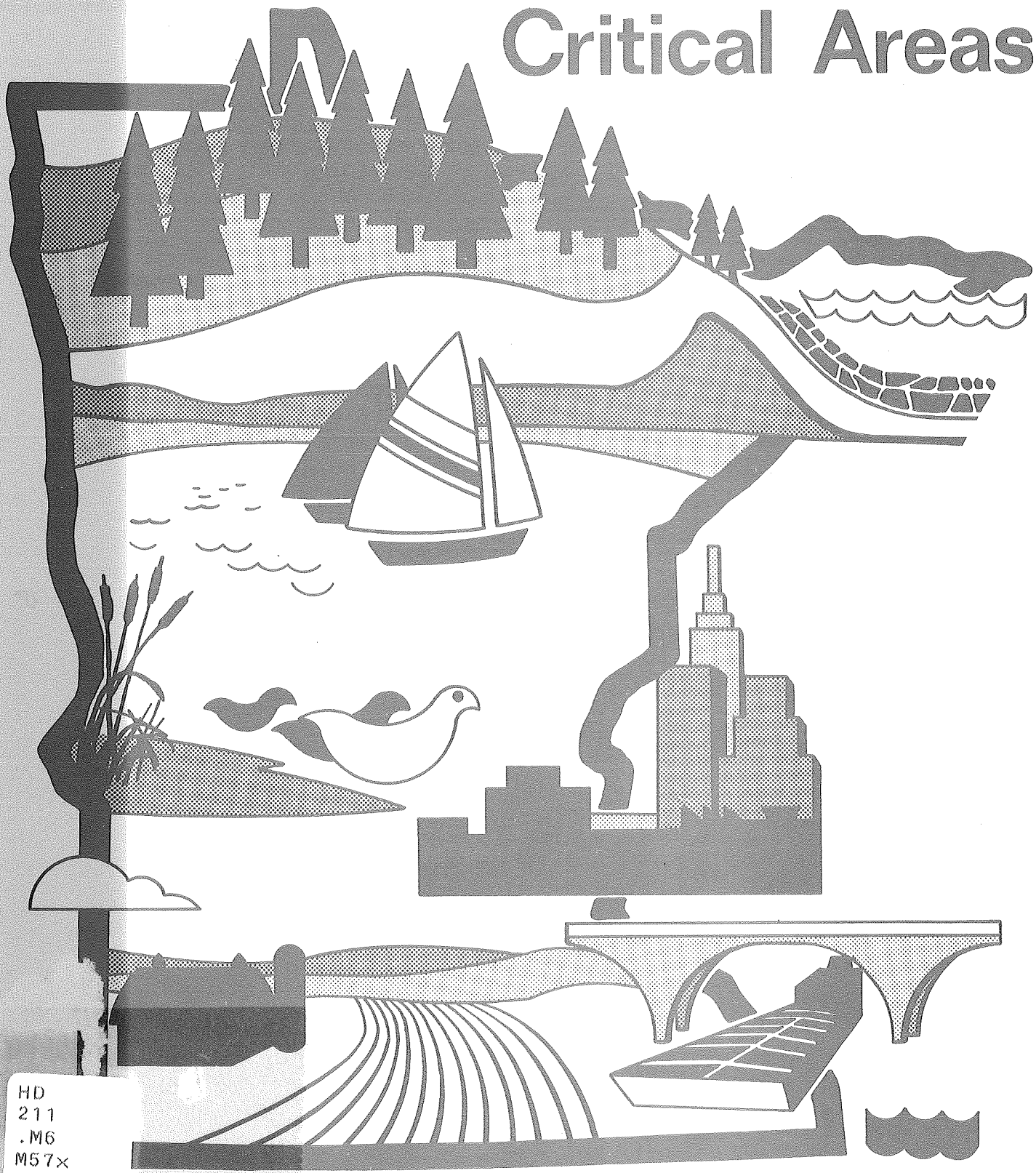
Inventory of Potential Critical Areas



ESOTA ENVIRONMENTAL QUALITY BOARD

1979

POTENTIAL CRITICAL AREAS

INVENTORY

JANUARY 1979

Minnesota Environmental Quality Board
Critical Areas Program
Room 100 Capitol Square Building
550 Cedar Street
St. Paul, Minnesota 55101

I SUMMARY

The Minnesota Critical Areas Act of 1973 directs the Environmental Quality Board (EQB) to identify areas of critical concern in the state. This report includes the results of this inventory, a description of the methodology used and the program for application of the inventory results.

In February, 1978, the EQB established a statewide committee to develop an inventory of potential critical areas called the Potential Critical Areas Nomination Committee. This statewide committee consisted of 167 members and had equal representation from each of the Development Regions of the State. Within each Development Region elected officials, land use planners, natural resources professionals and interested citizens were selected to serve on the committee by the EQB.

The inventory process began with a series of meetings at regional locations. Subsequent committee-staff contact was by mail or phone. The inventory process followed a modified nominal group technique. The inventory process consisted of five steps; initial meetings, nomination of potential critical areas by committee members, evaluation of the nominations, ranking of final potential critical areas, and presentation of the final report to the EQB.

A total of 125 areas were nominated as potential critical areas. During the evaluation step, all nominated areas were analyzed to determine their compatibility with the characteristics and criteria of a critical area. After evaluation of all nominations, thirty nine (39) areas which presented the best potential for meeting the criteria for a critical area were ranked. The ranking process placed all 39 areas into one of three general categories. Twelve (12) of these areas were ranked as most critical, twenty three (23) areas as critical, and four (4) areas as least critical. The twelve most critical areas are listed below in alphabetical order. Figure 3 on page 5 illustrates the location of each area and Appendix F includes a detailed discussion of each area.

1. Anoka Sand Plain in Anoka, Isanti and Chisago Counties
2. Cedar Creek Natural History Area in Anoka and Isanti Counties
3. Mille Lacs Lake Watershed in Aitkin, Crow Wing and Mille Lacs Counties
4. Minnesota River Big Stone Lake Outlet Archaeological District in Big Stone County
5. Minnesota River in Region 9
6. Minnesota River/Minneopa-Hanel Mounds in Blue Earth County
7. Minnesota River/Island-Kasota Prairie in Nicollet, Blue Earth and LeSueur Counties
8. Mississippi River Valley and Blufflands in Region 10
9. Lake Pepin in Wabasha County
10. Kellogg Weaver Dunes in Wabasha County
11. North Shore in Cook, Lake and St. Louis Counties
12. Pelican Lake in Wright County

The EQB has adopted the results of this inventory and has approved of the program for use of these results. The staff will now study in detail the twelve (12) most critical areas. These studies will identify alternative programs available to provide for proper resource management, recommend the most appropriate action, and determine whether the critical areas program could provide assistance in meeting this objective. The remaining twenty-seven (27) critical areas will be monitored to observe area development pressures.

The approval of this inventory by the EQB does not mean designation of any of these areas. Designation occurs only as a result of a lengthy public participation process and final designation by the Governor. Local initiative and a desire for a coordinated local, regional and state planning program is necessary for the successful use of the Critical Areas planning process.

TABLE OF CONTENTS

Page No.

I. Introduction.....1

II. Methodology.....3

Step 1. Initial Meetings.....5

Step 2. Nomination of Potential Critical Areas.....5

Step 3. Evaluation of the Nominated Areas.....6

Step 4. Ranking the Potential Critical Areas.....10

Step 5. Presentation of the Final Report to the EQB.....11

III. Results.....12

1. Most Critical Areas

2. Critical Areas

3. Least Critical Areas

IV. The Role of the EQB After Acceptance of the Report.....14

V. Appendix.....16

Appendix A. Directory of Committee Members

Appendix B. Definition of Major Government Development

Appendix C. Definition of Resources Having State and Regional Significance

Appendix D. Nomination Form

Appendix E. Ranking Form

Appendix F. Potential Critical Areas Descriptions

Appendix G. Evaluation Report Outline

LIST OF TABLES

Tables: Page No

Table 1. Potential Critical Area Nomination Committee Work Schedule.....3

Table 2. List of Nominated Areas and their Classification.....7

Figures:

Figure 1. Location of Committee Members.....4

Figure 2. Nominated Areas Map.....5

Figure 3. Potential Critical Areas Map.....13

Figure 4. Proposed Potential Critical Area Evaluation and Monitoring Process....15

I. INTRODUCTION

The Critical Areas Act of 1973 establishes the Critical Areas Program which is a planning program designed to coordinate the land management practices of all units of government within a given resource area. It is a planning tool to be used by local units of government, regions, and the state to provide clear plans for land use consistent with the constraints of the natural resources and the regional, state, or national public interest in the area. These plans and regulations are prepared by the local units of government, using general plan preparation guidelines, and with financial and technical assistance from the EQB.

The Minnesota Critical Areas Act of 1973 also directs the Environmental Quality Board (EQB) to identify areas of critical concern in the State.

The EQB first established a citizen committee in March of 1975 to develop a workable method to prepare an inventory of areas of critical concern. A second citizen committee was established in April of 1976 to identify state significant resources. This report documents the efforts of the Potential Critical Areas Nomination Committee, which included 167 members from throughout the State of Minnesota.

The first citizen committee, the Critical Areas Task Force, consisted of twelve representatives of state and federal agencies. This task force met regularly for about one year. At its beginning the task force favored a comprehensive, scientific approach to the identification of areas of critical concern. After all existing natural resources, historic and major government development data had been collected, it became apparent that much of the data was not comprehensive enough for use in the proposed comprehensive, scientific approach. The committee estimated that 5 to 10 years would be required to collect the data needed. After long hours of discussion, the task force members agreed that a comprehensive, scientific approach would be too time consuming and expensive. They concluded the inventory method should be simple and workable.

Looking at the two areas already designated as critical areas - the Lower St. Croix and Mississippi River through the Twin Cities areas - the members felt that the critical area process is a political process with public support and acceptance of the designation as a very important factor. Because of this, the task force members felt the EQB should involve the public in the inventory process. The task force recommended that the EQB use a public nomination process to inventory potential critical areas.

In April of 1976, the EQB accepted the recommendations of the task force and established a "Blue Ribbon Panel" to start the public nomination process. This panel consisted of eight active members from academic institutions. The panel was responsible for the development of a list of significant state resources. However, the results of this effort were incomplete and had several shortcomings. First, half of the 56 nominated areas were concentrated in the southwest and west regions of the state. This fact may be related to the panel composition as four out of the eight active members were from the southwestern and western region of Minnesota. Second, the panel consisted of too few people and was not a geographically-balanced group. Interestingly, among the panel members from the southwestern and western regions, there was a high consensus on the nominated areas in these regions. This indicated that the nomination process may succeed if a large number of people would participate and a geographically balanced group would be developed. Third, historical and archaeological resources were totally missing from the list. Fourth, the objective of the panel was not to inventory potential critical areas, but to compile areas having state significant resources.

To correct these drawbacks, the EQB established the Potential Critical Areas Nomination Committee. This committee was to have a larger membership and representation from each of the development regions of the state.

In August, 1977, the EQB began to solicit names of people to serve on this Potential Critical Area Nomination Committee. Requests were sent to legislators, county board chairmen, regional development commissions, colleges, and statewide interest groups. People were asked to suggest committee members with the following qualifications:

- an extensive knowledge of the natural, cultural, historic and aesthetic resources of the state or the region they represented;
- an understanding of the development patterns and land use problems in the state or their regions; and
- a high interest in participating in the inventory process.

In February, 1978, the statewide committee was formed. The objective of this committee was to develop an inventory of potential critical areas through a public nomination process. The committee consisted of 152 people and with 10 to 15 people from each of the development regions. In total, 22 committee members were elected officials, 37 were planners or zoning administrators, 45 were natural resources professionals, 14 were historians or archaeologists, and 34 citizens were appointed to the committee. A list of committee members by development region is included in Appendix A.

II. METHODOLOGY

The committee members were geographically dispersed throughout the state. (See Figure 1.) This made it difficult for the committee to meet as a group. Therefore, the EQB staff decided that the main communication between committee members and staff would be by mail and telephone. This process was thought to give all members a greater opportunity to participate in the committee work by eliminating lengthy and time consuming trips to the meetings, as well as afford each individual member an equal opportunity to express himself, something impossible with a large group in one room.

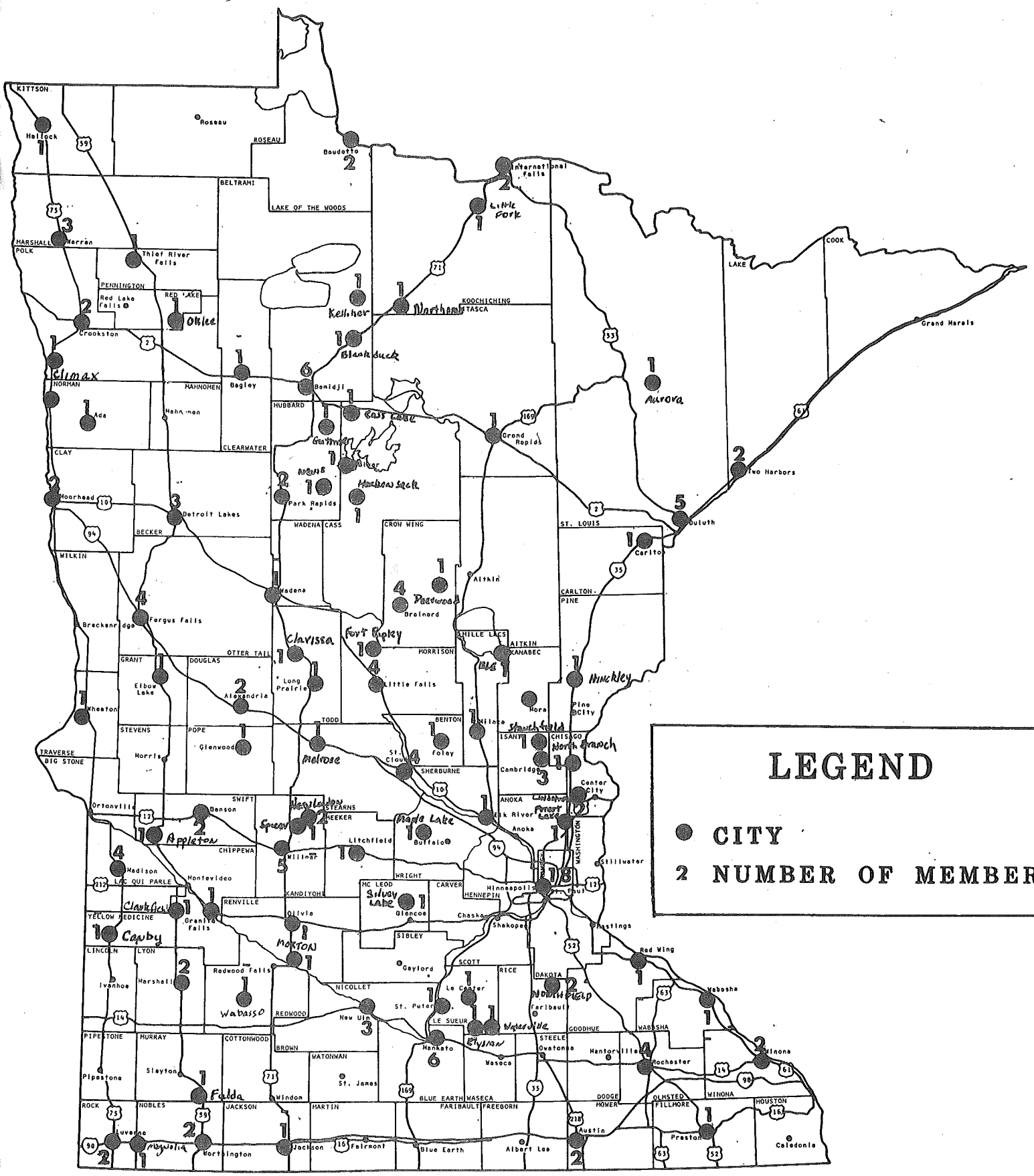
Before going into the detailed description of each step, a summary of the inventory procedures, the time table, the roles of staff and the committee,and the end products at each step are described in the following table.

TABLE I

Potential Critical Area Nomination Committee Work Schedule

		Time Table	Responsible Party	End Products
Step 1.	Initial meetings	End of Feb. to Mid-March	Staff	Explanation of inventory objective and purposes of Critical Areas Program.
Step 2.	Nomination of potential critical areas	Mid-March to Beginning of May	Committee Members	125 areas were nominated
Step 3.	Evaluation of nominated areas	Beginning of May to end of July	Staff & Committee Members	All areas placed into one of 4 categories: a.41 potential critical areas; b.37 areas for acquisition; c.31 areas for further study; d.16 areas for deletion.
Step 4.	Rank the potential critical areas	Beginning of Aug. to end of Oct.	Staff & Committee Members	a.12 most critical areas; b.23 critical areas; c.4 least critical areas; d.2 regionally significant areas.
Step 5.	Draft report	Beginning of Oct. to January	Staff	Draft C.A. Inventory Report
Step 6.	Review the report	Feb. to March	Committee Member	Final Inventory Report
Step 7.	Presentation of the final report to EQB	Late April	Staff	

LOCATION OF C.A.N.C. MEMBERS



PREPARED BY THE MINNESOTA STATE PLANNING AGENCY, 1976

SPA BASE MAP #2

Figure 1

Step 1. INITIAL MEETINGS AT REGIONAL LOCATIONS.

The inventory process was initiated by eight regional meetings held during February and March of 1978. The objectives of these meetings were to familiarize the members with Minnesota's Critical Area planning process, and to explain the inventory process. Approximately 90% of the appointed committee members attended one of these regional meetings.

Step 2. NOMINATION OF POTENTIAL CRITICAL AREAS.

The members were given one month to nominate critical areas. A nomination form was developed by staff for the member's use in nominating areas (See Appendix D). Committee members were allowed to nominate as many areas as they liked and were not limited to their development region. Most committee members nominated areas in their local area, but a few with a knowledge of the whole state did nominate areas outside their local area. Each committee member nominating an area was asked to provide the following information: the name of the area, location, description of the area's resources and management problems, and their assessment of whether the area had national, state, regional, or local public interest.

By the beginning of May, a total of 125 areas were nominated. All nominated areas are listed in Table 2 on page 7 and illustrated on the Nominated Areas map on the next page. Detailed information on each specific nominated area is not included in this report. Information on a specific nomination can be obtained by calling the Critical Areas staff.

In general, these nominated areas fell within five general resource groups:

1. Areas Containing Resources of Natural and Scientific Importance.
   This group included 58 areas. These areas include:
   (a) Unique wildlife habitats; such as prairie chicken booming grounds, colonial bird nesting sites, bald eagle nesting sites, breeding and feeding grounds for high concentration of migrating birds, wintering areas for deer;
   (b) Unique plant communities, such as high concentration of wild flowers protected by state law, and prime examples of Minnesota's original vegetation; and
   (c) Unique geological features such as landforms associated with glacial history and peatland.

   Many of these nominated areas have been studied by scientists and have extensive historical records. Significant impacts to many of these areas would result from a change in its current natural condition.

2. Areas Containing Resources of Historical and Cultural Importance.
   Twenty-seven sites were nominated for their historical and archaeological significance. In addition, a large number of buildings of architectural significance throughout the state were nominated. These sites are small in size, some of them include a group of buildings, while most include only one building.

3. Areas Impacted by or Impacting Major Governmental Developments. (For definition of major government development, see Appendix B.)
   There are about 17 areas in this category; they include:
   (a) Peripheral areas of national or state parks and designated national natural landmarks. These areas were nominated because the potential development at the periphery of these areas may have a negative impact on these parks and landmarks.

POTENTIAL CRITICAL AREAS INVENTORY

Nominated Area Map Legend

10-1 — Development region / Area number

— Regional Development Commission Boundaries

NOTE: Different shading patterns were used for ease of reading only

SCALE OF STATUTE MILES FOR MAP

7/5/78

Prepared By Bureau of Policy and Planning

Revised January 1977

(b) Areas within the state and county parks. These areas were nominated because many sensitive areas within the parks may be damaged by increasing recreational activities over the years. In addition, these parks lack a plan for the management of these sensitive areas.
(c) Areas impacted by the upgrading of a major highway. These areas were nominated because the upgrading of a major highway may generate substantial development in the area and have negative impacts on the areas' resources.

