3.7 SPECIAL DESIGNATIONS

3.7.1 Potential Wilderness Study Areas

Issue Statement

Public opinions differ on whether or not to add potential wilderness (for ecosystem, social, and other wilderness values) on the Chippewa and Superior NFs. Forest Plan revision will determine which, if any, areas will be recommended for wilderness study area designation. (The Forest Plan revision process did not address the current management direction for the Boundary Waters Canoe Area Wilderness (BWCAW).)

Indicator

The indicator is the number of Forest Roadless Inventory areas and associated acres allocated to the Wilderness Study Area MA.

Per the Wilderness Act (1964): "A wilderness… is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements of human habitation, which is protected and managed to as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

The result of this Forest Plan revision will not be the designation of wilderness. It may or may not include areas that could be recommended to Congress for wilderness study.

Scope of Analysis

The geographic analysis area included National Forest System land within the Chippewa NF and National Forest System land on the Superior NF outside the BWCAW. Each Forest identified areas of the Forest that currently meet criteria for potential National Wilderness Preservation System candidates.

The purpose of the inventory was to identify areas that were subject to future evaluation and possible recommendations to Congress for wilderness study. These areas were included in the revision alternative analysis.

According to 36 CFR 219.17 and FSM 1923, when revising Forest Plans, national forests must inventory, evaluate, and consider for wilderness study recommendation existing RARE II areas and other areas that may not have been previously inventoried in RARE II.

Areas identified in the November 2000 Roadless Areas Conservation Final Environmental Impact Statement were considered. The original RARE II areas were included in that EIS, and were inventoried and considered along with new inventoried areas for appropriateness as potential wilderness study areas.

3.7.1.a Affected Environment

This section summarizes the Forests' Roadless Inventory and Evaluation process and discusses demand and supply. See Appendix C for a complete

description of the Chippewa and Superior NFs' roadless inventory and evaluation process.

Roadless Area Inventory

The Forest Plan revision process required an up-to-date inventory to address the ongoing roadless area management issues. Direction for inventory and evaluation is found in: Regulatory (36 CFR 219.7); Handbook (FSH 1909.12); and Regional Guidance (1920/2320 August 13, 1997). The evaluation criteria for wilderness are found in FSH 1909.12, Chapter 7, section 7.2.

The inventory process included a review of existing RARE II areas to see if they met Forest Plan revision Roadless Area Inventory criteria, as well as a review of other essentially roadless areas that may not have been previously inventoried in RARE II process.

The inventory included lands that met the FSM criteria outlined below. Areas selected for evaluation also met inventory advice in the Regional Forester memo of August 13, 1997 titled "Roadless Area Inventory for Forest Plan Revision".

Vegetation:	No more than 20 percent of the area harvested in the past 10 years.
Setting/Solitude:	At least about 2,500 acres of semi-primitive area if not adjacent to existing wilderness. No acre limit adjacent to existing wilderness.
Ownership:	At least 70 percent federal ownership. No future non-federal land access needs.
Roads:	No more than ½ mile of improved roads per 1,000 acres. No roads not under Forest Service jurisdiction.
Shape:	A manageable area without narrow, elongated, or gerrymandered boundaries.

Areas were excluded from the inventory if they contained reservoirs, utility corridors, electronic sites, developed recreation sites, or current mining activity. However, some improvements were deemed acceptable. If motorized trails, fences, outfitter camps, or historical mining or timber activities were present, the area still was considered physically undeveloped.

The inventory resulted in the Superior National Forest identifying 30 areas with a total of 60,163 acres. The Chippewa NF identified 2 areas with a total of 6,213 acres. Some of these areas are scattered throughout both Forests, while others on the Superior NF are adjacent to the BWCAW. Figures PWA-1 and PWA-2 depict the Forests' Roadless Area Inventory areas.

Roadless Area Inventory Evaluation

The areas within the Forest Roadless Area Inventory on each Forest were evaluated in terms of *capability, availability, and need* which are outlined below. Appendix C describes the inventory and evaluation process in more detail.

The ***capability*** of a potential wilderness study area is the degree to which it contains the basic characteristics that qualify it for wilderness designation. Factors examined include environment and special features, challenge, outdoor recreation opportunities, and manageability.

An area's ***availability*** is determined by comparing wilderness values in that location to the value of and need for other resource uses and production from the same land area.

The ***need*** for designation of new wilderness is based on comparing the value of potential areas to existing wilderness in nearby locations as well as to the National Wilderness Preservation System as a whole. This considered demand for additional wilderness recreation opportunities on the Forests. It also considered the need to give certain ecological values the protection that wilderness designation would afford.

Demand and Supply

Public recreational demand for, and supply of, existing wilderness and of existing designated Semi-primitive Recreation Management Areas is discussed in this section. Other values of designated wilderness are also discussed.

Recreation

Visitor use of wilderness areas in the National Forest System is expected to grow about 0.5 percent annually

for the next 50 years. Generally, designating additional wilderness acres shifts the pattern of use upwards. (Cordell 1999) Current designated wilderness recreation use in the Minnesota National Forests occurs in the BWCAW.

BWCAW overnight paddle, overnight motor, and day motor use is regulated through a permit quota system from May 1 until September 30 each year. In 2001, the BWCAW had an estimated 1,350,000 Recreation Visitor Days (RVD). An RVD is one person recreating for 12 hours. Use within the BWCAW fluctuates from year to year but has remained fairly stable over the past 10 years. Use may fluctuate each year depending upon variables such as gasoline prices, insect activity, weather, fire danger, etc.

Historically and currently, many entry points are full during most of July and August as well as other key week-ends such as fishing opener, Memorial Day, and Labor Day. Although Cordell predicts national increases in wilderness use, potential for growth in the BWCAW is limited seasonally and geographically. Areas of the wilderness and times of year where there is potential for growth (i.e. quotas are available) may not meet people's needs and preferences.

A discussion of public demand for and use of designated semi-primitive recreation opportunities provides a perspective on the demand for and range of remote and primitive kinds of recreation opportunities. The following information concentrates on designated areas that have few or no roads, with either primitive or semi-primitive ROS classification versus the Forest Setting – Recreation Opportunity Spectrum section, which discusses semi-primitive settings over the whole Forest.

Federal lands are often the only source of remote recreation opportunities, such as those found in designated Semi-primitive Recreation MAs. The scarcity of federal lands in the eastern United States implies more limited opportunities for remote recreational experiences. Access to private land for public recreation is expected to decrease in the future; so public lands are likely to be the destination of choice for increasing numbers of people looking for high-quality recreation experiences in natural settings. (RACR 2000)

Regional trends indicate slow but steady growth in the demand for unroaded recreation opportunities. (Cordell 1999). Although demand for other recreation activities will increase more rapidly in the future, the availability of unroaded areas for remote recreation activities may be a limiting factor in meeting future demand. (RACR 2000)

Currently, the Chippewa NF sees relatively low current overall use of designated Semi-primitive Non-motorized Recreation Management Areas. Use in these areas increases in the spring and fall when insect populations are low. Areas with groomed cross-country ski trails are popular in the winter. Participants in unroaded recreation opportunities on the Chippewa NF include a high percentage of local residents within an hour's drive of the Forest, although there is also a noticeable percentage traveling from the Twin Cities metropolitan area. Forest users are attracted to the Chippewa NF instead of other government land ownerships due to locality, tradition, and family values. (HRDC 2002a).

On the Superior NF outside the BWCAW, there are currently Semi-primitive Motorized Recreation Management Areas where use is generally lower than other more roaded areas of the Forest. The areas contain backcountry camping sites and trails. Use of these dispersed sites and trails is estimated to be low to moderate. However, some areas that are similar to the BWCAW receive heavy use in July and August as well as on key week-ends. Many of the dispersed sites provide opportunities similar to the BWCAW without the need for obtaining a permit or complying with other wilderness regulations. However, because motorized recreation, timber harvest, and other management activities can occur within these Semi-primitive Motorized Recreation Management Areas, visitors cannot always expect a wilderness type of experience (solitude, natural setting, etc). The amount of use is also not limited, so visitors may encounter more users or types of uses that would conflict with a wilderness type of experience.

In summary, current Semi-primitive Recreation Management Areas could meet some of the projected recreational demand for primitive recreational experiences. The BWCAW has capacity to meet most of the demand. However, at many entry points there are periods of time throughout the year (particularly on key week-ends and most of July and August) where

demand exceeds the available number of entry permits. Even if capacity were increased, demand would likely not be met at those peak use times while still maintaining a quality wilderness experience.

Cordell's research does not include the availability and use of wilderness outside the United States. Nevertheless, it is important to note that just to the north in Canada lies another approximately one million acres of wilderness in Quetico Provincial Park. Quetico Provincial Park is similar to the BWCAW in environment and management, but with a much lower density of visitors because the Park has lower quotas than the BWCAW. Use is currently at or near capacity in Quetico Provincial Park.

Ecosystem Representation

On a regional or State level, the location of wilderness is distributed unevenly across the nation in terms of population. The majority of federal wilderness lands are located in the western states and Alaska. While these states account for only about 20 percent of the national's population, they hold more than 95 percent of the wilderness areas. (Cordell 1999) Even though approximately 37 percent of the federal land in the Superior NF is designated wilderness, only 5 percent of the National Wilderness Preservation System (NWPS) is found in the eastern United States.

