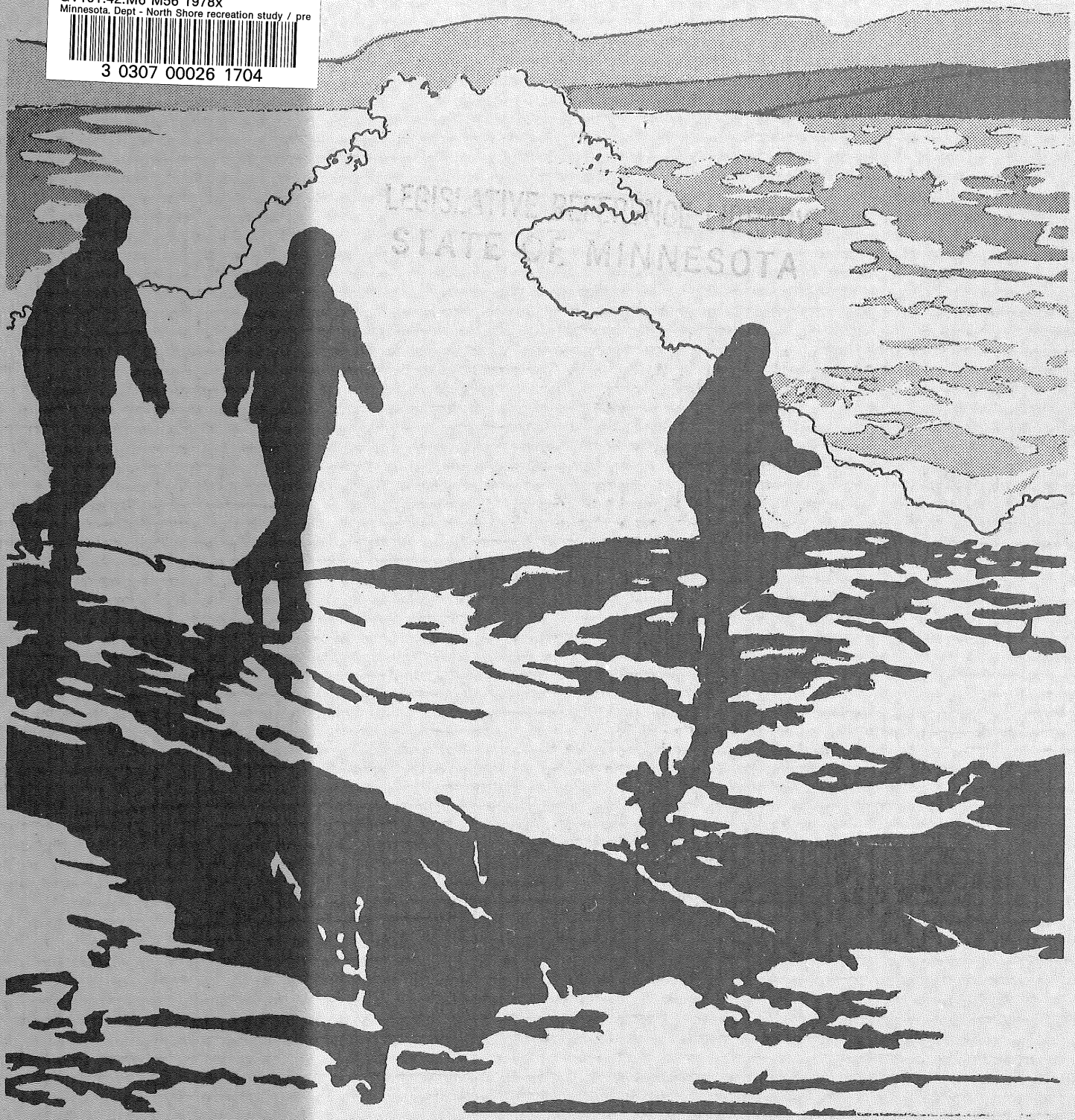

North Shore Recreation Study

and Research and

Recreation

ACKNOWLEDGEMENTS

The following staff members of the Department of Natural Resources assisted in the preparation of this report:

Frank Svoboda	Scott Brakke
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Finally, our deepest thanks go to those without whom this report would not have been possible - the people of the North Shore.

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I. INTRODUCTION

The North Shore of Lake Superior is a totally unique resource, both physically and culturally. The scenic attributes of the North Shore are comparable to those of the fjord coast of Maine and the Pacific coast in Washington and Oregon. The Shore is characterized by rocky headlands, sheer cliffs, cobble beaches and secluded coves combined with a varied mantle of pines, birches, maples and aspen. The rugged topography and the vast expanse of Lake Superior combine to create one of the most scenic areas in North America.

Historically, the North Shore was important as a source of lumber and the location of ports for the shipment of ore from the Iron Range. While these functions still play a major role in the life of the region, recreation and tourism are relatively more important today in the lifestyle and economy of the Shore. The abundance of public land in the region and the quality of the natural resources of the area have resulted in the development of a wide variety of recreational facilities and opportunities along the Shore. On any given summer day, one is likely to find people boating, hiking, taking pictures, swimming, rock climbing, fishing or just driving along Highway 61 and enjoying the views. In the winter, people hunt, ski, snowmobile, go winter camping and snowshoeing, and fish through the ice.

The diversity of available recreational opportunities has created a diversity of management structures and agencies to accommodate the needs and desires of the recreating public. Many of these management structures were developed at a particular point in time in response to a particular need and have subsequently evolved and changed up to the present. The result is an oftentimes confusing amalgamation of Federal, State and local governmental agencies and private entrepeneurs, all in the business of satisfying the demand for recreation. Not surprisingly, the result is less than perfect. For a myriad of reasons, the actions of one agency or group often fail to recognize the programs and activities of other agencies or groups. As a consequence, programs and facilities are uncoordinated, duplication of efforts occurs and recreation facilities are presented to the public as a series of unconnected activities having little or no relationship to one another.

The need exists to tie together all the disparate elements of recreation on the North Shore and knit them into a functioning whole which utilizes the tremendous potential of the North Shore to its fullest extent, commensurate with the capabilities of the resource to sustain such use. This study is a first step toward the development of a total recreation system for the North Shore.

II. PURPOSE AND SCOPE

The purpose of this study is to evaluate the recreation potentials of federal, state, county and private lands on the North Shore, make recommendations concerning the recreational use of state lands and to suggest ways in which the various recreational activities in the area can be coordinated to function as an interrelated system. For purposes of this study, a system is defined as "... a complex unity formed of many diverse parts; an aggregation of components joined in regulat interaction of interdependence ..."*

The "components" of the North Shore recreation system include all those recreation facilities provided by the various agencies and private groups. These can be subsumed under three major groupings as follows:

- Units authorized by the Outdoor Recreation Act of 1975

State Parks	Historic Sites
State Forests	Rest Areas
Trails	Wildlife Management Areas
Water Access Sites	Scientific and Natural Areas
Wild, Scenic and Recreational Rivers	Wilderness Areas

- Other Public Facilities

Federal
National Forests
National Monuments
Other Federal Lands

- County and Municipal

Tax-forfeited Lands
Parks
Water Access Sites
Campgrounds
Harbors

- Private Facilities

Resorts	Ski Hills
Campgrounds	
Trails	

The use of these facilities by the recreating public creates regular patterns of interaction between these "components" and thereby makes them interdependent. As an example, private resort facilities adjacent

* The Language of Open Space, Department of Research and Planning, City of Duluth, MN, November, 1974.

to public lands such as parks and forests often provide for the use of these lands by resort clients, thereby exposing larger numbers of people to the recreational opportunities located on public land. See Appendix A for a description of the methodology used in this study to evaluate the components and their interactions.

This study consists of two parts. The first part is a data manual which will be published as a separate document. This manual will include all the data developed through this study as well as an inventory of other studies that were used as references. This manual will provide a common base for determining the relationship between recreation potentials and other potentials, such as land use and economics.

The second part of the study consists of the material contained in this document. The contents of this report do not constitute statements of policy nor do they serve as a management plan for the development of any of the units mentioned in the study. Given the regional scale of analysis used in this study, the study findings are primarily useful in determining the proper level of coordination necessary to develop a total system. The analysis is not capable of making detailed site decisions for the development of each component. The management plans required by the Outdoor Recreation Act will accomplish this for state facilities while other facilities will require their own detailed planning by the managing authority.

This report presents suggestions and recommendations as to appropriate strategies in developing the recreation potentials in the study area over the long term. An important aspect of this is recognition of the planning and development activities of other agencies and groups and the necessity of continuing coordination between all concerned agencies. This report does not evaluate the recreational use of land in relationship to potentials for other kinds of uses. The Coastal Zone Management Program has addressed certain aspects of this for part of the area but additional work is required. The Long Range Planning program in DNR will address this issue for state lands, but a total land use analysis should be conducted on an on-going basis.

The recommendations in this report are grouped into three levels. First level actions are those that can be accomplished immediately without extra funding or personnel. These actions do not require substantial levels of development such as would require an Environmental Impact Statement. The benefit of these actions is the achievement of immediate results which will help the various facilities to begin to function more effectively as a system.

Second level actions require some extra funding or administrative authorization but can be accomplished through existing programs. Additional funding, reassignment of personnel and coordination meetings may be required to facilitate implementation.

Third level actions may require substantial additional funding, intense coordination of differential management goals, major program reorganization or legislative action.

Another important aspect of this study is public participation. Since the beginning of the study, efforts were made to involve both the public at large and various interest groups in every step of the program. Four series of formal public meetings were held during the course of the study and numerous informal meetings between local residents and staff were held. Many of the problems and recommendations in this report are a direct result of input received from citizens at these meetings.

The organization of this report further defines the scope and direction of the recommendation. In Chapter VI, ANALYSIS/RECOMMENDATIONS, there are seven major items of discussion. These are as follows:

- DNR/DOT/PCA/Historical Society/Local Agency Coordination
- Accessibility
- Rest Areas
- Forests
- Rivers and Lakes
- Parks
- Wildlife Management

The order in which these items appear in the report is of primary importance, as they are arranged in priority order of implementation. That is, the recommendations in the Coordination section should be addressed prior to those under Accessibility. The result is that, before Wildlife Management recommendations are pursued, all of the preceding sections will have been addressed. Consequently, many of the recommendations in the latter sections are of an "either/or" nature because they are dependent upon prior actions. The obvious implication here is that, as work progresses on implementing or refining the study recommendations, latter recommendations continually have to be re-evaluated in light of previous actions.

III. SUMMARY OF MAJOR NORTH SHORE RECREATION STUDY RECOMMENDATIONS

This section contains a summary of the major recommendations made in this study. Generally the recommendations listed in this section are Implementation Level Two or Three actions, as it is these recommendations which will require additional personnel and funding and increased coordination.

DNR/DOT/PCA/Historical Society Coordination

Coordination Procedures:

1. Joint meetings between respective agency staffs should be held periodically to disseminate program information and to provide inputs to plan formulation prior to final decisions.

2. Periodic meetings of agency personnel and local officials should be held to keep each other informed regarding plans and programs.

3. Agencies and local governments should develop an information distribution system which will notify concerned parties of proposed actions.

4. An inter-agency liaison position should be established which would be responsible for maintaining communications and providing current information on proposed programs and projects.

5. Decisions which affect more than one agency should be formalized by written agreements.

Road Maintenance/Equipment Servicing

1. A system of maintenance zones should be developed along the North Shore to coordinate maintenance and management activities of DOT and DNR.

2. Adequate turn-off lanes should be studied and developed at Temperance and Cascade River State Parks and considered for Judge C.R. Magney and Baptism River State Parks when and if they are developed.

3. Plans for development of a Class A maintenance shop by DNR should be coordinated with the DOT shop facility.

Gravel Sources

1. A detailed analysis of gravel source locations should be conducted as the basis for the development of a plan which would insure the availability of adequate gravel resources for the area.

2. Gravel sources on state lands other than parks should have a high priority for development.

3. A policy for gravel extraction in state parks should be developed. Where alternative sources of gravel are available, existing gravel pits in parks should be closed and reclaimed.

4. All gravel pits should be reclaimed in a manner beneficial to land management objectives when the pits are depleted.

Waste Disposal

1. The DNR should continue to work with the counties on developing equitable cost formulas for the collection and disposal of solid waste from all state facilities by the county.

2. The DNR and DOT should work with the counties to develop a solid waste collection/disposal system which provides the most efficient level of service. The agencies should seek funding within their budgets to assist in developing such a system.

3. The DNR, in cooperation with PCA, should experiment with different sewage disposal systems on state land and make the results known to local residents and officials.

4. At a minimum, on-site sewage disposal systems should comply with county sanitation ordinances and PCA's regulation WPC-40.

5. Trailer dump facilities should be provided by the private sector rather than the State.

Accessibility
General:

1. Where appropriate, access to all public and private trails and facilities should be provided so as to allow access to these facilities by all segments of the population. Such access should be rated according to the Accessibility Rating System contained in the Trails Section of this report and provided in a manner that does not cause undue alteration of the site.

2. A publicity/information program should be developed which would provide the traveler with information on available facilities, distances, rates, type of accommodations and recreational opportunities along the Shore. This information could be disseminated through the Tourism Division of the Department of Economic Development, the Minnesota Arrowhead Association, other local groups and through sign malls, information plazas and rest areas.

Roads

1. Specific problems should be evaluated and corrected by application of the most appropriate measures.

2. Upon DNR's request, DOT should review and monitor areas of pedestrian congestion or where sight distances create a hazard, including Gooseberry, Cross River, Temperance River, Cascade River and Judge C.R. Magney State Parks.

3. A design study of Highway 61 should be undertaken and implemented by DOT in cooperation with DNR. Implementation of the study should begin in the biennium beginning July 1, 1979.

4. State and local agencies should cooperatively develop design and construction guidelines specific to the North Shore at the beginning of the design study.

5. The design guidelines should include a system of loop routes which would provide alternative routes in case of bridge washouts, bypass congested areas, relieve traffic congestion and provide access to other recreational opportunities.

6. A study should be conducted on providing bicycle routes in the area, utilizing statewide criteria and information developed through the CZM program.

7. Existing speed limits and control of pedestrian circulation should be vigorously enforced.

8. An inventory of significant views and vistas should be developed and mapped.

9. Vegetative clearing should be done so as to protect the character of the site and retain protective screening of adjacent properties.

10. Vistas which create an unsafe attraction at critical points such as curves should either be screened or provided with safety protection.

Boating

1. While the demand for increased boating facilities is high, the high cost of developing such facilities requires that the decision to proceed should be weighed against the need for provision of other types of public facilities.

2. Compared with the development and use of other natural resources in the area, boating is presently underdeveloped. It is recommended that recreational boating along the shore be promoted and enhanced to take advantage of the existing potential.

3. Existing public access sites should be improved through the addition of hard surfaced ramps and parking areas.

4. Development of service areas for the proposed small boat harbors should be coordinated with the development of trail service facilities to avoid duplication.

5. Potential access and harbor sites should be carefully evaluated to determine the probable impacts of future development.

6. Small boat harbors to be developed should include the authorized harbors at Silver Bay and Schroeder and a facility at Grand Portage.

7. Harbors of refuge should be developed according to the following priorities:

First Priority	- Split Rock River Bluebird Landing
Second Priority	- Lutsen Sugarloaf Landing
Third Priority	- Pork Bay Temperance River
Fourth Priority	- Good Harbor Bay Baptism River

8. Feasibility studies should be conducted to determine the actual need for each additional harbor beyond those authorized. Such studies should consider the user analysis done by the Minnesota Marine Advisory Service and any data which subsequently becomes available.

Trails

1. Trail planning for the North Shore area should be a coordinated venture involving all groups and agencies which provide trails.

2. A concentrated effort should be made to inform local residents of the Grants-in-Aid Trail Program. This program may be used for both trail development and maintenance.

3. Trails should be designed so that they are capable of being maitained by a standardized maintenance system.

4. Agencies having expertise in trail development and maintenance should provide technical assistance to private trail owners.

5. All trails should be located on public land wherever legally possible.

6. Ski-touring trails should be developed in accordance with the Ski Touring Trail Rating System.

7. Other trails should be developed according to the Trail Accessibility Rating System.

8. The North Shore Trail should be completed to the Canadian border. Trail links should connect to service areas, multiple-season recreation nodes and state parks as recommended.

9. A separate system of trails designed for hiking and ski-touring should be developed, connecting Crosby-Manitou State Park, Finland State Forest and Baptism River State Park.

10. Backpacking trails in Crosby-Manitou State Park and Judge C.R. Magney State Park should be extended to provide longer backpacking experiences.

11. Trails should be developed for bicycle use, including use along Highway 61.

12. Trails should be developed in the river fall zones.

13. At Class II rest areas, trails of all accessibility ratings should be included in the development of the site.

14. Where publicly owned beaches are accessible and are not susceptible to damage, trails could be developed and interpreted for investigation of the "North Shore Character."

15. Trail service nodes should be located at Two Harbors, Silver Bay, Schroeder, Grand Marais and Grand Portage.

Forests

1. Dispersed types of recreation can and should be integrated with timber management on sites where there is potential for both uses.

2. A Phase II Intensive Inventory should be done for each forest in the Study Area as soon as possible.

3. A recreational demand survey should be conducted to determine which recreational needs of the North Shore can be provided by state forests.

4. Areas with high wildlife and recreation values should be evaluated for cooperative management programs, similar to the Cascade Management Plan.

5. Investigate the potential of Horseshoe Bay as a state forest recreation site.

6. Scenic corridors should be established along all major recreation routes.

7. Investigate state forest boundaries to determine the most manageable unit configuration.

8. Maximize timber production in state forests, consistent with other values, and where land is of relatively suitable productive quality.

Rest Areas

1. Develop a Class I Rest Area at the Pigeon River entry on the Canadian Border.

2. Develop Class II Rest Areas at Knife River, Split Rock River, Baptism River, Tofte, Cut Face Creek and Mt. Josephine.

3. County and municipal rest areas and information centers should be organized into a coordinated system which complements the state rest area system and enhances the scenic character of Highway 61.

4. Review of turn lanes and traffic monitoring should be done by DOT.

Rivers and Lakes

1. The cooperative program between DNR, the State Highway Patrol and local officials and groups which was designed to alleviate problems associated with the smelting season should be continued and upgraded as necessary. Local government should be reimbursed for actual costs incurred as a result of program participation.

2. Fisheries management should be accelerated on the following rivers. This should include development of fisheries access sites where appropriate.

Stewart River	Lester River
Sucker River	Gooseberry River
Knife River	Baptism River
Silver Creek	Temperance River
Split Rock River	Devil Track River
Beaver River	Brule River
Talmadge River	French River

This may involve development of new sites or redesign and redevelopment of existing sites.

3. The stream easement acquisition program should be coordinated with the accelerated management program.

4. The section of fisheries property on the Knife River should be designed and developed in cooperation with local interests.

5. Application of the shoreland management ordinances should be consistent and coordinated with fisheries management objectives.

6. Boating use of North Shore streams should not be encouraged or developed.

7. A plan should be developed for primitive campsites, hike-in picnic areas and a system of trails at and along especially scenic locations along the river fall zones.

State Parks

The following is a summary of only the general recommendations affecting State Parks along the Shore. For detailed recommendations for the individual parks, see Chapter VI, Section F.

1. Acquisition of land within State Parks should be consistent with the philosophy of improving park management through consolidation. Whenever possible, parcels within legislative authorized boundaries of state parks should be acquired through land exchanges.

2. Development of camping facilities should be coordinated between the state and the private sector. The state should provide camping in the coastal zone when the private sector cannot and should continue to provide the type of camping that the private sector cannot afford.

3. Funding should be sought for the immediate upgrading of sanitary facilities and water systems at Gooseberry River, Split Rock Lighthouse, Baptism River, Cascade River, Temperance River, George Crosby-Manitou and Judge C.R. Magney State Parks.

4. Development of sewage systems in State Parks should emphasize experimental or new technology systems and the results of these systems should be made available to local residents.

5. Development of park lands should reflect the following:
   -- Park development should be coordinated with development in state forests;
   -- Park development should be coordinated with the private recreational/tourism industry;
   -- Areas closest to the Shore are generally less suitable for development than areas further inland and should be protected;
   -- Provide for more primitive camping and backpacking;
   -- Parks should not provide uses normally associated with rest areas;
   -- Power line rights-of-way should be carefully considered in park planning and design;
   -- Consideration should be given to the provision of access links to the North Shore Trail;
   -- Provide for passive interpretive/educational experiences.

6. Recreational facilities to be developed should be appropriate to the natural characteristics of the park.

7. The parks should be considered as experimental sites for application of the Trail Accessibility Rating System.

Wildlife Management

1. Wildlife habitat along the Shore should be improved through the combined efforts of the U.S. Forest Service, DNR and local officials.

2. Superior Game Refuge No. 1 should be abandoned as it does not perform the function for which refuges were intended.

3. Wildlife values should be considered in the management of all state lands on the Shore.

4. Deer management should be the first priority in the Cascade River Management Unit and the Brule River Management Area.

5. Additional wildlife management areas may be needed as changing management conditions indicate the need.

6. The need for management programs for moose, bear, grouse and other species should be investigated and developed where appropriate.

POTENTIALS FOR FUTURE ACTION

Programs

1. Existing interpretive programs in State Parks should be expanded and new programs developed where none now exist. Interpretive programs should also be developed for other state lands as appropriate.

2. Additional printed matter such as brochures and guidebooks should be developed and made available through the state parks, private vendors and the state Documents Section.

3. Interpretive displays should be developed in conjunction with the Class II Rest Areas proposed in this study.

4. A committee of private citizens and local, state and federal agency representatives should be formed to coordinate the development of a regional interpretive program.

5. The DNR should develop basic interpretive packages for state lands which will complement federal, local and private facilities.

6. A series of trail guides should be developed which will provide for a self-guided trail experience.

7. The interpretive program at Gooseberry Falls State Park should be expanded. A program should be developed as soon as possible for Cascade River State Park and similar programs at Baptism River, Temperance River and Judge C.R. Magney State Parks should be instituted as these parks are developed.

8. A clearinghouse for projects, studies and data pertaining to the North Shore should be established. A possible location for this facility is the University of Minnesota-Duluth with a branch at either Temperance River or Baptism River State Parks.

9. A Species Richness Experimental Program should be developed near Kodonce River State Park. This program would be used to validate the ecological community/species richness matrix.

10. The ecological community/species matrix should be used as a guide by wildlife managers, interpretive naturalists and foresters in their respective programs.

11. A system of Scientific and Natural Areas should be established on public lands along the North Shore to protect the rare and unique resources of the area for research and education.

Studies

1. A Vegetation Inventory should be conducted in State Forests which would provide supplemental information to that commonly gathered in forest inventories.

2. A Micro-Climate Study of the North Shore should be conducted to provide additional localized data on precipitation, temperature, winds and other pertinent factors.

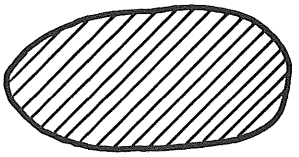
Facilities/Sites

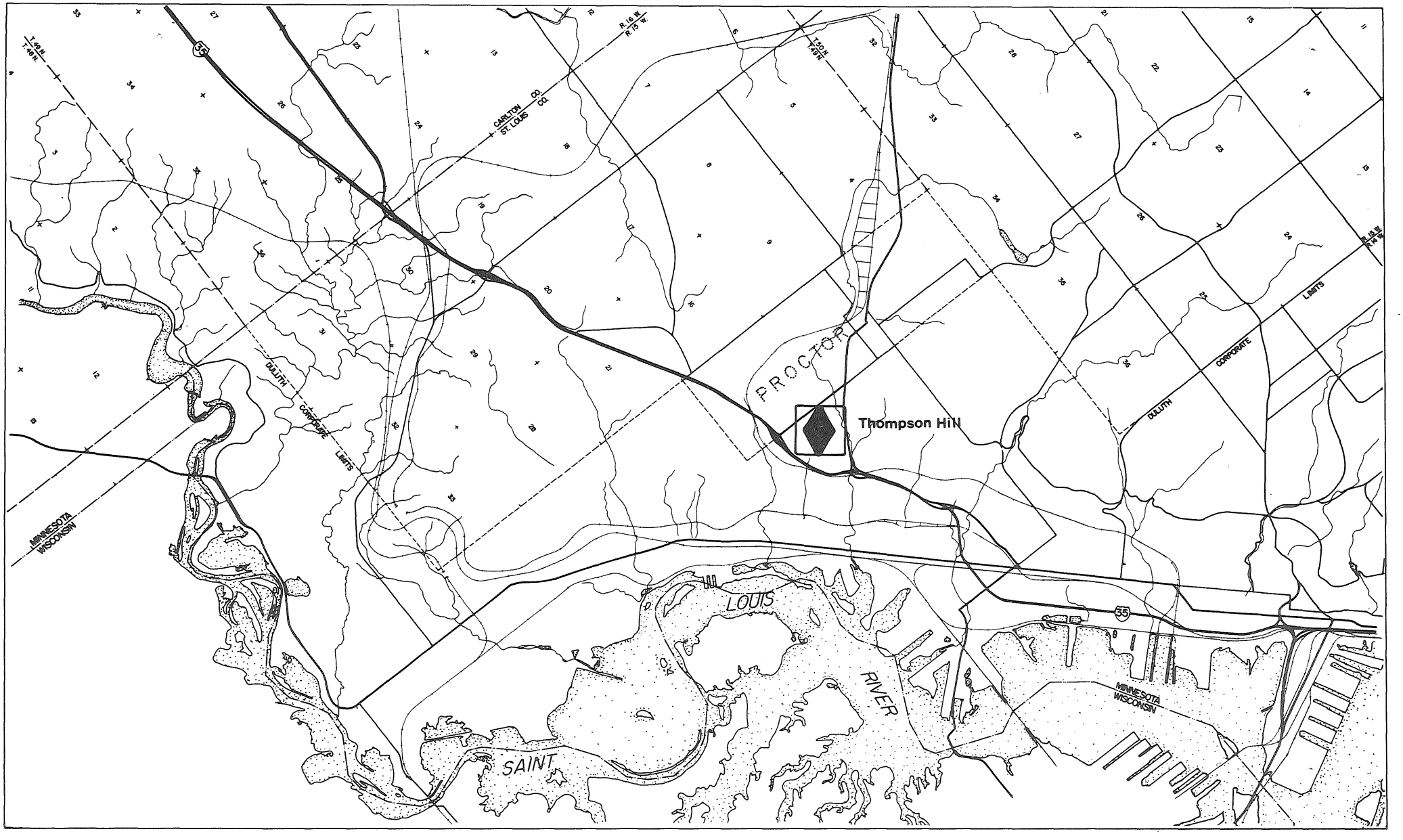
1. Consideration should be given to the development of a major park/recreation area adjacent to the High Falls of the Pigeon River.

2. If needed in the future, a cooperative recreation system should be developed for the Caribou/Lake Agnes area in Cook County through the combined efforts of local citizens and state and federal agencies.

3. If needed in the future, a committee comprised of representatives from the private sector and state and local agencies should be established to develop recommendations for the development of a cooperative recreation system for the Tettagouche area.

RECREATIONAL FACILITIES

FACILITIES	EXISTING	PROPOSED
SMALL BOAT HARBOR		
HARBOR OF REFUGE		
ACCESS		
REST AREAS		
CLASS 1		
CLASS 2		
SERVICE NODE		
CORRIDOR TRAIL		
RECREATIONAL CLUSTER		
PRIORITY FISHERIES MANAGEMENT (RIVERS)		
TRAIL LINKAGES (GENERALIZED)		



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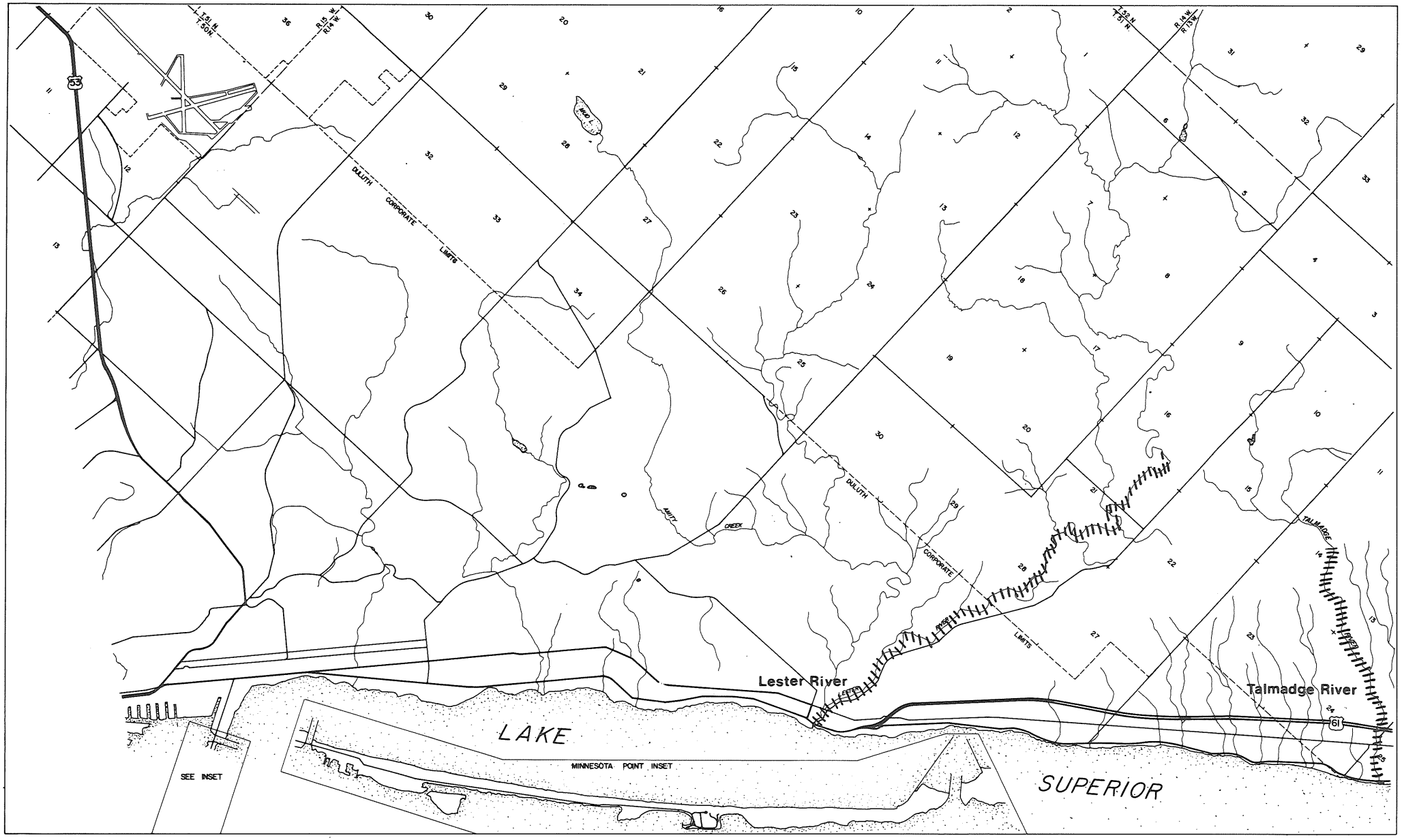

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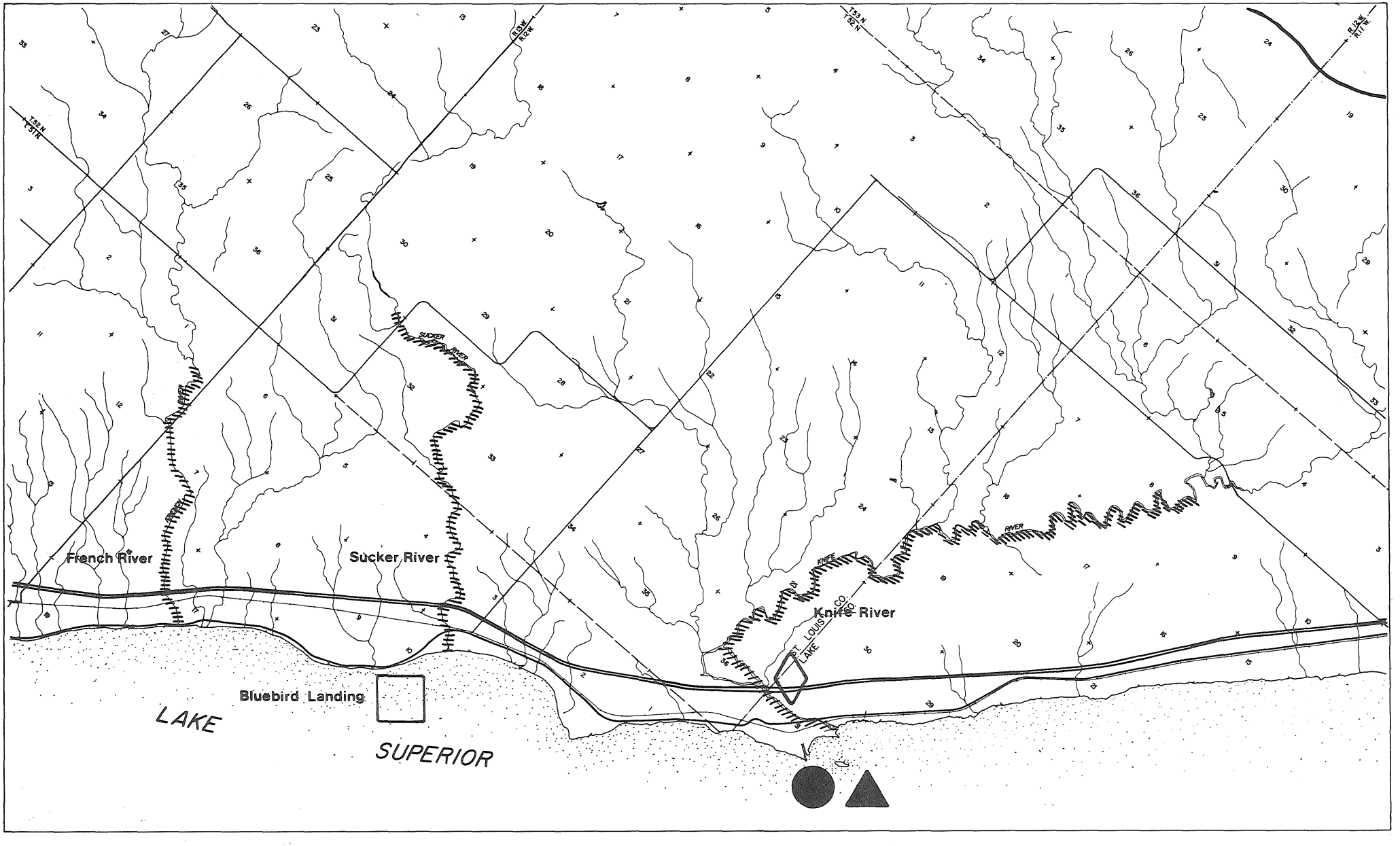