4. Areas of Potential Groundwater Pollution.
Two areas were nominated because of potential ground water pollution: the Anoka Sand Plain and the Sink Holes in Fillmore County. The Anoka Sand Plain is a major aquifer recharge area, as well as an area containing many significant geologic and biological features. The Sink Holes region is underlain by a fractured limestone formation where pollutants can travel great distances without being removed by ordinary filtration processes.

5. Large and Vaguely Defined Areas.
Several of the nominated areas were very large with an undefined resource management problem and a vaguely defined boundary such as all trout streams in S.E. Minnesota, major lake regions, and all counties surrounding the Twin Cities Metropolitan Area.

Step 3. EVALUATION AND CLASSIFICATION OF NOMINATED AREAS.

Because the nominated areas varied in size and resource characteristics, each nominated area was carefully examined to see whether application of the Critical Areas Program would be appropriate. After examination of all nominations, it was apparent that many nominations did not fit with the intended use of the Critical Areas Program. For example, many of the committee members nominated areas for the purpose of preserving the area in its present state. Since the purpose of the Critical Areas rogram is to plan for the proper use of an area through preparation of plans and regulations, it cannot insure "preservation" of an area. The only way to insure preservation of a unique habitat is to acquire land or at least the development rights.

After examination of all nominations, the Critical Areas staff determined that all areas would fit into one of four classes: potential critical areas, areas suited for acquisition, areas needing further study, and areas to be deleted from the process. After initial staff classification of each area, the committee reviewed and commented on the proposed classifications. Several areas were changed based upon committee comment and the submission of additional information. Only those areas classified as Potential Critical Areas would proceed to the ranking phase of the inventory process.

This step was also designed to evaluate the significance of each nomination i.e. national, state, regional, or local public interest. This evaluation was not needed, however, when staff found that, with the exception of two regionally significant areas, the thirty-nine final potential critical areas had clear state significance.

The results of this classification process are shown in Table 2 on page 7. The four classes are discussed in more detail below.

1. Potential Critical Areas.
Areas in this category have existing or potential land and resource use conflicts. These conflicts have a potential of being resolved through a coordinated land use planning process which provides for orderly development and balanced resource use. Most of these areas are impacted by major governmental development and are facing increasing development pressures. Areas within this category were felt to fit the intended use of the Critical Area Program.

TABLE 2

LIST OF NOMINATED AREAS AND THEIR CLASSIFICATION

REGION	MAP #	NOMINATED AREAS	TYPE OF RESOURCE	CLASSIFICATION
1	1-1	Norman County Prairie Area	original prairie	2
	1-2	Polk County Prairie Region	original prairie	2
	1-3	Roseau-Marshall Copper-Nickel Area	peatland Cu-Ni deposits	3
	1-4	Roseau Co. Peatland	bog close to Roseau Wildlife Area	3
	1-5	Marshall & Lake of the Woods County Peatland	bog close to Agassiz and Thief Lake Wildlife Area	3
	1-6	Pembia Trail Crossing on the Middle River	historic and scenic site	1
not mapped	1-7	The Conservation Lands of Marshall & Roseau	wildlife habitat	3
	1-8	Agassiz Dunes in Norman County	prairie-forest transition area, interesting land forms	2
	1-9	Frenchman's Bluff in Norman County	dry-grass prairie	2
2	2-1	LaSalle Creek Tunnel Valley in Clearwater County	scenic river valley	3
	2-2	Turtle River Heron Rookery in Beltrami County		3
	2-3	Hines Territory BD 17--Eagle Nests in Beltrami County	endangered species	4
	2-4	Upper Red Lake Peatland Koochiching and Beltrami Counties	unique extensive peatland and designated natural landmark	1
	2-5	Wetland in Beltrami County	wildlife habitat	4
	2-6	Pine and Curry's Island in Lake of the Woods County	sand barrier beach	3
	2-7	Stony Creek--Sand Point Bay Area in Northwest Angle Lake of the Woods County	natural area	3
	2-8	Iron Springs Bog	unique floral community	3
	2-9	Fishhook Lake in Hubbard County	lakeshore development problem	3
	2-10	Badora Bogs in Hubbard County	peat bog	3
	2-11	Fringe Area of Itasca State Park in Clearwater, Hubbard and Becker Counties	fringe of state park	1
	2-12	Rabideau Lake CCC Campsite and Buildings in Beltrami County	historic site	4
3	3-1	North Shore Lake Superior	interesting land forms, fish and timber management areas, scientific and natural areas, significant cultural and recreational areas, etc.	1
	3-2	Minnesota Point	natural barrier beach and migratory bird area	1
	3-3	Itasca County Upland Hardwood	good example of upland hardwood in the region	1
	3-4	Sherry Lake Area in Itasca County	virgin cedarstand	3
	3-5	Golden Anniversary Forest in Itasca County	hardwoods unique to region	3
	3-6	Fringe Area of Boundary Waters Canoe Area	fringe area of the national wilderness area	1
	3-7	The Fringe of Voyageur's National Park	fringe of state park	1
	3-8	Lake Agassiz Peatland in Koochiching County	unique bog; designated national natural landmark	1
	3-9	Upper Tamarack River in Koochiching County	unique bog	3
	3-10	Pine Island in Koochiching County	unique bog	3
	3-11	Sand Lake Bog in Lake County	unique bog	3
	3-12	Lake Vermillion Area in St. Louis County	scenic and recreational area	1
	3-13	Mille Lacs Lake Watershed in Mille Lacs County, Aitkin County & Crow Wing County	recreational area	1
	3-14	White Oak Point in Itasca County	archaeological site	2
	3-15	Wakemap Village--Ojibway Burial Ground in St. Louis County	archaeological site	2
	3-16	Upper Red Lake Peatland	same as 2-4	2
not mapped	3-17	Finnish Farmstead in St. Louis Co.	historic site	4
not mapped	3-18	Municipal Sewage Treatment Plant in St. Louis County	architectural site	4
not mapped	3-19	1930's Residential Architecture in St. Louis County	architectural site	3
not mapped	3-20	Architecture in Cloquet, St. Louis County	architectural site	3
4	4-1	Prairies in Clay County	prairie chicken booming ground	?
	4-2	Prairies in Clay County	prairie chicken booming ground	2
	4-3	Prairies in Wilkin County	prairie chicken booming ground	2
	4-4	Lake Johanna Rookery in Pope County	shore bird nesting sites	3
	4-5	Straight River in Becker County	scenic river area and German Brown Trout habitat	3
	4-6	Lake District of Detoit Lakes, Becker Co.	scenic and recreational areas	3
	4-7	Otter Tail River in Ottertail County	recreational, scenic and archaeological areas	1
	4-8	Lake District of Alexandria	recreation and scenic area	3

TABLE 2 (Continued)

REGION	MAP #	NOMINATED AREAS	TYPE OF RESOURCE	CLASSIFICATION
5	5-1	Swan River Area in Morrison County	scenic and natural area at confluence with Mississippi	1
	5-2	Bungey Bay in Cass County	Heron Rookery	3
	5-3	Pelican Island in Cass County	Bald Eagle Nesting Area--privately owned	2
5	5-4	Bear Island in Cass County	Bald Eagle Nesting Area--publicly owned	4
	5-5	Leader Area in Cass County	prairie chicken booming ground	2
	5-6	Nokasippi Lake Area in Crow Wing County	natural and wildlife areas	4
	5-7	Mille Lacs Watershed in Crow Wing County, Mille Lacs County, Aitkin County	same as 3-13	1
	5-8	Lake Shore in Crow Wing County	prime waterfront recreation	3
	5-9	Hackensack Lake District in Cass County	prime waterfront recreation	3
	5-10	Steamboat Bridge in Cass County	historic site	4
	5-11	Two Rivers Mill in Morrison County	historic site	2
6E		Minnesota River from Ortonville to Ft. Snelling	same as 9-1	1
	6E-1	Minnesota River Valley, Upper Sioux Agency in Yellow Medicine and Renville Counties	scenic, natural, historic area	1
	6E-2	Minnesota River Valley--No. 6 Bridge to No. 7 Bridge in Redwood & Renville Counties	scenic and natural area	1
	6E-3	Minnesota River Valley, Cedar Rock Wildlife Area and Camp Pope Historic Site in Redwood and Renville Counties	scenic & historic sites same as 8-2	1
	6E-4	Minnesota River Valley, Lower Sioux Agency in Redwood and Renville Counties	scenic, natural and historic areas	1
	6E-5	Minnesota River Valley, Cedar Mountain Area in Redwood and Renville Counties	scenic and natural area	1
	6E-6	Lady Slipper Area in Kandiyohi County	unique floral community	2
	6E-7	Wagonga Woods in Kandiyohi County	unique hardwood stand	2
	6E-8	Monongalia Heron Rookery in Kandiyohi Co.	nesting site	2
	6E-9	Monson Lake Marsh Area in Kandiyohi Co.	waterflow habitat	2
	6E-10	Long Lake Island in Kandiyohi County	nesting site	2
	6E-11	Timber Lake Area in Kandiyohi County	scenic and wildlife area	2
	6E-12	Canoe Portage Area in Sibley State Park Kandiyohi County	recreation area	2
	6E-13	Hard Maple Stand Area in Sibley State Park Kandiyohi County	unique hardwood stand	2
	6E-14	Back Pack Area in Sibley State Park	recreation area	2
not mapped	6E-15	Prairie Architecture in McLeod and Renville Counties	architecture sites	3
not mapped	6E-16	The Urban-Rural Fringe of the Twin Cities in McLeod County	land use problems	4
6W		Minnesota River from Ortonville to Ft. Snelling	same as 9-1	1
	6W-1	Minnesota River, Yellowbank River Tributary to Kibler Lake in Lac Qui Parle Co.	natural,scenic, historic and scientific areas	1
	6W-2	Pin Cushion Cactus Habitat in Lac Qui Parle County	unique vegetation	2
	6W-3	Minnesota River, Marsh Lake and Pomme de Terre River in Lac Qui Parle Co. Big Stone and Swift Counties	natural, historic, scenic and scientific areas	1
	6W-4	Glacial River Warren Channel	geologic, scientific and natural areas	1
	6W-5	Chippewa Prairie in Chippewa County	original prairie	4
	6W-6	Sleeping Bison Prairie in Swift County	original prairie	4
	6W-7	Minnesota River, Lac Qui Parle River Tributory System in Lac Qui Parle County and Chippewa County	unique natural area	1
	6W-8	Minnesota River, Lac Qui Parle River	same as 6W-7	1
	6W-9	Minnesota River, area around Carlton Lake Long Slough, Round Slough in Chippewa Co.	unique natural area	1
	6W-10	Minnesota River, Kettles, Prairie Pothole Remnant in Chippewa County	original prairie	2
	6W-11	Minnesota River, Highway 212 Bridge in Granite Falls to Minnesota Falls Dam in Yellow Medicine County and Chippewa County	geologic and ecologic study area	1
	6W-12	Minnesota River Valley, area around upper Sioux Agency including the State Park, Yellow Medicine River Valley in Yellow Medicine and Renville Counties.	historic and geologic importance	1
not mapped	6W-13	Big Stone Moraine Area in Big Stone County	prairie chicken booming area	2
	6W-14	Salt Lake in Lac Qui Parle County	unique bird life	1
	6W-15	Burrowing Owl Nest Site in Big Stone Co.	rare nest site	2
	6W-16	Artichoke Lake Archaeological Site in Big Stone County		2

TABLE 2 (Continued)

REGION	MAP #	NOMINATED AREAS	TYPE OF RESOURCE	CLASSIFICATION
	6W-17	Pomme Terre River Village and Mound Archaeological Site in Swift County		2
	6W-18	Lake Morre Archaeological Site in Swift Co.		2
	6W-19	Big Stone Lake--Outlet Archaeological District in Big Stone County		1
7E	7E-1	Grandy Pines in Isanti County	unique natural site	3
	7E-2	Mille Lacs Lake Watershed	same as 3-13	1
not mapped	7E-3	Entire Isanti and Chisago Counties	urban-rural fringe	4
	7E-4	Rum River Crevasse Filling in Mille Lacs County	unique glacial features, esker	2
	7E-5	Anoka Sand Plain in Anoka, Isanti and Chisago Counties	natural and aquifer recharge areas	1
	7E-6	Fringe of Cedar Creek Natural History Area in Anoka and Isanti Counties	education and scientific area designated national natural landmark	1
not mapped	7E-7	Upper and Lower St. Croix River in Pine, Chisago and Washington Counties	natural scenic and historic areas	4
7W	7W-1	Pelican Lake in Wright County	waterfowl habitat	1
	7W-2	Heims Mill Bridge in Stearns County	historic site	4
not mapped	7W-3	Entire Sherburne, Wright Counties		4
8		Minnesota River from Ortonville to Ft. Snelling	same as 9-1	1
	8-1	Minnesota River Valley, Redwood County Road No. 7 Bridge to No. 6 Bridge	same as 6E-2	1
	8-2	Minnesota River Valley, Cedar Rock Wildlife Management Area & Camp Pope Historic Site	same as 6E-3 scenic & historic sites	1
	8-3	Minnesota River, Lower Sioux Agency	same as 6E-4	
	8-4	Cedar Mountain Area in Minnesota River Valley	same as 6E-5	1
	8-5	Redwood River; Camden State Park in Lyon County	natural scenic area	2
	8-6	Old Gold Mine in Redwood County	historic site	2
	8-7	Old Brick Yard in Jackson County	historic site	3
	8-8	Great Oasis Archaeological Site in Murray County and Cottonwood County	archaeological site	2
	8-9	Mountain Lake County Park	bird sanctuary & architectural sites	4
	8-10	Lincoln Grove in Lyon County	scenic area	3
9	9-1	Minnesota River Valley, Ortonville to Ft. Snelling	natural and historic resources	1
	9-2	Swan Lake in Nicollet County	waterfowl habitat	1
	9-3	Minneopa - Hanel Mounds Area in Blue Earth County	historic area	1
	9-4	LeSueur River Bluff Area in Blue Earth County (Regionally significant)	scenic area	1
	9-5	"Island" - Kasota Prairie Area in Nicollet County, Blue Earth County & LeSueur County	scenic area with unique habitat	1
	9-6	Traverse des Sioux State Park in Nicollet County	recreation and historic resources	3
	9-7	Robard's Glen - portion between Green Hill Cemetery & Minnesota River in Nicollet Co.	scenic area	1
	9-8	Fox Lake Archaeological Site in Martin Co.	archaeological site	2
	9-10	Seha Sorghum Mill in Waseca County	historic site	2
	9-11	Klondike Hill Area in LeSueur County	unique geologic feature	2
10	10-1	Mississippi River Valley and Bluff in Goodhue, Wabasha, Winona & Houston Counties	scenic and natural areas	1
	10-2	Barn Bluff in Red Wing and Goodhue Counties	geologic feature	4
	10-3	Hiawatha Apple Blossom Scenic Drive in Winona County	scenic area	1
	10-4	Lake Pepin in Wabasha County	recreation and natural resources	1
	10-5	Kellog Weaver Dunes in Wabasha County	wildlife habitat	1
	10-6	Forestville State Park in Fillmore County	scenic and natural area	3
	10-7	Silver Lake in Olmsted County	Canada goose wintering grounds	4
	10-8	Falls Creek Park in Rice County	rare plants and animals	3
	10-9	Carlton College Arboretum in Rice County (Regionally significant)	recreationand natural area	1
	10-10	McKnight Prairie in Goodhue County	restored prairie	2
	10-11	Cannon River County Park in Rice County	recreational and natural area	3
not mapped	10-12	All trout streams of Southeastern Minnesota in Region 10	recreational and natural resource	3
	10-13	"Sink Holes" in Fillmore County	environmentally sensitive area, water pollution problem	1
	10-14	City of Lanesboro in Fillmore County	historic site	3
	10-15	Sweetwater Creek Headwater Area	same as 9-9	3
11	11-1	Anoka Sand Plain	same as 7E-15	1
	11-2	Fringe of Cedar Creek Natural History Area	same as 7E-6	1

2. Acquisition Areas.
Many nominations were made for areas highly sensitive to any alteration of their existing condition. Most of these areas contained resources of scientific, historical and cultural importance. To achieve the purpose identified by the nominator, it was concluded that acquisition would be necessary. Several existing state and local programs exist specifically to protect these areas. Since the Critical Areas Program cannot acquire and preserve land, the Critical Areas staff will transmit these nominated areas to the appropriate local and state agencies for their consideration.

3. Areas Needing Further Study.
Several nominations were made for very large areas such as lakeshores, all trout streams of a region, and counties at the fringe of the Twin Cities. Staff concluded that these areas need further study to more specifically define the problem areas before the Critical Areas Program could be used. Numerous historically and architecturally significant sites were also included in this category. These were also felt to be inappropriate for the program at this time. More study would have to be made to determine if and how the program could be used to address historically and architecturally significant sites.

4. Areas To Be Deleted.
Several nominated areas were deleted because proper planning has already occurred in the area or sufficient management tools are in force at the present time. The Critical Area Program would not give any additional assistance to the management of these areas.

Step 4. RANKING OF THE NOMINATED POTENTIAL CRITICAL AREAS.

The evaluation step narrowed the number of potential critical areas to thirty-nine having state significance and two having regional significance. For the definition of resources of state or regional importance, see Appendix C. The two areas having regional significance were not ranked; rather, these areas will be referred to the appropriate Regional Development Commission for their consideration. If more regional significant areas had been nominated, there would have been an effort to rank the significance of these regional areas within each of the development regions. Since there were only two regionally significant areas, there was not enough for comparison of significance.

Four factors were developed to rank the potential critical areas: existing population density, population growth rate, existing or potential projects and their impact on the area, and the significance of the resource. The population factors were used as an indicator of growth and development pressures on the areas.

1. The Population Density factor was determined by taking the 1975 U.S. Census estimated population data divided by the size of the area. Since the township is the basic unit for the population estimation, the whole township was included for calculation purposes if an area was totally or partially within that township. The population density for all nominated potential critical areas varied from 4 to 272 persons per square mile. A score was assigned by staff to each area based upon the MLMIS (Minnesota Land Management Information System) population density categories:

Population Density (Persons per sq. mi.)	Ranking Score
0-9	0
10-19	1
20-59	2
60 & over	3

2. The Population Growth Rate factor was based on 1975 U.S. Census Revenue Sharing data and 1970 seasonal population growth data. The 1970 U.S. Census provides the most current seasonal population data. The growth rate for each area was divided into 4 categories--population loss, 0.1-9.9%, 10-19.9%, and over 20%, and a ranking score assigned from 0 to 3 respectively.

3. Existing or Potential Project Impact on the Area. This is one of the most important factors influencing the areas ranking. Committee members were to look at existing or potential development pressures in each area and give a score which would indicate the relative impact of these developments. Staff assumed that committee members would have the knowledge of these existing or potential projects or could obtain the information. The ranking score of this factor is from 0 to 6.

4. Significance of the Area. Each member was asked to rank each area based on their opinion of the significance of each area in the State of Minnesota. The ranking score of this factor is from 1 to 3.

   In ranking process, the population density and the growth rate were already ranked by the staff. The existing or potential projects and the significance rating were made by the committee. The score was then totaled and divided by the total number of persons voting on each area to yield an average score. The ranking form is included in Appendix E.

Step 5. PRESENTING THE FINAL INVENTORY REPORT TO THE EQB.

The final step of the inventory process was to prepare the final inventory report. This inventory report documents the process followed and the results achieved. This final document has been revised to accomodate committee comments and has been presented to the EQB for approval. This inventory fulfills the directive of the Critical Areas Act and defines the proposed use and application of the results.

III. RESULTS

As mentioned in the previous section, the ranking step produced average scores for each potential critical area. These scores represented the committee's impression of the importance or urgency to provide for proper land use management in each potential critical area. This ranking procedure produced a score for each area, but the sole intention was to develop three general categories of potential critical areas; most critical, critical, and least critical. Staff chose cut-off points within the range of scores to define the three categories.

Average scores for the thirty-nine areas ranged from a low of 4.90 to a high of 12.04. The division points were established at 9 and 6. This division placed twelve areas in the most critical category, twenty-three in the critical category and four in the least critical category.

Approximately sixty committee members returned ranking forms. The number of people voting on each area ranged from 17 to 40 with an average of about 25 people voting on each area.