The NWPS covers almost 104 million acres in about 130 areas on lands managed by the U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, and the Bureau of Land Management. Although the Forest Service manages only 33 percent of the total NWPS acreage; 62 percent of the wilderness acreage in the lower 48 states is managed by the agency.

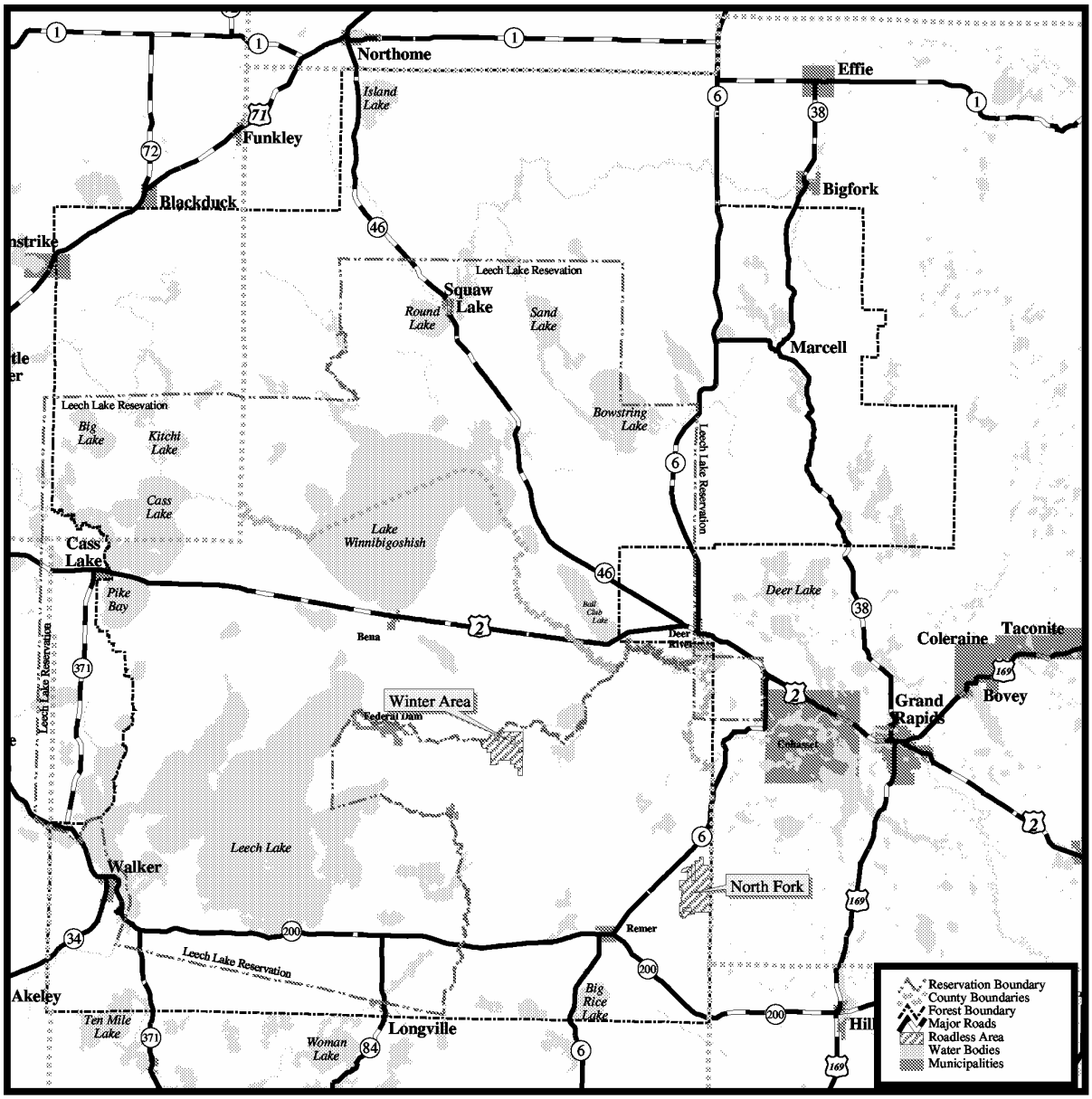
Cordell's (1999) research shows an imbalance of ecosystem representation in designated wilderness. Particularly under-represented are prairie grassland ecoregions of the Great Plains. While hill and mountain landforms account for about three-fourths of all wilderness areas, plains and tablelands make up less than five percent. Cordell's research shows a need for more representation in the Laurentian Mixed Forest Province. The Chippewa and Superior NFs lie within that province.

For the most part, the biological need for ecosystem representation was addressed in the Forest Plan revision process through the potential Research Natural Area (pRNA) analyses conducted by both Forests. (EIS section 3.7.2) Special wildlife habitat or ecosystem features information is provided in the description of each inventoried roadless area in Appendix C. However, the pRNA analysis identified the need for ecosystem representation based on many ecological features and not just the attribute of being roadless. Potential wilderness designation does allow natural processes to occur, but it may not provide the options necessary to provide for all ecosystem representation (an example of this would be regeneration of jack pine without the use of prescribed fire).

Other Values

There are many other values (of wilderness study designation) in addition to recreation and ecosystem representation. The Wilderness Act of 1964 states as its purpose: "To insure that an increasing population accompanied by expanding settlement and growing mechanization, does not occupy or modify all areas… leaving no lands designated for preservation and protection in their natural state." The other values that may be provided by designated wilderness (recognized in the Act) include scientific, educational, scenic, and historic. With few exceptions, designated wilderness does not have temporary or permanent roads; use of motor vehicles, motorized equipment or motorboats; landing of aircraft; other form of mechanical transport; and structures or installations.

Figure PWA-1 Chippewa National Forest Forest Plan Revision Roadless Areas Inventoried for Evaluation as Potential Recommendations for Wilderness Study



The Forest Service uses the most current and complete data available. Geographical Information System (GIS) data and product accuracy may vary from map to map. Data and maps may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation other than those for which they were created, which may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace GIS products without notification. The Forest Service will not be liable for any activity involving this information. This map shows all ownerships within the National Forest boundaries. However, management direction would only apply to land managed by the Forest Service.

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June, 2004

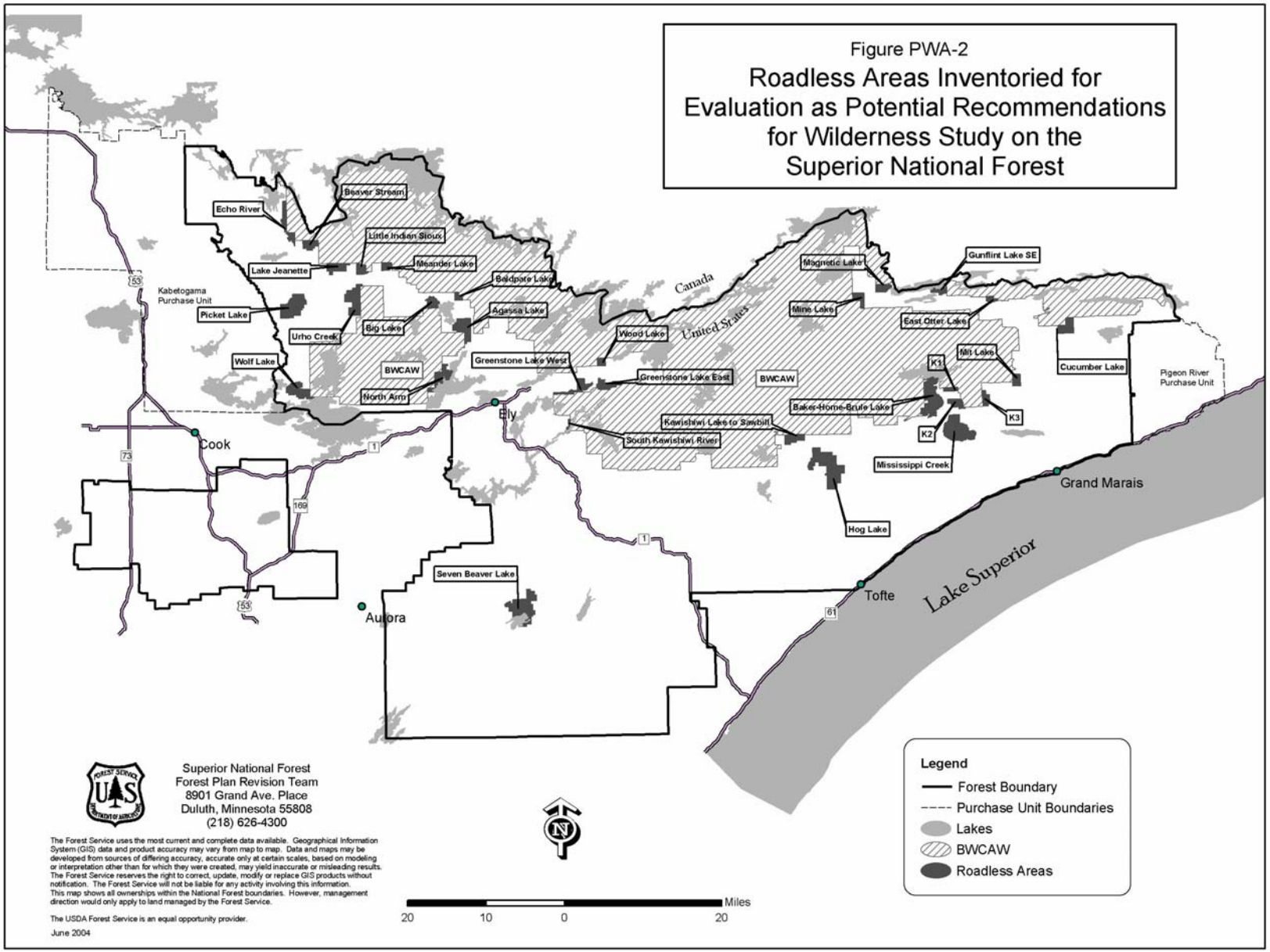
Figure PWA-2
Roadless Areas Inventoried for Evaluation as Potential Recommendations for Wilderness Study on the Superior National Forest
Beaver Stream
Echo River
Little Indian Sioux
Lake Jeanette
Meander Lake
Baldpate Lake
Kabetogama Purchase Unit
Picket Lake
Agassa Lake
Urho Creek
Big Lake
Wolf Lake
BWCAW
Greenstone Lake West
Wood Lake
Canada
United States
Magnetic Lake
Gunflint Lake SE
Mine Lake
East Otter Lake
Greenstone Lake East
BWCAW
K1
Mit Lake
Cucumber Lake
Pigeon River Purchase Unit
North Arm
Ely
Bakes-Home-Brule Lake
K3
K2
Kawishiwi Lake to Sawbill
South Kawishiwi River
Cook
Mississippi Creek
Grand Marais
Hog Lake
Seven Beaver Lake
Aurora
Tofte
Lake Superior
Legend
Forest Boundary
Purchase Unit Boundaries
Lakes
BWCAW
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Miles
20 10 0 20

