



**HANCOCK COUNTY NEAR CARTHAGE  
POTENTIAL WETLAND COMPENSATION SITE**

**ISGS #42**

FAP 315 & 10

Hancock County, near Carthage, Illinois

**Primary Project Manager: Steven E. Benton**

**Secondary Project Manager:** not assigned

**SITE HISTORY**

- March 1997: IDOT tasked ISGS to monitor site.
- February 1998: ISGS installed monitoring wells and began a hydrogeologic characterization of the site.
- August 2000: ISGS presented a summary of hydrologic data gathered to-date and participated in general site discussion at a planning meeting with IDOT and Christopher B. Burke Engineering, Ltd. The meeting included discussion of wetland design concerns and construction ideas for the final compensation plan at the site.
- August 2004: A Level II hydrogeologic characterization report was submitted to IDOT.

**WETLAND HYDROLOGY CALCULATION FOR 2004**

The area of the site that satisfied wetland hydrology criteria (U.S. Army Corps of Engineers 1987) for more than 5% of the 2004 growing season was estimated to be 12.0 ac (4.8 ha) out of an area of 44.3 ac (17.9 ha). No portion of the site satisfied wetland hydrology criteria for more than 12.5% of the growing season. These estimates are based on the following factors:

- According to the Midwestern Climate Center, the median date that the growing season begins in La Harpe is April 9 and the season lasts 196 days; 12.5% of the growing season is 25 days and 5% of the growing season is 10 days.
- Precipitation recorded at Bentley, IL during the monitoring period was 35.61 inches, exclusive of August 2004 which was not available. However, the on-site rain gauge recorded 7.7 inches in August, which, combined with the Bentley data, gives a total of 43.31 inches (117% of normal) during the monitoring period. The wettest month during the period as recorded at Bentley, IL was September 2003 (178% of normal), and the driest month was February 2004 (41% of normal). There were no extended periods greater than 2 months of either above or below normal precipitation, though only one month (March 2004) was near or above normal in the period from January 2004 to April 2004.
- In 2004, water levels measured in wells 1U, 2U, 4U, 5U, 7S, 8U, 9S, 11S, 12S, and 16S satisfied the wetland hydrology criteria for more than 5% of the growing season. No wells satisfied the wetland hydrology criteria for more than 12.5% of the growing season.
- Surface-water elevations measured at gauges RDS1 and RDS2 reveal that inundation occurred for more than 5% of the growing season in June 2004. At RDS1, inundation to an elevation greater than 165.23 m occurred for 15 days (7.6% of the growing season) in June, while at RDS2, inundation to an elevation greater than 165.61 m occurred for 12 days (6.2% of the growing season) in June. At RDS3, inundation did not occur for any significant

period of time. Inundation for more than 12.5% of the growing season did not occur in 2004.

- Limitations of the wetland hydrology determination are as follows:
  - The precipitation total for this reporting period does not include data from August 2004.

