



**PECATONICA RIVER FOREST PRESERVE
WETLAND COMPENSATION SITE**

ISGS #73

Harrison Avenue Extension
Sequence #3746

Winnebago County, near Pecatonica, Illinois

Primary Project Manager: Eric T. Plankell

Secondary Project Manager: Steven E. Benton

SITE HISTORY

- Summer 2003: Wetland construction was completed at the site.
- February 2005: ISGS was tasked by IDOT to monitor wetland hydrology.
- April 2005: ISGS began on-site monitoring with the installation of a monitoring network. Instrument locations were determined using a Trimble XR Pro GPS unit.

WETLAND HYDROLOGY CALCULATION FOR 2006

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2006 growing season is 2.5 ha (6.2 ac) out of a total site area of approximately 6.9 ha (17.1 ac). The same acreage also satisfied wetland hydrology criteria for greater 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 nearby Freeport, Illinois is April 13, and the season lasts 183 days; 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days.
- Total precipitation at the nearby Wastewater Treatment Plant Weather Station in Freeport, Illinois, was approximately 106% of normal for the monitoring period of September 2005 through August 2006. Precipitation at this station was below normal in September, October, and December 2005, and in February, May, and August 2006. Precipitation amounts were above normal for the remaining months.
- In 2006, water levels measured in soil-zone wells 1S, 2S, 3S, 4S, 5S, 6S, and 14S satisfied wetland hydrology criteria for greater than 12.5% of the growing season. No additional wells satisfied wetland hydrology criteria for greater than 5% of the growing season.
- Water-level records for the data-logger at Gauge C (RDS) indicated inundation at elevations below approximately 224.95 m (738.02 ft) for greater than 5% of the growing season. Additionally, inundation was indicated at elevations below approximately 224.93 m (737.96 ft) for greater than 12.5% of the growing season
- Visual observations made on April 21, 2006, along with surface-water data from Gauges C, D, E, F, and H, indicated that water levels along the Pecatonica River were high enough to cause flooding in portions of both the northern and southern mitigation areas at the site. The river did not appear to overtop its banks; instead, water entered the southern mitigation area through the small inlet pipe near well 11S, and water entered the northern mitigation area as a result of back-flooding along the western drainage ditch. In addition to this flooding, water levels recorded at the site in 2006 were also supplemented by higher than

normal rainfall in April, and the continual input of water to the northern mitigation area from the culvert under Blair Road.

- Approximately 0.2 ha (0.4 ac) of the estimated area of the site that satisfied wetland hydrology criteria lies outside the excavation for the northern mitigation area. For the purposes of this report, the boundaries of the mitigation areas were reproduced from engineering plans drawn by Hey and Associates, Inc, and then altered slightly to match features observed in the field and on aerial photography of the site taken in 2005.

