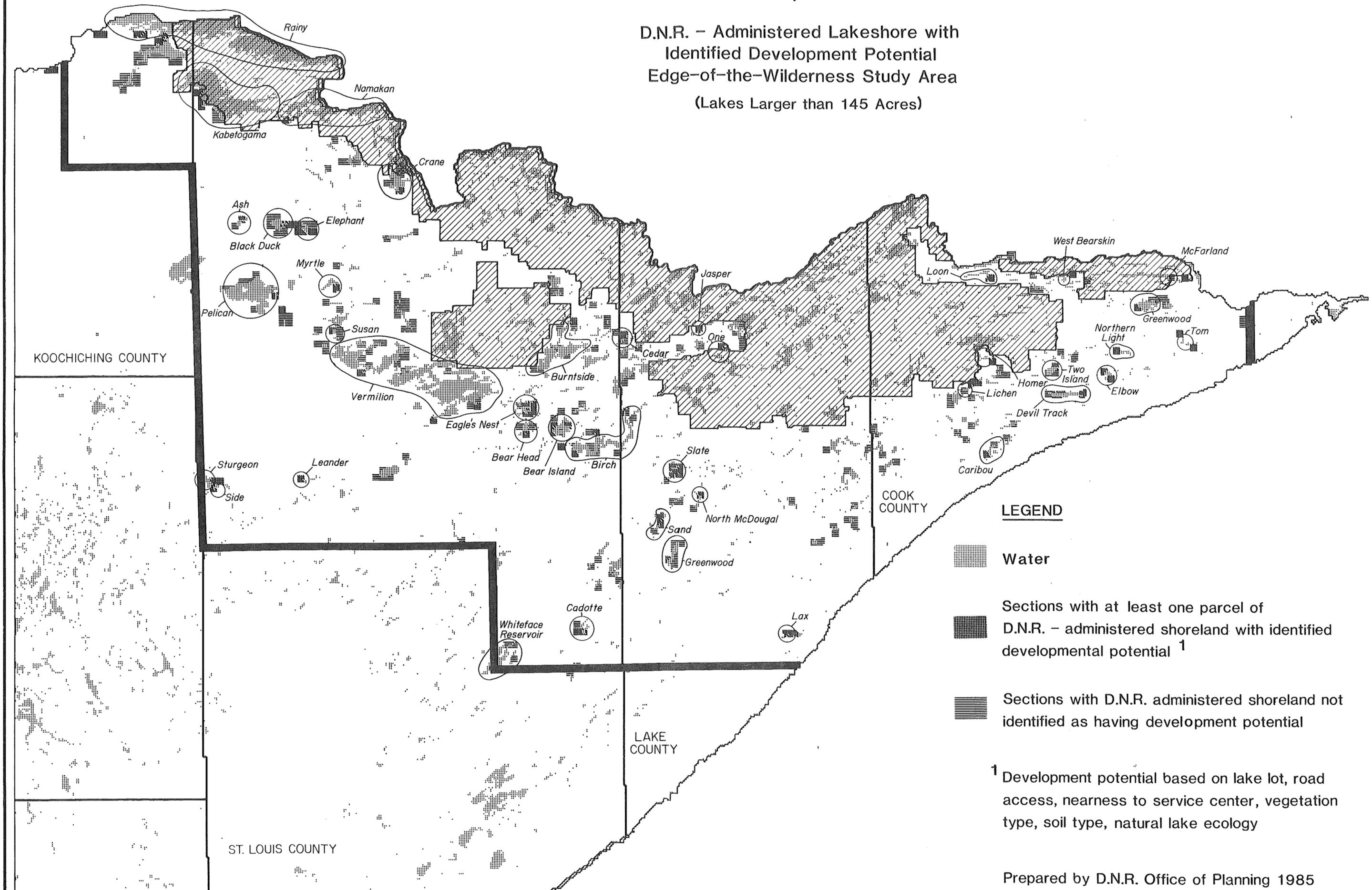
Figure 5
Origin of Recreation Use in Major Activities,
Edge-of-the-Wilderness Study Area: 1978
(Including BWCAW and Voyageurs National Park)



Source: SCORP Data

Map 6

D.N.R. – Administered Lakeshore with Identified Development Potential
Edge-of-the-Wilderness Study Area
(Lakes Larger than 145 Acres)



KOOCHICHING COUNTY

COOK COUNTY

LAKE COUNTY

ST. LOUIS COUNTY

LEGEND

 Water

 Sections with at least one parcel of D.N.R. – administered shoreland with identified developmental potential ¹

 Sections with D.N.R. administered shoreland not identified as having development potential

¹ Development potential based on lake lot, road access, nearness to service center, vegetation type, soil type, natural lake ecology

activities) is projected to increase about 2 million hours. Nature study, driving for pleasure, snowmobiling and fishing are the only activities for which notable percentage increases are projected. Hours spent in nature study are projected to increase 22 percent by 1995, with participation reaching 1.4 million hours. Hours spent driving for pleasure are projected to increase about 15 percent; snowmobiling hours, 14 percent; fishing hours, 11 percent; and boating hours, 10 percent. (The rising popularity of ATVs may affect snowmobiling use projections.) Notable decreases are projected for hours of participation in orienteering (-27 percent) and backpacking (-16 percent).

Economic Importance of Recreation

Outdoor recreation expenditures account for a major portion of income in the tourism sector of northeastern Minnesota's economy. Studies done by the DNR Office of Planning put travel-related expenditures supported by outdoor recreation in the study area, the BWCAW and Voyageurs National Park at about \$150 million (1984 dollars)¹. This figure represents out-of-pocket expenditures (that is, gas, food, lodging and equipment purchased while traveling) for persons traveling over 100 miles by road for purposes of outdoor recreation. When expenditures by people traveling less than 100 miles are included, expenditures supported by outdoor recreation total over \$170 million.

The 1980 Agricultural Extension Service report mentioned previously in this chapter put direct tourism sales for BWCAW edge firms in the vicinity at an estimated \$28 million. (The area considered in this estimate includes the communities of Crane Lake, Orr, Cook, Tower, Soudan, Ely, Winton, Isabella, Tofte, Lutsen and Grand Marais).

¹ Expenditures were assigned to the place where the recreation occurred, not to the place where the money was spent.

Outdoor recreation in Minnesota accounts for 16 percent of total tourist expenditures (that is, expenditures for business and indoor recreation as well as outdoor recreation). Within the Arrowhead Region, of which the study area is a part, outdoor recreation is a much larger share of all tourism (63 percent), with the study area alone supporting 38 percent of total tourism expenditures. The study area, when compared with all of Minnesota, supports 22 percent of tourist expenditures for outdoor recreation and 3.4 percent of total tourist expenditures.

An indication of travel-generated employment in the area can be gained from U.S. Travel Data Center information for the four counties that are totally or partially within the study area boundaries: Cook, Lake, St. Louis, and Koochiching. In these four counties, outdoor recreation, along with indoor recreation and business travel, generated about 11,000 jobs in 1983, 10 percent of all travel-related jobs statewide (information prepared by U.S. Travel Data Center for Minnesota Office of Tourism). The Agricultural Extension Service report estimated that 1,400 full-time job equivalents were generated by resort/outfitting sales in the BWCAW vicinity in 1979.

User Profile

A survey by the Leisure Time Industries consulting group of Laventhol & Horwath for the Ely Area Development Council gives an indication of the characteristics of recreationists in the Edge-of-the-Wilderness Area. For the survey, Laventhol & Horwath conducted research in five Midwest cities that are potential BWCA-area tourism markets: Chicago, Des Moines, Kansas City, Springfield, Ill., and Indianapolis.

From the survey, Laventhol & Horwath concluded that in recent years, emphasis on the area's northwoods-waters assets has shifted away from fishing, motor boating

and passive recreation to other, more active pursuits, primarily canoeing and camping. They attributed this, in part, to the notion that a segment of Ely's vacation market is being attracted to other areas as a result of affordable airfare and alternative vacation opportunities; they also cited the BWCAW legislation, which gave the area higher visibility as a wilderness canoeing and camping destination.

The Laventhol & Horwath study identified three potential types of recreationists for northern Minnesota vacations, grouping dominant activities likely to be done in combination. (While this information was gathered for the purpose of identifying potential markets for recreationists, it also gives an indication of user preferences.) Three types of recreation user groups emerged (see also table 7):

- A. People who appreciate a natural environment but are interested in a vacation that does not involve strenuous physical activity. Persons in this group generally are somewhat older than those in groups B and C.
- B. People interested in sports and experiencing nature. This group is comprised of young, active people, much like those currently vacationing in the BWCA area.
- C. People in this group are young and active, as in Group B, but in addition to sports/outdoor types of activities, they desire a full complement of activities that will provide intellectual and social satisfaction as well as physical satisfaction.

The survey indicated that all three groups find being in the wilderness less important than being close to nature.

TABLE 7

Elements of Importance to
 Different Types of Vacationers
 (Chicago Market)
 (Degree of Importance: Max. = 7)

<u>Item</u>	<u>Groups</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Be where it's peaceful and quiet	4.5	6.0	5.3
Go places you'd never been before	6.4	4.3	6.5
Be close to nature	4.8	6.0	6.1
Be in the wilderness	2.5	4.2	4.5
Engage in active outdoor recreation	3.7	5.0	5.5
Be where there are lots of different things to do	5.5	5.3	6.3
Get physical rest	3.9	5.9	5.6
Have educational experiences	4.0	4.8	5.5

Source: Executive Summary, Report to Ely Area Development Council by Leisure Time Industries Group of Laventhol and Horwath.

Information from the Laventhal & Horwath survey corresponds with that of a 1983 DNR Office of Planning SCORP report (No. 2334). The SCORP report identified five basic types of vacationers in Minnesota who visit the state for recreation purposes, traveling by automobile. For the report, visitors recorded the types of activities they participate in while on vacation; this information was then grouped to identify five basic vacation types or "packages" that involve complementary activities:

1. Canoeing, fishing, playing games, hiking, nature study.
2. Boating, camping, fishing, swimming.
3. Bicycling, tennis, golf.
4. Camping, sightseeing, picnicking, visiting historic sites and interpretive centers.
5. Visiting zoos and amusement parks, dining out, attending fairs, festivals and movies, attending spectator sports events.

Of these basic vacation types, four (1,2,3,4) primarily involve outdoor recreation activities. Two of these four outdoor-recreation-oriented trips (1 and 2) are dependent on natural resources and are the types of trips characterizing use in the Edge of the Wilderness. Trips typified by canoeing, fishing, playing games hiking and nature study are basically nonconsumptive, the report stated; the boating, fishing, camping, swimming trip is a more consumptive type of outdoor recreation. Of the types of natural resource-dependent trips that rely on facility development, trip type 2 (tennis and golf) generally requires goods and services best provided by the private sector. Type 4 (picnicking, sightseeing, visiting historic sites and interpretive centers) generally corresponds with use of facilities considered best provided by the public sector.

In response to a 1979 Agricultural Extension Service survey, BWCAW edge firms identified changes they had noticed in their customers in the previous five years. (The results of this survey are included in the 1980 Agricultural Extension Service Report.) Close to half of the operators said their customers were wanting more of each of the following: fishing, relaxation, cross-country skiing, deluxe accommodations, hiking, viewing scenery, enjoying a natural setting and canoeing. A large share of operators estimated that demand for power boating, snowmobiling and waterskiing had dropped. This indicated a preference for nonmotorized forms of recreation that take place in a natural setting.

