



**GALENA RIVER BRIDGE
WETLAND COMPENSATION SITE**

ISGS #46

FAS Route 67

Jo Davies County, near Galena, Illinois

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SITE HISTORY

- Spring 1999: ISGS began monitoring surface- and ground-water levels at the site.
- Fall 2000: An Infinities sonic data logger was added on a telescoping mount to catch the often substantial flood peaks common to the site. A second RDS was added to the site, as were two very shallow (VS) soil-zone wells and one standard (S) soil-zone well.
- Spring 2003: A telescoping global unit was installed to monitor ground-water elevations in the center of the site and a crest gauge was installed to monitor the stream along the south site margin.
- Spring 2004: Stop-logs were put into the north overflow weir, and the leaks sealed to see if surface water could be retained. The RDS unit was relocated to a better position within the site, and one additional soil-zone monitoring well was installed. Additionally, a field tile was directed into the eastern edge of the site from the adjacent farm field.
- October 2004: IDOT requested that site monitoring be discontinued.

WETLAND HYDROLOGY CALCULATION FOR 2004

We estimate that the total area that satisfied wetland hydrology criteria (U.S. Army Corps of Engineers 1987) for greater than 5% of the 2004 growing season was 6.24 ac (2.52 ha). In addition, the area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season in 2004 was 5.67 ac (2.29 ha). These estimates are based on the following factors.

- According to the Midwestern Climate Center, the median date that the growing season begins in Dubuque, Iowa, is April 13 and the season lasts 188 days; 5% of the growing season is 9 days, 12.5% of the growing season is 24 days.
- The total precipitation for the monitoring period from September 2003 to August 2004 was 104% of normal. Near-normal precipitation for September and December 2003 and June and July 2004, coupled with significantly above normal rainfall in November 2003, and March, and May 2004 led to a wetter than normal 2004 growing season. Precipitation for the months of October 2003, January, February, April and August 2004 was below-normal.
- In 2004, water levels in wells 1S, 1VS, 2S, 2VS, 3S, 4S, 5S, 7S, 8S, 9S, 10S, 12S, 13S, and 14S satisfied wetland hydrology criteria for greater than 5% of the growing season. Water levels measured in the same groups of wells (excluding wells 3S and 7S) also satisfied wetland hydrology criteria for a period greater than 12.5% of the growing season.
- Surface-water levels measured by the RDS 2 data logger indicated that inundation occurred to an elevation of 183.20 m (601.05 ft) for a duration longer than 5% of the growing season.