The potential critical areas are listed below by category. The area numbers correspond to those shown on the map on the next page. The categories are indicated on the map by use of shaded patterns. Each of the potential critical areas is discussed in more detail in Appendix F.

1. Most Critical Areas (scores from 9.0 to 12.04)
   1) Anoka Sand Plain in Anoka, Isanti and Chicago Counties (12.04)
   2) Pelican Lake in Wright County (11.32)
   3) Cedar Creek Natural History Area in Anoka and Isanti Counties (10.64)
   4) Mississippi River Valley in Region 10 (10.41)
   5) Lake Pepin in Wabasha County (9.25)
   6) Kellogg Weaver Dunes in Wabasha County (9.23)
   7) Minnesota River Big Stone Lake Outlet in Big Stone County (9.85)
   8) North Shore of Lake Superior in Cook, Lake and St. Louis Counties (9.43)
   9) Minnesota River in Region 9 (9.15)
   10) Minneopa-Hanel Mounds Area in Blue Earth County (9.59)
   11) Island-Kasota Prairie Area in Nicollet, Blue Earth & LeSueur Counties (9.72)
   12) Mille Lacs Lake Watershed in Aitkin, Crow Wing and Mille Lacs Counties (9.0)

2. Critical Areas (scores 6.23 to 8.90)
   1) Pembina Trail Crossing on the Middle River in Marshall County (6.59)
   2) Fringe of Itasca Park in Clearwater, Hubbard & Becker Counties (6.66)
   3) Minnesota Point in the City of Duluth (8.56)
   4) Otter Tail River in Otter Tail County (8.4)
   5) Swan River in Morrison County (6.71)
   6) Minnesota River in Region 6W (8.0)
   7) Minnesota River in Region 6E and 8 (7.86)
   8) Minnesota River/Yellow Bank River in LacQui Parle County (8.29)
   9) Marsh Lake and Pomme de Terre River Area in Big Stone and Swift Counties (6.29)
   10) a. Minnesota River/Lac Qui Parle Lake in Lac Qui Parle County (7.30)
       b. Minnesota River/Lac Qui Parle River & Tributories in Lac Qui Parle & Chippewa Counties (7.33)
   11) Carlton Lake, Long Slough, Rough Slough in Chippewa Counties (8.11)
   12) Minnesota River from Hwy. 212 Bridge Granite Falls to Minnesota Falls Dam in Redwood & Chippewa Counties (7.8)
   13) Upper Sioux Agency Area in Yellow Medicine and Renville Counties (6.23)

14) Minnesota River from Redwood County Road No. 7 to No. 6 Bridge in Redwood Co. (7.37)
15) Lower Sioux Agency Area in Redwood & Renville Counties (7.3)
16) Cedar Mountain Area in Redwood & Renville Counties (7.3)
17) Old Gold Mine in Redwood County (7.06)
18) "Sink Holes" in Fillmore County (7.05)
19) Hiawatha Apple Blossom Drive Area in Winona County (6.89)
20) Robard's Glen Area in Nicollet County (8.2)
21) Swan Lake in Nicollet County (7.95)
22) Lake Vermillion in St. Louis County (8.90)
23) Cedar Rock Wildlife Management Area and Camp Pope Historic Site in Redwood and Renville Counties (7.3)

3. Least Critical Areas (scores 4.9 to 5.9)
   1) Upper Red Lake Peatland in Koochiching and Beltrami Counties (5.7)
   2) Fringe Area of the BWCA (5.9)
   3) Lake Agassiz Peatland in Koochiching County (5.7)
   4) Fringe of Voyageurs National Park in Koochiching County (4.9)

In the process of analyzing the results of this inventory, it is obvious that Minnesota's water resources are of continuing high interest and value to Minnesotans. Nearly 70% of the areas listed above involve a wetland, lake, river or water recharge area. The primary concerns were for pollution and shoreland use as it effects the areas scenic qualities and general aesthetics.

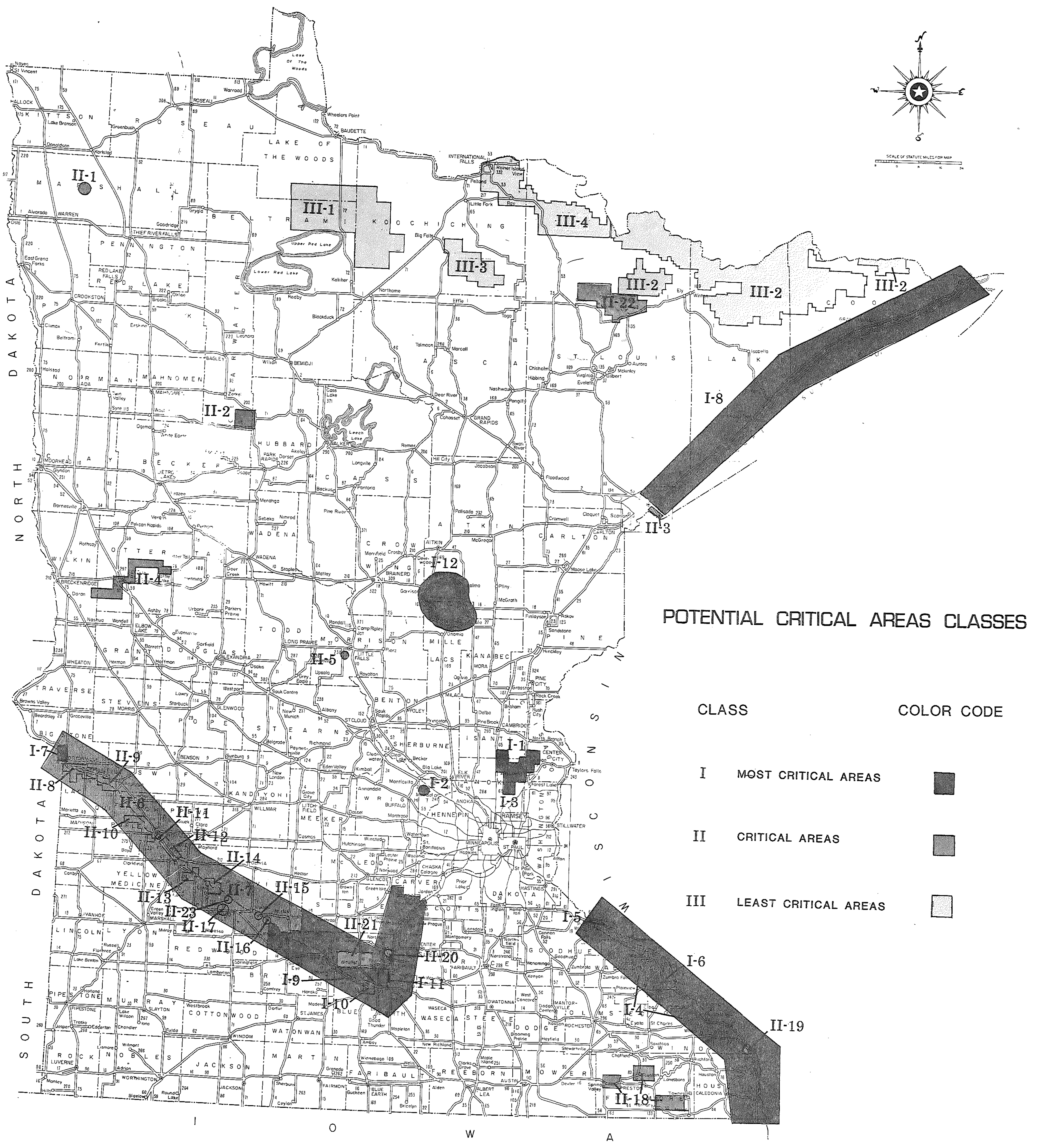
The final potential critical areas also indicate a significant interest in the states peatland resources and the use of fringe areas of state parks and other public lands.

Although many of the original nominations were determined to be inappropriate for the Critical Areas Program, it is significant to note the large interest in preservation of unique natural areas, wildlife habitat, and plant communities. This result is significant when considered with the numerous complaints received objecting to further public land acquisition.

Many original nominations were also not considered as potential critical areas because of the vague definition of the resource management problem and the area to be considered. Most notable of these would be the nomination of the lake districts of Minnesota around Alexandria, Detroit Lakes, Brainerd and Hakensack. These nominations indicate a general belief that these lake districts are still receiving heavy development pressures which are jeopardizing the very resource attracting the development. Another significant, but vague nomination, was the urban-rural fringe of the Twin Cities Metropolitan Area including McLeod, Wright, Sherburne, Isanti and Chicago Counties. Although undocumented, it is felt that much of the growth experienced in these counties is because of controls placed on growth and development inside the Metropolitan area.

The concerns expressed for the lake districts and the urban-rural fringe should be given specific attention through detailed study. If existing programs at the state, regional, or local level are ineffective or are having negative effects on these areas, these programs should be corrected to address the new or continuing problems.

Conspicuously absent from the inventory is a concern for agricultural lands, wetlands, prime forest resources, and mineral resources. The reason for the absence of these concerns is not known except that possibly the nomination committee members were not concerned about these resources or did not think the Critical Areas Program could address these concerns.


POTENTIAL CRITICAL AREAS CLASSES
CLASS
COLOR CODE
I MOST CRITICAL AREAS
II CRITICAL AREAS
III LEAST CRITICAL AREAS
SCALE OF STATUTE MILES FOR MAP
N
S
E
W
I-1
I-2
I-3
I-4
I-5
I-6
I-7
I-8
I-9
I-10
I-11
I-12
II-1
II-2
II-3
II-4
II-5
II-6
II-7
II-8
II-9
II-10
II-11
II-12
II-13
II-14
II-15
II-16
II-17
II-18
II-19
II-20
II-21
II-22
II-23
III-1
III-2
III-3
III-4
NORTH DAKOTA
SOUTH DAKOTA
IOWA
WISCONSIN
LAKE OF THE WOODS
MINNEAPOLIS
ST PAUL

IV. THE ROLE OF THE EQB AFTER ADOPTION OF THE FINAL INVENTORY REPORT

This report has been approved by the EQB and distributed to all units of government with a potential critical area within their jurisdiction to obtain comments and inform them of the completion of this product and its purpose. The Critical Areas staff is conducting detailed studies or evaluations of the areas identified as most critical by the committee. The evaluation report outline is included in Appendix G. The staff will work very closely with local and regional officials and citizen groups to get their input to this study and evaluation process.

These evaluations will be a vehicle by which all concerned can better define the resource management problems identified through the inventory process and define the alternative methods available to local units of government to resolve the problems. If the Critical Areas Program is found to be a usable tool for resolving problems and coordinating area planning and management, it will be listed as one of the alternatives. The report may also recommend a method for meeting the resource management objective. The evaluation report will then be used as a discussion vehicle to acquaint area residents and local officials with the management concern identified through the inventory. The report will also be used to initiate discussions as to the most appropriate tool to be used to solve the management problem.

The completion of this inventory and its adoption by the EQB does not mean an identified potential critical area will automatically become a designated critical area. Designation can only be made after a local unit of government, a Regional Development Commission or the EQB develops a formal recommendation for designation. After preparation of a recommendation, extensive public meetings and hearings are held to obtain all comments or concerns about the proposed program.

The areas which have been identified as critical and least critical will be monitored by the Critical Areas staff. The monitoring program will be tailored to each area but generally will analyze area development pressures and resource management issues. The staff will present to the EQB an annual status report on the monitored areas and make an assessment of any change in the area's status.

Although this inventory process was designed to produce a thorough inventory of potential critical areas throughout the state, there are potential applications of the Critical Areas planning process that have not been identified. This inventory process does not preclude the opportunity of an individual, group or local unit of government to bring an additional area to the program's attention. This can be done without formally requesting designation. All areas brought to the attention of the EQB or its staff will be evaluated prior to any further consideration of the area as a possible critical area.

The evaluation and monitoring process is shown in Figure 4.

PROPOSED POTENTIAL CRITICAL AREA EVALUATION AND MONITORING PROCESS

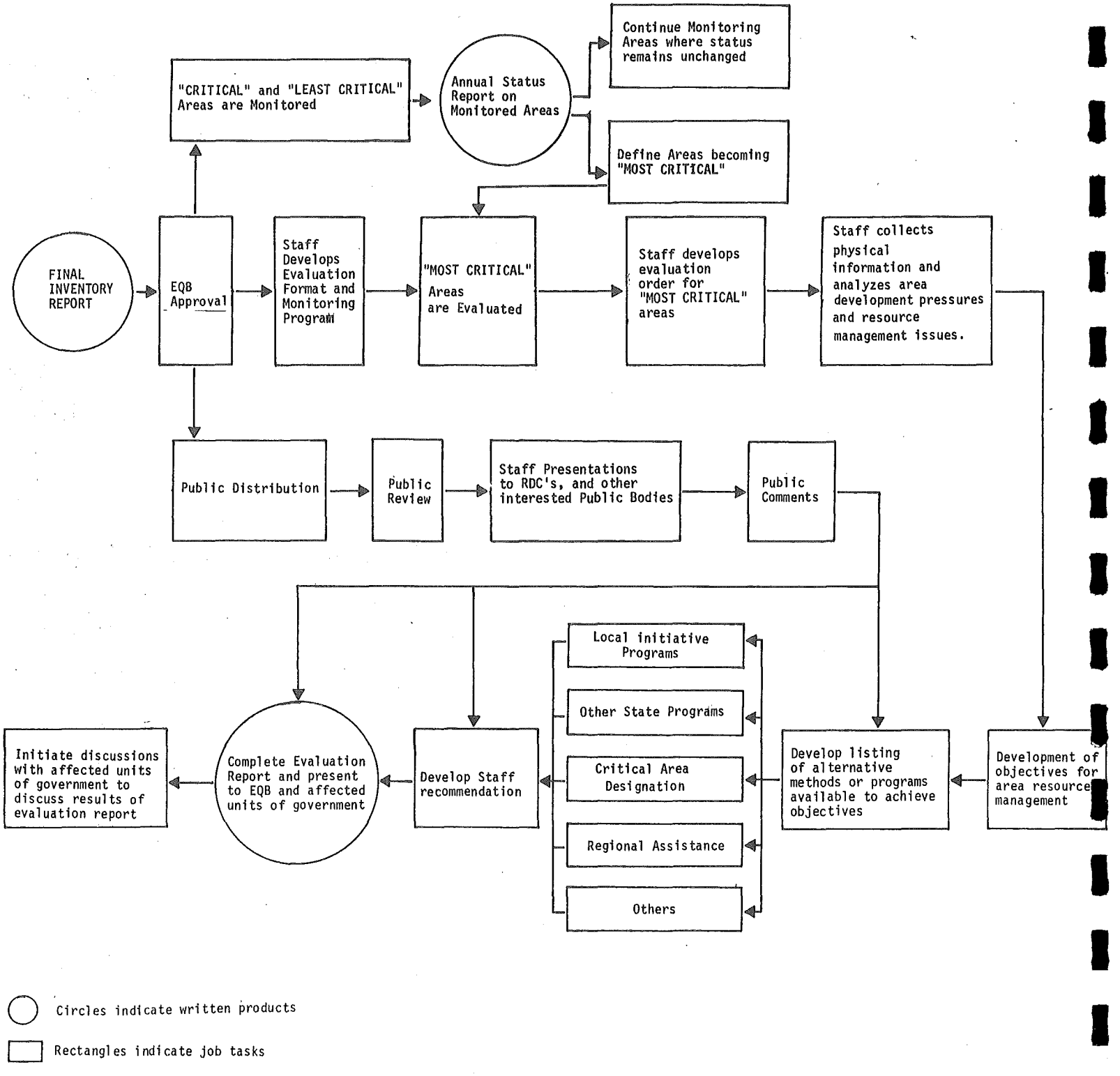


Figure 4

V APPENDIX

A. Directory of Committee Members

B. Definition of Major Government Developments

C. Definition of Resources Having State and Regional Significance

D. Nomination Form

E. Ranking Form

F. Potential Critical Areas

G. Evaluation Report Outline

A. Directory of Committee Members

CRITICAL AREAS DIRECTORY

REGION I

ANDERSON, Merle
Climax, MN
Background: Farmer

BENDRICKSON, Orren
Thief River Falls, MN
Background: Biologist, Thief River Falls Community College

BERNHARDSON, Wally
Shelly, MN
Background: Member of Norman Polk Watershed District Board

HJELLE, Dennis
Warren, MN
Background: County Board Chairman, Marshall County

JOHNSON, Randall
Crookston, MN
Background: RDC staff member

LYNNE, Gladwyn
Warren, MN
Background: Science teacher in Warren School system

OGAARD, Don H.
Ada, MN
Background: Served on numerous commissions and boards

PEMBLE, Richard
Moorhead, MN
Background: Biology professor

PERSON, Arnold
Oklee, MN
Background: Farmer, Member of Red Lake Watershed District Bd.

ROSENGREN, Keith
Hallock, MN
Background: Director, Kittson County Museum

SOLEM, Nancy (Mrs.)
Warren, MN
Background: Chairperson of the Historical Society

SVEDARSKY, Dan (Dr.)
Crookston, MN
Background: Biologist, Ecologist

REGION 2

ARNEBACK, Rick
Bemidji, MN
Background: Employed with District #2 DOT

COLE, Larry Dale
Bemidji, MN
Background: Engineer with Dept. of Health

GULLINGSRUD, Hope
Baudette, MN
Background: Lake of the Woods County Commissioner

HEDEEN, Florence
Park Rapids, MN
Background: Former member of Commission on Minnesota's Future

LICKE, Jake
Nevis, MN
Background: U.S. Forest Service, Retired

LOCKNER, Gary
Baudette, MN
Background: Lake of Woods County Planning and Zoning Administrator

MALTAIS, Jean Swedmark
Bemidji, MN
Background: Active in community affairs

MARSHALL, William
Grand Rapids, MN
Background: Itasca County Land Commissioner

MCCOLLUM, Donald A.
Bagley, MN
Background: Lumber yard salesman, Member of Clearwater County Board

MELCHOIR, Robert C.
Bemidji, MN
Background: Professor of Biology and Geology in Bemidji State University

MILLER, Cliff
Guthrie, MN
Background: Employed 40 yrs. with DNR; high interest in historic sites

MOCKFORD, Joe
Blackduck, MN
Background: Retired Area Forest Supervisor

PATNAUDE, William
Bemidji, MN
Background: Zoning Administrator, Beltrami County

REGION 2 (Cont.)

RENNEMO, Ingvar
Kelliher, MN
Background: Farmer, interested in community work

SCHLATTMAN, Don
Park Rapids, MN
Background: Science teacher with Park Rapids School system

WELLER, William W.
Bemidji, MN
Background: Director of Outdoor Recreation at Bemidji State University

REGION 3

ANDERSON, Bob
Two Harbors, MN
Background: Member of Economic & Environmental Council of Northeastern Minn.

BUCHANAN, James
Duluth, MN
Background: Active knowledgeable resource person from Region 3

COLLINS, Holly
Duluth, MN
Background: National Landmark Site Inventories

CURB, Orville
Northome, MN
Background: Owner of Northland Hardwood Lumber Co.; active in community affairs

GRANNES, Jan (Mrs.)
Carlton, MN
Background: Mayor of Carlton (present)

GREEN, John and Janet
Duluth, MN
Background: Extensive knowledge of northern part of the state

GRIM, Lee
International Falls, MN
Background: Chairman of MN Environmental Education Board

HOFSLAND, Pershing (Dr.)
Duluth, MN
Background: Original critical area inventory panel member

JONASSEN, Erling
Duluth, MN
Background: Pre-Design Engineer

LAMPPA, Marvin
Aurora, MN
Background: Heads Iron Range Interpretative Program; teaches college classes on NE Minn.

