

**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.

WETLAND HYDROLOGY CALCULATION FOR 2009

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2009 growing season is 5.3 ha (13.0 ac) and the area that satisfied wetland hydrology criteria for greater than 12.5% is 2.2 ha (5.3 ac) out of a total mitigation area acreage of approximately 6.9 ha (17.1 ac). Using new guidance proposed by the U.S. Army Corps of Engineers (2008), we estimate that 3.9 ha (9.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. Additional areas outside the designated mitigation areas also satisfied wetland hydrology criteria, and are discussed below. These estimates are based on the following factors:

- According to the MRCC, 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. According to methods outlined in the Midwest Regional Supplement (U.S. Army Corps of Engineers 2008), we estimate that March 24 was the starting date of the 2009 growing season based on vegetation growth and development observed at the wetland compensation site.
- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois, was approximately 128% of normal for the monitoring period of September 2008 through August 2009. Precipitation at this station was below normal in November and December 2008, and in August 2009. Precipitation amounts were at or above normal for the remaining months of the 2008–2009 monitoring period. Several inches of rainfall recorded at the site during the latter half of April and the first week of May, coupled with a flooding event along the Pecatonica River that peaked on May 2, were the primary influences resulting in the observed areas that satisfied the wetland hydrology criteria for the 2008-2009 monitoring period.
- In 2009, water levels measured in all soil-zone (S) monitoring wells, except wells 12S and 16S, satisfied wetland hydrology criteria for greater than 5% of the growing season. All wells, except 7S, 12S, and 16S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season. In addition, water levels measured in wells 1S, 2S, 3S, 4S, 5S, 6SR, 9S, 14S, 17S, 18S, and 19S satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- Surface-water levels shown by data loggers at gauges C and H indicated inundation at or below approximately 225.10 m (738.52 ft) and 224.99 m (738.14 ft), respectively, for greater than 5% of the growing season, and inundation at or below approximately 225.07 m (738.42 ft) and 225.04 m (738.32 ft), respectively, for 14 or more consecutive days of the growing season. Gauge C indicated inundation at or below approximately 225.03 m (738.29 ft) for greater than 12.5% of the growing season, while gauge H was not inundated for greater than 12.5% of the growing season.
- In areas within the site, but outside of the designated mitigation areas, approximately 6.3 ha (15.6 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, approximately 5.2 ha (12.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season, and approximately 4.1 ha (10.0 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These acreages include some preexisting wetland areas previously delineated along the western edge of the site by Hey and Associates, Inc.
- 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 corrected to match features observed in the field and on aerial photography of the site taken in 2005. Therefore, total site acreage may vary from other estimates.
- A beaver dam, first discovered in April 2009 and located approximately 140 m (460 ft) north of the Pecatonica River in the western ditch, is helping to sustain water levels in the northern mitigation area and along the western edge of the site (including wells 1S, 2S, 3S, 4S, 5S, 6S, 14S, 17S, 18S, 19S, and 20S) for longer than has been typically observed.