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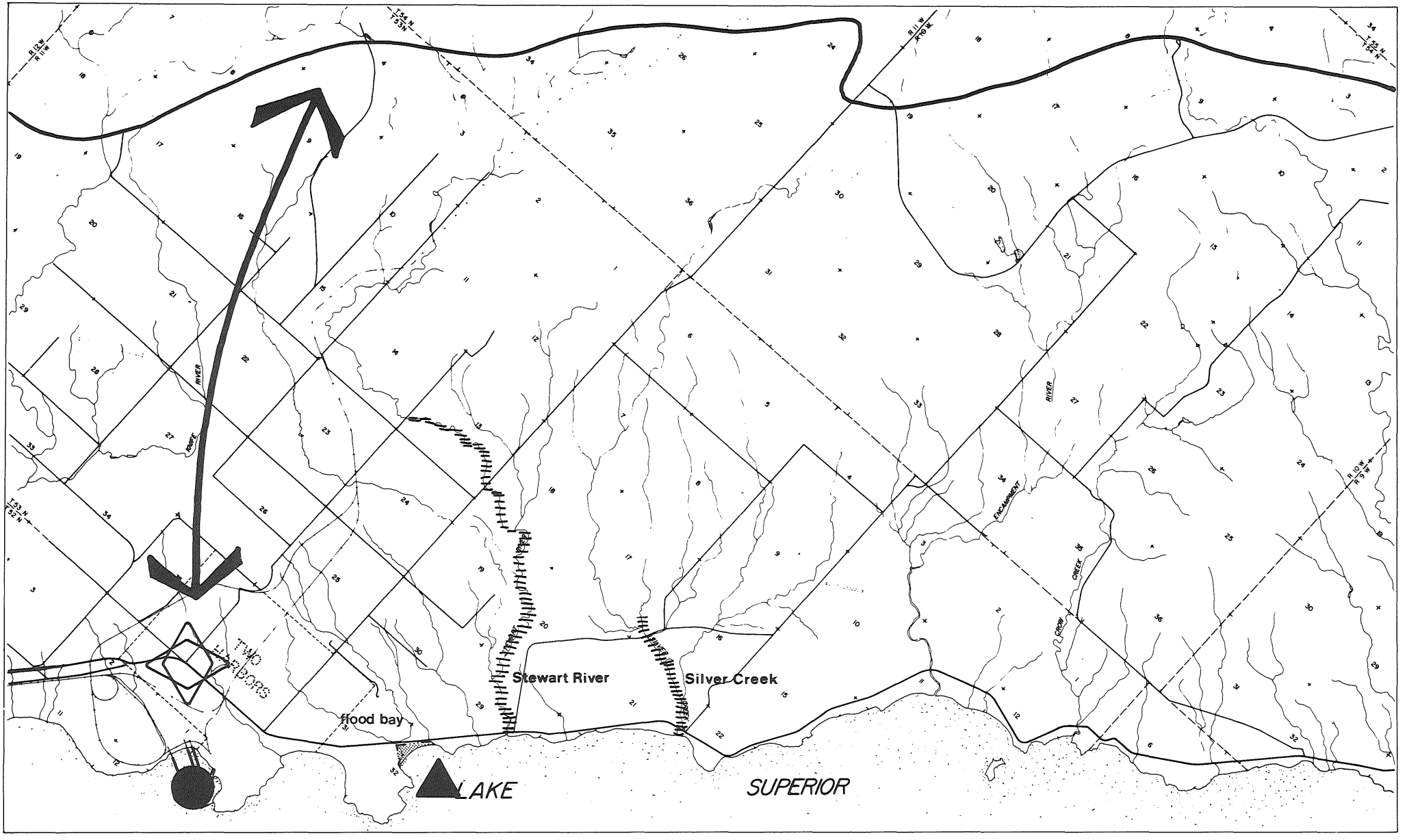

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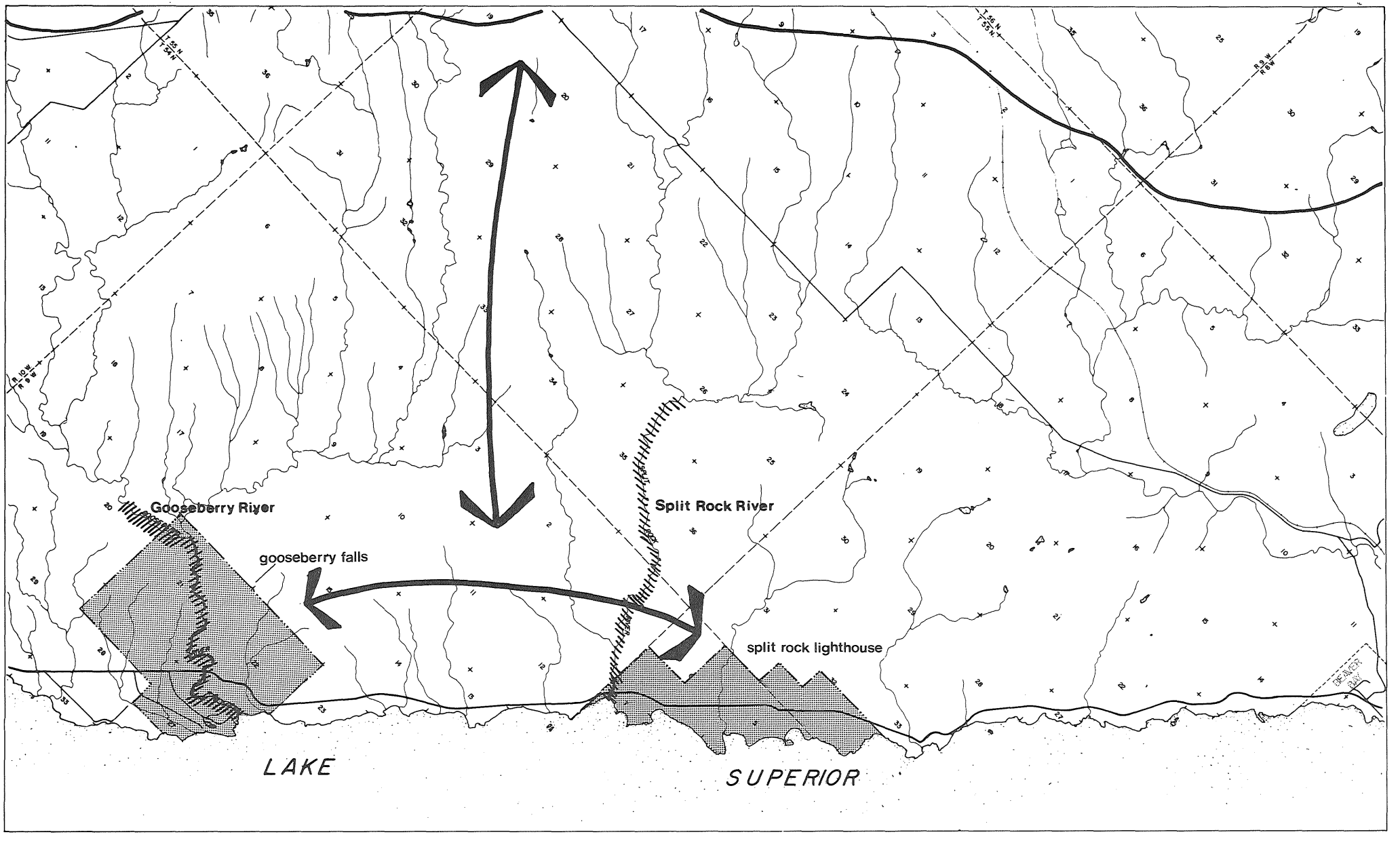

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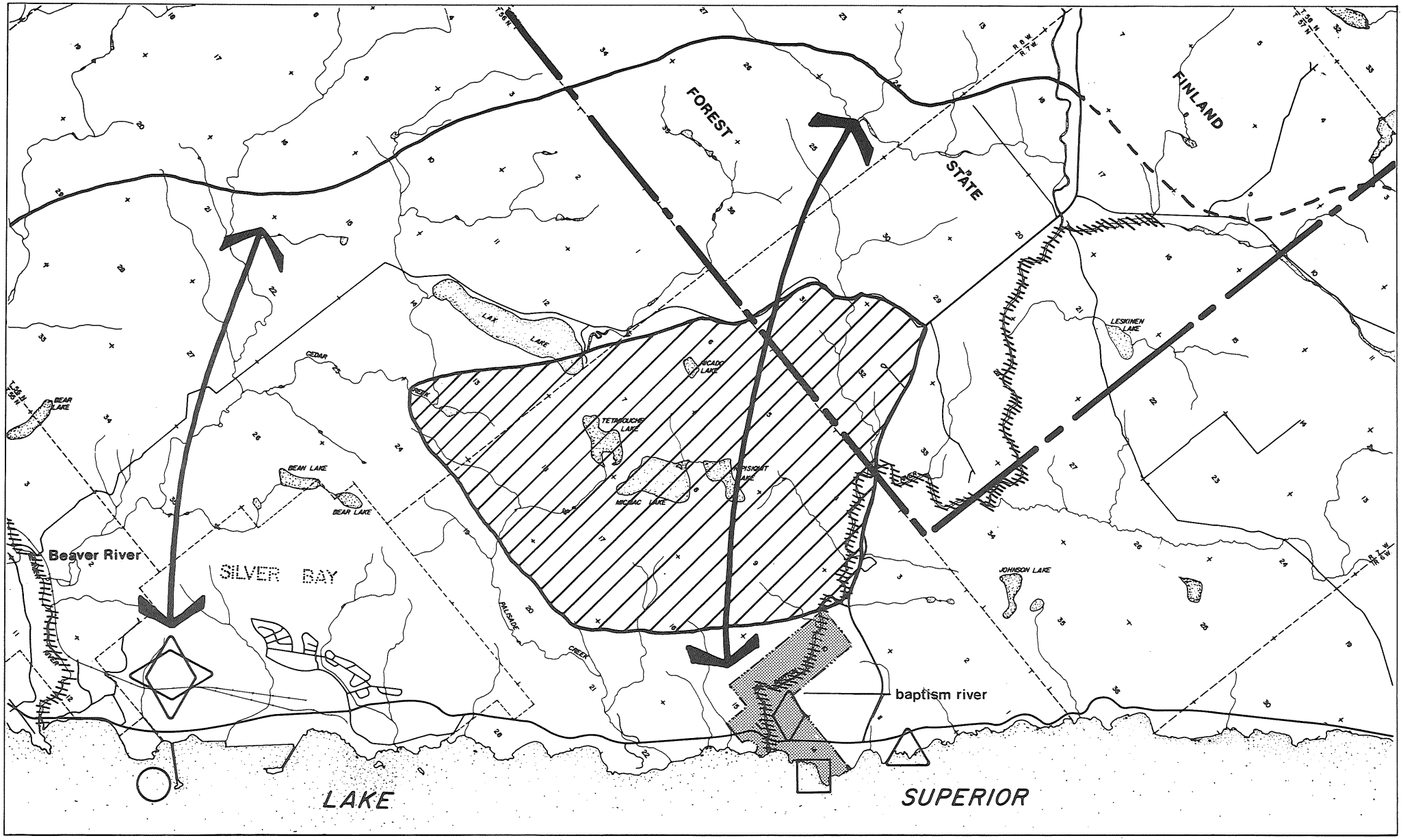

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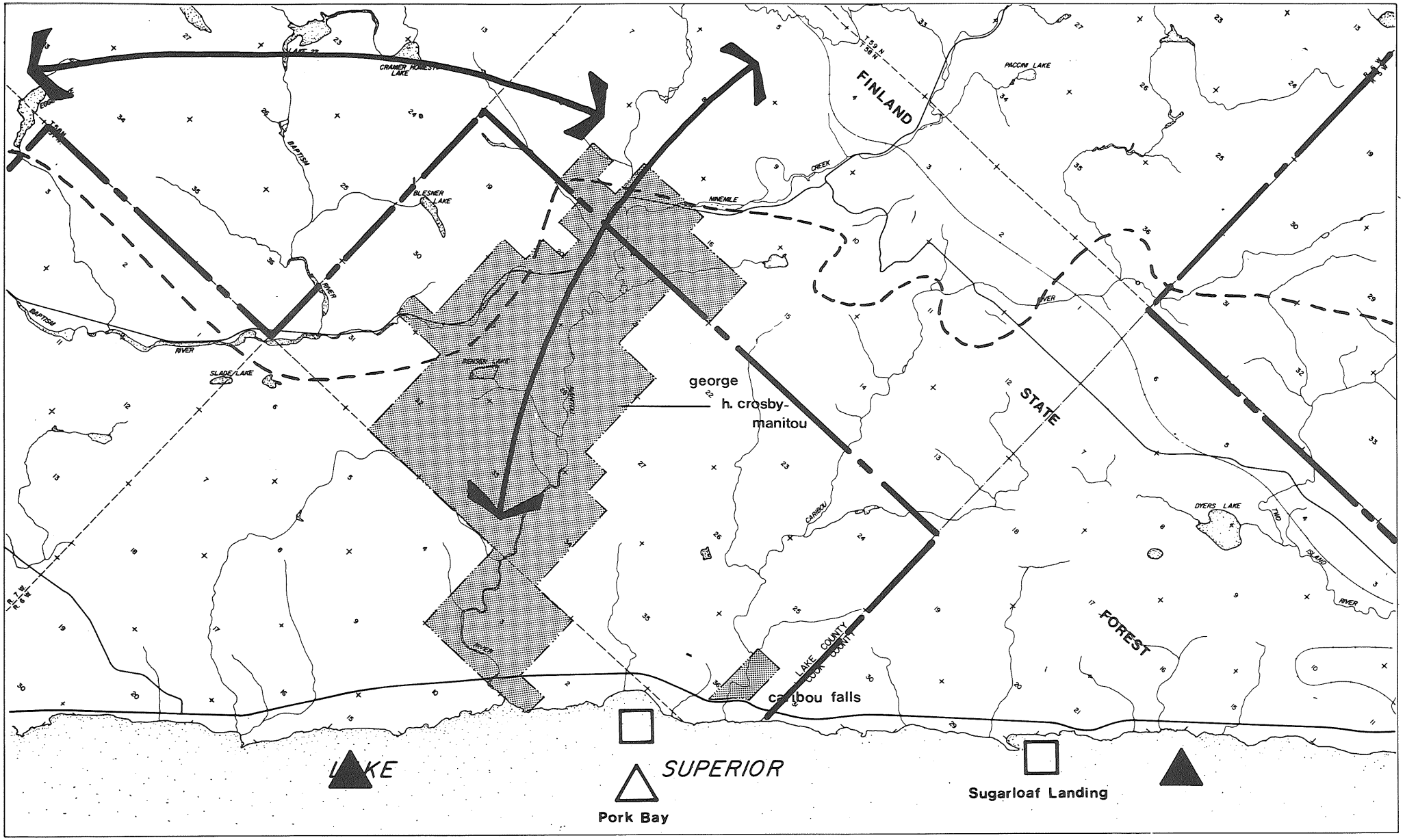

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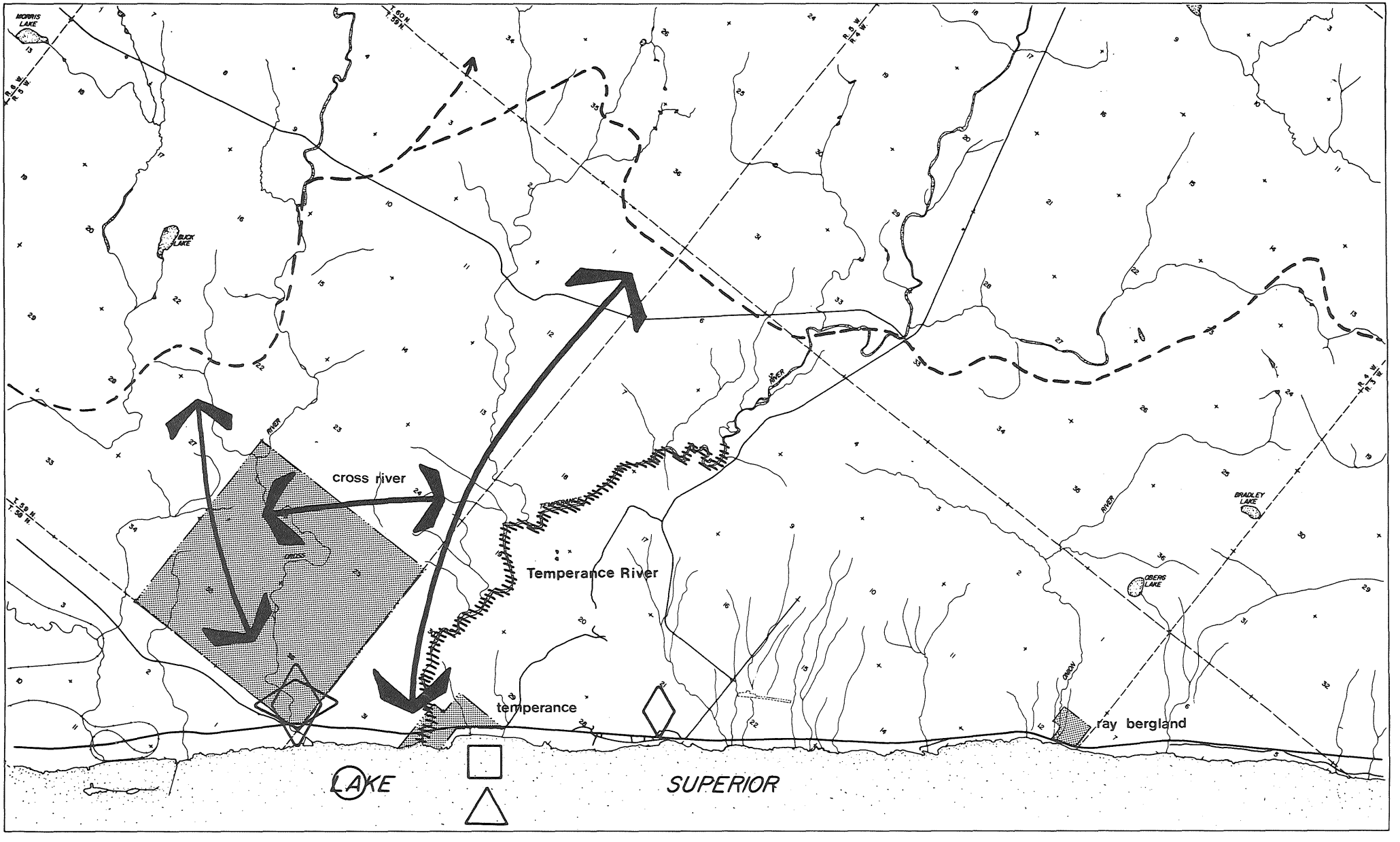

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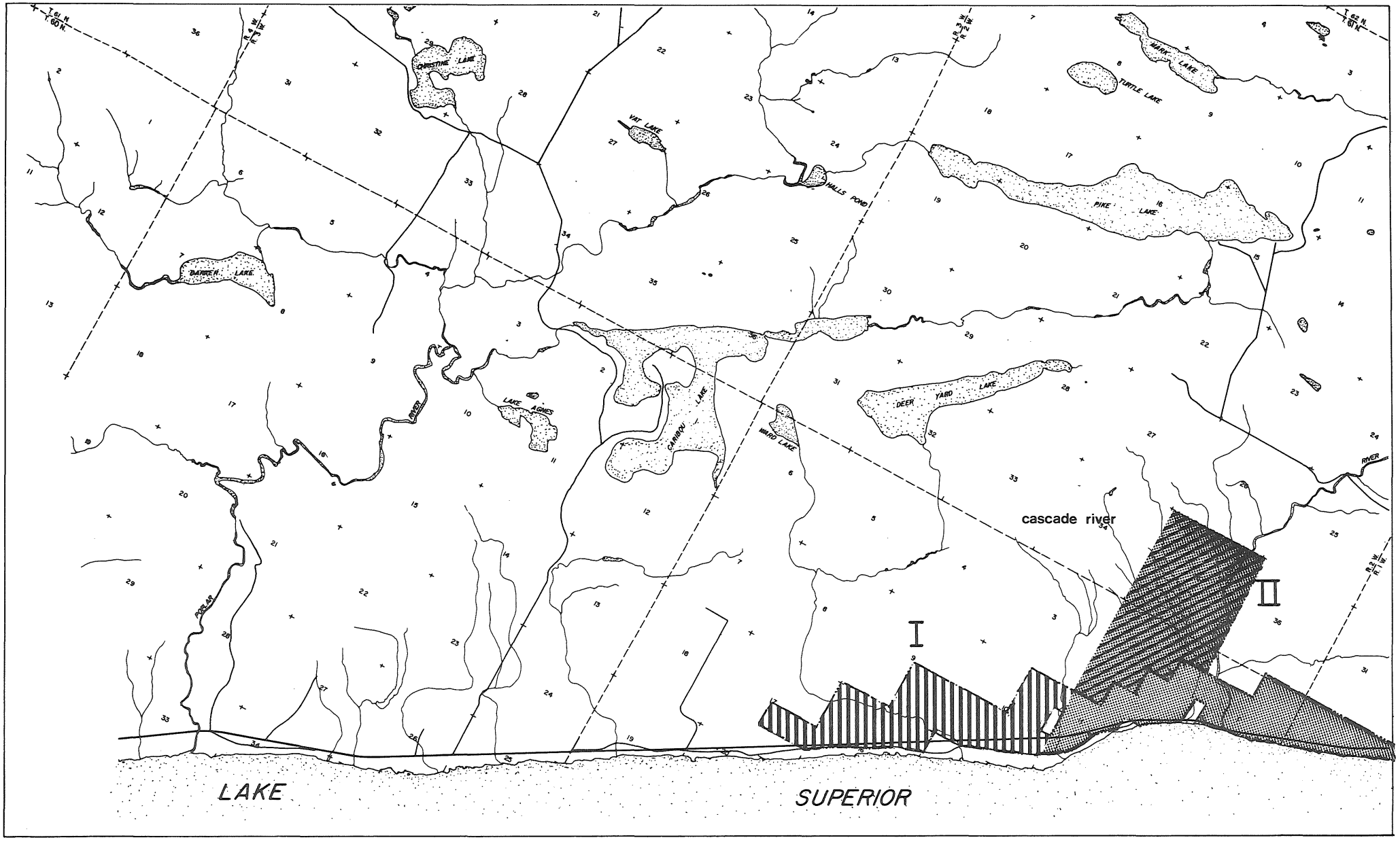

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1 Retain
4 Transfer Jurisdiction

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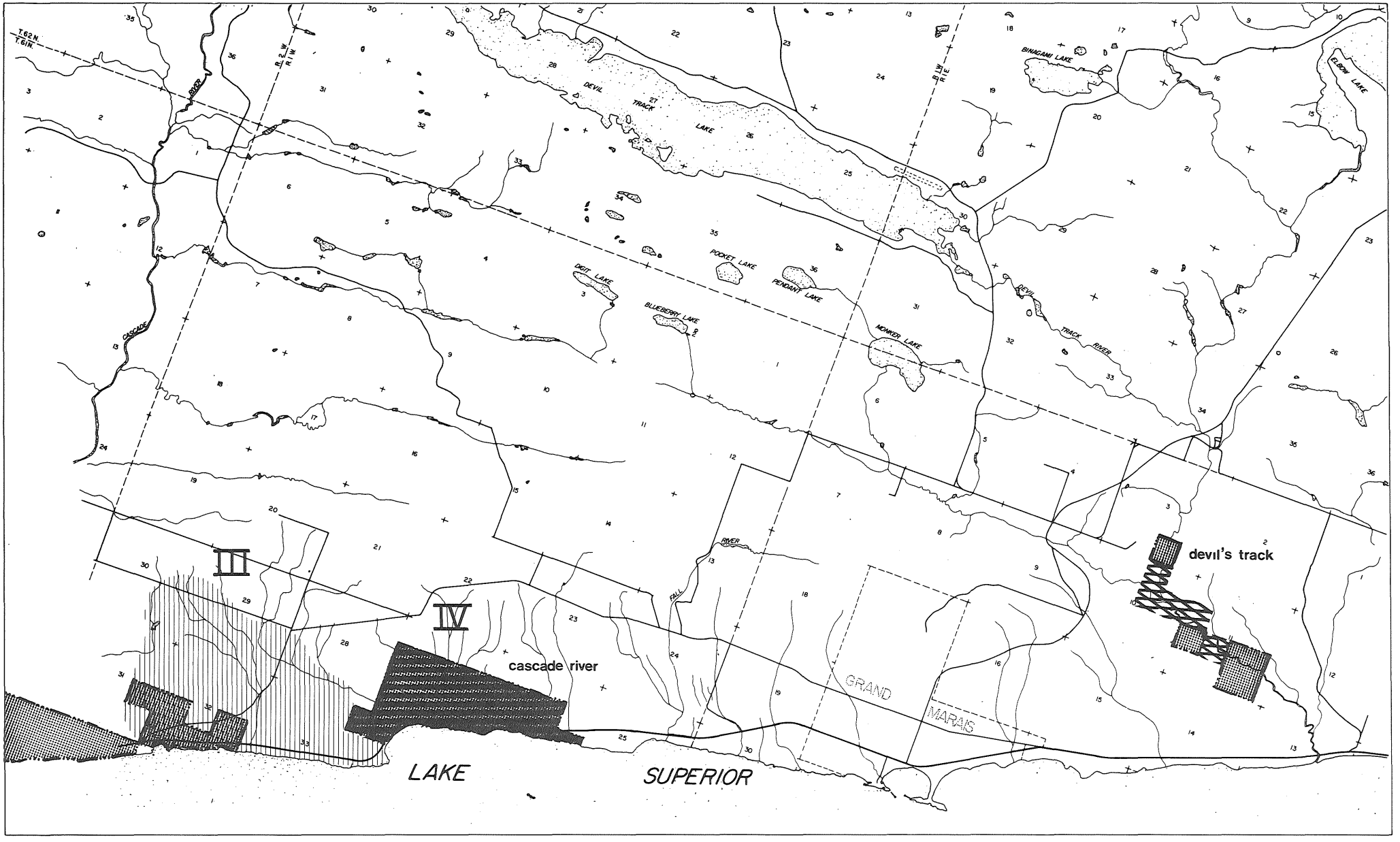

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6 Acquisition / Land Exchange
8 Cooperative Management

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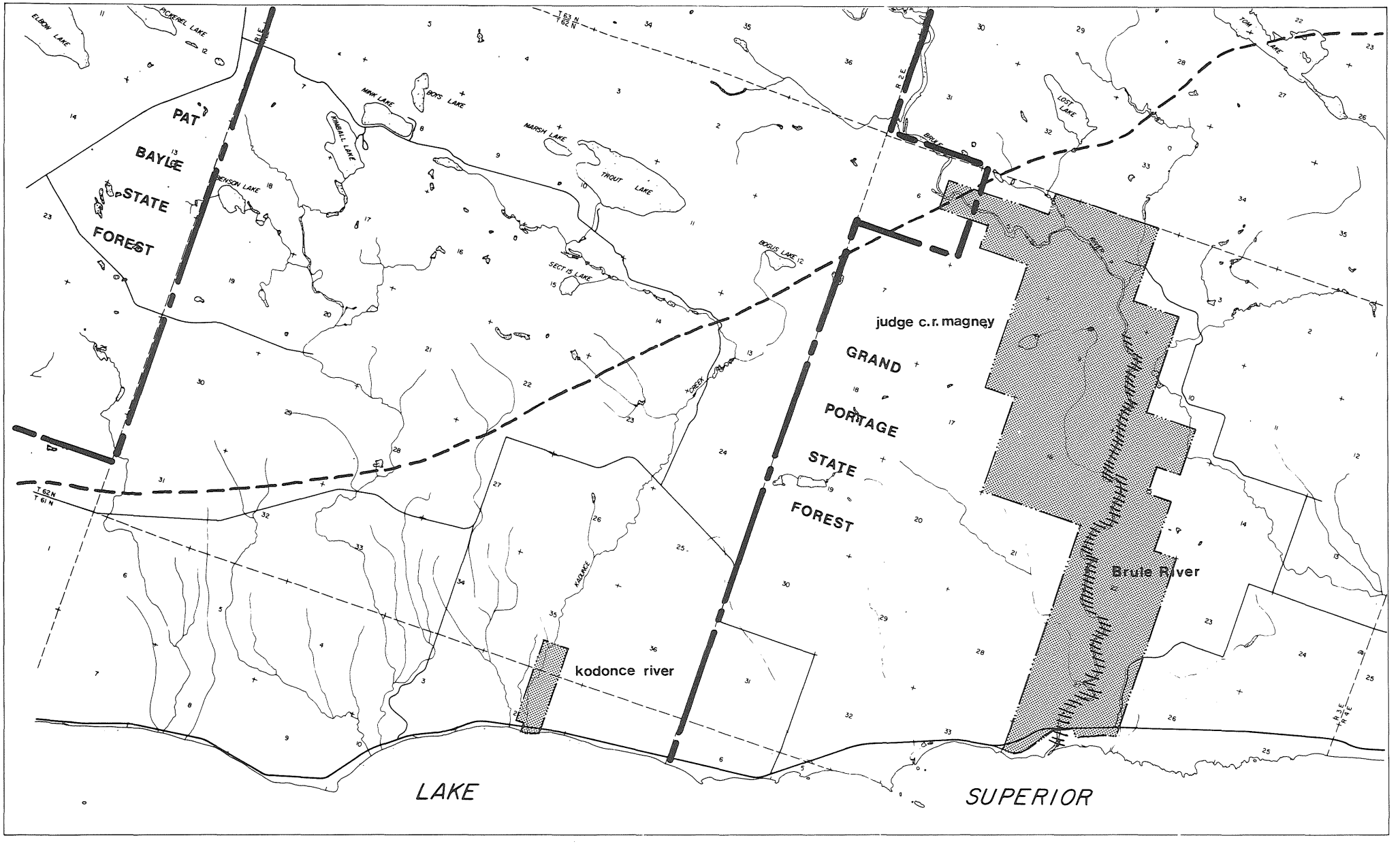

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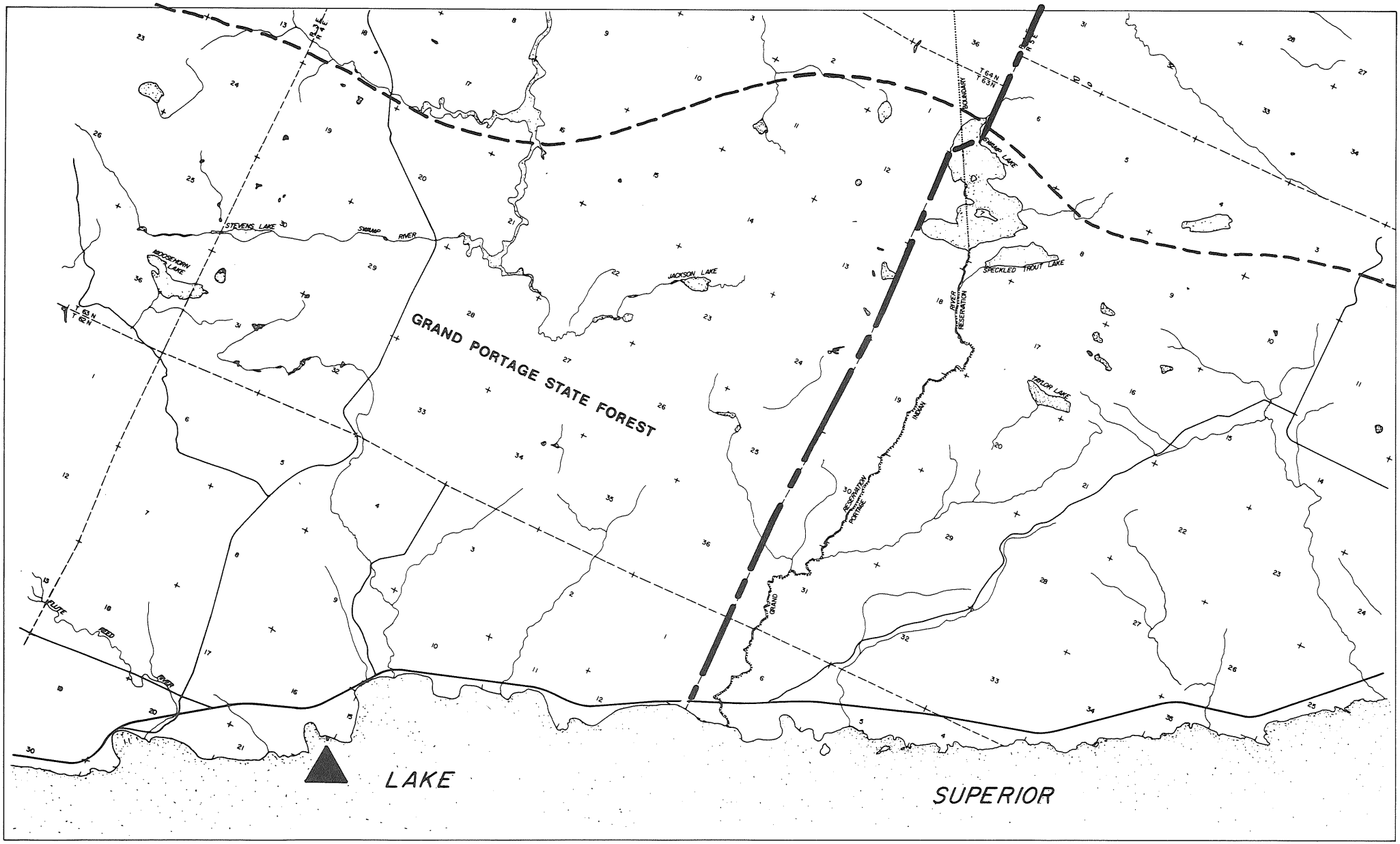

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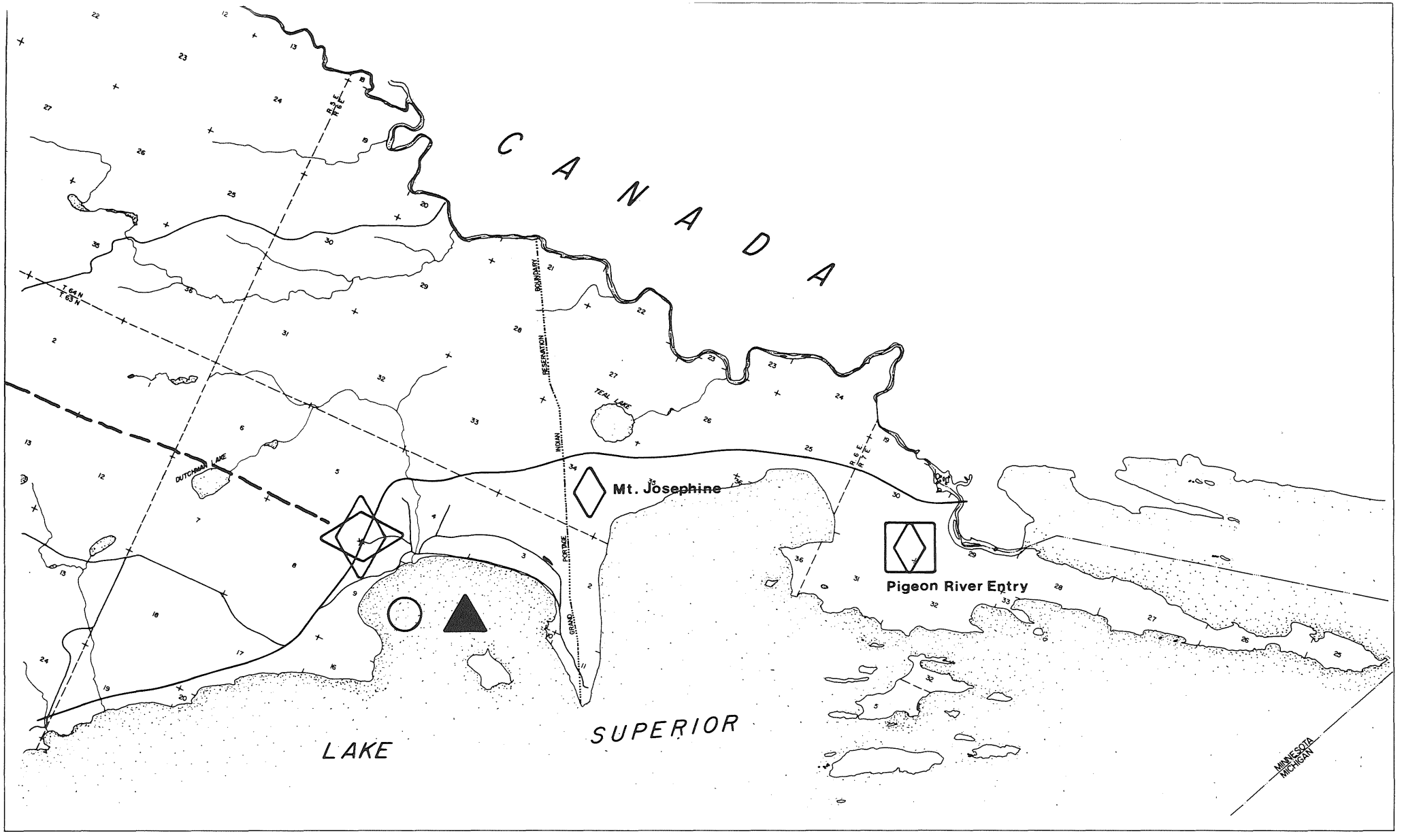

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IV. MAJOR ISSUES

During the course of this study, three major issues were identified which are of extreme importance in considering the recreational use and development of land along the North Shore. These issues are the current amount of public land holdings and future acquisitions, the planning and management of public lands and interactions between the public and private sectors.

