

# Scoping Document

## Headwaters of the Upper Mississippi River, Minnesota Reservoir Operation Plan Evaluation

March 2005

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# INTRODUCTION

## WHAT IS ROPE?

The U.S. Army Corps of Engineers and the U.S. Forest Service are embarking on a jointly sponsored, long-range reservoir operating plan study for the Mississippi River Headwaters reservoirs. This study is called the Reservoir Operating Plan Evaluation, or ROPE. The primary purpose of the study is to evaluate alternative plans for each of the existing reservoirs and try to improve system-wide operations of the Mississippi Headwaters reservoirs system. Consideration will be given to tribal trust, flood control, environmental, water quality, water supply, recreation, navigation, hydropower, and other public interests when evaluating alternatives.

The study process used for the ROPE Study relies heavily on interagency, public, and Tribal involvement and collaboration to assist in the plan formulation and to help develop a shared vision. A number of interagency task forces and volunteer citizen groups have been formed specifically to provide technical inputs and review of study products and to provide local perspective. Significant and ongoing Tribal involvements have been sought to inventory and evaluate Tribal interests in the study area and to insure that tribal trust resources are protected. Numerous interagency task forces and local citizen volunteer groups have periodically met to provide technical and public perspective and to assist in simulation modeling. The general public has also been kept informed and involved via four public scoping workshops and will be asked to review a number of preliminary reports as alternatives are formulated and evaluated. See figure 1 for details about the communications and decision hierarchy diagram used for this study.

The Minnesota Department of Natural Resources (MDNR), Ottertail Power, and Minnesota Power are collaborating Headwaters dam operators included in this planning effort and are helping to evaluate and recommend a system-wide operational plan for the Headwaters reservoirs. Possible outcomes of this study to be fully evaluated and coordinated during the study include reservoir-operating changes at one or more of the 9 reservoir areas in the study area. The nature of the operating changes include: adjusting lake level, revising winter drawdown, changing operations so as to create a more natural flow release for downstream river reaches and in some lake areas, and adjusting flood water storage for flood control affecting sections of the system. The Mississippi Headwaters Board and the Leech Lake and Mille Lacs Bands of Ojibwe also play important roles in this study by helping to coordinate and evaluate alternative plans from the regional perspective.

The study began in December 2001 and should be completed by 2006. In addition to the systemwide operation changes to headwater reservoir operations, it is expected that there will be spin-off Federal projects and beneficial activities in the Headwaters area as a result of this study process. These would be pursued separately using other study authorities. Much more information about this study is available at any of the Headwaters Corps of Engineers field offices, at the Chippewa National Forest

Offices in Cass Lake and online at the Website for this study located on the Internet at: [http://www.mvp.usace.army.mil/fl\\_damage\\_reduct/default.asp?pageid=143](http://www.mvp.usace.army.mil/fl_damage_reduct/default.asp?pageid=143)

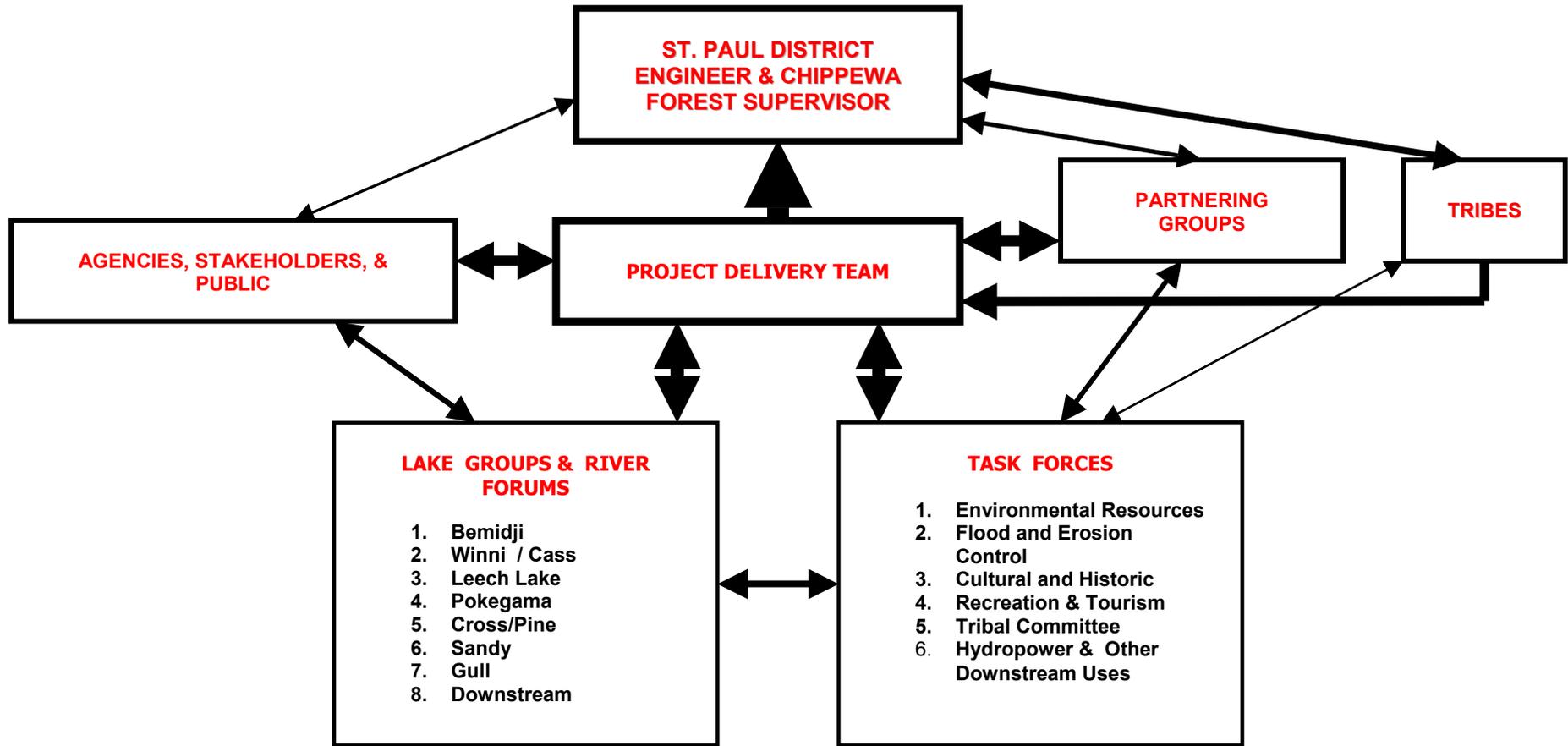
## **DOCUMENT PURPOSE**

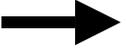
This Draft Scoping Document describes what will be included in the Environmental Impact Statement (EIS) for the ROPE Study. It is based on information gathered through scoping efforts that began in some form as early as 1999. The first public meetings were held in 1999 to discuss a watershed-scale study for the Headwaters that included topics pertinent to the current ROPE study. A series of initial informal public workshops to kickoff the ROPE Study were conducted in December 2001. Then, a number of formal public scoping meetings for ROPE were held the week of June 7, 2004. Additionally, ongoing agency and lake group meetings have been held since 2002 to gather technical and user-group opinions and expertise.

