ANNUAL REPORT FOR ACTIVE IDOT WETLAND COMPENSATION AND HYDROLOGIC MONITORING SITES

September 1, 2007 to September 1, 2008

Christine S. Fucciolo
Steven E. Benton
Kathleen E. Bryant
Keith W. Carr
Charles W. Knight
James J. Miner
Eric T. Plankell
Geoffrey E. Pociask

Wetlands Geology Section
615 East Peabody Drive
Champaign, IL 61820-6964

Submitted Under Contract Number IDOT 2008-03746-00-00 to
Illinois Department of Transportation
Bureau of Design and Environment, Wetlands Unit
2300 South Dirksen Parkway
Springfield, IL 62764-0002

November 1, 2008

University of Illinois at Urbana-Champaign
Institute of Natural Resource Sustainability
Illinois State Geological Survey
Open File Series 2008–03

INTRODUCTION

This report was prepared by the Illinois State Geological Survey (ISGS) to provide the Illinois Department of Transportation (IDOT) with hydrogeologic data collected from wetland compensation sites and potential wetland compensation sites being monitored under contracts IDOT 2007-04065 ANTIC and 2008-03746-00-00. Where appropriate, this report also includes a determination of areas meeting wetland hydrology criteria listed in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and its online updates (http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf). Additional activities performed under this contract, such as water-quality monitoring, are not included in this report. Other site observations are included where appropriate.

Summaries of 20 sites are included in this report. Most summaries contain a location map, a site map showing field instruments and the extent of area satisfying wetland hydrology criteria, hydrographs for selected monitoring wells, and local precipitation data for the period. Site locations are shown on Figure 1, and a list of site names is presented in Table 1. All data included in this report are from September 1, 2007 to September 1, 2008 at IDOT's request, except where noted.

METHODS

The primary purpose of this report is to determine the area within each wetland compensation site that satisfies the wetland hydrology criteria listed in the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and its online updates (http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf). However, to be a wetland, an area must also satisfy soils and vegetation criteria that are assessed by the Illinois Natural History Survey (INHS). INHS will combine the hydrologic data presented in this report with vegetation and soils data they collect, determine the total wetland area of each compensation site, and report it under separate cover. The total wetland area determined by INHS may differ from the areas that satisfy the wetland hydrology criteria shown in this report.

An area must be inundated or saturated for no less than 5% of the growing season in order to satisfy wetland hydrology criteria. These areas will be determined to be jurisdictional wetlands if vegetation and soils criteria mentioned above are also met. Areas that are inundated or saturated for greater than 12.5% of the growing season satisfy wetland hydrology criteria in a conclusive manner, and strongly indicate wetland conditions regardless of soils and vegetation, which may be inconclusive or may not respond as rapidly as wetland hydrology after site construction activities. To assist in proper characterization of wetland compensation sites where soils or vegetation data may be inconclusive, this report shows areas that are inundated or saturated for greater than 5% of the growing season as well as areas that are inundated or saturated for greater than 12.5% of the growing season. Inundation occurs when surface water is present at depths no greater than 2 meters (m) (6.6 feet) (ft). Saturation occurs when the water table is no deeper than 30 centimeters (cm) (1 ft) below land surface.

The Midwestern Regional Climate Center (MRCC) provides data regarding the length and beginning date of the growing season (Midwestern Regional Climate Center 2008). The growing season is defined as the time period between the last occurrence of 28°F (-2.2°C) air temperatures in spring to the first occurrence of 28°F (-2.2°C) air temperatures in the fall. The median beginning date and length of growing season are calculated by the MRCC for individual climate observation stations throughout the state. Data from the nearest observation station with an adequate period of record are used for each site.

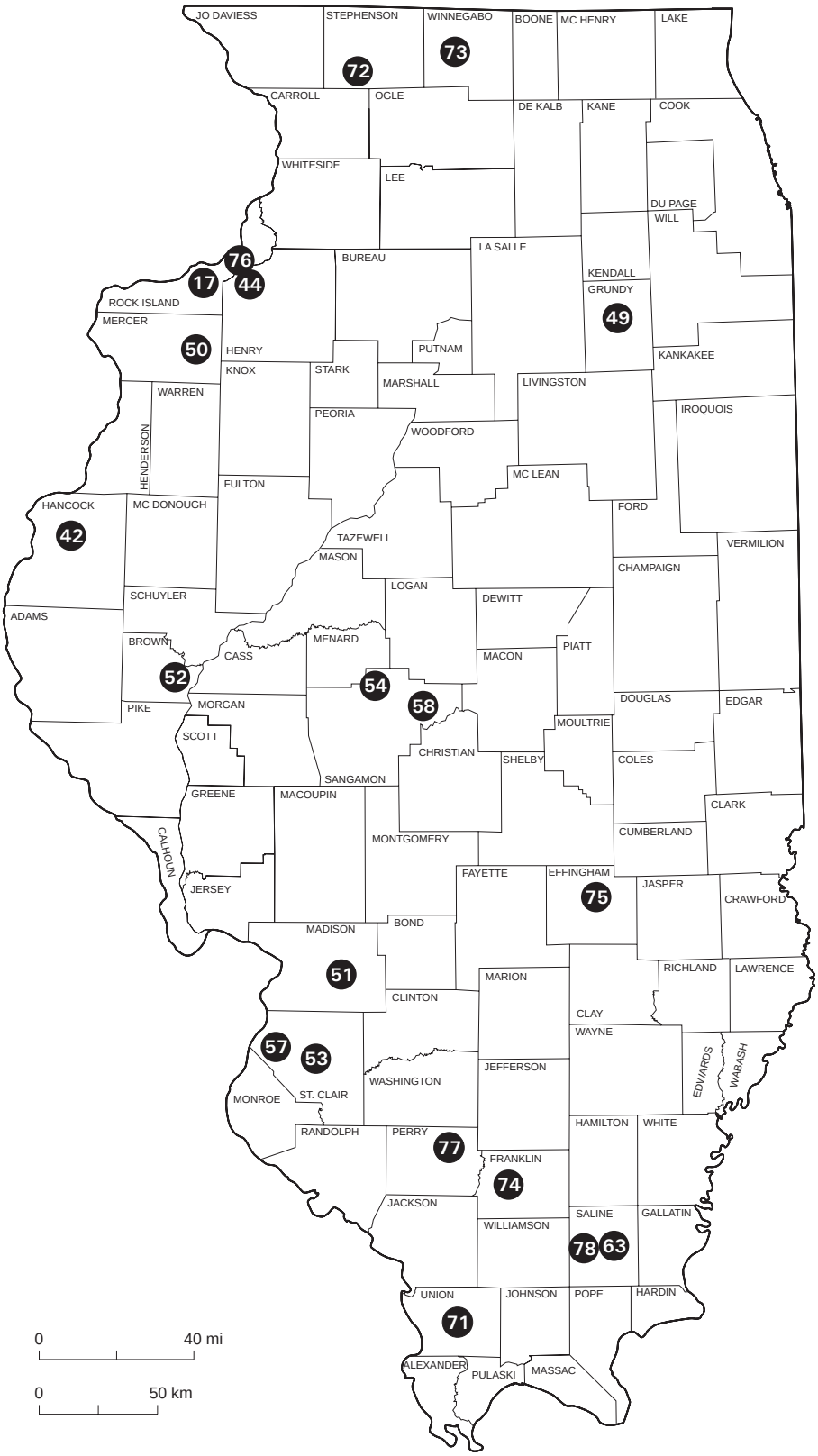


Figure 1 General locations of sites monitored by ISGS for IDOT between September 1, 2007 and September 1, 2008. Numbers indicate ISGS project numbers and are explained in Table 1.

Active IDOT Water-Level Monitoring Sites
September 1, 2007 to September 1, 2008

ISGS #	Site Name Route # FAP # Sequence #
17	Milan Beltway, Airport Road FAU 5822 Sequence #67
42	Hancock County near Carthage US 136 FAP 315 & 10 Sequence #235
44	Milan Beltway, Green Rock FAU 5822 Sequence #67
49	Morris, Illinois River Wetland Bank Sequence #1306
50	Edwards River, Mercer County US 67 FAP 310
51	Former Luehmann Property New River Crossing FAP 999
52	Former Wessel Property, La Grange Wetland Bank Sequence #9579
53	Fairmont City New River Crossing FAP 999
54	Springfield IL 29 FAP 658
57	Former Tiernan Property New River Crossing FAP 999 Sequence #33G
58	Buckhart TR 478 FAS 1637 Sequence #10531
63	Harrisburg US 45 FAP 332
71	Tamms IL 127 FAS 1907 Sequence #1026
72	Freeport Bypass West Site 6W US 20 FAP 301 Sequence #10487
73	Pecatonica River Forest Preserve Harrison Avenue Extension Sequence #3746
74	Sugar Camp Creek IL 3 FAP 312 Sequence #9282
75	Green Creek IL 32/33 Sequence #12505
76	Milan Beltway, Augustana/Rock Island FAU 5822 Sequence #67
77	Perry County, Pyramid Site EC25 FAS 864 Sequence #9778
78	Harrisburg, Site 2 IL 14 FAP 857

Table 1 ISGS project numbers and active water-level sites monitored by ISGS for IDOT between September 1, 2007 and September 1, 2008.

Wells and stage gauges where water levels satisfied wetland hydrology criteria are listed in the text for each site. Interpolation between measuring points and/or extrapolation are used to locate the boundary of the area that satisfies wetland hydrology criteria. Best professional judgment is used to refine the location of this boundary, using small-scale topographic features, vegetation, soils, and other site features. To measure the size of an area satisfying wetland hydrology criteria, the boundaries were plotted on the best available base map, then measured with a Tamaya Super Planix B digital planimeter and listed in hectares (ha) and acres (ac). Alternatively, geographic information systems (GIS) combined with computer contouring programs were used at some sites to map and calculate the area satisfying wetland hydrology criteria.

The error of each area measurement will vary significantly depending on the quality of the underlying base map, the precision in locating monitoring devices, and the precision of the planimeter or GIS at the scale of the base map. The base maps used for these determinations include as-built surveys (done both by IDOT and ISGS), construction plans, U.S. Geological Survey (USGS) 7.5-minute topographic maps, unrectified aerial photographs, and USGS digital orthophotograph quarter-quadrangle (DOQQ) maps (Illinois State Geological Survey 2008). Given the many potential sources of error, estimates of the amount of error are difficult to calculate and are not included. However, area measurements for each site may differ in the number of significant digits, reflecting the expected accuracy in the base map and the methods.

Water-level data were collected monthly throughout the year, and biweekly during April and May, when highest water levels generally are observed in Illinois. Biweekly readings continued into June on a site-by-site basis or were added during periods of high precipitation or flooding as needed. Weekly readings were made at some sites to improve or check accuracy.

At sites located in different parts of Illinois, 5% of the growing season ranges from about 9 to 11 days, and 12.5% of the growing season ranges from about 23 days to 28 days. Therefore, two consecutive biweekly measurements are required to satisfy wetland hydrology criteria at 5% of the growing season, and three readings are required at 12.5% of the growing season. If fewer readings suggest wetland hydrology, then interpolation of the water levels is performed to determine total number of days of inundation or saturation. Interpolation between two dates is not performed if a water level is not recorded for both dates. Flooding that prevents measurement of any specific instrument is considered sufficient evidence of inundation for that site visit. Manual water-level measurements are often supplemented with various automated data loggers that measure daily or more frequently. These data loggers are used to determine the timing of hydrologic events such as precipitation or flooding that occur between manual measurements. One manual measurement alone is generally considered insufficient to indicate inundation or saturation for a sufficient duration without the identification of a precipitation or flooding event that would have initiated the inundation or saturation. If conflicts occur between automatic and manually recorded data, best professional judgment is used to solve any conflicts in data, and a specific note may be added to the site summary in question.

Monitoring wells are given an alphanumeric designation based in part on their relative depths. Monitoring wells designated with an “S” or “VS” are shallow and are specifically constructed for measuring wetland hydrology in the soil zone. Monitoring wells designated with a “U” (upper) have varying depths but are deeper than “S” wells, and may be used to determine wetland hydrology depending on the depth of the well screen, as determined by the project manager. Other types of wells, including “M”, “L”, and “D”, are deeper wells used to collect other hydrogeologic data and cannot be used to determine wetland hydrology. They are included only to document ISGS activities at the site and are discussed in other ISGS contract reports to IDOT.

Graphs for each site show water-level elevations at wells and surface-water instruments, and depth-to-water below land surface at each well. Depths are shown as negative values when water levels are above land surface. Elevations are shown relative to the National Geodetic Vertical Datum (NGVD) of 1929 or the National American Vertical Datum (NAVD) of 1988. The water levels recorded during the year are shown in the charts accompanying each site summary. For small sites, all measurements are shown on the same chart. For sites with more instruments, similar types of instruments are grouped on individual charts; for example all "S" wells may be on a single chart. For the largest sites, there may be several charts for a single type of instrument. If no data are shown on the charts for any specific well, then the well was either dry or not read, or the data were removed for quality-control purposes (see below). Charts lacking any well data were not included in this report.

Multiple data loggers were used to monitor water levels continuously at many sites. Several types of instruments are being used, each made by a different manufacturer. Each type of instrument has different operations and default values. We have removed or labeled any incorrect readings that result when the instrument is dry (e.g. "0" or other default values identified during installation). Other spurious readings that occurred due to data-logger malfunction or natural conditions that cause inaccuracies (e.g. vegetation growth or debris accumulation beneath the logger) were removed after interpretation by ISGS scientists.

On-site precipitation data were collected by ISGS using several types of tipping-bucket rain gauges. Due to inherent difficulties in maintaining rain gauges (e.g., clogging, equipment malfunction, timing of deployments), actual precipitation for each month may be greater than the recorded value. Because all ISGS gauges are nonheated and must be removed in the winter, monthly precipitation data are also shown from climate observation stations maintained year-round by the MRCC (Midwestern Regional Climate Center 2008). The closest weather station with an adequate period of record is used at each site, and additional stations may be used to supplement the record if data from the closest station are missing. Normal (i.e. mean, average) precipitation values, and the above- and below-normal range threshold values are calculated by the National Water and Climate Center (NWCC) (National Water and Climate Center 2008) and are all based on a 30-year period, between either 1961 and 1990 or 1971 and 2000 based on a 2-parameter gamma distribution over the 30-year period (National Water and Climate Center 1995). Precipitation is classified as "above 30% threshold", or above the normal range, when there is a 30% chance precipitation will be greater than or equal to the value shown. Precipitation is "below 30% threshold", or below the normal range, when there is a 30% chance that precipitation will be less than or equal to the value shown. Precipitation is considered to be within the normal range when neither above nor below the 30% thresholds. Precipitation may be described relative to "normal" (meaning average or mean) or the "normal range" as defined above.

This document is intended to be a summary of all hydrologic data collected under this contract during the reporting period. Therefore, some details have been omitted that may be necessary to interpret the data for other uses. The primary project manager listed for each site should be contacted for additional information.

REFERENCES

Environmental Laboratory, 1987, Corps of Engineers Wetlands Delineation Manual: U.S. Army Corps of Engineers Technical Report Y-87-1, Washington, D.C., 100 p. Available online at http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf.

Illinois State Geological Survey, 2008, Illinois Natural Resources Geospatial Data Clearinghouse, Illinois Digital Orthophoto Quarter Quadrangle Data: Illinois State Geological Survey, Champaign, Illinois, available online at http://www.isgs.uiuc.edu/nsdihome/webdocs/doqs/.

Midwestern Regional Climate Center, 2008, Midwestern Climate Information System: Illinois State Water Survey, Champaign, Illinois, available online at http://MRCC.sws.uiuc.edu/.

National Water and Climate Center, Natural Resources Conservation Service, 2008, Climate Analysis for Wetlands by County, available online at http://www.wcc.nrcs.usda.gov/climate/wetlands.html.

National Water and Climate Center, Natural Resources Conservation Service, 1995, WETS Table Documentation, available online at http://www.wcc.nrcs.usda.gov/climate/wets_doc.html.

MILAN BELTWAY, AIRPORT ROAD **ISGS #17**
WETLAND COMPENSATION SITE
FAU 5822
Sequence #67
Rock Island County, near Milan, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- Spring 1997: The sump pump on the east side of the site was turned off and later removed.

- August 1997: ISGS data collection was initiated with the installation of monitoring wells and staff gauges.

- August 2004: Construction of the Milan Bypass began. Wetland mitigation began with the excavation of the southern portion of the site. Tree planting began in Fall 2004 and was completed in Spring 2005.

- January 2005: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2005–04).

- December 2005: The ISGS was tasked by IDOT to perform post-construction monitoring.

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2008 growing season was estimated to be 6.1 ha (15.1 ac) out of a total area of 8.9 ha (22.0 ac). The area that satisfied wetland hydrology criteria for more than 12.5% of the growing season was estimated to be 4.7 ha (11.6 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.

- Total precipitation during the monitoring period was 99% of normal. Precipitation was at or above normal in December 2007, and in February, April, May, June, and July 2008. Total precipitation in the spring (April, May, and June) was 138% of normal.

- In 2008, wetland hydrology criteria were satisfied for more than 5% of the growing season at wells 1SR, 2SR, 5S, 6S, 7S, 8S, 10SR, 11S, 13S, 14S, 15S, 16S, 17S, and 18S, and for more than 12.5% of the growing season at wells 1SR, 2SR, 5S, 6S, 7S, 8S and 17S.

- Surface-water gauges showed that inundation occurred at gauges F, G, H, and I, and at RDS 4 during the growing season. At gauges F and G, in the excavated southern basin, surface water was observed on two dates, April 10 and June 11. However, the period of inundation was brief, insufficient to satisfy wetland hydrology criteria at even 5% of the growing season. At gauges H and I, and RDS 4, inundation persisted for almost 4 months

(April 10 to August 6), inundation occurred at an elevation greater than 171.84 m (563.81 ft) for more than 5% of the growing season, and 171.82 m (563.74 ft) for more than 12.5% of the growing season.

- Limitations of the wetland hydrology determination are as follows:
  - The area of wetland hydrology includes pre-existing wetland.

ADDITIONAL INFORMATION

- Approximately 0.5 ha (1.4 ac) of the excavated southern portion of the site, designated forested wetland on the as-built plan, satisfied wetland hydrology criteria at 5% of the growing season. This appears to be due primarily to runoff from Airport Road generated by heavy rain events on April 8 (0.17 in.) and April 10 (0.18 in.). Surface water was observed at gauges F and G on April 10, and soil saturation persisted at monitoring wells 10SR, 13S, 14S, 15S, and 16S for the first 10 days (5%) of the growing season.

PLANNED FUTURE ACTIVITIES

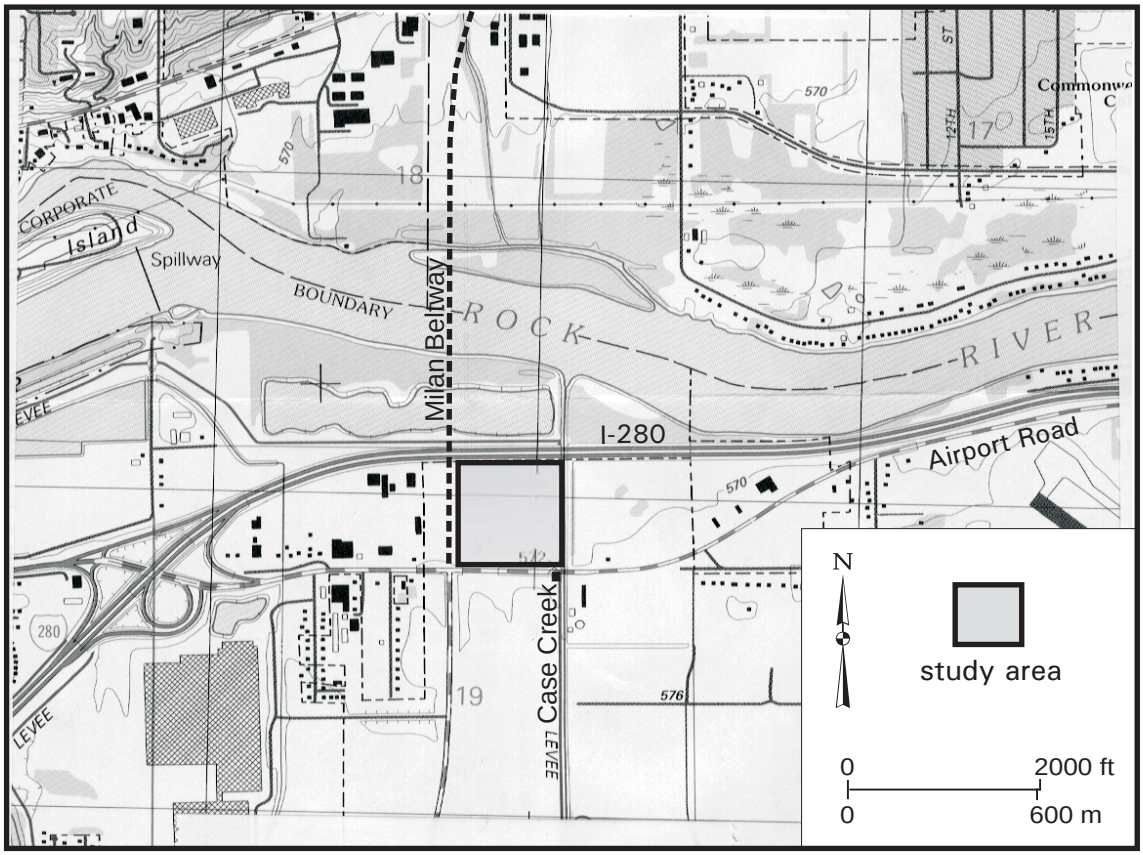
- Monitoring of the southern excavated basin in 2009 will include not only biweekly to weekly well readings, but also readings after heavy (>0.75 in.]) rain events.

- Monitoring of the site will continue until notified otherwise by IDOT.

Milan Beltway, Airport Road Wetland Compensation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Milan IL-IA 7.5-minute Quadrangle (USGS 1992)
contour interval is 10 feet

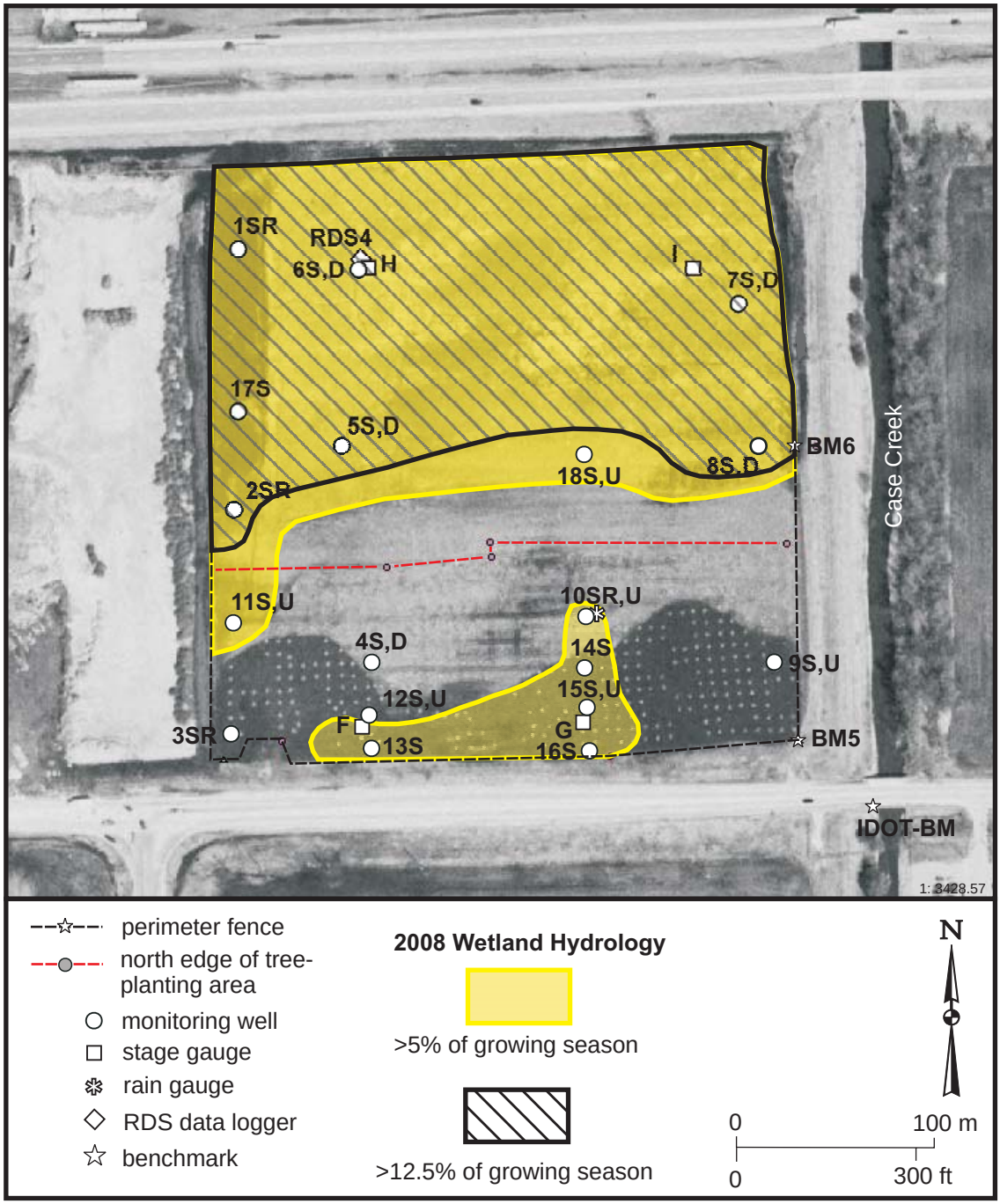


Milan Beltway, Airport Road Wetland Compensation Site (FAU 5822)

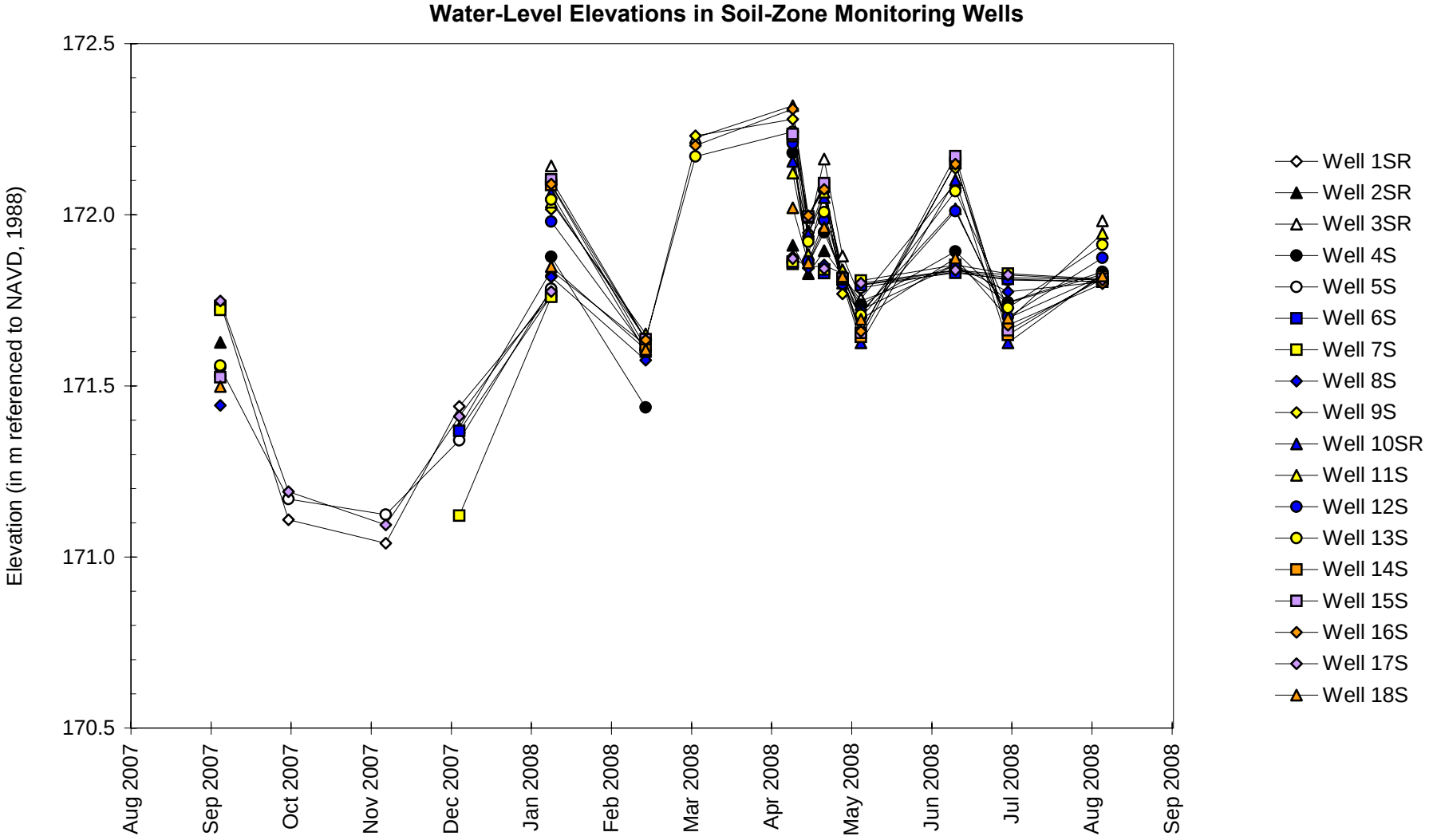
Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

Map based on USGS digital orthophotograph, Milan SW quarter quadrangle
from 03/30/2000 aerial photography (ISGS 2005)

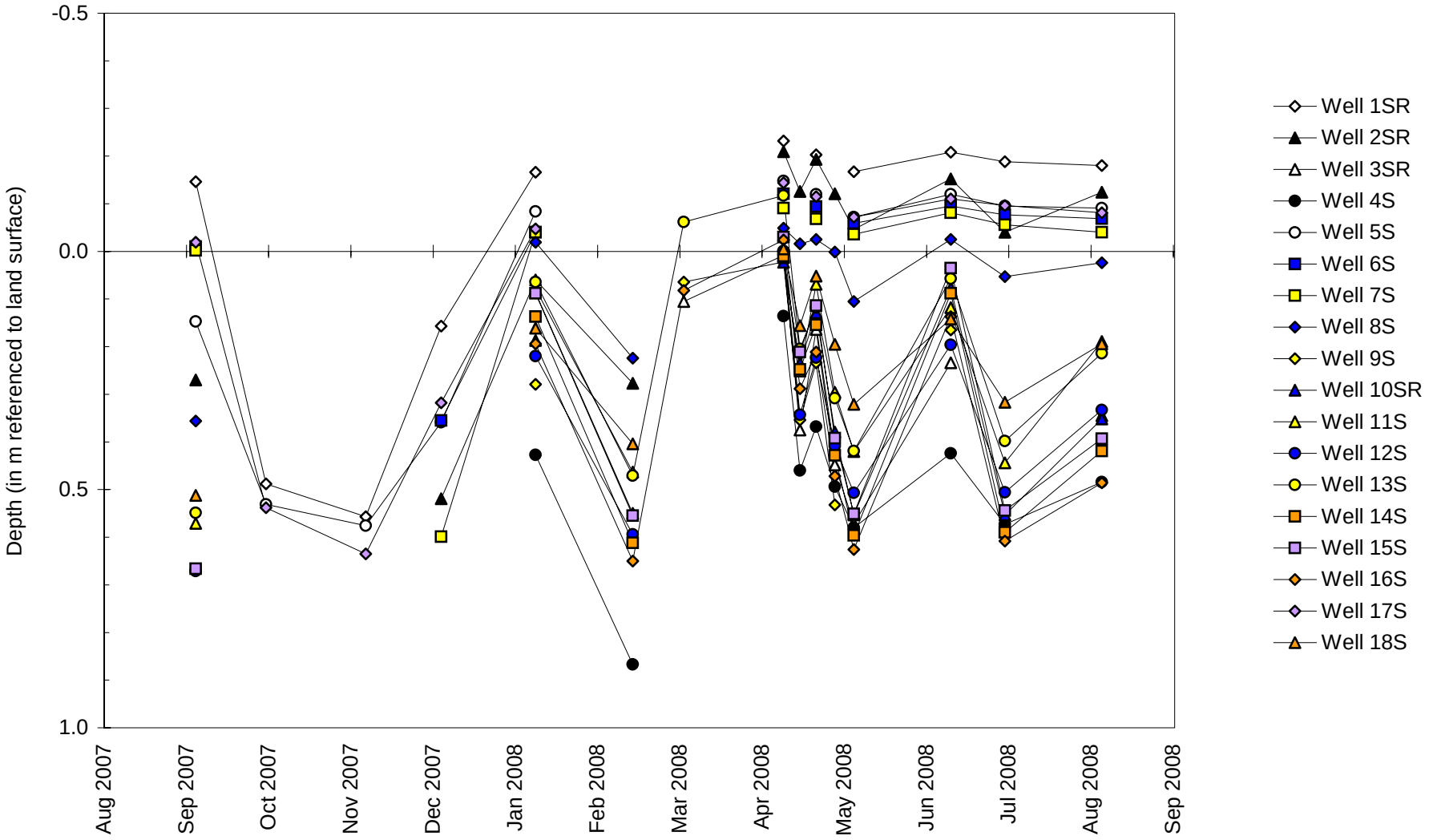


Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008

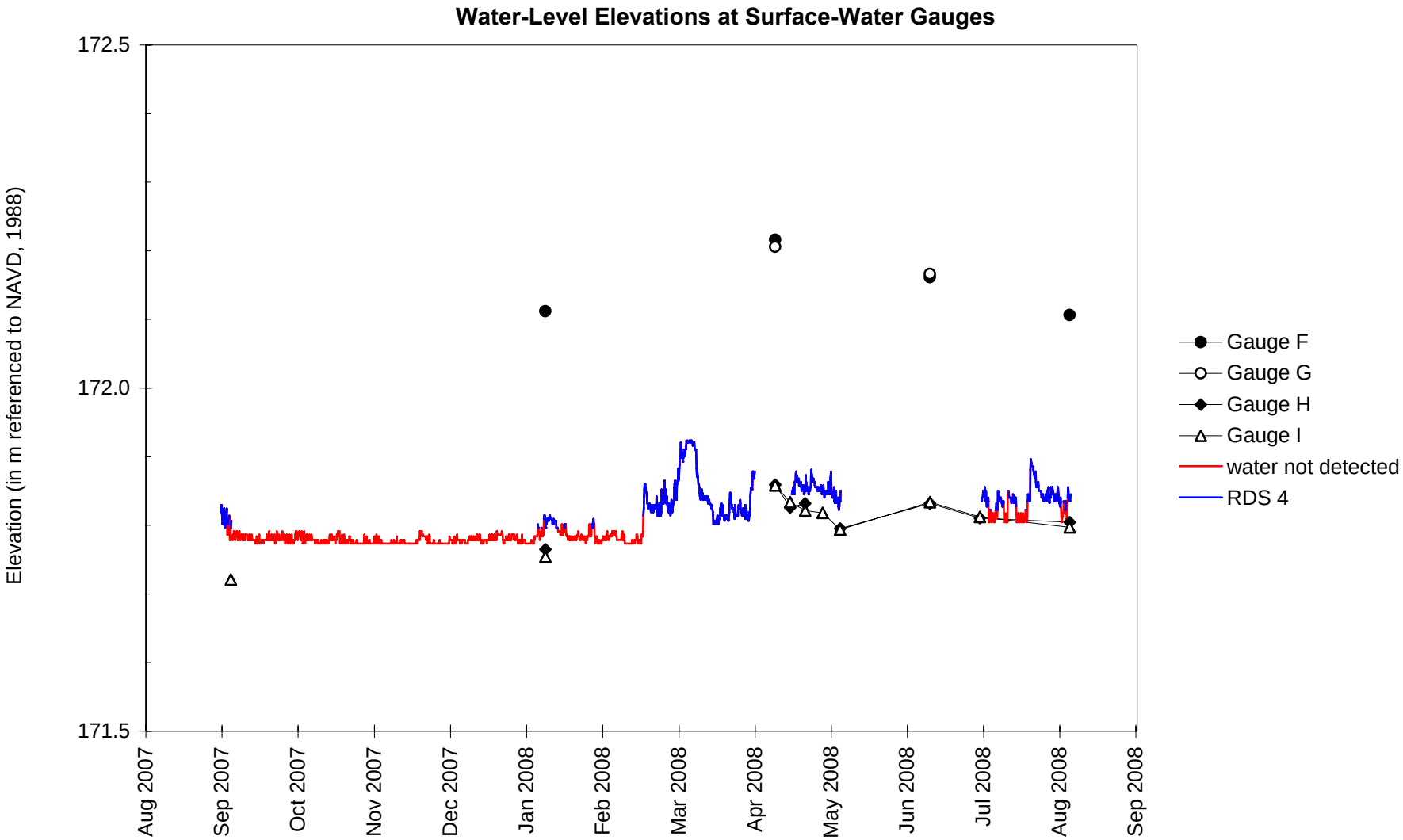


Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008

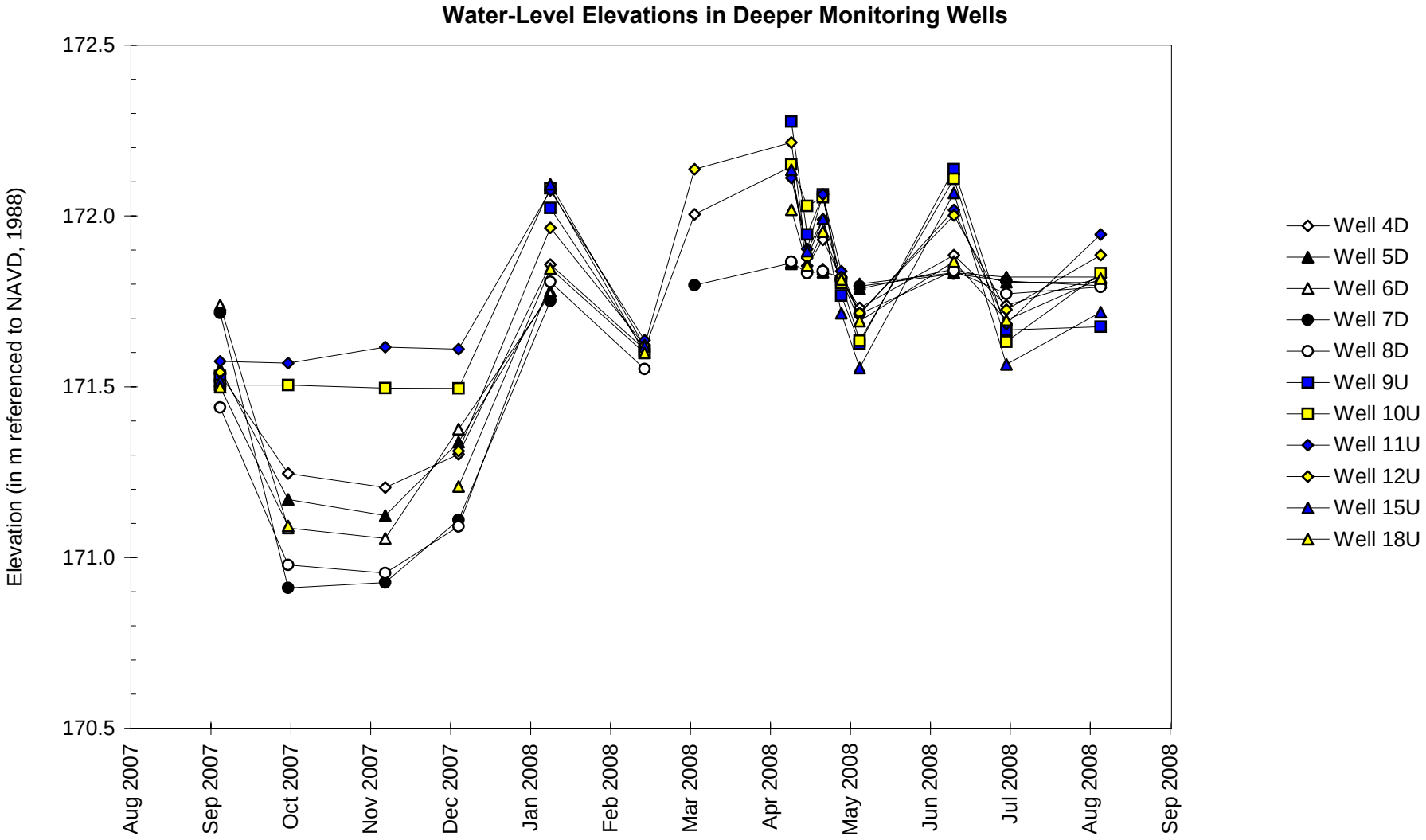
Depths to Water in Soil-Zone Monitoring Wells



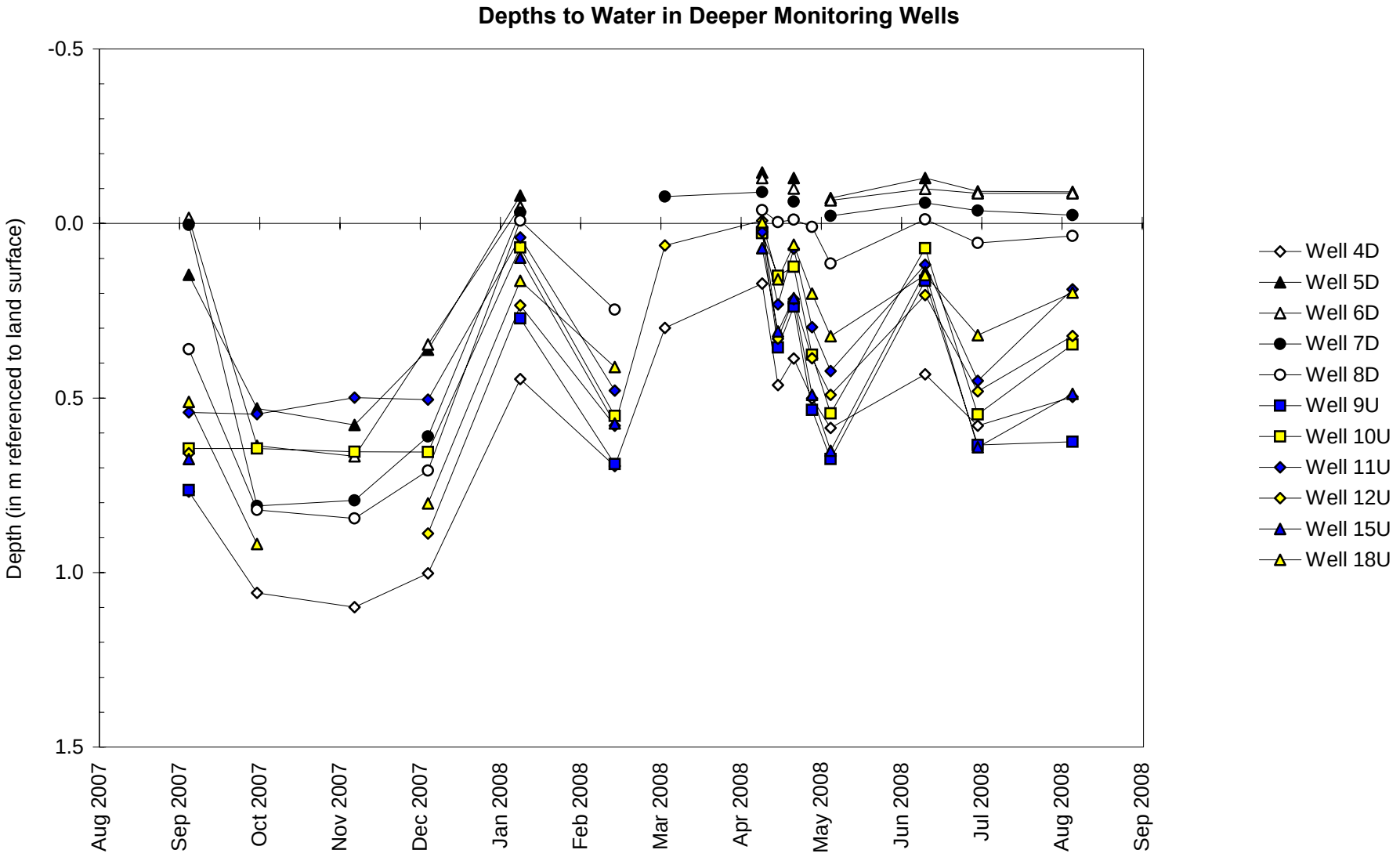
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008



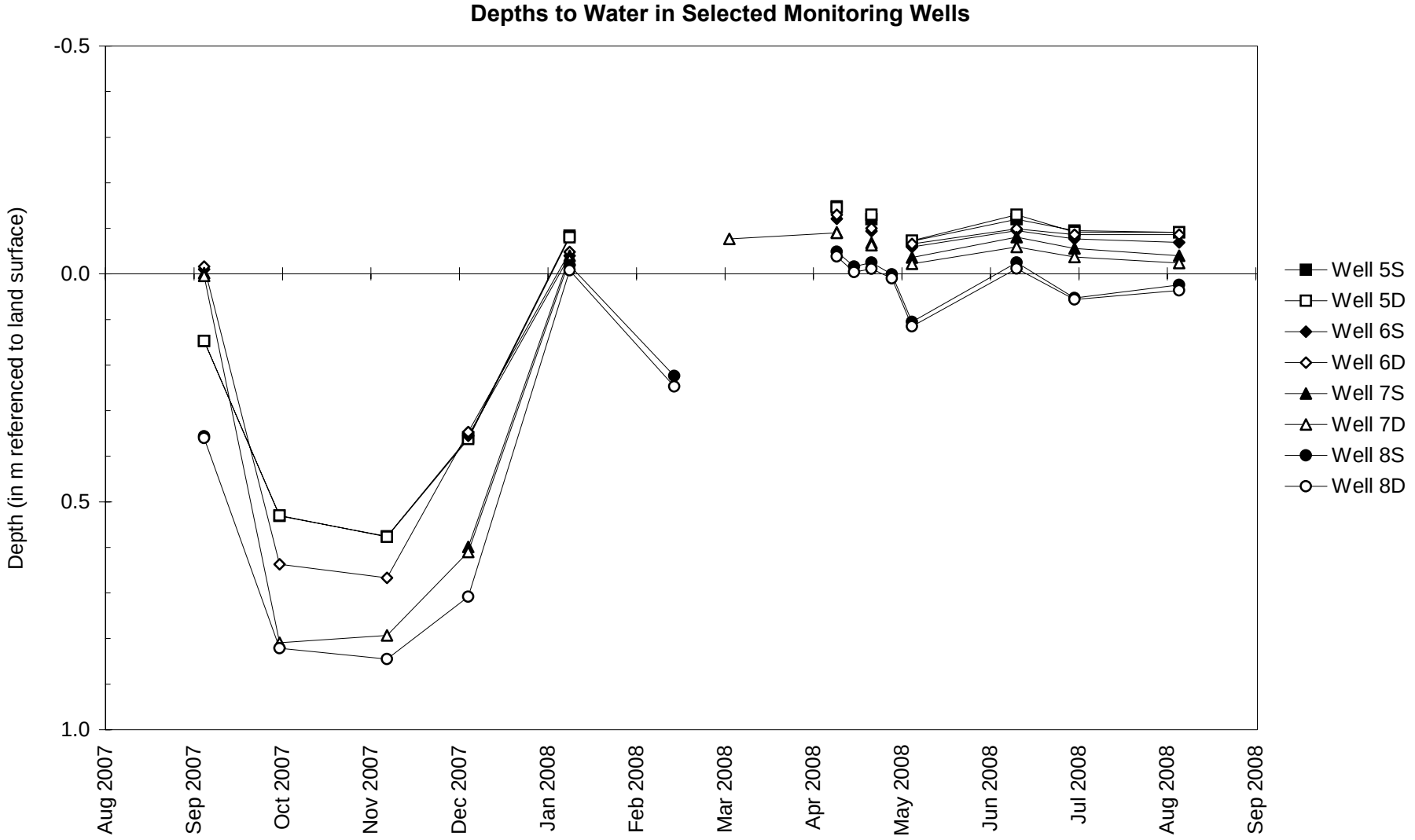
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008



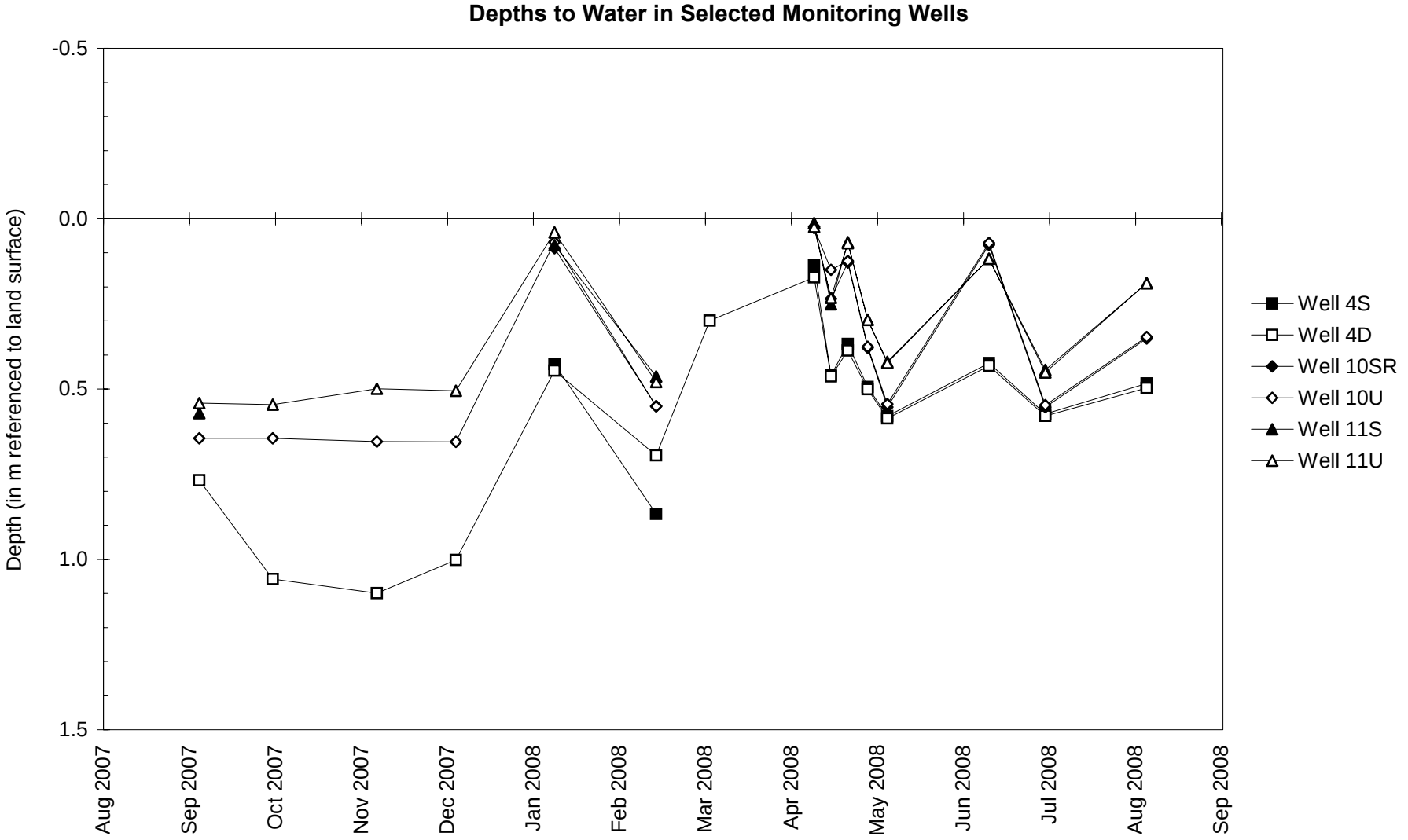
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008



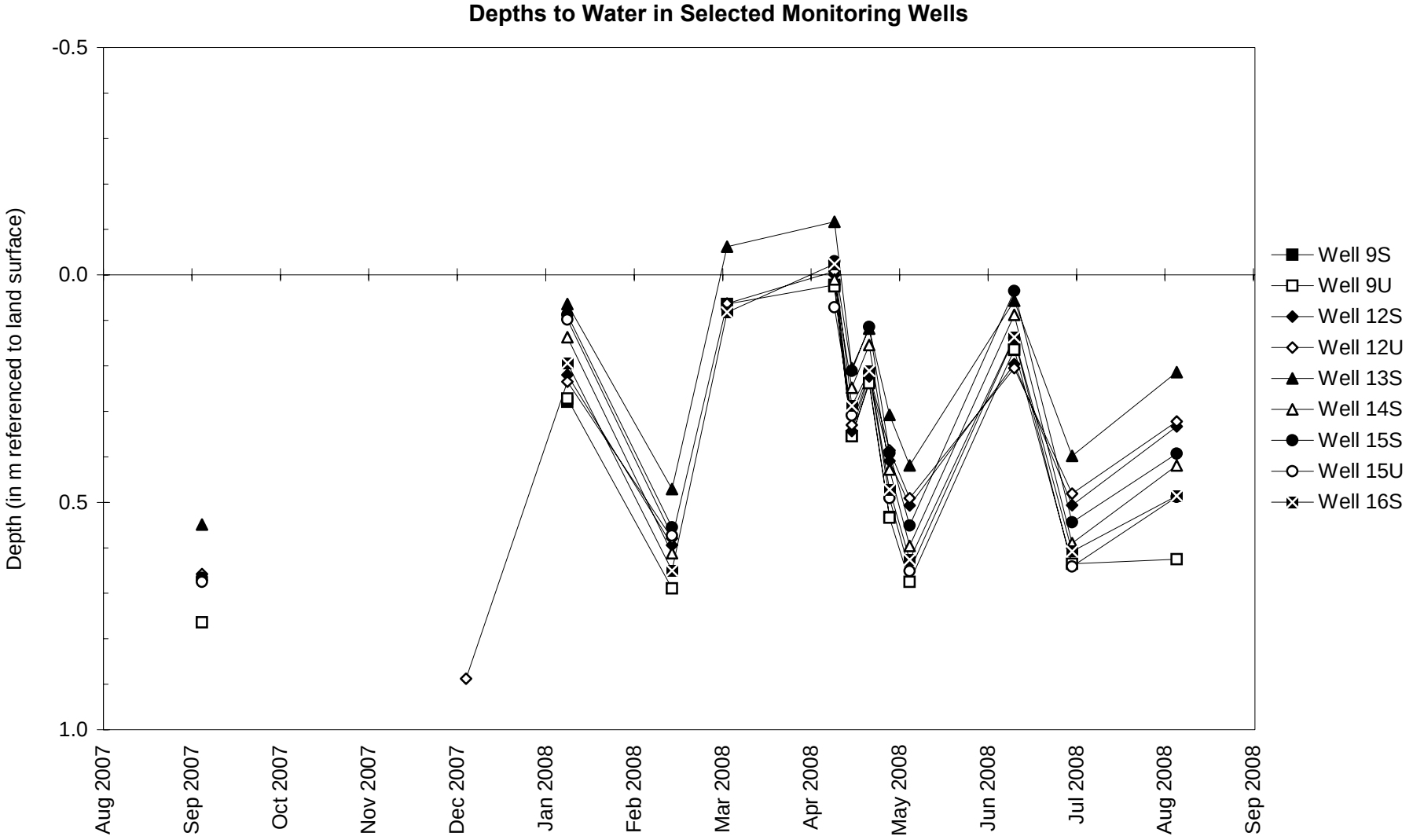
Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008

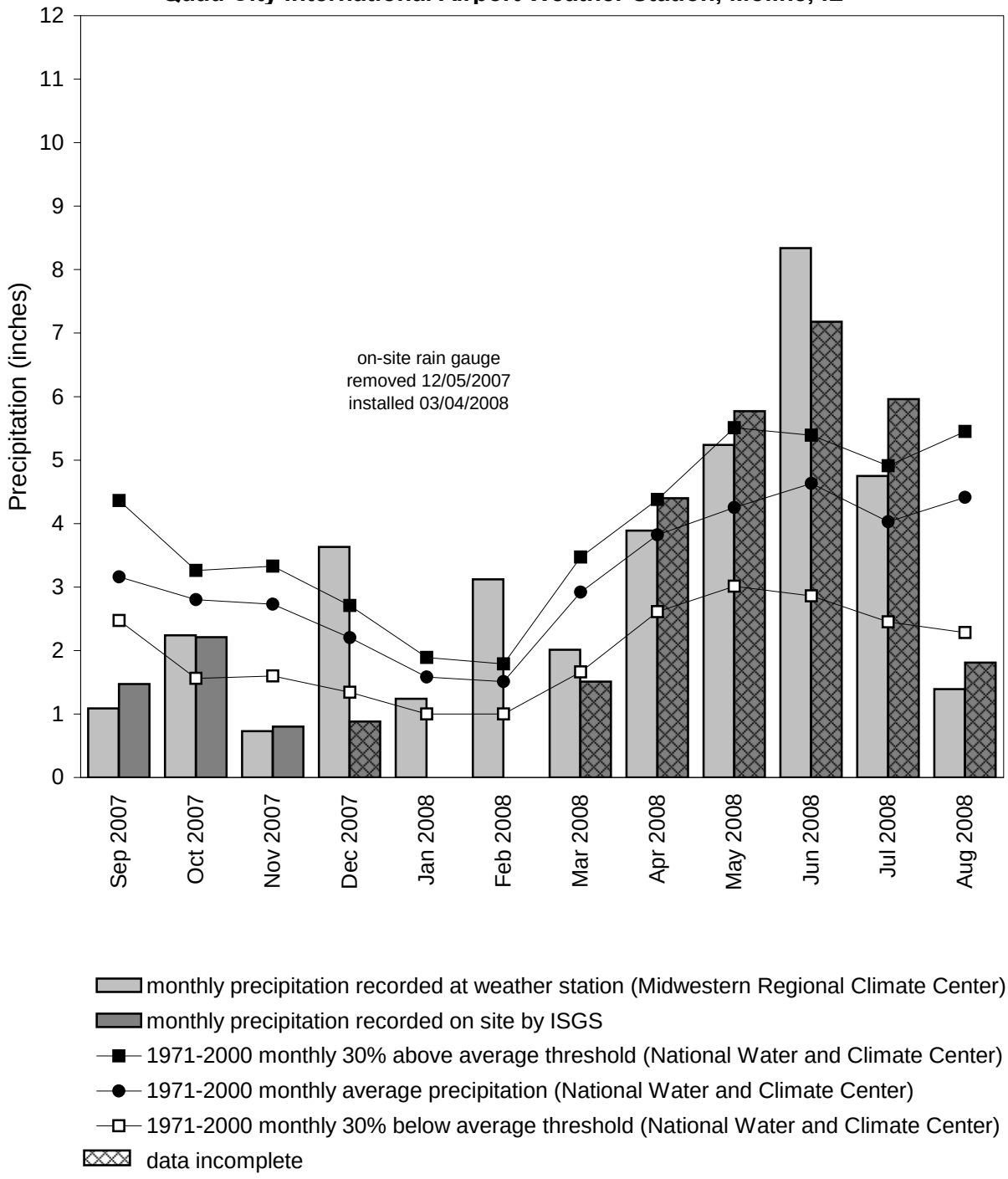


Milan Beltway, Airport Road Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Airport Road
Wetland Compensation Site
September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated October 7, 2008

HANCOCK COUNTY NEAR CARTHAGE **ISGS #42**
WETLAND COMPENSATION SITE
FAP 315 & FAP 10
Sequence #235
Hancock County, near Carthage, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- March 1997: IDOT tasked ISGS to monitor the site.
- August 2004: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2004–13).
- July 2006: Wetland and highway construction began.
- July 2007: Tree planting was completed.

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2008 growing season was estimated to be 14.2 ha (35.2 ac) out of an area of 17.9 ha (44.3 ac). The area of the site that satisfied wetland hydrology criteria for more than 12.5% of the growing season was estimated to be 9.8 ha (24.3 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby La Harpe, Illinois, is April 9 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.
- Total precipitation recorded at Bentley, Illinois during the monitoring period was 103% of normal. Precipitation was at or above normal in October and December 2007, and in January, February, March, April, June, and July 2008.
- Monitoring wells 1U, 2U, 3U, 4U, 5U, 6U, 7S, 8U, 10S, 11S, 12SR, 13S, 14S, 15S, 16S, 17S, 18S, 22S, 23S, 24S, 25S, 26S, 27S, 28S, 29S, 31S, 32S, and 34S satisfied the criteria for jurisdictional wetland hydrology at 5% of the growing season. With the exception of 2U, 7S, 10S, 11S, 12SR, 18S, 22S, and 24S, these monitoring wells also satisfied the criteria for jurisdictional wetland hydrology at 12.5% of the growing season.
- Surface-water elevations measured at RDS 1 were greater than or equal to 165.65 m (543.49 ft) for more than 5% of the growing season, and greater than or equal to 165.62 m (543.40 ft) for more than 12.5% of the growing season. Surface-water elevations measured at RDS 2 were greater than or equal to 165.75 m (543.82 ft) for more than 5% of the growing season, and greater than or equal to 165.72 m (543.73 ft) for more than 12.5% of the growing season. Surface-water elevations measured at RDS 3 were greater than or equal to 165.32 m (542.41 ft) for more than 5% of the growing season, and greater than or equal to 165.30 m (542.35 ft) for more than 12.5% of the growing season.

ADDITIONAL INFORMATION

- The entire emergent wetland area satisfied the criteria for jurisdictional wetland hydrology at both 5% and 12.5% of the growing season. The entire upland buffer satisfied the criteria for jurisdictional wetland hydrology at 5% of the growing season and a portion satisfied the criteria at 12.5% of the growing season. Most of forested wetland areas 1 and 2 satisfied the criteria at 5% and/or 12.5% of the growing season, but the only portion of forested wetland area 3 that satisfied the criteria at either 5% or 12.5% of the growing season was southwest of the drainage ditch that discharges into the La Moine River.

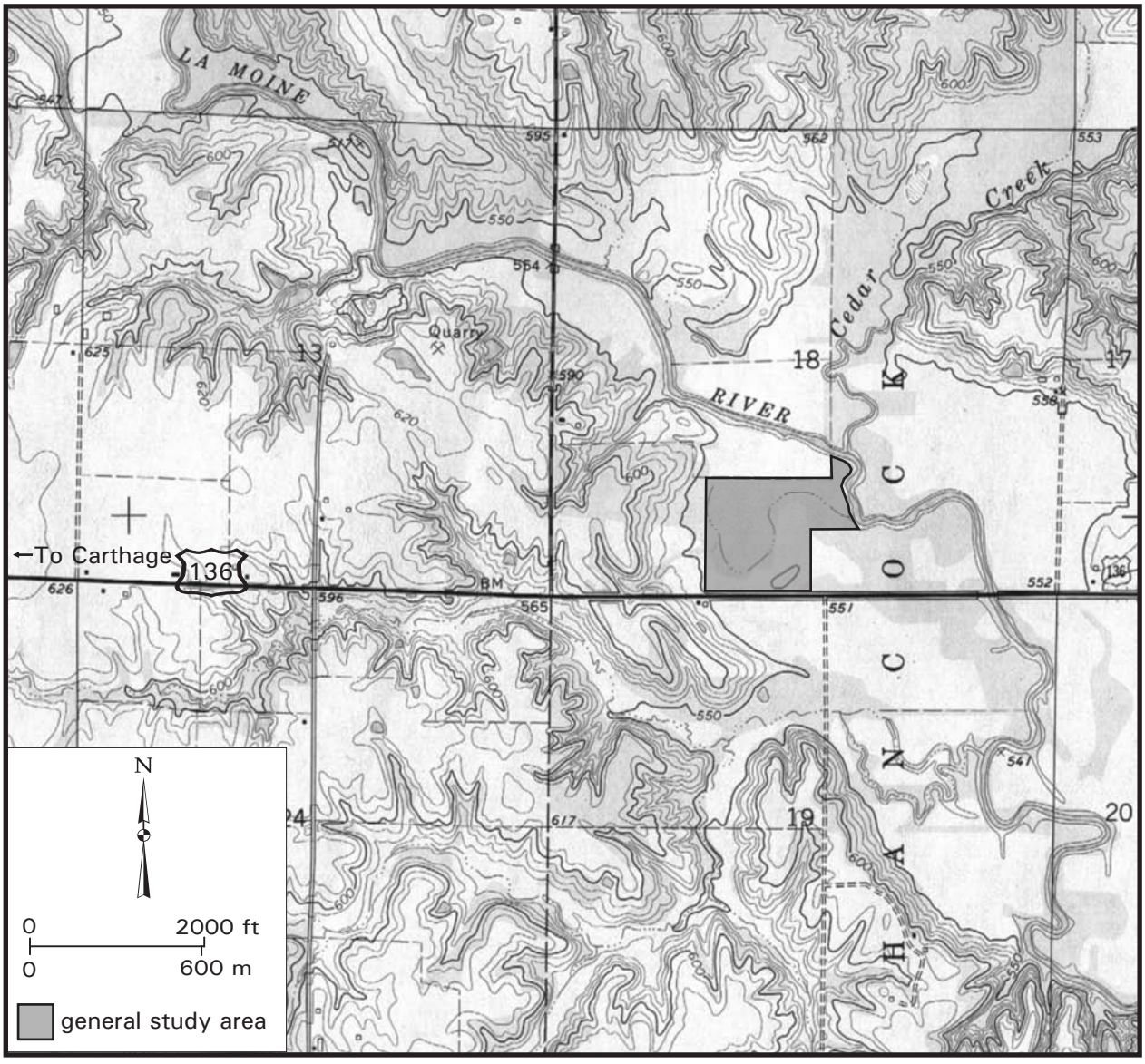
PLANNED FUTURE ACTIVITIES

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

Hancock County near Carthage
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

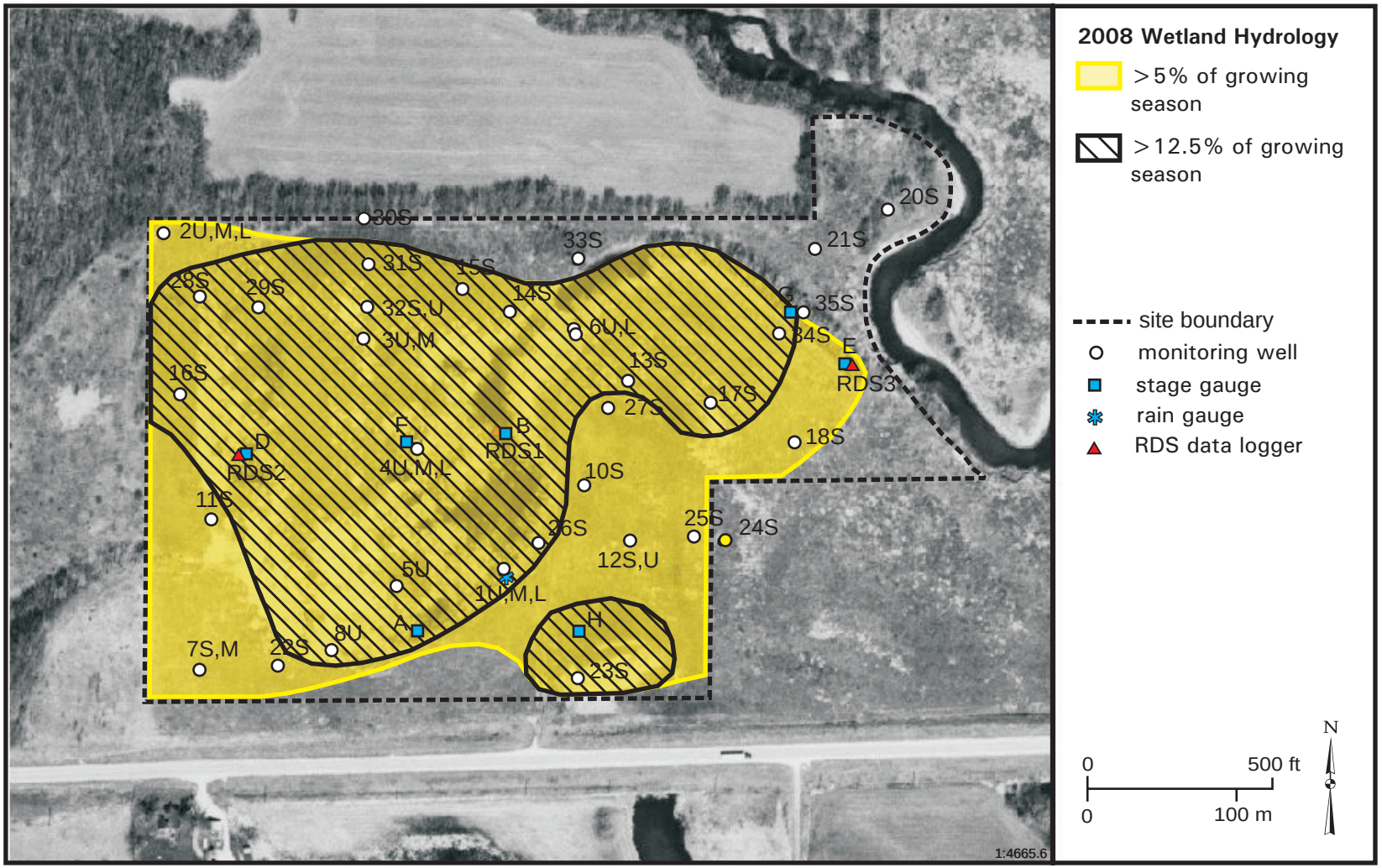


Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)

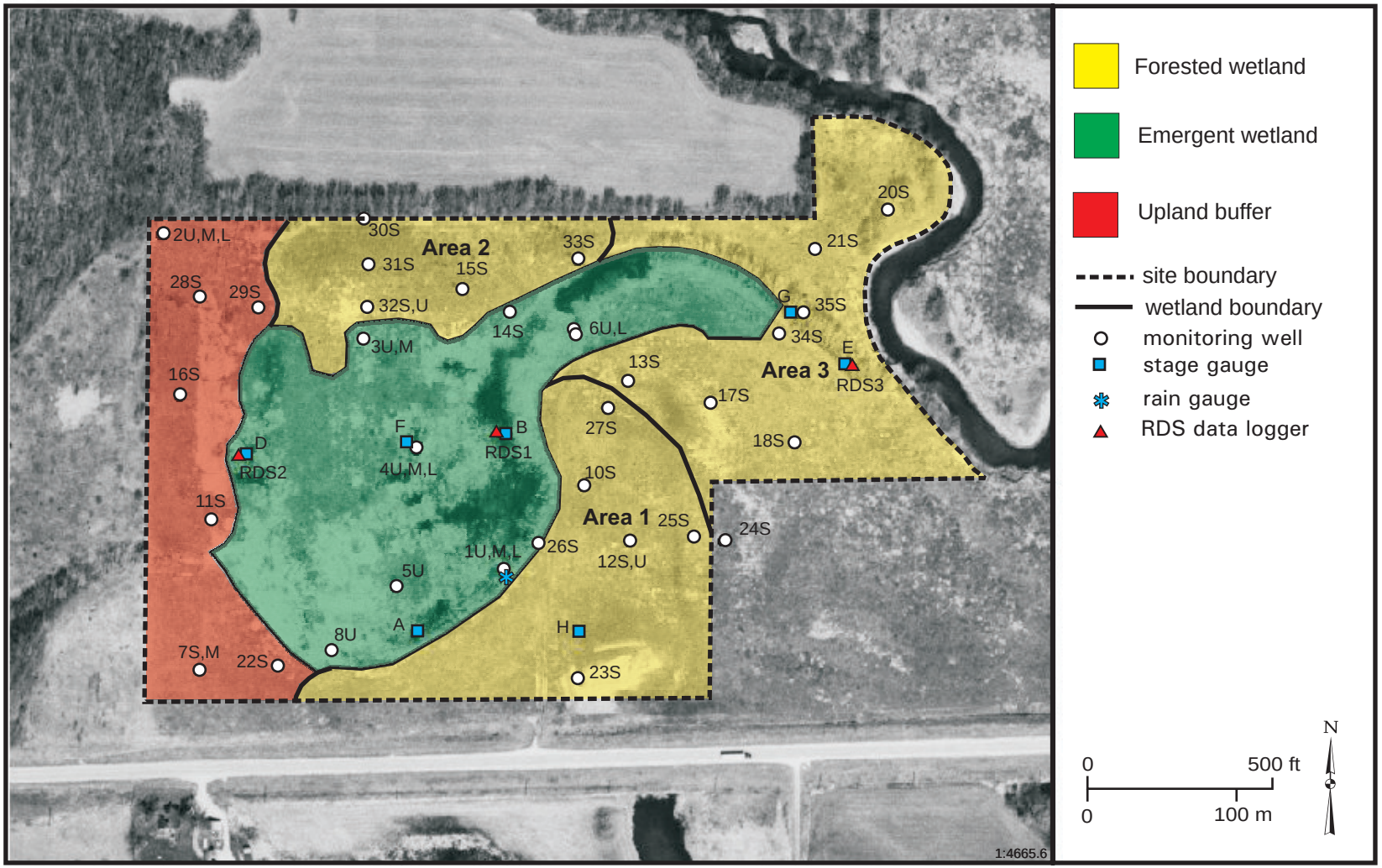


Hancock County near Carthage Wetland Compensation Site (FAP 315 and FAP 10)

Wetland and Nonwetland Site Areas

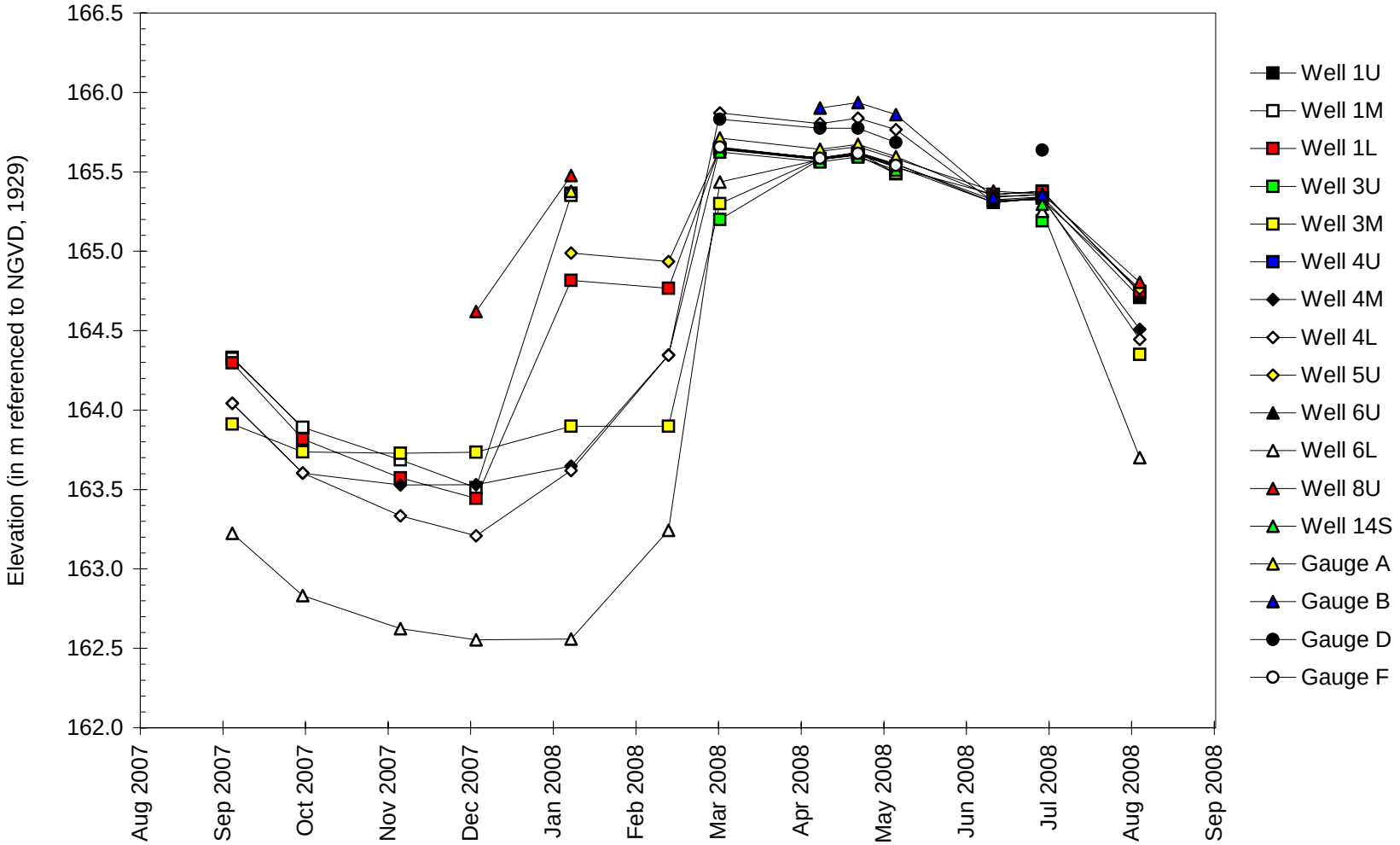
based on IDOT as-built plans

Map based on USGS digital orthophotograph, Carthage East SE quarter quadrangle
produced from 2005 aerial photography (ISGS 2005)

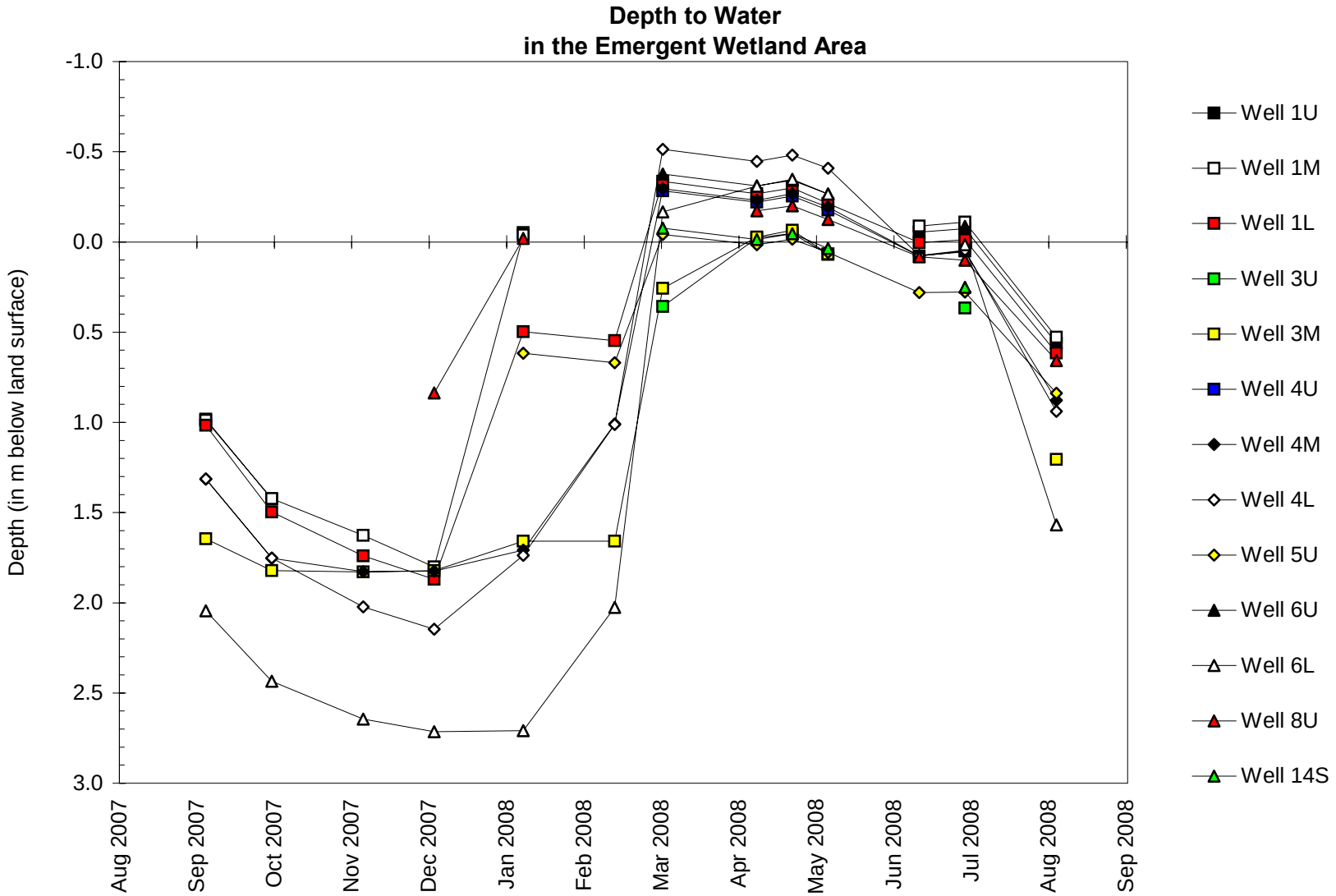


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in the Emergent Wetland Area

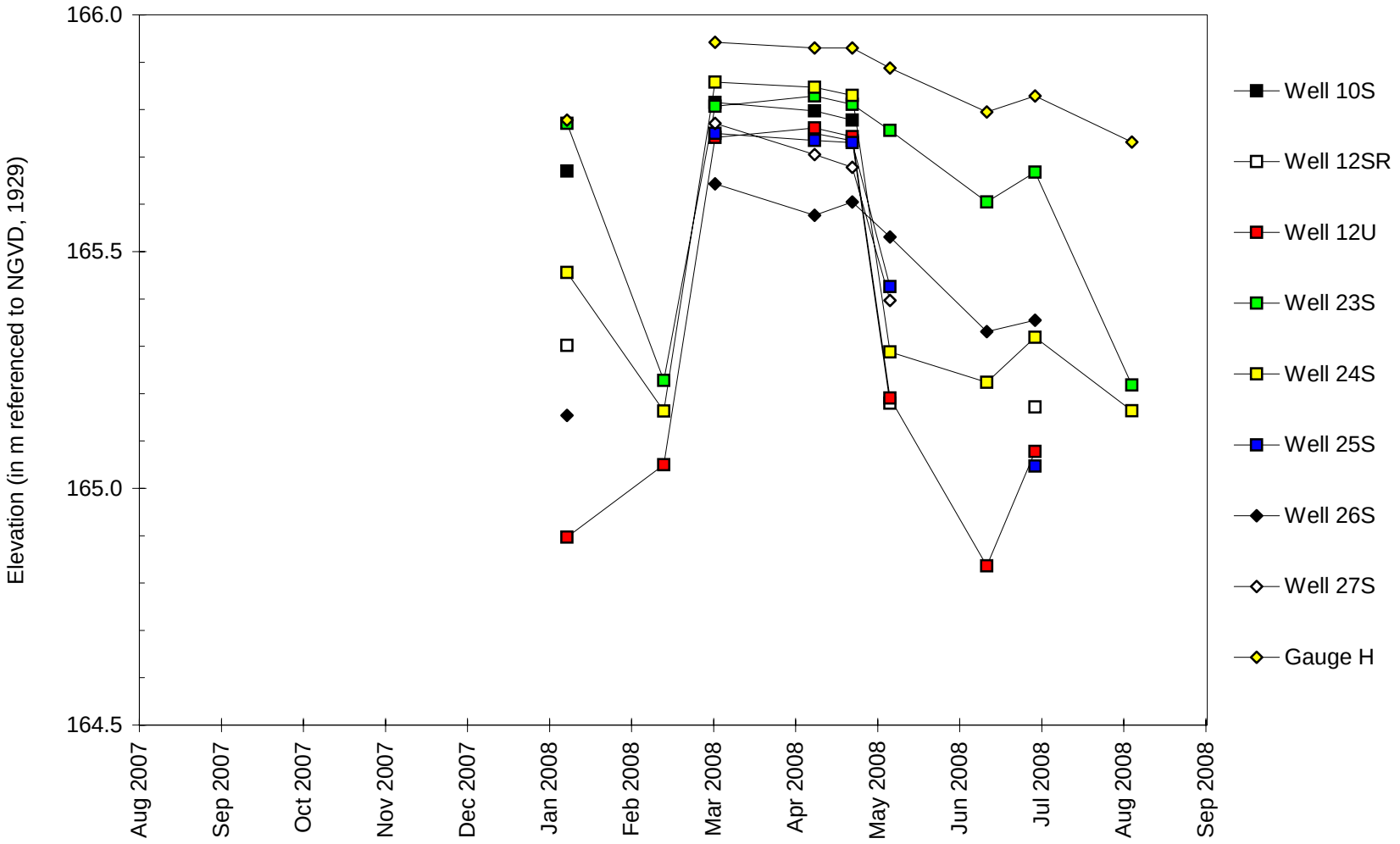


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

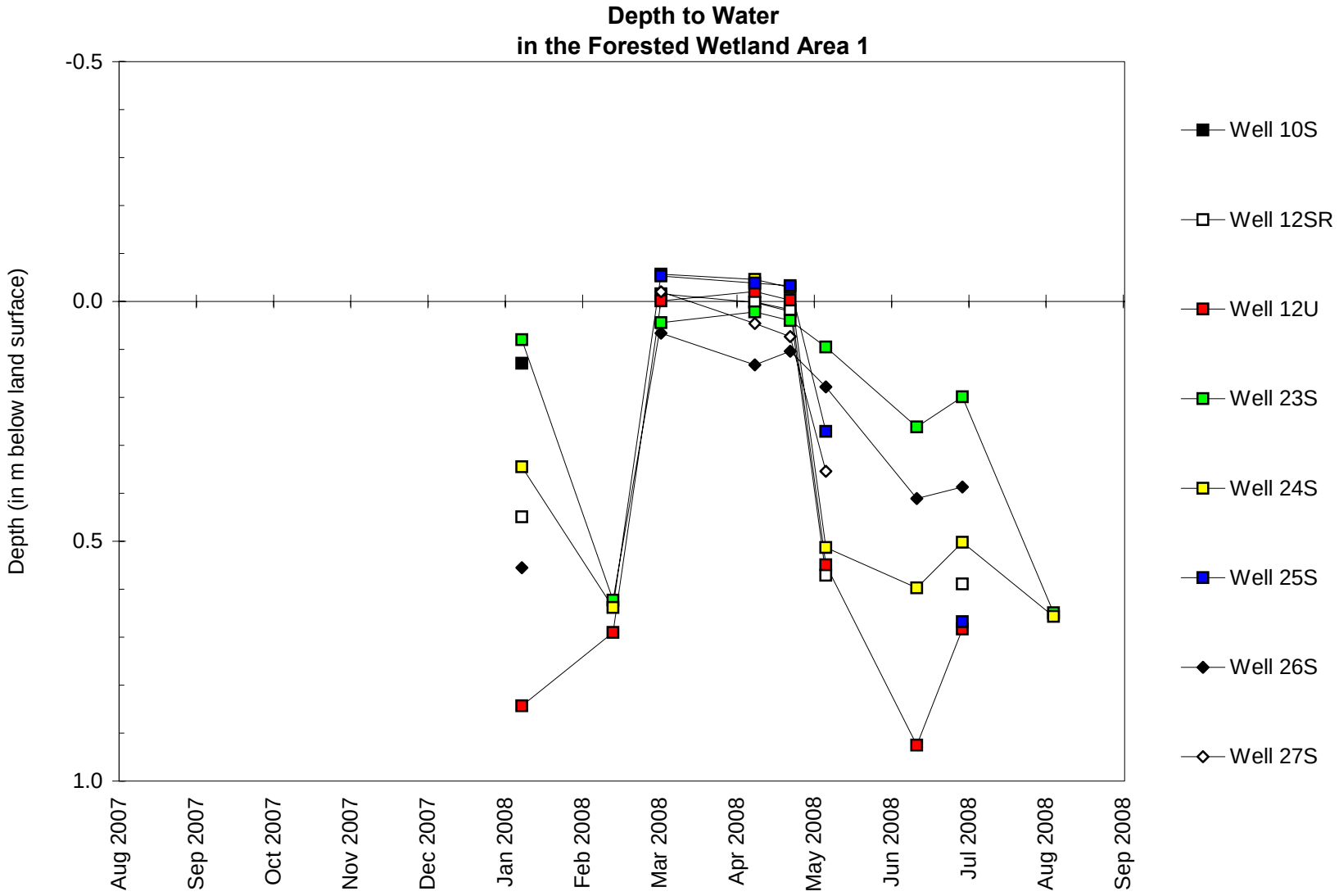


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in the Forested Wetland Area 1

