



**US Army Corps
of Engineers**
St Paul District

AROUND the ROPE

Mississippi River Headwaters Reservoir Study

Volume 3; Issue #1, July 2006



US Forest Chippewa
National Forest

Public Meetings Planned in August to Review Draft Plans

The study team will be traveling to several locations the week of August 21 to explain our plans and get your input on proposed changes. The four locations for meetings are Tuesday afternoon the 22nd at Aitkin, Tuesday evening at Grand Rapids, Wednesday the 23rd at Walker, and ending on Thursday the 24th at Brainerd. All meetings, except Aitkin, are scheduled to start at 6:30pm and will have a 30

minute presentation of modeling results and findings, followed by an informal question and answer session. The afternoon meeting in Aitkin begins at 1:00pm. Staff members will be available 30 minutes before the meeting and as long as needed afterwards to talk one on one with anyone needing additional information. Details are on page 3 of this newsletter.

ROPE Update and Next Steps

As you are likely aware, the Headwaters Reservoir Operating Plan Evaluation, or ROPE, is a long-range operating plan study of the Mississippi River Headwaters Reservoirs. The study is being jointly sponsored by the U.S. Army Corps of Engineers and U.S. Forest Service. The primary purpose of the study is to evaluate alternative operating plans for each of the Corps and Forest Service reservoirs with the goal of improving system-wide operations and stewardship of the Headwaters Reservoirs system.

The study began in December 2001 with a goal of completion within 4 years. Many things have changed since then, and we have learned much throughout the study process. As a result of unforeseen difficulties with the study models and funding shortfalls, the study completion date is now set for summer 2007, or roughly a year and half later than originally planned. Also, the scope of the study has narrowed. Originally, possible study alternatives included dam removal, changes in the congressionally mandated aspects of dam operations, and land acquisition. Through the scoping process, we have found little interest in removing the dams or changing operations outside the wide range of the congressional limits. Also, land acquisition has been removed as a possibility because of a general lack of interest and funding limitations.

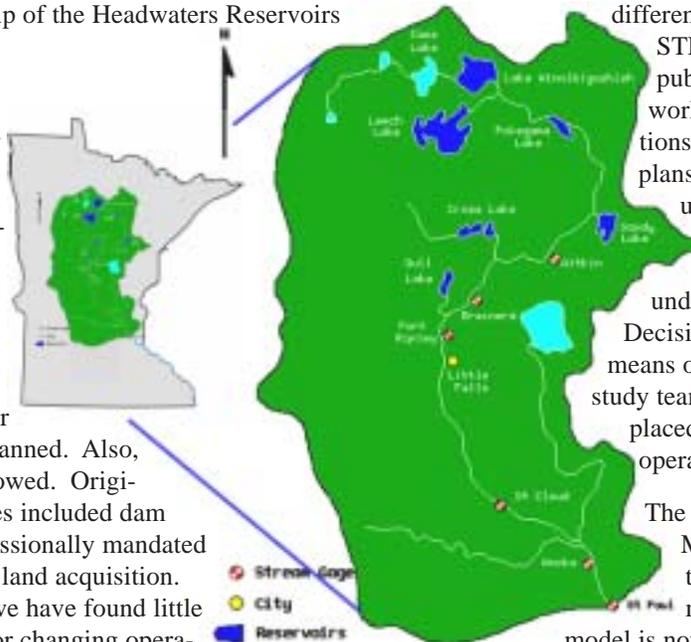
The ROPE Study has been employing the Shared Vision Planning Process to ensure full participation by all study stakeholders. The key to Shared Vision Planning is the incorporation of stakeholder involvement in the development of flexible, transparent, and easy-to-use models for the development and evaluation of alternatives. Three models have been

developed for the ROPE Study to meet these needs: the Prescriptive Reservoir Model (PRM), the Structural Thinking Experimental Laboratory with Animation (STELLA) model, and the Decision Model. PRM is an optimization model being used by the study team to aid in the development of optimally balanced operating plans. The STELLA model is being used to simulate the operating plans and measure their effects on

different Headwaters resources. The STELLA model will be available at public meetings and stakeholder workshops to answer specific questions about modifications to operating plans. The Decision Model is being used to compile the large amounts of data produced by the STELLA model and present it in easily-understood tables and graphs. The Decision Model will be the primary means of communication between the study team and all stakeholders and will be placed on the ROPE website for operating plan review.

The last newsletter was released in May 2004. Since that time, most of the study effort has focused on model development. The STELLA

model is not a typical Corps of Engineers hydrologic model, and the St. Paul District had never constructed a STELLA model before. The process involved a learning curve, but the new model is easier for non-modelers to understand than traditional hydrologic models. Around the beginning of 2006, the models were basically complete, and it is anticipated they will only need minor adjustments through the end of the study. A brief summary of STELLA model development can be found in another article in this newsletter.