A. Public Land Holdings/Future Acquisitions

The presence of large amounts of land in public ownership in the area creates both an opportunity and a problem. The opportunity stems from the fact that there are large areas which are suitable for various kinds of recreational use which are already publicly held. The problem lies in the fact that local residents feel the large public land holdings decrease their tax base and restrict opportunities for private development. Consequently, the question of additional public acquisition of land is viewed with disfavor by local residents and officials.

This dilemma suggests several alternative courses of action which might be pursued.

1. The State and Federal governments could dispose of all their holdings to private interests. However, even if there was sufficient market demands for all of this land, much of the land is held under legislative and congressional authority for the benefit of everyone. The disposition of these lands on a wholesale basis would be a loss to the entire state and private development of this much land would likely result in heavy burdens on local government from providing services to these areas.

2. The total acreage of land in public ownership could be reduced. Again, this would require that sufficient market demand for disposed properties exists. Assuming that the demand exists, this could enable the consolidation of public properties into more manageable units and allow for the disposition of marginal properties.

3. Some type of payment in lieu of taxes could be instituted. This would have the obvious effect of providing money to local governments to offset their lack of a property tax base. By itself, however, it would not resolve questions concerning public land use and management.

These options only address the question of taxes and acreage of state land. They do not address the issue of public land management, which is the second major issue.

B. Planning/Management of Public Lands

There is a common viewpoint among local residents that public lands are not being managed as efficiently as possible and, in some cases, actual mismanagement occurs. It is fairly evident that the planning and management of public lands is not as effective as it could be. This is partially due to a lack of funds and manpower and partially to a lack of coordination between managing agencies. The implication of this is that each agency must enhance their efforts to plan for the use of lands under their control and to do this is in active cooperation with other groups and agencies, both public and private. Public land management must recognize not only a local perspective but regional and statewide perspectives as well if the total public interest is to be served.

Cooperative planning and management, however, is still insufficient to solve identified problems if the management programs don't address the articulated needs of the people. This leads us to the third major issue.

C. Public/Private Sector Interaction

The charge is often made that public agencies will do what they please irrespective of what the people want. This may or may not be true, depending on the perspective of the one making the charge. Frequently, state or national programs are counter to the wishes of local residents but express the will of the majority on a broader basis. The problem in any program is satisfying the needs of as many interests as possible while insuring that others are not adversely affected.

This approach is basically neutral, however, as it primarily addresses the management needs of the agency. Ideally, management should be developed so as to actively address the needs of the private sector as well. For example, state park management is typically concerned with the preservation of unique natural resources and the provision of outdoor recreation experience for park users. This is not to say that this is wrong. However, park management could also take into account the needs of local resort owners, private campgrounds and recreation facilities and work with these interests to satisfy the needs of a broad spectrum of the recreating public. This combined approach would not only serve the needs of the public but would also provide a direct economic benefit to the local community by enhancing tourism in the area.

With these issues in mind, the data collected through this study were analyzed and several concepts were developed. These concepts served as a framework within which specific recommendations were developed to address these major issues.

V. CONCEPTS

Analysis of the issues, resource data and recreational usage patterns in the Study Area suggested a number of concepts which address the major problems, issues and opportunities identified through this study. These concepts serve to emphasize the interdependent nature of recreational facilities along the North Shore and provide a framework for developing specific recommendations. These concepts also provided an analytical model against which the inventory data was compared to determine problems and deficiencies in the recreational system. Following is a description of each of these concepts.

A. Accessibility

The concept of accessibility is fundamental to this study as it is the basis for many of the recommendations in this report. Simply stated, accessibility refers to the relative ease with which tourists and local residents may gain access to, or information about, the variety of recreational opportunities along the Shore and throughout the Study Area.

This concept embraces a wide range of factors including road design and location, distance, availability of information regarding recreational opportunities, patterns of recreational use, facility location and alternative modes of travel.

The concept of accessibility holds that the design of the recreational system should distribute users throughout the system so that crowding at certain facilities is alleviated and access to all recreational opportunities is provided, commensurate with user demand and resource capabilities.

As noted above, accessibility was used as the major factor in analyzing the North Shore recreational system. The assumption was made that access to facilities and opportunities was of paramount concern given the nature of the road system along the shore. To illustrate, the linear nature of the shore and the lack of loop or alternative routes have concentrated recreational usage in the State parks along Highway 61. Usage is highest in those parks closest to Duluth and decreases toward the Canadian border. Recreational usage also decreases rapidly inland away from the Shore. In order to distribute this usage more efficiently along the lower part of the shore, it is necessary to make adjustments in the present system of transportation and information services.

B. Integrated Resource Management

In essence, this concept recognizes that most land areas are capable of supporting a variety of uses and activities over time and that management of these lands should serve to maximize the number of these activities. While management of any given unit may be directed toward achieving a primary goal, subareas within the unit may serve a variety of activities. Due to the dynamic nature of ecological communities,

the pattern of uses in these subareas will change over time in response to changes in the physical structure of the management unit. The management strategies chosen should recognize this and remain flexible and capable of responding to, or actively creating, changes in the management unit which are directed toward achieving unit goals.

Application of this concept will achieve the primary goal for a given unit while, at the same time, allowing for the variety of secondary activities which can occur as a result of primary activities. It is these "spin-off" results which provide the diversity of social, biological and economic benefits which derive from a properly managed unit.

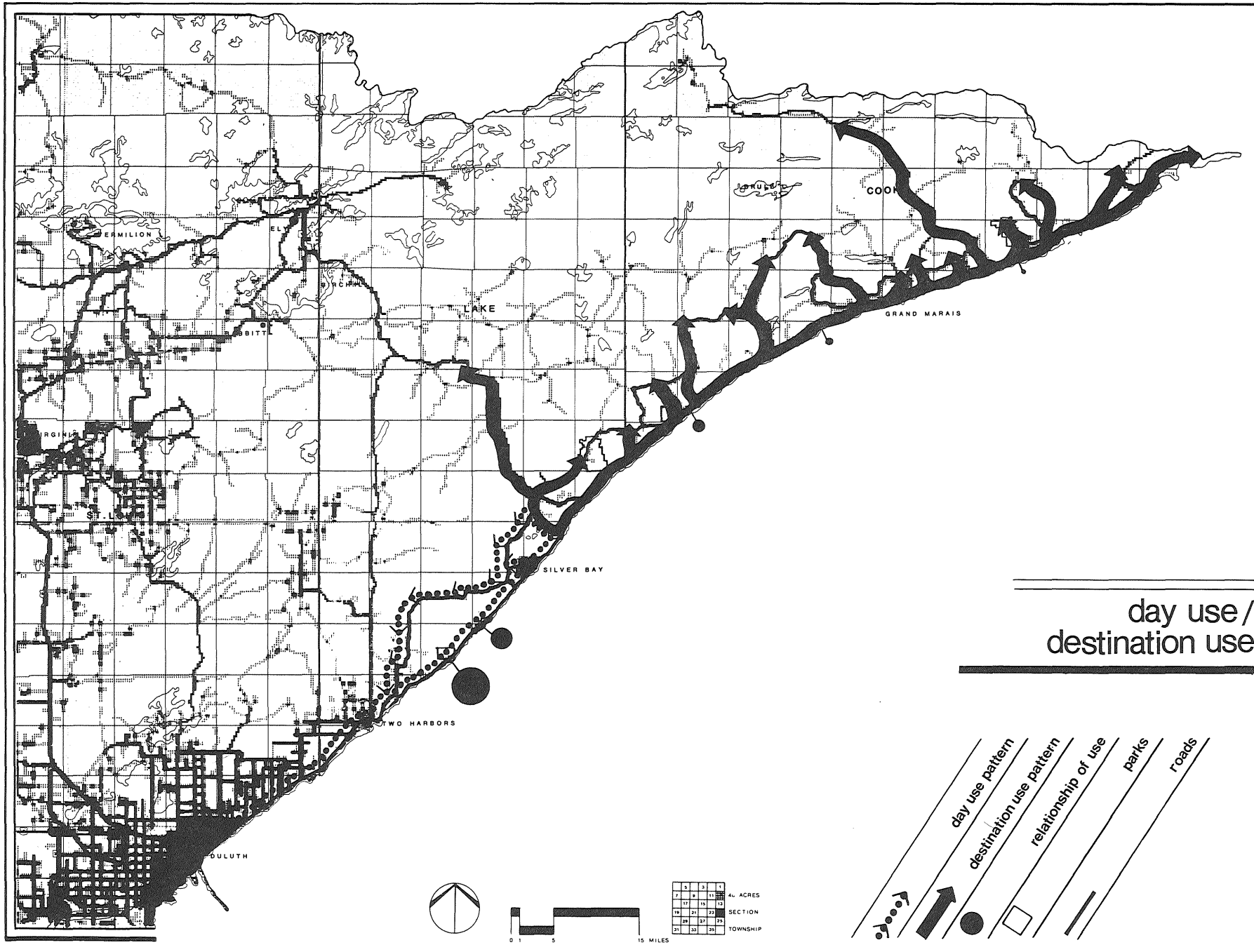
C. Day Use/Destination Use Planning

Underlying this concept is the idea that recreational activities may generally be classified as either day-use activities or destination-use activities. Day-use activities are those which a person would ordinarily participate in only once at a given location on any given recreational outing. Examples include viewing individual scenic or historical attractions such as the Split Rock Lighthouse or Gooseberry Falls, and picnicking. The duration of these activities is typically short and is dictated by accessibility factors. Destination-use activities are those which are engaged in over and over, either at one location or several locations, on a particular trip. Examples of destination-use activities are hunting, fishing, skiing, camping and snowmobiling.

The analysis of user patterns has shown that the Shore from Duluth to Illgen City is primarily impacted by demands for day-use activities while the Shore from Illgen City to the border is better suited for destination-use activities. This distinction implies that detailed planning for individual facilities must take into account the differing demands to be placed on the facility and provide for the proper types of activities which enhance either day-use or destination-use activities, depending on the facilities' location on the Shore.

D. Cooperative Management Programming

Currently, public land management is the responsibility of federal, state and local units of government and there is little likelihood that this will change. Recognizing this, the concept of cooperative management programming emphasizes on-going coordination of management between all levels of government, identification of common objectives and allocation of responsibility. Under this concept, management programs would be coordinated to avoid repetition or duplication of efforts and to insure that confusion over responsibilities does not work against the achievement of management objectives.



day use / destination use

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Also, included in this concept is recognition of the role of the private sector in land management. There are several instances along the Shore where facilities have been developed either on or in conjunction with public lands in cooperation with the managing agency. Generally, this has proven to be a satisfactory and desireable arrangement and should be continued. It is necessary that appropriate procedures be developed for involving the private sector in public land management decisions.

E. Natural Systems Management Areas

This concept relates to the preservation and management of physical and biological resources on an extensive, rather than intensive basis. It requires that management needs and objectives be determined for a broad area so as to realize specific goals. For example, an entire watershed may be managed in order to minimize erosion and sedimentation in the stream, thereby improving water quality and fish habitat. Another example might be a wildlife management program in an area which is not included in a formal management unit but requires the cooperation of several agencies.

The identification of program areas must be followed by determination of the proper management approach and the extent of the area to be addressed by the program.

F. Property Consolidation for Management Effectiveness

The presence of scattered parcels of land outside of any management unit or the presence of land inside management units which are unsuited for the purpose of that unit has often resulted in inefficient management practices. To remedy this, it is necessary to evaluate the resource potentials of such areas and to assign their management to the appropriate agency. These areas should then be consolidated into manageable units in order to assign the primary responsibility for management.

A good example is Cascade River State Park. Due to the linear nature of the park and the existence of Highway 61 running through the park, it is extremely difficult for the park manager to control park land in a manner consistent with good park philosophy. Combined with this is the fact that in the southern portion of the park is excellent deer and grouse habitat and illegal hunting occurs. This study recommended that this area be withdrawn from the Park and turned over to the Division of Fish and Wildlife. The result is more efficient management of the park and more suitable management of the habitat area.

G. Multiple Season Recreation Nodes and Recreational Clusters

Because of their similarities, both of these concepts will be discussed together. Both concepts have three essential aspects:

1) An attraction space for recreational activity development;
2) Support facilities, which may include provision of gas, food, lodging, entertainment, and so on; and
3) Accessibility to user group.

They differ in that the relationships of the attraction spaces to support facilities in each are tailored to meet different sets of needs. In a recreational cluster, lodging and commercial services are developed in compact groupings and utilize a network of commonly used open space. Recreational clusters have the potential of promoting more extended use activities. Coordination with the local resort operators would be essential to insure the availability of ample lodging located adjacent to the attraction space. A cooperative management program would be needed to avoid unnecessary duplication and insure predictability for both the state and the private businessman.

In contrast, private support facilities would be the central feature in a Multiple Season Recreation Node. This type of cluster would be comprised of a number of private businesses which provide services to people using the surrounding public lands and/or waters, particularly for activities such as boating and snowmobiling. These service areas should build on existing private developments because the exchange of goods and services, to be successful, requires a concentration of compatible and supportive uses. Development of surrounding public recreational areas could focus the demand for services on these areas and promote year-round use.

I. ANALYSIS/RECOMMENDATIONS

A. Interagency
Introduction

While federal, state, and county and local governments provide a variety of recreational facilities in the Study Area, quite often these facilities and their use are not coordinated effectively. This lack of coordination is reflected in problems of operation and maintenance of these facilities, and is further aggravated by shortages of funds and personnel. As a result, recreational management programs have not been able to offset problems created by the regions unique physical characteristics as effectively as they might.

While coordination of activities at all levels of government and with the private sector is needed, and recommended by this study, the emphasis in this section on the Department of Natural Resources, the Department of Transportation, the Pollution Control Agency and the State Historical Society stems from two factors.

The first factor is the Outdoor Recreation Act of 1975 (MSA 86A) which establishes the state outdoor recreation system. The major agencies involved in implementing this act are DNR, DOT and the Historical Society. Consequently, this study goes into some detail concerning the interaction between these agencies. The second factor relates to the physical character of the Study Area and its unique problems and opportunities. Because of the importance of the highways to recreational development in the area, DOT is necessarily heavily involved. The Historical Society is involved because of the rich historical resources of the North Shore. The PCA is involved because of the problems encountered in waste disposal in the area.

At a series of meetings between agency personnel, a number of issues were identified where cooperation and coordination was needed or could be improved. These issues are:

- Coordination procedures
- Road maintenance/equipment servicing
- Gravel sources
- Waste disposal

Following is an analysis of each issue and recommendations.

1) Coordination Procedures

A number of steps should be taken to insure coordination between the three agencies and local governments.

a) Joint meetings should be held periodically with both central office and regional staff personnel from each agency to keep each other abreast of plans, programs and proposals which would impact the Study Area. Such meetings should occur while plans and programs are being formulated, rather than waiting until they are completed, so that inputs from all concerned parties are reflected in the final decisions.

b) Meetings between agency personnel and local government officials should be held on a regular basis so that each is made aware of the other's plans. Again, this should occur before plans are finalized.

c) Each agency and local government should develop an information distribution system which will serve to notify concerned parties of proposed actions which would be of interest.

d) An inter-agency liaison position could be established on a permanent basis. This person would be responsible for insuring regular communication and cooperation between agencies and local government. This person would also function as an information source for current and proposed projects, which could result in a sharing of data and materials and a subsequent reduction in duplication of efforts.

e) Decisions which affect more than one agency should be formalized by written agreements between the respective agencies. This would insure that proposals for action are included in agency work programs and budgets and would increase the likelihood of timely implementation.

2) Road Maintenance/Equipment Servicing

Presently, several problems exist in the area of maintenance and equipment servicing. There is some confusion about jurisdiction over particular roads with the result that DNR maintains some state park and forest roads while others are handled by DOT or the counties. This problem is complicated for DNR since most of the equipment is based in Grand Rapids and maintenance needs on the North Shore must compete with the rest of DNR Region II. Equipment maintenance is also uncoordinated. The DOT currently has maintenance facilities along the shore and DNR is considering development of a maintenance shop in the area. Finally, some of the parks along Highway 61, particularly Temperance and Cascade River, are in need of adequate turn-off lanes to accommodate park users.

Recommendations

a) A system of maintenance zoning should be developed along the North Shore, utilizing the present DOT sub-area system of highway maintenance. DNR and DOT should coordinate maintenance and management activities within those sub-areas subject to appropriate agreements. The agencies would function cooperatively to insure that management practices would be interrelated and functions as efficiently as possible. The physical extent of these zones and the detailed procedures to be followed should be worked out by DNR regional staff and personnel from DOT's district office.

Turn-offs

b) Development of adequate turn-off lanes should be implemented for Temperance River, Cascade River and Judge C.R. Magney State Parks. The DNR should ask DOT to evaluate the need for such turn-offs during high-usage periods with a view to minimizing traffic problems on Highway 61 at these locations. In the event such turn-off lanes are deemed necessary, DNR and DOT will have to work out arrangements to develop them. Normally, DOT does not provide such improvements unless new roadwork or major ungradings are underway. However, DOT has indicated that several alternatives might be possible if additional work could be undertaken as part of current work programs. As Baptism River and Judge C.R. Magney State Parks are developed, the need for turn-offs should be evaluated.

Cooperative Maintenance Shop

c) If cooperative use of state-owned maintenance equipment is increased, an agreement should be established to organize the procedures. Plans for development of a Class A maintenance shop by DNR should be coordinated with the DOT shop facility. This would avoid duplication of equipment and result in cost savings to both departments. If such a shop is established, a scheduling system would have to be devised to avoid inevitable priority conflicts.

3) Gravel Sources

Available information suggests that there is a shortage of good quality gravel readily available along Highway 61. Presently, gravel pits located within State parks are used, both by DOT and the county highway departments. Such use is either through formal agreements (as is the case in Cascade River State Park) or informal agreements. Often, these gravel pits are incompatible with park management objectives but, in many cases, are the only feasible source of gravel for a given area.

Recommendations

a) A detailed analysis of gravel source locations should be jointly conducted by DNR and DOT which expands on the information developed in the Coastal Zone Management Program reports on the geology of the North Shore. Based on this analysis, a plan should be developed which would insure the availability of adequate gravel resources for the area.

b) Sites located on state lands other than parks should be included in the gravel resources plan as a high priority for development. These sites could be managed by DOT or the counties for use by all public agencies.

c) A policy should be established for gravel extraction in State parks. Existing operations in parks should be evaluated, and where alternative gravel sources are available, th gravel pits should be closed. Where alternative sites are not available, this policy should outline excavation and reclamation procedures. Other aspects of site operations, such as hours, equipment and screening, should be included in the policy.

d) Upon completion of excavation, gravel pits should be closed and reclaimed in a manner which is beneficial to land management objectives. Management guidelines should be developed by each managing agency.

4) Waste Disposal

Until recently, DNR and DOT handled all solid waste collection from the sites under their jurisdiction and hauled the material to the nearest disposal site. The agencies have now agreed to either

contract for solid waste collection or use the county collection system. They have also negotiated fee arrangements with the counties to cover disposal costs. The amount charged to the agencies may or may not cover actual disposal costs.

Another problem is the fairly widespread inadequacy of the soils to accommodate on-site sewage disposal systems without extensive modification of the systems. Frequently, the result is malfunctioning sewage systems, not just in state operated facilities but in many private developments as well. Somewhat related to this is the general lack of sewage dumping facilities for trailers and motor homes.

Recommendations

a) The DNR should continue to work with the counties on developing equitable cost formulas for the collection and disposal of solid wastes from state facilities. The formulas developed should take into account the volume of material collected and disposed of, and fees set accordingly. The agencies should negotiate annual contracts with the counties and the price should fairly reflect the actual costs of collection and disposal.

b) The DNR and DOT should work with the counties in developing a solid waste collection/disposal system which provides the highest level of service for the lowest possible cost to all. The agencies should seek funding within their budgets to assist in implementing the system as finally developed.

c) The DNR and PCA should experiment with different sewage disposal systems on their respective units to determine those which are most adaptable to conditions in the Study Area. The results should be made available to local residents and units of government to allow them the opportunity to solve existing problems.

d) Standards for on-site sewage disposal systems should be modeled after those contained in the Pollution Control Agency's suggested regulations known as WPC-40. This document suggests alternative means of treatment which are acceptable to the PCA and have been found effective. It should be noted that application of WPC-40 standards are mandatory in areas officially designated as "shore lands". County sanitary codes must also be followed.

e) Trailer dump facilities should not be provided in State rest areas. Rather, this function should be handled by the private sector or local units of government on a fee basis. A listing of dump station locations should be posted in each rest area, however.

5) Emergency/Convenience Stations

There is presently a lack of public telephones and toilet facilities along the North Shore which are available to the general public.

Recommendation

a) The provision of public toilets and telephones should be handled by the private sector where possible. In all cases, the DNR and DOT should work with those providing such facilities. (They may or may not be located in rest areas.)

B. Accessibility

Accessibility refers to the relative ease with which people may gain access to, or information about, recreational opportunities along the North Shore. While roads are by far the dominant mode of transportation in th area, but, rail and air travel must also be considered. Analysis of the area is complicated, however, by the obvious fact that the roads and other transportation modes are utilized by people other than tourists and sight-seers. The needs of commuters, through-traffic and commercial vehicles must be weighed against the needs of tourists and sightseers and steps taken to alleviate the conflicts which constantly occur in the area. This is further complicated by the linear nature of the North Shore, the lack of alternatives routes and the physical characteristics of the Shore.

The transportation facilities are only part of the accessibility equation, however. Once in the area, boating and trails are major components in the recreation system which afford direct access to a variety of recreational activities. The third major aspect of accessibility is publicity. A person can get to a recreational site only if they are aware of it.

Transportation Modes
Roads

The major road along the North Shore is T.H. 61 which extends from Duluth to the Canadian border. This is the only direct route through the area. T.H. 1 extends from T.H. 61 near Silver Bay to Ely. A network of county and state and national forest roads provides access to areas inland from Lake Superior.

Bus

Currently, bus service along the Shore is limited to one trip per day in each direction.

Rail

Railroad development and usage along the North Shore is almost exclusively geared to the mining industry. Passenger service is

limited to one Amtrak train per day between Minneapolis and Duluth. A rail line exists between Duluth and Two Harbors, but its use is minimal. There are private rail lines from Silver Bay, Taconite Harbor and Two Harbors to the Iron Range which are used for shipping iron ore and taconite for transshipment to lake freighters.

Additional development of rail service for passenger use in the area is infeasible at this time.

Air

Commercial passenger service in the area is limited to daily flights from Duluth to the Twin Cities and Thunder Bay. General aviation airports are located at Two Harbors, Silver Bay and the Devil's Track airfield.

Historically, most of the air travel in the region has been business-oriented with little private use of airport facilities.

Recently, however, airport use for recreational purposes has shown an increase, particularly with relationship to winter recreation facilities in Cook County.

Improved access by air travel and location of airports in relation to cluster developments should be considered for future development.

A) Roads

Problem Analysis

Many of the problems associated with road development and upgrading stem from the physical character of the North Shore. The presence of high bluffs, numerous rock outcrops and stream valleys and variation in topography all combine to make road construction an expensive proposition. Given funding restrictions, it is difficult to develop a road to the most desireable standards.

Potential Washouts

Recent events have underscored the hazard of road and bridge washouts along Highway 61. The high relief and rocky nature of the small watersheds along the shore combine to create a very real potential for washouts during periods of rapid runoff.

Following is a listing of the rivers along the shore where the hydraulic capacity of the bridge over Highway 61 could or have, result in washouts.

River	Milepost Location
Caribou Creek	370.5
Two Island River	377.1
Unnamed	382.8
Onion River	386.4
Elford Creek	392.3
Caribou River	393.0
Devils Track River	413.3
Durfee Creek	415.1
Cliff Creek	417.2
Kroll Creek	418.6
Flute Reed River	428.8
Reservation River	434.2
Red Rock Creek	439.0
Hollow Rock Creek	440.6

B) While not unique to this area, there is the ever-present conflict between local perceptions of local needs and the demand for road facilities on a statewide basis. Historically, the North Shore has been a relatively low priority area for road development because of the relatively sparse population, economic activity and low traffic volumes. Recently, the Department of Transportation has begun work on a statewide transportation plan and there are indications that the priority status of Highway 61 may be upgraded in view of the unique scenic qualities of the North Shore.

Notwithstanding this conflict, there are a number of problem areas along the shore where DOT, DNR and local individuals agree as to the type and magnitude of the problem. Following is a summary of these areas.

Mileposts 300-310 - The temporary intersection of T.H. 61 and County Road 61 needs more emphasis through better signing.

Consideration should be given to consolidating some of the waysides in this area or tieing them together so that fewer accesses are needed, but still leaving the opportunity to stop.

French River - This turnoff to the county road is an important fisheries area. There should be cooperation between the Department of Transportation and the Department of Natural Resources-Fisheries in the landscaping of this area to protect the river.

Knife River Rest Area - There is conflict between development and fisheries. The Department of Transportation suggests a parking area for fishermen on old Highway 61 - This could eliminate some of the traffic congestion. More planting in this area would help to protect the mouth of the river.

Two Harbors - The City of Two Harbors is developing an information center and wayside. There is a problem of traffic congestion in the Two Harbors area, and a scenic parkway with lower speeds is one solution under consideration. Another possibility is a highway with both tourist and business traffic, providing loop recreation travel options for the tourists.

Stewart River - Relocation of the roadway depends on problems encountered in crossing the river and private property.

Silver Cliff and Crow Creek - Both are problem areas because of dangerous curves. There is a section of the highway between these two areas that is four-lane, 9-ton. Area beyond Crow Creek is generally narrow, needs wide shoulders.

Gooseberry - Department of Transportation will design the roadway to be consistent with the park entrance design. This area needs thorough study to insure the best development of the area.

Chapin's Curve - This area has dangerous curves and the Department of Transportation suggests a study to consider pulling away from the shore. Would be able to provide access to the old road.

Beaver Bay - An inland route should be considered to save this beautiful area. The Department of Transportation suggests an information plaza at Beaver Bay.

Beaver Bay to Silver Bay - The highway should be left on the present alignment, with the scenic route on the County Road. The county should be given some assistance for development and maintenance of the scenic route.

Caribou River - Should consider a bypass of the shore, there may be a future need for a rest area at this location.

Schroeder - This area needs further Department of Natural Resources and Department of Transportation study.

Cascade River State Park - Need to rebuild the frontage road, the area needs clearing because of deerkill.

Thompsonite Beach - This is a potential Scientific and Natural Area. The highway needs realignment away from the shore. Some space should be provided for rest areas.

Grand Marais - The Department of Transportation feels the highway should stay on alignment here, with speed zones controlling any traffic problems. East of Grand Marais people like to stop to pick rocks, parking areas should be provided for them so that they are not stopping on the highway.

Brule River to Reservation River - The surface will be redone and the shoulders will be widened. The Department of Transportation will reclaim the gravel pit at Brule when it is exhausted.

Hovland - Flute Reed Area - This area could possibly use a slower speed zone.

Tofte - Tofte should have an information plaza.

Grand Portage - The Indian Reservation has an information center, there are too many entrances which causes congestion and confusion.

Information Center to Canadian Border - The road should be resurfaced to 9-ton with eight foot shoulders.

Pigeon River - There should be a good information center at this area, this could be a joint Department of Transportation and Department of Natural Resources project.

C) Traffic volumes in the Study Area fluctuate sharpely depending on the season. Typically, the summer months experience the highest traffic volumes with secondary peaks during the smelting season and the fall color tours. There are some indications that winter volumes are increasing due to increased use of winter recreation facilities along the shore. These fluctuations increase the difficulty of road planning as it becomes difficult to justify road development to handle peak demands which occur for only a part of the year.

D) However, there are often conflicts between commuter and commercial traffic on the one hand, and tourist traffic on the other. The latter are interested in sightseeing and often travel at speeds well under the speed limit. The high-speed traffic is forced to slow down in response to this. The nature of the highway makes it difficult to pass in many places and the highway frequently becomes congested.

To summarize, the physical character of the road and problem areas resulting therefrom, combined with wide seasonal variations in traffic volumes and increasing commercial traffic along the shore which conflicts with tourist traffic, have led to the development of the following recommendations.

Recommendations

a) While there is some local sentiment for the development of an alternative 4-lane roadway for Highway 61, most local comment centered on the need for maintaining and upgrading the present alignment. Consequently, this study recommends that problems in specific areas be corrected by the most appropriate measures, including development of alternate routes, passing lanes, construction of shoulders, accelerated maintenance, screening and so on.

b) The Department of Transportation should review and monitor areas of pedestrian congestion or where sight distances create a hazard upon request by the DNR.

c) As a means of implementing DOT's objective for Highway 61 of providing for safety considerations while respecting the scenic qualities of the area, a study of Highway 61 should be undertaken. This study should consider solutions to the problems identified above in relationship to ore, another within the context of an overall design framework for the entire Highway 61 corridor from Duluth to the Canadian border. Any proposed changes in the road system should consider not only environmental factors, fluctuating traffic conditions and socio-economic needs of the North Shore, but should also be evaluated relative to overall statewide needs and the State Transportation Plan. DNR and DOT have agreed that this should be done and have taken the initial steps to secure funding for the project. This study should be done at a level of detail sufficient to provide working drawings for construction. The study should be completed in sufficient time to allow for the preparation of a budget request to the 1979 session of the Legislature which will enable work to begin in the biennium beginning July of 1979.

d) The state agencies in cooperation with local units of government should develop design and construction guidelines specific to the North Shore at the outset of the study to provide guidance in the development of working drawings. This will insure that state plans, policies and standards are incorporated while, at the same time, meeting local needs.

e) As part of the design guidelines recommended in c) above, a system of loop routes should be included which would serve several purposes. Initially, these loops should provide a means for bypassing those rivers listed above which have potential washout problems. Loop routes could also bypass congested areas along the shore and alleviate traffic problems during peak periods. The loop routes could also improve access to recreational opportunities inland from Lake Superior. Development of such routes should involve the counties, the DOT and DNR and the U.S. Forest Service. DNR should initiate and coordinate the necessary public involvement while DNR and DOT will coordinate efforts to take the loop concept to the final design stage.

f) The design guidelines should consider siting the road so as to maximize the visual experience by passing through the largest possible number of physical environments and highlighting contrasts between settled areas and undisturbed areas. This process should take into account the views at eye level from Highway 61 that would be experienced by the traveller. Other visual guidelines should address structure heights, locations and vegetative management in order to enhance the scenic character of the shore.

The recommendations contained in a) and b) above should be done immediately and constitute the minimum level of effort necessary to begin to address the road-related issue along the North Shore. The initial steps in undertaking recommendation c) have already been taken and the remaining steps should be done as expeditiously as possible.

Recommendations d) through f) are refinements which are highly desireable and should be done on a high priority basis.

Much of the information and background data needed for the Highway 61 corridor study has already been developed through the Coastal Zone Management Program, the DOT, DNR and other studies, and development of the study should utilize this data.

F) Speed Zones

Presently, there are several areas along Highway 61 where there are recurring conflicts between high speed traffic and tourists and between vehicular traffic and pedestrians. As these conflicts seem to be increasing, it is clear that existing measures are not adequately handling the situation, even though they meet federal regulations.

Recommendations

a) DNR should request that DOT monitor and analyze problem areas to determine the severity of existing conditions and a need for remedial actions. Areas to be studies include Gooseberry, Cross River and Temperance River State Parks.

b) Pending a decision on a final solution, existing speed limits and control of pedestrian circulation should be vigorously enforced.

G) Vistas

In many places along Highway 61, the highway user is denied visual access, both to Lake Superior and scenic upland areas as a result of dense tree growth immediately adjacent to the highway.

Recommendations

a) An inventory of significant views and vistas should be developed and mapped. Those occurring on public land should be incorporated into a vegetative management program to insure selective clearing and brushing on a regular basis to keep these areas clear for viewing from moving vehicles. Clearing and maintenance would be done as needed, but annual work programs should include this activity based on projected needs for each year.

b) Clearing should be done so as to protect the natural character of the site and to retain protective screening of private property.

2) Boating

Recreational boating is one of the most natural forms of recreation in the area. According to a recent survey of North Shore residents, there is a great interest in, and demand for, more recreational boating facilities. Some development of recreational boating on the lake has already taken place. The most active recreational boating areas are Duluth Harbor, the Knife River Marina, the Grand Portage/Isle Royale area, Grand Marais and the Apostle Islands near Bayfield, Wisconsin. However, there is great potential for further development of recreational boating all along the shore.

In order to best develop the full potential for recreational boating, there is a need for the construction of three types of facilities, namely small boat harbors, harbors of refuge and fair weather accesses.

A small boat harbor is a protected anchorage which has support facilities such as mooring spaces and docks, gasoline, parking and off-season boat storage. It may have other recreational developments associated with it.

A harbor of refuge is a protected anchorage where services are not available. It is intended to provide quick refuge for boaters in case of emergencies such as sudden storms. These facilities may or may not be equipped with boat ramps. As used here, the term harbor of refuge differs from the use of the term as used by the U.S. Army Corps of Engineers in their Harbor of Refuge program. This program basically provides for the construction of breakwaters and navigational aids. Any additional development is a non-Federal responsibility. Thus, the Harbor of Refuge program could be used to develop basic facilities for either small boat harbors or harbors of refuge.

Additional development by local sponsors would determine whether or not the facility would be functionally classified as a small boat harbor.

A fair weather access is simply a boat ramp and parking area which would not necessarily offer protection from waves. It's primary purpose would be to provide access to the lake for day-use by small boats that are capable of being readily carried by trailer.