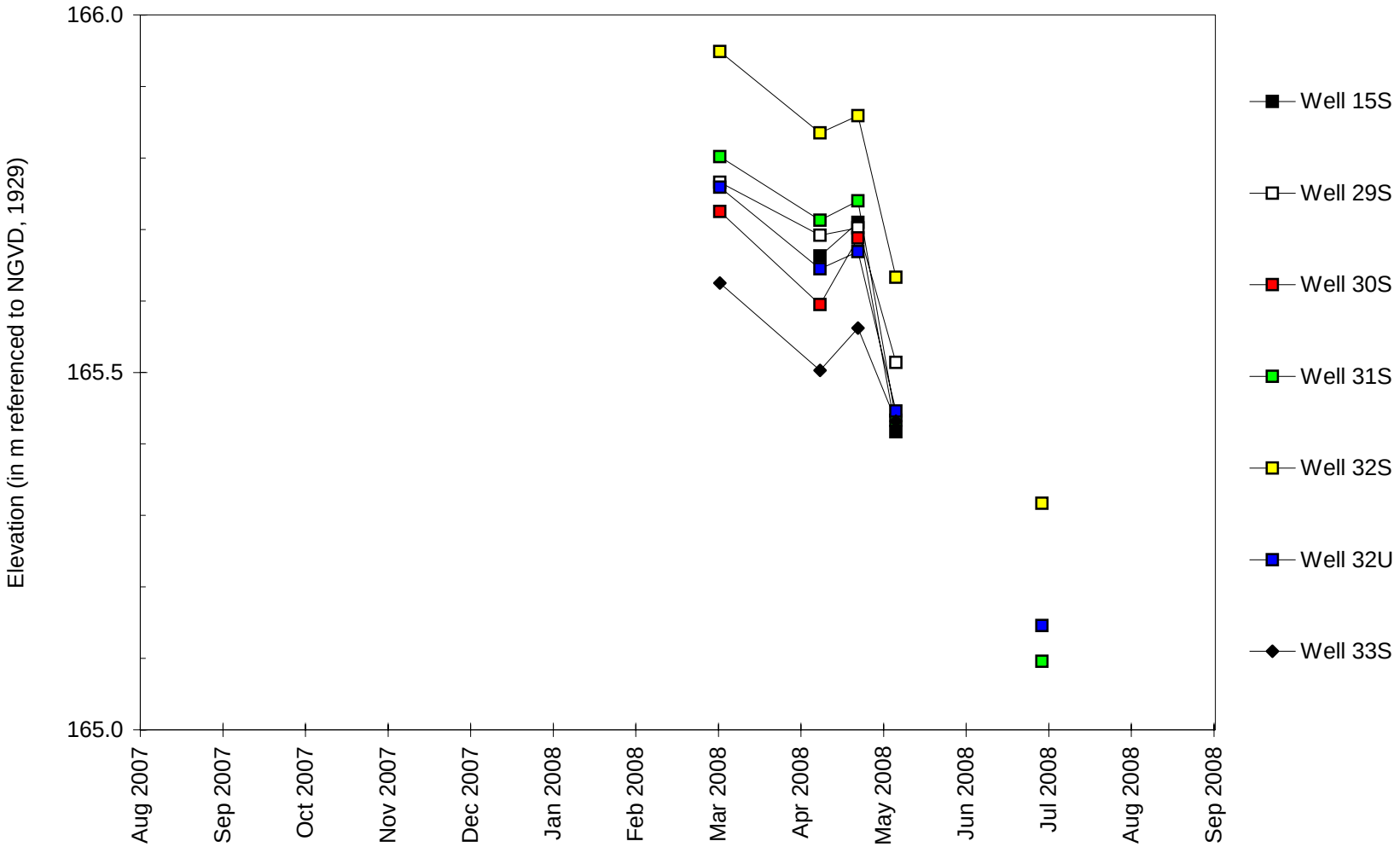


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

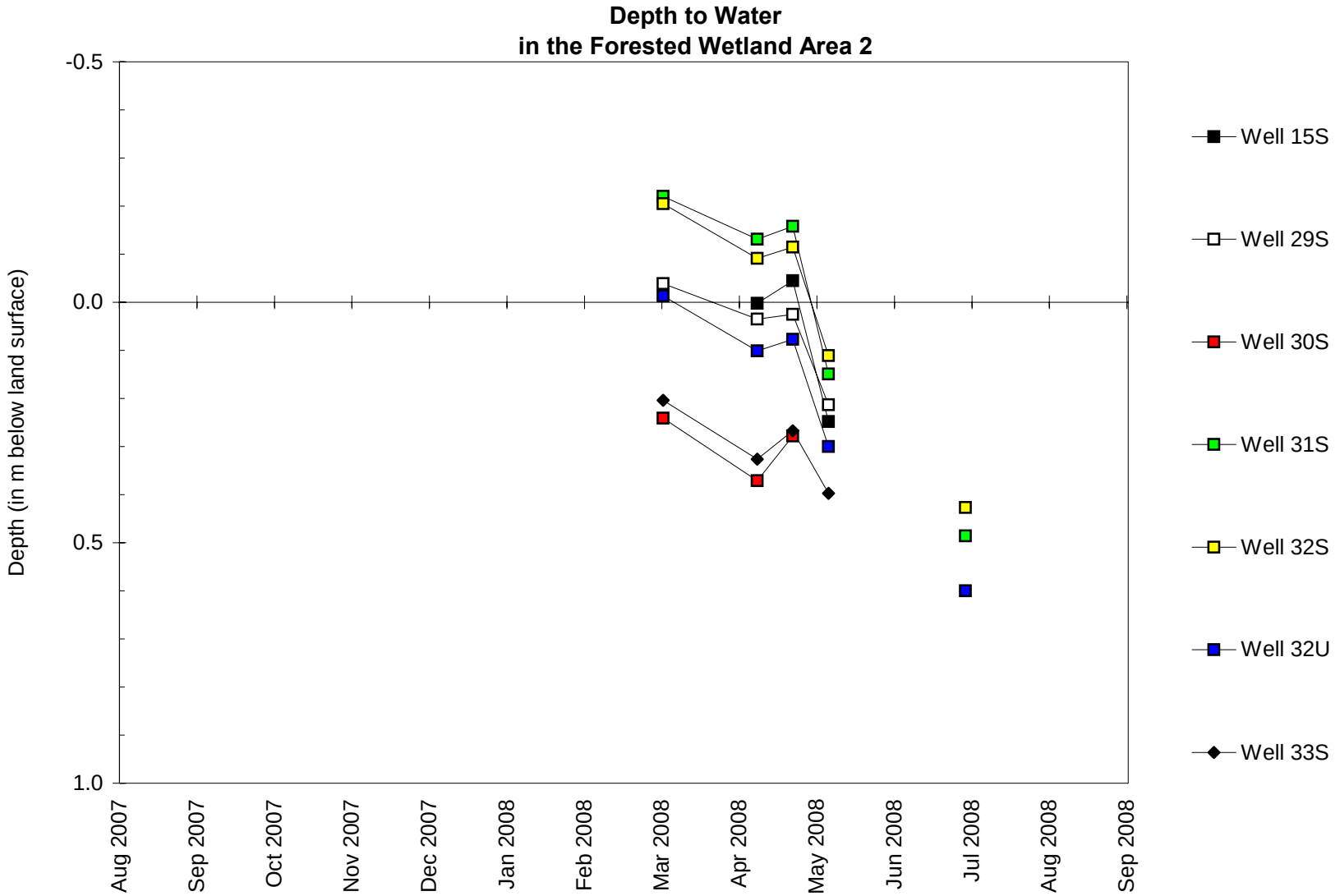


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in the Forested Wetland Area 2

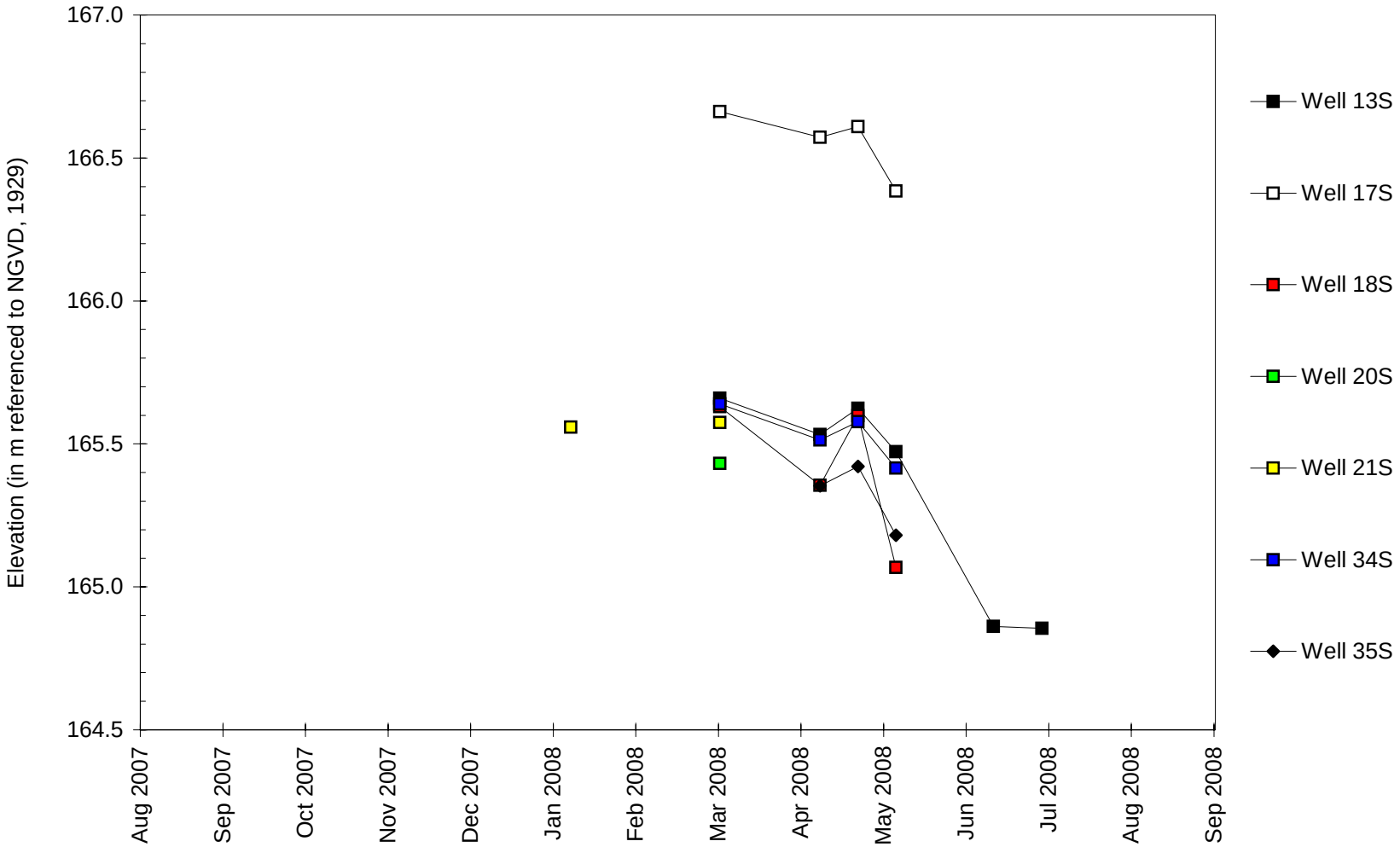


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

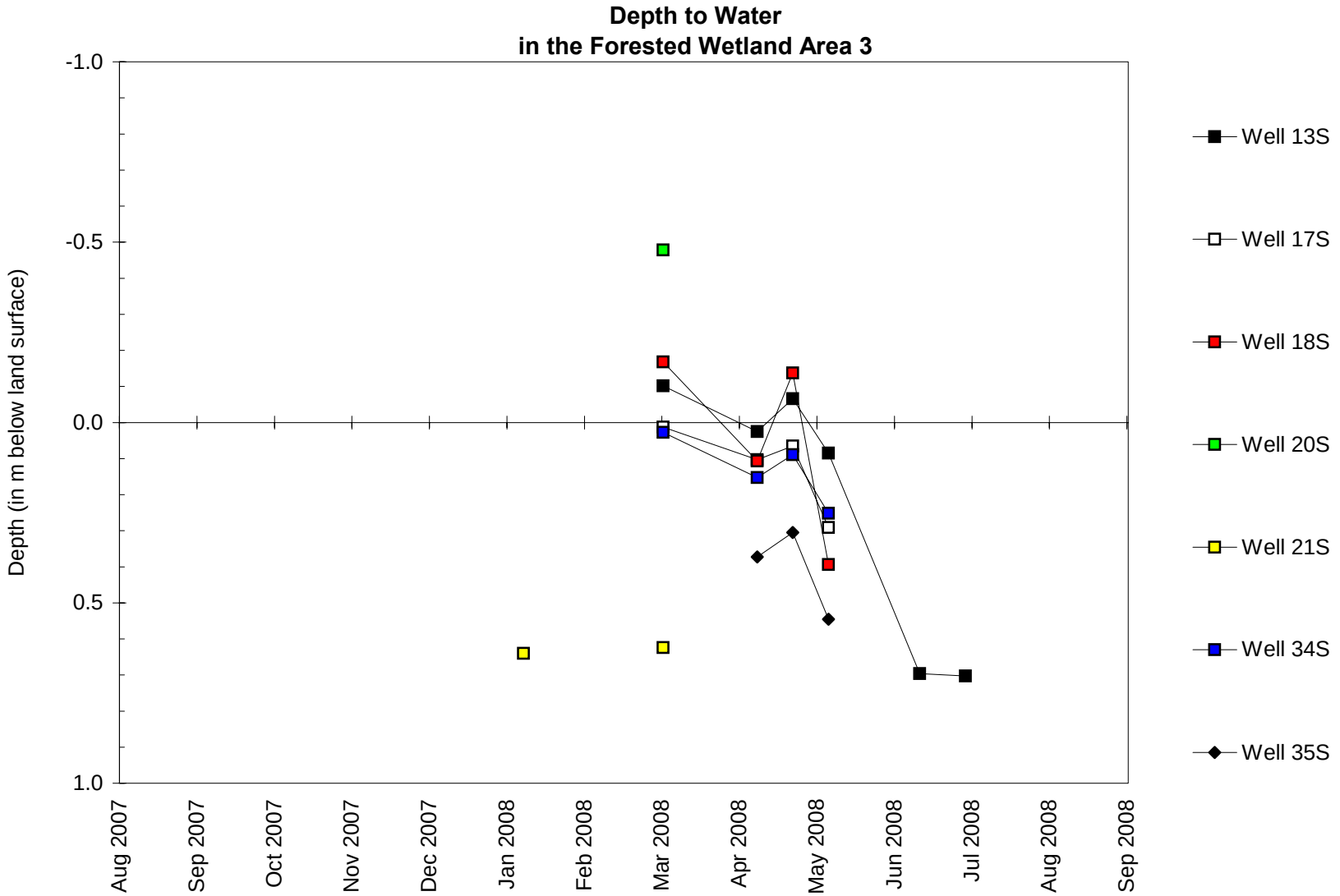


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in the Forested Wetland Area 3

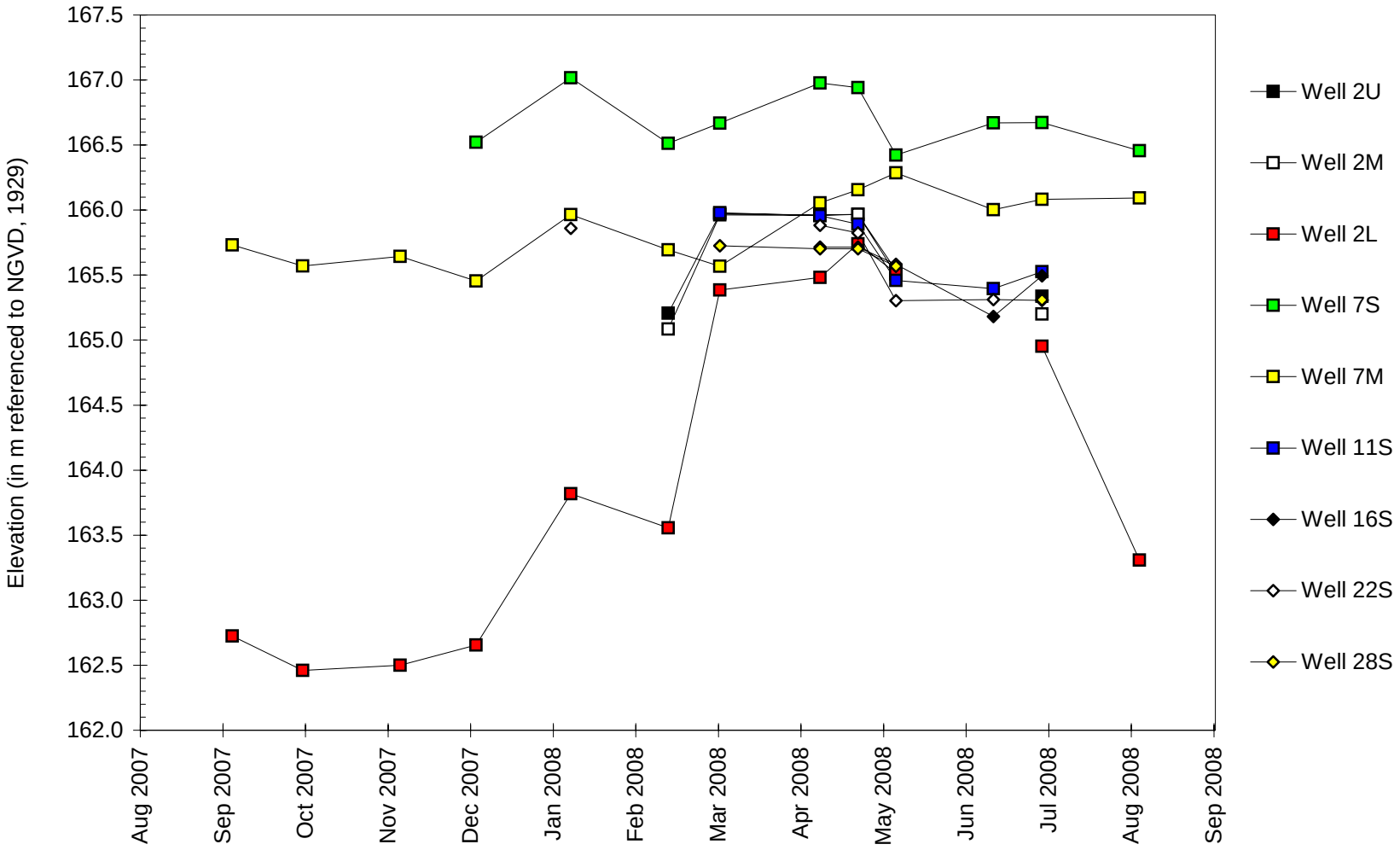


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

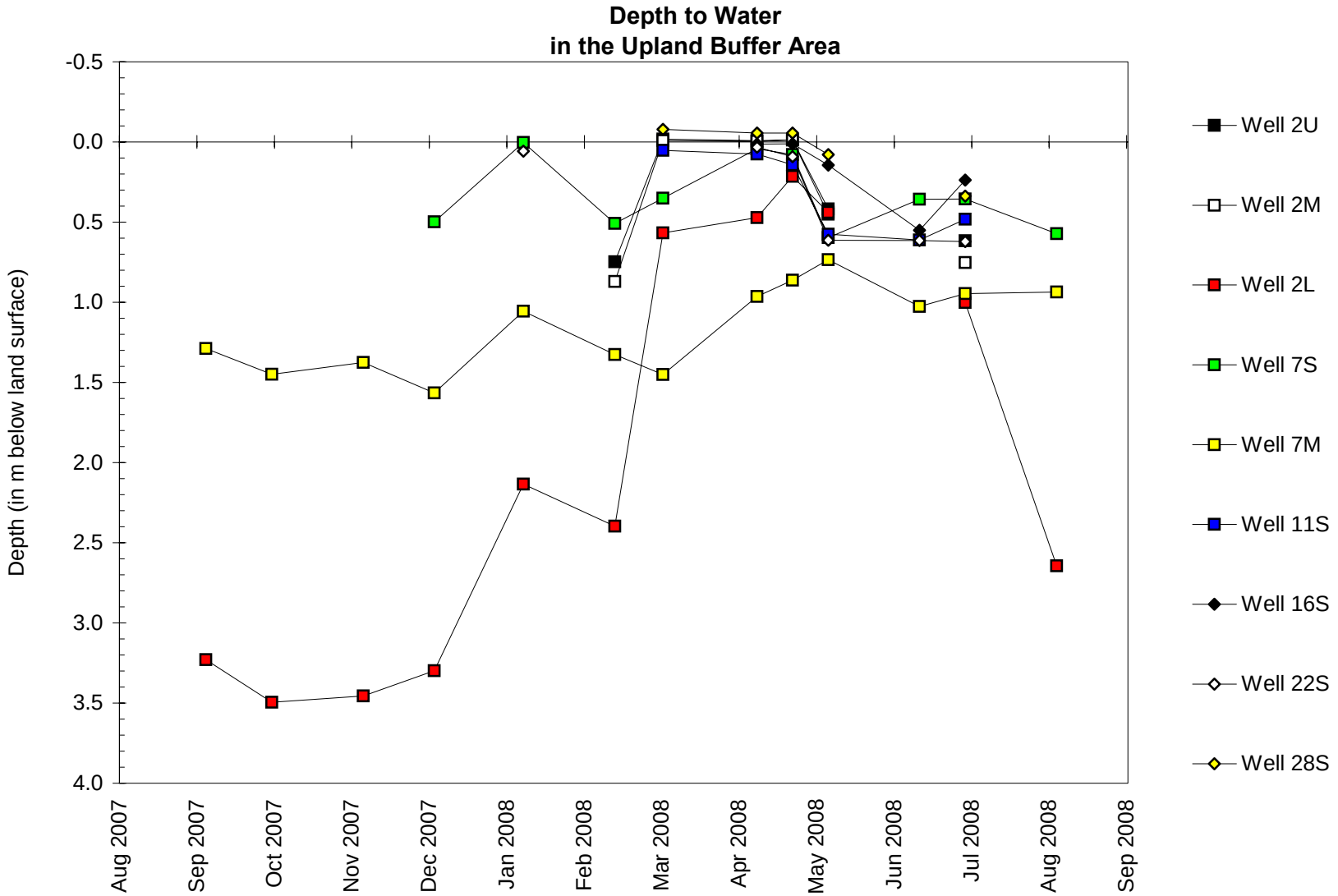


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations in the Upland Buffer Area

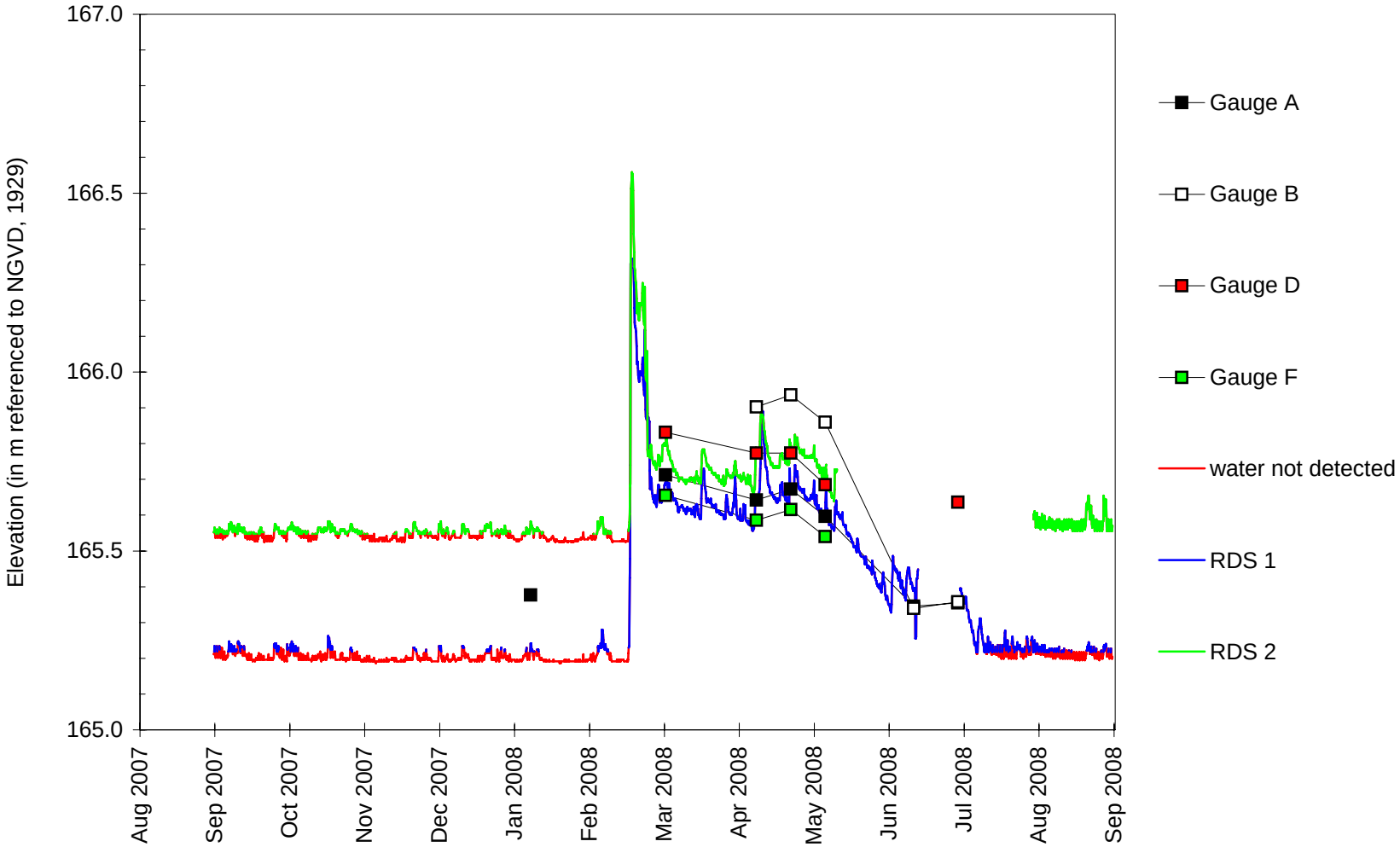


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008



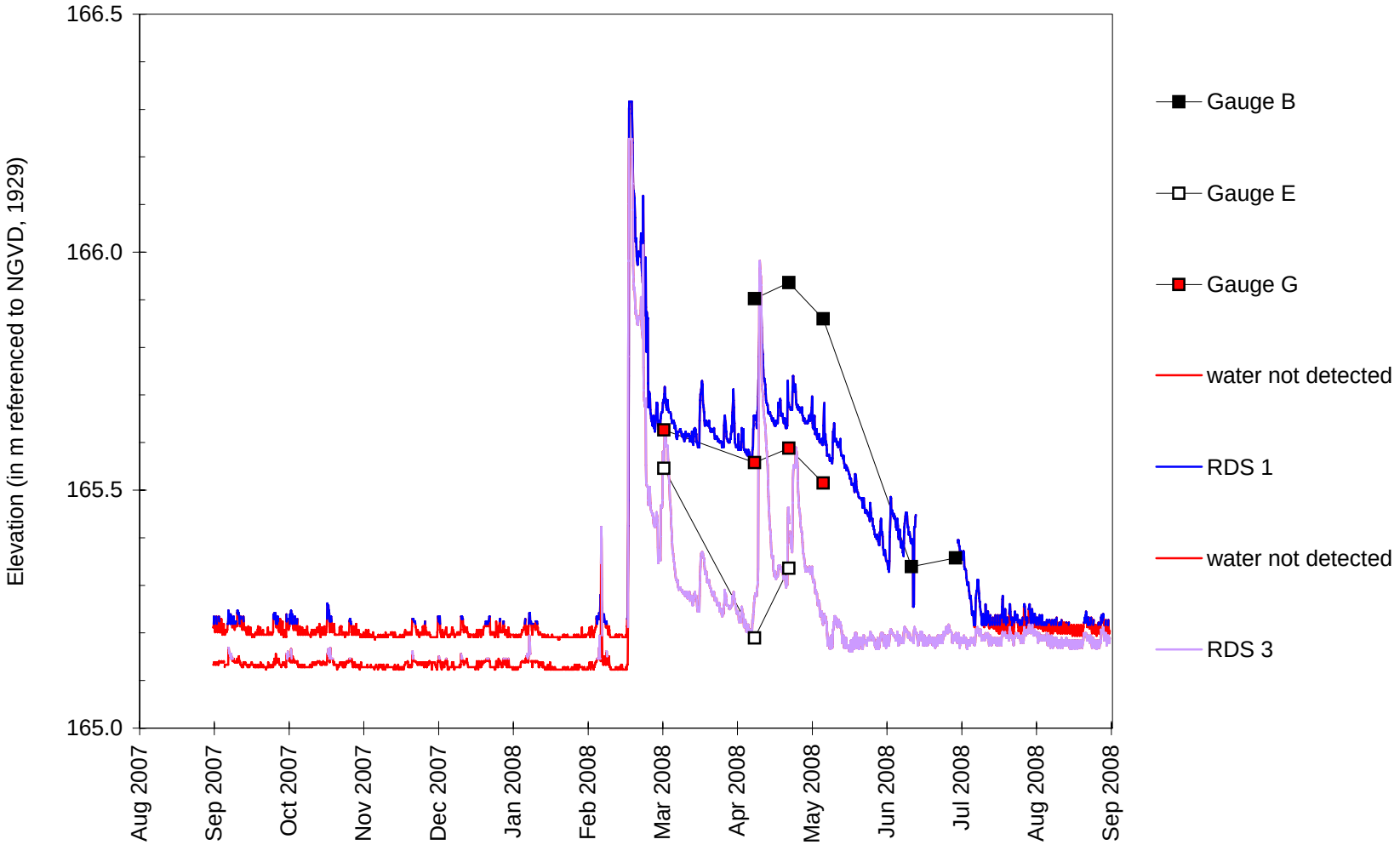
Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
On Stage Gauges in the Emergent Wetland Area

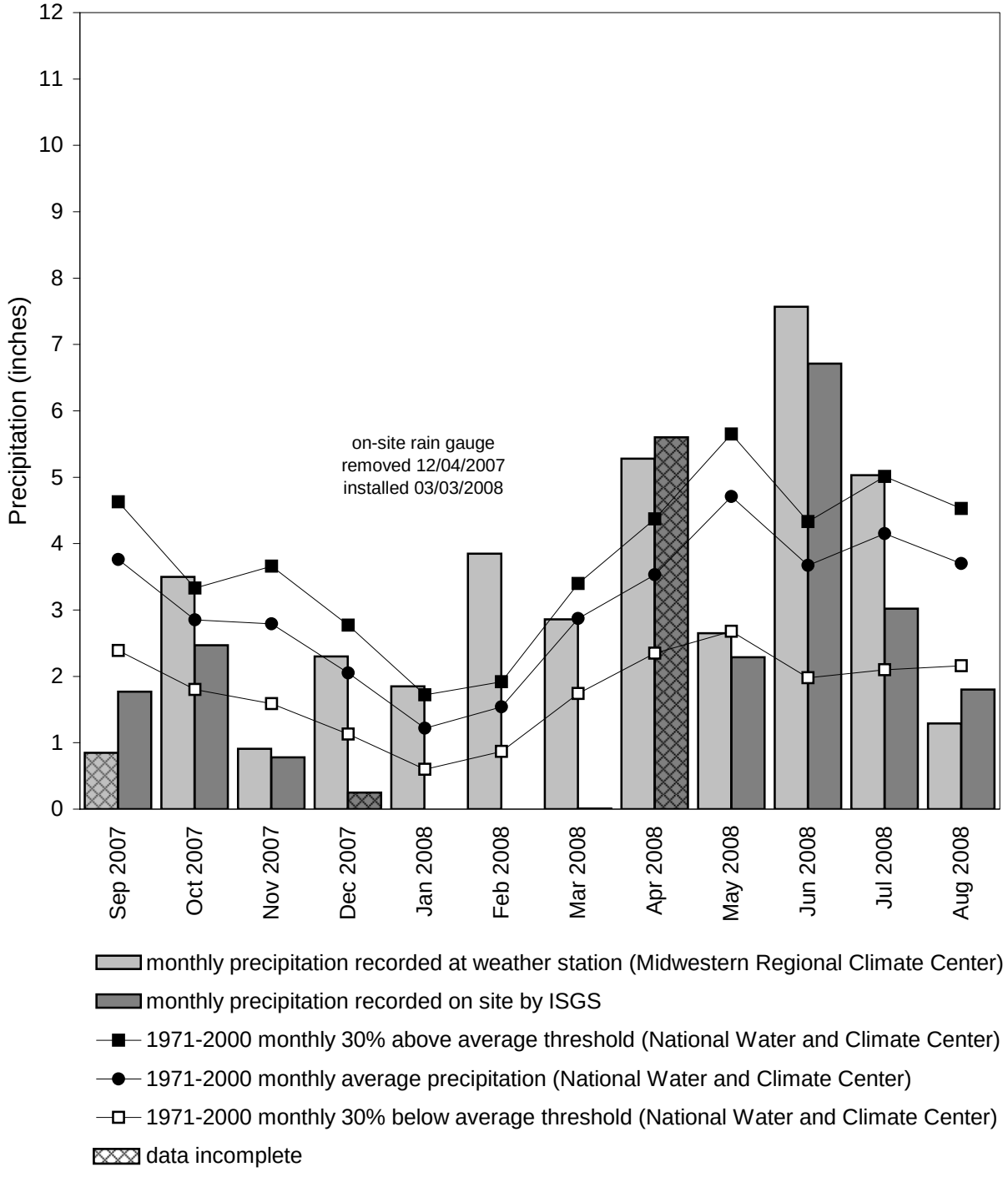


Hancock County near Carthage Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
On Stage Gauges in the Drainage Ditch



Hancock County near Carthage
Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site
and at the Bentley, IL Weather Station



Graph last updated October 7, 2008

MILAN BELTWAY, GREEN ROCK **ISGS #44**
WETLAND COMPENSATION SITE
FAU 5822
Sequence #67
Henry County, near Green Rock, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- December 2005: IDOT tasked the ISGS to conduct five-year performance monitoring of the Green Rock wetland mitigation site.

- March 2006: The monitoring network was installed on Phase I of the site.

- November 2007: The monitoring network was installed on Phase II of the site.

WETLAND HYDROLOGY CALCULATION FOR 2008

The site is divided into two portions, Phase I and Phase II. According to the as-built plans of the site, Phase I contains 16.7 ha (41.3 ac) and Phase II contains 4.3 ha (10.7 ac). In 2008, the entire mitigation areas of both Phase I and Phase II satisfied jurisdictional wetland hydrology criteria at both 5% and 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.

- Total precipitation during the monitoring period was 88% of normal. Precipitation was at or above normal in December 2007 and in February, April, May, June, and July 2008. Total precipitation in the spring was 117% of normal.

- In 2008, water levels measured in all of the monitoring wells in the mitigation areas satisfied the criteria for jurisdictional wetland hydrology at both 5% and 12.5% of the growing season. Water levels measured in wells 13S, 14S, and 15S, outside the mitigation areas, satisfied jurisdictional wetland hydrology criteria at 5% of the growing season, and water levels measured in wells 13S and 14S satisfied jurisdictional wetland hydrology criteria at 12.5% of the growing season.

- The site was flooded seven times in 2008. Four of these occurred before the start of the growing season, on January 28, February 17, March 2, and March 14, one occurred at the start of the growing season, on April 10, and two occurred after the start of the growing season, on June 12 and July 11. In at least one of the floods, water depth on the site was as much as 0.9 m (3.0 ft) judging by the flood debris seen on top of the wire cages around the trees. As a result of the flooding, the site was inundated for at least 5 months and did not finally dry up until almost the end of August.

ADDITIONAL INFORMATION

- The site is < 0.8 km (0.5 mi) above the mouth of the Green River. Analysis of stage data recorded by the USACE gauges at Milan, Illinois, on the Rock River, and at Geneseo, Illinois, on the Green River, reveals that flooding of the site occurs when the Rock River is above flood stage (171.70 m [563.35 ft]) at Milan.

- On-site observations reveal that surface water on the site tends to flow westward. Three surface-water outlets were seen that convey water to the Green River: one that discharges into Mosquito Creek, one that discharges into the Green River, and one that discharges into an abandoned drainage ditch along the north side of the west field. After water has stopped flowing through the lowest outlet, about 20 cm (8 in.) to 30 cm (12 in.) of surface water remains on most of the site.

PLANNED FUTURE ACTIVITIES

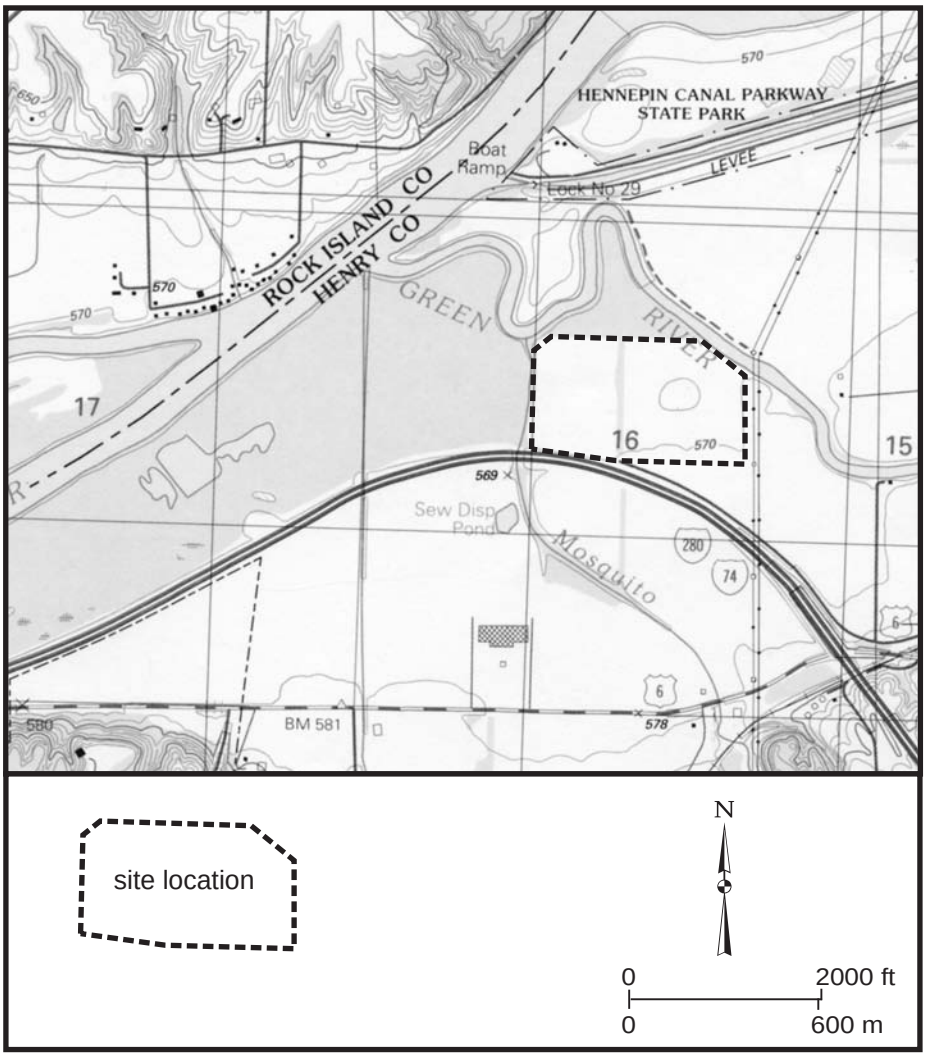
- Monitoring of the site will continue until notified otherwise by IDOT.

- Elevations of the surface-water outlets will be determined by optical survey. Several monitoring wells will be replaced. They have been pulled partially out of the ground by ice heave in the winter and the force of surface water flowing across the site. Another data logger for measuring the stage of the Green River will be installed. Both of the previous loggers failed prior to the start of the growing season.

Milan Beltway, Green Rock Wetland Compensation Site (FAU 5822)

General Study Area and Vicinity

from the USGS Topographic Series, Coal Valley, IL (W) (USGS 1991) and Green Rock, IL (E) (USGS 1992) 7.5-minute Quadrangles
contour interval is 10 feet

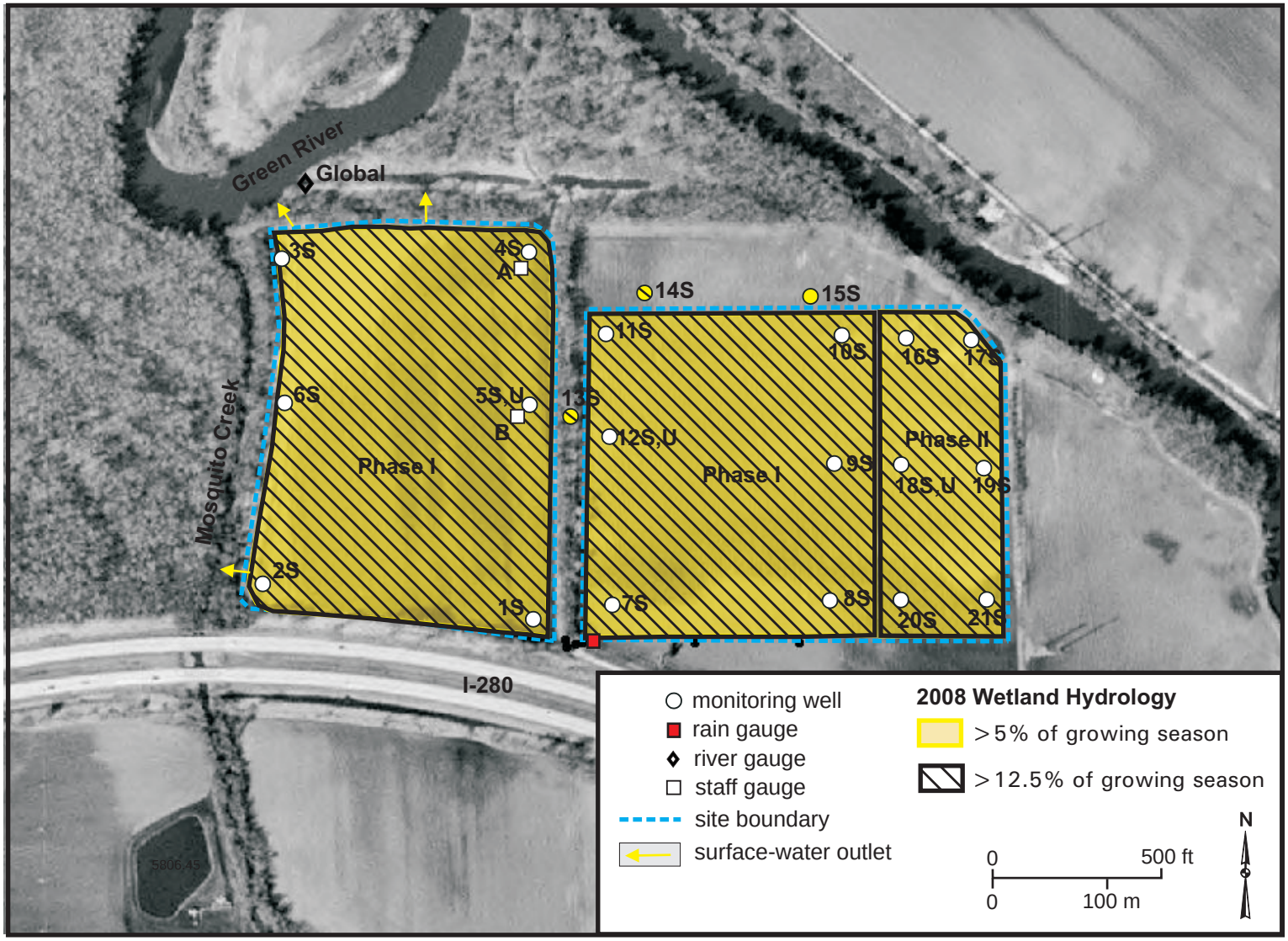


Milan Beltway, Green Rock Wetland Compensation Site (FAU 5822)

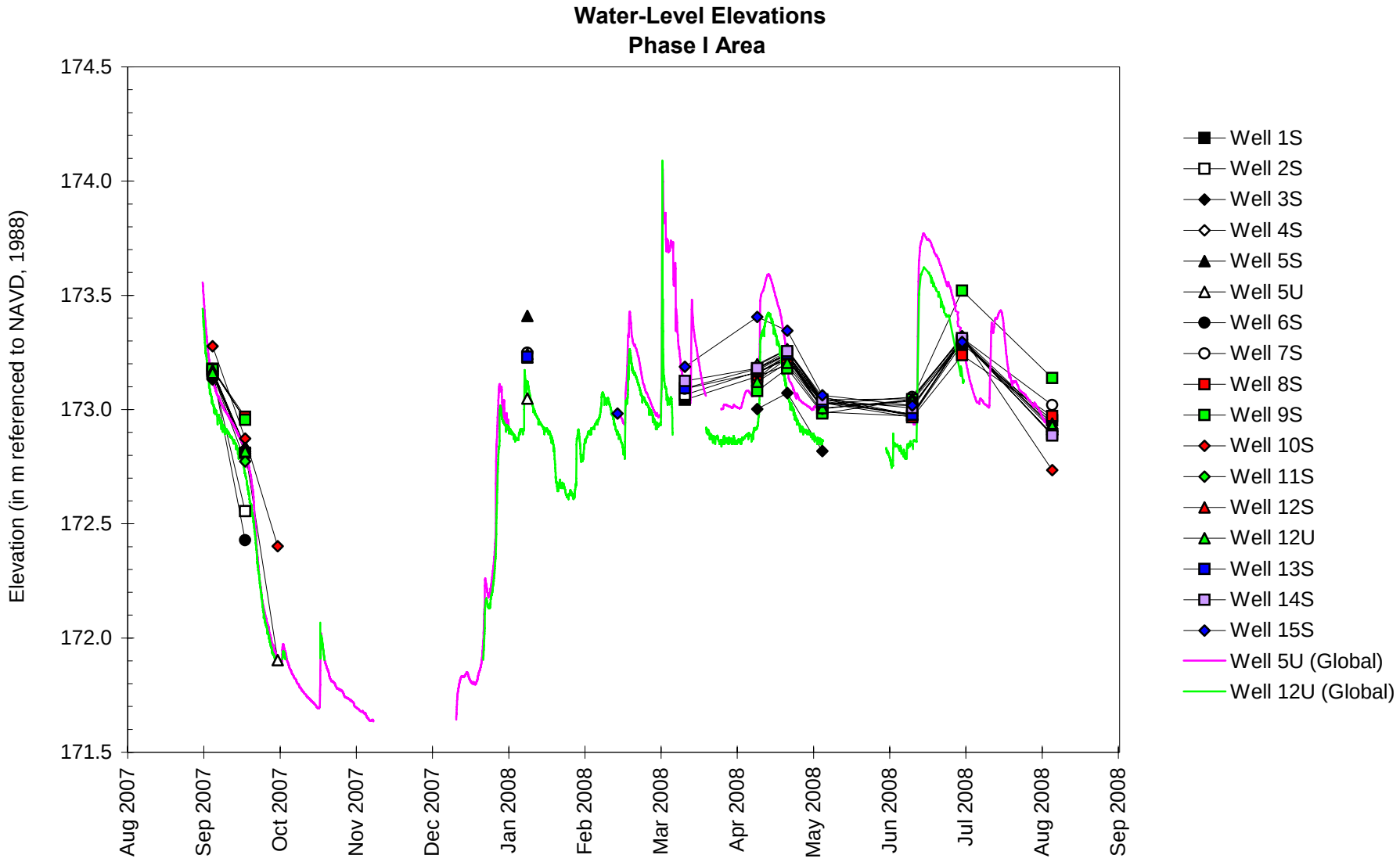
Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

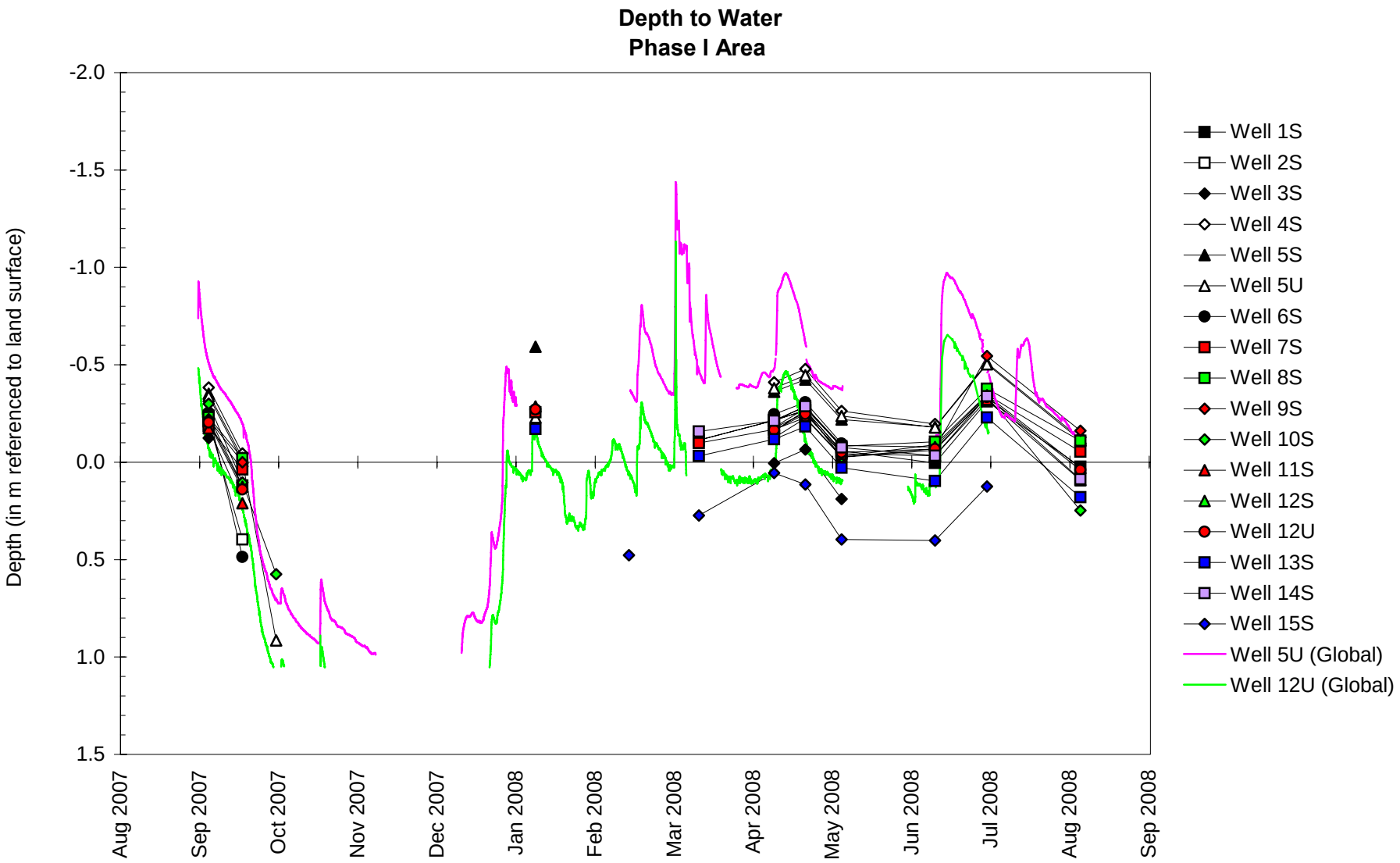
Map based on USGS digital orthophotograph, Coal Valley NE quarter quadrangle
produced from 4/14/98 aerial photography (ISGS 2006)



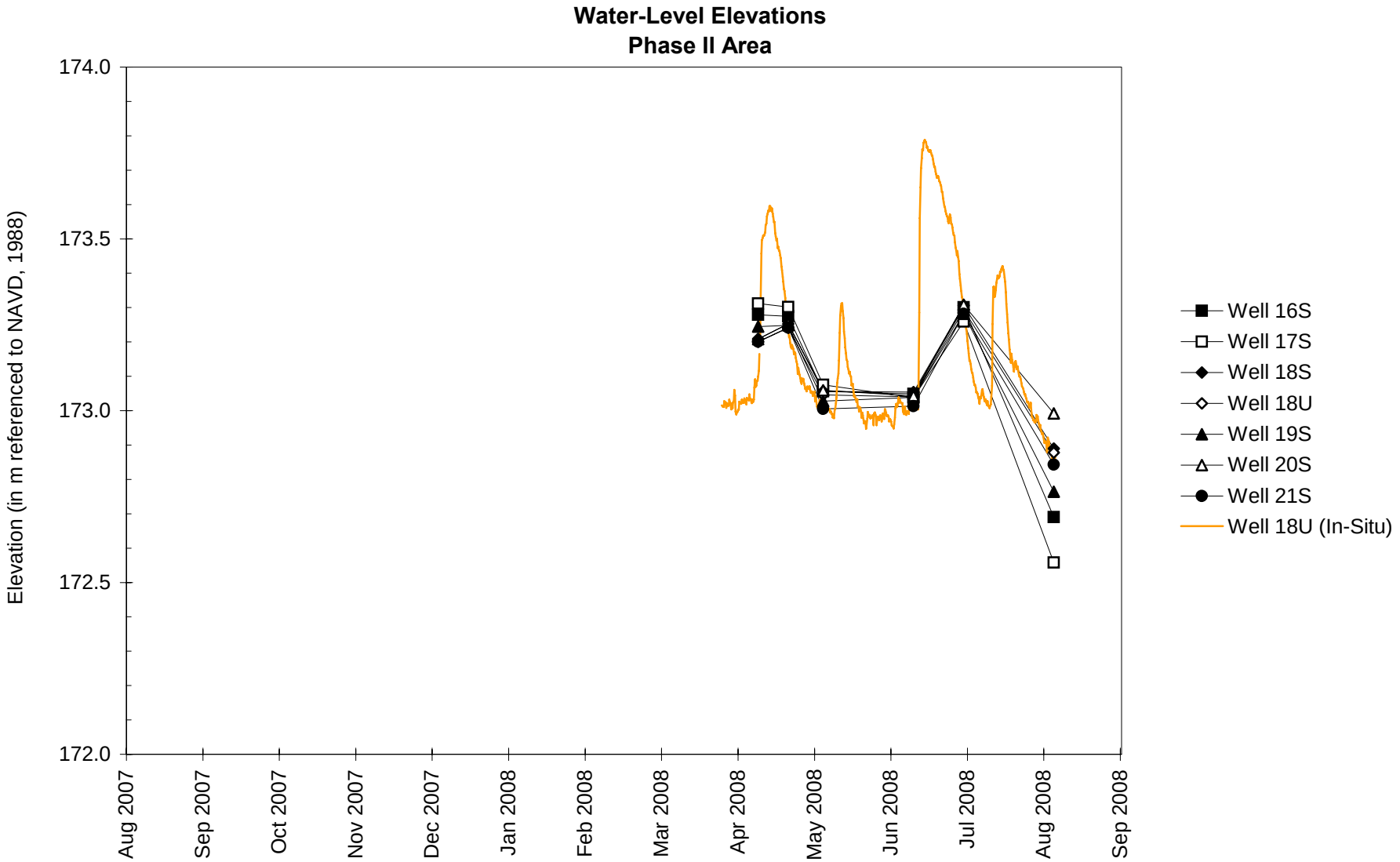
Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2007 to September 1, 2008



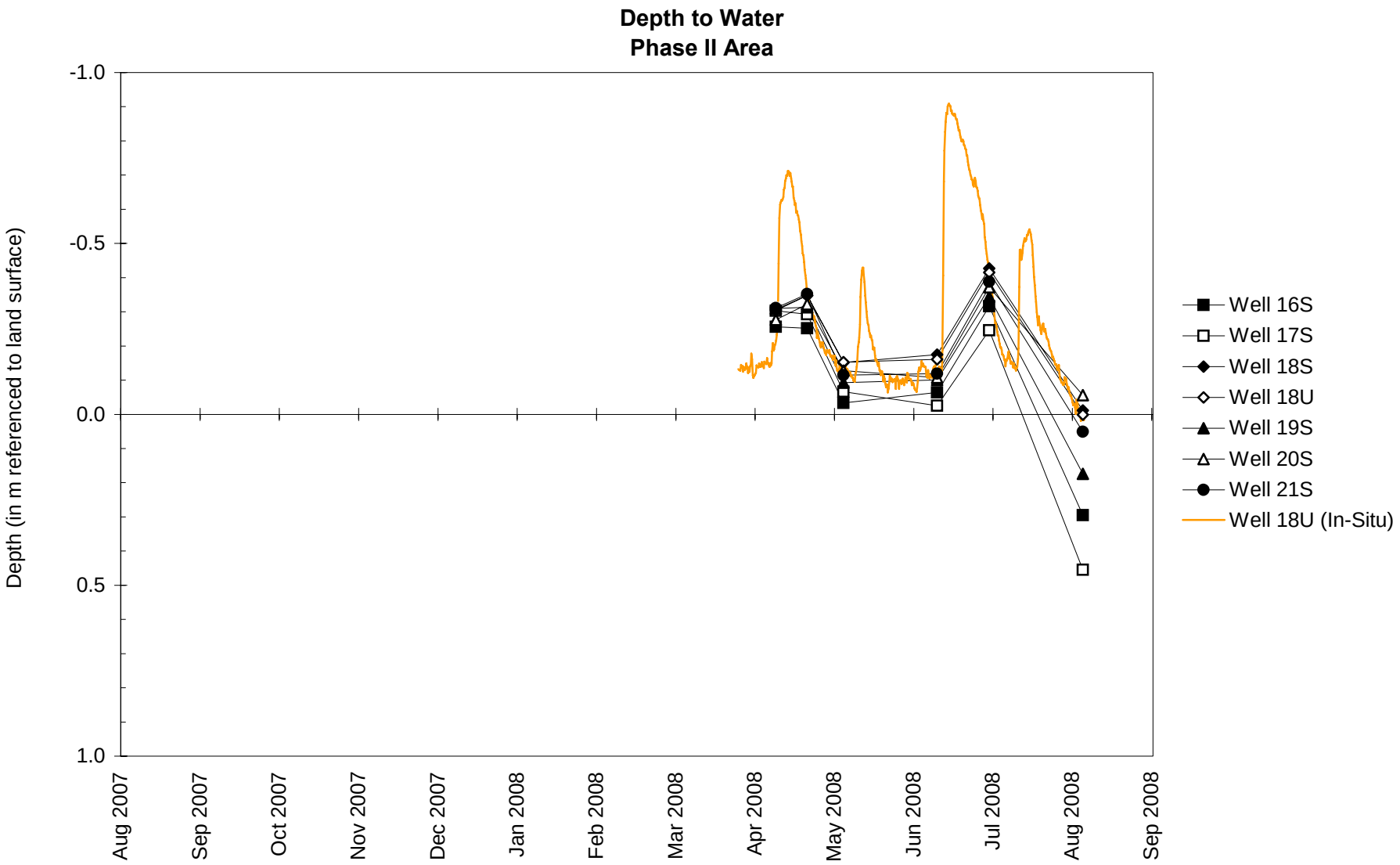
Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2007 to September 1, 2008



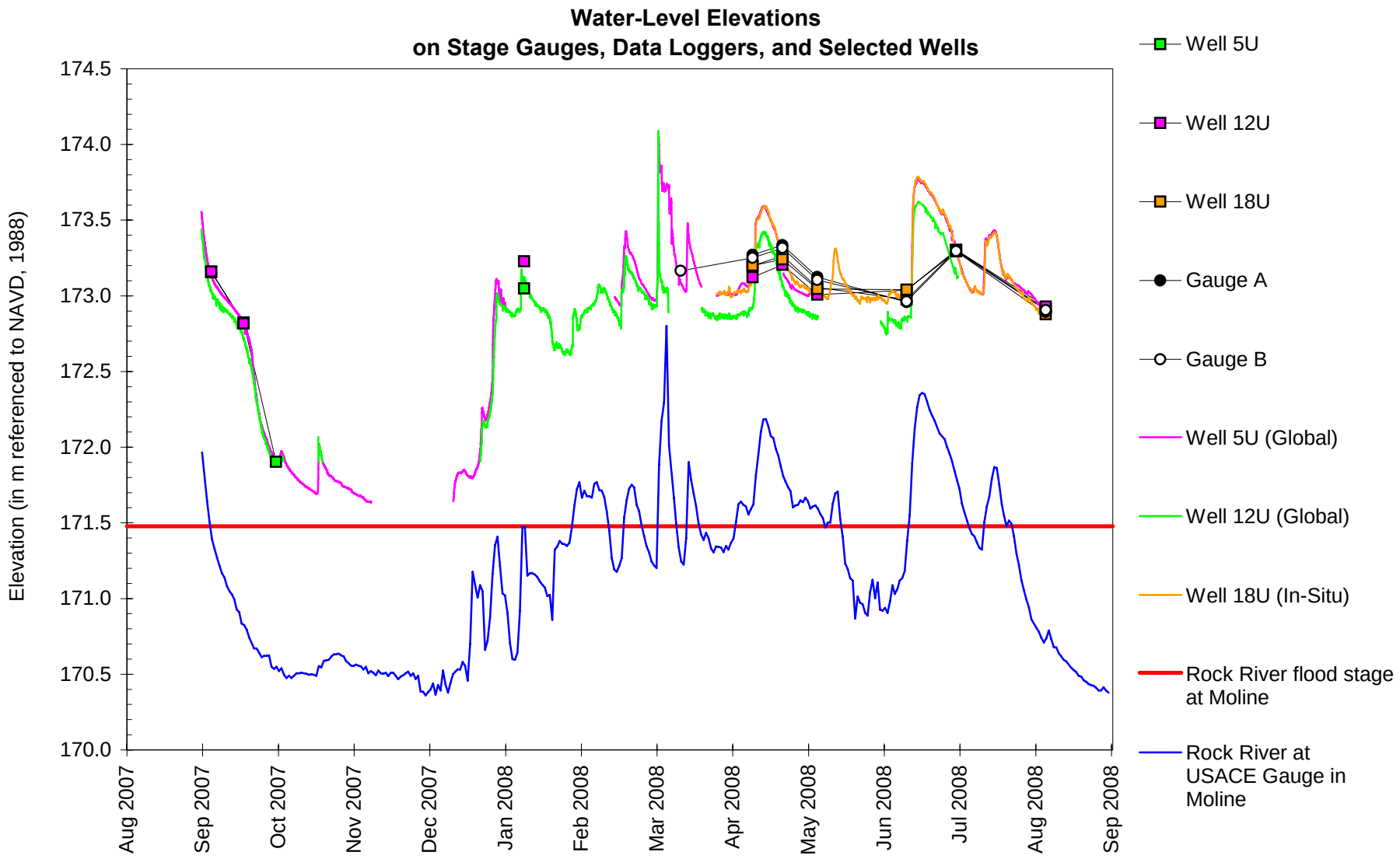
Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2007 to September 1, 2008

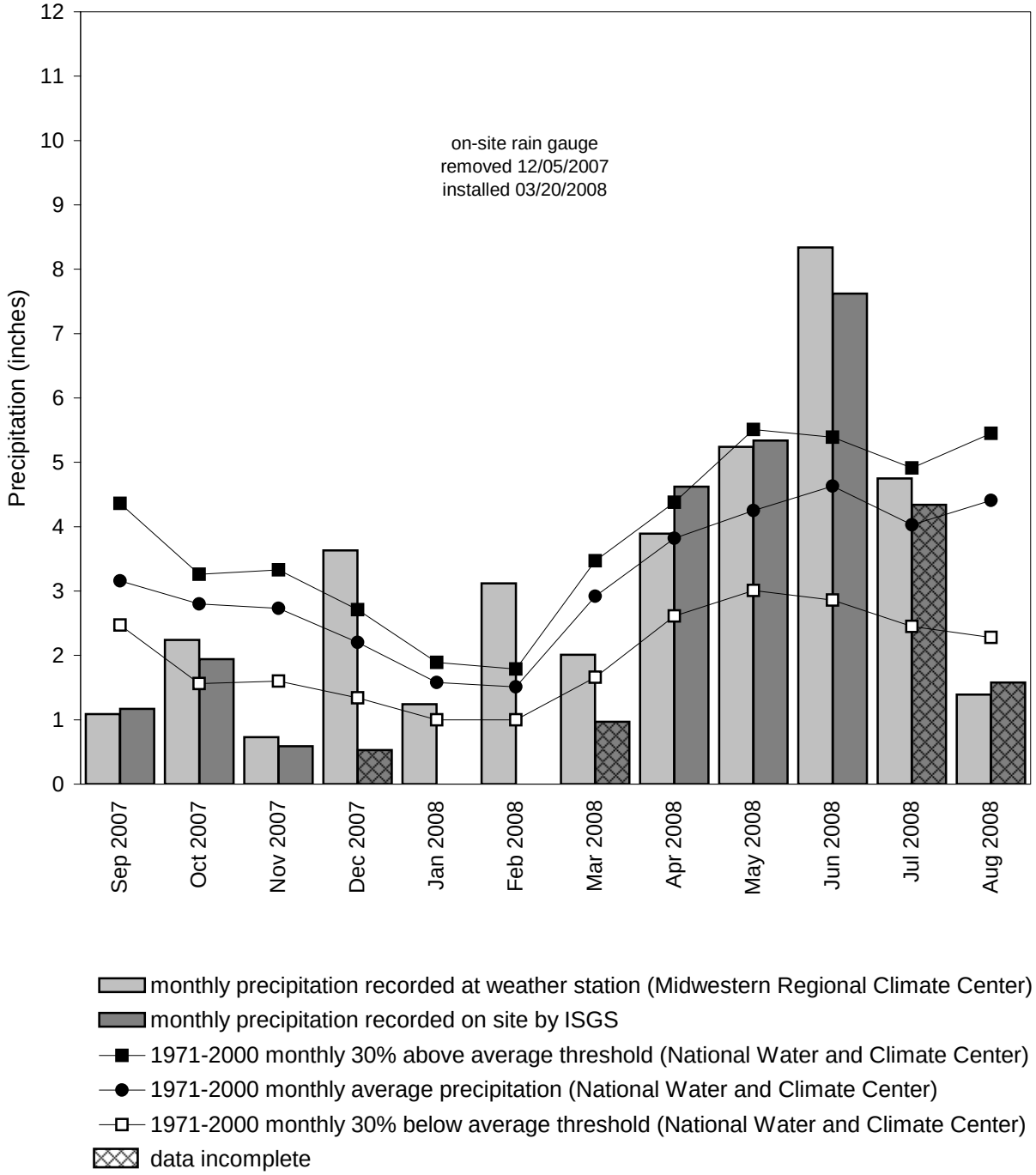


Milan Beltway, Green Rock Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Green Rock
Wetland Compensation Site
September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated October 7, 2008

MORRIS, ILLINOIS RIVER **ISGS #49**
WETLAND BANK SITE
Sequence #1306
Grundy County, near Morris, Illinois
Primary Project Manager: Keith W. Carr
Secondary Project Manager: Geoffrey E. Pociask

SITE HISTORY

- March 1999: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential banking site.

- April and December 2003: Drainage tile removal was undertaken in the east field, also called the "spider" field. This concluded tile removal work at the bank site. In Spring 2004, trees were planted in wetland restoration areas on site.

- March 2007: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2007–03).

- September 2008: A record flood stage occurred that exceeded the former record set in 1957. The flood peaked at 153.4 m (503.3 ft) on September 16 and inundated the entire site, including overtopping Pine Bluff Road south of the site. As in previous floods, the site drained rapidly and the duration of water levels greater than bankfull was only six days.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that the total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008 was 15.6 ha (38.5 ac) out of a total site area of 342 ha (844 ac). Further, 6.3 ha (15.6 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Areas west of IL 47 are not included in these totals. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Morris, Illinois is April 13 and the season lasts 187 days; 5% of the growing season is 9 days and 12.5% of the growing season is 23 days.

- Total precipitation for the monitoring period was 103% of normal. During the four-month period from December 2007 to March 2008, precipitation was 101% of normal, resulting in normal conditions entering the growing season. In the April to August period of the growing season, however, precipitation dropped off to only 75% of normal. Extreme September 2008 precipitation totals (400% of normal) caused a large overbank flood at the site.

- In 2008, of the 46 active soil-zone wells on site, 19 satisfied wetland hydrology criteria for greater than 5% of the growing season, including 11SR, 12S, 16S, 18SR, 21SR, 35SR2, 40S, 42S, 43S, 43VS, 44S, 44VS, 46SR2, 48SR2, 51SR, 54SR, 56SR, 57S, and 61S. Further, nine of these wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season, including 16S, 21SR, 42S, 43S, 43VS, 44S, 44VS, 56SR, and 57S.

- Staff gauges or data loggers in closed depressions at SW5, SW7, SW7L, SW8, SW9, SW10, SW11, and SW12 indicated inundation for a period greater than 5% of the growing season. Of these gauges, SW5, SW7L, SW9, SW10, and SW11 also showed inundation for a period greater than 12.5% of the growing season.

- In the 2007–2008 season, an on-site data logger at SW2 and the nearby USACE gauge showed that two small flood events during the first half of the growing season barely exceeded the bankfull elevation of the Mazon River and Mud Slough, roughly 149.4 m (490 ft). These floods were of short duration and did not flood significant areas of the site. In mid-September, a record flood affected the site. The unprecedented stage of 153.4 m (503.3 ft) deeply inundated the entire site. This flood, which peaked on September 16, was also of short duration (six days over bankfull). As in previous years, the flood duration itself was not sufficient to meet wetland hydrology criteria, nor did widespread areas of the site retain water for sufficient periods after the flood to do so.

- As in previous years, perennial water bodies such as the creek channels were not included in areas having met wetland hydrology criteria.

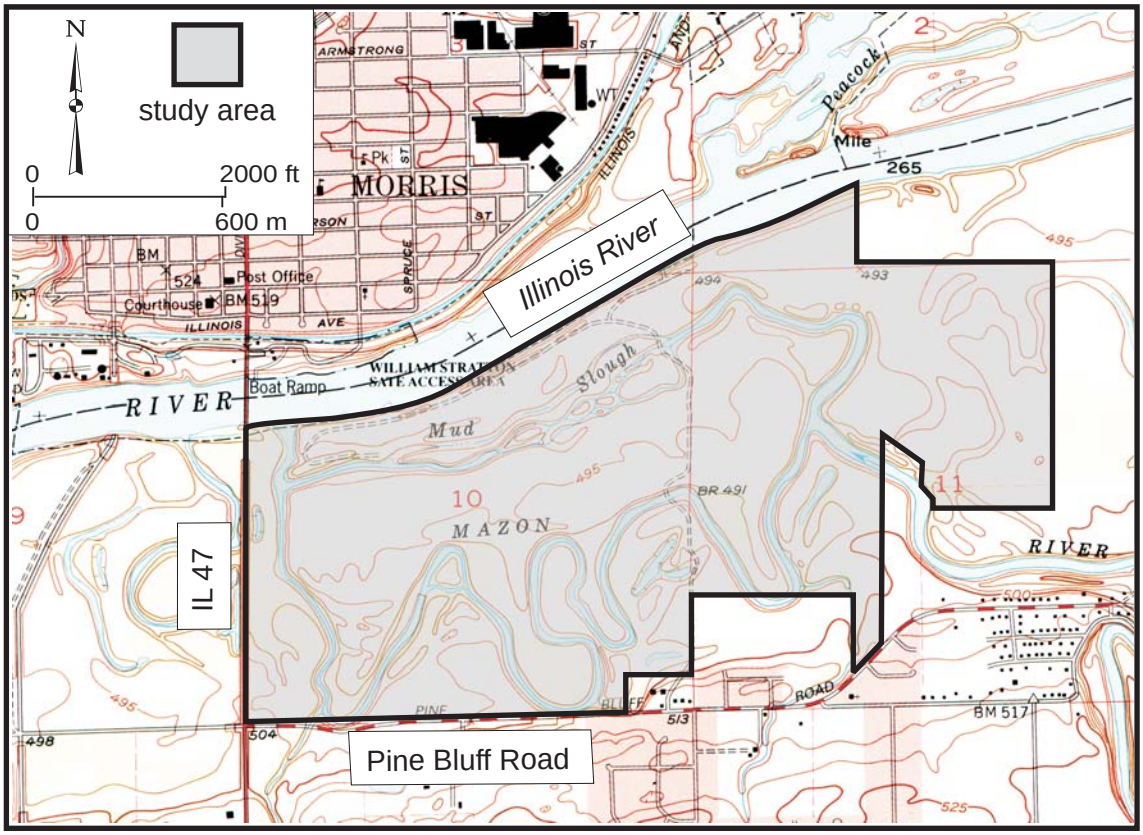
PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

Morris, Illinois River Wetland Bank Site

General Study Area and Vicinity

from the USGS Topographic Series, Morris, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 5 feet

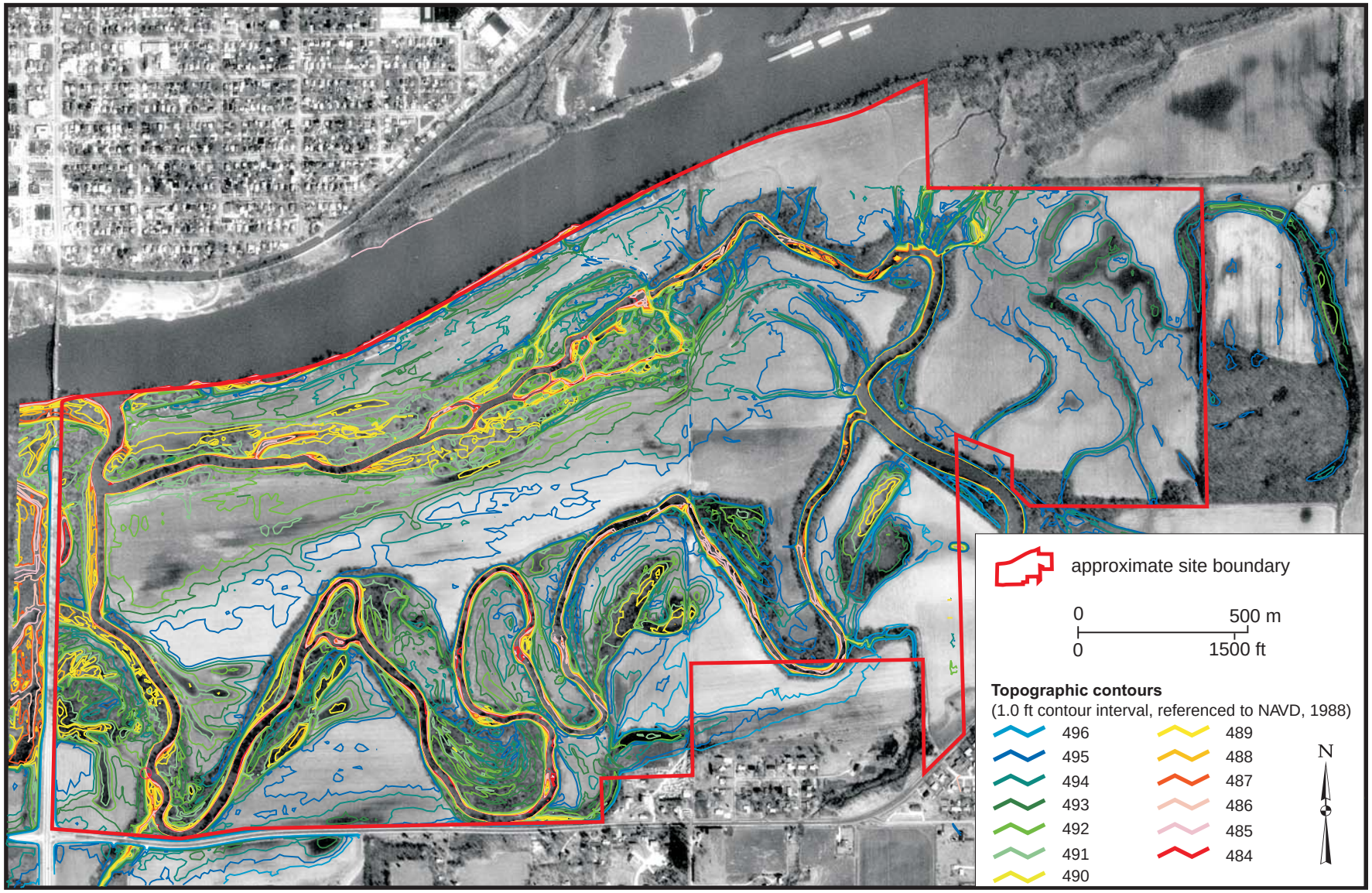


Morris, Illinois River Wetland Bank Site

Site Topographic Map (IDOT / INHS)

contours prepared by Illinois Natural History Survey in May 2000, using IDOT survey data

Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
from 4/5/1998 aerial photography (ISGS 2001)

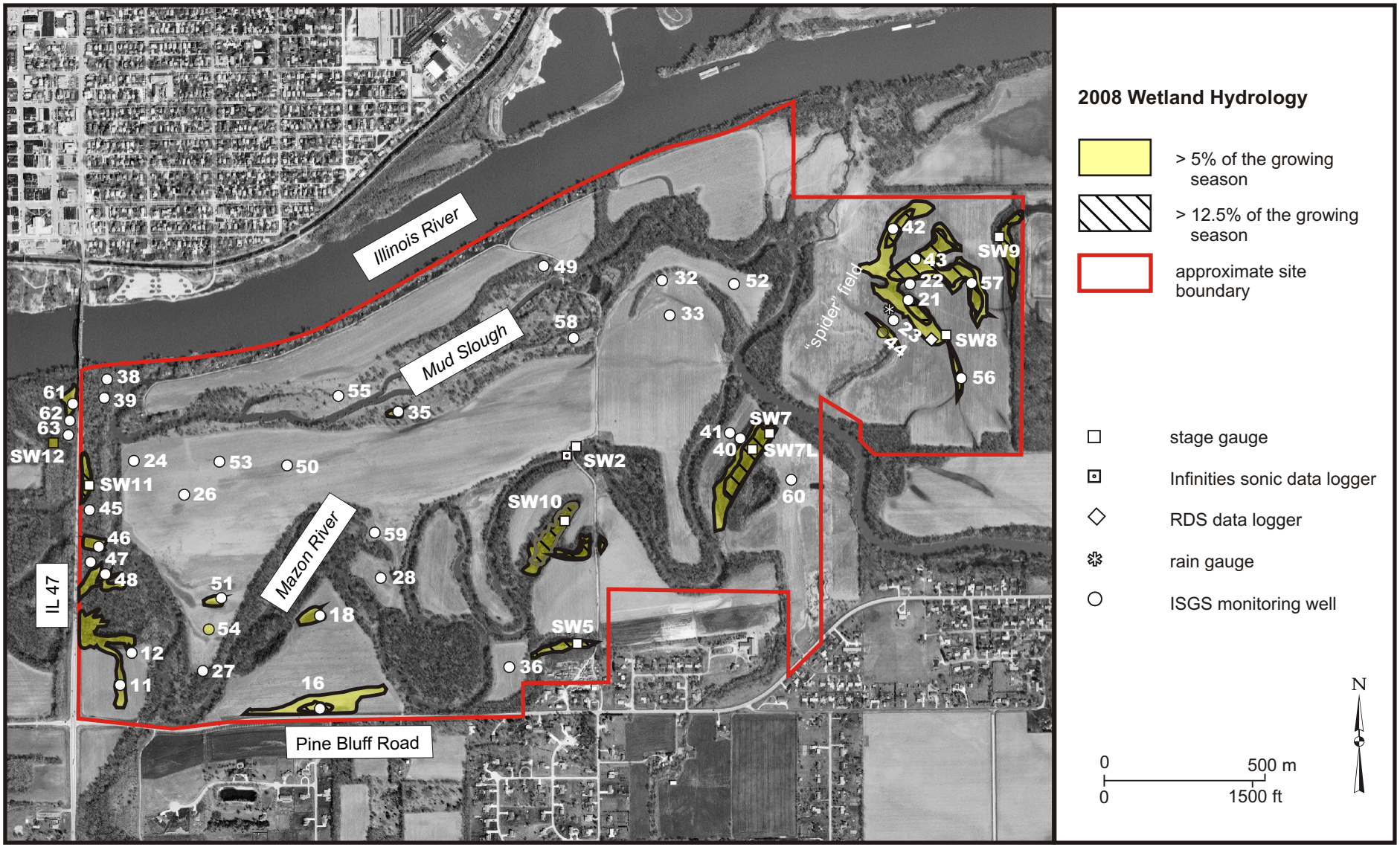


Morris, Illinois River Wetland Bank Site

Estimated Areal Extent of 2008 Wetland Hydrology

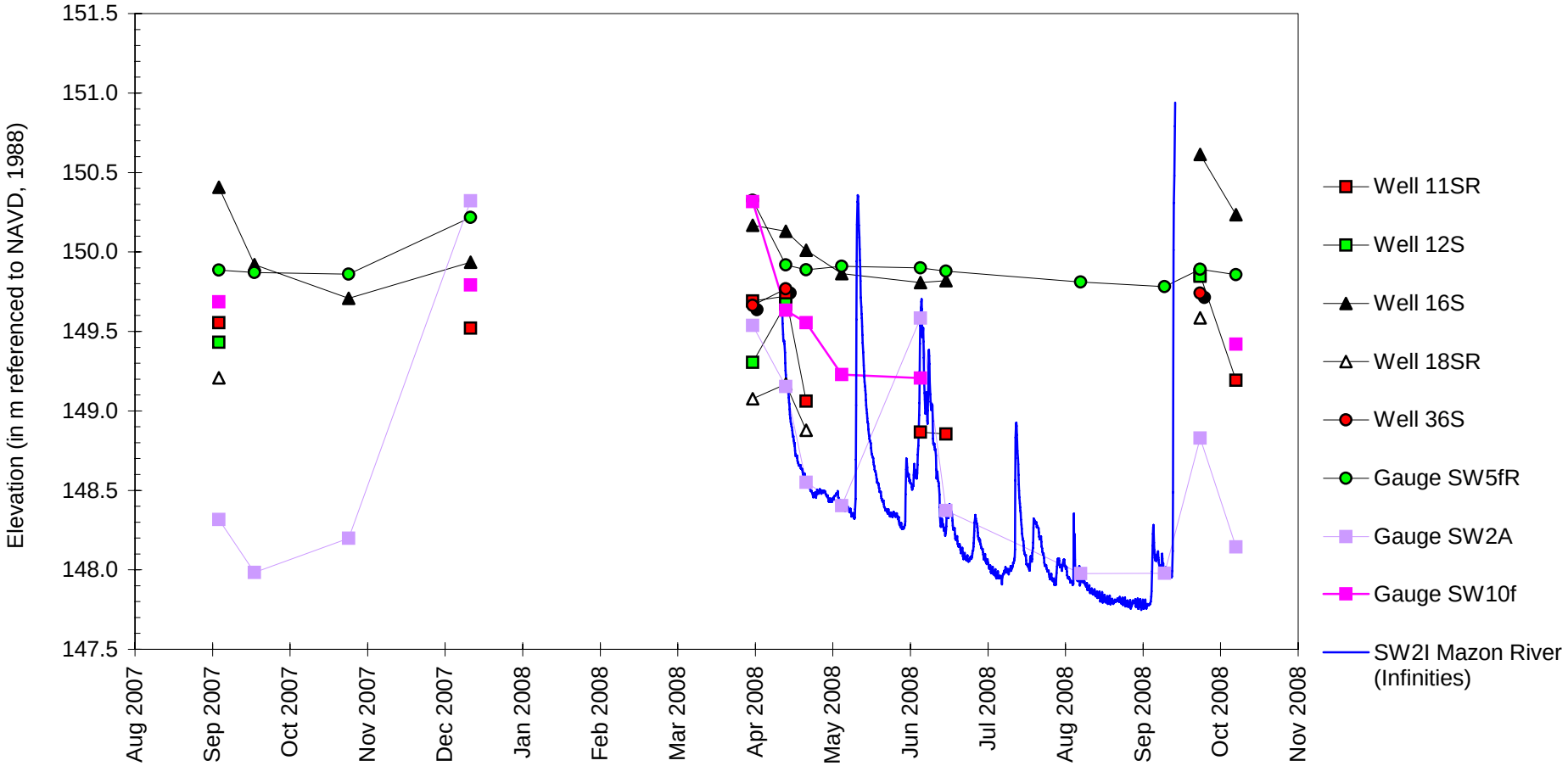
based on data collected between September 1, 2007 and October 8, 2008

Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
from 4/5/1998 aerial photography (ISGS 2001)