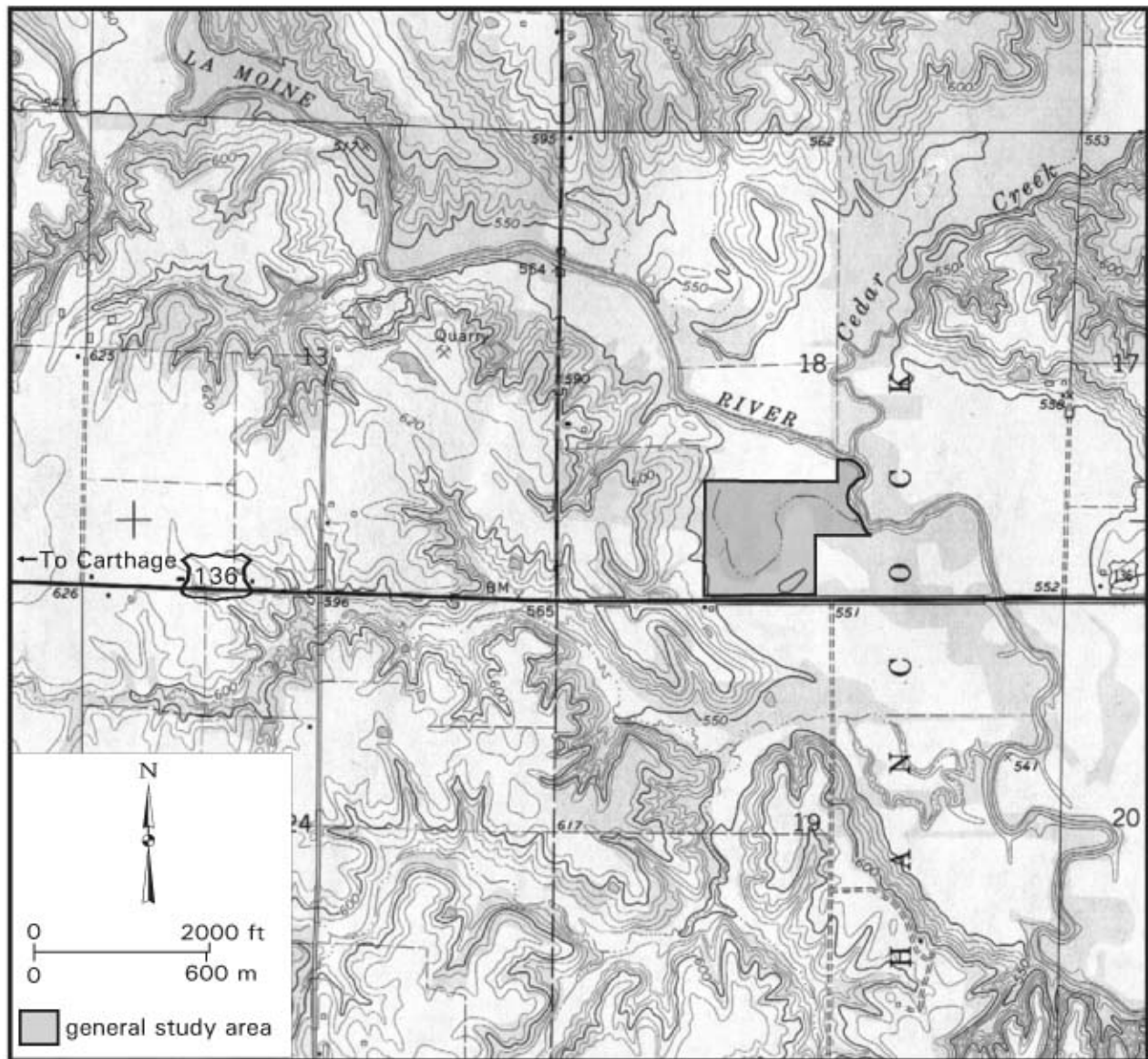
#### PLANNED FUTURE ACTIVITIES

- Monitoring of the site will continue until no longer required by IDOT.

Hancock County near Carthage  
Potential Wetland Compensation Site  
(FAP 315 and FAP 10)

General Study Area and Vicinity

from the USGS Topographic Series, Carthage East, IL 7.5-minute Quadrangle (USGS 1974)  
contour interval is 10 feet