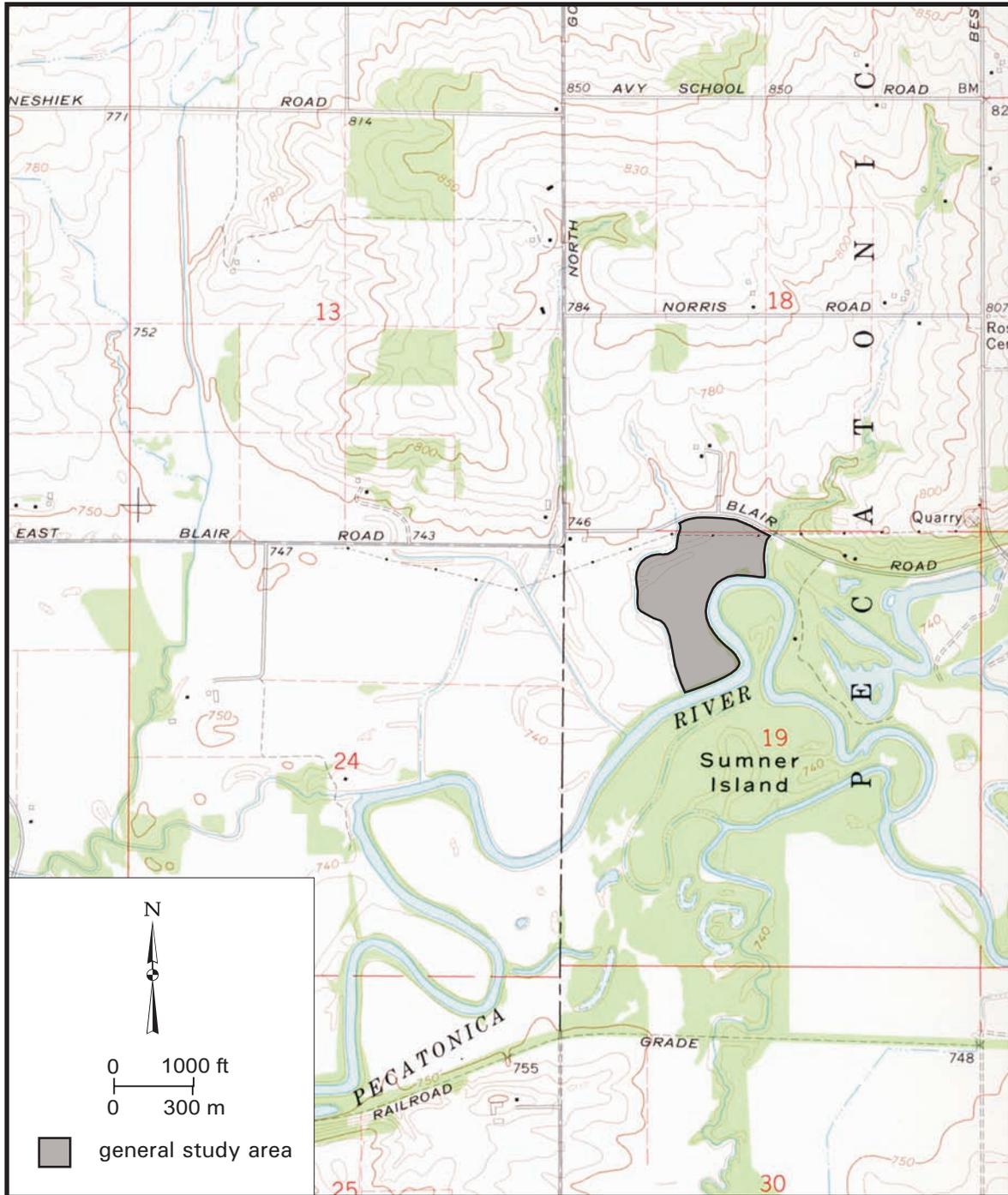
PLANNED FUTURE ACTIVITIES

- Hydrogeologic monitoring will continue at the site until no longer required by IDOT.

Pecatonica River Forest Preserve Wetland Compensation Site [Sequence #3746]

General Study Area and Vicinity

from the USGS Topographic Series, Ridott, IL 7.5-minute Quadrangle (USGS 1971)
contour interval is 10 feet