3.7.1.b Environmental Consequences

Effects Common to All Alternatives

Roadless Area Conservation Rule Management

There is ongoing legal uncertainty of implementing the Roadless Area Conservation Rule in the future. How the Roadless Area Conservation Rule, that includes the RARE II lands on both Forests, would affect management and its final legal disposition (final arrangement) continues to be in question.

MA Allocation

All the areas in the Forest Roadless Area Inventories were assigned a management area designation within each alternative based on that alternative's theme and the area's characteristics. Table PWA-1 indicates, by alternative, the management area allocation of each area in the Forest Roadless Area Inventories. For examples: If an inventoried area was within a large expanse of General Forest - Longer Rotation MA and the theme of the alternative did not call for additional special designations, the inventoried area was generally allocated to the General Forest - Longer Rotation MA. If an inventoried area had high quality semi-primitive recreation opportunities and the theme of the alternative included providing more primitive types of recreation, the area was allocated to a Semi-primitive Motorized or Semi-primitive Non-motorized MA.

Regional Direction

"Once the Forest Roadless Area Inventory is finalized, any proposed site-specific projects within an inventoried area will require an environmental analysis which considers effects of the project proposal on the roadless characteristics in the area. The effects analysis must consider the entire inventoried area, not just the project area." (Eastern Region August 1997)

The Forest Roadless Area Inventory process identified and evaluated 2 areas on the Chippewa NF and 30 on the Superior NF. Effects on roadless characteristics of these areas would be addressed during project-level analyses.

Direct and Indirect Effects

The following is a summary of general effects which could occur with designation and non-designation of areas in the Forest Roadless Area Inventories in a Wilderness Study Area MA.

Wilderness Study Area designation:

There are a number of consequences of Wilderness Study Area MA designation, which may include:

- Natural processes would occur.
- Biological and ecological values requiring minimal disturbance would be enhanced and protected.
- Social and economic values may be enhanced as a result of additional wilderness capacity and opportunities.
- Timber, minerals, and other commodities may be unavailable for harvesting or extraction.
- Additional wilderness boundaries may need to be located and maintained.
- Existing access routes to non-National Forest System lands may cross some of the areas.
- Non-National Forest System neighboring ownership may affect the wilderness setting.
- Payments to local governments could be affected – either positively or negatively.

Non-wilderness Study Area designation:

There are also a number of consequences of non-Wilderness Study Area MA designation, which may include:

- Timber, minerals, and other commodities would be available for harvesting or extraction.
- Vegetation could be managed to meet Landscape Ecosystem objectives.
- Loss of future option for possible wilderness or other special area designation if the areas are roaded and intensively managed or character is changed.
- Potential option for designation in a research or other special area.
- Designation of some of the areas for semi-primitive management may provide solitude

and backcountry experiences, while still allowing some management activities and recreational uses not permitted in designated wilderness.

Each alternative includes all, some, or none of the Forest Roadless Area Inventory areas as a Wilderness Study Area MA. The discussion below addresses anticipated overall direct and indirect effects for each alternative in relation to the allocation of the Forest Roadless Inventory Areas. Effects would become noticeable within the Plan implementation period (the next 10 to 15 years).

The tentatively identified suitable lands for timber harvesting are also included in this discussion to show effects on the potential acres reserved from harvest. This information is included because in general NFS land is identified for multiple-use management and part of that management is the potential for timber harvesting.

Alternatives A, C, Modified E, and F on both Forests:

Alternatives A, C, Modified E, and F on both the Chippewa and Superior NFs do not allocate any Forest Roadless Area Inventory areas to the Wilderness Study Area MA.

Alternatives A and C would generally provide developed and undeveloped recreational opportunities in motorized and non-motorized recreation settings, and would maintain the existing higher standard roads while decommissioning some of the existing low standard roads. Alternatives Modified E and F would generally provide both developed and undeveloped motorized recreational opportunities in scenic landscapes and would maintain the existing higher standard roads while decommissioning some of the existing low standard roads.

Alternatives A and C focus, to a greater extent than other alternatives, on the production of timber and other commodities; Alternative F focuses on the restoration of natural ecological processes. These alternatives emphasize a more developed, motorized recreational opportunity setting. Wilderness Study Area MAs would not be expected to be a priority when meeting management objectives outlined under these alternatives.

Modified Alternative E emphasizes diverse economic opportunities for local communities. Under this alternative the Forests would be managed in a manner that provides a range of tourism opportunities, diverse wildlife habitats, and scenic landscapes. Timber and other commodity production would also be emphasized, although not to the extent of alternatives A and C. Modified Alternative E included other management areas than Wilderness Study Areas to meet its theme because there would be more management flexibility for developing potential economic and recreation opportunities.

These alternatives would not create additional wilderness recreational opportunities on either Forest. (Modified Alternative E does include allocations to the Semi-primitive Non-motorized Recreation MA.) The Chippewa NF would continue to provide a forest setting that has a maximum ROS objective that is approximately 91 to 95 percent roaded natural. The opportunity for semi-primitive or primitive recreational experiences would remain small. The Superior NF would have a maximum roaded natural ROS objective of approximately 55 to 60 percent. The Superior NF would continue to provide semi-primitive and primitive recreational experiences and benefits. People desiring additional wilderness experiences would not likely find that these alternatives meet their needs, while people not desiring additional wilderness may prefer these alternatives.

Alternatives B and D on the Chippewa NF

The North Fork and Winter Area were allocated to the Wilderness Study Area MA in these alternatives on Chippewa NF. The Wilderness Study Area MA allocation fits well with the themes of Alternatives B and D.

The theme of Alternative B emphasizes restoring older mixed forests and coniferous species. Protecting unique resources is also emphasized more in this alternative than in other alternatives. It would emphasize a variety of recreation opportunities in predominately semi-primitive settings. Existing higher standard roads would be maintained while decommissioning some of the existing low standard roads.

Table PWA-1. Forest Roadless Area Inventories by Alternative Management Area Allocation

Management Area Abbreviations

GF: General Forest and General Forest - Longer Rotation
REA: Riparian Area
PWILD: Wilderness Study Area
PRNA: Potential Research Natural Area
UNIQ: Unique Biological, Aquatic, Geological, or Historical Area
SPM: Semi-primitive Motorized Recreation
SPNM: Semi-primitive Non-motorized Recreation
REC: Recreation Use in a Scenic Landscape
SMC: Special Management Complex