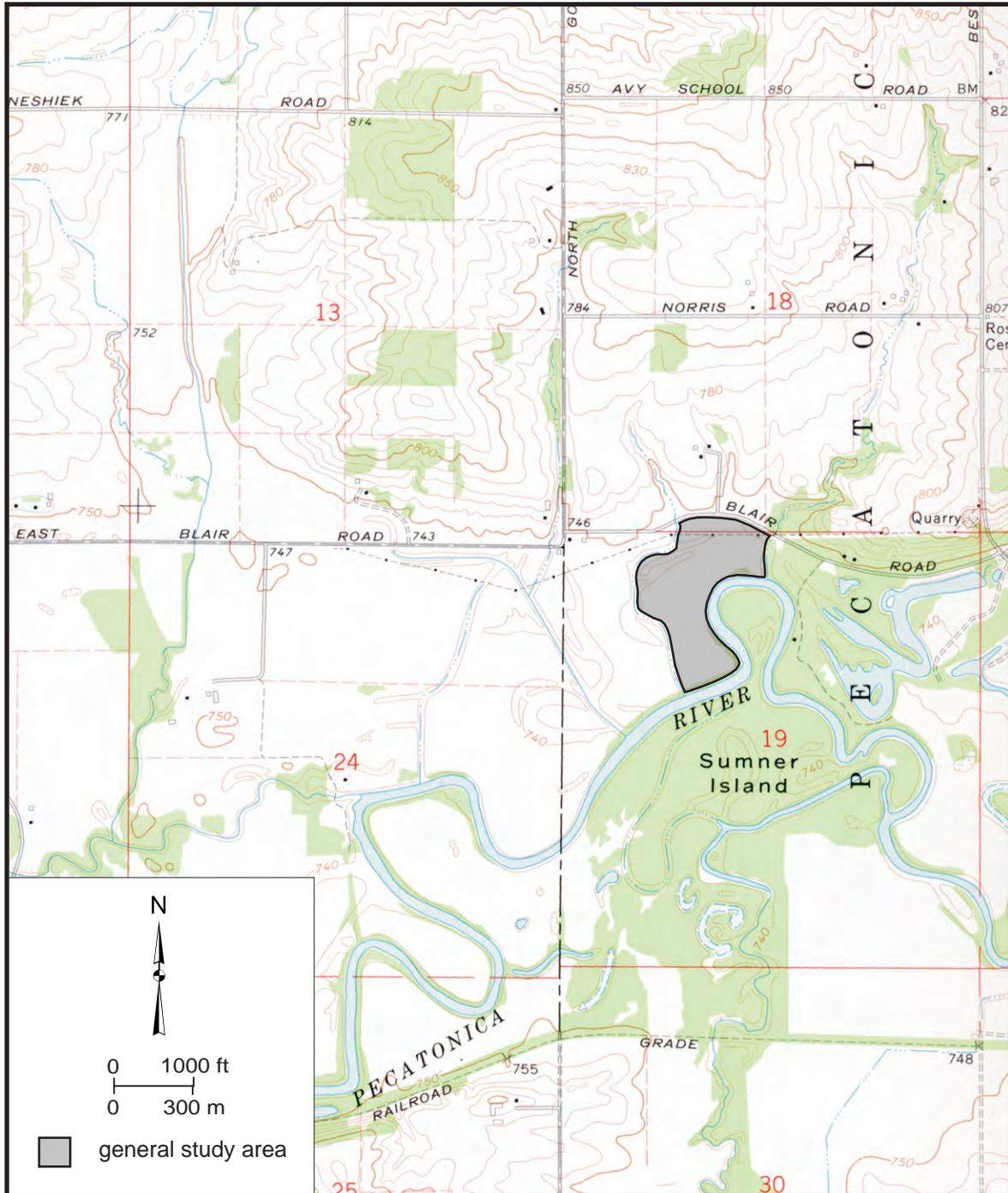
PLANNED FUTURE ACTIVITIES

- 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



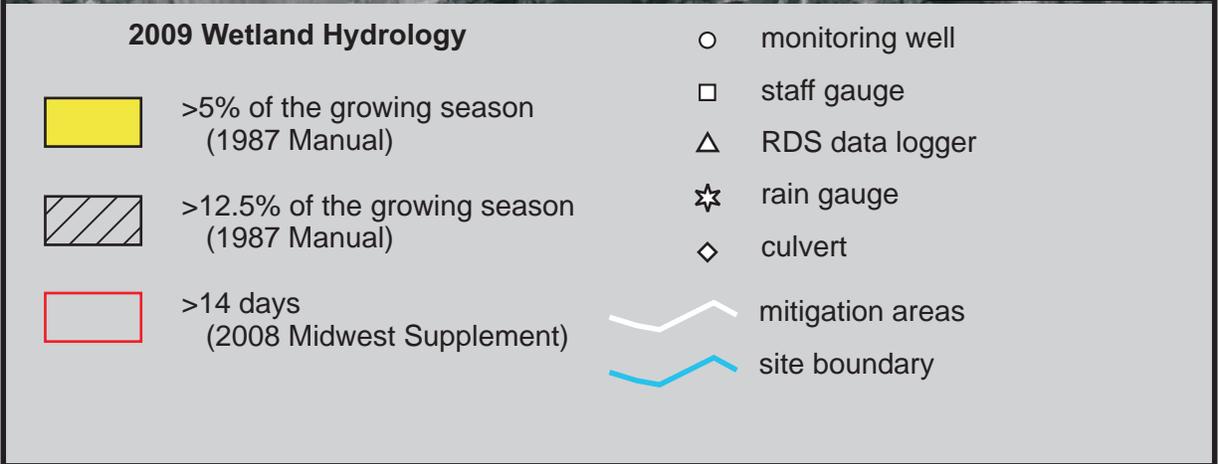