The objectives of this document are threefold: 1) To describe the scoping process and results; 2) To list and discuss the alternatives that will be evaluated in the EIS; 3) To list and briefly discuss the significant resources that will be evaluated in detail within the EIS.

This document will be made available on the ROPE website for review by the general public, State, Federal, and local agencies, and Indian tribes. Availability will also be widely announced through the ROPE newsletter and public notices/news releases. Following the incorporation of revisions based on that review, the Final Scoping Document will be posted at the same location.

Figure 1. Communication / Decision Hierarchy For the Headwaters ROPE Study



**LEGEND**  
 Flow and Strength of Formulation Communications

## **WHAT IS AN EIS AND SCOPING?**

The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to carefully consider all environmental effects of their proposed actions. If a Federal action is likely to have a significant effect on the quality of the environment, the agency proposing the action is required to prepare an EIS. An EIS is a document that contains many components, some which are: a description of the proposed action and alternatives to the proposed action; a description of the affected environment in its present and future states; and a description of the environmental consequences of each proposed and alternative action.

Following the decision that an EIS is required, there are a number of steps that must be followed. The first step is scoping, a process that involves the participation of Federal, State, and local agencies, Indian tribes, and the general public. The most important thing that occurs during scoping is the identification of relevant and significant issues that will be analyzed in depth in the EIS. The scoping process is officially announced in the Federal Register through a Notice of Intent to prepare a Draft Environmental Impact Statement (DEIS).

Information gathered during scoping is used to prepare the DEIS, which is subsequently made available for agency and public comment. Also during this time, public hearings are held to further encourage public comment. Following the comment period, a Final EIS (FEIS) is prepared that identifies the agency's "preferred alternative". The FEIS is also made available for agency and public comment. Subsequent to this comment period, a Record of Decision (ROD) is prepared that states the agency's final decision. The ROD must also identify the environmentally preferable alternative, discuss how and why the agency reached its decision, and indicate whether all practicable means to reduce environmental harm have been included in the preferred alternative, and, if not, why not.

For the ROPE, it has been determined that an EIS will be prepared. The Notice of Intent was published in the Federal Register on December 12, 2003. For the ROPE EIS, the Corps of Engineers will act as the lead agency and the U.S. Forest Service will act as a cooperating agency. The Corps of Engineers has the main responsibility for coordination and preparation of the EIS, but the U.S. Forest Service will play an active role in the preparation and funding of the EIS and the ROPE study in general. The ROPE study and the EIS are estimated to cost about \$3 million, of which the U.S. Forest Service will pay approximately 15%.

## **SCOPING PROCESS FOR ROPE**

In January of 1999, the St. Paul District, Corps of Engineers, in close cooperation with the Mississippi Headwaters Board (MHB), conducted a series of scoping meetings with the public, interested agencies, and Native American Indian Tribes/Bands in an effort to identify water resource problems and opportunities in the Mississippi River Headwaters area. The study area for that effort was essentially the same as that of the

current ROPE. The public involvement and interagency coordination accomplished in 1999 was intended to be a catalyst for leveraging funding and fostering future collaborative planning and implementation efforts. This goal was not met because no cost-share sponsor was identified to assist in the implementation of a comprehensive basin-wide study. Results of the 1999 scoping effort were summarized in a letter report (Letter Report, Upper Mississippi River Watershed, Minnesota). Information from the letter report pertinent to the ROPE scoping process has been included here.

In 2002, ROPE study “task forces” were assembled to represent different resource/user groups within the Headwaters and to provide technical expertise to help guide the direction of the ROPE. The groups are comprised mostly of resource agency personnel from the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Minnesota State Historic Preservation Office, The Nature Conservancy, Public Utilities, U.S. Forest Service, and the Corps of Engineers. These task force groups have met numerous times throughout the study process and have provided valuable assistance in study formulation. The following is a list of the task force groups:

- Downstream Interest Group
- Environmental/Natural Resources Task Force Group
- Flood Control/Erosion Control Task Force
- Public Involvement/Education Task Force Group
- Hydropower and Downstream Uses Task Force Group
- Cultural Resources/Historic Preservation Task Force Group
- Recreation and Tourism Task Force Group

Lake groups, also known as “citizen/stakeholder workgroups” were formed for each of the major reservoirs by inviting all citizens and members of preexisting lake groups to participate in meetings. These lake groups were formed to solicit non-technical public input and to serve as a vehicle for communicating information to the public. Numerous lake group meetings have been held to meet these objectives.

A Partner Group comprised of high-level officials and stakeholder representatives was also convened and briefed at strategic times to solicit ideas, communicate on study related problems and opportunities, and generate understanding and consensus of key managers within key water resource managing agencies. See figure 1 for additional details about the communications hierarchy used for this study.

A ROPE newsletter was developed, named “Around the ROPE”, and 3 issues have been released as of September 2004. The newsletter is used to update readers on ROPE events and information and to solicit comments. Currently the newsletter has a distribution of about 632 individuals.

Public scoping meetings were held for the ROPE during the week of June 7, 2004. The U.S. Army Corps of Engineers and the U.S. Forest Service hosted these meetings to gather input on the potential effects of new reservoir operation plan alternatives that will be studied under the ROPE. These meetings were used to express

what potential impacts will be studied in detail within the ROPE, and to obtain additional public input regarding possible alternative plans and associated impacts that should be studied but were not previously identified. These meetings consisted of a presentation of current information on the ROPE followed by a session for gathering public input.

The problems and opportunities identified and documented during the meetings in 1999 were summarized in handout materials presented at each of the EIS scoping meetings. These handouts and summaries of the existing condition and future conditions under the current operating plan (i.e., future without project) were provided to agency representatives at each meeting.

### **ROPE PUBLIC MEETINGS**

A number of media announcements were prepared to widely announce and provide background about the four ROPE scoping public open house meetings that were co-sponsored by the Corps and the Forest Service. The ROPE newsletter announced the meetings and was widely distributed throughout the study area. A Corps news release was also issued and widely distributed by the Corps Public Affairs Office and was picked-up by a number of local newspapers and radio stations.

The public meetings were informal meetings set up as open houses where interested citizens could come to provide their ideas and concerns and receive answers to questions. A computerized slide presentation lasting about 15 minutes was used to orient the public as they came to the open house and then they were given the opportunity to informally interact with Corps of Engineers and Forest Service representatives. A summary of logistical information about each of these public open house meetings follows:

The first public open house meeting was held in the Twins Cities Metropolitan area from 5:00-7:30 p.m. on Monday, June 7th at the Brooklyn Park Library, 8600 Zane Avenue N. Brooklyn Park, Minn. 55443. About a dozen individuals attended this meeting.

The second public meeting was held in the Walker area from 5:00-8:00 p.m. on Wednesday, June 9th at the AmericInn, 907 Highway 371 N. Walker, Minn. 56484. About 25 individuals attended this meeting.

The third public meeting was held in the Grand Rapids area from 5:00-8:00 p.m. on Thursday, June 10th at the Grand Rapids Area Library, 140 NE 2nd Street Grand Rapids, Minn. 55744. About 10 individuals attended this meeting.

