EDWARDS RIVER, MERCER COUNTY **ISGS #50**
WETLAND COMPENSATION SITE
FAP 310
Mercer County, near Boden, Illinois
Sequence #11666
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Keith W. Carr

SITE HISTORY

- May 1996: ISGS submitted an initial site evaluation report to IDOT.
- Spring 1999: ISGS began post-construction monitoring.
- Fall 1999: Eleven sediment traps were added to the site at IDOT's request.
- April 2005: A berm was constructed at the northwest corner of the site by IDOT in order to increase the depth and duration of water retention on the site.
- April 2008: IDOT requested that monitoring of the site be concluded.

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season was estimated to be 0.54 ha (1.33 ac) out of a total area of 0.61 ha (1.51 ac). The area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 0.45 ha (1.11 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Aledo, Illinois, is April 11 and the season lasts 195 days; 5% of the growing season is 10 days and 12.5% of the growing season is 24 days.
- Total precipitation for the monitoring period was 38.39 inches, which was 107% of normal. Precipitation was at or above normal in December 2007, and in January, February, April, May, June and July 2008.
- In 2008, wetland hydrology criteria were satisfied for more than 5% of the growing season at RDS 2, and at wells 1S, 2SR, 3VS, 3S, 4SR, 5VS, 5SR, 6SR, 7SR, 8VS, 9S, 10S, 11S, 12VS, 12S, 13VS, and 13S, and for more than 12.5% of the growing season at RDS 2, and at wells 2SR, 3VS, 3S, 4SR, 5VS, 5SR, 8VS, 9S, 11S, 12VS, 12S, 13VS, and 13S.
- Surface-water levels measured at RDS 1 reveal that inundation occurred at an elevation $\geq$ 193.90 m (636.18 ft) for more than 5% of the growing season and $\geq$ 193.75 m (635.69 ft) for more than 12.5% of the growing season.
- In 2008, inundation of the site was caused by flood events on February 17, March 2, April 10, May 11, and June 13. The number of floods, and their timing, resulted in surface water persisting on the site for most of the growing season.

ADDITIONAL INFORMATION

- The sediment traps on the site were emptied on August 11, 2008. All of the traps contained sediment, likely deposited by the flood events on February 17, March 2, April 10, May 11, and June 13, 2008. Sediment thickness in the wetland mitigation area (T1, T2, T3, T4, T5, T6, T7, T10, and T12) ranged from 0.33 cm (0.13 in.) at T4 to 1.79 cm (0.70 in.) at T10, and averaged 1.10 cm (0.43 in.). Sediment thickness in the natural forested wetland (T9) was 1.25 cm (0.49 in.) and sediment thickness on the levee (T8) was 0.79 cm (0.31 in.).

- Sediment traps were installed on the site in 1999. A total of 6 sets of samples were retrieved from the traps covering the periods April 17, 2001 to April 1, 2002, April 17, 2002 to April 15, 2003, April 15, 2003 to April 14, 2004, May 6, 2004 to March 29, 2005, September 12, 2006 to August 17, 2007, and August 17, 2007 to August 11, 2008. No measurable amounts of sediment were collected prior to 2001 and there were no floods on the site from July 2004 to September 2006, and thus no measurable amount of sediment was deposited. In the wetland mitigation area, the greatest total thickness of sediment accumulated at T7 (8.86 cm [3.49 in.]), in the lowest part of the basin, and the smallest total thickness accumulated at T4 (2.29 cm [0.90 in.]) near the southern edge of the basin.

- Prior to the construction of the berm in April 2005, inundation of the site was of short duration. The longest period of inundation was about 12 days in 2003, resulting from a flood that occurred on April 30 of that year. The duration of inundation from other flood events in 2002, 2003, and 2004, ranged from about 1 day to about 5 days.

- After construction of the berm, the period of inundation resulting from flood events increased significantly. In 2007, the site was inundated for about 60 days as the result of a single flood event that occurred on February 21. Surface water persisted on the site until about April 21, or the first 11 days of the growing season, and saturation persisted for a period long enough to result in a significant portion of the site satisfying the criteria for jurisdictional wetland hydrology at both 5% and 12.5% of the growing season. In 2008, there were 5 flood events (February 17, March 2, April 10, May 11, and June13) that resulted in inundation over a majority of the site that persisted for about 82 days or 42% of the growing season.