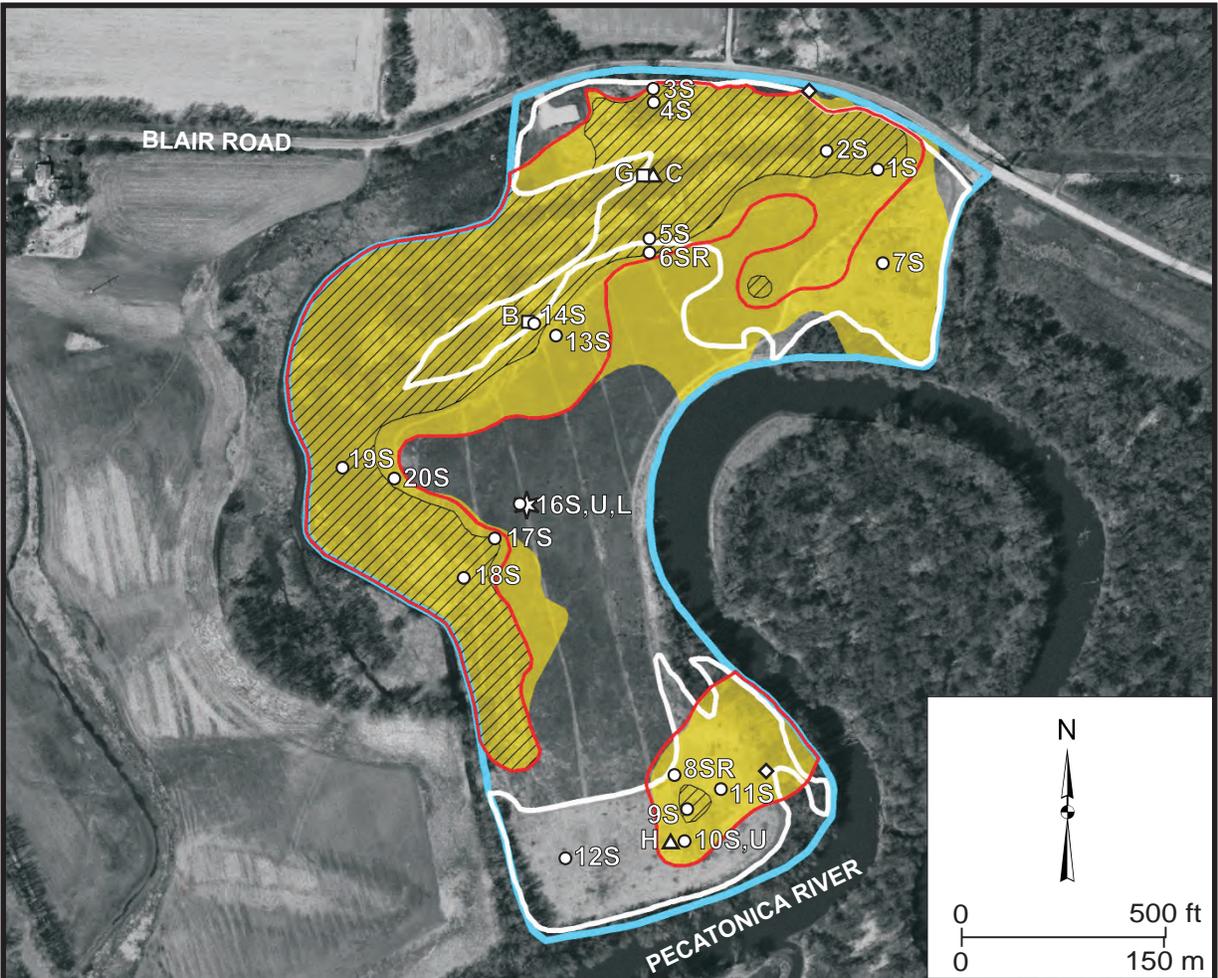
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Estimated Areal Extent of 2009 Wetland Hydrology