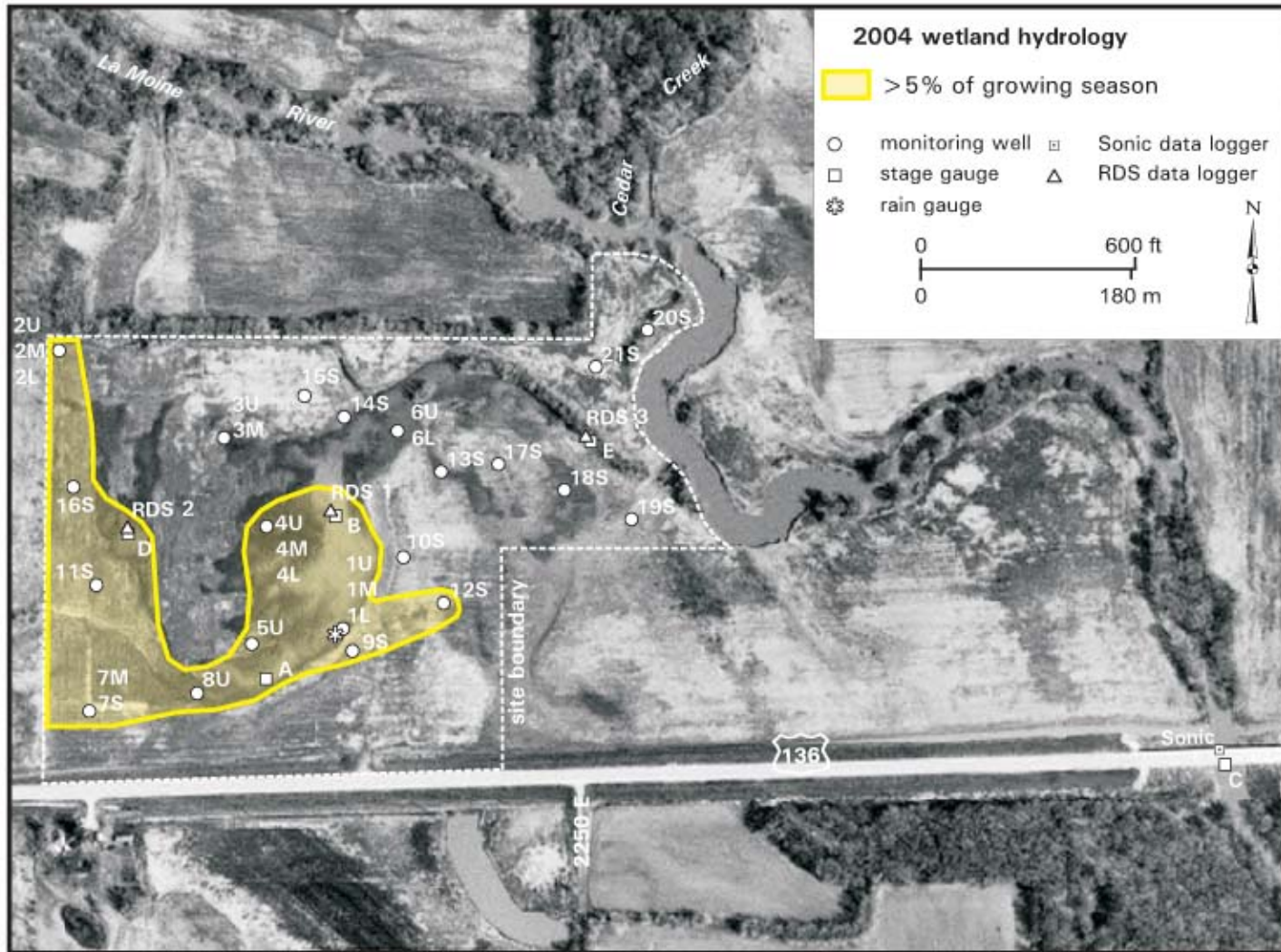




# Hancock County near Carthage Potential Wetland Compensation Site (FAP 315 and FAP 10)

## Extent of 2004 Wetland Hydrology

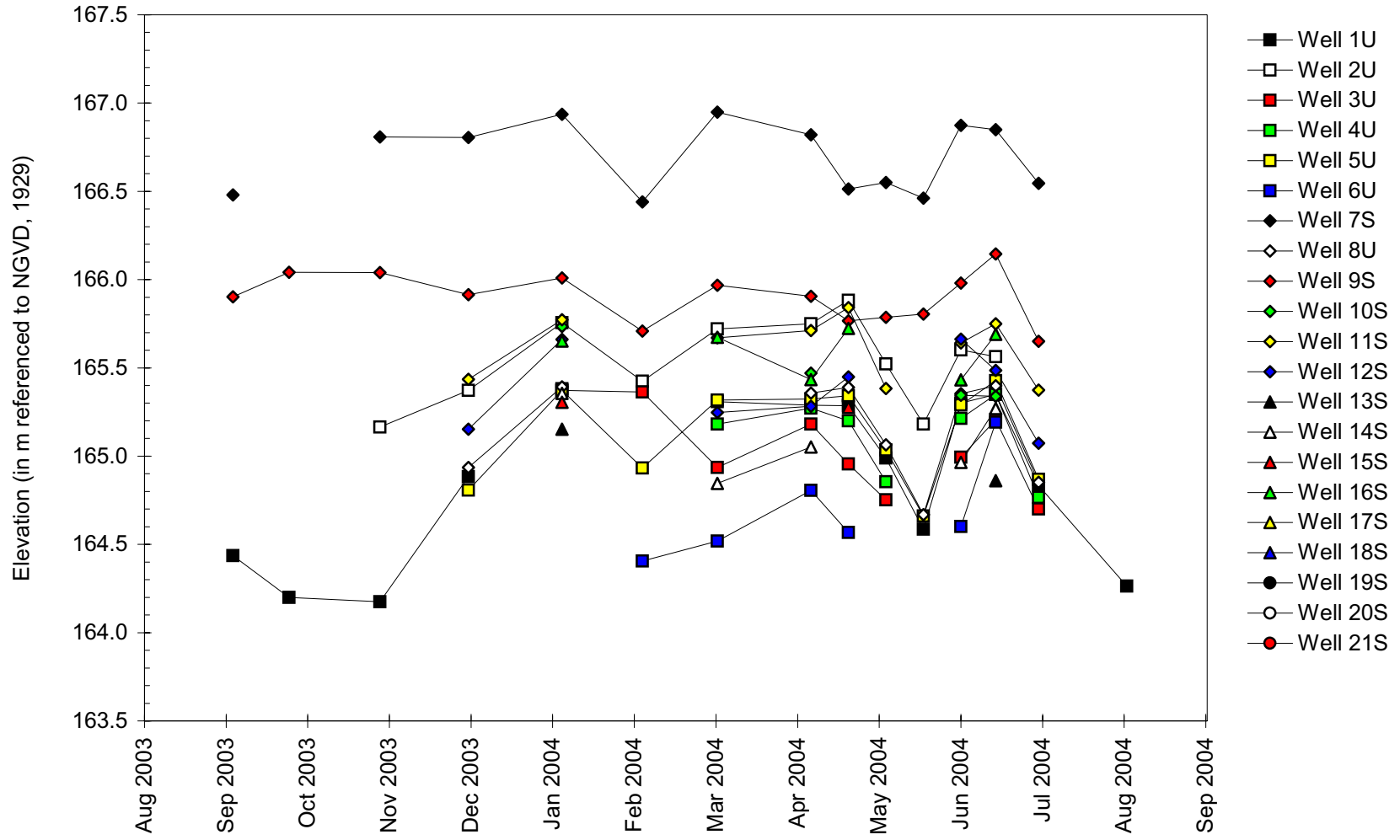
based on data collected between September 1, 2003 and September 1, 2004  
map based on USGS digital orthophotograph Carthage East, SE quarter quadrangle  
produced from 4/14/98 aerial photography (ISGS 2002)