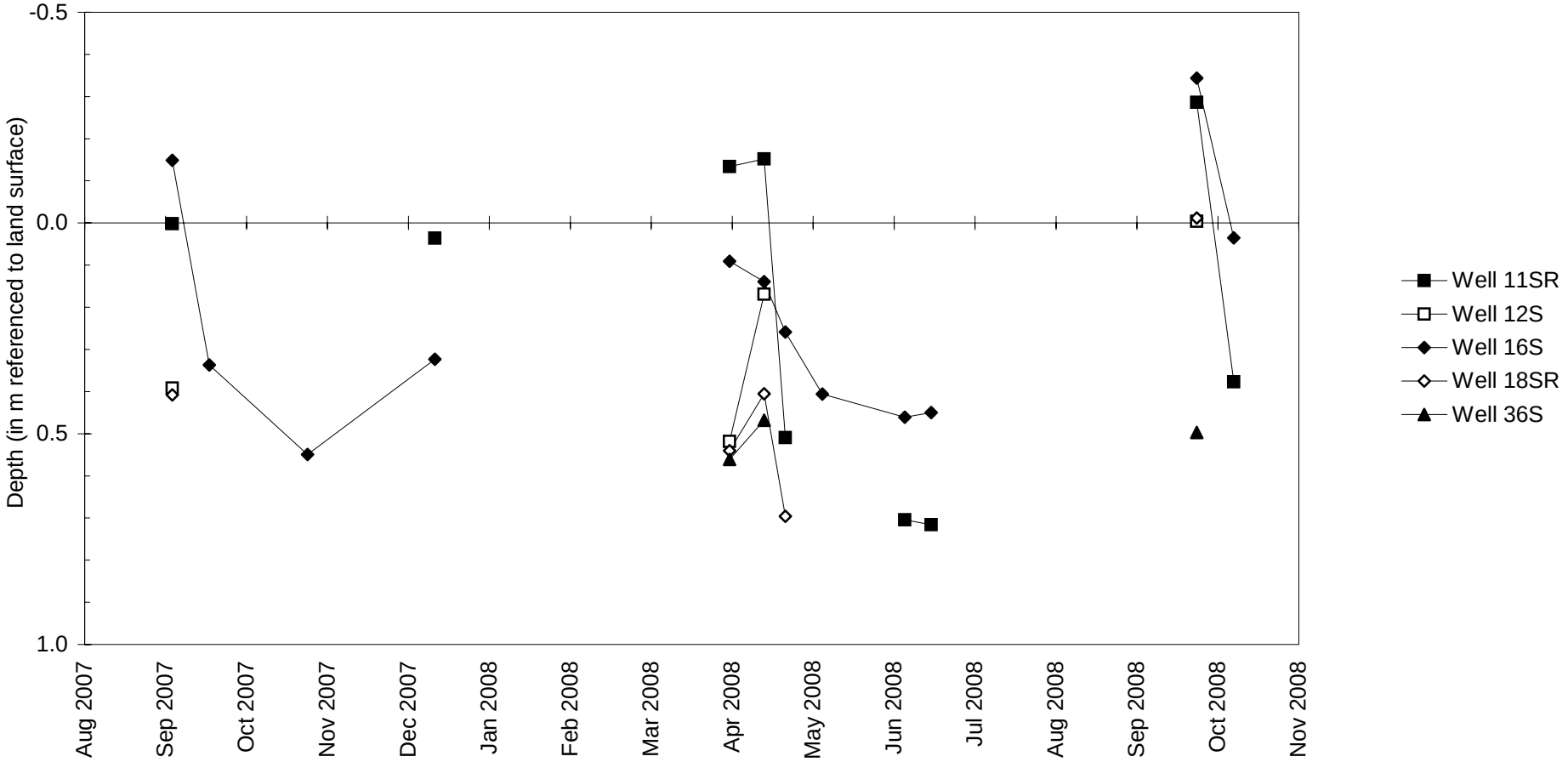
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
South of the Mazon River



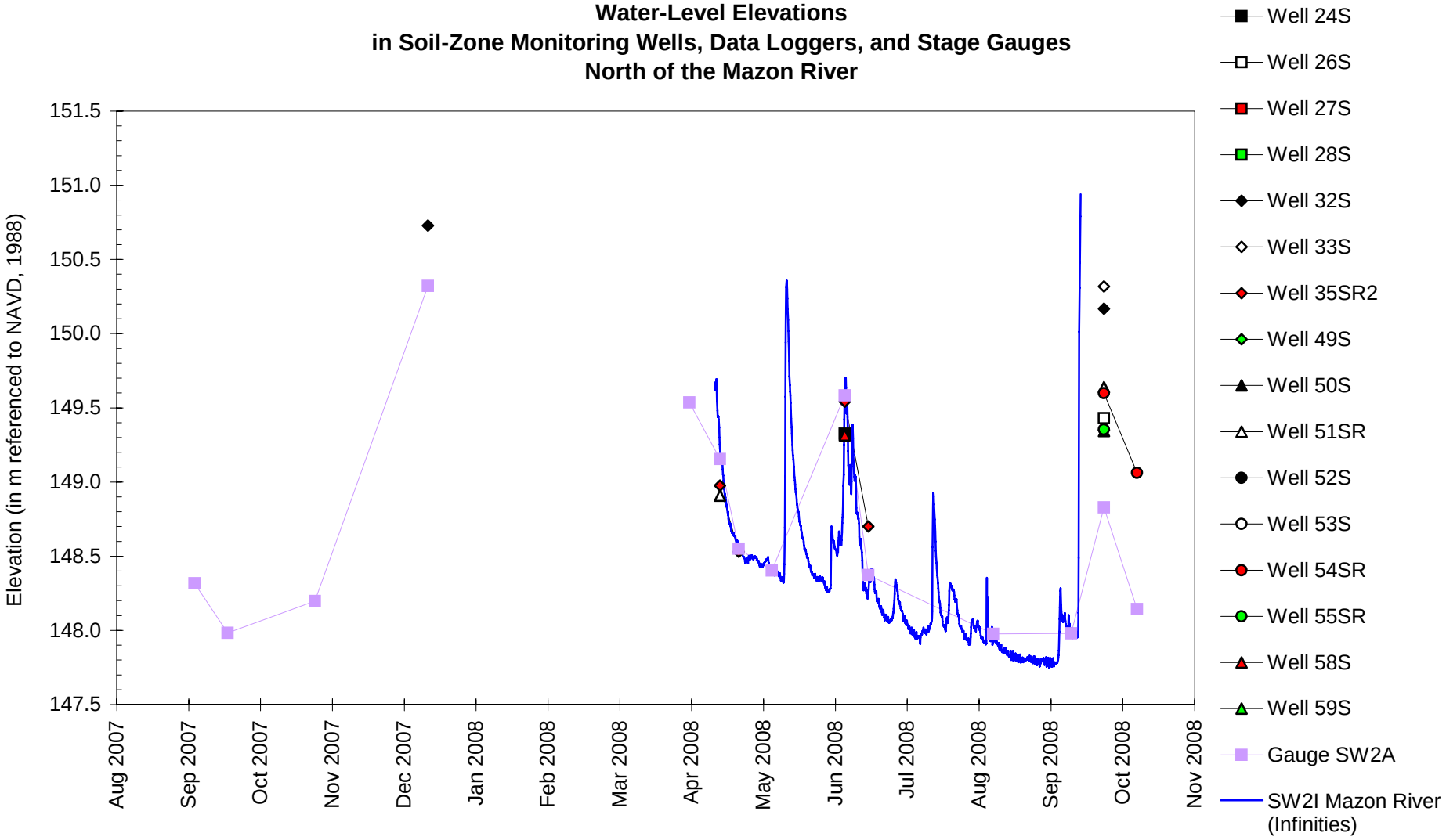
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Depth to Water
in Soil-Zone Monitoring Wells
South of the Mazon River



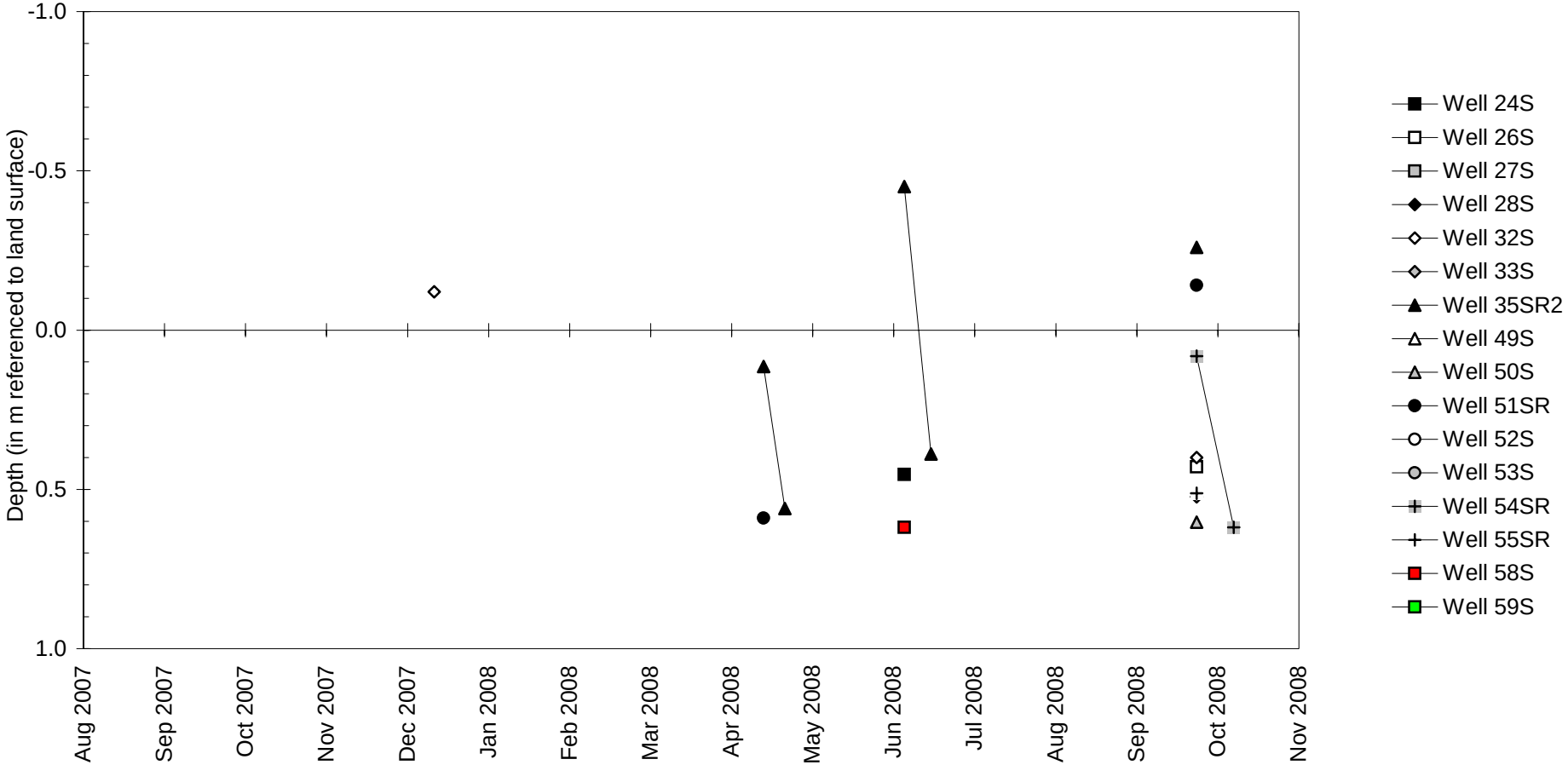
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
North of the Mazon River



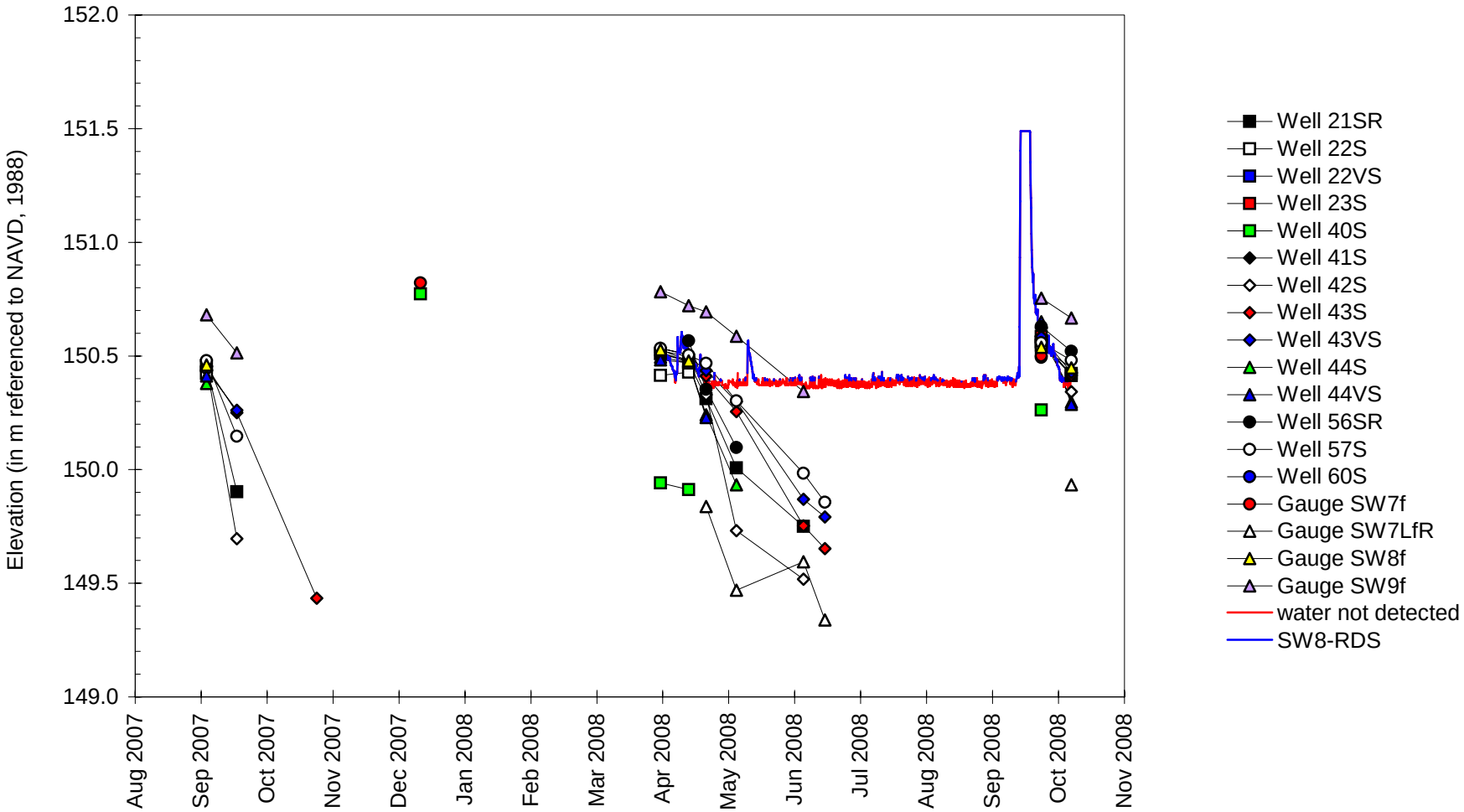
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Depth to Water
in Soil-Zone Monitoring Wells
North of the Mazon River



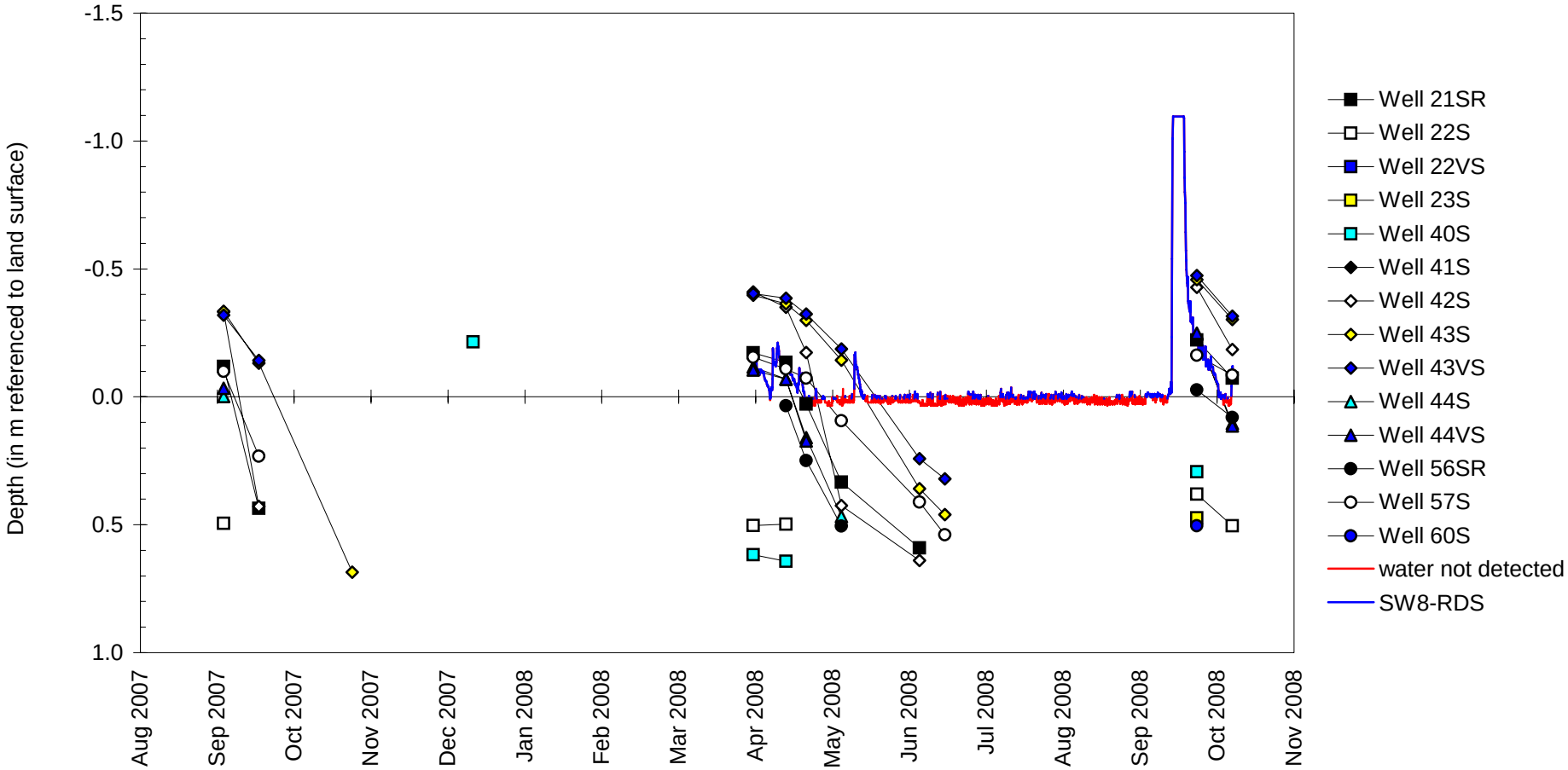
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Water-Level Elevations
in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges
in the East Field and near the Natural Slough



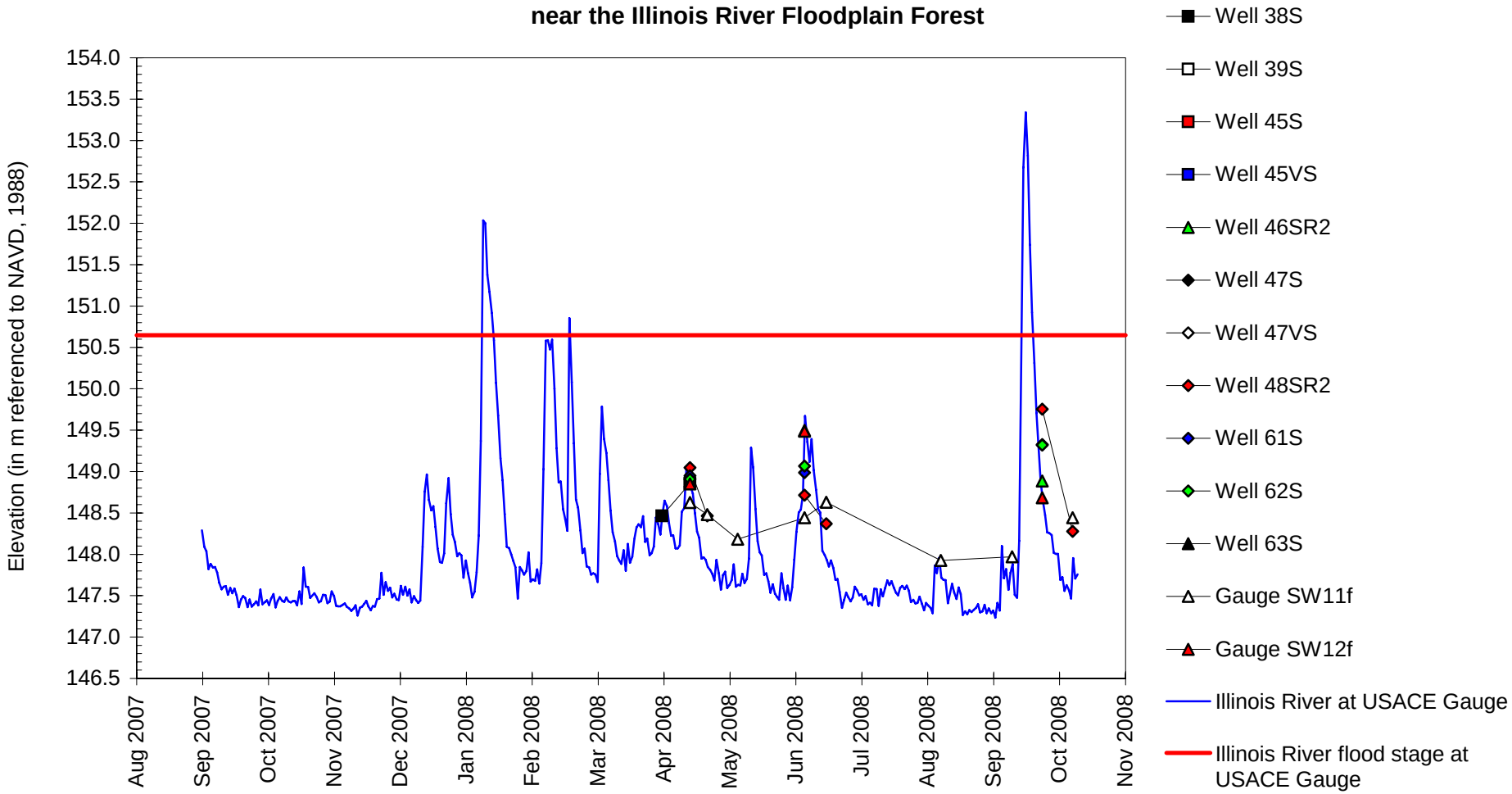
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Depth to Water
in Soil-Zone Monitoring Wells and Data Loggers
in the East Field and near the Natural Slough



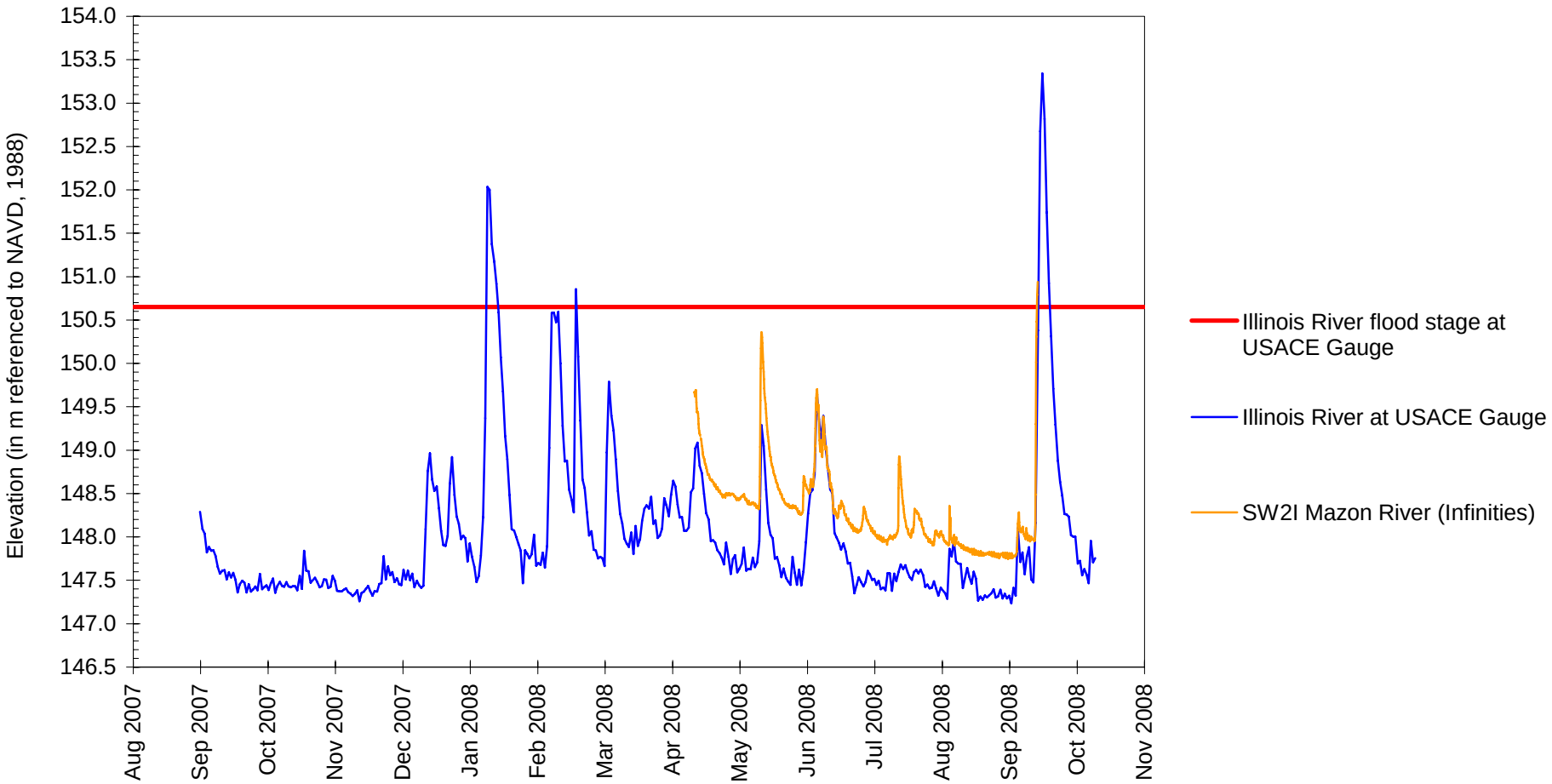
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Water-Level Elevations
in Monitoring Wells, Data Loggers, and Stage Gauges
near the Illinois River Floodplain Forest



Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

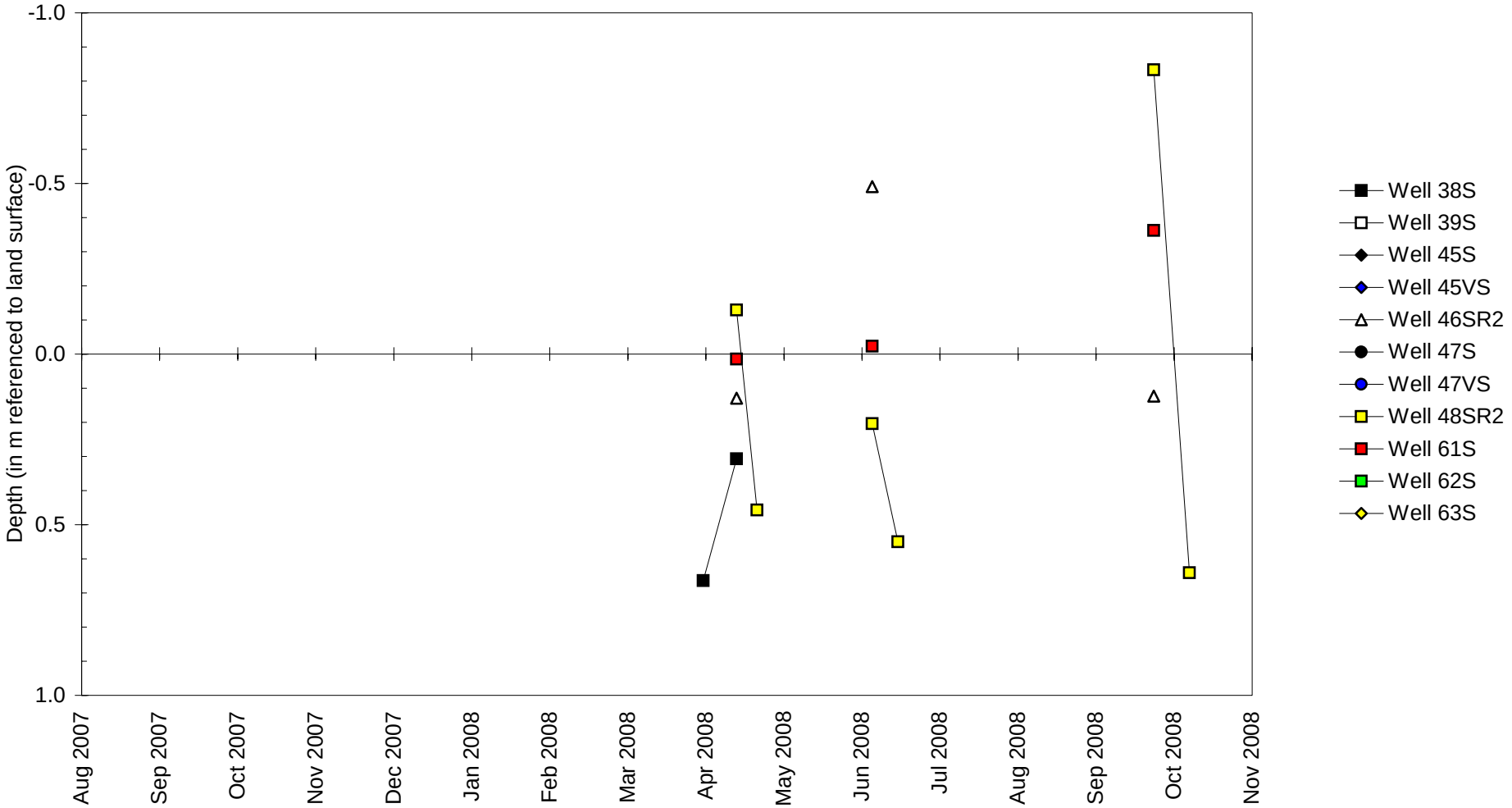
Water-Level Elevations
in Selected Data Loggers



09

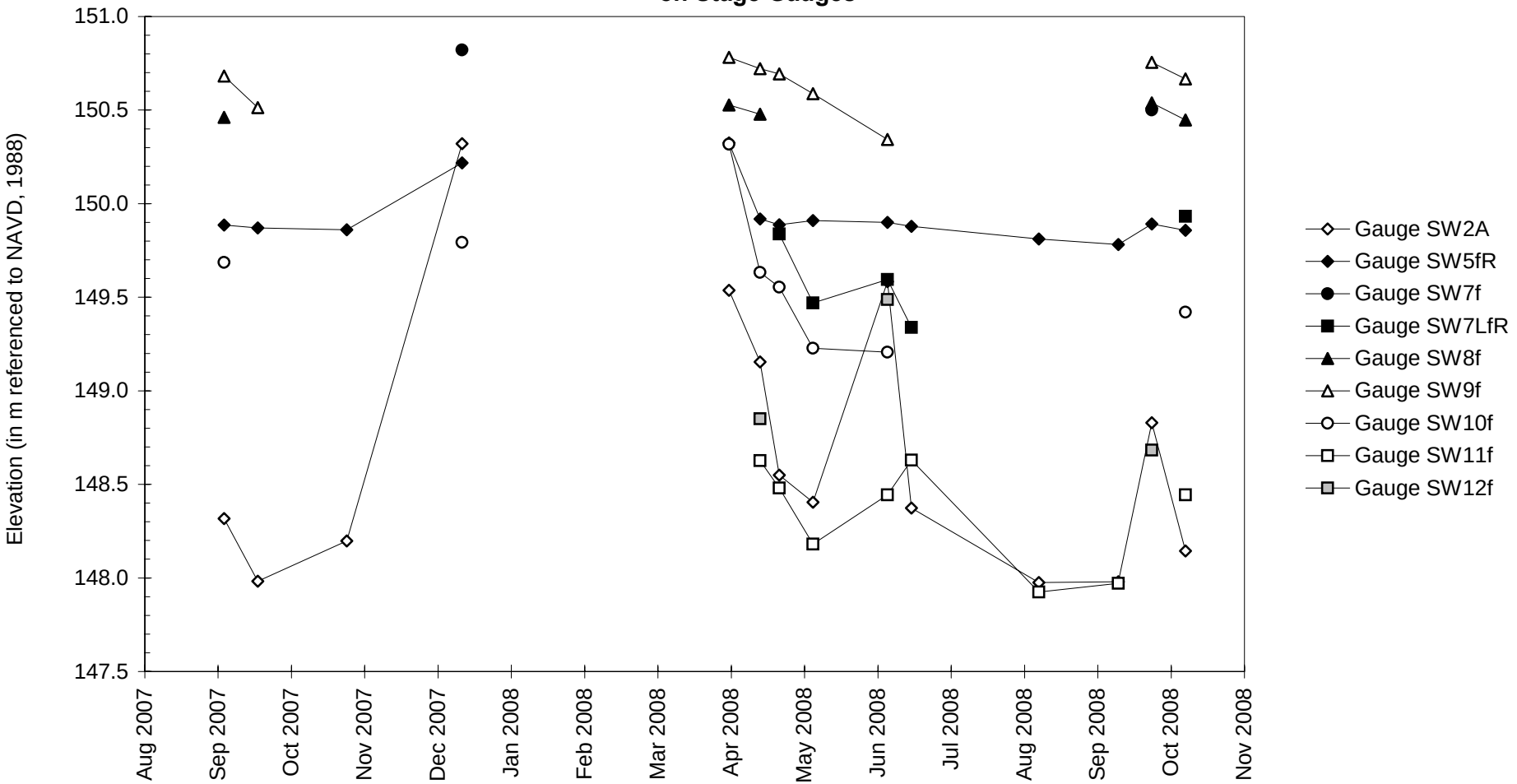
Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

Depth to Water
in Monitoring Wells
near the Illinois River Floodplain Forest



Morris, Illinois River Wetland Bank Site
September 1, 2007 to November 1, 2008

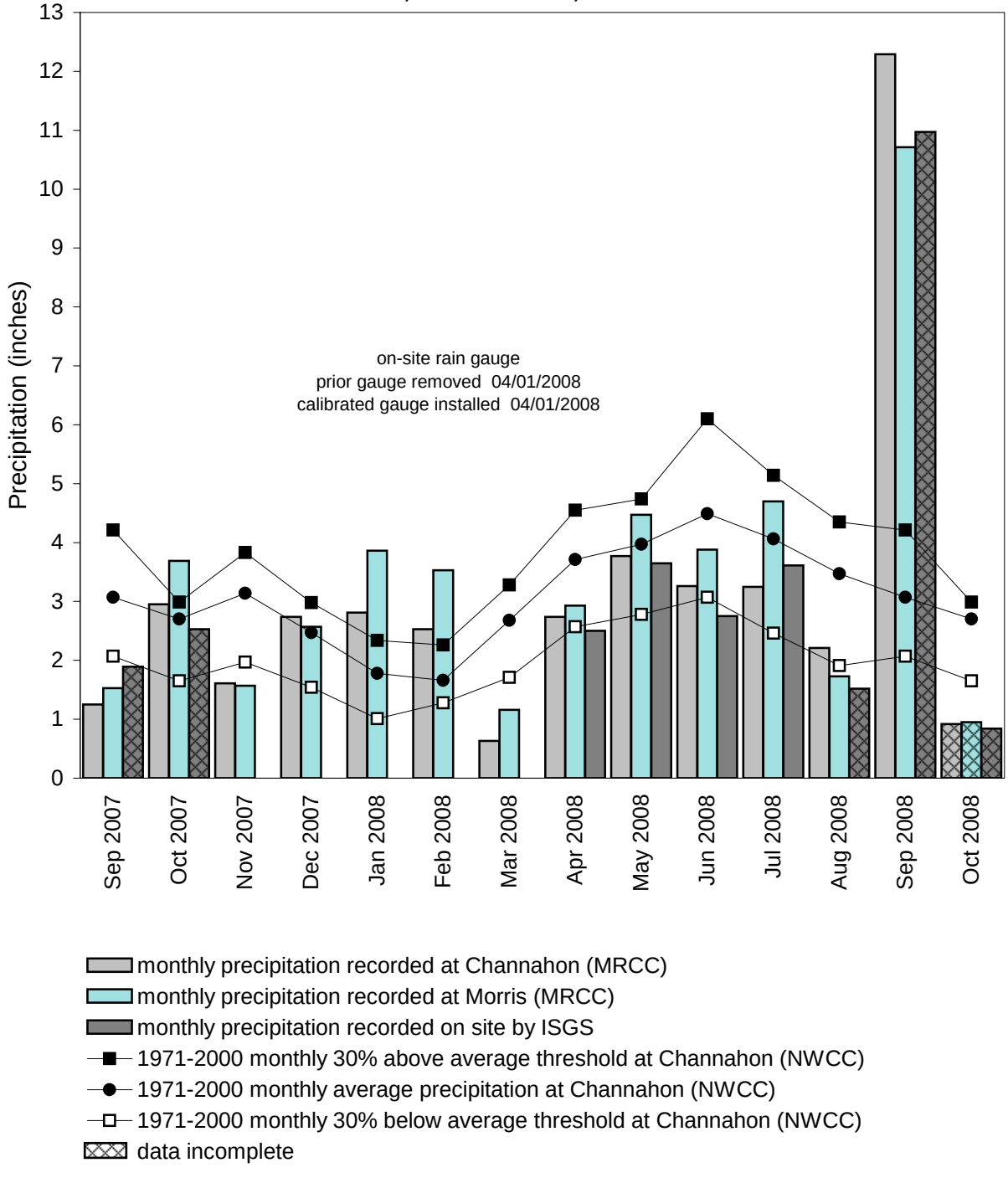
Water-Level Elevations on Stage Gauges



Morris, Illinois River Wetland Bank Site

September 1, 2007 through October 8, 2008

Total Monthly Precipitation Recorded On Site and at the Channahon, IL and Morris, IL Weather Stations



Graph last updated October 8, 2008

EDWARDS RIVER, MERCER COUNTY **ISGS #50**
WETLAND COMPENSATION SITE
FAP 310
Mercer County, near Boden, Illinois
Sequence #11666
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Keith W. Carr

SITE HISTORY

- May 1996: ISGS submitted an initial site evaluation report to IDOT.
- Spring 1999: ISGS began post-construction monitoring.
- Fall 1999: Eleven sediment traps were added to the site at IDOT's request.
- April 2005: A berm was constructed at the northwest corner of the site by IDOT in order to increase the depth and duration of water retention on the site.
- April 2008: IDOT requested that monitoring of the site be concluded.

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season was estimated to be 0.54 ha (1.33 ac) out of a total area of 0.61 ha (1.51 ac). The area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 0.45 ha (1.11 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Aledo, Illinois, is April 11 and the season lasts 195 days; 5% of the growing season is 10 days and 12.5% of the growing season is 24 days.
- Total precipitation for the monitoring period was 38.39 inches, which was 107% of normal. Precipitation was at or above normal in December 2007, and in January, February, April, May, June and July 2008.
- In 2008, wetland hydrology criteria were satisfied for more than 5% of the growing season at RDS 2, and at wells 1S, 2SR, 3VS, 3S, 4SR, 5VS, 5SR, 6SR, 7SR, 8VS, 9S, 10S, 11S, 12VS, 12S, 13VS, and 13S, and for more than 12.5% of the growing season at RDS 2, and at wells 2SR, 3VS, 3S, 4SR, 5VS, 5SR, 8VS, 9S, 11S, 12VS, 12S, 13VS, and 13S.
- Surface-water levels measured at RDS 1 reveal that inundation occurred at an elevation $\geq$ 193.90 m (636.18 ft) for more than 5% of the growing season and $\geq$ 193.75 m (635.69 ft) for more than 12.5% of the growing season.
- In 2008, inundation of the site was caused by flood events on February 17, March 2, April 10, May 11, and June 13. The number of floods, and their timing, resulted in surface water persisting on the site for most of the growing season.

ADDITIONAL INFORMATION

- The sediment traps on the site were emptied on August 11, 2008. All of the traps contained sediment, likely deposited by the flood events on February 17, March 2, April 10, May 11, and June 13, 2008. Sediment thickness in the wetland mitigation area (T1, T2, T3, T4, T5, T6, T7, T10, and T12) ranged from 0.33 cm (0.13 in.) at T4 to 1.79 cm (0.70 in.) at T10, and averaged 1.10 cm (0.43 in.). Sediment thickness in the natural forested wetland (T9) was 1.25 cm (0.49 in.) and sediment thickness on the levee (T8) was 0.79 cm (0.31 in.).

- Sediment traps were installed on the site in 1999. A total of 6 sets of samples were retrieved from the traps covering the periods April 17, 2001 to April 1, 2002, April 17, 2002 to April 15, 2003, April 15, 2003 to April 14, 2004, May 6, 2004 to March 29, 2005, September 12, 2006 to August 17, 2007, and August 17, 2007 to August 11, 2008. No measurable amounts of sediment were collected prior to 2001 and there were no floods on the site from July 2004 to September 2006, and thus no measurable amount of sediment was deposited. In the wetland mitigation area, the greatest total thickness of sediment accumulated at T7 (8.86 cm [3.49 in.]), in the lowest part of the basin, and the smallest total thickness accumulated at T4 (2.29 cm [0.90 in.]) near the southern edge of the basin.

- Prior to the construction of the berm in April 2005, inundation of the site was of short duration. The longest period of inundation was about 12 days in 2003, resulting from a flood that occurred on April 30 of that year. The duration of inundation from other flood events in 2002, 2003, and 2004, ranged from about 1 day to about 5 days.

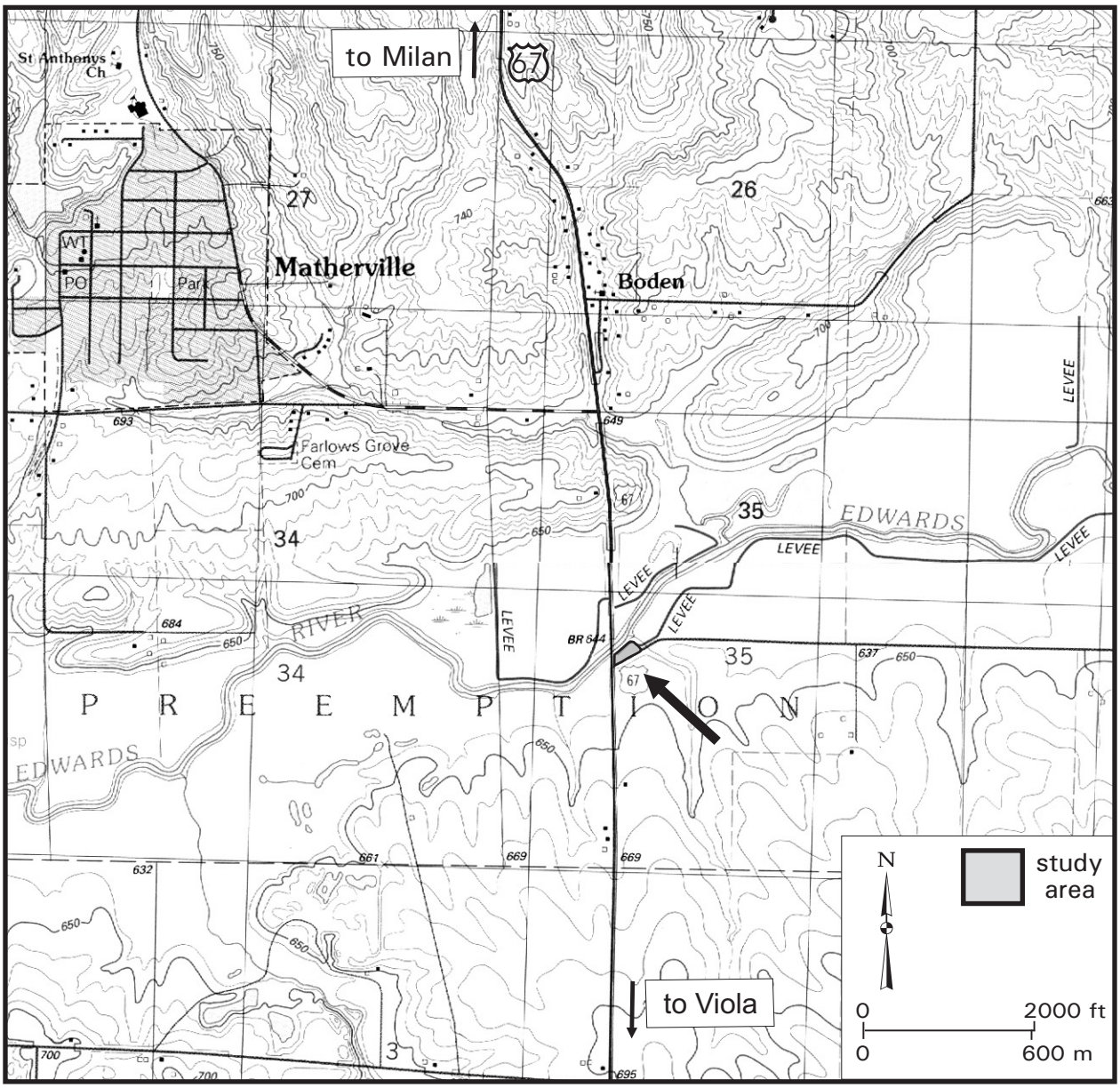
- After construction of the berm, the period of inundation resulting from flood events increased significantly. In 2007, the site was inundated for about 60 days as the result of a single flood event that occurred on February 21. Surface water persisted on the site until about April 21, or the first 11 days of the growing season, and saturation persisted for a period long enough to result in a significant portion of the site satisfying the criteria for jurisdictional wetland hydrology at both 5% and 12.5% of the growing season. In 2008, there were 5 flood events (February 17, March 2, April 10, May 11, and June13) that resulted in inundation over a majority of the site that persisted for about 82 days or 42% of the growing season.

Edwards River, Mercer County Wetland Compensation Site

(FAP 310)

General Study Area and Vicinity

from the USGS Topographic Series, Viola, IL (USGS 1992) and
Matherville, IL (USGS 1991) 7.5-minute Quadrangles
contour interval is 10 ft



Edwards River, Mercer County Wetland Compensation Site

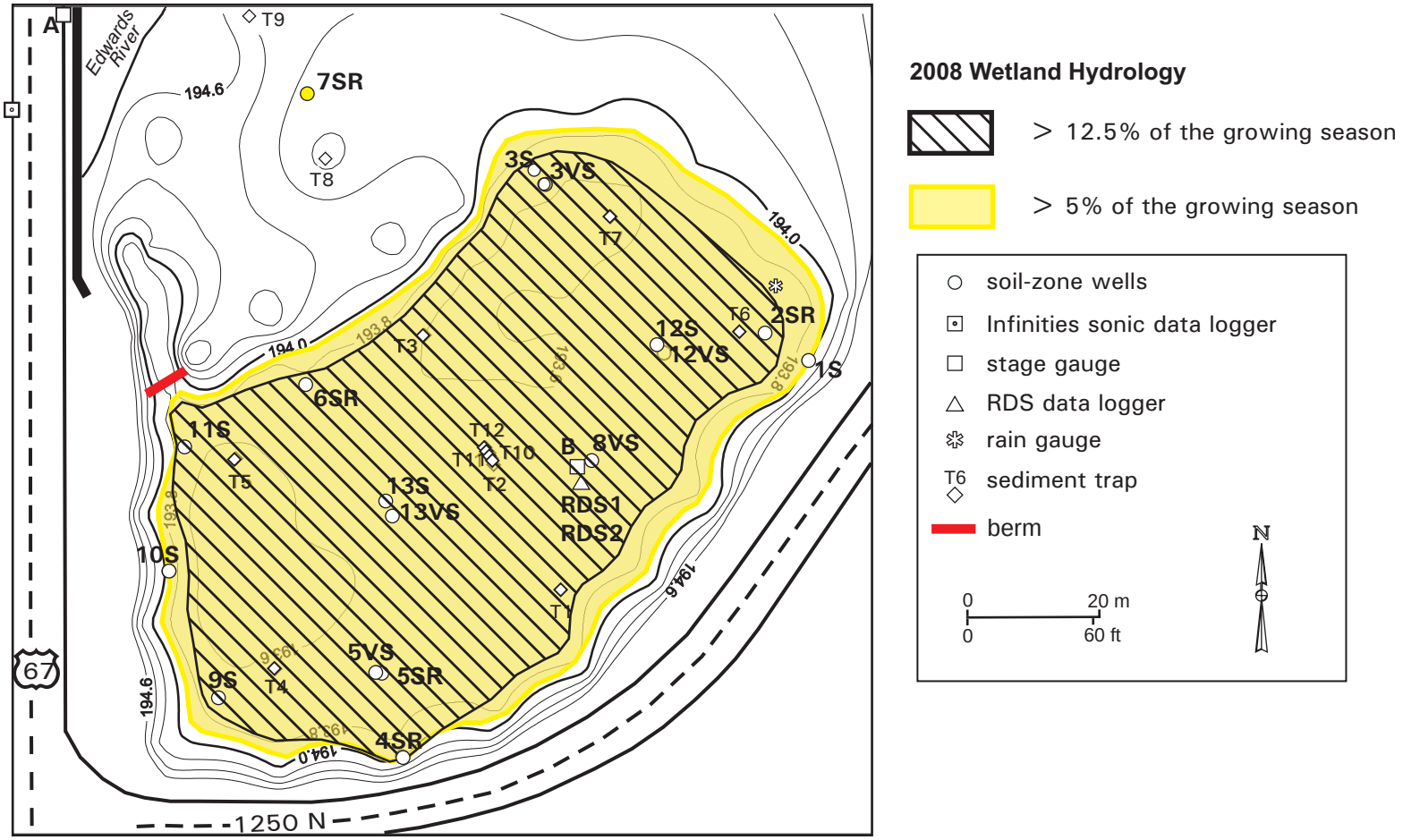
(FAP 310)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

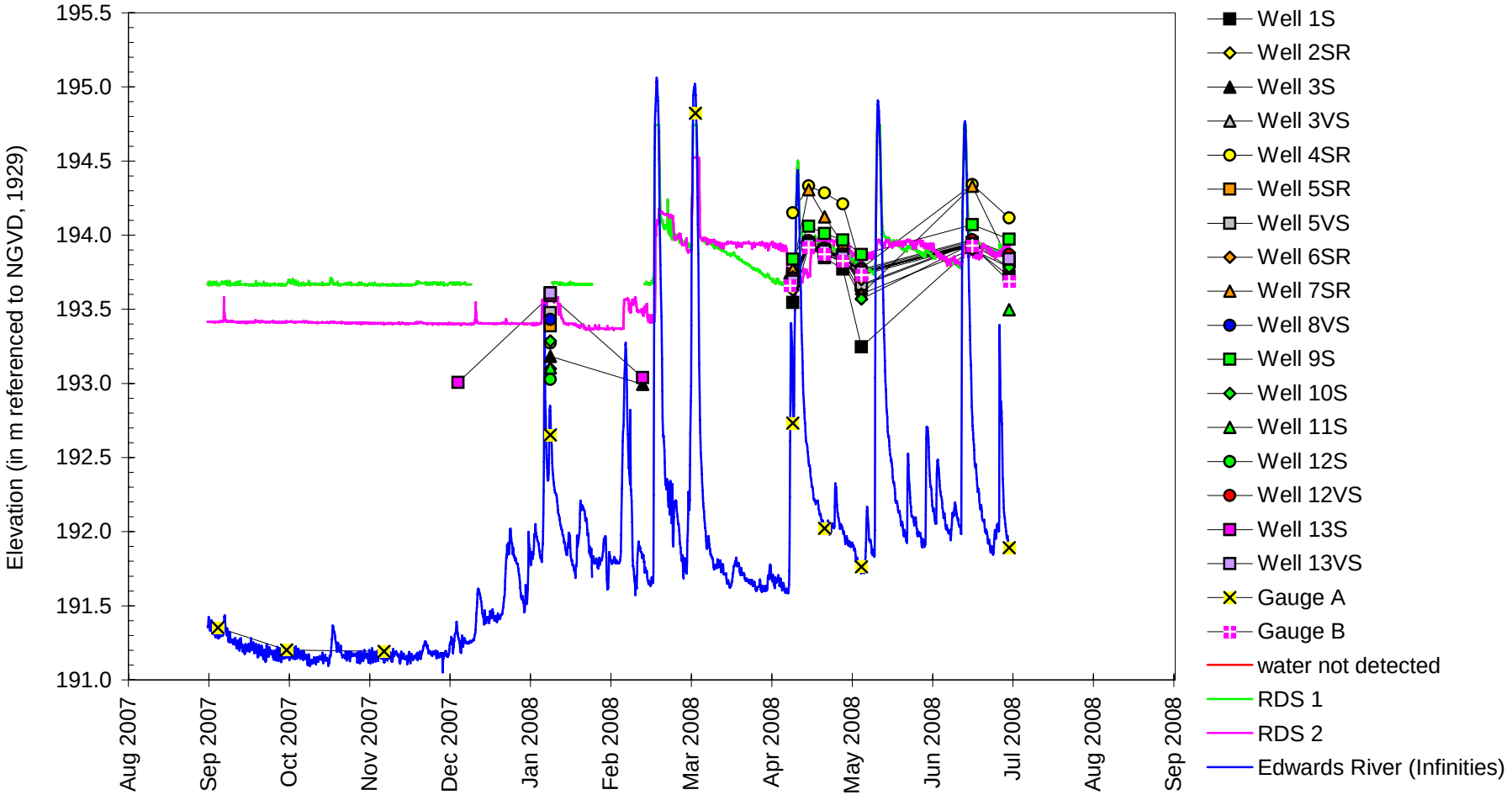
Map based on 2002 ISGS elevation survey referenced to NGVD, 1929

contour interval is 0.2 meters



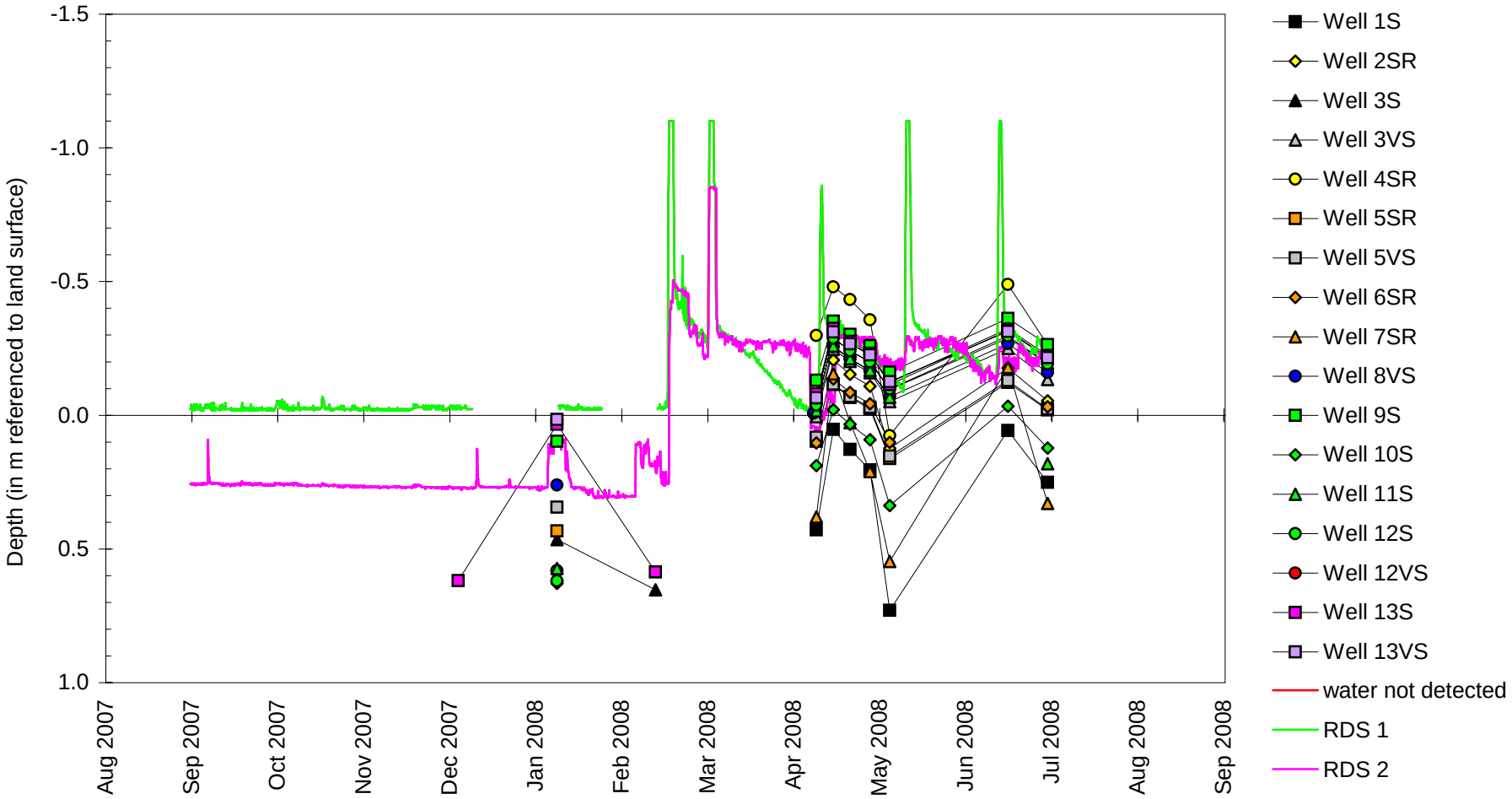
Edwards River, Mercer County Wetland Compensation Site
September 1, 2007 to July 1, 2008

Water-Level Elevations



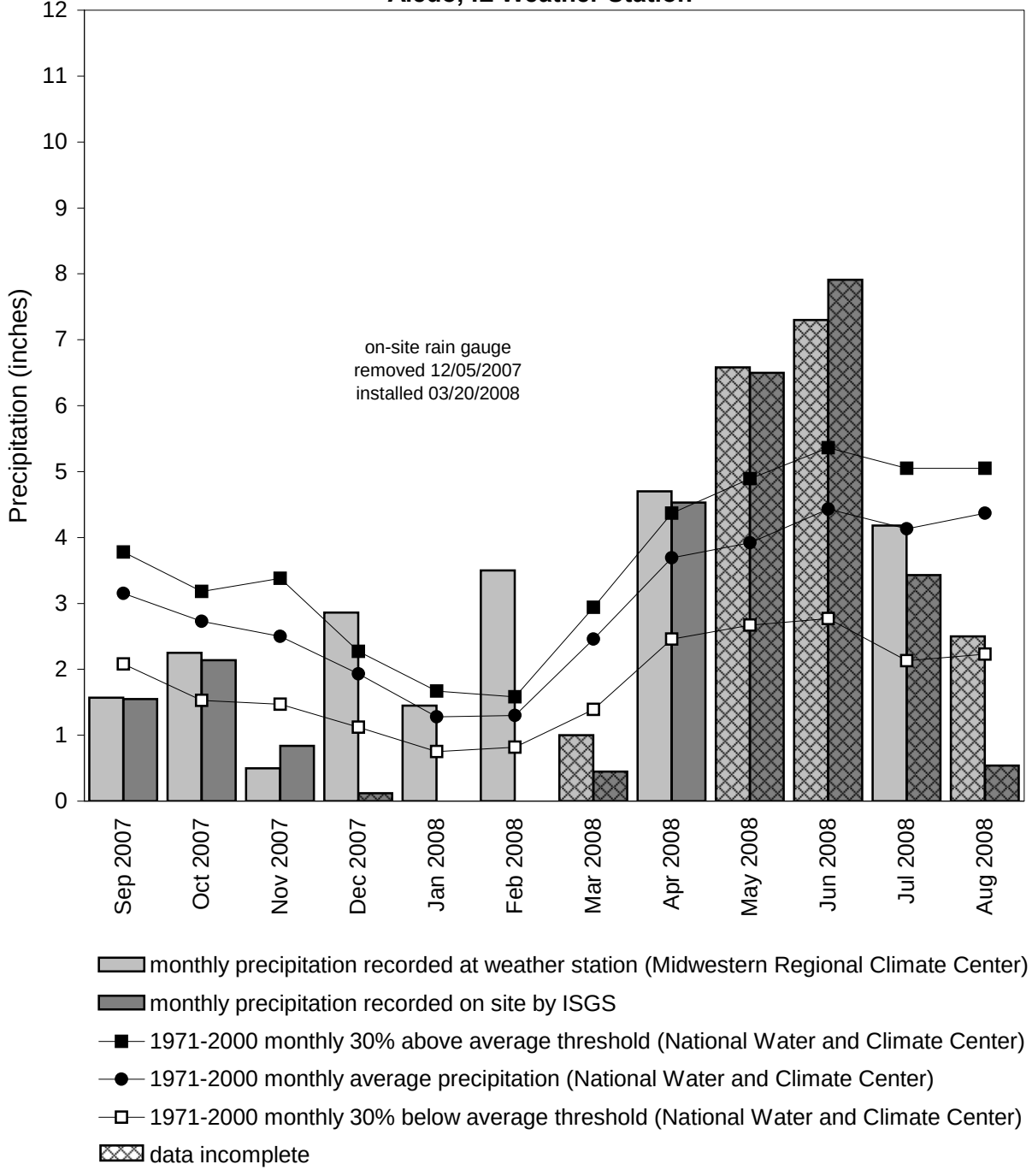
Edwards River, Mercer County Wetland Compensation Site
September 1, 2007 to July 1, 2008

Depth to Water



Edwards River, Mercer County
Wetland Compensation Site
September 2007 through August 2008

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



Graph last updated October 7, 2008

FORMER LUEHMANN PROPERTY, NEW RIVER CROSSING **ISGS #51**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Madison County, near Stallings, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- February 2000: The ISGS was tasked to perform a Level II hydrogeologic assessment of the site.

- May 2003: A Level II hydrogeological characterization report was submitted to IDOT (ISGS Open-File Series 2003–09).

- June 2003: IDOT requested the suspension of ground-water monitoring. The collection of data from surface-water instruments is ongoing.

SUMMARY OF 2008 EVENTS

The total area of the site is 27.5 ha (68 ac). Because ground-water monitoring was suspended at this site, an estimate of the area satisfying the criteria for wetland hydrology was not prepared for this report.

- According to the MRCC, the median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.

- Precipitation at the nearby Edwardsville weather station during the monitoring period was 46.22 inches or 121% of normal. Precipitation was at or above normal in December 2007, and in February, March, April, May, June, and July 2008.

- Measurements in the Cahokia Canal indicate that the water level exceeded 126.8 m (416.0 ft) on 7 occasions during the growing season, April 10–13, May 7–14, May 25–29, May 31–June 2, June 6–10, July 2–4, and July 30–August 1, 2008. This is the suggested elevation of an intake culvert described in the Level II Report (ISGS Open-File Series 2003–09).

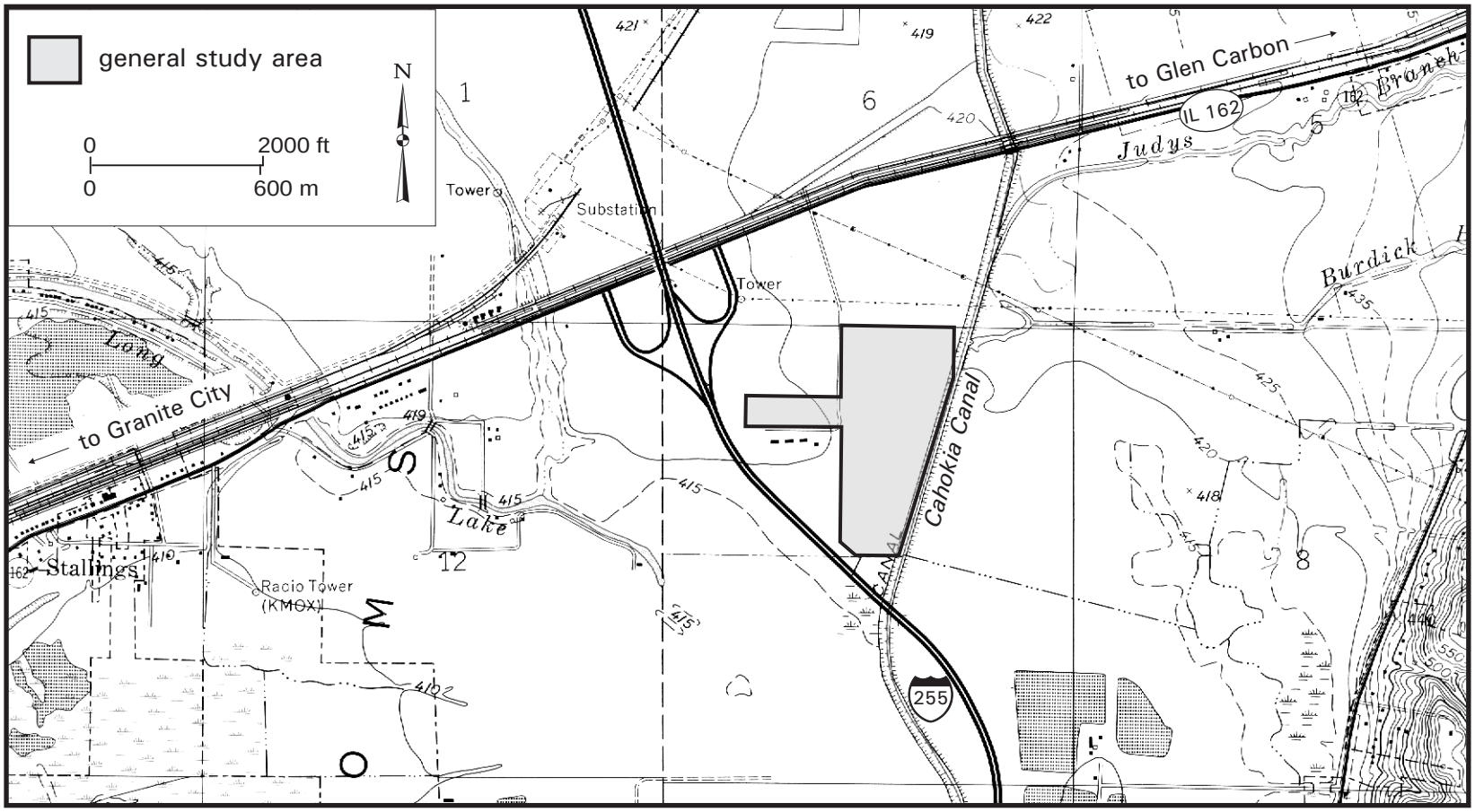
PLANNED FUTURE ACTIVITIES

- Collection of surface-water data will continue at this site until no longer required by IDOT.

Former Luehmann Property, New River Crossing Potential Wetland Compensation Site (FAP 999)

General Study Area and Vicinity

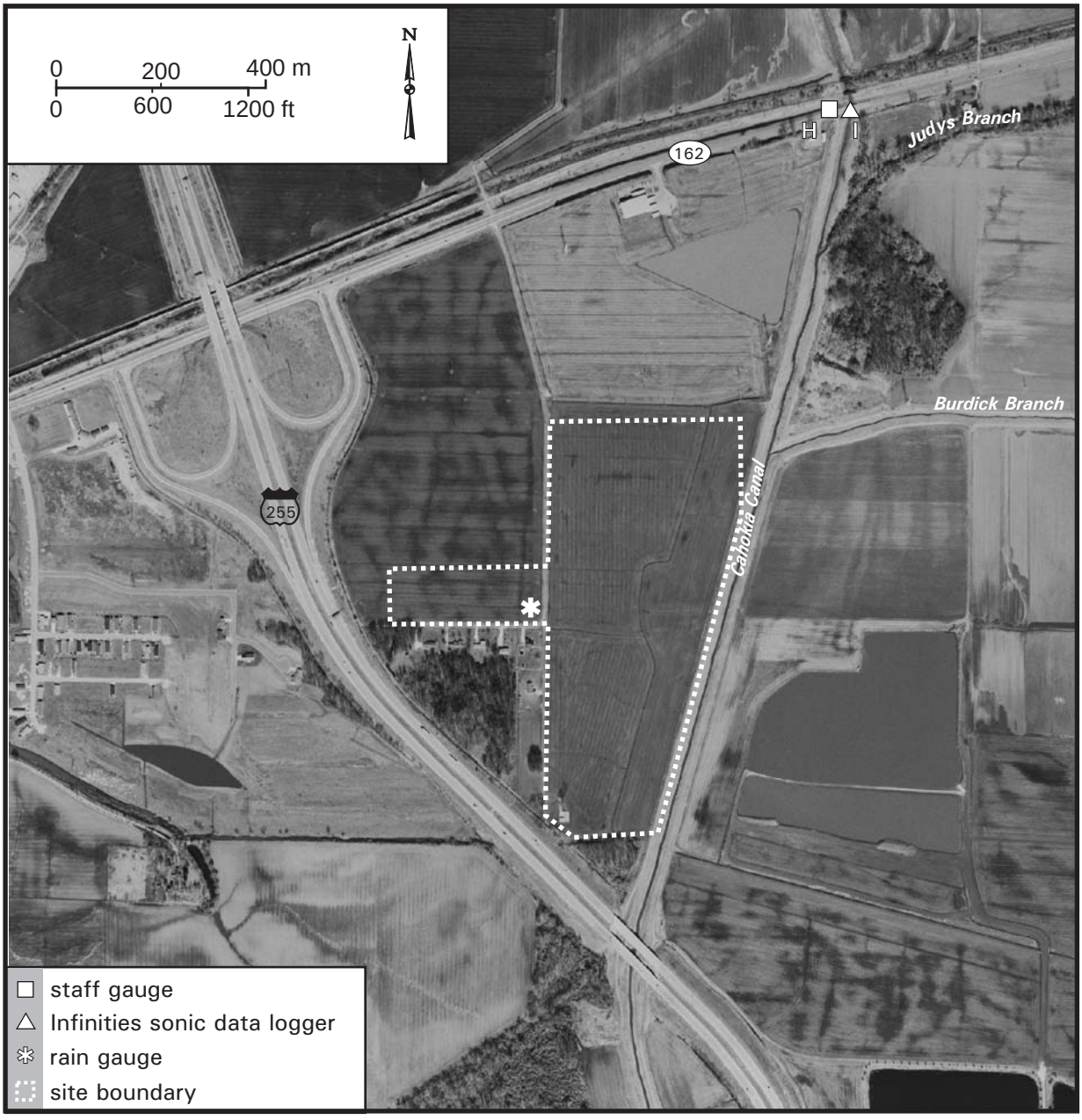
from the USGS Topographic Series, Monks Mound, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 10 feet



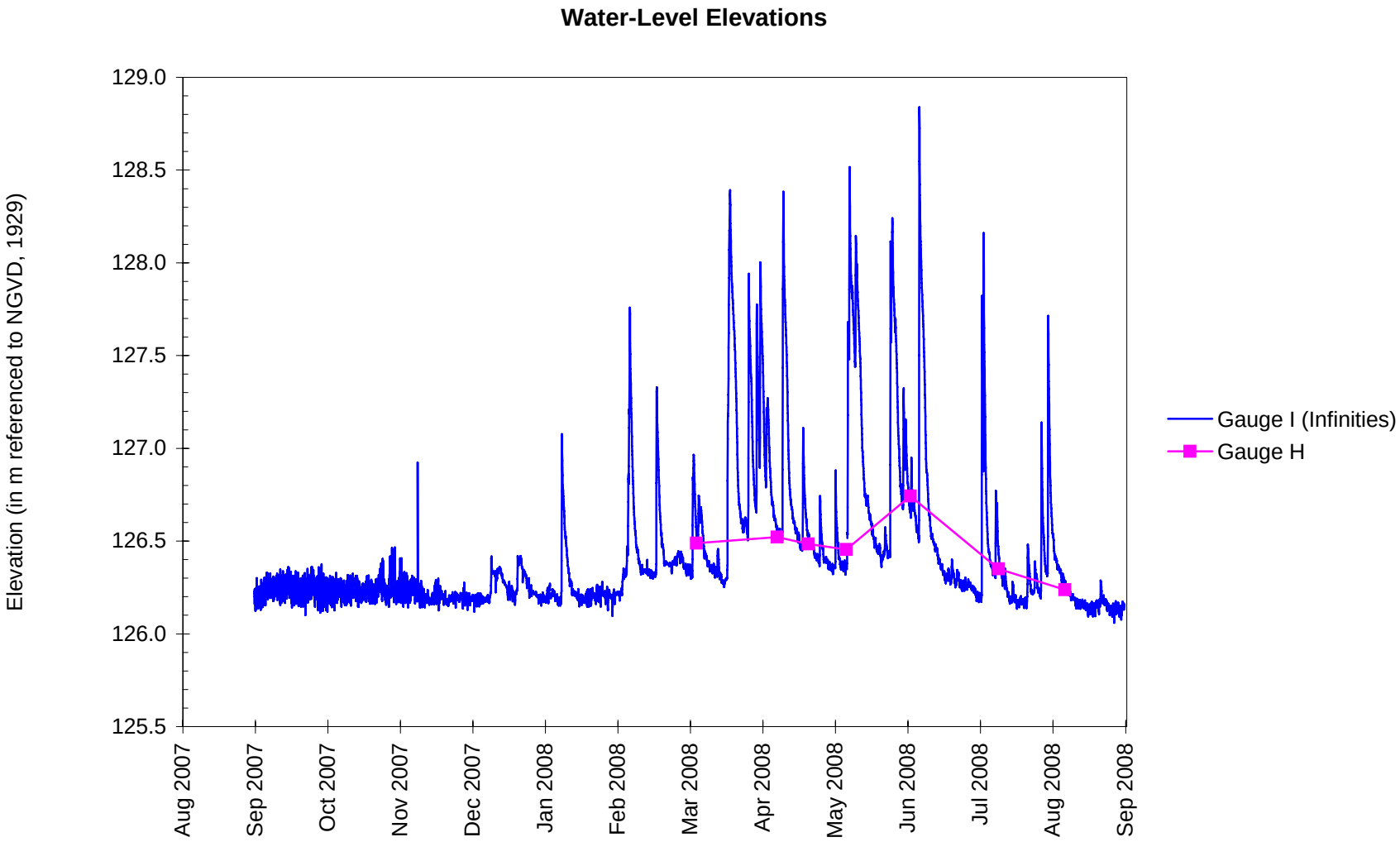
Former Luehmann Property, New River Crossing
Potential Wetland Compensation Site
(FAP 999)

Locations of ISGS Monitoring Instruments

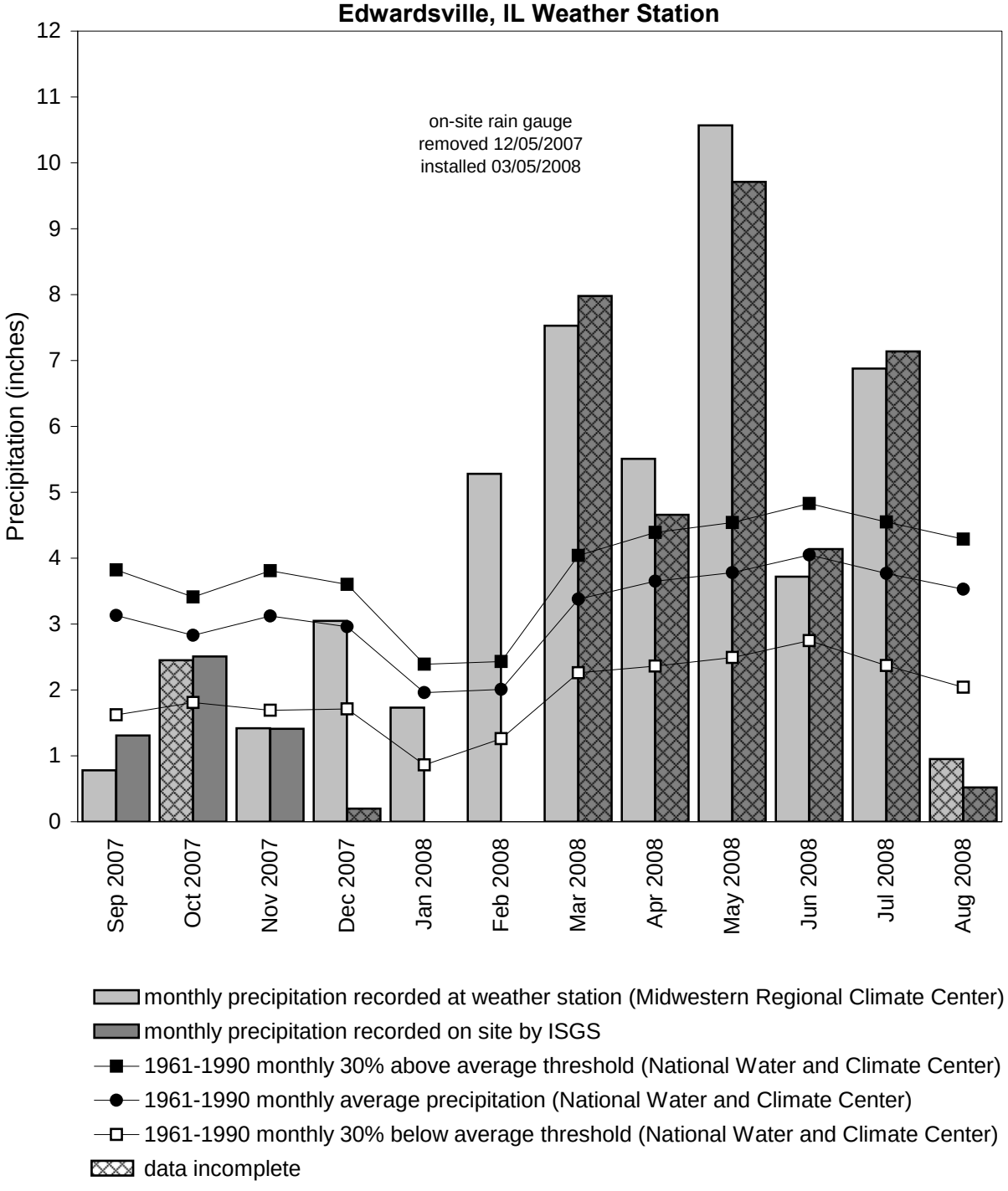
Map based on USGS digital orthophotograph, Monks Mound NE quarter quadrangle
produced from 2005 aerial photography (ISGS 2006)



Former Luehmann Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008



Former Luehmann Property, New River Crossing
Potential Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site and at the Edwardsville, IL Weather Station



Graph last updated October 7, 2008

FORMER WESSEL PROPERTY **ISGS #52**
LA GRANGE WETLAND BANK SITE
Sequence #9579
Brown County, near La Grange, Illinois
Primary Project Manager: Keith W. Carr
Secondary Project Manager: Geoffrey E. Pociask

SITE HISTORY

- February 2000: ISGS was tasked by IDOT to conduct a Level II hydrogeologic assessment of the site, and began on-site activities in Spring 2000.

- August 2002: IDOT tasked ISGS and INHS to prepare a draft wetland banking instrument, which was submitted to IDOT in January 2003.

- January 2005: A Level II report was submitted to IDOT (ISGS Open-File Series 2005–02).

- Fall 2005 and 2006: Extensive earthworks were undertaken by IDOT, including filling and plugging of several ditches, reshaping of the east levee, construction of a raised access road, and the excavation of a large basin in the north–central area of the site. Two large drainage tiles were located and removed by IDOT. A partial repair of the south levee breach was also completed by an adjacent landowner. In Fall 2006, 2,849 trees were planted in Fields 4 and 7.

- Spring and Summer 2008: Another round of winter flooding and ice action caused damage to planted trees. Trees were righted and baskets were removed in July. A total of 17 soil-zone wells and two staff gauges were also installed in April, both as replacements for damaged wells and gauges and as new units to increase coverage. Two long-duration floods affecting the site occurred in June and September of the monitoring year.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that the total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008 was 560 ha (1384 ac) out of a total site area of 666 ha (1645 ac). Further, 505 ha (1248 ac) 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 MRCC, the median date that the growing season begins in nearby Rushville, Illinois is April 6 and the season lasts 208 days; 5% of the growing season is 10 days and 12.5% of the growing season is 26 days.

- Total precipitation for the monitoring period was 137% of normal. During the four-month period from December 2007 to March 2008, precipitation was 157% of normal, resulting in atypically moist conditions entering the growing season. The April to August period continued moist, with precipitation at 136% of normal. An extreme September 2008 precipitation total (315% of normal) caused a long-duration overbank flood at the site.

- A total of 32 wells satisfied wetland hydrology criteria for greater than 5% of the growing season, including 3SR2, 4SR, 5SR2, 6SR, 7SR, 8SR, 10SR, 11SR, 12SR, 13SR2, 15SR, 16SR, 17SR2, 21SR, 22SR, 23SR, 26SR, 27SR, 29SR2, 30SR, 31SR2, 32S, 35S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, 43S, and 44S. Further, 31 soil-zone wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season, including 3SR2, 4SR, 5SR2, 6SR, 7SR, 8SR, 10SR, 11SR, 12SR, 13SR2, 15SR, 16SR, 17SR2, 21SR, 22SR, 23SR, 26SR, 27SR, 29SR2, 30SR, 31SR2, 32S, 35S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, and 44S.

- Water levels recorded at all 10 stage gauges on site satisfied wetland hydrology criteria for greater than both 5% and 12.5% of the growing season. A combination of data from these on-site gauges and from the USACE La Grange stream-gauging station showed surface-water inundation for a period sufficient to satisfy wetland hydrology criteria at an elevation of at least 134.2 m (440.3 ft) for greater than 5% of the growing season, and at an elevation of at least 132.8 m (435.7 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

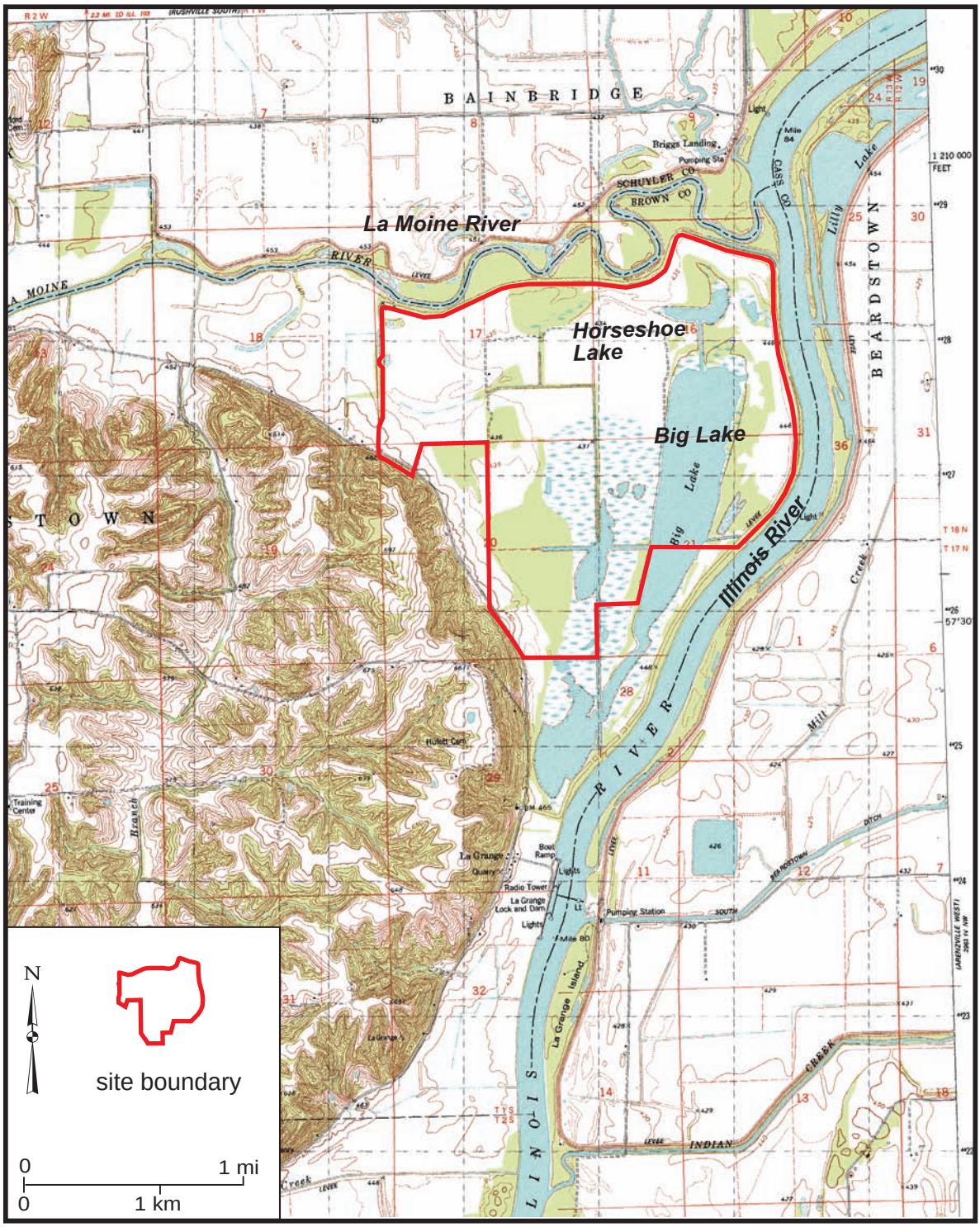
- Three flood-resistant data loggers will be added to the site in the spring of 2009. Soil-zone wells damaged in the 2008 flooding will also be replaced prior to the start of the growing season. In addition, three water-quality data loggers will be installed to measure turbidity, specific conductivity, pH, dissolved oxygen, and other parameters to help quantify site functions.