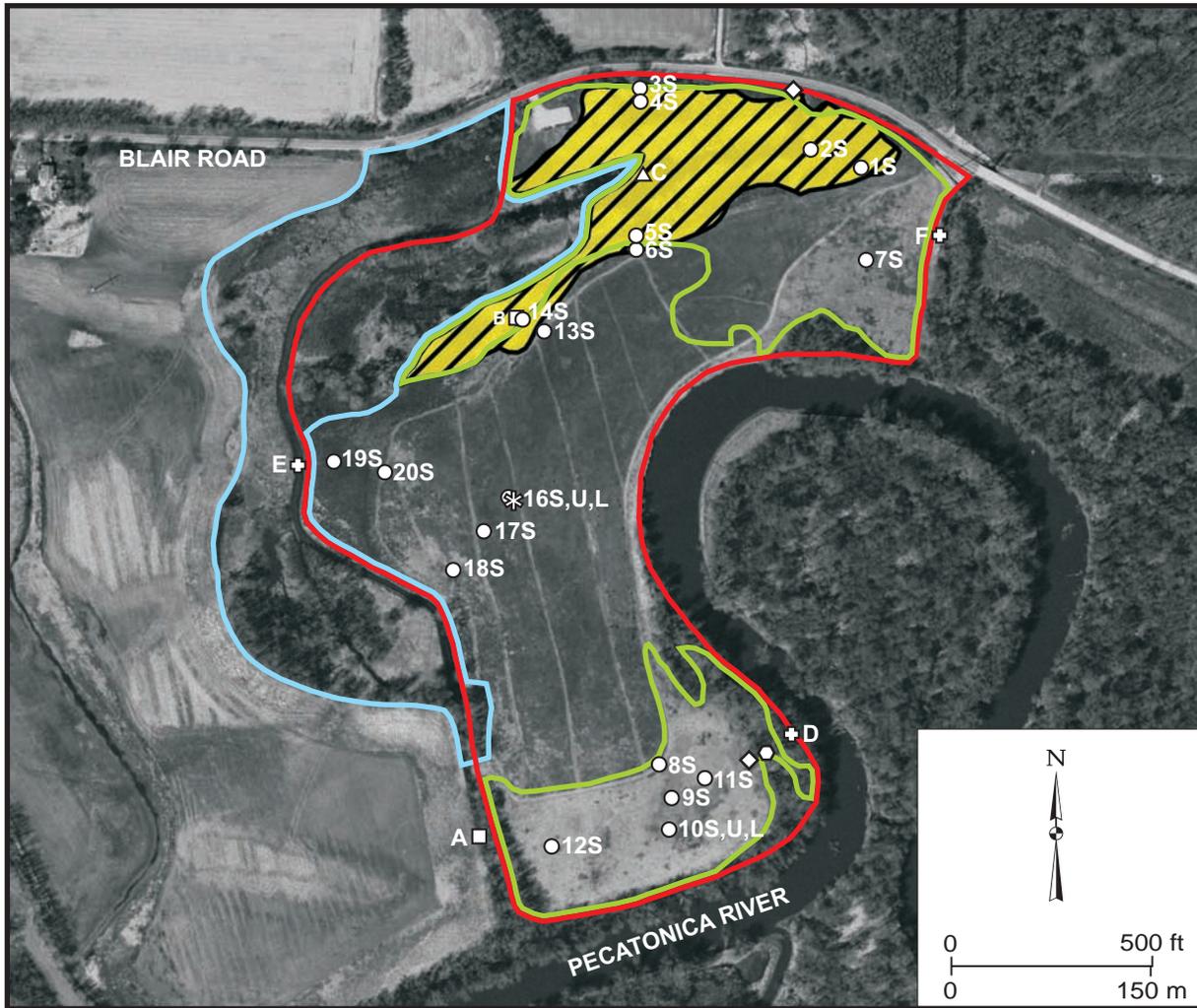


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Estimated Areal Extent of 2006 Wetland Hydrology

based on data collected between September 1, 2005 and September 1, 2006

Map based on USGS digital orthophotograph, Ridott NE quarter quadrangle
produced from 4/8/99 aerial photography (ISGS 2005)