Edwards River, Mercer County Wetland Compensation Site

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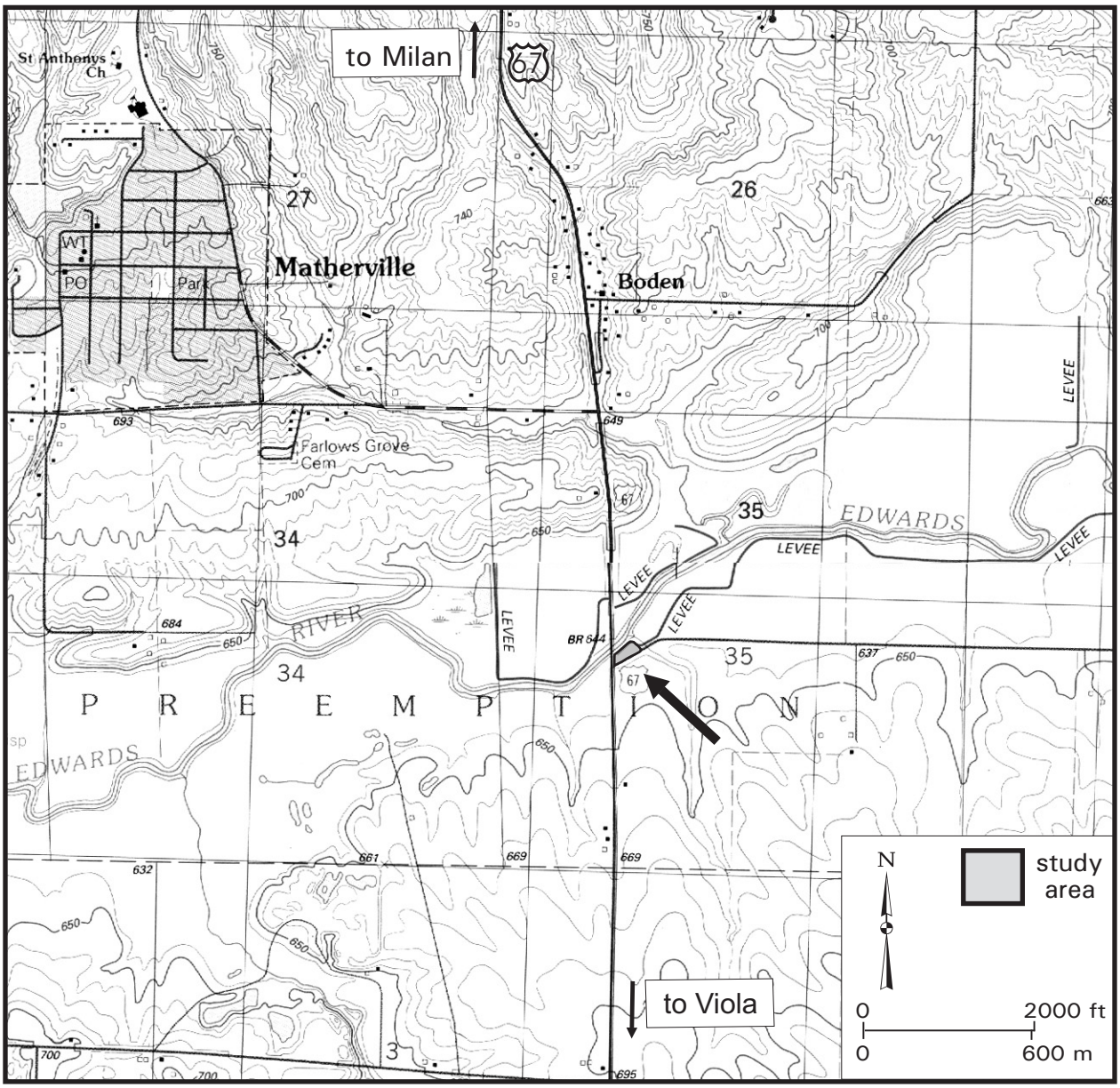
General Study Area and Vicinity

from the USGS Topographic Series, Viola, IL (USGS 1992) and
Matherville, IL (USGS 1991) 7.5-minute Quadrangles
contour interval is 10 ft