# Hancock County near Carthage Potential Wetland Compensation Site

September 1, 2003 to September 1, 2004

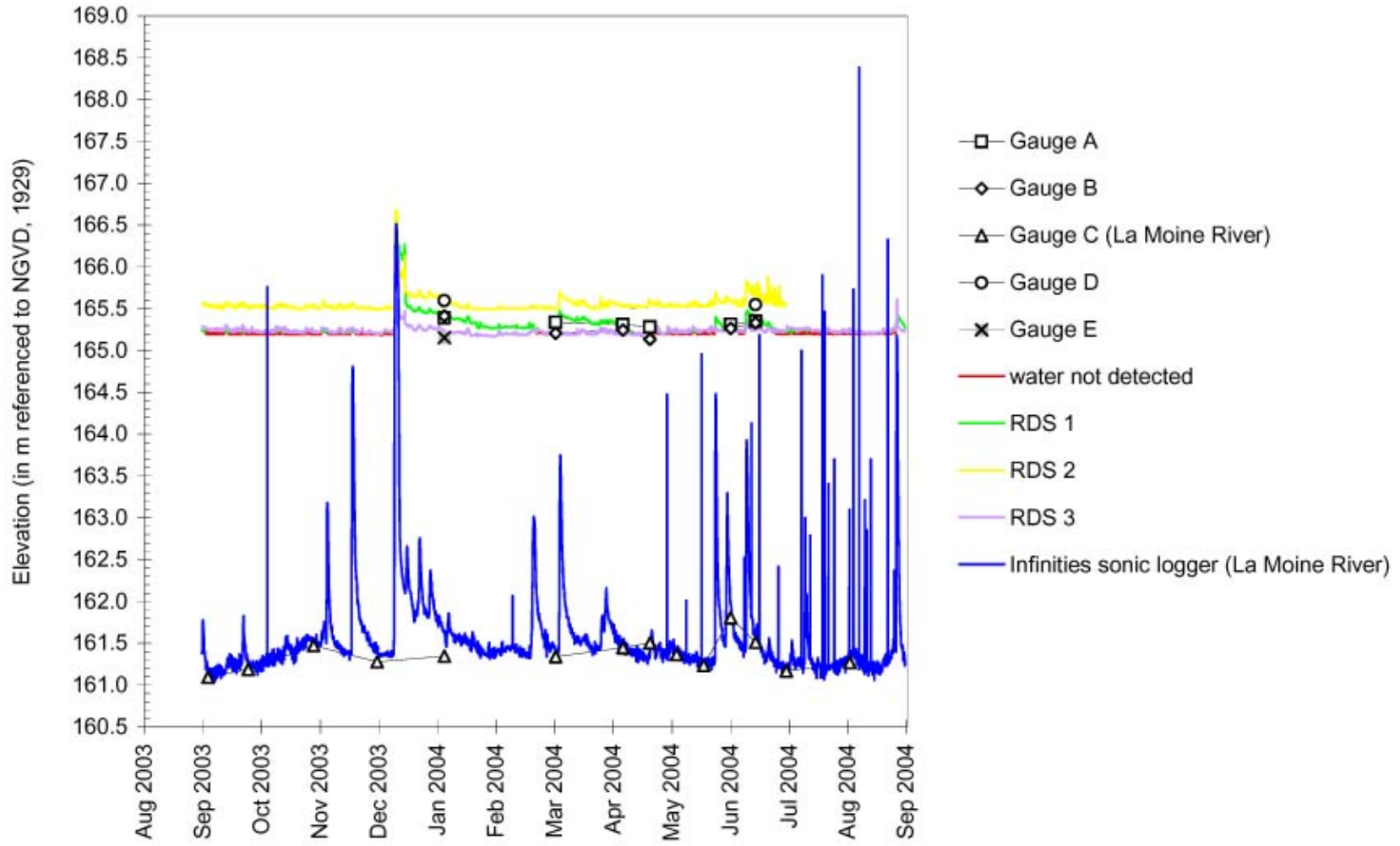
## Water-Level Elevations in Wells Used to Determine Areas Satisfying Wetland Hydrology Criteria