REGION 2

ARNEBACK, Rick
Bemidji, MN
Background: Employed with District #2 DOT

COLE, Larry Dale
Bemidji, MN
Background: Engineer with Dept. of Health

GULLINGSRUD, Hope
Baudette, MN
Background: Lake of the Woods County Commissioner

HEDEEN, Florence
Park Rapids, MN
Background: Former member of Commission on Minnesota's Future

LICKE, Jake
Nevis, MN
Background: U.S. Forest Service, Retired

LOCKNER, Gary
Baudette, MN
Background: Lake of Woods County Planning and Zoning Administrator

MALTAIS, Jean Swedmark
Bemidji, MN
Background: Active in community affairs

MARSHALL, William
Grand Rapids, MN
Background: Itasca County Land Commissioner

MCCOLLUM, Donald A.
Bagley, MN
Background: Lumber yard salesman, Member of Clearwater County Board

MELCHOIR, Robert C.
Bemidji, MN
Background: Professor of Biology and Geology in Bemidji State University

MILLER, Cliff
Guthrie, MN
Background: Employed 40 yrs. with DNR; high interest in historic sites

MOCKFORD, Joe
Blackduck, MN
Background: Retired Area Forest Supervisor

PATNAUDE, William
Bemidji, MN
Background: Zoning Administrator, Beltrami County

REGION 2 (Cont.)

RENNEMO, Ingvar
Kelliher, MN
Background: Farmer, interested in community work

SCHLATTMAN, Don
Park Rapids, MN
Background: Science teacher with Park Rapids School system

WELLER, William W.
Bemidji, MN
Background: Director of Outdoor Recreation at Bemidji State University

REGION 3

ANDERSON, Bob
Two Harbors, MN
Background: Member of Economic & Environmental Council of Northeastern Minn.

BUCHANAN, James
Duluth, MN
Background: Active knowledgeable resource person from Region 3

COLLINS, Holly
Duluth, MN
Background: National Landmark Site Inventories

CURB, Orville
Northome, MN
Background: Owner of Northland Hardwood Lumber Co.; active in community affairs

GRANNES, Jan (Mrs.)
Carlton, MN
Background: Mayor of Carlton (present)

GREEN, John and Janet
Duluth, MN
Background: Extensive knowledge of northern part of the state

GRIM, Lee
International Falls, MN
Background: Chairman of MN Environmental Education Board

HOFSLAND, Pershing (Dr.)
Duluth, MN
Background: Original critical area inventory panel member

JONASSEN, Erling
Duluth, MN
Background: Pre-Design Engineer

LAMPPA, Marvin
Aurora, MN
Background: Heads Iron Range Interpretative Program; teaches college classes on NE Minn.

REGION 3 (Cont.)

MATTSON, Lester
Two Harbors, MN
Background: Lake County Planning and Zoning Director

MCLINN, Ruth
International Falls, MN
Background: Employed as Koochiching County Zoning Administrator

PETERSON, Dale
Littleford, MN
Background: City Clerk of Littlefork, MN

REGION 4

BANKE, Bill
Alexandria, MN
Background: Farmer; served on local government

GOETZINGER, Bill
Elbow Lake, MN
Background:

HEGSETH, Theodore
Fergus Falls, MN
Background: Secretary West Otter Tail Soil & Water Conservation District

HOWE, Mike
Glenwood, MN
Background: Pope Co. Planning & Zoning Administrator since 1972; interested in CA

KRAGWINKLE, Glen
Alexandria, MN
Background: RC&D Project Committee - Soil Conservation Service

LEE, Malcolm
Fergus Falls, MN
Background: Land-Resource Administrator, Otter Tail County

NORDGREN, A. Hubert
Fergus Falls, MN
Background: Otter Tail County Commissioner

RICHMAN, Roger
Moorhead, MN
Background: Professor, Dept. of Geography-Geology, Moorhead State University

ROLFE, John
Detroit Lakes, MN
Background: Employed by DOT District 4

RUONA, Wayne
Detroit Lakes, MN
Background: Director of WESMIN RC&D Association

REGION 4 (Cont.)

SANFORD, Parnell E.
Detroit Lakes, MN
Background: On the Advisory Board of Pelican River Watershed District

TOWNSEND, Melvin C.
Fergus Falls, MN
Background: State Wetland Committee

VOLLMARS, Ellen
Wheaton, MN
Background: Teacher, background in Land Use

REGION 5

KAVANAUGH, Sherman
Brainerd, MN
Background: Resort development

GILSON, Joe
Ft. Ripley, MN
Background: SWCD RC&D, elected official, farmer

HARRINGTON, Fay
Hackensack, MN
Background: Land Commissioner, Cass County

HUMRICKHOUSE, Bruce
Brainerd, MN
Background: Aerial fire control

JOHNSON, Stanley
Cass Lake, MN
Background: Forester

KRAGWINKLE, Glen
Little Falls, MN
Background: Chamber of Commerce

KEMPF, Gregory
Wadena, MN
Background: Zoning Administrator, Wadena County

LAVOIE, Ray
Clarissa, MN
Background: Todd Co. Board Chairman

MATTIOLI, Amadeo
Walker, MN
Background: Retired Superintendent of Schools

REGION 2 (Cont.)

RENNEMO, Ingvar
Kelliher, MN
Background: Farmer, interested in community work

SCHLATTMAN, Don
Park Rapids, MN
Background: Science teacher with Park Rapids School system

WELLER, William W.
Bemidji, MN
Background: Director of Outdoor Recreation at Bemidji State University

REGION 3

ANDERSON, Bob
Two Harbors, MN
Background: Member of Economic & Environmental Council of Northeastern Minn.

BUCHANAN, James
Duluth, MN
Background: Active knowledgeable resource person from Region 3

COLLINS, Holly
Duluth, MN
Background: National Landmark Site Inventories

CURB, Orville
Northome, MN
Background: Owner of Northland Hardwood Lumber Co.; active in community affairs

GRANNES, Jan (Mrs.)
Carlton, MN
Background: Mayor of Carlton (present)

GREEN, John and Janet
Duluth, MN
Background: Extensive knowledge of northern part of the state

GRIM, Lee
International Falls, MN
Background: Chairman of MN Environmental Education Board

HOFSLAND, Pershing (Dr.)
Duluth, MN
Background: Original critical area inventory panel member

JONASSEN, Erling
Duluth, MN
Background: Pre-Design Engineer

LAMPPA, Marvin
Aurora, MN
Background: Heads Iron Range Interpretative Program; teaches college classes on NE Minn.

REGION 3 (Cont.)

MATTSON, Lester
Two Harbors, MN
Background: Lake County Planning and Zoning Director

MCLINN, Ruth
International Falls, MN
Background: Employed as Koochiching County Zoning Administrator

PETERSON, Dale
Littleford, MN
Background: City Clerk of Littlefork, MN

REGION 4

BANKE, Bill
Alexandria, MN
Background: Farmer; served on local government

GOETZINGER, Bill
Elbow Lake, MN
Background:

HEGSETH, Theodore
Fergus Falls, MN
Background: Secretary West Otter Tail Soil & Water Conservation District

HOWE, Mike
Glenwood, MN
Background: Pope Co. Planning & Zoning Administrator since 1972; interested in CA

KRAGWINKLE, Glen
Alexandria, MN
Background: RC&D Project Committee - Soil Conservation Service

LEE, Malcolm
Fergus Falls, MN
Background: Land-Resource Administrator, Otter Tail County

NORDGREN, A. Hubert
Fergus Falls, MN
Background: Otter Tail County Commissioner

RICHMAN, Roger
Moorhead, MN
Background: Professor, Dept. of Geography-Geology, Moorhead State University

ROLFE, John
Detroit Lakes, MN
Background: Employed by DOT District 4

RUONA, Wayne
Detroit Lakes, MN
Background: Director of WESMIN RC&D Association

REGION 4 (Cont.)

SANFORD, Parnell E.
Detroit Lakes, MN
Background: On the Advisory Board of Pelican River Watershed District

TOWNSEND, Melvin C.
Fergus Falls, MN
Background: State Wetland Committee

VOLLMARS, Ellen
Wheaton, MN
Background: Teacher, background in Land Use

REGION 5

KAVANAUGH, Sherman
Brainerd, MN
Background: Resort development

GILSON, Joe
Ft. Ripley, MN
Background: SWCD RC&D, elected official, farmer

HARRINGTON, Fay
Hackensack, MN
Background: Land Commissioner, Cass County

HUMRICKHOUSE, Bruce
Brainerd, MN
Background: Aerial fire control

JOHNSON, Stanley
Cass Lake, MN
Background: Forester

KRAGWINKLE, Glen
Little Falls, MN
Background: Chamber of Commerce

KEMPF, Gregory
Wadena, MN
Background: Zoning Administrator, Wadena County

LAVOIE, Ray
Clarissa, MN
Background: Todd Co. Board Chairman

MATTIOLI, Amadeo
Walker, MN
Background: Retired Superintendent of Schools

REGION 5 (Cont.)

MCKINNON, Lee
Little Falls, MN
Background: Planning and Zoning Administrator

PETROBORN, Walt
Brainerd, MN
Background: Retired Wildlife Management official

RUTGER, Jack
Deerwood, MN
Background: Resort owner

SCHULTZ, Ray
Long Prairie, MN
Background: Todd County Commissioner

SIEGEL, Bob
Little Falls, MN
Background: SWCD, Farmer, Planning Commissioner for Little Falls Township

WILSON, Steve
Little Falls, MN
Background: Soil Conservation Technician

WEISS, Mike
Brainerd, MN
Background: Employed by District 3 DOT

REGION 6E

AARVIG, Dean
Willmar, MN
Background: Chairman of Natural Resources Advisory Committee (Reg. 6)

BAKKE, Lloyd
New London, MN
Background: Biology Teacher at New London High School

BUSHEO, Harold
Morton, MN
Background: Farmer, County Planning Commission

CARLSTROM, Dick
Willmar, MN
Background: Staff person for Reg. 6E

CHALUPSKY, Howard
Wilver Lake, MN
Background: Clerk-Treasurer

DANIELSON, Gary
Willmar, MN
Background: Employed with DOT Dist. 8

REGION 6E (Cont.)

FERGUSON, William
Willmar, MN
Background: Mayor of Willmar

GERNES, Charles
New London, MN
Background: Manager of the New London Federal Fish Hatchery

LARSON, Earl
Willmar, MN
Background: Former Chairman of RDC

PETERSON, Dennis E.
Spicer, MN
Background: Farmer, County Planning Commissioner

ROSS, Roy J.
Litchfield, MN
Background: Clerk Treasurer of Litchfield

RUEBEL, Clyde
Olivia, MN
Background: Farmer, Planning Commissioner

THOMA, Ben
Willmar, MN
Background: Teacher, Willmar Community College

REGION 6W

BUER, Charles (Mrs.)
Canby, MN
Background: Interpretive Naturalist-Historian

EGRET, Sally
Ortonville, MN
Background: Mayor of Ortonville

ESTUM, Rick
Madison, MN
Background: Agricultural extension agent

GEHANT, George Jr.
Madison, MN
Background: Retired Agricultural Extension Agent

HAALAND, Dennis
Clarkfield, MN
Background: Teacher at Clarkfield High School

LENDE, Roy
Appleton, MN
Background: Staff person at Upper MN Valley RDC

REGION 6W (Cont.)

RADIO, William
Benson, MN
Background: City Manager

SCHLADWEILER, John
Madison, MN
Background: DNR Wildlife Manager

THOMPSON, John
Benson, MN
Background: Mayor of Benson, Teacher at Benson High School

VOLLER, Richard
Granite Falls, MN
Background: City Manager, Granite Falls

REGION 7E

DRUDE, Ron
Cambridge, MN
Background: Farmer

FOX, Bob
Mora, MN
Background: RDC staff

GRABENBAUER, Bob
Cambridge, MN
Background:

HABECK, Gloria
Isle, MN
Background: County Commissioner

HULT, Don
Forest Lake, MN
Background: Chisago County Surveyor

NORELIUS, Theodore
Lindstrom, MN
Background: Interested in historical preservation

PERSON, Harold
Cambridge, MN
Background: Zoning Administrator

PUNG, Joe
Stanchfield, MN
Background: Teacher, Co. Planning Commissioner

REGION 7E (Cont.)

REINEKE, Karen (Mrs.)
Milaca, MN
Background: Secretary of City Planning Commission

SELLMAN, Jerry
Lindstrom, MN
Background: Reporter for Chisago Co. Press

TEAGUE, Howard
Bemidji, MN
Background: Strong environmentalist

WHEELER, Larry
North Branch, MN
Background: Civil Engineer, Natural Resources Commissioner

REGION 7W

BERLIN, Karl
Foley, MN
Background: Mayor of Town of Foley; Principal of High School

GRETHER, Dave
St. Cloud, MN
Background: Geologist

LANE, Richard
St. Cloud, MN
Background: Historian

LUNDBERG, Clifford
Elk River, MN
Background: Attorney, Former Mayor of Elk River

MCALPINE, Paul
Maple Lake, MN
Background: Chairman of Wright County Board, RDC Commissioner

NIEHOFF, Elaine
Melrose, MN
Background: Director, District 740 School District

PECK, Dr. John
St. Cloud, MN
Background: Biologist

TIDEMAN, Philip
St. Cloud, MN
Background: Professor of Geography

REGION 8

BJERK, Irid O.
Luverne, MN
Background: Employed with Rock County Star Herald Newspaper

FLANIGAN, John
Magnolia, MN
Background: Rock County Planning Commissioner

HIRSCH, Frank
Wabasso, MN
Background: Redwood County Commissioner

HALGREN, Lee (Prof.)
Marshall, MN
Background: Original member of CA Inventory Panel

MCNEIL, Dennis
Luverne, MN
Background: Former chairman of the Luverne City Planning Commission

MIRANOWSKI, J.B.
Fulda, MN
Background: Chairman, Middle Des Moines Watershed District

OLSON, Gordon
Jackson, MN
Background: Planner from Jackson County

REEDE, Prof. Roger
Marshall, MN
Background: Member of original CA Inventory Panel

OSNESS, Richard
Worthington, MN
Background: City Councilman

HUDSON, Lou
Worthington, MN
Background: Reporter from Worthington Area

REGION 9

BERG, John
Mankato, MN
Background: Teacher, Mankato Public School System

FILTER, Larry
Mankato, MN
Background: Employed with DOT District 7

GERBIG, Bruce
New Ulm, MN
Background: Staff, Dept. of Natural Resources

REGION 9 (Cont.)

HRUSKA, James
Waterville, MN
Background: President of LeSueur County Historical Society

HRUSKA, Louis E.
Elysian, MN
Background: Board member of LeSueur Co. Historical Society

KELLETT, Clark
New Ulm, MN
Background: Retired Director of Brown County Welfare Dept.

MAHER, Barbara
Mankato, MN
Background: Active in many community organizations

NELSON, Maynard
New Ulm, MN
Background: Regional Administrator DNR Region IV

STEEN, Tyrone
St. Peter, MN
Background: Strong interest in MN River Valley

STEGER, Don
Mankato, MN
Background: Region 9 Planner

STONE, Terrence
Mankato, MN
Background: RDC Director

STRACHAN, Richard
Mankato, MN
Background: Sociology professor, Mankato State University

ZIMMERMAN, John
LeCenter, MN
Background: LeSueur County Zoning Administrator

REGION 10

ALDRICH, Prof. Brian
Frontenac, MN
Background: Professor of sociology, Winona State University

BUCHWALD, C. Edward
Northfield, MN
Background: Geologist, Carlton College

CHELL, John
Rochester, MN
Background: DNR Regional Hydrologist

REGION 10 (Cont.)

FREMLING, Dr. Calvin
Winona, MN
Background: Biologist, Winona State University

KLOBUCHER, Dick
Rochester, MN
Background: Employed by DOT District 6

LAUSON, Ella Marie
Preston, MN
Background:

MCGUINESS, Dan
Wabasha, MN
Background: Planning consultant

NELSON, Richard
Preston, MN
Background: Southeastern MN Regional Development Commissioner

RUBLE, Dick
Austin, MN
Background: Farmer, Town Board Supervisor, Board member of Turtle Lake Watershed

SOTH, Prof. Lauren
Northfield, MN
Background: Member of original CA Inventory Panel

STORY, Robert
Rochester, MN
Background: Regional Administrator DNR Region 5

WATSON, Roy
Rochester, MN
Background: Member of City Park Commission

WELCH, Dennis
Red Wing, MN
Background: Planner Director

REGION 11

ADFINSON, Scott
St. Paul, MN
Background: Archaeology

ALEXANDER, Calvin
Minneapolis, MN
Background: Geologist

BORCHERT, Dr. John
Minneapolis, MN
Background: Geography Dept., University of Minn.

REGION 11 (Cont.)

BRECKINRIDGE, Dr. Walter
Minneapolis, MN
Background: Member of original CA Inventory Panel

BURWELL, Robert W.
Wayzata, MN
Background: Chairman of the DNR Scientific & Natural Areas Advisory Committee

CARPENTER, Cy
St. Paul, MN
Background: President MN Farmers Union

DANA, Robert
Minneapolis, MN
Background: Native Conservancy Board

FRENZEL, Daniel
St. Paul, MN
Background: Professor at University of Minnesota

HANSEN, Henry
St. Paul, MN
Background: Forestry professor, University of Minn.

HEINSELMAN, Miron
St. Paul, MN
Background: Retired US Forest Service

HOGBERG, Rudy
Minneapolis, MN
Background: Original CA Inventory Panel member

HUDAK, G. Joseph
St. Paul, MN
Background: Archaeologist

JENSEN, Gerald
St. Paul, MN
Background: Staff of Natural and Scientific Areas Program

JOHNSON, Eldon
Minneapolis, MN
Background: Archaeology

LANEGRAN, Prof. David
St. Paul, MN
Background: Member of original CA Inventory Panel

MANN, Grady
St.Paul, MN
Background: Wetland Specialist

MARTINSON, Tom
Minneapolis, MN
Background: Member of original CA Inventory Panel

REGION 11 (Cont.)

ROSSILLON, Joseph
Wayzata, MN
Background: Executive Director of Fresh Water Biological Institute

B. Definition of Major Government Developments

* Definition of Major Government Developments:

The Critical Areas Act defines major government developments as any development financed in whole or in substantial part (more than 50%) directly or indirectly, by the United States, the State of Minnesota, or any agency or political subdivision thereof.

1. Recreational facilities

   Areas designated and/or proposed by federal or state legislation for recreational purposes.

   (1) National Parks,
   (2) Areas to be incorporated in the National Trail Systems.
   (3) National Forests,
   (4) Recreational State Parks,
   (5) Areas to be incorporated in the State Trail System,
   (6) State Forests,
   (7) State Zoo,
   (8) State Water Access Sites,
   (9) Canoe and Boating Rivers,
   (10) Designated Official trout streams,
   (11) Designated Official trout lakes,
   (12) Designated Official waterfowl lakes.

2. Health Facilities

   (1) Municipal water supply facilities

   (2) Municipal water reservoir

   (3) Waste treatment facilities
      a. Sewage treatment plants
      b. Sewage interceptors
      c. Solid waste treatment facilities

3. Education Facilities

   (1) Universities and field stations

   (2) Special purpose school - e.g. facilities for handicapped; vocational schools

   (3) Research and experimental stations

4. Transportation System

   (1) Public airport facilities

   (2) Major water navigation facilities

   (3) Highways
      a. Interstate highways
      b. Expressways
      c. Principal arterials
      d. Scenic highways and parkways
      e. Forest highways
      f. Interchanges

* This definition has been developed by the Critical Area Work Group

C. Definition of Resources Having State and Regional Significance

* Definition of Resources of Statewide and Regional Significance

A. Criteria for Natural Preservation Areas

A Natural Preservation Area is an area which, because of its biological, geological, scenic, and many public benefits is of value to the citizens of Minnesota

1. Areas designated and/or proposed by federal or state legislation for natural and scientific purposes.

   (1) National Natural Landmarks
   (2) National Wilderness Areas,
   (3) National Wild and Scenic Riverways,
   (4) State Wild Scenic and Recreational Riverways,
   (5) National Education Landmarks,
   (6) Natural State Parks,
   (7) State Scientific and Natural Areas,
   (8) National Wildlife Refuge Areas,
   (9) State Wilderness Areas,
   (10) State Wildlife Management Areas.

2. Areas of Biological Significance

   (1) Habitats of endangered or threatened animal and plant species on the following Federal and State lists, but not limited to:

      a. Smithsonian's endangered and threatened plant species in the State of Minnesota.
      b. U.S. Fish and Wildlife Service's endangered wildlife species.
      c. Minnesota Department of Natural Resources' lists e.g. "... the Uncommon Ones."

   (2) Habitats of uncommon and rare plant and animal species which have been defined by the Minnesota Department of Natural Resources.