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

Former Wessel Property, La Grange Wetland Bank Site

General Study Area and Vicinity

from the USGS Topographic Series, Cooperstown, IL 7.5-minute Quadrangle (USGS 1980)
contour interval is 10 feet

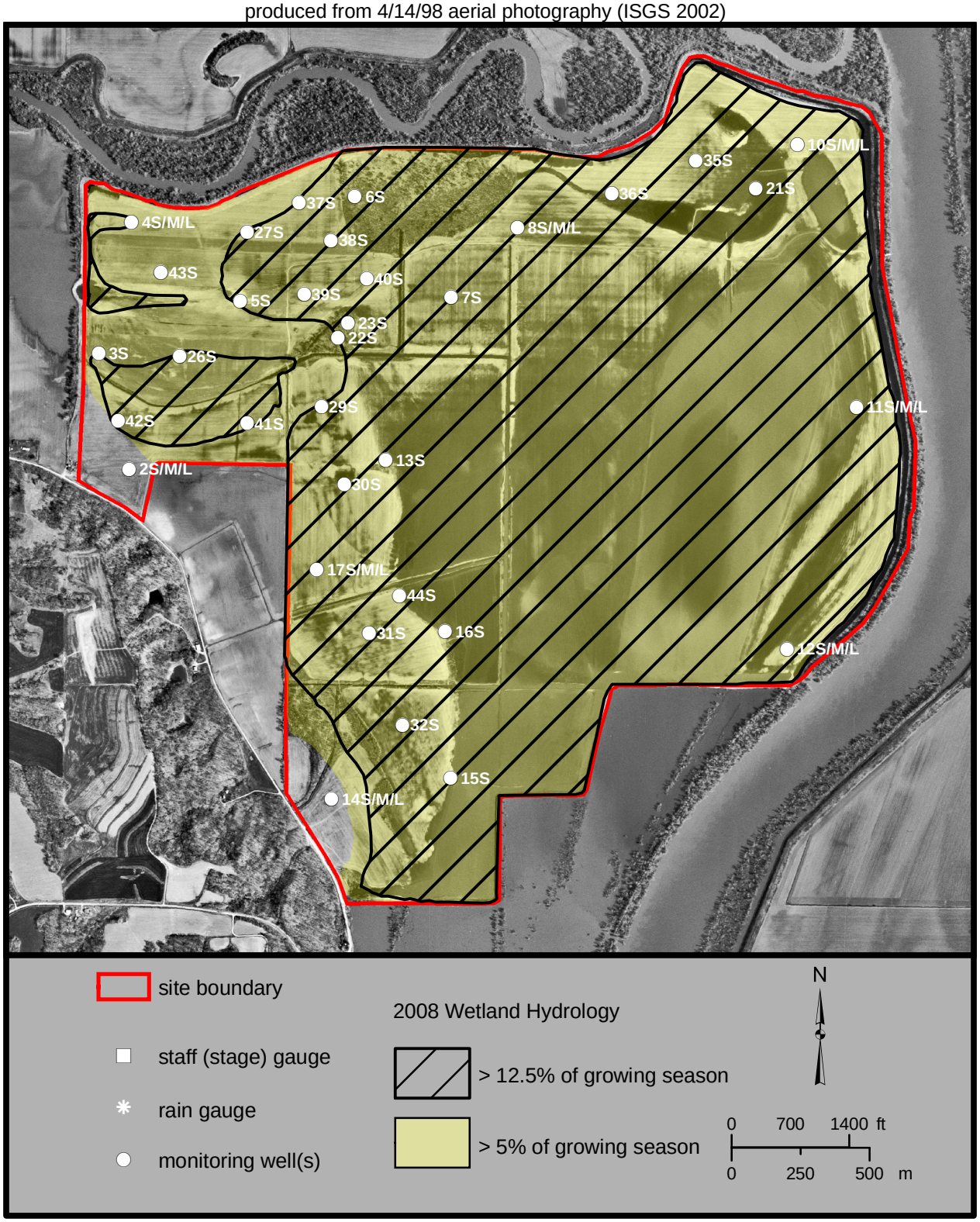


Former Wessel Property, La Grange Wetland Bank Site

Estimated Areal Extent of 2008 Wetland Hydrology

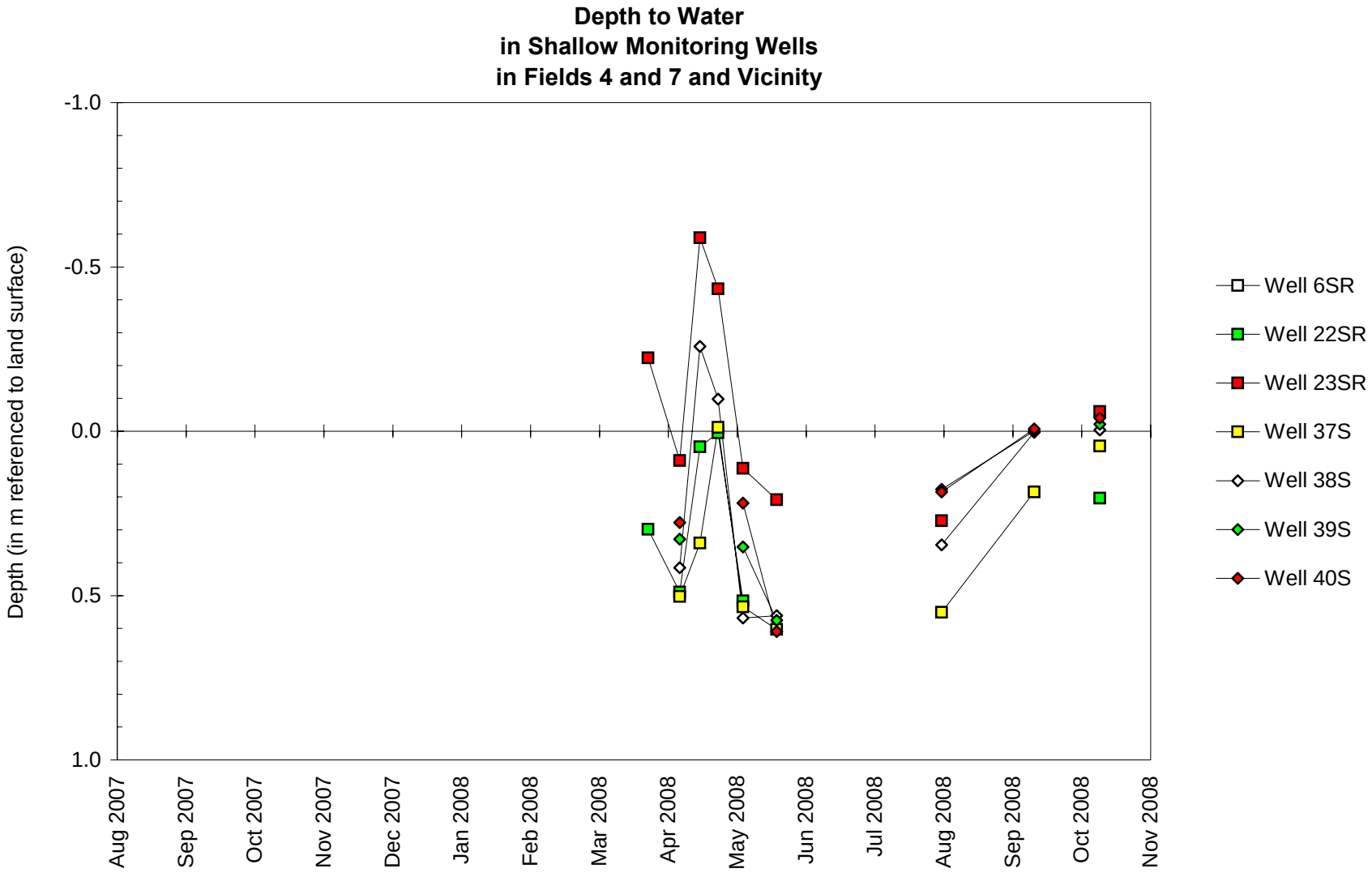
based on data collected between September 1, 2007 and October 10, 2008

map based upon USGS digital orthophotograph, Cooperstown NE quarter quadrangle, produced from 4/14/98 aerial photography (ISGS 2002)



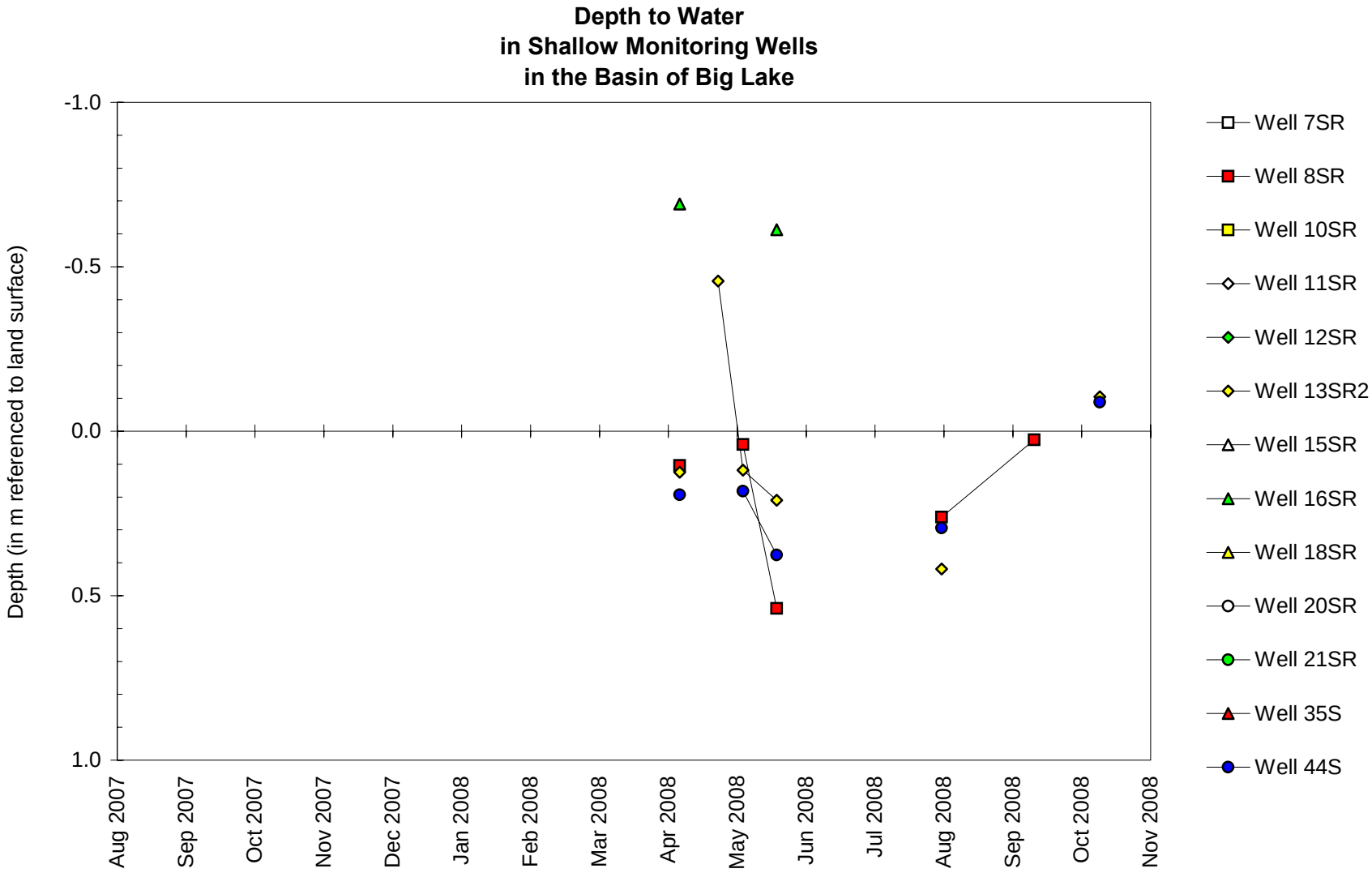
Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008



Former Wessel Property, La Grange Wetland Bank Site

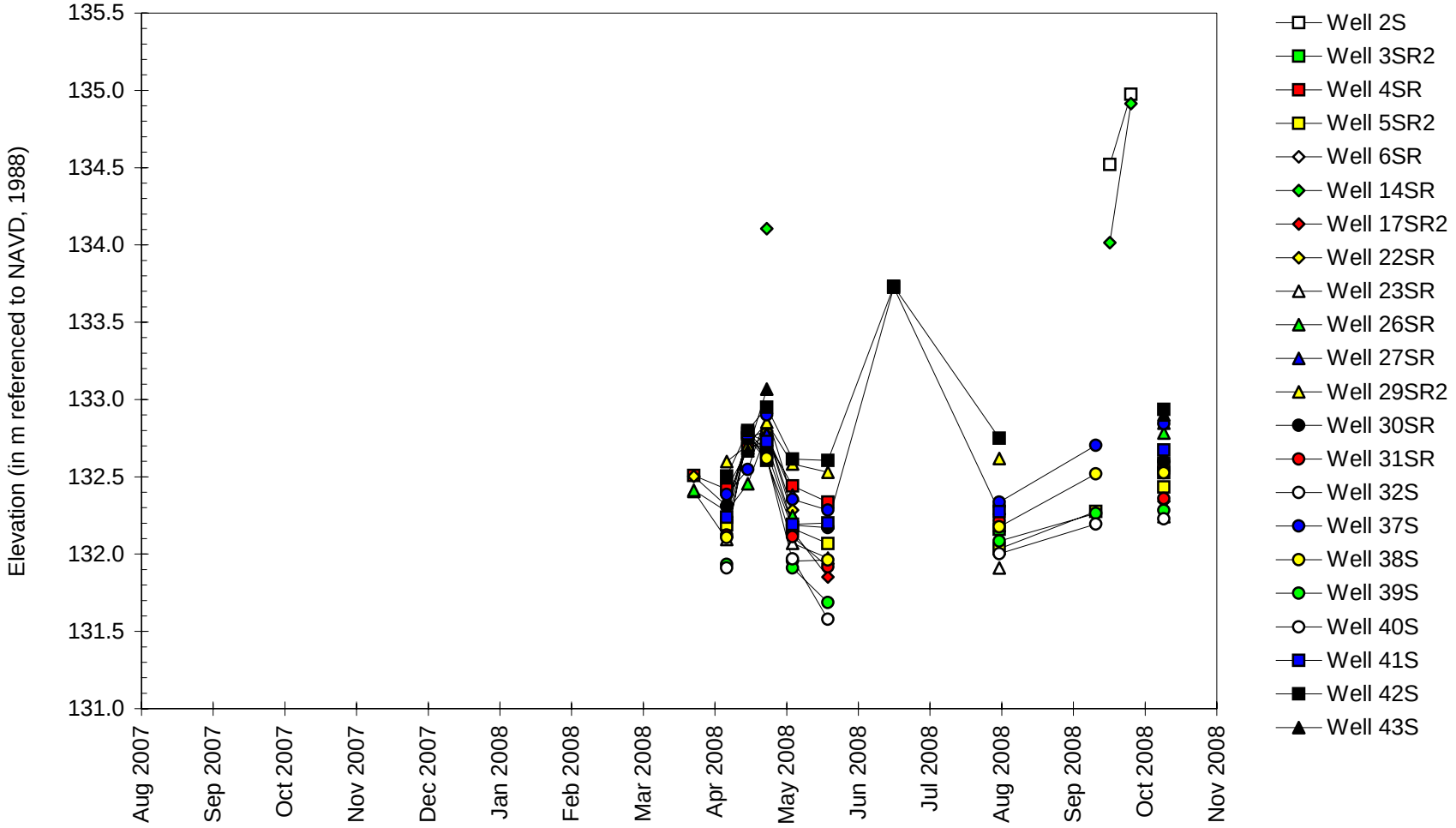
September 1, 2007 to November 1, 2008



Former Wessel Property, La Grange Wetland Bank Site

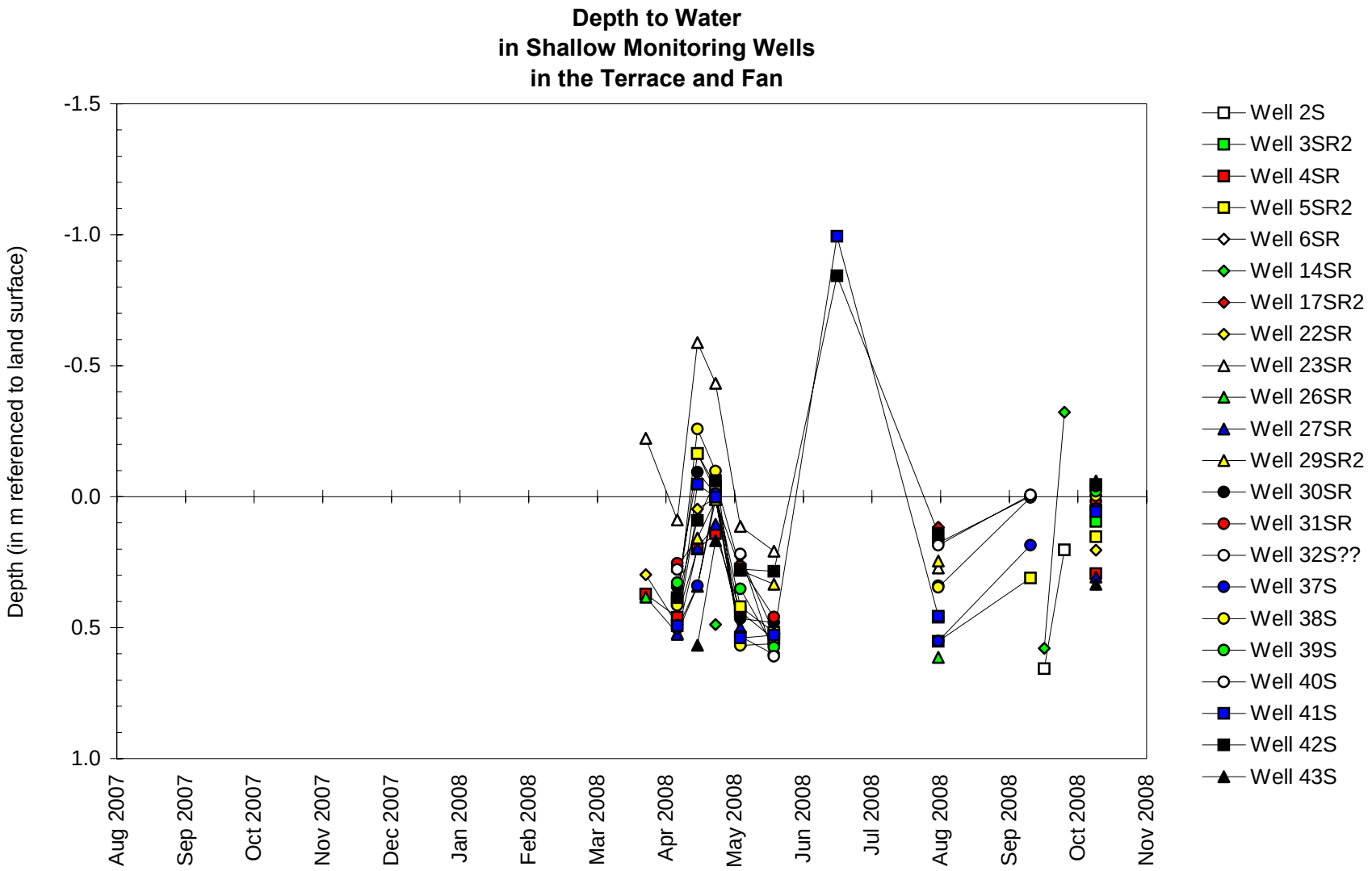
September 1, 2007 to November 1, 2008

Water-Level Elevations in Shallow Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

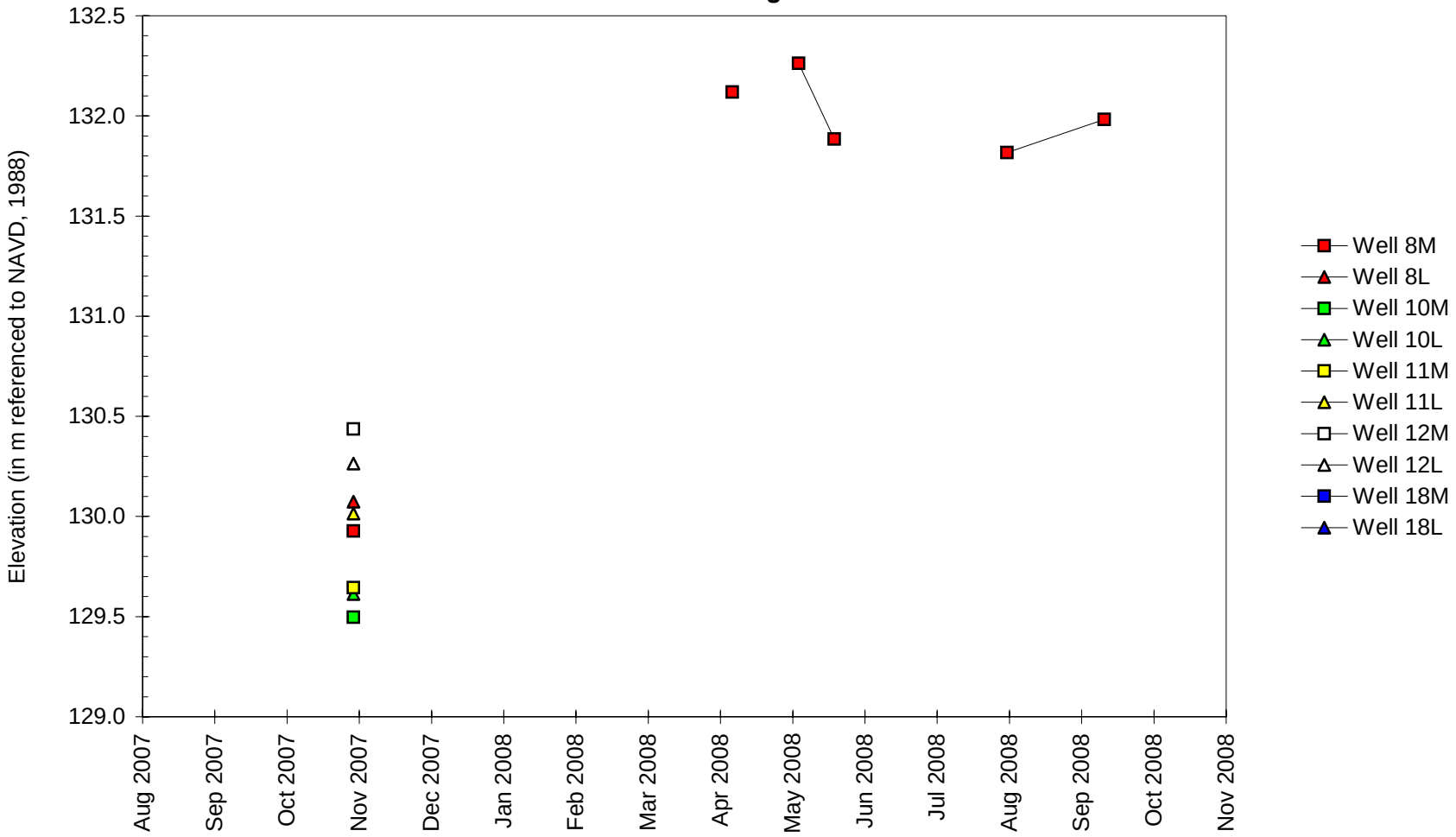
September 1, 2007 to November 1, 2008



Former Wessel Property, La Grange Wetland Bank Site

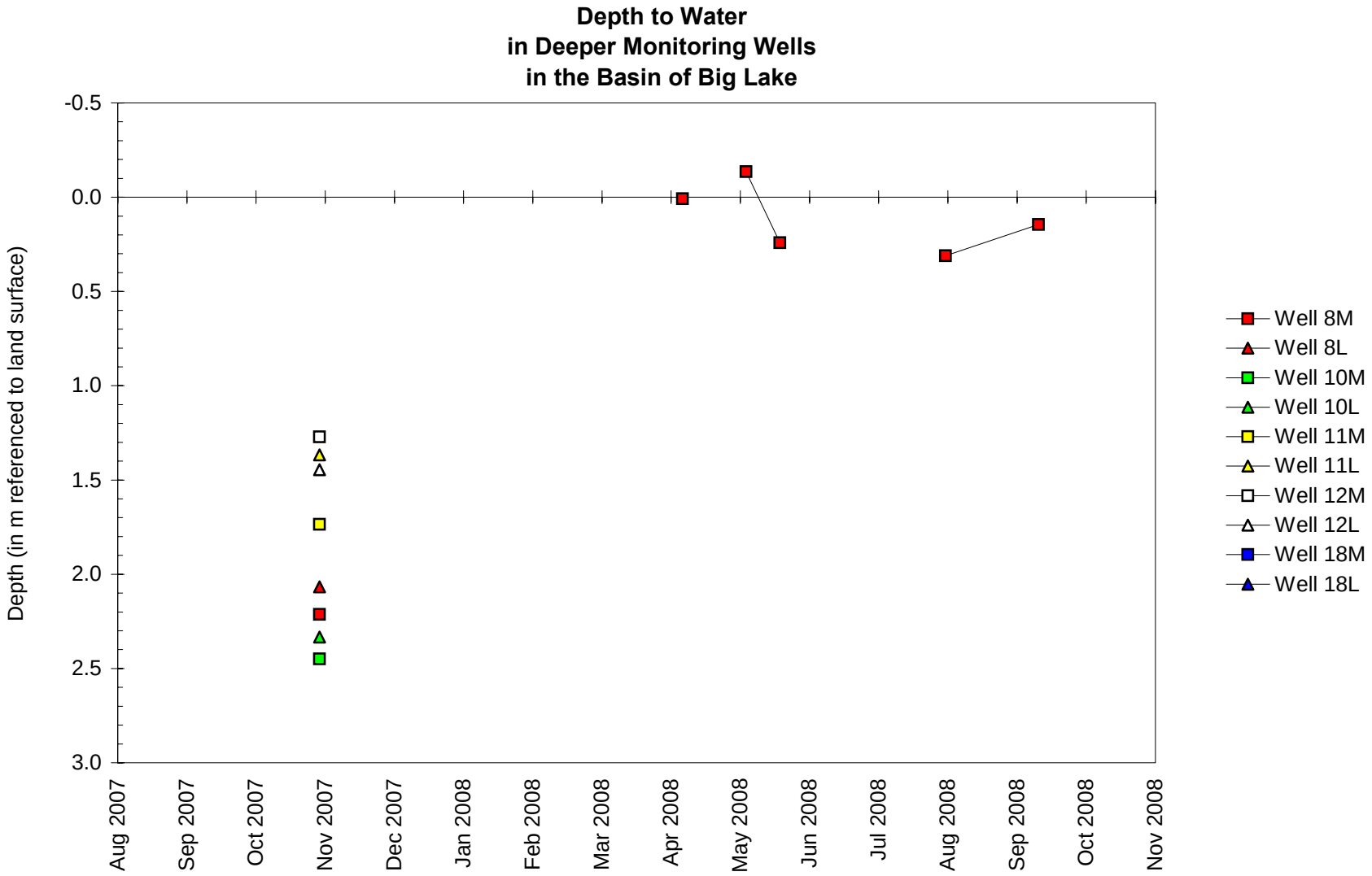
September 1, 2007 to November 1, 2008

Water-Level Elevations in Deeper Monitoring Wells in the Basin of Big Lake



Former Wessel Property, La Grange Wetland Bank Site

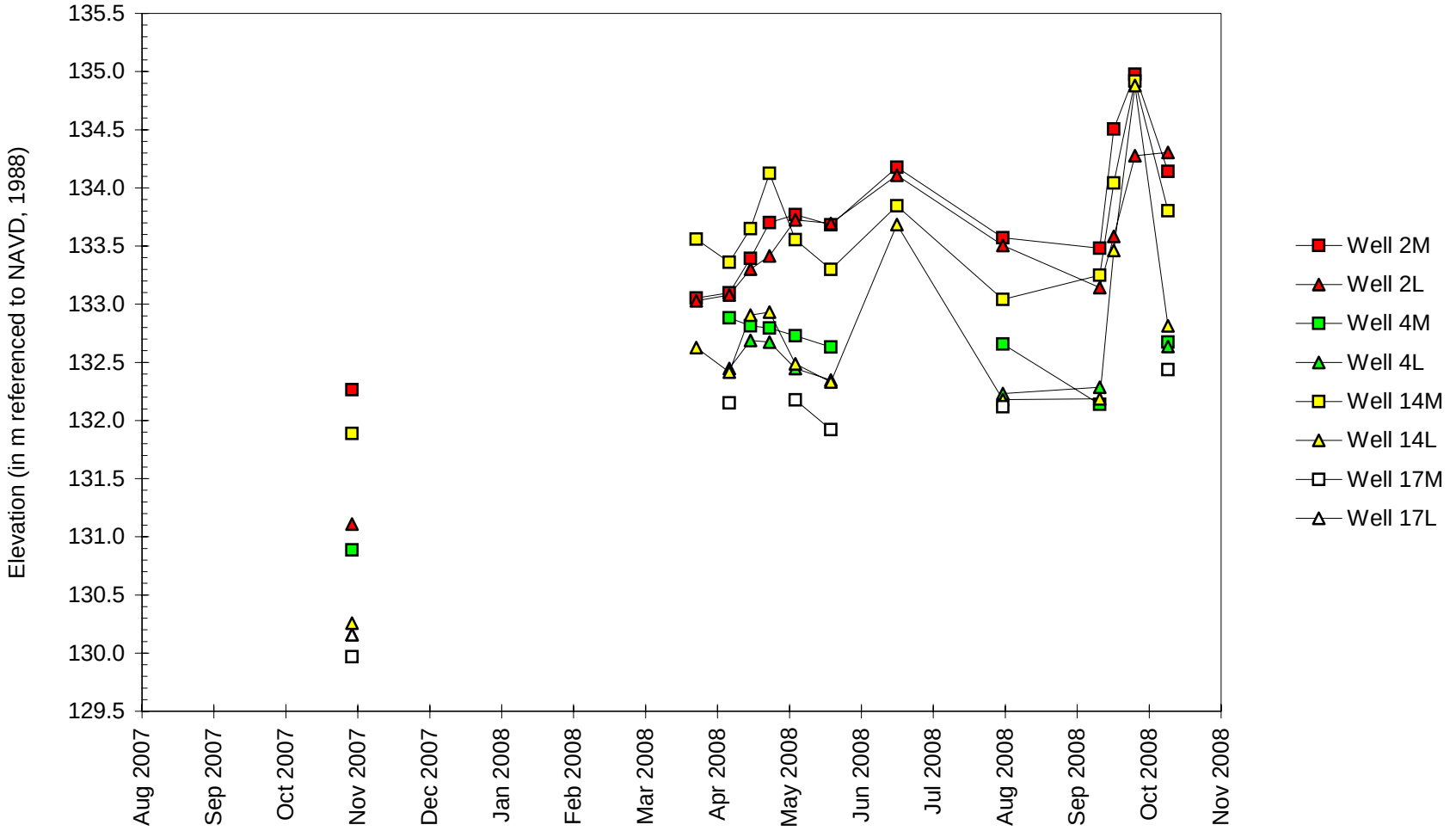
September 1, 2007 to November 1, 2008



Former Wessel Property, La Grange Wetland Bank Site

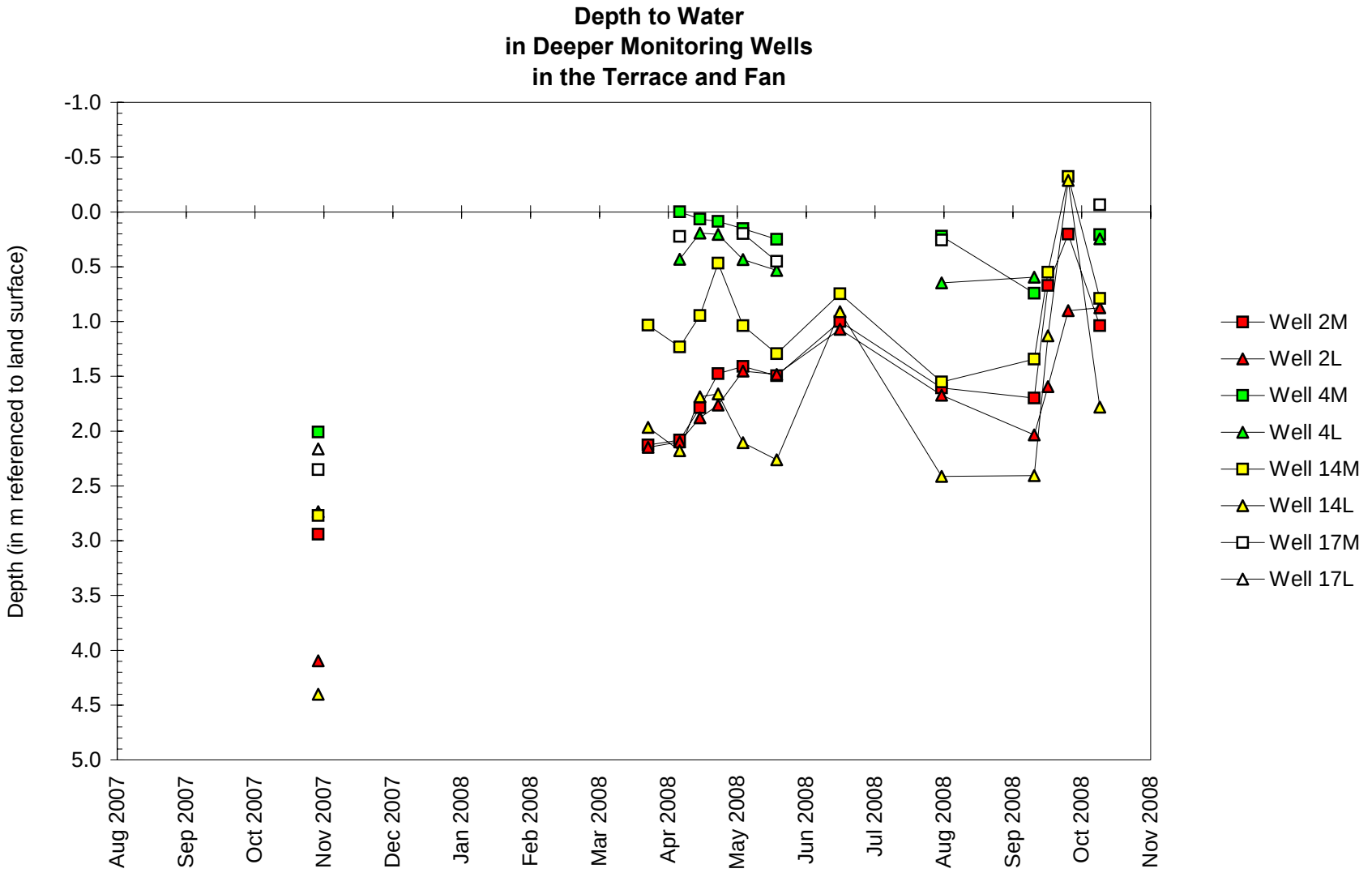
September 1, 2007 to November 1, 2008

Water-Level Elevations in Deeper Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

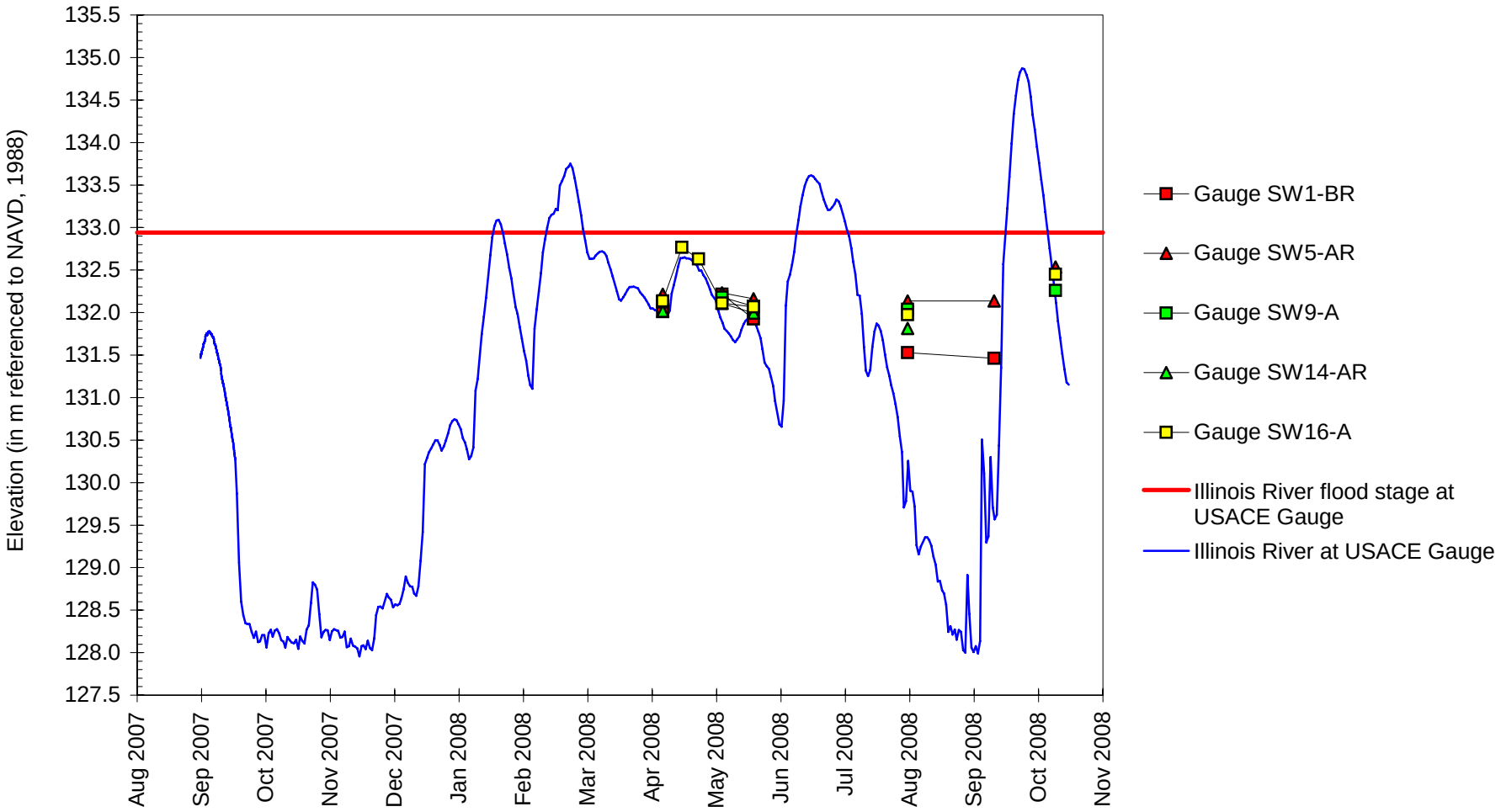
September 1, 2007 to November 1, 2008



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008

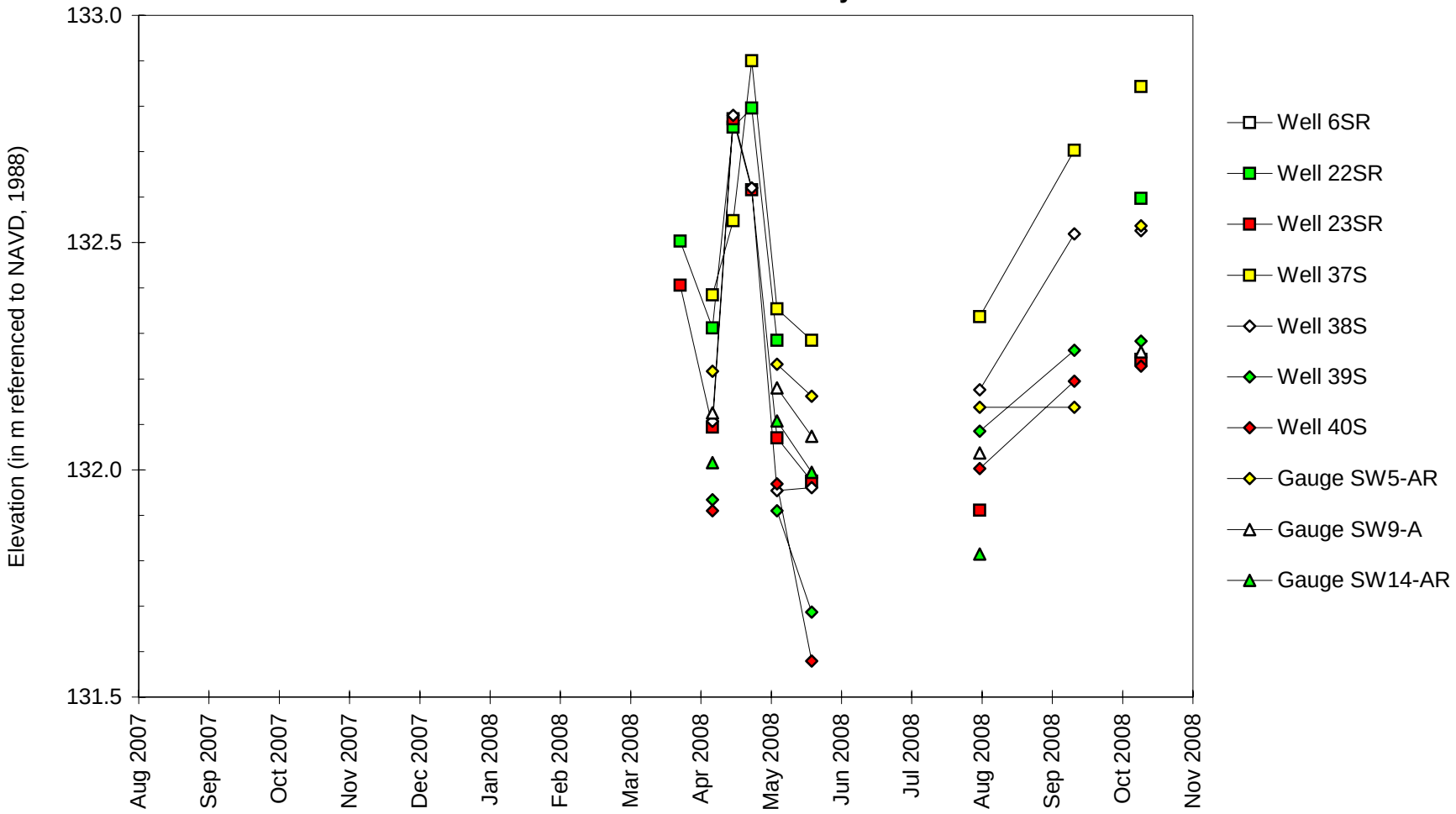
Water-Level Elevations on Surface Water Gauges



Former Wessel Property, La Grange Wetland Bank Site

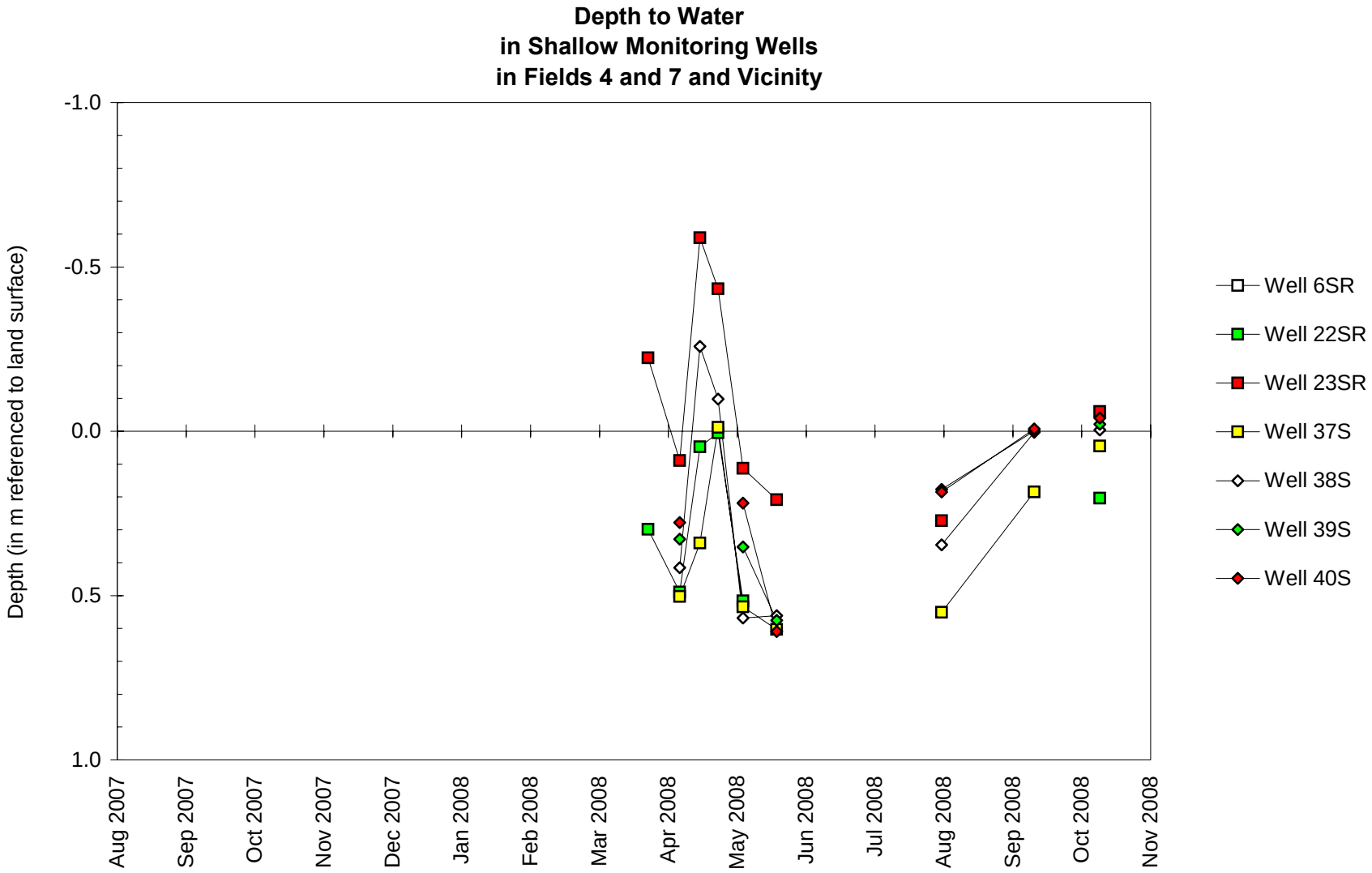
September 1, 2007 to November 1, 2008

Water-Level Elevations in Shallow Monitoring Wells and on Stage Gauges in Fields 4 and 7 and Vicinity



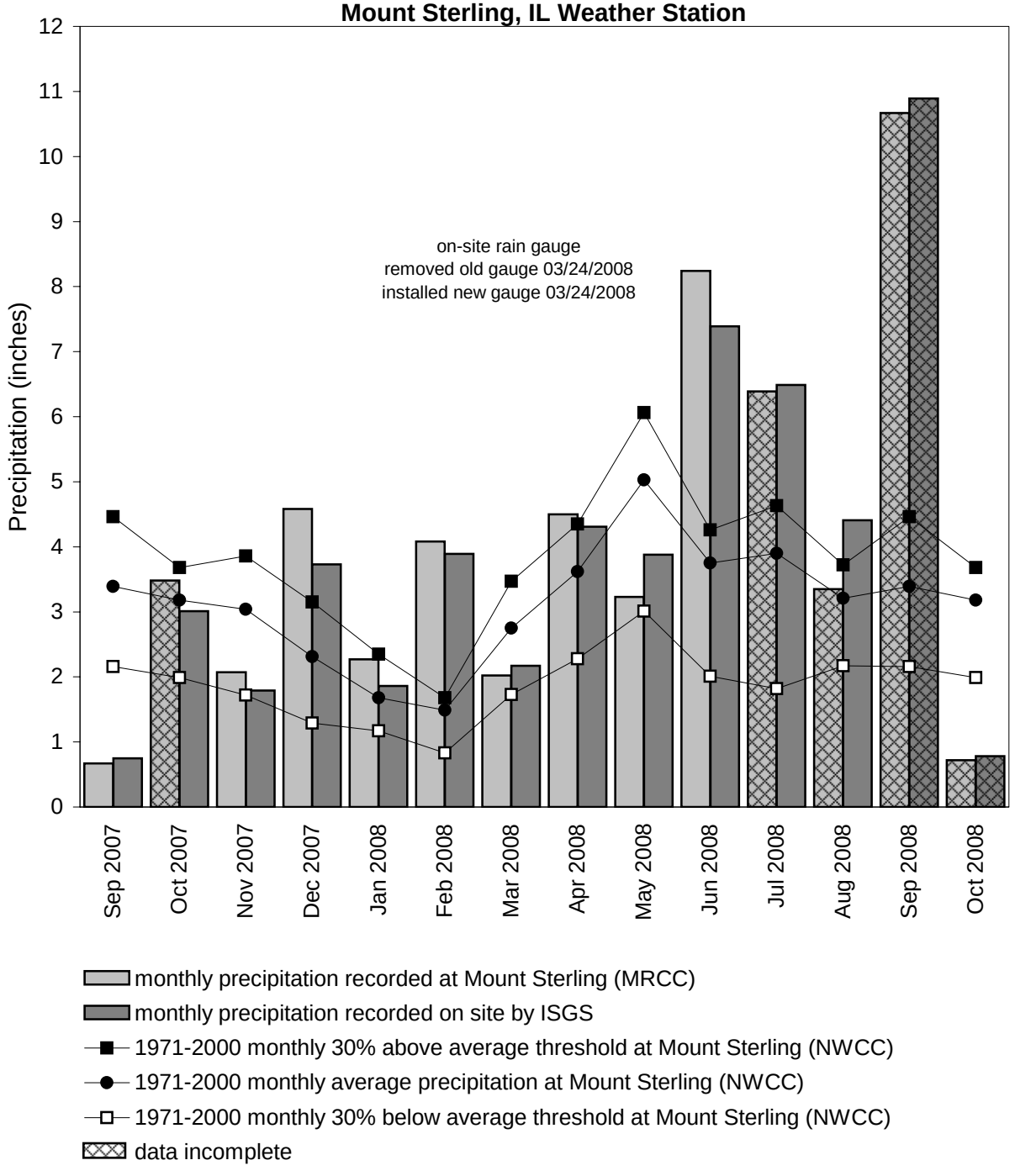
Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008



Former Wessel Property,
La Grange Wetland Bank
September 1, 2007 through October 10, 2008

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



Graph last updated October 10, 2008

FAIRMONT CITY, NEW RIVER CROSSING **ISGS #53**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Saint Clair County, near Fairmont City, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- August 1999: The ISGS conducted an initial site evaluation. The results were reported to IDOT by letter in November.

- September 2000: ISGS began monitoring ground- and surface-water levels.

- March 2003: A Level II report was submitted to IDOT (ISGS Open-File Series 2003–04).

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2008 growing season was estimated to be 13.9 ha (34.4 ac) out of a total area of 32.4 ha (80.0 ac). The area that satisfied wetland hydrology criteria for more than 12.5% of the 2008 growing season also was estimated to be 13.9 ha (34.4 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.

- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 139% of normal. Precipitation was at or above normal in October and December 2007, and in January, February, March, April, May and July 2008. Total precipitation in the spring was 155% of normal.

- In 2008, wetland hydrology occurred for more than 5% of the growing season at wells 3S, 4S, 5S, 9S, 13S, 14S, 15S, 16S, 17SR, 23S, 24S, 25S, and 26S. Wetland hydrology occurred for more than 12.5% of the growing season at these same wells.

- In the southwest pond (Global) and the drainage ditch along the base of the terrace (gauges AR, B, and BR) surface-water elevation was above 122.26 m (401.13 ft) for more than 5% of the growing season and above 122.24 m (401.07 ft) for more than 12.5% of the growing season. At gauges D and F, on the east side of the site, surface-water elevation was above 122.39 m (401.56 ft) for both 5% and 12.5% of the growing season.

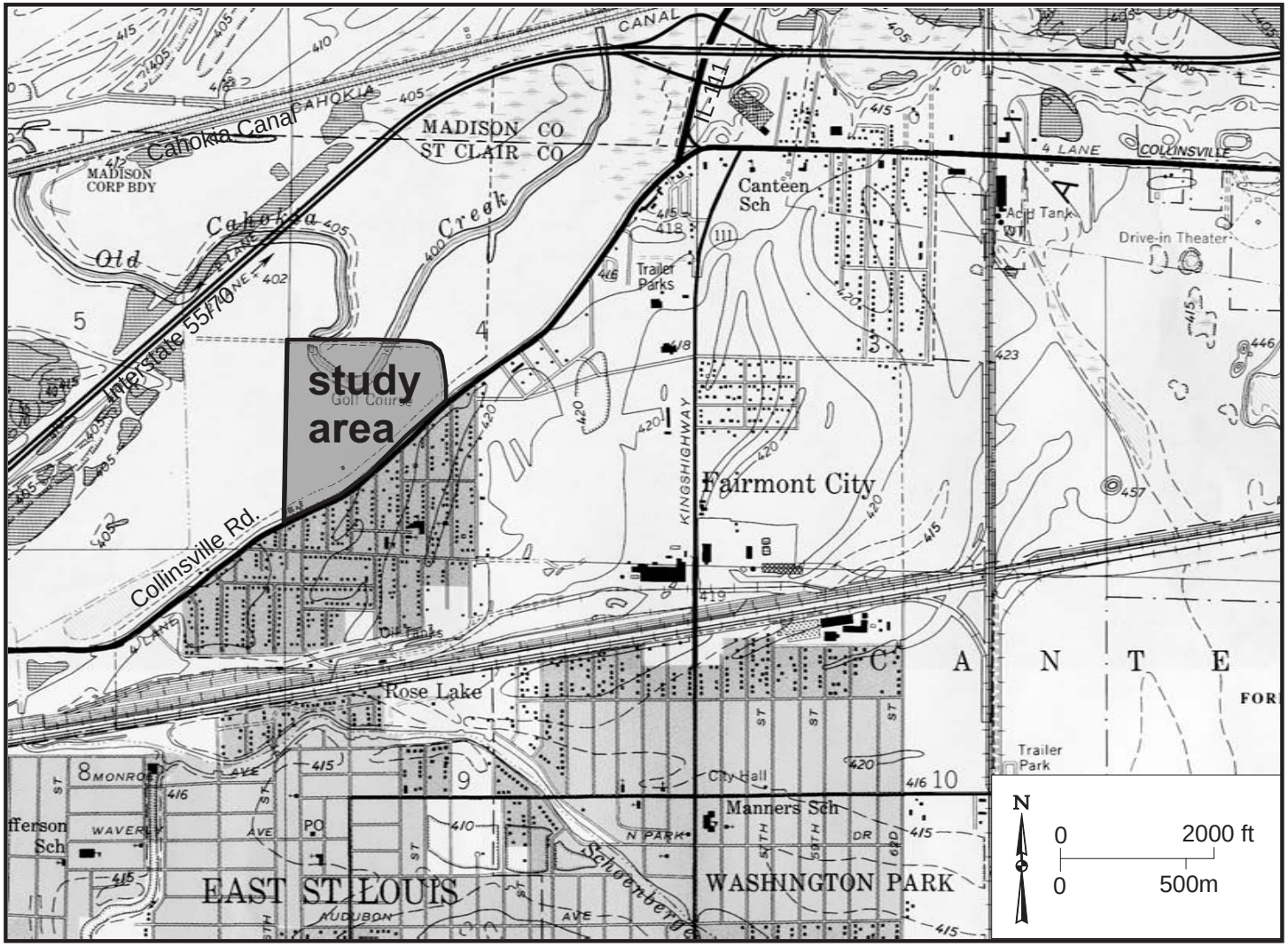
PLANNED FUTURE ACTIVITIES

- Monitoring will continue at this site until notified otherwise by IDOT.

Fairmont City, New River Crossing Potential Wetland Compensation Site (FAP 999)

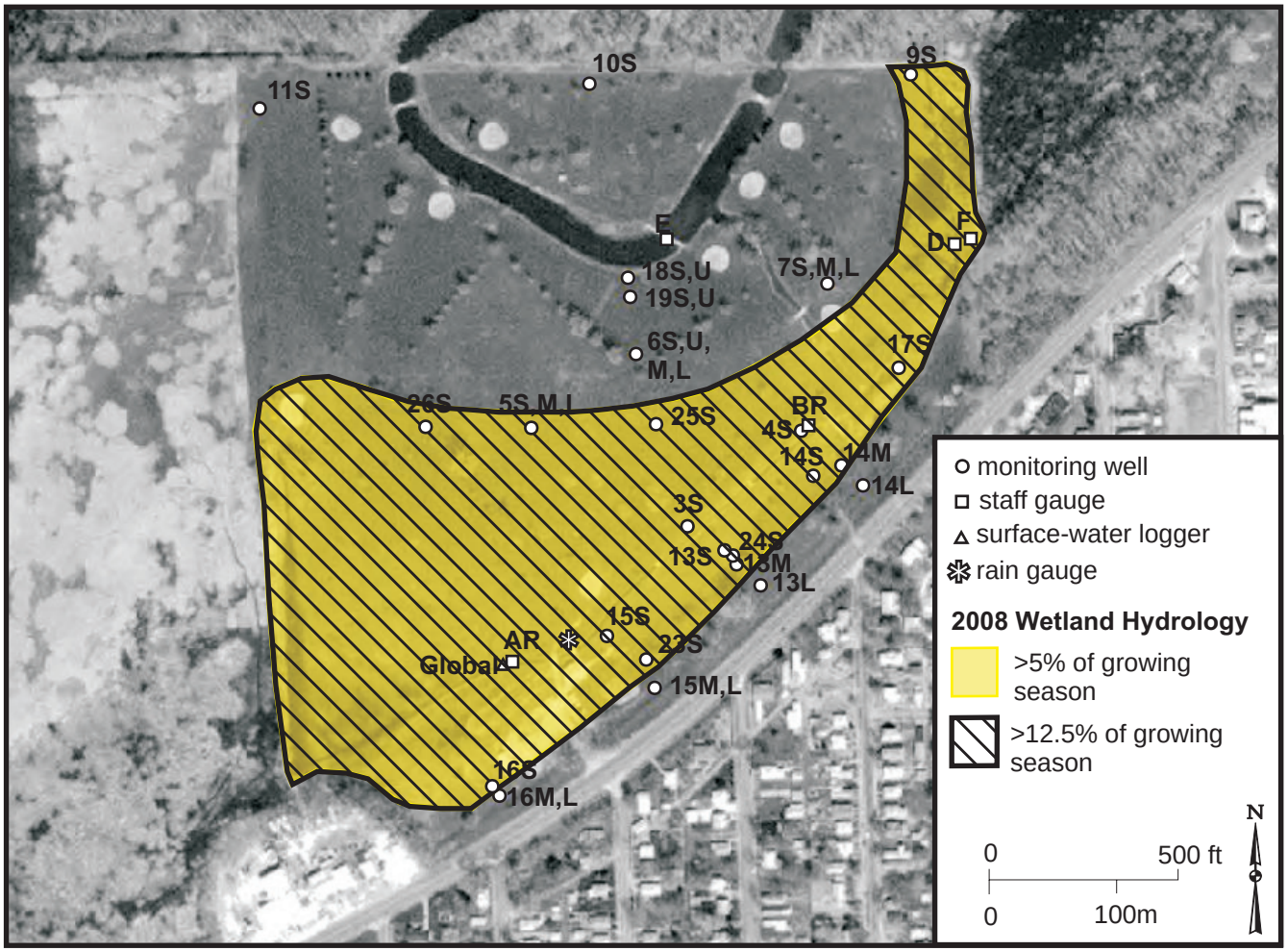
General Study Area and Vicinity

from the USGS Topographic Series, Monks Mound, IL 7.5-minute Quadrangle (USGS 1993)



Fairmont City Potential Wetland Compensation Site
(FAP 999)
Estimated Areal Extent of 2008 Wetland Hydrology
based on data collected between September 1, 2007 and September 1, 2008

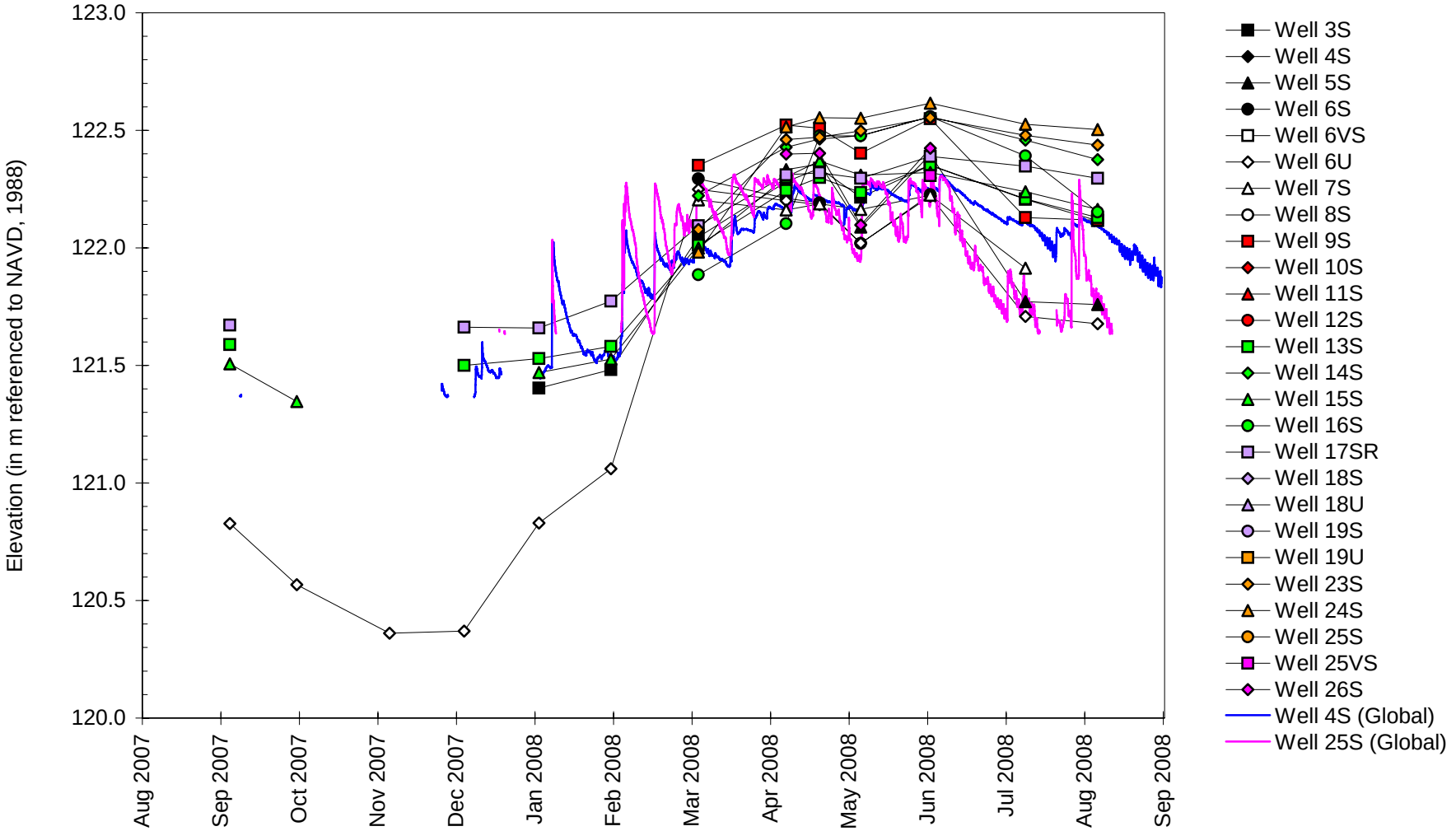
Map based on USGS digital orthophotograph, Monks Mound SW quarter quadrangle
produced from 04/08/1999 aerial photography (ISGS 2001)
monitoring well, staff gauge and data logger locations from GPS survey



Fairmont City, New River Crossing Potential Wetland Compensation Site

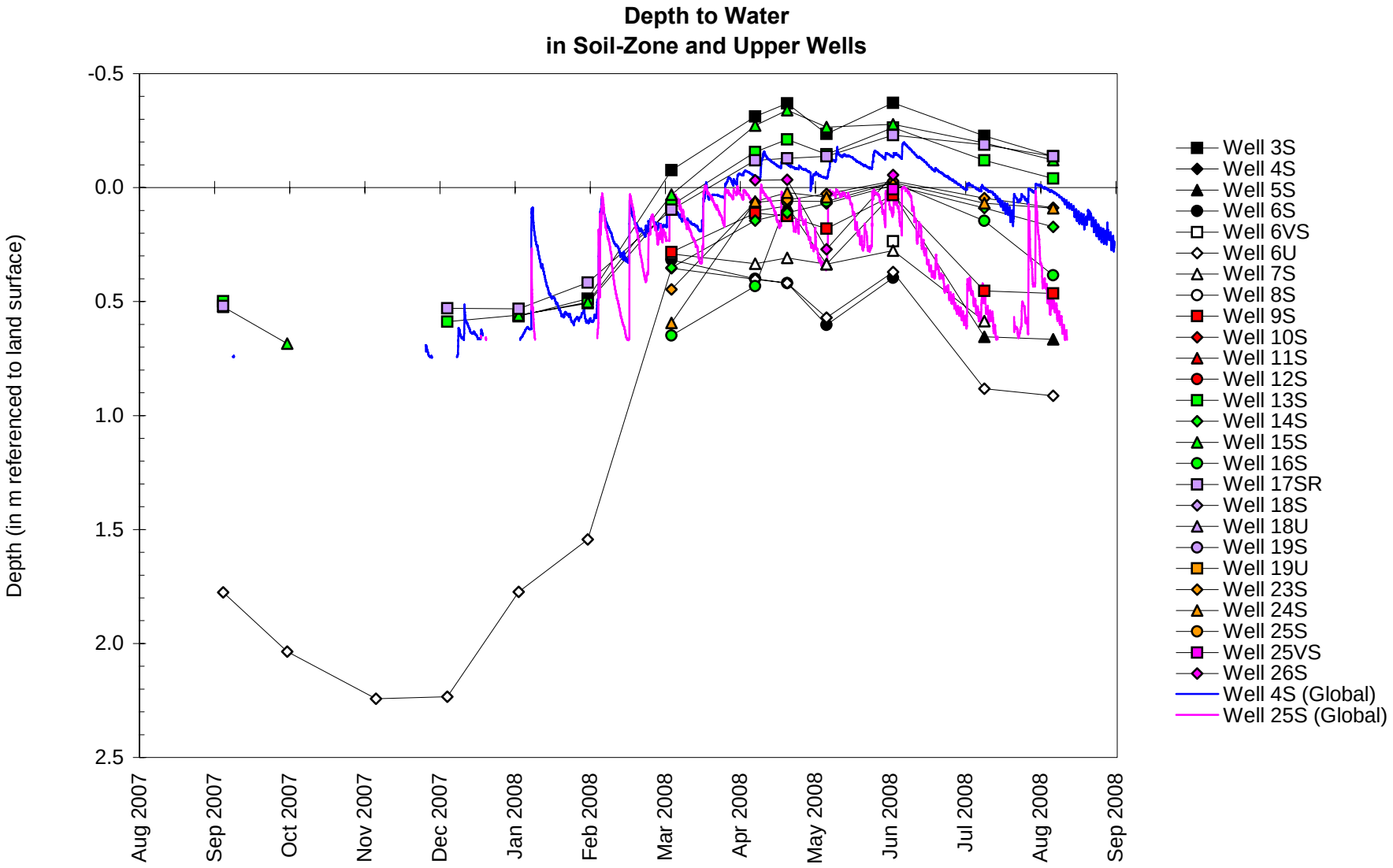
September 1, 2007 to September 1, 2008

Water-Level Elevations in Soil-Zone and Upper Wells



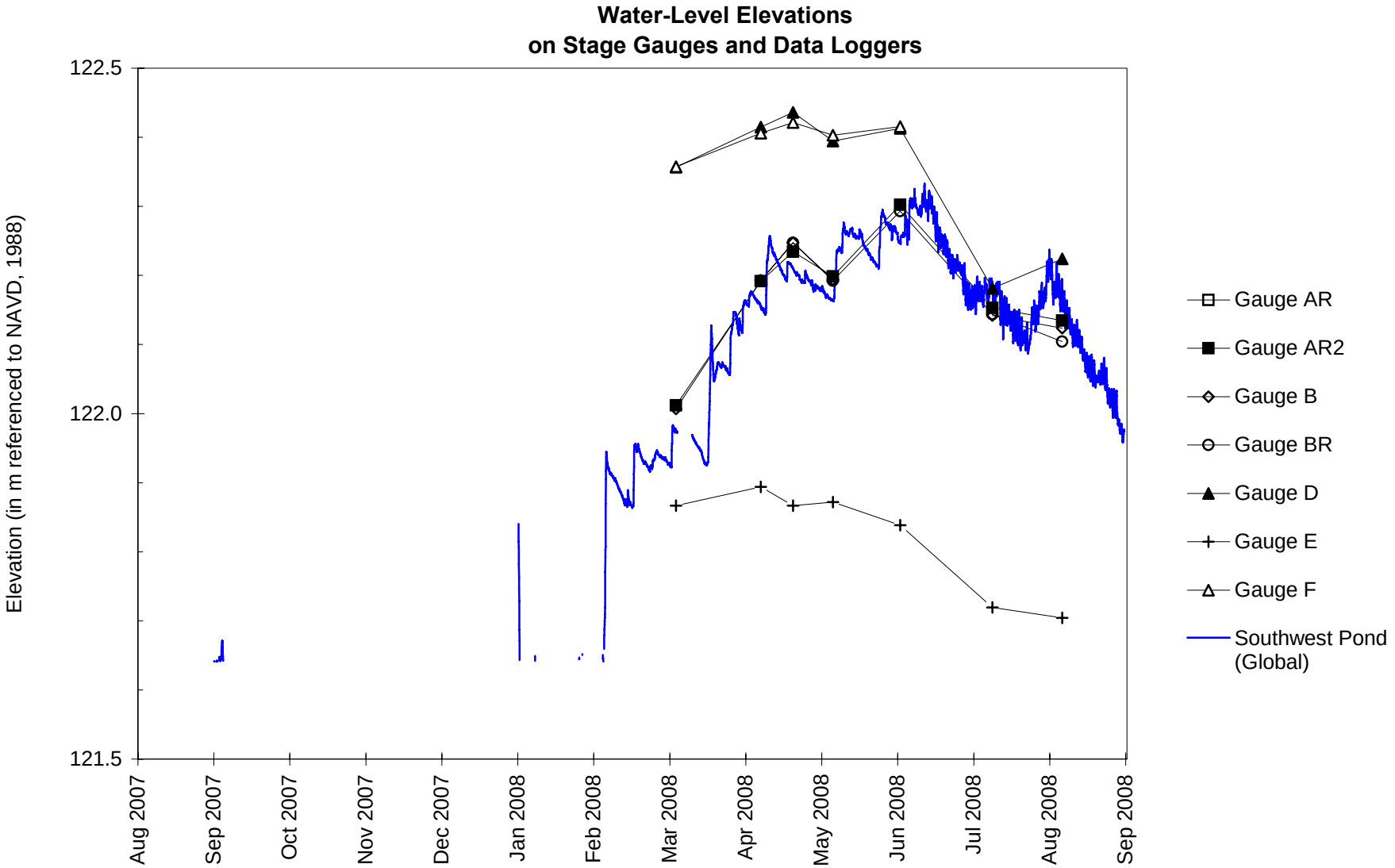
Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2007 to September 1, 2008

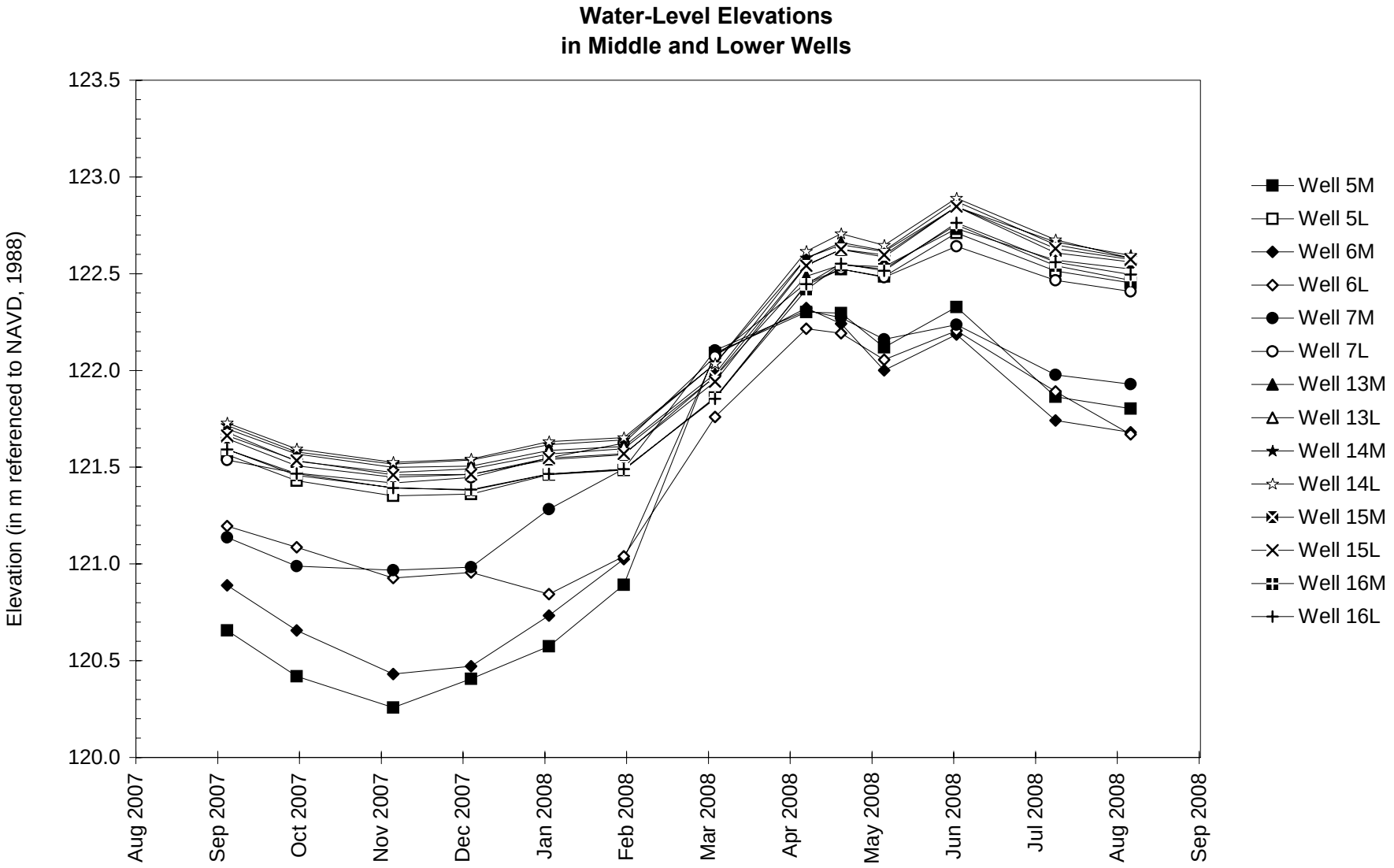


Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2007 to September 1, 2008

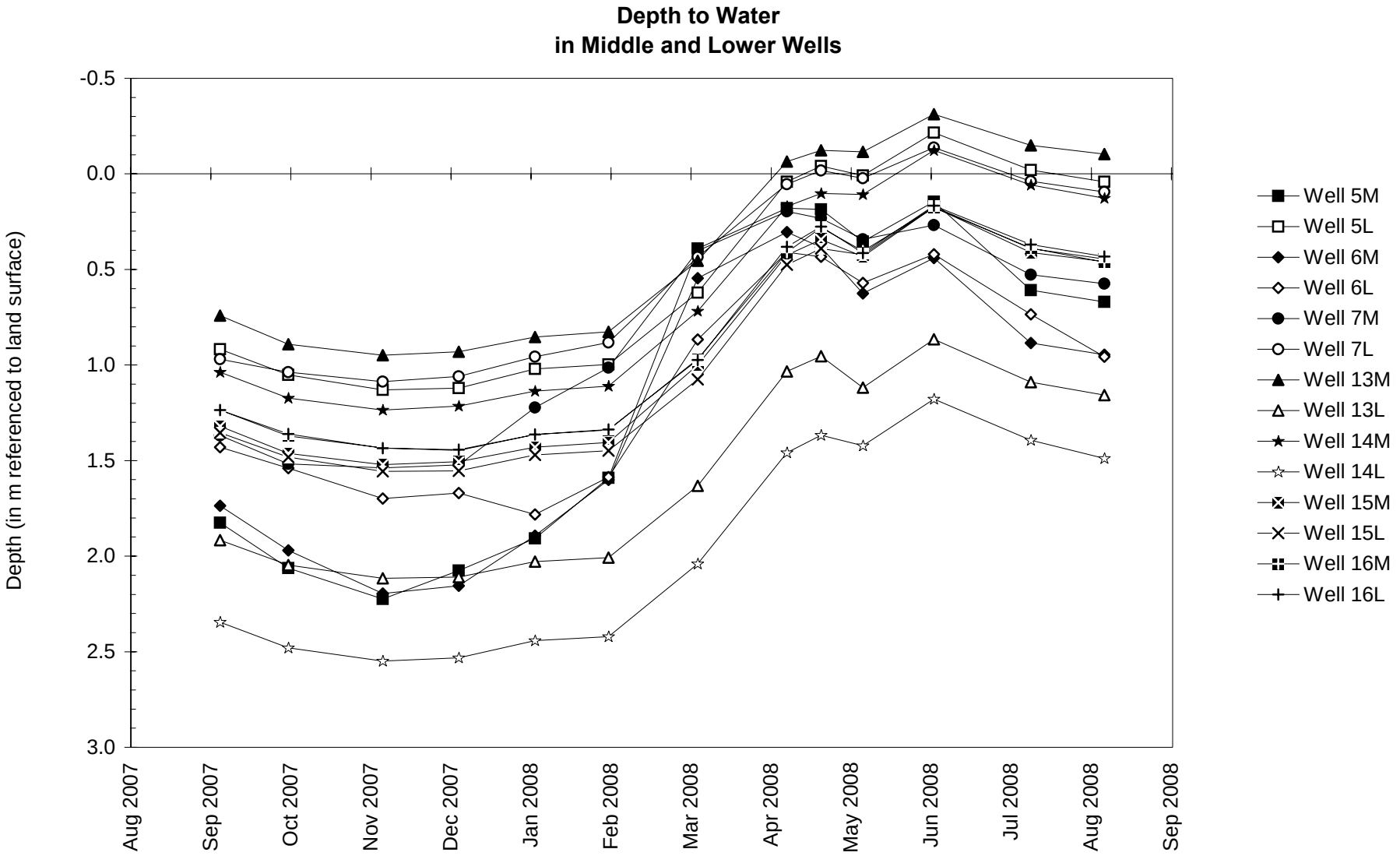


Fairmont City, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

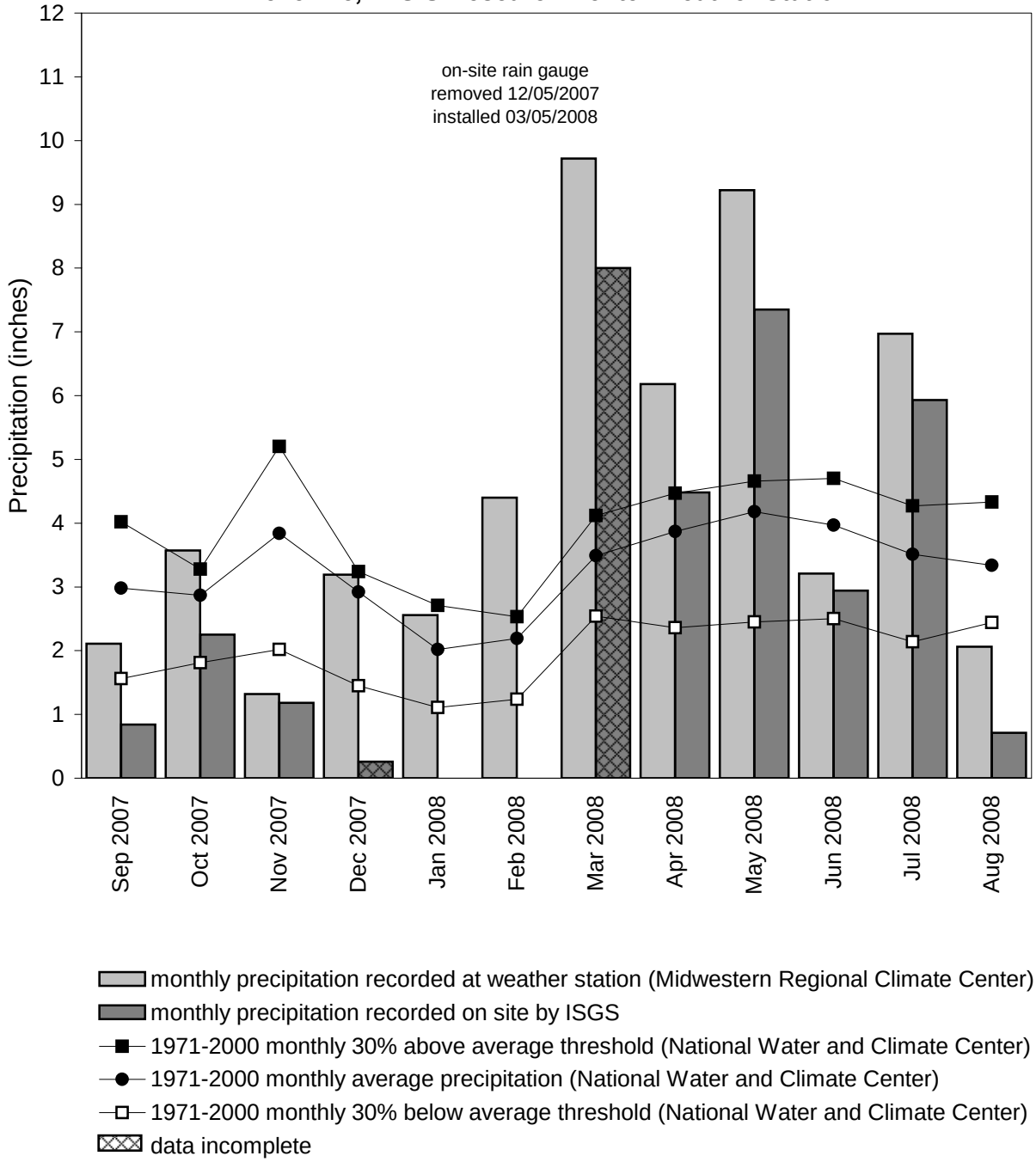


Fairmont City, New River Crossing Potential Wetland Compensation Site

September 1, 2007 to September 1, 2008



Fairmont City, New River Crossing
Potential Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site and at the Belleville, IL SIU Research Center Weather Station



Graph last updated October 7, 2008

SPRINGFIELD, ILLINOIS ROUTE 29 **ISGS #54**
WETLAND COMPENSATION SITE
FAP 658
Sangamon County near Springfield, Illinois
Primary Manager: Geoffrey E. Pociask
Secondary Manager: Eric T. Plankell

SITE HISTORY

- September 1996: ISGS conducted an initial site evaluation of the proposed compensation site and reported findings to IDOT.

- Spring 1997: The wetland compensation site was constructed.

- June 2000: ISGS was tasked by IDOT to monitor wetland hydrology on the compensation site. In 2005, IDOT extended monitoring through 2007.

- April 2008: The wetland mitigation project met all requirements and was signed off by the U.S. Army Corps of Engineers. ISGS was notified by IDOT to discontinue monitoring at the site.

WETLAND HYDROLOGY CALCULATION FOR 2008

Wetland hydrology area was not calculated for this site because monitoring was discontinued in April 2008.

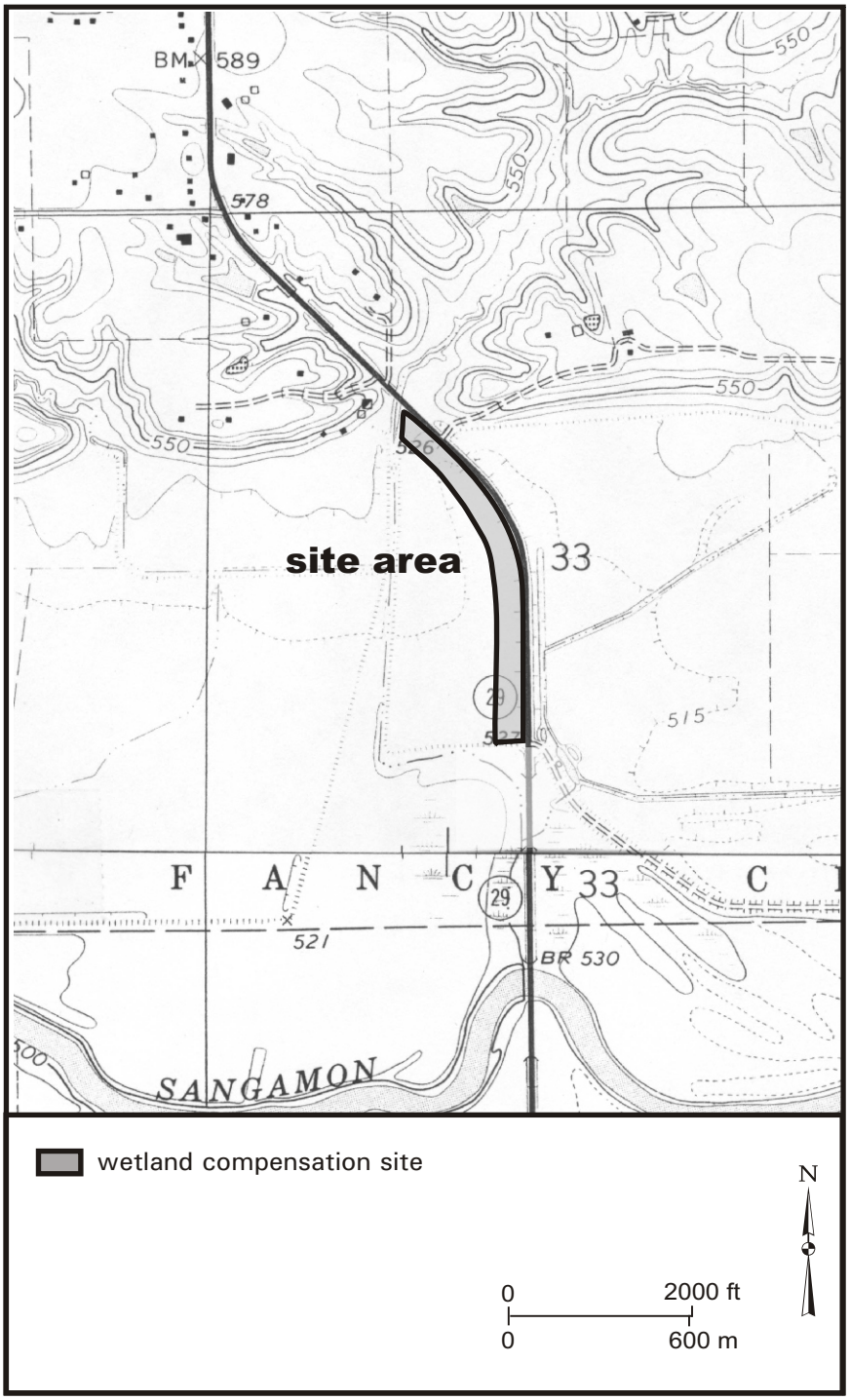
PLANNED FUTURE ACTIVITIES

- Monitoring is no longer required by IDOT and all monitoring instruments have been removed from the site.

