

**GREEN CREEK
POTENTIAL WETLAND COMPENSATION SITE**

ISGS #75

FAP 774

Sequence #12505

Effingham County, near Effingham, Illinois

Primary Project Manager: Bonnie J. R. Sperling

Secondary Project Manager: Eric T. Plankell

SITE HISTORY

- August 2005: ISGS submitted an Initial Site Evaluation Report to IDOT.
- September 2005: ISGS was tasked to perform a Level II hydrogeologic assessment of the site.
- December 2005: ISGS began on-site monitoring with the installation of a monitoring network and submitted an outline of preliminary hydrologic conditions to IDOT.
- March 2006: ISGS submitted a conceptual design plan to IDOT.
- September 2006: A Level II hydrogeological characterization report was submitted to IDOT (ISGS Open-File Series 2006–3).

WETLAND HYDROLOGY CALCULATION FOR 2006

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2006 growing season was estimated to be 1.30 ha (3.21 ac) out of a total site area of 4.05 ha (10.0 ac). Furthermore, 1.28 ha (3.16 ac) of that area also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These estimates were based on the following factors:

- According to the Midwestern Climate Center, the median date that the growing season begins in nearby Effingham, Illinois, is April 6 and the season lasts 210 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days.
- Total precipitation during the monitoring period was 92% of normal. December 2005 and February 2006 were the only months (when instruments were installed on the site) that were below the normal range of precipitation. This resulted in relatively stable water levels observed in the wells onsite throughout most of the year. Water levels began dropping in June in response to the higher summer evapotranspiration rates.
- In 2006, ground-water levels measured in wells 3S, 4S, 5U, 6U and 7S satisfied the wetland hydrology criteria for more than 5% of the growing season. Furthermore, wells 3S, 4S, 6U and 7U satisfied wetland hydrology criteria for greater than 12.5% of the growing season.
- Areas of inundation were observed for greater than 5% of the growing season on both sides of the main north–south ditch. Secondary indicators such as debris lines and water stains suggest that Green Creek and/or the Little Wabash River flooded the site at least once between the dates of April 6 and April 20, leading to standing water for a period of at least 25 days. This is

is supported by data from the USGS gauging station 6.8 km (4.3 mi) downstream that indicates that the Little Wabash River flooded out of its banks on April 7, 2006.