During the summer, the ROPE team is working to develop a range of operating plan lake levels and discharges that will lead to the development of an initially proposed “balanced” plan. This plan will be presented to ROPE stakeholders for feedback, and, as a part of that process, a series of public meetings will be held in late August. Following these meetings, the plan will be revised as warranted and will be presented again with the release of the draft report and environmental impact statement (EIS). These documents are scheduled for release in February 2007, depending on continued funding for the study. The draft report and EIS will be available for review and comment for the required 45-day period. Following revisions based on comments received, the final report and EIS will be released for a 30-day comment period. Finally, a Record of Decision (ROD) will be signed by the Corps and the Forest Service, stating which operating plan alternative will be implemented. The new plan will be put in place sometime in summer 2007.

Operating Plan Alternatives

In mid-May 2006, the study team held a plan formulation workshop that included the in-house and model development teams. The goal of the meeting was to develop a list of alternative operating plans that would cover the full scope of potential plans. Although these plans would consider all the study objectives, each would have a different “flavor” that would try to accomplish a different goal in the management of the headwater reservoirs. Following is a list and basic description of these plans. More detailed information on these plans will be provided through public meetings and document reviews.

1. **Environmental Plan** – This plan focuses on increasing the diversity and abundance of aquatic life by restoring more natural hydrology throughout the study area, with equal emphasis on riverine and reservoir habitats. A more natural lake level and river flow regime would include somewhat higher spring water levels, the correct timing of high and low flows, and allowing more fluctuation in water levels as influenced by rainfall. The environmental plan does attempt to decrease the potential for negative impacts to other study factors where possible. For example, flooding considerations would take priority over others for larger events.
2. **Tribal Interest Plan** – This plan places a high importance on operating for environmental resources by adopting similar goals as the environmental plan. This plan places more emphasis on environmental operation for Winnibigoshish, Leech and Cass Lakes, which are within the Leech Lake Indian Reservation. Other factors of importance include reduced erosion and protection of archeological resources.
3. **Economic Development Plan** – This plan strives to operate the reservoirs to maximize direct economic benefits in the system derived from hydropower, recreation, and flood damage avoidance. This plan would be similar to the existing operating plan with some modifications to ensure benefits are effectively balanced throughout the system. Operation for other interests would be included where possible after maximizing direct economic benefits.

In addition to the “balanced” plans above, other operating plans will be used for comparison purposes and will likely include:

4. **Current Operating Rules** – This plan is a simulation of the current operating lake levels and discharges, which are focused primarily on flood damage reduction and recreational interests. This plan will be the basis for comparison to the other plans.
5. **Dam Removal Plan** – This plan is a simulation of what the reservoir and river water levels might look like if the federally-owned dams were removed. This plan will only be presented for information and comparison purposes and will not be considered for selection.
6. **Run-of-River Plan** – This plan is a simulation of what the reservoir and river levels might look like if the reservoirs were operated with fixed-crest weirs at the present lake levels. All water flowing into the reservoirs would flow out without being controlled by a gated dam. This alternative has been used to represent what an ideal environmentally-focused operating plan might look like, while keeping the lake levels at their current state. Therefore, this plan and the Environmental Plan will be very similar.

As part of the process for plan selection in the ROPE Study, an initially proposed plan will be identified. This plan will be presented to all stakeholders for feedback and modification prior to being proposed for selection in the draft report and EIS. During the development of the initially proposed plan, components of the previous plans will likely be combined or “balanced” based on subregional differences in the study area. Some of these differences are lakeshore and riverine development, which is greater in the southern portion of the study area, and a greater interest in environmental and tribal resources in the northern portion. Below is a summary of what the initially proposed plan will look like:

7. **Initially Proposed Plan** – This operating plan will balance the primary subregional interests in the study area by combining features of the other alternative operating plans. It would include operating the more northern reservoirs in accordance with the Tribal and Environmental plans to the extent possible while still maintaining the flood control benefits for larger flooding events. The more southern reservoirs in the study would be operated primarily for economic benefits, while restoring some natural water level fluctuation to protect and enhance environmental resources. This plan would also include consideration and modifications for impacts on erosion, archeological resources, hydropower, and other uses throughout the system. Other components that may be included in this plan are lowering water levels on some northern reservoirs to decrease shoreline erosion and increasing summer water levels on some southern reservoirs to benefit recreation.

What is listed here for possible operating plans is a summary of the alternatives that will be developed in more detail in the coming months. During the public meetings in August, these plans will be presented with a focus on the subregional impacts for the area in which any given meeting is held. We will answer questions during those meetings and use the public input to better develop the proposed plan.