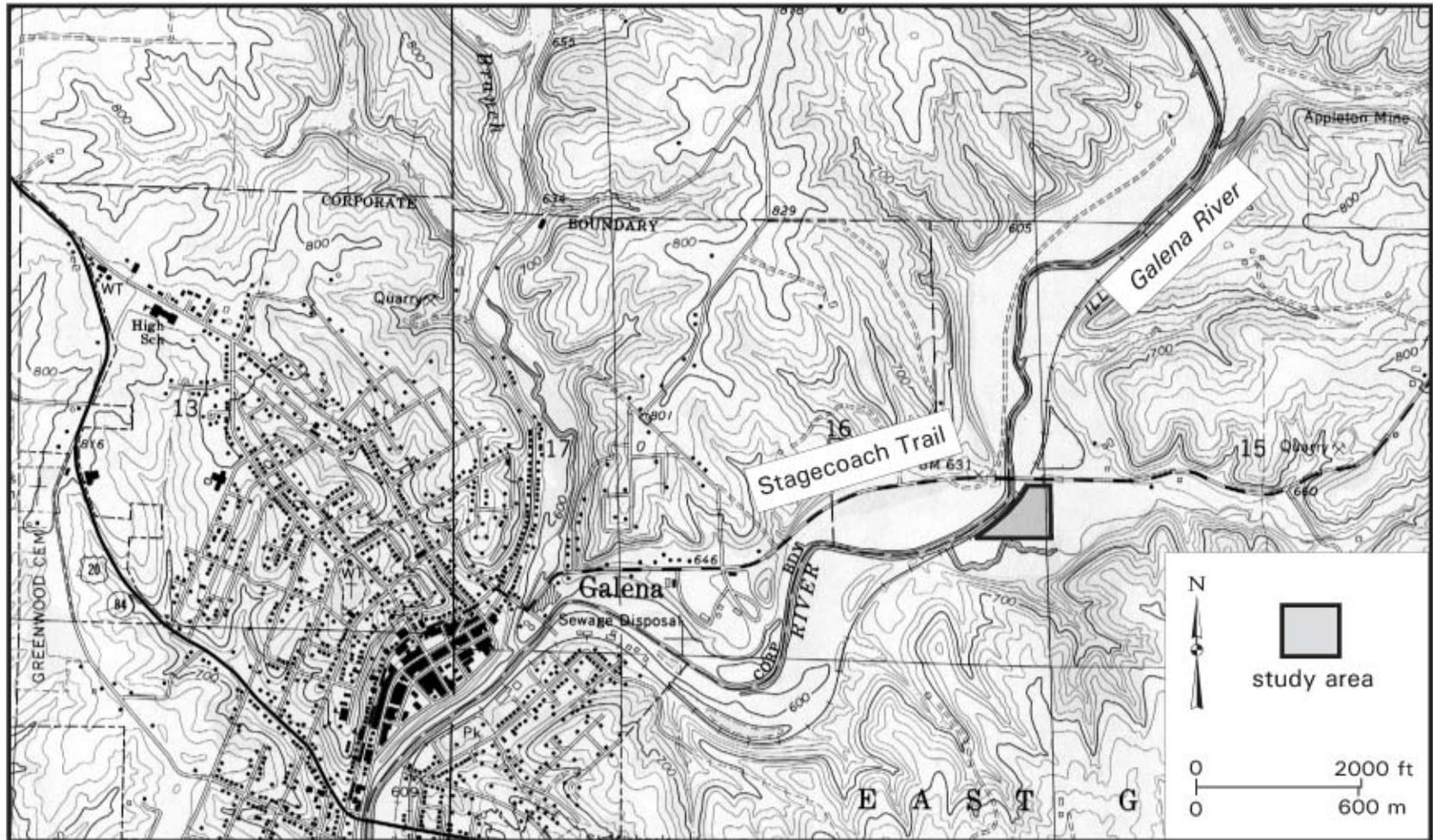
Additionally, RDS 2 indicates site inundation occurred to an elevation of 183.09 m (600.69 ft) for a period that exceeded 12.5% of the growing season.

- The crest gauge and the Infinities sonic data logger indicate that the site was inundated to a maximum elevation of approximately 184.04 m (603.82 ft) by the Galena River at least once during the spring of 2004.
- Limitations of the wetland hydrology determination are as follows:
 - The area of wetland hydrology was measured planimetrically using a digitally produced ISGS topographic contour map with 0.10-m (0.33-ft) contour intervals. The acreage polygon generated from this topographic map was then superimposed upon the digital topographic map used for the figure in this report.

Galena River Bridge Wetland Compensation Site (FAS Route 67)