Roadless Area	NFS Acres	Alt. A	Alt. B	Alt. C	Alt. D	Mod. Alt.. E	Alt. F	Alt. G
Chippewa NF								
Winter Area	2,727	GF	PWILD	GF	PWILD	REA	GF	PWILD
North Fork	3,486	GF	PWILD	GF	PWILD	UNIQ	PRNA	PRNA
Total CNF PWILD	6,213	0	6,213	0	6,213	0	0	2,727
Superior NF								
Seven Beaver Lake	5,174	GF, SPM	PRNA, SMC	GF, SPM	PWILD	REA, PRNA	PRNA, SPM, GF	PRNA, SMC
Picket Lake	4,097	SPM, GF	SMC, SPNM	SPM, GF	PWILD	SPM	SPM, GF	SPM
Wolf Lake	2,661	GF	SMC, SPNM	GF	PWILD	GF	GF	SPM
Echo River	1,900	REC, GF	REC, SPNM	REC, GF	PWILD	REC, GF	REC, GF	REC, GF
Beaver Stream	1,277	GF	SPNM	GF	PWILD	GF	GF	GF
Lake Jeanette	1,793	GF	SPNM	GF	PWILD	GF	GF	GF
Meander Lake	753	GF	SPNM	GF	PWILD	GF	GF	GF
Urho Creek	3,573	GF	SPNM	GF	PWILD	GF	GF	GF
Little Indian Sioux	995	GF	SPNM	GF	PWILD	GF	GF	GF
Agassa Lake	2,641	GF, REC	SPNM, SMC	GF, REC	PWILD	GF, SPM	GF, REC	SPM
Baldpate Lake	485	GF	SPNM	GF	PWILD	GF	GF	SPNM
North Arm Burntside Lake	2,285	REC	PWILD	REC	PWILD	SPM	REC, PRNA	PRNA, SMC
Greenstone Lake East	1,476	REC	PWILD	REC	PWILD	SPM	REC	SPM
Greenstone Lake West	1,353	REC	PWILD	REC,	PWILD	SPM	REC	SPM
Big Lake	1,079	GF	PWILD	GF	PWILD	SPNM	GF	SPNM
Wood Lake	544	REC	PWILD	REC	PWILD	REC	REC	SPNM
South Kawishiwi River	211	GF	PWILD	GF	PWILD	REC	GF	PWILD
Hog Lake	7,035	GF	SPNM, SMC, PRNA	GF, SPM	PWILD	GF, SPM	GF, PRNA	GF, PRNA, SMC
Brule Lake-Eagle Mt K1	589	GF	SMC	GF	PWILD	GF	GF	SMC
Brule Lake-Eagle Mt K2	1,035	GF	SMC	GF	PWILD	GF	GF	SMC
Kawishiwi Lake to Sawbill	1,486	GF	SMC	GF	PWILD	GF	GF	SPM
Baker-Homer-Brule	4,963	SPM, GF	PWILD	SPM, GF	PWILD	SPM	SPM, GF	SMC
Mit Lake	961	GF	SMC	GF	PWILD	GF	GF	GF
Mississippi Creek	5,152	GF	SMC	GF	PWILD	GF	GF	SMC, GF
Magnetic Lake	1,119	REC	PWILD	REC	PWILD	REC	REC	REC
Gunflint Lake SE	1,003	REC	PWILD	REC	PWILD	REC	REC	REC
Brule Lake-Eagle Mt K3	1,071	GF	SMC	GF	PWILD	GF	GF	GF
Cucumber Lake	1,801	GF	PWILD	GF	PWILD	SPNM	GF	PWILD
Mine Lake	1,129	REC	PWILD	REC	PWILD	REC	REC	PWILD
East Otter Lake	522	REC	PWILD	REC	PWILD	REC	REC	PWILD
Total SNF PWILD	60,163	0	17,485	0	60,163	0	0	3,663
Total both Forests PWILD	66,376	0	23,698	0	66,376	0	0	6,390

The theme of Alternative D emphasizes managing the forest for natural recreation settings and restoration of native cover types. Non-motorized recreation settings would be emphasized. It would maintain most, but not all of the existing high standard roads while decommissioning many of the existing low standard roads.

The North Fork and Winter Area would provide unroaded opportunities for wilderness values such as solitude and ecosystem diversity. They would contribute to the protection of unique resources, older age classes, and natural appearing forest. These two areas would contribute less than one percent (about 0.8) of land managed for wilderness character to existing designated wilderness (the BWCAW) on the Forests.

The management of these areas under the Wilderness Study Area MA would also affect the opportunity for more developed recreational experiences and active management of the vegetation resources. In these alternatives, there would be 1,608 acres of tentatively suitable lands unavailable for timber harvest.

Designated semi-primitive recreational opportunities and benefits would increase due to the allocation of Wilderness Study Area MAs. In Alternative B there would be approximately 68 percent of the Forest with a maximum roaded natural ROS objective, while in Alternative D, about 5 percent of the Forest would have a maximum roaded natural ROS objective. People desiring wilderness experiences on the Chippewa NF would likely find that these alternatives best meet their needs, while people not desiring more wilderness would likely find that these alternatives do not meet their needs.

Alternative G on the Chippewa NF

The Winter Area was allocated to the Wilderness Study Area MA in this alternative on the Chippewa NF. Alternative G emphasizes managing vegetation communities in a way that distributes young forest, older forest, and old growth across the Forest. This alternative would provide both motorized and non-motorized recreation opportunities in motorized and non-motorized settings. Existing higher standard roads would be maintained while decommissioning some of the existing low standard roads.

This Wilderness Study Area MA would fill a niche within the alternative's emphasis of providing the range of management opportunities for young, older and old growth forests; and a balance of motorized and undeveloped, non-motorized recreation settings. The Winter Area is identified in this alternative because it would maintain the area's terrestrial and riparian systems as well as provide recreational opportunities.

The Winter Area would provide unroaded opportunities for wilderness values such as solitude, ecosystem diversity, wildlife, and watershed. It would add less than one percent (about 0.4) of land managed for wilderness character to existing designated wilderness (the BWCAW) on the Forests.

The management of this area under the Wilderness Study Area MA would also affect the opportunity for more developed recreational experiences and active management of the vegetation resources. The Winter Area has 600 acres of the land suitable for timber management that would be unavailable for harvest.

Alternative G would provide for an increase in semi-primitive recreational opportunities and benefits within the potential wilderness setting. The alternative has a fairly high amount of maximum roaded natural ROS objective, at approximately 76 percent of the Forest. People desiring a wilderness experience on the Chippewa NF would likely find that this alternative meets some of their needs, while people not desiring more wilderness would likely find that this alternative does not meet their needs.

Alternative B on the Superior NF

On the Superior NF, 12 areas were allocated to the Wilderness Study Area MA in this alternative: Cucumber Lake, Mine Lake, East Otter Lake, South Kawishiwi River, North Arm of Burntside Lake, Greenstone Lake East, Greenstone Lake West, Big Lake, Wood Lake, Baker-Homer-Brule, Gunflint Lake Southeast, and Magnetic Lake. Wilderness Study Area MA allocations fit well with the theme of this alternative.

This alternative emphasizes semi-primitive recreation opportunities, and is second only to Alternative D in that regard. Most of the 12 areas could provide a more immediate wilderness experience or, through the development of campsites and/or portages, provide slightly more capacity in the BWCAW. Each area includes a high percentage of National Forest System land ownership, has at least some recreational potential and is not encumbered to any great degree with special use permits or mineral development potential. All of these areas are adjacent to the BWCAW and would require the establishment of additional wilderness boundary lines. This alternative would add about two percent of land managed for wilderness character to existing designated wilderness (the BWCAW) on the Forests.
About 8,196 acres of tentatively suitable timber land are within the 12 areas. This would amount to approximately one percent of all of the tentatively suitable timber acreage on the Forest. These 12 areas would also include 44 percent of Superior NF Roadless Area Inventory areas that have mineral potential.

Alternative B would provide for an increase in the designated semi-primitive/primitive potential wilderness experiences, while continuing to have approximately 30 percent of the Forest in a maximum roaded natural ROS objective. Persons desiring more wilderness opportunities and benefits would likely find that this alternative meets many of their needs, while people not desiring more wilderness would likely find that this alternative does not meet their needs.
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Alternative D on the Superior NF

On the Superior NF, all 30 areas in the Roadless Area Inventory were allocated to the Wilderness Study Area MA. Wilderness Study Area MA allocations fit especially well with the theme of this alternative.

This alternative maximizes semi-primitive recreation opportunities. It includes all of the areas that met the inventory criteria even though some are not immediately adjacent to the BWCAW and have few special attributes. See discussion for Alternative B as it relates to those 12 areas. The remaining roadless areas included in this alternative have encumbrances such as special uses and mineral development potential, and would have significant associated costs of establishing and maintaining property boundary lines. This alternative would add about seven percent of land managed for wilderness character to existing designated wilderness (the BWCAW) on the Forests.

About 35,000 acres (4 percent) of tentatively suitable timber land would not be available for harvest.

A result of this alternative is that the overall amount of maximum roaded natural ROS objective becomes very small, only about 1 percent of the Forest. Persons desiring wilderness opportunities and benefits would likely find that this alternative best meets their needs, while those who do not want additional wilderness would likely find that this alternative does not meet their needs.

Alternative G on the Superior NF

On the Superior NF, four areas were allocated to the Wilderness Study Area MA in this alternative: Cucumber Lake, Mine Lake, East Otter Lake, and South Kawishiwi River. Allocation of these areas to the Wilderness Study Area MA would fill a niche within the alternative's emphasis of providing the range of management opportunities for young, older and old growth forests; and a balance of motorized and undeveloped, non-motorized recreation settings.

These four areas have qualities that would contribute to potential wilderness such as contiguous National Forest System land ownership and/or adding lakes that connect to or are adjacent to the BWCAW. These additions would provide a more immediate wilderness experience or, through the development of campsites and/or portages, provide more capacity and help alleviate congestion in the BWCAW. This alternative would add less than one percent (about 0.4) of land managed for wilderness character to existing designated wilderness (the BWCAW) on the Forests.