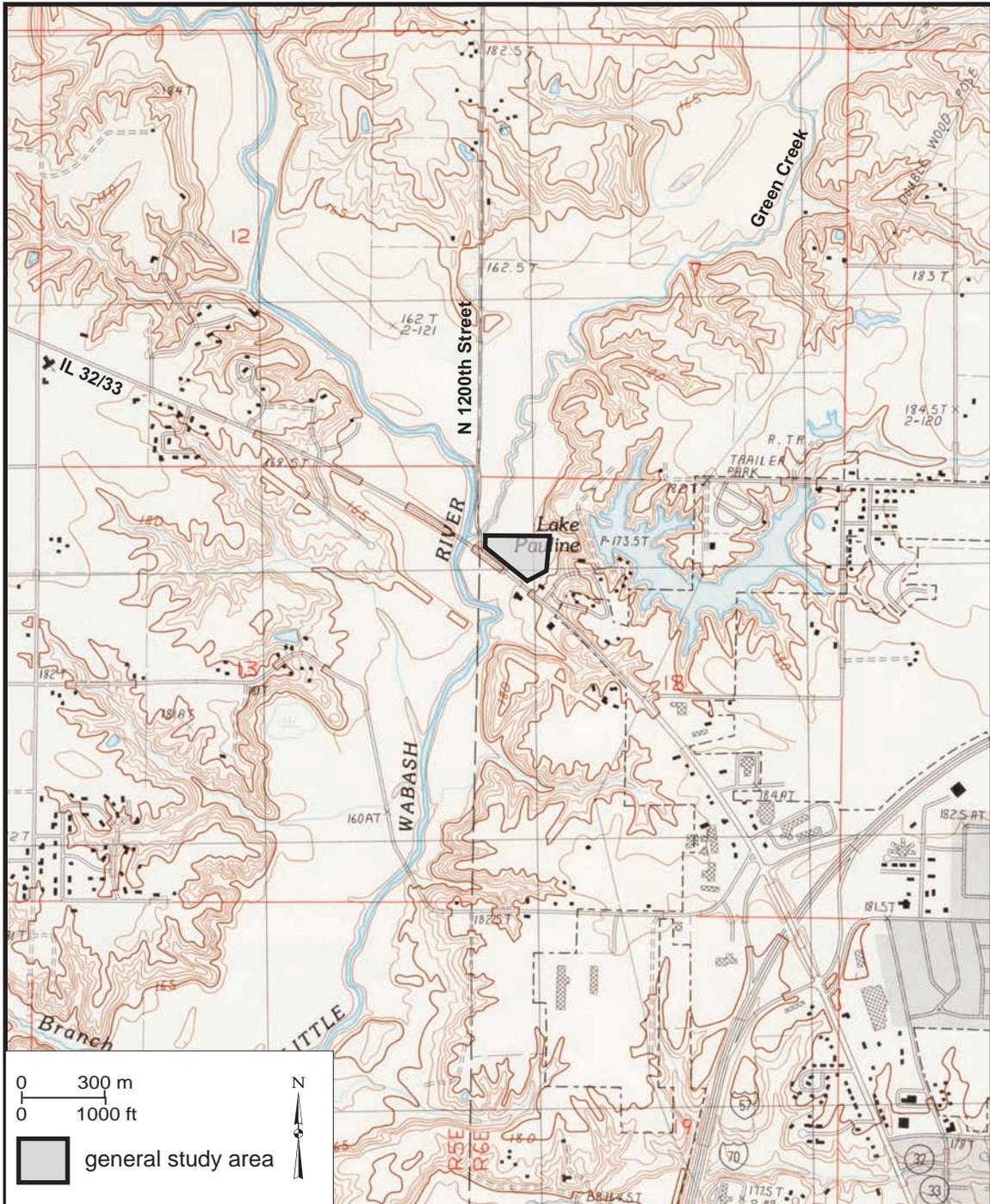
PLANNED FUTURE ACTIVITIES

- A surface-water gauge will be installed in the overflow channel of Lake Pauline and in Green Creek once construction on IL 32/33 is complete.
- Additional shallow wells will be installed on the western portion of the site once site construction is complete.

Green Creek Potential Wetland Compensation Site (FAP 774, IL32/33, Seq. No. 12505)