General Study Area and Vicinity

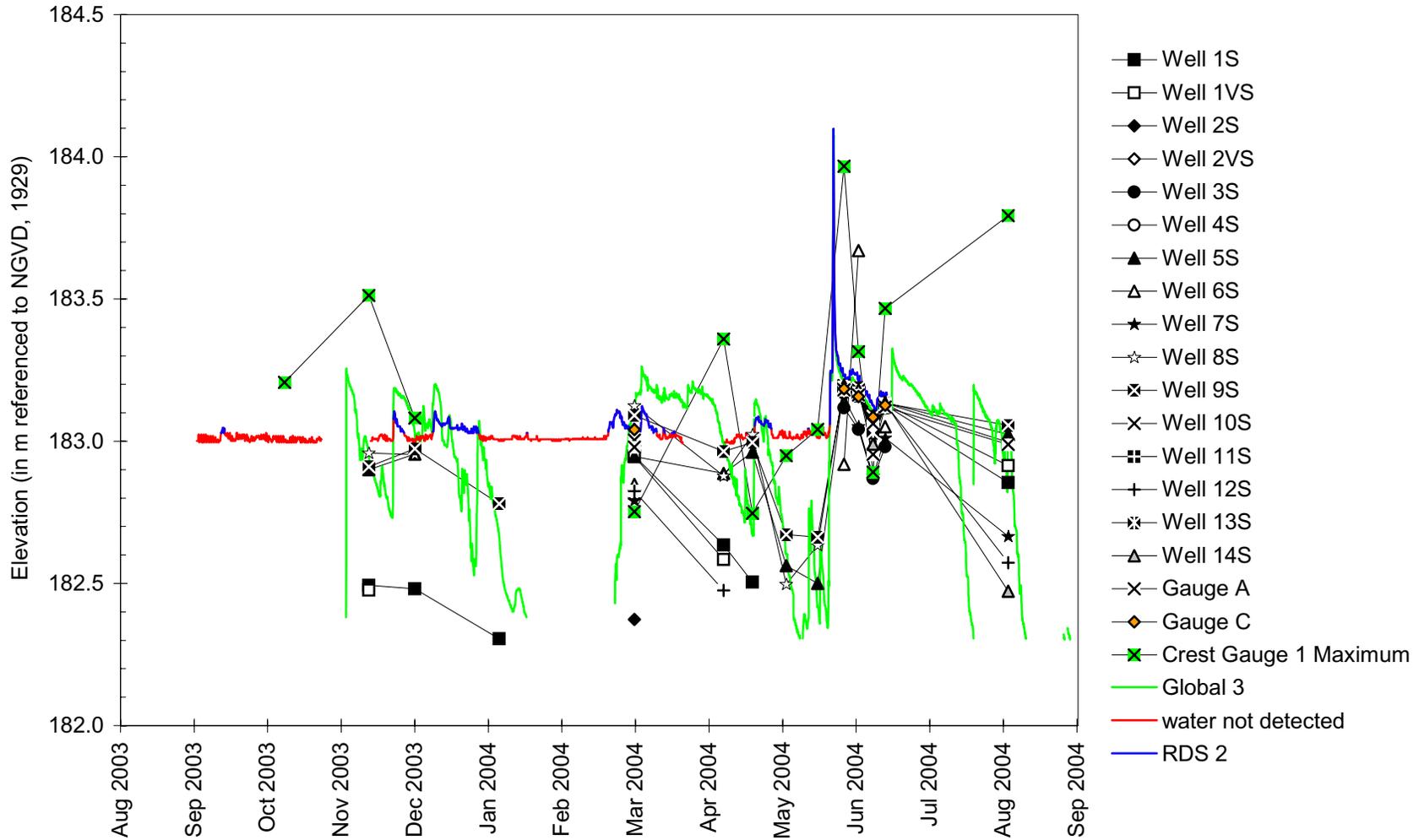
from the USGS Topographic Series, Galena, IL-Iowa 7.5 minute Quadrangle (USGS 1988)
contour interval is 10 feet