In this alternative 1,590 acres of suitable timber land would be unavailable for harvest. This amounts to about two tenths of one percent of all of the suitable timber acreage. Ten percent of all the Superior NF area within the Forest Roadless Areas Inventory having potential for mineral development is included in these four areas.

Alternative G would provide for additional semi-primitive recreational opportunities and benefits with the addition of Wilderness Study Area MAs, and would result in approximately 49 percent of the Forest being managed with a maximum roaded natural ROS objective. Persons desiring more wilderness experiences and areas would likely find that this alternative meets some of their needs, while people not desiring more wilderness would likely find that this alternative does not meet their needs.

Cumulative Effects

The cumulative effects discussion of potential Wilderness Study Area MAs occurs in the context of the National Wilderness Preservation System and other designated wilderness in close proximity to the Forests. The National Forest contributions to cumulative effects would be apparent in the short-term (10 to 15 years) as well as the long-term (15 to 50 years).

Alternatives D and B would provide the most opportunities to manage areas within the Forest Roadless Area Inventories as Wilderness Study Area MAs and for primitive recreation opportunities, followed by Alternative G. The Chippewa and Superior NF combined acreage in Alternative B would add less than one percent (about 0.8) of land managed for wilderness character to existing designated wilderness in the region. Alternative D would add about 2 percent and Alternative G less than one percent (about 0.2). Alternatives A, C, E, and F would not provide additional land that could be recommended to Congress for wilderness study designation.

Need for designation of new wilderness is based on comparing the value of a potential area to existing wilderness in nearby locations as well as to the National Wilderness Preservation System as a whole. The "need overview", according to FSH 1909.12-7.23, provides direction to the Forest Service to "determine the need for an area to be designated as wilderness through an analysis of the degree to which it contributes to the local and national distribution of wilderness." Need is addressed on a national basis and is evaluated in terms of the geographic distribution of areas, representation of landforms and ecosystems, and the presence of wildlife expected to be visible in wilderness.

Assessment of need may be divided into two major categories: *biological need* (ecosystem representation and plant/animal biodiversity) and *social need* (primitive type recreation opportunities, education, historic values, scenic values). As discussed in the Affected Environment Section, for the most part, the biological need for ecosystem representation was addressed in the Forest Plan revision process through the potential Research Natural Area (pRNA) analyses conducted by both Forests. (EIS, Section 3.7.2)

Designated wildernesses within Minnesota, Wisconsin, Michigan, and Quetico Provincial Park (in Canada) provide a local, regional and national context of the National Wilderness Preservation System. The nearly one million acre BWCAW, in northern Minnesota, plays a large role in the biological and social composition of the National Wilderness Preservation System. Within the BWCAW boundary, the State has designated 18,000 acres of their land as wilderness. Additionally, Canada's Quetico Provincial Park (about 1,175,000 acres), just north of the Chippewa and Superior National Forests and immediately adjacent to the BWCAW, provides a wilderness experience that is similar to the BWCAW, though generally offering more solitude and naturalness. Use in Quetico Park is currently at or near capacity.

Within close proximity to Minnesota, and serving people from similar areas with water based recreation opportunities, are a number of designated wildernesses on the Chequamegon-Nicolet and Ottawa National Forests. The Chequamegon-Nicolet NF has five small to moderately sized designated wildernesses that total about 42,300 acres, and the Ottawa NF has three moderately sized areas that total about 47,784 acres. There are also two National Parks in Minnesota in close proximity to the BWCAW. About 127,000 acres in Voyageurs National Park are managed as a Wilderness Study Area so as to protect its wilderness attributes. Isle Royale National Park is designated wilderness and encompasses about 571,790 acres. Two National Wildlife Refuges in Minnesota also include wilderness: 4,000 acres in Agassiz and 5,000 acres in Tamarac.

Population growth in the State and regional area is important within the context of cumulative effects. Population growth in Minnesota, Wisconsin, Iowa, and North and South Dakota could result in increasing demands on the National Forests, ranging from commodity production to all types of recreation opportunities. Roadless areas have traditionally provided for semi-primitive non-motorized opportunities. Road and trail construction and user-created trails reflect the increased demand for motorized and mechanized opportunities. Additional motorized trail construction may result in a decrease in opportunities for primitive and semi-primitive non-motorized recreation. Regional trends indicate slow but steady growth in unroaded recreation opportunity demands (Cordell 1999). Although demand for other recreation activities will increase more rapidly in the future, the availability of opportunities for remote recreation activities may be a limiting factor in meeting future demand (USDA 2000a).

Ecosystem representation and social needs at a local scale were considered when allocation of areas in the Forest's Roadless Area Inventories was made, while giving consideration to the theme of an alternative. Some of the Forest Roadless Area Inventory areas had unique attributes that could contribute to the local and regional area. It was found that this contribution could be maintained, at least to some extent, using the Wilderness Study Area MA or by allocation into appropriate management areas. Some of the Forest Roadless Inventory areas could contribute social and economic benefits in terms of providing a non-motorized, semi-primitive area (solitude and challenge recreation experiences), and potential economic benefits to local communities. Here too, it was found that this contribution could be maintained through Wilderness Study Area MA allocation or by other management area allocation based on the alternative theme. However, in other allocations the primitive setting may occasionally be altered through management activities.

3.7.2 Potential Research Natural Areas and Unique Areas

Issue Statement

There is debate about how many Research Natural Areas (RNAs) on the Chippewa and Superior NFs are needed to provide for biodiversity and research opportunities while at the same time providing for consumptive forest uses. Forest Plan revision will determine which, if any, additional RNAs will be recommended for establishment.

Indicator – Acres of Potential RNAs

This indicator describes the extent that high-quality representative or unique native plant communities would be protected as RNAs, and allows for meaningful comparison among alternatives.

Analysis Area

The area covered by the analysis of direct and indirect effects includes all land administered by the Chippewa and Superior NFs. The area covered by the cumulative effects analysis for the Chippewa NF is land of all ownerships within the Drift and Lake Plains Section, and for the Superior NF is land of all ownerships within the Northern Superior Uplands.

3.7.2.a Affected Environment

Existing RNAs

Research Natural Areas (RNAs) are areas that are permanently maintained in a natural condition. These areas include: unique ecosystems or ecological features, habitat for rare or sensitive species of plants and animals, and high-quality examples of common ecosystems.

A national network of RNAs helps protect genetic, species, ecosystem, and landscape level biological diversity. RNAs representing the natural condition of common ecosystems serve as baseline or reference areas. To help answer resource management questions, RNA baseline areas can be compared with similar ecosystems undergoing silvicultural or other management prescriptions. RNAs contribute to ecosystem management as a monitoring tool measuring the effects of management activities in other areas.

RNAs are managed to maintain natural features and processes. Because of an emphasis on natural condition, they provide areas for studying ecosystems or their component parts, and for monitoring successional and other long-term ecological changes. Nonmanipulative research and monitoring activities are encouraged in RNAs and can be compared with manipulative studies conducted in other areas. In addition, RNAs serve as sites for low-impact educational activities.

The Chippewa and Superior National Forests each currently have four designated RNAs (Table RNA-1). Although these RNAs provide sites for research and education, they were selected without any landscape wide assessment of unique and representative native

Table RNA-1. Acres of existing RNAs on Chippewa and Superior NFs

Research Natural Area	Acreage
Chippewa NF	
Battle Point	337
Cluster Burr Reed	77
Pine Point	1,365
Stony Point	361
TOTAL	2,140
Superior NF	
Keeley Lake	640
Lac LaCroix	973
Marble Lake Lookout	120
Schroeder	1,439
TOTAL	3,172
Source: Project file	

plant community types.

Existing Unique Areas

Unique Biological, Aquatic, Geological, or Historical Areas (unique areas) are areas with outstanding biological, aquatic, geological, or historical resource values. The objective for these areas is to protect and interpret them for public use and enjoyment, in contrast with RNAs in which research and educational values are emphasized. Most ground disturbing management activities are not permitted in unique areas. On the Chippewa, there are 15 unique areas which total 5,971 acres. On the Superior, there is one unique area, Harris Lake Natural National Landmark, which is 514 acres and adjacent to the Keeley Creek RNA.

Potential RNAs and Unique Area Analysis Process

The process for identifying the pool of potential RNAs (pRNAs) is described in "Potential research natural areas – Superior National Forest" (USDA Forest Service 2000) and "An evaluation of the potential research natural areas of the Chippewa National Forest" (USDA Forest Service 2002). The draft Regional RNA Framework was considered during this process (Faber-Langendoen et al. 1998), as was the draft RNA assessment for the Superior (Snow et al. 1998) and Chippewa NFs (Snow et al. 1998). In general, potential RNA selection was based on identifying representative ecosystems at a landscape level. While all represented ecosystems contribute to the biodiversity protection goals of the RNA program, it is the common community types that can best function as baselines or reference areas for the monitoring and research objectives of RNAs. In addition, the Superior NF and Chippewa NF identified areas with unique attributes in the pool of pRNAs; these areas as well as the attributes are described in USDA Forest Service (2000) and USDA Forest Service (2002).

There were limited opportunities for identifying high quality representative ecosystems on the Chippewa NF relative to the Superior NF due to complex land ownership patterns, relatively high road and trail densities, and past landuses (USDA Forest Service 2002).