Existing small boat harbors are located at Duluth-Superior, Knife River, Two Harbors and Grand Marais. There are two harbors authorized for development by the Corps of Engineers at Silver Bay and Schroeder. In addition, Reserve Mining operates a harbor at Silver Bay for taconite shipping, as does Erie Mining at Taconite Harbor. Fair weather public access sites are located at Flood Bay, Horseshoe Bay and Hovland.

Problems

Boating on Lake Superior can be extremely hazardous given the rocky shoreline, the lack of harbors at suitable intervals, the

extremely cold water and the frequency of sudden violent storms and fog on the lake. Combined with the fact that much of the shoreline is in private ownership, the provision of adequate harbors and access sites is difficult and costly.

While Corps of Engineers standards suggest that the spacing between small boat harbors should be 30 miles by water and between harbors of refuge should be 15 miles, this has not been rigidly followed in these recommendations, particularly with regard to harbors of refuge. This is primarily due to the nature of the shoreline and the resulting location of suitable sites and the climate of the lake which requires closer spacing between sites. However, it is also the result of an attempt to develop areas of boating concentration. To illustrate, it is proposed that boating facilities be concentrated along the central portion of the North Shore centered on Schroeder. The purpose is to encourage both day-use and longer term boating use of the lake in this area.

Recommendations

a) Boating use of Lake Superior is currently underdeveloped when compared to potential development. In the face of the high demand for boating facilities, recreational boating should be promoted and enhanced to make use of the potential that exists.

b) While the demand for increased boating facilities is high, the cost involved in developing such facilities requires that the decision to proceed with facility development should be balanced against the need to provide other types of public facilities.

c) Currently developed access sites should be improved through the use of hard-surfaced ramps and parking facilities.

d) Service areas which are developed for the small boat harbors should be coordinated with the development of service facilities designed to serve the snowmobile trails. The purpose is to avoid duplications and to encourage year-around use and development of the service areas.

e) Before development proceeds, potential harbor and access sites should be evaluated to determine the environmental effects of development.

f) Additional small boat harbors should include the authorized harbors at Silver Bay and Schroeder and a facility at Grand Portage.

g) If a determination is made that they are needed and justified, harbors of refuge should be developed according to the following priorities :

First Priority
Split Rock River
Bluebird Landing

Second Priority
Lutsen
Sugarloaf Landing

Third Priority
Pork Bay
Temperance River

Fourth Priority
Good Harbor Bay
Baptism River

This does not necessarily imply that all eight sites should be developed as harbors of refuge. It means that, if all the sites are developed, this should be the order of development.

h) Feasibility studies should be conducted to determine the actual need for each additional harbor beyond those authorized at Silver Bay and Schroeder. These studies should consider the user analysis conducted by the Minnesota Marine Advisory Service and such other information that may subsequently become available.

3) Trails

Introduction

The rugged, scenic nature of much of the Study Area, combined with the generally low level of development and extensive public land holdings has created a tremendous potential for trail development. The variety of types of trails and the varying degrees of intensity of trail use demand careful selection of potential trail routes. Different areas have different resource potentials for trail use. The suitability of some areas for intensive trail use by snowmobiles, horses or bicycles and passive trail use such as hiking or ski-touring must be taken into consideration in the selection of trail routes.

The Outdoor Recreation Act of 1975 (MSA 86A) describes state trails in the following manner.

Subd. 4 State trail; purpose; resource and site qualifications; administration; designation.

(a) A state trail shall be established to provide a recreational travel route which connects units of the outdoor recreation system or the national trail system, provides access to or passage through other areas which have significant scenic, historic, scientific, or recreational qualities or reestablishes or permits travel along an historically prominent travel route or which provides commuter transportation.

(b) No unit shall be authorized as a state trail unless its

proposed location substantially satisfies the following criteria:

1. Permits travel in an appropriate manner along a route which provides at least one of the following recreational opportunities:

   (i) travel along a route which connects areas or points of natural, scientific, cultural, and historic interest;

   (ii) travel through an area which possesses outstanding scenic beauty;

   (iv) travel along a route which is historically significant as a route of migration, commerce, or communication;

   (v) travel between units of the state outdoor recreation system or the national trail system; and

2. Utilizes, to the greatest extent possible consistent with the purposes of this subdivision, public lands, rights-of-way, and the like; and

3. Provides maximum potential for the appreciation, conservation, and enjoyment of significant scenic, historical, natural, or cultural qualities of the areas through which the trail may pass; and

4. Takes into consideration predicted public demand and future use.

(c) State trails shall be administed by the Commissioners of Highways or Natural Resources specified by law in a manner which is consistent with the purposes of this subdivision. State trails established by the Commissioner of Natural Resources shall be managed to provide a travel route through an area with a minimum disturbance of the natural environment, recognizing other multiple land use activities. Trail markers shall be limited to those providing safety information and interpretation.

(d) Facilities for the rest and comfort of trail users shall be provided primarily within units of the outdoor recreation system through which the trail passes. When additional facilities are required to insure the rest and comfort of the traveler, the managing agency may develop such facilities along the trail and shall designate the facilities as trail waysides. In addition to the foregoing purpose, trail waysides shall be developed for the preservation and interpretation of the trail's natural, historic, or scenic values, and may include facilities for primitive camping, picnicking, sanitation, and parking for access to the trail.

A) Inventory

The Department of Natural Resources currently utilizes four different trail programs in the Study Area. The four types of trails developed through these programs are corridor trails, grant-in-aid trails, state park trails and state forest trails.

1. Corridor trails are long-distance trails designed for year-around use. They are intended to be the major arteries in the Minnesota recreational trail system. There are two corridor trails authorized by the legislature for the North Shore. The first is the North Shore Trail which will eventually extend from Duluth to the international boundary. Two segments of this trail have been developed and are open for snowmobiling and hiking. The first segment runs from Duluth to Finland, a distance of 53 miles. The other segment is nine miles long and begins at National Forest Road 157 near Pike Lake at the Cascade River crossing and ends at National Forest Road 1367 near Monker Lake north of Grand Marais.

   The second corridor trail is called the Grand Marais to International Falls Trail and it will intersect the North Shore Trail near Grand Marais. A route for this trail has been established and development work will begin within the next two years.

   When the North Shore Trail is completed, a connection is planned to the Minnesota-Wisconsin Boundary Trail. This will allow for continuous trail travel between the Twin Cities and the North Shore.

2. Grant-in-Aid Trails. These are either snowmobile or ski touring trails developed and maintained through the cooperation of local trail user clubs, local units of government, private landowners and the DNR.

   In the Study Area, the snowmobile grants-in-aid program has resulted in the development of 162 miles of snowmobile trail. These trails are located in the following areas:

Duluth	-	Cross City Trail	40 miles
Silver Bay	-	Tolands Red Dot Trail	29 miles
Silver Bay	-	Greenwood Trail	35 miles
Silver Bay	-	Sawtooth Trail	8 miles
Isabella	-	Happy Wanderer Trail	50 miles

In the Study Area, the grants-in-aid ski touring trail program has assisted in the development of 104 miles of trail. These trails are located in the following areas:

Cook County	-	Border Route Trail	22.5 miles
Grand Marais	-	Cascade Lodge Trail	30 miles
Isabella	-	Environmental Learning Center Trails	30 miles
Isabella	-	National Forest Lodge Trails	12.5 miles
Two Harbors	-	City Trail	9 miles

3. State Park Trails. These are generally day-use, loop type, recreational trails within state parks. There are two state parks which have snowmobile trails. There are four miles of snowmobiles trails in Cascade River State Park. These trails provide corridors through the park to adjacent snowmobile areas. The Sawtooth grant-in-aid snowmobile trail connects Finland to Silver Bay and runs through Baptism River State Park.

   Three North Shore state parks provide ski-touring trails. George H. Crosby Manitou has six miles, Cascade River has 15 miles and Temperance River has a 10 mile trail.

   Seven state parks on the North Shore provide a total of 31 miles of hiking trails.

4. State Forest Trails. These are recreational trails located within state forests. The Cloquet Valley State Forest has a 26 mile snowmobile trail, the Finland State forest has a 21 mile snowmobile trail and there are 20 miles of snowmobile trail in the Grand Portage State Forest. The Finland State Forest also contains a 16 mile ski touring trail.

   In addition to state corridor, park and forest, and state-assisted grant-in-aid trails, there are trails on the North Shore which are privately maintained. Private resorts on the North Shore provide 166 miles of ski touring trail. There are numerous snowmobile trails and areas which are used by local snowmobiles. Most of these are not maintained.

B) Funding for Recreational Trails

The Minnesota Department of Natural Resources Trail Assistance Programs are designed to assist local units of government, trail user organizations and private resort owners in the development and maintenance of trails. Grants-in-aid are currently available for snowmobile, ski touring and equestrian trails. Each program operates on a 65% - 35% cost sharing basis, with 65% being the state's share. The local match can

be volunteer or in-kind labor, and local units are not required to encumber any of their funds for trail grant projects. Trail informational and directional signs are supplied by the state for grant-in-aid trails. Maintenance and grooming of existing trails is the top funding priority for the assistance programs. Maintenance funds can be granted for trails which were not originally constructed through one of the state programs. Development funds are also available to upgrade existing trails to state safety specifications. Information concerning the Minnesota Trail Assistance Programs is available through the Grants-in-Aid Coordinator, Department of Natural Resources, Centennial Office Building, St. Paul, MN 55155.

The federal LAWCON (Land and Water Conservation) program is a potential source of recreational trail funding. It is not specifically designed to provide assistance for trail projects and does not provide maintenance funds. For these reasons, it has not been used for trail development assistance. LAWCON funding is useable for all types of recreational facilities development and should be considered when recreational projects are planned. Information concerning LAWCON funding may be obtained by contacting the State Planning Agency, Capitol Square Building, 550 Cedar Street, St. Paul, MN 55402.

The Outdoor Recreation Bonding Program, which was passed by the legislature during the 1977 session, initiated two important trail assistance programs. The State Planning Agency administers a grants program "... for the betterment of public land and improvements needed for recreational trails in parks owned and operated by units of government." The Department of Transportation is authorized to award grants "... for the betterment of public land and improvements needed for local bicycle trails." In addition to these programs, the DOT has established "a program for the development of bicycle trails primarily on existing road rights-of-way." Information concerning these programs is available from the State Planning Agency and the Department of Transportation in St. Paul.

C) Problem Analysis

Currently, there are a variety of problems related to trail development and maintenance. The most important of these are described below.

1. There is presently a lack of coordination in the planning and development of trails between state, federal and private concerns. This has resulted in overdevelopment of trails in some parts of the Study Area while in other areas, there is a lack of trail facilities or access to existing facilities.

2. A lack of coordination of trail maintenance schedules has resulted in inconsistencies in treadway standards and lack of any maintenance on portions of trails. Since some trails have segments under different jurisdictions, the allocation of limited maintenance funds often results in portions of a trail not being maintained in a given year. Not only is this frustrating to trail users, but it creates safety hazards as well. The Moose Walk Trail in the Finland State Forest is a case in point. Lack of maintenance over the past few years has resulted in the trail being overgrown to the point that it has been virtually obliterated.

3. Difficulties are encountered in securing long-term easements for development of corridor trails. There is a potential problem in securing easements for the link trails between the corridor trails and the multiple-season recreation nodes where such trails cross private lands. Related to this is the necessity to make major trail intersections permanent and insure that these connections will always be available.

4. Because funding for development is running ahead of funding for maintenance, there have been problems with securing adequate funds to maintain trails which are already developed. Many trails, including State trails, are in an extreme state of disrepair. Uncontrolled erosion, poor signage and inadequate publicity are factors which contribute to continuing difficulties.

5. Although the North Shore Trail is popular for snowmobile use, it does not have orderly and effective access control. The Trail also needs links into service areas where food, gasoline and other services are available.

6. There is a great demand for the development of good bicycle trails, but the lack of shoulders in many places on Highway 61 and the rough condition of many of the back roads have restricted the development of this activity in the Study Area.

7. There is also a large demand for long distance ski-touring trails in the Study Area but, with the exception of the trails at the Environmental Learning Center at Isabella, Grand Portage State Forest and the Cascade River area, this demand is not being met.

8. There are an insufficient number of hiking trails of all types and all hiking trails need interpretation.

9. There are an insufficient number of trails which will accommodate special populations, such as the elderly, sightless persons or those with physical limitations.

10. While the Study Area contains many areas which are ideal for more extensive backpacking trails, the only trails that are provided (those at Crosby-Manitou State Park) are only adequate for beginning and day-use backpackers.

D) Recommendations

In the light of the problems identified above and the opportunities for trail development, the following recommendations are made.

Programs/Procedures

1. A coordinated trail planning effort should be undertaken for the Study Area. This effort should locate, describe and classify all existing trails and provide for the orderly and coordinated development of proposed trails. Additionally, the planning program should develop procedures which would ensure that trail development would be consonant with maintenance capabilities.

2. A concerted effort should be made to inform North Shore residents and trail user groups of the Grants-in-Aid program. The program could be used to develop the recommended links to the North Shore Trail in some cases. The program could also provide assistance in developing the necessary links between state park, state forest and private trails. This is possible for trails designed for snowmobile and horseback use as well as for non-motorized trails. Local trail program administrators should utilize the Grant-in-Aid program as a source of funds for trail maintenance.

3. Trails should be designed so that they can be maintained with a standardized maintenance system. This system should be developed jointly by those agencies providing public trail facilities.

4. Public agencies which have expertise in trail development and maintenance should provide technical assistance to private trail owners.

5. All trails should be located on public land wherever legally possible. Where trails cross private lands, the right-of-way should be secured through the use of land exchanges or the longest term easement possible. In addition, trails should only be located on soils which are physically suitable for trail development.

6. Ski-touring trails, both existing and proposed, should be developed in accordance with the standards and criteria specified in the Ski Touring Trail Rating System contained in Section e) following.

7. Other trails should be developed according to the Trail Accessibility Rating System contained in Section e) following.

Facilities

1. The North Shore Trail should be completed to Grand Marais and on to the Canadian border. Trail links should be developed to connect the trail with service areas and multiple-season recreation nodes at approximately 50 mile intervals. Links should also be constructed to connect the trail with state park and forest trails.

2. A separate system of trails designed for less intensive uses such as hiking and ski-touring should be developed. These trails should connect existing trails in Crosby-Manitou State Park and Finland State Forest with Baptism River State Park.

   Other trails should connect the Caribou Lake and Lutsen trails with Cascade River State Park and trails in Judge C.R. Magney State Park and the Grand Portage Reservation to Grand Portage State Forest.

3. Backpacking trails in both Crosby-Manitou and Judge C.R. Magney State Parks and Grand Portage State Forest should be extended to provide longer backpacking experiences to people having a variety of skill levels.

   The feasibility of developing a hiking trail from Duluth to the Canadian Border separate from the North Shore Trail should be investigated. This trail could tie in with the trails recommended in 3. above, and be connected via links to areas such as the Sawtooth Range.

4. Trails should be developed for bicycle use. As the scenic qualities of Highway 61 are enhanced, a bicycle trail could be incorporated on the shoulders. Development of such a trail must comply with Minnesota Department of Transportation criteria and should also provide for a variety of scenic experiences. Where conditions would make such development impossible, the trail could follow inland routes such as county roads and state and federal forest roads.

5. Trails should be developed in the river fall zone and not encouraged near the mouths of rivers.

6. Where publicly owned beaches are accessible and are not susceptible to damage by usage, trails could be developed and interpreted for investigation of the "North Shore Character."

E) Trail Rating Systems

1. Ski Touring Trail Rating

This trail rating system is designed to be an approximate guide for ski touring trail planners and trail area managers. Ski touring trails can be rated according to their difficulty using this system, and they can be marked with the appropriate signs. The trail marking sign corresponds to individual skier ability levels and allows the skier to select routes which can be safely negotiated.

The new skier will be comfortable on trails designated by the class one sign, intermediate skiers will seek trails signed as class two and expert skiers will find class three trails challenging.

The ideal family ski touring area is one which provides trail opportunities for all three experience classes of skiers. This can be done in several ways. The best method may be through a system of trails which contains individual one-way loops for the different classes. Loop trails should be designed to get progressively more challenging but allowance must be made so that class 1 and class 2 skiers can return to their starting points on their own class of trail.

Ski touring trails should be designed and constructed in such a way that they can be easily groomed. Trail design, including surface, clearance and bridges, must take into account the type of grooming equipment to be used.

This ski touring trail rating system can be applied to most trails developed for family recreational skiing. The system affords skiers a reasonable idea of the experience and challenge they can expect on the trails they are planning to visit. There are other types of ski experience, such as the local park or golf course without designated trails and the narrow, unmaintained wilderness type trail. These do not fit into the rating system's classes, although the wilderness type trails are generally for expert skiers and should be so marked.

GENERAL SKIER ABILITY RATING

This ability rating is an approximate system designed to assist skiers in determining their skill levels. The skill levels correspond to ski touring trail difficulty ratings and aid the in skier in selecting trails for safe recreational use. The number one reflects a skier who is new to the sport while two indicates an intermediate skier and three an expert skier of considerable experience and ability.

Read down each column describing a skier class. Select the class which most nearly corresponds to your ability. Use your class rating to select ski touring trails which safely match your ability.

GENERAL SKIER ABILITY RATING

Technique	1	2	3
Waxing	Learned waxing basics, can wax	Can wax for most conditions	Can wax for all skiable conditions
Basic Kick and Glide	Requires considerable effort, kick slipping and poor glide	Can maintain with smooth rhythm for 10-30 minutes	Can maintain proficiently for over an hour, if need be
Single Poling	Poles not helping in forward motion	Integrated with kick and glide, rhythm occasionally broken	Smoothly integrated with kick and glide
Double Poling	Poles used mainly for balance	Integrated with kick and glide, rhythm occasionally broken	Smoothly integrated with kick and glide and easily alternated with single poling
Kick Turn	Cannot perform or can only do one side	Can turn easily either side	Can turn easily either side and on slopes
Uphill Kick and Glide	Can go up easy slopes with some slippage	Can go up moderate slopes with no slippage	Can go up moderate-steep slopes without breaking stride
Herringbone and Sidestep	Can go up moderate slopes for short distances	Can go up moderate slopes	Can proficiently go up moderate-steep slopes
Step Turn	Can only do one or two steps under slow conditions	Can negotiate wide turns, need recovery period between turns	Capable of repeating many turns in both directions, if needed

GENERAL SKIER ABILITY RATING

Technique	1	2	3
Snowplow Turn and Stop	Can do on moderate slopes	Can do on moderate slopes	Can do going relatively fast on steep slopes
Falling and Getting Up	Falls are awkward and getting up is difficult	Falls are usually controlled and getting up is easy on packed snow	Falls are controlled and getting up is easy in all snow conditions
Stem Turns	Cannot perform	Can do on moderate slopes on packed snow	Can do proficiently on moderate steep slopes under all snow conditions
Parallel Christie to Stop	Cannot Perform	Can do on moderate slopes on packed snow	Can do proficiently on moderate-steep slopes under all snow conditions

GENERAL SKI TOURING TRAIL RATING

Characteristic	1	2	3
Recommended Sign	0 (green)	(blue)	(black)
Maximum Slope	10%	20%	None
Maximum Slope Distance	10 yards	150 yards	None
Maximum Proportion of Trail in Slopes	20%	60%	75%
Average Trail Width	10 feet depends on grooming equipment and number of tracks	10 feet depends on grooming equipment and number of tracts	10 feet depends on grooming equipment and number of tracks
Curves on Slopes	1-2, must be wide sweeping	2-3	Any number
Turnouts	Generous space - 10 feet on slopes	10 feet on slopes 10-20%	10 feet on slopes greater than 20%
Surface Condition	Flat, smooth	Moderate bumps and dips, some banked sections	More bumps and dips allowed, some banked sections

GENERAL SKI TOURING TRAIL RATING

Characteristic	1	2	3
Visibility on Downhill Runs (from start	Entire run visible	Visible and non-visible sections, easy to negotiate	Visible and non-visible sections, difficult to negotiate
Trail Length	8 kilometers	16 kilometers	No limit
Runouts at Bottom of Hills	No sharp turns at bottom of hills, long runout before turn	No sharp turns at bottom of hills, sufficient runout depending on slope	No sharp turns at bottom of hills, sufficient runout depending on slope
Rest Stop	Located at access	Located at 16 kilometer intervals	Located at 16 kilometer intervals
Vertical clearance of maximum snow depth	10 feet	10 feet	10 feet

TRAIL ACCESSIBILITY RATING SYSTEM

11/25/77

Class of Trail	*1	2	3	4	5
Length of Trail	0 - ¼ mile	¼ - 1 mile	1 - 3 miles	3 - 10 miles	Over 10 miles
(Use natural materials whenever possible for benches, shelters, etc.) Rest stop Spacing and Types	100' - 150' *** benches, shelter, interpretation	200' - 300' benches, shelter, interpretation	500' - 600' natural benches occasionally, interpretation	1 mile cleared area adjacent trail or interpretation	None - Unless extremely unique interpretation
Width of Trail	1-way - 4' 2-way - 8' - 10'	1-way 3' - 4' 2-way 8'	1-way 3' 2-way 6' - 8'	1-way 2' - 3' 2-way 4' - 6'	Undefined
Width and Type of Trail Edge	1½' grass slight slope toward trail	Clear understory brush to 1' from trail; gradual slope either direction	Clear understory brush to 1' from trail; no abrupt dropoffs adjacent	Clear understory brush to ½' from trail	Undefined
Slope of Trail	1:50	1:20 with 5' level space at 100' intervals	1:12 with level space at 5' long at 30' intervals	1:8 occasional level space when possible	Steps
Cross Slope	***None	1:50 for max. of 30' and varied from 1 side to other - entire trail	1:25 for max. of 50', vary from side to side	1:20	Undefined
Surface of Trail	Concrete, asphalt	Asphalt, very fine crushed rock solidly packed surface	Firm, pea gravel size surface well compacted	Bound woodchips class 5 gravel mixture coarse	Sandy, rough unbound woodchips, rocks
Trail Edge (rails, curbs, etc.) Use natural materials whenever possible	Curbs used where necessary for safety; rails, 3' height for safety or for resting along lineal slope where necessary	Gradual ramping; rails used for resting along lineal slope and to provide safety on cross slope or hazard area	Compacted earth level with trail edge; definite texture change rails for holding slope at steepest grade and for safety	Texture change with immediate drop to natural terrain from trail edge. Rails used to guard hazard	Nothing

* 1-5 where "1" is the easiest trail and "5" trail provides more challenging opportunities

** Benches may mean commercial type or a big log or boulders suitable for sitting on

*** Drainage by crown or valley - cross slope strongly relates to lineal slope

4) Publicity

As noted previously, an important component of accessibility is publicity concerning the area and the facilities and recreational opportunities which are available. Presently, information of this type is available from a variety of sources including, DNR, DOT, Department of Economic Development, promotional organizations such as the Minnesota Arrowhead Association and local chambers of commerce as well as private resorts and campgrounds. However, these efforts are uncoordinated with the result that some things are over-publicized while others are barely mentioned.

Inasmuch as tourism and recreation are major factors in the economy of the North Shore, a coordinated approach to information and publicity for the North Shore is essential if the recreation system is to function effectively.

Recommendations

a) A committee consisting of representatives from the Department of Economic Development, DNR, DOT, local chambers of commerce and private recreation facility operators should be formed for the purpose of developing a coordinated information/publicity program for the North Shore.

b) At a minimum, the information package should contain a comprehensive listing of recreational facilities, their location, activities and user fees, if any. Maps and supporting information should be included as necessary. Other information which could be displayed includes a directory of tourist support facilities such as lodging and restaurants, historical data and basic interpretive materials.

c) The committee mentioned above should develop the outline of a coordinated publicity program for the North Shore and suggest appropriate implementation procedures.

C. Rest Areas

Introduction

Trunk Highway rest areas are planned and developed for the entire statewide trunk highway system. The planning for, and location of, rest area facilities is based on a systems analysis of natural resources and engineering values, a highway route, desirable spacing intervals, existing facilities, and other special or significant features within the highway corridor. The proposed number and locations of rest areas on T. H. 61 reflect the above evaluation criteria, as well as the fact that the scenic drive is the highest priority recreational activity along the North Shore.

Maximum emphasis has been given to the suitability of the sites and highway system rather than emphasis on constant mileage or

driving time between sites. The Area along the North Shore of Lake Superior, is an extremely unique area, with outstanding physical features which warrant the location of rest areas and scenic overlook facilities at irregular intervals. This irregular placement allows the traveler to experience the unique features of the shore in a safe and convenient manner.

Rest areas are one of the facilities addressed in the Outdoor Recreation Act as follows:

Subd. 12. State rest area; purpose; resource and site qualifications; administration.

1. A state rest area shall be established to promote a safe, pleasurable, and informative travel experience along Minnesota highways by providing areas and facilities at reasonable intervals for information, emergencies, or the rest and comfort of travelers.

2. No unit shall be authorized as a state rest area unless its proposed location substantially satisfies the following criteria:

   a. Is adjacent to or in near proximity to a trunk or interstate highway;

   b. Is developed at appropriate intervals based on the type of road system, traffic and traffic projections and known or projected usage of the proposed development;

   c. May be near or associated with a place or area of natural, scientific, cultural, or historic interest.

3. Rest areas shall be administered by the commissioner of highways in cooperation with other agencies as appropriate in a manner which is consistent with the purposes of this subdivision. State rest areas may be managed to provide parking, resting, restroom, picnicking, orientation, travel information, and other facilities for the convenience of the traveling public. Where located in conjunction with features of interest, state rest areas shall provide interpretive exhibits or other facilities if appropriate to promote understanding and enjoyment of the features.

   In keeping with the intent of the ORA as outlined above, the DOT has adopted the recommendations of the Project 80 report* and has established criteria for four types of rest areas.

* Minnesota Resource Potentials In State Outdoor Recreation Project 80 Staff Report No. 1, Department of Natural Resources, Bureau of Planning and State Planning Agency, Environmental Planning Section, July, 1971.

Class I - Rest Area and Information Center

A major rest area facility which would be located at border entry point, and which would distribute travel information. This facility would be comparable to the Thompson Hill Information Center facility on I-35 in Duluth. It would include flush toilets, surfaced parking areas, refuse containers, picnic tables and shelters, drinking water, an attendant, and possible regional historical/cultural interpretation facilities.

Class II - Rest Area and Interpretation Facility

A rest area development which would include regional historical, cultural and natural resource interpretation facilities related to the North Shore recreational zone. In addition, this type of rest area would include vault rest rooms, surfaced parking areas, refuse containers, picnic tables and drinking water. Special features would include site interpretations, trails systems to lakes and rivers, and agate hunting areas. In concept, then, such developments would be recreation use areas which would be adequately spaced along the scenic highway corridor in order to provide recreational driving facilities, as well as the necessary convenience requirements promoting highway safety.

Class III - Rest Area - Optional Interpretation

This type of rest areas would contain privy toilet facilities, parking, refuse containers, picnic tables, a water supply and travel information. Interpretation facilities are optional. Use of this type of facility along the North Shore is not anticipated, given the nature of the soils and the fact that this facility uses a privy toilet.

Class IV - Rest Area - Scenic Overlook

This type of rest area, located at distinctive viewing points along T. H. 61 would require a minimum level of development. It would include parking areas, refuse containers, and possible site interpretation information (in the form of markers or plaques). The views from these vantage points would be managed in an appropriate manner so that viewing potential would be increased.

1. Public Perception of Problems Relating to Rest Areas.
   In public informational meetings held by the DNR on the North Shore, a number of issues were raised by the public concerning rest area development and maintenance. These issues of public concern are listed and answered in the Appendix on page . The concerns expressed can be summarized as follows:

   - that decisions establishing policies for rest areas are decided in St. Paul and are alienated from local concerns.

   - that there should be more strict enforcement of no-camping policies in highway waysides.

- that discrepancies exist between Canadian and Minnesota fines for illegal parking and camping along roadsides.

- that sanitation facilities are not adequate at waysides, and that these facilities should be developed for year round use.

- that shaded, attractive rest areas should be developed with adequate garbage can pickup and that, Wisconsin rest areas should be studied as examples.

- that freeway-type rest area should be developed along the shore.

- that better liaison be established between the DNR and Mn/DOT and DNR and the NFS.

- that a cooperative effort will be initiated by the Minnesota Department of Natural Resources and the Minnesota Department of Transportation to facilitate the resolution of these concerns and others, encouraging the development and improvement of rest area facilities along the North Shore.

Recommendations

a) General Recommendations

1. Any review of turn lanes for state parks or monitoring of traffic for the purpose of justifying changes should be done by the Department of Transportation at the request of DNR.

2. County, township, and municipal rest areas and information booths should be organized into a coordinated system. This would facilitate recreational use, and would reduce the problems of multiple accesses which are located too closely together. Intermediate rest areas could be converted into picnic areas, and the remaining rest areas could be enlarged and designed more appropriately. Such consolidation would serve to reduce maintenance problems. In order to maximize the natural scenic character of the road, the number and location of rest areas could be coordinated into the redesigning of the road. Funds should be made available for these efforts.

   The first implementation level should include the improvement of Speed Zones and Class IV facilities. The second implementation level should include improvement of vista-areas as soon as appropriate funding and time is allowed for such action. Ownership analysis in this study indicates that development of Class II rest areas should be a third level implementation action which would require

planning, cooperative meetings and the drafting of explanatory drawings. This type of development could be undertaken in phases which would occur parallel to park development; sites farthest removed from other park facilities should be implemented first.

3. The development of Class II rest areas should provide for the interpretation of nearby historic sites of primarily local significance. Such development should be coordinated with County and State Historical Societies.

4. The marking of historic sites should be done in a way which complements the scenic highway and rest area design. The historical interpretation of these areas is a significant recreation activity which is currently underdeveloped. With the cooperation of the Historical Society, a system of such interpretation could be coordinated with other developments.

   As a start, an interpretive map could be developed for distribution at state parks and major rest areas. The map could contain the locations of visible artifacts and significant historic sites.

   A special graphic symbol should be used on signs designating historically significant areas which are of no visual or recreational interest. For instance, rivers should be distinguished by symbol according to their historical value. Both types of distinguishing signs should be of similar type face and size.

   Sign boards indicating the relationship of sites to each other in the immediate area should be placed at Class II rest areas. Significant scenic features and newly restored sites could be indicated.

Cascade River — Milepost 400.1

This area should be monitored as a speed zone. Some redesigning or total relocation should be considered for the area.

Kodonce River — Milepost 481.8

The state park sign should be removed and fisheries potential should be investigated. River access classification is needed here. Potential transfer to DNR for operation and control should be considered.

Lake Superior Access — Milepost 437.1

This area should be signed as a scenic overlook. Roadway parking should be halted. Signs should be kept, but the area should be restored.

Wauswaugoning Bay — Milepost 449.2

This area should be signed as a scenic overlook.

SECOND IMPLEMENTATION LEVEL - DEVELOPMENT

Knife River Historical Site — Milepost 317.8

This area should be redesigned as a Class II Interpretive Rest Area. A regional reference map should be made available at this site.

Stewart River Area 2 — Milepost 328.5

Relocation of fisheries access should be implemented here by DNR, with local cooperation. Planning should be done to prevent parking on the road shoulder, and there should be better enforcement of no-parking areas. DNR should notify the DOT after the change, so that DOT can remove the rest area.

Nelson's Creek — Milepost 340

This rest area should be eliminated and DNR Fisheries should provide fisherman's access if appropriate.

Palisade Head — Milepost 357

This rest area should be closed temporarily and should be reconstructed for pedestrian use only when the Baptism River area is developed more fully. Ownership will be retained, but there should be no automobile access to the top of the bluff.

Caribou Falls — Milepost 370.7

This rest area should be closed, pending evaluation of alternatives for future disposition of this facility.

Cross River — Milepost 378.8

Easements should be acquired by DNR for river trails in order to clarify public use of this area.

Fall River — Milepost 407

Fisheries potential should be investigated and, if access is necessary, DNR should provide appropriate access.

Judge Magney — Milepost 424.7

This rest area should be closed after appropriate discussion with the family over the moving the marker to the state park. DNR ownership should be retained. Fisheries access should be relocated.

Flute Reed River — Milepost 428

This area should be transferred to the Division of Forestry, as their management would be more appropriate. Improvement of entrance, signs, and campsites is needed.

THIRD IMPLEMENTATION LEVEL - DEVELOPMENT

Larsmont — Milepost 321.7

This area should be retained for future development.

Split Rock River — Milepost 343.25

This area should be developed as a Class II Rest Area, with habitat protection for fisheries management.

Baptism River — Milepost 358.6

This heavy-use area should be developed as a Class II Rest Area with a major interpretive center. Consideration should be given to transfer of this area to the DOT.

Sugar Loaf Landing — Milepost 373

Development of a historic theme is needed. The Department of Transportation and the Department of Natural Resources should jointly conduct further research on developing this area as a major rest area interpretive center.

Temperance River — Milepost 380.1

The present parking area should be eliminated and access to the park should be upgraded. The area should be developed for park control. Fishing access may be a problem and this should be investigated. The entrance to the site should be improved.

Tofte — Milepost 383.6

This area should be developed as a Class II Rest Area.

Cut Face Creek — Milepost 404.6

Redesigning is needed; this area should be developed as a Class II Rest Area with an interpretive center. Development would depend on reconstruction of T.H. 61.

Red Rock — Milepost 439.5

DOT will develop this area as a Class IV overlook. Quality views of the beach should be retained.

Lake Superior Public Access Site — Milepost 420.5-421.5

This site is a high-priority intermediate rest area. Further investigation of this area is needed to determine access needs and usage before decision on the appropriate level of development.

Mount Josephine — Milepost 447.1

Class II Proposed

Horseshoe Bay — Milepost 430

This area should be developed as a Scientific and Natural Area with recreation use.

Proposed Information Center at Pigeon River Entry — Milepost 450.7

This area should be developed by DOT as a major information center with recreation development.

Areas Suggested for Elimination

Closure of certain rest areas has been recommended for the following reasons:

They present safety hazards for current traffic conditions; or, they are unable to handle large recreational vehicles; or, to reduce the number of sites to promote a functional system that is easier to maintain. Removal of state park signs on state park waysides has been recommended in order to reduce the confusion and hazard created by people entering the units expecting to find developed park facilities, such as campgrounds.

Areas for First Priority Elimination

MN/DOT Asphalt Storage Area — Milepost 327.6

This area should be closed

Crow Creek Rest Area — Milepost 334.5

This area should be eliminated; the Department of Transportation should retain ownership. Scarifying and re-seeding should be undertaken.

Split Rock Scenic Rest Area (Day's Hill) — Milepost 344.75

This area should be closed; ownership should be retained.

Beaver River — Milepost 351.3

This area should be closed when Beaver Bay is developed. Consideration should be given to fisheries.

East Beaver Bay — Milepost 352

This area should be closed; ownership should be retained.

Caribou Falls — Milepost 370.7

State park wayside signs should be removed in this area.

Leveaux Creek — Milepost 385

This area should be closed.

Ray Berglund — Milepost 386.4

This area should be closed.

Good Harbor Hill — Milepost 404.4

This area should be signed as a scenic overlook.

Old Dog Trail Marker — Milepost 426.7

This area should be closed and the marker should be moved to a trail in an appropriate state park.

Areas of Second Priority Elimination

Split Rock Overlook — Milepost 345.1

This area should be closed as an overlook, but should be retained as a "vista" and maintained yearly for enhancement of the scenic drive design.

Areas of Third Priority Elimination

Gooseberry Rest Areas — Milepost 339.25

These areas should be phased out as rest areas as the Split Rock River Area is developed.