Galena River Bridge Wetland Compensation Site

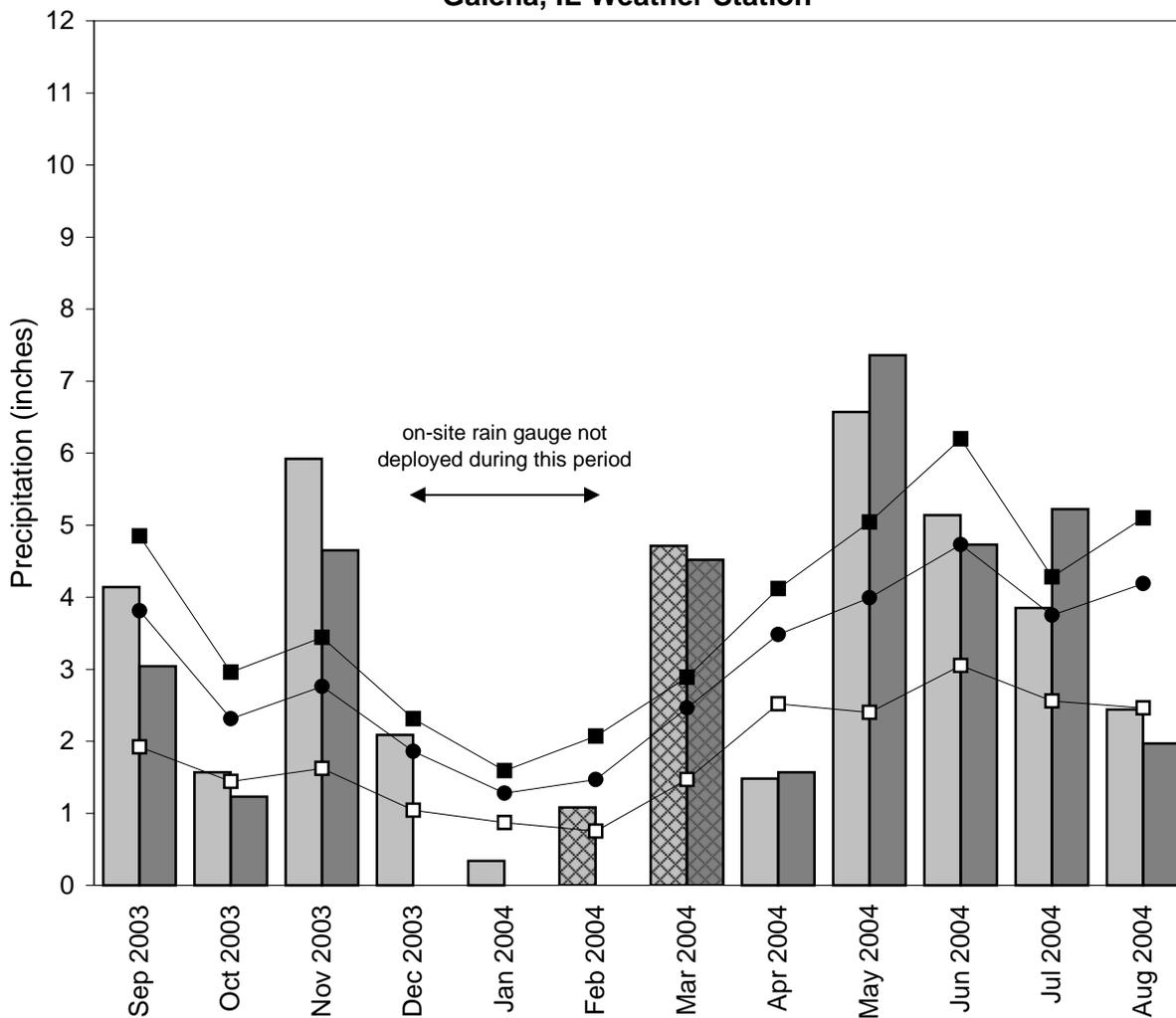
September 1, 2003 to September 1, 2004

Water-Level Elevations



Galena River Bridge Wetland Compensation Site September 2003 through August 2004

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



- monthly precipitation recorded at weather station (Midwestern Regional Climate Center)
- monthly precipitation recorded on site by ISGS
- 1971-2000 monthly average precipitation (National Water and Climate Center)
- 1971-2000 monthly 30% above average threshold (National Water and Climate Center)
- 1971-2000 monthly 30% below average threshold (National Water and Climate Center)
- data incomplete

Graph last updated October 1, 2004