   (3) Areas containing large concentrations of wild flowers protected by state law.

   (4) Areas containing large trees large trees which have gained national recognition e.g. the American Forestry Association's "Social Register of Big Trees".

   (5) Areas containing one or more of the following characteristics:

      a. Areas containing high concentrations of common wildlife species e.g. wintering areas for deer, wild turkey, and nesting, breeding and feeding grounds for migrant birds, etc.

      b. Areas containing the sites of unusual and essential life cycle activities of endangered or rare species in need of special consideration.

      c. Habitat areas which border on or are included in population centers and contain population of species normally uncommon in areas of human habitation.

* This definition has been developed by the Critical Area Work Group.

(6) Areas acquired by non-governmental agencies for the protection and proper management of nautral areas, e.g. Nature Conservancy Lands.

(7) Prime examples of Minnesota's original vegetation such as described in the Francis J. Marschner's report "The Original Vegetation of Minnesota," 1930.

(8) Minnesota's wetland type 3, 4, 5 which have been defined in the U.S.D.I. Fish and Wildlife Service Circular No. 39.

3. Areas of Geological Significance

(1) Prime examples of Minnesota's unique geological features.

a. Rock outcrops or formations which represent past eras of geological history and have scenic as well as scientific value. Volcanic, sedimentary and fossilized formations as well as other unique formations may be included.

b. Representative deposits and landforms associated with Minnesota's glacial history. Eskers, drumlin fields, stratified deposits and other gaicial formations may be included.

(2) Peatlands

Peatlands which provide a stratigraphic record of past vegetational and environmental conditions or whose history has been well studied.

4. Areas of Scientific Significance

Areas which have been subject to long-term scientific monitoring or study, or where a significant quantity of historical data has been developed, and where continuation of long-term study is considered feasible and desirable.

5. Areas of Scenic Significance

(1) Areas containing vantage points which offer superior views and can be described in terms of the angles, distance and quantity of the view.

(2) Areas where a combination of vegetation and landforms creates a special scenic effect. For example, the North Shore which has red rocks contrasting with blue water and white trunks of the birch forests.

(3) Areas containing interesting seasonal characteristics such as the apple orchards in Hiawatha Valley, or areas with spectacular fall color, etc.

(4) Areas where scenic easements have been purchased by state agencies.

(5) Areas containing unique landforms which are close to a large population center.

B. Criteria for Historical and Cultural Areas

1. Areas designated and/or proposed by federal or state legislation and programs for historical and cultural purposes.

   (1) Archaeological sites,
   (2) State Historic sites,
   (3) State Historic districts,
   (4) National Monuments,
   (5) National Historic landmarks,
   (6) Historic American Buildings,
   (7) Historic American Engineering sites,
   (8) Areas which have been registered in the National Register of Historical places,

2. Areas meeting one or more of the following criteria:

   (1) Areas associated with events that have made a significant contribution to the broad patterns of our history.

   (2) Areas associated with the lives of persons significant in our past.

   (3) Areas embodying the distinctive characteristics of a type, period, or method of construction or that represent the work of a master. Areas possessing work of high artistic merit or that contain a number of coordinated elements which when viewed as a single entity become significant and distinctive.

   (4) Areas that have yielded, or may be likely to yield, information important to the understanding of history.

C. Criteria for Environmentally Sensitive Areas

Environmentally sensitive areas are land areas whose destruction or disturbance will create hazards such as flooding and landslides, or the pollution of important public resources such as water supplies, lakes, rivers, and ground waters.

1. Areas of active and potential erosion.

   (1) Steep slopes
   (2) Soils susceptible to wind and/or water erosion

2. Areas subject to flooding.

3. Groundwater subject to pollution including direct and indirect aquifer recharge areas.

4. Surface waters which are sensitive to pollution, such as lakes which are sensitive to pollution because of their depth, size, temperature, etc.

5. Geological hazard areas

   (1) landslides-largely restricted to steep slopes in glacial lake clays, which are undercut by streams or roadways, for example near the Nemadji River southwest to Duluth.

C. Criteria for Environmentally Sensitive Areas (continued)

(2) Subsidence in areas of carbonate rock in southeastern Minnesota, where underground solution has made cavities near the surface. These are also areas of potential contamination of groundwater.

D. Criteria for Unique or Valuable Production Areas--Agricultural land, Mining Timber, etc.

D. Nomination Form

Critical Areas Program
State Planning Agency
550 Cedar Street
Room 106
St. Paul, MN 55101

Please return this form by
April 15, 1978

Potential Critical Area Nomination Form

1. Name of Area _____

   General Location _____

   (County, Township, or Municipality)

2. Boundaries

   a. Please use the attached map to indicate the general location of the site.

   b. Please also send us a sketch of the site by using roads, intersections, landmarks, or other identifying features.

3. Please describe any major government developments within the area. (For definition of major government development, see appendix 1)

   _____

   _____

   _____

4. Please describe any resources of state or regional importance, within the area. (For definition of resources of state or regional importance, see appendix 2)

   _____

   _____

   _____

5. Please state the reasons for considering this an area of critical concern.

   a. What are the problems associated with the current use of the area?

   _____

   _____

   _____

   B. What problems do you forsee in the future?

   _____

   _____

   _____

6. a. Please list the units of government presently involved in managing the area.

   _____

   _____

   b. Please describe the extent of their involvement.

   _____

   _____

7. Please state whether the area has:

   a. ___Regional Significance
   ___State Significance
   ___National Significance

   b. Please explain your choice.

   _____

   _____

Please use a separate form for each nomination. If you need additional forms, please contact Yo Jouseau at (612) 296-9030, or Cliff Aichinger at (612) 296-2686.

E. Ranking Form

POTENTIAL CRITICAL AREA RANKING FORM

	Population Density Factor	70'-75' Population Change Factor	Existing or Potential Projects	Evaluation of Significance of the Resources	Total Score
1. Pembina Trail Crossing on the Middle River/Marshall County	0	1			
2. Upper Red Lake Peatland/Koochi-ching and Beltrami Counties	0	0			
3. Fringe of Itasca State Park/Clear-water, Hubbard and Becker Counties	0	2			
4. North Shore Lake Superior/Cook, Lake and St. Louis Counties	2	1			
5. Minnesota Point/the City of Duluth	3	0			
6. Fringe area of BWCA	0	1			
7. Fringe of Voyageurs National Park	0	1			
8. Lake Agassiz Peatland/Koochi-ching County	0	0			
9. Lake Vermillion/St. Louis County	2	1			
10. Mille Lacs Lake Watershed/Aitkin Crow Wing and Mille Lacs Counties	2	2			
11. Otter Tail River/Otter Tail County	3	1			
12. Swan River/Morrison County	2	1			
13. MN River/Reg. 6W	2	1			
14. MN River/Reg. 6E and 8	2	1			
15. MN River/Reg. 9	3	1			
16. MN River/Yellow Bank River/Lac Qui Parle County	2	1			
17. MN River/Marsh Lake/Lac Qui Parle, Big Stone and Swift Counties	1	0			

	Population Density Factor	70'-75' Population Change Factor	Existing or Potential Projects	Evaluation of Significance of the Resources	Total Score
18. Mn River/Lac Qui Parle Lake/Lac Qui Qui Parle County	1	1			
19. MN River/Lac Qui Parle River Tributory/Lac Qui Parle and Chippewa Counties	1	1			
20. MN River/Carlton Lake, Long Slough, Round Slough/Chippewa Counties	2	1			
21. MN River Hwy. 212 Bridge Granite Falls to MN Falls Dam/Redwood and Chippewa Counties	2	1			
22. MN River/Upper Sioux Agency/Yellow Medicine, Renville Counties	1	1			
23. MN River/Big Stone Lake Outlet Archaeological District/Big Stone County	3	1			
24. MN River/Redwood County Road No. 7 to No. 6 bridge	1	1			
25. MN River/Lower Sioux Agency/Redwood and Renville Counties	2	1			
26. MN River/Cedar Mountain Area/ Redwood and Renville Counties	2	1			
27. MN River/Old Gold Mine/Redwood County					
28. MN River/Minneopa-Hanel Mounds/ Blue Earth County	3	1			
29. MN River/Island-Kasota Prairie/ Nicollet, Blue Earth and Le Sueur Counties	2	2			

		Population Density Factor	70'-75' Population Change Factor	Existing or Potential Projects	Evaluation Significance of the Resources	Total Score
30.	MN River/Robard's Glen/ Nicollet County	2	1			
31.	Swan Lake/Nicollet County	2	0			
32.	Pelican Lake	3	3			
33.	Mississippi River Valley and Bluff/Reg. 10	3	1			
34.	Mississippi River/Hiawatha Apple Blossom	2	0			
35.	Mississippi River/Lake Pepin	2	1			
36.	Mississippi River/Kellogg Weaver Dunes/Wabasha County	2	1			
37.						
38.	"Sink Holes" in Fillmore County	2	0			
39.	Anoka Sand Plain/Anoka, Isanti, and Chisago Counties	3	3			
40.	Cedar Creek Natural History Area/ Anoka and Isanti Counties	3	3			

F. Potential Critical Areas

I MOST CRITICAL AREAS

1. Area: Anoka Sand Plain

Location: Northern Anoka, Southern Isanti Counties

Significance: A major aquifer recharge area as well as an area containing many geological and biological features of significance, such as: Cedar Creek Natural History area, Boot Lake, Helen Allison Savannah, Carlos Avery Wildlife Management Area.

Development Threat: Current--the area is being subjected to rapidly increasing agricultural and residential development pressures. The hydrology of the area is very complex and sensitive to these pressures.

Future--a continuation and possible intensification of current development pressures.

Population Data: This area includes Athens Township, Isanti Township, Isanti, Wyoming Township, Lent Township, Wyoming, Stacy, Linwood Township, Columbus Township, East Bethel, Ham Lake.

1975 estimated population of this area was 19,688 with a growth rate of 26% from 1970 to 1975. Seasonal population of this area is insignificant.

According to the State Planning Agency's 1977 estimates Anoka County has a total of 39,200 people with a growth rate of 25% from 1970 to 1977.

Isanti County had a population of 3,700 people and had a 22% growth rate from 1970 to 1977.

Chisago County had a total population of 5,600 people with a 37.8% growth rate from 1970 to 1977.

These counties are the fastest growing counties in the state. This area does face very heavy development pressures. Total population density of this area is 66.55 persons per square mile.

Nominated by: Jerry Jensen, Robin Fox

2. Area: Pelican Lake

Location: Between Monticello, Buffalo and St. Michael in Wright County T12IN, R24W

Significance: In addition to being productive of several waterfowl species, the lake has a colony of 20-30 pairs of western Grebes which is the farthest eastern known breeding area for this western species. Also, it has an extensive bed of Pickerel weed (Pontederia cordata) a southeastern water plant quite uncommon in Minnesota. The area hs state significance.

With the disappearance of so much of our wetlands this excellent example of our original waterfowl lakes should be reserved.

Development Threat: current--it is little disturbed at the present. The marshy nature of its borders (except for a small portion of the south shore) makes it undesirable for building. Hunting is permitted at present.

Future--urbanization threatens even the less desirable sites as near to the Twin Cities as this is. Surrounding areas are agricultural and drainage is a threat as land values increase.

Population Data: This area covers Frankford, Monticello, and Buffalo Townships.

The 1975 estimated population was 7173 with a growth rate of 28%. The population density is 62.6 persons per square mile.

Nominated by: W.J. Breckenridge (Region 11)

3. Area: Cedar Creek Natural History Area

Location: Isanti, Anoka Counties

Significance: The area is a designated national natural landmark. It contains relatively undisturbed environments such as wetland, tall-grass prairie, northern forest and eastern deciduous woodland. These provide excellent opportunity for comparative studies. At this site the boreal coniferous forest is at its southern-most limits in the country. Also, Northernbog and Oak Savannah communities are found in the area, and are rare in southern Minnesota. The site supports an uncommon or rare species of national importance, such as the Loon, Goshawk, Golden Eagle and Bald Eagle. Whitetail Deer have winter concentrations of from 150-200. 61 species of mammals and 183 species of birds have been identified in the area. Since 1941 when R.L. Lindeman has published his famous studies on developmental history and food-cycle dynamics, there have been close to 200 reports published on the Cedar Creek Natural History site. The site is both nationally and internationally known scientific study area. One of the most significant factor to make this area important is its proximity to Twin Cities.

Development Threat: The area is facing increasing development pressure from the Twin Cities areas.

Population Data: This area includes Athens Township, in Isanti County, and East Bethel, Bethel, St. Francis and Oak Grove in Anoka County. The 1975 estimated population for this area was 10,922 and the growth rate was 33% from 1970 to 1975.

The population density is about 68.5 persons per square mile.

Nominated by: John Tester (Region 11)

4. Area: Mississippi River Valley and Bluff

Location: South from the Dakota County line to the Iowa border, in Goodhue, Wabasha, Winona, and Houston Counties

Boundary: The area would cover one township in from the Mississippi River, in the above counties.

Significance: The area has scenic significance, as it contains interesting landforms, vantage points, and seasonal characteristics, such as apple blossom in Hiawatha Valley.

The area also contains unique geological, and biological significant resources such as Barn Bluff, Wacouta Pond, Tower View, Kellogg Weaver Dunes, Queens Bluff; Lake Pepin and Hiawatha Apple Blossom Scenic Drive.

Numerous threatened species with uncertain status (i.e., Massasauga, Northern Bald Eagle, Osprey, Blandings Turtle, etc.)

Government developments in the area: The primary government development affecting this area is highway 61 which, in being up graded to four lanes is making access to the adjacent areas very easy. In addition, the great river road will be built on the Wisconsin side of this area which will increase traffic. There are four bridges between the two states which will allow access from the great river road to the valley.

The area definitely has state and national significance.

Land Use Problems: Current--Lack of local control is resulting in development of bluff faces and fragile blufftops. Many local units of government have no land use controls over the bluff area. Scattered residential development and subdivision are a potential threat to the scenic resources of the river valley.

The main problem is that the upgrading of the highways on both sides of the Mississippi River contributes to high levels of industrial and residential development in the very narrow confines of the bluffs and the area between the bluffs and the river. As the road improves, the area becomes increasingly attractive to small lot development, generating problems of pollution and general degradation of the bluffs and narrow valley.

Future--By all estimates, including the state demographer and CURA (Dr. Borchart), there is tremendous pressure building up for large and small scale housing development in the area as the movement out of the metropolitan areas increases. There is also a possibility that the area will be utilized for a major power plant site in the next decade or so. The primary problem however, is the small, single lot development of the blufflands and the river valley which is made attractive and accessible because of the road upgrading.

Improper road grades and vegetative stripping are creating erosion hazards, unsafe roads, and negative aesthetic impacts on the bluff line.

4. Area: Mississippi River Valley and Bluff (continued)

Population Data: The 1975 estimated population for this area was 63,539.

Homer Township in Winona County had a growth rate of 27%; Crooked Creek Township had a growth rate of 25%, and Brownsville was growing at the rate of 17% during the period 1970 to 1975. On the other hand, Dresbach Township decreased its population by 29% and Brownsville Township at the rate of 16% during this same time period.

Overall, this area was growing at the rate of 4% during the years 1970 to 1975. This area contains 53% of the total 4 counties population.

The population density is 121 persons per square mile.

Nominated by: B. Aldrich, J. Chell, C. Fremling, D. McGuiness (Region 10)

5. Area: Lake Pepin

Location: Minnesota-Wisconsin border from near Red Wing to Reed's Landing, Goodhue and Wabasha Counties.

Significance: Lake Pepin is actually a widening of the Mississippi River channel. Much of the east and west shorelines of Lake Pepin are dominated by imposing limestone cliffs or bluffs rising abruptly from the river's edge to elevations exceeding 450 feet. Numerous ravines interrupt these rock faces. This area is certainly very scenic. Historically, Lake Pepin was an important trading place for the French and the Dakota Indians. Now, this area is an important recreational area for Midwesterners.

Land Use Problems: Increasing commercial navigation conflicts with recreational river uses. Also, the lake is slowly being filled by sediment deposition. The water quality of the river is also a major concern because of the upstream dumping of sewage effluents.

Population Data: This area covers Pepin, Florence, Wacouta Townships and Wabasha.

The 1975 estimated population for the area was 1876. The growth rate during the period from 1970 to 1975 for Pepin was 13%, while Wacouta Township decreased its population 7% during the same period.

The population density for the area is 28 persons per square mile.

Nominated by: Calvin Fremling

6. Area: Kellog Weaver Dunes

Location: Below U.S. Lock and Dam #4 Wabasha County

Ownership: State, Federal government and private

Significance: The area is a significant wildlife habitat and it has at least 98 species of birds, 42 species of mammals, 26 species of reptiles and amphibians and 31 species of fish.

A large part of the area is covered with prairie vegetation about half of which has never been plowed. There exists sand blowouts and dunes in various stages of development and stabilization, with a remarkable series of successional stages ranging from bare sand to mature dry, mesic, and moist prairie. Also to be found are old dunes and blowouts covered by Aspen, Northern Pine and Burr Oaks, with scattered relict Jack Pines very unusual. The area is used as a seed source for breeding programs by Forestry.

The species composition of the prairie portions that have never been cultivated is remarkably diverse, with some species of plants, butterflies, spiders and turtles that are considered rare or threatened. Of special biological importance is the rare Ottoe Skipper butterfly and the uncommon Regal Fritillary butterfly. Also unusual southern butterfly migrate to this area in the summer. There are four species of jumping spiders found here and nowhere else in the state.

There exists several plants of rare or uncommon status such as Rabbit's Pea (Tephrosia virginiana), Cottonweed (Froelichia floridana), Caroline Anemona (Anemone caroliniana), two False Indigos (Baptisia leucantha and B. leucophaea) and small colonies of native Jack Pine (Pinus banksiana) situated far south of the main range.

The world's largest population of the Blanding's turtle inhabits the marshes and nests in the sand dunes of this area. This is a turtle that is threatened throughout its small range because its living habitat is constantly being drained and farmed under. Donald Tinkle, a professor at the University of Michigan and a member of the endangered species committee of that state, has said that this turtle is very important to the balance of a marsh habitat and should be managed accordingly. The traffic generated alone by the NSP plant would surely bring the end to this population of turtles. The plant's waste disposal pond would cover up approximately 70% of the turtle's nesting area. Another group of turtles known as Map turtles also nests in this area. In 1974, the DNR published a bulletin entitled, "The Uncommon Ones" - animals and plants which merit special consideration and management. Both the Map turtles and the Blandings turtle are listed in this bulletin.

This area has occupied a position of high priority on the DNR's list of proposed Scientific and Natural Areas.

Land Use Problems: Land use conflicts, agriculture and NSP proposed plant.

Population Data: This area covers Greenfield Township and Kellog; Wabasha Co.

The 1975 estimated population for this area was 1021 with a population density of 30 persons per square mile.

Greenfield Township had a growth rate of 12.6% during the years 1970 to 1975, while Kellog decreased its population by 6% during the same time period.

6. Area: Kellog Weaver Dunes (continued)

Nominated by: J. Jensen (Region 11)

7. Area: MN River/Big Stone Lake Outlet Archaeological District

Location: Big Stone Lake, Big Stone County

Significance: Cluster of prehistoric archaeological sites. This area has one of the most intensive concentrations of archaeological sites in Minnesota. The district has national significance.

There are six registered sites in the three nominated sections and there are more reported sites in the same sections which have not yet been added to the official site file. This area, then, has one of the greatest archaeological sites in the state. This is probably due to its unique location.

The Big Stone Lake Outlet is at the base of both glacial rivers Agassiz I and II. The lake itself is a remnant of these great glacial lakes. The area overlooks Big Stone Lake and the Minnesota River which flows through the valley carved by glacial river Warren. The area has been attractive to human occupation for thousands of years. Archaeologically, the remains of cultures from as early as 10 or 12 thousand years ago to the early historic period are liable to be found. These sites are very important in helping us understand both the prehistory and the early history of Minnesota.

The City of Ortonville is expanding. This expansion may destroy many very important archaeological sites if it is not carefully supervised.

Development Threat: Current--Residential development. Future--Residential and other construction disturbance.

Population Data: According to Minnesota's Lake Shore Study, 1970; the Big Stone Lake has 206 seasonal homes, 62 permanent homes and 2 resorts. The Big Stone Lake has 8.9 dwellings per mile of shore. In 1975 the estimated population was 2835 persons and growth rate was 11% from 1970 to 1975.