When operators estimated changes in customer demands over the next five years, this trend was even clearer. At least 75 percent of the operators estimated that demand for deluxe accommodations and the following nature-oriented activities would increase: relaxation, enjoying a natural setting, hiking, cross-country skiing and snowshoeing, biking and viewing scenery. The percentages of respondents estimating an increased demand for motorized activities were much lower: snowmobiling (46 percent), power boating (30 percent), and water skiing (28 percent).

The responses of BWCAW edge-firm operators suggest that trends in customer activity demands are largely in harmony with the area's northwoods/wilderness setting. It could also be argued that demands are shaped by existing opportunities and accommodations and the area's image as a wilderness destination.

Trends in perceived customer demands for some activities were very similar from one community to another. For example, about half the operators (two-thirds to three-fourths in some areas) reported seeing an increased demand for fishing,

relaxation, deluxe lodging, enjoying natural settings and viewing scenery. However, there were differences among communities regarding other demands. Ely and Grand Marais appeared to be experiencing a greater increase in demand for nonmotorized activities than Crane Lake and Vermilion Lake. About half the Ely and Grand Marais respondents said demand was increasing for cross-country skiing, hiking and canoeing. This trend was not perceived to be as strong in the other communities. Power boating demand was reported to be increasing by about half of the Crane Lake and Vermilion Lake operators.

The greater emphasis on nonmotorized activities and appreciation of the natural environment in the Ely and Gunflint/Cook County areas in comparison with the other communities is consistent with the results of an earlier study (Blank 1973¹). In that study of northeastern Minnesota, resort guests were asked to name their activity interests. Results showed that the dominant activities in the Ely and Gunflint/Cook County areas were fishing and wilderness-oriented activities such as hiking, camping, canoeing and berry-picking. Crane Lake was clearly fishing oriented, while the dominant activities in the Vermilion area were water activities such as boating, water skiing, swimming and fishing.

The Laventhol & Horwath study pointed to other trends evident in the resort and tourism industry:

- a) Lifestyle and demographic changes have elevated the public's expectations and education regarding recreation and have made more dollars available for vacationing.
- b) There is growth in off-season tourism.

¹ Blank, Uel. 1973. A Concept of Recreational Focus Areas, Proceedings: Institute of Traffic Engineers. 23rd annual meeting. Minneapolis, MN.

- c) The tourism product mix is being diversified to include both primitive elements, such as camping, and elements such as full-service, modern resorts.
- d) Demand for wilderness activities is increasing (7.2 percent per year annually as compared to 2.6 percent per year in the BWCAW between 1977 and 1982).
- e) The reduced cost of air travel and the increased cost of automobile travel (in time as well as dollars) have a major influence on choice of a vacation destination.

In brainstorming sessions to gather development ideas, these perceptions on the changes in user groups were offered: people want to be more physically active than in the past and are seeking more than just a fishing vacation; people are interested in variety; they are interested in physical fitness; they want to be educated and informed; and they want their vacations made as simple as possible with trip planning and packaged activities.

CHAPTER FIVE
CONCLUSIONS



CONCLUSIONS

While it has not been the intent of this study to develop a recreation plan for the Edge-of-the-Wilderness study area or to choose from among the many development ideas those that should be implemented, efforts were made to gather information that may assist in further evaluation of development opportunities.

To begin looking more closely at development options available, this chapter contains: (a) a summary of the development ideas, (b) information that may assist in evaluation of some ideas and (c) discussion of guidelines regarding recreation development that are set forth in the State Comprehensive Outdoor Recreation Plan (SCORP).

It is important to note that the ideas generated in meetings represent a sort of "wish list" of DNR central office, regional and field personnel as well as representatives of other agencies. To make decisions on implementing ideas, a number of factors would require consideration. Among these factors:

- a) their effects on different DNR divisions,
- b) how ideas correspond with current DNR management direction,
- c) the level of funding they would require,
- d) how action that might be taken by one DNR division would affect another,
- e) how development on DNR-administered lands may correspond with ongoing and planned development activities of other public land management agencies and the private sector,
- f) the extent to which development of opportunities and facilities on public land would compete with--or enhance--opportunities and facilities provided by the private sector,

- g) what types of recreational development would best be carried out in the private sector and what type would best be provided by public land management agencies, and
- h) the extent to which different ideas would benefit local economies.

These and other considerations may serve as criteria for further evaluation of development ideas.

Summary of Ideas

1. Further development of recreation opportunities in the BWCAW and Voyageurs periphery zone should be built around existing opportunities and resources.

It was the stated opinion of a number of individuals (and the implied opinion behind many development ideas) that the study area already has a solid base of recreation opportunities that complement the natural resource base. This opinion is born out by SCORP recreational use statistics, which indicate that over one-half of all recreation hours spent in the study area are spent in two natural-resource-based activities: summer fishing and camping. Together, four other activities (canoeing, boating, hiking and swimming) account for another one-quarter of recreation use in the area. But while the area's lakes and streams, campgrounds, trail network and other recreation facilities already accommodate substantial use, it was felt that through management and additional development, a greater diversity of opportunities could be provided and a broader user group attracted.

For example, accelerated access development would make more lakes and streams available to anglers and boaters. Intensifying fisheries management in lakes that are heavily used or underutilized would ensure

quality fishing opportunities and create opportunities with appeal to casual anglers as well as those on a serious fishing vacation. Lake trout waters could be managed as trophy fisheries; other lakes could provide quality fishing opportunities for rainbow and brook trout, splake and other species; some lakes could be targeted for fishing for smallmouth bass and other underutilized species.

Camping opportunities in the area also could be diversified to attract different user groups. Most public campgrounds in the area provide opportunities for only primitive or semiprimitive camping, and some individuals identified a need for developed campgrounds to accommodate campers seeking more amenities. Providing specialized services such as food services would also appeal to this user group.

The area's trail network could be improved by creating more connecting trails and completing trails such as the Tower to International Falls State Trail. This would expand opportunities for resort-to-resort skiing, snowmobiling or hiking and would also make trails such as the North Shore Trail more accessible to users. In addition, it was felt that more emphasis should be placed on the quality of trails, not just the quantity. This opinion was evident in concern over the number of trails that are not marked or maintained, the need to reroute some trails to provide more scenic vistas and take less difficult paths, and the effort currently underway to identify Explore Minnesota Trails that provide some of the region's best two-day trail opportunities.

In addition to providing facilities that serve these base activities, it was felt that providing additional opportunities for resort-to-resort canoeing, skiing and snowmobiling and ancillary activities such as

nature-guided hikes, educational displays, interpretive programs, wildlife viewing, berry picking, guided boat tours and other planned activities would further enhance the area's appeal. These, in part, are the sort of "high-tech, high-touch" activities that appeal to people who like to vacation in an area where there is opportunity to be educated and informed, to participate in a variety of activities, and to be spared the task and the time of vacation planning. They are also the types of activities that are well suited to families with small children who are seeking outdoor recreation opportunities but who may find it difficult to take extended wilderness-type trips.

2. More and better information is needed to make people aware of recreational options in the periphery zone and to direct them to opportunities.

A number of individuals felt that recreational opportunities are often overlooked simply because of lack of information on what is available. A variety of ways of providing information was suggested. For example, more signs could be placed to indicate the location of lakes, water access sites, campgrounds, trails and other facilities. A comprehensive information system could be created for opportunities on private land and public land (both DNR- and Forest Service-administered land). Such information could be provided in the form of maps, publications or a computer data base with terminals at information centers, rest areas, agency headquarters and other locations.

People repeatedly emphasized the need for comprehensive information--that is, information on all facilities of all public agencies as well as the private sector (public and private campgrounds, parks, resorts, trails, education/interpretive opportunities and so forth).

3. Greater cooperation is needed among public land management agencies and between the public and private sectors in developing and promoting recreation opportunities.

It was generally agreed that "clusters" of development that provide a diversity of opportunities enhance an area's appeal and attract users interested in a variety of activities. But the opinion was frequently voiced that to be effective, development and promotion must be joint public-private efforts. For example, in developing trails, campgrounds, water access sites and other facilities on state lands, the DNR should consider their relationship to opportunities available on nearby public and private lands. Private facility operators should provide information on public-land recreation opportunities in their promotions.

Interagency and public-private cooperation is also needed to pursue development of accesses and trails, which cross lands of different ownership. Actions that would streamline the process of land exchange, interagency agreements and other cooperative efforts would speed further development of these facilities. Public-private cooperation would also be needed to develop such opportunities as resort-to-resort canoeing.

Information to Assist in Evaluation of Ideas

To assist in evaluation of ideas, two assumptions were made regarding considerations that may influence development: (a) DNR-administered lakeshore would be prime land for recreational development and (b) the availability of road access would be a critical factor in development of opportunities such as trailheads, access to fishing lakes, intensified fish management, campgrounds and a facility such as a multi-service resort complex. It is also an important factor in providing clusters of recreational opportunities.

Existing recreational development in the study area, especially private development, is concentrated on lakeshore with good access to the road network. While limited road access is not a detriment to all types of recreation, there already is abundant opportunity for dispersed and wilderness-type recreation in the study area and in the adjacent BWCAW and Voyageurs National Park. Large portions of the periphery zone are unroaded, and many opportunities exist for dispersed recreation in Superior National Forest and state forests. It also could be argued that developed forms of recreation would generate more income in the study area than would additional dispersed/primitive opportunities.

Many of the ideas offered reflect the opinion that more developed types of recreation are needed to balance the range of opportunities for motorized/nonmotorized recreation, for primitive/developed camping, for wilderness-type trips/planned vacations with greater variety of activities and more amenities. There is ample opportunity to provide more developed recreation options in the periphery zone without detracting from the overall wilderness characteristics of the area.

To help identify DNR land that may be suitable for more developed types of recreation, information was gathered on lakes in the study area that have DNR-administered shoreline. These lakes are listed in table 8.

In addition, information was gathered on lakes with high potential for development, based on the following factors that have influenced recreational home development in the private sector statewide: availability of road access, nearness to major service center, soil type, vegetation type and natural lake ecology. These lakes are identified on map 6 and listed in table 9, with related information on the level of existing housing, resort, campground and water access development.