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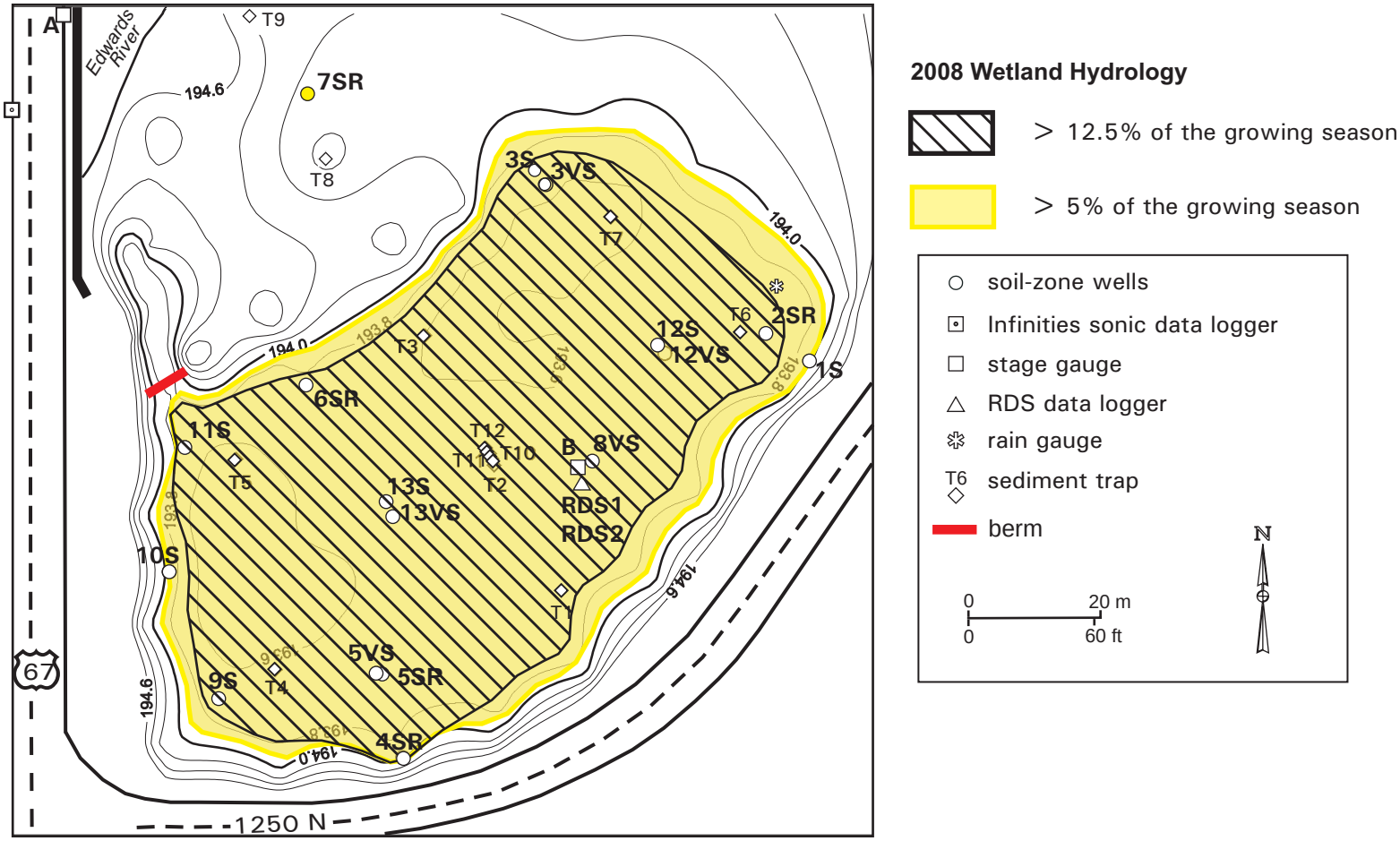
Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