September 1, 2008 through August 31, 2009

Map based on USGS digital orthophotograph Ridott, NE quarter quadrangle

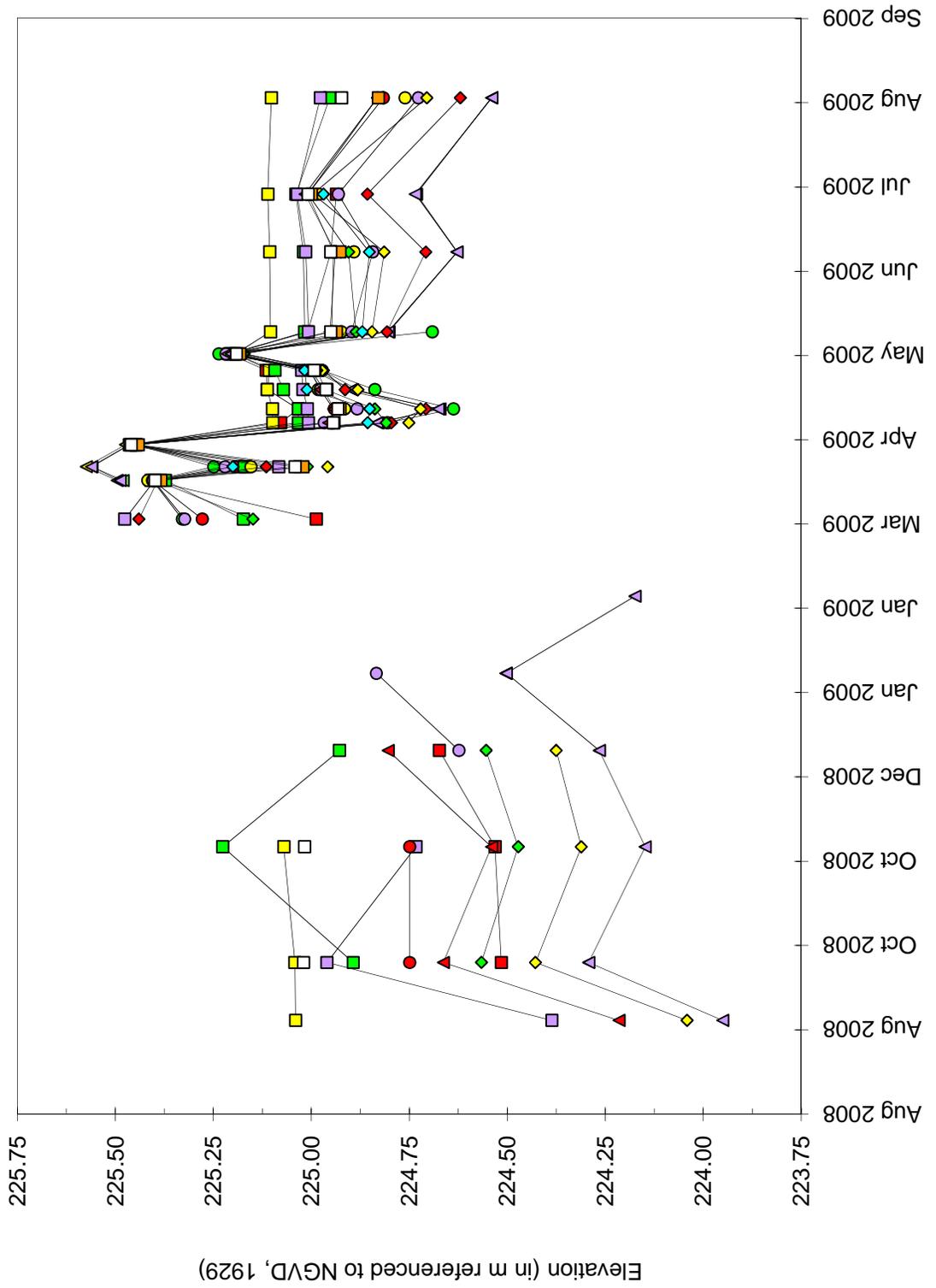
Produced from 4/8/99 aerial photography (ISGS 2005)