The population density of this area is 20.6 persons per square mile.

Nominated by: Scott Anfinson (Region 11)

Comments: As indicated by Mr. Anfinson, this site could be developed as a historical and recreational park.

8. Area: North Shore of Lake Superior

Location: From Minnesota Point to High Falls, Pigeon River

Ownership: Private and public

Significance: This is special clustering of unique resources, scenic, natural and scientific areas, water, ports, and resources for primary productions--fish and timber. The high quality of the water and air resources in the area make it an exceptional area within the United States as well as Minnesota. Many significant scientific, natural and historic sites were inventoried in "The North Shore Historic,Natural and Scientific Sites Inventory." This report was prepared for the Coastal Zone Management Program in 1975, through the joint efforts of the Arrowhead Regional Development Commission, Mr. and Mrs. Green, State Historical Society and Count Historical Societies.

Cultural Significance: The best and most private resort structures are located along Lake Superior. Included are about eighteen cabins and residences by Edwin H. Lundie, the major romantic designer of the 20th century in Minnesota. Duluth East End, East edge of CBD to Lester Park, "The richest and most tasteful residential area in the state - the influence of the I.V. Hill and other Duluth architects created an impressive grouping of 20th century revival houses. Interspersed within this fabric are the work of nationally known architects such as Ralph Adams Cram, Bertram Goodhue and Marcel Bruer." Morgan Park, South of Duluth, "Although no longer owned by the Minnesota Steel Company Morgan Park still looks like the company town it was when it was built in 1915-17. All the buildings were constructed of cement block and poured concrete. The Architects were Dean and Dean of Chicago."

Land Use Problem: Shipping, fishing, tourism and industry are heavily dependent on North Shore resources. The need for a comprehensive plan for the whole North Shore is urgently needed by the increasing demands on these resources.

Population Data: The following population information comes from the Coastal Zone Management Program. The shore area includes one-half mile inland from the shore and municipalities along the shore, excluding the City of Duluth. The 1975 estimated permanent population by the Arrowhead Regional Development Commission (ARDC) was 2697 and 9722 in Cook and Lake Counties respectively. The 1975 seasonal population was 2436 in Cook and 1925 in Lake County.

In Cook County 79% of the permanent population and 68% of the seasonal population is located in the shore area. The growth rate of permanent residents was 7.7% from 960 in 1970 to 1163 in 1975 and the growth rate was 21% from 1970 to 1975.

In Lake County, about 82% of the permanent population and 73% of the seasonal population is located in the shore area. The growth rate of permanent residents was 3.2% from 1970 to 1975. Seasonal homes have grown from 489 in 1970 to 807 in 1975. The growth rate for seasonal homes has increased 65% over the 5 year period.

In St. Louis County (excluding the City of Duluth) 12% of the permanent population and 73% of the seasonal population is located in the shore area.

8. Area: North Shore of Lake Superior (Continued)

The growth rate for the whole area (excluding seasonal homes) was about 4% from 1970 to 1975. However, if seasonal population is included the growth rate is 34%. Seasonal homes are one of the major factors contributing to the growth of this area. The population density (including seasonal population) is 27.9 persons per square mile.

Nominated by: Dr. W.J. Breckenridge, Dr. Dave Langran, Tom Martinson, Lauren Soth (Region 11)

9. Area: Minnesota River Valley/Region 9

Location: The area includes the river and the bluff area. Blue Earth, Brown, Le Sueur, Nicollet, Sibley Counties.

Significance: This reach of river includes the following nominated area;

1. Minneopa--Hanel Mounds
2. "Island" -- Kasota Prairie Area
3. Traverse des Sioux State Park
4. Robard's Glen

Land Use Problems: The development occurs on the floodplain. Future--It does not have a comprehensive long-range plan for the entire area. Continued and haphazard development with insufficient concern for the framework of the entire Minnesota River Valley.

Population Data: The 1975 estimated population for this area was 65,321 and growth rate was 6% from 1970 to 1975. This area has about 46% of the total population of the 5 counties. The density population is about 111 persons per square mile.

10. Area: Minnesota River/Minneopa-Hanel Mounds

Location: Minneopa State Park and camp ground, Blue Earth County between 169 and 68

Biological Significance:

1. The area bordering the river is disturbed prairie with many wildflower species including the rare birdsfoot violet.

2. There is a large colony of liverworts in the cliff area near the falls.

3. The Park has a wide range of plants and animals because it has both prairie, transition zones and woodland.

10. Area: Minnesota River/Minneopa-Hanel Mounds (Continued)

Geological Significance: The falls at the Park is the only major falls in this area.

Historical Significance: The Seppmann Mill is located on the Park property It is on the State Historical list.

This area has state significance because it has an outstanding waterfall, prairie and river valley vegetation and the historic Seppmann Mill within its boundaries.

Land Use Problems: Current--Residential Development Pressures

1. Increased residential development between two sections of Minneopa State Park

2. Increased peripheral park development (Minneopa State Park)

3. Reasons for increasing residential development

    a. Scenic qualities of area

    b. Convenient access to Mankato urban area

    c. Close proximity to established recreational facilities

    d. Amenities of rural living

4. Effects of residential development

    a. Further separationand isolation of two sections of Minneopa State Park

    b. Reduced visual aesthetics

    c. Loss of cultural study

Current--Commercial/Industrial Development Pressures

1. Peripheral development has included: a concrete products manufacturing plant regional petroleum storage facility, and a service station that are:

    a. Generally situated adjacent to Minneopa State Park

    b. Responsible for creating a disruptive atmosphere, especially concrete plant (access road to plant extends through center of Minneopa State Park)

10. Area: Minnesota River/Minneopa-Hanel Mounds (Continued)

2. Effects of Commercial/Industrial Development

a. Further separation and isolation of two sections of Minneopa State Park

b. Reduced visual aesthetics

c. Loss of cultural study

Current--Natural Resources Development Pressures

1. Adjacent area to Minneopa State Park currently used as a sanitary landfill for Mankato urban area

2. Area contains subsurface resources of sand and gravel

3. Effects of natural resources development

a. Further separation and isolation of two sections of Minneopa State Park

b. Reduced visual aesthetics

c. Loss of cultural study

Future--Land Use Problems

1. Increased residential potential due to aesthetic qualities of area

2. Potential expansion of existing commercial and industrial sites

3. Potential of encroachment of Minneopa State Park through development of existing natural resources

4. Projected increase in Blue Earth County population expected to facilitate increased urban pressures in Minneopa State Park

Population Data: This area includes South Bend Township and Belgrade Township. South Bend Township has grown at the rate of 8.9% between the years 1970 to 1975. Belgrade Township decreased its population 10.7% from 1970 to 1975.

The 1975 estimated population for this area was 2461. The population density is 45 persons per square mile.

Nominated by: D. Steger, J. Berg, L. Filter, B. Maher, R. Strachan, R. Miles (Region 9)

11. Area: MN River/"Island" Kasota Prairie Area

Location: Minnesota River Bluffs and adjacent flat land on the Nicollet County, Blue Earth County, LeSueur boundary

Significance: The area has state significance because it contains 4 unique resources.

--the "Island" is an example of stream piracy

--"Garden of the Gods" has limestone outcropping

--Kasota Prairie has rare plant species

--Seven Mile Creek has a clear stream and rare wildflowers

1. Nicollet County Park (Seven Mile Creek)

   a. Used as an outdoor laboratory by Mankato State University Biology classes; approximately 390 students per year.

   b. Abundant wildflowers including three types of orchid and three types of trillium.

   c. The only known local occurrence of the Leatherwood tree.

   d. Good habitat for song birds; the only known local nesting sites of the Gray Gnat Catcher.

   e. The stream through the Park is especially valuable because of its clarity, low silt content, and wide diversity of invertebrates.

2. Kasota Prairie Preserve

   a. One of the few undisturbed prairie areas.

   b. Over 175 different prairie plants have been identified in this area, many of them rare.

   c. This area is used as a laboratory by the students at Mankato State University.

3. "Garden of the Gods"

   a. This area is a transition area between the prairie and the deciduous forest.

   b. The MSU Students use the area because of its abundant spring flowers, especially the pasque flower.

   c. The limestone outcroppings are a unique geologic feature..

11. Area: "Island" - Kasota Prairie Area (continued)

4. "Island"

a. The "Island" is a raised area of land formed when the Minnesota River changed its course. The old river bed is on one side and the present Minnesota River is on the other. An example of stream piracy.*

b. There is an oak savanna on the North side of the "Island."

c. On the western edge of the "Island" is a cedar glade which has not been succeeded because of the harsh climate of the exposed bluff; this is very unusual.*

d. This is also a good habitat for song birds and deer and other animals.*

* Information from Don Gordon, Professor of Biology MSU

5. Land Use Problem: Current--Residential Development Pressures

1. Significant rural residential development has occurred due to natural aesthetics of the area.

2. Most residential development has occurred within the wooded areas of the Minnesota River Valley and along its bluffs.

3. Effects of residential development

a. Reduction of wildlife habitat

b. Reduced visual aesthetics

c. Pollution potential due to septic system installation within the limestone bed.

Current--Agricultural Development Pressures

1. Continued expansion of agricultural activities within the Minnesota River flood plain area.

2. Clearing of natural forest and prairie vegetation for agricultural purposes.

3. Effects of agricultural development

a. Reduction of wildlife habitat

b. Reduced visual aesthetics.

Current--Commercial/Industrial Development Pressures

1. The area contains the major heavy industrial expansion area for the City of Mankato.

2. Significant rural industrial development has occurred in the area.

11. Area: "Island" - Kasota Prairie Area (continued)

Current- Commercial/Industrial Development Pressures (continued)

3. Obtrusive commercial development has concentrated within the area.

4. Site of coal powered generating plant.

5. Effects of commercial/industrial development

   a. Reduced visual aesthetics

   b. Degradation of air and water

   c. Adverse effects on overall environment of area due to operating noise and activity.

Current--Natural Resources Development Pressures

1. Most of area underlain by tremendous limestone deposits.

2. Extensive quarrying operations in past and present.

3. Use of Minnesota River water for power plant operation.

4. Use of natural waterways as dumping grounds for untreated or partially treated sewage by two mobile home courts consisting of serveral hundred units.

5. Effects of natural resource development

   a. Loss of wildlife habitat

   b. Reduced visual aesthetics

   c. Creation of health hazards

   d. Noise pollution from quarrying

   e. Potential loss of natural vegetation such as native prairie

Future--Land Use Problems

1. Continued significant residential development in amenable areas.

2. Continued potential for increased agricultural activities.

3. Likelihood for obtrusive commercial and heavy industrial expansion (major heavy industrial expansion area for Mankato.)

4. Likelihood of expansion of quarrying operations.

5. Area currently being considered by NSP for power plant site (likelihood of eradication of remaining native prairie area).

6. Potential for increased degradation of Minnesota River waters if current pollution continues or residential expansion occurs.

11. Area: "Island" - Kasota Prairie Area (continued)

Population Data: The 1975 estimated population for this area was 4628. The townships in Nicollet County decreased their population 8% from 1970 to 1975. However, the townships in Le Sueur County and Blue Earth County had a growth rate of 11% from 1970 to 1975. Kasota's growth rate was 20.5% during this same time period.

The population density is 35 persons per square mile.

Nominated by: D. Steger, J. Berg, L. Filter, B. Maher, R. Strachan, R. Miles (region 9)

12. Area: Mille Lacs Lake

Location: Mille Lacs, Crow Wing and Aitkin Counties

Significance: Large lake close to the Twin Cities Metropolitan areas. It is a famous fishing lake and is under the development pressure from the Twin Cities. The area has national significance because it draws substantial tourists from Minnesota and other states.

Land Use Problems: Current--disposal of waste waster from the developments of lakeshore, and lacking of regulation for disposal of trash and human waste during the winter fishing season causes the determination of lake water quality.

Future--the identified problems may become more severe.

Population Data: According to Minnesota's Lake Shore Study, 1970; the Mille Lacs Lake shore has 960 seasonal units, 355 permanent homes and 94 resorts. It has a total of 15.3 dwellings per shore mile, which is three times more dense than the Lake Vermillion area.

Within the Mille Lacs Watershed, the 1975 population was 5,392 with a growth rate from 1970-1975 of 10%. The seasonal population was estimated at 4638 persons in 1970. The population density of this area is 34.3 persons per square mile including seasonal population.

Nominated by: Phil Tideman (Region 7W) and Dave Lanegran (Region 11)

Comments: In May 1976, three county boards of Mille Lacs, Crow Wing, and Aitkin, jointly recommended that the Mille Lacs Lake Watershed be designated a critical area. The recommendation was submitted to the Regional Development Commissions; Region 3, 5 and 7E, which have jurisdiction over the Mille Lacs Lake Watershed.

In July, 1976 the three Regional Development Commissions held three public meetings on the recommendation, one in each of the counties affected. At the public meetings the majority of the watershed residents attending indicated that the designation of the Mille Lacs Lake Watershed as a critical area was neither desired nor warranted at the present time. In addition, the public felt that the Mille Lacs Lake Tri-County Sanitary District Committee could perform adequately and would be able to coordinate planning among the three counties and regional and state agencies.

12. Area: Mille Lacs Lake (Continued)

Following the public meetings, the three counties passed resolutions to withdraw their original recommendations. In early October, Regional Development Commissions 5 and 7E submitted their recommendations to the EQB to reject the recommendations for critical area designation.

In 1977, the Tri-County Sanitary District Committee received a land use planning grant from the State Planning Agency for identification of the sources of water pollution. However, the Committee has not looked into other land use issues which were identified in the counties original recommendation for critical area designation.

2. CRITICAL AREAS

1. Area: Pembia Trail Crossing on the Middle River

Location: Foldahl, Wright, West Valley Townships; Marshall County

Size: 440 acres

Ownership: The DNR controls about 200 acres and the remainder is privately owned.

Significance: The Pembia Trail has one unique role in the history of the North American fur trade which was the trail for the Red River oxcarts. This trail served as a fur-trading line between St. Paul and Red River settlement for Hudson's Bay people. The trail started from 1844 to 1870. The uniqueness of this trail was the use of large trains of carts for hauling furs and supplies. In the early years most brigades were under 100 carts, but in latter years trains of 200 or more were not uncommon. The exact path of the trail varied from season to season. As a result, there has always been great confusion as to exactly where the Red River trails went. In 1975 legislature established a study commission to clean up the confusion. Middle River crossing is one of the best preserved stretches of the old trail. The area contains scenic river view, steep slopes, and 80% of the area is wooded.

Development Threat: Current--open to danger of bulldozing and being put into agricultural use. Future--possible future housing development. The area is susceptible to erosion.

Population Data: The area covers Foldahl, Wright and West Valley Townships. The 1975 estimated population was 644 for this area with a growth rate of 5% from 1970 to 1975. The growth rate for Marshall County was 2.4%. This area is growing faster than the whole county, however, the growth rate is still low in comparison with the entire state.

The population density for this area is 8.47 persons per square mile.

Nominated by: Dennis Hjelle, Gladwyn Lynne, Nancy Solem and Randall Johnson (Region 1)

2. Area: Fringe of Itasca State Park

Location: Clearwater, Hubbard, and Becker Counties

Significance: The park contains the finest stand of virgin Red Pine in Minnesota, ranging from 100-300 years old. In addition, it has Tamarack-Black Spruce bogs and open sedge meadows. Twin Lake bogs are beautiful examples of lake-bog vegetation development. This area has been studied by the University of Minnesota over 25 years.

The park has many wildlife species, a total of 141 species of birds and 53 species of mammals were recorded. It has endangered and uncommon wildlife species, such as bald eagles, loons, and ospreys.

The park has one designated national natural landmark - Itasca National Area, and two proposed National Natural Landmarks - Itasca Virgin Pine and Twin Lake Bogs. It is the headwater of Mississippi River.

2. Area: Fringe of Itasca State Park (Continued)

In addition, there are many archaeological and historical sites in the park, such as Woodland Indian Mounds and habitation sites which were dated about 500 years old. The Bison Kill site and encampment are believed to have been occupied 7-800 years ago by an Archaic Indian Tribe.

Population Data: This area covers Savannah, Round Lake, Itasca, Rice, and Lake Alice Townships in Becker, Clearwater and Hubbard Counties.

The 1975 estimated population was 643 for this area with a growth rate of 10% from 1970 to 1975. According to 1970 census this area has a seasonal population of 775. The seasonal homes are a major impact to the area. The population density (with seasonal population) is 4.2 persons per square mile.

Nominated by: John Tester, Jean Maltais (Reg. 2)

3. Area: Minnesota Point

Location: All undeveloped portions of Minnesota Point, from the aerial bridge southeastward, including the beach and dune complex, Hearding Island, the Recreation Area, Oatka Area, and Superior Entry, plus the Sky Harbor Airport and Superior Power and Light Pumping station.

Ownership: City of Duluth, private

Significance: The longest freshwater bay-head sandbar in North America and it contains the only mature stand of Red and White Pine in Duluth. It is the only significant dune formation in Northeastern Minnesota and it contains several rare Minnesota plants, such as Beach Grass (Amophila breviligulata). It also remains as perhaps the best avian migrational focal points in Minnesota and ranks among the best in the country. It acts as an important resiting place for migrating birds of all kinds and is the one area in the state which consistently provides an opportunity to see birds associated with coastal rather than inland areas. It has educational value for three local and some outstate educational institutions.

Land Use Problem: Current--no overall plan for recreational use or future development; no system of beach and dune protection; the value of geological characteristics are not fully appreciated by public officials.

Future--overuse both by recreationists and development. Expansion of Sky Harbor Airport and Superior Water and Power pumping facilities. Elimination of critical bird habitat.

Nominated by: Dr. Pershing Hofslund, Janet Green (Region 3)

4. Area: Otter Tail River

Location: From the outlet of Otter Tail Lake to the bridge on the Foxhome Road, Fergus Falls

Size: About 44 miles of river have been nominated.

Ownership: Most of land is privately owned. The Minnesota Historical Society owns the Morrison Mound.

Significance: This area has historical and archaeological significance. At the outlet are the famous Morrison Mounds, the oldest burial mounds in the State of Minnesota dating back to approximately 800 BC. Later on down the River is the Phelp' Mill, a historical site which is on the National Register of Historic Places. In Orwell Township of Otter Tail County, where the Otter Tail River cuts through the Herman Beach of Lake Agassiz, is an entire different series of mounds, excavated by Dr. Elden Johnson, MN State archaeologist. The Orwell Mounds have already been declared both a Minnesota and a National Historic site. The Department of Archaeology of the University of Minnesota has made studies and excavations. The river winds through many lakes and this stretch of the river could be an excellent canoe journey.

Land Use Problems: Farming practice and preservation of these historical mounds are in conflict. There is no over all planning effort to guide a balance use of this stretch of river;to establish recreational use,to preserve historical sites and to maintain farming practice are all needed in this area.

Population Data: This area covers Otter Tail Twp., Amor Twp., Maine Twp., Fergus Falls Twp., Friberg Twp., Elizabeth Twp., Elizabeth, Fergus Falls and Underwood. The 1975 estimated population for this area was 17,566 which was 36% of the total Ottertail County population.

The growth rate for this area was 2% from 1970-1975. The county growth rate was 5.6%. The area is growing slower than the total county. This seems to be contributed by Fergus Falls decreasing in population. If Fergus Falls is deleted from the area, the area growth rate would be 10% from 1970-1975 which is higher than the total growth rate for the entire county.

According to 1970 U.S. Census data there were about 890 seasonal homes in the area.

The population density for this area including seasonal population is 73 persons per square mile; without seasonal population the density is 63.24 persons per square mile.

Nominated by: W.M. Goetzinger

5. Area: Swan River area

Location: Five miles from Highway 27. South of Little Falls on west side of the Mississippi River, Morrison County.

Size:

Ownership: Private

Significance: The confluence of the Swan and Mississippi Rivers was the site of Zebulon Pike's Fort constructed in 1805. This site is on the Minnesota Historical Society's Inventory. Swan River Indian Village archaeological site is within this area. In addition, this area has scenic beauty. The entire area is a pasture land and a bluff to the west overlooks the Mississippi River Valley.

Land use problems: Current--None. Future--unplanned housing development may destroy scenic beauty and historical sites.