Public Meeting Details at a Glance

The U.S. Army Corps of Engineers and the U.S. Forest Service will conduct public meetings to gather input on the modeling results and findings of new reservoir operation plan alternatives being studied under the Mississippi River Headwaters Reservoir Operation Plan Evaluation (ROPE). The meetings will be used to present potential impacts that 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 are not currently planned. A preliminary draft of the proposed operating plan will be presented to solicit comments regarding the plan's potential impacts and acceptability. These comments will be used to further develop the proposed plan, which is scheduled for public release this winter with the draft project report and Environmental Impact Statement.

The format for the meetings will be held in an informal open house format that will consist of a short presentation of current modeling results and information on the ROPE followed by a session for gathering citizen and stakeholder inputs. Participants are welcome to come at any time during the session; they should plan to spend at least 20 minutes to view the presentation and have their questions answered. The presentation will be repeated every half hour during the meeting so everyone has the opportunity to hear the study update regardless of when you can make it.

To allow for the greatest participation, the meetings will be held at several locations along the Upper Mississippi River, as follows.

1. **Aitkin area.** Tuesday, August 22, 2006, from 1:00 to 3:00 p.m., at the City Hall, 109 1st Ave NW, Aitkin, Minn. 56341
2. **Grand Rapids area.** Tuesday, August 22, 2006, from 6:30 to 8:30 p.m., at the Grand Rapids City Hall, 420 N. Pokegama Ave, Grand Rapids, Minn. 55744.
3. **Walker area.** Wednesday, August 23, 2006, from 5:00 to 8:00 p.m., at the AmericInn, 907 Highway 371 North, Walker, Minn. 56484.
4. **Brainerd area.** Thursday, August 24, 2006, from 5:00 to 7:30 p.m., in the Administration Building of the Gull Lake Recreation Area, 10867 East Gull Lake Drive, Brainerd, Minn. 56401.

Meetings are also being coordinated with interagency and tribal interests to gather additional pertinent study related input. For more information on these meetings, please contact Kevin Bluhm at 651-290-5247 or Kevin.W.Bluhm@usace.army.mil

Details on the Modeling

Three models are being used in the ROPE Study, the Prescriptive Reservoir Model (PRM), the STELLA model, and the Decision Model. These three models will be used in sequence to determine the best overall plan to balance the system-wide impacts on various resources. The PRM model will show which combinations of water levels best meet the various goals in the system to help the study team develop revised reservoir operating rules for the plan alternatives. The operating rules will be entered into the STELLA model to simulate reservoir operation and show the lake levels and discharges that would have occurred from these plans during the last 70 years. The decision model will display the simulated water levels for most locations in the study area, along with an estimate of the impacts these water levels would have on factors such as erosion, hydropower, archeological resources, recreation, flood control, tribal interests, and environmental resources. This information will then be used to select the revised operating plan for the system. It is expected that the plan will be adjusted in the future as results of the new plan are monitored and conditions in the study area evolve.

These models were developed to be as transparent to the general public as possible, which required the use of modeling techniques that were new to the study team and involved a learning process and a great deal of effort. This effort has led to models that produce reliable and meaningful results, but also to ones that

are easier to understand than those used in the past. These models use the hydrology dating back to 1930 and are able to mimic the water levels that would have occurred under the current operating plan. These models do not perfectly represent past conditions and cannot predict the impacts of specific future events, but they are able to effectively simulate lake levels and river flows based on dam operating rules and will be useful tools for plan development and selection in the ROPE Study.



CALENDAR OF EVENTS:

Draft Report & EIS complete	Feb. 07
Public Meetings/comment period	Mar. 07
EIS comment period ends	Apr. 07
Final Report & EIS complete	Jun. 07

How to Get More Information

ROPE Contact Information

You can become involved in this study. You can volunteer to be a member of a lake group or just take some time to learn more about the operations of the Headwaters dams by visiting the ROPE website. For more information, please use the following contact information.

Website: <http://www.mvp.usace.army.mil/rope/>

Newsletter:

Kevin Bluhm 651-290-5247
Kevin.W.Bluhm@usace.army.mil



Headwaters Field Offices:

Leech Lake Dam	218-654-3145
Pine River Dam	218-692-2025
Gull Lake Dam	218-829-2797
Pokegama & Winnibigoshish Dams	218-326-6128
Knutson Dam	218-335-8651
Stump Lake Dam	218-751-3120

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Chantel Cook, U.S. Forest Service	218-335-8662
cmcook@fs.fed.us	

St. Paul District Public Affairs	651-290-5201
St. Paul District Toll Free Number	800-290-5847

Letters can be directed to:

Colonel Pfenning, District Engineer, St. Paul District, Corps of Engineers, ATTN: Mr. Steve Clark, Project Management Branch, 190 Fifth Street East, St. Paul, MN 55101-1638.

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