The Chippewa NF examined ecosystem representation at the landtype level of the National Hierarchy of Ecological Units (USDA Forest Service 2002). Each landtype on the Forest is associated with a different plant community. One to seven areas per landtype were evaluated to determine which was the best representative of that particular landtype community within the pool of possible areas. If one of the existing RNAs on the Forest fulfilled this representation role, no additional pRNAs were considered for that particular landtype. The best representative of each landtype community was selected to be in the pool of ten pRNAs (approximately 9,261 acres) to be considered in the Forest Plan Revision.

The Superior NF examined ecosystem representation at the subsection level of the National Hierarchy of Ecological Units. A ranking system ranging from A-D was used to define quality of the community types (called alliances) within each pRNA (USDA Forest Service 2000, Faber-Langendoen et al. 1998, Snow et al. 1998). In order to represent ecosystems, the IDT attempted to have a high quality (A- or B-ranked) example of each alliance within each of the subsections. They developed an overall pool of 41 pRNAs (approximately 45,571 acres) that provided for the best examples to be considered in the alternatives.

In addition to the existing and potential RNAs, there are other lands both on and off the National Forest that offer similar long-term objectives that can be considered "RNA-equivalent" from the standpoint of ecosystem representation. In Minnesota, these include State Scientific and Natural Areas, Nature Conservancy preserves, Boundary Waters Canoe Area Wilderness and Voyageurs National Park. Such areas were considered prior to determining potential needs for additional representation in each subsection.

In addition to ecosystem representation, existing land uses and management concerns were considered during the development of the pool of pRNAs. These included: outstanding or reserved mineral rights, designated hiking, skiing, and snowmobile trails, system roads, old logging roads, special use permits, and varying levels of recreational use. For further information on the pRNAs, see USDA Forest Service (2000) and (2002) .

The allocation of lands made in the Forest Plan would result in areas being identified as candidate RNAs.

Actual designation of RNAs would be done after revision of the Forest Plan is complete. Establishment Records would be prepared for candidate RNAs. The Regional Forester with concurrence of the North Central Research Station Director would approve or disapprove designation of RNAs based on the RNA Establishment Records.

3.7.2.b Environmental Consequences

Effects Common to All Alternatives

The Code of Federal Regulations (CFR) 36 219.25 states that Forest Planning shall provide for the establishment of Research Natural Areas (RNAs). Planning shall make provision for the identification of examples of important forest, shrubland, grassland, alpine, aquatic, and geologic types that have special or unique characteristics of scientific interest and importance and that are needed to complete the national network of RNAs. CFR 36 251.23 states that when appropriate the Forest Service shall establish a series of research natural areas, sufficient in number and size to illustrate adequately or typify for research or educational purposes, the important forest and range types in each forest region, as well as other plant communities that have special or unique characteristics of scientific interest and importance.

Forest Service Manual (FSM) 4063 provides direction for RNA establishment and management**.**

Forest Service Manual 2372 provides direction for establishment and management of unique areas.

On July 19, 1993, the Chief of the Forest Service issued a national strategy for recognizing the expanding role of RNAs in ecosystem management.

Direct and Indirect Effects

First, a summary of the pRNA allocation process and the level of ecosystem representation are described for each alternative. Next a discussion of the unique area allocation process are described for each alternative. Lastly, the overall effects of the alternatives are discussed. Because of the similarity of effects of establishing pRNAs and unique areas, they are considered together in the effects analysis.

Potential RNA Allocation and Ecosystem Representation

Chippewa National Forest

Alternatives A and C offer minimal ecosystem representation as they each propose only one pRNA (Tables RNA-2 and RNA-4). The rationale for selecting only one pRNA is that both alternatives emphasize management that promotes young forest age classes. A minimal number of pRNAs were selected for these alternatives since RNA designation would emphasize succession and older forests, in contrast with these alternatives. Potential RNAs not established as RNAs under these alternatives would become part of another management area designation and would be managed accordingly.

Alternatives B and D offer high levels of ecosystem representation as they propose nine and eight pRNAs, respectively (Tables RNA-2 and RNA-4). For alternatives B and D, the rationale for selecting nearly all ten pRNAs is that both alternatives emphasize management to promote older forests; the pRNAs would be areas where succession promoted older forests, which would be in keeping with the theme of these alternatives. The reason that all ten areas are not allocated to pRNAs is because one area (North Fork) is instead recommended for Wilderness in both alternatives B and D. In alternative D, another area (Trout Lake) is instead part of an area allocated to Minimum Management Natural Area.

Alternative F offers maximum ecosystem representation as it proposes all ten pRNAs (Tables RNA-2, RNA-4). For alternative F, the rationale for selecting all ten pRNAs is that the alternative emphasizes managing to achieve vegetative conditions that are within the range of natural variability. Designating ten pRNAs would maximize ecosystem

Table RNA-2. Level of ecosystem representation on the Chippewa NF depicted as the number of alliances with good representation in a pRNA or unique area out of the total number of alliances with good representation in the pRNA pool.

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E (Mod.)	Alt. F	Alt. G
Chippewa NF	3/16	14/16	3/16	12/16	11/16	16/16	14/16

Source: USDA Forest Service (2002)
Notes: Alliances in pRNAs and in pRNAs which are proposed as unique areas in Alternative E were considered in the above table. The numbers in the table are taken from descriptions of the pool of pRNAs which describe the number of alliances with good representation for each pRNA. "Good representation" is defined as a contiguous block of an alliance 100 acres or larger.

representation, thus contributing to achieving a portion of the range of natural variability.

Alternative G offers a high level of ecosystem representation as it proposes nine pRNAs (Tables RNA-2 and RNA-4). The rationale for this allocation is that Alternative G emphasizes allocating areas of older forest to special designations that recognize old forest character such as RNAs.

Modified alternative E proposes an intermediate level of ecosystem representation since it proposes 3 pRNAs (Table RNA-4) which, when considered with the proposed unique areas in modified alternative E, encompass 11 out of the 16 alliances described for the pRNA pool (Table RNA-2). The rationale for selecting 3 RNAs for modified alternative E is that intermediate levels of ecosystem representation are in keeping with the theme of this alternative, which emphasizes a mix of young and old forest. Sunken Lake pRNA was selected because it was proposed in the 1986 Forest Plan but never established. Ottertail and Pimushe Lake were selected for modified alternative E because they have excellent representation of the Northern Hardwoods-Coniferous Forest and Northern Hardwoods communities, respectively, because they both have old growth values, and because Ottertail was recognized by the MN County Biological Survey as a high priority potential natural area. North Fork was proposed as a pRNA in the DEIS because it was originally identified as potential wilderness, but the IDT determined that these characteristics did not equate with being a good RNA candidate, and it is now proposed as a unique area.

Superior National Forest

Alternatives A and C offer minimal ecosystem representation as they each propose only one pRNA (Tables RNA-3, RNA-5). The rationale for selecting only one pRNA is that both alternatives emphasize management that promotes young forest age classes. A minimal number of pRNAs were selected for these alternatives since RNA designation would emphasize succession and older forests, in contrast with these alternatives. The one pRNA proposed in these alternatives, Lake Agnes, was selected because it was identified in the 1986 Forest Plan as a pRNA but was never established. Potential RNAs not established as RNAs under these alternatives would become part of another management area designation and would be managed accordingly.

Alternatives B, D, and F offer maximum ecosystem representation as they each propose all 41 pRNAs (Tables RNA-3, RNA-5). For alternatives B and D, the rationale for selecting all 41 pRNAs is that both alternatives emphasize management to promote older forests; the pRNAs would be areas where succession promoted older forests, which would be in keeping with the theme of these alternatives. For alternative F, the rationale for selecting all 41 pRNAs is that the alternative emphasizes managing to achieve vegetative conditions that are within the range of natural variability. Designating 41 pRNAs would maximize ecosystem representation, thus contributing to achieving a portion of the range of natural variability.

Table RNA-3. Level of ecosystem representation on the Superior NF depicted as the number of different A- or B-ranked alliances represented in a pRNA or unique area out of the total possible number of A- or B-ranked alliances possible in pRNAs or unique areas within a subsection.

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E (Mod.)	Alt. F	Alt. G
Superior NF							
Border Lakes Subsection	0/12	12/12	0/12	12/12	7/12	12/12	12/12
North Shore Highlands Subsection	6/17	17/17	6/17	17/17	14/17	17/17	16/17
Nashwauk Uplands	0/15	15/15	0/15	15/15	11/15	15/15	12/15
Toimi Uplands	0/13	13/13	0/13	13/13	9/13	13/13	5/13
Laurentian Highlands	0/15	15/15	0/15	15/15	13/15	15/15	15/15
Little Fork – Vermillion Uplands	0/8	8/8	0/8	8/8	0/8	8/8	8/8
Tamarack Lowlands	0/7	7/7	0/7	7/7	0/7	7/7	7/7

Source: USDA Forest Service (2000)
Notes: Alliances in pRNAs and in pRNAs which are proposed as unique areas in Alternative E were considered in the above table.

Alternatives E and G propose an intermediate level of ecosystem representation, with alternative G providing slightly better representation than alternative E (Tables RNA-3, RNA-5). The rationale for selecting 11 and 26 pRNAs for alternatives E and G, respectively, is that these intermediate levels of ecosystem representation are in keeping with the themes of these alternatives, which emphasize a mix of young and old forest.