The final public open house meeting was held in the Brainerd area from 5:00-7:30 p.m. on Friday, June 11th in the Administration Building of the Gull Lake Recreation Area, 10867 E. Gull Lake Dr. Brainerd, Minn. 56401. About 10 individuals attended this meeting.

## **INTER-AGENCY MEETINGS**

In mid-May 2004 a letter of invitation was sent to approximately 150 agency representatives from local, regional, State, and Federal levels of government. These invitation letters announced four interagency workshops/meetings to scope problems in the Headwaters area and requested agency participation. Each of these meeting sessions was to be held in the late afternoon. A summary of logistical information about each of the interagency meetings held follows:

The first interagency meeting was held in the Twins Cities Metropolitan area from 1:30-3:30 p.m., on Monday, June 7th at the Brooklyn Park Library, 8600 Zane Avenue N. Brooklyn Park, Minn. 55443. Unfortunately, no interagency representatives were able to attend this initial meeting – it is likely that the tight budgets of the State and Federal agencies precluded participation in multiple meetings and agencies were focusing on participation in the agency meeting to be held later in the headwaters.

The Second interagency meeting was held in the Walker area from 1:30-3:30 p.m., on Wednesday, June 9th at the AmericInn, 907 Highway 371 N. Walker, Minn. 56484. About 15 individuals attended this meeting.

The third interagency meeting was held in the Grand Rapids area from 1:30-3:30 p.m., on Thursday, June 10th at the Grand Rapids Area Library, 140 NE 2nd Street Grand Rapids, Minn. 55744. About 15 individuals attended this meeting.

The fourth and final interagency meeting was held in the Brainerd area from 1:30-3:30 p.m., on Friday, June 11th in the Administration Building of the Gull Lake Recreation Area, 10867 E. Gull Lake Dr. Brainerd, Minn. 56401. About 10 individuals attended this meeting.

## **NATIVE AMERICAN INDIAN MEETINGS**

In early May 2004 an invitation was made to representatives of the two Ojibwe Bands of Minnesota that were known to have interest in the study area. Each Band was asked to assist in setting up the logistics for open house meetings with their respective tribal members in order to obtain their ideas and concerns regarding water resources in the Headwaters area. Meetings occurred with Indian representatives of the Mille Lacs Band on 7 June and with the Leech Lake Band on 15 January. The Mille Lacs meeting was held in the Tribal Community Center and began at 5pm and lasted until about 7pm. The Leech Lake Band meeting was held in two locations; from 2pm to 4pm in the Cass Lake American Legion and from 5pm to 8pm in the Northern Lights Casino in Walker. These meetings were very constructive and key inputs were received as a result.

Participants at each of these tribal meetings were documented. A total of about 25 individuals attended these meetings.

### **POST MEETING / MAIL-IN-INPUTS**

In the newsletter and at each of the interagency, public, and Tribal meetings, a point-of-contact was identified where written or emailed inputs could be provided. To help facilitate written comments, a mail-in form and preaddressed and stamped envelope was made widely available at the public, interagency, and tribal meetings. Comments received in this matter are included with other inputs received during the public workshop and interagency meetings.

### **PLANNED SCOPE OF EIS**

The results of the scoping process have been used to define the current scope of the EIS. Through continual public, agency, and tribal involvement in the study, it is anticipated that the scope of the EIS will change slightly as new information becomes available. However, the general scope of the study will not change significantly from what is shown here.

### **STUDY AREA AND GEOGRAPHIC SCOPE**

The Planning Team has identified the study area as the area and resources that may be affected by changes in the operation of the Headwaters reservoirs. In the broadest sense, this includes the Upper Mississippi River Basin upstream of Lock and Dam 2 at Hastings, Minnesota (Figure 1). The effects of operation decrease as distance from the reservoirs and receiving rivers increases laterally. The effects of operation also decrease with increasing distance downstream of the reservoirs. The effects of increasing lateral and longitudinal distances will be evaluated during the study to better define the affected project area.

### **TEMPORAL SCOPE**

The Headwaters reservoirs will continue to operate into the foreseeable future. It is assumed that the operation plan developed here will be reevaluated in 25 years. Therefore, the EIS will address the effects of changes in the operation plan for 25 years into the future.

### **RESERVOIR OPERATION ALTERNATIVES**

There are a number of possible alternative operating plans that will be integrated into the plan formulation and screening process. Each alternative operating plan will be created using combinations of different operational components at different reservoirs. All possible alternatives can not be listed at this time but it is possible to list the components that will later be combined to create alternatives. The operational components listed here have been identified during the scoping process. Additional operational components may be developed as the study progresses. The key

operational components to be evaluated in different combinations for some or all reservoirs include:

- No Action, or no change to current conditions (maintain the status quo).
- Reduce flood damages and balance upstream and downstream trade-offs to foster fairness.
- Do not operate for flood control at Aitkin, Ball Club Lake, and other places.
- Operate with different drawdown levels and/or eliminate the drawdown.
- Change the channel capacity restrictions between Winnibigoshish/Leech and Pokegama (restriction is currently 2,200 cfs) to enhance the flexibility of operations during high flows. Raising the 2,200 cfs value may decrease high water events on the Cass Lake Chain and would affect downstream resource values (e.g., may increase flooding but restore some of the natural seasonal variability of flows).
- Operate to mimic nature (e.g., produce higher flow in the spring and lower flow in the fall) to restore or enhance natural resources and processes.
- Conduct periodic and selective drawdowns on reservoirs during the growing season (e.g., like what was done at Pool 8 on the Mississippi River) to simulate drought and enhance aquatic vegetation.
- Operate to maintain or improve recreation opportunities throughout the study area and minimize adverse effects to current recreation users.

## **SIGNIFICANT RESOURCES THAT WILL BE ANALYZED IN DETAIL**

### ***Natural Resources***

The aquatic ecosystems of the Headwaters reservoirs, lakes, rivers, and wetlands have been identified as significant resources based on their scientific, institutional, social, and economic value. A list of important natural resources consisting of species and communities has been identified through scoping. This list includes the following resources: walleye, smallmouth bass, whitefish, greater redhorse, muskellunge, the general aquatic community including invertebrates, submersed and emergent vegetation, undesirable exotic vegetation, wild rice, sedge meadows, ducks, marsh birds, shorebirds and terns, and wetland mammals (furbearers). These natural resources are significant in the study area but their significance relative to the ROPE is still unclear. This is because the magnitude of the effect water level management has on these resources is unknown. These effects will be evaluated in detail through the development and use of resource-specific environmental models. The potential effects to other species, including those with special status such as threatened or endangered will also be evaluated within the EIS.

Water and air quality will be analyzed in the EIS. The potential effects of reservoir operation on these resources would likely be the result of indirect relationships in most cases. Water quality would likely be affected through wetland water exchange, specifically affecting levels of dissolved oxygen and mercury. However, with the limited amount of data available, it would be extremely difficult to predict the magnitude of the effect reservoir operation could have on these factors. Air quality may be affected only by increases in power production, and

pollution, at steam-generated power utilities as a result of decreased production at hydropower facilities. Due to the indirect nature of these relationships, analyses on these effects will be conducted at a lower level of detail unless findings warrant more detailed studies.