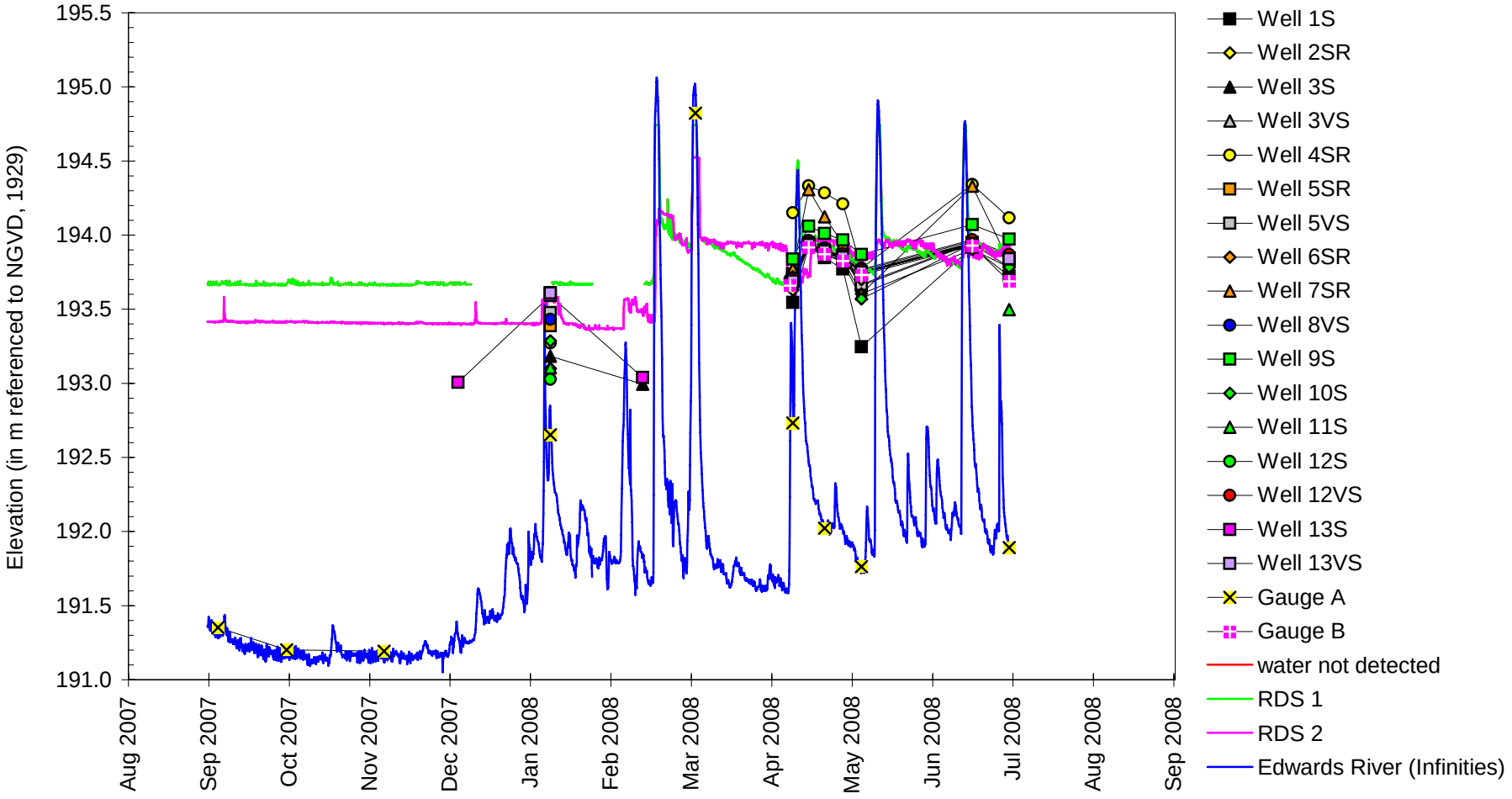
Map based on 2002 ISGS elevation survey referenced to NGVD, 1929