TABLE 8
Miles of DNR-Administered Shoreline
in the Edge-of-the-Wilderness Study Area
(by Lake)

<u>Lake Name</u>	<u>Lake Number</u>	<u>DNR Shoreline Miles</u> ¹	<u>Percent of DNR Total</u>
Swamp	160009	3.56	1.3
Tom	160019	.66	.2
Mc Farland	160027	.57	.2
Devilfish	160029	.97	.4
South Fowl	160034	.32	.1
Pine	160041	1.93	.7
Greenwood	160077	.97	.4
Northern Light	160089	.28	.1
Elbow	160096	1.95	.7
Moon	160117	.32	.1
Devil Track	160143	5.36	2.0
East Twin	160145	.80	.3
Daniels	160150	.44	.2
Two Island	160156	1.59	.6
Kemo	160188	.28	.1
West Bearskin	160228	1.00	.4
Poplar	160239	1.55	.6
Birch	160247	2.29	.9
Pike	160252	1.95	.7
Deer Yard	160253	.44	.2
North	160331	2.88	1.1
Cascade	160346	1.91	.7
Caribou	160360	2.29	.9
Mistletoe	160368	.83	.3
White Pine	160369	1.04	.4
Christine	160373	.40	.1
Lichen	160382	1.23	.5
Tait	160384	.21	.1
Juno	160402	.44	.2
Homer	160406	.25	.1
Loon	160448	3.48	1.3
Crescent	160454	1.08	.4
Seagull	160629	3.09	1.1
Fourmile	160639	1.25	.5
Finger	160646	.44	.2
Elbow	160805	1.86	.7
Frear	160806	1.08	.4
Rat Root	360006	14.26	5.3
Crooked	380024	.68	.3
Ninemile	380033	1.99	.7
Moose	380036	1.15	.4
Wilson	380047	.80	.3
Whitefish	380060	.47	.2

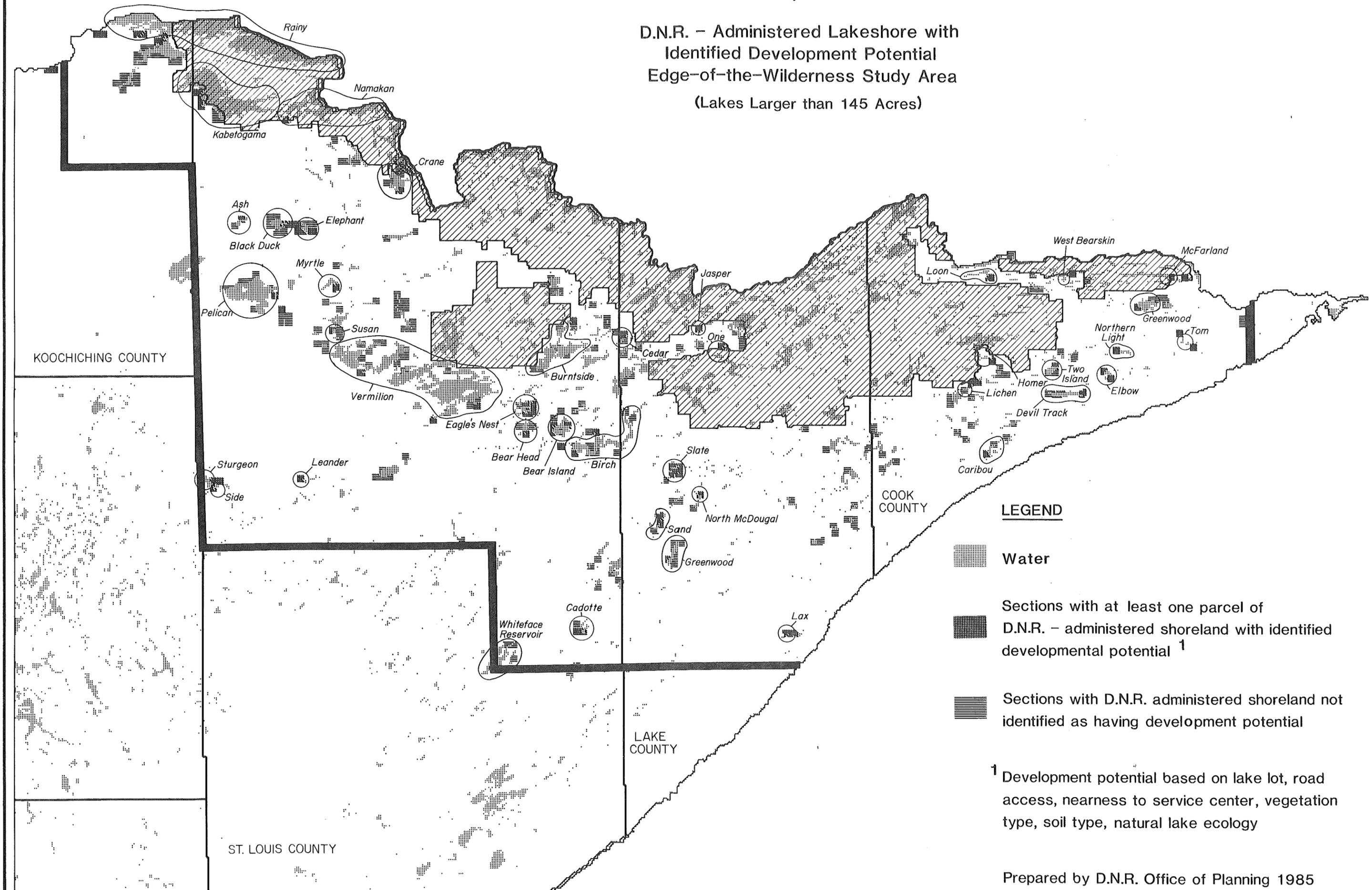
¹ Miles refer to frontage of parcels in which there is at least some DNR-administered land. Actual DNR-administered frontage may be less than miles given.

Silver Island	380219	.32	.1
Balsam	380245	1.42	.5
Island River	380289	2.20	.8
Dumbbell	380393	1.21	.5
Isabella	380396	1.00	.4
Lax	380406	.15	.1
Four	380528	.32	.1
Snowbank	380529	4.45	1.7
One	380605	2.27	.8
Ojibway	380640	.98	.4
Jasper	380641	3.26	1.2
Moose	380644	.70	.3
Greenwood	380656	4.32	1.6
South McDougal	380659	.87	.3
Stony	380660	1.02	.4
Slate	380666	3.45	1.3
Wampus	380685	.44	.2
North McDougal	380686	2.25	.8
Triangle	380715	.91	.3
Greenstone	380718	.32	.1
Sand	380735	1.29	.5
Cedar	380810	1.93	.7
Fall	380811	1.95	.7
Seven Beaver	690002	.15	.1
Birch	690003	8.03	3.0
White Iron	690004	.97	.4
Long	690044	.34	.1
Stone	690046	.55	.2
Round	690048	.32	.1
Big	690050	.83	.3
Little Long	690066	.57	.2
Low	690070	1.00	.4
Nels	690080	.98	.4
Cadotte	690114	.32	.1
Bear Island	690115	3.92	1.5
Johnson	690117	2.76	1.0
Burntside	690118	9.11	3.4
Wolf	690143	2.97	1.1
Muckwa	690159	.61	.2
Slim	690181	.32	.1
Big	690190	6.86	2.6
Bearhead	690254	4.51	1.7
Eagles Nest	690285	5.74	2.1
Whiteface Reservoir	690375	9.38	3.5
Vermilion	690378	20.24	7.5
Wynne	690434	.32	.1
Pike River Flowage	690580	.34	.1
Little Rice	690612	.38	.1
Vermilion River	690613	8.31	3.1
Echo	690615	.57	.2
Crane	690616	3.46	1.3
Big Rice	690669	3.46	1.3
Winchester	690690	.62	.2
Johnson	690691	3.45	1.3
Namakan	690693	1.38	.5

Rainy	690694	20.53	7.6
Susan	690741	1.36	.5
Ban	690742	.32	.1
Elbow	690744	.32	.1
Clear	690747	.66	.2
Myrtle	690749	.10	.0
Moose	690750	.32	.1
Little Johnson	690760	1.14	.4
Sunset	690764	1.61	.6
Leander	690796	.49	.2
Hóodo	690802	1.08	.4
Rice	690803	4.51	1.7
Elephant	690810	3.47	1.3
Pelican	690841	7.75	2.9
Black Duck	690842	5.76	2.1
Kabetogama	690845	6.27	2.3
Ash	690864	.44	.2
Perch	690932	.23	.1
Side	690933	1.19	.4
Sturgeon	690939	<u>.83</u>	<u>.3</u>
	TOTAL	268.57	100.0

Map 6

D.N.R. - Administered Lakeshore with
Identified Development Potential
Edge-of-the-Wilderness Study Area
(Lakes Larger than 145 Acres)



KOOCHICHING COUNTY

COOK COUNTY

LAKE COUNTY

ST. LOUIS COUNTY

LEGEND

 Water

 Sections with at least one parcel of D.N.R. - administered shoreland with identified developmental potential ¹

 Sections with D.N.R. administered shoreland not identified as having development potential

¹ Development potential based on lake lot, road access, nearness to service center, vegetation type, soil type, natural lake ecology

TABLE 9
DNR-Administered Lakeshore Lots with Identified Potential for Development
(Lakes larger than 145 acres)

Development & Road Classes ¹	Lake Number	Lake Name	Lake Acres	Level of Existing Development ²	Number of State-owned Parcels	Miles of Shoreline	Acres of DNR-owned Land	
Development Potential Class 1	Road Classes 1 or 2	160096	ELBOW	415	16	1	0.322	34
		160143	DEVIL TRACK	1873	72	1	0.436	40
		160360	CARIBOU	714	32	2	0.474	89
		160382	LICHEN	306	9	3	0.550	111
		380406	LAX	273	54	1	0.038	0
		380656	GREENWOOD	1469	20	2	0.796	43
		690693	NAMAKAN	14050	38	2	1.004	42
		690939	STURGEON	2050	43	4	0.834	93
		160143	DEVIL TRACK	1873	72	2	1.269	75
		160156	TWO ISLAND	858	52	1	0.436	39
Development Potential Class 2	Road Class 2	380810	CEDAR	472	18	2	0.644	87
		160089	NORTHERN LIGHT	443	13	1	0.284	37
		160096	ELBOW	415	16	3	1.269	64
		160143	DEVIL TRACK	1873	72	1	0.644	8
		380406	LAX	273	54	1	0.114	39
		380641	JASPER	195	42	5	2.255	146
		380666	SLATE	354	17	6	3.448	159
		380686	NORTH MC DOUGAL	323	48	3	1.572	0
		380735	SAND	506	30	3	0.966	93
		690285	EAGLES NEST	1926	59	10	3.769	302
		690693	NAMAKAN	14050	38	1	0.379	31
		690694	RAINY	220800	94	12	2.803	344
		690845	KABETOGAMA	25760	95	12	3.882	291
		690864	ASH	678	36	1	0.246	2
No Soils Data	Road Class 1	160448	LOON	1197	51	2	0.606	81
		380605	ONE	822	49	4	1.401	116
		690003	BIRCH	7628	80	3	0.814	88
		690115	BEAR ISLAND	2667	75	1	0.246	5
		690378	VERMILION	49110	98	4	1.174	109
		690580	PIKE RIVER FLOWAGE	241	17	1	0.341	40
		690749	MYRTLE	860	57	1	0.095	1
		690796	LEANDER	253	39	2	0.492	59
		690841	PELICAN	11944	95	3	0.890	47
		690933	SIDE	375	70	5	1.193	111
No Soils Data	Road Class 2	160019	TOM	411	18	2	0.360	79
		160027	MC FARLAND	394	41	2	0.568	61
		160077	GREENWOOD	2078	34	1	0.322	31
		160228	WEST BEARSKIN	522	39	2	0.398	57
		160406	HOMER	516	15	1	0.246	36
		690003	BIRCH	7628	80	2	0.701	72
		690114	CADOTTE	318	52	2	0.285	0
		690115	BEAR ISLAND	2667	75	6	1.950	214
		690118	BURNTSIDE	10236	76	1	0.284	39
		690254	BEARHEAD	693	47	2	0.644	69
		690375	WHITEFACE RESERVOIR	4980	63	12	2.614	480
		690616	CRANE	3396	88	1	0.795	2
		690741	SUSAN	305	15	1	0.227	19
		690810	ELEPHANT	782	48	4	1.098	118
690842	BLACK DUCK	1264	40	5	1.344	119		
					150	47.52	4,222	

¹ Indicates potential for development based on criteria of road access, nearness to major service centers (Ely and International Falls), soil type, vegetative cover, natural lake ecology.