# Hancock County near Carthage Potential Wetland Compensation Site

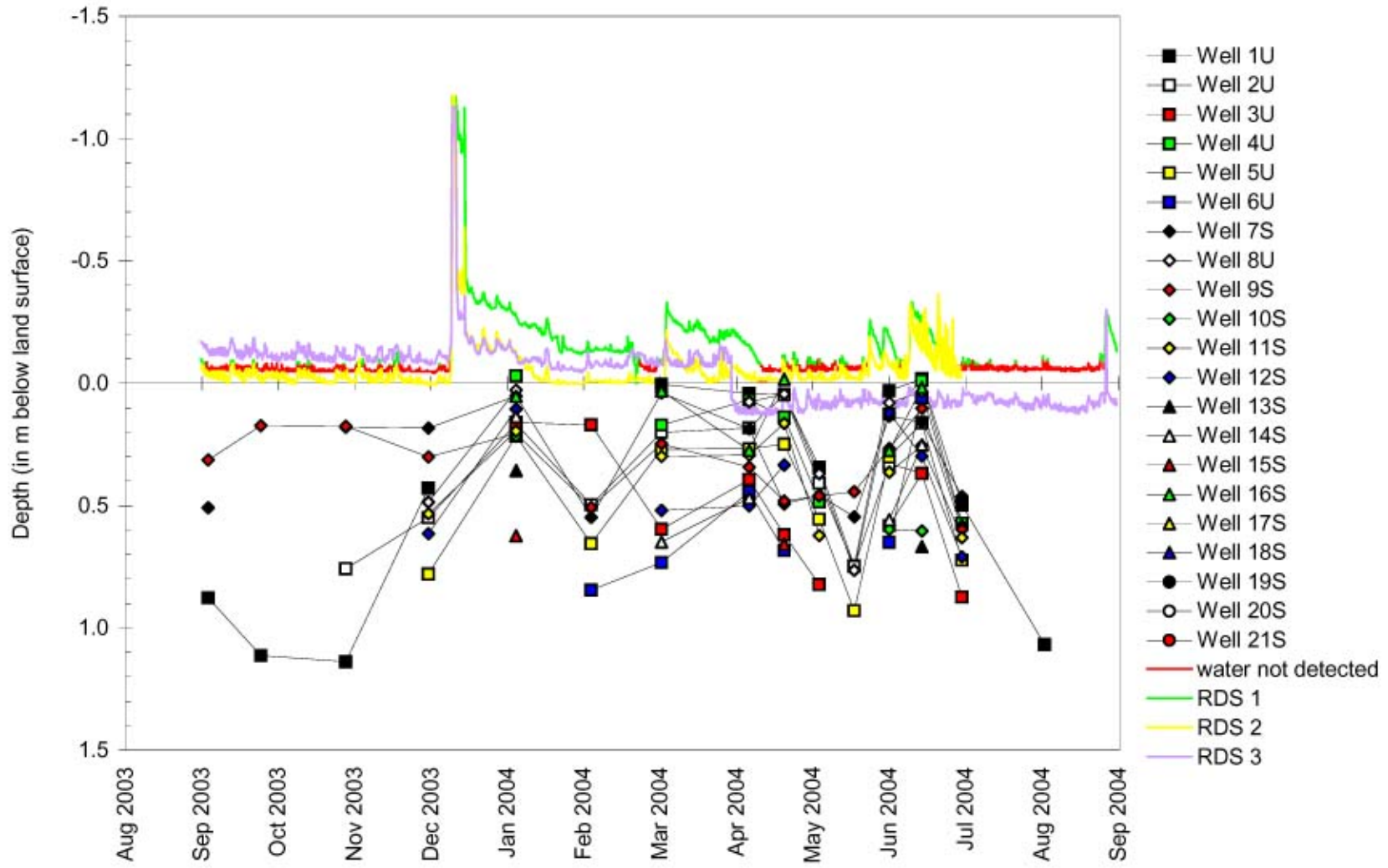
September 1, 2003 to September 1, 2004

## Water-Level Elevations on Stage Gauges and at Data Loggers



## Hancock County near Carthage Potential Wetland Compensation Site September 1, 2003 to September 1, 2004

**Depth to