### ***Socio-economic Resources***

There are numerous significant socio-economic resources found in the study area with the potential to be affected by reservoir operations. Private property adjacent to the lakes and rivers in the study area has been identified as a significant resource. Examples of this resource include, but is not limited to, houses, cabins, docks, and related private facilities such as septic systems. An inventory of these resources in the study area was completed in 2001 and 2002.

Economic resources significant for their income stream, such as resorts, marinas, farms, and hydroelectric plants will be considered in the ROPE study as will public resources such as water supplies and infrastructure. In addition, the impact on the Headwaters' highly valued recreation resources such as fishing, boating, nature-watching, hunting, and swimming will be also be considered.

The scoping process identified these resources as significant for consideration in the ROPE EIS. The magnitude of the effects of the evaluated alternative operating plans will determine which of these resources will be analyzed in detail using the best available information.

### ***Cultural Resources***

The Headwaters Reservoirs are geographically positioned at the head of North America's largest river, the Mississippi. The area has been a focus for human occupation and activity for 10,000 years or more, and the archaeology of the Headwaters region plays a central role in understanding cultural development not only in the central lakes region of Minnesota, but also in the prairie-plains region to the west, the boreal forests to the north, and the eastern woodlands and southern reaches of the Mississippi River. The archaeological sites located on the Headwaters Reservoir Lakes represent an irreplaceable legacy that warrants preservation.

Hundreds of archaeological sites are known to exist along reservoir shorelines and downstream river reaches in the ROPE Study area. The extent of the damage to archaeological sites along the reservoir shorelines due to erosion and inundation has not been thoroughly assessed. The effects of reservoir operations along downstream river reaches are not well understood and need to be further evaluated. It is clear, though, that Headwaters Project operations are adversely affecting historic properties and that any change in operations may continue to adversely affect them.

In the late 1970s the St. Paul District, Corps of Engineers conducted a series of reservoir shoreline surveys at all six reservoirs. The surveys were successful in locating a considerable number of sites and providing recommendations for future work. Most of the recommendations concerned the evaluation of the National Register of Historic

Places eligibility of the eroding archaeological sites identified during these surveys. Since these surveys, there has been very little systematic cultural resource work in the Headwaters, with the exception of work completed by the Chippewa National Forest and the Leech Lake Band of Ojibwe that centers on the Leech Lake and Lake Winnibigoshish areas. Most of the ROPE study area, including large portions of the Corps' Headwaters Project as defined by flowage easement and fee-title lands, has not been surveyed.

As historic preservation policies under Section 106 have evolved, tribal consultation has played an increasingly prominent role in the process. Through the ROPE study the Corps is addressing both Tribal Trust issues and issues pertaining to Traditional Cultural Properties that may exist within areas affected by reservoir operations. The Tribal Trust issues will be addressed in the Tribal Interest portion of the ROPE study.

A Traditional Cultural Property is a site or place that any group of people may consider culturally or religiously important. This site or place may be considered a historic property if it is eligible for listing or listed on the National Register of Historic Places. This property type would be considered eligible if it plays a significant role in the ongoing traditions of the group and is important in maintaining their social and cultural fabric, traditions and group identity.

As part of the cultural resources review for the EIS, the Corps will assess the status of cultural resource work in the Headwaters and the Corps' compliance with Federal laws and regulations. The assessment will be used in drafting a Programmatic Agreement and an Historic Property Management Plan for the Corps' Headwaters Project. This will be necessary even if the recommended alternative is "no action."

### ***Tribal Interest***

Tribal Trust is much broader in scope and is not necessarily addressed in a Section 106 review. The issues go beyond historic preservation and are driven by a set of principles, legal concepts, laws, memoranda and executive orders that outline the responsibilities of the Federal government to protect Indian property and lands, rights, and resources.

The ROPE study is addressing Tribal Trust through consultation and contracts with the Leech Lake Band of Chippewa and the Mille Lacs Band of Ojibwe to obtain general descriptions of the natural resources used traditionally by the Tribe/s or cultural resources that could be adversely affected, or benefited, by changes in lake or river management the study area.

It is critical to the overall ROPE Study progress that Tribal interests be accurately identified early in the study process so that the ROPE Delivery Team can fully incorporate tribal interest data into the optimization and simulation modeling, which will direct the formulation of new operating plans for the Headwater Reservoirs. The intent

is to generate operating plans that would not impact Tribal Trust responsibilities and may benefit tribal interests.

It is important to note that, in addition to incorporating the Tribal Interest Inventory into the model, the Tribes will be asked to provide review comments on the findings and recommendations of the draft ROPE Study report and EIS.

### **RESOURCES THAT WILL NOT BE ANALYZED IN DETAIL**

On the basis of the scoping process to date, the following environmental conditions have been determined to probably not be affected by changes in reservoir operation: climate and mineral resources.

### **EIS SCHEDULE**

It is anticipated that the Draft EIS will be available for public review in the fall of 2005. It is anticipated that the Final EIS will be available for public review in the summer of 2006.

## **SCOPING COMMENTS AND RESPONSES**

During the past two years, various agency and lake group meetings have been held as a way to provide ROPE information to the public and to gather additional information on known problems and opportunities. That information, in addition to that from the letter report, has been summarized here. In most cases, numerous comments were gathered that were very similar. Therefore, comments were categorized and summarized here to reduce duplication.

### **FLOOD CONTROL/PROPERTY VALUES**

**1. Comment:** It is not known if the Flood Control Guide Curves used to manage flooding, which were last updated in the 1950s, are a good representation of current conditions. Due to significant changes in population distribution in the study area and greater public uses of the lake areas, it is likely that the guide curves need some revision. Flooding impacts to farmland in Aitkin County must be a part of ROPE evaluation.

**Response:** An evaluation of the guide curves will be included in the ROPE.

The guide curves attempt to balance damages between Pokegama Lake, Sandy Lake and Aitkin when the reservoirs are storing water for flood control at Aitkin. In actuality four reservoirs are affected by flood control at Aitkin due to the fact that Winnibigoshish and Leech store water concurrently with Pokegama (to reduce inflow into Pokegama).

It appears that land use and flood damages in the flood-prone rural areas in the Aitkin vicinity have changed since the 1950s (less crop farming, more pastureland). In

turn emergency levees were installed along the Aitkin urban corridor in the 1960s thus changing the flooding picture in the city. Although the guide curves take effect at approximately a 12-foot stage at Aitkin (so storage in the reservoirs must begin at about 12 ft.), rural and urban damages/problems are typically not reported until the stage exceeds the 15 to 16 foot range.

A flood control project for Aitkin is currently being analyzed. A permanent levee system, for example, could reduce the need to operate the reservoirs for flood control in Aitkin's urban corridor. The rural area, however, would still have to be considered. In addition, Sandy Lake is impacted by high water whenever the Mississippi River (Sandy's tailwater) is high due to reduced head across the dam (i.e. reduced outflow). Even with Aitkin's urban area out of the flood control picture, Pokegama (and by implication Winnibigoshish and Leech) may have to operate for flood control at Sandy (and for Aitkin's rural area).

**2. Comment:** During the annual drawdown, a large amount of water is released in the fall and winter from the reservoirs to provide room to store water in the spring. It is not known how the environmental impact to downstream rivers from releasing water in the fall and winter as well as the impact to storing water in the reservoirs in the spring, compares to the damages prevented in the Aitkin area.