contour interval is 0.2 meters

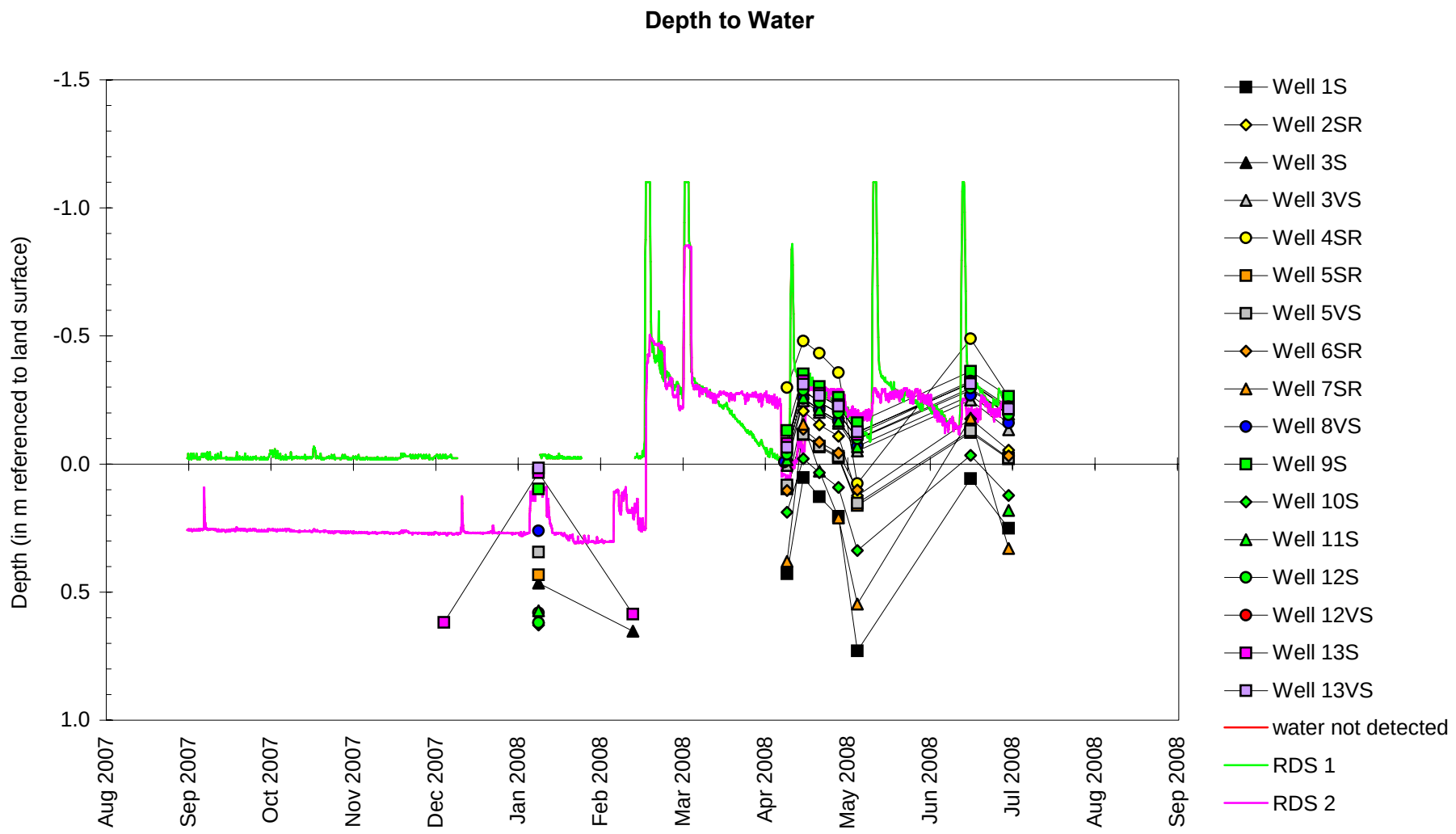


Edwards River, Mercer County Wetland Compensation Site
September 1, 2007 to July 1, 2008