Springfield, IL Route 29 Wetland Compensation Site
(FAP 658)

General Study Area and Vicinity

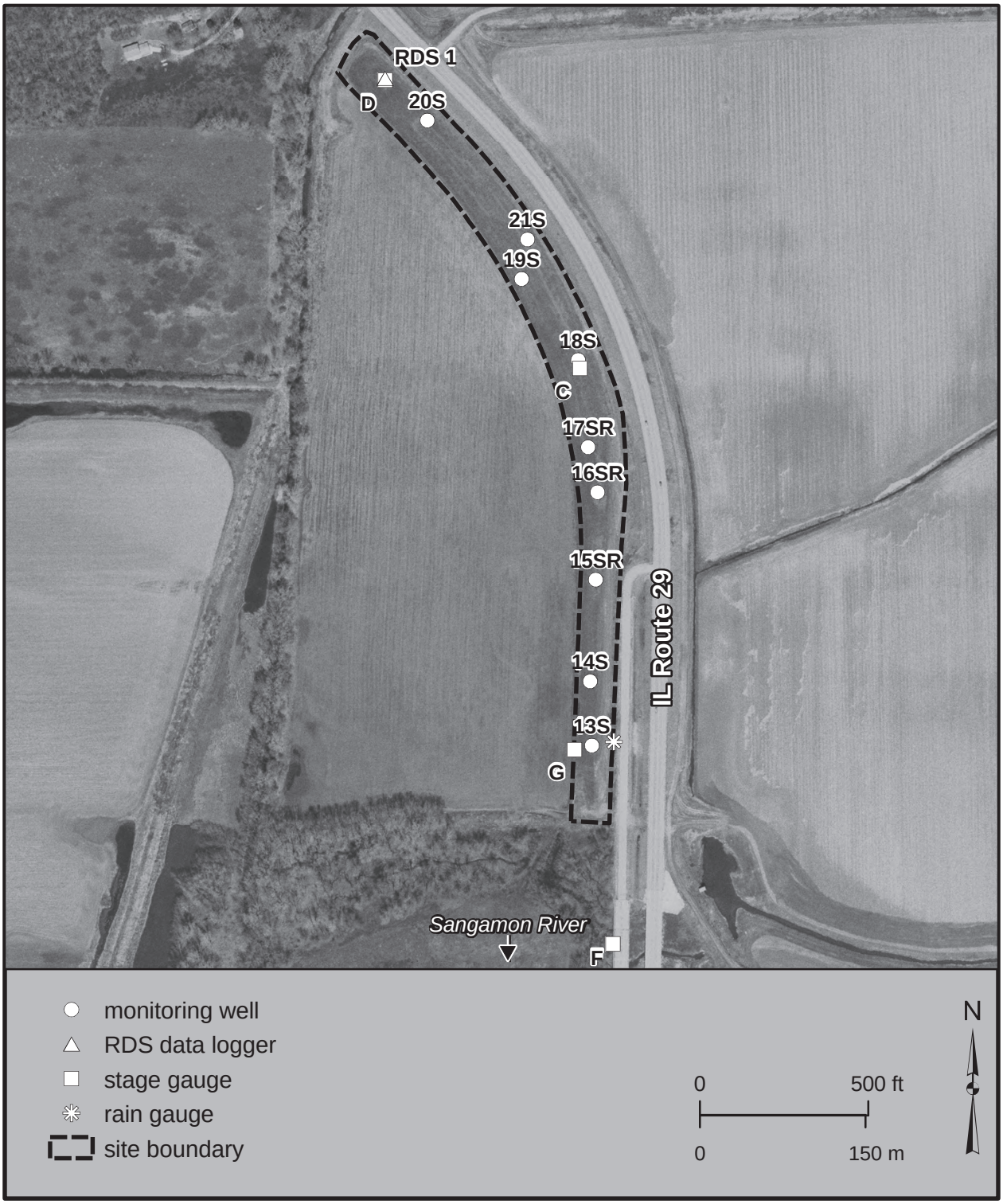
from the USGS Topographic Series, Athens, IL (USGS 1966; photorevised 1971 and 1976) and Springfield West, IL (USGS 1965; photorevised 1971 and 1976) 7.5-minute Quadrangles
contour interval is 10 feet



Springfield, IL Route 29 Wetland Compensation Site (FAP 658)

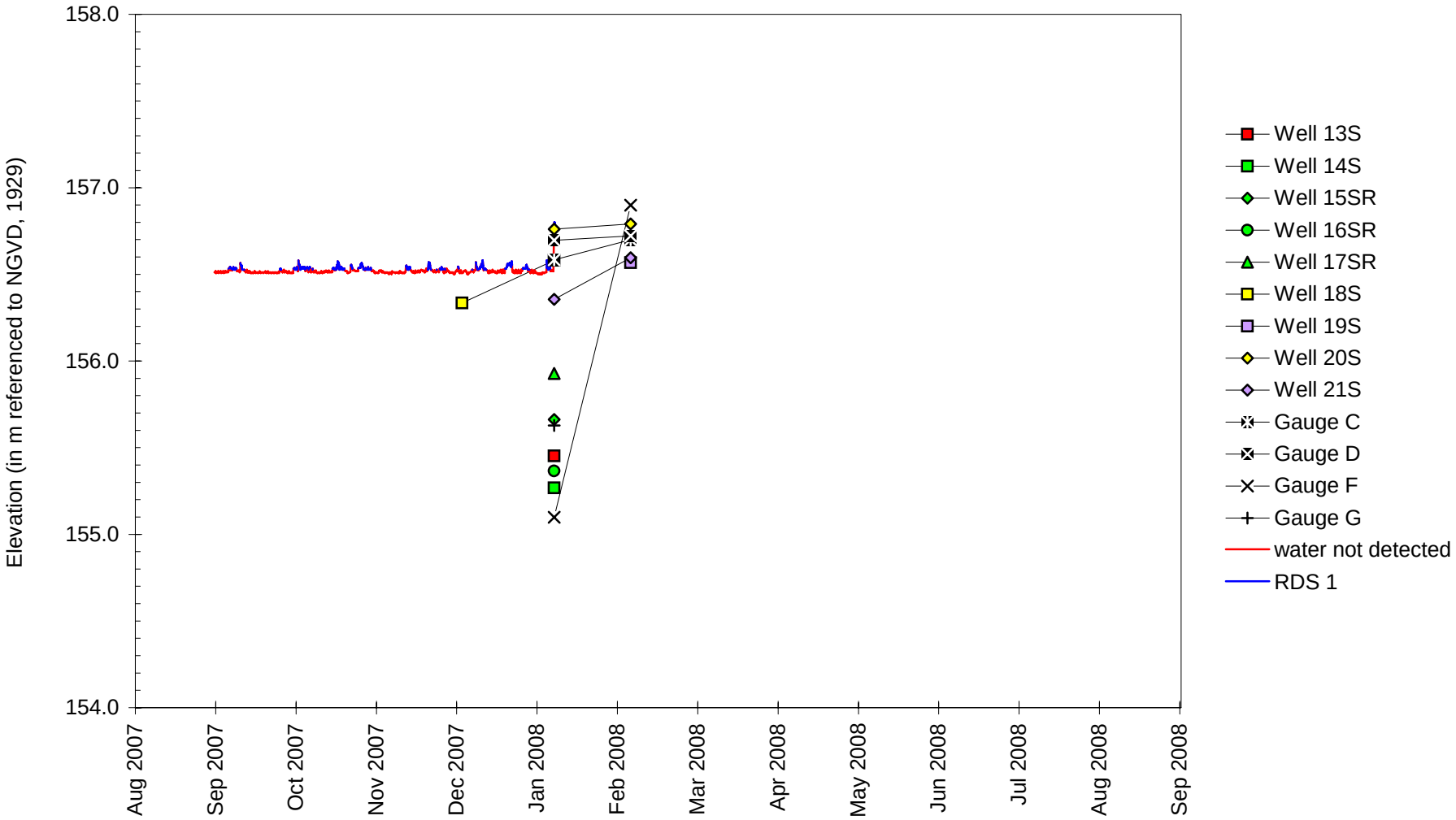
2008 Monitoring Network

Map based on USGS digital orthophotograph Athens SW quarter quadrangle from 4/8/2005 aerial photography (ISGS 2006)

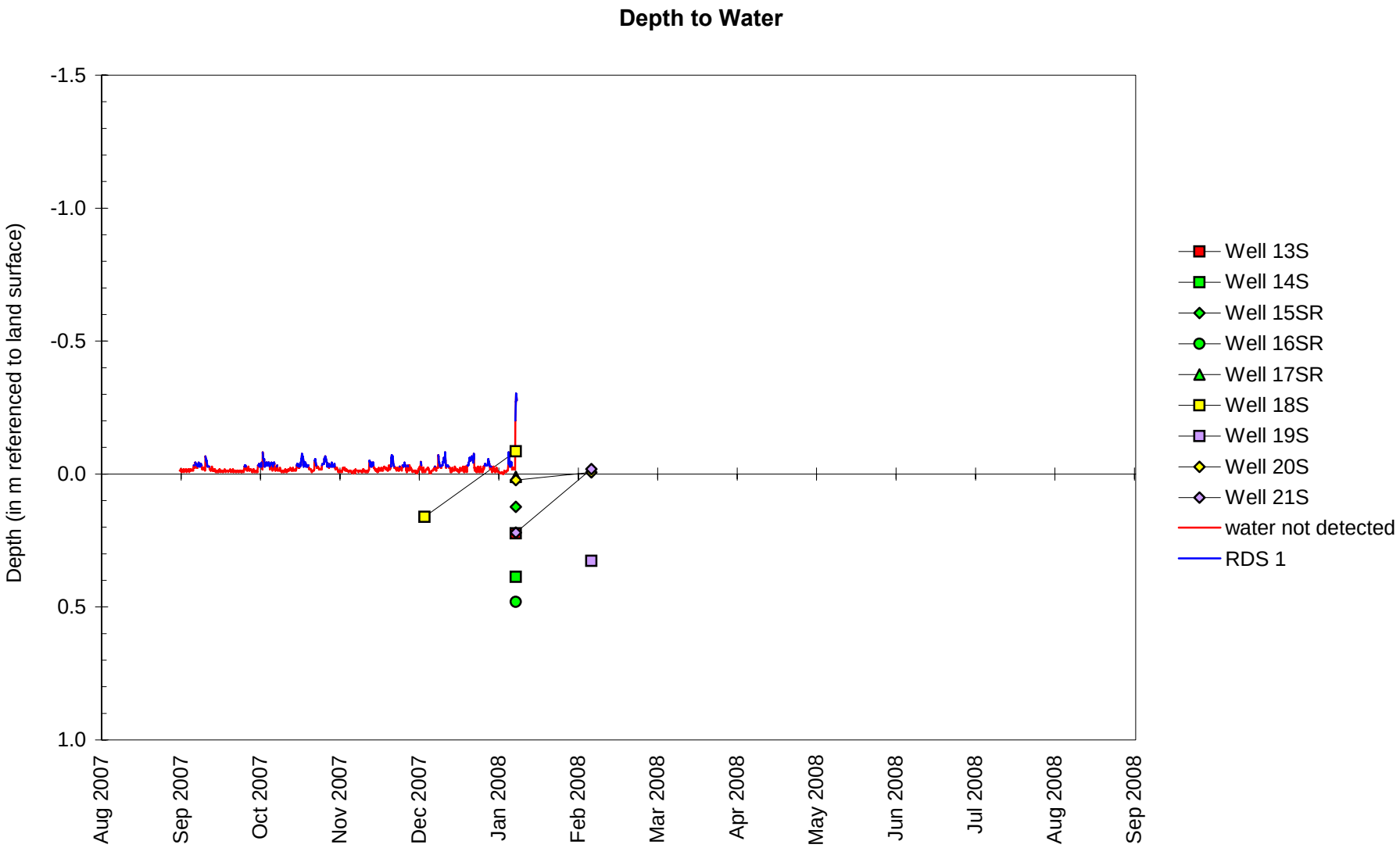


Springfield, IL Route 29 Wetland Compensation Site
September 1, 2007 to September 1, 2008

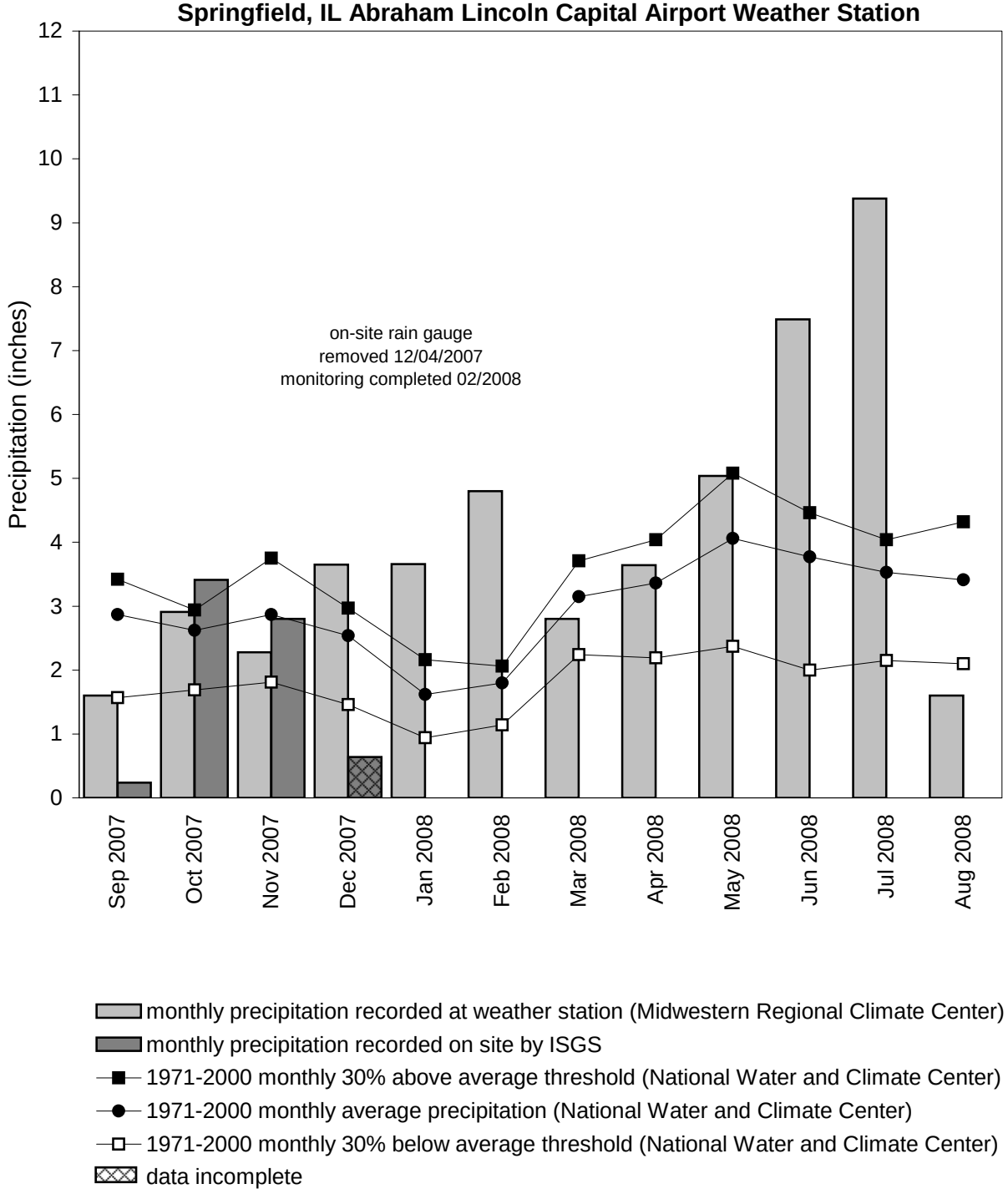
Water-Level Elevations



Springfield, IL Route 29 Wetland Compensation Site
September 1, 2007 to September 1, 2008



Springfield, IL Route 29
Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site and at the Springfield, IL Abraham Lincoln Capital Airport Weather Station



Graph last updated October 7, 2008

FORMER TIERNAN PROPERTY, NEW RIVER CROSSING **ISGS #57**
POTENTIAL WETLAND COMPENSATION SITE
FAP 999
Sequence #33G
Saint Clair County, near Cahokia, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- July 2000: The ISGS was tasked to perform a Level II hydrogeologic assessment of the site.

- July 2005: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2005–11).

WETLAND HYDROLOGY CALCULATION FOR 2008

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season was estimated to be 22.9 ha (56.5 ac) out of a total site area of 26.4 ha (65.3 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was also estimated to be 22.9 ha (56.5 ac). The estimates for 2008 are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Cahokia, Illinois, is April 2 and the season lasts 214 days; 5% of the growing season is 11 days and 12.5% of the growing season is 27 days.

- Total precipitation recorded at the Belleville, Illinois weather station during the monitoring period was 139% of normal. Precipitation was at or above normal in October and December 2007, and in January, February, March, April, May and July 2008. Total precipitation in the spring was 155% of normal.

- In 2008, water levels measured in wells 1S, 2S, 3S, 4S, 5S, 8S, 9S, 10S, 11S, 12S, 13S, 14S, 15S, 16S, 17S, 18S, 19S, 20S, 21S, 22S, 23VS, 24S, 24VS, 25S, 25VS, 26S, 26VS, 27SR2, 27VS, 28S, 28VSR, 29S, 29VS, 30S, 30VS, 31S, 31VS, and 32SR satisfied wetland hydrology criteria for more than 5% and 12.5% of the growing season.

- Surface-water stage data from gauge D indicate that inundation occurred to an elevation $\geq$121.30 m (397.98 ft) for a period sufficient to satisfy wetland hydrology criteria for greater than 5% of the growing season and to an elevation $\geq$ 120.90 m (396.67 ft) for greater than 12.5% of the growing season.

- While most of the southern half of the site (the former borrow pit) is mapped as preexisting wetland, the hydrology is controlled primarily by the water level in Blue Waters Ditch southeast of the site. Extreme springtime precipitation events resulted in widespread flooding in the southern half of the site. Analysis of stage data from gauge D reveals that, except for occasional periods lasting up to 2 to 3 days, the southern half of the site was almost continuously inundated to an elevation of 121.15 m (397.49 ft) from April 2 to August 7, a total of 128 days, or about 60% of the growing season.

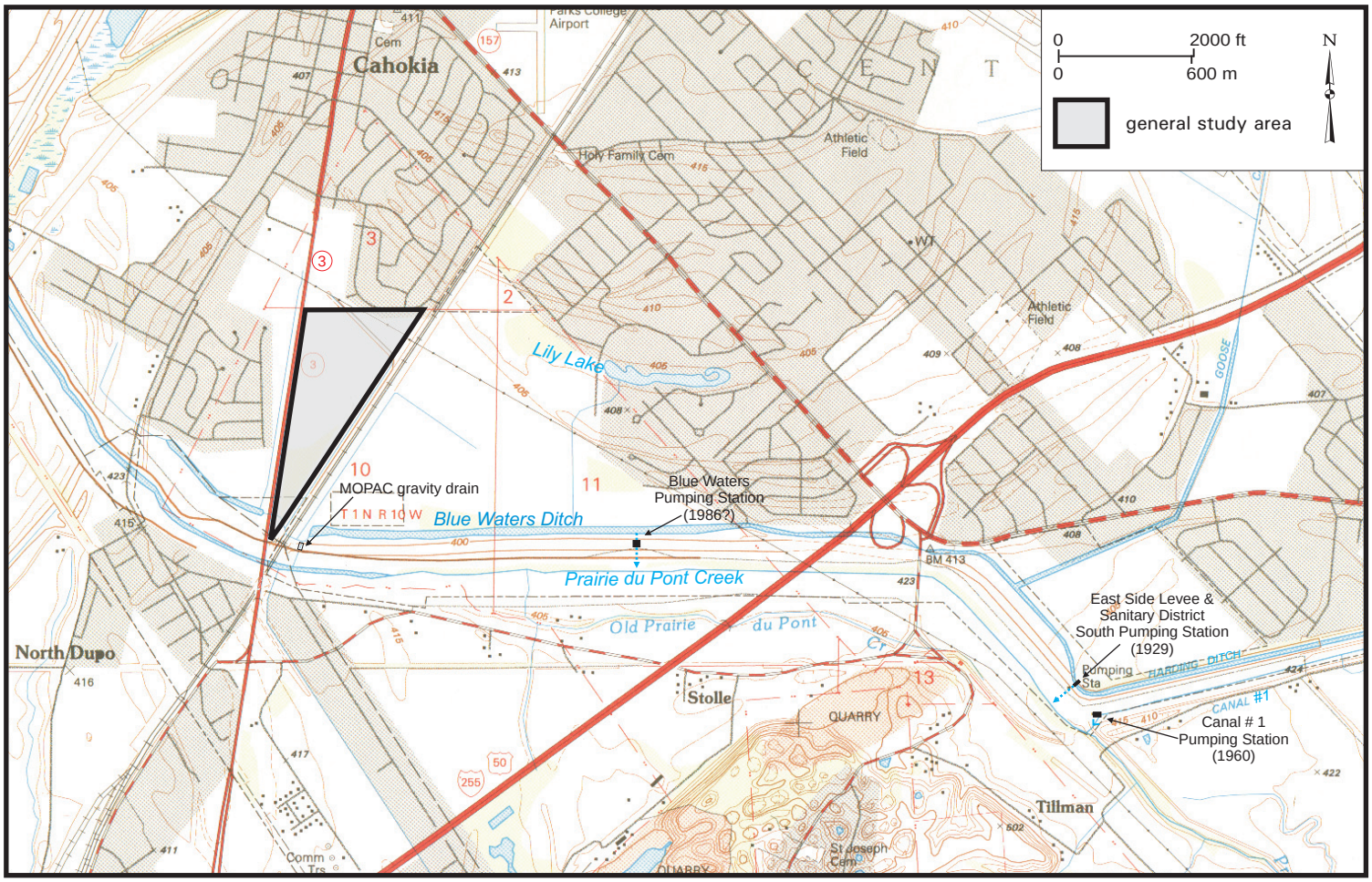
PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

Former Tiernan Property (Cahokia) Potential Wetland Compensation Site
(FAP 999)

General Study Area and Vicinity

from the USGS Topographic Series, Cahokia, IL 7.5-minute Quadrangle (USGS 1993)
contour interval is 3 m (10 ft)

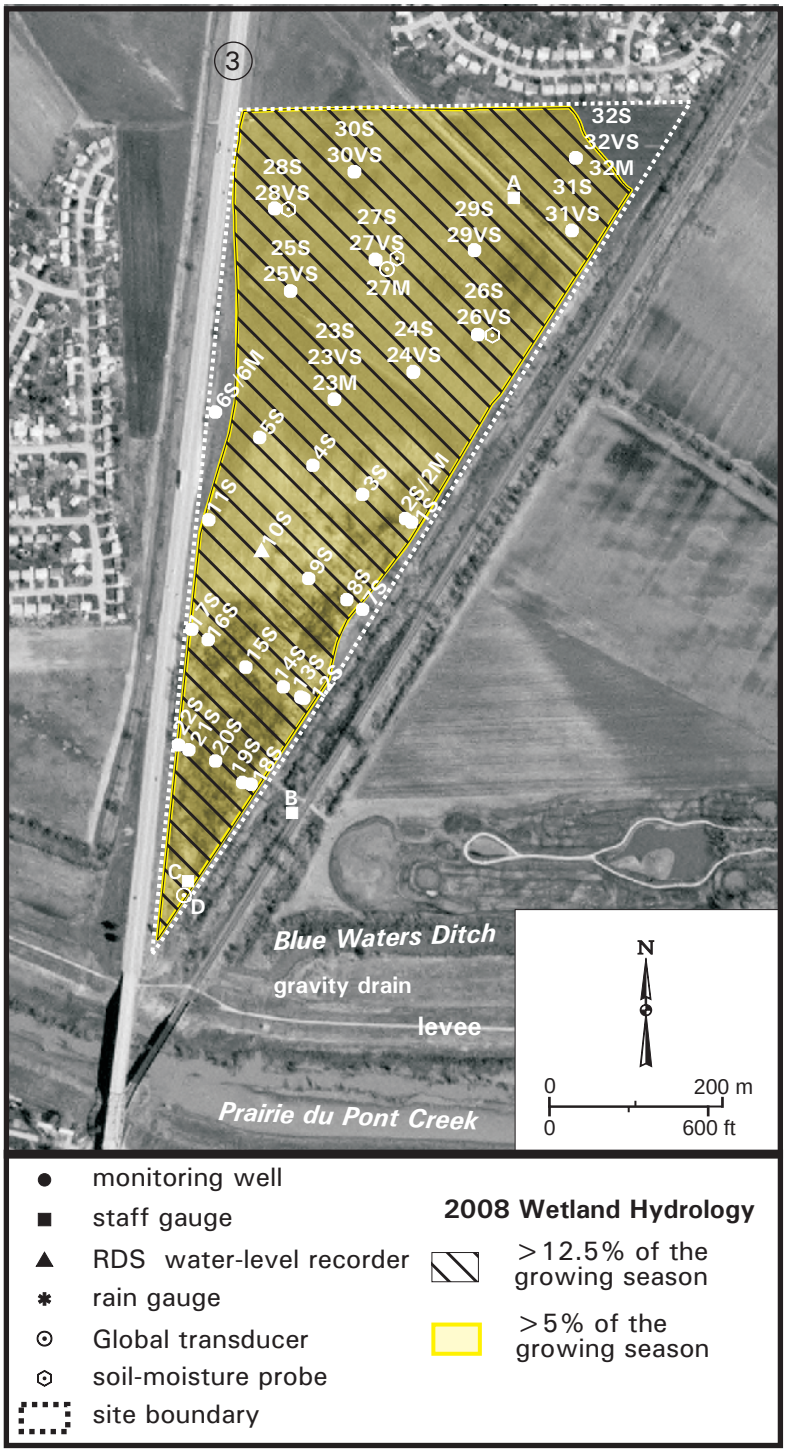


Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
(FAP 999)

Estimated Areal Extent of 2008 Wetland Hydrology

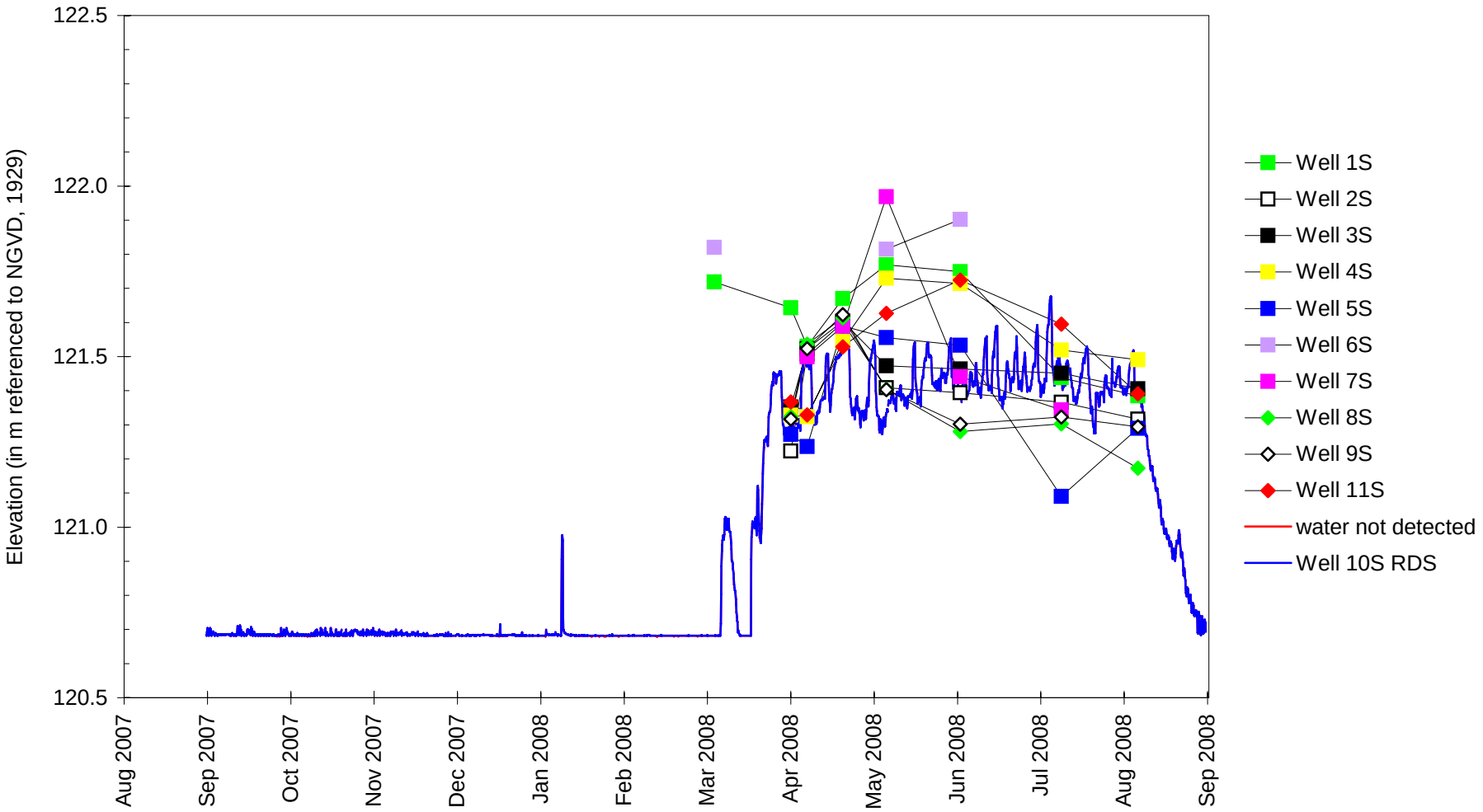
based on data collected between September 1, 2007 and September 1, 2008

Map based on USGS digital orthophotograph, Cahokia SW quarter quadrangle
produced from 04/02/98 aerial photography (ISGS 2000)



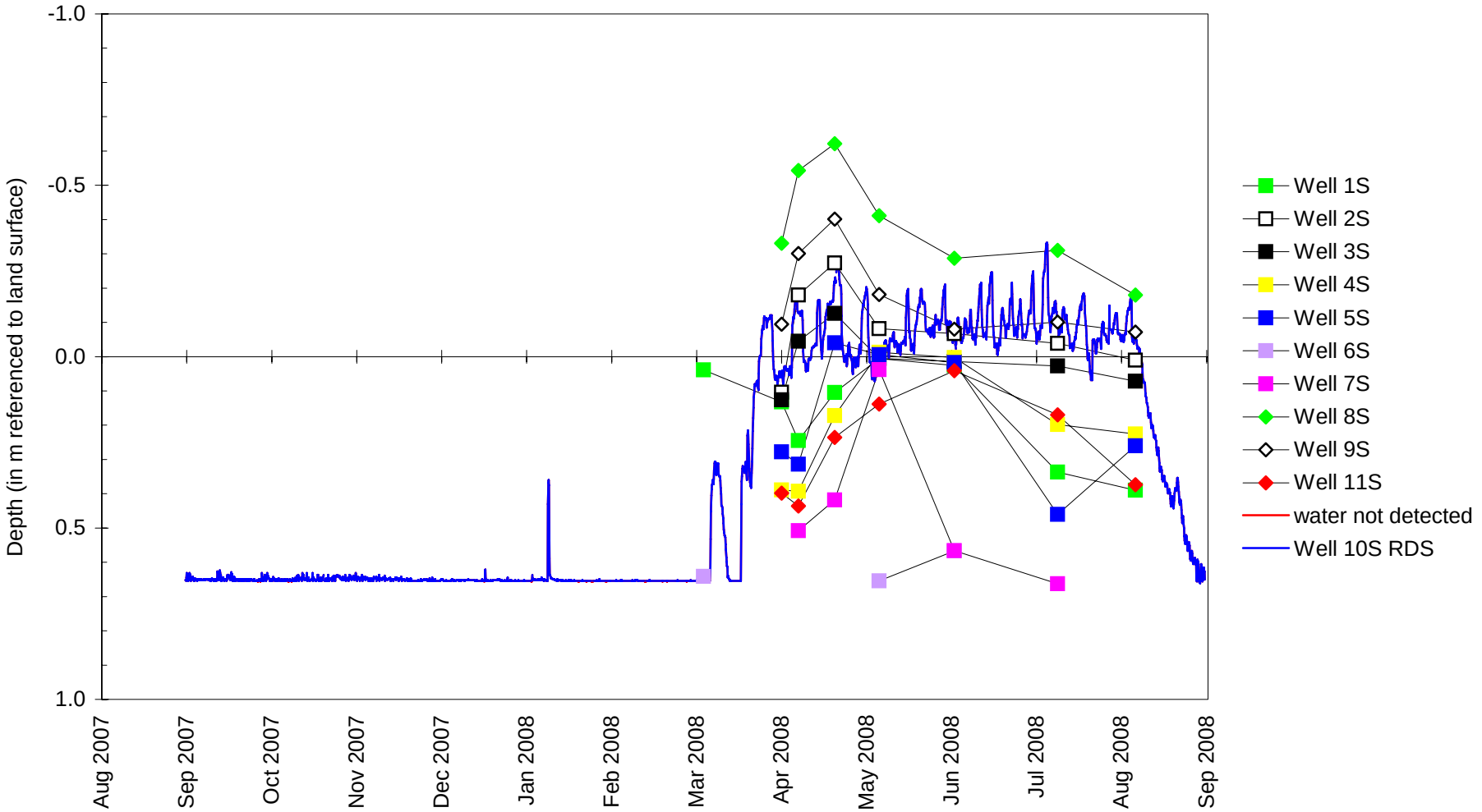
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



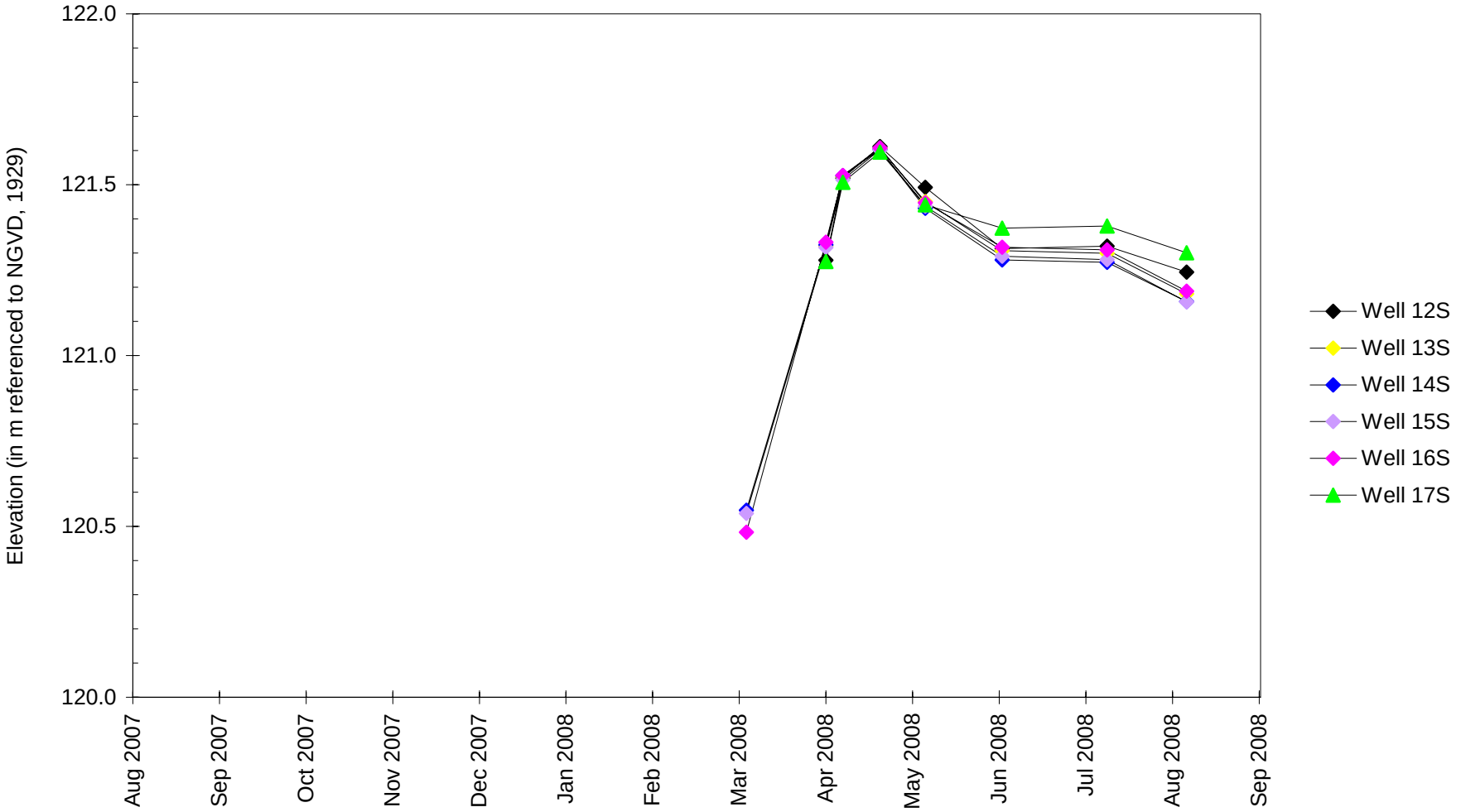
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Depth to Water

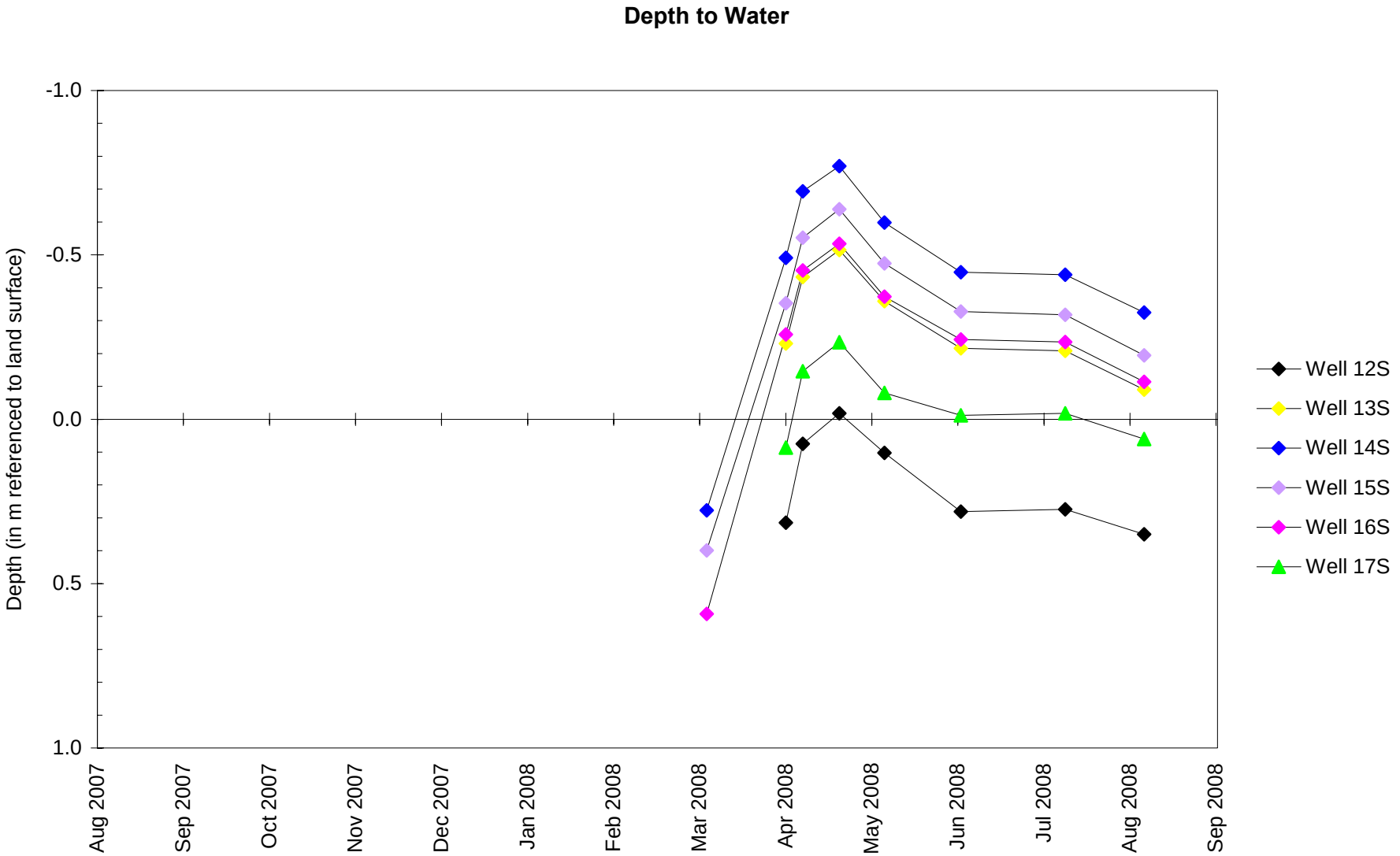


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations

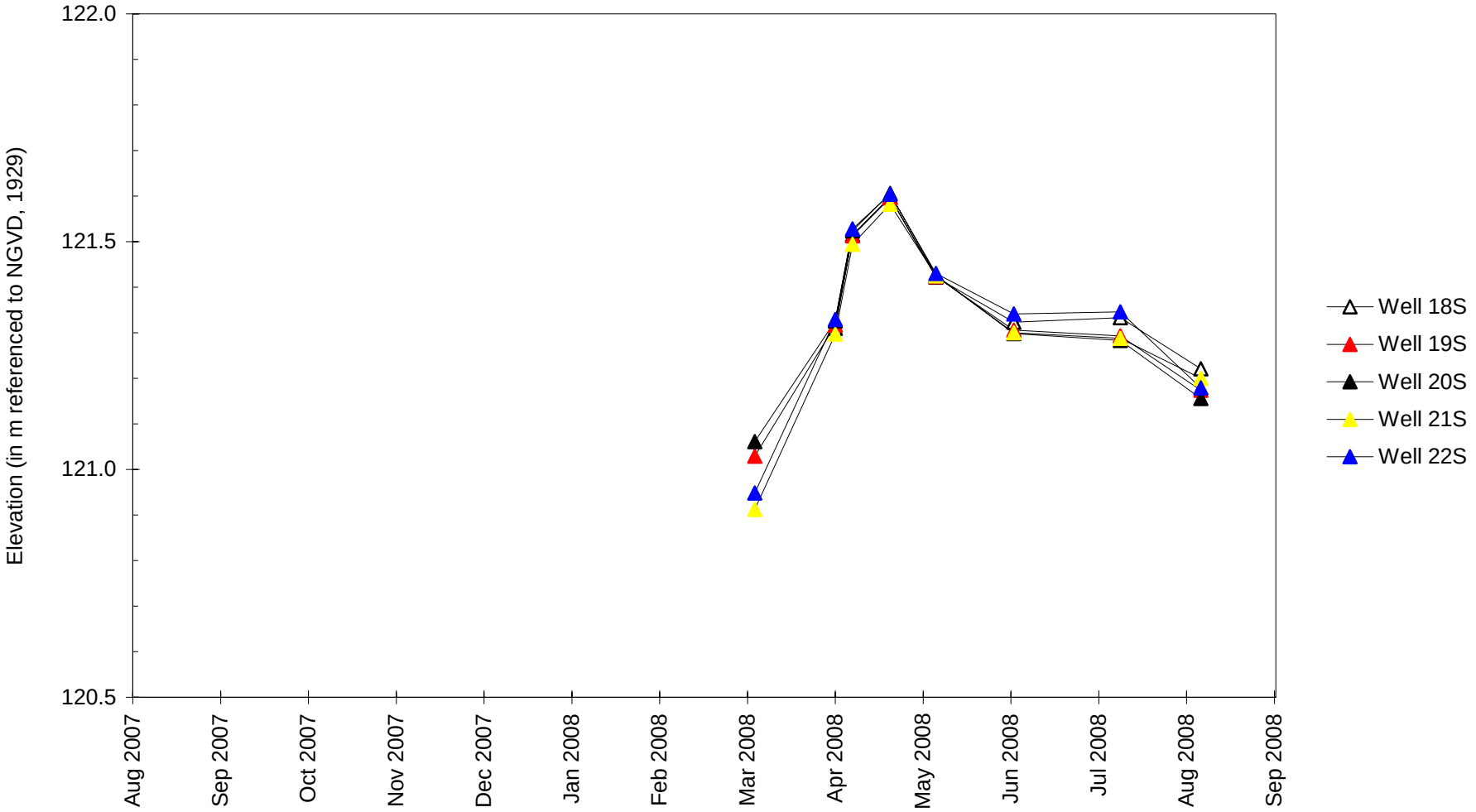


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008



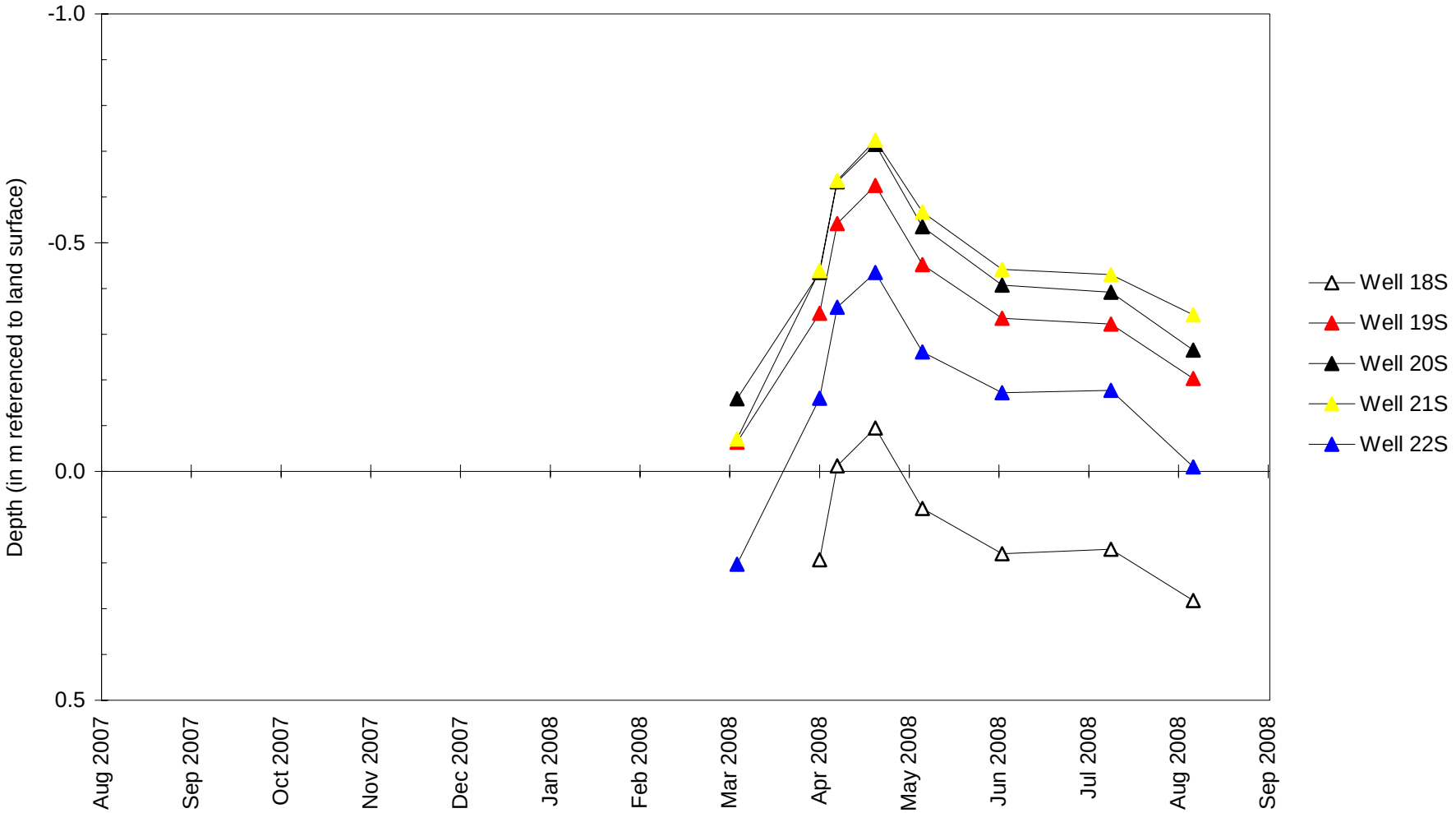
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations



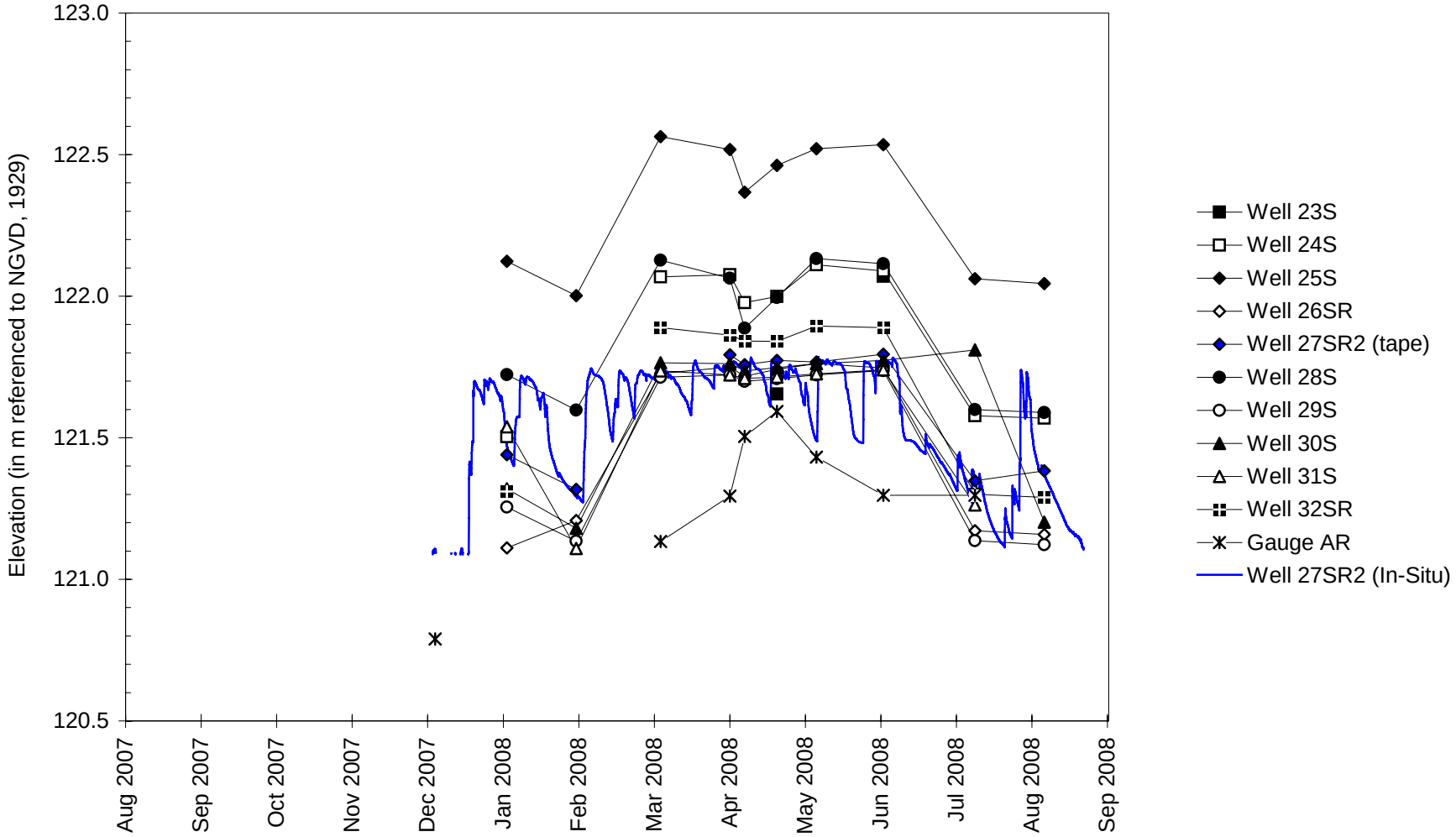
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Depth to Water

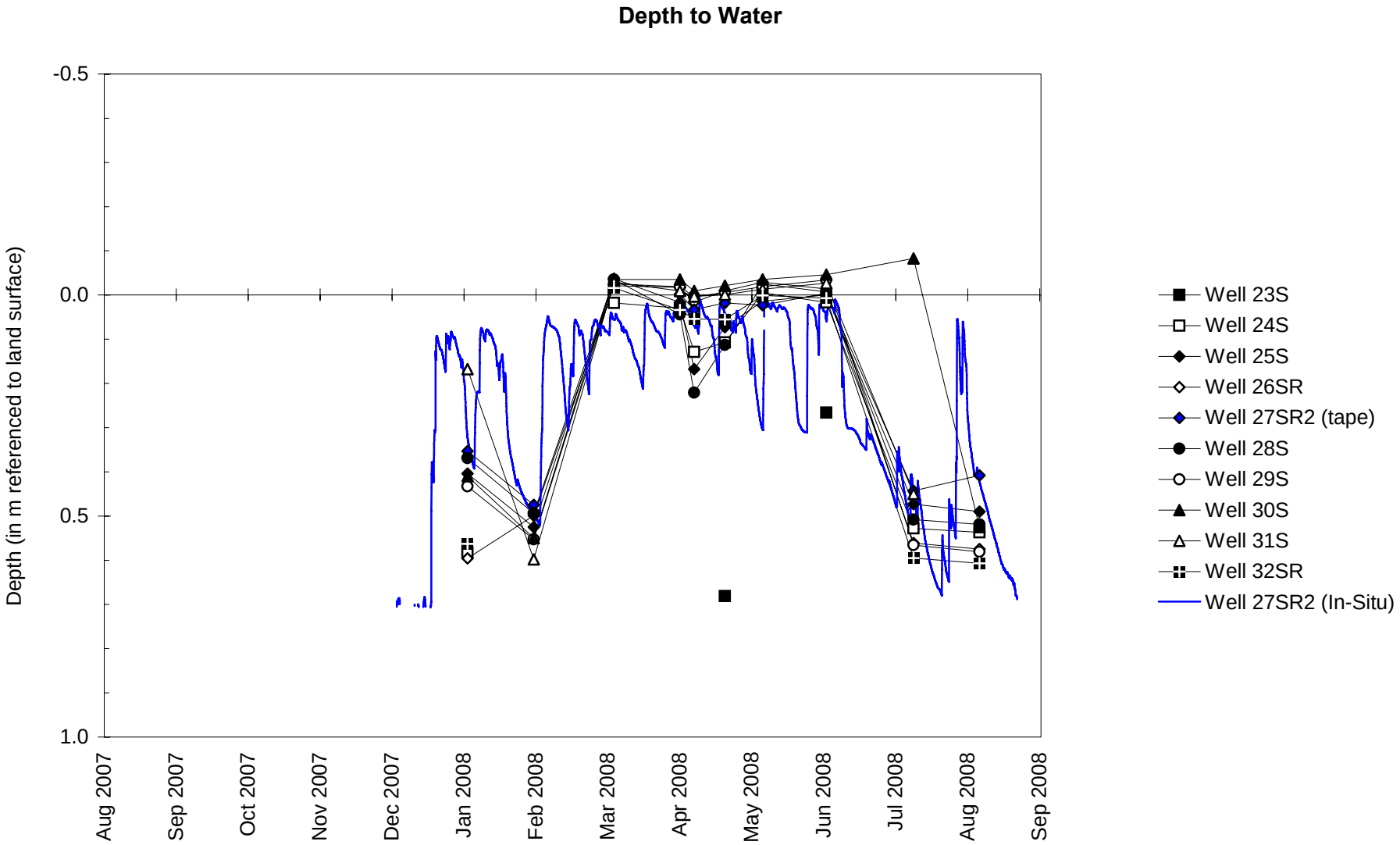


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations

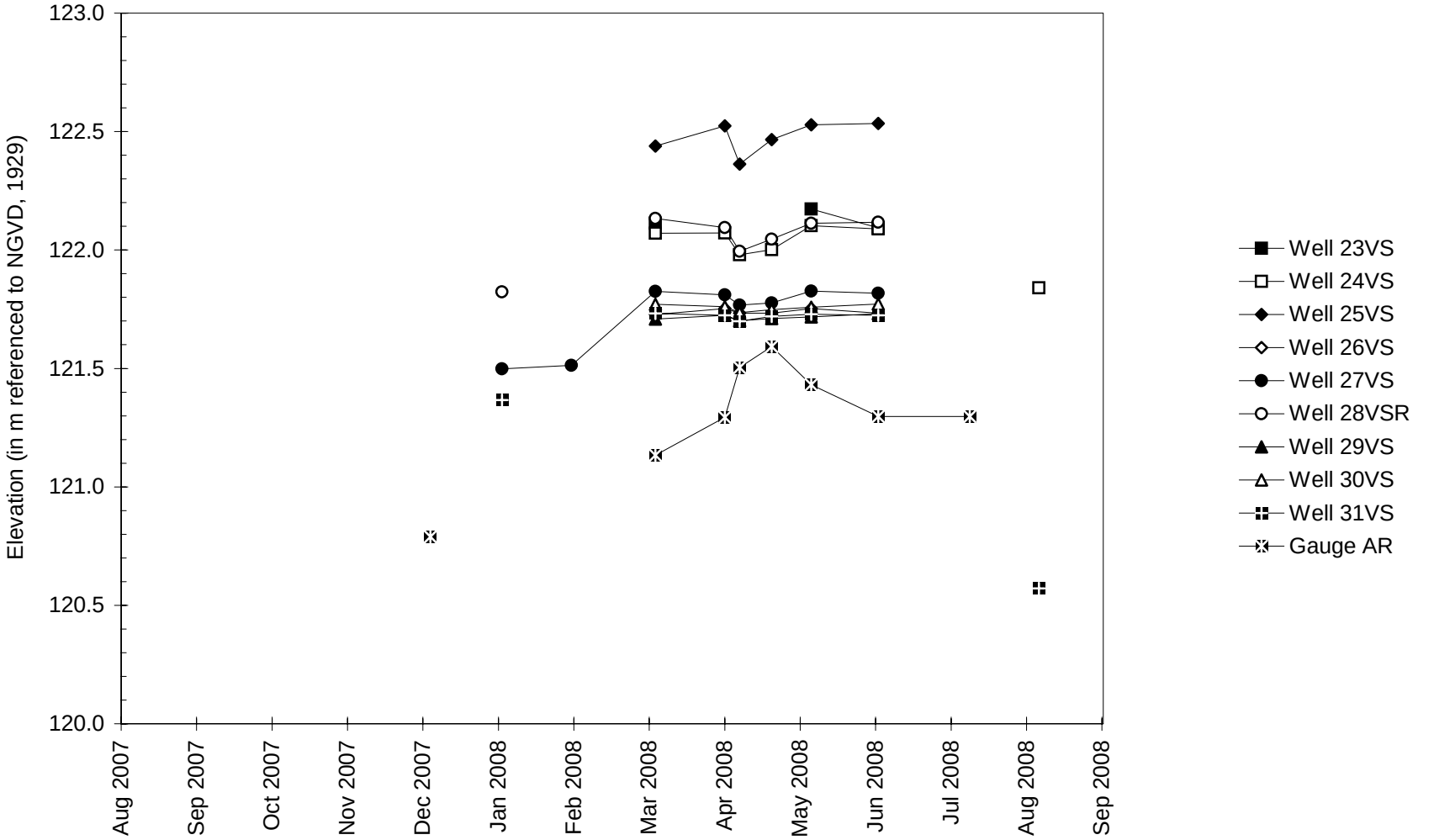


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

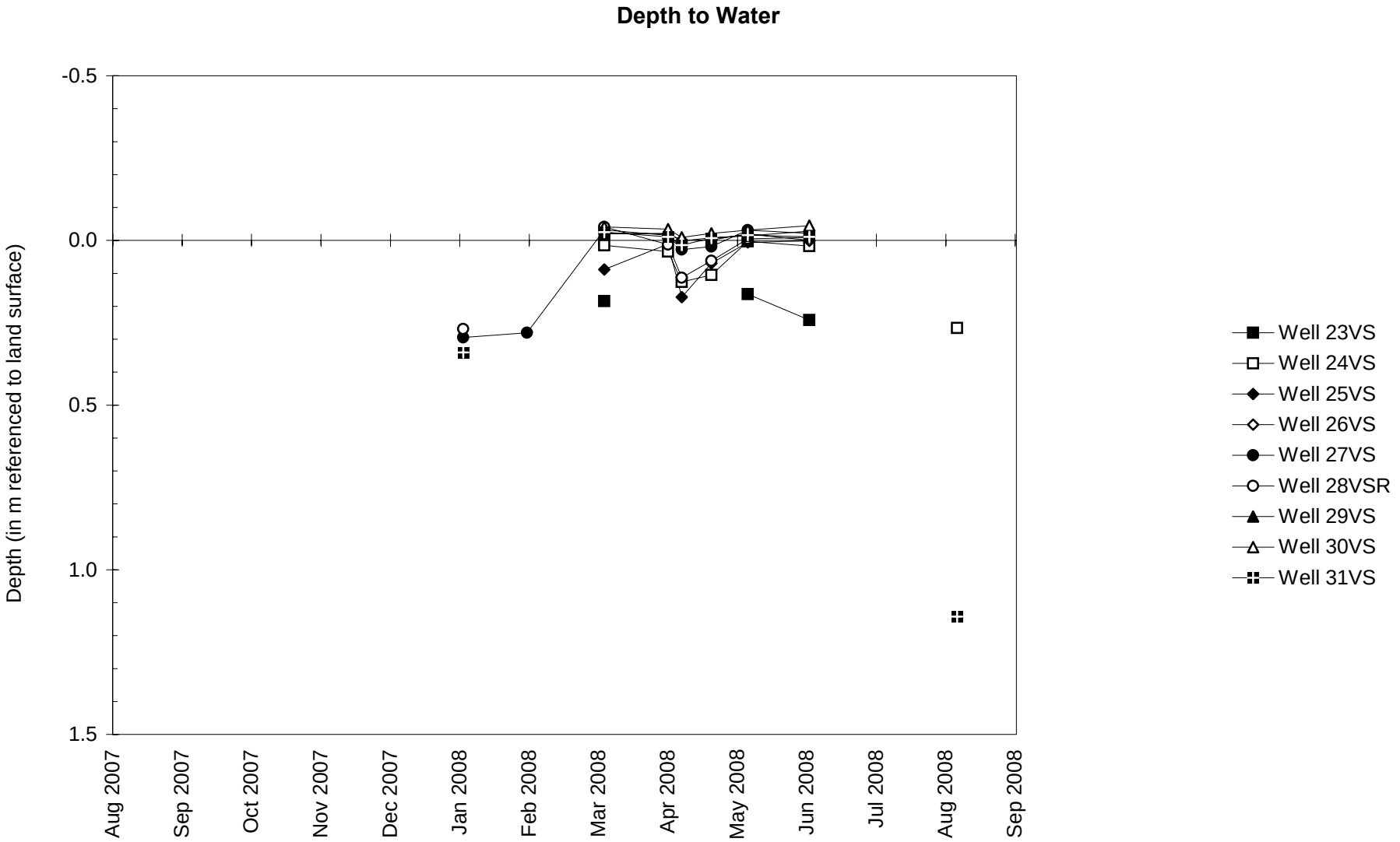


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations

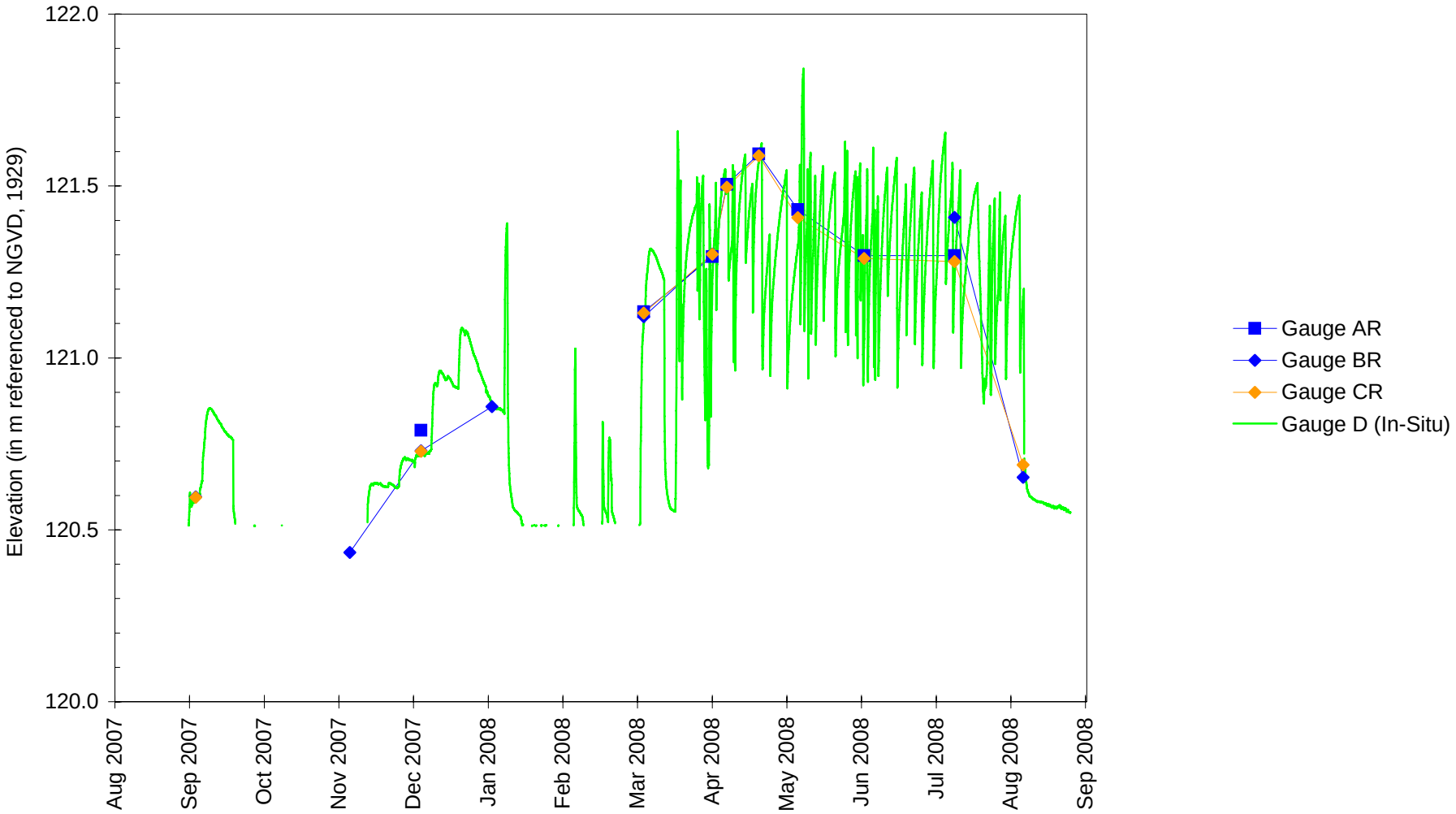


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008



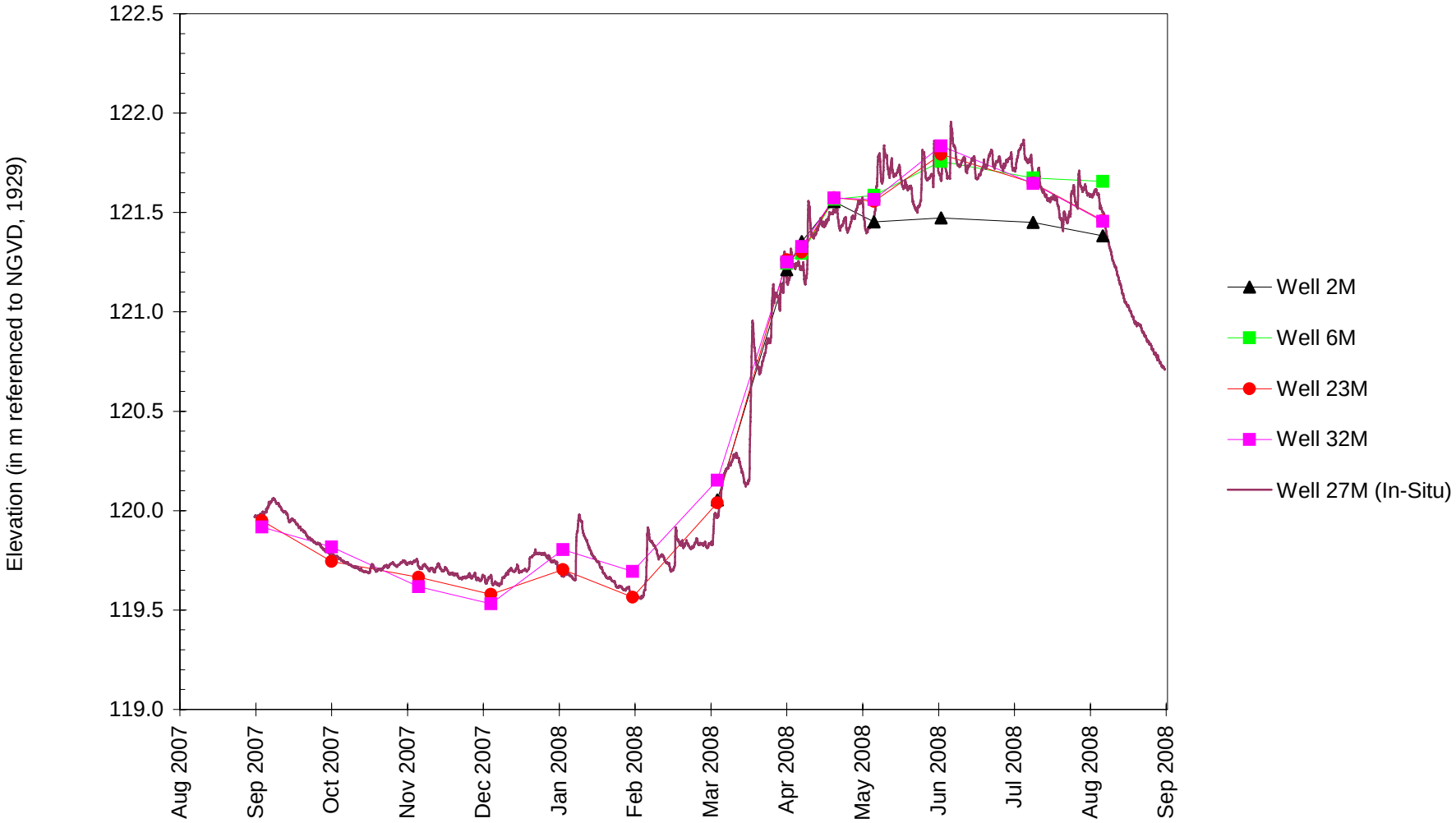
Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations

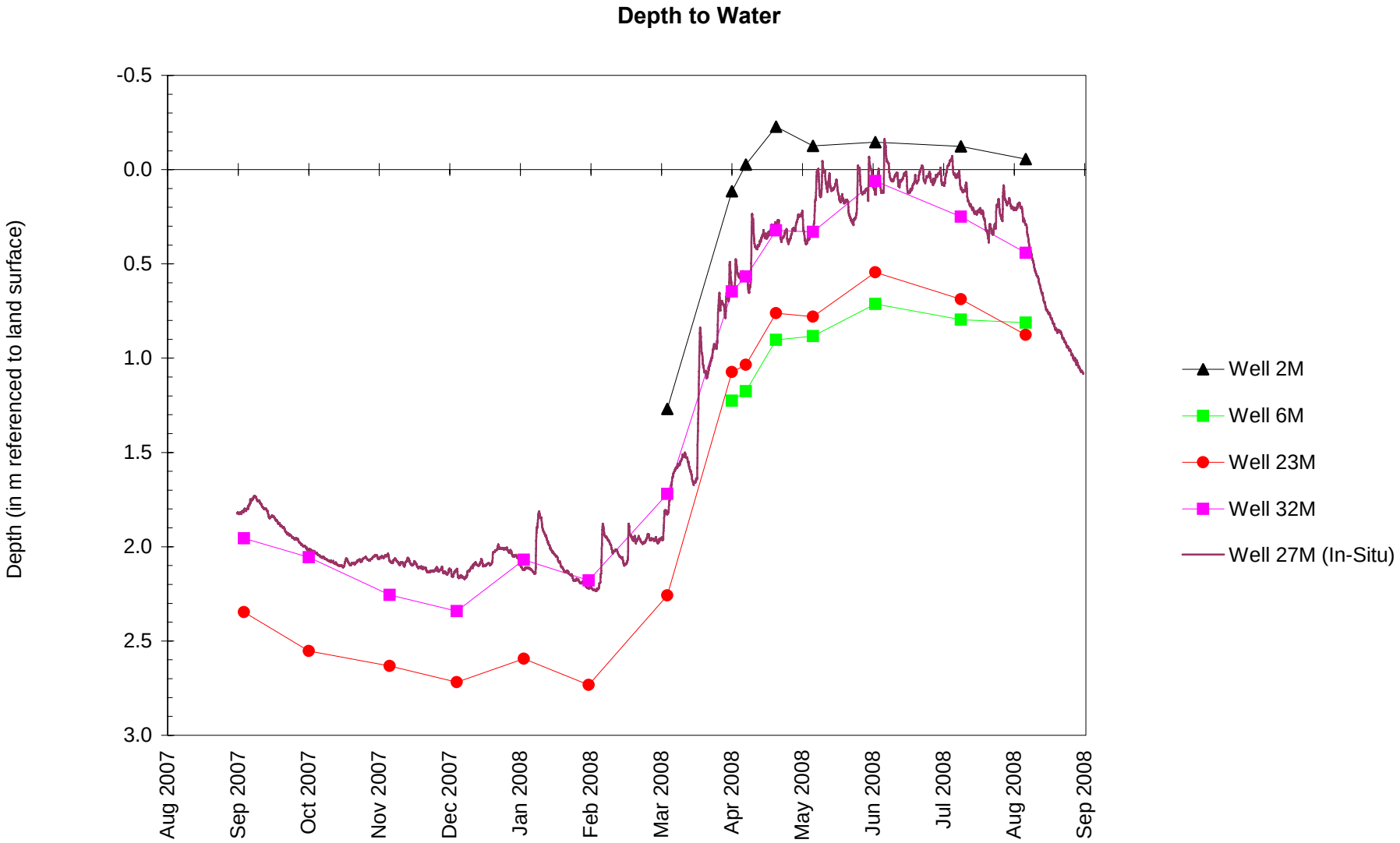


Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008

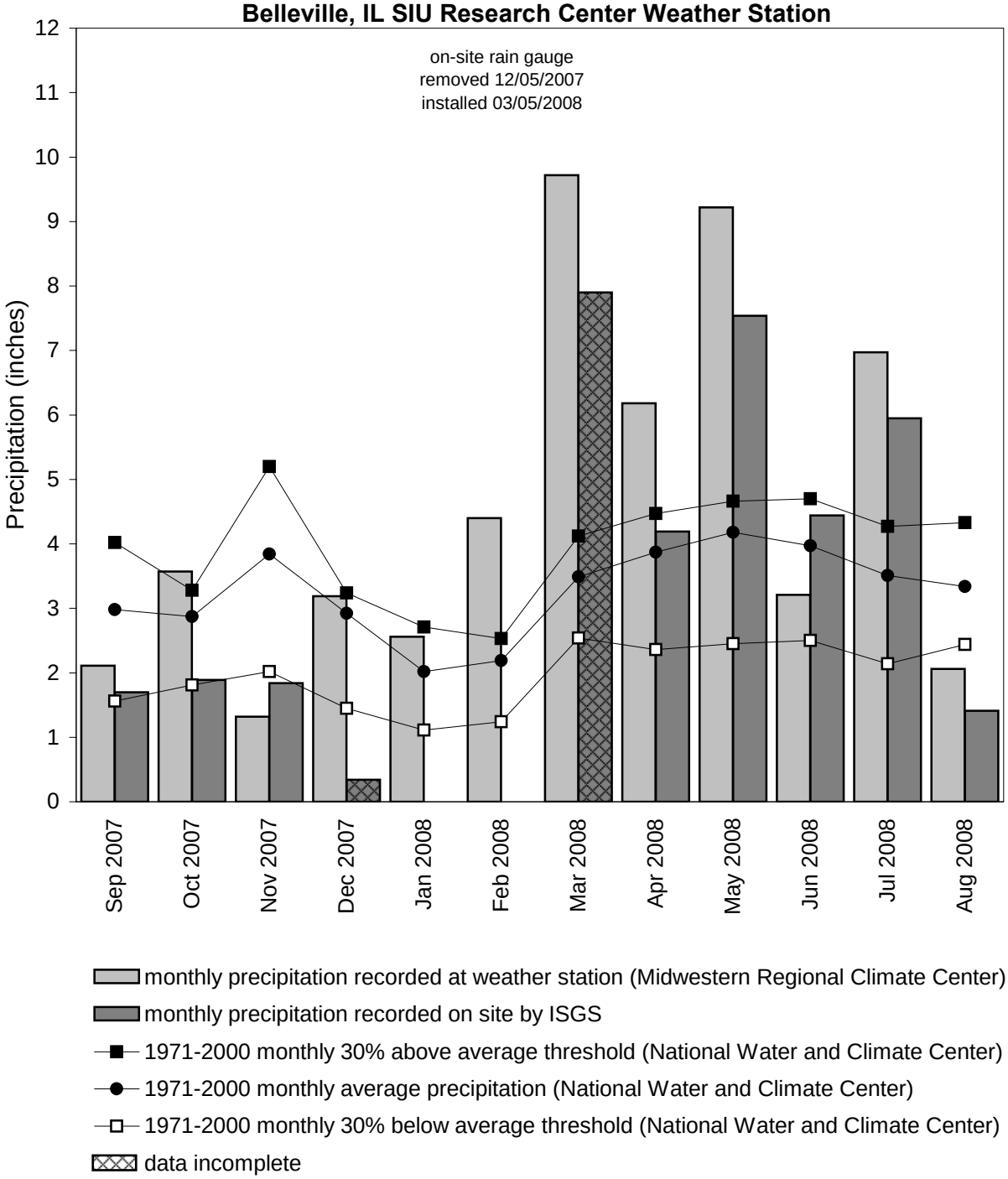
Water-Level Elevations



Former Tiernan Property, New River Crossing Potential Wetland Compensation Site
September 1, 2007 to September 1, 2008



Former Tiernan Property, New River Crossing
Potential Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site and at the Belleville, IL SIU Research Center Weather Station



Graph last updated October 7, 2008

BUCKHART **ISGS #58**
WETLAND COMPENSATION SITE
FAS 1637
Sequence #10531
Sangamon County, near Buckhart, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: Keith W. Carr

SITE HISTORY

- 1996: Young Road was realigned and a new bridge was constructed over the Sangamon River. Construction of wetland mitigation areas was subsequently completed.

- April 2004: ISGS was tasked to conduct hydrologic monitoring at the site.

- May–August 2004: ISGS installed a number of instruments at the site.

- Spring 2006: Young Road was raised by 0.6 m (2 ft) immediately north of the site.

WETLAND HYDROLOGY CALCULATION FOR 2008

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season is 2.3 ha (5.8 ac) out of a total compensation area of 2.3 ha (5.8 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the 2008 growing season is 0.8 ha (1.9 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Springfield, Illinois, is April 6 and the season lasts 205 days; 5% of the growing season is 10 days and 12.5% of the growing season is 26 days.

- Total precipitation at the nearby Abraham Lincoln Capital Airport weather station in Springfield, Illinois was 127% of normal for the period from September 2007 through September 2008. Precipitation amounts were normal or above normal for October and December 2007, and for January, February, April, May, June, July, and September 2008. Precipitation amounts were below normal for the remaining months of the 2007–2008 monitoring period.

- In 2008, water levels in wells 1SR2, 2SR, 3S, 3SR, 4S, 5S, 6S, 7S, 7SR, and 8SR2 satisfied wetland hydrology criteria for greater than 5% of the growing season. In addition, water levels in wells 7SR and 8SR2 satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- In 2008, surface-water data logger gauge D (Sonic), located on the Young Road bridge over the Sangamon River, recorded a water level of 165.37 m (542.55 ft) that was sustained for greater than 5% of the growing season. At this water-level elevation, the Sangamon River floods both mitigation areas 1 and 2. Data from gauge D were insufficient to calculate the area of inundation that affected the site for greater than 12.5% of the growing season, and the other logger (Gauge A) typically used for this purpose was damaged and could not be replaced during the monitoring period.