Water  
in Wells Used to Determine Areas Satisfying Wetland Hydrology Criteria**

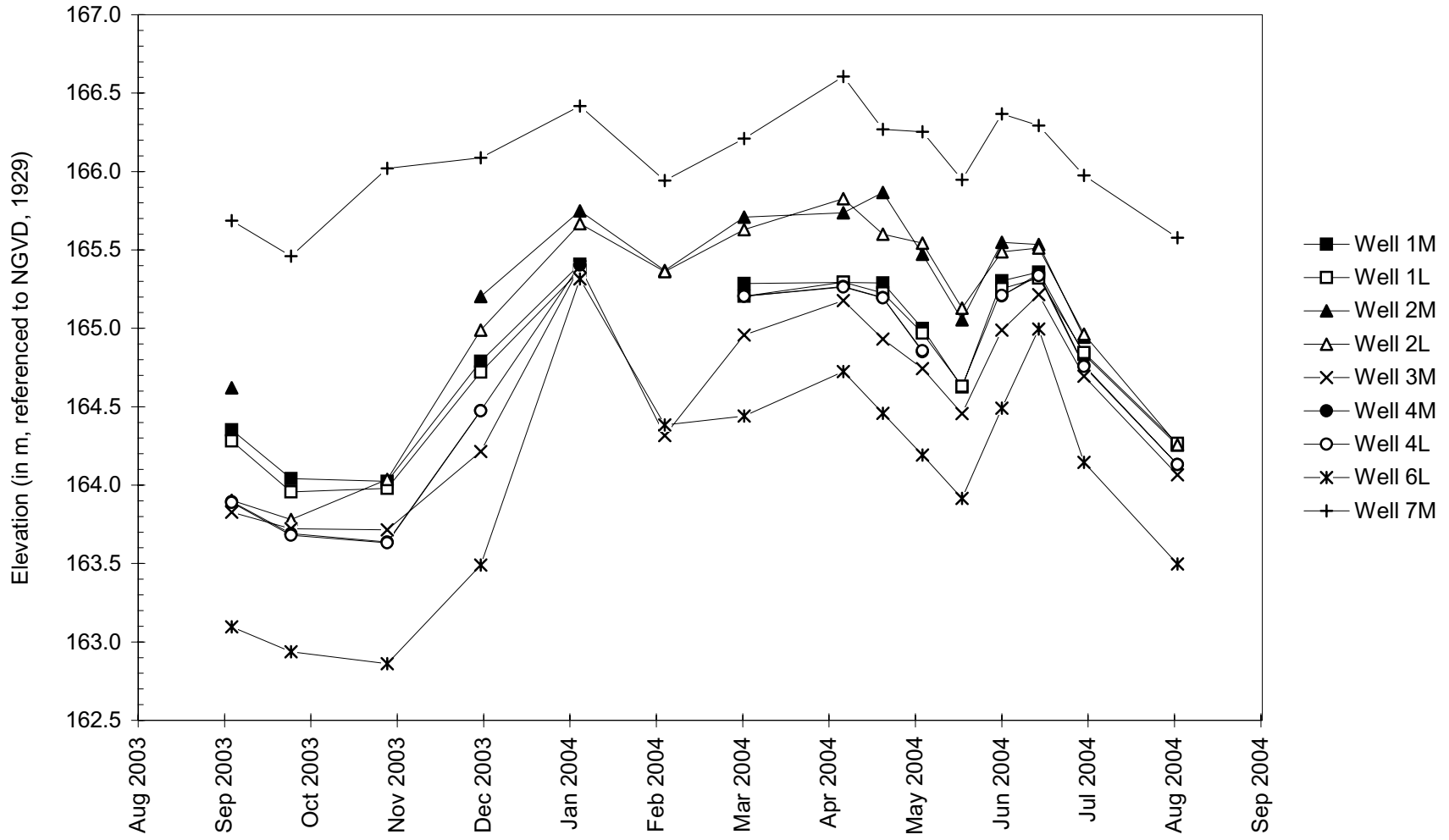




# Hancock County near Carthage Potential Wetland Compensation Site

September 1, 2003 to September 1, 2004

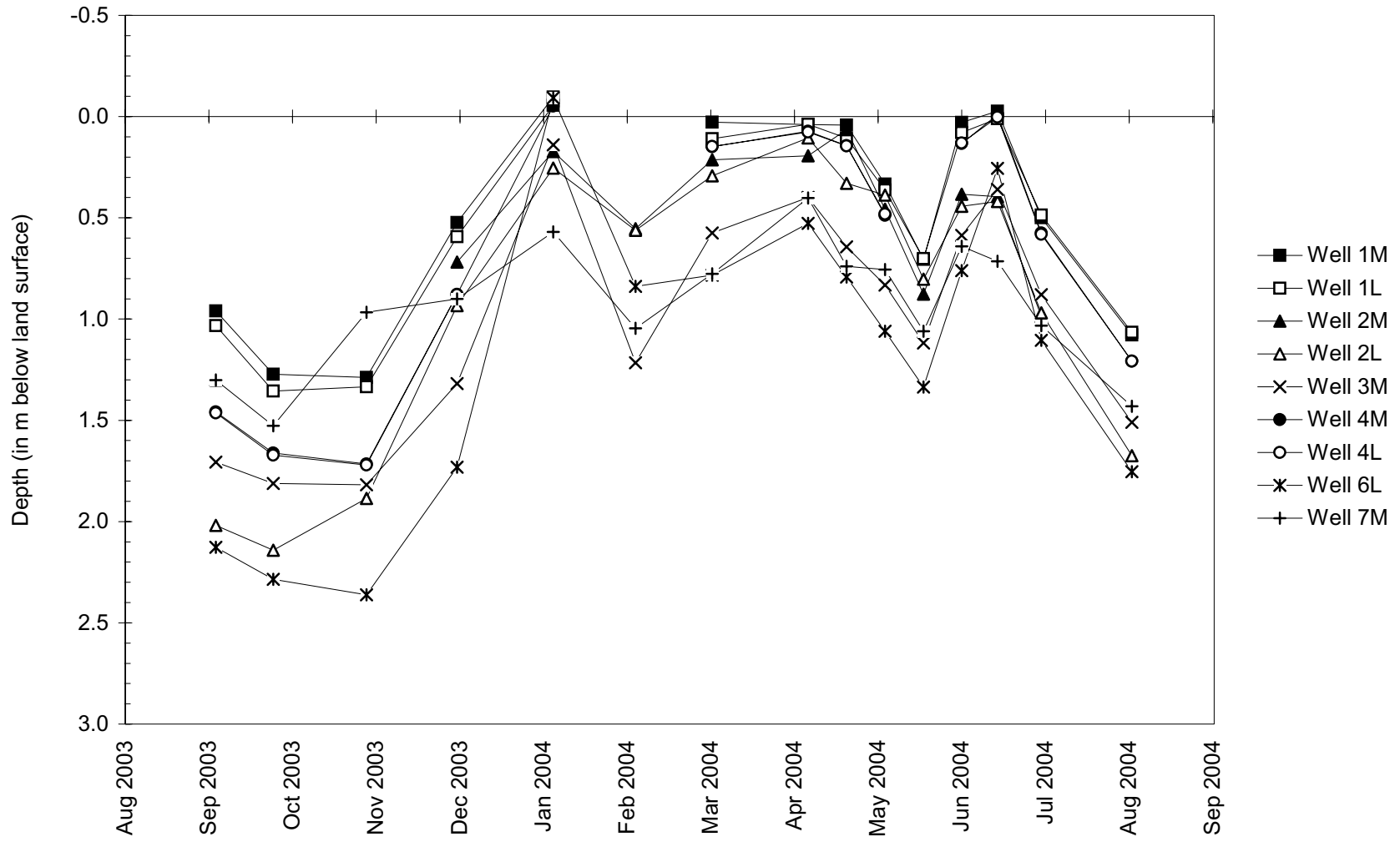
## Water-Level Elevations in Deeper Monitoring Wells