**Response:** The effects of operating for flood control at Aitkin on upstream resources and resources at Aitkin will be evaluated as part of the ROPE. Alternative operating plans that would prioritize and balance flood control, environmental, recreation, and Tribal interests will be fully evaluated and coordinated as part of the ROPE modeling.

**3. Comment:** The fall and winter drawdown lowers water levels in the reservoirs prior to the spring snowmelt/breakup period. It is not known how eliminating or reducing the drawdown will impact damage to shorelines from ice action.

**Response:** The general perception amongst landowners is that the winter drawdown reduces ice damage to the shoreline due to lower water levels during the winter and spring. Ice movement, however, is influenced by many factors to include air temperature and snow cover. The relationship between ice damage and water levels will be included in the evaluation of the winter drawdown plan in the ROPE.

**4. Comment:** Can flood-prone farmlands (in Aitkin area) be put into CRP program to compensate farmers for flood losses?

**Response:** The CRP program is administered by the U.S.D.A. Natural Resource Conservation Service; therefore control of this program is outside the scope of the ROPE. However, this question should be posed to the NRCS, as it may be an effective way to idle marginal flood prone farmlands.

**5. Comment:** The regulations regarding Congressional Notification water level limits (WRDA 1988, P.L. 100-676) (see Table 2) need to be modified to account for errors in the language and dam safety modifications.

**Response:** A public meeting was held on October 26, 2002 at Pine River Dam to discuss the proposal for making these changes. The proposal was coordinated with Senator Oberstar's office, the MDNR and other interested parties. The comment period closed on December 31, 2002 and the changes have since been submitted to Congress and are included in the, as yet unsigned, Water Resource Development Act (WRDA) of 2004. If the WRDA bill does not get congressional approval the changes can be incorporated thru the ROPE process.

**6. Comment:** Increases in water levels in the Headwaters could flood septic systems, docks, and other structures located within the flowage rights areas.

**Response:** These potential effects will be considered and evaluated as part of the ROPE plan formulation modeling. The Corps has contracted the expert services of the United States Geological Service (USGS) to evaluate potential ground water effects of changing lake and river levels. The findings of those studies will be integrated into the ROPE study.

**7. Comment:** The water levels on some lakes adjacent to the Mississippi River are affected by fluctuations in river levels both low and high. In some areas, outflows from the reservoirs significantly affect river levels (and thus adjacent lake levels).

**Response:** The effects of low water and flooding will be evaluated for all parts of the Headwaters system in the ROPE. An interagency and stakeholders task force on flood control and erosion control is assisting with the inventory and modeling of flooding.

**8. Comment:** Most reservoirs and some areas on the river have actively eroding shorelines.

**Response:** The effect of reservoir operation on erosion will be evaluated within the ROPE. An interagency and stakeholders task force on erosion control and flood control is assisting with the inventory and modeling of erosion.

**9. Comment:** The flowage rights are equal to the upper operating limits at Gull Lake.

**Response:** Each reservoir managed by the Corps of Engineers has an upper operating limit (water level) above which the dam must be wide open. With the exception of Gull, all the Corps reservoirs have approximately 1 to 4 feet of flowage rights lands above the upper limit to account for the effects of wind, waves etc. Gull does not have flowage right lands above its upper limit and there are real estate gaps in flowage rights in some lakes. These real estate issues will be evaluated in detail within the ROPE.

**10. Comment:** The upper limit of the Federal flowage right at Sandy Lake is easily exceeded during years of high water.

**Response:** Sandy Lake Dam is located a short distance up the Sandy Lake River from the Mississippi River. When the Mississippi River is high the water level below the dam can raise as high as the lake level above the dam. This essentially shuts off the outflow from the dam resulting in high lake levels, which can exceed the flowage rights elevation.

**11. Comment:** With the exception of Pokegama Dam, all the Corps of Engineers dams have a MDNR maximum discharge guideline, which lists maximum discharges from the dams versus lake elevations. The guidelines were adopted in the 1960s. Are the guidelines effective for current conditions? (Knutson dam does not have a maximum discharge guideline.)

**Response:** The maximum discharge guidelines are rarely if ever used. The ROPE study will determine if the maximum discharge guidelines are needed and if so whether or not a guideline is needed for Pokegama.

**12. Comment:** The role of each reservoir in flood control should be better defined or updated.

**Response:** The simulation model being prepared to assist with the ROPE formulations will provide a new and powerful tool that will be available to fully evaluate system-wide flood reduction and other reservoir functions. Public education is an integral part of the ROPE; through the education process, the roles of the reservoirs will be clarified for the operators, stakeholders, and the general public.

**13. Comment:** Combined releases from Winnibigoshish and Leech are restricted to 2,200 cubic feet per second (cfs). Is this restriction still needed under current conditions? How large a flow would be allowed under downstream flowage rights?

**Response:** This restriction was implemented to minimize flooding conditions in the river reaches between Winnibigoshish/Leech and Pokegama. Problems during high flows have included inundated roads (cutting off access to homes), flooded wild rice beds and other property damage. In recent years some of the affected roads have been raised and some of the property has been relocated. It is not known if the 2,200 cfs restriction is optimal for current conditions. We have flowage rights in the affected reach to an elevation of approximately 1290 feet. The corresponding flow at this elevation has not been determined yet, however it is in excess of 9,000 cfs in the White Oak area. Analyzing this will be a part of the ROPE optimization evaluation.

## **GENERAL OPERATION**

**14. Comment:** Should consider maintaining a 1301.4 (+/- 0.3 inches) lake level at Cass Lake for the summer pool. This would help to keep June rains from causing high lake water levels and associated shoreline erosion.

**Response:** The effects of lake levels on shoreline erosion in Cass Lake will be analyzed in the ROPE. Erosion susceptibility is a major factor being integrated in the plan formulation modeling. Currently, the normal summer band for Cass Lake extends from elevation 1301.43 to 1301.70 feet. The lake is often times held toward the upper end of the band (1301.79 ft.) following the spring runoff to allow for evaporation during the summer.

**15. Comment:** Operation at one dam affects areas up- and downstream in many ways. All the dams in the Headwaters of the Upper Mississippi River (HUMR) should be operated as a system to more effectively manage water resources.

**Response:** The ROPE will consider up- and downstream effects and will develop an operating plan that treats the Headwaters reservoirs as a system to more effectively manage water resources. A Mississippi River Headwaters Dam Operators Coordination group/committee was formed in February 2002. The members include all the dam operators within the Headwaters system. The group meets each winter/spring to discuss the snow pack conditions, reservoir conditions and dam operations. The group coordinates with each other via email and telephone during the remainder of the year to insure consistent and optimal operation of the Headwaters system.

**16. Comment:** There is an opportunity to coordinate and institutionalize an adaptive management approach to water management and restoration efforts. This approach would monitor project performance and fully network adaptive operational measures to help attain desired operational outputs recommended by the ROPE study.

**Response:** Adaptive management has been utilized in the past to gradually update the current reservoir operating plan. Adaptive management will be utilized in the future as well, but the ROPE will help structure and clarify the process by which operational changes are made. A more aggressive adaptive management strategy will be assessed in the ROPE study and if recommended would include extensive modeling and periodic adjustments to meet planning objectives defined in the ROPE recommendations.