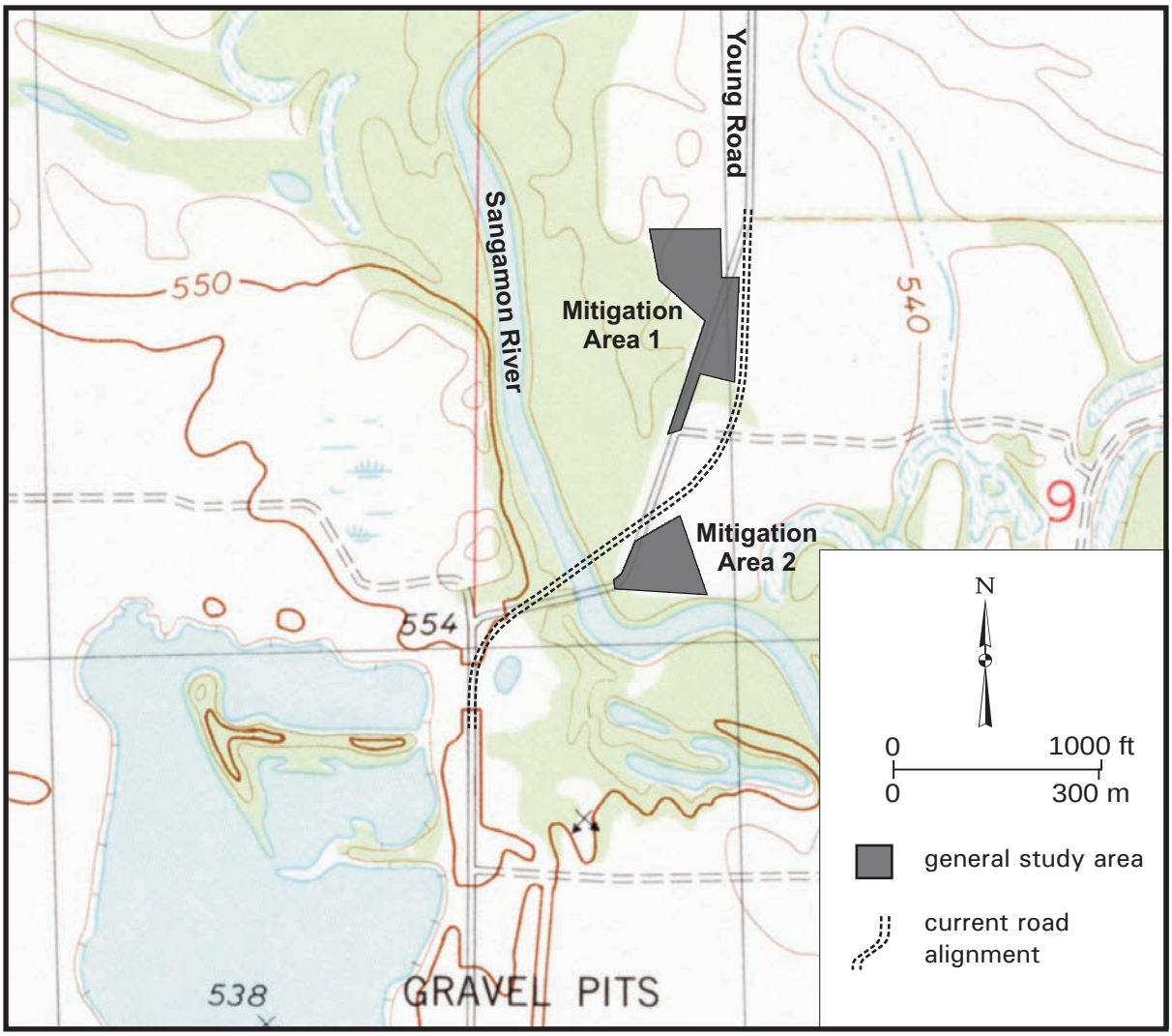
- The areas that met wetland hydrology criteria for the 2008 growing season did so as a result of overbank-flooding events from the Sangamon River. The primary event peaked on June 9 and inundated the entire site for greater than 5% of the growing season. At least ten additional instances of overbank flooding from the Sangamon River were recorded at the site from January through October 2008.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

Buckhart Wetland Compensation Site
(FAS 1637, TR 478)
General Study Area and Vicinity

from the USGS Topographic Series, Mechanicsburg, IL 7.5-minute Quadrangle (USGS 1982)
contour interval is 10 feet



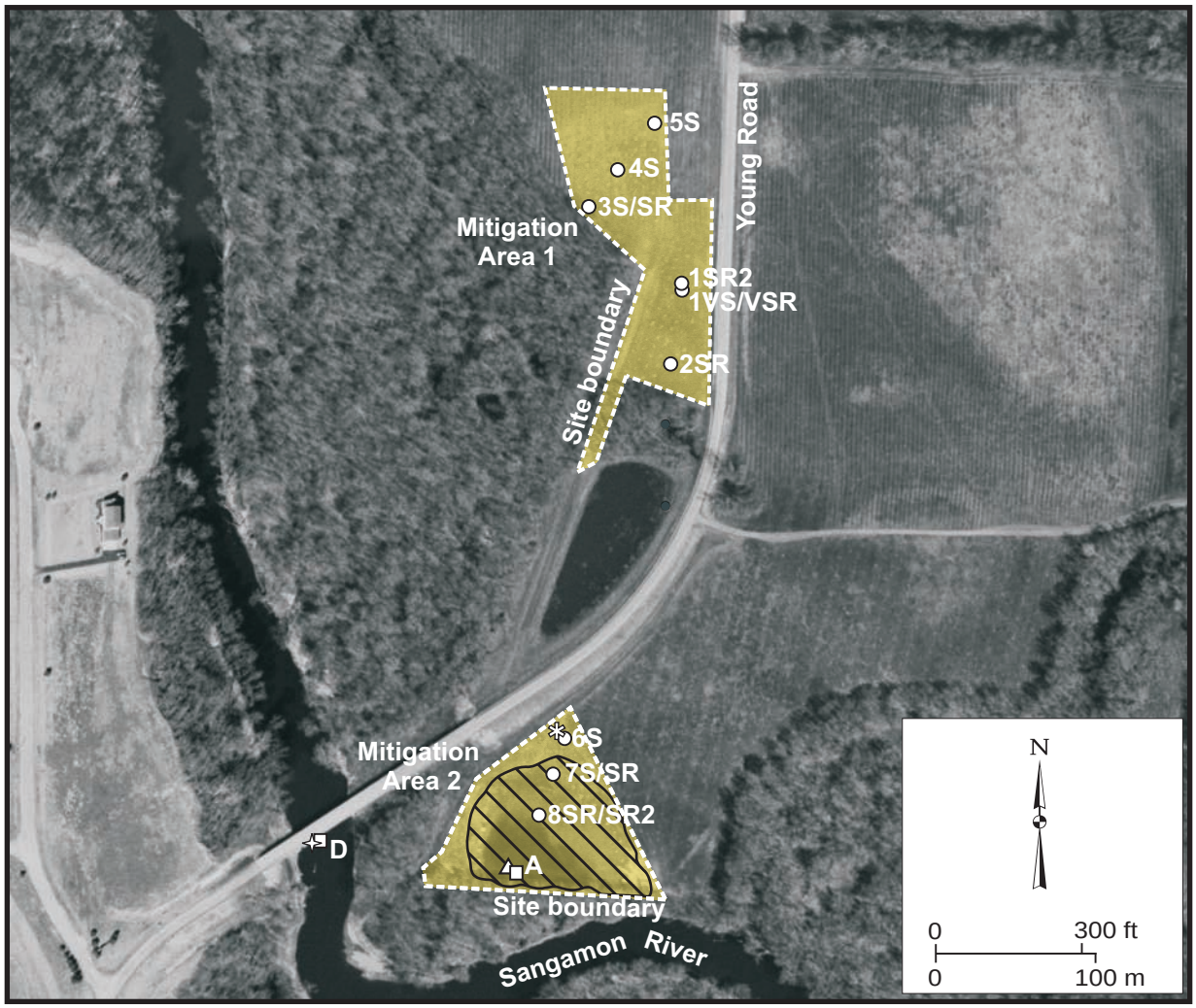
Buckhart Wetland Compensation Site

(FAS 1637, TR 478)

Estimated Areal Extent of 2008 Wetland Hydrology

Based on data collected between September 1, 2007 and September 23, 2008

Map based on USGS digital orthophotographs, Mechanicsburg, SE and SW quarter quadrangles (ISGS 2005)



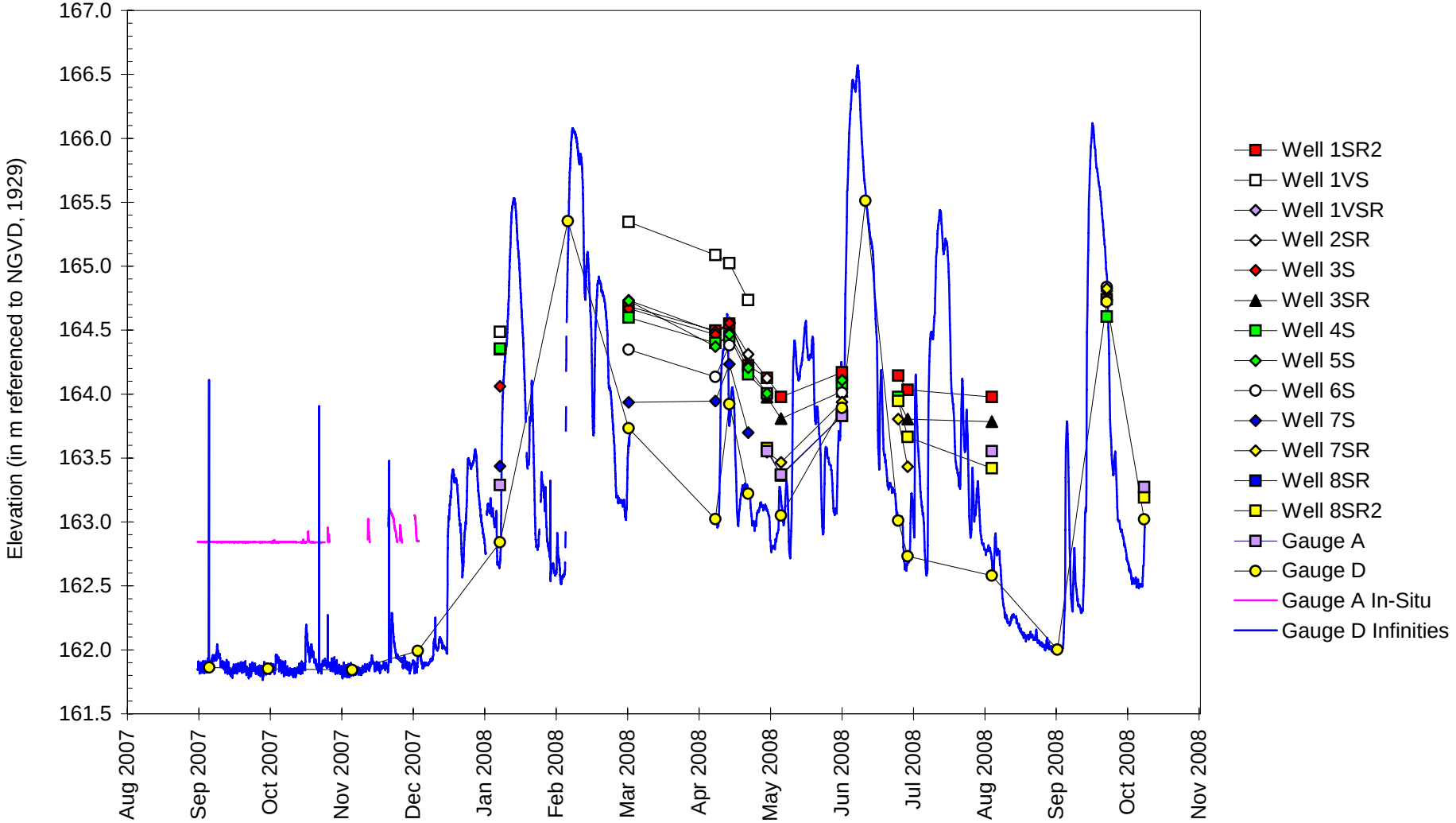
2008 Wetland Hydrology

- >12.5% of the growing season
- >5% of the growing season

- ○ monitoring well
- □ staff gauge
- △ In-Situ data logger
- ❄ rain gauge
- ✧ Infinities data logger

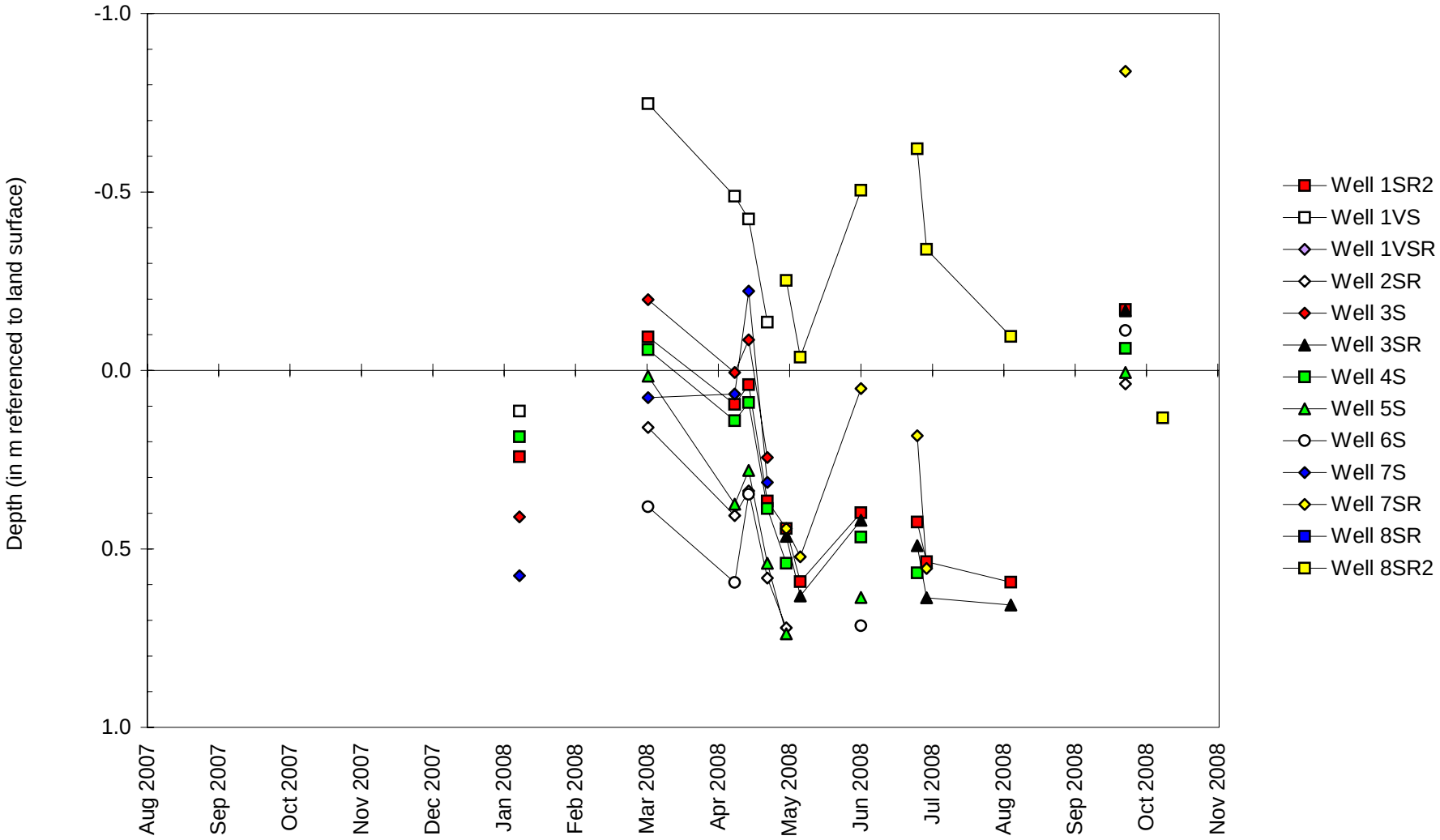
Buckhart Wetland Compensation Site
September 1, 2007 to November 1, 2008

Water-Level Elevations
in Monitoring Wells, on Stage Gauges, and in Data Loggers



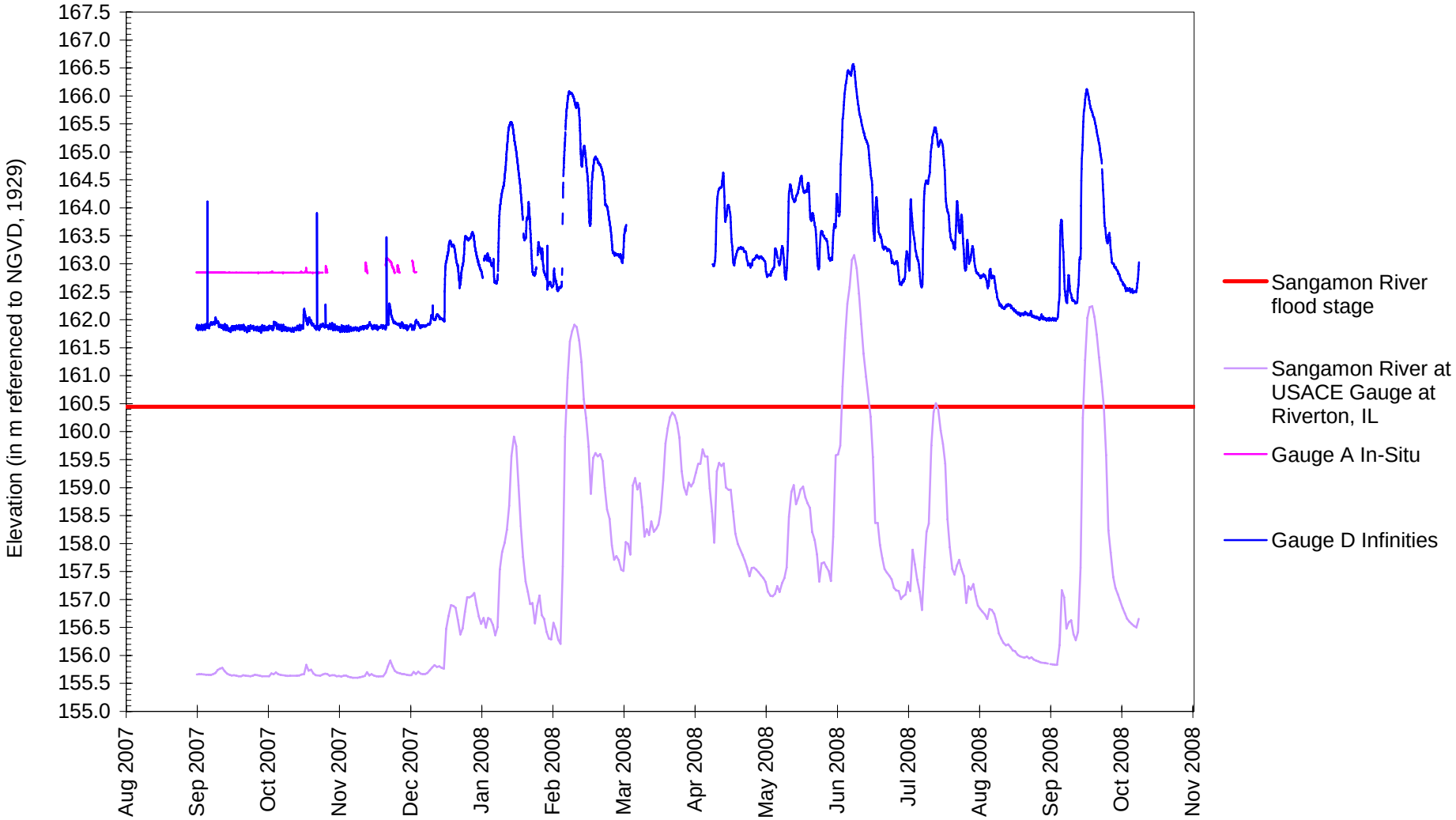
Buckhart Wetland Compensation Site
September 1, 2007 to November 1, 2008

Depth to Water
in Monitoring Wells



Buckhart Wetland Compensation Site
September 1, 2007 to November 1, 2008

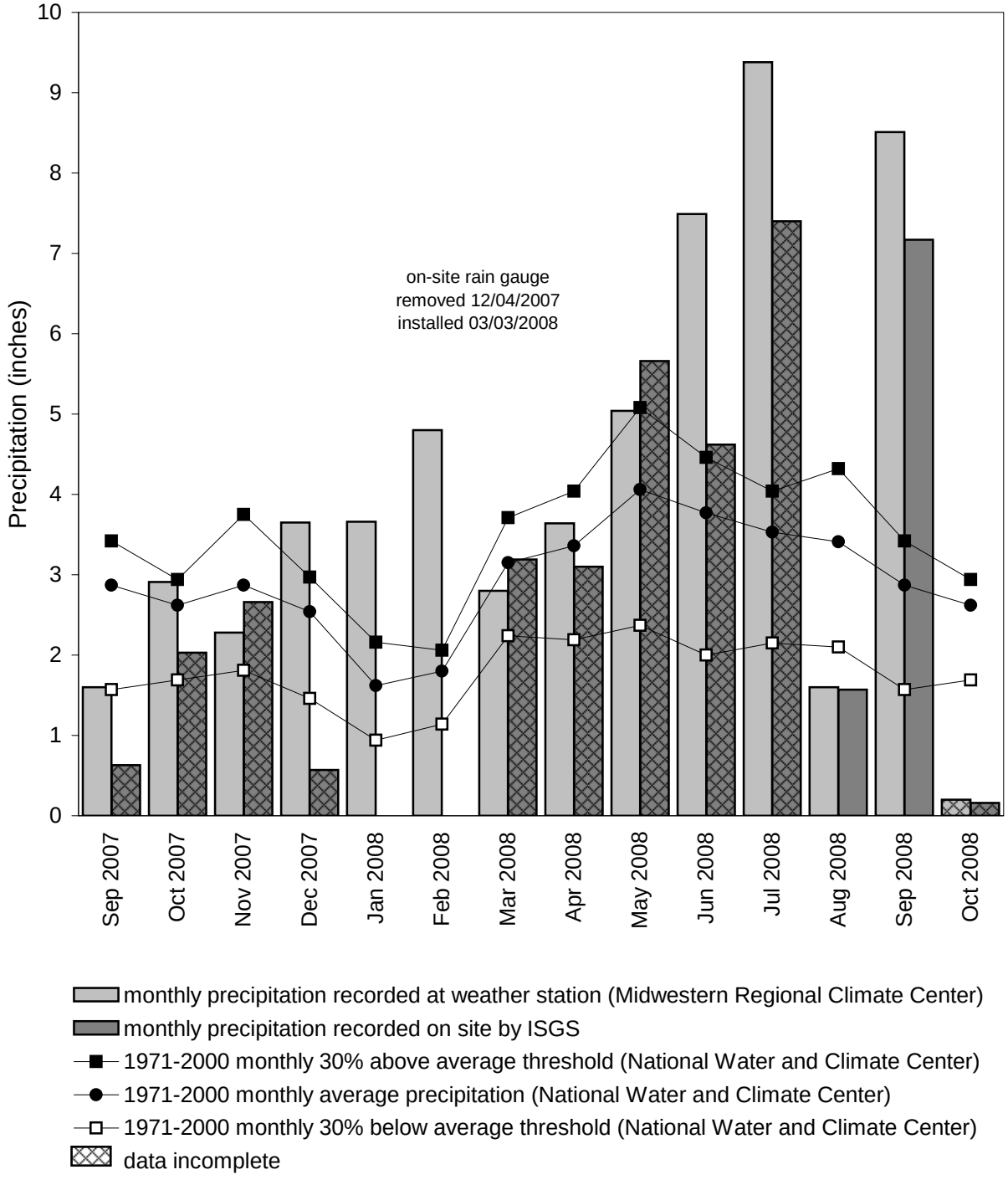
Water-Level Elevations



Buckhart Wetland Compensation Site

September 1, 2007 through October 9, 2008

Total Monthly Precipitation Recorded On Site and at the Springfield, IL Abraham Lincoln Capital Airport Weather Station



Graph last updated October 9, 2008

HARRISBURG **ISGS #63**
WETLAND COMPENSATION SITE
FAP 332
Sequence #90
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- April 2000: ISGS submitted an initial site evaluation report to IDOT.
- April 2004: ISGS submitted a Level II hydrologic characterization report to IDOT.
- May 2004: Construction at the wetland compensation site was completed.
- December 2005: ISGS was tasked by IDOT to monitor the site for performance standards, and post-construction water-level monitoring was initiated.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that 6.1 ha (15.0 ac) out of a total site area of 8.1 ha (20.0 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008, whereas 3.2 ha (7.9 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days.
- Total precipitation for the period from September 2007 through August 2008 was 136% of normal. Drier than normal conditions prevailed in September and November 2007 and in January, June, and August 2008. Precipitation amounts were at or above normal for October and December 2007, February through May 2008 and in July 2008. The period March through May 2008 was extremely wet, with 185% of normal precipitation.
- In 2008, all wells except 3S and 10S satisfied wetland hydrology criteria for greater than 5% of the growing season. Furthermore, wells 2S, 5S, 6S, 7S, 7VS, 8S, 8VS, 9S, 9VS, and 11VS satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.
- The data logger RDS 1, located at the confluence of the drainage ditches at the east end of the site, indicated that surface-water inundation occurred below 111.10 m (364.50 ft) for greater than 5% of the growing season and below an elevation of 111.02 m (364.23 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

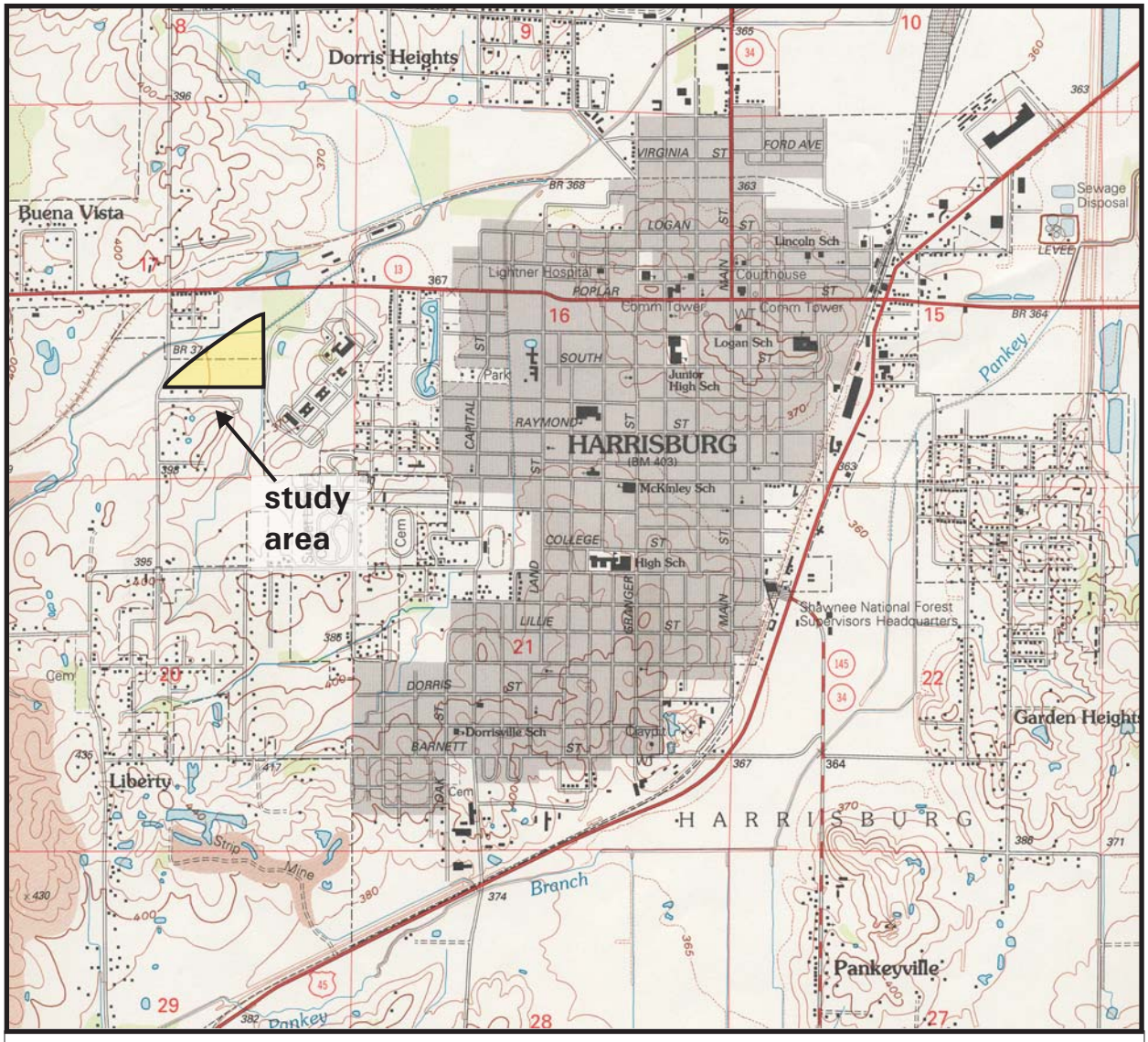
- Monitoring will continue through 2010 or until no longer required by IDOT.

Harrisburg Potential Wetland Compensation Site
(FAP 332)

General Study Area and Vicinity

from the USGS Topographic Series, Harrisburg, IL 7.5-minute Quadrangle (USGS 1996)

contour interval is 5 feet



wetland compensation site

0 2000 ft

0 600 m

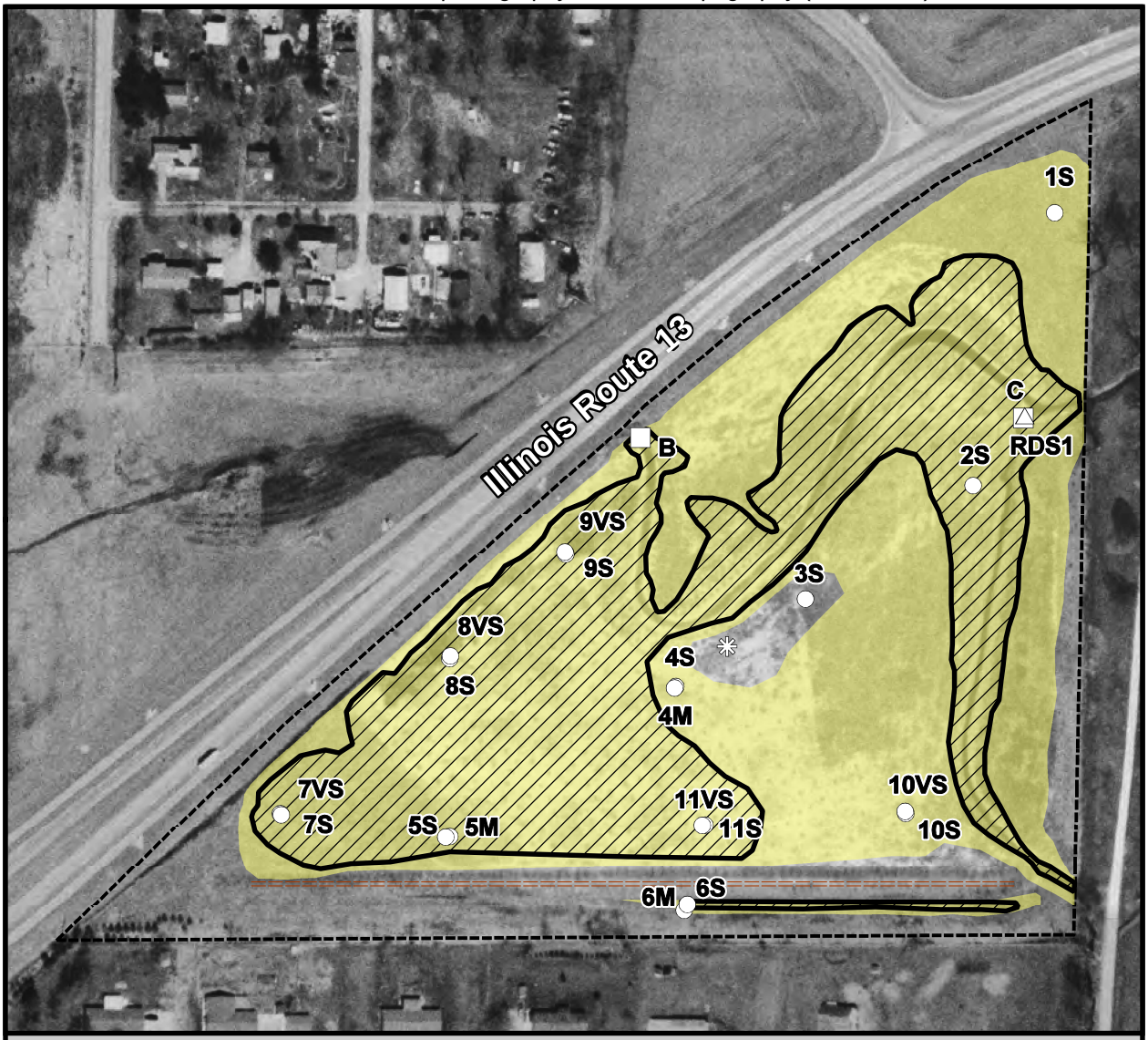
N

Harrisburg Wetland Compensation Site
(FAP 332)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

map based on USGS digital orthophotograph Harrisburg NW quarter quadrangle
from 3/17/2005 aerial photography and ISGS topography (ISGS 2006)



2008 Wetland Hydrology

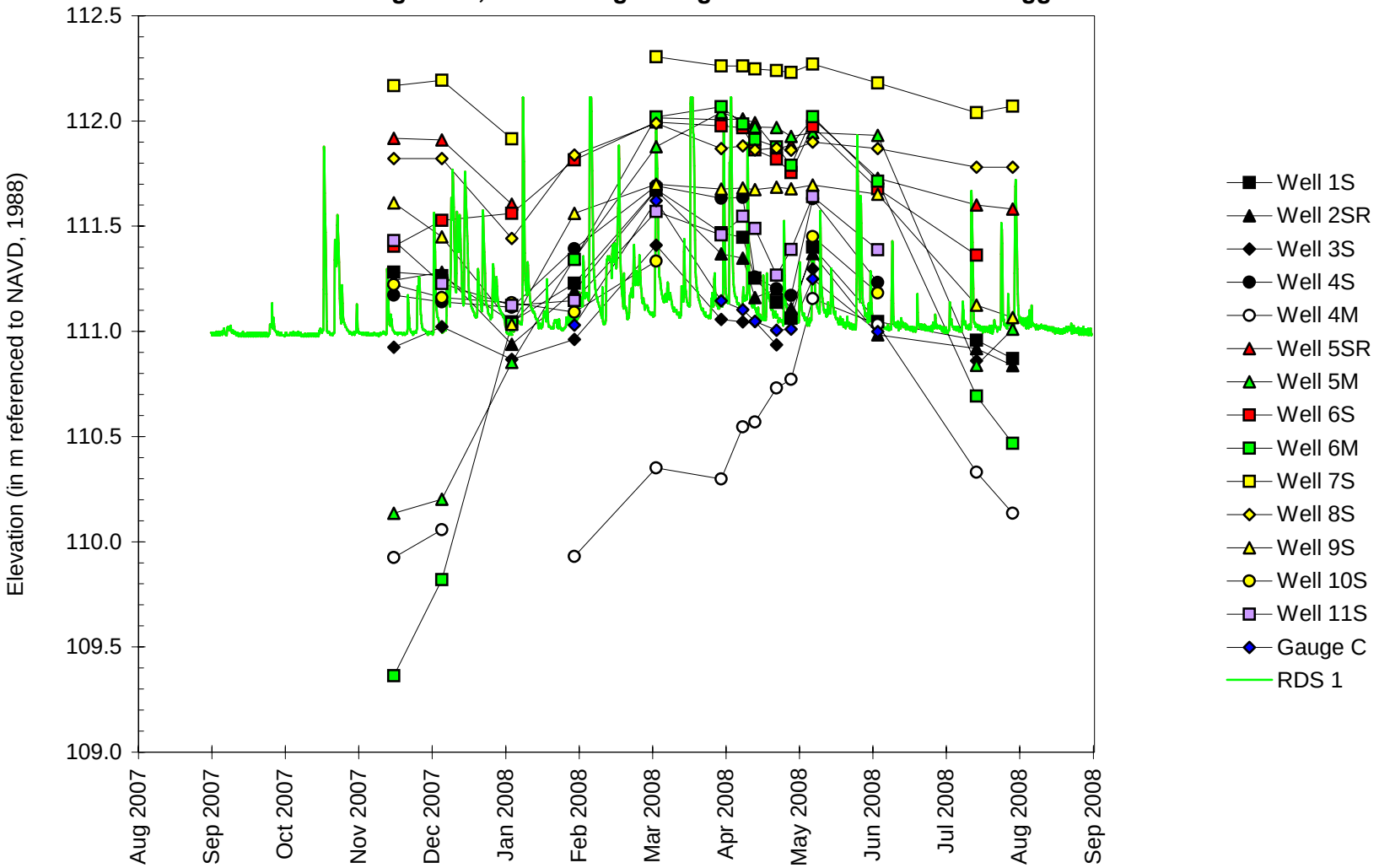
- >5% of growing season
- >12.5% of growing season

- monitoring well
- RDS data logger
- staff gauge
- rain gauge
- berm
- site boundary

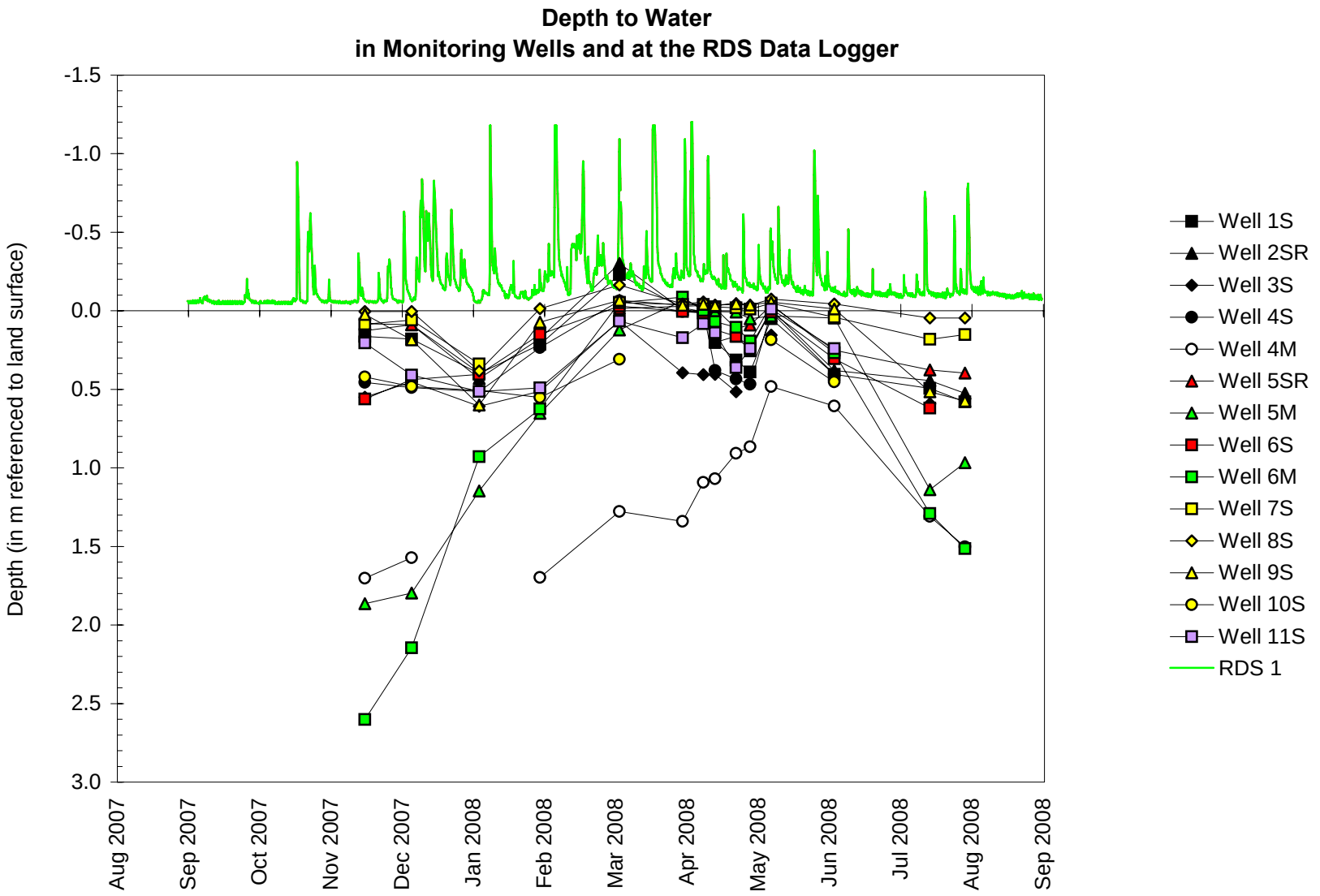
0 250 ft
0 75 m
N

Harrisburg Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in Monitoring Wells, on the Stage Gauges and at the RDS Data Logger

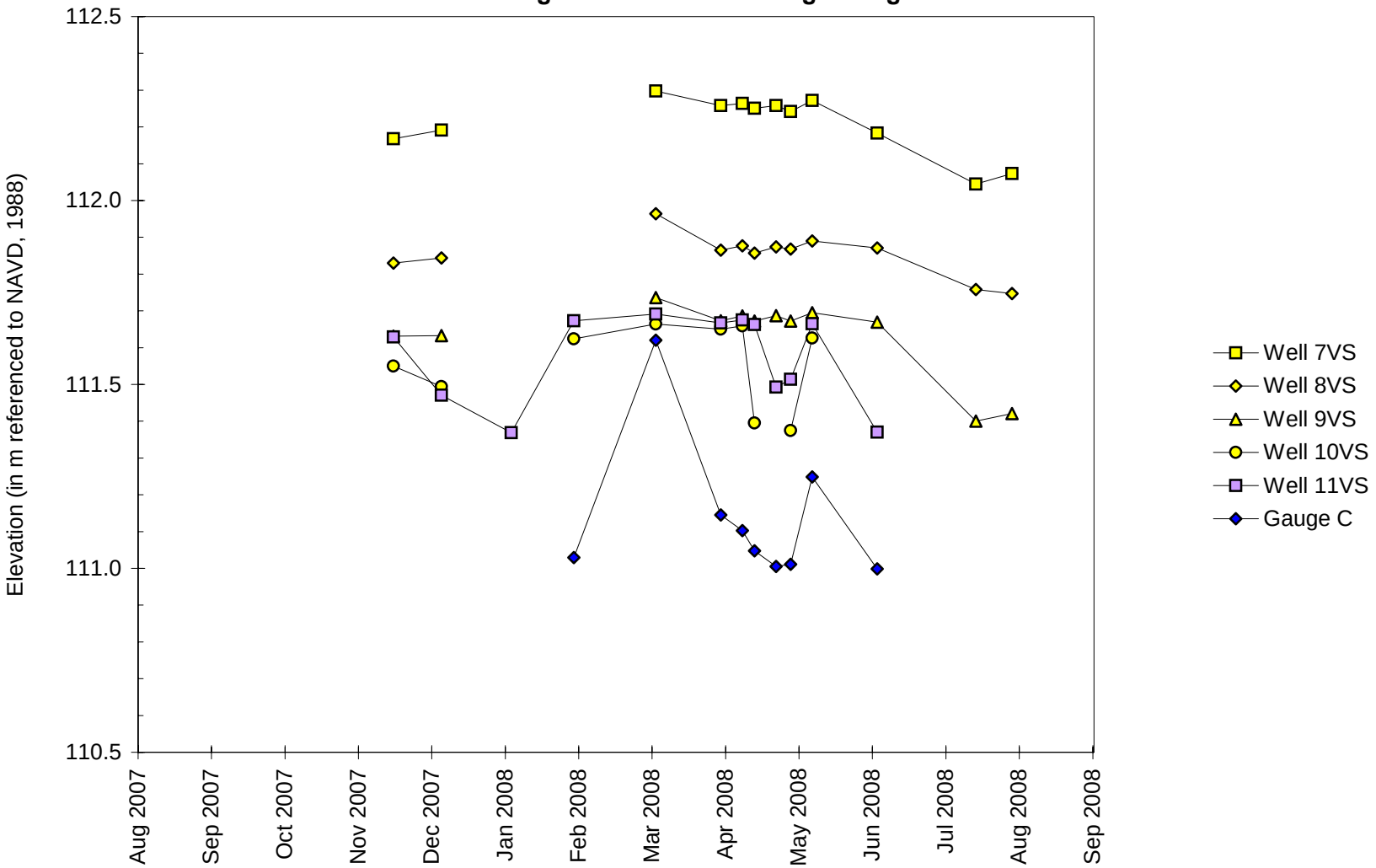


Harrisburg Wetland Compensation Site
September 1, 2007 to September 1, 2008

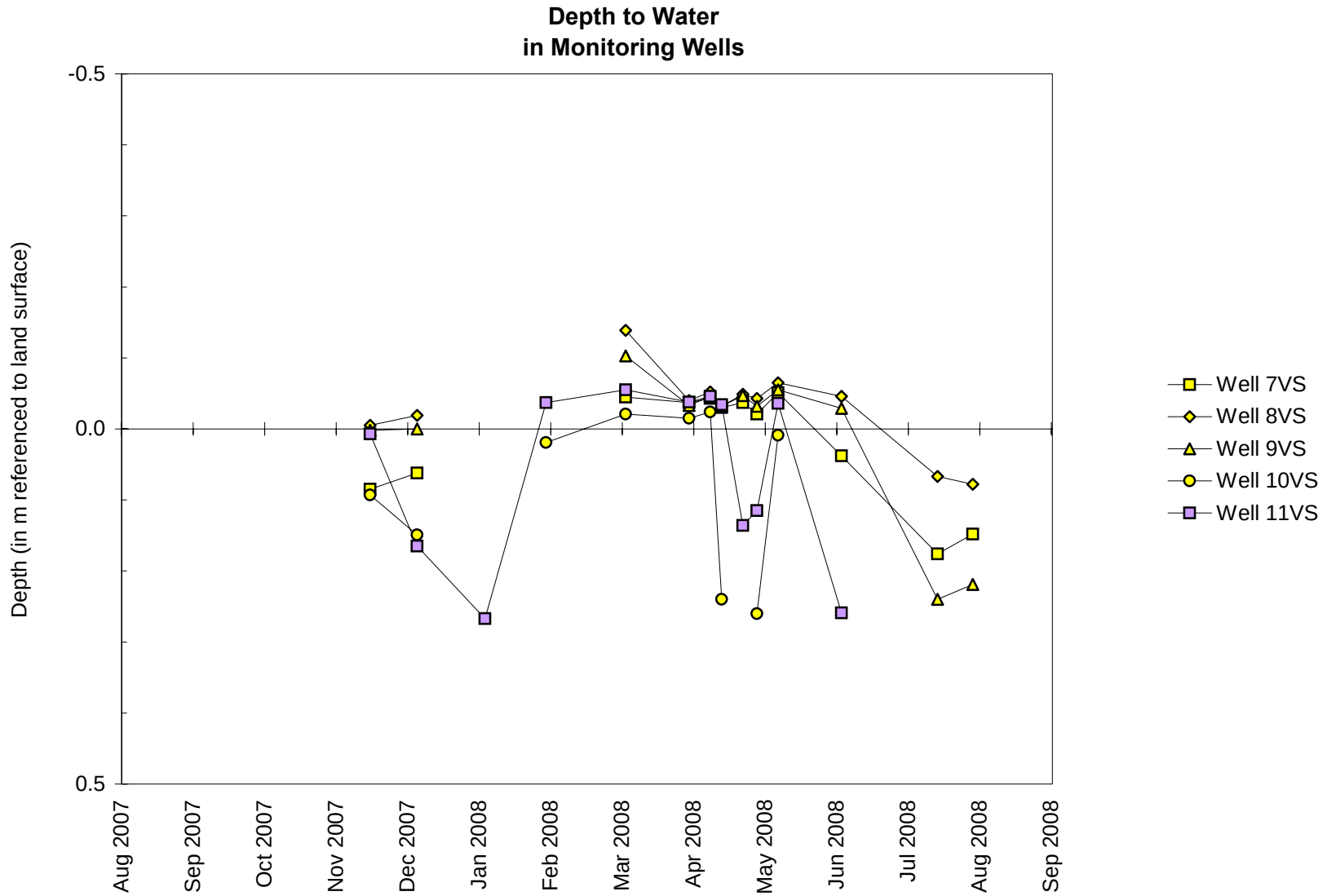


Harrisburg Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in Monitoring Wells and on the Stage Gauges



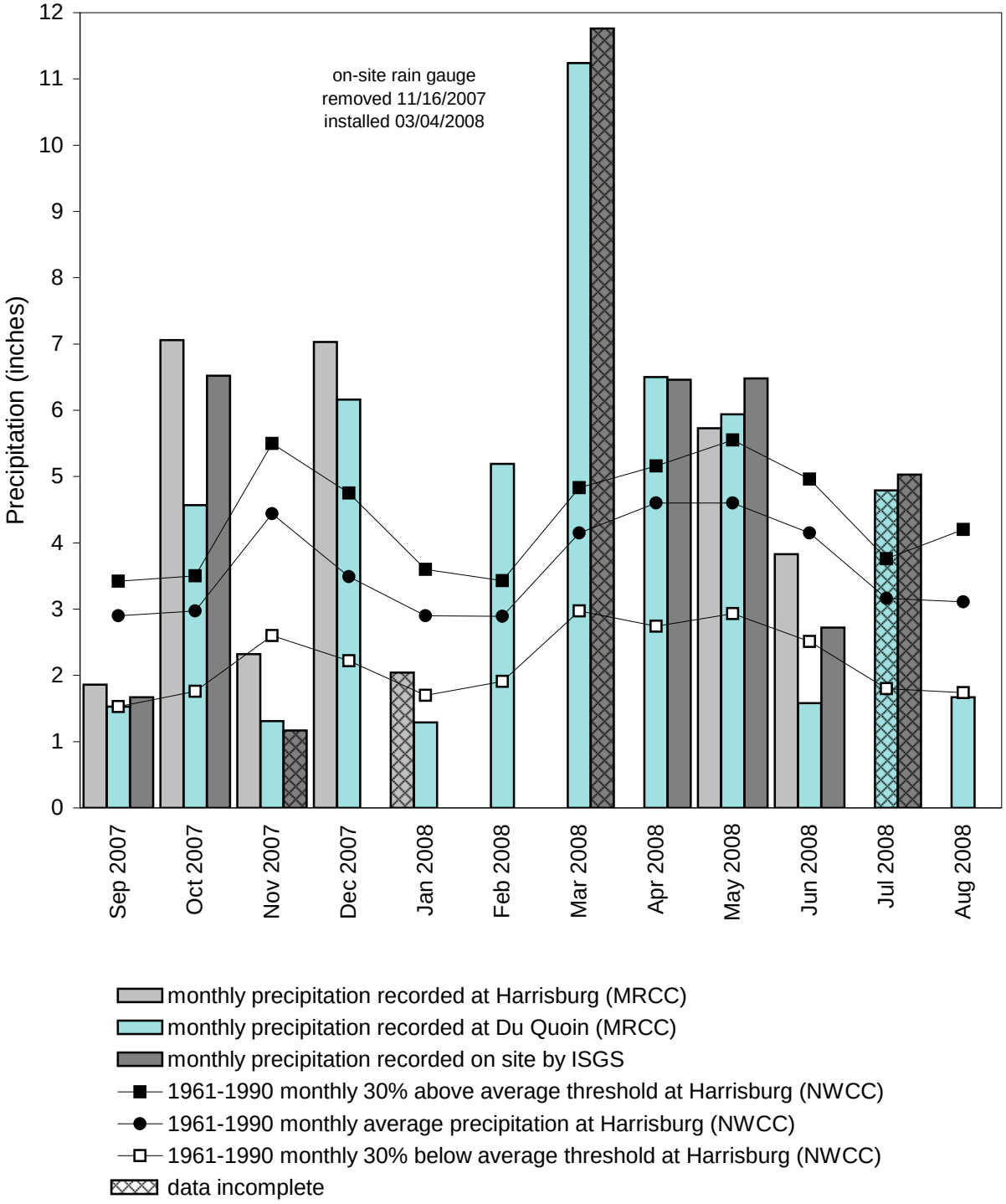
Harrisburg Wetland Compensation Site
September 1, 2007 to September 1, 2008



Harrisburg Wetland Compensation Site

September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Harrisburg, IL and Du Quoin, IL Weather Stations



Graph last updated October 7, 2008

TAMMS **ISGS #71**
WETLAND COMPENSATION SITE
FAS 1907
Sequence #1026
Union County, near Tamms, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- Summer 2001: The wetland compensation site was constructed.
- June 2003: ISGS was tasked by IDOT to monitor wetland hydrology.
- November 2003: Post-construction water-level monitoring was initiated.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that 2.5 ha (6.3 ac) out of the 6.3-ha (15.6-ac) site satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008, whereas 1.1 ha (2.6 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in nearby Anna, Illinois, is March 31 and the season lasts 225 days; 5% of the growing season is 11 days and 12.5% of the growing season is 28 days.
- Total precipitation for the reporting period from September 2007 through August 2008 was 140% of normal. Drier than normal conditions prevailed in September and November 2007 and in January, June and August 2008. Precipitation was at or above normal in October and December 2007, during February through May and in July 2008. The period March through May 2008 was extremely wet with 206% of normal precipitation.
- In 2008, wells 1S, 3S, 4S, 5S, 7S, 8S, and 10S satisfied the wetland hydrology criteria for greater than 5% of the growing season. Wells 7S and 10S also satisfied wetland hydrology criteria for greater than 12.5% of the growing season.
- Data from RDS 2 showed that areas at the south end of the site below 102.4 m (336.0 ft) were inundated for greater than 5% of the growing season, and areas below 102.3 m (335.6 ft) were inundated for greater than 12.5% of the growing season. Data were not available to estimate wetland hydrology from RDS 1, because the data logger malfunctioned during the early growing season. Instead, water-level values from Gauge A were used to estimate wetland hydrology for this location. Gauge A showed that areas below 103.1 m (338.3 ft) were inundated for greater than 5% of the growing season, and areas below 103.0 m (337.9 ft) were inundated for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Water-level monitoring is expected to continue through 2008 or until no longer required by IDOT.

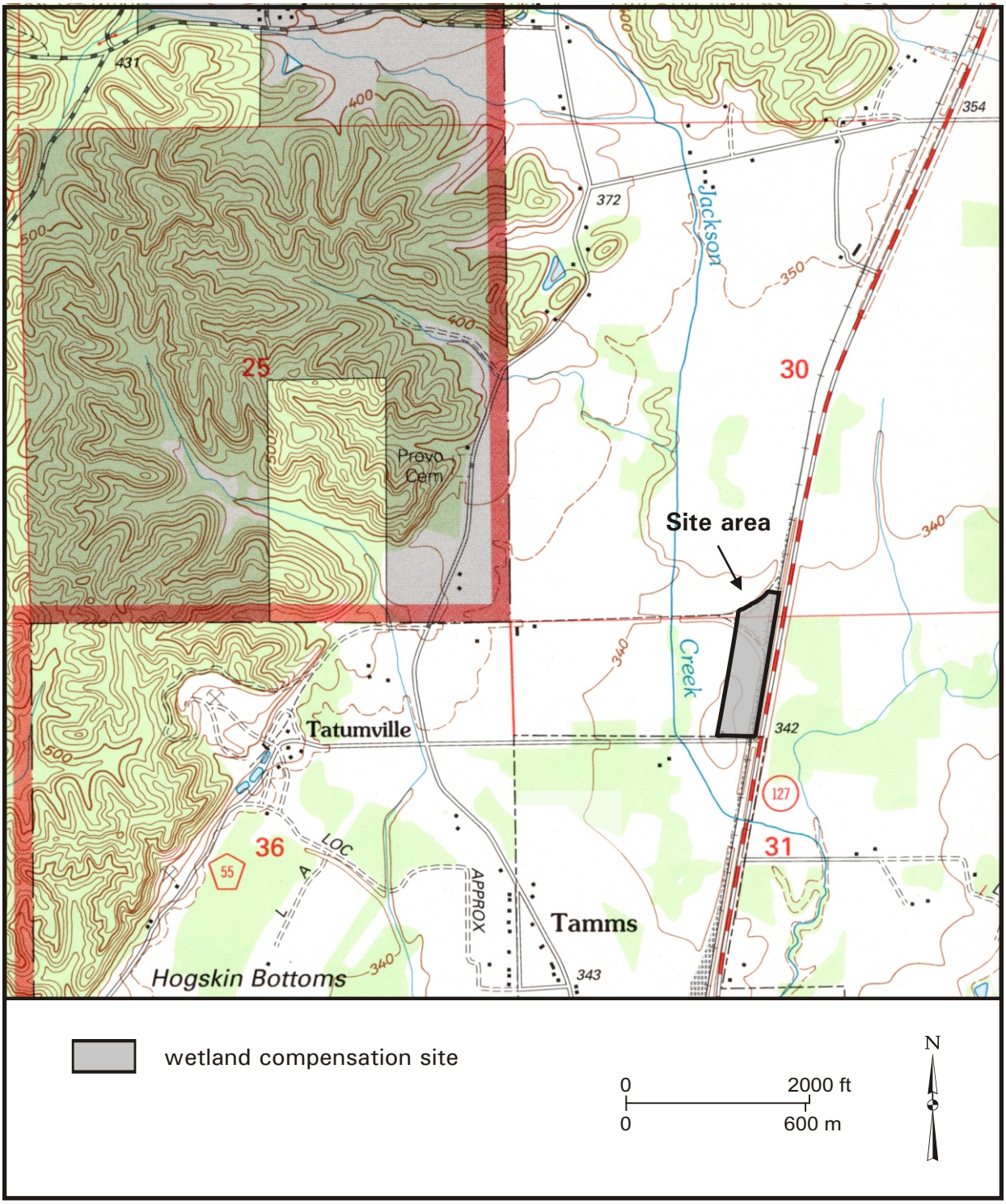
Tamms Wetland Compensation Site

(FAS 1907)

General Study Area and Vicinity

from the USGS Topographic Series, Mill Creek, IL 7.5-minute Quadrangle (USGS 1996).

contour interval is 20 feet

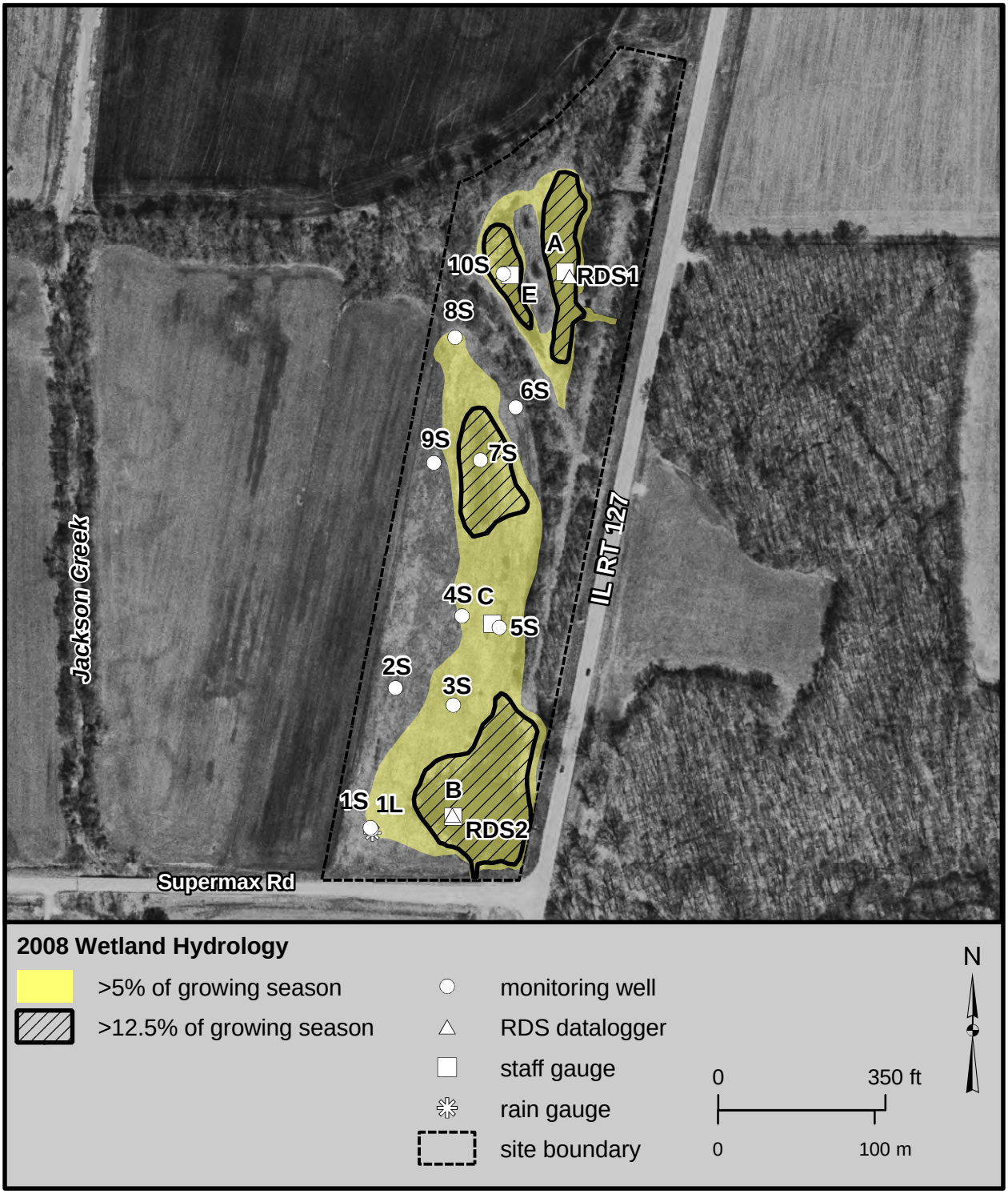


Tamms Wetland Compensation Site
(FAS 1907)

Estimated Areal Extent of 2008 Wetland Hydrology

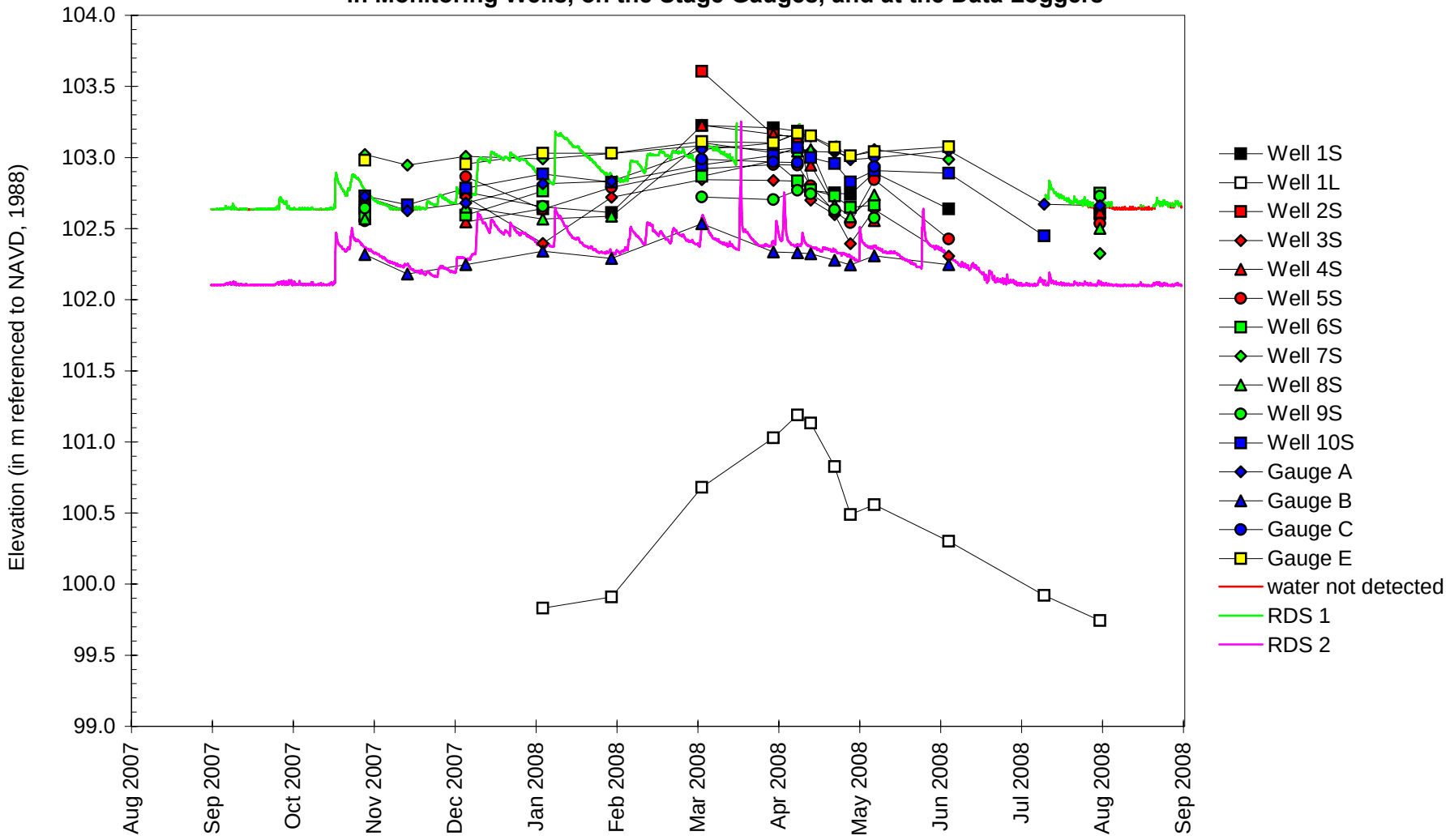
based on data collected between September 1, 2007 and September 1, 2008

map based on USGS digital orthophotograph Mill Creek SE quarter quadrangle
from 3/31/2005 aerial photography and ISGS topography (ISGS 2006).

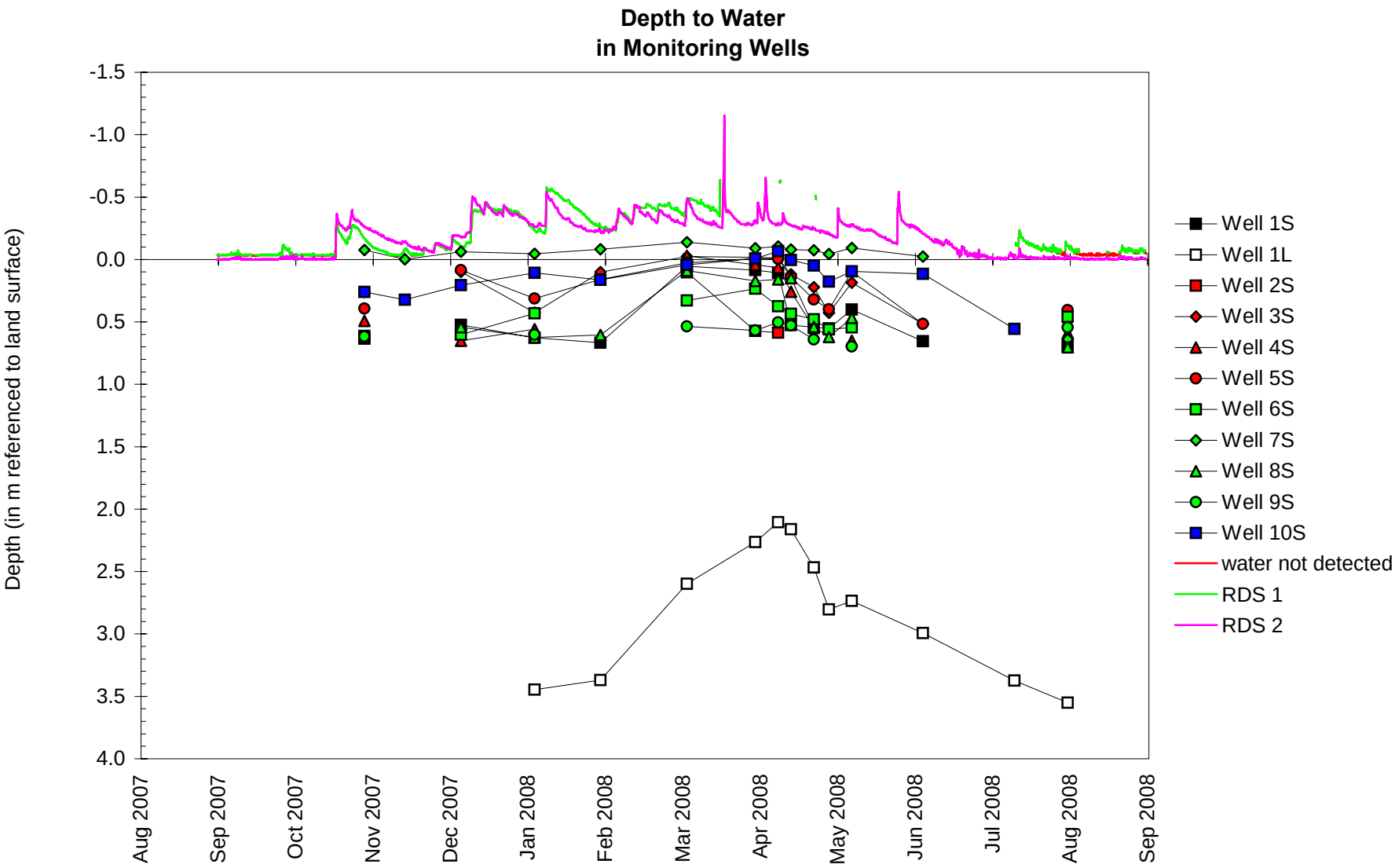


Tamms Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
in Monitoring Wells, on the Stage Gauges, and at the Data Loggers



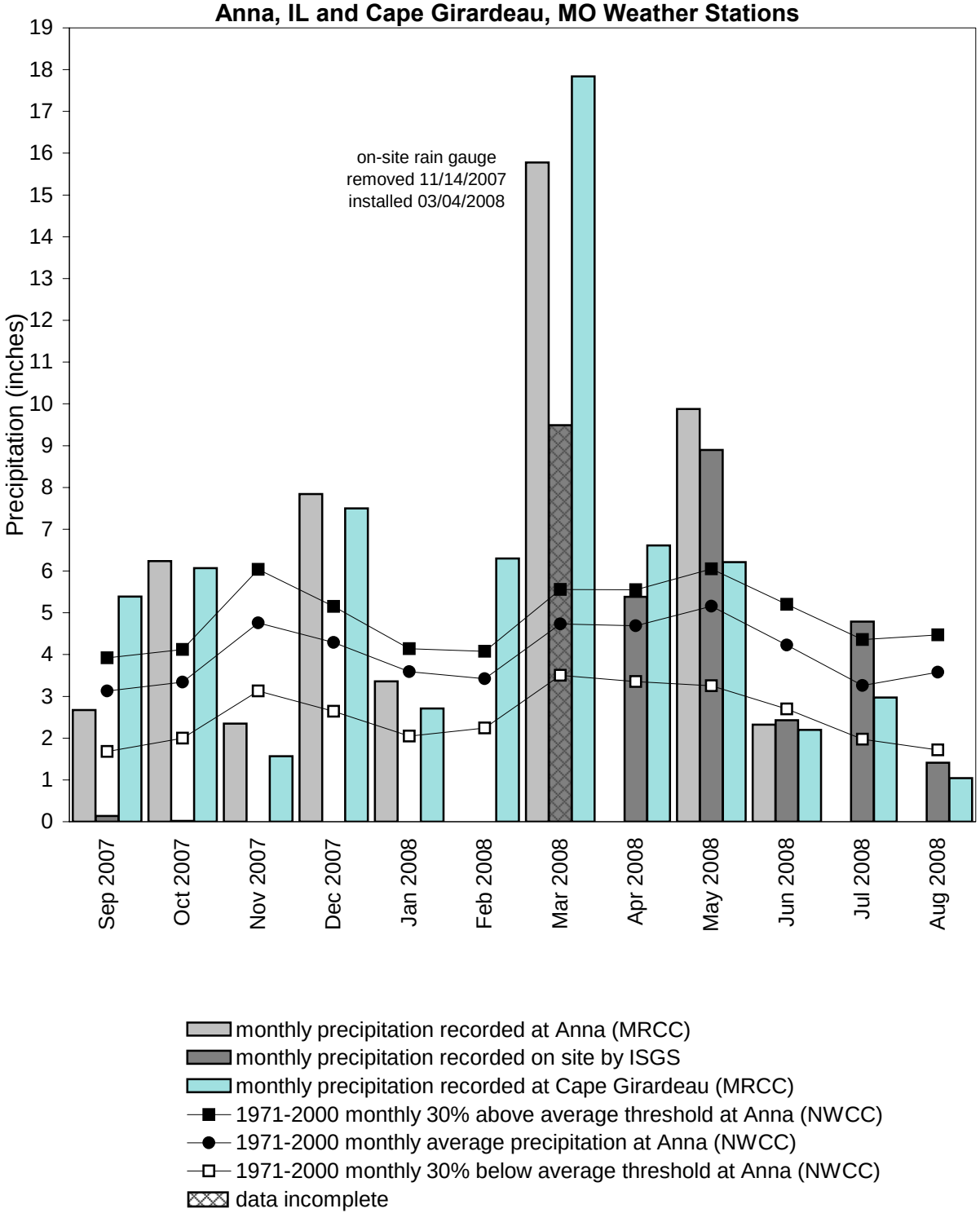
Tamms Wetland Compensation Site
September 1, 2007 to September 1, 2008



Tamms Wetland Compensation Site

September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Anna, IL and Cape Girardeau, MO Weather Stations



Graph last updated October 7, 2008

FREEPORT BYPASS WEST **ISGS #72**
WETLAND COMPENSATION SITE 6W
FAP 301
Sequence #10487
Stephenson County, near Freeport, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- Fall 2003: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential wetland mitigation at this site.

- December 2003: ISGS monitoring network was installed.

- Summer 2006: Tree planting was completed and a berm was installed at the western end of the central drainage ditch.

- February 2007: ISGS submitted a Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2007–01).

WETLAND HYDROLOGY CALCULATION FOR 2008

The estimated total area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season is 9.6 ha (23.6 ac) out of a total site area of 9.6 ha (23.6 ac). The estimated total area that satisfied wetland hydrology criteria for greater than 12.5% of the 2008 growing season is 9.5 ha (23.3 ac). These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in 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 105% of normal for the monitoring period of September 2007 through August 2008. Precipitation at this station was below normal in September, October, and November 2007, and in March, June, and August 2008. Precipitation amounts were normal or above normal for the remaining months of the 2007–2008 monitoring period. Significant on-site rainfall recorded by the ISGS in April, coupled with spring flooding along the Pecatonica River, resulted in elevated water levels that were sustained across almost all of the site for greater than 12.5% of the growing season. Heavy regional rainfall in late May and early June 2008 again caused the Pecatonica River to flood the site, resulting in the entire site satisfying the wetland hydrology criteria for greater than 5% of the 2008 growing season.

- In 2008, water levels measured in all soil-zone (S and VS) wells satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.

- Water-level records for the Pecatonica River, as measured by the USACE river gauge in Freeport, indicated on-site inundation at elevations below approximately 232.09 m (761.45 ft)* and 231.47 m (759.42 ft)* for durations that satisfied the wetland hydrology criteria for greater than 5% and 12.5% of the growing season, respectively. *A correction factor of +1.17 m (3.84 ft), as determined in the Level II Hydrogeologic Characterization Report previously prepared for this site (Plankell and Weaver-Miner 2007), was added to the USACE river gauge elevations.

PLANNED FUTURE ACTIVITIES

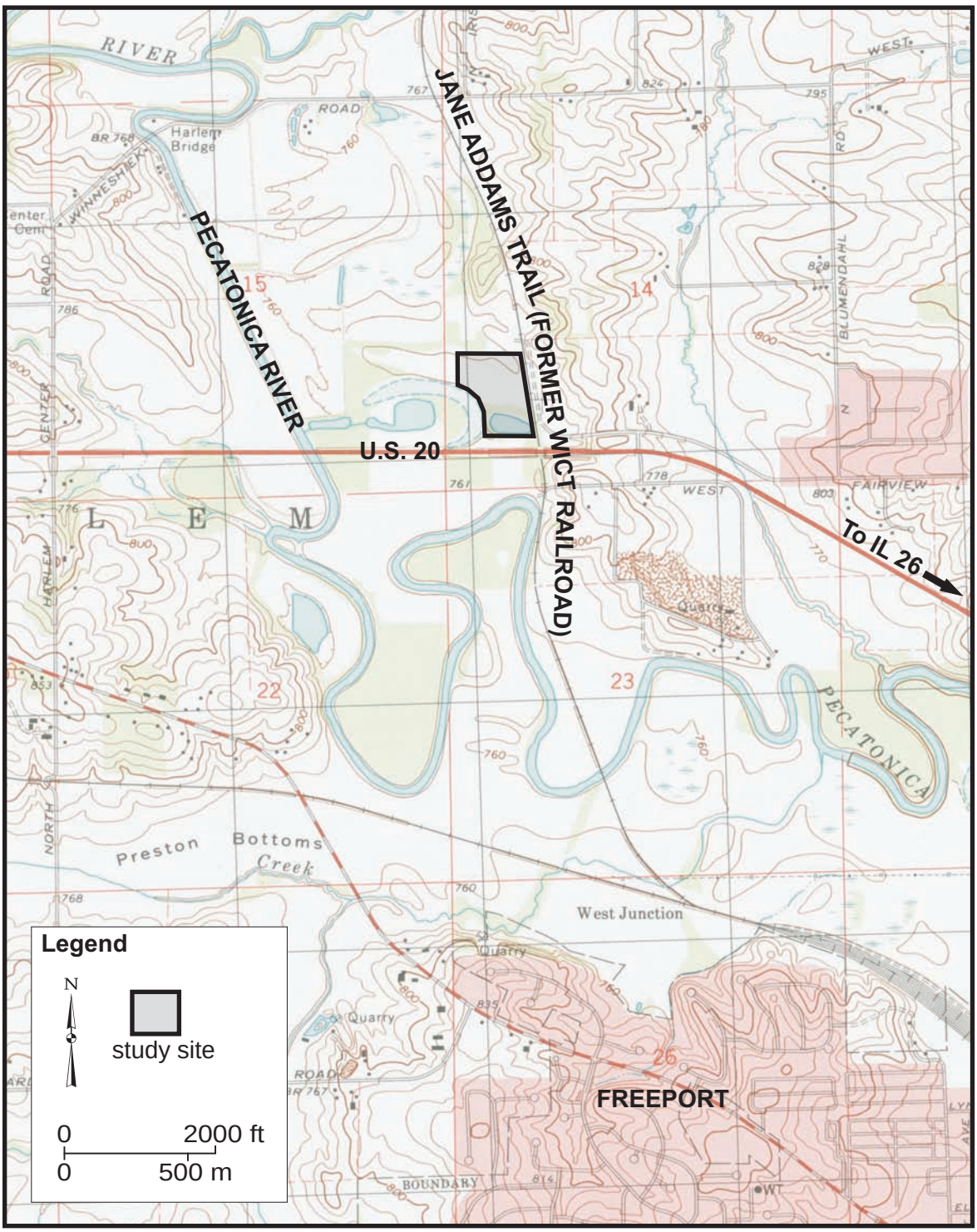
- On-site data loggers will be upgraded in 2009 to more closely monitor on-site water level fluctuations.

- Monitoring is expected to continue until no longer required by IDOT.

Freeport Bypass West Wetland Compensation Site 6W
(FAP 301)

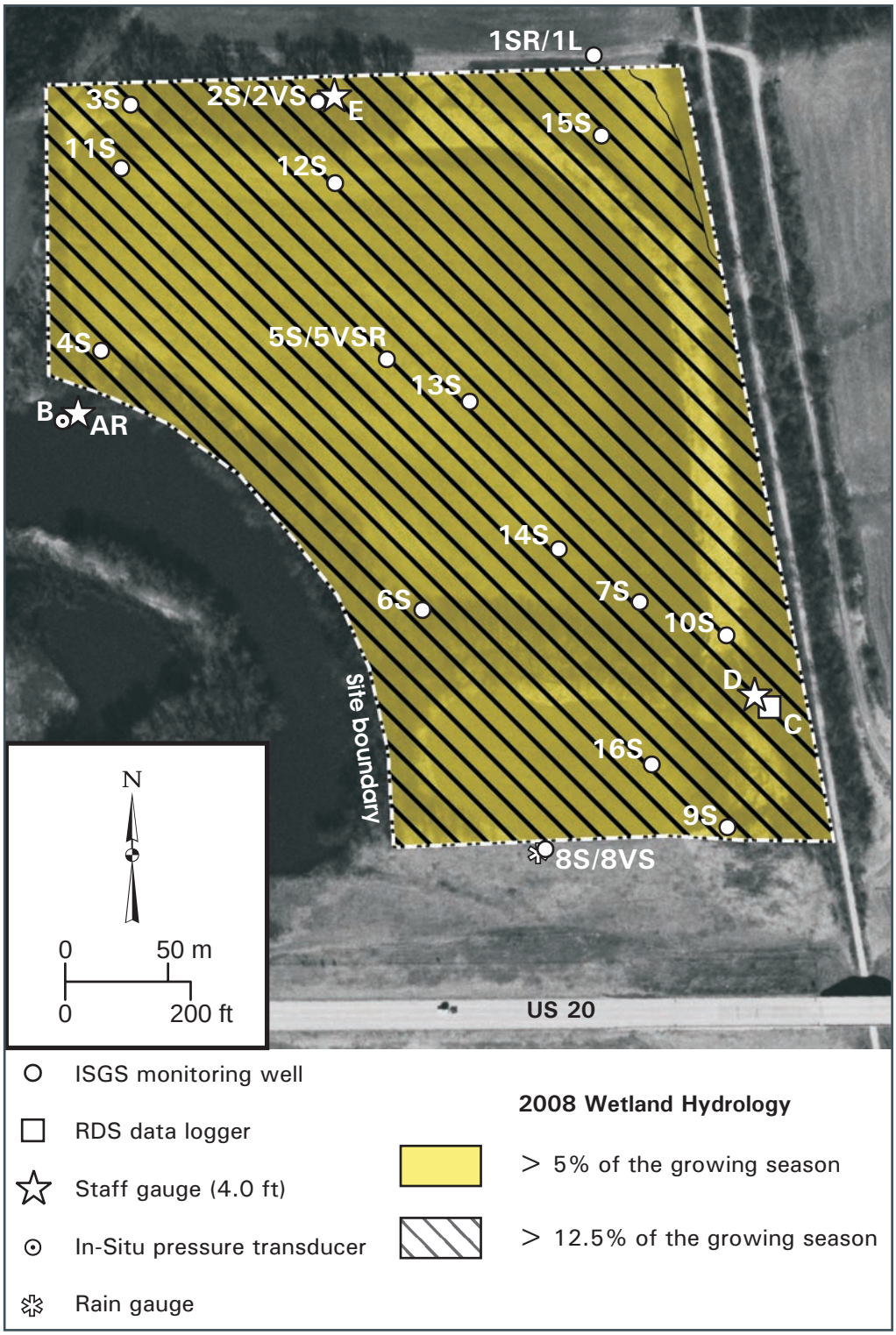
General Study Area and Vicinity

from the USGS Topographic Series, Freeport West, IL 7.5-minute Quadrangle (USGS 1998)
contour interval is 10 feet

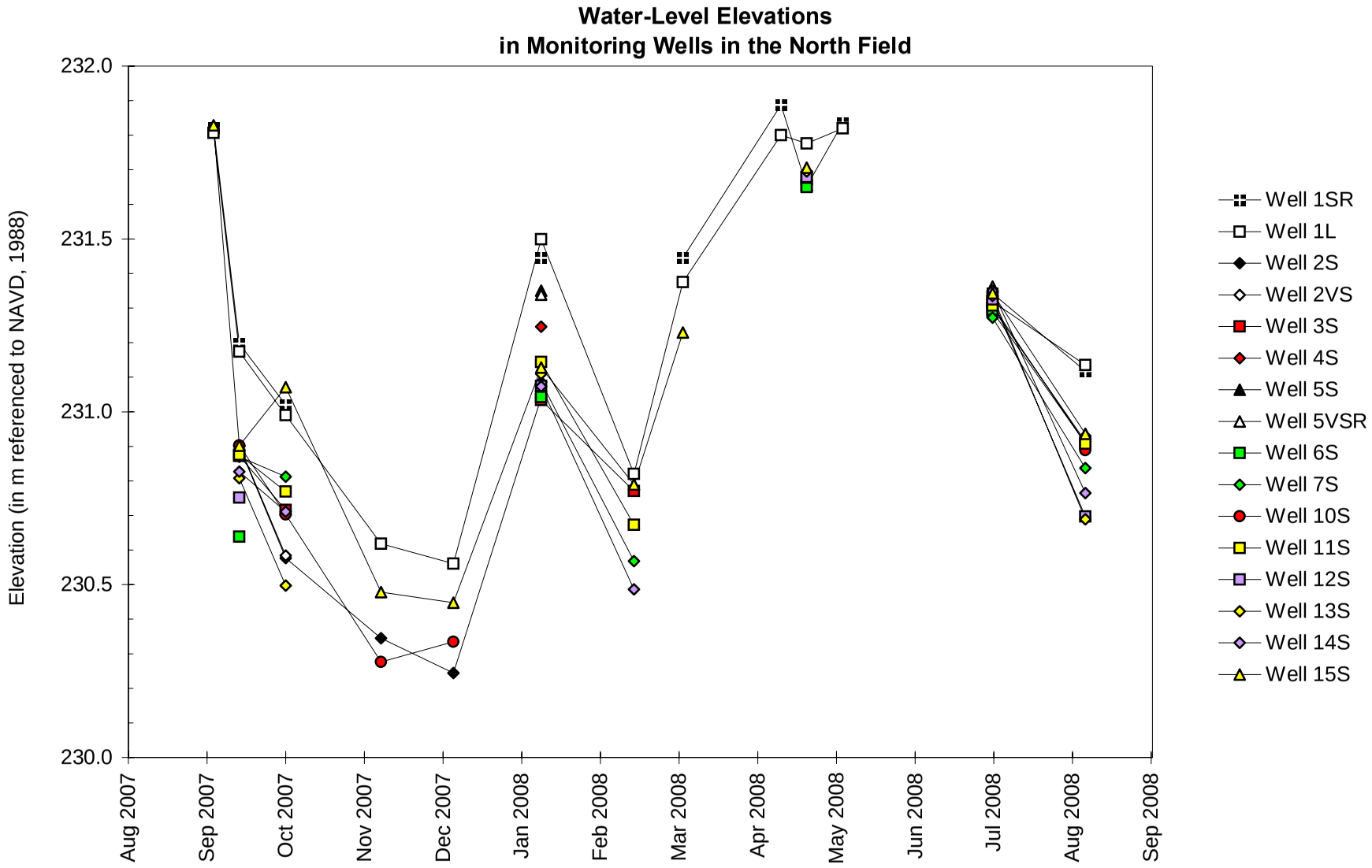


Freeport Bypass West Wetland Compensation Site 6W
(FAS 301)
Estimated Areal Extent of 2008 Wetland Hydrology
based on data collected between September 1, 2007 and September 1, 2008

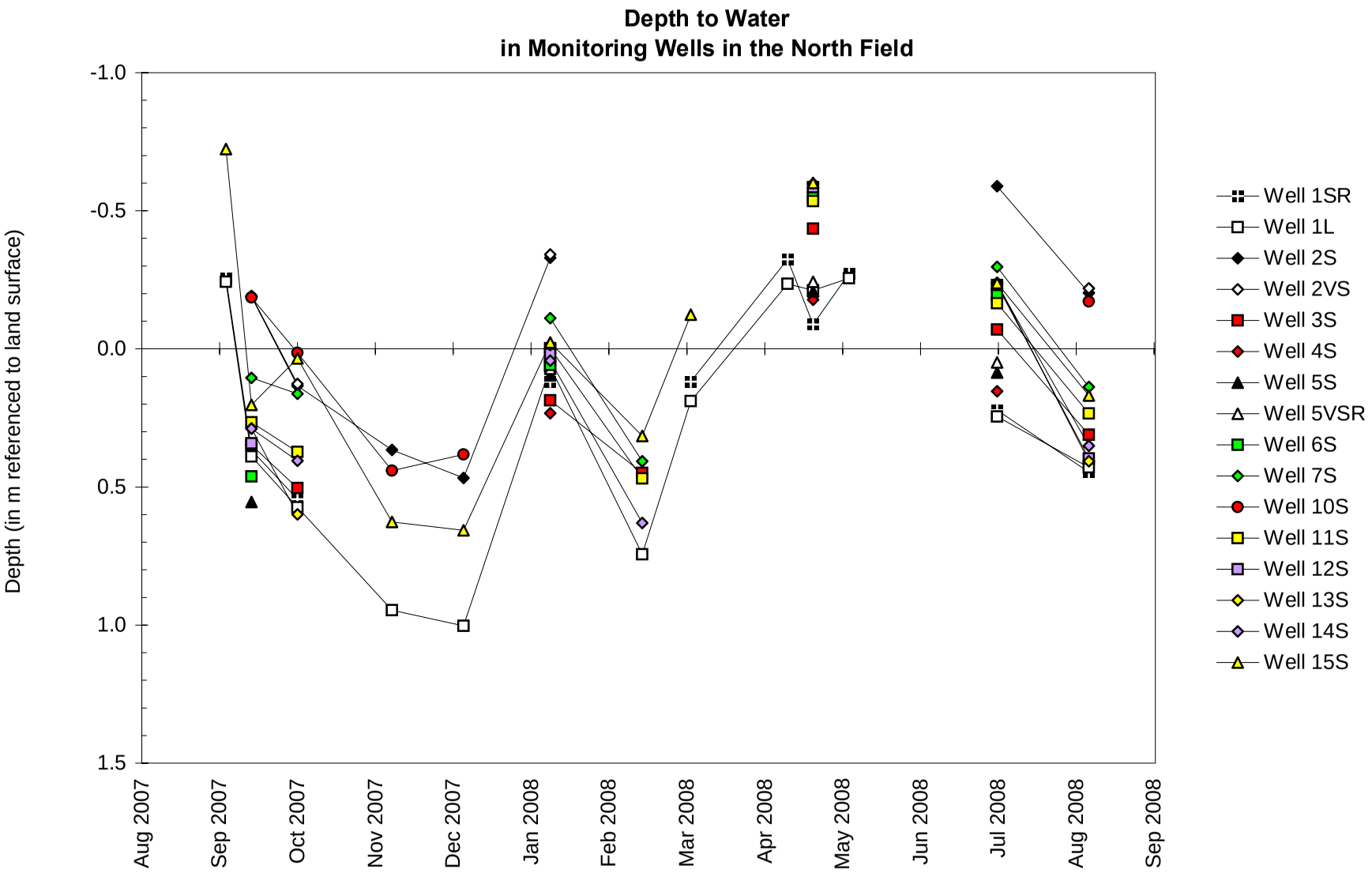
Map based on USGS digital orthophotograph, Freeport West, NE quarter quadrangle (ISGS 2005)



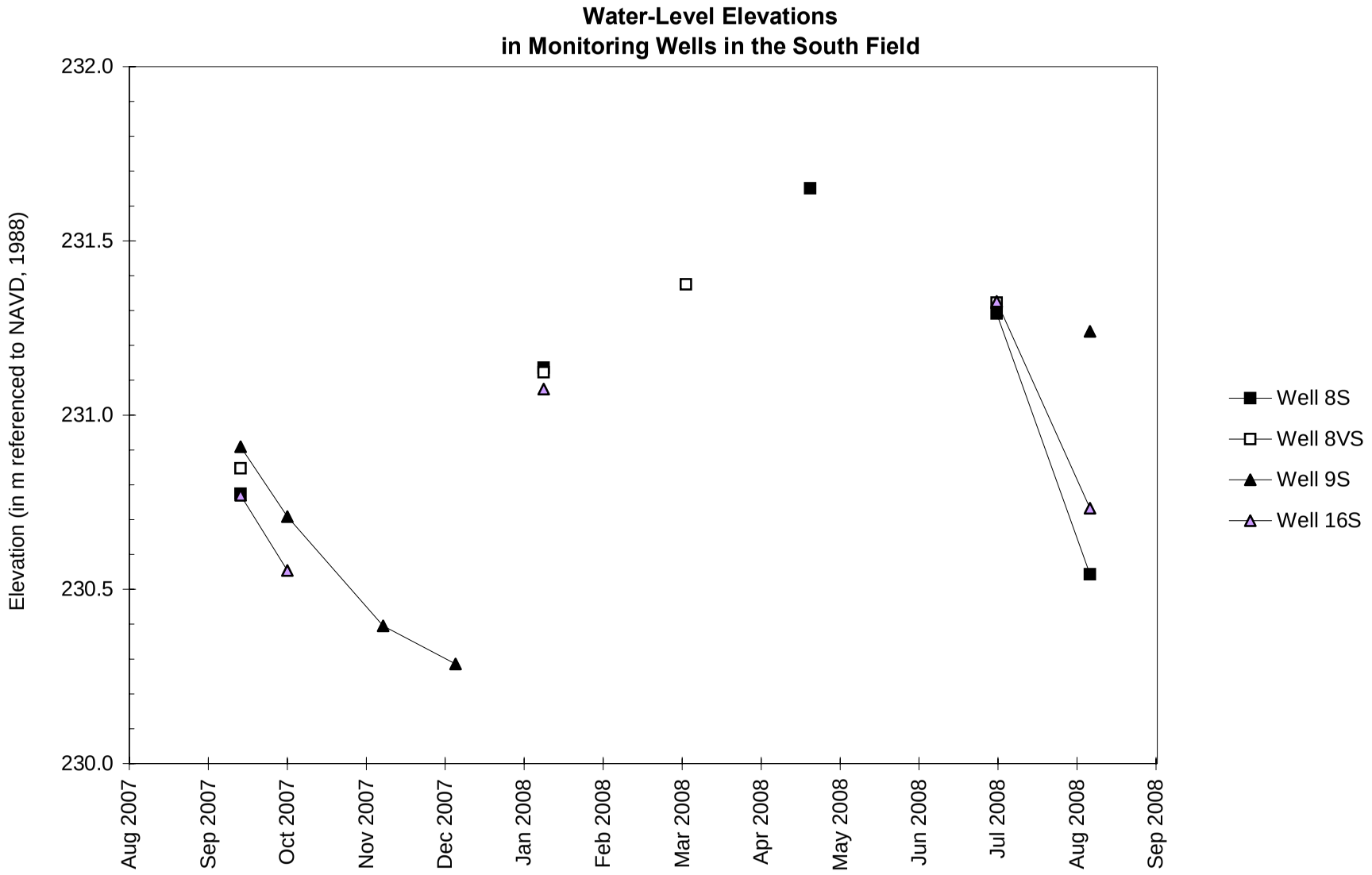
Freeport Bypass West Wetland Compensation Site 6W
September 1, 2007 to September 1, 2008



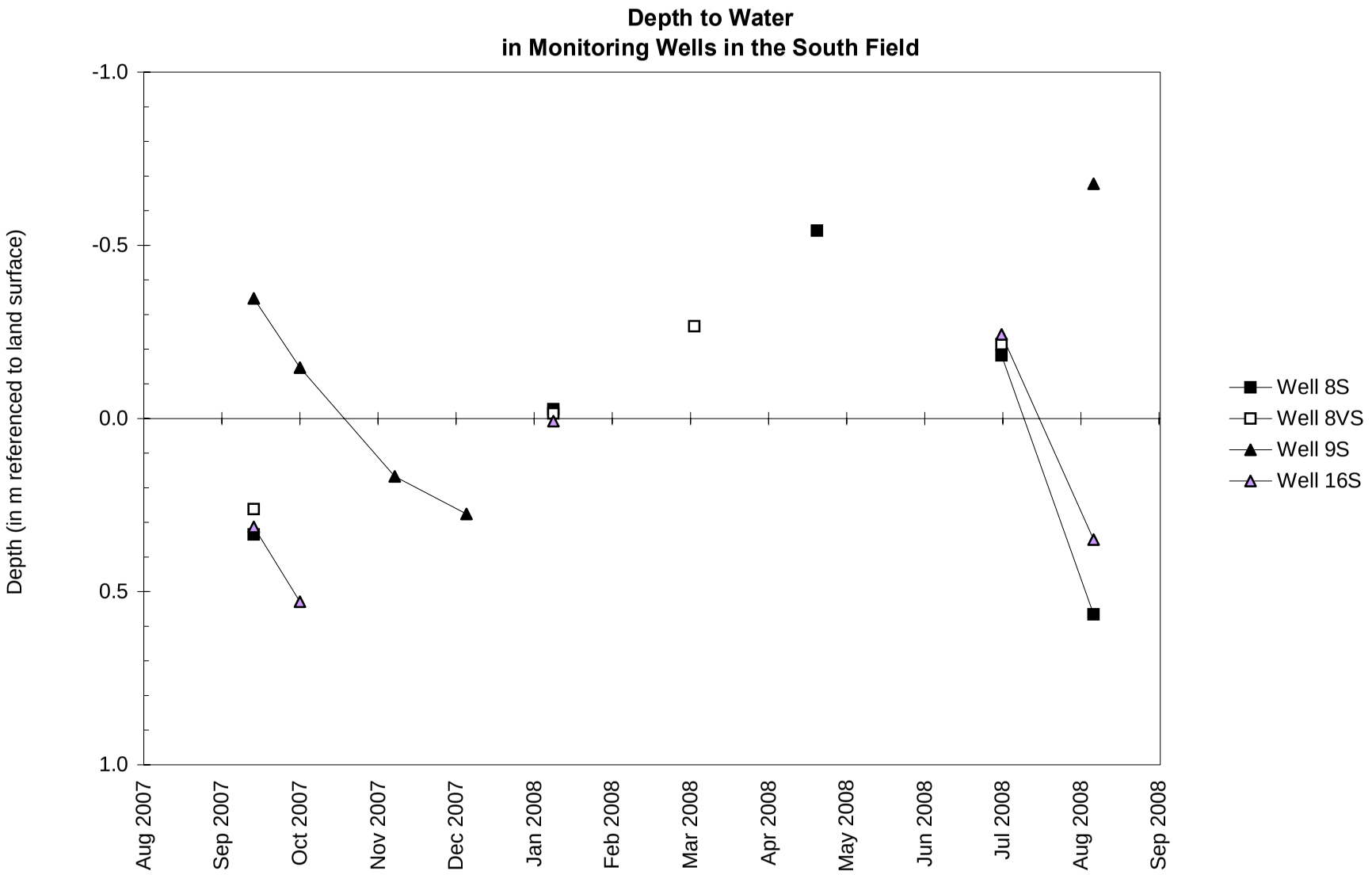
Freeport Bypass West Wetland Compensation Site 6W
September 1, 2007 to September 1, 2008



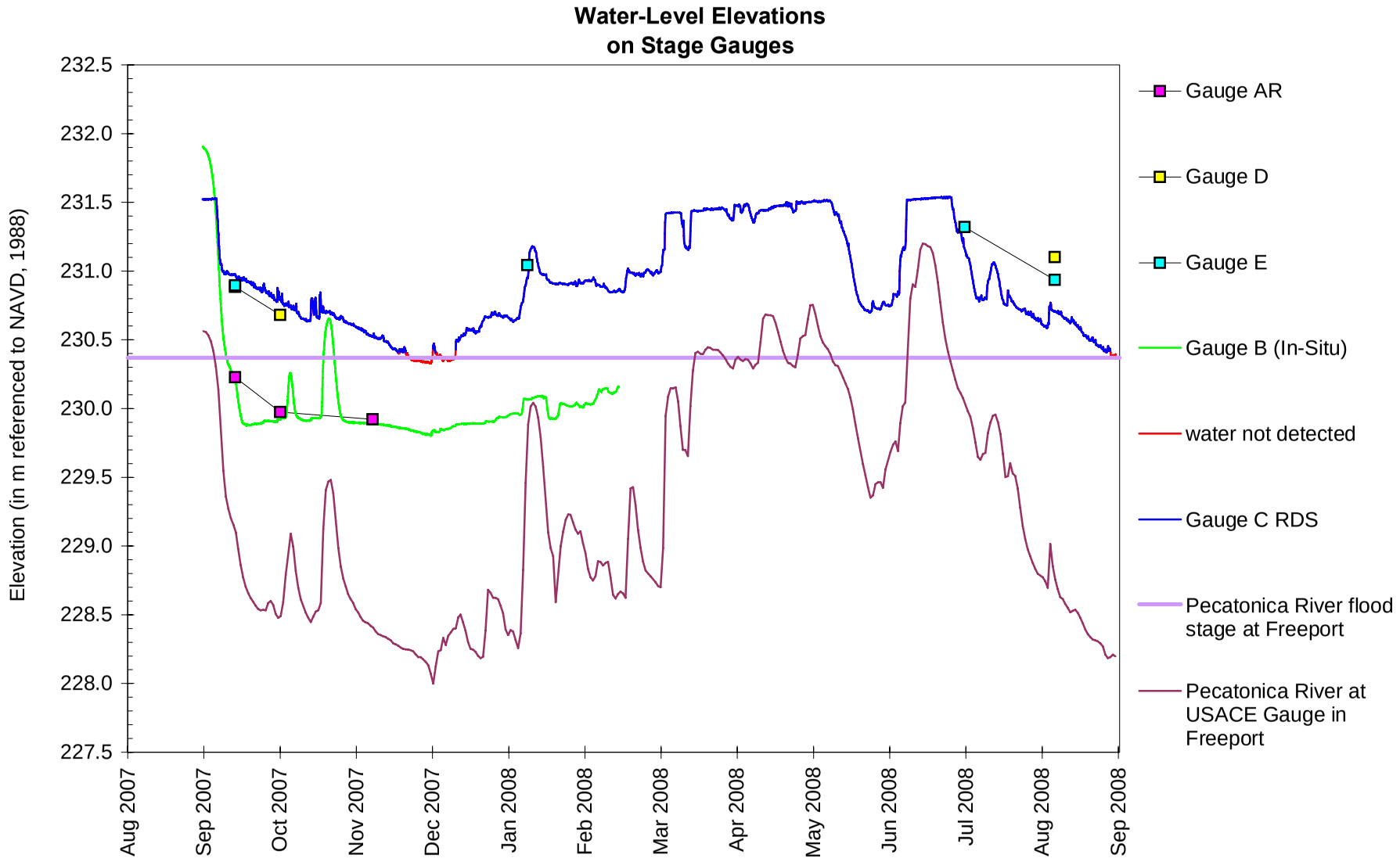
Freeport Bypass West Wetland Compensation Site 6W
September 1, 2007 to September 1, 2008



Freeport Bypass West Wetland Compensation Site 6W
September 1, 2007 to September 1, 2008

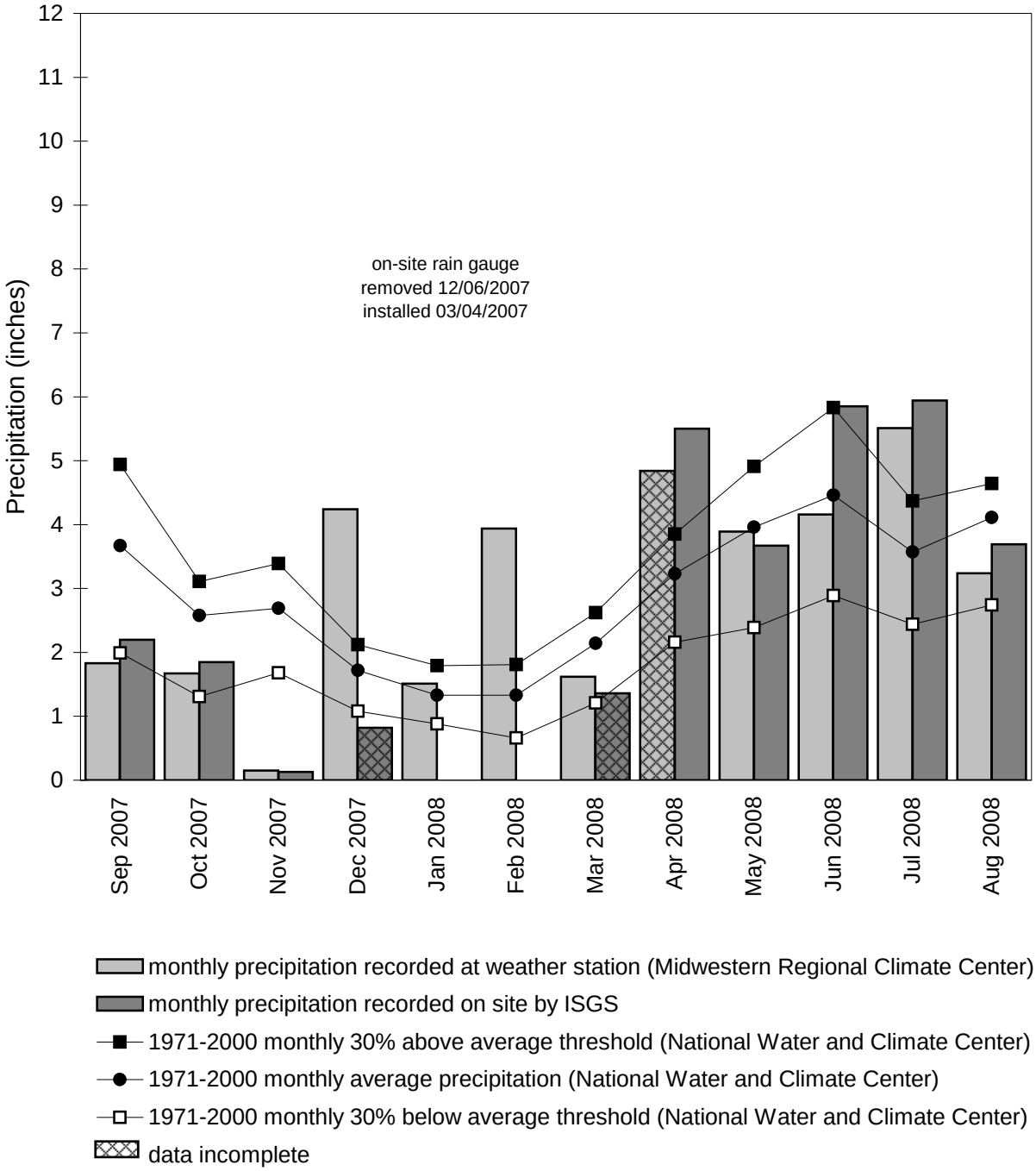


Freeport Bypass West Wetland Compensation Site 6W
September 1, 2007 to September 1, 2008



Freeport Bypass West
Wetland Compensation Site 6W
September 2007 through August 2008

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



Graph last updated October 7, 2008

PECATONICA RIVER FOREST PRESERVE **ISGS #73**
WETLAND COMPENSATION SITE
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 2008

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season is 6.9 ha (17.1 ac) and the area that satisfied greater than 12.5% is 6.8 ha (16.8 ac) out of a total mitigation area of approximately 6.9 ha (17.1 ac). 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.
- Total precipitation at the nearby Wastewater Treatment Plant weather station in Freeport, Illinois was approximately 105% of normal for the monitoring period of September 2007 through August 2008. Precipitation at this station was below normal in September, October, and November 2007, and in March, June, and August 2008. Precipitation amounts were normal or above normal for the remaining months of the 2007–2008 monitoring period. Significant rainfall in April, coupled with spring flooding along the Pecatonica River, resulted in elevated water levels that were sustained across almost all of the site for greater than 12.5% of the growing season. Heavy regional rainfall in late May and early June 2008 again caused the Pecatonica River to flood the site, resulting in almost the entire site satisfying the wetland hydrology criteria for greater than 5% of the 2008 growing season.
- In 2008, water levels measured in all soil-zone (S) monitoring wells satisfied the wetland hydrology criteria for greater than 12.5% of the growing season.
- Water-level records for the RDS data loggers at gauges C and H in each mitigation area indicated inundation below approximately 226.09 m (741.77 ft) and 226.04 m (741.60 ft), respectively, for greater than 5% of the growing season. Additionally, gauges C and H both indicated inundation below approximately 225.68 m (740.42 ft) for greater than 12.5% of the growing season.