Pecatonica River Forest Preserve Wetland Compensation Site

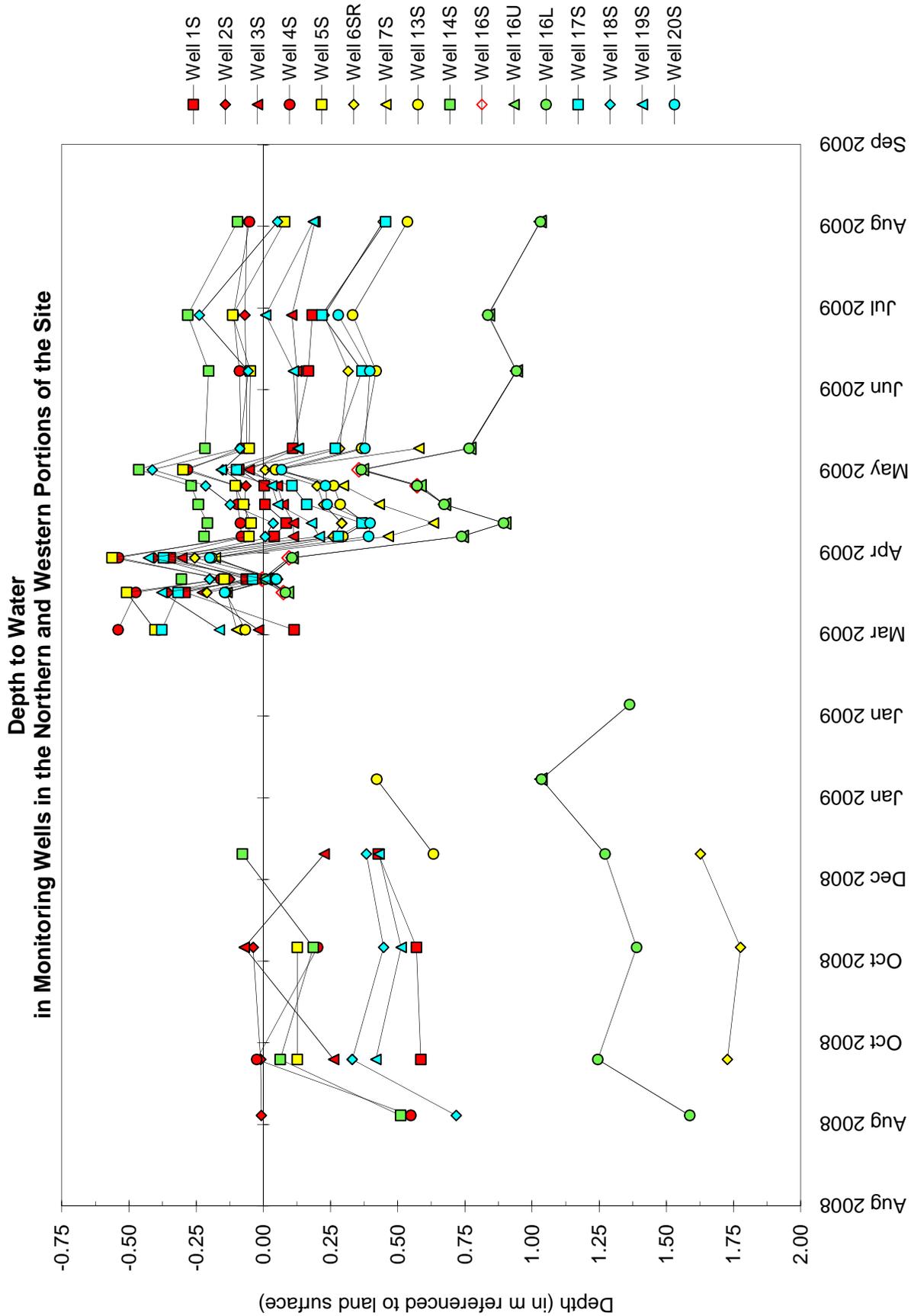
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Monitoring Wells and at Select Stage Gauges
in the Northern and Western Portions of the Site



Pecatonica River Forest Preserve Wetland Compensation Site

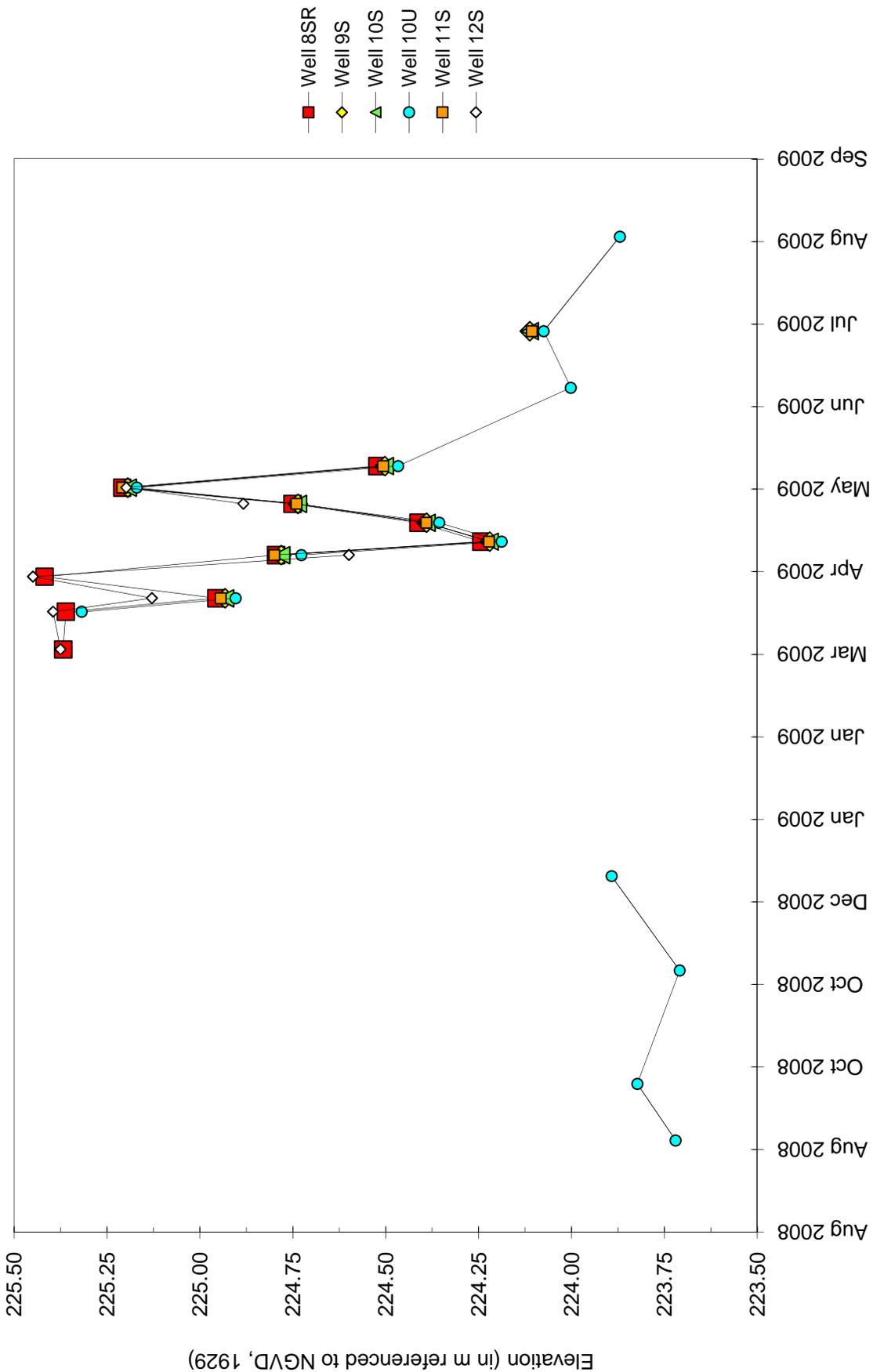
September 1, 2008 through August 31, 2009



