

Water Level Management Update

Volume 1, Issue 1

May 1998

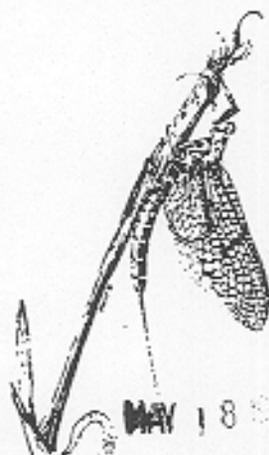
Because of your interest in water level management on the Upper Mississippi River, you will be receiving the "Water Level Management Update" newsletter. The newsletter will not be sent out on a specific time-frame, instead, it will be sent as new issues/topics arise.

What is Water Level Management?

The Mighty Mississippi has been around for about a million years in one form or another. During all of that time, the river provided habitat for plants, animals, birds, and fishes. Most of these species adapted and thrived with fluctuating river flows and water levels.

For the last 170 years people have modified the Mississippi River for the movement of goods and services, disrupting natural river flows and water levels. Many of these modifications have produced social benefits, but it is becoming more apparent that they have also caused un-intended negative effects. In this century, we have experienced a trend toward declining health and diversity of the river ecosystem as evidenced by filling-in and loss of side-channel and backwater habitats, losses of aquatic vegetation and invertebrates, reduced water clarity, and changes in the fish community. Much of this decline is probably due to human modification of the river system and its natural processes.

River managers and scientists believe it is time to reverse the trend of habitat loss by working with more natural river flows and water levels. This is what water level management is all about, **using the river's natural forces to re-create, enhance or revitalize river habitat.**



For instance, river flows could be adjusted more frequently during the day and under more dam gates to improve riverine habitat below the locks and dams. This would require more work at the lock and dam, but river managers believe these tools deserve additional attention for the future management of the river.

Other changes involve the increase or decrease in water levels to restore habitat. Increasing the water levels during the winter months would provide more wintering backwater habitat for several species of the sunfish family. With this in mind river biologists asked the U.S. Army Corps of Engineers (COE) to discontinue the practice of reducing water levels by three inches just prior to the river freezing. In the winter of 1995-96, the COE agreed to discontinue this practice and have done so ever since. Although it is difficult to quantify, fishery biologists are confident the additional wintering space is important to species in the sunfish family.

The flip-side of increased water levels is to reduce water levels during the summer, mimicking natural river conditions. These conditions produce benefits such as sediment drying, plant germination and growth, and recycling of nutrients. In turn, the increased aquatic plant production provides habitat for fish and wildlife through production of food, shelter, aquatic insects, and resting areas.

Reducing water levels for aquatic plant growth has been done in small backwater areas by diking an area off and pumping the water out. This method has been found to be effective in producing aquatic plants. These small-scale efforts work well on an experimental basis but are too labor intensive to continue as a routine management practice. For this reason, river biologists believe water level reduction on a pool-wide scale would be a better choice, using the dams as water control devices.

There are many concerns associated with a water level reduction during the summer months. Maintaining commercial navigation and recreational access to the river will require that the conditions for the water level reduction be strictly defined. Although access may be temporarily affected at some locations, it appears through careful planning a water level reduction could be completed with minimal impact to the river users.

Many river biologists as well as many of the public believe the short-term costs and risks associated with a water level reduction are worthwhile when you consider the risk of continued decline of river habitat. Water level reductions are a potential management tool that could be used in concert with other tools. For these reasons, river managers are investigating the possibility of doing an experimental water level reduction on Pool 8 of the Upper Mississippi River. If preliminary studies show that water level management is a feasible tool for Pool 8, the experiment could be conducted in the year 2000. Perhaps, this will be a positive step forward for the River in the new millennium.

Key Points:

Water level management is:

- a temporary seasonal increase or decrease in water level
- a management tool used to mimic natural cycles
- a chance to benefit a few acres to several thousand acres
- a tool that has been used to restore aquatic plants that support fish and wildlife.

Water level management is not:

- a complete drainage of a navigation pool
- a uniform water level change throughout the pool; change would be the greatest at the lock and dam and become less pronounced upriver
- a one-time solution for restoring habitat it must be repeated occasionally.

Pool 8 Selected

Out of all of the Upper Mississippi River Pools, four were selected as sites for the pilot water level management project, Pools 5, 7, 8 and 9. After reviewing comments from four public meetings and discussions among river managers, a single pool was selected. Pool 8 was chosen as the pool to be studied to determine if a water level reduction could be conducted in the summer of 2000.

Why Was Pool 8 Selected?