Local Rest Areas

Silver Bay Area 1 — Milepost 352.8

This area should be kept as an interpretive site.

Silver Bay Areas 2, 3, 4, 5 — Milepost 353.3-353.7

Obliteration and re-seeding should be implemented immediately. All areas should be checked for clarification of ownership.

Reserve Mining Observation Area — Milepost 354.6

This area should be coordinated with the development of Area 1. This would involve cooperative work between DOT and the Reserve Mining Company.

County Line Turnaround — Milepost 371.0

Sign and trash cans should be removed in this area

Grand Marais Overlook — Milepost 409.7

This area should be maintained as is.

Paradise Beach — Milepost 423.3

Ownership records should be checked for this area.

Reservation River — Milepost 434

This area should be closed as a rest area; access road should be retained, and private road should be retained to residence. Ownership should be checked here.

Cannon Ball Bay — Milepost 434.8

Ownership should be investigated. This area should be closed immediately.

Grand Portage — Milepost 444.2

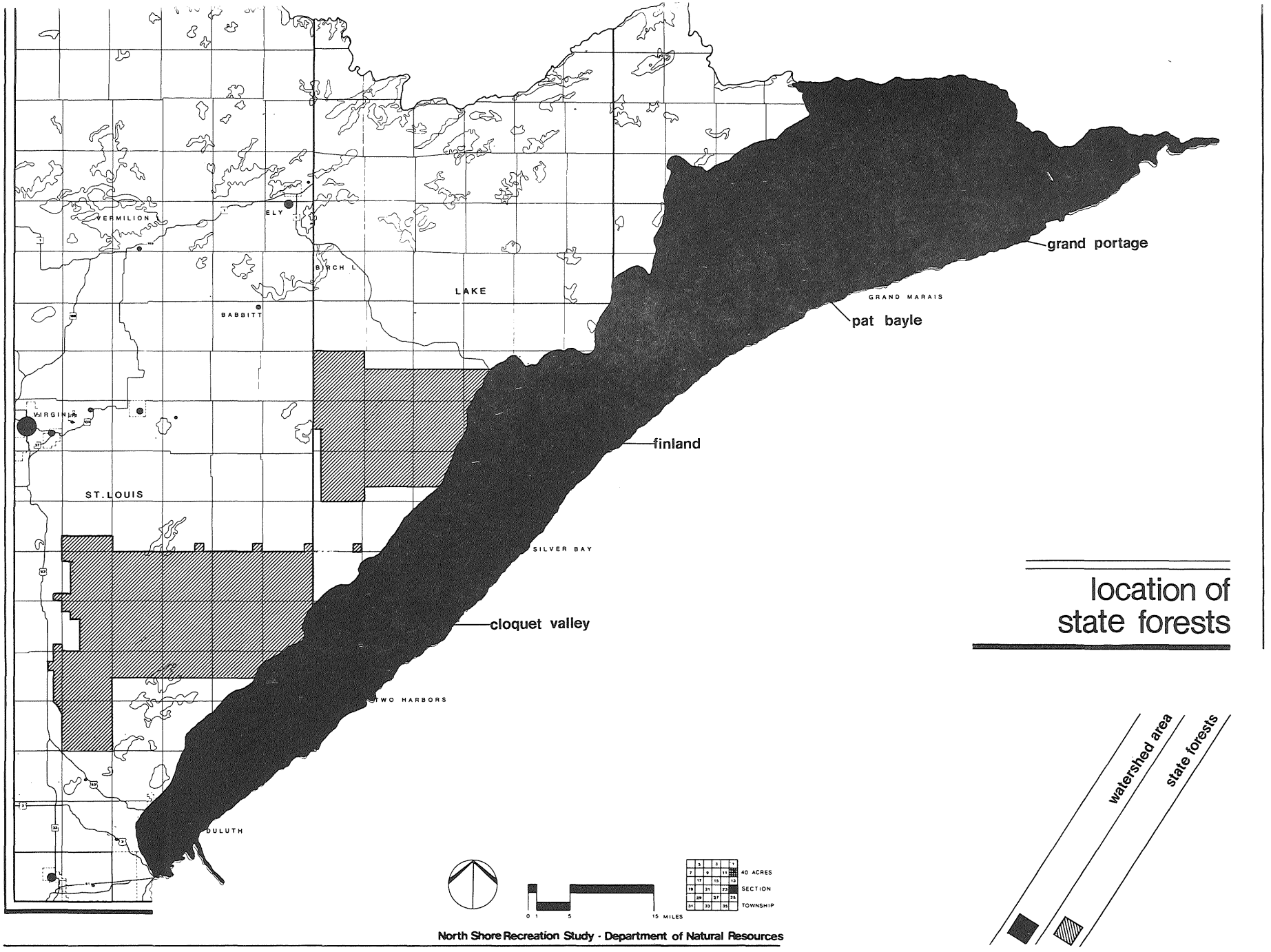
Proposed Class II

D. Forests

Introduction

State forests are established for growing, managing and harvesting timber and other forest crops, for the establishment and development of recreational areas, for the protection of watershed areas and the preservation and development of rare and distinctive native species of flora and fauna. State forests provide excellent opportunities for recreational activities of various types which are compatible with the timber management goals of the unit. This is all the more important in view of the fact that the four state forests in the Study Area have nearly 900,000 acres within their boundaries, of which over 218,000 acres are owned by the State. It is the intent of this study to suggest possible roles for the state forests in developing the recreational system in the area.

As a result of the extensive public ownership in state forests combined with the economic potential of the forests in a good market situation, state forests are the second highest priority in terms of recreational development. Because of this, it is necessary to evaluate the recreation potential of the forests in a systematic fashion. This section is a first step in this evaluation, inasmuch as large areas of the forest have not been evaluated from this standpoint and such an evaluation was beyond the scope of this study.



location of state forests

watershed area

state forests

North Shore Recreation Study - Department of Natural Resources

The Outdoor Recreation Act of 1975 (MSA 86A) describes the recreational aspects of state forests as follows:

Subd. 7, state forests and state forest sub-areas: purpose; resource and site qualifications; administration.

(a) A state forest, as established by Minnesota Statutes, Section 89.021, shall be administered to accomplish the purposes set forth in that section, and a state forest sub-area shall be established to permit development and management of specialized outdoor recreation at locations and in a manner consistent with the primary purpose of the forest.

(b) No unit shall be authorized as a state forest sub-area unless it is located within a state forest and contains suitable natural resources to accommodate any of the following uses:

(1) Day Use Areas - Areas which permit recreational use of the forest in its natural state, not requiring an overnight stay, including but not limited to picnicking, fishing, swimming, boat launching, hiking, interpretation, and nature observation.

(2) Campgrounds - Provide minimum facilities to accommodate overnight camping.

(3) Outdoor recreation sub-areas located within state forests shall be administered by the Commissioner of Natural Resources in a manner which is consistent with the purposes of this subdivision.

Inventory

Four state forests lie partially or completely within the study area. They are Cloquet Valley State Forest, Finland State Forest, Pat Bayle State Forest and Grand Portage State Forest.

The following table shows the total acreage which lies within the statutory boundaries of the state forests and the portion of the total acreage that is state owned. (The acreage of private, county and federal lands is not included here.)

	Total Acres With Statutory Boundaries of State Forests	Total Acres* of State Owned Land Within Statutory Boundary
Cloquet Valley	316,467	38,357
Finland	307,648	104,212
Pat Bayle	170,644	39,956
Grand Portage	98,000	35,821
Totals	893,459	218,346

*As of July, 1976

Following is a breakdown of facilities and major characteristics for each state forest.

CLOQUET VALLEY STATE FOREST

Location

Cloquet Valley State Forest is located 15 miles north of Duluth. It is bounded by the Superior National Forest on the major portion of its north border and lies totally within the day-use zone of Duluth. Only a small portion of the southeast corner of the forest falls within the study area.

Natural Characteristics

This forest's flat rolling terrain interspersed with lakes and rivers is largely forested with aspen-birch providing a good habitat for deer with about one quarter of the forest being spruce-fir providing good cover for a diversity of wildlife.

The timber production capability, the flat terrain, road accessibility, the proximity of the forest to the Duluth and Cloquet mills qualify Cloquet Valley State Forest as a prime area for timber production.

In order to determine suitability for recreation development, it is necessary to cosider the suitability of soils. The vast majority of the Cloquet Valley State Forest which lies within the study area is suitable for sewage lagoon development and erosion potential is slight, however, the structural suitability of the soil requires some restrictions on recreational development.

Recreational Facilities Inventory

Camgrounds:

Cedar Bay Campground
- 17 drive-in campsites
- 6 picnic sites
- swimming beach
- concrete boat landing
- canoe landing
- one mile of hiking trail

Cloquet River Landing Campground
- 4 walk-in campsites
- canoe portage

Dr. Barney's Landing Campground
- 4 drive-in campsites
- canoe portage

Indian Lake Campground
- 9 drive-in campsites
- 8 picnic sites
- swimming beach
- concrete boat ramp
- canoe route landing

Whiteface River Campground
- 4 walk-in campsites
- 3 picnic sites

Day-Use Areas:
- Ness Park Picnic Area
- Lever Beach Picnic Area

CCC Historic Site

Boat Accesses:
- Boulder Lake
- Island Lake
- Sun Set Harbor (canoe)
- Whiteface Reservoir (2)
- Bear Lake

Public Accesses:
- Loaine Lake Public Access
- Spring Lake Public Access
- Fish Lake Public Access
- Sullivan Lake

Forest Roads:
- Jim Ready, Camp 26, Northeast Grade, Hagstrom, West Branch, Carrol, Marshall, Bear Lake, Cedar Bay, Spring Lake, Whiteface and Indian Lake - Total length, 56½ miles

Snowmobile Trail:
- Length - 25 miles

FINLAND STATE FOREST

Location

Finland State Forest is located north of Silver Bay near the junction of Lake County Road F and Highway 1, in an area suitable for both destination and day use. Most of it lies within the Superior National Forest. The North Shore Trail passes through the Finland State Forest.

Natural Characteristics

Finland State Forest is characterized by outstanding scenic terrain, including rugged highlands and river valleys, lakes, however, are fewer in number than in the other forests.

Of all the state forests within the study area, Finland ranks the highest in timber productivity.

Vegetation is quite varied with aspen-birch predominating near the shore and spruce-fir predominating further back in the watershed. These stands are interspersed with large patches of northern hardwoods and lowland hardwoods. The majority of the forest is rated fair to good for forest game habitat.

Natural restrictions imposed by soil conditions on recreational development are generally moderate throughout the forest. About half of the area is suitable for sewage lagoon development with some portions suitable for septic systems. These areas tend to be in the areas farthest from the shore, with the portion of the forest nearest the shore more severely rated. Erosion potential is high near the shore and slight to moderate in the rest of the forest. The major portion of the forest land nearest the shore has soils with structural suitability which for all practical purposes prohibits recreational development. There is however, one small pocket of land in the area which is structurally suitable for development.

Recreational Facilities Inventory

Campgrounds:

Eckbeck Campground
- 32 drive-in campsites
- 4 picnic sites
- fishing access

Finland Campground
- 19 drive-in campsites
- 10 picnic sites
- fishing access

Rocky Shores Campground
- 4 boat-in campsites

Sullivan Lake Campground
- 10 drive-in campsites
- 2 picnic sites
- boat access
- 2½ miles of hiking trail

Picnic Areas:
- Greenwood Lake Picnic Area
- 4 picnic sites
- boat access

Trails:
- Moose Walk Snowmobile Trail - 25 miles
- Woodland Caribou Ski-Touring Trail - 20 miles

Forest Roads:
- Heffelfinger, Northeast Grade and Finland - Total Length - 24½ miles

PAT BAYLE STATE FOREST

Location

Pat Bayle State Forest north of Grand Marais, lies totally within the Superior National Forest. It is bordered on the north by, and overlaps at many points with, the BWCA. Several resorts lie within the boundaries of Pat Bayle State Forest.

Natural Characteristics

The topography of Pat Bayle State Forest, the most scenic of all the state forests, varies from flat and rolling to very rugged with numerous lakes and rivers. It's Lime Mountain (2,238 ft.), is the highest points on the North Shore.

The vegetation is a complex pattern of conifers and aspens that provides good wildlife habitat.

The largest restriction for recreation and other development in this forest is the lack of soils suitable for on-site sewage disposal. Due to soil problems, the majority of the area falls into a category requiring restrictions for recreational development.

Recreational Facilities Inventory

Two Island Public Access
Elbow Lake Public Access
Dislocation Lake Public Access
Brule River Public Access

GRAND PORTAGE STATE FOREST

Location

The Grand Portage State Forest lies northeast of Grand Marais and north of Hovland. It is bordered on the west by the Superior National Forest and on the east by the Grand Portage Indian Reservation. The Arrowhead Trail runs through the center of the forest. Judge C.R. Magney State Park lies totally within Grand Portage State Forest.

Natural Characteristics

The scenic terrain of this forest varies from flat and rolling to very rugged and interspersed with lakes and rivers. One of the highest elevation points (2,169 feet) on the North Shore is located in Grand Portage State Forest.

Vegetation is dominated by aspen-birch, but includes northern hardwoods and spruce-fir communities. Nearly all of this forest is ranked medium to high for fiber production.

The area in and around Judge C.R. Magney State Park and the Brule deer yard provides some of the best wildlife habitat for both species diversity and big game production on the North Shore.

Limitations to recreation or other development determined by soil suitability are varied. More than half of the area within the forest boundary is rated poor for on-site sewage lagoons, nor is it suitable for septic systems. Erosion potential is slight or moderate over most of the area. In terms of structural suitability, the best soils appear to be in and around Judge C.R. Magney State Park and along the shore.

Recreational Facilities Inventory

Public Accesses:

MacFarland Lake Public Access
Lake Superior Public Access
Esther Lake Public Access
John Lake Public Access
Otter Lake Public Access
Moosehorn Lake Public Accesss

Trails:

Grand Portage Snowmobile Trail - 45 miles
Border Trail Ski-Touring Trail - 12 miles

Day-Use and Camping:

McFarland Lake - 3 sites
Esther Lake - 3 sites

State Forest Roads:

Tom Lake, Otter Lake, Stoney Brook, Irish Creek, Boyd
Esther Lake and Portage - Total Length - 52½ miles

Problem Analysis

In order to adequately analyze and project the role of state forests in a total recreation system for the North Shore, several problems must be looked at.

The primary barrier in this determination is the fact that there is not a complete current forest inventory. (Forest inventories are usually taken in ten year cycles, therefore, some necessary data is current and some is ten years old). This forest inventory is the only viable way through which appropriate potential state forest land usage can be determined. Timber production, wildlife management, and recreational activities must all be taken into consideration in this land usage determination. Unfortunately, the Division of Forestry has no staff for recreation planning, even though they are responsible for providing all recreational activities within state forests.

Some of the specific problems relating to forest land usage for timber production are: the high cost of timber harvesting due to poor or non-existent roads, difficult terrain for logging and moving timber out of the forest, and the distance of forests from existing mills. These factors result in an inadequate harvest, leading to overmature forests which are much more prone to insects and disease. However, none of these are economically limiting factors when there is sufficient market demand. Consequently, by 1990, when forecasted nationwide fiber shortages may occur, this general area will have to be managed for maximum fiber production.

The disease problem, along with natural mortality, results in an increase in dead wood, thus intensifying the possibility of fire. Compounding this dangerous situation, an overmature forest burns with much greater intensity than a forest managed for timber production.

There are several other problems evident within state forests concerning their use for recreation; namely, fire danger from recreation usage, snowmobile and four-wheel drive vehicle damage to timber, especialy plantations, and if used during wet periods, damage to unsurfaced roads. Finally, there is difficulty in keeping the program of management for timber production consistent with the goal of preservation of rare vegetation.

Recommendations

The specific recommendations below relate only to the forest under which they are listed. The general recommendations apply to all forests.

a) Specific Recommendations

1. Cloquet Valley State Forest
   The soils suitability of the southeast corner of the Cloquet Valley State Forest (the portion that falls within the study area) along with its location in an area of high recreation

demand make it a prime area for day-use recreational facilities. However, since only a very small portion of this forest lies within the study area, it is recommended that it may be managed consistent with management practices for the whole forest.

2. Finland State Forest

The forest inventory for this unit should be accelerated. It is essential that the Phase II inventory be done in Finland State Forest. Of all the forests in the study area, this one is the most pressured, because of its high rating for forest production, its all around suitability for recreational development, and its central location on the North Shore. It is imprerative that all aspects and areas of this forest be known in order to best fulfill all of its potentials relative to each of the above mentioned factors.

Any recreational development done should be done in conjunction with Baptism for day-use and proposed Tettagouche and for destination use in conjunction with Crosby-Manitou State Park.

3. Pat Boyle State Forest

Specific Recommendations

Of all of the state forests within this study area, Pat Bayle is in the least need for immediate action primarily because of the healthy economic status of the privately held resorts within its boundaries. This factor coupled with a relatively high rating in forest productivity leads this study to recommend no specific action in the northern and eastern parts of the forest nearest the Boundary Waters Canoe Area and Gunflint Trail. However, the southern reaches of the forest could provide some areas for recreational development to alleviate the pressure in Cascade State Park which is incapable of withstanding such development.

The soils suitability, especially for sewage disposal, is rated relatively low in this part of the forest, but even this rating is better than the prohibited rating in Cascade. Therefore, with very careful development and management some intensive campground sites could be developed near major access routes in Pat Bayle State Forest.

This forest's location in an area of relatively sparse recreational usage along with its highly scenic characteristics make it a prime candidate for development for destination use, by either the state or private sector in conjunction with the BWCA and Cascade State Park.

4. Grand Portage State Forest

Because of this forest's location in an area of little

recreational use, it is a prime candidate to alleviate the pressure of the excessive use of the recreational areas further south along the North Shore. Since the soils suitability is best within Judge C.R. Magney State Park, it should be the focal point of the more intensive recreational use, such as trailer camping, while the surrounding forest should be used for dispersed recreational activities, such as a system of back packing and cross-country ski trails providing access points to lakes and rivers identified as having potential for boating, fishing or swimming, and selection of non-intensive campsite locations within the forests.

The area around Judge C.R. Magney State Park should be set up as a multi-disciplinary management unit like that at Cascade. This will require delineation of the management unit boundary, establishing a management group including Forestry, Wildlife and Parks personnel as well as local landowners, to incorporate their usage plans into habitat and recreation management. A detailed inventory of the unit will be required, followed by a vegetation management plan.

b) General Recommendations

1. Dispersed types of recreation can and should be integrated with timber management on sites where there is potential for both uses. Establishing management units for each use by delineating boundaries and transferring custodial control is, in many cases, unnecessary and sometimes reduces management flexibility by creating administrative barriers. If an effective plan is developed and implemented, both uses can be accommodated to a greater degree within the same management unit. It is essential that plans are completed soon as management must begin now to meet projected needs for the year 2000.

2. A Phase II Intensive Inventory should be done for each forest in the Study Area as soon as possible. This Inventory should follow established procedures of the Division of Forestry and be supplemented, where necessary, by additional resource data which will allow for an analysis of all potential activities in the forest. Inventories should be conducted in Finland and Cloquet State Forest. Pat Bayle State Forest is the lowest priority in terms of need for a Phase II inventory.

3. A demand survey should be developed and conducted to be used in conjunction with the Intensive Forest Inventory to determine the following recreational needs of the North Shore which could be provided by the state forests:

   - areas of high recreation potential

- the compatibility of recreation activities with resource potential

- how state park and national forest recreation plans could fit into the total recreation system

- the need for interpretive programs capitalizing on forest management practices and problems, such as spruce budworm and fire suppression

- potential areas to develop systems of backpacking trails and dispersed camping (see Trails Section)

- identify any areas near population centers with swimming potential

- evaluate potential recreation sites by accessibility and determine the appropriate management agency

4. Areas with high wildlife and recreation values should be evaluated for cooperative management programs, similar to the Cascade Management Plan. The Brule deer yard and Judge Magney State Park within Grand Portage State Forest make up one such potential area.

5. Investigate the potential of developing Horseshoe Bay as a state forest recreation site with boating related development, using it for public recreation rather than leasing properties for private recreation. The Enforcement Division currently has a public access on Horseshoe Bay which could serve as a focal point for future development.

6. Scenic corridors should be established along all major recreation routes, forest roads leading to recreation sites or used for recreation purposes, as well as state forest land adjacent to other recreation corridors and maintained in a manner consistent with vegetation management for the whole forest.

7. Investigate the boundaries of state forest land with the objective of determining the best manageable unit, deleting any possible areas outside the unit which have no present or future value for forest production and expanding boundaries to include other state owned lands which have value for forest production.

8. Maximize timber productivity on suitable sites to benefit the local economy by providing forest industry employment and generating income for local communities during those periods of time when recreational demands and activities are low. Management for recreational opportunities will encourage

recreational use, attract visitors to the area and provide opportunities for the private sector to meet the demand for certain types of facilities and services.

E. Rivers and Lakes

Introduction

The waters of the North Shore are probably its most striking feature. The inland lakes, the numerous rivers and streams and Lake Superior itself, all combine to offer a variety of scenic and recreational opportunities. The most popular form of recreation associated with these waters is fishing, which ranks third after the scenic drive and the "wilderness" experience, followed closely by enjoyment of the scenic qualities of the lakes and streams. Protection of the water resources of the North Shore is essential if these major recreational activities are to be maintained and enhanced.

1. Management Programs/Authorities

Presently, there are several programs available which can be used to protect public waters by directing or regulating development adjacent to the waters or conducting various activities in the water itself. These include DNR's Fisheries Management program, Shoreland Management, Floodplain Management, Water Resources Permits and the Wild, Scenic and Recreational Rivers programs.

a) Fisheries Management Program Authorities

The Department of Natural Resources has the authority to:

1. Develop and maintain stream habitat.

2. Acquire water access sites (of less than five acres) on public waters with inadequate accesses, and to acquire easements and rights-of-way to connect them to public highways.

3. Acquire easements or rights-of-way on lakes managed exclusively for fishing.

Management Programs

The Department of Natural Resources, Section of Fisheries, is responsible for the management of fisheries resources; and exercises regulatory control over 56 streams in the North Shore area and that portion of Lake Superior that lies within the statutory boundaries of the State of Minnesota.

Management of streams capable of producing or supporting trout populations emphasizes two distinct management philosophies. The portion of manageable trout stream lying between Lake Superior and the first natural barrier to fish migration is

managed for anadromous species (fishes which ascend rivers from "Lake Superior at certain seasons for breeding purposes). The portion of trout stream above the first natural barrier in a stream is managed for resident trout populations, except where anadromous species are being stocked.

Inland lakes are managed in various ways according to the fisheries resource, with 40 to 50 managed expressly for stream trout, and others for lake trout, walleye or northern pike.

Lands and facilities under the jurisdiction of the Fisheries Section include water access sites, stream bank easements, and the French River Hatchery. These provide recreational access for fishermen, and functional access for fisheries crews engaged in habitat improvement. Easements, which are usually 66 feet wide, protect water quality of the streams by restricting development. Easements may also exist in sensitive spawning areas. Stream improvement strategy does not necessarily require construction, but may take the form of barrier removal, or the addition of gravel, or in-stream cover.

Program Priorities

Objectives for the North Shore:

1. To increase the production capability of North Shore streams for larger natural populations of rainbow trout (steelhead).

2. To stock fish in streams and rivers where natural populations are deficient.

3. To protect fish habitat through careful control of rivers and stream water quality.

Fishery management priorities of the lower reaches are determined by evaluating stream size, historic value, proximity to population centers and proximity to harbors of refuge.

1. Size - Refers to depth, width, consistency of flow and the quantity of habitat provided. The size of the watershed generally influences the size of the stream.

2. Proximity to population centers - Generally the streams between Duluth and the Baptism River receive the greatest use pressure.

3. Proximity to harbors of refuge - Generally those areas near boating facilities will receive greater boat-oriented fishing pressure.

4. Historic value - Popularity of the stream and its reputation as a recreational fishing location.

Fisheries management areas on the North Shore are categorized by priorities as one of four areas. The first priority area is the lower reaches of the tributary streams to Lake Superior up to the first natural barrier to fish migration. This area receives the heaviest fishing pressure and is also the spawning area for lake-run steelheads.

The second priority area is Lake Superior proper. The steelheads spend the adult portion of their life cycle in the lake and the recent resurgence of lake trout and the introduction of salmon to the lake has resulted in an upturn in sport fishing on Lake Superior.

The third priority area is the stream reaches above its uppermost water falls to the source and inland lakes. These reaches are generally in remote areas and support populations of native brook trout. Fishing pressure is typically light and management emphasizes maintenance and enhancement of habitat.

Management of the inland lakes is on the basis of their ecological classification. For example, certain lakes may be reclaimed and managed as stream trout lakes. Other may be managed as walleye or lake trout lakes. No distinctions have been made between management priorities for the various ecological classes of the lakes beyond what has been discussed here.

The fourth priority management areas are the "fall zones", which include the cataracts and slides between the lowest and highest natural barriers to fish migration. Fish populations in this area are generally limited and access to these areas is often quite difficult.

Fourteen streams have been identified for intensified habitat management and protection. They are as follows:

Sucker River	Gooseberry River
Knife River	Baptism River
Silver Creek	Temperance River
Split Rock River	Devil Track River
Beaver River	Brule River
Stewart River	Lester River
Talmadge River	
French River	

Problems

a) During the annual smelt run, the large concentrations of people result in damage to stream banks, vegetation and

parking areas as well as adjecent private property. Law enforcement problems are particularly severe, especially parking and camping in posted areas and illegal fires.

b) Access to many of the popular streams is often difficult because of inadequate parking facilities and a lack of stream easements. The lack of easements further hinders habitat development by Fisheries crews.

Recommendations

a) For the 1977 smelting season, a cooperative effort between the Department of Natural Resources, Minnesota State Highway Patrol, county and municipal law enforcement agencies, local chambers of commerce and the news media was initiated to alleviate some of the problems associated with this event. As a result of this effort, problems encountered during the season were significantly fewer than in previous years. Because of the positive response to this effort, it is recommended that the procedures developed during the 1977 smelt season be followed on a continuing basis and that the program be periodically evaluated to determine if and where improvements can be made. It is further recommended that adequate funding be provided to local units of government to cover the actual cost of their participation in the program.

b) Fisherman access sites should be developed at the fourteen streams listed above. Ideally, these access sites should be some distance from the stream (up to one-eighth of a mile), but in those locations where such sites cannot be reasonably provided because of access difficulties from the site to the stream, the existing parking areas should be improved by defining and surfacing the parking area, landscaping, providing control of runoff from the parking area and provision of garbage containers. No facilities should be provided which would encourage extended use, such as picnic tables.

c) The acquisition of stream easements is essential to further management of the North Shore streams and should be coordinated with the overall fisheries management program.

d) The property owned by the Section of Fisheries along the Knife River between old Highway 61 and the expressway should be designed and developed in cooperation with local interests.

e) A check survey of the roads parallel to the Baptism River should be conducted to determine if adequate parking for fisherman exist. If there is a lack of such facilities, they should be developed.

f) It is recommended that a plan for the Judge Magney/Brule River recreational cluster be developed. This plan should include a trail system linking public and private facilities within the cluster. Improved vehicular accessibility to the river is also necessary.

B. Shoreland Management Program

Program Authority

The Shoreland Management Act is actually two separate pieces of legislation. The original act (Laws of Minnesota 1969, Chapter 777) was passed by the 1969 session of the legislature in order to provide guidance for the wise development of shorelands in unincorporated areas. During the 1973 session of the legislature, the original Shoreland Management Act was amended to also include municipalities (Laws of Minnesota 1973, Chapter 379).

Basically, the Shoreland Management Act requires the Department of Natural Resources to promulgate regulations under Minnesota Statutes Chapter 105 which shall be implemented through county and municipal land use controls (i.e., zoning ordinances). The intent of the act is to provide local units of government with minimum dimensional and performance standards in order to protect and enhance the quality of our surface waters and conserve the economic and natural resource values of the shorelands of public waters.

Program Objectives

The primary goal of the classification system is to designate lakes and streams into classes which will provide a balance between general public use and resource protection. The goals are more explicitly stated in the statewide standards:

The Natural Environment classification is intended for those waters which need a significant amount of protection because of their unique natural characteristics or their unsuitability for development and sustained recreational use. They will be assigned the most restrictive development standards.

The Recreational Development classification is intended for those waters which are capable of absorbing additional development and recreational use. They are usually lightly to moderately developed.

The General Development classification is intended for those waters which are, at present, highly developed or which, due to their location, may be needed for high density development in the future.

The Critical Lakes designation is intended for those waters requiring further study to determine a satisfactory management program. These waters have peculiar physical or developmental characteristics which set them apart from other lakes.

Recommendations

Minimum standards for development along streams and lakes are contained in existing county shoreland management ordinances. Application of these standards should be coordinated with fisheries management objectives.

C. Wild, Scenic and Recreational Rivers

Program Authority

The Statewide Standards and Criteria for the Minnesota Wild and Scenic Rivers System (Chapter 6: NR 78-81), promulgated in 1974, provide the general provisions, land use provisions, regulations for the public use of waters and lands within wild, scenic and recreatioinal river land use districts, and regulations for the general administratiin of the program. These regulations may vary with each individual management plan to take into account particular attributes of each river.

Program Objectives

To be eligible for inclusion a river or river segment and its adjacent lands must possess outstanding scenic, recreational, natural, historical, scientific, or similar values. In addition, specific guidelines are provided in the Wild and Scenic Rivers Act to help determine the appropriate classification--wild, scenic, or recreational--that best fits each particular river or river segment.

As a practical matter, the DNR must also take into account such factors as the river's significance on a statewide basis, the need for additional protection beyond what presently exists, and the relative urgency for action based upon immediate threats to the river or adjacent lands from over-development over-use, or other factors.

Recommendations

To date, no North Shore streams have been studied for possible inclusion in the system.

Wild, scenic, or recreational river designation for North Shore rivers should be viewed as an unlikely possibility, at least in the near future. It may be considered as an available management tool, however, in some cases if other means of protection fail, if the particular river meets the eligibility criteria, and if a real need is demonstrated. These conditions do not exist at the present time.

If, however, future development pressures or other threats to these river resources should change the present situation, or if the present regulations or management programs should change, steps may be taken to commence the study process prior

to possible implementation of the wild and scenic rivers program on those rivers that might be eligible.

It is also recommended that any federal land along the North Shore rivers be managed in such a manner as to protect their natural and scenic qualities.

D. Water Resources Permits

Program Authority

Minnesota Statues Chapter 105 provide that a water resources permit must be obtained for any activity that would alter the course, current or cross-section of a public water. In addition, Chapter 105 requires that a permit must be issued for any appropriation of water from a public water.

Program Objectives

The objectives of this program are listed below:

a) To preserve the physical and biological integrity or public waters.

b) To minimize adverse impacts on aquatic fish and wildlife habitats.

c) To protect both water quality and water quantity.

d) To enhance the beneficial public purposes of public waters.

Recommendations

Water resources permits in the North Shore area should recognize the unique character of the area and include adequate provisions for its protection.

E. Boating/Swimming

There is very limited potential for recreational boating on North Shore Streams. The water level of most streams fluctuates greatly in response to rapid runoff and high stream gradients, and waterfalls and rapids are frequently encountered. Of all the streams along the North Shore, only the Baptism, Cross, Poplar and Brule have some boating potential and this is in the upper reaches of these streams. These reaches have been mapped and rated according to difficulty using the International Rating System (See Data Manual for details). These rivers are rated only for expert kayak use and at that, are extremely dangerous. Because of this, boating use of the streams should not be encouraged or developed.

Swimming areas are generally in short supply on the North Shore. Current use is made of some of the inland lakes and natural pools in some of the rivers such as the Baptism, Gooseberry, Temperance and Manitou.

F. Scenic Appreciation

The fall zone is generally a low priority fisheries management area. However, the scenic attractiveness and diversity of this zone with its falls, slides and cataracts suggests the development of a series of general recreational trails for purposes of mental and physical revitalization, scenic enjoyment, photography and the like. Such uses of the fall zone would not conflict with fisheries management priorities.

Recommendations - Implementation Level Two Action

It is recommended that a plan be developed for the construction of primitive campsites, hike-in picnic areas, and a system of trails and trail-side rest points at especially scenic locations along the fall zones of rivers and streams.

It is recommended that these non-intensive recreational facilities be coordinated with the recommended interpretive system for the North Shore.

G. State Parks

Introduction

State parks are established to protect and preserve extensive areas of the state which possess certain resources that illustrate and exemplify the variety of natural phenomena to be found in Minnesota. Use of these parks must be managed in such a way that the natural resources within their boundaries are protected and preserved for further generations. The parks are a showcase of a broad variety of unique landscapes, vegetative communities, wildlife habitats and water resources. These areas should be sufficiently diverse and interesting to attract statewide attention and provide a variety of recreational uses without damaging the park's resources. In addition, the parks should serve to support and complement other recreation in the area.

The Outdoor Recreation Act of 1975 (MSA 86A) makes the following distinction between state parks:

Natural State Park

Subd. - Natural state park; purpose; resource and site qualifications; administration.

a) A natural state park shall be established to protect and perpetuate extensive areas of the state possessing those resources which illustrate and exemplify Minnesota's natural phenomena and to provide for the use, enjoyment, and understanding of such resources without impairment for the enjoyment and recreation of future generations.

b) No unit shall be authorized as a natural state park unless its proposed location substantially satisfies the following criteria:

1. Exemplifies the natural characteristics of the major landscape regions of the state, as shown by accepted classifications, in an essentially unspoiled or restored condition or in a condition that will permit restoration in the foreseeable future; or contains essentially unspoiled natural resources of sufficient extent and importance to meaningfully contribute to the broad illustration of the state's natural phenomena; and

2. Contains natural resources, sufficiently diverse and interesting to attract people from throughout the state; and

3. Is sufficiently large to permit protection of the plant and animal life and other natural resources which give the park its qualities and provide for a broad range of opportunities for human enjoyment of these qualities.

c) Natural state parks shall be administered by the commissioner of natural resources in a manner which is consistent with the purposes of this subdivision to preserve, perpetuate, and interpret natural features that existed in the area of the park prior to settlement and other significant natural, scenic, scientific, or historic features that are present. Management shall seek to maintain a balance among the plant and animal life of the park and to reestablish desirable plants and animals that were formerly indigenous to the park area but are now missing. Programs to interpret the natural features of the park shall be provided. Outdoor recreation activities to utilize the natural features of the park that can be accommodated into the natural scene may be permitted. Park use shall be primarily for aesthetic, cultural, and educational purposes, and shall not be designed to accommodate all forms or unlimited volumes of recreational use. Physical development shall be limited to those facilities necessary to complement the natural features and the values being preserved.

Recreational State Park

Recreational state park; purpose; resource and site qualifications; administration.

a) A recreational state park shall be established to provide a broad selection of outdoor recreation opportunities in a natural setting which may be used by large numbers of people.

b) No unit shall be authorized as a recreational state park unless its proposed location substantially satisfies the following criteria:

1. Contains natural or artifical resources which provide outstanding outdoor recreational opportunities that will attract visitors from beyond the local area; and

2. Contains resources which permit intensive recreational use by large numbers of people; and

3. May be located in areas which have serious deficiencies in public outdoor recreation facilities, provided that recreational state parks should not be provided in lieu of municipal, county, or regional facilities.

c) Recreational state parks shall be administered by the commissioner of natural resources in a manner which is consistent with the purposes of this subdivision primarily to provide as broad a selection of opportunities for outdoor recreation as is consistent with maintaining a pleasing natural environment. Scenic, historic, scientific, scarce, or disappearing resources within recreational state parks shall be recommended for authorization as historic sites or designated scientific and natural areas pursuant to section 8 of this act to preserve and protect them. Physical development shall enhance and promote the use and enjoyment of the natural recreational resources of the area.