**17. Comment:** Clearly define what adaptive management means if it is to be a recommended strategy.

**Response:** Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational procedures. There are six basic steps as follows:

1. acknowledgement of uncertainty about what policy or practice is "best" for the particular water management issue
2. thoughtful selection of the policies or practices to be applied to the water resource
3. careful implementation of a plan of action designed to reveal the critical knowledge that is currently lacking
4. monitoring of key response indicators
5. analysis of the water management outcomes in consideration of the original objectives, and
6. incorporation of the results into future decisions.

## **RECREATION**

**18. Comment:** If normal summer water levels are decreased, it will become more difficult or impossible to navigate a boat between some bodies of water with shallow connections.

**Response:** The effects of low water levels on navigation will be analyzed in the ROPE. Tradeoffs between recreation benefits and other operating outputs such as environment, cultural, flood reduction, erosion control, and tribal interests will be evaluated and balanced.

**19. Comment:** Changes to the water control plan will need to consider the impacts on the Minneapolis Whitewater Park, lock and dam operations, and the aesthetics of flow over the spillway at Upper St. Anthony Falls Dam. In addition, if a change in the current Water Control Plan is proposed, the Minnesota Department of Natural Resources' Mississippi River System-Wide Low-Flow Plan may need to be reevaluated.

**Response:** The effects of reservoir operation will briefly consider these impacts, however they are likely limited because the effect of operation is less significant with increasing distance downstream of the dams.

**20. Comment:** Need to maintain current summer lake levels on Leech Lake to allow for existing Leech Lake Shores sailing access. Except for a couple of times during droughts, the lake levels at Leech have been managed to allow for sailing use and that use has grown to the point where the sailing is a significant recreational use.

**Response:** The effects of water levels on all recreational uses at Leech Lake will be taken into consideration in the ROPE. The tradeoffs associated with maintaining higher lake levels will also be inventoried and fully evaluated with the aid of a headwaters ROPE Prescriptive Reservoir (optimization) model and a STELLA (simulation) model.

## WATER QUALITY/QUANTITY

**21. Comment:** The ROPE must consider the effects to surface water quality, including drinking water, for various factors such as total organic carbon, mercury, dissolved oxygen, and other pollutants.

**Response:** These potential effects will be analyzed within the ROPE at a level of detail corresponding to the likely magnitude of the effect.

**22. Comment:** The Headwaters reservoirs and the Mississippi River face degradation of water quality and quantity, possibly linked to population growth and how the dams on the system are operated.

**Response:** While the effects of population growth are generally outside the scope of the ROPE, the effect of operation on water quality and quantity will be analyzed. For example, the effect of changes in water quantity for various alternative plans upon hydropower generation in the study area will be evaluated and disclosed.

**23. Comment:** Minneapolis and St. Cloud are dependent on the Mississippi River for water supply and do not have emergency water supply plans. St. Paul and Brooklyn Center also use the water but have alternate sources to fill some of the capacity. How will changes to the Headwaters Water Control Plan affect water supply to cities downstream?

**Response:** The utility of using the Headwaters reservoirs as a source for water supply to downstream cities will be quantified as part of the ROPE study. A September 1994 study by the Corps of Engineers indicated that the reservoirs are very limited in their ability to provide for water supply to downstream cities.

**24. Comment:** There have been extensive studies done to evaluate how effective Headwaters reservoir releases are managed during droughts to supplement water supplies in the Twin Cities. These studies clearly show that only a small percentage of the water released from the Headwaters lakes reaches the Twin Cities during drought conditions indicating that they are not an effective means of supplementing the downstream water supplies. This new information will aid in evaluating alternatives evaluations for drought conditions.

**Response:** You are correct about the ineffectiveness of headwater releases to the Twin Cities during drought conditions. The Corps and USGS cooperated to develop such an analysis in 1994 in response to a crisis that occurred during the low water years of 1976-77 and 1987-88. Information and findings from that study will be presented in the ROPE study documentations.

**25. Comment:** The ROPE study should expand on the 1994 report\* by examining the implications of a 500- to 1,000-year drought event on water resources as far south as the Twin Cities metropolitan area. The ROPE should recommend whether

low-flow augmentation should remain a Federal purpose and, if so, better define the Corps' decision-making process for releasing emergency supplemental flows. In turn, the ROPE should define the volume of water physically available from the six reservoirs, and how much and how long flow in the river could actually be augmented at critical points to include the Twin Cities.

The Water Control Drought Contingency Plans for the Headwaters Reservoirs, which were compiled in 1992, are in draft form. When will they be completed?

*\*Water Available from the Mississippi River at Minneapolis and Other Upstream Minnesota Locations During Low Flow Conditions, Section 22 Report, Corps of Engineers, St. Paul District, September 1994.*

**Response:** The ROPE will clarify the process by which extreme flow events, either low or high, will be coordinated and addressed by the Corps of Engineers. Thresholds for certain actions as identified in other reports will be clarified in the ROPE. The impacts of a 500- or 1000-year event will not be analyzed in detail due to the difficulty in estimating the effects of an event that has never occurred. The Corps will summarize the 1994 Section 22 report as a chapter to be included in the ROPE report. Examples of supplemental release scenarios (from Exhibit F in the report) will be expanded and inserted into a table (or similar) for easier reference. The summary will include a discussion of the impacts of releases at Anoka and a clear articulation of the attendant applicable rules and regulations.

The effort to finalize the Drought Contingency Plans is separate from the ROPE study. A scope of work to identify the effort necessary to complete the plans is currently being developed.

**26. Comment:** If there are changes to the current water control plan, the potential changes to the 7Q10 flows will need to be assessed in relation to wastewater treatment plants, along with the economic impacts on those effects.

**Response:** The Minnesota Pollution Control Agency's (MPCA) NPDES permits for wastewater treatment plants are tied to the 7Q10 flow of the receiving river (for plants that discharge more than 1 million gallons per day). If a change in the current Water Control Plan is proposed, the ROPE may need to assess the potential changes to the 7Q10 flow at a particular location, and in turn the economic impacts on the wastewater treatment plants. The "7Q10" flow is the minimum flow averaged over 7 consecutive days that is expected to occur, on average, once in any 10-year period. The 7Q10 has a 10-percent chance of occurring in any given year. Due to the statistical nature of a 7Q10 flow, this may require a period-of-record modeling analysis.

**27. Comment:** If there are changes to the water control plan, changes to the total maximum daily load (TMDL) in affected rivers will need to be considered.

**Response:** Potential effects to the TMDL will be considered as a part of the ROPE. Such effects will be considered and reviewed with the Minnesota Pollution Control Agency.

## **UTILITIES**

**28. Comment:** How does the Stump Lake Dam operation by Ottetail Power fit into the system-wide recommendations that may come from the ROPE and EIS?

**Response:** Ottetail Power Company is a cooperator in this ROPE Study and the operator of the Stump Lake dam. The affects of alternative operations at that dam will be generally evaluated to assess affects upon Lake Bemidji and the areas downstream of that dam as part of the ROPE study. However, recommendation made in the ROPE study will be made in the context of "a suggestion" to Ottetail Power and there is no requirement for their acceptance.