- 1) Lower Pool 8 contains a large amount of open water with marginal quality aquatic vegetation that could benefit from this technique to promote plant growth.
- 2) Dredging required to maintain a nine-foot channel is minimal for a one or two-foot water level reduction and becomes more significant for a three-foot reduction.
- 3) At the public meetings, there appeared to be support for a reduction of water level in Pool 8.
- 4) The impacts on angling, boating and other forms of recreation are manageable because the majority of recreational facilities are located in the upper portion of Pool 8. A water level reduction will be greatest at the dam (Genoa, WI) and become less pronounced as you move upstream (La Crosse, WI).
- 5) A complete monitoring program can be done economically because of the extensive existing data and supplemental monitoring by the numerous agencies working on the river near La Crosse.

Water Level Reduction Examples

The following two scenarios represent examples of water level reduction for Pool 8. These numbers represent computer model generated estimates for Pool 8.

1-Foot Seasonal Reduction:

- could expose 2,400 to 4,600 acres of sediment
- affects two boat landings and one marina
- safe commercial navigation would be maintained with minimal additional dredging

3-Foot Seasonal Reduction:

- could expose 5,600 to 9,400 acres
- affects 13 boat ramps and two marinas
- safe commercial navigation would be maintained with four times the normal amount of dredging

Want to See a Small Scale Drawdown?

A small scale drawdown will be done this summer in Pool 9 within the COE Recreation Area, Blackhawk Park. An area known as Peck Lake will be diked and about two feet of water will be pumped off to promote vegetation growth and sediment drying. The COE has agreed to maintain the drawdown and area natural resource agencies will monitor the site to determine if the expected benefits occur.

Peck Lake has little to no aquatic vegetation so this summer's experiment should provide a good test for the benefits and/or impacts of water level reduction. Please stop by if you are in the area and if you see a scientist out collecting information feel free to ask questions.



Water Level Management Schedule:

①✓ Select the target pool for investigation of water level reduction	Feb 1998
②□ Develop a pilot pool water level reduction plan	Nov 1998
③□ Distribute draft report/environmental assessment for public review	Feb 1999
④□ Complete final report with a recommended plan for a drawdown	May 1999
⑤□ Obtain approval to implement water level reduction	Sept 1999
⑥□ Implement pilot pool drawdown (If suitable water conditions exist)	June 2000

- Items 4-6 depend on the outcome of the report. At this early stage it appears likely a one to three foot water level reduction could be implemented in Pool 8 without major impacts to the wide-range of river users, but, the study results and public input will make the final determination.

Comparisons of Four Potential Pools for a Pilot Water Level Management Study

	Pool 5	Pool 7	Pool 8	Pool 9
Dredging Requirements (vol)				
1-foot drawdown			2,000 cubic yards	
2-foot drawdown	200,000 cubic yards	215,000 cubic yards	135,000 cubic yards	75,000 cubic yards
3-foot drawdown			295,000 cubic yards	
Dredging Requirements (cost)				
1-foot drawdown			\$ 90,000	
2-foot drawdown	\$1,255,000	\$1,280,000	\$ 500,000	\$375,000
3-foot drawdown			\$1,185,000	
Placement Sites				
1-foot drawdown	Adequate	Adequate	Adequate	Adequate
2-foot drawdown	Adequate	Marginal	Adequate	Adequate
3-foot drawdown	Adequate	In-adequate	Adequate	Marginal
Area of Aquatic Vegetation	6,100 acres	5,300 acres	9,700 acres	14,700 acres
Area of Open Water	6,200 acres	9,000 acres	13,800 acres	17,600 acres
Total	12,300 acres	14,300 acres	23,500 acres	32,300 acres
Potential Recreation Affects				
Boat ramps in upper 1/3 of pool	3	5	18	9
Boat ramps in middle 1/3 of pool	5	2	6	5
Boat ramps in lower 1/3 of pool	3	8	4	3
Total	11	15	28	17
Marina slips upper 1/3 of pool	100	4	1,039	18
Marina slips middle 1/3 of pool	0	5	70	185
Marina slips lower 1/3 of pool	0	80	30	20
Total	100	89	1,139	223



The next scheduled public open houses are as follows:

June 3, 1998 (Wednesday) - Stoddard, WI, American Legion - 4:00 p.m. to 8:00 p.m.

June 4, 1998 (Thursday) - Brownsville, MN, Community Center - 4:00 p.m. to 8:00 p.m.



Please come and participate!

