



**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, including 4.27 ha (10.54 ac) of emergent marsh/wet prairie at the north end of the site and 2.64 ha (6.52 ac) of wooded wetland at the south end of 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.
- August 2005: ISGS completed a topographic survey of the site using a Leica TC 702 Total Station.

**WETLAND HYDROLOGY CALCULATION FOR 2005**

The total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2005 growing season is estimated to be 1.7 ha (4.1 ac) out of a total site area of 6.9 ha (17.1 ac). In addition, the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2005 growing season is estimated to be 1.3 ha (3.3 ac). 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 78% of normal for the monitoring period of September 2004 through August 2005. Precipitation during the period from March through July 2005 was only 48% of normal.
- In 2005, water levels measured in wells 2S, 3S, 4S and 5S satisfied wetland hydrology criteria for greater than 12.5% of the growing season. No other wells at the site satisfied the wetland hydrology criteria for a period exceeding either 5% or 12.5% of the growing season.
- Surface-water data from Gauge C indicated that inundation occurred in those portions of the site below an elevation of approximately 224.87 m (737.76 ft) for a duration that satisfied the wetland hydrology criteria for greater than 5% of the growing season. Additionally, data from Gauge C indicated inundation for an elevation below approximately 224.85 m (737.69 ft) for a duration that satisfied the wetland hydrology criteria for greater than 12.5% of the growing season. Surface-water data from Gauges D, E, and F showed

that flooding from the Pecatonica River did not occur following deployment of the stations on April 15, 2005. Therefore, surface-water flooding did not affect water levels at the site during the monitoring period.