- Approximately 10.6 ha (26.1 ac) of the total site outside of the mitigation areas satisfied wetland hydrology criteria for greater than 5% of the growing season and 10.1 ha (25.0 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These acreages include some preexisting wetland areas shown on the accompanying figure.

- 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.

PLANNED FUTURE ACTIVITIES

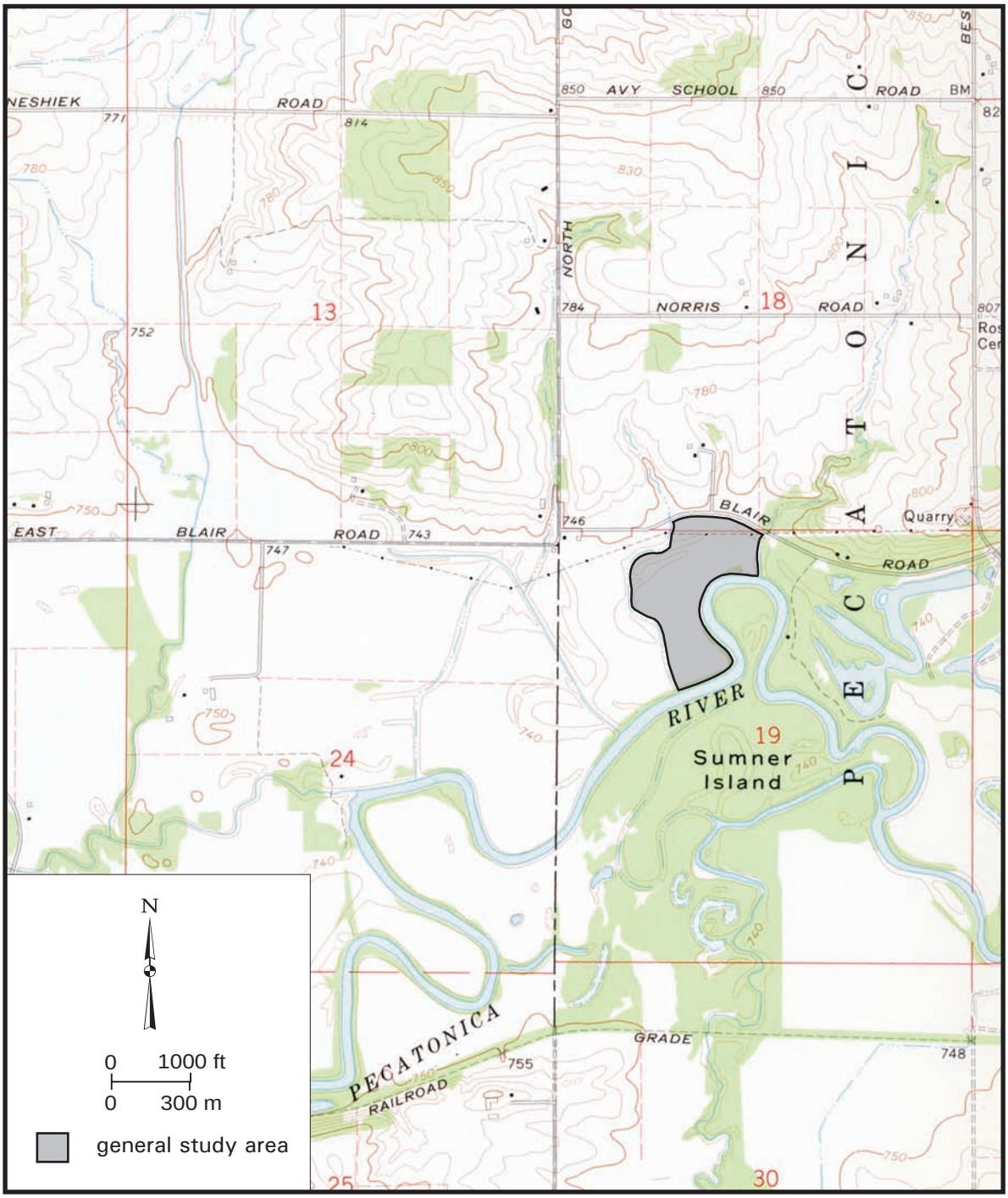
- Hydrogeologic monitoring will continue at the site until no longer required by IDOT.

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

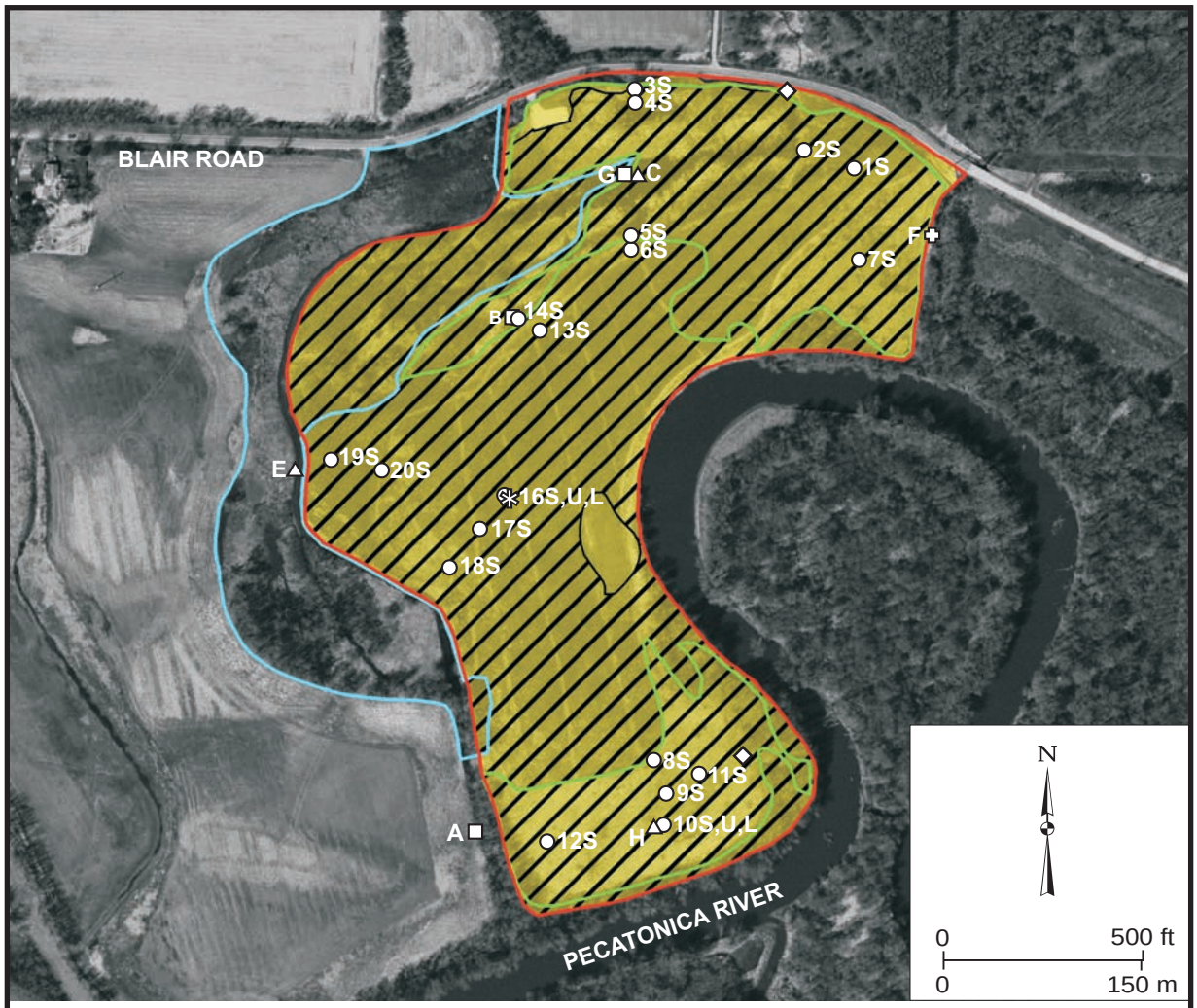


Pecatonica River Forest Preserve Wetland Compensation Site (Sequence #3746)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

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



2008 Wetland Hydrology

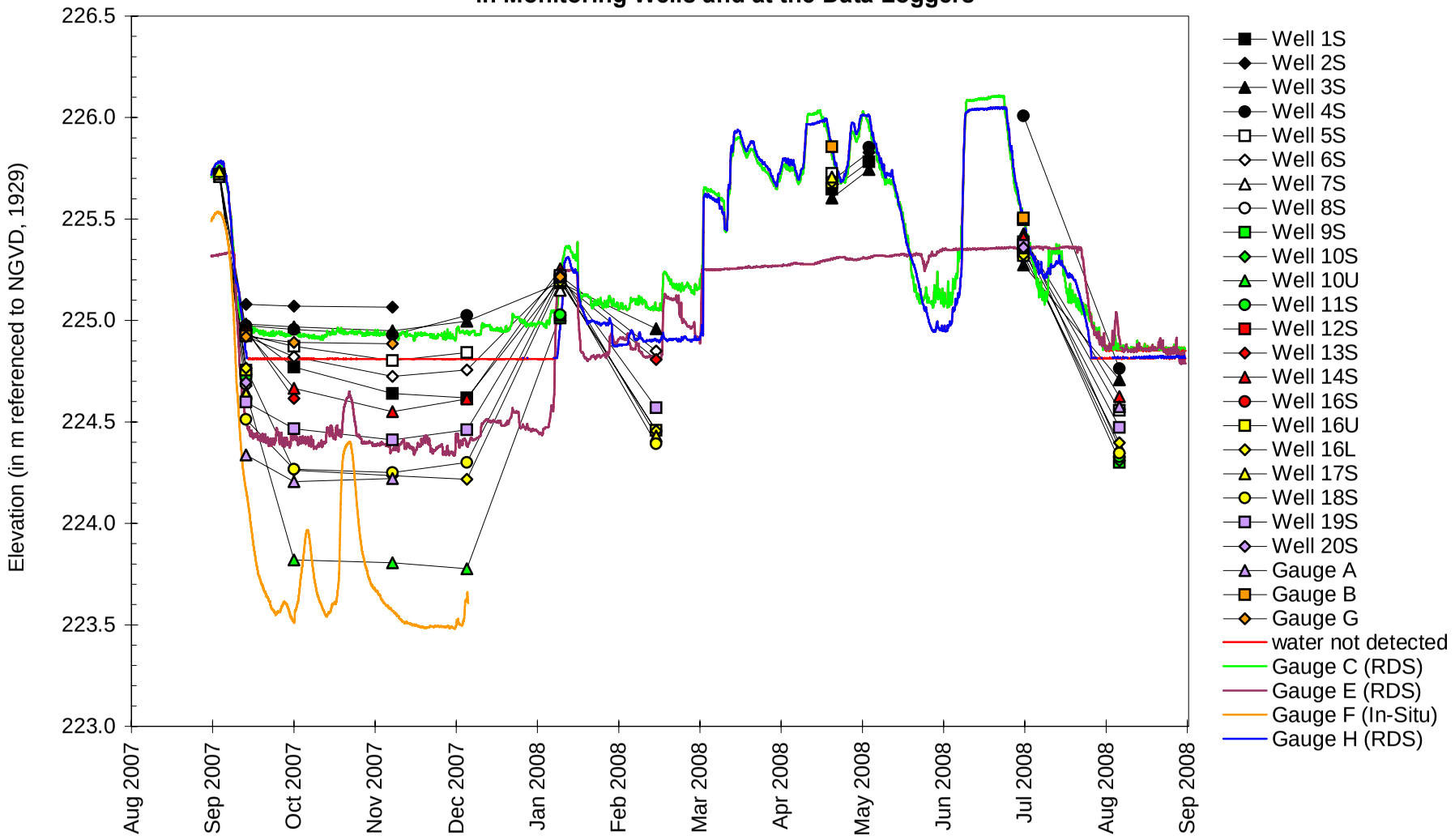
- >12.5% of the growing season
- >5% of the growing season
- preexisting wetland
- mitigation areas
- site boundary

- monitoring well
- staff gauge
- RDS data logger
- Davis rain gauge
- In-Situ data logger
- culvert

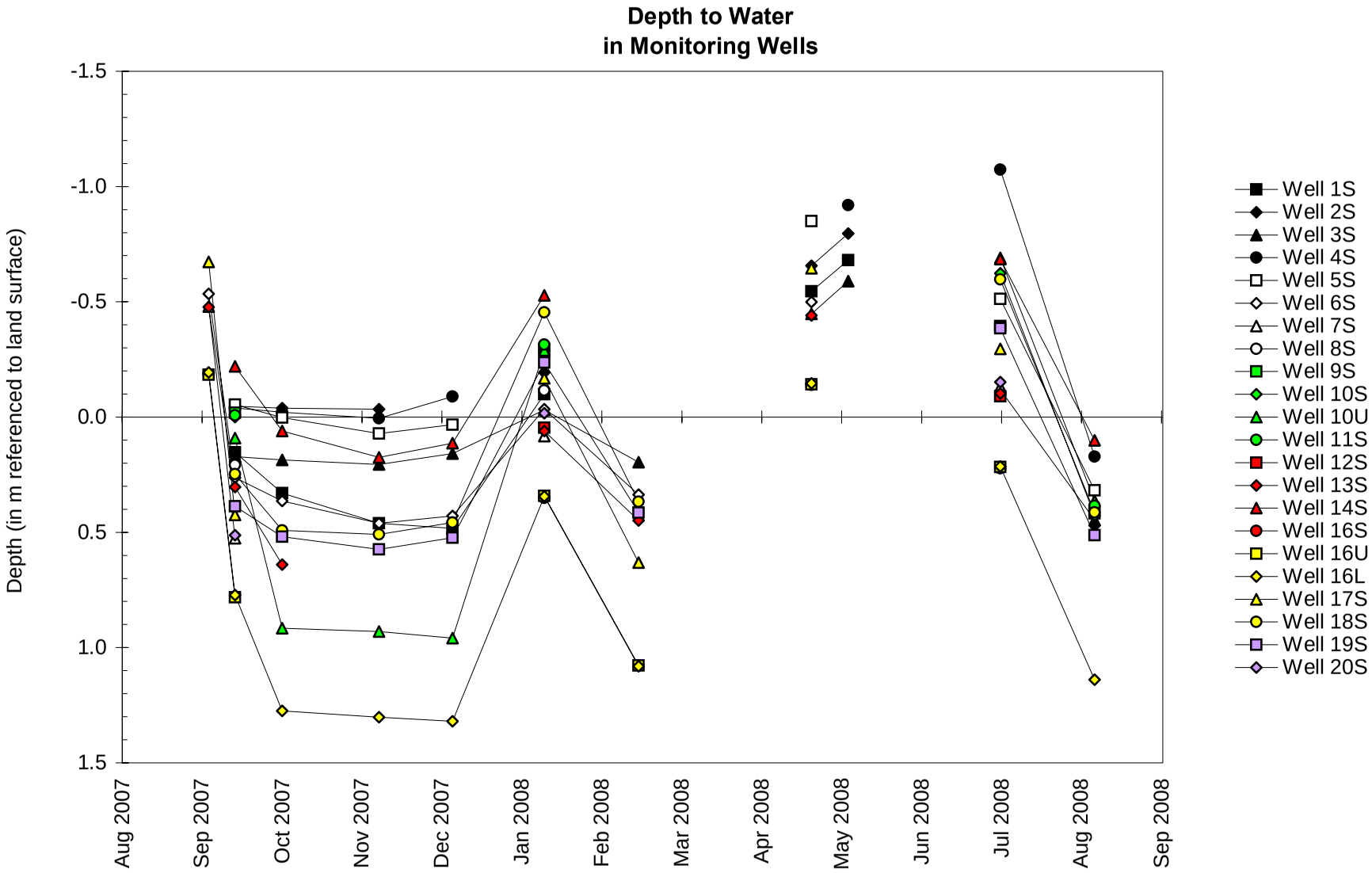
Pecatonica River Forest Preserve Wetland Compensation Site

September 1, 2007 to September 1, 2008

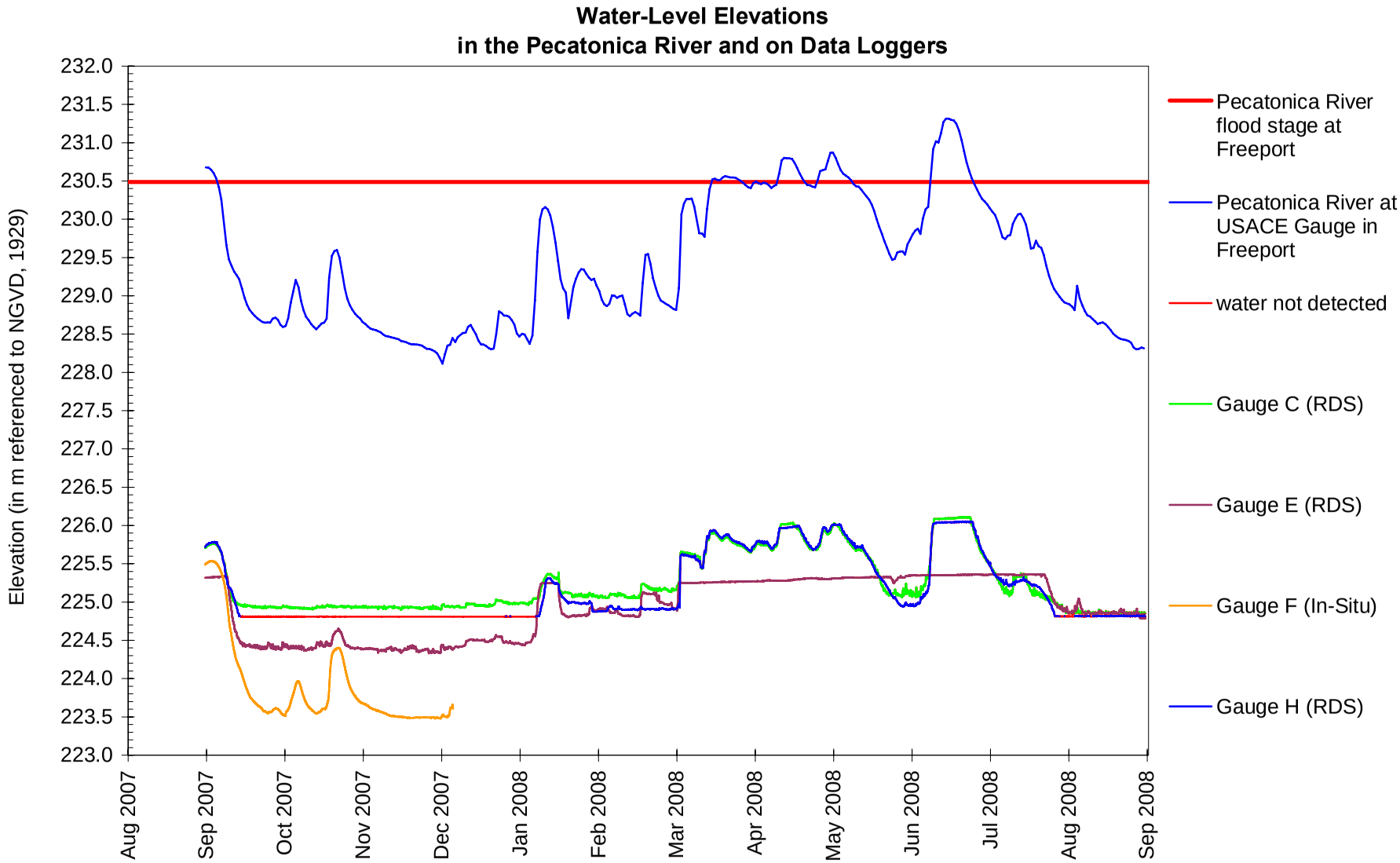
Water-Level Elevations in Monitoring Wells and at the Data Loggers



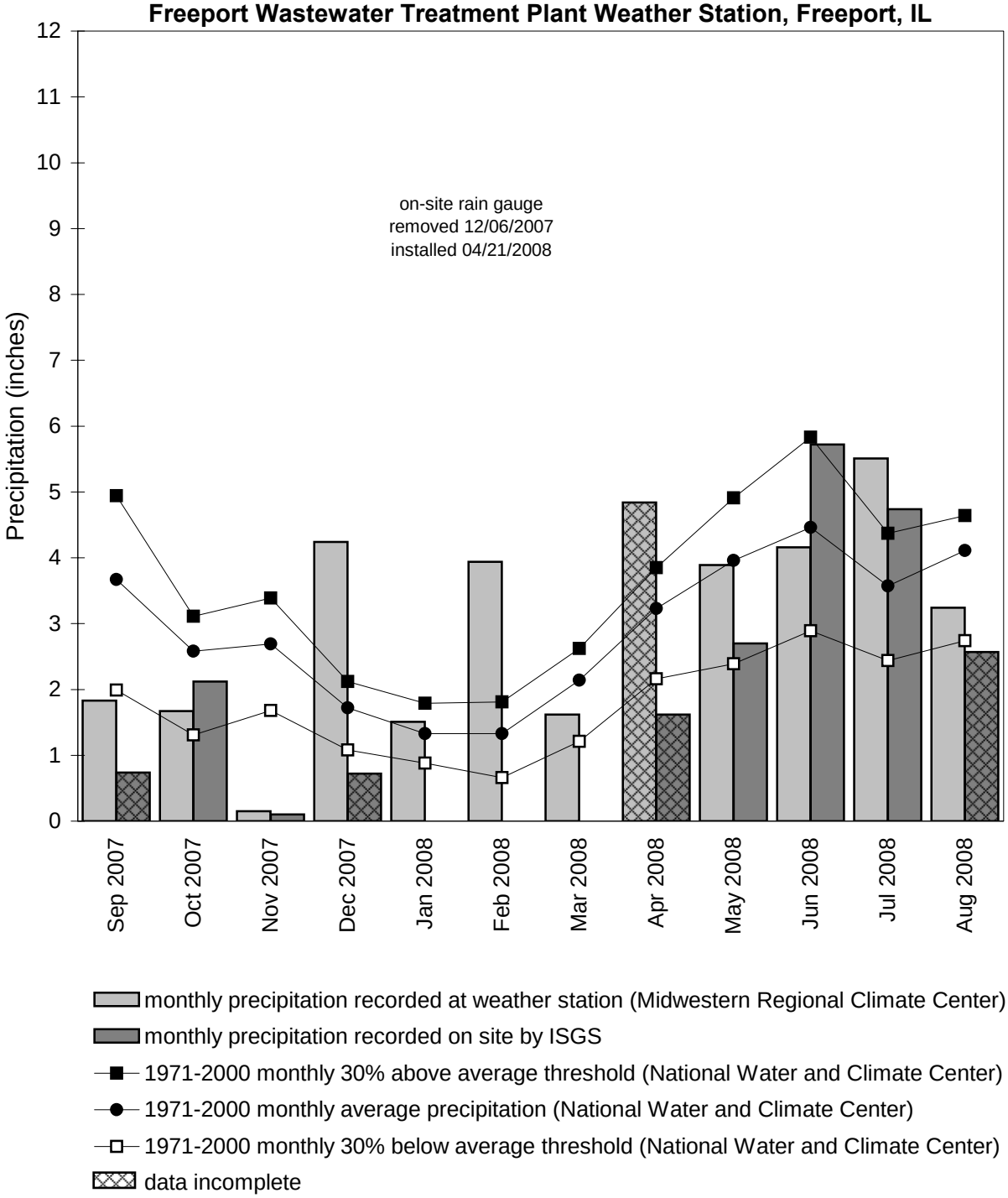
Pecatonica River Forest Preserve Wetland Compensation Site
September 1, 2007 to September 1, 2008



Pecatonica River Forest Preserve Wetland Compensation Site
September 1, 2007 to September 1, 2008



Pecatonica River Forest Preserve
Wetland Compensation Site
September 2007 through August 2008
Total Monthly Precipitation Recorded On Site and at the Freeport Wastewater Treatment Plant Weather Station, Freeport, IL



Graph last updated October 7, 2008

SUGAR CAMP CREEK **ISGS #74**
WETLAND COMPENSATION SITE
FAP 312
Sequence #9282
Franklin County, Northern Township, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: not assigned

SITE HISTORY

- December 2004: ISGS submitted an initial site evaluation report to IDOT.
- Spring 2005: IDOT tasked ISGS to conduct a Level II hydrogeologic characterization of the site and to prepare a draft wetland banking instrument for the site. Water-level monitoring was initiated in March 2005.
- August 2006: ISGS submitted a draft wetland banking prospectus to IDOT.
- March 2007: ISGS submitted the Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2007–02).
- May 2008: Wetland bank prospectus cleared public notice period.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that 26.6 ha (65.7 ac) of the total site area of 50.9 ha (125.7 ac), including the FAP 312 wetland compensation site, satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008, whereas 8.5 ha (21.1 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Within the 8.3-ha (20.5-ac) FAP 312 wetland compensation site, 8.2 ha (20.1 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, of which 5.4 ha (13.4 ac) 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 MRCC, the median date that the growing season begins in nearby Du Quoin, Illinois, is April 5 and the season lasts 207 days; 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days.
- Precipitation was 111% of normal for the monitoring period. Drier than average conditions prevailed in September and November 2007 and in January, April, June, and August 2008 Precipitation was at or above normal in October and December 2007 and in February, March, May, and July 2008.
- In 2008, wells 1S, 2S, 3S, 4S, 5S, 7S, 8S, 9S, 11S, 13S, 14S, 15S, 16S 17S, 18S, 19S, 20S, 23S, 26S, 28S, 29S, 30S, 31S, 32S, 33S, 34S, and 35S satisfied wetland hydrology criteria for greater than 5% of the growing season. Furthermore, wells 2S, 4S, 8S, 9S, 14S, 17S, 18S, 19S, 23S, 29S, 30S, 31S, 32S, and 35S satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- Data from gauge A in Sugar Camp Creek indicated that four moderate floods inundated large portions of the site during the 2008 growing season. Data from this data logger indicated that the duration of inundation from each of these floods was less than 5% of the growing season.

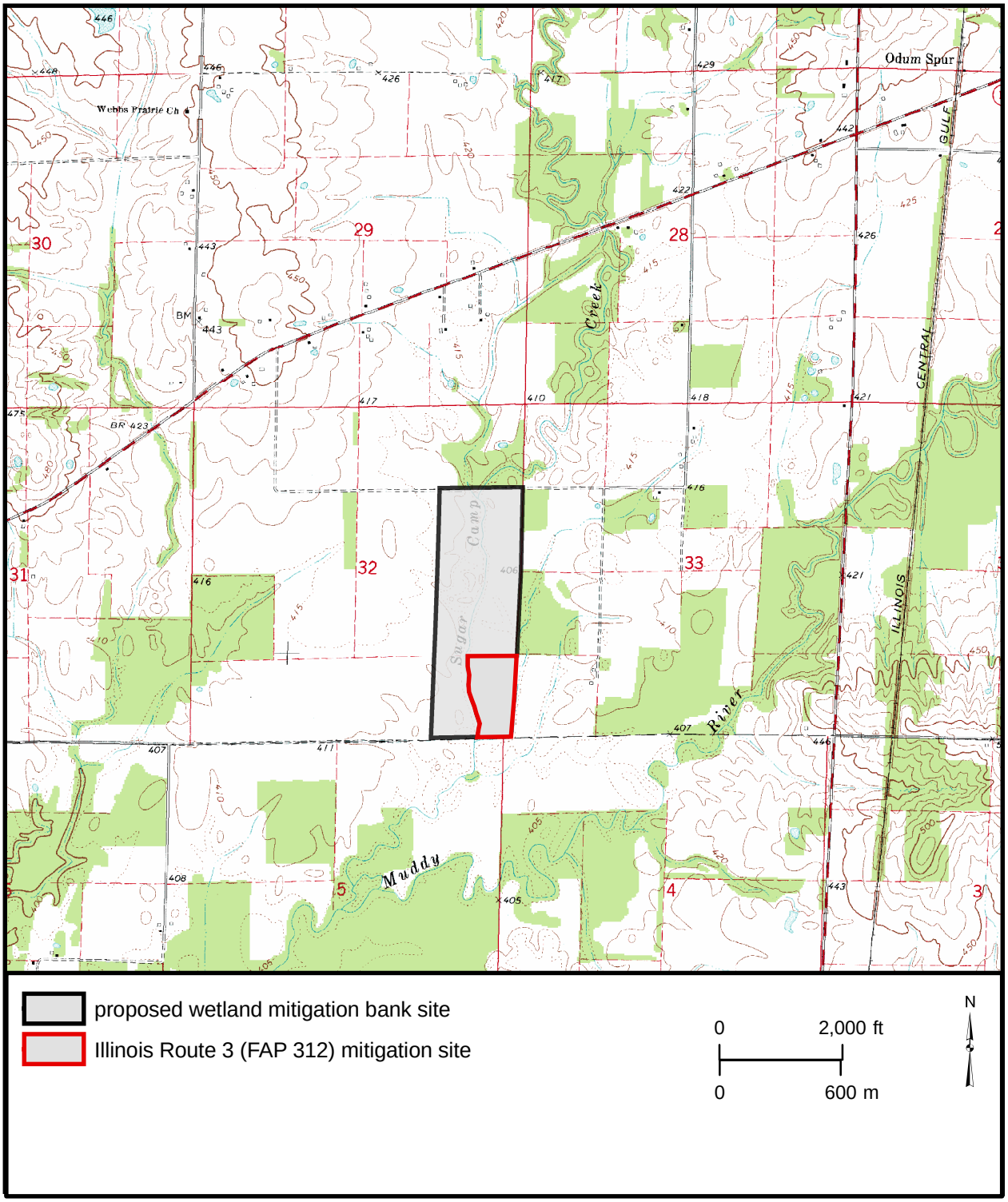
- Data from RDS 2 in the FAP 312 mitigation area showed that water-level elevation was at or above 123.3 m (404.5 ft) for both greater than 5% of the growing season and at or above 123.2 m (404.2 ft) for greater than 12.5% of the growing season. Furthermore, RDS 3 showed water levels at or above 123.5 m (405.2 ft) for greater than 5% and greater than 12.5% of the growing season. Gauge H, west of Sugar Camp Creek, showed water-levels above 122.7 m (402.6 ft) for greater than 5% of the growing season but not enough data was acquired from this location to determine the 12.5% threshold.

PLANNED FUTURE ACTIVITIES

- Monitoring activities will continue until no longer required by IDOT.

Sugar Camp Creek Wetland Compensation Site
(FAP 312 and Proposed Wetland Mitigation Bank)
General Study Area and Vicinity

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

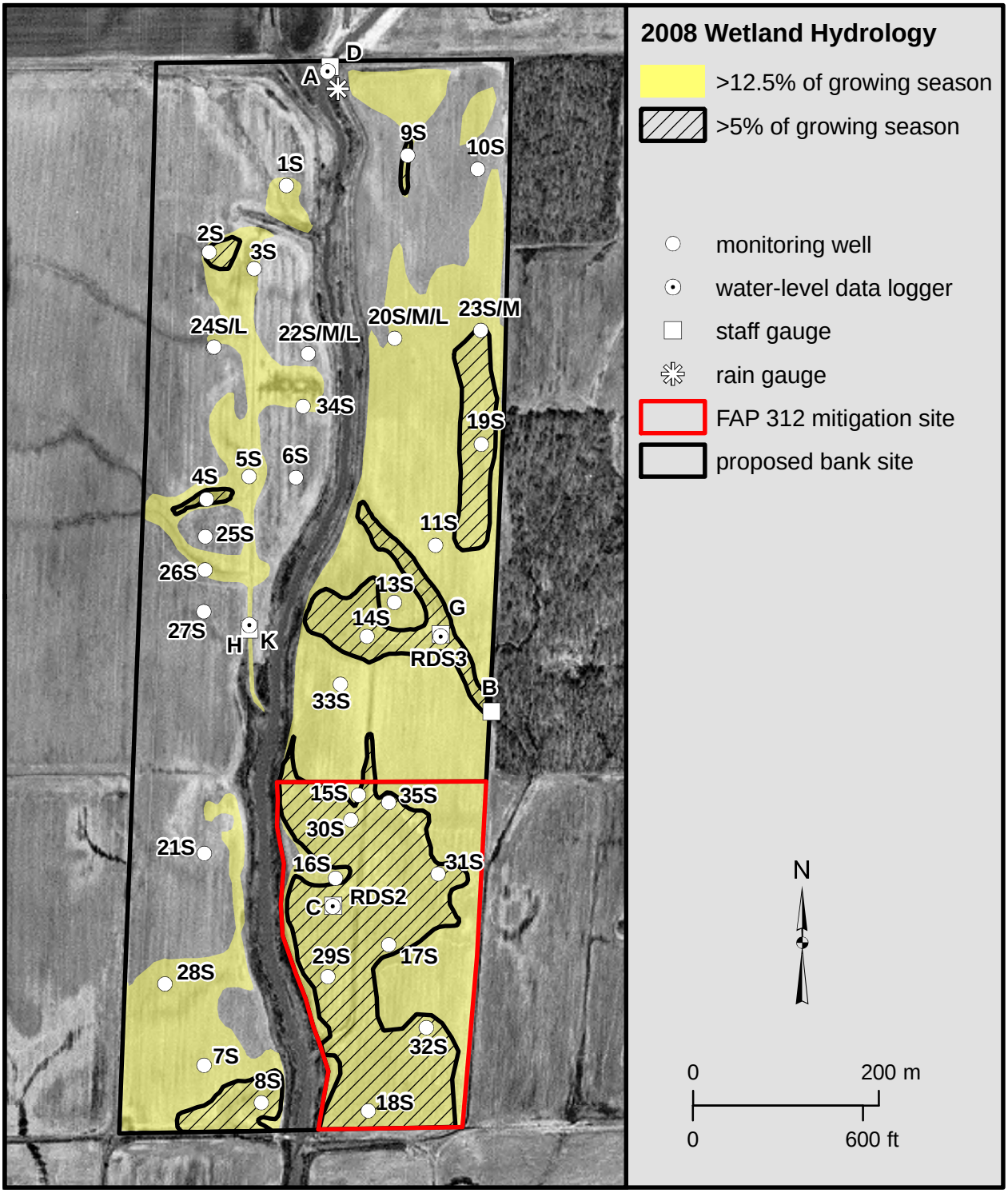


Sugar Camp Creek Wetland Compensation Site
(FAP 312 and Proposed Wetland Mitigation Bank)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

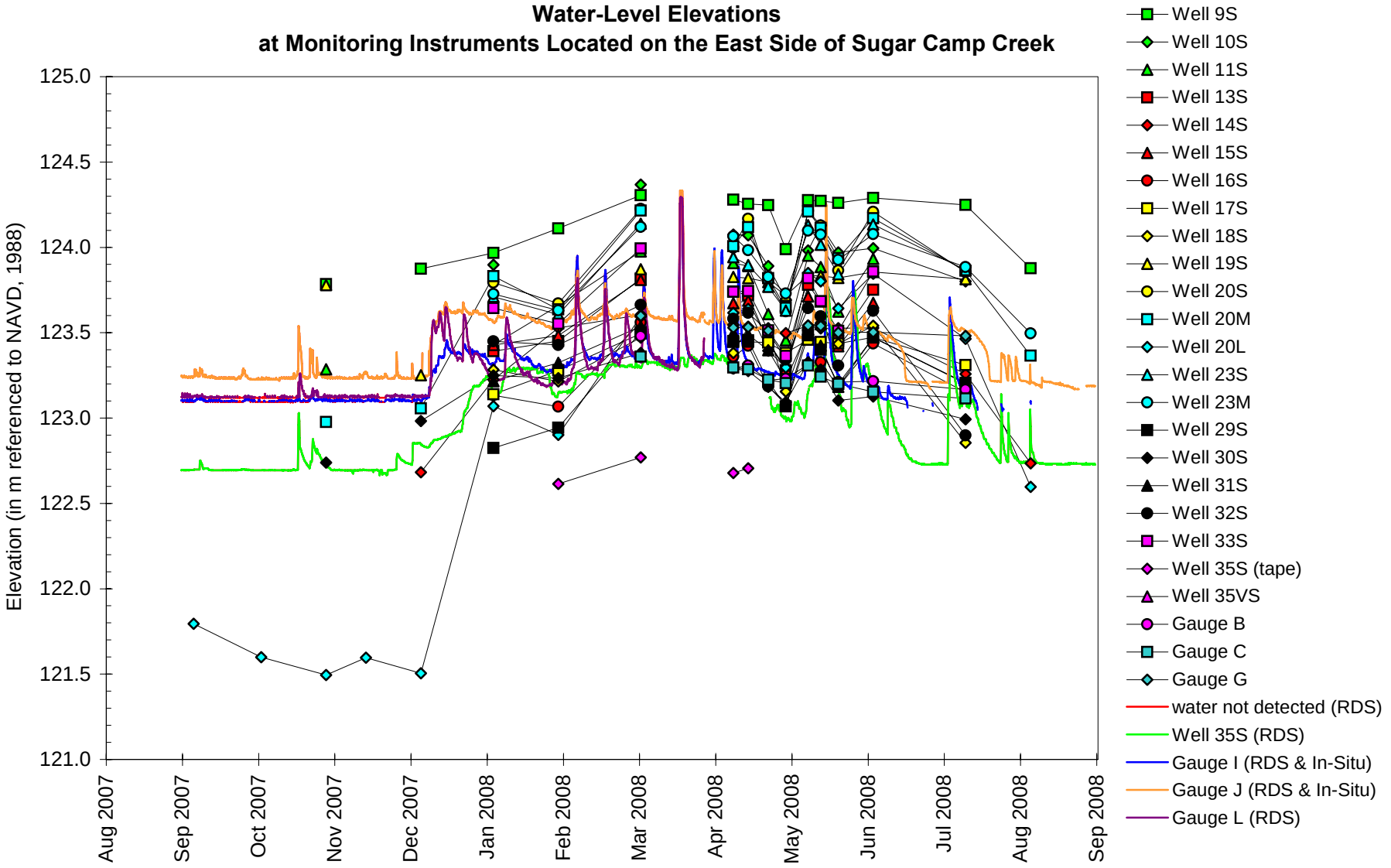
Map based on USGS digital orthophotograph, Ewing SE quarter quadrangle,
aerial photography from April 1998 (ISGS 2000)



Sugar Camp Creek Wetland Compensation Site

September 1, 2007 to September 1, 2008

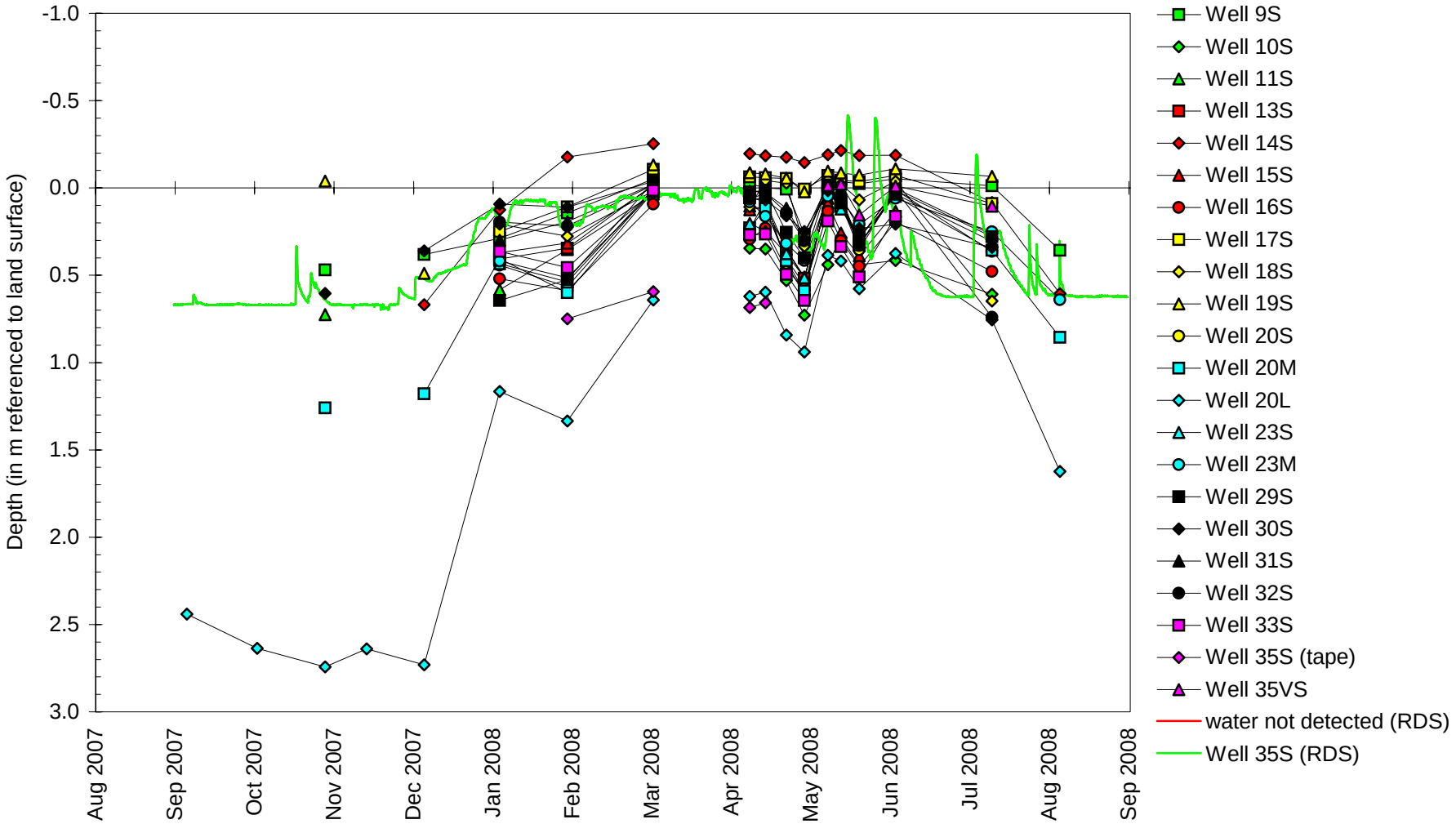
Water-Level Elevations
at Monitoring Instruments Located on the East Side of Sugar Camp Creek



Sugar Camp Creek Wetland Compensation Site

September 1, 2007 to September 1, 2008

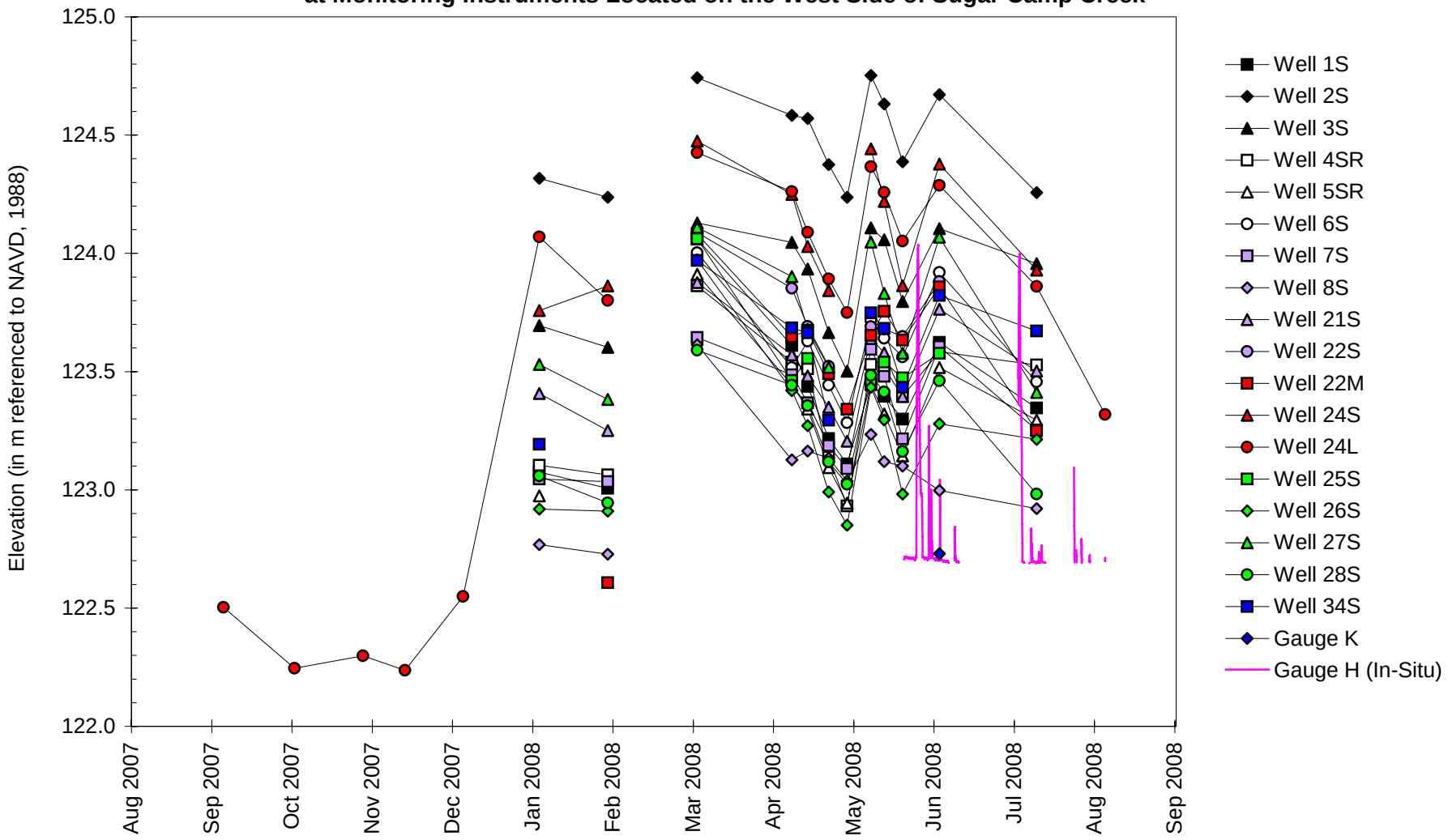
Depth to Water
at Monitoring Instruments Located on the West Side of Sugar Camp Creek



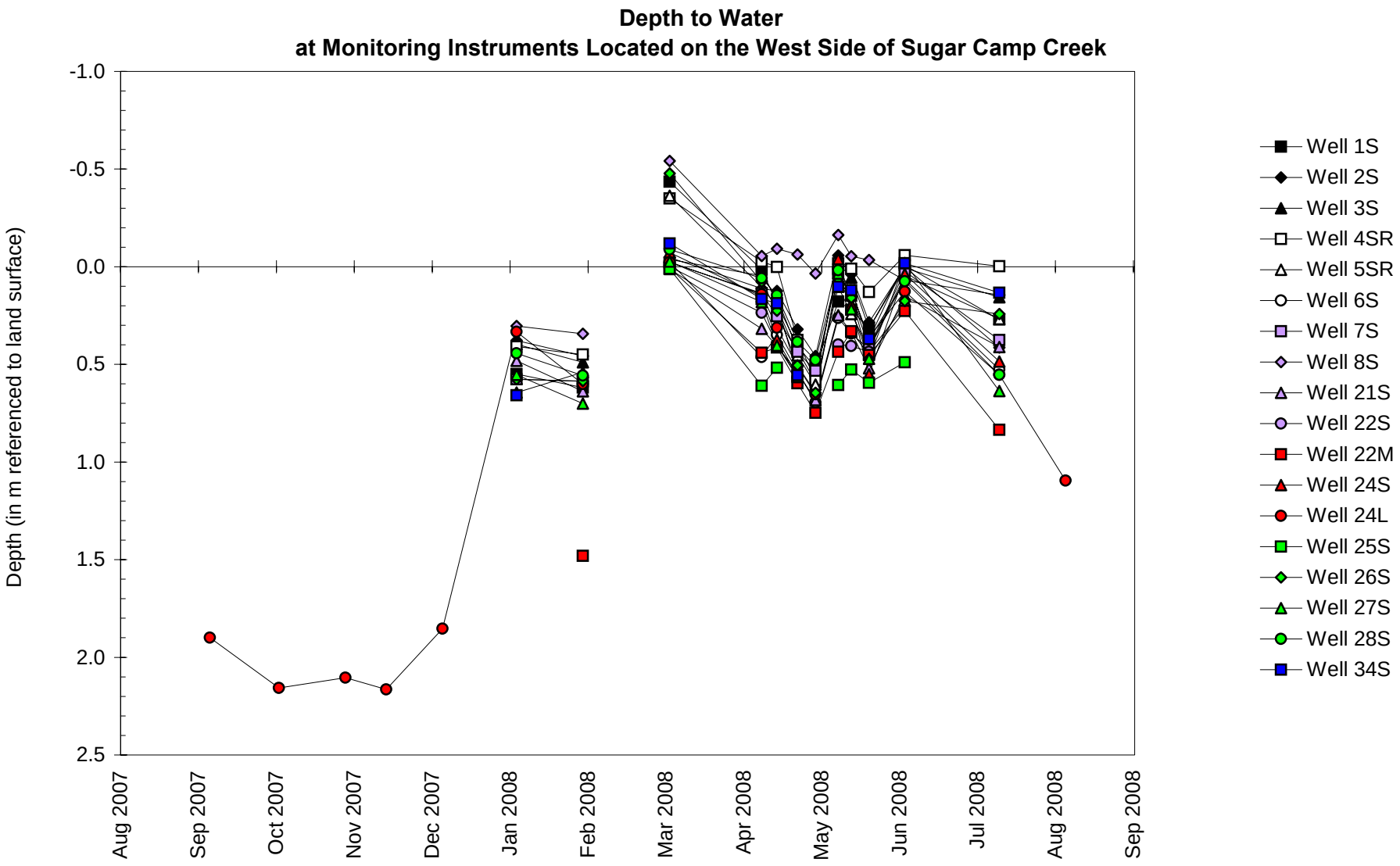
Sugar Camp Creek Wetland Compensation Site

September 1, 2007 to September 1, 2008

Water-Level Elevations
at Monitoring Instruments Located on the West Side of Sugar Camp Creek



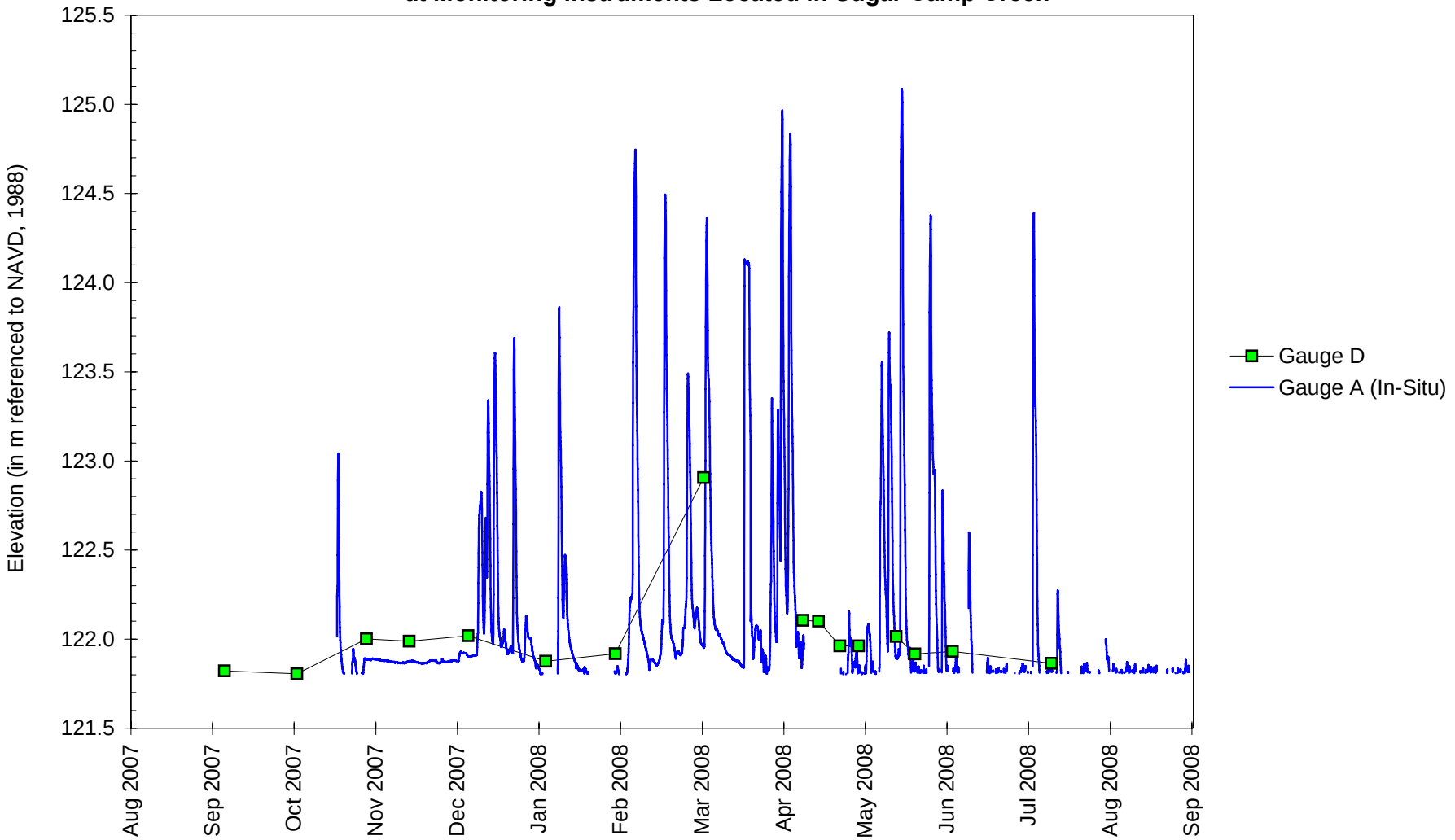
Sugar Camp Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008



Sugar Camp Creek Wetland Compensation Site

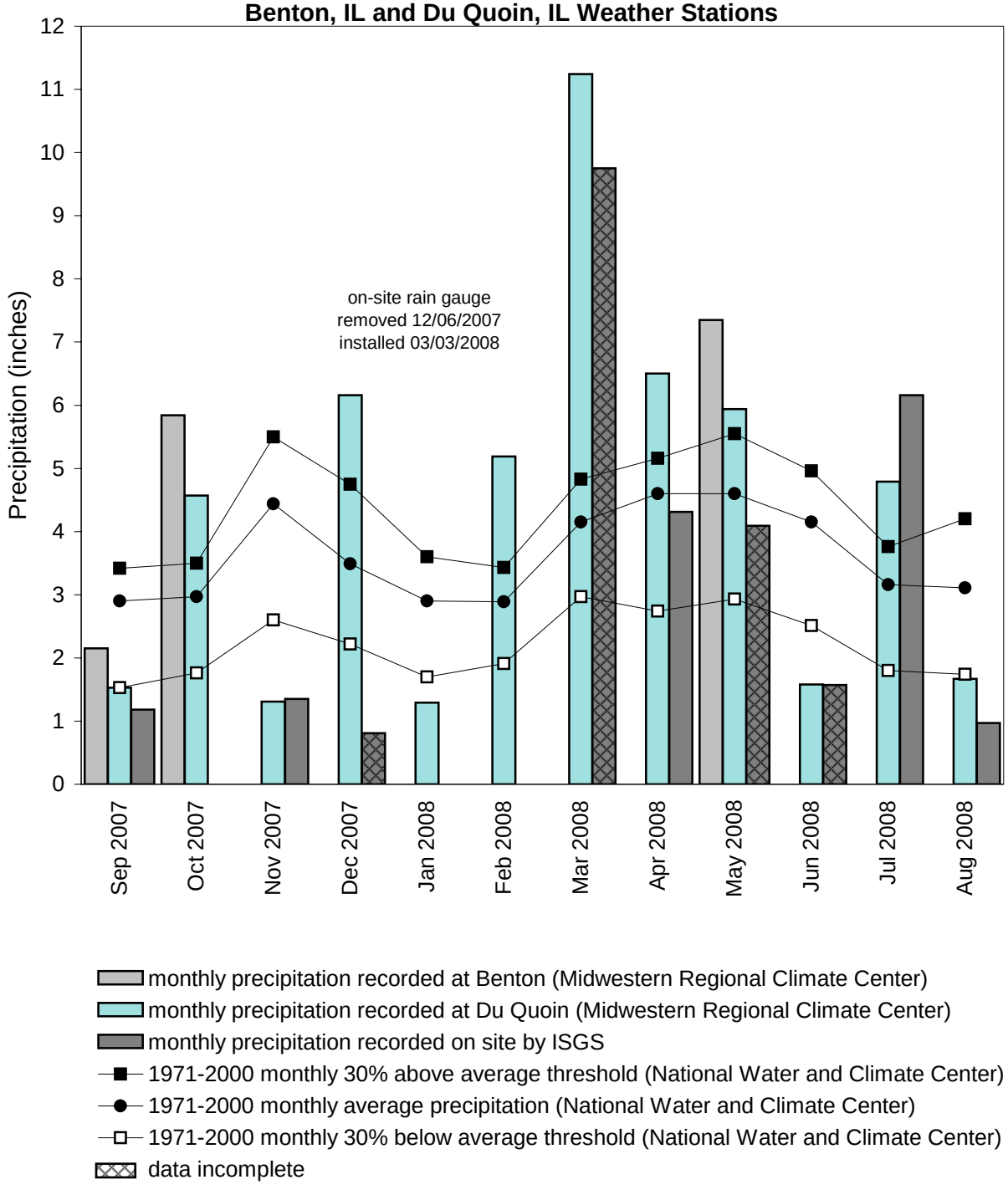
September 1, 2007 to September 20, 2008

Water-Level Elevations
at Monitoring Instruments Located in Sugar Camp Creek



Sugar Camp Creek
Potential Wetland Compensation Site
September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Benton, IL and Du Quoin, IL Weather Stations



Graph last updated October 7, 2008

GREEN CREEK **ISGS #75**
WETLAND COMPENSATION SITE
FAP 774
Sequence #12505
Effingham County, near Effingham, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- August 2005: ISGS submitted an initial site evaluation report 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 2006–03).
- June 2007: Construction at the wetland compensation site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2008

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season was estimated to be 1.6 ha (3.9 ac) out of a total site area of 4.1 ha (10.0 ac). The area that satisfied wetland hydrology criteria for greater than 12.5% of the 2008 growing season was estimated to be 1.4 ha (3.4 ac). These estimates were based on the following factors:

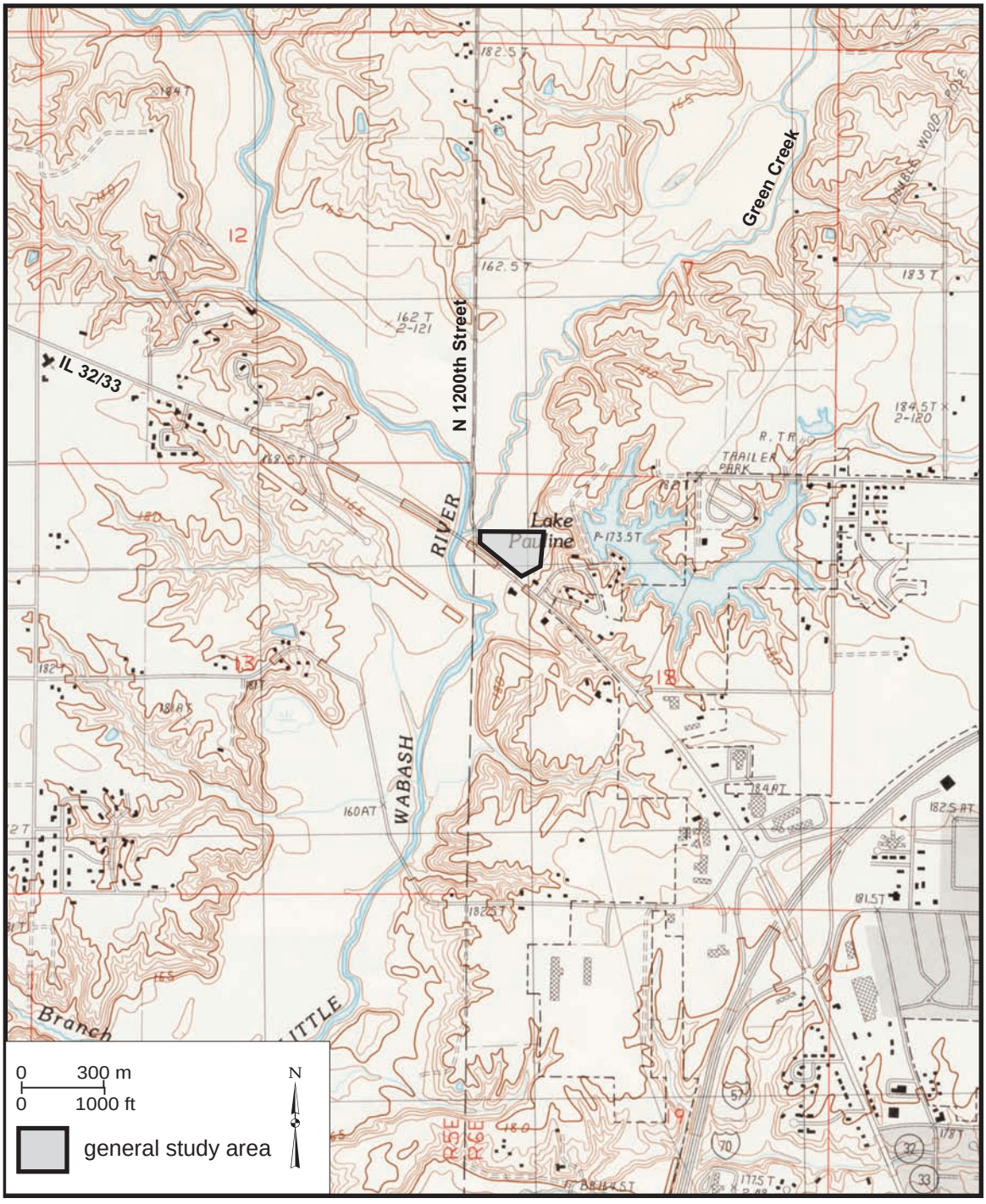
- According to the MRCC, the median date that the growing season begins in nearby Effingham, Illinois, is April 6 and the season lasts 210 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days.
- Total precipitation during the monitoring period was 108% of normal. Above-normal precipitation from February through July helped sustain elevated water levels at the site throughout nearly the entire growing season to date.
- In 2008, ground-water levels measured in wells 3S, 4S, 10SR, 10VS, 11SR, 12SR, 13S, and 14S satisfied the wetland hydrology criteria for both 5% and 12.5% of the growing season. In addition, wells 8SR and 9S satisfied the wetland hydrology criteria for 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, while much of the eastern half of the site remained inundated for greater than 12.5% of the growing season. Water-level records for staff gauge B indicated inundation in the area west of the north–south ditch below approximately 160.41 m (526.28 ft) for greater than 5% of the growing season. Water-level records for staff gauge ER indicated inundation in the area east of the north–south ditch below approximately 160.73 m (527.33 ft) for greater than both 5% and 12.5% of the growing season. According to the surface-water gauge in Green Creek, water levels in Green Creek reached an elevation sufficient to flood the site at least six separate times in 2008: three times preceding the growing season, and three times during the growing season.

PLANNED FUTURE ACTIVITIES

- The ISGS will continue to monitor the Green Creek Wetland Compensation Site until no longer required by IDOT.