The Process for establishing a state park is as follows:

1. The Department of Natural Resources, with the support of the Council of State Parks and numerous planning bodies and citizens groups, makes a recommendation to the legislature that an act be passed to establish a state park. Legislative hearings are held before appropriate House and Senate Committees where proponents and opponents are given an opportunity to be heard.

2. If the recommendation meets with legislative approval, statutory boundaries are defined by legal descriptions of all properties to be included in the park.

3. The Department of Natural Resources may not purchase any land that does not lie within a designated boundary previously established by the legislature for park use.

4. The proposed lands are acquired by the State through its Department of Administration. Land values are established by certified appraisers and certified by the Department of Administration. Negotiations with property owners determine a mutually agreeable price.

5. Other means of acquisition have been by transfer of custodial control, e.g., from the Department of Transportation to the Department of Natural Resources. Land exchanges, tax forfeitures, county resolutions, and

rarely, condemnation proceedings, complement the process of negotiated purchase. Condemnation authority has not been given to Department of Natural Resource, Parks and Recreation Division, although other state departments, such as the Department of Transportation, do have this authority. If certain lands are under severe threat of abuse, the Department of Natural Resources can request the Legislative Committees to hold hearings and to review both sides before making a decision to condemn for acquisition. The Department of Natural Resources has only rarely requested such an action.

Owners of private lands which lie within the boundaries of a newly established park continue to exercise all their rights and privileges. They retain the right of entry to their property until that property is actually sold to the State. Private property is not automatically acquired when a park is authorized. Funds must first be made available for purchase from willing sellers. Concerns which area residents have about the possibility of damage to the natural environment by overuse should be alleviated by the knowledge that the entire emphasis of a State park's program is the conservation of natural values. At least 80% of an acquired park is kept in a natural state. This complements with the standards, which municipalities and counties may have as a primary concern, for the promotion of concentrated organized recreation.

Outdoor Recreation Act: Detailed Management Plans and Development

The Outdoor Recreation Act of 1975 requires that detailed management plans be prepared for all major units of the state outdoor recreation system, before any further development can occur. The detailed management plans for each of the park units consider these recreational philosophies:

a) The unit should have outstanding scenic quality - a combination of natural features contributing to the scenic beauty and providing for a variety of recreational uses.

b) Units should be unique, possessing their own characteristics which exemplify the landscape region within which they are established.

c) A unit must be of sufficient size to provide an outstanding outdoor recreational experience. The unit must be large enough to protect and preserve the natural resources within it, and still provide recreational opportunities. An average park unit is approximately 1,500 - 2,000 acres.

d) Interpretive opportunities should have statewide attractiveness.

e) Water resources, particularly for natural state parks, provide for a greater variety of wildlife and consequent interpretive opportunities. Large lakes, streams and rivers provide a greater variety of recreational activities and are favored for recreational park siting.

f) Physical development capability factors are not of primary importance in selecting a natural state park, but may be important in establishing recreational park units because they are intended to provide extensive recreational activities.

g) Vegetational diversity in a natural state park is highly significant because it provides increased interpretive opportunities. Vegetation is evaluated according to its ability to represent the major landscape features of the area, either in its virgin quality or in its ability to absorb a variety of recreational uses.

h) Adjacent land use is to be considered because of the requirement for a significant buffer to protect the aesthetic character of the park. Agricultural and forest lands are the most compatible adjacent lands.

i) Accessibility to park lands on a statewide basis is a consideration in choosing a part site. Units close to population centers, or on the most direct routes from them are generally desirable.

j) Historical and archeological sites add to the interpretive values of any state park. The relation of human history to natural resources is the major interpretive opportunity of these sites.

Overall management objectives to parks require that each unit shall have identifiable statutory boundaries to reduce enforcement problems of state park regulations. Ideal boundaries are roads, streams, rivers, valleys and lakes. Through-roads within state parks are incompatible and have a negative impact on the aesthetic character and recreational opportunities in the unit. If feasible and justified, through-roads should be eliminated within state parks. Relocation of any through-road would be the responsibility of the agency requesting the change.

All state parks will be zoned for management purposes according to the following pattern as determined to be appropriate and necessary:

Ecological Protection Zone
Outstanding Natural Feature Zone
General Environment Zone
Primitive Zone
Historical and Cultural Zone
Development Zone

In a natural state park, development of facilities is limited to approximately 10% of the total land area of the unit and is restricted to appropriate zones. In a recreational state park, development of facilities may include up to 30% of the total land area and is restricted to appropriate zones. Overhead utility lines are undesirable in any park unit.

The park units herein listed have been evaluated in this study and are discussed below. The content of the discussion deals with the problems of management and use of the natural resources.

Existing Parks

1. Flood Bay State Park and Wayside (Rest Area)
2. Gooseberry Falls State Park
3. Split Rock Lighthouse State Park
4. Baptism River State Park
5. George Crosby-Manitou State Park
6. Caribou Falls State Park and Wayside (Rest Area)
7. Cross River State Park
8. Temperance River State Park
9. Ray Berglund State Park and Wayside (Rest Area)
10. Cascade River State Park
11. Devil's Track State Park
12. Kodonce State Park and Wayside (Rest Area)
13. Judge C.R. Magney State Park

Problems

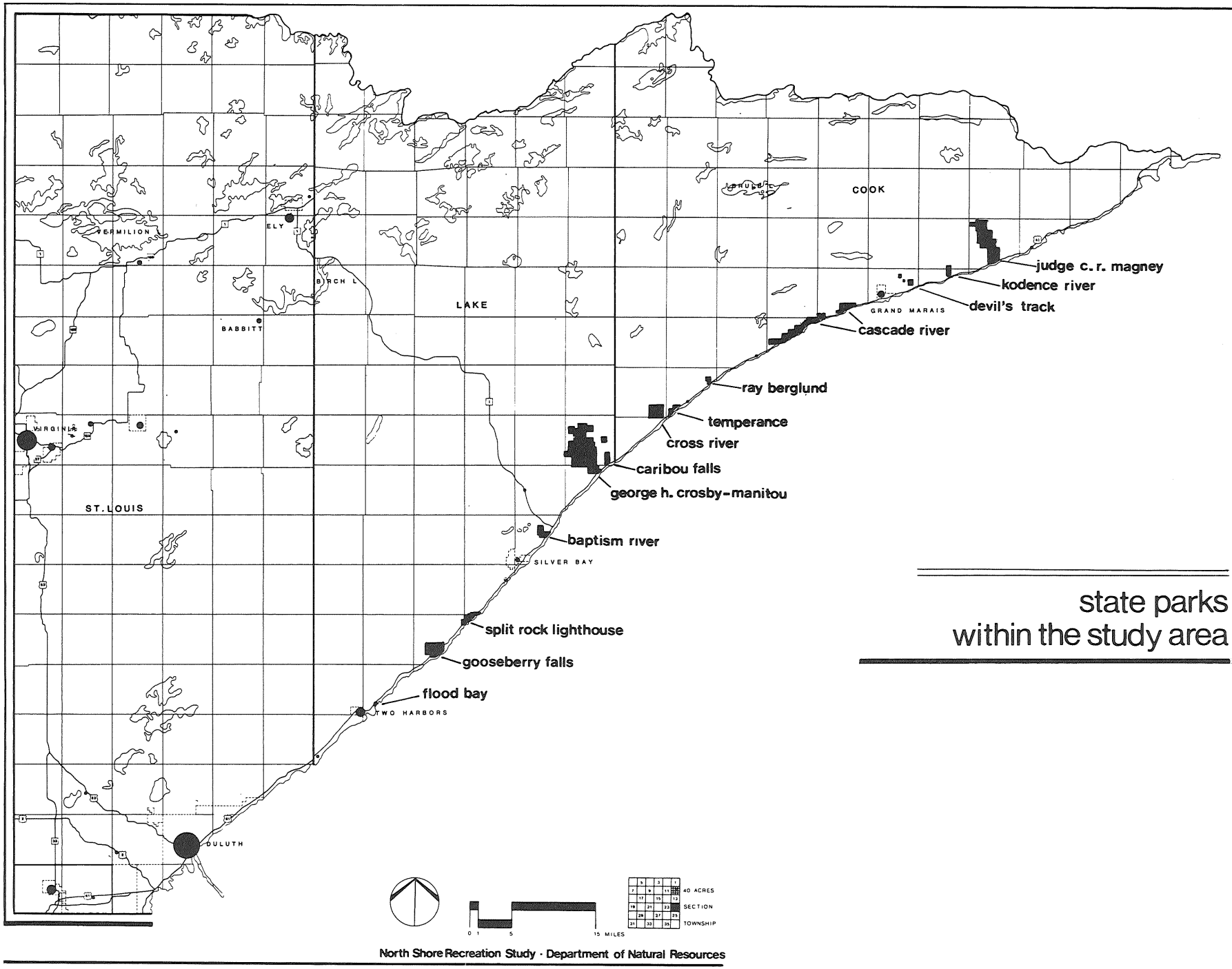
Concerns brought for public airing with the Department of Natural Resources can be classified into roughly four general areas.

The first area of concern is over the overuse of the present parks and the lack of adequate controls. Campers often use areas for overnight camping which are not designed for this type of use. Vandalism and littering, during the peak of the summer season, are deteriorating the beauty of the present parks and the shore.

The second area of concern deals with the lack of facilities at the present parks. More picnic tables, benches for the elderly, toilet facilities, and better information about how to use the park areas are needed.

The third area of concern is for more, and better maintained, trails. New trails, and better maintenance of the old trails, is seen as a high priority need. The concern that the present parks are not fully developed, and that more facilities should be added to the more popular park grounds, may be in conflict with the requirement that no more than 10% development is possible for a Natural State Park and 30% for a Recreational State Park.

The fourth area of concern has to do with sanitary facilities and solid waste disposal. Some of the parks have inadequate sewage treatment systems and until quite recently, there have been severe problems with solid waste collection and disposal.



state parks within the study area

North Shore Recreation Study · Department of Natural Resources

Framework

As noted above, detailed management plans must be prepared for every state park in the system before additional development can be undertaken. The recommendations in this study are not intended to be a substitute for management plans for each unit. This study recognizes the importance of management plans and is intended to be supportive of the legislative charge to develop such plans.

This study provides a framework for the development of management plans for the 13 parks on the North Shore. Given this study's perspective of a system's approach to park planning, the recommendations for each park basically addresses those actions to be taken which will strengthen the relationships between the parks and other public lands, as well as relating the role of the parks to actions of the private sector. The detailed management plans for each park will be developed within the context of this study.

Individual Park Analysis/Recommendations

a) Flood Bay State Park and Wayside (Rest Area)

Location

Cooperatively owned and developed by the Department of Natural Resources and the Department of Transportation, Flood Bay is a small (19 acres) rest area facility located two miles northeast of Two Harbors on a natural harbor of Lake Superior. It is bordered by a privately owned resort development and Highway 61.

Natural Characteristics

The Flood Bay shoreline is well-known for its wealth of Lake Superior agates. It is also the first good stopping point along the North Shore Drive with a panoramic view of the Lake.

Facilities

Facilities at Flood Bay are limited to a parking lot, small picnic area, and limited sanitation facilities.

Problems

Insignificant acreage
Confusion over Department of Natural Resources/Department of Transportation joint management
No resident manager
Shoreland erosion
Inadequate maintenance of sanitation facilities

Recommendations

It is recommended that Flood Bay's designation as a state park

be reconsidered. The Management Plan should address the proper disposition of this unit and evaluate the alternatives which could be considered for the site.

Appropriate Managing Agency

To be determined

Appropriate Ownership

To be determined

b) Gooseberry Falls State Park

Location

Gooseberry Falls (1,662 acres) the first park in the North Shore system, has very heavy day-use because it is located only 40 miles from Duluth. On a statewide basis it is also one of the most popular camping parks on the North Shore.

Natural Characteristics

Some of the unique qualities of the park which have made it so popular are its series of waterfalls (which can be investigated while walking through the park), its park buildings (built under the CCC program), which are reminders of the history of the park, and its less commonly known quiet areas, with unique plant life which the estuary provides. The Gooseberry River is one of the top ten priority rivers for fisheries management.

Facilities

The distinctive facilities are a Department of Transportation rest area, a group center for interpretive programs, and the refectory. It also has picnic grounds, interpretive trails, snowmobile trails, river fishing, and modern campgrounds with a sanitary dump station.

Problems

Abuse of sensitive natural areas.
Ill-defined park entrance.
Inadequate utilization of parks area's potential.
Inadequate development of day-use facilities.
Safety hazards resulting from the design of the rest area (See Rest Area Section)
Inadequate warning for impending slow speed zone.
Inadequate trails - no linkage.
Hazardous trails.
Overuse of campsites.
Inadequate sewage systems.
Inadequate utilities.

Recommendations

1. Through the analysis of natural systems, it is concluded that Gooseberry Falls State Park should be classified as a natural state park. It is recommended that all future development for use be non-intensive, implying minimal impact types of facilities. The numbers of campsites already developed should be reduced. Because of the high demand, however, camping cannot be removed from Gooseberry until sufficient alternatives are provided in the area. Private business in the area should be encouraged to provide for this demand.

   In the future, the emphasis should be placed on tent camping. Other forms of camping, such as vehicle camping, should be located near existing roads, on sites suitable for sewage systems. These facilities would serve the heavy demand which accompanies the smelt season.

2. Gooseberry is also in an area of high day-use demand, and this will continue. Therefore, the kinds of passive interpretive uses that are consistent with the natural character should be encouraged and developed for the benefit of the day users.

   It is recommended that the interpretive program be intensified at Gooseberry, using the existing structures. Interpretation of the potential Scientific and Natural Areas in the park should be developed, and the unique suitability of the park for wildlife habitat should be explored with the cooperation of the regional wildlife personnel.

3. Also, consistent with the philosophy of a natural state park, the rest area functions should be totally removed from the park. Having worked together with representatives of the Department of Transportation, we have arrived at a solution that is agreeable to both agencies. It is recommended that a Class II rest area be developed on public property at Split Rock River, and that all rest area functions be removed from Gooseberry. The park will function totally as a park, providing both day-use and camping facilities in a natural setting.

4. A speed survey should be conducted in the Park by DOT and changes in signing or speed zones should be made as indicated by the survey.

5. The Gooseberry River, because of its high scenic value and fisheries potential, should be managed to benefit both the sightseer and the fisherman. (Fisheries management programs should be implemented on the river, upstream from the park.)

6. The park trails located east of the highway should be more passive in nature, while trails located in the upper portion should be linked to both the intensive camping area and the North Shore Corridor Trail.

7. The Gooseberry Falls State Park Management Plan should consider recommendations to resolve the following points:

   a) Redesign of park utilities and sewage systems.
   b) Placement of all power lines underground.
   c) Redesign entrance road and relocate contact station.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation

c) Split Rock Lighthouse State Park

Location

This park is located only five miles northeast of Gooseberry Falls State Park. It's acreage (996) is divided evenly by the North Shore Scenic Drive, and is bordered on the southwest by the Split Rock River. It is in an area of high day-use demand and has much private ownership all around it.

Natural Characteristics

The Split Rock Lighthouse State Park is a prime historic site for the State Historical Society. The park has the greatest section of shoreland that is suited for development of all the North Shore parks.

The natural relief of the lower portion of the park provides a view of the Shore from several different levels. Three levels are terraced from the road grade down to the actual shoreline. From the Split Rock River, the character of the park changes from a developed historic settlement to a remote natural area. There are two natural harbors, one adjacent to the site of the Split Rock Lighthouse, and the other near the mouth of the Split Rock River, one of the top ten priority rivers for fisheries management. The land on the near side of the Split Rock River is owned and managed by the Department of Transportation. There are scattered deposits of anorthosite throughout the park. Soils are suitable for recreation development, but unsuitable for large soil absorption sewage systems.

Facilities

The historic complex includes the Split Rock Lighthouse and three lighthouse keepers' houses and stables. A parking lot and trail system link the houses on the bluff to the lighthouse on the shore.

Problems

Much of the key land within the park remains in private ownership. This is a major factor in other park problems.

In spite of their proximity, the trails in Split Rock have not been linked to those of Gooseberry Falls or to the North Shore Corridor Trail.

Development coordination between Department of Natural Resources and the Historical Society could be improved.

The park's potential for camping has not been developed.

Fisheries easements are lacking on both sides of the Split Rock River above the statutory boundaries of the park.

There is no access between the upper and lower portions of the park.

Recommendations

1. It is recommended that the remaining private lands in both the upper and lower portions of the park be acquired by the State as it becomes available. A safe, convenient access should then be developed between these areas.

2. The lower portion of the park is structurally suitable for the development of campsites along the shore. Camping in this portion should be limited to tent camping. When the access is completed, vehicular camping facilities could be developed near the highway on the upland side of Highway 61.

3. The Split Rock River has high fisheries potential. In view of this, fisheries easements should be obtained along as much of the river above the park as possible. If any park extension is contemplated, it should include the land between the current park boundary and the river.

4. Because land in this area is largely privately owned, it is recommended that all land currently in the park boundaries be retained in order to insure adequate recreation space in this portion of the shore. This will also provide recreation use areas and facilities for guests of private resorts in the area.

5. The upper portions of Split Rock and Gooseberry Falls could be linked by a multi-use trail. This trail should connect with the North Shore Corridor Trail to provide common access to the corridor trail from both parks. In addition, this would connect the parks to the combination harbor/trail rest areas at Two Harbors and Silver Bay.

6. Development of this park is a high priority because of the heavy demand for both low intensive camping and day-use in this area. Having reviewed the published plans for development of the historical area, it is recommended that a re-evaluation of these plans be undertaken jointly by DNR and the Historical Society. Rather than concentrating these facilities on the 7.3 acre historical area, it would be beneficial to disperse this development throughout the park, in order to integrate the development more naturally with the site. By cooperatively using both park and historical site land, facilities such as the handicapped ramps can be redesigned to enhance both accessibility and

the natural character of the site. A carefully conceived cooperative agreement covering the use and maintenance of these lands would be required. The benefits derived from this arrangement would far outweigh any inconvenience encountered.

7. Intensive day-use activities should be concentrated near the lighthouse area, while less intensive activities should be located near the Split Rock River. These areas should be linked by trails.

8. The site at the mouth of the Split Rock River is recommended for development of a harbor of refuge, and as a replacement for the Gooseberry site for a Class II rest area (see Rest Area Section). Development of this site would require the coordinated efforts of the Department of Transportation, and of the Parks and Recreation and Fisheries Division of the Department of Natural Resources and the Corps of Engineers.

9. Existing sewage and utility facilities need to be upgraded to improve the overall quality of the park and accommodate future demands as the park grows in popularity.

Appropriate Managing Agency

Department of Transportation, Department of Natural Resources - Fisheries and Parks and Recreation Divisions

Appropriate Ownership

Department of Natural Resources - Parks and Recreation Division (park) and Minnesota Historical Society (7.3 acres and the Lighthouse)

d) Baptism River State Park

Location

Baptism River State Park is located directly south of the Finland State Forest, at the intersection of U.S. Trunk Highway 61 and Minnesota Trunk Highway 1, which leads to the Isabella Learning Center and the BWCA. The park consists of 706 acres, located thirty-three miles northeast of Two Harbors. It is the last park just at the edge of the day-use area.

Natural Characteristics

The Baptism River provides potential both as one of the top ten priority rivers for fisheries management, and as a potentially boatable river on the North Shore. On the upper reaches of the river, there is a series of scenic waterfalls,

rugged cliffs, and deep gorges. Soils are most suitable for trail and non-intensive camping development, though there are some areas suitable for more intensive development.

Facilities

Presently the park is undeveloped, although there is a Department of Transportation rest area. Within the statutory boundary of the park are remnants of an old CCC Camp, picnicking facilities, limited sanitation facilities, a large parking area, and an old bridge retained for scenic character, and used by snowmobilers. The southern portion of the park has an extensive trail system leading from T.H. 61 down to the lake, and includes one of the few swimming areas on the North Shore.

Problems

Complex ownership pattern around the park.
Lack of privately developed lodging facilities in the area.
No easement above the park boundary for fisheries protection or habitat development on the Baptism River.
Existing trails not interrelated with other trail systems in the area.
Misleading signage for trails.
Confusion of cooperative management between the Department of Natural Resources and Department of Transportation. Old bridge hazardous for vehicles. Division of park above and below Route 61.

General Recommendations

The resource potentials of Baptism and the surrounding areas indicate that Baptism should be developed into a state park, with the appropriate recreational facilities and a resident manager.

The inventory of the Baptism area shows that it has a high priority river for fisheries habitat development and demand, and that it is one of the few boating rivers on the North Shore. It has several successful state forest campsites in the area (Eckbeck and Finland), and is part of a large network of snowmobile trails developed under both private and state programs. The value of these resources for recreational use have increased with the selection of Milepost 7 as a tailings site.

These resources could work together to provide a diversity of recreational use opportunities, so that all interests could be accommodated in the same area. This potential suggests that Baptism be developed in coordination with the local private

facilities operators to provide lodging for resource users. It is recommended that a cooperative management plan be established, similar to the cooperative plan for Cascade. (At Cascade, the plan is coordinated for wildlife management between the state and federal government.) For Baptism, there should be a cooperative program, oriented around recreational uses, between private owners, local, state and federal land managers, to insure no unnecessary duplication or competition of efforts.

The demand analysis shows that Baptism is just within the high day-use demand area, and that it is at the junction point between the day-use and the destination-use portions of the North Shore. Both types of use should be accommodated at Baptism. Similar to Gooseberry, Baptism is for the most part fragile, and development needs to be sensitive to this. It has some area for intensive use near the road. It is recommended that development be guided by the limitations of the resources in order to avoid the complications encountered by both private developers and park development in the past. By providing for the demand at this point in the system, we would relieve the heavier demands further up the route, where there are difficult sections of road which are made hazardous by the pressures of overuse during peak times.

This site is also at the junction of Trunk Highway 1, and is the farthest point on a day-use loop formed by the existing roads. Day-use activities should be developed in careful combination of the extended use and camping facilities. With the encouragement of a recreational cluster development on the more suitable soils farther back in the watershed, (along the second bank of county roads), the recommended development of the park would provide recreational spaces for the users of the clusters.

A Class II rest area could be developed in the lower part of the park near the existing parking lot. This use would be separated from park use by T.H. 61.

The problems of vandalism, litter, and unauthorized camping would be minimized if the area were developed and had a resident manager.

This park deserves major emphasis, and careful design should be used to take full advantage of the many recreational opportunities within and near the park. Its location in relation to adjacent private lands and numerous recreation potentials suggests potential development of the park as the center of a recreation cluster. This would be advantageous to private recreational development. Its development into recreational activity spaces to support the private sector would help disperse visitors throughout the surrounding area. Although area demand at this time would probably not support

increased private recreation development, this idea should be kept in mind in terms of long range planning. The surrounding Finland State Forest provides space for further dispersed recreation.

Specific Recommendations

1. A committee, composed of private operators and state and local officials, should coordinate development in the entire recreation cluster area (Baptism, Finland State Forest, George Crosby-Manitou, and private facilities in the area like Tettagouche), so that the fragile lands can be preserved and development located on the most suitable lands.

2. Once these areas have been determined, the park boundary should be consolidated to reflect these uses. Land should be exchanged between Divisions to reflect these management purposes.

3. Establishment of a Baptism River cooperative management area should be considered because of the excellent potential for both wildlife, forestry, and fisheries and recreational management.

4. A system of trails should link Baptism, Finland State Forest, and George Crosby-Manitou. In addition, Baptism should be linked to the North Shore Corridor Trail and recreational clusters developments. Land to accommodate these trails should be acquired through land exchange wherever possible. Snowmobile loop trails should be provided within the cluster as determined by resource suitability.

5. Department of Natural Resources should work with the Department of Transportation to transfer the most suited parcel of land, within the area between T.H. 61 and the shore, to the Department of Transportation for development of a Class II rest area.

6. Private recreational development should be encouraged on peripheral lands that are capable of supporting such development. A cooperative agreement could be written between the private resort owners and the park to establish mutual benefits and limits of each others jurisdiction.

7. Because of the high demand at this location, day-use facilities and all types of camping should be provided. Adequate sewage disposal systems overcoming resource limitations need to be designed. High-intensity camping should be located near the highway on the more suitable soils.

8. A resident manager should be provided to minimize vandalism caused by lack of on-site management.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation in cooperation with the Department of Transportation.

Appropriate Ownership

State - Department of Natural Resources - Division of Parks and Recreation.

e) George Crosby-Manitou State Park

Location

This park is located eight miles northeast of the town of Finland on County Road 7. Much of the 5,250 acre park overlaps the boundaries of the Finland State Forest. The eastern reach of the park borders Trunk Highway 61. The Manitou River flows southeast through the park into Lake Superior.

Natural Characteristics

This park offers use of some of the most primitive lands on the North Shore. The topography varies from rugged rock formations to rolling hills, heavily forested with stands of aspen, balsam fir, and spruce, to swampy wetlands. The Manitou River Gorge which flows through the park has scenic waterfalls, rapids, and stands of virgin vegetation. At the bottom of one of the waterfalls is a swimming hole. The Manitou River and intermittent streams throughout the park provide excellent trout fishing, and Lake Benson also provides good fishing opportunities. Soil suitability for recreational development is excellent. One active gravel pit lies within the park boundaries and four active pits are located in adjacent lands to the west. The park is intersected in the northwest portion by County Road 7 and in the southeast by Trunk Highway 61.

Facilities

This is a primitive backpacking park, containing twenty-three primitive campsites and fifteen miles of unsurfaced hiking trails. There is a parking lot and a manager's residence and workshop.

Problems

Blow-down damage to vegetation and spruce-bud-worm infestation.
Relationship of the entrance fee to the available facilities for fishermen.

The trail development is insufficient for backpacking.
Too many uncontrolled entrances on the lake boundary.
Difficulty in managing that portion of the park south of Trunk Highway 61.
Isolated, unmanageable portion of park land to the east.
Disproportionate workload for park personnel.
No emergency equipment if one person is managing the park.

Recommendations

1. The park should be consolidated into a manageable unit and any confusion over the legal boundary be clarified. Private parcels that separate portions of state-owned lands in Section 20 and 21 should be acquired when they become available. The park property in Sections 22 and 23, and the land west of County Road 7 should be exchanged for other parcels within the boundary. The State should acquire the private parcels that separate State lands above the highway from State land below the highway. This would provide access to and from Lake Superior and protect this area from further incompatible development.

2. Backpacking trails should link this park with the Baptism River and with the Finland State forest lands. This would vastly expand the opportunities for experienced backpackers.

3. Additional staff personnel are needed to effectively manage this unit.

4. The sewage system needs to be expanded to accommodate current and future use.

5. The gravel pits need to be reclaimed.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation

f) Caribou Falls State Park and Wayside (Rest Area)

Location

The rest area is located on the north side of Trunk Highway 61, 45 miles northeast of Two Harbors, and consists of 88 acres.

Natural Characteristics

The natural characteristics include a rugged rocky gorge, unique geologic formations and a scenic waterfall.

Facilities

Parking for four cars, a picnic ground, and one mile of foot trail.

Problems

A full-time manager could not be justified, and yet the area cannot be managed adequately without one.

Recommendations

1. The sign designating the site as a state park should be removed immediately because it is misleading to tourists. Existing recreation facilities should be removed and the land exchanged for other, more usable parcels.

2. An easement should be retained along the river to provide access for fishermen. Before any exchange is undertaken, the DNR Bureau of Planning and Research should complete a management plan which analyzes suitable alternatives for the future use of this site.

Appropriate Managing Agency

To be determined

Appropriate Ownership

To be determined

g) Cross River State Park

Location

The park is located 30 miles southwest of Grand Marais on 2,560 acres of land, with the major portions owned by the Federal Government. As of the 1977 Legislative Session, 40 acres of this total has been deleted from the boundary.

Natural Characteristics

The resources of this park include rugged rolling ground, the presence of gravel deposits, and soils suitable for sewage lagoons. Ninety-five percent of the lands are excellent for recreational development. Overmature aspen stands minimize deer foraging, but have potential to support a fair diversity of wildlife.

Facilities

This park has been left undeveloped.

Problems

No accessibility to the park lands.
Existing accesses intrude through private properties.
No significant management.
Not directly in park ownership.

General Recommendations

The most accessible and scenic portion of the river is in private ownership. The river gorge merits protection, and the possibility of public use is desireable. Soils are capable of withstanding sewage lagoon development and more intensive recreation use and development. The proximity of Temperance River State Park to private recreation facilities, makes it choice for development into a public/private recreational cluster development.

Specific Recommendations

1. It is recommended that this area either be recommended for deletion from the state park system or combined into the boundary with Temperance River State park by land exchange with the United States Forest Service for the connecting pieces. These options should be explored in the Management Plan, taking into consideration the effects of actions taken up to the point. Prior to this action, however, an easement along the river should be obtained to facilitate trail access to the river. If the park is deleted, Federal land should revert to the authority of the Superior National Forest, while the trust fund property could be sold or exchanged for more manageable parcels.

2. A trail should be developed between Temperance River State Park and the Cross River easement, with access to the North Shore Corridor Trail. The linking of these facilities, along with the further development of private facilities, would greatly enhance the recreational attractiveness of this whole area.

Appropriate Managing Agency

United States Forest Service and private sector. Easement along the river corridor should be owned by State, United States Forest Service, or county.

Appropriate Ownership

Various public and private.

h) Temperance River State Park

Location

This park consists of 133 acres of land located 23 miles southwest of Grand Marais and at a point of heavy lodging demand as access to the area is 5-5½ hours driving time from the Twin Cities Metropolitan Area. Because the campgrounds are located directly on the lakeshore, this has been one of the most popular camping parks on the North Shore. The campgrounds are adjacent to federally-owned shore land. There are two rest areas on Trunk Highway 61 located within the park.

Natural Characteristics

The soils are structurally suitable for recreational development. Due to the unique geology of the Temperance River gorge, the park has a high priority for consideration in the Scientific and Natural Area Program. The gravel pits located in the northern portion of the park are in the process of reclamation. The flora includes aspen-birch and mixed deciduous, with a few conifers. Cover for deer is poor. Wildlife diversity is limited. The prime park lakeshore property, combined with the adjacent federally owned lakeshore lands, have potential as a harbor of refuge.

Facilities

Two campgrounds, one located north and one located south of the Temperance River, provide a total of 50 tent and trailer sites near a picnic ground and there are two sanitation buildings. The park contains six miles of hiking trails, a swimming hole, eight miles of cross-country ski trails under construction, a manager's residence, shop, and trailer.

Problems

Unfulfilled demands for camping and picnicking facilities.
Campgrounds are worn down from overuse.
Bad water supply in northern campground.
Inadequate control of entry to southern campground.
Park regulations requiring the park to close at 10:00 p.m. excludes campers traveling from Twin Cities on weekends.
Illegal camping in the rest areas when the park is filled.

General Recommendations

Although it is small, containing only 133 acres, it is heavily used. Resource data indicates that the park lands are more suitable for handling this intensive recreation use than most of the other parks on the shore. It is not, however, capable of handling on-site sewage disposal, without special accommodations. Any further development should be required to

be served by alternate systems. With the adjacent Federal lands the shoreline property contains the best potential site for a small boat harbor on the shore. Boating studies indicate that associated recreation needs include picnic facilities and beach use. These could be provided within the park. If boating is developed, the upper campground could be converted into a day-use area to support this development. The small lower campground, which provides unique lakeshore camping opportunities, could then be retained, but geared towards providing a less intensely developed, more oriented type of experience, with the support of year-round facilities. Adjacent private development could meet the need for trailer camping. Proximity to privately developed camping facilities and resorts would make it possible to phase out this use as the private sector increases its capacity to provide it, eventually allowing the park to evolve into a primarily day-use and boating oriented area. A small campground may be necessary if the private sector is not able to provide this facility. The character of any camping facilities should be of the primitive type.

There is potential for fishing and swimming in the river, agate hunting on the beach, and hiking into surrounding National Forest lands.

Specific Recommendations

1. Lands linking the upper portions of Temperance River and Cross River State Parks, could form the nucleus of a recreation cluster area.

2. This park should also be linked to the North Shore Corridor Trail, either directly, or through a common spur trail with Cross River.

3. The Federal land adjacent to the park, south of Trunk Highway 61 should be included in the park, or the park could be exchanged to the Federal authorities.

4. Temperance River should be considered as a potential site for a centrally located interpretive center. This is a low priority action, however, and should be further evaluated in the Management Plan.

5. High intensity camping should be phased out as private camping facilities are developed. The park should then be developed for more passive activities, such as boating, tent camping, interpretation, and trail use.

6. The rest areas should be removed, and a parking area should be provided in the upper portion for swimming hole users. Since vehicle camping has been phased out in the southern portion, the southern entrance should be closed.

7. A small boat harbor should be developed on adjacent federal land, with the cooperation of the Corps of Engineers. Currently, the site is under natural management by the U.S. Forest Service and any future activities on the site will have to be coordinated with them.

8. Gravel pits in the park should be reclaimed.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation (alternate United States Forest Service)

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation United States Forest Service

i) Ray Berglund State Park and Wayside (Rest Area)

Location

Ray Berglund State Park consists of 50 acres located on the Onion River, 17 miles southwest of Grand Marais and 4 miles east of Tofte. It is bounded by federal land to the north.

Natural Characteristics

The Onion River is a typical example of a North Shore river, and provides excellent fishing.

Facilities

The area contains a picnic site, parking lot, trash receptacle, pit toilet, and hiking trails.

Problems

Out of range of the assigned manager.
Conflict between state agencies over solid waste removal program for the site.
Misleading signage.
Unsafe entrance to site.
Insufficient acreage for development as a park.

Recommendations

1. It is recommended that the state park sign and facilities be removed until a decision can be made on the area's use.

2. Because it is a "dedicated" property, the DNR legal staff must determine whether the area must be used as a state park or be considered for other uses.

3. Because the area is too small for development as a state park, and is impractical to manage on a daily basis, it is recommended that the property be used for exchanged for more desirable properties elsewhere on the shore (i.e. proposed additions to Cascade or Temperance Parks). If this recommendation is followed, any addition to the other parks should contain a suitable memorial to Ray Berglund.

4. Even if land exchange cannot be implemented, the area has some potential as a state recreation site, a water access site, or a second priority for fisheries management.

Appropriate Managing Agency

To be determined.

Appropriate Ownership

To be determined.

j) Cascade River State Park

Location

Cascade River State Park is located 10 miles southwest of Grand Marais and is comprised of 2,813 acres, with frontage on Lake Superior. The park lies totally within the Superior National Forest and is the largest parcel of state-owned land within the Cascade Wildlife Management Area. The Division of Wildlife owns small portions of land adjacent to the park (also, there are some privately owned parcels), and the remaining land is under Federal jurisdiction. The area immediately west of the park river is used extensively by visitors and is prime scenic land. A privately owned resort is totally surrounded by the park's boundary.