If you cannot attend meetings or just have some questions, please feel free to contact the following people:

Dick Otto
U.S. Army Corps of Engineers
1114 South Oak Street
La Crosse, MN 55947
(507) 895-6341

Gretchen Benjamin
Wisconsin DNR
3550 Mormon Coulee Road
La Crosse, WI 54601
(608) 785-9982

James Nissen
U.S. Fish and Wildlife Service
555 Lester Avenue
Onalaska, WI 54650
(608) 783-8405

Tim Schlagenhaft
Minnesota DNR
1801 South Oak Street
Lake City, MN 55041
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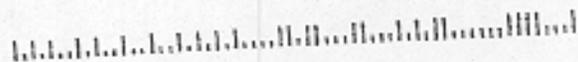
U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
UPPER MISSISSIPPI RIVER NW & FR
LA CROSSE DISTRICT
555 LESTER AVENUE
ONALASKA, WI 54650

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

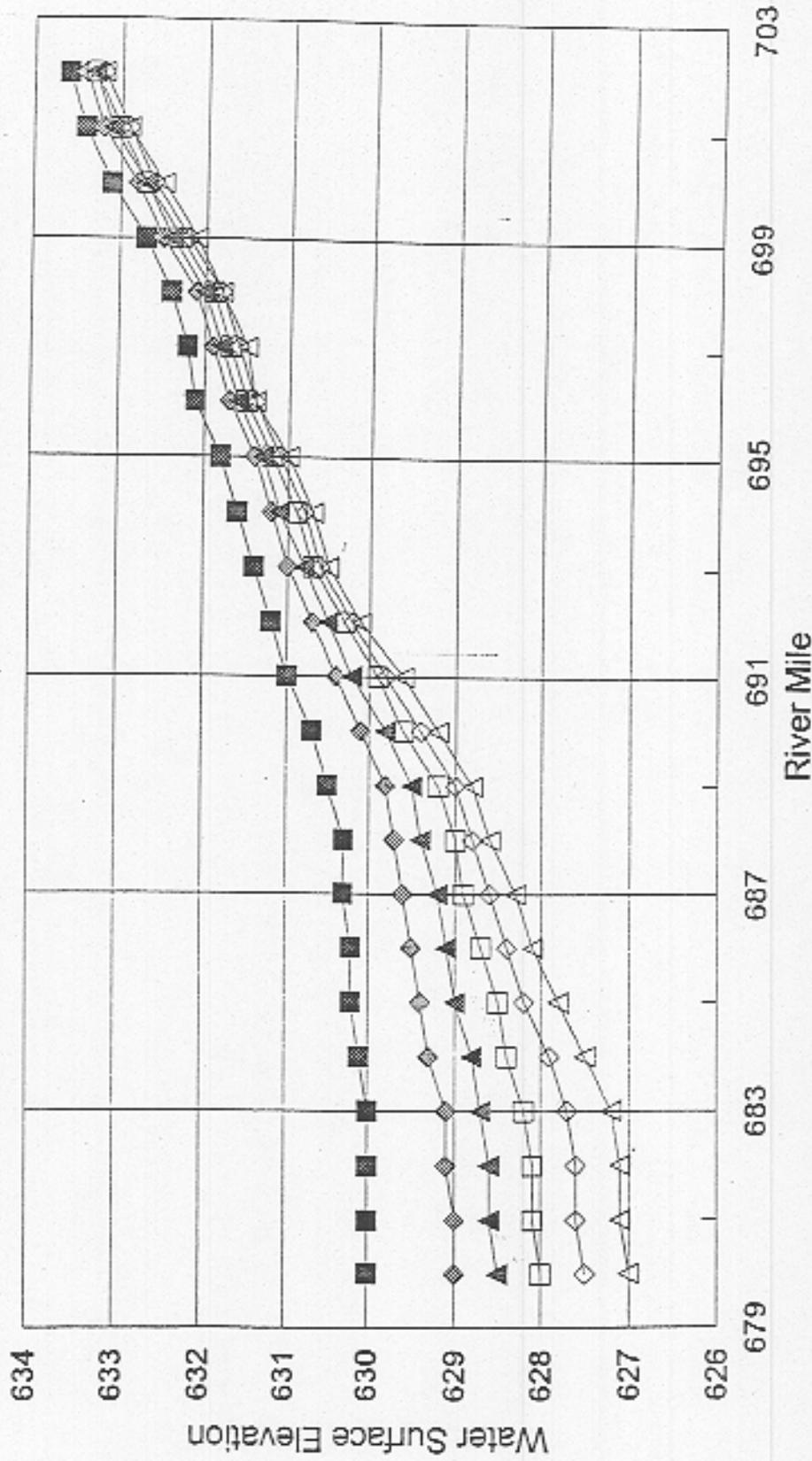


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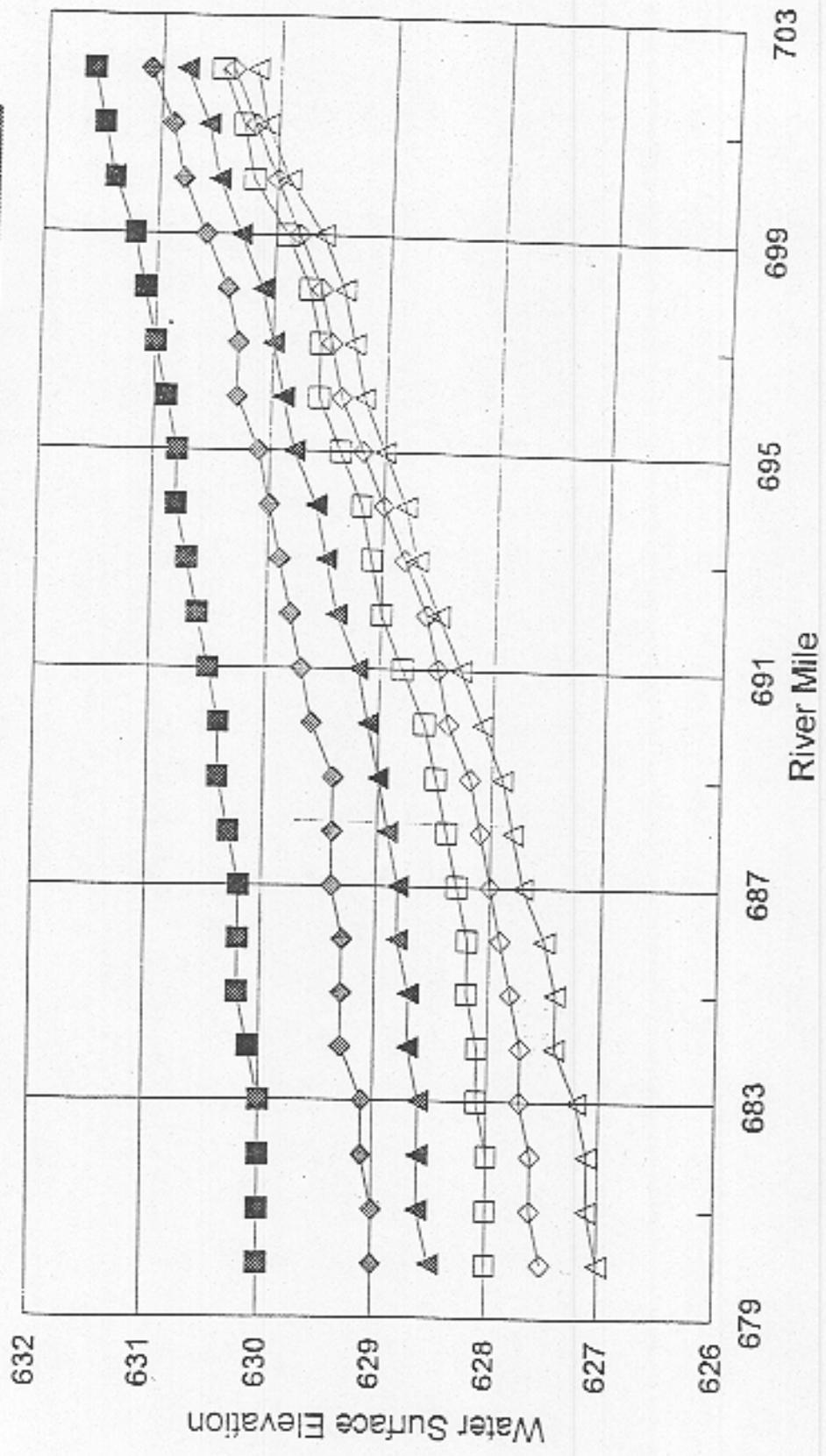


POOL 8 DRAWDOWN AT 40,600 CFS



- Routine Regulation
- ◆ 1.0-foot Drawdown
- ▲ 1.5-foot Drawdown
- 2.0-foot Drawdown
- ◇ 2.5-foot Drawdown
- △ 3.0-foot Drawdown

POOL 8 DRAWDOWN AT 22,000 CFS



- Routine Regulation
- ◆ 1.0-foot Drawdown
- ▲ 1.5-foot Drawdown
- ◻ 2.0-foot Drawdown
- ◇ 2.5-foot Drawdown
- △ 3.0-foot Drawdown