Water Level Management Update

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Review of the Water Level Reduction 2001 and Recommendations for 2002

The drawdown was planned to take from June 15 through September 15, 2001. The target reduction for the pool elevation was 628.5' mean sea level (msl) at the dam, an 18-inch reduction and a maximum reduction at the La Crosse gage of 630.5' msl, a six-inch reduction (4.2 reading). However, the natural dynamics of the river in 2001 forced managers to follow the river's lead.

The pool elevation at Lock and Dam 8 did not reach normal pool levels (630.0') until June 30 and the target of the drawdown was not achieved until July 6 (628.5'). The drawdown was maintained near the target level at L&D 8 for 40 days, until August 14, or about half of the recommended 90-day period. As river flow rates dropped the minimum pool elevation at the La Crosse gage could no longer be maintained and pool levels at the dam had to increase to maintain the water levels at the La Crosse gage. From August 16 to September 15, the pool level at L&D 8 was only about three-tenths of foot below normal (629.7' ± 0.3'). However, due to the slope of the pool, reduced water levels persisted throughout the mid-portion of the pool through September 15.

One main goal of the demonstration project was to reestablish lost acreage of perennial emergent plant beds. With drawdown conditions, the seeds that exist in the soil have a chance to germinate and grow into healthy emergent plants. However, in the long-term it is the production of the rooting structure or the tuber that will determine if perennial emergent plants will persist overwinter and survive reflooding. The tuber strength and size is related to proper conditions for seed germination and the length of the growing season. The longer the growing season the more time the plant has to maximize underground tuber growth.

River conditions only allowed for a partial drawdown in 2001. Therefore, professional river resource managers suggest that a second year drawdown be considered by the public because there is a strong likelihood that a second year drawdown would help ensure that plants established in 2001 will persist.

A follow-up drawdown in Pool 8 would be implemented in mid-June and extend to mid-September 2002. The actual start-up would depend on river discharges and navigation channel conditions. The recommendation for public consideration would be as follows:

- **Maximum drawdown at the La Crosse gage would be 0.25 feet to an elevation of 630.75 or a La Crosse gage reading of 4.45, plus or minus 0.2'**
- **The drawdown at Lock and Dam 8 would be between 0.75 feet and 1.5 plus or minus 0.2', depending upon public acceptance, river flow conditions, and the navigation channel after 2002 spring runoff.**

Preliminary Findings for Monitoring Activities

Emergent Plants

Researchers monitored the response of aquatic plants on exposed mudflats along 26 sample transects in Pool 8, south of the Root River. They found 26 different species of aquatic plants, 6 emergent, 2 rooted floating aquatic, 9 submersed aquatic, and 4 non-rooted aquatic. The dominant aquatic plants growing on the exposed mudflats were; rice cut grass, broadleaf arrowhead, water stargrass, nodding smartweed, chufa flatsedge, false pimpernel, and teal love grass. These same plant species dominated the response in the seedbank work that was done in 2000. Growth progressed well despite the later-than-scheduled water level reduction and hot, dry conditions during much of July. Plant density was related to the amount of time the mudflats were exposed. Higher plant densities and more plant development were found in areas where the mudflats were exposed for a good portion of the growing season (mid-pool area, such as Goose Island) and low plant density on those substrates that were reflooded in mid-August. They also collected samples from which seed and tuber production will be assessed. These samples will be processed during the winter months.

Submersed Plants

Baseline information was collected on more than 200 open water sites in 1999 and 2000 to determine where and how much submersed aquatic vegetation (aquatic plants that grow completely underwater) were present prior to the drawdown. This monitoring was repeated during the drawdown for comparison purposes. Researchers are currently preparing the plant samples for final analysis and should have complete results by late-January 2002. A sediment sample was also collected at each sample site from which they will determine any changes in the characteristics of the sediment as a result of the drawdown.

Aerial Photographs

Aerial photographs were taken of Pool 8, from Root River south to Lock and Dam 8, on July 21, 2001, to determine the extent of exposed mudflats. By reading these aerial photographs, researchers have determined that 1,954 (8.2%) acres of a possible 23,721 acres were exposed as result of reduced water levels. A second set of aerial photos was taken on August 28th, 2001, when the maximum amount of aquatic plants would be present in the pool. Researchers are currently reading those aerial photos to determine the aquatic plant coverage and should have the information by late-January 2002.

Water Quality

A number of factors affecting water quality have been monitored in Pool 8 since 1988 through the Long Term Resources Monitoring Program and these same factors were monitored during the 2001 drawdown. Jim Fisher, Water Quality Specialist with the Wisconsin Department of Natural Resources, said "There are some localized effects from the drawdown in the backwaters but results in 2001 generally follow trends from previous years." Here are some of the observations from 2001:

- Water temperature was higher in 2001, but the summer was very warm.
- Record low dissolved oxygen in lower pool during 2001, but downward trend is evident over several years at this site.
- No remarkable difference in turbidity during the drawdown but turbidity was up during the flood as would be expected.
- Some nutrients were higher in the mid-pool backwaters than the previous five years but that is possibly due to high water in June bringing main channel water into backwaters. (Median Chlorophyll, Total Nitrates, and Total Phosphorus were all higher)

How can you get information and provide input?