Water-Level Elevations

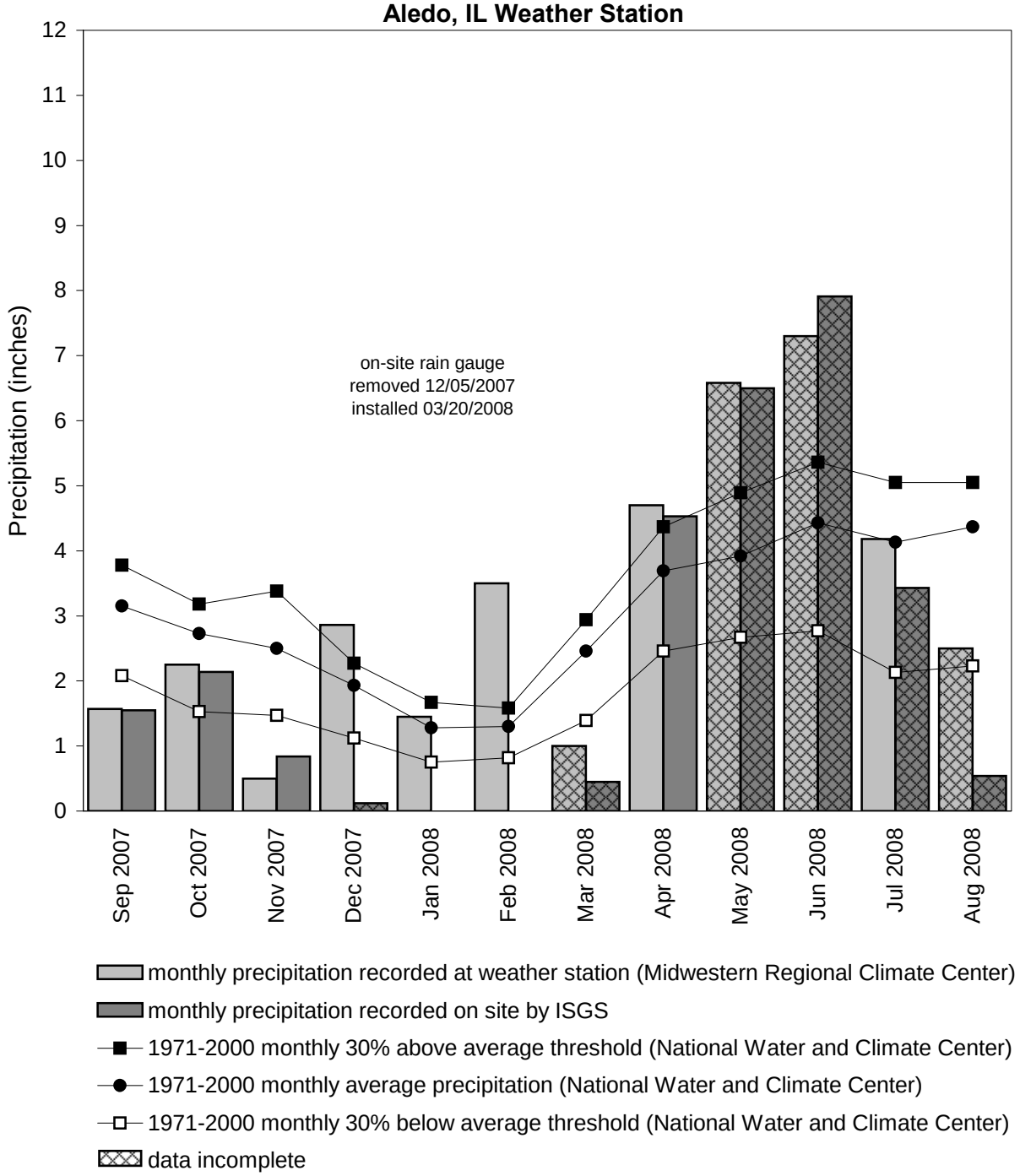


Edwards River, Mercer County Wetland Compensation Site
September 1, 2007 to July 1, 2008



Edwards River, Mercer County
Wetland Compensation Site
September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Aledo, IL Weather Station



Graph last updated October 7, 2008