#### 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]

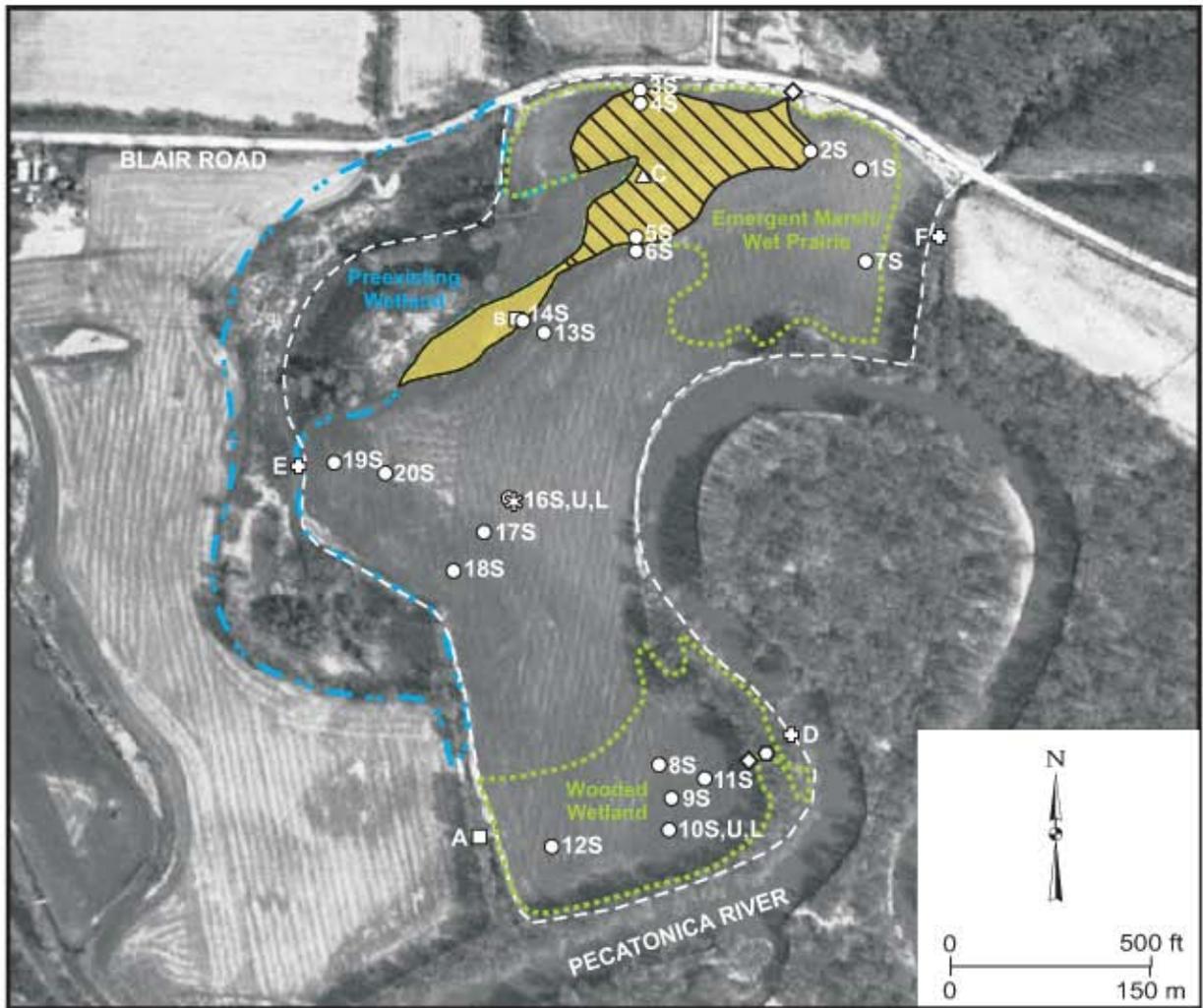
## General Study Area and Vicinity

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



# Pecatonica River Forest Preserve Wetland Compensation Site (Sequence #3746)

**Estimated Areal Extent of 2005 Wetland Hydrology**  
 based on data collected between April 21, 2005 and September 1, 2005  
 Map based on USGS digital orthophotograph Ridott, NE quarter quadrangle  
 produced from 4/8/99 aerial photography (ISGS 2005)