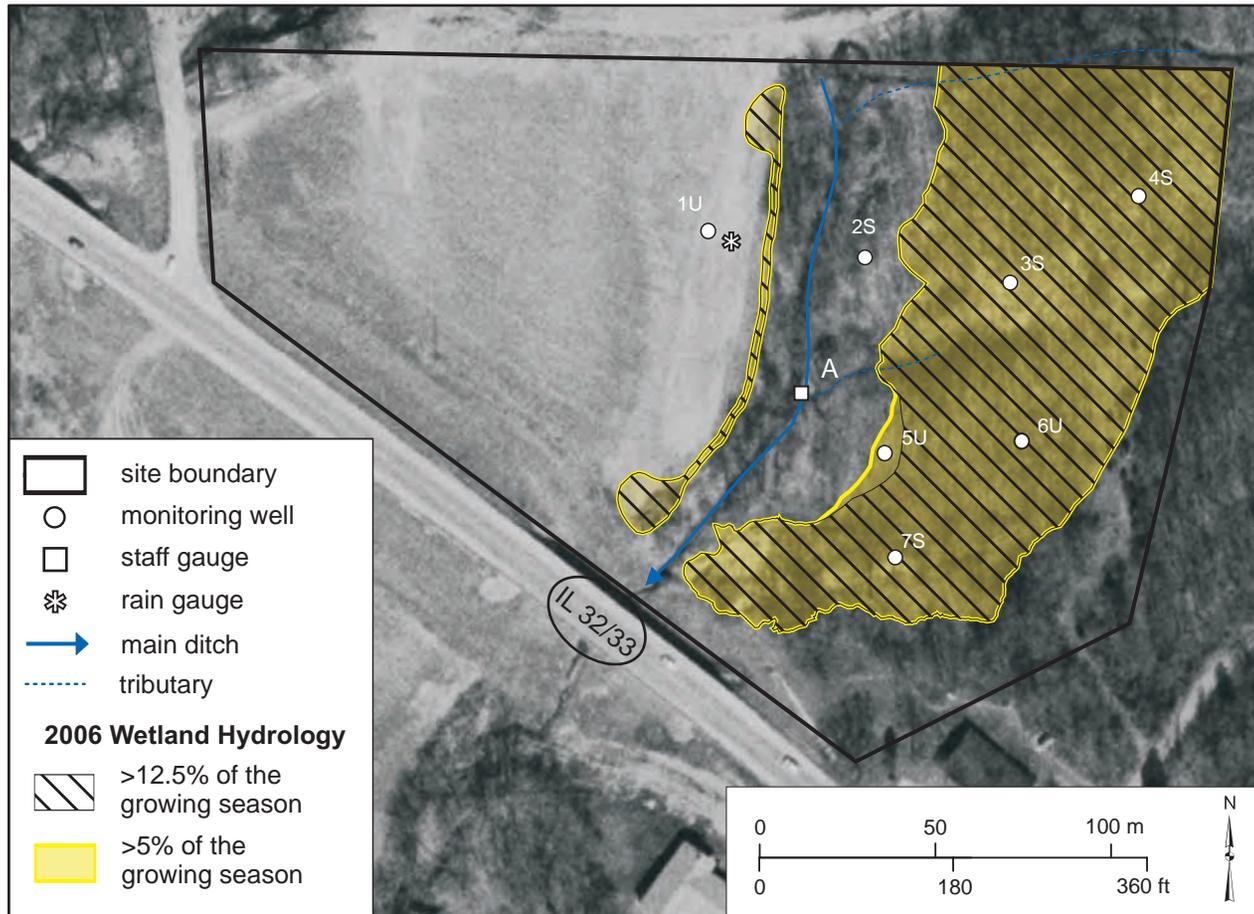
General Study Area and Vicinity

from the USGS Topographic Series, Effingham North, IL 7.5-minute Quadrangle (USGS 1985)
contour interval is 3 m (10 ft)



Green Creek Potential Wetland Compensation Site (FAP 774, IL32/33, Seq. No. 12505)