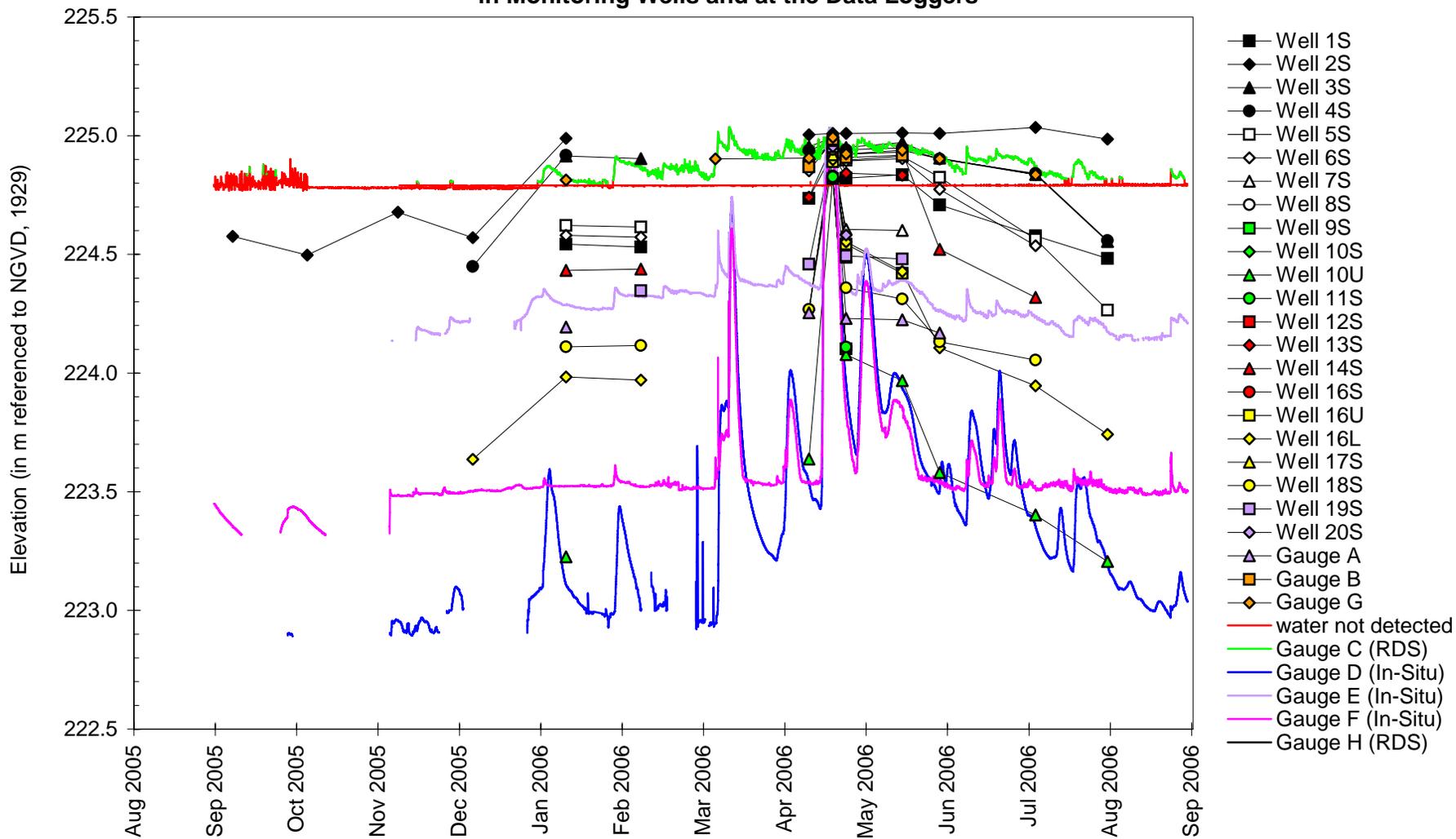


- | 2006 Wetland Hydrology | | | |
|---|-------------------------------|---|---------------------|
|  | > 12.5% of the growing season |  | monitoring well |
|  | > 5% of the growing season |  | staff gauge |
|  | preexisting wetland |  | RDS data logger |
|  | mitigation areas |  | Davis rain gauge |
|  | site boundary |  | In-Situ data logger |
| | |  | ISGS benchmark |
| | |  | culvert |

Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2005 to September 1, 2006

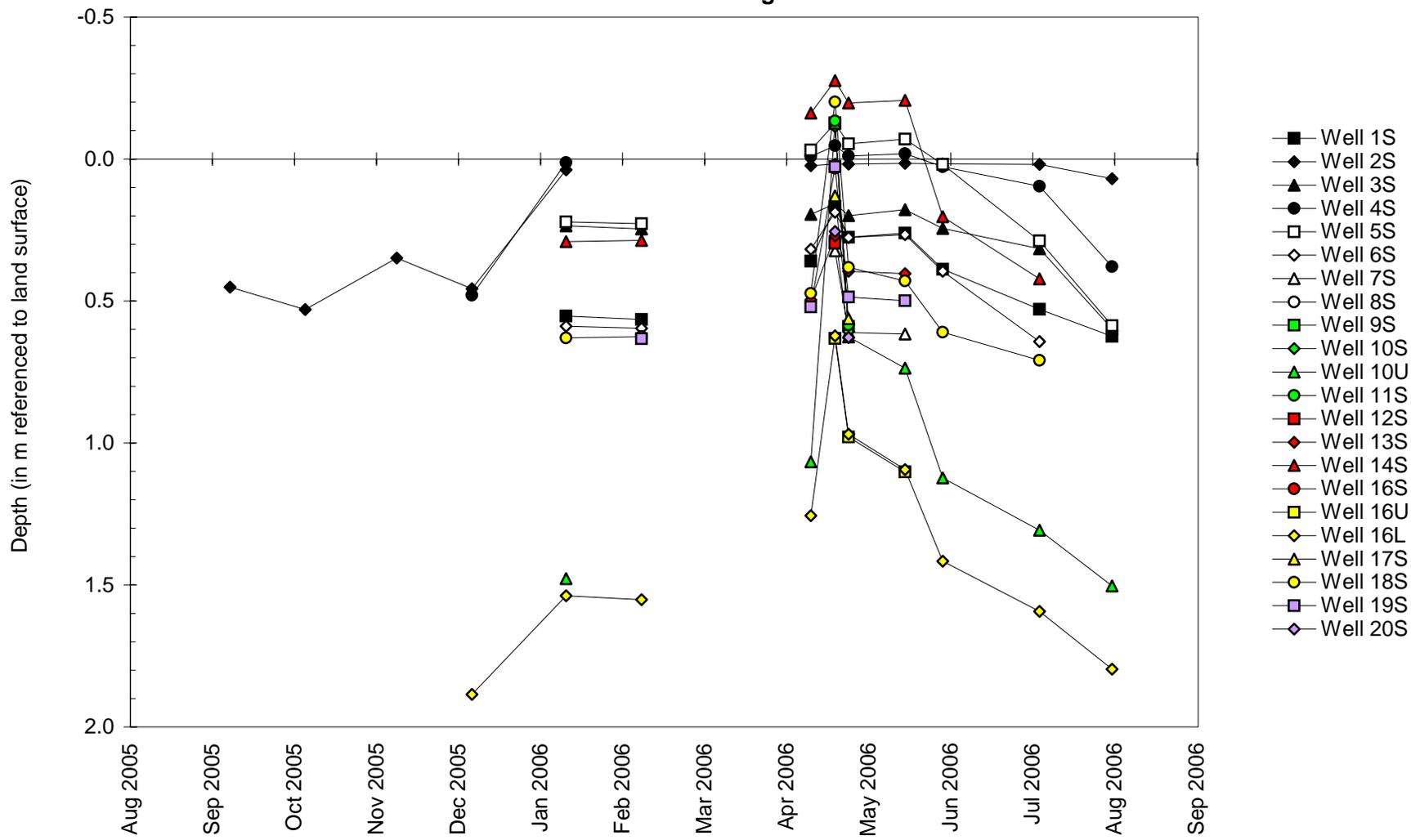
Water-Level Elevations in Monitoring Wells and at the Data Loggers