Pecatonica River Forest Preserve Wetland Compensation Site

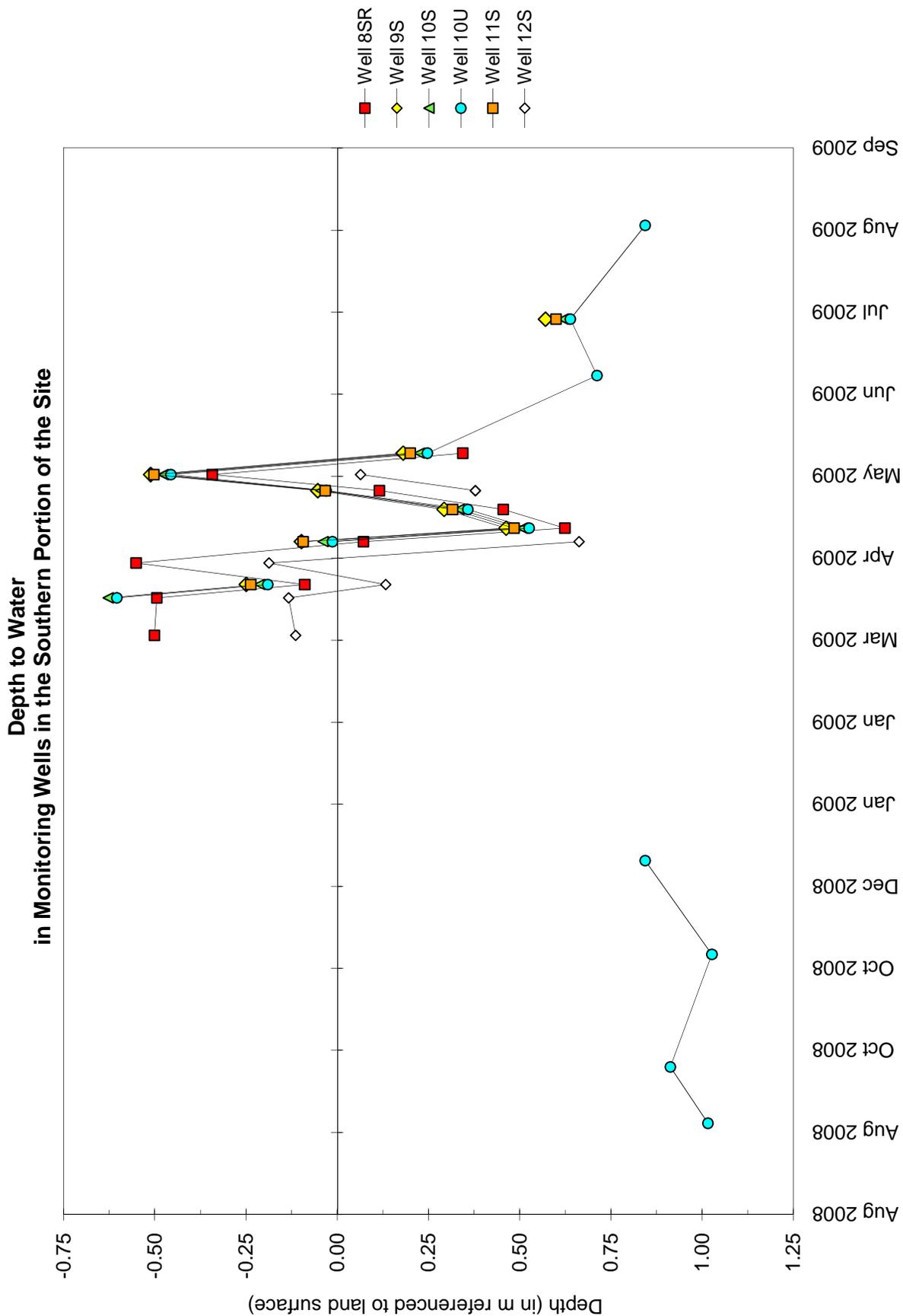
September 1, 2008 through August 31, 2009