Road class 1 = Lake lot is adjacent to a paved road or adjacent to a gravel road and within 1/4 mile of a paved road.

Road class 2 = Lake lot is adjacent to a gravel road and over 1/4 mile to a paved road.

Road class 3 = Lake lot is not adjacent to a paved or gravel road but is (a) within 1/4 mile of a paved road or (b) between 1/4 and 1 mile from a paved road and within 1/4 mile of a gravel road.

² Indicates existing level of development. Lakes throughout the study area were ranked from 1-100 based on number of shoreland housing units and on resort, campground and water access development. Lakes were assigned rankings for each of these four criteria, and the individual rankings were averaged for a combined development ranking.

It is important to note that table 9 does not necessarily list all the lakes in the study area that are suitable for development; rather, it is intended as a tool that could be used to begin more site-specific evaluation of areas with potential for development. It could be used in combination with information on distribution of access sites, resorts and campgrounds (maps 3, 4 and 5 in Existing Recreational Facilities chapter) to identify areas where development might be clustered. It could also be cross-referenced with access priority and fisheries management lists to identify where accelerated access development, intensified fisheries management and development of related opportunities may be desirable. In all cases, use of this list should be coupled with on-site evaluation of development potential.

Existing Guidance Affecting Recreational Development

The 1985 Draft State Comprehensive Outdoor Recreation Plan (Volume II) addresses issues related to recreation and tourism planning in Minnesota and provides direction that may guide evaluation of ideas for the Edge-of-the-Wilderness study area. In many cases, SCORP direction supports development ideas that were suggested for the study area.

Aiding the Private Sector: The SCORP draft suggested several ways in which the state could aid the private sector in recreation development. Among the suggestions:

- a) The DNR and the Department of Energy and Economic Development (DEED) should work together to assess the recreational significance of resort failures on prime lakeshore.
- b) The DNR and DEED should work with other state agencies to identify key underdeveloped highway intersections and indicate the tourist services missing from these intersections.

- c) DNR and DEED should work together to identify locations for development near key state and federal recreation/tourism resources, and if no other public purpose exists near these key developments, lease the land to private businesses that cater to recreation tourists.
- d) DNR should consider leasing state-owned lakeshore to private interests who pledge to develop lakeshore for public use.

The latter two of these suggested guidelines lend support to the idea of making DNR land available for development of facilities such as a developed campground or multipurpose resort complex.

Public Facility Development: SCORP directs the DNR to continue to lead the state in promoting Minnesota's recreation and tourism image through continued protection of public waters, intensified management of fish populations in major lakes, accelerated management of lake-surface use on major recreation lakes, and development of highway facilities in prime tourism areas. Suggested ways in which this is to be accomplished include:

- a) Increasing fish stocking where such action is biologically and economically sound.
- b) Accelerating the trophy fishery program and other special management efforts designed to enhance fishing opportunities.
- c) Developing public water-access and day-use areas on prime recreational lakes.

- d) Designating and promoting (with other agencies) sightseeing routes and developing facilities such as waysides, interpretive displays and improved access along these routes.
- e) Developing major interpretive and educational facilities.

These suggested guidelines for public facility development correspond with ideas related to fisheries management, access development, auto and bus tours and interpretive/educational facilities.

Coordinating Promotional Efforts and Information Distribution: SCORP identified information on available recreation facilities as an important component in increasing the vitality of the state's tourism/recreation industry. Among the guidelines put forth for information and promotion:

- a) Under the auspices of DEED, the DNR, USFS and National Park Service should jointly provide information on public and private recreation opportunities in Minnesota and make this information available at interagency-sponsored information displays in strategic locations.
- b) The DNR and Office of Tourism should consolidate informational materials to reduce duplication in brochures and other media messages.
- c) Within the DNR, divisions should pool their information resources and develop promotional messages and information materials that provide a complete picture of Minnesota's public recreation facilities. A cooperative work group should be formed to coordinate development of divisional maps and brochures, and this information should be developed and distributed with the Office of Tourism.

These guidelines give strong support to ideas to provide more comprehensive information on recreation opportunities in the study area. In addition, SCORP identifies the multipurpose recreation map as one of the most effective information tools for the recreation/tourism market and makes reference to computers as a valuable tool in disseminating information. Both of these methods of disseminating information were suggested for the study area.

Other, related guidelines identified in SCORP are:

- a) State and federal land managers should consider development of public lands immediately south of the BWCAW to provide additional, less-primitive recreation areas and promote motorized recreation in the area near Voyageurs National Park to reduce pressure on the BWCAW.
- b) The state should increase its supply of natural history and historic sites and provide interpretive information to the public. More information should be provided to assist in interpretation.
- c) The DNR and the USFS should develop a joint management and development plan that focuses on servicing motorized BWCAW users displaced by federal wilderness legislation restricting motorized use. The plan should provide for coordinated acquisition, development, management and promotion of resources and should consider the full range of development and management options available to the state and federal governments, including private-sector development options. The primary management objectives of the plan should be provision of opportunities for motorized fishing and camping in the summer and snowmobiling in the winter.

Further Action Regarding Recreational Development in the Study Area

In the process of preparing this report, a number of DNR personnel in the central and regional offices and in the field expressed the hope that further action would be taken to implement development ideas. Staff in all resource disciplines are concerned with providing the types of recreation opportunities that will meet the needs of residents and visitors to the area and contribute to the tourism-based segment of the area's economy. They are also concerned about providing these opportunities in a way that preserves the integrity and character of the region and that maintains the quality of its natural resources.

Many resource managers perceive changing trends in the desires and needs of recreationists in the BWCAW and Voyageurs National Park periphery area, but they cannot pinpoint these trends with certainty. Because of this, they identify a need for better information (such as user profiles and identification of recreational markets) with which to make management decisions and promote recreation opportunities.

There appears to be a widespread desire and willingness to work cooperatively in efforts to provide additional recreation opportunities and boost tourism in the area. To this end, several suggestions were made regarding action that could be taken to implement development ideas:

- a) Each DNR division and unit could identify ideas that they could best address. They could also identify barriers and constraints to implementing ideas, and prioritize the ideas. An interdisciplinary task force could then be formed to discuss ideas not addressed by individual units. Some ideas would be interdisciplinary in nature and coordination would be required to implement them. The Outdoor Recreation Coordinating Committee could perform these functions.

- b) A conference could be held to address recreation development and tourism promotion within the Edge-of-the-Wilderness Area, with participation from state and federal land management agencies, the Department of Energy and Economic Development, including the Office of Tourism, interested local government units, legislators, regional and local development groups, the University of Minnesota Agricultural Extension Service and other interested groups and individuals. The Edge-of-the-Wilderness Study, along with other work that has been done on tourism development and promotion, could form the basis for the conference.
- c) An interdisciplinary team could be formed to develop criteria for evaluating ideas and a process for improved public-private cooperation. On the basis of this evaluation, a pilot project could be undertaken to develop and promote recreation opportunities within a defined "test" area. This could be an area where there already is a concentration of public-private facilities serving base activities such as fishing and camping and where there are opportunities for additional development (with minimum investment) of ancillary activities such as guided interpretive tours, day hikes and other planned activities. The project would focus on identifying and developing diverse activities, packaging information identifying, target markets, and promoting in those markets. The Outdoor Recreation Coordinating Committee could play a key role in this effort. The department could pursue the project in conjunction with the U.S. Forest Service and other interested organizations.
- d) Compile information on existing and proposed DNR recreation programs. Using this information, along with ideas and background information in this report, regional and field staff could develop work programs to implement some of the ideas.

e) An ombudsman-type position could be created for a recreational development coordinator. The person in this position would work with the DNR, DEED, USFS, regional and community groups, and other concerned agencies and organizations to coordinate information on recreation opportunities, development plans, packaging of information and promotion. While there are a number of state and federal agencies and private organizations involved in recreation research and management and tourism promotion, communication and coordination could be improved.

Findings of this study indicate that whatever action may be taken to further develop recreation opportunities in the Edge-of-the-Wilderness, it should be an interdisciplinary, interagency, private-public cooperative effort that will bring together existing information and expertise for coordinated development.

APPENDIX A
DNR and USFS Lakes
with Priority for Access Development

DEPARTMENT NATURAL RESOURCES

*Office Memorandum*TO: Mike Markell
Water Access Supervisor

DATE: 7/30/84

FROM: Bob Moore
Water Access Specialist

PHONE: 327/1708

SUBJECT: Ely Area Water Access Priorities and Status

As we discussed, the following is a brief summary of the water access situation around the Ely, MN., area.

A couple of years ago it was brought to our attention that a large number of lakes around Ely had limited or no public water access. While all of these lakes are located outside the BWCA many are within the Superior National Forest.

We have met in Ely and communicated closely with local area groups, the USFS, and our Division of Fisheries in identifying priorities for access in this area. Realizing that the USFS and our Department do have separate development programs for water accesses, we established two separate priority development lists for this area. On a short term basis it was decided that we would work toward developing sites around this area mostly on priority lakes outside the Superior National Forest, and the USFS would attempt to develop sites within the Superior National Forest. If we (DNR) completed development on the lakes we identified as priority, then we could also look at working cooperatively with the USFS on a few of the mutual priorities within the Superior National Forest (the USFS have indicated that they expect limited funding for access development over the next few years).

The following is a list of our immediate priorities for the Ely area and a list of the short term USFS priorities. Also attached is a list of long term priorities for this area as identified through our recent meeting.

DNR Priorities and Status

1. Eagles Nest No. 3 - Currently on our 1985 development plan located on State Park land we need engineering plans and funding for this project.
2. Shagawa Lake - Acquisition being pursued. The property should be close to option stage. Once acquired the development would be considered a very high regional priority.
3. Little Long Lake - Listed on our '85 development plan. Waiting for final engineering review. Site needs to be closely evaluated because of high rock ridge between road and lake. Property owned partially by USFS and State. Special use permit will be required if this site is developed from USFS. (They have given us preliminary approval, but now need formal plans to complete that permit). Project will have to be dropped if cost evaluation is too high.

4. Armstrong Lake - Lease to use St. Louis County land approved by County Board through resolution. This project will be added to our next development plan. Final lease from County will be necessary prior to construction.
5. Snowbank Lake - existing site proposal to expand parking. Bids have been accepted for this small project. Work should be completed this summer.
6. White Iron Lake - Lake County does have an area that has potential for improvement. County has not been formally approached about a possible cooperative agreement as this project would not be added to our development list until at least next year. If the County is unwilling to cooperate with us locating a site on White Iron through acquisition, it will be difficult and expensive.
7. Cedar, Brown, Low Lakes - Potlatch controlled. We have approached them about possible lease, etc.. To date response has been negative.
8. Burntside South Side - Recently identified as priority USFS developing access on north side. We will have to look closely at limited USFS ownership on South side or pursue acquisition.
9. Vermilion - Hoodoo Point - Rehabilitation currently out on bid - existing DNR access site.

USFS Priorities

1. Tofte Lake
2. Big Lake
3. Ojibawa
4. Burntside
5. Snowbank - Resort acquisition - longer term.

FOR YOUR INFORMATION:

We were recently informed that the USFS had funding available for the Tofte Lake and ~~Burntside~~ Lake access developments.