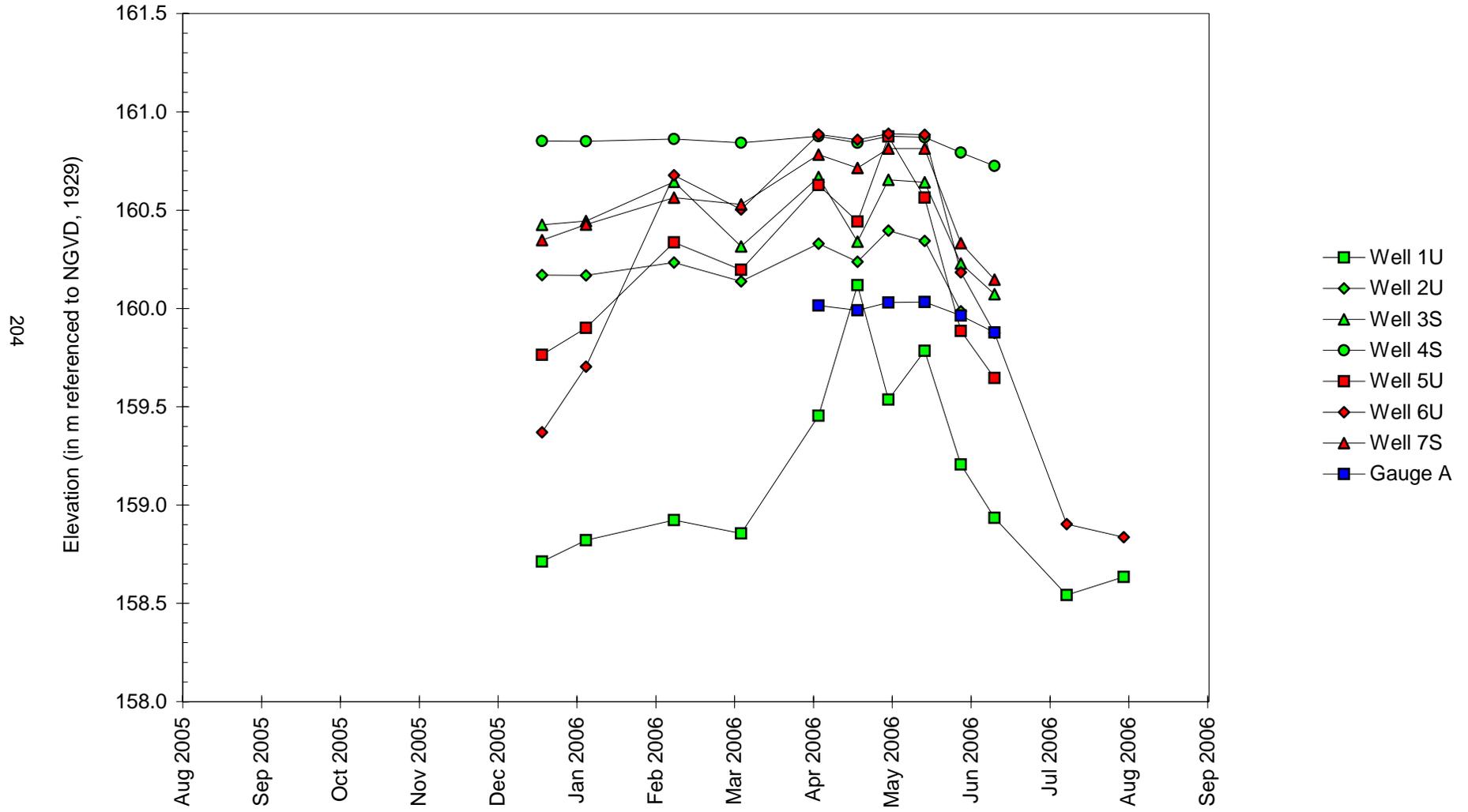
Estimated Areal Extent of 2006 Wetland Hydrology
 based on data collected between September 1, 2005 and September 1, 2006
 Map based on USGS digital orthophotograph, Effingham North SW quarter quadrangle
 produced from 2005 aerial photography (ISGS 2006)