Pecatonica River Forest Preserve Wetland Compensation Site

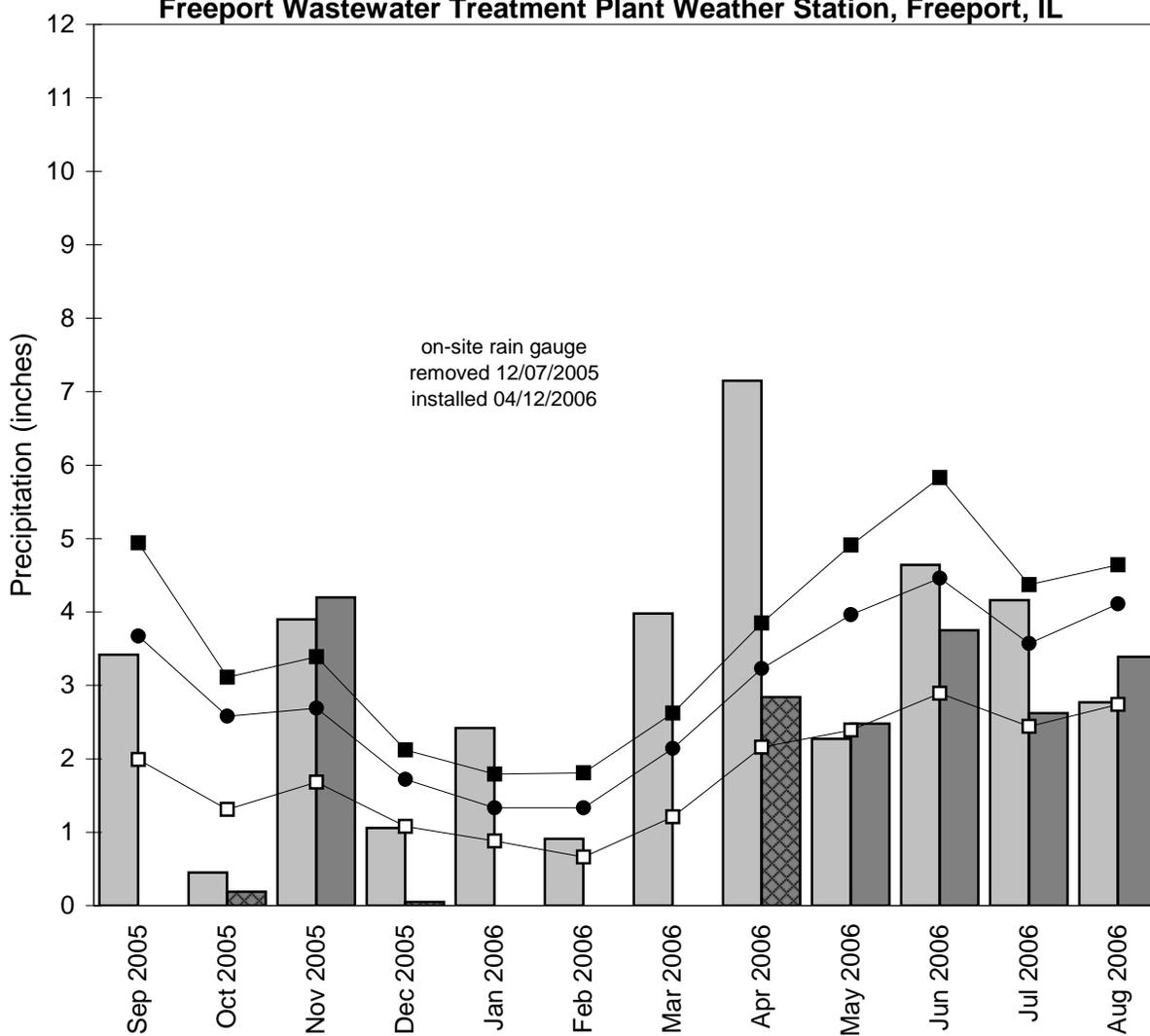
September 1, 2005 to September 1, 2006

Depth to Water in Monitoring Wells



**Pecatonica River Forest Preserve
Wetland Compensation Site
September 2005 through August 2006**

**Total Monthly Precipitation Recorded On Site and at the
Freeport Wastewater Treatment Plant Weather Station, Freeport, IL**



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

Graph last updated October 13, 2006