Water-Level Elevations
in Monitoring Wells in the Southern Portion of the Site

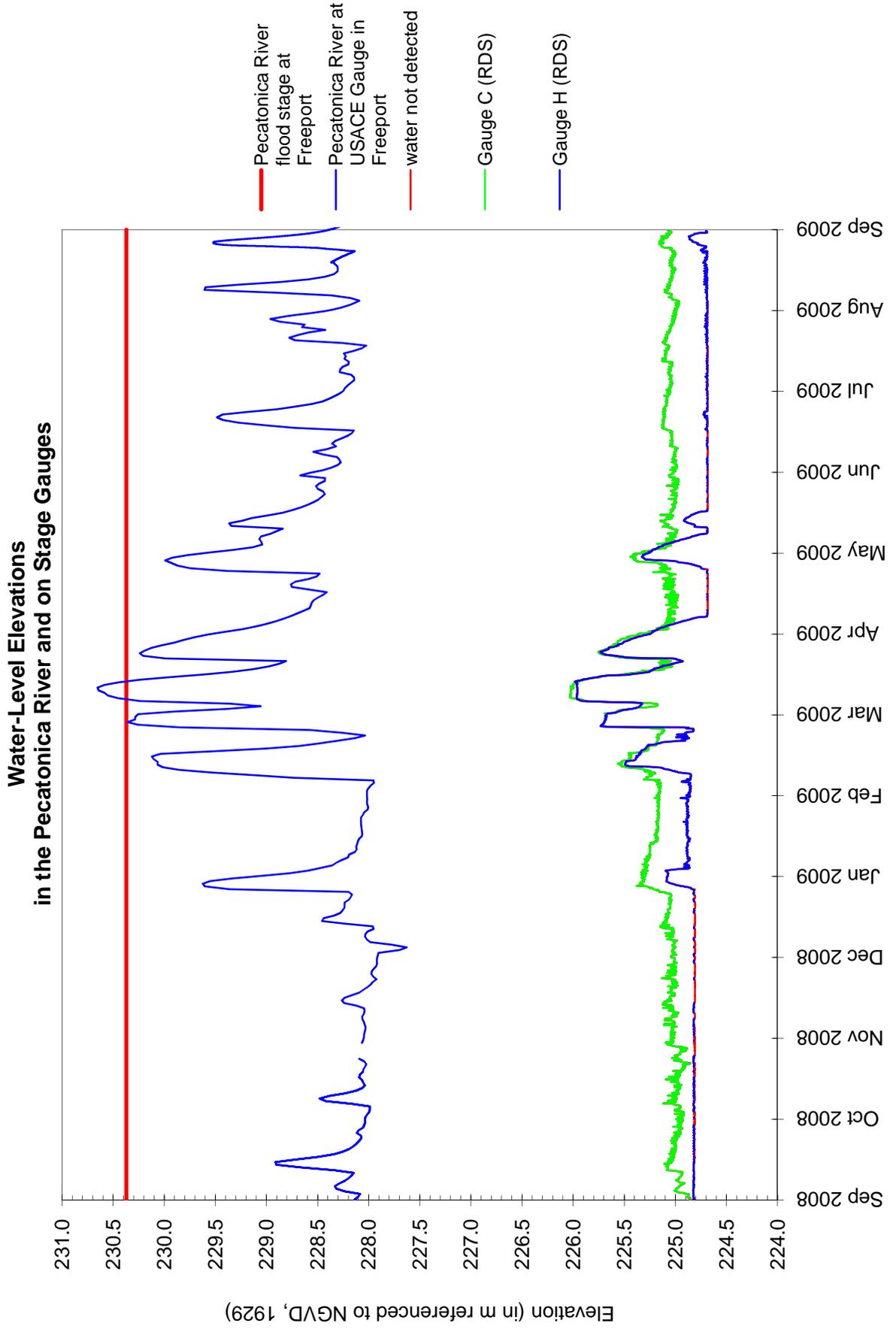


Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2008 through August 31, 2009