Green Creek Potential Wetland Compensation Site

September 1, 2005 to September 1, 2006

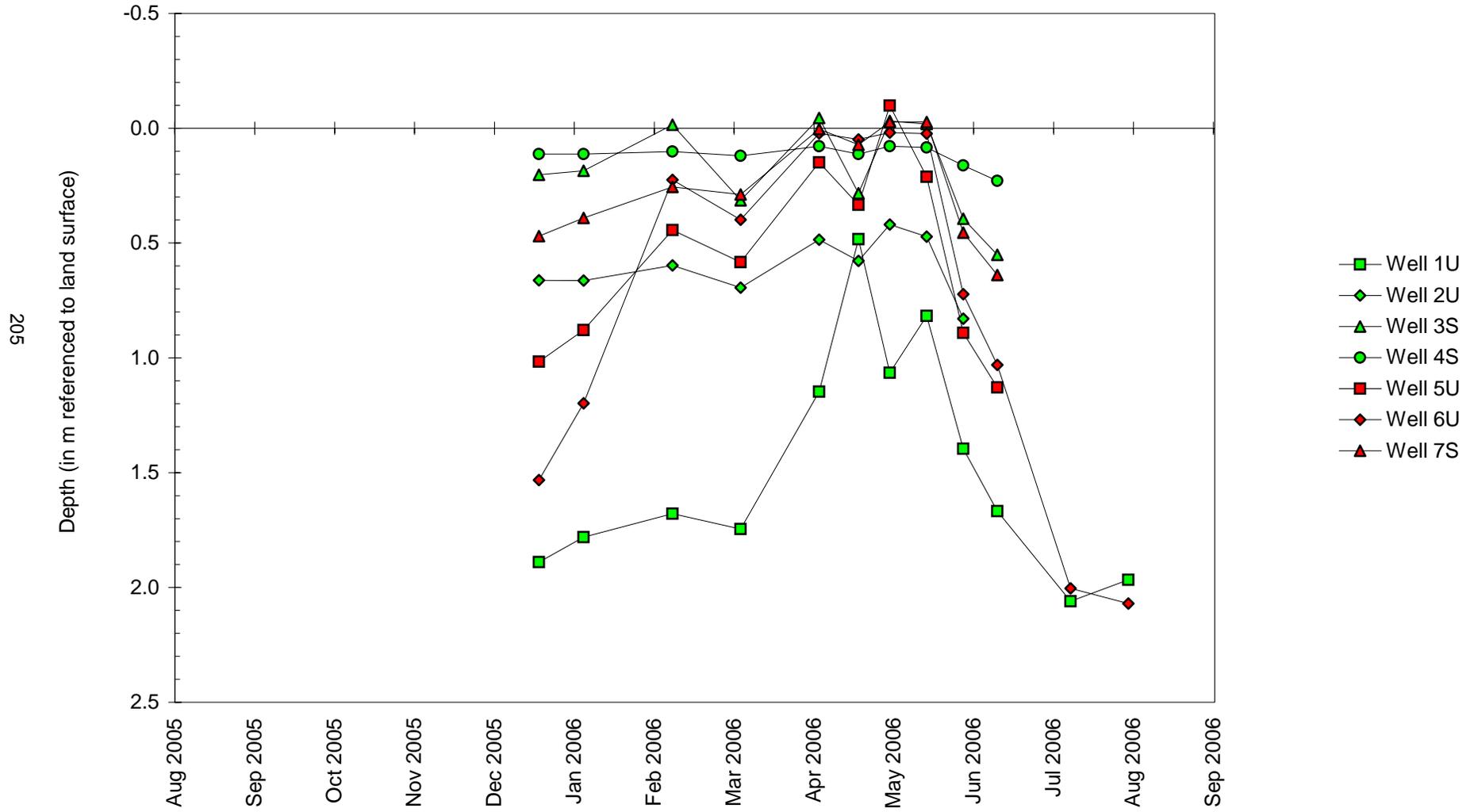
Water-Level Elevations



Green Creek Potential Wetland Compensation Site

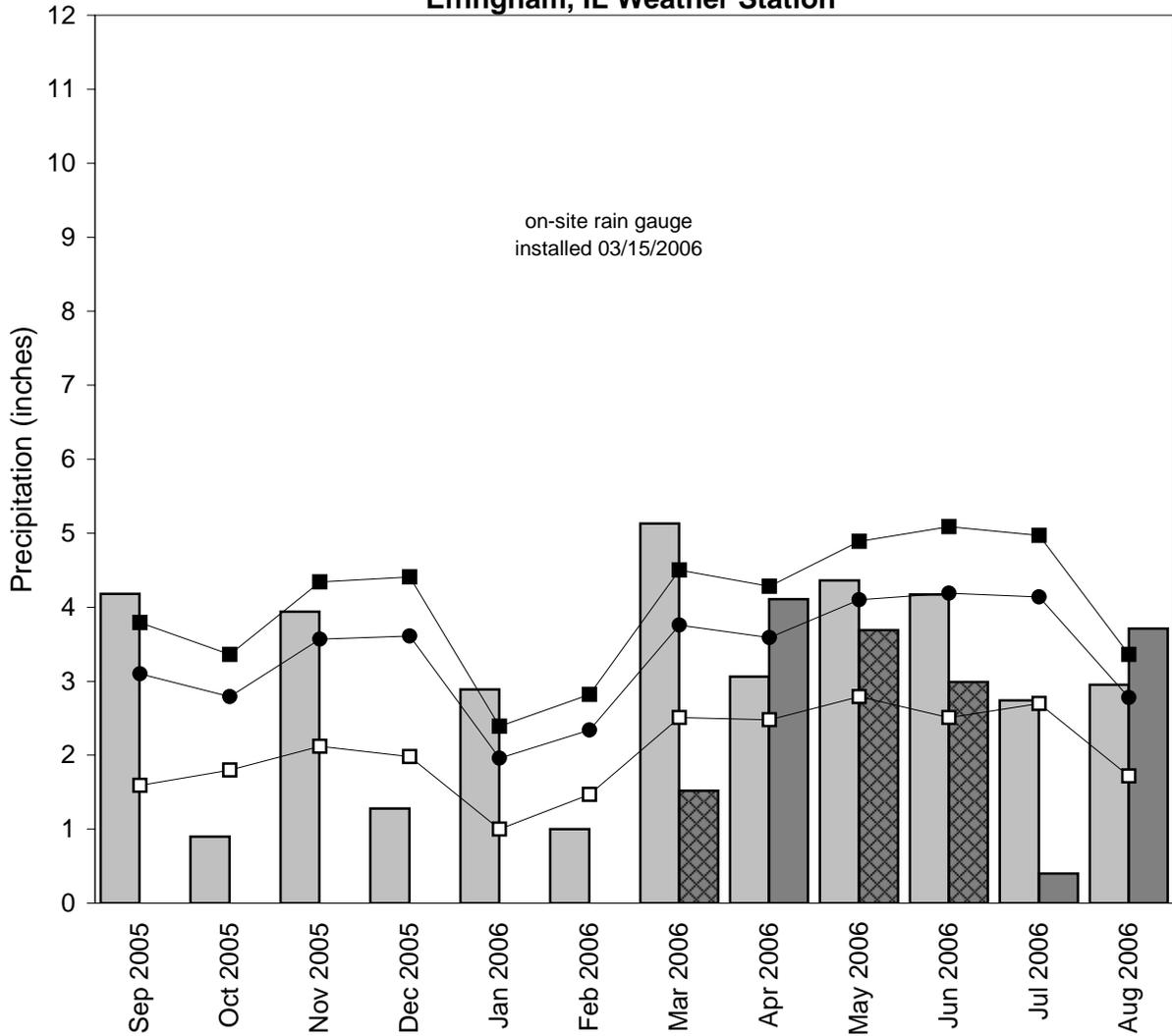
September 1, 2005 to September 1, 2006

Depth to Water



Green Creek Potential Wetland Compensation Site September 2005 through August 2006

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



- monthly precipitation recorded at weather station (Midwestern Regional Climate Center)
- monthly precipitation recorded on site by ISGS
- 1961-1990 monthly average precipitation (National Water and Climate Center)
- 1961-1990 monthly 30% above average threshold (National Water and Climate Center)
- 1961-1990 monthly 30% below average threshold (National Water and Climate Center)
- data incomplete

Graph last updated October 13, 2006