Natural Characteristics

Ten permanent, or intermittent, streams including the Cascade River, which flows through a twisting rock gorge, join Lake Superior within park lands. These rivers and streams provide excellent trout fishing. The Thompsonite Beach section is among the state's highest priority considerations for a Scientific and Natural Area on the North Shore. Three gravel pits are located within the park: the northern pit is being reclaimed as deer habitat, the southern pit is still in use, and a new pit has been opened in the northern section for use by the Department of Transportation. Structural suitability for recreation development is most prohibitive, erosion potential is high, and sewage lagoon suitability is good only in the Good Harbor area and along County Road 7. The area is largely forested with spruce, conifer, and aspen, with some birch.

Demand and use of Cascade State Park, especially use of winter facilities, is increasing, but the park has the potential to accommodate this increase. The Cascade Wildlife Management Plan, a cooperative plan involving the Department of Natural Resources - Parks and Recreation, Forestry and Wildlife Divisions and the United States Forest Service, includes the park area. Some vegetative management has already resulted from this group effort. The linear nature of the park, with its disconnected parts, creates difficulties for recreational management. It is recommended that cooperation in management planning continue.

Facilities

The park facilities include 40 campsites, a picnic area, a group-meeting building, a manager's residence and shop; shower facilities are provided, as well as two pit toilets and a vault toilet. The park contains 10 miles of ski trails, 5 miles of interpretive trails, and 4 miles of snowmobile trails.

Problems

Inadequate trail system.
Inadequate sewage facilities
Inadequate picnic area.
Insufficient campsites.
No group campground.
Difficulty in controlling and managing the far reaches of the park.
Insufficient manpower for maintenance.
Illegal hunting in portions of the park.
Illegal vehicular travel through certain sections.
Severe timber blow down.

For clarity of description we have divided this park into four sections: (See the map on the following page.)

Section I - Recommendations

The complex pattern of conifer cover and winter food sources, as well as the microclimate, make this section a large prime deer yard. (Jonvik Deeryard Section - Possible trade with Department of Natural Resources - Division of Fish and Wildlife.) The major emphasis of management should be for wildlife and timber production. Provisions should be made for low maintenance hiking trails through forest lands in this area. There are other accesses through the area to the North Shore Trail, which the location of will have to be studied throughout the management process. The utility system also needs upgrading.

Appropriate Managing Agency

Department of Natural Resources

Appropriate Ownership

Department of Natural Resources

Land Expansion or Deletion

1. We recommend that this entire section be transferred to the Department of Natural Resources - Division of Fish and Wildlife. This would facilitate wildlife management and would also open this area for hunting. Before transfer of lands, an agreement assuring continued Department of Transportation access to gravel pits on the property should be finalized.

2. Educational interpretation of the management practices could be included in the development of the wildlife management program.

Section II - Recommendations

This area should be consolidated with federal, state and private land, and the park boundary redefined according to this change. The periphery of the section could still accommodate semi-intensive forest management to restore original vegetation.

There is a major need for a lakeshore day-use site and for a sheltered picnic area. Excellent potential exists for fishing, and for development of hiking trails and a winter camping site. So a "gap" in the recreational system dictates the need for camping in this area, but due to the sensitive resource, it should be used in passive, non-intensive ways. Portions of Judge C.R. Magney State have more durable soils than those in this park, and would be better suited for intensive camping development. Temperance River State Park and surrounding of private development could meet this need to the south. The provisions of low intensity camping would be suited here. The area has high interpretive potentials for wildlife and natural processes and an interpretive center should be considered for the park. The rocky shoreline in this area provides the opportunity for an excellent lakeshore experience.

The Cascade River which has beautiful waterfalls, provides excellent trout fishing. The proposed change in boundaries would allow for development of trails further up the river, and would also allow for recreational development of areas with better soils. Work on carefully detailed soils analysis and design of recreation development will be necessary to implement protection of sensitive soils.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation

Section III - Recommendations

Thompsonite Beach Section is one of the State's top ten significant Scientific and Natural Areas. Once the value of the resources is determined, only a part of this resource needs to be retained in public ownership for study and preservation. The private sector could then provide a source for rockhounds and benefit by their holdings or could provide educational and interpretive information to the general

public. There is a great need for interpretation of this resource. A study should be conducted to locate the highest quality mineral deposits. That portion which is state-owned should then be protected, and mineral rights should be re-acquired on state-owned lands only in this section.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation

Section IV - Recommendations

Good Harbor Bay should be transferred or developed in cooperation with the Department of Transportation for development of a rest area (see Rest Area Section). The acreage along the shore should be fully utilized with a hiking trail and an access to the beach. The rest area facilities should not intrude on the bluff or beach resources. The current Good Harbor section of the state park extends from the beach up to the ridge, and is vegetated with aspen-birch. It is a potential pathway for wildlife. Some of the soils are suitable for sewage lagoons or other similar systems.

This section could also be considered for trade to the Federal Forest Sevice in exchange for the parcel at Temperance, to give them suitable conservation for shoreland access.

The resolution of these different choices should be determined by a cooperative effort of Department of Transportation, Department of Natural Resources, and the United States Forest Service.

Appropriate Managing Agency

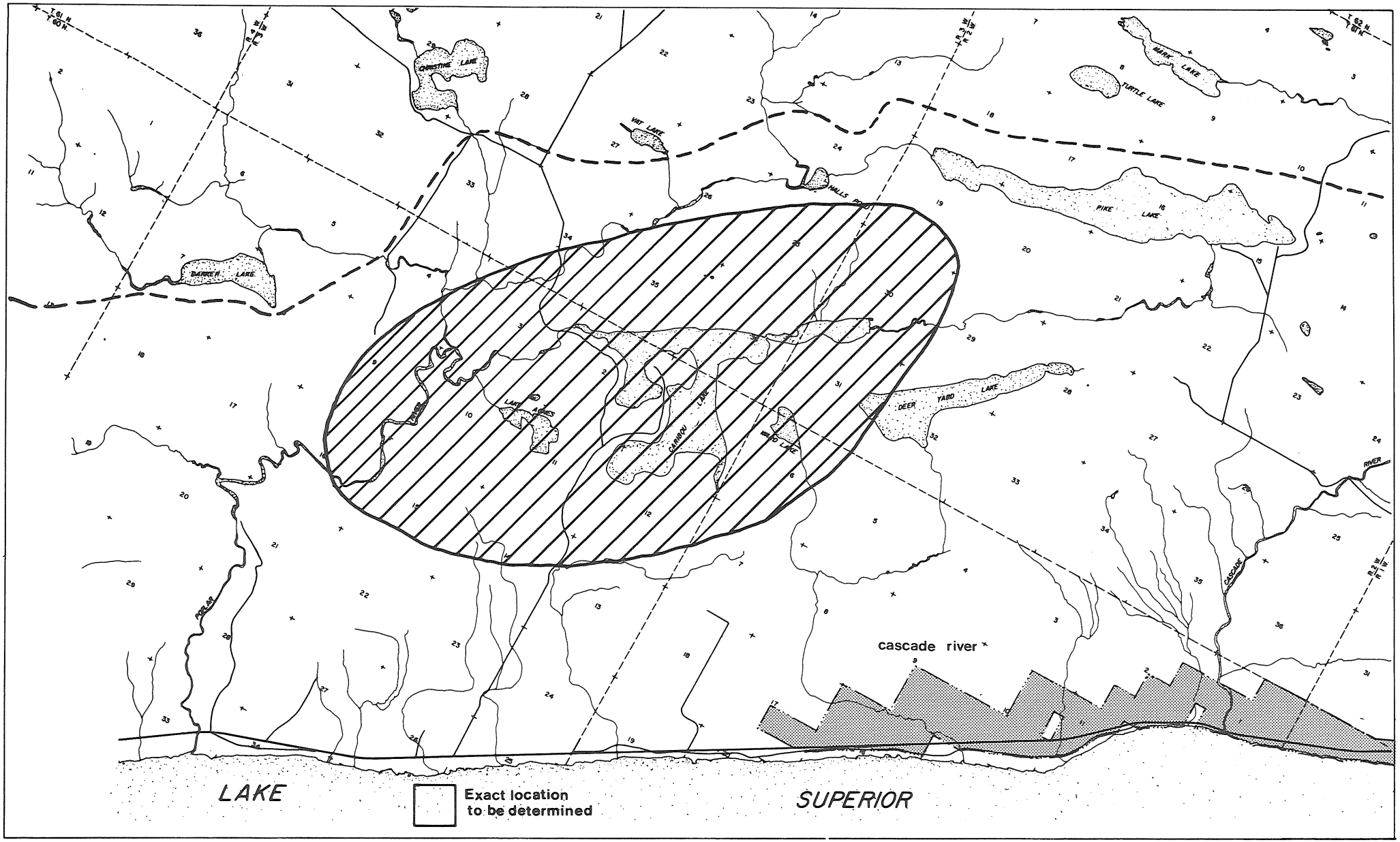
Department of Transportation - Department of Natural Resources Cooperative or Federal and Department of Transportation

Appropriate Ownership

To be decided. State Department of Transportation and Department of Natural Resources Cooperative and Federal (possible).

Land Expansion or Deletion

Possible reduction in size as part of trade to add to Sections II and III.



coastal zone management program
recreational systems study
department of natural resources

map 9 of 13

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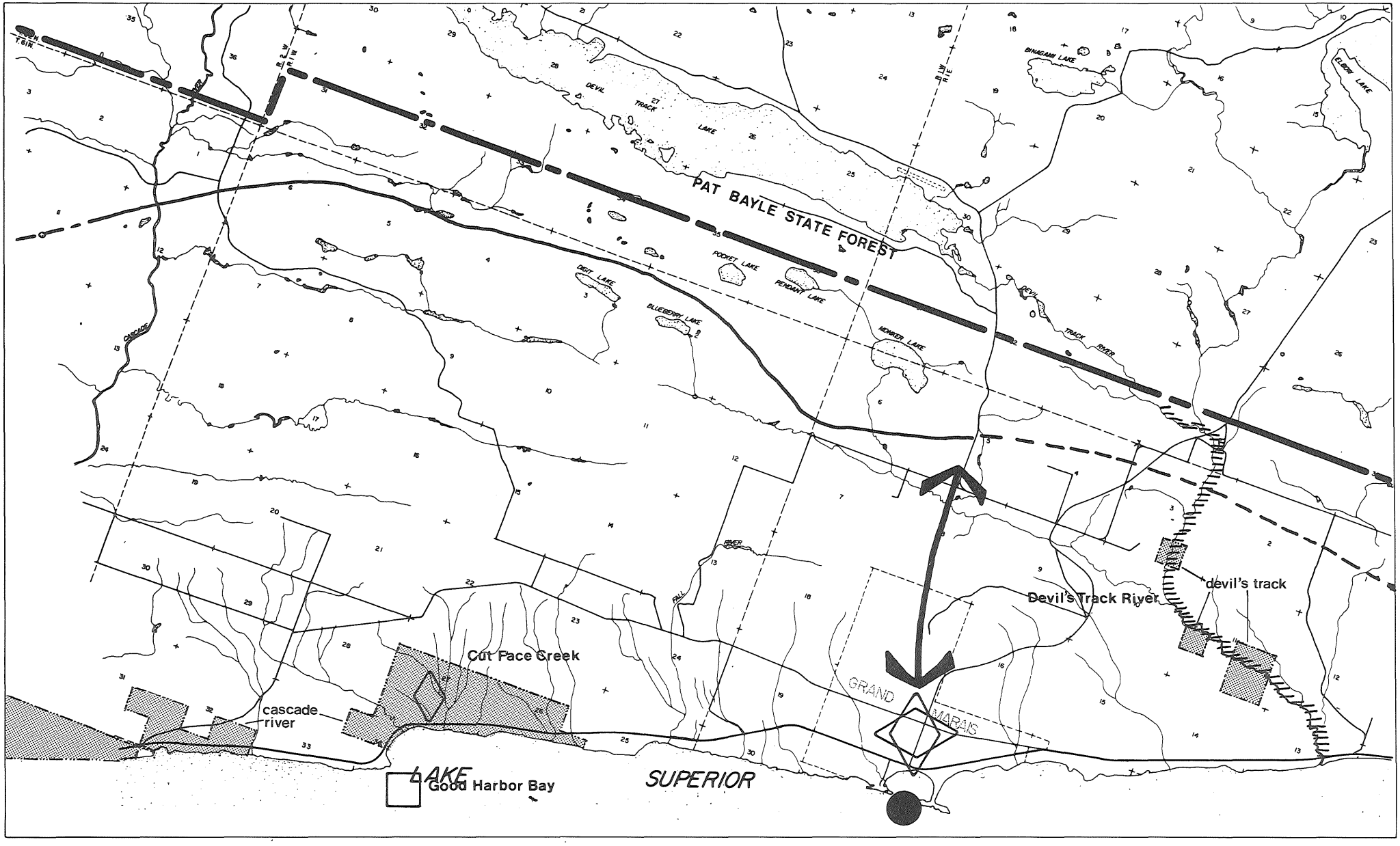

coastal zone management program
recreational systems study
department of natural resources

map 10 of 13

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k) Devil's Track State Park and Wayside (Rest Area)

Location

Devil's Track State Park and Wayside (Rest Area) consists of three separate parcels of land including 240 acres land on the Devil's Track River, eleven miles northeast of Grand Marais and one mile north of Trunk Highway 61. It is in the Superior National Forest and is totally surrounded by privately owned property.

Facilities

This area is undeveloped.

Natural Characteristics

Devil's Track River flows through a unique, rugged river gorge, which is the state's only example of the Porphyritic diabase geological process, and falls over 50 feet in each of two waterfalls. The river, recognized as a valuable fisheries stream, is an excellent habitat for rainbow trout. Among the various types of vegetation in the area is a community of rare ferns. The area has a moderate to good forest cover of aspen-birch. Soil suitability is excellent for sewage lagoons, with little or no potential for erosion. Structural suitability for recreation development is inadequate.

Problems

Preservation of natural characteristics.
Unlinked parcels of land.
No access because of privately owned surrounding lands.
No access from one side of the river to the other during the spring thaw.
No access from one side of the river to the other.

Recommmendations

Development should be carefully coordinated with the planning efforts of Grand Marais and great care should be taken to protect this unique resource of statewide significance. This could mean that the only development would be an off-the-road parking lot linked to hiking trails. The park's unique features should be interpreted for public enjoyment and education, and fishing potential should be managed. Through land exchanges, link existing park lands along the river gorge.

Appropriate Managing Agency

First - Department of Natural Resources - Division of Parks and Recreation
Second - Department of Natural Resources - Division of Fisheries and Wildlife
Third - County

Appropriate Ownership

First - Department of Natural Resources - Division of Parks and Recreation
Second - County

1) Kodonce State Park and Wayside (Rest Area)

Location

Kondonce State Park and Wayside (Rest Area) includes 130 acres and is located 11 miles northeast of Grand Marais, within the Superior National Forest.

Natural Characteristics

A rocky gorge and waterfall provide a spawning area for rainbow trout, which along with rare fern and alpine plant species, qualify the area as a candidate for the Scientific and Natural Program. The area has been recorded as having high natural diversity and would be ideal for research on the wildlife species richness interpretation program as suggested in Chapter VII.

Facilities

This area has a fisherman's access and trails.

Problems

No management.
Inadequate solid waste collection.
No protection of rare natural resources.

Recommendations

It is recommended that this park be considered for designation as a Scientific and Natural Area, during the interim period while appropriate designation is being made. The State park sign should be removed, as it misleads users concerning the facilities they can expect on the site.

Appropriate Managing Agency

DNR - Scientific and Natural Areas Program

Appropriate Ownership

To be determined by exchange.

m) Judge C.R. Magney State Park

Location

Judge C.R. Magney State Park contains 4,514 acres of land on both sides of the Brule River 14 miles northeast of Grand Marais, in an area of low private resort development. The park lies totally within the Grand Portage State Forest boundaries, and is the last state park on the North Shore before the Canadian border. It provides the opportunity for one of the most pleasant camping experiences on the North Shore.

Natural Characteristics

The park is a prime area for recreational development. A major fisheries river, the scenic Brule River is characterized by cascading waterfalls and extremely challenging whitewater areas. It's upper reaches have kayaking potential. The structural suitability of the soils is generally not good for recreation development, with the exception of that area near T.H. 61. Soil erosion potential is generally slight, and sewage lagoon suitability is generally poor. Gravel deposits are located along both sides of the Brule River, and there is one active Department of Transportation gravel pit within the park boundary. The area is forested with maple and aspen-birch and many original conifer stands which make good deer habitat. It is a deer yarding area which, because of existing vegetation, could become more significant than the Cascade area. There is good potential in the park and with its connection into the Grand Portage State Forest for exploration of the wildlife diversity interpretive program.

Facilities

The park contains well water and sanitation facilities, and has 38 campsites, three miles of interpretive trails and a picnic area.

Problems

Inadequate water supply - no winter water supply.
Inadequate sanitation facilities.
Lack of enforcement of hunting ban.
Unauthorized use of park land - mainly by hunters.
Ownership problems.
Poor solid waste removal.

General Recommendations

Judge C.R. Magney State Park provides virtually the last major camping and recreational opportunity on the shore until the Grand Portage development. We recommend that funding be

obtained for completion of the Grand Portage development, we also recommend that more destination uses be designed and incorporated into the development to serve to extend tourist use. Many groups camp at Judge C.R. Magney on their way to Isle Royale. Little recreation development exists between Judge C.R. Magney State Park and Grand Portage, and very little of the area within the park is developed. Resource data indicates some soils with appropriate structural suitability for intensive recreation development, but not for septic field or sewage lagoon development. This combined with Grand Portage State Forest lands would be an ideal area for the state to pioneer implementation of new specialized sewage systems. Knowledge gained through the state's research would benefit both local residents and resort owners who have experienced a high failure rate of local sewage systems. This park has potential for high intensity camping, with camper-trailers accommodated near T.H. 61. High intensity camping facilities are needed along this portion of the shore, but Cascade River State Park is not suitable for such facilities. There is potential for major recreation development, potential for backpacking, cross-country skiing, and snowmobiling in a wilderness type of area, and potential for providing a lakeshore type of experience in the future when considering the development as cooperatively done with the forest lands.

The Brule river is a major fisheries river and a challenging white water area for kayaking.

The general area has a high wildlife value, both for big game habitat development and for species diversity. It could be developed into a cooperatived management unit like Cascade, with adjacent private land owners and their logging operations working as part of the cooperative effort. The detailed Outdoor Recreation Act Management Plan could select areas for intensive habitat improvement and study. The current and potential mix of vegetative communities including aspen, conifers, and scenic hardwoods provides visual interest, as well as excellent wildlife habitat. Major wildlife interpretation opportunities should be fully explored. The terrain is rugged and varied, and unusual formations related to the waterfalls provide points of interest. All of these factors combine to give this area a high priority for Scientific and Natural Area Program study.

This park deserves major emphasis and careful design should be used to take full advantage of the many recreational opportunities within, and near, the park. Its location in relation to adjacent private lands and numerous recreation potentials suggests potential development of the park as the center of a recreation cluster. This would be advantageous to private recreational development. Its development into recreational activity spaces to support the private sector

would help disperse visitors throughout the surrounding area. Although area demand at this time would probably not support increased private recreation development, this idea should be kept in mind in terms of long range planning. The surrounding Grand Portage Stat Forest provides space for further dispersed recreation.

NOTE: This is a "dedicated" property and, as a result, all modifications must be approved by the Magney family.

Specific Recommendations

1. The Department of Natural Resources, Division of Parks and Recreation, Forestry, Fish and Wildlife, and local interest groups together with the Grand Portage Indian Band should conduct a joint cooperative management study to determine which areas of the park are most suitable for recreation, forest management, and fish and wildlife management purposes.

2. Once these areas have been determined, the park boundary should be consolidated to reflect these uses. Land should be exchanged between Divisions to reflect these management purposes.

3. Establishment of a Brule River Cooperative Management Area should be considered because of the excellent potential for both wildlife, forestry, fisheries, and recreational management.

5. A cooperative agreement could be written between the private resort owners and the park to establish mutual benefits and limits of each others jurisdiction.

6. Proposed North Shore Corridor Trail link continued from Grand Marais through the park and forest to the Indian lands with loops developed off the trail for snowmobiling, where resources are suitable.

7. The rest area should be removed from the park.

8. An interpretive program which emphasizes wildlife should be developed.

Appropriate Managing Agency

Department of Natural Resources - Division of Parks and Recreation with cooperative agreement with private sector

Appropriate Ownership

Department of Natural Resources - Division of Parks and Recreation

5) General Recommendations

a) It is recommended that all expansion and acquisition of properties should be consistent with the philosophy of making the parks more manageable through consolidation for recreational use.

All attempts will be made to consolidate recreational and other resource lands by trading various land parcels between various governmental agencies. By consolidating these lands for specific control, operational costs will be decreased.

b) The interrelationship of public lands usage and the usage of private facilities for lodging and camping has a unique character in this part of the state. The development of recreational facilities should be coordinated with the private sector, while state parks should provide large outdoor recreational developments that would be too costly for the private sector to develop.

It has been shown that the private sector can benefit economically by providing food, gas, dump sites, and other services. Therefore, the state should not provide these services.

Camping facilities should be carefully coordinated between the state and the private sector. It is recommended that the state provide camping facilities only when the private sector cannot. All camping facilities provided by the state should gradually be phased out as the private sector is able to satisfy the demand. The state should, however, continue to provide for the less intensive camping needs, since it has not been economically feasible for the private sector to provide for this demand.

c) As the public has pointed out, many facilities within the parks, such as sewage and water systems, are apparently not being maintained. It is recommended that special funding be obtained for the immediate upgrading of sewage and water systems at Split Rock Lighthouse State Park, Gooseberry River State Park, Baptism River State Park, and Cascade River State Park.

d) Concerning the recommendations for other issues brought up by the public, such as solid waste removal problems, the servicing of equipment, the responsibility for road maintenance and plowing, and the uses of gravel sources within the park boundaries, refer to the Rest Areas Section. These statements of recommendation, developed by both park staff and regional personnel, in cooperation with the Department of Transportation personnel, apply to park properties as well as rest areas.

e) There is a need for development of sewage systems within the parks, a need which is not present in the Class II rest areas (which require only vault systems). Therefore, with respect to sewage systems within the parks, the following is recommended:

Since the resource conditions on the North Shore impose special restrictions on the development of on-site sewage systems, modified or new technology systems are needed in many cases. The state should provide leadership in implementing such systems in state parks, which may lead to their acceptance by the private sector.

Such systems could be designed by the Pollution Control Agency on test area plots where the soils are similar to those that are in the most troublesome areas of private development, and on those soils determined as needing protection by the Coastal Zone Management Program. It is recommended that funding be made available immediately for these projects, and the funding include monies for graphic presentation of the systems and make test results available to local residents.

f) It is recommended that the parks program support the concept of cooperative management and the development of recreational clusters, and that the development of park lands be reflective of the following needs:

1. Systems analysis and soil evaluation has proven that the area located closest to the shore in most areas is more fragile, and therefore, more suitable for less use intensive development compared to land located farther inland. This development is suitable for lands along the shore and throughout scenic zone 2.

2. State parks will be managed exclusively for state park uses, and will not provide rest area associated uses.

3. It is recommended that special consideration be given to the design and location of power line right-of-ways passing through parks to insure minimum visual impact.

4. Special consideration should be given for provision of accesses from most of the state parks along the shore to the multi-use North Shore Trail system, and to the provision of accesses where there is a site which conforms to natural development.

g) It is recommended that recreation facilities be developed that are appropriate to the natural characteristics of the parks; that all parks which fall into the day-use zone be developed according to day-use activities, and that destination-use parks be developed according to more extended-use facilities.

h) It is recommended that all of the parks be considered as experimental sites for the development of the outdoor accessibility program. The North Shore area is indeed a unique state resource which should be accessible and interpretable to all people. Thus, trails should be ranked according to a standard rating system. Loops should be developed along with access to major sites where undue alterations are not necessary.

IV. Priority of Recommendations

First Implementation Level: Actions which can be implemented immediately.

1. Removal of park signs for Flood Bay, Caribou Falls, Ray Berglund, Kodonce River, Devils Track River and Cross River State Parks.

2. Continued reclamation of gravel pits in Temperance and Crosby-Manitou State Parks.

3. Hiring of additional personnel at Crosby-Manitou State Park.

4. Establishment of a temporary group camp at Judge Magney State Park.

5. Extension, marking, and enforcement of speed zones at Gooseberry Falls State Park - reduction of safety hazards.

6. Further development of trails at Gooseberry Falls State Park.

7. Retaining of all land within park boundaries of Split Rock Lighthouse State Park.

8. Location of intensive-use facilities near Lighthouse area of Split Rock Lighthouse State Park - location of less intensive facilities near Split Rock River.

9. Obtaining of easement along river at Caribou Falls State Park.

10. Determination of status of Ray Berglund State Park.

11. Consideration of potential alternative uses for Ray Berglund State Park.

12. Consideration of interpretive potential of Section III of Cascade River State Park.

13. Consideration of Kodonce State Park for qualification as Scientific and Natural Area.

14. Determination of equipment needs for North Shore shop implemented by equipment inventory - completion of plans for shop.

15. Analysis of trail usage difficulty for identification of trails in need of repair.

16. Relocation of improperly located park boundary signs to indicate current boundaries.

Second Implementation Level: Actions which require additional funding, planning, or administrative work.

1. Evaluation of Flood Bay, Caribou Falls, Ray Berglund, and Kodonce State Park for transfer of lands to other Department of Natural Resources divisions, state, or federal agencies - deletion from park systems of selected lands.

2. Temporary establishment of North Shore maintenance and equipment shop at Temperance or Gooseberry State Parks.

3. Sponsorship of Corps of Engineers for analysis of proposed harbor on North Shore, especially at Split Rock River and Temperance River.

4. Transfer of Section I of Cascade State Park to Department of Natural Resources Fish and Wildlife or United States Forest Service Department for wildlife management - inland expansion of Section II of Cascade State Park - funding for further maintenance - reduction of safety hazards - acquisition of rescue equipment for Cascade State Park.

5. Purchase of mineral rights for Section III of Cascade State Park - consolidation of ownership - analysis of Thompsonite Resource at Cascade State park - (for recommendations concerning Section IV of Cascade State Park, see Rest Area Section).

6. Development of trails system at Crosby-Manitou State Park and Judge C.R. Magney State Park.

7. Deletion of Cross River State Park from park system - retention of river easement - development of easement trail.

8. Removal of parking areas at Temperance State Park - development of cooperative trails program on adjacent Federal land - provision of additional safety equipment.

9. Removal of rest area at Judge C.R. Magney State Park - provision of additional safety equipment.

10. Redesigning of utilities and sewage systems at Gooseberry Falls.

11. Redesigning of entrance road and contact station at Gooseberry Falls State Park.

12. Redesigning of trails system at Gooseberry Falls State Park.

13. Increase of staffing at Gooseberry Falls State Park.

14. Encouragement of passive interpretive usage at Gooseberry Falls State Park.

15. Obtaining of fisheries easement on both sides of Gooseberry River.

16. Acquisition of land at Split Rock Lighthouse State Park - development of access between portions.

17. Development of campsites at Split Rock Lighthouse State Park.

18. Obtaining of fisheries easements along Split Rock River.

19. Development of multi-use trail to link Gooseberry Falls and Split Rock Lighthouse State Park - development of link trail to North Shore trail.

20. Development of trail link to Baptism River State Park and North Shore Trail - acquisition of accommodating lands.

21. Department of Natural Resources transfer of best parcel of land between Trunk Highway 61 and shore to Department of Transportation development of rest area at Baptism River State Park.

22. Provision of water access on Lake Superior (see Crosby-Manitou State Park recommendations).

23. Development of recreational cluster at Temperance State Park - development of trail to link Temperance State Park with the North Shore Trail.

24. Acquisition or development of federal lands adjacent to Temperance State Park.

25. Development of wildlife management at Section I of Cascade State Park - further study of park.

26. Possible development of off-road parking at Devil's Track State Park - preservation of fishing capacity.

27. Consideration for establishment of Brule River Wildlife Management Area.

28. Provision of park information sheets for all parks.

Third Implementation Level: Actions which require substantial additional funding, planning or personnel.

1. Development of group camp at Section II of Cascade State Park - increase of staff - transfer of portion of Section IV for

Department of Transportation rest area - provision of hiking trail and beach access.

2. Replacement of double-entrance system at Crosby-Manitou State Park with single entrance.

3. Acquisition of land at Temperance State Park - development of harbor.

4. Consolidation of public land at Devil's Track - possible land exchange.

5. Review traffic situation on Highway 61 at Judge C.R. Magney State Park.

6. Gradual increase of staffing at Split Rock Lighthouse State Park - gradual upgrading of sewage and water systems.

7. Completion of management plan for proper development of facilities at Baptism River State Park.

8. Classification of Gooseberry Falls State Park as a natural state park - future non-intensive development - reduction of campsites - encouragement of private sponsorship of campsites - future emphasis on passive camping.

9. Removal of rest areas at Gooseberry Falls State Park - development of Class II rest area at Split Rock River.

10. Reinstating of interpretive program at Gooseberry Falls State Park.

11. Dispersal of future campsites at Split Rock Lighthouse State Park - consideration of handicapped facilities.

12. Encouragement of private accommodation of recreation for peripheral lands at Baptism River State Park.

13. Development of camping at Baptism River State Park.

14. Provision of resident manager for Baptism River State Park.

15. Consolidation of Crosby-Manitou State Park into manageable unit - state acquisition of private and county lands - deletion of some park lands - establishment of statutory boundary.

16. Consideration of development of potential interpretive center for Temperance River.

17. Development of passive recreation at Temperance State Park.

18. Removal of rest areas, and closing of southern entrance at Temperance State Park.

19. Conducting of joint study to determine various suitabilities of Judge C.R. Magney State Park - consolidation of park boundary to reflect uses.

20. Development of day-use and camping facilities at Judge C.R. Magney State Park.

21. Development of day-use and camping facilities at Judge C.R. Magney State Park.

G. Wildlife Management

Introduction

Much of the Study Area provides habitat for species which are either uncommon or non-existent in the remainder of the State. These species include timber wolves, lynx and pine martens. Additionally, there is a wide variety of both game and non-game species found in the Study Area, including moose, deer, black bear, ruffed and spruce grouse, fishers, bobcats, fox, coyotes, red squirrels, porcupines and snowshoe hares.

Major wildlife management emphasis in the area is aimed at providing suitable habitat for moose, deer and bear in order to provide opportunities for big game hunting and viewing of big game by the general public. The Department of Natural Resources is responsible for species management through the Section of Wildlife while the U.S. Forest Service, through its timber management programs, also plays a role in managing wildlife habitat.

Management Authorities

Following is a summary of statutory authorities related to wildlife management.

Department of Natural Resources

> The commissioner shall acquire by gift, lease, easement, purchase or condemnation ... lands or any interest in lands suitable and desirable for establishing and maintaining public hunting grounds, game refuges, and food and cover planting areas, and to make all improvements thereon deemed by him advisable ... The commissioner may designate lands or interests in lands acquired pursuant to this subdivision as wildlife management areas for the purposes of the outdoor recreation system. M.S. 97.48, Subd. 13.
>
> The commissioner of Natural Resources is hereby authorized and empowered to acquire in the name of the state by gift, lease, purchase, and transfer of state lands, any such wildlife lands ... and, he may also require ... lands now in state ownership or tax-forfeited which are suitable for wildlife purposes ... No such lands shall be acquired until first approved for such purchase, or lease, by a majority of the members of the board of county commissioners in the counties where the land to be purchased, or leased, is located. M.S. 97.481

All state parks are hereby designated as state game refuges. M.S. 99.25, Subd. 1

U.S. Forest Service

a. Multiple Use and Sustained Yield Act, P.L. 86-517, 6/12/60. This Act directs the Forest Service to consider all renewable resources in coordination with one another.

b. Sikes Act, P.L. 93-452, 10/18/74. This Act provides direction for wildlife habitat planning and management on Federal lands in cooperation with the States.

c. Endangered Species Act, P.L. 93-205, 12/28/73. This Act provides for the conservation of endangered and threatened species ecosystems.

d. Forest and Rangeland Renewable Resources Planning Act, P.L. 93-378, 8/17/74. This Act directs the Forest Service to inventory and provide comprehensive plans for the various forest resources.

e. 36 CFR 241.2. This regulation provides authority for the Forest Service to enter into cooperative wildlife projects with States.

f. Wilderness Act, P.L. 88-577, 9/3/64. Establishes National Wilderness Preservation System and sets deadlines for study of additional candidate areas. Special BWCA provisions are included.

g. Environmental Policy Act, P.L. 91-190, 1/1/70. This is a National Policy Act to encourage productive harmony between man and his environment.

h. Bald Eagle Act, 16 U.S.C. 668-668d, 1940. This Act provides for the protection of the bald and golden eagles.

i. Forest Management Act, P.L. 94-588, 10/22/76. This Act requires the Forest Service to use an ecological approach to management and an interdisciplinary approach to planning.

Management Problems

1. During the winter, deer migrate from inland areas and concentrate in a one to three mile wide area paralleling the shore. The habitat in this area is in poor condition as a result of the lack of timber cutting and wildfires. As a consequence, the forest is aging and there is a lack of understory growth. The presence of aging and large monotype forests decreases wildlife diversity.

2. The North Shore has a high number of deer killed by automobile on Highway 61 annually. Currently, deer are being fed by North Shore

residents, but feeding stations are not located ideally. Consequently, many deer have been killed by automobiles. The problem needs further study.

3. Free-roaming dogs frequently pursue and harass deer especially in early spring when the snow crusts over and dogs can move about freely. The deer are at a disadvantage because the long winter has left them in a weakened condition and they cannot move through the snow as easily as dogs. Many are chased out on highways and struck by cars or trucks.

4. While wolves and deer have co-existed in the area for centuries, recent changes in habitat conditions and a natural decline in the deer herd have resulted in severe pressure on the herd by wolf predation. It is thought that this pressure has kept the deer herd from increasing significantly during the recent mild winters.

Management Areas/Programs

Department of Natural Resources

Past wildlife management programs along the North Shore have been implemented primarily on other public lands such as State and national forests and to a lesser extent in state parks. Primarily management program emphasis has been placed in three areas, the Brule, the Jonvik, and the Little Marais deer yards. Lack of complete ownership of these yards by the Section of Wildlife places limitations of the levels of management which can be done.

The proposed Cascade Management Unit includes part of Cascade River State Park and adjacent lands. This unit has been proposed because of complex management problems which exist in the area, including overmature and deteriorating winter cover, inadequate regeneration of new cover and a lack of sufficient openings which provide early spring deer foods. In addition, the presence of the park and three trout streams in the unit suggest that a coordinated management approach is needed. Coordination meetings with the three DNR divisions (Parks, Forestry and Fish and Wildlife) have been held and some work has been completed by the Division of Forestry. A short-term schedule of activities has been developed and efforts are underway to define long-term management goals for the unit.

Although the Jonvik Deer Yard which lies within the proposed management unit has been given a "critical" ranking for protection or acquisition in the DNR Wildlife Acquisition Plan, acquisition is dependent on the final management authority. Under the management unit concept, if implemented by DNR, acquiring Jonvik Deer Yard will not be necessary since a coordinated plan will be written so as to manage the area for wildlife and other resources.

Leveaux Wildlife Management Area is trust fund land and final land transfer is pending for this parcel.

Long range needs are to continually maintain existing deer yards, acquire key areas as wildlife management areas to prevent their destruction or loss, and work with other agencies so wildlife management plans are coordinated. More wildlife management areas may be needed as changing conditions indicate the need.