Originally for alternative E, 11 pRNAs were selected by picking two pRNAs per subsection except for the Border Lakes subsection, in which the BWCAW was considered an RNA equivalent that would afford good representation for alliances in this subsection. For each subsection, the pRNAs with the greatest level of ecosystem representation were generally chosen. No pRNAs with unique values were included under this alternative.

For alternative G, within each subsection one pRNA was chosen per landtype association. For each landtype association, the pRNA with the greatest level of ecosystem representation was generally chosen. In addition, all the unique areas were added to this alternative.

The mix of pRNAs in alternative E underwent a final review by the IDT after the close of the public comment period for the DEIS to review issues such as representation and potential management conflicts. Several pieces of information were considered: the priority listing by subsection from the draft Regional RNA Framework (Faber-Langendoen et al. 1998); alliance information, special feature notes, and pRNA summary notes from the Superior pRNA report (USDA Forest Service 2000); and public comments.

After this review, several changes were made. For the North Shore Highlands subsection (which had a medium priority for alliance representation [USDA Forest Service 2000]), the Blueberry Lake pRNA was added because it added three additional high quality alliances, thus increasing alliance representation in this subsection. Also, western portions of the Cabin Creek pRNA were dropped to reduce potential access conflicts with state lands southeast of Moose Lake with only minor impacts to alliance representation.

For the Nashwauk Uplands subsection (which had a high priority for alliance representation [USDA Forest Service 2000]), the Rice Lakes pRNA was dropped because of concerns about potential conflicts with wild rice management. Two pRNAs, Loka Lake and Lehtinen Creek, were added to compensate for loss of Rice Lakes pRNA alliances.

For the Laurentian Highlands subsection (which had a high priority for alliance representation [USDA Forest Service 2000]), the Southwest Greenwood Creek

pRNA was added because it added two high quality alliances, thus increasing alliance representation in this subsection. Also, the northwestern portion of the Big Lake-Seven Beavers pRNA was dropped to reduce potential access conflicts with state land and to reduce potential mineral exploration conflicts. These changes had only minor impacts to alliance representation.

Two subsections, Littefork/Vermillion Uplands and Tamarack Lowlands, had low priority for alliance representation on National Forest land, primarily because very little of the Superior NF occurs within these subsections (USDA Forest Service 2000). For this reason, no pRNAs are proposed for these subsections. There are no changes to pRNAs proposed for the Border Lakes or Toimi Uplands subsections.

Potential Unique Area Allocation and Ecosystem Representation

Chippewa National Forest

On the Chippewa NF, 24 areas were considered for allocation to unique areas. In Alternatives A, B, C, D, and G, 19 areas are proposed for allocation. Alternative F, because of its emphasis on managing vegetation to mimic natural disturbances and its long term goal of managing vegetation to be within the Range of Natural Variation, proposes 20 areas for allocation as unique areas.

Modified Alternative E, also proposes to allocate the 19 areas identified in most other alternatives, and also adds four areas (Sucker Bay, Mississippi, Trout Lake and North Fork) that were considered for pRNA status in some other alternatives, but were determined to be more appropriately allocated as unique areas.

Superior National Forest

On the Superior NF, nine pRNAs in the pool of 41 pRNAs considered during the Forest Plan Revision process were identified as having unique features (USDA Forest Service 2000). In alternatives A and C, none of these nine areas with unique features were proposed as either unique areas or pRNAs. In alternatives B, D, F, and G, these nine areas with unique features were all proposed as pRNAs rather than as unique areas. For modified alternative E, the IDT looked closely at those pRNAs that best met the Draft Regional RNA Framework and the purposes for pRNA establishment. For this reason, those areas that had unique features but did not closely meet the purposes for RNA establishment were considered for allocation as unique areas.

Three of the nine potential unique areas were included in modified alternative E: Birch Bay, Fall River Patterned Fen, Little Isabella River. These areas were selected out of the nine because, based on the analysis in USDA Forest Service (2000) and on the judgement of the IDT, these areas had the most truly unique features. These areas also provide alliance representation, which is captured in table RNA-3.

There would be some general effects of pRNA /unique area management common to all alternatives on both Forests. The types of effects would not differ between alternatives, but the magnitude of the effects would depend on the number and acreage of pRNAs/unique areas allocated within each alternative. Management within areas designated as RNAs and unique areas (on the Superior NF) differs from other Forest Service actions in that no ground-disturbing activities would be planned. Management in unique areas on the Chippewa NF would be similar except that limited ground disturbance associated with restoration activities would be permitted. Each of the alternatives would manage a specific combination of pRNAs/unique areas for long-term protection of these sites for research, monitoring, education, and biological diversity conservation. Management of the pRNAs would contribute to the national network of research areas. Opportunities for future and current research and monitoring of natural processes and conditions would be available.

Table RNA-4. Acres of potential RNAs and unique areas (acres) on the Chippewa National Forest

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E (Mod.)	Alt. F	Alt. G
Chippewa NF							
Potential RNAs							
Cutfoot Sioux		728		728		728	728
Flora Lake		395		395		395	395
Goche Lake		1,892		1,892		1,892	1,892
Mississippi		290		290	6,310*	290	290
North Fork					3,214*	3,214	3,214
Ottertail		430		430	430	430	430
Pimushe Lake		500		500	500	500	500
Sucker Bay		613		613	613*	613	613
Sunken Lake	769	769	769	769	769	769	769
Trout Lake		699			699*	699	
CNF TOTAL pRNAs	769	6316	769	5617	1699	9530	8831
Potential Unique Areas							
Bear Island	144	144	144	144	144	144	144
Cedar/Rice Pond	26	26	26	26	26	26	26
Cut Foot Sioux Ranger Station	13	13	13	13	13	13	13
East Lake Pine	74	74	74	74	74	74	74
Elmwood Island	42	42	42	42	42	42	42
Farley Hill Esker and Lookout Station	85	85	85	85	85	85	85
Gilfillan	399	399	399	399	399	399	399
J.W. Goble Homesite	15	15	15	15	15	15	15
Kutson Dam	97	97	97	97	97	97	97
Lost Forty	169	169	169	169	169	169	169
Marcell Ranger Station	13	13	13	13	13	13	13
Miller Lake	70	70	70	70	70	70	70
Pennington Bog	16	16	16	16	16	16	16
Rabideau CCC Camp	89	89	89	89	89	89	89
Supervisor's Office	71	71	71	71	71	71	71
Stony Point	132	132	132	132	132	132	132
Ten Section	6,586	6,586	6,586	6,586	5,659	6,586	6,586
Webster Lake Bog	45	45	45	45	45	45	45
Willow River Bridge Logging Camp	32	32	32	32	32	32	32
White Cedar Swamp and other LE Segments	0	0	0	0	0	28,303	0
CNF TOTAL UNIQUE AREAS	8,105	8,105	8,105	8,105	18,026	36,408	8,105

Source: Project file

Notes: In modified alternative E, items with an asterisk (*) were proposed as unique areas (MA 8.3) rather than as pRNAs (MA 8.2). Ten Section is reduced by 927 acres in mod. Alt E. Marcell Ranger Station acres were unintentionally omitted from DEIS. The acreage of the Mississippi unique area in alternative E differs from the acreage of the Mississippi pRNA because different boundaries are proposed for the unique area.

Any pRNA/unique area that is established as an RNA within any alternative would be managed by allowing ecological processes to prevail with minimal human intervention. These pRNAs/unique areas would be managed to protect against activities that directly or indirectly modify ecological processes. However, under some circumstances, deliberate manipulation (such as management ignited fire) would be used to maintain the ecosystem or unique features for which the pRNA/unique area was established or to reestablish natural ecological processes. Management activities and consumptive uses that threaten or interfere with the objectives or purposes for which the pRNAs/unique areas were established would not be allowed. Vegetation, wildlife habitat, soil productivity, water quality, and ecological processes would be in as natural condition as practical. Specific management direction (addressing issues such as fire management) would be developed for the pRNAs identified in the selected alternative. Consumptive uses would not be allowed.

The alternatives have different combinations of pRNAs/unique areas, resulting in different acreages of pRNAs/unique areas for each alternative (Table RNA-4, RNA-5.) On the Superior NF, Alternatives B, D, and F include all 41 of the pRNAs, Alternative G includes 26 pRNAs, modified Alternative E includes 11 pRNAs and 3 unique areas, and Alternatives A and C each include one pRNA. On the Chippewa NF, Alternative F includes 10 pRNAs, Alternatives B and G include 9 pRNAs, Alternative D includes 8 pRNAs, modified Alternative E includes 3 pRNAs, and Alternatives A and C each include one pRNA. Alternatives A, B, C, D, and G on the Chippewa each propose 19 unique areas, alternative F proposes 20 unique areas, and modified alternative E proposes 23 unique areas.

On the Superior NF, the percentage of the total Forest land affected by inclusion of the pRNA or unique area Management Area is: Alternatives B, D, and F - 2.1 percent; Alternative G - 1.6 percent; modified Alternative E - 1.0 percent; and Alternatives A and C - 0.04 percent. On the Chippewa NF, the percentage of the total Forest land affected by inclusion of the pRNA or unique area Management Area is: Alternative F – 6.9 percent; modified Alternative E – 3.0 percent; Alternative G – 2.5 percent; Alternative B – 2.2 percent; Alternative D – 2.1 percent; and Alternatives A and C – 1.3 percent.