**29. Comment:** Since there is no requirement from Ottetail Power to accept "suggestions" from the ROPE Study, will the study include alternative management of the River and Lakes if "suggestions" are not accepted?

**Response:** Because there has been a good faith commitment to systemwide operations through a ROPE process made by the non-Federal operations and because the operations of the non-Federal reservoirs can not substantially affect the downstream Federal reservoirs, we do not intend to include separate Federal operating recommendations for the with "suggested" non-Federal operational changes and the without "suggested" non-Federal operational changes.

**30. Comment:** Steam generation and nuclear power plants use the river water for cooling purposes. Low flows or high water temperatures can limit the amount of power that can be generated, posing a potential problem for the Twin Cities metropolitan area.

**Response:** Various steam generation and nuclear power plants use river water for cooling purposes (e.g., Boswell, Sherburne, Monticello). Low flows or high water temperatures in the river can limit the amount of water that can be withdrawn and therefore limit the amount of power than can be generated. This can be critical for the Twin Cities area in the summer due to the fact that, under adverse circumstances, Xcel Energy may not be able to purchase and/or receive enough power from other sources to offset the loss of key generating units forced to shutdown due to lack of cooling water. In a worse case scenario, blackouts could occur. This will be considered as part of the ROPE study.

**31. Comment:** Changes to the drawdown plan will affect hydropower. The potential changes to flow duration (high and low) at particular locations will need to be evaluated, as well as the economic impacts on the hydropower plants.

**Response:** The hydropower plants at Grand Rapids (Blandin), Brainerd (Missota), Little Falls, Sylvan, Royalton (Blanchard), Sartell (Intl. Paper), St. Cloud, Minneapolis (Xcel), and Lock/Dam No. 1 (Ford) depend, to varying degrees, on the increased flow duration that the reservoirs provide. This is particularly true during the normally low-flow winter months when the drawdown flows from the reservoirs can add as much as 2,700+ cfs to the river's base flow. Many of these sites pay the Federal Government for this increase in the river's flow duration as mandated by Section 10(f) of the Federal Hydropower Act. High flows during flooding conditions also have an adverse impact on power generation. If a change in the current Water Control Plan is proposed, the ROPE will need to evaluate the potential changes to the flow duration (high and low) at a particular location and, in turn, the economic impacts on the hydropower plants. Due to the statistical nature of flow duration, this may require a period-of-record modeling analysis.

**32. Comment:** Decreasing the production of electricity at a hydropower plant would increase production at power plants that burn fossil fuels. The resultant increase in air pollution should be considered for any operating plan that reduces hydropower production.

**Response:** Such potential impacts to air pollution will be considered in the ROPE and discussed in the EIS and will be based on existing studies.

## **TRIBAL/CULTURAL**

**33. Comment:** What process will be used to ensure that the activities related to the ROPE will be in compliance with Sections 106 and 110 of the National Historic Preservation Act?

**Response:** Due to the vast number of resources in the study area and the potential for impacts to a large number of those resources, it would likely require an overwhelmingly expensive and time consuming effort to fully comply with the National Historic Preservation Act prior to implementing ROPE study recommendations. Therefore, the Corps and the Forest Service will negotiate a Programmatic Agreement with the Advisory Council on Historic Preservation to govern the implementation of a program to resolve adverse effects resulting from the continued operation of the Headwaters reservoirs.

**34. Comment:** There is considerable concern about the way that the Tribe is proceeding with the contracted inventory of tribal interests associated with the ROPE study.

**Response:** The Federal Government has entered into two separate sole source services contracts with the Leech Lake and Mille Lacs Bands to prepare a written inventory and evaluation of Tribal interests in the study area. The way that this work is to be prepared by the Bands is an internal Tribal matter and in the case of the Leech Lake Band has been controversial.

**35. Comment:** There is a growing concern that shoreline development around the lakes will cause a number of problems. Of greatest concern are lake and river pollution, and degraded lake environmental conditions. These effects would likely adversely impact Tribal uses such as wild ricing and fishing.

**Response:** Controlling shoreline development is outside the scope of the ROPE. However, roles of Government and the private sector in providing stewardship will be discussed in the ROPE documentation and the public education process being utilized in the study can increase awareness of the potential problems with increasing development. The ROPE will consider the effect of reservoir operation on the ecosystems of the headwaters and may implement operational strategies for improving them.

**36. Comment:** High priority should be given to preserve and protect the environment and natural resources long-term over recreational interests. There is concern about recreational users (such as resort and marina operators) having too much power in deciding what reservoir operations are best for Leech Lake.

**Response:** The ROPE is being conducted in a manner to prevent any one user group from unfairly influencing the outcome of the study. Utilizing well coordinated transparent formulation models that will be accessible and operable by the general public is one way to help ensure fairness. These models are up-to-date methods and technologies that will greatly assist in optimizing and assessing a variety of possible changes in headwater reservoir operations.

**37. Comment:** There is mistrust regarding the release of stored lake waters downstream to the Twin Cities under drought conditions. It is believed that under drought conditions water is released downstream to benefit the Twin Cities to the detriment of the Headwaters resources.

**Response:** There have been extensive studies done to evaluate how effective Headwaters reservoir releases are managed during droughts to supplement water supplies in the Twin Cities. These studies clearly show that releases made from the Headwaters lakes do not reach the Twin Cities during drought conditions and are not effective means of supplementing the downstream water supplies. This new information will aid in evaluating alternatives evaluations for drought conditions

**38. Comment:** There is concern that storing water in Leech Lake for flood protection at Aitkin is causing damage to the lake.

**Response:** The effects of flood control operations on the reservoirs and at Aitkin will be analyzed in detail as part of the ROPE.

**39. Comment:** Summer fluctuations of the lake levels can have serious impacts to wild rice production.

**Response:** The potential effects on wild rice will be evaluated and discussed in the ROPE study.

**40. Comment:** There is a belief by some that the “flush theory” is being used by some industries in the area to meet water quality standards and that they are driving (the reason for) the ROPE study.

**Response:** Alternative operations intended to benefit industries by providing them with additional dilution waters has not been requested and is not a formulation objective. However, any affects on industry from a change in dam operation is part of what the EIS seeks to evaluate and disclose (i.e., if water flows impact industrial uses of the river that would be documented in the EIS).

**41. Comment:** Will there be a period of time after the ROPE study recommendations go into affect when the operation is monitored to see if the new operation is working (to determine if the operational changes are good or bad)?

**Response:** A number of possible strategies of future headwaters operations would involve increased monitoring requirements. Specifically, the use of demonstration/pilot projects to test the effectiveness of changes in operation is being considered. Adaptive management will continue to be utilized to strive to reach defined objectives. However, the adaptive management approach will be better defined and by definition must include monitoring. These strategies will require increased monitoring to evaluate the effects of operational changes. Full consideration of the merit of proceeding with such operational strategies is part of the alternative evaluations that the ROPE will consider.

**42. Comment:** If tribal resources are impacted by changes recommended by the ROPE study, what collateral is there for the Band?