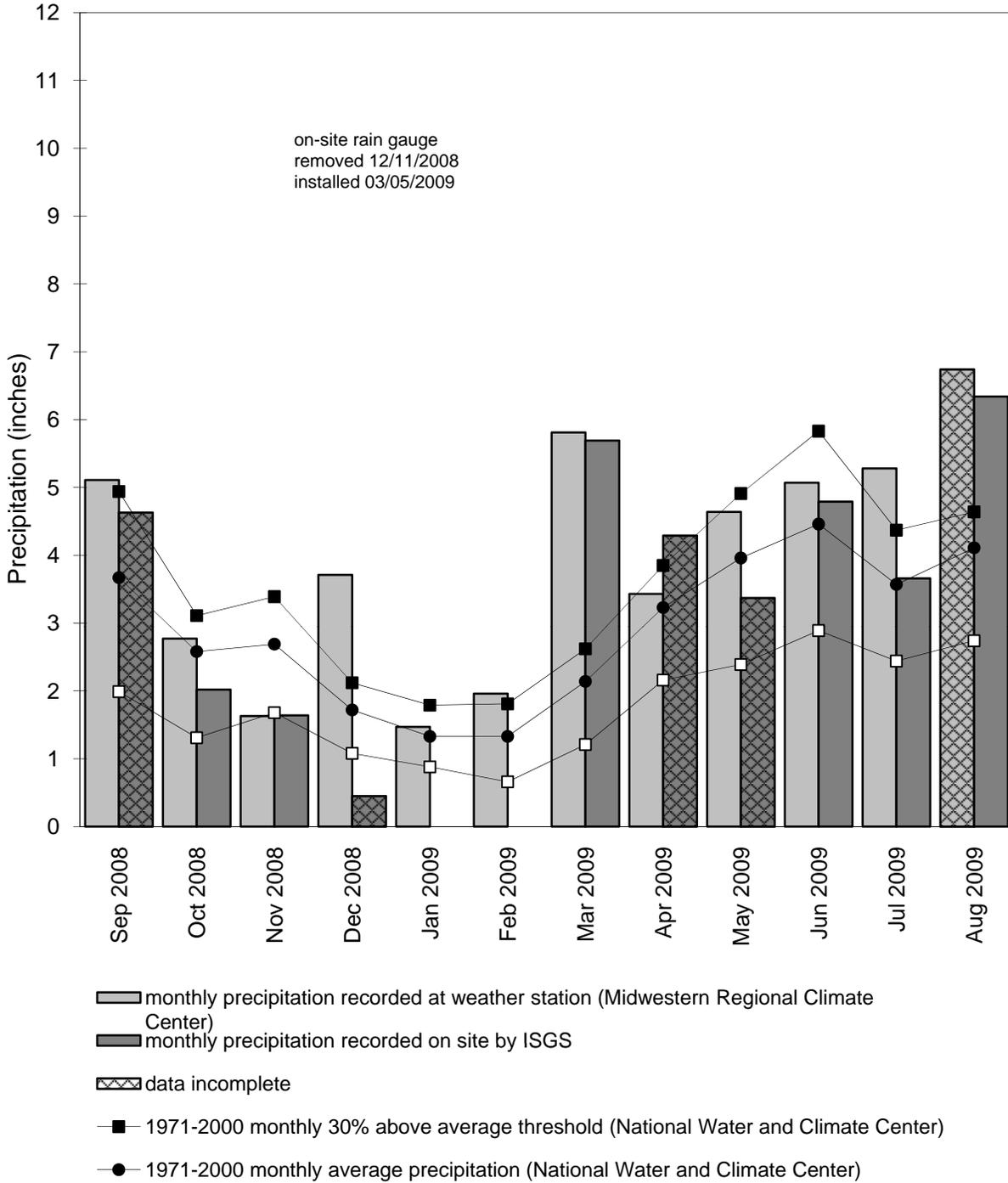


Pecatonica River Forest Preserve Wetland Compensation Site September 1, 2008 through August 31, 2009



**Pecatonica River Forest Preserve
Wetland Compensation Site
September 2008 through August 2009**

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



Graph last updated October 22, 2009