~~Big ?~~

The attached list is a complete longer term list of access priorities for the Ely area. Including the above short term priorities these include varied types of developments some of which development may be impossible because of ownership problems, lake locations, suitability, etc..

We do feel that this is an important area for improved water access improvements. If we can develop 2-3 of our priorities over the next 1-2 years and the USFS can do the same, I feel, we would be well on our way to satisfying local concerns on this issue. If you have questions or need additional information at this time, please call this office.

cc: John Chell
Les Ollila

Attachment

vf

STATE OF MINNESOTA

DEPARTMENT NATURAL RESOURCES

Office Memorandum

TO : John Chell
Regional Administrator

DATE: 6/28/83

FROM : Bob Moore
200 Thru: Les Ollila *les*
Trails & Waterways

PHONE: Ex. 151

SUBJECT: Superior National Forest Water Access Development Priority List.

The following lists resulted from comparing the USFS access priority list with our Division of Fisheries priority list for the Superior National Forest area. The first list A) identifies lakes that DNR Regional Fisheries considers as priorities for water access within the Superior National Forest and are also listed on the USFS development plan; B) identifies lakes that DNR Regional Fisheries considers as priorities for access with the Superior National Forest, but are not currently on the U.S. Forest Service priority development plan; C) identifies projects that were on the DNR Regional Fisheries priority list, but not on the USFS list that through our statewide water access program priority rating system would have the most potential for cooperative type projects according to our program guidelines. We hope all lakes prioritized by the Division of Fisheries are considered for water access development by the USFS. Perhaps, many or all of those priorities could be incorporated into the Superior National Forest priority plan.

A. DNR Fisheries Priorities/Listed on U.S.F.S. Plan

	<u>I.D. No.</u>	
1. Tofte Lake, Lake Co.	38-724	Carry In Access proposed by USFS
2. Ojbiway Lake, Lake Co.	38-640	New launch proposed by USFS
3. Burntside Lake, St. Louis Co.	69-118	Launch proposed by USFS on north area
4. Big Lake, St. Louis Co.	69-190	Reconstruct launch-5 car parking-USFS
5. Grassy Lake, St. Louis Co.	69-82	Carry in access proposed by USFS
6. Round Lake, St. Louis Co.	69-48	Carry in - reconstruct by USFS
7. Slim Lake, St. Louis Co.	69-181	Carry in - reconstruct by USFS
8. Nels Lake, St. Louis Co.	69-80	Carry in - reconstruct by USFS
9. Gun Flint Lake, Cook Co.	16-356	Launch-expansion proposed by USFS
10. Mayhew Lake, Cook Co.	16-337	Launch - new site proposed by USFS
11. Birch Lake, Cook Co.	16-247	Launch - reconstruction proposed by USFS
12. Hungry Jack Lake, Cook Co.	16-227	Launch - new construction proposed by USFS
13. Tait Lake, Cook Co.	16-384	Launch - new construction proposed by USFS
14. Barker Lake, Cook Co.	16-358	Launch - new construction proposed by USFS
15. East/West Twin Lakes, Cook Co.	16-145	
	16-186	Launch - new construction proposed by USFS
16. Deer Yard Lake, Cook Co.	16-253	Launch - new construction proposed by USFS
17. Lake Fourteen, st. Louis Co.	69-793	Launch - new construction proposed by USFS

B) DNR Fisheries Priorities/Not Listed on USFS Plan

	<u>I.D.No.</u>	
1. Kemo Lake, Cook Co.	16-188	
2. Jim Lake, Cook Co.	16-135	
3. Poplar Lake, Cook Co.	16-239	
4. Devil Fish Lake, Cook Co.	16-29	
5. Ball Club, Cook Co.	16-182	
6. Gust Lake, Cook Co.	16-380	
7. Northern Light Lake, Cook Co.	16-89	
8. Snowbank Lake, Lake Co.	38-529	
9. High Lake, St. Louis Co.	69-71	
10. Conchee Lake, St. Louis Co.	38-720	
11. Hanson Lake, St. Louis Co.	69-189	
12. Reganbogen Lake, St. Louis Co.	69-81	
13. Seven Beaver, St. Louis Co.	69-2	
14. Pine Lake, St. Louis Co.	69-1	
15. Little Long Lake, St. Louis	69-66	Currently on DNR '83 development plan.
16. Mitchell Lake, St. Louis	69-116	
17. Madden Lake, Lake Co.	38-709	
18. Green Stone Lake, Lake Co.	38-718	
19. Big Lake, St. Louis Co.	69-50	
20. Pike Lake, Cook Co.	16-252	
21. Picket Lake, St. Louis Co.	69-79	

C) Priorities identified by the Division of Fisheries, not listed by USFS that would have good potential for cooperative development projects (based on our statewide water access priority rating system)

	<u>Size</u>	<u>Rated</u>	
1. Poplar Lake	950 acres	A311	
2. Pike Lake	850 acres	A311	
3. Little Long Lake	388 "	B411	T/W will be pursuing development possibilities with USFS
4. Northern Light Lake	443 "	C413	
5. Snowbank Lake	4819 "	A211	
6. Seven Beaver Lake	1508 "	B214	
7. Pine Lake	442 "	B411	
8. Mitchell Lake	270 "	B411	
9. Green Stone Lake	316 "	B411	
10. Big Lake	793 "	A312	

(List Not Prioritized)

This list does not contain the priorities that are identified for development by the USFS as we are assuming that funding and subsequent development of those projects will be completed by that agency according to their schedule. There are, however, many lakes on their list that we do consider "priority" for water access development.

Additional questions we feel are important that should be directed to the Superior National Forest personnel include:

- Will the sites identified on their priority list be funded and constructed on schedule?
- What schedules will there be on the projects that are on the USFS priority list, but where no funding dates have been set? (Example: Seagull Lake, 4996 acres, proposal to expand existing access parking to 40 cars/trailer parking, no scheduled funding date set on priority list).
- If funding will not be available on those projects for years, could DNR participate on the development of a few of the higher priority sites?
- Are carry in access sites or launches with small parking areas adequate for a few of the larger lakes outside of the BWCA?

GRAND MARAIS AREA

TROUT LAKES

Immediate Management

<u>Lake</u>	<u>County</u>	<u>Id. No.</u>
Clearwater	Cook	16-139
Greenwood	Cook	16-77
Loon	Cook	16-448
Magnetic	Cook	16-463
Moss	Cook	16-234
North	Cook	16-331
Saganaga	Cook	16-633
Sea Gull	Cook	16-629
Trout	Cook	16-49

Access Improvement Needed

<u>Priority</u>	<u>Lake</u>	<u>County</u>	<u>Id. No.</u>
1.	Gunflint ²²⁴⁵	Cook	16-356
2.	Mayhew ^{247 641}	Cook	16-337
3.	Birch ^{200 641}	Cook	16-247
4.	Kemo ⁷³⁰⁰⁰⁻³⁴¹	Cook	16-188
5.	Jim ^{700-115 351}	Cook	16-135

COOL WATER FISH LAKES

Access Improvement Needed

<u>Priority</u>	<u>Lake</u>	<u>County</u>	<u>Id. No.</u>	<u>Land Ownership</u>
1.	Poplar ^{7508 F311}	Cook	16-239	Federal
2.	Devilfish ^{417 B41}	Cook	16-29	Federal, State
3.	Hungry Jack ^{435 B411}	Cook	16-227	Federal, State
4.	Pike ^{850 F311}	Cook	16-252	Federal
5.	Devil Track ^{1013 F211}	Cook	16-143	Federal, State
6.	Tait ^{833 B411}	Cook	16-384	Federal
7.	Barker ^{1001 B}	Cook	16-358	Federal
8.	East and West Twin ¹⁰⁰¹	Cook	16-145, 16-186	Federal
9.	Ball Club ^{101 B412}	Cook	16-182	Federal
10.	Dear Yard ^{353 B412}	Cook	16-253	Federal
11.	Gust ^{159 243}	Cook	16-300	Federal
12.	Northern Light ^{143 B413}	Cook	16-09	Federal, State
13.	Elbow ^{150 103}	Cook	16-74	Federal, State

Note: This list is a refinement of lists prepared by the DWR with participation of local residents. It was used in identifying short-term priorities.

TROUT LAKES

Immediate Management

Access Improvement Needed

<u>Lake</u>	<u>County</u>	<u>Id. No.</u>	<u>Priority</u>	<u>Lake</u>	<u>County</u>	<u>Id. No.</u>
Dam	Lake	None T.63,R.10;S.17	1.	Ojibway 44-411	Lake	38-640
Discovery	Lake	38-602	2.	Snowbank 38-421	Lake	38-529
Glacier Pond No. 1	Lake	38-712	3.	Burntside 38-30-411	St. Louis	69-118
Judd	Lake	38-601	4.	Tofte 44-3511	Lake	38-724
Big Rosendahl	St. Louis	69-739	5.	High 303 44-4	St. Louis	69-71
Shipman Bass	St. Louis	69-168	6.	Conchu 50-422	Lake	38-720
			7.	Hanson 20-422	St. Louis	69-189
			8.	Reganbogen 12-6511	St. Louis	69-81

COOL WATER FISH LAKES

State Access Improvement Needed

Federal Access Improvement Needed

<u>Priority</u>	<u>Lake</u>	<u>County</u>	<u>Id. No.</u>	<u>Priority</u>	<u>Lake</u>	<u>County</u>	<u>Id. No.</u>
1.	Browne	Lake	38-780	1.	Big 204-4212	St. Louis	69-190
2.	Cedar	Lake	38-810	2.	Grassy 343 4413	St. Louis	69-82
3.	Eagles Nest #3 ✓	St. Louis	69-285C	3.	Seven Beaver 1503 3214	St. Louis	69-2
4.	Armstrong ✓	St. Louis	69-278	4.	Round 33-411	St. Louis	69-48
5.	Low	St. Louis	69-70	5.	Pine 44-2-13	St. Louis	69-1
6.	Ed Shave	St. Louis	69-199	6.	Slim 3-3-8411	St. Louis	69-181
7.	Shagawa ✓	St. Louis	69-69	7.	Nela 200 34-2	St. Louis	69-80
8.	White Iron	St. Louis	69-4	8.	Little Long 343 4411	St. Louis	69-66
9.	Bear Island	St. Louis	69-115	9.	Mitchell 270 6411	St. Louis	69-116
10.	Twin	St. Louis	69-163	10.	Maddan 37 3514	Lake	38-709
11.	Clear	St. Louis	69-277	11.	Greenstone 313 3411	Lake	38-718
12.	Joseph	St. Louis	69-157	12.	Picket 28-1012	St. Louis	69-79
13.	Isaac	St. Louis	69-158	13.	Big 343 4212	St. Louis	69-50

FINAL PRIORITY LIST: FOREST-WIDE
(12/31/82)

SCHEDULED FOR \$'s IN FY:

