Water Level Management Update

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Synopsis of the 2001 drawdown.

Gage was Plugged

For 34 days, from July 8th to August 12th, the demonstration drawdown on Pool 8 proceeded as well as can be expected. The drawdown began two weeks late due to a prolonged spring flood and the wet conditions were followed by a very hot, dry July. However, plants responded quickly to the exposed conditions. River managers and researchers heard many compliments about the changes occurring in the river as a result of the drawdown.

Beginning on August 13th, river managers were hearing a change in the response from the public. Telephone calls began coming in reporting that the water level had to become too low in the upper pool and people were experiencing difficulty boating. They insisted that water levels were lower than 4.2 at the La Crosse gage (the gage was reading 4.5) and as it turns out they were right. On Monday morning, the staff at the Hydraulics Office at the St. Paul District of Corps of Engineers noticed the La Crosse gage had not moved even though flows had gone from 30,600 to 20,600 over the weekend. Immediately, they began filling the pool and sent staff to check the gage to determine if there was a malfunction.

The Corps together with the help of the City of La Crosse workers found that sand deposited during this spring's high floodwaters had filled up the river gage, causing inaccurate readings. The gage instrument at the La Crosse water treatment plant, near the upstream end of Pool 8, was repaired and was operating correctly by August 14th. Due to the low flows at that time the water level was raised and the gage reading has been above 4.2 since August 14th.

USGS Continues to Monitor Plants

Researcher, Kevin Kenow and crew from the U.S. Geological Survey; took samples of river sediment during the summer of 2000 throughout lower Pool 8. Under laboratory conditions, they subjected the samples to different water levels to see if the seeds in the sediment would grow. The seeds proved to be viable and healthy plants thrived under the various conditions.

This year, Kenow is able to watch how the seeds in the sediment respond to the conditions created by the drawdown. Just as the experiment indicated, the same plants are showing up in Pool 8. The dominant plants include rice cutgrass, common and stiff arrowheads, smartweeds, flatsedge, teal grass, water stargrass, pigweed, and false pimpernel. All of these plants provide important food, shelter for fish and wildlife and play an important role in riverbank stabilization.

Kenow, who is monitoring plant progress five days a week, is pleased with plant growth, diversity and the desirable species that are growing up on the exposed mudflats. However, many factors will influence the vigor of these plants over time. The drawdown began about two weeks late due to floodwater, July was hot and dry, and the water level has increased since August 14th. These less than ideal conditions will effect the long-term strength of these new plants.

Pool 8 Water Surface Elevations - 0800 hours

Date	La Crosse Gage *	L/D 8 Pool	L/D 8 Discharge
30-Jun	636.17	629.96	87,100
02-Jul	635.29	629.10	76,400
04-Jul	634.52	628.87	74,200
06-Jul	633.60	628.36	70,100
08-Jul	633.06	628.49	59,700
10-Jul	632.32	628.40	48,300
12-Jul	632.36	628.43	48,900
14-Jul	631.53	628.39	34,400
16-Jul	631.49	628.61	31,900
18-Jul	630.98	628.63	27,900
20-Jul	631.07	628.63	33,000
22-Jul	631.05	628.54	34,700
24-Jul	630.91	628.56	31,500
26-Jul	631.03	628.61	34,500
28-Jul	630.98	628.39	32,200
30-Jul	630.92	628.47	31,400
01-Aug	630.96	628.62	30,200
02-Aug	630.95	628.70	31,400
04-Aug	631.10	628.61	37,300
06-Aug	631.42	628.68	43,300
08-Aug	631.63	628.49	44,000
10-Aug	**630.93**	**628.55**	**30,600**
11-Aug	**-**	**628.69**	**24,800**
12-Aug	**-**	**628.68**	**20,500**
13-Aug	**-**	**628.83**	**22,100**
14-Aug	**630.17**	**628.79**	**22,000**
16-Aug	630.57	629.65	21,400
18-Aug	630.56	629.50	20,000
20-Aug	630.85	629.79	23,300
22-Aug	631.00	629.84	24,600
24-Aug	630.58	629.45	23,300
26-Aug	630.92	629.87	23,400
28-Aug	630.69	629.53	25,500
30-Aug	630.64	630.00	13,900
01-Sep	630.76	629.94	21,300
02-Sep	630.80	629.83	21,100
04-Sep	630.60	629.71	22,500
06-Sep	630.53	629.68	18,200
08-Sep	630.91	629.95	26,900
10-Sep	630.86	629.48	24,500
12-Sep	631.11	629.57	30,000

*A reading at the La Crosse gage of 631.0 is the equivalent of 4.7 at the La Crosse gage. A reading of 630.5 is the equivalent of 4.2 at the La Crosse gage.

Management of water levels is complicated.

Looking at the numbers you will notice that we have been close to normal pool elevations at Lock and Dam 8 since August 20, 2001, and you may wonder why the La Crosse gage is not closer to 4.7 (631.0 msl). The reason is that when river flows decline to the ranges experienced over the last month, the slope on the pool flattens. The drawdown was maintained in the upper portion of the pool as much as possible, but the water had to be allowed to rise in the lower pool. If the 1.5-foot drawdown had been maintained at Lock and Dam 8 during these low flow conditions, the water levels at the La Crosse gage would have declined to about 3.7, similar to those that occurred the weekend of August 11th when the gage malfunctioned.

Main Channel Dredging 2001

Main channel dredging in Pool 8 was higher than usual due to the second largest flood on record and because additional dredging was required for the drawdown. On an average year the Corps of Engineers will dredge 75,498 cubic yards of sand from Pool 8, however, this year they dredged 208,918 cubic yards of dredge material. The Corps is evaluating these numbers to determine how much of the dredging is a result of the flood and how much is a result of the drawdown.

Below are the actual quantities of material dredge from the main channel of Pool 8:

Dredge Cut Name	River Mile	Quantity (Cubic Yards)	Last Dredged
Root River	693.2	35,337	2000
Picayune	691.1	38,048	1973
Above Brownsville	690.2	26,537	2000
Brownsville	689.0	20,197	1999
Head of Raft Channel	688.0	75,802	1999
Crosby Slough	684.8	12,997	1976
Total		**208,918**	

Refilling Will Begin Soon

The refilling of Pool 8 is scheduled to begin on September 17, 2001. As a benefit to the plants that were established during the drawdown the refilling of the pool is to proceed in a slow methodical manner. Below is a timetable identifying rates of refilling.

Date	Target Elevation at L&D 8	Target Elevation at LAX Gage
9/15/01	628.5	630.5 (4.2)
9/16/01		
9/17/01	628.8	
9/18/01		630.6 (4.3)
9/19/01	629.1	
9/20/01		
9/21/01	629.3	630.7 (4.4)
9/22/01		
9/23/01	629.5	630.8 (4.5)
9/24/01		
9/25/01	629.8	630.9 (4.6)
9/26/01		
9/27/01	630.0	631.0 (4.7)

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