We would like to get information about the Pool 8 drawdown and the potential for a smaller drawdown next summer out to as many interested people as possible. In order to do this we will use numerous strategies to communicate with as many people as possible. Below are a list of communication strategies we intend to use during the next few months. Please let us know your ideas to improve communication

⇒ The website will be updated to include current information about the 2001 drawdown as it becomes available, the recommendation for public consideration and any activities associated with the drawdown. Find the website at www.mvp.usace.army.mil, go to Environmental Protection and find the label called Mississippi River Water Level Management Study.

⇒ Articles will be send out to the newspapers, radios and TV for their consideration to be included in the news.

⇒ Members of the task force are willing to come talk with your civic or conservation group about the drawdown. Contact one of the members on the back of this newsletter to set up a presentation.

⇒ Public meetings will be held during the second week in February to provide a dialogue between managers and the public about a potential second year drawdown. An open house format with both formal and informal presentations will be held in Stoddard, Brownsville, and La Crosse. All interested publics are encouraged to come and provide reaction to the drawdown whether it is negative or positive. Announcements will be sent out when arrangements are finalized.

⇒ If you want to provide reaction prior to the public meetings or are unable to attend these public meetings we have included a comment sheet with this newsletter. Please provide us with your reactions to 2001 drawdown and the proposal for 2002 by mail. This will not provide us with a scientific poll but it will allow us to gage public response to the project and the future of the project. Positive, negative or even neutral reactions are welcomed. Fill out the back of this sheet, fold, tape, and send it back.

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Reaction to the 2001 drawdown and proposal for 2002.

Shorebirds

A weekly shorebird monitoring survey was conducted on lower Pool 8 between June 11th and September 26th, 2001. The survey was to determine the migratory shorebird use of new habitats created during the drawdown. Shorebird monitoring took place one day per week for 15 weeks. Twenty-two species of shorebirds and 1,211 individual shorebirds were observed during this time. Due to the weather conditions and water flows, the target level drawdown of 1.5 feet was achieved for only 6 weeks, from July 10 through August 14. During these six surveys, 921 (73%) of the 1,255 total individual shorebirds were observed and the average number of species observed was 8.3. The other nine surveys contributed only (27%) of the total shorebird observations, and the average number of species observed was 4.8. Even though there are no other surveys for comparison, the 2001 data suggests that the water level reduction in Pool 8 created vital feeding habitat for migrating shorebirds. This had a positive impact on the number of shorebirds and increased the number of different species.

Duck Hunter Surveys

This fall, personnel from the U.S. Fish and Wildlife Service and U.S. Geological Survey conducted interviews with 924 waterfowl hunting parties at access sites around Pool 8. These interviews or "bag checks" occurred on 25 randomly selected days throughout the 60-day duck hunting season, September 29 through November 27. Hunting parties may have been interviewed on multiple occasions during the season.

During each bag check, hunters are asked a number of questions related to their day's hunting experience. This year, two questions specific to the Pool 8 drawdown were added. They were: 1) Were you aware of the water level reduction in Pool 8? 2) If yes, do you feel the water level reduction had a positive or negative affect on river habitat?

Preliminary results are available for the drawdown questions. A total of 921 parties answered the first question. Of those, 867 (94%) said they were aware of the drawdown; 54 (6%) reported they were not. The second question drew responses from 865 parties. A total of 535 parties (62%) felt the drawdown produced positive results in 2001 and 124 parties (14%) thought the results were negative. The majority of responses from the remaining parties, 172 (20%), said they either did not know or felt more than one year is needed to determine how Pool 8 habitat will be affected by the drawdown. Finally, 34 parties (4%) thought habitat conditions on the pool stayed about the same.

Other data obtained through the bag checks should be summarized and available in final form in January.

Avian Botulism

Avian botulism is an often fatal disease of birds resulting from ingestion of toxin produced by the bacterium *Clostridium botulinum*. This bacterium persists in wetlands. Important environmental factors that contribute to initiation of avian botulism outbreaks include water depth, water level fluctuations, and water quality; the presence of carcasses; rotting vegetation; and high temperatures. Because many of these factors may be present during a drawdown, extra monitoring was planned for lower Pool 8 this year.

Crews from the Wisconsin DNR, U.S. Geological Survey, and U.S. Fish and Wildlife Service engaged in drawdown monitoring activities were also on the lookout for the presence of sick/dead waterbirds. They observed minimal waterbird mortality this summer on lower Pool 8. *(Continued on the back page.)*

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(Avian Botulism continued)

Each year there is the potential for an avian botulism outbreak and it often happens on a stretch of the Black River in upper Pool 8. This summer nearly 50 sick/dead mallards and one herring gull were removed from the area. Additional mortality may have occurred but was not reported or observed. Many local residents, marina owners and boaters aided local resources managers in locating these birds. Avian botulism was confirmed by the National Wildlife Health Center in a mallard carcass collected August 8.

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