Currently, approximately 3,700 acres of land are proposed to be brought under the jurisdiction of the Section of Wildlife. These lands have been identified as key habitat areas which would benefit from management. Following is a summary of the individual areas and their current status.

Little Marais - Lake County - 280 acres of Trust Fund land outside state forest - pending second appraisal.

Caribou Falls - Lake County 480 Acres of Trust Fund land - pending second appraisal.

Leveaux - Cook County - 80 acres of Trust Fund land - pending second appraisal.

Jonvik - Cook County - 960 acres of Trust Fund land outside of state forest and 40 acres of private land - held up pending outcome of Cascade Management Unit Cooperative Plan.

East Colvill - Cook County - 240 acres of Trust Fund land in State Forest - cooperative agreement 800 acres of Consolidated Paper Co. land - being considered for possible exchange. 356 acres under DOT jurisdiction - possible gift.

Hovland - Cook County - 268 acres of Trust Fund land in state forest - cooperative agreement.

Deer populations along the North Shore have declined significantly in recent years. In portions of the Study Area, particularly in Cook County, the present deer herd has a density of 0-2 deer per square mile, compared with densities of 15-20 deer per square mile during peak years. Winter concentrations of deer may approach 100 deer per square mile, particularly in the Jonvik deer yard, but this is an extremely localized condition and is not indicative of general deer population levels in the Study Area.

The moose population, however, increased steadily during the 1950's and 1960's and presently seems to be maintaining itself at a relatively stable level. The reasons for the increase in the moose population are complex and not completely understood, but several factors are suggested. One factor is the maturing forest cover over much of the range. This vegetative type is more favorable to moose than deer and provides food species which are suitable for moose. Another factor is the presence of large cleared areas from former timber sales which have grown up in brush. While the browse is suitable for deer, the deer do not utilize these areas to any great extent but the moose use them

extensively. Severe winter conditions do not hamper moose as much as deer in obtaining food. Finally, programs intended for deer habitat improvement also have some benefits for the moose.

U.S. Forest Service

The objective of wildlife management in the Superior National Forest is to provide the variety of habitat components needed to maintain the integrity of the boreal forest ecosystems of northern Minnesota. The concept of diversity emphasizes management for a variety of species (species richness) in an ecosystem rather than an individual species. This concept recognizes wildlife as part of a community rather than emphasizing the needs of an individual species. The Superior National Forest habitat management program provides for the establishment of a desirable mixture of various components that will provide the greatest diversity through time and space on a sustained basis. The goal of this program is to create a quality environment that will support a variety of species in different densities.

In addition to the overall management goal, there are specific situations where management has been directed toward the needs of one or more specific species. Habitat for endangered and threatened wildlife may require special management practices. An example would be the establishment of protective buffer zones around active eagle nests to minimize disturbance during the nesting season.

Timber management practices, when correctly planned and implemented, are the most efficient, cost effective and practical broad scale forest management tool that wildlife managers have available to achieve wildlife goals.

The wildlife of the Superior National Forest includes 45 species of mammals, 219 species of birds, and 12 species of reptiles and amphibians. To provide continued suitable habitat for these species, the initial step is to identify broad ecological units which identify major wildlife habitats. Wildlife, vegetation, and soils data were used as a basis for these identifications.

The Superior National Forest is divided into 1800 compartments, each about 1000 acres in size. Each unit has been inventoried for stand age and type and the distribution of these in the unit. The program of diversity is built around the major variables of age and type.

An analysis of timber stand type and age class data provides the habitat manager with the information necessary to maintain or improve habitat diversity.

Present wildlife funding at the forest level allows for 2000 acres of direct habitat improvement per year. The major opportunities in habitat work are through coordination with other resource programs.

Recommendations

a) General Recommendations

For wildlife to continue to thrive in northeastern Minnesota, it is necessary to implement certain management programs which will replace and/or duplicate the ecological cycles present prior to the inhabitation of the area by man. An important element of this cycle was the presence of fire which sanitized diseased and wind damaged stands, released nutrients bound up in plant materials, and set back successional events in the forest. Fire also was one of the factors responsible for the origin and presence of the vast pine stands of the North Shore area. Used under a set of very rigid and controlled conditions, fire can be used to manage forest stands to benefit both timber and wildlife.

Other techniques for timber stand improvement include logging, shearing, rock raking, and chemical release to name a few. Certain techniques may not be practical to use because of soil condition, depth to bedrock slope, or rockiness.

Habitat along the North Shore needs improving. A greater cooperative effort is needed between the wildlife manager and county, state and federal foresters. Logging must be placed near deer concentration areas and forest openings must be provided and maintained. Because much of this land is in public ownership, it must be utilized as strongly as possible for wildlife values. Improving the condition for economic logging or harvesting by the private sector is important so that recycling the forest is accomplished. The federal government through "A Program for Fish and Wildlife Habitat on the National Forests in Minnesota" will participate in this effort.

b) Specific Recommendations

Minnesota Department of Natural Resources

1. Superior Game Refuge No. 1 which extends from the Lake-Cook County line to the Grand Portage Indian Lands and lying between Highway 61 and Lake Superior does not serve the purpose for which it was established. Local residents did not want hunting on their land and asked for refuge status. The refuge should be abandoned.

2. The acquisition of 3,700 acres of land referred to above may not be adequate to achieve the desired results. It is recommended that wildlife values be considered in the management of all state lands in keeping with the concept of integrated Resource Management. More specific cooperative plans can be developed as appropriate.

3. From the wildlife standpoint, deer management should be first priority in the Cascade area. The area between the top of the Sawtooth Range and the lake is especially attracted to deer

because it provides good winter cover in the form of mature balsam and spruce, quality food in the form of mt. maple, less snow than is found to the north, and the south facing slope is exposed to the sun.

Evidence at present indicates that the vegetative habitat in the yard is deteriorating. The mature and overmature balsam and spruce is dying and blowing down. Partly because of heavy deer browsing pressure there is little or no reproduction of any hardwoods or conifers and open areas are growing back to tall brush and thimbleberry instead of staying in desirable forb and low browse stages.

In order to maintain the area as an important wintering yard for deer, an intensive program of food and cover management is necessary. Every 40 acre tract will have to be examined in 10 acre blocks and management recommendations made to get the best distribution of adequate cover and food. Management would include:

a. Regeneration of hardwood trees and shrubs where possible to provide browse.

b. Regeneration of varying age stands of conifers to provide cover properly distributed through the area and to eventually replace overmature trees.

c. The commercial sale of timber should be first priority in order to achieve points 1 and 2 above. This has met with only limited success in the past because of poor markets and poor quality timber. The future for wood products from this area apparently does not look promising.

d. The use of machinery, such as dozers and shearing blades would be most desirable to treat the area if it cannot be sold, from the economic standpoint, but the soil is allow and there would be much uprooting of trees.

e. Handcutting would be most desirable from the standpoint of obtaining the best reproduction, but it is the most costly form of treatment.

f. A combination of machine use and handcutting would probably be best.

g. Habitat management for deer and other wildlife and the treatment of the vegetation should be integrated with the recreational needs of the various agencies and interest groups involved.

The optimum distribution of habitat for deer includes about 45-60 percent deciduous cover of which 25-35 percent is aspen and 25 percent is 10 years old or less; another 5-10 percent should be in grassy openings and 15 to 20 percent should have conifers for protective cover.

U.S. Forest Service

1. Forest openings will be reclaimed by removing invading tree reproduction. Treatments will include hand cutting, mowing, prescribed fire, selective use of approved herbicides, fertilizing and seeding. Openings need to be inventoried and classified.

2. Trails will be managed and maintained to distribute hunting, fishing, and other recreational uses. Hand cutting, seeding, mowing, signing, and gating on 625 miles of trails and logging roads is planned.

3. Management plans for critical deer wintering areas will be prepared. Research to insure perpetuation of white cedar will be encouraged. Browse conditions in critical areas will be improved through coordination with commercial timber harvesting and by specific projects. These projects will consist of releasing understory shrubs in deer yards, planting of conifers to improve cover conditions and maintenance of browse adjacent to yards in aspen and birch types.

4. Some priority management areas cannot be manipulated because of inadequate access. Access to these areas can be provided in the form of temporary roads to be obliterated upon completion of the project, temporary roads to be seeded and used as walking trails or permanent roads to provide for future management to maintain and improve habitat diversity.

5. Special management projects are needed in the Boundary Waters Canoe Area to provide herbaceous and shrub growth or recycle old aspen and maple stands in certain areas. Logging and prescribed fire and allowing selected wildfires to burn will be the primary means of vegetation management in the Portal Zone. Controlled fire will be used to manage the Interior Zone upon development of an approved burning program.

6. The wetlands of the Superior National Forest will be inventoried to determine opportunities for habitat improvement. Dams will be constructed in selected areas to maintain or improve wetlands habitat. The effects of beaver on the maintenance of wetland habitat and the use of beaver ponds by other wildlife will be evaluated.

7. Surveys, management, planning, evaluation, and protection of habitats for the maintenance of endangered, threatened, and unique species on the forests will be provided. At present, these species include the eastern timber wolf, northern bald eagle, American osprey, great blue heron and common loon.

8. Continuous monitoring of certain key populations such as mentioned in No. 7 above and for moose, deer, woodcock, ruffed grouse, waterfowl, and songbirds are proposed. Information will be used to select appropriate habitat management programs as well as for direct population management.

Counties

1. Certain counties in the State have begun their own system of county wildlife management programs similar to the county forest system. A county wildlife manager along the North Shore could be responsible for wildlife management programs on county lands and work with the other public agencies in the area.

Definitions

*** Wildlife Management Area - A legally defined area which is under the Division's jurisdiction and managed for one purpose, wildlife management.

Habitat improvement Area - An area managed for multiple or other purposes by another agency or division of DNR, where approval has been given to the Division of Fish and Wildlife to do habitat improvement. Deer wintering areas are the principle habitat improvement areas.

Deer Wintering Area - Area where deer congregate during winter because of better habitat conditions than found elsewhere, i.e., more food and cover.

Deer Yards - Smaller areas within a wintering area where deer congregate during most severe winter conditions. Generally wintering areas and deer yards are synonomous.

VII. POTENTIALS FOR FUTURE ACTION

Introduction

During the course of this study, a number of potential actions were identified which could enhance the recreational system along the North Shore. Because of a lack of time, these actions were not developed as formal recommendations, but are presented here as suggestions for possible future action. The potentials have been identified, but it remains for additional work to be done on each of these to refine the ideas and develop procedures for their implementation. These potential actions are divided into programs, studies and facilities.

A. Programs

1. Interpretation of Natural Systems

Introduction

The role of interpretive programs is to develop the user's awareness of natural and cultural processes. While the various methods utilized in the interpretive programs serve as catalysts, the actual interpretive process must occur in the mind of the user. Thus, the interpretive process can occur without the presence of any formal interpretive program. However, by presenting the natural and cultural processes of a region in an interesting, understandable manner, an interpretive program greatly encourages environmental and cultural appreciation on the part of the user.

Throughout this section, interpretation is divided into three stages: introductory, intermediate, and advanced. In practice, of course, there will be some overlap in these stages. Care should be taken, particularly at the introductory level, to avoid both highly technical material and an overly structured, classroom-like approach. Rather, interpretation should be approached as a relaxing, low pressure recreational activity. As users reach the more advanced stages of interpretation, they will develop an interest in the more detailed aspects of their environment, but this deepening of interest should develop naturally rather than result from external pressure.

a) Aids to Interpretation

In the introductory stage of interpretation, the objective is to stimulate the users' interest and to encourage them to further explore their environment. Three methods are generally used at this level.

1. Naturalist Program - By providing informal lectures and guided hikes, a well-designed naturalist program can acquaint users with their environment. While emphasis is placed on non-technical information, the naturalist should have enough knowledge and reference material to answer more technical questions, should they arise.

2. Printed Matter - Brochures and maps outlining points of interest and informing the user of scheduled naturalist program activities are valuable introductory tools.

3. Displays - Strategically located displays, especially in conjunction with printed matter, not only act as interpretive aids themselves, but also encourage users to explore other facets of the interpretive program.

As users move into the intermediate level of interpretation, they tend to become more independent. To accommodate this desire, the interpretive program should provide facilities which allow users the opportunity to explore on their own. Self-guided trails are particularly effective at this level. These trails include:

a. Pedestrian* (hiking, cross-country ski, and snowshoe)
b. Bicycle
c. Motorized Recrecreational Vehicle (snowmobile, etc.)
d. Automobile

* A trail rating system has been developed as a guide to the relative difficulty of pedestrian trails. This rating system is explained in detail in the Trails Section.

These self-guided trails, used in conjunction with more detailed printed matter, strategically placed informational signs and Audio-Visual equipment such as tape recorders, provide users a sense of independence while still providing relevant information.

Advanced

At the advanced level, the users have gained fairly extensive knowledge in their field of interest. Any interpretive aids used at this level tend to be of a highly detailed technical nature. Indeed, users may actually be generating interpretive aids by participating in organized study programs (high school, college, or post graduate) or simply by recording their own informed observations.

b) Existing Interpretive Aids

Introductory

a. Existing Naturalist Program - An existing naturalist program currently provides interpretive services in some of the state parks on the shore.

b. Existing Printed Matter - State park handouts with basic orientation maps are currently available, as are a few privately produced brochures.

c. Displays - There are no existing displays.

Intermediate

a. Trail Guides - A few guides for use on self-guided trails exist, but they are not widely distributed.

b. Miscellaneous Printed Matter - The best source of material on the North Shore appears to be the University of Minnesota-Duluth. Several bibliographies exist, the most extensive compiled by Janet Green of UMD.

c. Audio-Visual Materials - While very little audio-visual material on the North Shore exists, existing research studies could provide the base data for the development of materials on geology, soils, and historical/cultural aspects of the region. Base data is needed for the development of audio-visual material in vegetation, wildlife, microclimate and other natural phenomena.

Advanced

a. Scientific and Natural Areas - Scientific and Natural Areas are established to protect rare and delicate natural phenomena and to provide for the study of these phenomena in a relatively undisturbed condition. Currently, there are no Scientific and Natural Areas on the North Shore. There are, however, a number of potential sites. These sites, their locations and their special features are listed on a table at the end of this section.

b. Educational Programs Within Preserved Areas (Parks, Forests, Etc.) - While Scientific and Natural Areas provide an opportunity for the academic community to pursue research, some slightly less restrictive programs are also needed. Facilities such as the Isabella Learning Center enable schools and other groups to provide an intensive nature study program with the emphasis on independent study.

c) Recommendations

Introductory Level

a. There is a need for more interpretive programs, both in state parks and on the North Shore in general. It is recommended that the existing programs be expanded to include more state parks as well as other publicly owned lands. In addition, an effort should be made to keep the private sector informed concerning the availability and scheduling of these programs. A newsletter to resort owners, schools and other interested parties would be of benefit for this purpose.

b. More printed matter should be developed and made available at strategic points on the shore. This material could include both brochures to aid self-guided interpretive exploration and information on available programs and facilities. A more comprehensive guidebook to the North Shore, similar to Fisher's Maps of the Quetico-Superior Canoe Country, could also be developed for sale by parks, private vendors and the state's Document Section.

c. Interpretive displays illustrating natural processes such as the geological formation of the North Shore could be developed for use at Department of Transportation Class II rest areas, state parks, resorts and service nodes. These displays, particularly when used in conjunction with informational brochures, can arouse the interest of the casual observer and encourage further participation in the interpretive program.

Intermediate Level

a. In order to eliminate duplication of effort and funding, a committee with representatives of local, state and federal government, as well as private groups, should coordinate the development of a regional interpretive program.

b. In cooperation with this committee, the Department of Natural Resources Regional Interpretive Staff should develop basic interpretive packages for state owned lands which will compliment federal, local and private facilities.

c. A series of trail guides should be developed to enable users to explore on their own while still having the benefit of readily available reference material. Trail signage would also be of benefit by providing information concerning specific points of interest on a trail. Some trails, however, should be left unsigned to accommodate the user who is seeking a more natural experience.

d. Interpretive trails should be accessible to all users wherever this is possible without undue alteration of the landscape. At the same time, trails should provide a challenge to the user. To accomplish these goals a trail rating system has been developed to assist the user in determining a trail's difficulty. By utilizing this system, a user could select challenging trails while avoiding trails that are beyond their capabilities. This trail rating system as well as other experimental techniques (surface treatments, etc.) should be tested on state owned land and the results should be made available

to the private sector to assist resort owners in developing complimentary facilities. In keeping with their recreation cluster concept, resort owners could greatly enhance the attractiveness of their resorts by linking them to the state trail system.

e. Because there is a demonstrated demand and because only minimal capital expenditures would be required, an interpretive program should be developed for Cascade River State Parks immediately. In addition, as general development occurs at Baptism River and Judge C.R. Magney State Parks, interpretive programs should be developed for these parks.

f. An official clearinghouse should be established for all projects, studies and other data pertaining to the North Shore. At this time, the most logical location for this clearinghouse appears to be the Lake Superior Basin Study Center at the University of Minnesota-Duluth. A branch facility should also be centrally located on the North Shore, possibly at Temperance River, Baptism River, or through a cooperative agreement with the Tofte School System. In conjunction with this facility, an audio-visual library should be developed and made available, on a lending basis, to private resort owners, schools and other interested groups. These materials would be used in the park interpretive programs as well. An interpretive coordinator should be utilized at the Temperance River facility, not only to coordinate various activities within State parks, but also to syncronize the audio-visual materials being used by resort owners with the programs currently being offered in the parks. For example, a film on area wildlife shown in the evening would complement a wildlife hike offered the following day at a nearby state park.

g. As an extension of the "multiple resource use" and "recreation cluster" concepts, interpretive trails could be extended onto federal and state forest land. These trails could link several recreation areas and would allow many private developments to link into the system. Cooperative agreements between the various managing agencies, defining limitations and responsibilities, would be necessary before these trails could be developed.

h. Where base data is lacking for the development of interpretive programs, studies should be designed and funded to collect this data. A geological study by John Green and his associates, a soils study by the Soil Conservation Service, and an historical/cultural study by John Fritzen provide base data in these fields, but data is needed concerning vegetation, microclimate, and other aspects of the North Shore.

Species Richness Experimental Program

An area of the North Shore with an existing high degree of diversity (several large blocks of different ecological communities relatively close to one another) has been located. This area includes T62N, R2E Sec. 36, and T62N, R3E Secs. 31 and 32 and is located just north and east of Kodonce River Park above Highway 61. A variety of plant communities lie in relative close proximity to one another. These communities include lowland brushy areas, northern hardwoods, conifer upland brush, aspen, and birch.

It is recommended that a management program utilizing logging and prescribed burning be initiated to enhance the age diversity of the various stands. Management blocks should be large enough to significantly affect the continuity of the stand. If the wildlife species composition is to be significantly altered, habitat must be changed over large areas. Present environmental considerations generally limit the size of a clearcut in the Superior National Forest to 50 acres unless justifying arguments are presented.

The purpose of this research proposal will be to determine the wildlife species component of each stand type, verify the species richness matrix on the basis of this information and monitor the long range changes in population composition and density as a result of the habitat manipulation program.

The project will involve the establishment of a series of experimental control plots in each of the stand types. Coordination with wildlife specialists from the Superior National Forest will eliminate any possible repetition or duplication of effort. In some cases, their data may be applicable to this project.

Intensive data on wildlife species densities and composition should be gathered for five years prior to any manipulation for the entire study area. Following the initial period, population densities need to be determined for two consecutive years out of every five years. Species composition data only is needed for the other three years. Habitat management may begin after the initial five year inventory period and shall continue as needed.

The initial inventory phase should also measure plant community structure to determine species composition and density including height of the various strata.

Wildlife use should be related to the different height levels. Vegetative changes as a result of management should also be monitored through stand maturity and subsequent reharvest.

Results of similar studies should be sought out prior to implementation of this project and only those stands where data deficiencies exist in the overall objectives of this project should be studied in detail.

Wildlife Interpretation

A previous section mentioned that different plant communities have different species of wildlife associated with them. An ecological community/species richness matrix has been developed for the resident (both seasonal and permanent) wildlife of Minnesota. Each species has been assigned to one or more of the 31 different ecological communities occurring within the state according to its habitat preferences.

The matrix allows interested persons to determine what types of wildlife they could expect to see in any one of the ecological communities of the North Shore.

Interpretive naturalists may also use this matrix as a familiarization tool upon arriving in a new area which they are unfamiliar with.

The totals at the end of the chart indicate the species richness (total number of wildlife species) of each community.

The list may also be used as a management guide. If certain ecological communities are present but certain associated wildlife species are not, more detailed wildlife studies may be required to determine what critical components are lacking if those desired species of wildlife are to be attracted.

When a given community is modified, this chart will permit resource managers to determine what changes will take place in wildlife species composition.

For example, converting an aspen stand to a pine grove would affect both total numbers and the kinds of species found.

Use of this matrix by wildlife managers, naturalists, foresters, park managers and recreators alike will give all a better understanding of the various dependencies and adaptabilities different wildlife species have.

This matrix is based on various literature source documents and has not been verified by exhaustive field testing. A previous section describes a project which will test the validity of this matrix, suggest changes and provide for some experimental opportunities to increase the species richness of an area.

Scientific and Natural Areas

A system of Scientific and Natural Areas should be established on the North Shore to protect the rare resources of the region and to provide for their study. Programs involved in the establishment of such areas are the state Scientific and Natural Areas program, federal programs such as the U.S. Forest Service Program for Research of Natural Areas and the quasi-public programs established by the Nature Conservancy.

The Outdoor Recreation Act of 1975 states that the goal of the Scientific and Natural Area program is to "... protect and perpetuate in an undisturbed natural state those natural features which passes exceptional scientific or educational value."

The following classes of natural features are to be preserved or perpetuated:

(a) natural formations or features which significantly illustrate geological processes;

(b) significant fossil evidence of the development of life on earth;

(c) an undisturbed plant community maintaining itself under prevailing natural conditions typical of Minnesota;

(d) an ecological community significantly illustrating the process of succession and restoration to a natural condition following disruptive change;

(e) a habitat supporting a vanishing, rare, endangered or restricted species of plant or animal;

(f) a relict flora or fauna presisting from an earlier period; or

(g) a seasonal haven for concentrations of birds and animals, or a vantage point for observing concentrated populations, such as a constricted migration route.

The Outdoor Recreation Act further directs that each site classified under one of the above be designated for either research, education or public use. The Scientific and Natural Area program may also protect other areas of exceptional scientific and educational value not included in one of the seven classes.

Fifty-three sites were identified along the North Shore as having potential for Scientific and natural Area designation. These sites were identified through the Coastal Zone Management program private parties and DNR's Scientific and Natural Areas program.

Using a process which has been developed by DNR, forty-nine of these sites were evaluated to determine priorities for future study. This process can also be used to evaluate the individual sites and provide the basis for making a recommendation for each site.

Following is a listing of those sites nominated for consideration as Scientific and Natural Areas.

SITE NAME	LOCATION
Big Bay	T62N, R4E, S12
Big Nose	T55N, R11W, S25
Bud Hill	T55N, R9W, S17, 18, 19, 20
Blueberry Island	T62, R5E, S5
Carlton Peak	T59N, R4W, S20
Cascade River	T60N, R2W, S12:T61N, R2W, S35, 36
Devils Track*	T61N, R1E, S10, 11, 12
Deronda Bay	T63N, R5E, S25, 26, 36
Duluth Alder	T50N, R14W, S6
Eagle Mountain	T63N, R2W, S34, 35:T62N, R2W, S2, 3
Encampment Forest	T53N, R10W, S2, 3, 10, 11
Five Mile Rock*	T61N, R2E, S7
French River	T51N, R12W, S17, 18
Good Harbor (Thompsonite Beach)*	T61N, R1W, S27, 32 33, 34
Gooseberry*	T54N, R9W, S21, 22, 27, 28
Grand Marais Point*	T61N, R1E, S21, 27
Grand Portage*	T63N, R6E
Gull Island	T58N, R5W, S11, 12
Hawk Ridge	T51N, R13W, S31, 32: T50N, R13W, S5, 6
Heartbreak Ridge	T59N, R5W, S1, 12: T59N, R4W, S7
Hollow Rock	T63N, R6E, S30
Hovland Woods*	T62N, R4E, S1, 6
Kodonce Creek*	T61N, R2E, S2: T62N, R2E, S35
Kimball Creek*	T61N, R2E, S3, 10
Knife River*	T52N, R11W, S17, 18, 19: T52N, R12W, S24, 25, 36
Lighthouse Point	T52N, R10W, S6
Magney Site*	T49N, R15W, S33
Mable Lake	T56N, R10W, S32
Minnesota Point*	Duluth Harbor
Mineral Center	T63N, R5E, S3, 8, 9
Moose Mountain	T51N, R13W, S22, 27, 33, 34
Mt. Josephine/Teal Lake*	T63N, R6E, S2, 3: T64N, R6E, S27, 34, 35
Oatka Beach	T49W, R14W
Olsen Lake	T52N, R15W, S23
Pigeon High Falls*	T69N, R7E, S19
Palisade Head	T56N, R7W, S22
Paradise Beach*	T61N, R3E, S6: T62N, R3E, S32,33
Shovel Point	T59W, R7W, S3, 10, 14, 15
Shroeder Virgin Hardwoods	T59N, R5W, S33, 34
Spirit Lake*	T48N, R15W, S1, 2, 8, 9, 10, 11: T49N, R15W, S36
Split Rock	T55N, R8W, S32, 33
Stony Point*	T52N, R12W, S1, 2
Sucker River	T51N, R12W, S33: T52N, R12W, S3, 4, 10
Sugar Loaf*	T58N, R5W, S20, 29
Susie Islands*	T63N, R7E, S5, 6: T64N, R7E, S32, 33
Temperance River	T59N, R4W
Tofte	T59N, R4W, S28
Two Island River	T59N, R5W, S28
Weber Lake Bog	T58N, R11W, S36

*Denotes those elements occurring on the North Shore that have a high priority for consideration in the SNA program.

TOP PRIORITY SITES

The following are brief descriptions of the sites that had the highest ratings. More precise mapping of these areas, together with much more detailed site evaluations and final recommendations must await field inspection by SNA personnel before setting acquisition priorities.

Devils Track: rainbow trout, rare ferns and canyon habitats, porphyritic diabase;
Five Mile Rock: rhyolite flows, pebble beach, Herring gull breeding colony;
Good Harbor (Thompsonite beach): artic ducks, thompsonite;
Gooseberry River: rare artic plants (2), river canyon and associated habitats, gravel beach;
Grand Marais Point: arctic ducks, bogs, rare plants (Least Asphodel), columnar basalt, tombolo;
Grand Portage: bog forests, muskeg, gravel beach, spruce-fir, aspen-birch, northern hardwoods, north shore rock habitats;
Hovland Woods: northern hardwoods, spruce-fir, pines, alder swamp, bogs, black oak, stream habitats;
Kodonce Creek: rare ferns (2), rainbow trout;
Kimball Creek: northern hardwoods, spruce-fir, rainbow and brook trout spawning river, Kokanee salmon;
Knife River: gravel beach, river canyon and associated habitats, Herring gull breeding colony;
Mt. Josephine and Teal Lake: rock bald habitat, muskeg, bog lake (lakefill), rare plants (Poa scopulorum), glacial lake shore features, diabase dike;
Pigeon High Falls: diabase dike, pike (and others) run, tidal and seiche stream features and habitat floodplain habitat, floodplain terraces, stream and waterfall geomorphology, unusual fauna habitat;
Paradise Beach: sea ducks, Herring gull breeding colony, bogs, "boreal forest", beach ridge features, rock island habitat, pebble beach;
Stony Point: migrant birds, aquatic bird feeding area, rock habitat;
Sugar Loaf: clastic dikes, volcanic structures, tombolo;
Susie Islands: special plants (11), lava flows, archipelago, Rove slate Puckwunge sandstone, Herring gull breeding area, heron rookery;
Minnesota Point: wormwood heather plant community, brooding area;
Magney Site: hardwood community;
Spirit Lake: marsh habitat, shore birds, fish spawning area.

B. Studies

1. Vegetation Inventory

To more efficiently manage for wildlife, certain types of plant community information are necessary in addition to what is gathered during routine forest inventory procedures. The most labor/cost efficient method of gathering this data is to utilize existing forest inventory crews and methods, providing them with additional training so that the other types of data can be gathered simultaneously.

Recommendations

a. All forest types, non-merchantable as well as merchantable, should be checked.

b. All vegetative types in the canopy, not just merchantable species, need to be identified.

c. Predominant plant species and general height of the understory should be recorded for each stand.

d. Accurate boundaries of all vegetative types should be indicated.

e. Intensity of browsing on predominant shrubs is needed.

f. Brush density and abundance should be recorded as light, moderate, or heavy.

g. The pressure of unique plant assemblages geological formations, plant species should be recorded.

h. Old trails, railroad grades, and roads should be mapped. Knowledge of their location will be useful in laying out future trails or logging access roads.

The previous information is needed to not only effectively make habitat management decisions for wildlife, but to provide for the interpretation of the boreal forest ecosystem to area residents and visitors alike. Knowledge of the location of various stand types and ages can lead to the development of a program explaining the forest aging process, effects of fire and logging on vegetation, and the effects of different stand types and ages on wildfire population composition and density.

2. Microclimate Inventory

The State Climatologist, recommends a five year study utilizing local citizens or graduate students to record data at a minimum

of three locations on the North Shore and at three topographic elevations at each location. Data should be collected by DNR on:

snowfall
rainfall
barometric pressure
dew point/relative humidity
temperature
wind velocity, direction and intensity
other pertinent data

C. Facilities/Sites

Caribou Lake/Lake Agnes

State and federal lands acquired in exchange for forest lands could provide passive recreational activity areas to include trails for hiking, climbing, and cross-country skiing. There could be snowmobile links into the North Shore Trail and cross-country skiing links to Lutsen and Cascade, as well as inland boating activities. Privately owned seasonal homes and resorts would provide most of the lodging. Some intensive camping could be provided by the state in an appropriate area near the North Shore Trail but removed from private development, to relieve the heavy camping demand.

Appropriate Management

To be determined through cooperative effort with the private sector, local and state agencies.

Priorities

1. Establish a cooperative task force made up of the private sector, local and state agencies.

2. Determination by task force of the best way to provide a cooperative recreation system and most desirable ownership pattern.

3. Determination by task force as to what recreation facilities should be provided by private, local government and state government. Maintenance and operational problems should be considered.

Tettagouche

Development

Tettagouche is adjacent to the Baptism area and could provide the dispersed recreation space for tourists in a cooperative recreation management cluster. Resource data indicates that a

portion of the area could support some development. It is a good example of an area that could be developed as a recreation oriented cluster, as described in the public ownership section.

Significant acreage in public ownership exists in the Finland Forest which also could be used for dispersed recreation.

Appropriate Management

To be determined through cooperative effort with the private sector, local and state agencies.

Priorities

1. Establish a cooperative task force made up of representatives from private sector, local and state agencies on a statewide basis.

2. Determination by task force of the best way to provide a cooperative recreation system and most desirable ownership patterns.

3. Determination by task force as to what recreation facilities should be provided by private, local government and state government. Maintenance and operational problems should be considered.

Pigeon River - High Falls

Recommendation for the site:

Best Use of Site

1. Joint International Park
2. Federal Recreation Area

Appropriate Managing Agency

State or Federal

Appropriate Ownership

State or Federal (Presently, it is privately owned.)

Special Maintenance and Operation Issues for the Site

There is potential for major cooperation with the Province of Ontario since they are planning a provincial park on the Canadian side of the river. The Minnesota side of the river needs protection with a minimum acquisition of 100-200 acres. If Minnesota or the U.S.A. wants to develop a Peace Garden similar to the one on the North Dakota-Manitoba border, this potential exists. Any development in this area should be coordinated with the Grand Portage Indian Reservation so that there is no conflict with the tourist trade of the reservation.

APPENDIX 1

METHODOLOGY

A variety of procedures were used during the course of preparing this study. For convenience, the procedures may be broken down into three categories, namely, Inventory, Analysis and Recommendations.

INVENTORY

The initial stages of the study involved the collection of a wide range of information relating to recreational facilities and supporting uses, management programs, physical resources and cultural resources.

Information regarding recreational facilities and supporting uses was compiled from a variety of sources. One of the major sources of information was the Recreation Facilities Inventory maintained by DNR as part of the State Comprehensive Outdoor Recreation Plan (SCORP). This is a computerized listing of public and private recreation facilities and related uses such as resorts. This data was augmented by file data from the DOT concerning rest areas and from a variety of other published sources. This information was verified through field-checking and interviewing public employees and private facility operators in the Study Area. Facilities information was collected for parks, state and federal forests, trails, campgrounds, wildlife management areas, highway rest areas, roads, and harbors. In addition, information on private facilities such as resorts, campgrounds, motels, ski areas and restaurants was collected.

Information on various management programs of state and federal agencies was collected from both published sources and agency personnel. These included programs addressing parks, trails, forestry, fish and wildlife, shorelands and floodplains, public access, wildl and scenic rivers, highways, rest areas, waste collection and disposal and others.

Physical resource data was obtained from a wide variety of sources including the DNR, Soil Conservation Service, U.S. Forest Service, U.S. Geological Survey, the Coastal Zone Management Program and the Minnesota Land Management Information System. Data collected included soils, vegetation, geology, topography and hydrology.

Economic information was collected from standard published sources in order to determine the role of recreational tourism in the local economy. This data was supplemented by interviews with various local businessmen, including resort and motel operators.

In the case of many of the public facilities, on-site evaluations were made of current use, physical conditions and potentials for additional development.

In addition to the individual interviews mentioned above, a series of public meetings were held along the North Shore during the course of the study. At these meetings, local citizens had the opportunity to point

out problems, issues and opportunities and to raise questions about management programs and policies. These public meetings comprised one of the major sources of input to the study.

Information on patterns of recreational use was developed through interviews with recreational facility managers, and such published data as was available, including SCORP and reports from the Minnesota Marine Advisory Service. User data on a broad basis was difficult to find, however, and the results are often quite subjective.

ANALYSIS

Wherever possible, this study relied on analysis of data completed through other studies and reports. A listing of some of these studies is included in he Data Manual.

The major analytical thrust of this study used the idea of accessibility as the major evaluative tool in analyzing resource and facility locations and use. The basic assumption in this approach is, given the linear nature of the North Shore and the lack of a well-developed road network, access to recreational opportunities is of primary importance in the development of a recreation system. This system approach recognizes that each recreational unit functions in relationship to other facilities and does not exist in isolation. Consequently, considerations of accessibility became the primary determinant in analysis of the system with secondary constraints imposed by physical suitability and economic considerations.

In addition to the public meetings, interviews, on-site evaluations and use of published data, considerable use was made of the computer facilities and data files at the Minnesota Land Management Information System. Data manipulations were made using the Environmental Planning and Program Language developed by MLMIS. The Data Manual contains the results of many of these manipulations.

RECOMMENDATIONS

Based on the data analysis and public inputs, a series of concepts were developed to serve as a framework for the development of recommendations. These concepts are discussed in detail in Chapter V. When related to the various problems, issues and opportunities identified by the study, the concepts determined the nature of the recommendations which were made.

APPENDIX II
Supporting Data

During the course of this study, a large volume of data was collected concerning many aspects of the North Shore, including information on existing recreational and tourist-support facilities, the natural resource base and plans and programs of numerous agencies and organizations. This data forms the basis for the conclusions and recommendations in this study.

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