Potential RNA and unique area management areas would not be suitable for timber management (Table RNA-6). Of the suitable timber base that would not be available for timber management on the Superior NF, pRNA and unique area management areas would represent 3.0 percent under Alternatives B, D, and F; 2.3 percent under Alternative G; 1.4 percent under Modified Alternative E; and 0.4 percent under Alternatives A and C.

Of the suitable timber base that would not be available for timber management on the Chippewa NF, pRNA and unique area management areas would represent 2.3 percent under Modified Alternative E; 1.7 percent under Alternative F; 1.6 percent under Alternatives B and G; 1.4 percent under Alternative D; and 0.7 percent under Alternatives A and C.

Alternatives with potential RNAs or unique areas would not affect any non-federal reserved or outstanding mineral rights in those areas. Applications for prospecting permits where the federal government owns the mineral rights within pRNAs/unique areas would be recommended for denial, since mineral development is not compatible with the objectives of RNAs/unique areas.

Table RNA-5. Acres of potential RNAs and unique areas (acres) on the Superior National Forest

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E (Mod.)	Alt. F	Alt. G
Superior NF							
Bassett		855		855		855	
Big Lake-Seven Beavers		7,177		7,177	5,599	7,177	7,177
Birch Bay		757		757	757*	757	757
Blueberry Lake		2,445		2,445	2,445	2,445	2,445
Cabin Creek		2,835		2,835	2,085	2,835	2,835
Candle Lake W&E		408		408		408	408
Cedar Lake		749		749		749	749
Clappers		1,085		1,085		1,085	
Deepwater		322		322		322	322
Dragon Lake		2,086		2,086	2,075	2,086	2,086
Fall River Patterened Fen		988		988	988*	988	988
Gyppo		434		434		434	
Heart Lake		839		839		839	839
Johnson Lake		283		283		283	
Kawishiwi Pines		471		471		471	471
Lake Agnes	792	792	792	792	792	792	792
Lehtinen Creek		478		478	478	478	
Lillian Creek South		1,874		1,874		1,874	1,874
Little Isabella River		338		338	338*	338	338
Loka Lake		1,661		1,661	1,661	1,661	1,661
Lookout Mountain White Pine		39		39		39	
Lost Lake Swamp		638		638		638	638
Lutsen SNA Addition		76		76		76	76
Marble Lake RNA addition		242		242		242	
Pearl Lake		2,652		2,652		2,652	
Pike Mountain		709		709	709	709	709
Rice Lakes		1,464		1,464		1,464	1,464
Rollick Creek		1,153		1,153		1,153	1,153
Southwest Greenwood Creek		1,199		1,199	1,199	1,199	1,199
Sturgeon River		258		258		258	258
Sullivan Creek		1,495		1,495	1,495	1,495	1,495
Sullivan Creek West		402		402		402	
Timber Frear		2,519		2,519		2,519	2,519
Tommila Lake		279		279		279	
Trout Lake		360		360		360	360
Watertank Lake		854		854		854	
Whiteface River		250		250		250	
Whitewater		924		924		924	924
Whyte Creek		677		677		677	
Wolf Lake		1,097		1,097	1,097	1,097	
Wynne Creek		1,407		1,407		1,407	
SNF pRNA TOTAL	792	45,571	792	45,571	19,635	45,571	34,537
SNF UNIQUE AREA TOTAL	0	0	0	0	2,083	0	0

Source: Project file
Notes: In alternative E, items with an asterisk (*) were proposed as unique areas (MA 8.3) rather than as pRNAs (MA 8.2).

Table RNA-6. Acres proposed for withdrawal from timber base (acres)							
	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E (Mod.)	Alt. F	Alt. G
Chippewa NF	3,595	7,450	3,595	6,924	11,239	8,200	7,674
Superior NF	368	28,703	368	28,703	13,740	28,703	21,869
Source: Project file Notes: Acreages refer to both pRNAs and unique areas.							

The effects of alternatives with pRNAs/unique areas on recreation would differ between Alternative A and the rest of the alternatives. Under Alternative A on the Chippewa and Superior NFs, the recreation opportunity spectrum would be semi-primitive motorized for the one pRNA on each Forest. For the remaining alternatives, the recreation opportunity spectrum for pRNAs/unique areas would be semi-primitive non-motorized. Several of the pRNAs/unique areas have existing designated motorized trails, or hiking/cross-country skiing trails within or adjacent to them. Motorized and non-motorized recreational use of pRNAs or unique area Management Areas would be limited to such trails. Normal maintenance of these trails would occur, but relocation or new construction of a trail within a pRNA/unique area would not normally take place. Exceptions to this would be actions needed to prevent resource damage (such as erosion) or to provide for public safety. Cross-country travel on ATVs and snowmobiles in pRNAs/unique areas would be prohibited on both Forests. Construction and use of user-developed trails for motorized or non-motorized use in pRNAs/unique areas would not be allowed. Cross-country hiking, skiing, canoeing, hunting, fishing, and other low impact dispersed recreation uses would continue. None of the pRNAs/unique areas are located within wilderness areas.

For all alternatives, existing system roads in pRNAs/unique areas would continue to be used and maintained. Except for road relocation required for ongoing resource damage (such as erosion) or public safety, or road construction for research needs, no new road construction would occur in pRNAs/unique areas.

The alternatives on both Forests that include pRNAs/unique areas would increase protection of any TES plant or animal occurrences within the pRNA/unique area; the alternatives with the largest acreages of pRNAs/unique areas would result in the greatest increases in protection of TES plant or animal occurrences. Several of the pRNAs/unique areas support one or more sensitive plant or animal occurrences, bald eagle nests, or old forest habitat. Management in pRNAs/unique areas would be compatible and/or beneficial to the protection of these habitats. No wildlife habitat improvement projects would occur in pRNAs/unique areas unless they are specifically needed to restore natural ecosystem conditions.

For all of the alternatives, existing special uses such as buried utilities, would continue to be permitted. Research proposals would require approval of the authorized official. New special use permits in pRNAs/unique area would not be permitted.

There would be no ground disturbance in any pRNA on either Forest or in unique areas on the Superior under any of the alternatives. Therefore, there would be no potential impacts to heritage resources within those pRNAs/unique areas. Limited ground disturbance associated with restoration activities would be permitted in unique areas on the Chippewa; however, management direction would prevent impacts to heritage resources.

Cumulative Effects

The cumulative effects of the Forest Plan alternatives on pRNAs/unique areas would be minor. For both the Chippewa and Superior National Forests, past actions in the respective cumulative effects analysis areas influenced the identification of the current pool of pRNAs/unique areas. For example, the wide variety of land uses that have occurred in the last 150 years (such as timber harvest, post-harvest wildfires, mining, agriculture, and road building) dramatically influenced

the structure and composition of native plant communities of the pre-European settlement landscape (MN FRC 1999a). These landscape-wide vegetation changes have narrowed the potential pool of representative native plant community types from which pRNAs/unique areas could be identified.

Other past actions in the analysis areas that influenced the identification of pRNAs/unique areas include designation of other public lands that prohibit or severely restrict ground disturbance as well as past Forest Planning efforts on the Chippewa and Superior NF. These "reserved" public lands include existing RNAs (designated through past Forest Planning efforts on the Forests), State Scientific and Natural Areas (SNAs), Voyageurs National Park, and wilderness areas. They were considered during the analysis of potential RNAs on the Superior and Chippewa NF (USDA Forest Service 2000b, USDA Forest Service 2002a).

There are 1,378,849 acres (34.2 percent of total public forestlands) of "reserved" public lands in the Northern Superior Uplands (MN FRC 1999a) and 33,400 acres (1.0 percent of total public forestlands) in the Drift and Lake Plains (MN FRC 2000). All of the alternatives would contribute to an increase in the amount of "reserved" public lands in the analysis areas. However, the increase in "reserved" public lands would be minor relative to the total acreage of forestland in the analysis areas. In the Northern Superior Uplands, the total percentage of "reserved" forestlands would differ by alternative as follows: Alternatives B, D, and F – 35.4 percent; Alternative G – 35.1 percent; Alternative E – 34.8 percent; and Alternatives A and C – 34.3 percent. In the Drift and Lake Plains, the percentage of forestlands that would be "reserved" would differ by alternative as follows: alternative F – 2.4 percent; modified Alternative E – 1.6 percent; Alternative G – 1.5 percent; Alternatives B and D – 1.4 percent; Alternatives A and C – 1.2 percent.

It is reasonably foreseeable that future timber harvest or road building would occur on Forest Service or private lands in the vicinity of some pRNAs/unique areas in Forest Plan revision alternatives. Such actions could lead to indirect effects on any riparian portion of a pRNA/unique area downstream, but the cumulative effects would be minor because Forest Service actions would be influenced by standards and guidelines for protecting watersheds and riparian areas. In general, pRNAs/unique areas in alternatives would experience minimal negative cumulative effects because of their protected status. In fact, it is likely that implementation of any of the alternatives that includes multiple pRNAs/unique areas would have small but beneficial cumulative effects to other resources such as watershed, riparian areas, and some rare natural resources because of their management guidelines.