**Response:** Protecting the Tribal trust relationships between the Federal Government and the Tribes is mandated and the ROPE study is taking many and effective steps to integrate tribal involvement and tribal resource priorities into the ROPE plan formulation process. Efforts to prevent and/or minimize any erosion in Tribal interests due to a change in operations is being carefully coordinated with Tribal representatives.

**43. Comment:** The Corps and USFS should work with the Leech Lake and Mille Lacs Bands to clarify how the Government can meet its Tribal Trust responsibilities and where possible to identify Tribal interests that can be enhanced as a part of reservoir operation.

**Response:** Efforts to benefit Tribal interests due to a change in operations is also being carefully coordinated with Tribal representatives and will be integrated into the plan formulation modeling done as part of this study.

## **ENVIRONMENTAL**

**44. Comment:** The current hydrologic cycle of the reservoirs results in reservoir levels and river flows that are different and even reversed from those in an unregulated system. This reversal of the natural condition adversely affects the ecosystem including but not limited to fish spawning (particularly whitefish), rearing, and over-wintering, as well as mussels, meadows, and floating bogs. Also, as a result of current operating plans, there has been a loss of habitat diversity and littoral vegetation in the system.

**Response:** The effects of the current (reversed) hydrologic cycle on these natural resources will be analyzed in the ROPE.

**45. Comment:** Due to the unnatural flow regime, there is an increased amount of lake and river erosion, and sedimentation in the system, including system tributaries.

**Response:** The effects of the current operating plan on lake and river erosion will be evaluated as part of the ROPE. Erosion susceptibility is a major factor being integrated in the plan formulation modeling.

**46. Comment:** What are the benefits of returning to a more natural water regime?

**Response:** The benefits of returning to a more natural water regime will be discussed in detail within the ROPE report and EIS. In general, a more natural hydrologic regime would restore some ecosystem functions, structure, and dynamics thereby creating a more sustainable, productive, and resilient ecosystem that would protect resources from future degradation. This more sustainable ecosystem would help the region to continue to be a destination vacation area and would protect the high quality of life for the citizens of the region.

**47. Comment:** Current understanding of instream low-flow requirements and rate-of-change in outflow rates is better understood now than when they were established by the managing agencies in the 1960's. As a result, refinements to the low-flow and rate-of-change flow regulations/guidelines are possible.

**Response:** The low-flow and rate-of-change operating components will be evaluated and possibly adjusted utilizing current information.

**48. Comment:** The MDNR low-flow guidelines and the federal low-flow regulations are not consistent.

**Response:** The ROPE will examine all the low-flow guidelines/regulations and recommend a plan that is consistent.

**49. Comment:** There are a number of locations in the study area where there is an opportunity to restore aquatic habitats, especially previously channelized river reaches. However, until the river flow regime can be restored to a more natural condition, restoration is not likely to result in significant habitat improvements (e.g., this applies to reaches of the Mississippi River downstream of Winnibigoshish and Leech Lake).

**Response:** Creating more natural flow conditions where practical will be a formulation emphasis of the alternative evaluations being carried out in the ROPE. Modification of the flow regime as a result of the ROPE study may result in spin-off projects that might attempt to restore aquatic habitats.

**50. Comment:** If this study recommends actions that would return the flow regime to a more natural condition, it will be important to monitor the effects of such an operating plan in such a way as to research, demonstrate, and document effectiveness of restoration actions.

**Response:** A number of possible strategies of future headwaters operations would involve increased monitoring requirements. Specifically, the use of demonstration/pilot projects to test the effectiveness of changes in operation is being considered. Adaptive management will continue to be utilized to strive to reach defined objectives. However, the adaptive management approach will be better defined and by definition must include monitoring. These strategies will require increased monitoring to evaluate the effects of operational changes. Full consideration of the merit of proceeding with such operational strategies is part of the alternative evaluations that the ROPE will consider.

**51. Comment:** Temporary lake draw downs of about three feet or less during the growing season would likely improve aquatic emergent and possibly submersed vegetation in the reservoirs. An increase in the amount and diversity of shoreline vegetation may also reduce shoreline erosion.

**Response:** Growing season drawdowns will be evaluated as part of the ROPE study as a tool to improve vegetation in the reservoirs. Improved vegetation would have a variety of benefits, one possibly being bank stabilization. The extent, timing, and duration of drawdown will be evaluated and fully coordinated during the ROPE formulations.

**52. Comment:** Impacts to wild rice must be considered.

**Response:** Impacts to wild rice will be considered within the ROPE.

**53. Comment:** Waterfowl nests and aquatic mammal dens downstream of the reservoirs are frequently flooded and this results in losses of ducks and muskrats each year.

**Response:** The effects of dam operation on ducks and muskrats will be evaluated within the ROPE.

**54. Comment:** The dams act as barrier to the movement of aquatic species. The Corps should consider providing fish passage at each of the dams.

**Response:** Dam modification projects are outside the scope of the ROPE but could be pursued under subsequent spin-off projects. However, the ROPE will recommend that fish passage issues highlighted during the EIS analysis should be evaluated in greater detail in a future study.

**55. Comment:** There is reduced channel complexity and less functioning floodplain due to channel modifications.

**Response:** Channel reconstruction projects are outside the scope of the ROPE, and we will likely recommend that projects for river channel restoration be pursued under other programs. However, returning to a more natural hydrograph will be evaluated in the ROPE, along with the associated benefits of increased habitat complexity and floodplain function.

**56. Comment:** Nesting habitat for common terns has been reduced.

**Response:** Nesting habitat for terns and shorebirds will be evaluated within the ROPE.

**57. Comment:** Should inform the public about aquatic invasive species - this can be achieved by increasing awareness and signage.

**Response:** The public education process being used in the ROPE can be used to help increase awareness about invasive aquatic species; however, an extensive public education program and the construction of signage for invasive species may be beyond the scope of the study.

## **EIS PROCESS**

**58. Comment:** Because the Mud Lake Dam, operated by the MDNR, is one of the Dams in the Headwaters system that the ROPE is evaluating and will make recommendations regarding, it is desirable to include the State EA process concurrent with the Federal EIS process.

**Response:** The possibility of including the State EA process with the Federal EIS process will be investigated. However, it may be simpler for the State to conduct their process separately if they decide to change their operating plan at Mud Lake.

**59. Comment:** The level of detail that the EIS will go into for various disclosures of impacts needs to be very carefully described in the EIS and the extent that the EIS

covers proposed actions verse utilizing programmatic EIS agreements and/or supplemental EA's needs to be fully documented.

**Response:** Concur.

**60. Comment:** The alternative reservoir operating plans must be clearly defined.

**Response:** Alternatives will be clearly defined for those that seem reasonable (i.e., for the ones that are not eliminated during the initial screening phase).

**61. Comment:** There is a concern that the public education process being used in the ROPE is not meeting its intended goal. The ROPE public education process should be revised to improve its effectiveness."

**Response:** The public education process being used in the ROPE is continually updated and improved based on new information as it becomes available. The Corps and Forest Service recognize that effective public education is imperative to the success of the ROPE.



- Cities
- Roads
- Rivers
- Mississippi Watershed Basin
- Basins

**Headwaters ROPE Study Basin**

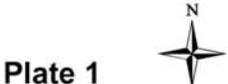


Plate 1