BOATING SITES

1.	Hog Creek (obliterate old site) (07) Carry In	82	83
2.	Tofte L. (05) Carry In 44 acres 2511	81	82
3.	Lake One (05) Carry In 322 acres A 312	82	
4.	Dark L. (09) Launch 344 C 413	81	82
5.	Johnson L. (06) Carry In 1635 A 211	83	
6.	Barker L. (07) Launch 166 C 413	82	84
7.	Big L. (05) - Launch 2049 A 212	83	
8.	Whitefish L. (07) Launch 350 B 411	83	
9.	N. Arm Burntside L. (05) 10236 H 111	84	
10.	Slim L. (05) Carry In 368 B 411	84	
11.	Gunflint L. (02) Launch (Campground) 2240 A 211	84	
12.	Clara L. (07) Launch (Campground) 418 B 412	85	
13.	Tait L. (07) Launch 386 B 412		
14.	Nels L. (05) Carry In 200 acres B 411	85	
15.	Birch L. (05) Launch 356 B 411	85	
16.	Moose R. (06) -- Priority #1 when R.O.W. is received.		
17.	Silver Island L. (04) Launch (Campground) 1294 B 213	86	
18.	Round L. (02) Carry In 168 B 411 (Campground)	86	
19.	Range L. (05) Carry In	86	
20.	Picket L. (06) Carry In 308 acres 2494	88	86
21.	Toohy L. (07) Launch 334 C 413		
22.	Little Gabbro L. (05) Carry In 228 C 414		
23.	Hogback L. (04) Launch 44 acres 2511	86	
24.	EAW Twin L. (02) Launch (Campground) w/145 B 511	82	
25.	Cadotte L. (01) Launch 313 B 412		
26.	Deeryard L. (02) (to be built in 85 with/Public Launch (Campground) Works Road 1410)		
27.	White Pine L. (07) Launch 374 C 413	85	
28.	Shoepac L. (09) Launch 55 acres 2513		
29.	Mudro L. (05) Carry In		
30.	Filson Creek (05) Carry In		
31.	Rice L. (07) Launch 230 C 413		
32.	Lake Fourteen (09) Launch 393 C 413		
33.	Harriet L. (04) Launch 231 B 412		
34.	Section-29-E--(04) - DROP 07/06/82 by Misiano	--	
35.	One-Pine-E--(05) -- DROP 10/22/81 by Church	--	
36.	Farm L. (05) Launch 2512		
37.	Big Rosendahl L. (09) 44 acres 2000 Launch or 2000		
38.	Clear L. (09) Launch 149 acres 2513		
39.	Knucky L. (09) Launch		
79	40. Cascade L. (07) Launch 534 A 312		
41.	Kawishwi-E--(07) -- DROP 10/01/81 by Anderson	--	
42.	Long L. (09) Launch 247 C 413		
43.	Gander L. (04) Launch 2513		
44.	Moose L. (04) Launch 201 acres 2424	88	
80	45. Cabin L. (04) Launch		
46.	Carlson L. (06) Launch 116 acres 2513		
47.	Seagull L. (02) Launch 495 acres A 211		
48.	Ball Club L. (02) Launch 231 acres B 412		

FINAL PRIORITY LIST: FOREST-WIDE
(12/31/82)

SCHEDULED FOR \$'s IN FY:

BOATING SITES (continued)

- 49. Ojibway L. (05) Launch 383 B411
- 50. Little Cascade L. (07) Carry on 306 acres 2413
- 51. Swamper L. (02) Launch 52 acres 2513
- 52. Mayhew L. (02) Launch 247 acres 3411
- 53. Hungry Jack L. (02) Launch 493 acres 3411
- '81 54. Aspen L. (02) Launch 1152
- 55. Round L. (01) Carry on 493 acres 2413
- '82 56. Grassy L. (05) Carry on 349 acres 2413
- 57.
- 58.
- 59.
- 60.

APPENDIX B

Guide to Fishing
Opportunities in St. Louis County
(Sample Draft)



Fishing the Wilderness Perimeter in the Ely Area

After January 1, 1984, ^{much of the} ~~the~~ Boundary Waters Canoe Area Wilderness is "off limits" to motor boats and snowmobiles. While many of your favorite trails, camping sites and fishing lakes will no longer be accessible by motor, there are many lakes in the Ely Area outside the BWCAW that provide a wilderness setting and good fishing!

Look over the lake list and map. You'll find fishing lakes for stream trout, lake trout, walleye, bass, panfish and northern pike listed by lake type. Summer access varies from parking lots and concrete ramps to primitive portages. The winter fisherman will find lake accesses ranging from plowed roads to remote snowmobile trails leading to back country lakes.

Boat campers have access to over _____ remote campsites on _____ lakes adjacent to the wilderness. Snowmobilers have over _____ miles of trails leading to pristine lakes from trail heads and resorts throughout the wilderness fringe.

The Minnesota Dept. of Natural Resources and the United States Forest Service are working together to provide new public accesses to remote lakes, upgrade existing public accesses, develop winter and summer trails, increase campsites on motor use lakes and emphasize fish management on the lakes outside the BWCAW.

There are many places adjacent to the BWCAW that provide the beauty, the isolation, and the recreation of the wilderness without restrictions on motors. You can still enjoy the wilderness experience from your snowmobile or motor boat if you'll give these lakes a try.

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Stream Trout</u>					
Chant	63-13-10	RBT	Portage-1/8 mile from Burntside L.		Some nice ones, pretty lake
Cub	61-14-1	BT, S	Portage-100 yds. from Bearhead L. Road	Bearhead Lake State Park	Try shore fishing
Dry	63-12-9	BT, S	Portage-150 yds. from Bass L.		Some nice ones - also 1/4 mi. portage from High L.
Dry, Little	63-12-9	BT, S	Lift-over from Dry L.		Good fishing
Ennis	64-9-33	RBT, S	Portage-1 mi. from Flash L. Portage off Moose Lake Road		Some nice rainbows
Glacier Pond #1	63-10-11		Carry down		Newly reclaimed ^a - try in 1985
Glacier Pond #2	63-10-11	BT, S	Carry down		Small ones
Hanson	64-13-36	RBT, BT, S	Logging road to about 200 yds. from lake off Echo Trail		Usually small fish
High	63-12-4	RBT, BT, S	Portage-1/4 mi. from Dry L.		Good fishing
Norberg	61-14-1	RBT	Portage-150 yds. from Bearhead Lake Road	Bearhead Lake State Park	
Reganbogan	64-12-18	RBT	Portage-1/2 mi. from Echo Trail		Usually small fish
Pofte	63-10-2	RBT	Boat landing		Good fishing, some large ones

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Lake Trout</u>					
Burntside	63-13-Var.	LT, W, NP, SMB	Boat landing		Some large fish
Ojibway	63-10-Var.	LT, NP, BG	Portage-½ mi. from Kawishiwi R. through Triangle Lake		Small lake trout, nice northern pike
Snowbank	64-9-Var.	LT, W, SMB	Boat landing		Partially in BWCAW - moto restrictions apply
<u>Walleye</u>					
Armstrong	62-14-14	W, NP, BG	None developed		Fish are there
Arthur	61-13-30	W, NP	None developed		Low walleye population
Astrid	65-16-13	W, NP	Portage-¼ mi. from USFS Road #200		Some nice walleyes
Bearhead	61-14-11	W, NP, LMB	Boat landing	Bearhead Lake State Park	
Bear Island	61-13-Var.	W, NP, SMB	Boat landing		Many small, but also some monsters
Birch	61-12-Var	W, NP, C, BG	Boat landing		Good walleye and northern pike fishing
Browns	63-11-8	W, NP	Private		Nice walleyes
Camp 20	63-10-12	W, SMB, LMB, BG	Carry down		Small walleyes
Cedar	63-11-7	W, NP	Carry down		Mostly small fish
De Sève	65-13-36	W, NP	None developed		Fair fishing

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Walleye (Con't)</u>					
Everett	64-12-31	W, NP, C, BG	Portage-50 yds. from Twin Lake		Usually slow, but try evening. Also ½ mi. portage from Fenske L. crossing Echo Trail.
Farm	63-11-Var.	W, NP	Boat landing		Mostly small fish
Flash	64-9-28	W, NP	Portage-¾ mi. from Moose Lake Road		Good walleye population, Also ½ mi. portage from Snowbank Lake
Garden	63-11-Var.	W, NP, C, SMB	Boat landing		Some nice northern pike
Greenstone (Stone)	63-10-21	W, NP	Portage-1 mi. from Madden Lake		Also ½ mi. portage from Kawishwi River
Jasper	63-10-1	W, NP, LMB	Portage from Moose Lake		Some nice walleye
Jeanette	65-15-5	W, NP	Boat landing		Lots of small walleyes, also some nice ones
Joseph	61-13-20	W, NP	Access off logging road to North side of lake		Good walleye population
Little	61-12-11	W, NP	Rough road off County road 402-Then ¼ mi. portage		Some nice walleyes
Loet	62-16-29	W	Boat landing		Nice walleyes
Madden	63-10-16	W, NP	Carry down from rough road off Fernberg Road		Also 1 mi. portage from Greenstone Lake
Maude	65-16-14	W, NP	Portage-¼ mi. off USFS 200 Road		Old logging road goes up to dam - very rough
Mitchell	62-12-18	W, NP	None developed		Nice walleyes

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Walleye (Con't)</u>					
Moose	64-9-Var.	W, NP, BG, SMB	Boat landing		Good fishing
Nels	64-12-17	W, NP	Boat landing		Usually small
Nickel	62-10-29	W	Carry down		Small walleyes
Pickett	64-12-15	W, NP	Portage-1/2 mi. (at least) from Nels Lake		Can drive to lake on Cloquet Line with 4 wheel drive, then must carry down
Shagawa	63-12-Var.	W, NP, SMB	Boat landing		Good fishing
Stub (Stump)	63-11-14	W, NP, BG, C	River from Fall Lake		Nice panfish, fair walleye fishing
Triangle (Lower Twin)	63-10-14	W, NP, SMB, LMB, BG	Portage-1/2 mi. from Kawishiwi River		Nice size walleyes
Vermilion	61-63, 14-18, Var.	W, NP, SMB, C	Boat landing		large lake known for good fishing
Wolf	62-13-5	W, NP	None developed		Can be good fishing
<u>Pass-Panfish-Walleye</u>					
Big	65-13-Var.	W, NP, SMB	Very rough road off Echo Trail to boat landing		Good SMB fishing, walleye coming on
Eagles Nest #1	62-14-27	W, NP, SMB, LMB, BG, C	Boat landing on Eagles Nest #2		Nice size walleyes, try night fishing
Eagles Nest #2	62-14-Var.	W, NP, SMB, LMB, BG, C	Boat landing		Nice size crappies, try spring time
Eagles Nest #3	62-14-Var.	W, NP, SMB LMB, BG, C	Carry down		Quite a few walleyes

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Bass-Panfish-Walleye (Con't)</u>					
Eagles Nest #4	62-14-25	W, NP, C BG, SMB	None developed		Some nice crappies
Fenske	64-12-30	W, NP, SMB, LMB, BG, C	Boat landing		Usually small - except may be nice northerns
Hobo	63-12-11	NP, LMB, C, BG	Over 1 mi. portage from Echo Trail		Nice panfish
Johnson	62-12-Var.	W, NP, C	Boat landing		Nice crappies, some large walleyes
Low	63-12-2	W, NP, SMB C, BG	Difficult boat landing or carry down		Nice panfish
One Pine	62-12-33	W, NP, C	Boat landing		Some large crappies
Pike River Flowage	61-16-9	W, NP, BG	Boat landing		Watch for deadheads
Tamarack	63-14-34	W, NP, BG	None developed		Fair fishing
Twin	62-13-14	NP, LMB	None developed		Nice largemouth bass
Twin Lakes	63-13-1	W, NP, SMB LMB, C, BG	By boat up Dear R. from Burntside Lake		Also 50 yd. portage from Everett Lake
<u>Bass-Panfish</u>					
Bass (Verm.)	62-15-2	LMB, SMB, NP BG, C	Portage-¼ mi. from Lake Vermilion		Nice panfish and norther
Bass (E.T.)	63-12-10	NP, BG, C	Portage-½ mi. from Echo Trail		Good fishing
Camp	62-14-24	SMB	None developed		Not much information