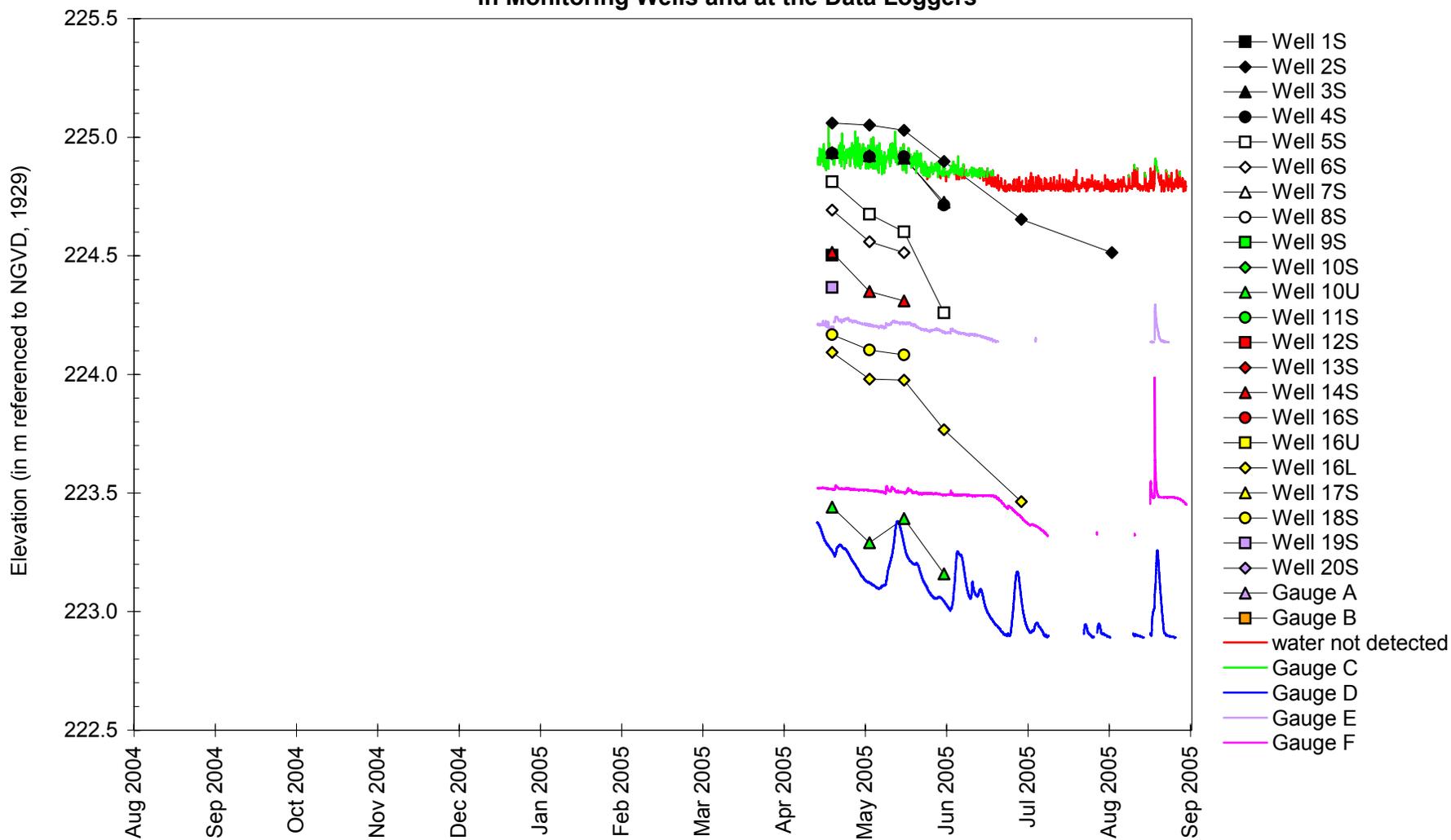


- | 2005 Wetland Hydrology  |                               |   |                                    |
|---|-------------------------------|---|------------------------------------|
|  | > 12.5% of the growing season | ○ | monitoring well                    |
|  | > 5% of the growing season    | □ | 4.0' staff gauge                   |
|  | preexisting wetland (IDOT)    | △ | RDS WL-40 data logger              |
|  | mitigation areas (IDOT)       | ⊛ | Davis Rain Collector II rain gauge |
|  | site boundary (IDOT)          | ⊙ | In-Situ MiniTROLL data logger      |
|   |                               | ◇ | ISGS benchmark                     |
|   |                               | ◇ | culvert                            |

# Pecatonica River Forest Preserve Wetland Compensation Site

## September 1, 2004 to September 1, 2005

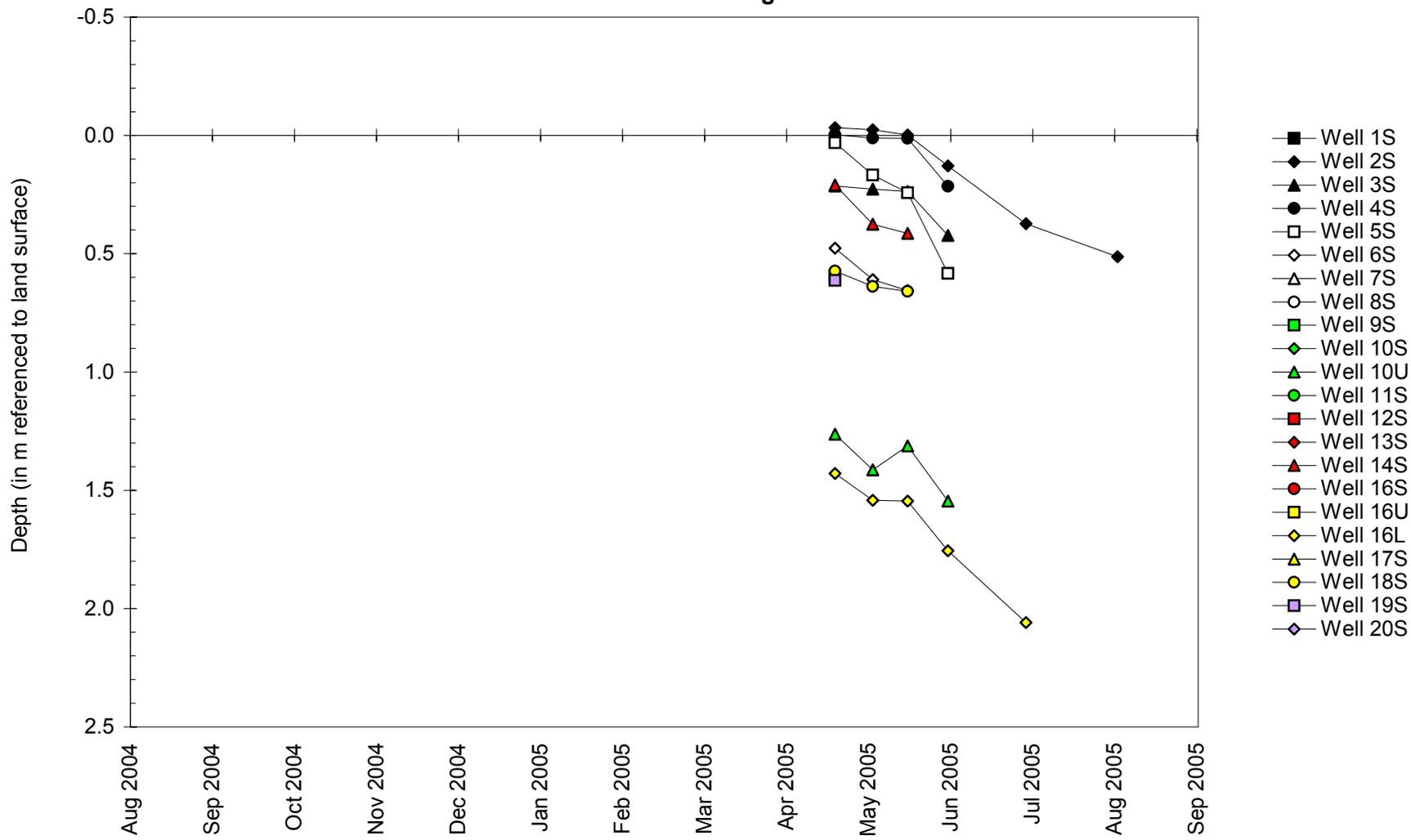
### Water-Level Elevations in Monitoring Wells and at the Data Loggers