# Hancock County near Carthage Potential Wetland Compensation Site

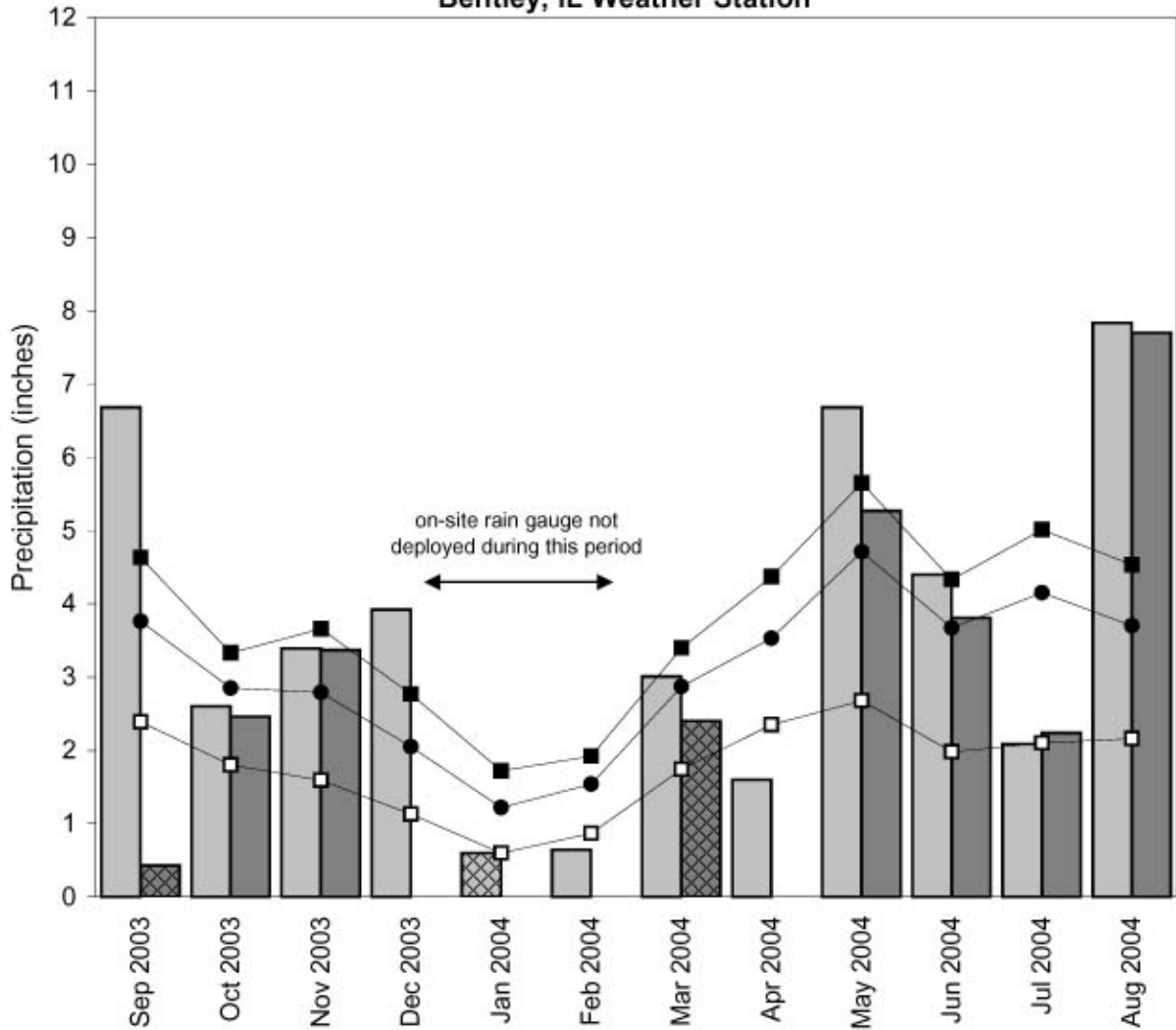
September 1, 2003 to September 1, 2004

## Depth to Water in Deeper Monitoring Wells



**Hancock County near Carthage  
Potential Wetland Compensation Site  
September 2003 through August 2004**

**Total Monthly Precipitation Recorded On Site and at the  
Bentley, 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