<u>Lake Name</u>	<u>Township-Range-Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Bass-Panfish (Con't)</u>					
Clear	62-14-13	SMB, NP, LMB BG, C, W	Private		Lots of crappies
Fourmile	62-14-19	LMB, NP, BG	None developed		Ocassional winterkill
Grassy	64-12-27	LMB, NP, BG, C	1/8 mi. portage from Tee Lake		Good fishing
Judd	64-9-33	LMB reported	20 yd. portage from Discovery Lake		
Little Long	63-12-17	SMB, NP, C BG, W	1/8 mi. portage from Burntside Lake		Lots of small bluegill, some nice northerns & bass
Little Sletten	64-12-33	LMB	Portage-100 yd. from Fenske Lake		Also 175 yd. portage from Sletten Lake
Meander	65-14-9	SMB	Carry down from parking area		Lots of smallmouth bass
Minister	63-12-7	NP, C, BG	Carry down		Usually small panfish
Mud	62-14-3	LMB, BG, NP, C	Carry down		Lots of bluegill, fair crappie and northerns
Needle Eoy	62-14-21	LNB, NP, BG	Portage-1/4 mi. from old Hwy. 169		Nice bluegills
Snipman Bass	63-13-11	LMB, NP	Portage-1/4 mi. from Dead River		
Six Mile	62-14-21	LMB, BG, C, M	Carry down from old Hwy. 169		Access of old Hwy. 169 - rough road
Sletten	64-12-28	LMB	Portage-175 yd. from Little Sletten Lake		Also 1/3 mi. portage from Tee Lake
Whisper	61-12-10	LMB, BG	Portage-1/5 mi. from Birch Lake		Also portage from USFS Road 191 - very rough road

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Northern Pike</u>					
Agassa	64-13-1	P	Portage-1 mi. from		Some nice perch
Blackstone	64-9-33	NP	Portage-3/8 mi. from Flash Lake Portage off Moose Lake Road		Also portage from Secret
blueberry	61-12-4	NP, C	None developed		Ocassional winterkill
Buckshot	63-14-32	NP, SMB	Portage-1 mi. from County Road 408		Small fish
First	64-12-18	NP, C	Portage-100 yds. from Echo Trail		Some crappie fishing
Five Mile	62-14-29	NP, BG	Portage-1/4 mi. from Four Mile Lake		Possible winterkill
Foss	63-14-35	NP reported	None developed		Public land - no trail
Grassy	62-13-31	NP reported	Portage-1/2 mi. from Bearhead Road	Bearhead Lake State Park	Shallow lake
Heikkillla	60-14-30	NP reported	Private		Winterkill
Horseshoe	61-14-4	NP reported	Portage-50 yds. from Taconite Trail		Ocassional winterkill
Jewell	63-10	NP	Portage-1/4 mi. from Ojibway Lake		Not very good
Nigh	65-15-7	NP	Portage-1/8 mi. from Pauline Lake		Small, but lots of northern pike
Pauline	65-16-12	NP	Portage-1/8 mi. from Echo Trail		Small northern pike, also 1/8 mi. portage from Nigh

<u>Lake Name</u>	<u>Township- Range- Section</u>	<u>Fish Present</u>	<u>Access</u>	<u>Facilities</u>	<u>Comments</u>
<u>Northern Pike (Con't)</u>					
Perch	61-12-18	NP	Portage- $\frac{1}{4}$ mi. from Whisper Lake		Lots of small northern. Also access by portaging from very rough trail on USFS Road #191
Pickereel	63-11-19	NP	Portage- $\frac{1}{4}$ mi. from Kawishiwi River		No current information
Picket	65-16-21	NP	Portage from logging road off USFS 200 Road		Small northern
Picketts	63-12-12	NP	Private		Small northern
Purvis	62-13-29	NP	None developed		Long portage
Putnam	61-14-18	NP	Trails off of Taconite Trail		Probable winterkill
Robinson	62-13-18	NP reported	Private		Small northern
Tee	64-12-28	NP	Portage- $\frac{1}{3}$ mi. from Grassy Lake		Also $\frac{1}{3}$ mi. portage from Sletten Lake
Wedge	63-10-10	NP	None developed		No current information

APPENDIX C

Correspondence Regarding:
Moose Management Areas
Economic Value of Moose Hunting
Ruffed Grouse Management Areas
Berry Management Areas
Wild Rice Seeding



STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

PHONE: (218) 365-3230

File No. _____

Area Wildlife Headquarters
Star Route 2, Box 3710
Ely, MN 55731

April 10, 1985

Kate Hanson
MN DNR
500 Lafayette Rd.
St. Paul, MN 55146

Dear Kate,

Here's an outline of the ideas we discussed pertaining to economic development opportunities in the Ely Area.

Moose Management

The potential for economic development centered on NE Minnesota's moose herd is attributable to two basic facts: (1) the moose is one of the most highly sought after big game animals in North America; and (2) Minnesota has one of the few huntable populations of any significance in the lower 48 states. In fact, Minnesota is second only to Alaska in numbers of U.S. moose hunters.

Estimates of monetary value/moose bagged vary greatly, but in all cases imply a very significant benefit to regional economies. The MN DNR sets the "base value" for moose to be applied in cases of illegal destruction, at \$800/animal as of June 1979 (Policy #7-79). The Eastern Region of the U.S. Forest Service attaches a "willingness to pay" value of \$836 to each moose shot. Either case implies a direct expenditure of perhaps \$360,000 in the 1983 NE Minnesota moose season. The possibility exists that these figures grossly underestimate the actual economic benefit from moose. In his study "The Economic Importance of Moose (*Alces alces*) in North America", Alan Bisset found direct expenditures by moose hunters in North America in 1982 equalled \$1687/moose. By combining this value with secondary benefits produced by respending of monies provided by hunters, and extra market benefits which represent the "direct value" of the moose resource alone, he derived a value/moose shot in North America of \$5,295 (equals 2 1/3 million dollars in 1983, NE MN only!). These figures do not represent a maximum potential benefit associated with moose hunting because demand for licenses in MN exceeded supply by 20 to 1 in 1981! The capacity of the land is such that we could never produce enough moose to satisfy demand, so "willingness to pay" values will not decrease with increased production of moose and therefore, any increase in our sustainable harvest will generate a significant economic benefit.

Also, Bisset cites figures associated with non-consumptive use of moose in North America (vicarious recreation, etc.) of \$315,000,000. As one of the more populous states or provinces with moose, MN's share of that should be high. If we apportion out a share based simply on our percentage of the total moose shot in North America, about \$8,000,000 can be attributed to NE MN, far exceeding the figure associated with consumptive use.

There are a number of ways dollars could effectively be spent to manage/increase the NE MN moose herd. On the enclosed map I have identified two areas demonstrating different degrees of need for expenditure of moose management dollars. The area outlined in yellow highlighter is the MN DNR's proposed Moose Management Area in NE MN. If markets for aspen remain firm, we may be able to maintain existing moose populations there (excluding area outlined in red) through coordination with forest managers. In order to increase the number of moose in this area, we need dollars for direct habitat improvement projects. These projects could include: -Regenerating birch and aspen through hand felling (recycling) where the timber is unmerchantable because of defect or inaccessibility and there is a shortage of young age classes in the type. Approximate cost = \$30-60/acre. -Hand release of conifer plantations. Typically, conifer plantations are released, i.e. freed from competing vegetation, through broadcast applications of herbicide. This often eliminates or greatly reduces available moose forage (broadleaf tree and shrub component) in the stand and reduces the carrying capacity of the area for moose. In some instances, the forestry objective could be accomplished just as effectively, or more effectively, through a hand spot application of herbicide. This maintains a hardwood or shrub component in conifer stands, resulting in increased moose production compared with levels attainable under current management practices. Unfortunately, many foresters are reluctant to utilize hand spot application, and an off-cited reason is the potential for higher costs associated with the method. If dollars were available for moose habitat management and we could offer to pay any extra contract costs associated with hand release, we could increase acres of acceptable moose habitat and therefore moose densities, and realize the benefits associated with increased opportunities for hunting and viewing. Even without considering the "moose factor", our local economy would benefit from emphasizing hand release. Most contracts for broadcast application are for aerial spray applications and are awarded to contractors from outside the area or state. Hand spot application contracts, on the other hand, could be awarded to local residents, thus providing direct employment as well as better moose habitat. Need = 500+ acres/year, Cost = approximately \$10-30/acre.

The two areas outlined in red on the map are critical habitat areas. Not only will we not see an increase in moose densities without a direct expenditure of dollars for habitat improvement here, we'll likely see a significant decline. This is due to the low aspen component in the area (0-10%) and the current practice of converting ideal moose habitat - birch, fir, spruce, brush uplands - to pure conifer stands through site-prep, planting and broadcast spraying of non-selective herbicides. Significant opportunities do exist for habitat improvement, though. One is managing for mixed conifer/hardwood stands by hand releasing plantations as earlier described.

Another way would involve site-prep for natural regeneration of paper and yellow birch. Division of Forestry is reluctant to spend dollars on this activity because current markets for birch are poor. However, the "aspen experience" and rapidly improving wood utilization technologies suggest that if birch is available in suitable quantities 60 years hence, it will be used. Also, the benefit of increased moose production should justify the direct expenditure of dollars to regenerate birch. Need = 200-500 acres/year; Cost = \$60-100/acre.

Any moose management program must be accompanied by an effective method of monitoring the population, so increases or decreases are detected and bag limits and other management efforts are adjusted accordingly. Given the previously demonstrated economic benefits per moose shot, it seems desirable to harvest moose at a maximum sustained yield level. However, moose populations subjected to both predation and hunting pressure can display rapid declines when subjected to slight increases in harvests above the maximum sustained yield and, therefore, must be closely monitored if managed at this level (V. VanBallenberghe, "Harvest Yields From Moose Populations Subject To Wolf and Bear Predation"). As VanBallenberghe says, "The rate at which moose management in the north evolves from art to science may well depend on how well moose biologists can census moose and predators in the future." The most effective census method for moose in NE MN is the aerial census, which has been run nearly every year since 1966. In recent years, the Superior National Forest funded 60-70% of the costs for moose census flights, but future funding may not be available. Cost = \$10,000/year.

Ruffed Grouse Management Units

I've identified existing and potential ruffed grouse management units on the enclosed map. The potential units were selected on the basis of accessibility and aspen component. Other suitable areas certainly exist near Ely, but would need to be identified through a more intensive survey.