# Pecatonica River Forest Preserve Wetland Compensation Site

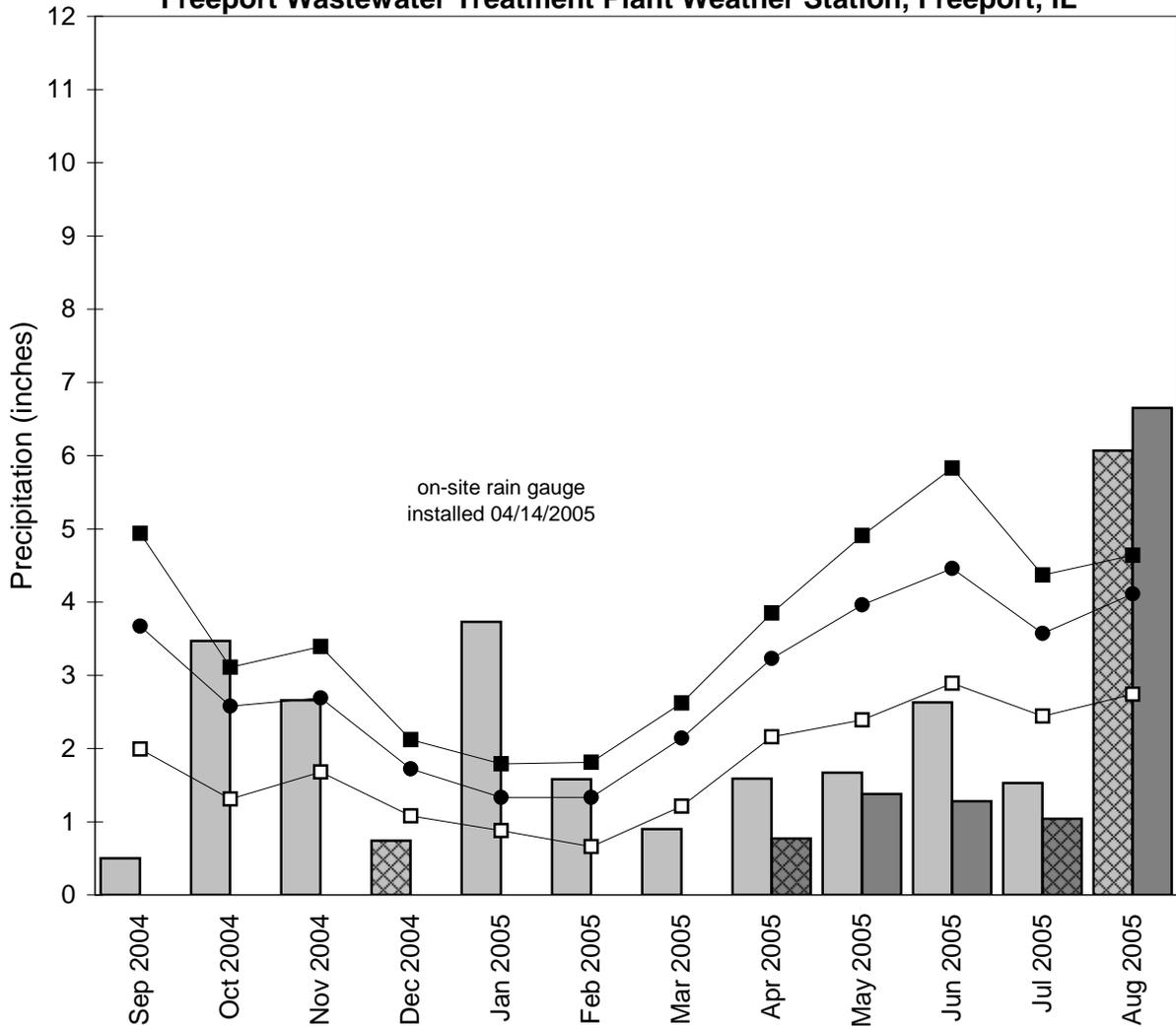
## September 1, 2004 to September 1, 2005

### Depth to Water in Monitoring Wells



**Pecatonica River Forest Preserve  
Wetland Compensation Site  
September 2004 through August 2005**

**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 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