Population Data: This area includes Swan River Township and Little Falls. According to the 1975 U.S. Census data, this area had a total population of 7938 and over that 5 year period from 1970 to 1975 decreased its population at the rate of 3%.

This area includes 28% of the total Morrison County population. According to the State Planning Agency's 1977 estimation the county had a total population of 28,100 with a growth rate of 4.4% from 1970 to 1977.

The population density in the area is 20.7 persons per square mile. Seasonal population is insignificant.

Nominated by: Glen Kragwinkle (Region 5)

6. Area: Minnesota River Valley including the river and the bluff area/Region 6W

Location: Big Stone, Swift, Chippewa, Lac Qui Parle and Yellow Medicine Counties

Significance: The reach of the river includes the following nominated areas:

1. Yellowbank River Tributary System to Kibler Lake in Lac Qui Parle County
2. Pin Cushion Cactus Habitat in Lac Qui Parle County
3. Marsh Lake and Pomme de Terre River in Lac Qui Parle, Big Stone and Swift Counties
4. Lac Qui Parle Lake in Lac Qui Parle County
5. Lac Qui Parle River Tributary System in Lac Qui Parle and Chippewa Counties
6. Carlton Lake, Long Slough, Round Slough in Chippewa County
7. Kettles, Prairie Pothole remnant in Chippewa County
8. Hwy. 212 bridge in Granite Falls to MN Falls Dam in Yellow Medicine and Chippewa Counties

6. Area: Minnesota River Valley /Region 6W (continued)

9. Area around Upper Sioux Agency including the state park, Yellow Medicine River Valley in Yellow Medicine and Renville Counties

Land Use Problems: The development occurs on the floodplain. Future-- It does not have a comprehensive long-range plan for the entire area. Continued and haphazard development with insufficient concern for the framework of the entire Minnesota River Valley.

Population Data: The 1975 estimated population of this area was about 23,454 which was about 45% of the total 5 county population. The growth rate for this area was 2% from 1970 to 1975. The population density is 39.7 people per square mile. The seasonal population is insignificant. Converting this area to agricultural use poses a threat.

7. Area: Minnesota River Valley/Region 6E and 8

Location: Redwood and Renville Counties

Significance: This reach of the river covers the following nominated areas:

1. Upper Sioux Agency, Hawk Creek, Yellow Medicine River Valley
2. Redwood County Road No. 7 Bridge to No. 6 Bridge
3. Cedar Rock Wildlife Management Area and Pope Historic Site
4. Lower Sioux Agency
5. Cedar Mountain Area
6. Old Gold Mine

Land Use Problems: The development occurs on the floodplain. Future-- It does not have a comprehensive long-range plan for the entire area. Continued and haphazard development with insufficient concern for the framework of the entire Minnesota River Valley.

Population Data: The 1975 estimated population for this area was 9638 persons with a growth rate of 4% from 1970 to 1975. This area contains approximately 24% of the two counties population. The population density is approximately 32 persons per square mile. The seasonal population is insignificant.

The population growth is not a pressure to the area at this time, however, the conversion of the existing land use to agricultural use will be a threat.

8. Area: Minnesota River/Yellowbank River Tributary System to Kibler Lake

Location: Correll Bridge Road Transecting Marsh Lake to Big Stone Lake and Whetstone River confluence with Minnesota River/Yellowbank River Tributary system--Kibler Lake from confluence with Minnesota River to south shore area of Kibler Lake/Co. Rd. 36

Boundary: Lac qui Parle County: Agassiz Twp. (120-45W) Sec. 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 12, 14, 15, 16, 18, 19, 24, 30, 31 and (121-45W) Sec. 31, 32, 33, 34

Yellowbank Twp. (120-46W) Sec. 1, 2, 3, 12, 13, 24, 25, 36 and (121-45W) Sec. 25, 26, 27, 28, 34, 35, 36

Lake Shore Twp. (120-44W) Sec. 7, 18, 19

Big Stone Co: Akron Twp. (120-44W) Sec. 5, 6, 7, 8, 17, 19

Odessa Twp. (120-45W) Sec. 1, 2, 3, 10, 11, 12, and (121-45W) Sec. 29, 30, 31, 32, 33, 34, 35, 36

Ortonville Twp. (121-46W) Sec. 16, 21, 22, 23, 26, 27, 25

Significance: This area, comprised of virgin river/floodplain forest, floodplain marsh and alkali meadows, prairie bluff and glacial moraine ridges, serves as a significant wintering area for diverse fauna species including deer, Richardson's Ground Squirrel, chipmunks, Bald and Golden Eagles, and Red breasted Nuthatch. Approximately 600 deer used this area in the winter of 1977-78.

This stretch of the Yellowbank is important as it is the most western segment of virgin Northern Floodplain Forest of any size in the State of Minnesota. Because of its location many western and eastern birds are at the limits of their ranges in these woods.

During the winter season of 1977-78, Big Stone Lake's open water habitat area provided a prime haven for Western Grebes. The area provides,also, prime habitat diversity for migratory species such as Hudsonian Godwit, Ferruginous Hawk, Sharp-shin Hawk, Cooper's Hawk, Peregrine and Prairie Falcons, Turkey Vulture Red-shouldered Hawk, and Black-bill Magpie. Additionally, numerous diving ducks along with Hooded Merganser and Whistling Swans utilize this area during their migratory route to summer ranges. The area also serves as a high priority nesting ground for Marbled Godwit, Woodcock, Eastern Bluebird and Indigo Bunting. The Simonson Crossing Granitic Outcrops/river forest has been one of few locations to find Cape May Warblers.

One of the most important aquatic bird rookeries in the State of Minnesota is located on the Big Stone NWR. There are about 1500 nests of 7 species located in this rookery including the Snowy, Cattle, and Great Egrets; Great Blue Herons, Black-crown Night Herons, and Little Blue Herons; and Cormorants.

8. Area: Minnesota River Valley/Yellowbank River Tributary System to Kibler Lake (continued)

Boundary: (continued)

The area is also rich in diverse flora species with significant rarities as the Downy Painted-cup (Castilleja sessliflora), along a sizeable prairie remnant of south bluff line, Small White Lady Slipper (Cypipedium candidum), in a small alkali meadow remnant, and the Ball Cactus (Mammalaria vivipara). This latter species found only amid the rock outcrops is found only in this part of the state and thereby is the rarest cacti species thereby allowing for minimal localized areas of concentrated clusters amid the rocky crevices. Amid the rock outcrops can also be found the uncommon blue-tailed Skink, atypical of such habitat and a species unique to this region. A small alkali meadow remnant south of the river provides a unique habitat for such indigenous species as Wood's Lily, Pale-spiked Lobelia, Liatris, and a variety of native grasses besides the rare Lady-Slipper species. The granitic outcrops provide a rich educational insight into the period of glacial formations and upheavals and the development of the ancient River Warren Channel.

The outcrops consist of numerous kettles and cauldrons, formations providing for unique ecosystems of flora and fauna and were historically utilized as grinding ground locations by the Indian culture that inhabited the area. Historically the Yellowbank River System to Kibler Lake was a significant area for Indian related activities with numerous village and encampment sites and other related archaeological remnants. A sizeable archaeological encampment site has been located along the bluff line of Kibler Lake with valuable archaeological data and specimens to be found. The area also is significantly noted for its early pioneer German element/emigrational influx of the 1875 period. Some sites are remnants of the earliest settlement of this upper western segment of the Minnesota River. Such sites as the Bendick Stone smokehouse (1877), LaCombe Rock Carving (1875), and Strube cabin ruins (1877) are of special note. Additionally, one of the few remaining Cleveland Iron Work Lattice bridges with wooden deck (1893) is the last of its type in the far western region of the state.

Land Use and Management Problems: The area is primarily within the boundaries of the Big Stone NWR along the upper river portion and the DNR Wildlife Management area along the remaining segment of river. However, the area has many vitally sensitive Scientific/Natural habitat along the fringing areas of the Big Stone NWR as well as within the refuge boundaries. The northern outcrops along the Minnesota River are under private ownership and are used intensively by the quarrying companies. This is the area bordering the Big Stone NWR and significant stands of Mammalaria Sp. Cacti exist in this area. The species is very vulnerable to habitat disruptance and, as the area is reduced through quarrying, the Mammalaria Sp.'s range is reduced drastically. High priority should be given to preserve this critical area. The only other significant stand of Mammalaria exists south of the river within the bounds of the Big Stone NWR and is believed to be the only such locality in which this species can be found south of the Minnesota River. It also should be placed in a high priority preservation status with regulated, recreational use of the particular area. The alkali meadow where the rare Lady-Slipper thrives in concentrated numbers is presently within a low-priority agricultural use area. However, farming and development in the area threatens this rare species which is located in only one other minimal alkali prairie remnant in this region. Additionally, this alkali meadow is utilized

8. Area: Minnesota River Valley/Yellowbank River Tributary System to Kibler Lake (Continued)

Boundary: (Continued)

by other unique indigenous species like the Wood's Lily which is uncommon to this particular region. Within Lac qui Parle County the shoreline/floodplain ordinances are adequate with no clearly defined specifications for clear cutting or flood-plain use and thereby many significant historical and scientific/natural areas within the virgin hardwood prairie bluffs to the south of the Minnesota River which is the locality for the uncommon Downy Painted-cup. Inadvertent misuse of this area would reduce one of the two minimal locations of this rare species within this segment of the region and state. The Wildlife Management areas of the DNR are used by all-terrain recreational vehicles, particularly during the winter season by snowmobiles. The Simonson crossing area is significant for its rock outcrops and diverse flora and fauna. A unique historical stone-dike road leading to a sizeable prairie remnant could be destroyed permanently through such misuse. Such recreational use also causes disturbance to the deer and other species utilizing this area and some reevaluation of the type of recreational use should be delineated for this vitally sensitive natural area. Kibler Lake rests in a hollow amid glacial moraine bluffs. Alteration of the Yellowbank River (i.e., channeling) and county and township roads could result in destruction of significant archaeological sites, and important natural areas, particularly certain stands of very large cottonwood trees, some of which have been measured for trunk circumference (at most 28 feet).

Nominated by: M. Buer, Estrum, John Schladweiler (Region 6W)

Population Data: This area covers Akron and Correl Townships in Big Stone County; Lake Shore Township and Louisberg in Lac qui Parle County; Appleton and Appleton Township in Swift County.

The 1975 estimated population for this area was 2866 and the growth rate was at the rate of 3% from 1970 to 1975. The population density of this area is 21.4.

9. Area: Minnesota River/Marsh Lake and Pomme de Terre River

Location: Hwy. 119 (Twin Bridges) to Correll Bridge Rd. transecting Marsh Lake

Boundary: Lac qui Parle County; Hantho Twp. (120-43W) Sec. 31 to 33

Lake Shore Twp. (120-44W) Sec. 16, 17, 20 to 28
Lake Shore Twp. (119-43W) Sec. 36

Big Stone County; Akron Twp. (120-44W) Sec. 4, 5, 8 to 17, 21, 23, 24, 25, 33

Appleton Township (120-43W) Sec. 16 to 22, 27 to 33

Hantho Township (119-43W) Sec. 5

9. Area: Minnesota River/Marsh Lake and Pomme de Terre River (Continued)

Significance: Marsh Lake like its sister lake, Lac qui Parle, is utilized significantly as a wintering, migratory, nesting, and feeding grounds for diverse species of birds. Such species as Marbled Godwit, Hudsonian Godwit, Marsh Hawk, bittern, rails, egrets, herons, grebes and a number of migratory shorebirds. The The atypical marshy habitat provides prime nesting for wrens and other songbirds and importantly the Le Conte's Sparrow. The lake additionally is a prime migratory haven for large populations of diving ducks and also for Whistling Swans. The lake also provides one of two nesting sites in the state and the only site in the region for White Pelicans. The upland prairie bluff provides a large virgin tract bordering Marsh Lake Dam and is significant habitat for a variety of avifauna of which more importantly would include Marbled Godwit Upland Sandpiper, Marsh Hawk, Prairie Falcon and Swainson Hawk. A heron rookery is located along the shoreline and provides one of two nesting sites within the region. The prairie tracts also provide habitat for other fauna species of which most importantly would include the Richardson's Ground Squirrel. The lake area provides a concentrated wintering area for deer and other fauna species. The rocky bottomland prairie and meadows finds a rich flora of which would include pasqueflower and one of few areas for Bird's foot Violet. The Pomme de Terre River which enters into Marsh Lake is a virgin river/floodplain hardwood forested area and provides a concentrated wintering area for deer, and other fauna species. The Red Squirrel is a resident of the wooded areas near the lake. Historically along the southshore bluff area various Indian encampment sites and related archaeological remnants. Additionally an all important branch of the Appleton-Benson Trail system, the Louisberg Ox Cart/Wagon Trail (1877), and the Appleton-Benson Trail remnant to a ferry crossing across the Minnesota River is located in the river stretch between Marsh Lake and Lac qui Parle Lake. The emergent species of grasses and sedges along the shore and red-osier dogwood, willow and distrant bluff lines provide a photographic setting of unusual beauty. Along the northshore bluff area is located a sizeable tract of prairie called Sleeping Bison Prairie. This tract has a most unique and unusual natural rock formation artistically created through weathering and polishing of the rock's surface by buffalo and later cattle. It is in the shape of a Bison in a sleeping position amid indigenous virgin prairie atop a rocky plateau. Additionally, the natural sculpture is encircled by smaller stones creating a significant ring and is theorized to have some spiritual importance in relation to the Indian culture that once inhabited the area. The stones are of the size of fieldstone and adjoin one another in unison around the natural form of the Sleeping Bison.

The area of the Glacial River Warren Channel/Minnesota River Valley is significant to both the region and the state because this marsh, prairie, and floodplain forest habitat represents the most western located type of this habitat in the state. Additionally the unique nesting sites of White Pelican and the Heron rookery makes this area especially significant to both the state and region.

Land Use Problems and Management Problems: The Marsh Lake area, like its counterpart Lac qui Parle Lake, is of low-priority agricultural use land. However, it could be destroyed if bulldozed and placed into agricultural productivity. Existing shoreline ordinances are inadequate along the lake's southshore area in Lac qui Parle County and some vitally significant areas have thereby been destroyed. Inadvertent disruptance of the sensitive White Pelican colony and Heron rookery exists with recreational use of the lake. More regulation should be considered in regard to this unique lake and its vulnerable natural areas. Without such regulation, especially in those important

9. Area: Minnesota River/Marsh Lake and Pomme de Terre River (Continued)

critical areas, increased general recreational use may destroy some very significant natural habitat or historical sites. Some form of delineation should be considered between general and specialized use areas of the lake. Inadequate enforcement of existing laws in the area of the Minnesota River between the two lakes has resulted in disturbance of wintering deer and disruptance of potentially critical habitat through indiscriminate use of snowmobiles. Use of these areas by snowmobiles needs to be more stringently regulated, especially when designated snowmobile trails are not strictly adhered to.

Population Data: This area covers Hantho, Lake Shore, Appleton, and Akron Township.

The 1975 estimated population for this area was 2850 and was lossing its population at the rate of 3% between the years of 1970 to 1975.

The population density is 17.8 persons per square mile.

Nominated by: M. Buer, C. Estrum, J. Schladweiler

10. a. Area: Minnesota River/Lac Qui Parle Lake

Location: Upper perimeter line of Lac qui Parle State Park (transecting Lac qui Parle Lake to Hwy. 119)

Boundary: Lac qui Parle County; Lac qui Parle Twp. (118-42W) Sec. 4, 5, 9, 10 and (119-42W) Sec. 30, 31, 32

Hanto Twp. (119-43W) Sec. 3, 4, 9, 10, 11, 14, 15, 22, 23, 26, 24, 25 and (120-43W) Sec. 21, 32, 33

Chippewa County; Kragero Twp. (118-42W) Sec. 1, 2, 3, 4, 10, 11, 12 and (119-42W) Sec. 19, 20, 29, 30, 32, 33, 34, 35, 36 and (119-43W) Sec. 1, 2, 3, 11, 12, 13

Swift County; Appleton Twp. (120-43W) Sec. 26, 27, 33, 34, 35, 22

Significance: Lac qui Parle Lake serves as a significant wintering area for many species, such as deer, Bald and Golden Eagles, and Short-eared Owls.

The shoreline of Lac qui Parle Lake in most places serves as a major deer wintering area because of high winter populations. Rosemoen Is. also serves as the neighborhood of 65-70,000 Canada Geese with lesser populations of mallards (50,000), Snow Geese (3,000) and other migrating waterfowl. As many as 20 Eagles (Bald and Golden) have been seen using the area at the same time as peak populations of geese.

10.a. Area: Minnesota River/Lac Qui Parle Lake (Continued)

Additionally, the area is prime habitat for numerous populations of ducks and is a migratory stopover for Whistling Swans. Other important areas would include the upland dry prairie tracts atop the bluff areas, Chippewa Prairie, and a privately-owned remnant. This rocky upland prairie is significant for its floral species which includes such varieties as Prairie Smoke, Pasqueflower, Liatris, and also is one of few remnant sizeable prairie tracts in the region. The prairie is an important migratry and nesting grounds for a variety of shorebirds as well as other uncommon or rare prairie species for the western region of the state. The area is one of few places where the Prairie Falcon, Peregrine Falcon, Cooper's Hawk, and Ferruginous Hawk can be found. Marbled Godwits, Upland Sandpiper's, and Marsh Hawk utilized this area as a nesting and feeding ground. In the marshy recesses of the lake area such indigenous species the uncommon bottle gentian and marsh marigold are found. The marshy areas provide a nesting and migratory haven for species of rails, bitterns, and migratory shorebirds, such as Hudsonian Godwit. A Long-bill Curlew was observed along the upper perimeter of the lake in April of 1976 and King Rails have been reportedly observed in past years. Recently the Prairie Chicken has been reintroduced onto the prairie tract of Chippewa Prairie. Within the Lac qui Parle County portion of the lake is another sizeable prairie tract. The area provides a significant migratory, nesting, and feeding grounds for many indigenous prairie species and is believed to be an important habitat area for prairie chicken and burrowing owls. A significant population of Richardson's Ground Squirrel, Marbled Godwits and Upland Sandpipers along with such species as Marsh Hawk and Cooper's Hawk have utilized the area for feeding grounds and migratory/nesting habitat. Historically, Ox Cart/Wagon Trail remnants are found in this area and are a significant link off the Red River Trail System and date from the period of 1875. Additionally, reported historic Indian encampments and other related archaeological remnants have been found in this area and are a significant insight into the hunting/nomadic aspect of the people who once inhabitated the area. The bluff region above Lac qui Parle Lake in 1977-78 winter season was utilized by a herd of Pronghorn Antelope, and indication of the significance of this lake/bluff glacially formed area. Scenically, the contrast of bluffs high above the lake and virgin floodplain forested regions blending into marshy recesses of emergent sedges and grasses creates a unique beauty.

This area is significant to both the region and state because it represents a vitally important habitat area for diverse flora and fauna unique to the west central region of the state and is part of the upper segment of the Minnesota River-Glacial River Warren Channel system. This segment's sizeable prairie tracts along the lake's bluffs and the virgin floodplain forest and marshy sag and recess channels are most significant.

Land Use and Management Problems: In privately-owned areas agricultural use of low priority land could destroy the significant prairie bluff area. The wooded Watson Sag and other lake channels utilized for wintering areas are sufficiently protected as part of the Lac qui Parle State Game Refuge However, privately-owned fringe areas could be subject to drainage and agricultural use, though the land would be of low priority designation. Currently the lake is extensively utilized for recreational purposes. Recreational use is regulated in accordance with game and fish laws and some areas could be jeopardized if regulatory control of powered boats, snowmobiles and other all terrain vehicles is not strictly adhered to in the fringe areas. The area is comprised of highly vulnerable habitat

10.a. Area: Minnesota River/Lac Qui Parle Lake (Continued)

and utilized by some sensitive species. Inadvertent or intentional misuse could destroy a vital part of this segment of the ancient River Warren/ Minnesota River channel and floodplain. Existing shoreline ordinances along the Lac qui Parle County portion of the lake region are inadequate and enforcement is minimal. The prairie tract remnant along the northern segment of the lake could be virtually destroyed if the low-priority land would be bulldozed and placed into agricultural productivity.