The primary habitat objectives in these areas could probably be accomplished through a cooperative Forestry-Wildlife agreement. An objective of maximizing grouse densities in these areas could probably be met without habitat improvement project dollars through a cooperative Forestry-Wildlife agreement allocating the size, spacing and timing of timber harvest activities in the area. However, in order to realize an economic benefit via increased tourism, dollars should be spent to give hunters access to the grouse. This means construction and maintenance of hunter hiking trails through the units, perhaps 2-6 miles/unit. Initial construction would involve dozing and seeding a trail. Seeding costs should run about \$25-30/mile. I don't know what the dozing would cost/mile, but the Division of Parks or Trails might have figures on that. I'd guess yearly maintenance (mowing) would run in the neighborhood of \$25-\$35/mile. There would also be costs associated with providing parking areas, signing and brochures.

Intensive Blueberry Management

I spoke with my "blueberry friend" and she offered some suggestions on managing "picking areas" for tourists around Ely. She suggested ten 10 acre units within 20 miles of town, or clustered around resort areas for tourists. They should be located on good, driveable roads.

If managed on a 5 year rotation of burning, she estimated yields of 200#/acre/year. Since the average tourist picks about 2#, each area could theoretically satisfy 100 tourists in seasons plants produced berries, i.e. there are no late frosts.

I'd estimate the cost to burn one 10 acre unit at approximately \$500-\$800. This treatment should be repeated every 5 years to maximize production. Because intensive management of wild blueberry stands has not been done in MN except on a "pilot plot" level, she strongly recommended that these areas be evaluated as to the effectiveness of the treatments. She suggested 2-3 years of evaluation at a cost of \$4400/year.

There is also an indication in her thesis that herbiciding and fertilizing the areas may be worthwhile, however, I don't have any cost estimates for this. For a copy of her thesis (I don't have one, or I'd send it to you) or for more information, I'd suggest you call the expert: Deb Shubat
221 Life Science Bldg.
UMD
Duluth, MN 55812
218-525-3708

I spoke to the Ely Chamber of Commerce and they will send you some information on the Blueberry Festival (July 27 & 28, this year). By the way, they love the managed blueberry area idea, as they are continually getting inquiries about where to pick in the summer. Another indication of demand is Deb's finding that the cost to pick wild berries is \$4.70 to \$5.50 per quart, more than wild berries can be purchased for in local grocery stores.

Waterfowl Habitat Management

Seeding of wild rice in NE MN lakes is a relatively inexpensive way of expanding opportunities for waterfowl hunting in the area. There are many lakes in the area suitable for growing wild rice where the plant is absent. Hand seeding of rice in such situations in the past has produced stands of wild rice and attracted huntable populations of ducks during the season where none were before. The present State/Federal seeding programs combined do not begin to put a dent in the backlog of available areas. Dollars to buy wild rice are the only limiting factor to expanding the program. Need = 100 acres/year; Cost = \$1000-\$2000/year.

I enjoyed our meeting and recent phone conversation. If I can be of any further help, please feel free to get in touch.

Very sincerely,

Steven G. Wilson

APPENDIX D

Periphery Area Big-Game Hunter Harvest Information

Moose: Minnesota's northeast moose population, which numbered 4,900 in 1983, is concentrated in the Edge-of-the-Wilderness study area and the BWCAW. A moose season was established in Minnesota in 1971 and has been held on odd years since then. In 1983, the last season for which statistics are available, 523 moose permits were issued for the northeast hunting zone (the boundaries of which closely correspond with the study area); 442 moose were harvested, with a success rate of 84.5 percent.

Black Bear: The study area is a part of the North Central and Northeast bear hunting permit areas. In 1984, 1,385 bear permits were issued for these areas and 304 bear were harvested.

Deer: The study area boundaries correspond closely with the Superior West, Superior Central, Superior East and Itasca Northeast deer management units. Harvest statistics for these units show 6,808 permits issued in 1983, with a total registered kill of 7,541. In comparison with other deer management units in the state, the Superior units (which encompass most of the study area) have the fewest number of permits issued and the lowest total kill.



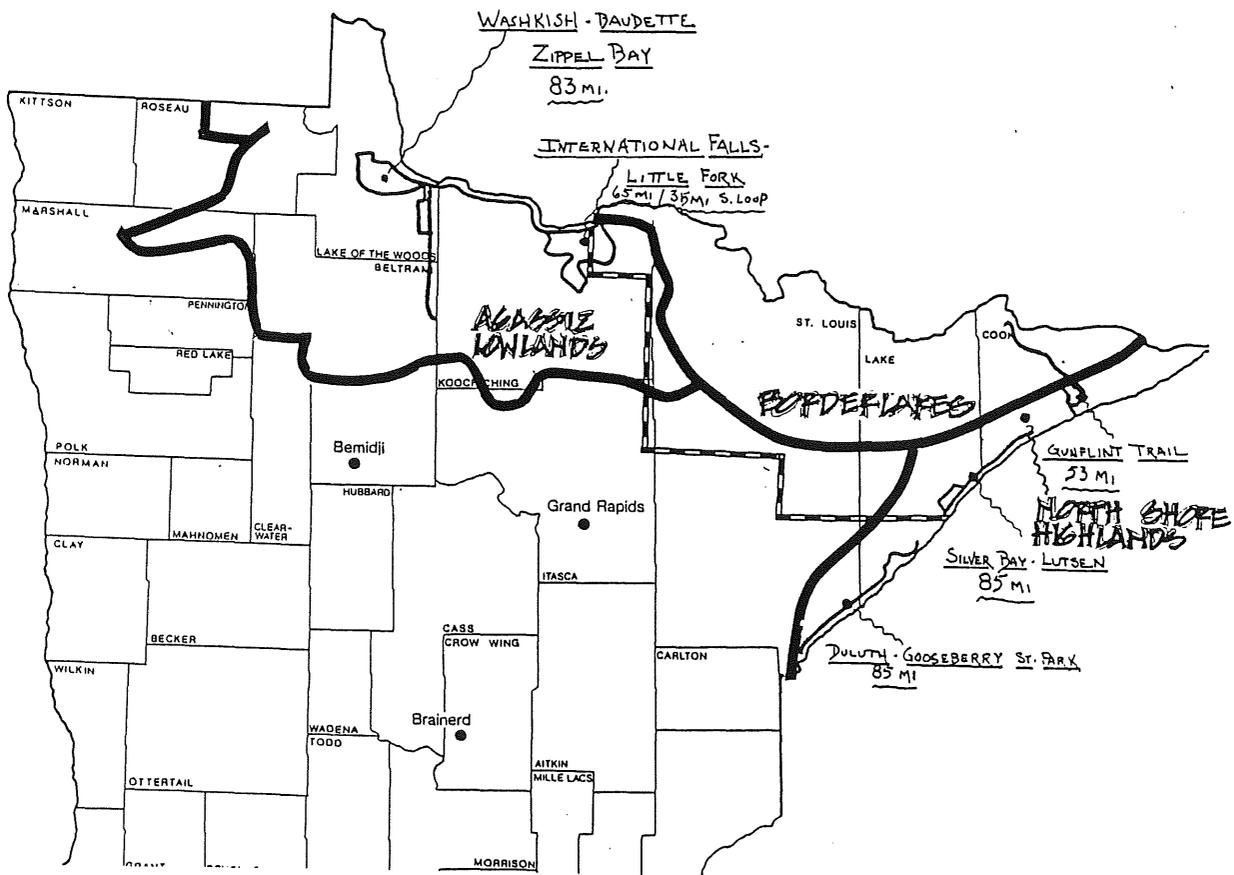
APPENDIX E

Candidate Explore Minnesota Trails

EXPLORE
Minnesota
 TRAIL COLLECTION

Study Area
 Recreation Landscape

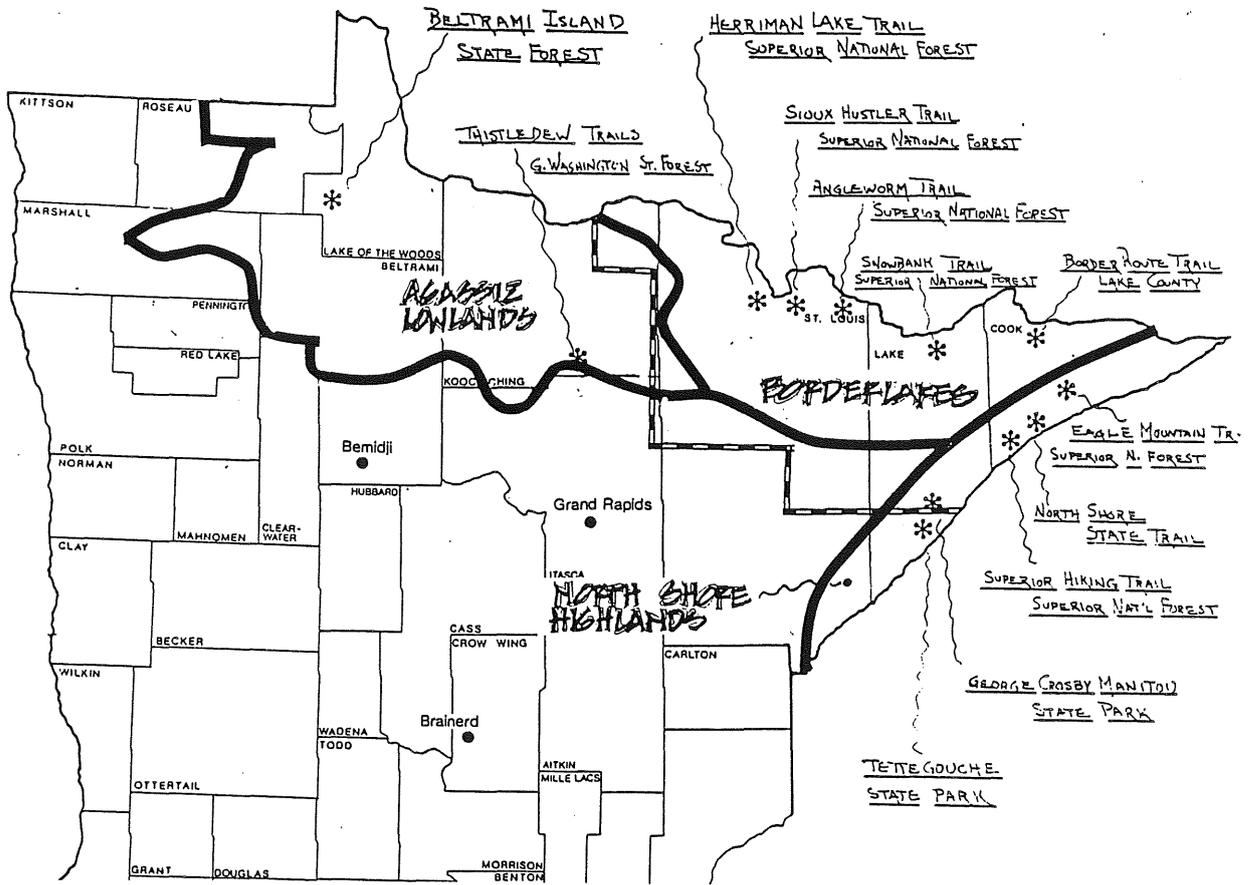
CANDIDATES FOR WEEKEND BICYCLE TOUR ROUTES



EXPLORE
Minnesota
 TRAIL COLLECTION

Study Area
 Recreation Landscape

CANDIDATES FOR WEEKEND BACKPACKING



EXPLORE
Minnesota
 TRAIL COLLECTION

----- Study Area
 _____ Recreation Landscape

CANDIDATES FOR WEEKEND SNOWMOBILE ROUTES