Population Data: This area covers Hantho, Lac qui Parle, Kragero Townships and Milan.

The 1975 estimated population for this area was 1,105 and growth rate was 1% from 1970 to

The population density is 10.5 persons per square mile.

Nominated by: M. Buer, C. Estum, J. Schladweiler (Region 6W)

10.b. Area: Minnesota River/Lac qui Parle River Tributary System

Location: Hwy. 212 Upper perimeter of Lac qui Parle State Park (Section 15 Lac qui Parle Twp.) transecting Lac qui Parle Lake-Lac qui Parle River Tributary System from confluence with Minnesota River to Co. Rd. 27

Boundary: Lac qui Parle Co: Lac qui Parle Twp. (118-42W) Sec. 13, 14, 15, 19 20, 22, 23, 24, 25, 26, 27, 28, 29, 31, 30, 33, 34

Camp Release Twp. (117-41W) Sec. 5, 8, 9, 13, 14, 15, 16, 24, and (118-41W) Sec. 30, 32

Chippewa County: Kragero Twp. (118-42W) Sec. 13, 14, 24
Tunsberg Twp. (118-41W) Sec. 19, 29, 30, 32, 33
Sparta Twp. (117-41W) Sec. 4, 5, 9, 10, 11, 13, 14, 12, 15, 16

Significance: An area unique as a virgin hardwood river/floodplain forest with steep river banks and glacially formed rocky prairie bluffs and ridges. The area serves as an important concentrated wintering habitat for deer and other fauna species, significantly Bald and Golden Eagles, Pileated and Red-bellied Woodpeckers Short-eared Owl, and Red Squirrels. Additionally, the wooded area provides vital habitat for migratory and nesting birds, some of which are in the extreme limits of their range, including Pileated Woodpecker, Red-bellied Woodpecker, Scarlet Tanager, and Cooper's Hawk. Minimal localized stands of indigenous woodland species of Nodding Trilium and Gentian. The adjacent dry upland prairie tracts amid glacial granitic moraine ridges produce a significant diverse flora and fauna and contrasting beauty. Native stands of elm, ash, oak, basswood, cottonwood, and maples are found in the more heavily forested areas and of which include a cottonwood tree (1975) recognized by the state as the largest of its species in the Upper Minnesota River Valley. Contrasting inadvertent and indiscriminate land acquisition, especially of low-priority floodplain and forested shoreline and prairie tracts amid the rocky plateau for agricultural use, could result in the drastic reduction of habitat vital as wintering, migratory nesting, and feeding ground for fauna and avifauna.

Lac qui Parle State Game Refuge is primarily involved with wildlife management and development of vital habitat for game and non-game species. Game and fish regulations are adequately enforced within the refuge but not in the outside fringe areas.

Lac qui Parle State Park is used and managed primarily for recreational purposes. Some types of recreational uses are regulated, however. Also, there is some interpretive literature of the significant historic and natural areas.

The Dakota Mission Settlement sites and Ft. Renville site were formerly under the management of the State Park but only recently have been placed under the auspices of the Minnesota Historical Society. A management plan/interpretive formal is presently underway. The Ft. Renville site was archaeologically excavated with historical data and specimens obtained. The Mission church site has been restored and is utilized as an Interpretive Center/Museum.

Population Data: The 1975 estimated population for the area was 2,380 and growth rate 2% from 1970 to 1975.

The population density is 13.5 persons per square mile.

10.b. (Continued)

Nominated by: M. Buer, Estrum, J. Schladweiler (Region 6W)

11. Area: Minnesota River area around Calrton Lake Long Slough, Round Slough

Location: South of Montevideo Chippewa County

Significance: The site is essentially an undisturbed part of the Minnesota River Valley, heavily wooded and fairly well isolated, a good site for ecological studies. It contains an abandoned quarry of Montevideo Gneiss, one of the oldest rocks in the world.

It has excellent potential as an environmental, recreational, and geologic study area. The site has early Indian encampments.

A quarter mile portage from the Minnesota River provides access to this area.

Population Data:

The area covers Sparta Township and Montevideo.

The 1975 estimated population for this area was 6944 and the growth rate was 3% from 1970 to 1975.

The population density is 27 persons per square mile.

Nominated by: Roger Reede, Lee Halgren (Region 8)

Comments: This area has been identified by Regional Development Commission 6W as a Regional Park, and it is on the high priority list for acquisition.

12, Area: Minnesota River/Hwy. 212 Bridge in Granite Falls to Minnesota Falls Dam (continued)

Land Use Problems: Danger exists from potential residential building and development of road systems through valley.

Significance: This area includes Granite Falls Memorial Park and adjacent land to the south and east. It is an excellent geologic area and ecology study area. It contains some of the youngest precambrian rocks in the Minnesota River Valley which differ greatly from the Montivideo and Cedar Mountain sites. There is excellent pothole development by glacial River Warren.

This portion of the river also has tremendous aesthetic beauty with outcrops, small islands, and red cedar mixed with lowland hardwoods. This stretch of the river is canoeable and used for recreation.

Population Data: This area covers Sparta, Granite Falls, and Stony Run Townships and Granite Falls. The 1975 estimated population was 4,532 and growth rate was 2% from 1970 to 1975. The population density is 38.7 persons per square mile.

Nominated by: Lee Halgren (Reg. 8), Roger Reede (Reg. 8).

13. Area: Minnesota River Valley, area around Upper Sioux Agency including the State Park; Hawk Creek to Renville Co., Rd., N. 42 and Yellow Medicine River Valley

Location: Yellow Medicine, Renville Counties

Significance: The historic significance of this region speaks for itself. Additional area along both the Yellow Medicine River and Hawk Creek should be added to this site--providing a complete environment (ecologic) sequence of plant life from the prairies, gully, small river and major river valley. It also provides an excellent geologic site for stream study--(corrosion and deposition sequence) as well as being an excellent recreation area.

Much of this area is under State or County control, however, additional areas not presently controlled should be protected.

Population Data: This area covers Hawk Creek, Minnesota Falls, Sioux Agency Twps. The 1975 estimated population for this area was 1233 and the growth rate was 4% from 1970 to 1975. The population density is 12 persons per square mile.

Nominated by: Lee Halgren, Roger Reede (Region 8)

14. Area: Minnesota River Valley; Redwood County Road No. 7 Bridge to the No. 6 Bridge

Location: Renville, Redwood Counties

Significance: This stretch of the river is probably the most scenic in the Upper Minnesota River Valley. Rock outcroppings are common within this stretch of river. Cacti and Red Cedar are also abundant in this xeric habitat. This is also the most challenging area of the river via canoe when water level is adequate. It has numerous small rapids making it very exciting during early spring for even the experienced canoeist and is easily canoed by novices in the spring and early summer. It is a short stretch that can be easily done in 4 hours. It is the one stretch along the river that should be maintained in its natural state.

Historic sites are also present along this area including Joseph Brown Historic Wayside.

Population Data: The 1975 estimated population for this area was 1633. The areas population was decreasing during that time and the rate of 0.5% (from 1970 to 1975).

The population density is 19.0 persons per square mile.

15. Area: MN River/Lower Sioux Agency

Location: Renville, Redwood Counties

Significance: This area is under the control of the State Historical Society. However, there are historic assets directly across the river from Redwood Ferry Crossing that are not under its control. The major importance of this site is its historic value.

Population Data: The 1975 estimated population for this area was 1697. The area population decreased 5% from 1970 to 1975.

The population density is 23.8 persons per square mile.

Nominated by: Lee Halgren (Region 8)

16. Area: Cedar Mountain Area within the Minnesota River Valley

Location: 1 mile SW of Franklin, E½ of Section 15 W¼ of Section 14, T112N R34W, Redwood County and Renville County

Significance: Cedar Mountain is a classical example of an igneous intrusion, A granitic intrusion into Morton Gneiss surrounded by several bonds of metamorphosed rock resulting from the intrusion. It is primarily a geologic area but it is wooded and there is a small lake to the north of the"Mountain" giving it excellent potential for a recreational site and possibly an environmental study area. This site contains some of the oldest rocks in the world.

Population Data: The 1975 estimated population for this area was 340 and the growth rate was 22%.

Nominated by: Roger Reede (Region 8)

17. Area: MN River/Old Gold Mine

Location: Sections 29, 32, 33, 34 Delhi Township, Redwood County

Boundary: Approximately 3 miles long and a half to one mile wide along the south side of the river, between CSAH #6 and 17.

Significance: Historically, it is a part of the old Sioux trail between the upper and lower reservations. Possibly more important, it is the site of a former commercially-operated gold mine. The site is the only underground mine in S.W.Minnesota. It is a very interesting historical site.

Geologically--Rock formations, ascertained to be the world's oldest, are on the surface for all to see and sample.

Cedar forest, river bottom vegetation, varying ecological habitat, kaolin clay deposits, extensive precambrian rock exposure.

Scenic wise--The area has a spring-fed, land-locked lake which adds to the natural beauty of the whole. The terrain lends itself to the possibilities of hiking, trails, fishing and the like. It abounds in virgin vegetation and wildlife, such as deer.

17. Area: MN River/Old Gold Mine (Continued)

Population Data: The 1975 estimated population for this area was 336. The area population decreased at the rate of 3% from 1970 to 1975.

The population density was 10 persons per square mile.

Nominated by: Frank Hirsch, Roger Reede (region 8)

Comments: This site was a proposed state park.

18. Area: "Sink Holes" in Fillmore County

Location: Fillmore Co.

Significance: Southeastern Minnesota is underlaid by faulted and creviced limestone formations. Because counties adjacent to the Mississippi River and its tributary streams have an extremely rugged topography, most of the limestone formations are exposed along river valleys or are covered by a very thin mantle of glacial drift. Pollutants percolating through outcrops and sinkholes can travel great distances without being removed by natural purification processes. According to MN Health Department Survey, 40% of all private wells sampled in Southeastern Minnesota show a significant concentration of nitrates, over 1.0 milligram per liter. Another 10% exceed the standards developed by the United States Public Health Service.

Land Use Problems: Land use connected with water pollution problems.

Population Data: This area covers Amherst, Canton, Caroolton, Fillmore, Fountain, Newburg, Preble, and Spring Valley Townships. The 1975 estimated population for this area was 10,007 and had no growth from 1970 to 1975. The population density is 34 persons per square mile.

Nominated by: Richard Nelson (Region 10)

19. Area: Hiawatha Apple Blossom Scenic Drive

Location: Section 33 of Dresbach Township, Winona County

Significance: The area has state significance because it is located on a scenic drive which is designated and named by the state legislature.

Land Use Problem: Current--None known. Future--Possible degradation of the spectacular scenic view from the overlook by reason of land development in the vicinity of the overlook.

Population Data: The 1975 estimated population for this area was 251 persons, population decreased 27% during the years of 1970 to 1975. The population density for the area is 33 persons per square mile.

Nominated by: Richard Klobacher (Region 10)

20. Area: Mn River/Robard's Glen

Significance: Robard's Glen--portion between Green Hill Cemetary to the Minnesota River combines scenic vegetation and landform with the historical significance of a pioneer cemetary (earliest date 1792). Located close by, on the John N. Dranttel farm , is an Indian burial ground left in its natural state. The stream enters the Minnesota River approximately 1 mile from the present location (boundary) of Traverse des Sioux State Park.

The area has national significance because its unique location of Robard's Glen have made it part of the past history and prehsitory of Traverse des Sioux (crossing, treaty, state park, etc.).

Land Use Problems: Future--Development for residential use is being contemplated at this time. Such utilization of the area could well destroy the environmentally sensitive slopes of the glen.

Population Data: The 1975 estimated population for Traverse Township was 564. During the period from 1970 to 1975 the township decreased its population 6.8%.

The population density is 28 persons per square mile.

Nominated by: Tyrone Steen (Region 9)

21. Area: Swan Lake

Location: N.W. of Mankato, Nicollet Co.

Size: About 9,000 acres

Ownership: Private

Significance: It is a highly productive waterfowl lake. It is the only known Black-Crown Heron Rookery in this area and the eastern most range for many shore birds, for example the Western Grebe and the Rednecked Grebe. Used as an outdoor classroom by the Biology Department of Gustavus Adolphus College in St. Peter because of its rich variety of flora and fauna.

According to Dr. W.J. Breckenridge, the area has state significance.

Land Use Problems: Current--The lake is surrounded by agricultural land. It is a shallow lake and is vulnerable to fluctuation of water levels. Agricultural drainage projects will affect the water level of the lake and eliminate the peripheral wetlands. Agricultural activity has resulted in the elimination of significant stands of forest cover in the past. Future--Continued increased pressure for agricultural drainage and clearing can be expected. Potential for reconsideration for power plant siting.

Population Data: This area covers Nicollet Township, Granby Township, Courtland Township, Brighton Township, Nicollet and North Mankato.

The 1975 estimated population was 2,477 people and the growth rate was 10% from 1970 to 1975.

The population density is 22.6 persons per sq. mile.

21. Swan Lake (Continued)

Nominated by: Dr. W.J. Breckenridge, (Region 11), Don Steger, J. Berg, L. Filter, B. Maher, R. Strachan and Ron Miles (Region 9)

22. Area: Lake Vermillion watershed.

Location: Lake Vermillion, St. Louis Co.

Significance: The area is very scenic and has a Great Blue Heron colony nesting site, about 300 pairs recorded. Five old archaeological sites have been excavated. Evidence suggests that the shores of the lake are one of the oldest and most consistently occupied places of human habitation in N.E. Minnesota.

Population Data: According to Minnesota's Lakeshore Study, 1970; the Lake Vermillion Area contains 1345 seasonal homes, 157 permanent homes, 48 resorts and 5.1 dwellings per shore mile. The area has a total of 292.1 shore miles.

Lake Vermillion is among one of the 10 lakes in the state with the majority of the development along shore lines. The Lake Vermillion area has more lake homes (1502) than any single lake in Minnesota. Mille Lacs Lake ranks second with a total of 1315 homes. However, the Mille Lacs Lake area is more dense with a total of 15 dwellings per shore mile.

Nominated by: David Lanegran (Region 11)

23. Area: Cedar Rock Wildlife Management Area and Camp Pope Historic Site

Location: Delhi Township, Redwood Co.

Significance: This area has long been considered for inclusion in the state park system. Variation in topography and the granite bedrock make the geology of this area unique. Also, red cedar and cacti are prevalent. It is an excellent example of a scenic riverside habitat.

Nominated by: Lee Halgren

3. LEAST CRITICAL AREAS

1. Area: Upper Red Lake Peatland

Location: Koochiching/Beltrami Counties primarily around upper and lower Red Lake

Significance: This area is a designated national natural landmark. It contains 300 square mile of unbroken peatland, is the largest peatland in Minnesota and one of the largest in the United States.

This large, undisturbed peatland has great scientific interest because of the unusual floral community. It is an excellent example of a domed or raised bog which is a bog with an elevated pordon caused by peat accumulation. The well-developed domed bog has a 12-foot cap of sphagnum moss with black spruce and feather moss. This area is a most southern example of this type of peatland, which extends across North Canada to Alaska and across Northern Eurasia.

The vegetation patterns indicate the direction of flowing water and have interested geologists, botanists and foresters for years. The great depths of peat reveal historic data of the past 1,000 years, however little study has been carried out in the area.

Area serves as a major groundwater recharge for municipal water supplies to the N.W. edges of Minnesota. Surface water enters streams serving Thief River, Crookston, East Grand Forks, Oslo, Stephen, Hallock and two state parks. The peatland also acts as a flood control area serving the Red Lake River and Red River of the North basins.

Land Use Problem: Current--None. Future--Minnegasgo Company is planning to use some of these areas for peat gasification.

Population Data: This area covers large parts of both Koochiching and Beltrami Counties. The 1975 estimated population for Koochiching County and Beltrami County was 17,644 and 29,501. The rate of growth of these two counties was 3.1% and 11.9% from 1970 to 1975 respectively. This area is very sparsely populated, and the population growth of this area is not of great importance, as the major impact to the area will be from the peatland mining project.

Nominated by: Jean Maltais, J.J. Mockford (Reg. 2), Larry D. Cole (Reg. 2) L. Bakke, C. Gernes, D. Lais, B. Thomas (Reg. 6E) D. Lanegren, Jerry Jensen, W.J. Breckenridge (Reg. 11)

2. Area: Fringe area of Boundary Water Canoe Area

Ownership: U.S.F.S. MN DNR, and private

Significance: The BWCA is the only designated national wilderness area in the State. It consists of vast land and water and has great scenic, historical, scientific and geological value. The area attracts tourists and canoeists from all over the nation and is important to the economy of Northern Minnesota towns.

Land Use Problems: The area is under pressure from lumber, mining interests and tourism.

Future--increasing demand for lumber, minerals, and recreational activities will have major impact to this area.

Nominated by: A Mattioli (Region 3) David Lanegran and John Tester (Region 11), Jean Maltais (Reg. 2).

3. Area: Lake Agassiz, Peatland

Location: T63, 64, 65 R24 and 25 Koochiching County

Size: 22,500 acres

Ownership: MN State Trust Fund Land

Significance: This area represents an outstanding example of peatlands which illustrates the process of peat accumulation. Myrtle Lake in the southeast part of the area represents an unusual phenomenon. The bog surface around Myrtle Lake was built upward elevating the surface by at least 12 feet, contrary to the usual successional process of lake filling. The area contains fine examples of raised bog and string bogs and uncommon flora and fauna. The area is a designated national natural landmark.

Development threat: Current - this site is adjacent to the site proposed for peat mining by Minnegasco. Future - dependent on future demand for peat.

Population data: This area is very scarcely populated.

Nominated by: Jerry Jensen (Region 11) L. Bakke, C. Gernes, B. Thoma (Region 6E), Jean Maltais (Reg. 2).

4. Area: The fringe of Voyageurs National Park

Location: Koochiching and St. Louis Counties

Significance: The tourist activity around the park could cause a great deal of destruction of forest land and destroy the scenic attributes of the place.

Population Data: This area had a population of approximately 10, 195 persons in 1975. The population has grown 2% over the 5 year period from 1970 to 1975. Koochiching County had a population of approximately 17,688 persons in 1975. One-half of the total population of the county lived within this nominated area during this time.

According to Minnesota's Lake Shore Study, 1970, Rainey Lake had 416 seasonal homes, 186 permanent homes and 3 resorts and 2.2 dwelling units per shore mile. There is a total of 251 seasonal homes as of this year in Koochiching County along the lake. Unfortunately we cannot get seasonal home data in St. Louis County and cannot compare the rate of growth of the seasonal homes in the lake shore area.

Comments: In 1971 Governor Anderson established the Voyageurs Park Committee and the Legislature appropriated money to the Committee for the planning of peripherial areas of the park. The Arrowhead Regional Commission, county officials, state planning agencies and citizen groups participated in the planning process. The study area covered about a 50 mile radius around the park. The plan was completed in 1974.

Nominated by: David Lanegran (Region 11), Jean Maltais (Reg. 2).

G. Evaluation Report Outline

BASIC OUTLINE FOR AN EVALUATION OF A POTENTIAL CRITICAL AREA

I. Description of the Area.
   A. Physical Description;
      - location (regional or state map)
      - size, area
   B. Environmental Features and Concerns;
      - resources of regional or state significance
      - topography/scenic resources
      - soils (general groupings or soil atlas description)
      - geology
      - hydrology (surficial, groundwater)
      - vegetation
      - climatological data
      - wildlife
   C. Existing Land Uses;
   D. Public Facilities;
      - transportation
      - sewers
      - fire, police
      - parks and recreation

II. Major Situational Factors.
   A. Socio-Economic Factors;
      - population growth and distribution
      - area economy - and economic interrelationships
   B. Planning Status in Each Governmental Unit;
      - comprehensive plans
      - transportation, sewer, open space, land use
      - other agency involvement - state, federal
   C. Regulations;
      - floodplain zoning
      - shoreland
      - on-site sewage disposal
      - steep slopes
      - etc.
   D. Development Philosophy.

III. Problem Definition and Alternative Resolutions.
   A. General Issues or Conditions Endangering Resources of State of Regional Significance;
   B. Effects of (A.) on Resources of State of Regional Concern;
   C. Conditions to be Achieved - Goals, Objectives;
   D. Alternative Means of Achieving Goals and Objectives.

IV. Conclusions and Recommendations