Green Creek Wetland Compensation Site
(FAP 774, IL 32/33, Sequence #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)



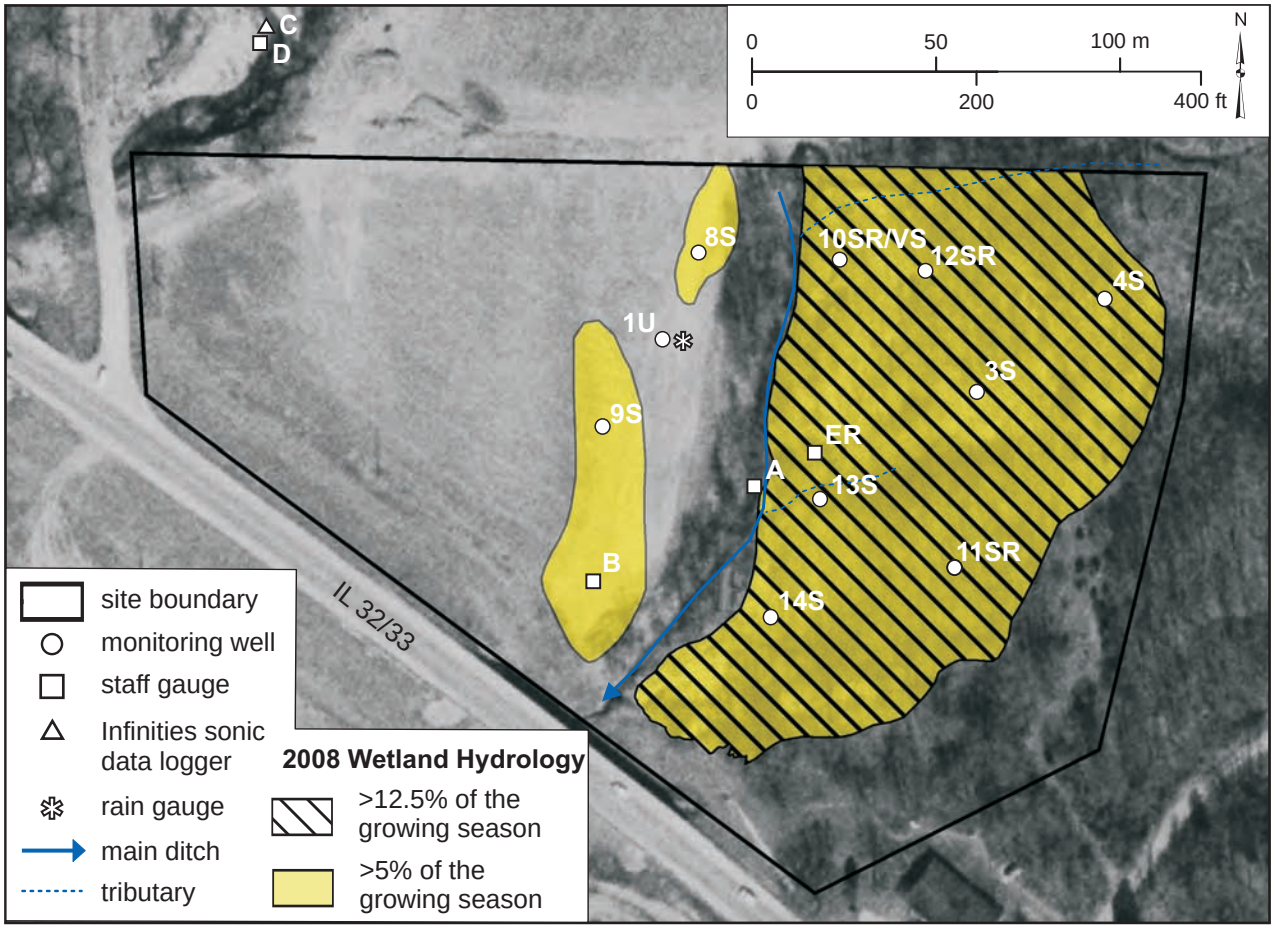
Green Creek Wetland Compensation Site

(FAP 774, IL 32/33, Sequence #12505)

Estimated Areal Extent of 2008 Wetland Hydrology

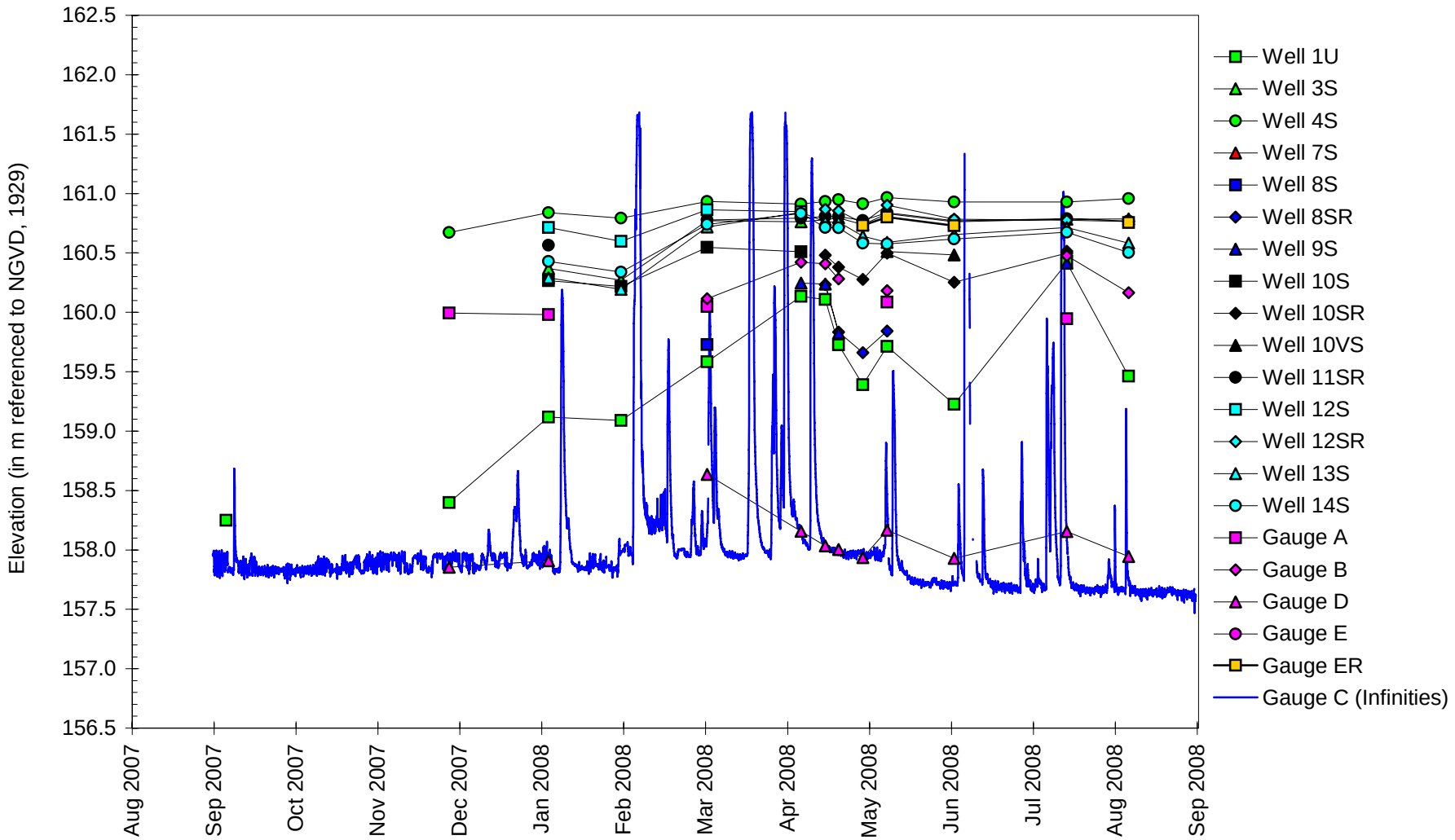
based on data collected between September 1, 2007 and September 1, 2008

Map based on USGS digital orthophotograph, Effingham North SW quarter quadrangle produced from 2005 aerial photography (ISGS 2006)



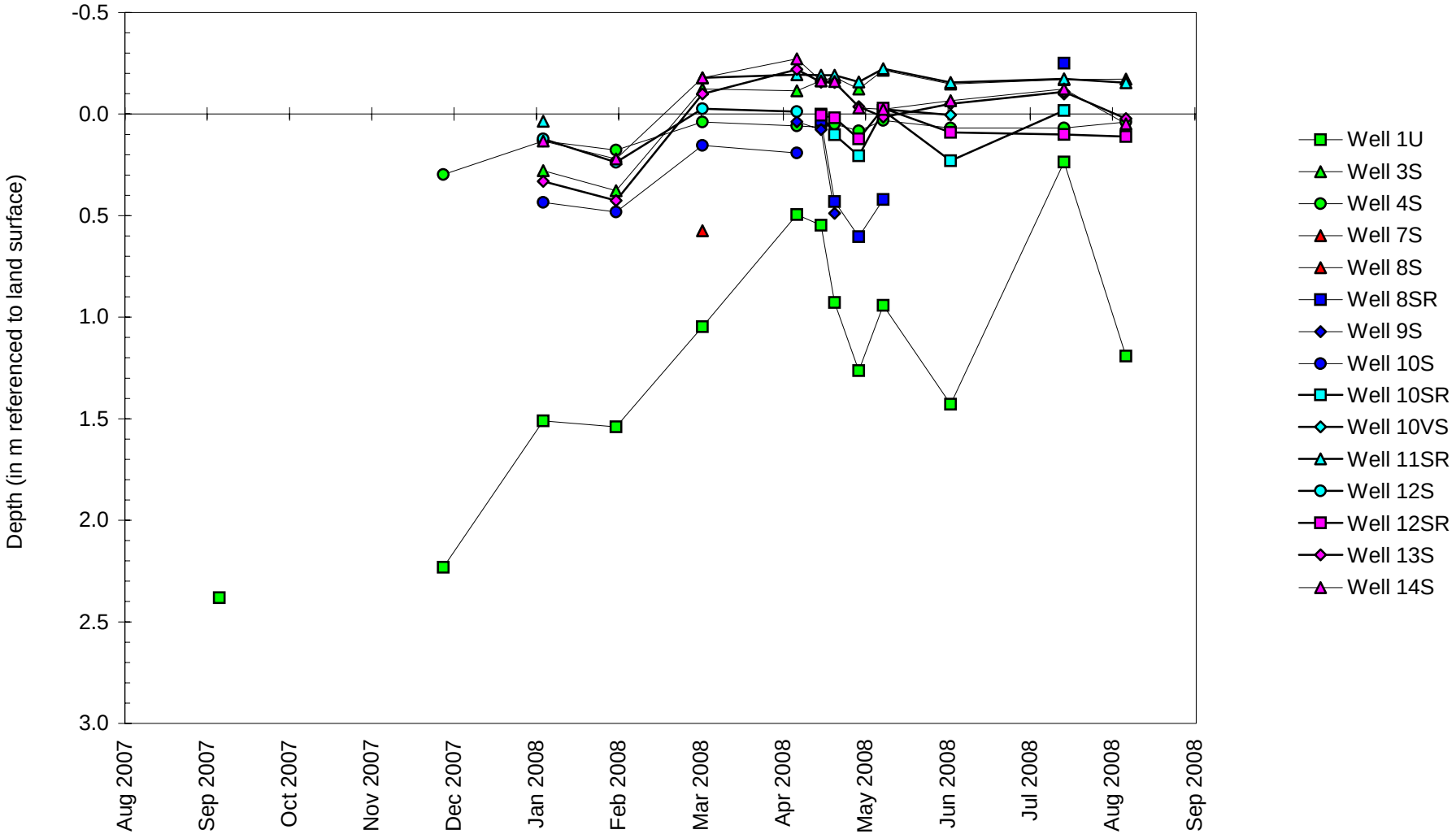
Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations

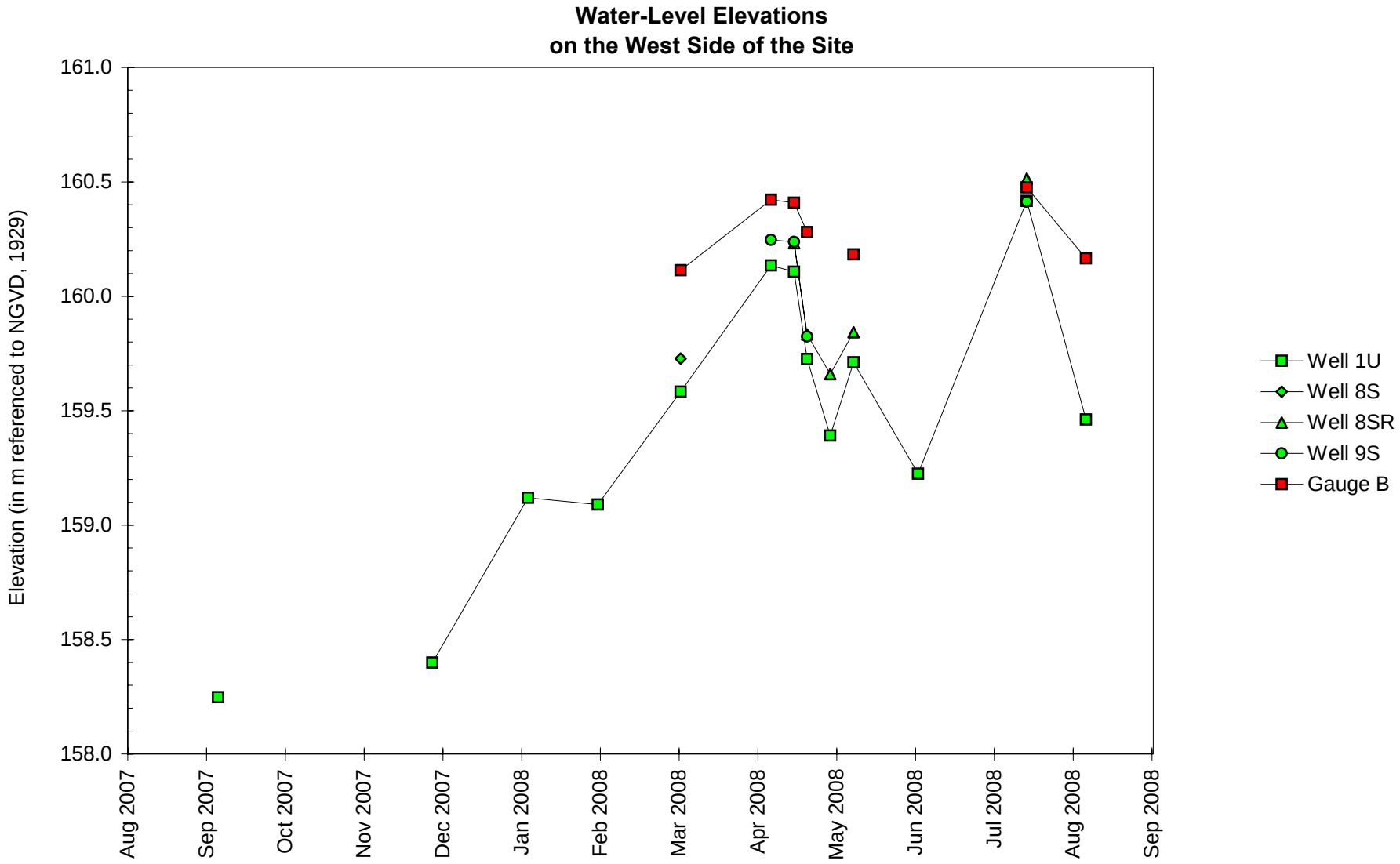


Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008

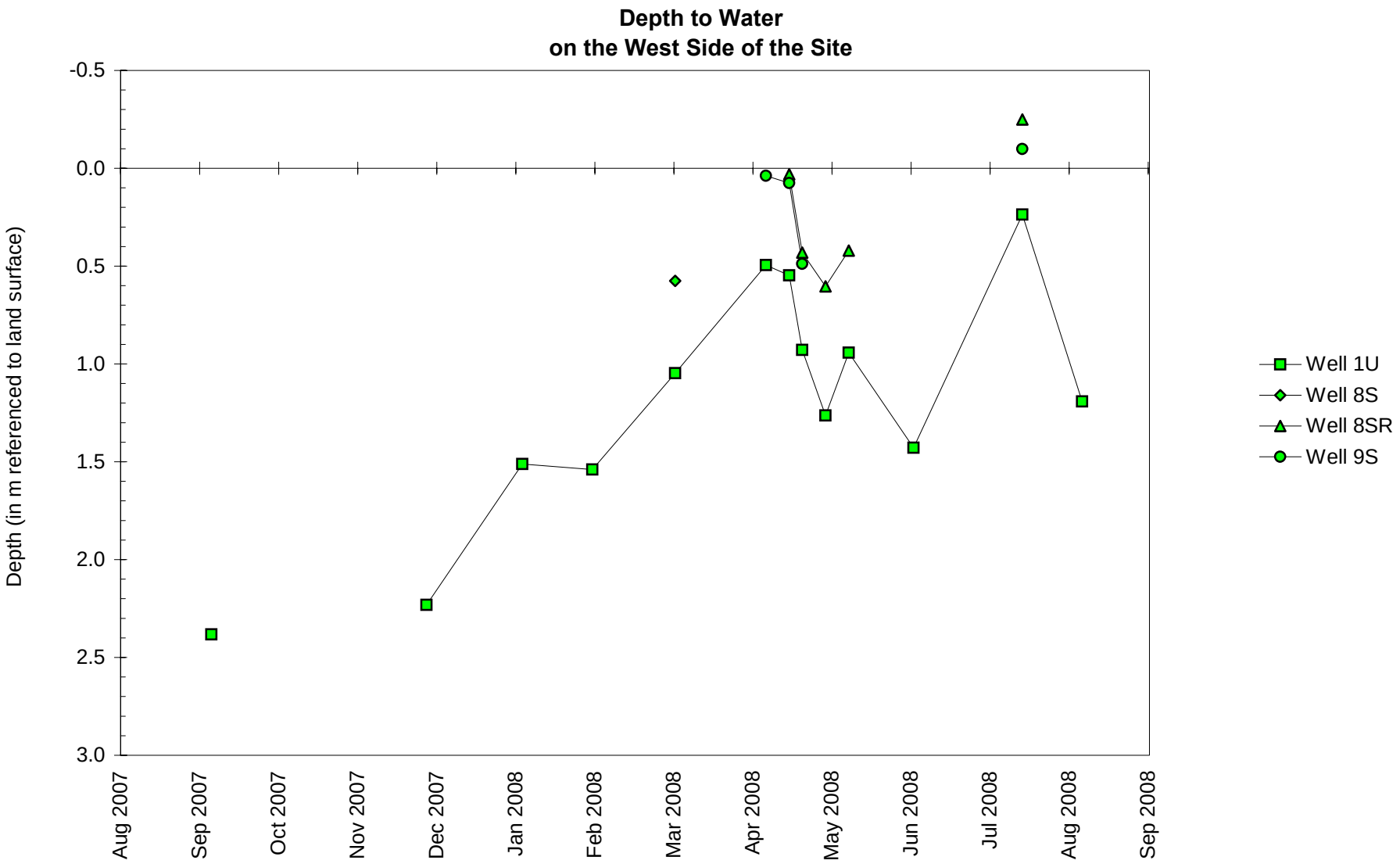
Depth to Water



Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008

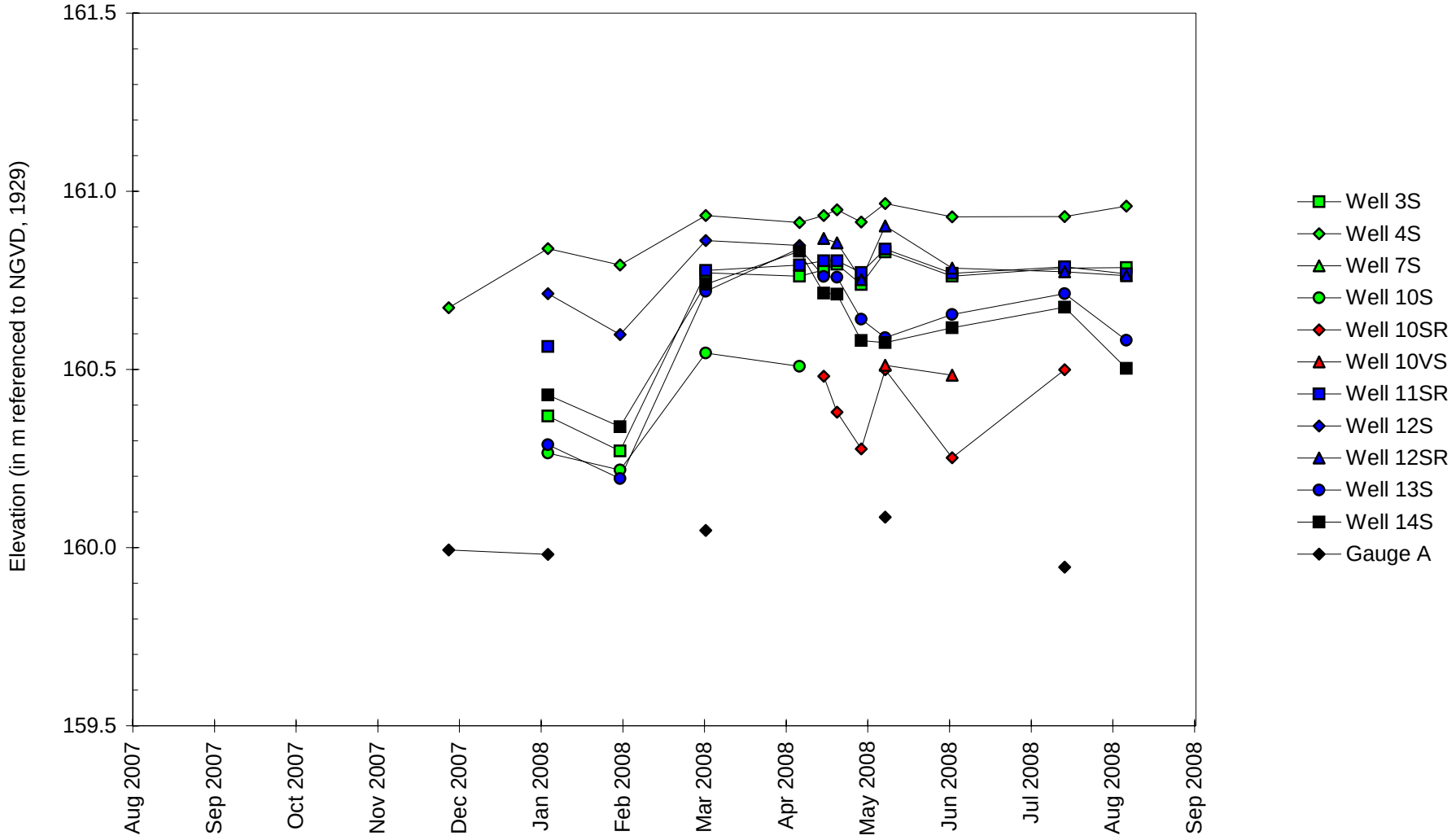


Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008

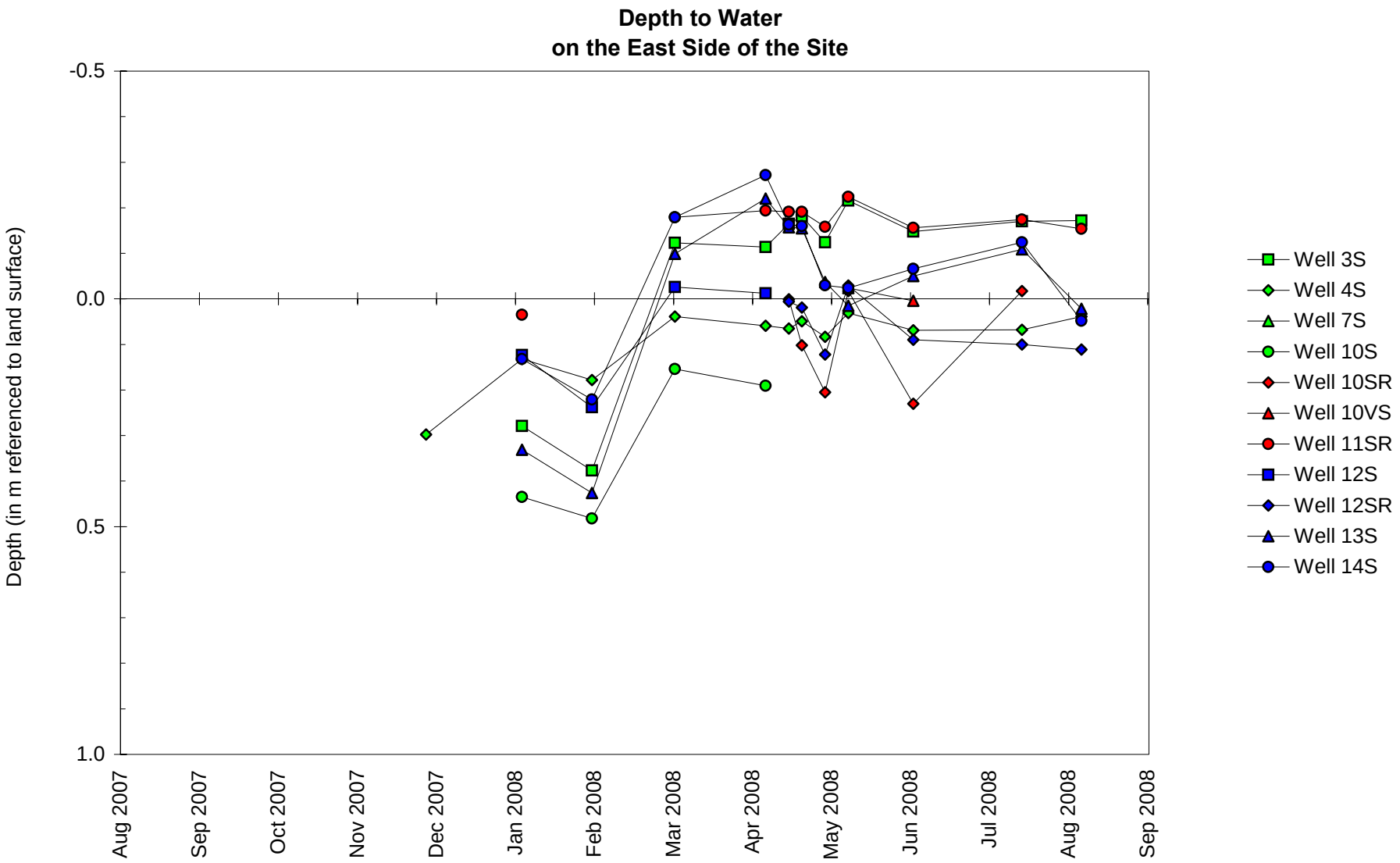


Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008

Water-Level Elevations
on the East Side of the Site



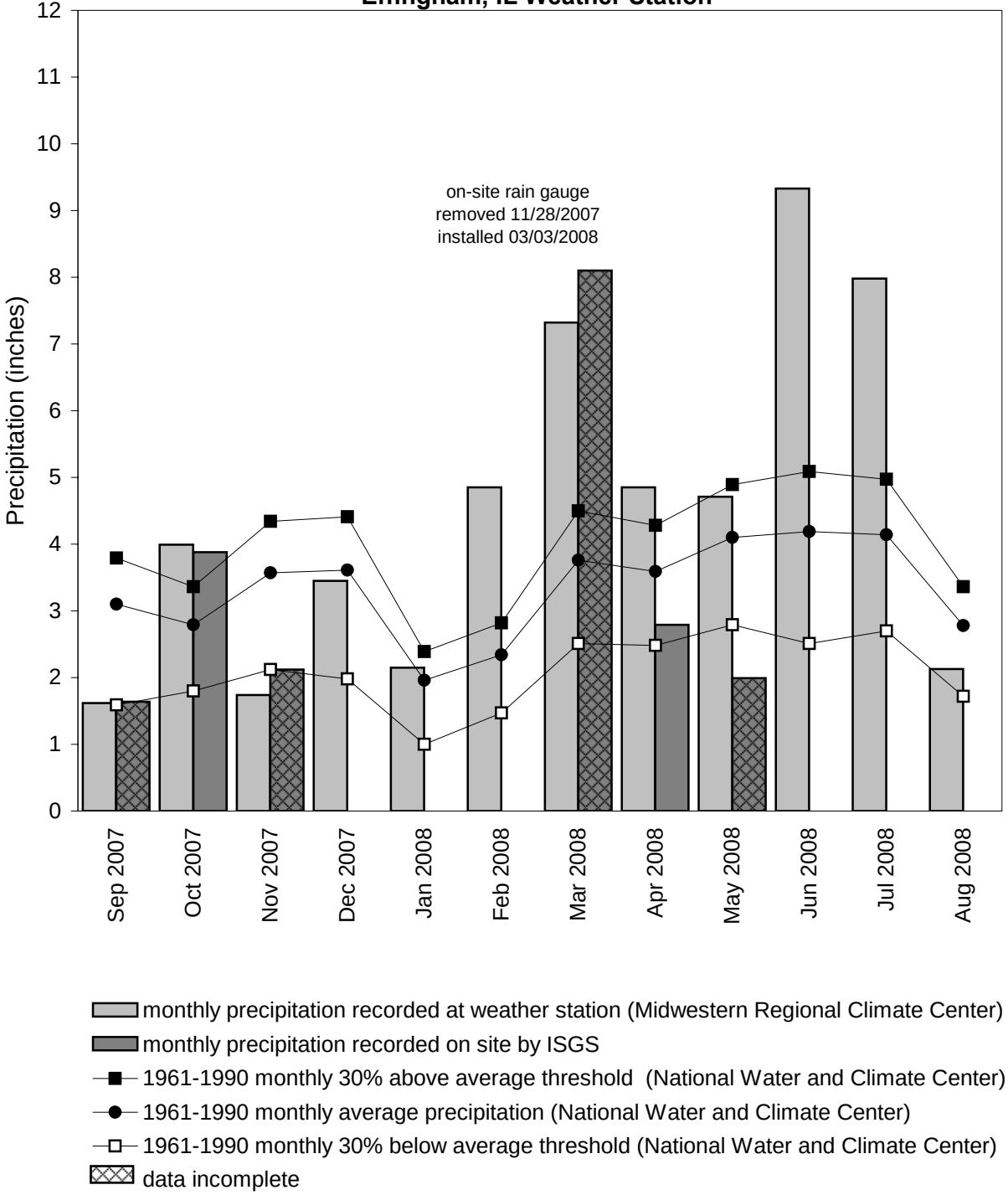
Green Creek Wetland Compensation Site
September 1, 2007 to September 1, 2008



Green Creek Wetland Compensation Site

September 2007 through August 2008

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



Graph last updated October 7, 2008

MILAN BELTWAY, AUGUSTANA/ROCK ISLAND WETLAND COMPENSATION SITE **ISGS #76**

FAU 5822
Sequence #67
Rock Island County, near Moline, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Kathleen E. Bryant

SITE HISTORY

- February 2008: The ISGS was tasked by IDOT to conduct 5-year monitoring.
- March 2008: A monitoring network was installed on the site.

WETLAND HYDROLOGY CALCULATION FOR 2008

The total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for more than 5% of the 2008 growing season was estimated to be 1.48 ha (3.67 ac) out of a total area of 4.13 ha (10.22 ac). This included 0.61 ha (1.52 ac) of area A, 0.11 ha (0.27 ac) of area B, and 0.76 ha (1.87 ac) of area C. None of the wetland mitigation areas satisfied wetland hydrology criteria for more than 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Quad City International Airport in nearby Moline, Illinois, is April 13 and the season lasts 196 days; 5% of the growing season is 10 days and 12.5% of the growing season is 25 days.
- Total precipitation during the monitoring period was 99% of normal. Precipitation was at or above normal in December 2007, and in February, April, May, June, and July 2008. Total precipitation in the spring (April, May, and June) was 138% of normal.
- In 2008, wetland hydrology in the mitigation areas occurred for more than 5% of the growing season at wells 2S, 3S, 4S, 6S, 7S, and 8S, but wetland hydrology did not occur for more than 12.5% of the growing season. Outside the mitigation areas, wetland hydrology occurred for more than 5% of the growing season at wells 5S, 9S, 10S, and 11S, and for more than 12.5% of the growing season at wells 5S and 9S.
- The highest recorded surface-water elevation was 171.58 m (562.95 ft) at gauge A and 171.59 m (562.99 ft) at gauge B on April 16. Based on surveyed land-surface elevations at the monitoring wells, inundation did not occur for more than 5% of the growing season in any of the mitigation areas.

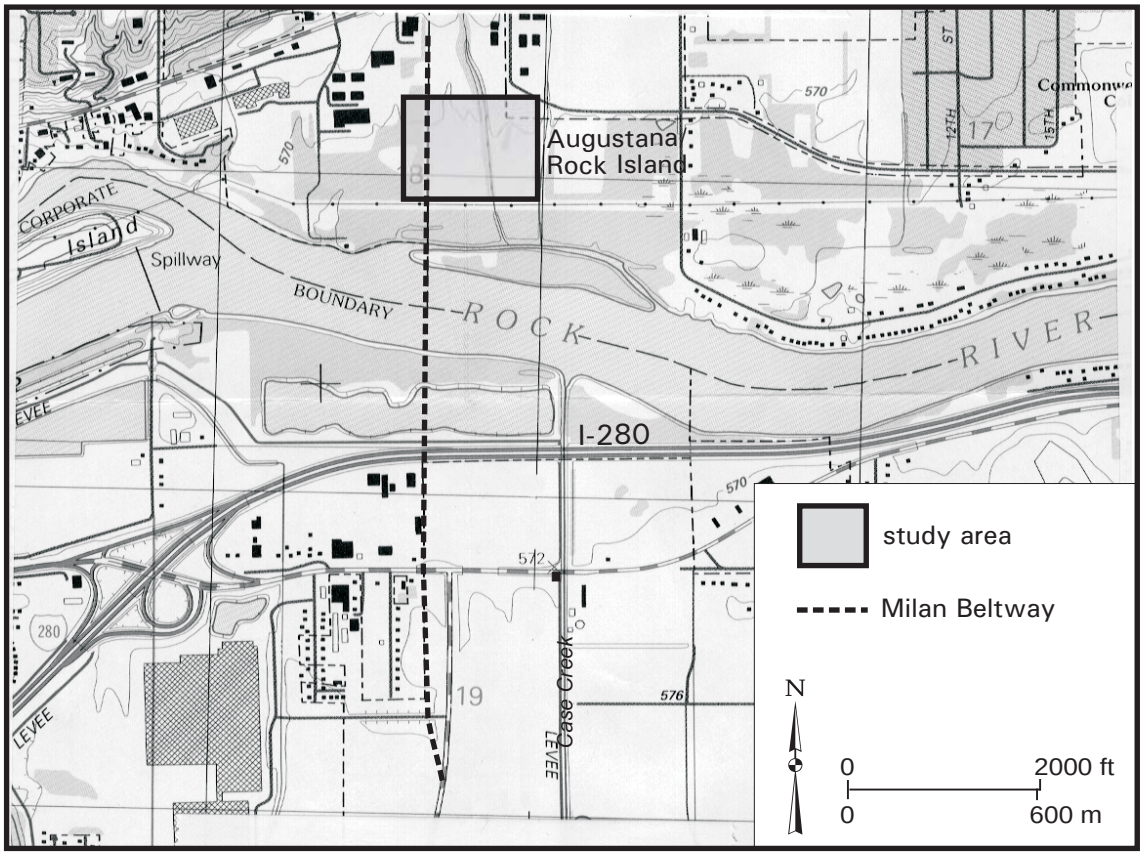
PLANNED FUTURE ACTIVITIES

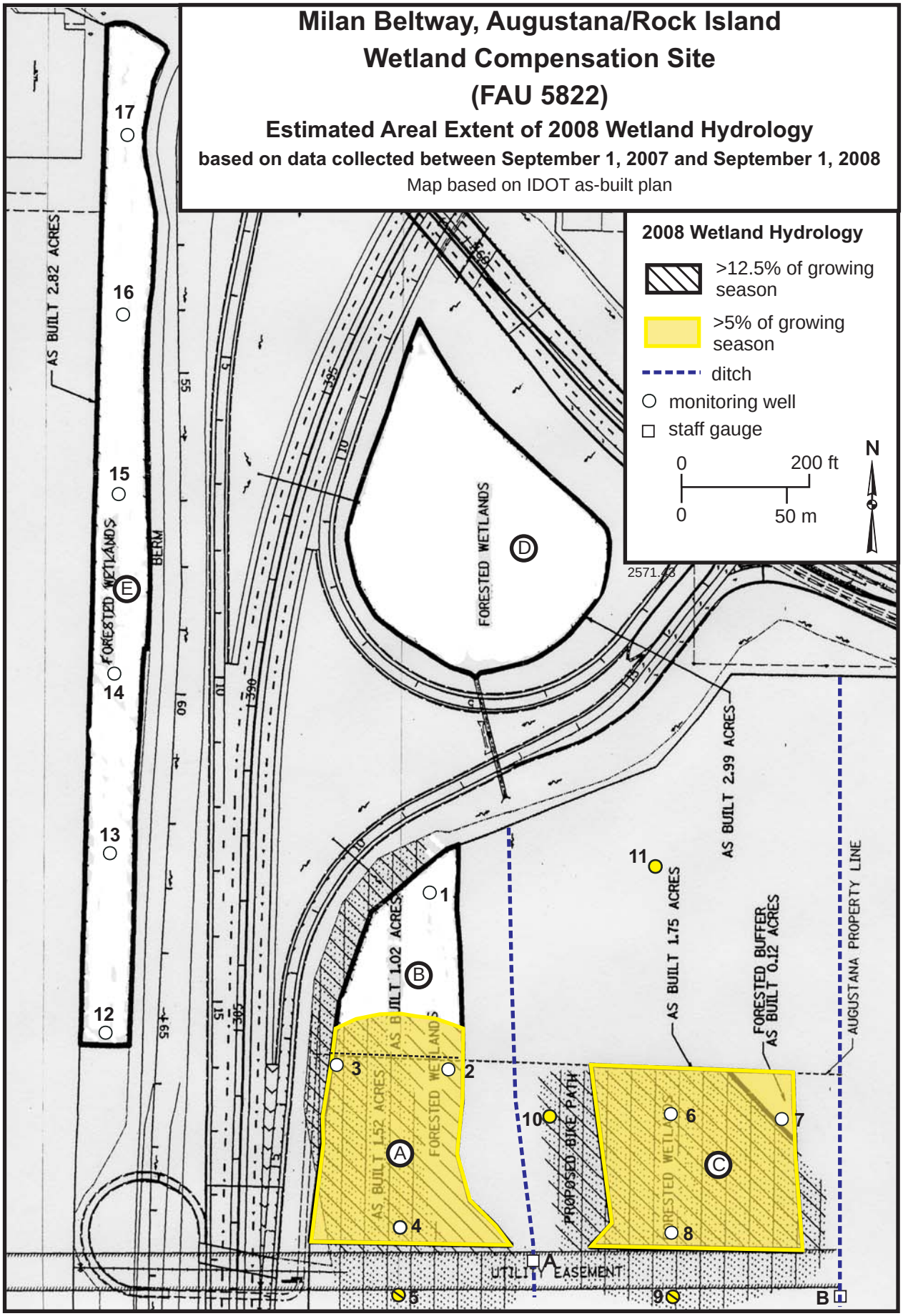
- Additional monitoring wells will be installed in Fall 2008. Electronic data loggers will also be installed in the drainage ditches/creeks on the site in Fall 2008.

Milan Beltway, Augustana/Rock Island Wetland Compensation Site (FAU 5822)

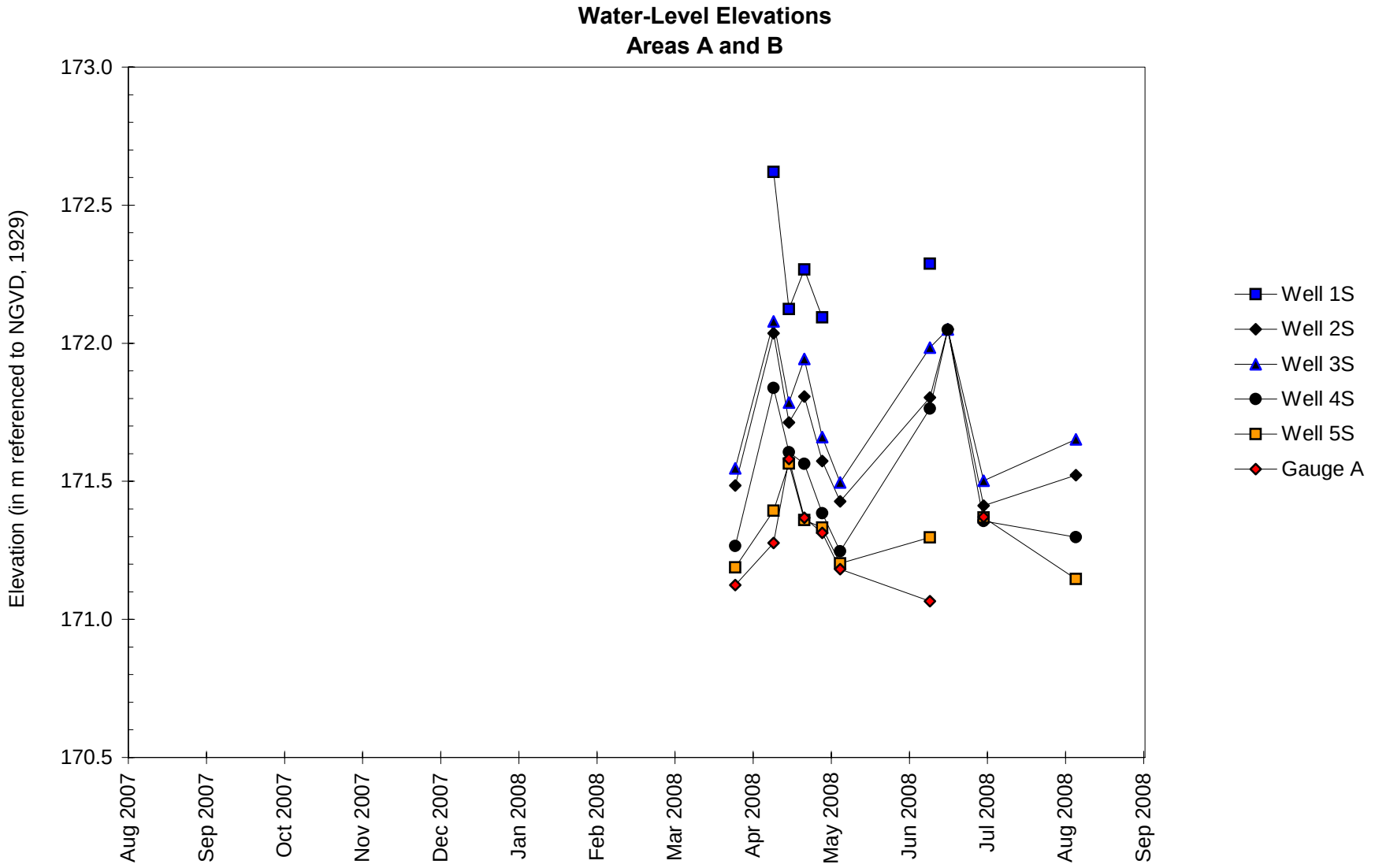
General Study Area and Vicinity

from the USGS Topographic Series, Milan IL-IA 7.5-minute Quadrangle (USGS 1992)
contour interval is 10 feet

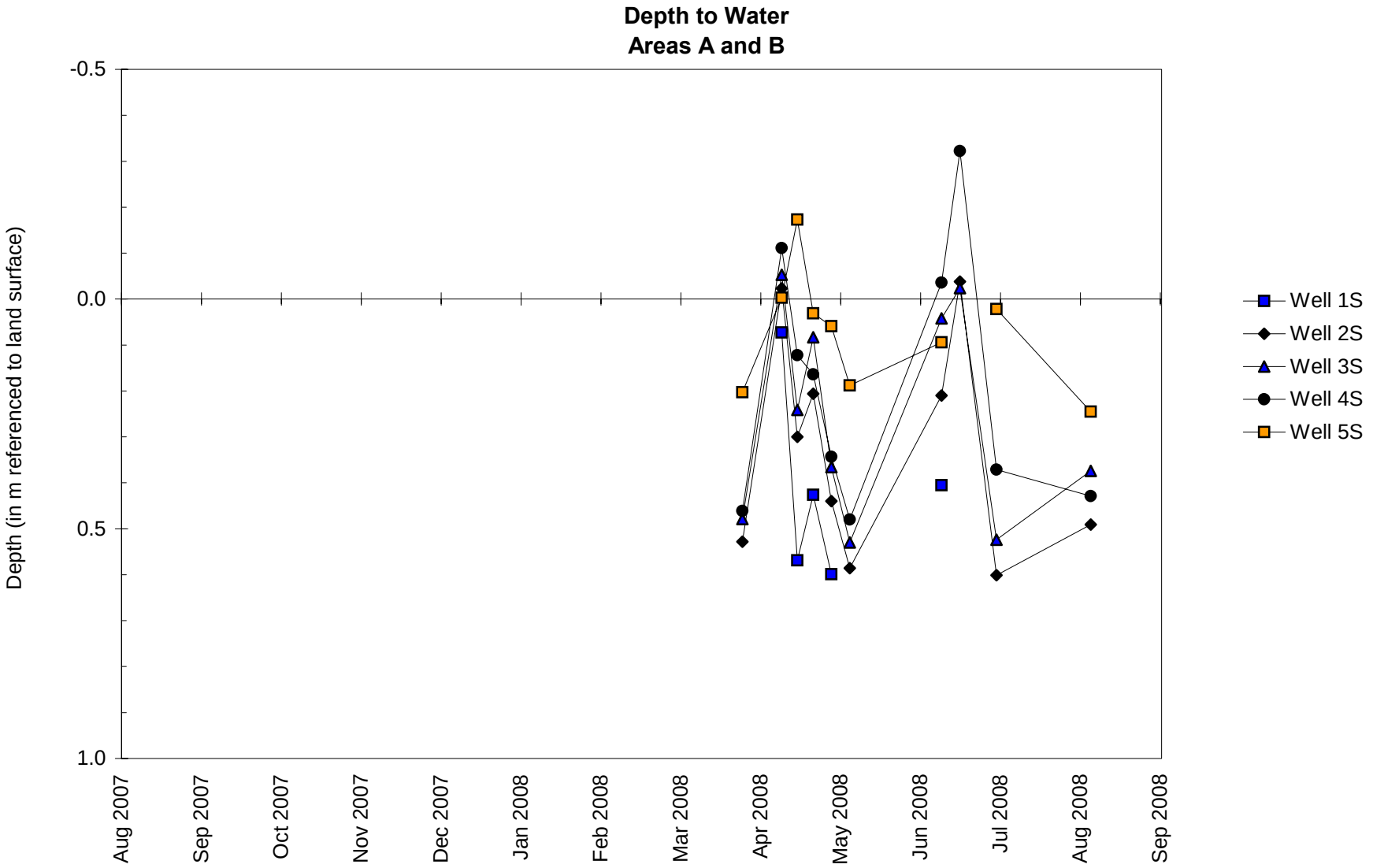



Milan Beltway, Augustana/Rock Island
Wetland Compensation Site
(FAU 5822)
Estimated Areal Extent of 2008 Wetland Hydrology
based on data collected between September 1, 2007 and September 1, 2008
Map based on IDOT as-built plan
2008 Wetland Hydrology
>12.5% of growing season
>5% of growing season
ditch
monitoring well
staff gauge
0
200 ft
0
50 m
N
AS BUILT 2.82 ACRES
FORESTED WETLANDS
BERM
FORESTED WETLANDS
AS BUILT 1.02 ACRES
AS BUILT 2.99 ACRES
AS BUILT 1.75 ACRES
FORESTED BUFFER
AS BUILT 0.12 ACRES
AUGUSTANA PROPERTY LINE
AS BUILT 1.52 ACRES
FORESTED WETLANDS
PROPOSED BIKE PATH
UTILITY EASEMENT
2571.43
A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

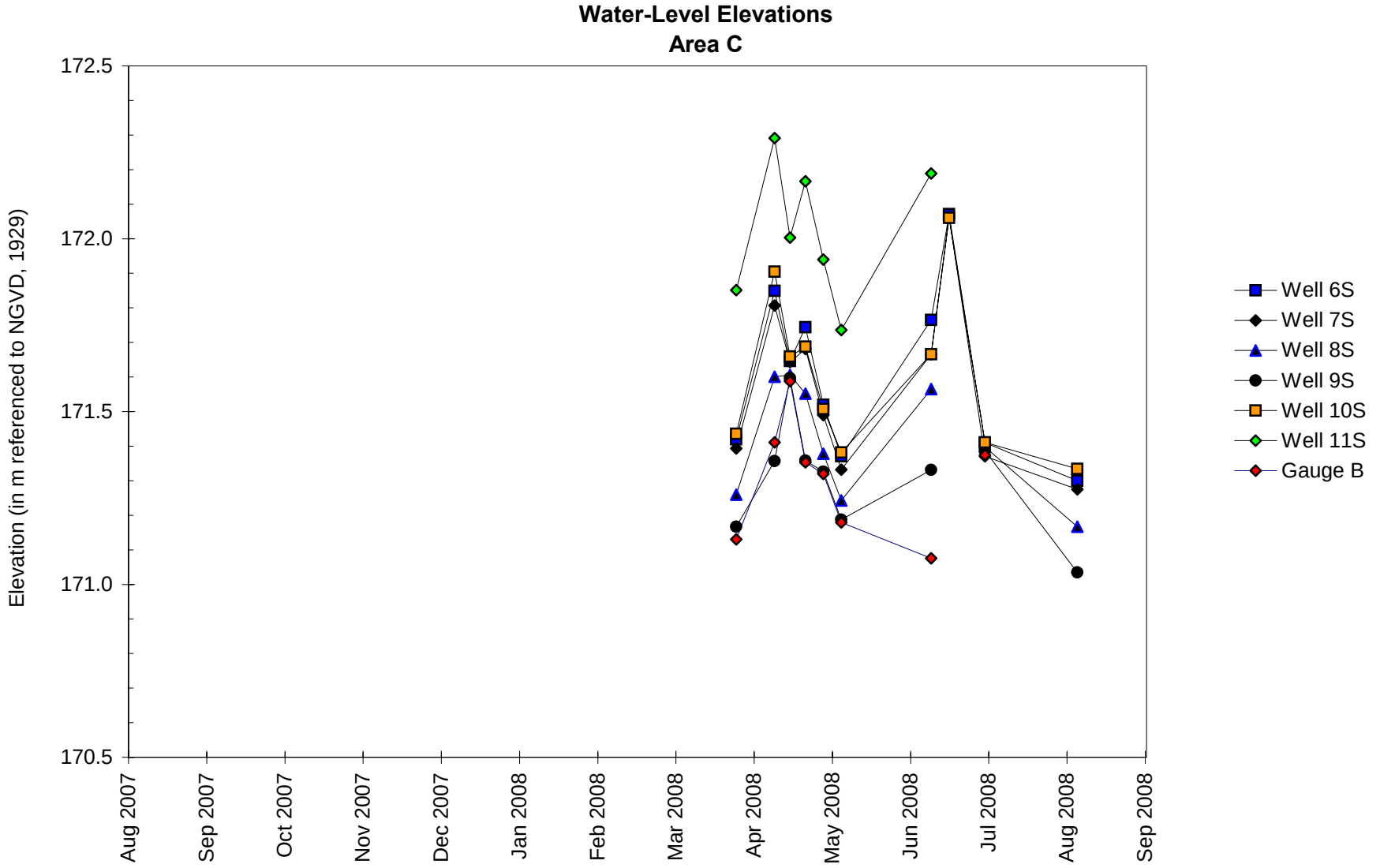
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



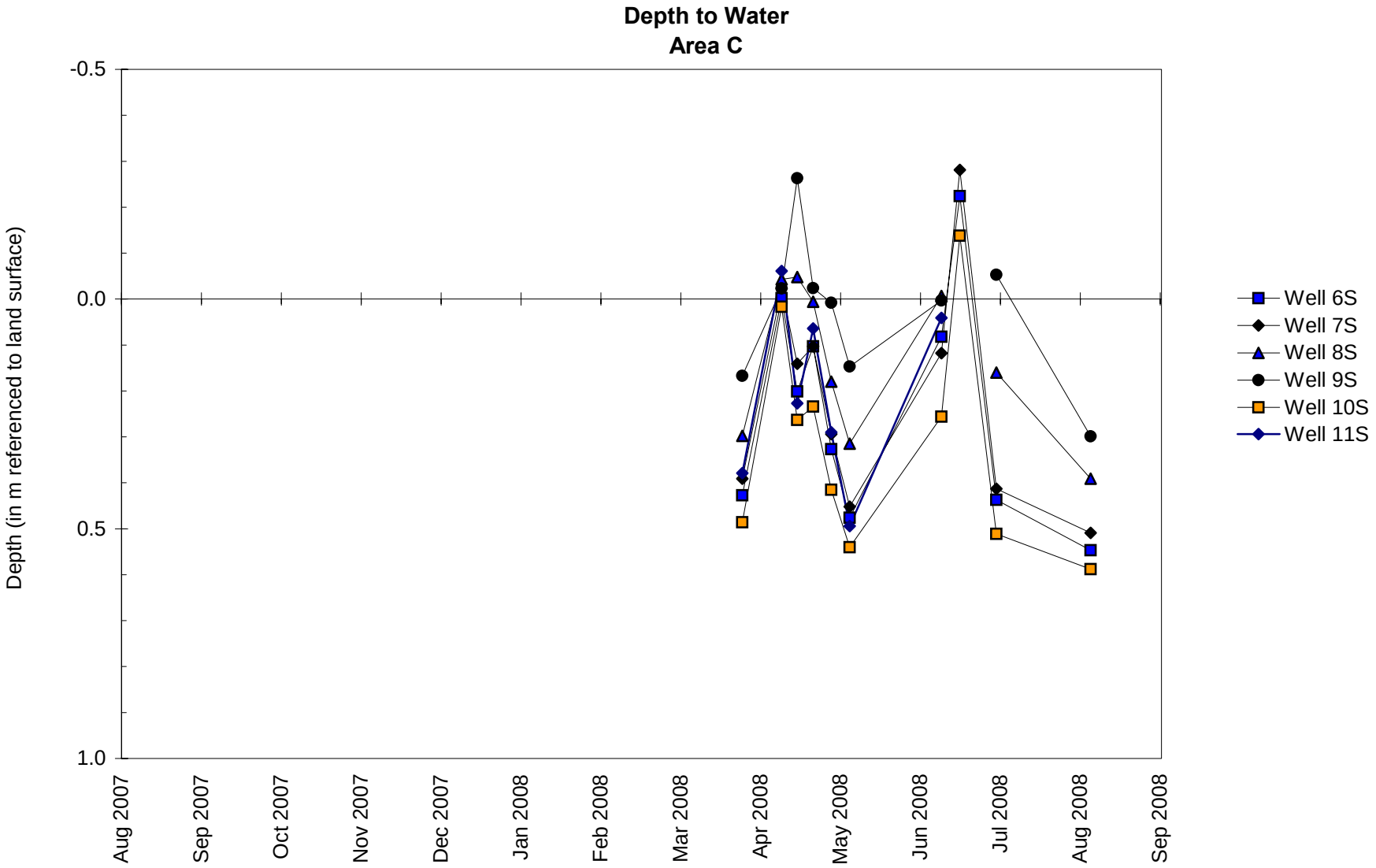
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



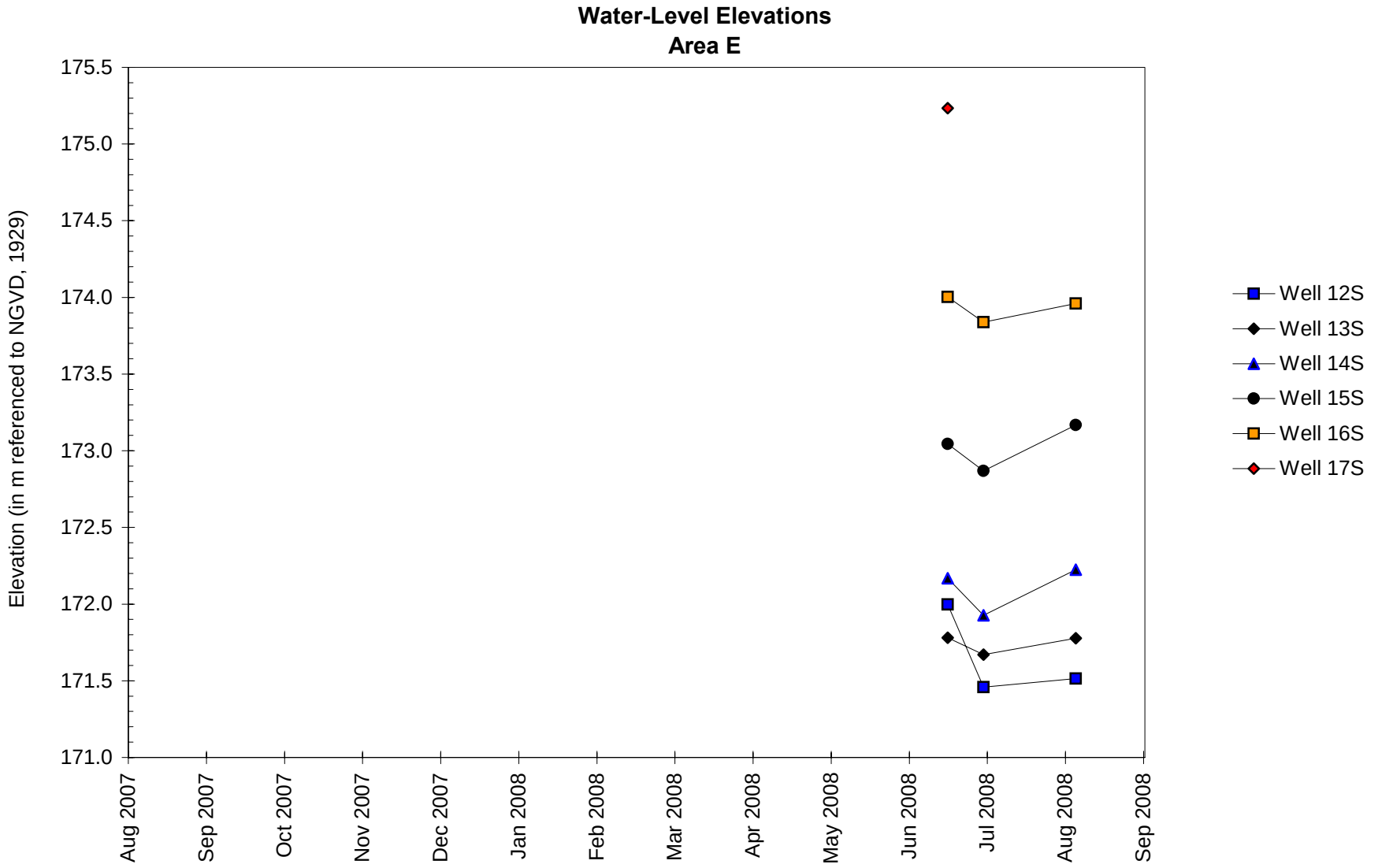
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



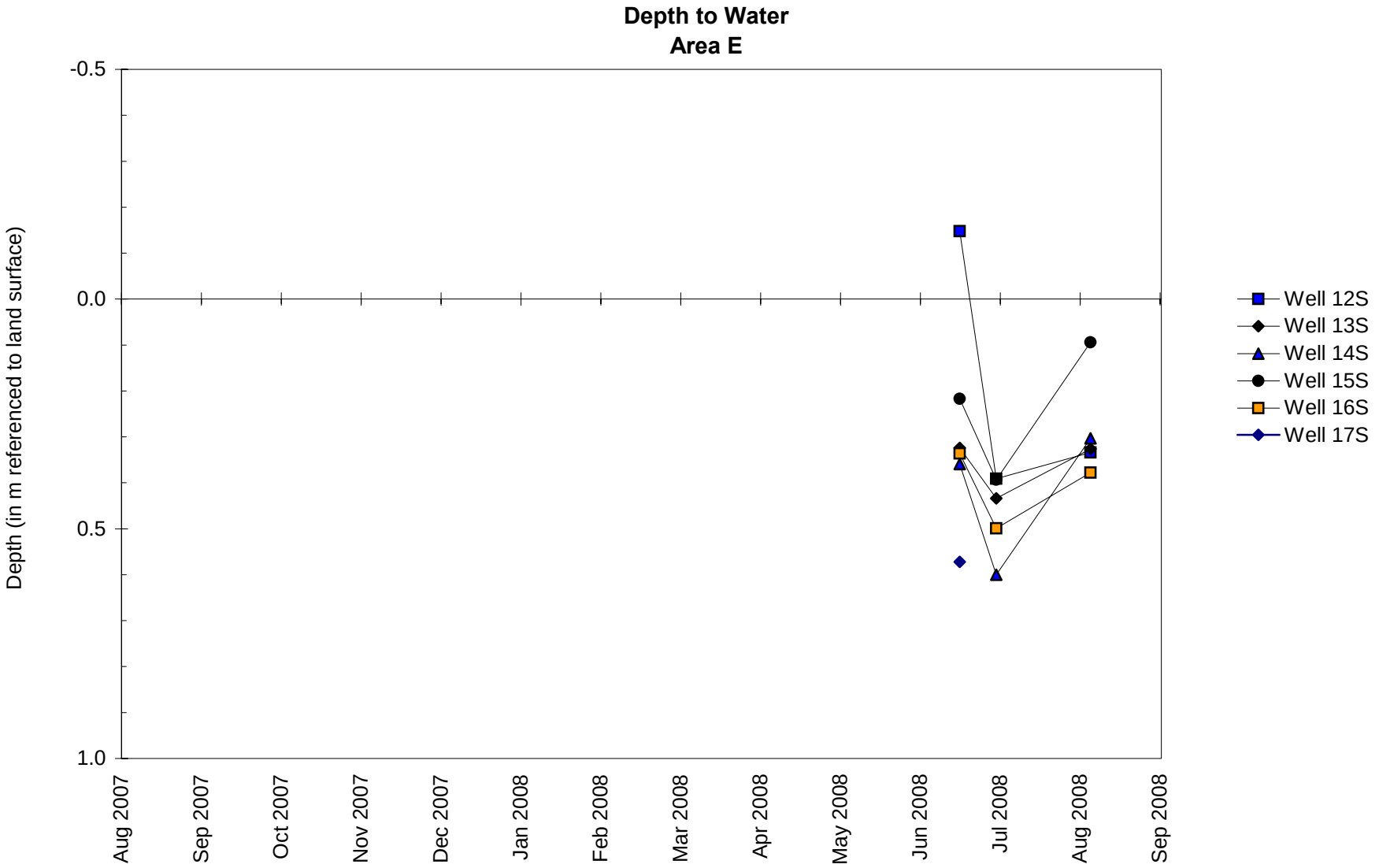
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



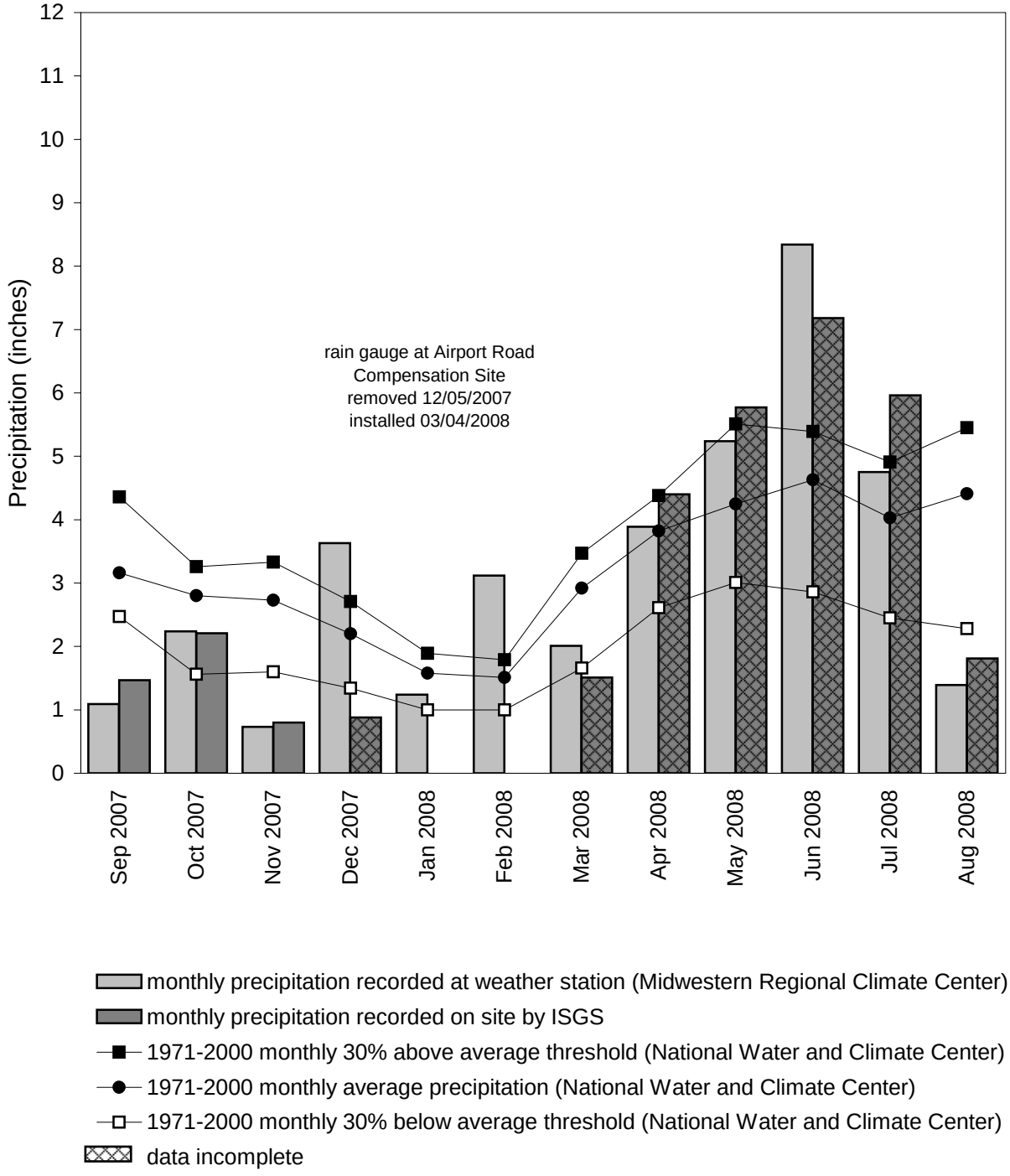
Milan Beltway, Augustana/Rock Island Wetland Compensation Site
September 1, 2007 to September 1, 2008



Milan Beltway, Augustana/Rock Island Wetland Compensation Site

September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Quad City International Airport Weather Station, Moline, IL



Graph last updated October 7, 2008

PYRAMID SITE EC25 **ISGS #77**
WETLAND COMPENSATION SITE
Pyatts Blacktop
Sequence #9778
Perry County, near Pinckneyville, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- June 2007: ISGS was tasked by IDOT to monitor wetland hydrology.

- April 2008: ISGS began on-site monitoring with the installation of a monitoring network.

WETLAND HYDROLOGY CALCULATION FOR 2008

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2008 growing season is 5.1 ha (12.6 ac) out of a total mitigation area of approximately 5.3 ha (13.1 ac). The estimated area that satisfied wetland hydrology criteria for greater than 12.5% of the 2008 growing season is 1.6 ha (3.9 ac).

- According to the MRCC, the median date that the growing season begins in nearby Du Quoin, Illinois is April 5, and the season lasts 207 days; 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days.

- Total precipitation for the monitoring period, as recorded at the weather station in Du Quoin, Illinois, was 117% of normal. Precipitation was normal or above normal in the months of October and December 2007, and February, March, April, May, and July 2008. Precipitation was below normal for the remaining months in the monitoring period. Precipitation recorded at the Du Quoin weather station for the months of February through May 2008 was 181% of normal for those months.

- Gauge B, installed in Little Galum Creek on April 22, 2008, recorded three separate flood events in May and a fourth event in July that were sufficient to inundate the entire site. However, these floods were of short duration, with peaks lasting only a few hours before the creek once again dropped within its banks. Current site conditions allow water to flow from Little Galum Creek across the northern tip of the site and into the ditch along the western site boundary. From there, the water flows south until it crosses back onto the site north of wells 4S/VS, then flows toward well 13VS, and finally flows towards a ditch near the center of the southern edge of the field. This unrestricted flow allows much of the surface water to quickly drain from the site, and thus potentially reduces the amount of acreage that will meet wetland hydrology criteria in subsequent years with more normal precipitation levels.

- In 2008, water levels measured in all soil-zone (S and VS) monitoring wells, except well 2VS, satisfied the wetland hydrology criteria for greater than 5% of the growing season. In addition, water levels in wells 7VS, 7S, 8VS, 9VS, 12VS, and 13VS satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- For the purposes of this report, the boundary of the mitigation area was derived from Exhibit 7 of the Wetland Compensation Plan (Perry County Highway Department and Illinois Department of Transportation 2006) and best fit to site features.

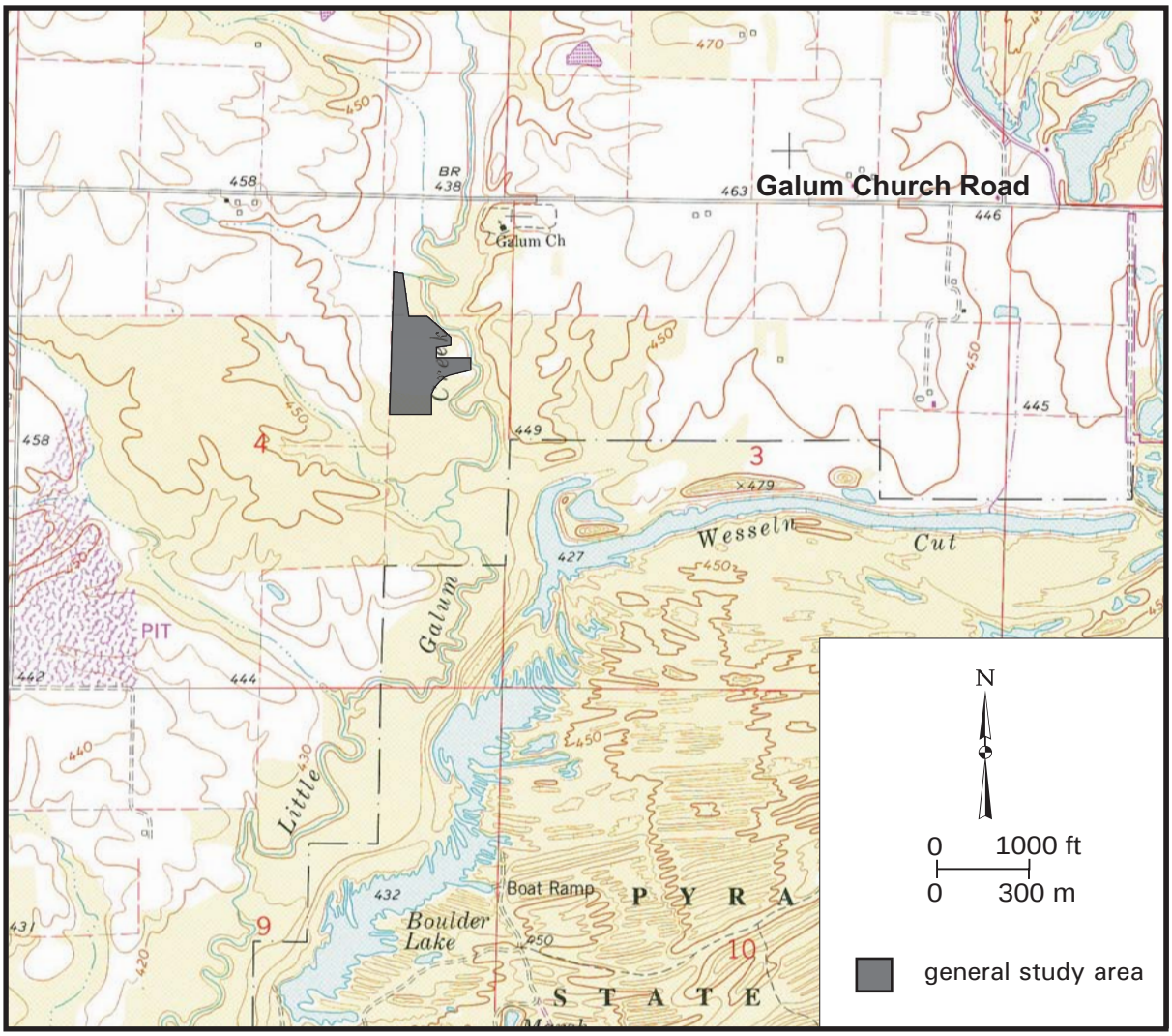
PLANNED FUTURE ACTIVITIES

- Additional wells and an on-site surface-water monitoring station will be added during Fall 2008 to better assess the hydrologic aspects of the site.

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

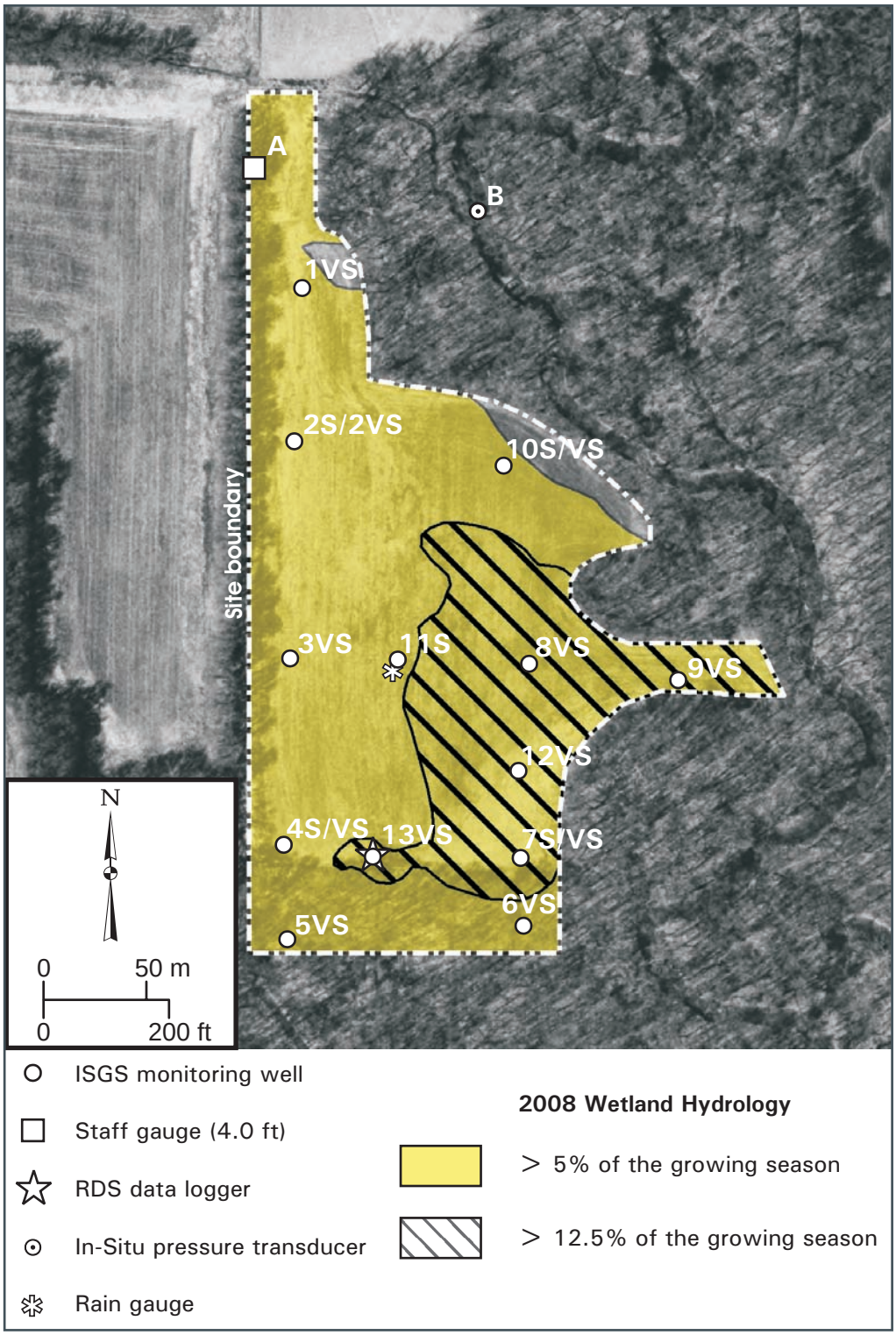
Pyramid Site EC25 Wetland Compensation Site
[FAS 864 (Pyatt's Blacktop)]
General Study Area and Vicinity

from the USGS Topographic Series, Pinckneyville, IL 7.5-minute Quadrangle (USGS 1982)
contour interval is 10 feet



Pyramid Site EC25 Wetland Compensation Site
FAS 864, Pyatt's Blacktop
Estimated Areal Extent of 2008 Wetland Hydrology
based on data collected between September 1, 2007 and September 1, 2008

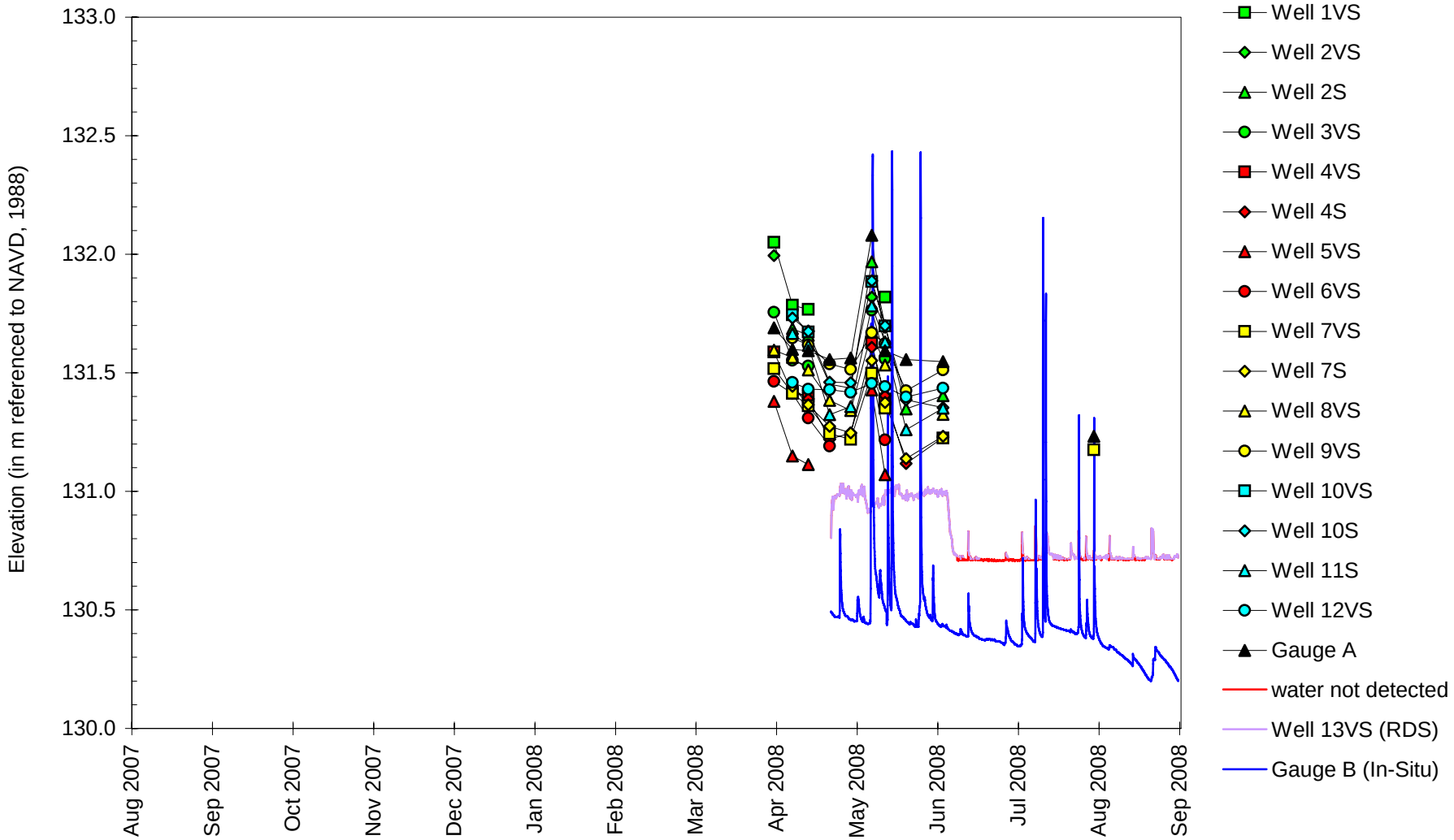
Map based on USGS digital orthophotograph, Pinckneyville, SE quarter quadrangle (ISGS 2005)



Perry County Wetland Compensation Site, Pyramid Site EC25

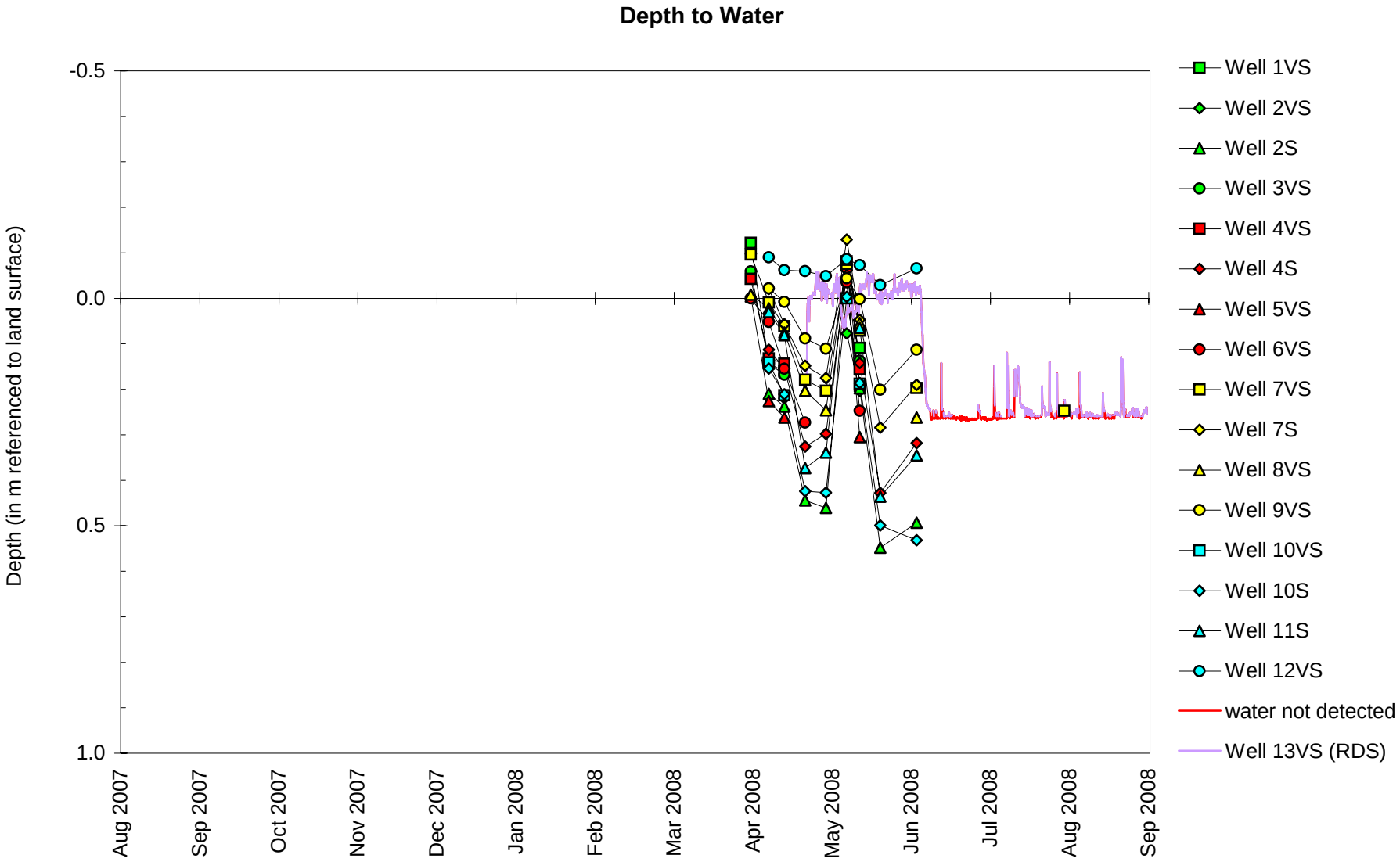
September 1, 2007 to September 1, 2008

Water-Level Elevations



Perry County Wetland Compensation Site, Pyramid Site EC25

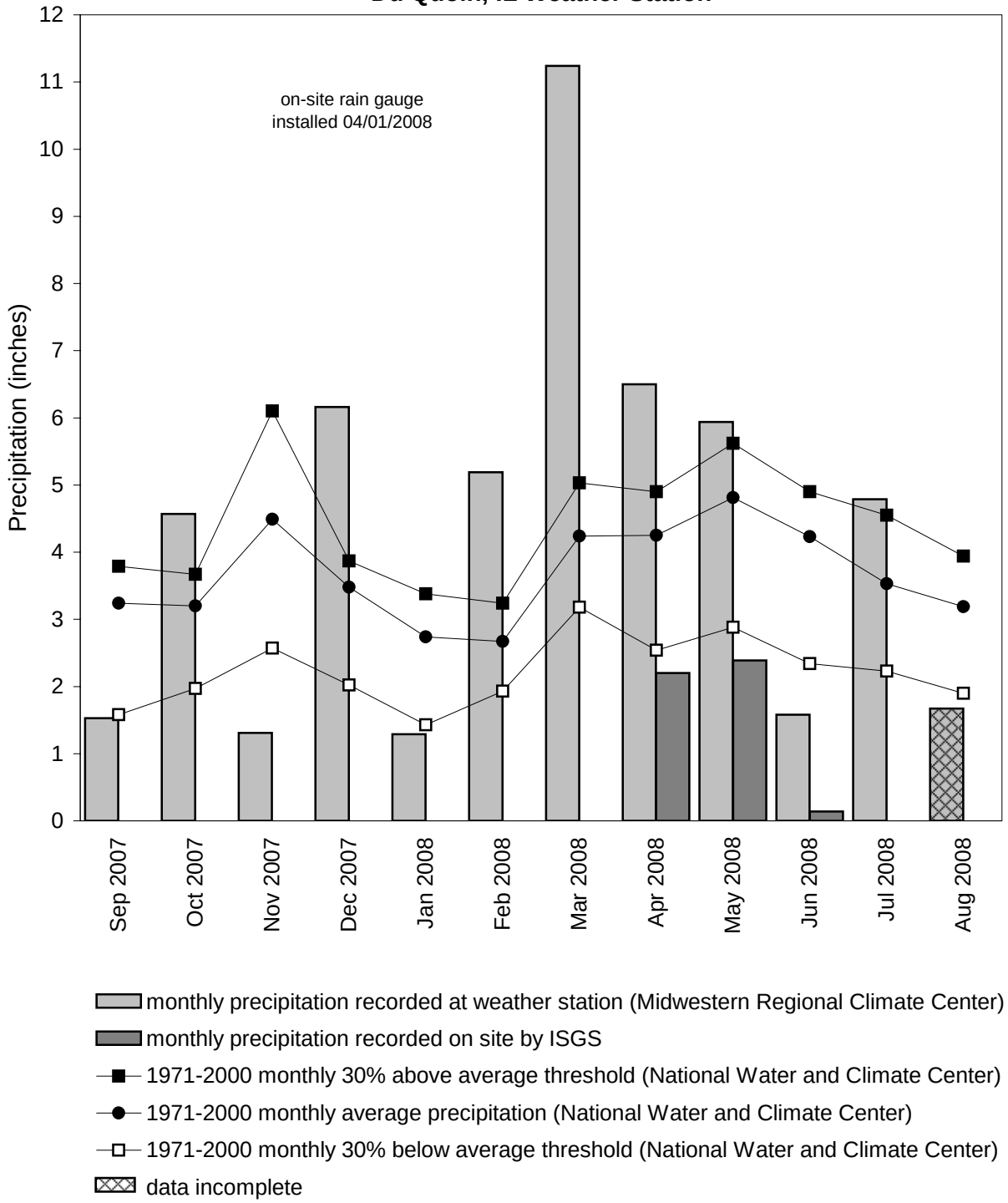
September 1, 2007 to September 1, 2008



Perry County Wetland Compensation Site, Pyramid Site EC25

September 2007 through August 2008

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



Graph last updated October 7, 2008

HARRISBURG, SITE 2 **ISGS #78**
WETLAND COMPENSATION SITE
FAP 857
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Charles W. Knight

SITE HISTORY

- March 2008: ISGS was tasked by IDOT to monitor the site for performance standards as outlined in the wetland mitigation plan, and post-construction water-level monitoring was initiated.

- May 2008: Construction at the wetland compensation site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2008

We estimate that 7.8 ha (19.4 ac) out of a total site area of approximately 14.2 ha (35.0 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2008, whereas 2.6 ha (6.5 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days; 5% of the growing season is 11 days and 12.5% of the growing season is 26 days.

- Total precipitation for the period from September 2007 through August 2008 was 136% of normal. Drier than normal conditions prevailed in September and November 2007 and in January, June, and August 2008. Precipitation amounts were at or above normal for October and December 2007, February through May 2008, and in July 2008. March through May 2008 was extremely wet with 185% of normal precipitation for this period.

- In 2008, wells 1VS, 2S, 2VS, 3S, 3VS, 4VS, 6VS, 7S, 8S, 9S, 10S, 11S, 12S, and 15S satisfied wetland hydrology criteria for greater than 5% of the growing season. Furthermore, wells 1VS, 2S, 2VS, 3S, 3VS, 4VS, 9S, 10S, and 11S satisfied wetland hydrology criteria for greater than 12.5% of the growing season.

- Data from gauge A showed that water-level elevation was at or above 114.0 m (374.0 ft) for greater than 5% of the growing season and for greater than 12.5% of the growing season. Furthermore, gauge B showed water levels at or above 112.5 m (369.1 ft) for greater than 5% and 112.4 m (368.8 ft) for greater than 12.5% of the growing season. Gauge C showed water levels above 111.8 m (366.8 ft) for greater than 5% of the growing season and for greater than 12.5% of the growing season.

- Wetland hydrology areas were refined through observations of standing water at the site. Many small areas of persistent ponding were delineated using a GPS during site visits during the early growing season and included in the wetland hydrology estimate.

PLANNED FUTURE ACTIVITIES

- Additional wells will be installed in Fall 2008.
- Water-level monitoring is expected to continue through 2012 or until no longer required by IDOT.

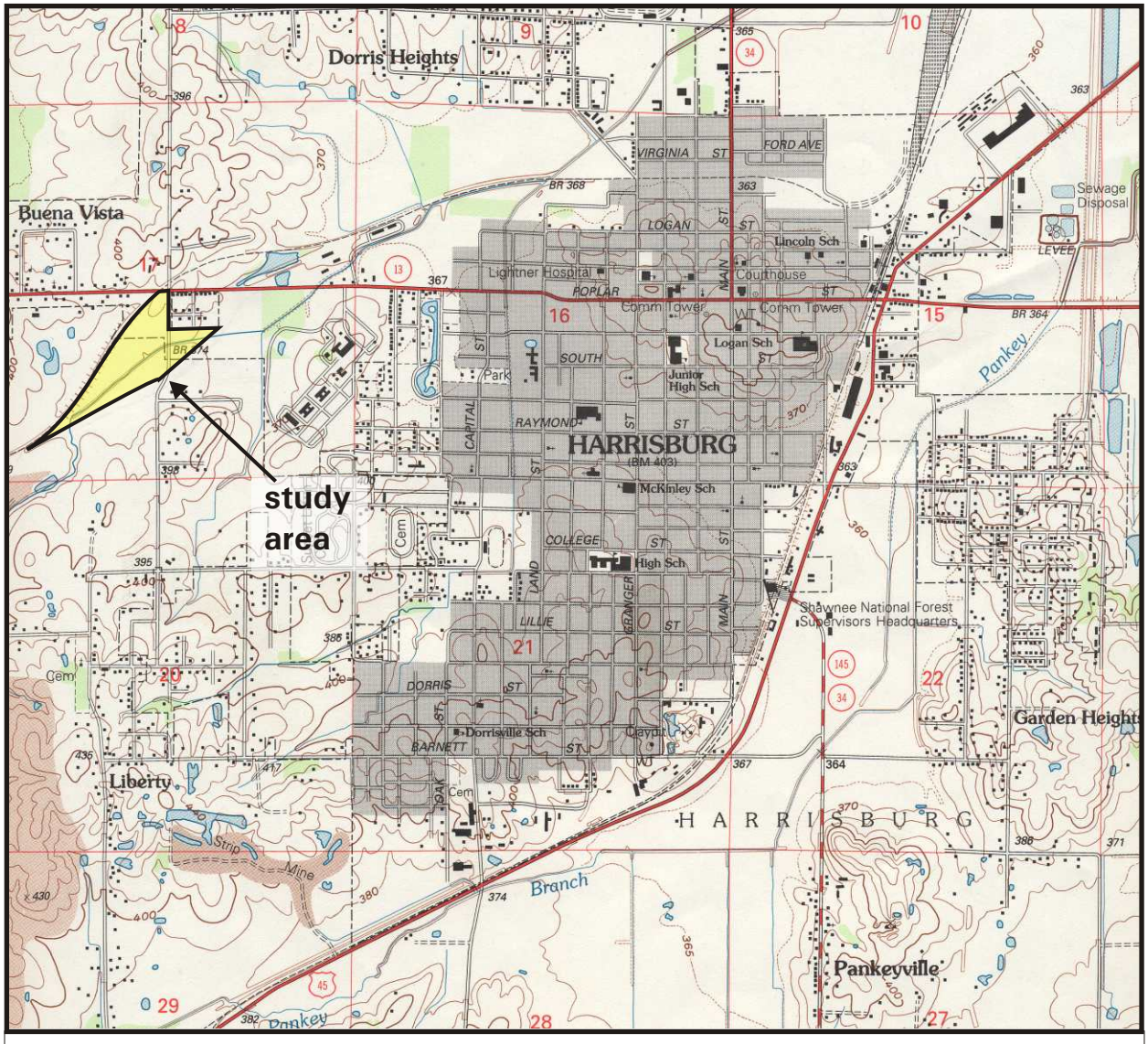
Harrisburg, Site 2 Wetland Compensation Site

(FAP 857)

General Study Area and Vicinity

from the USGS Topographic Series, Harrisburg, IL 7.5-minute Quadrangle (USGS 1996)

contour interval is 5 feet

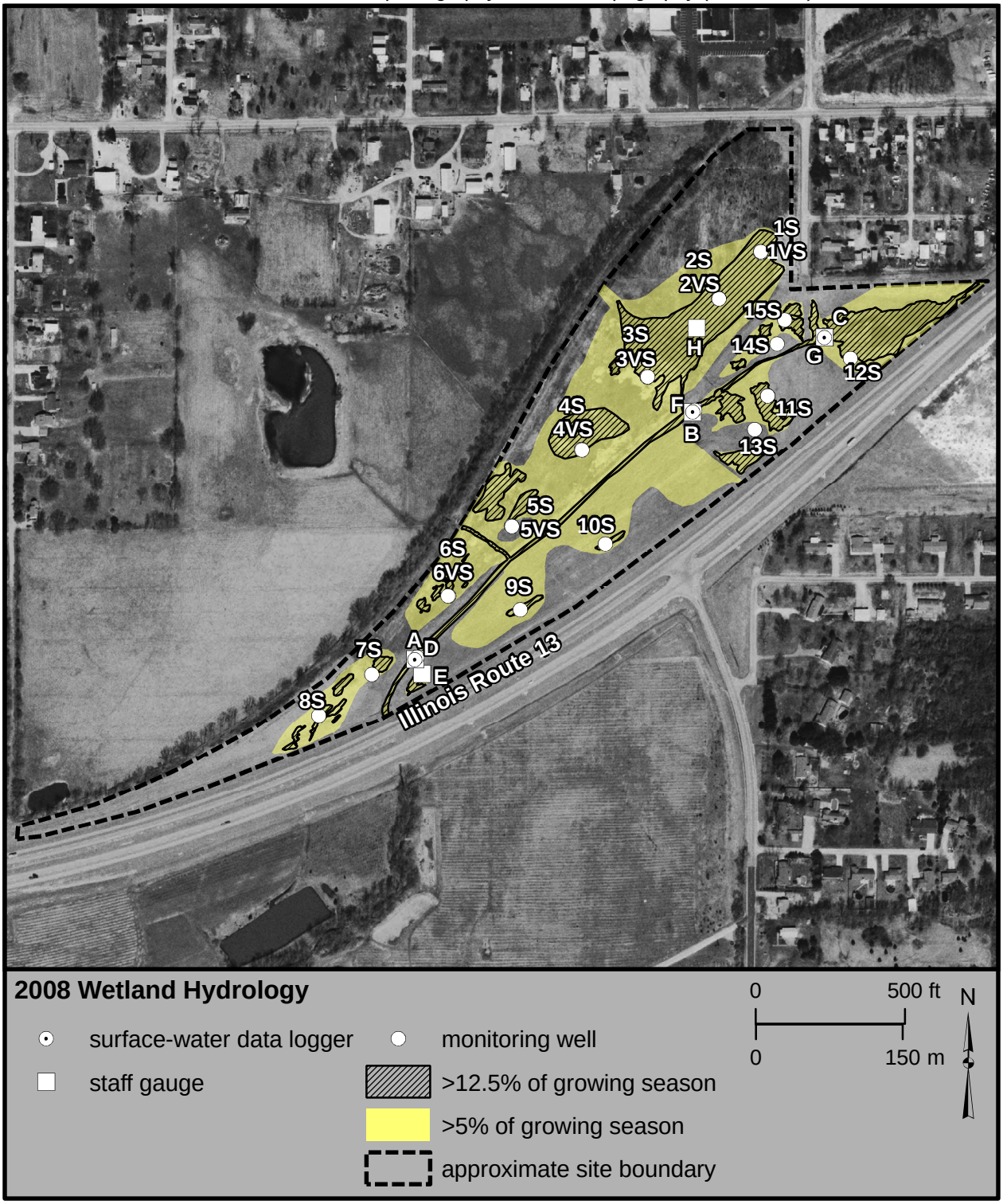


Harrisburg, Site 2 Wetland Compensation Site
(FAP 857)

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and September 1, 2008

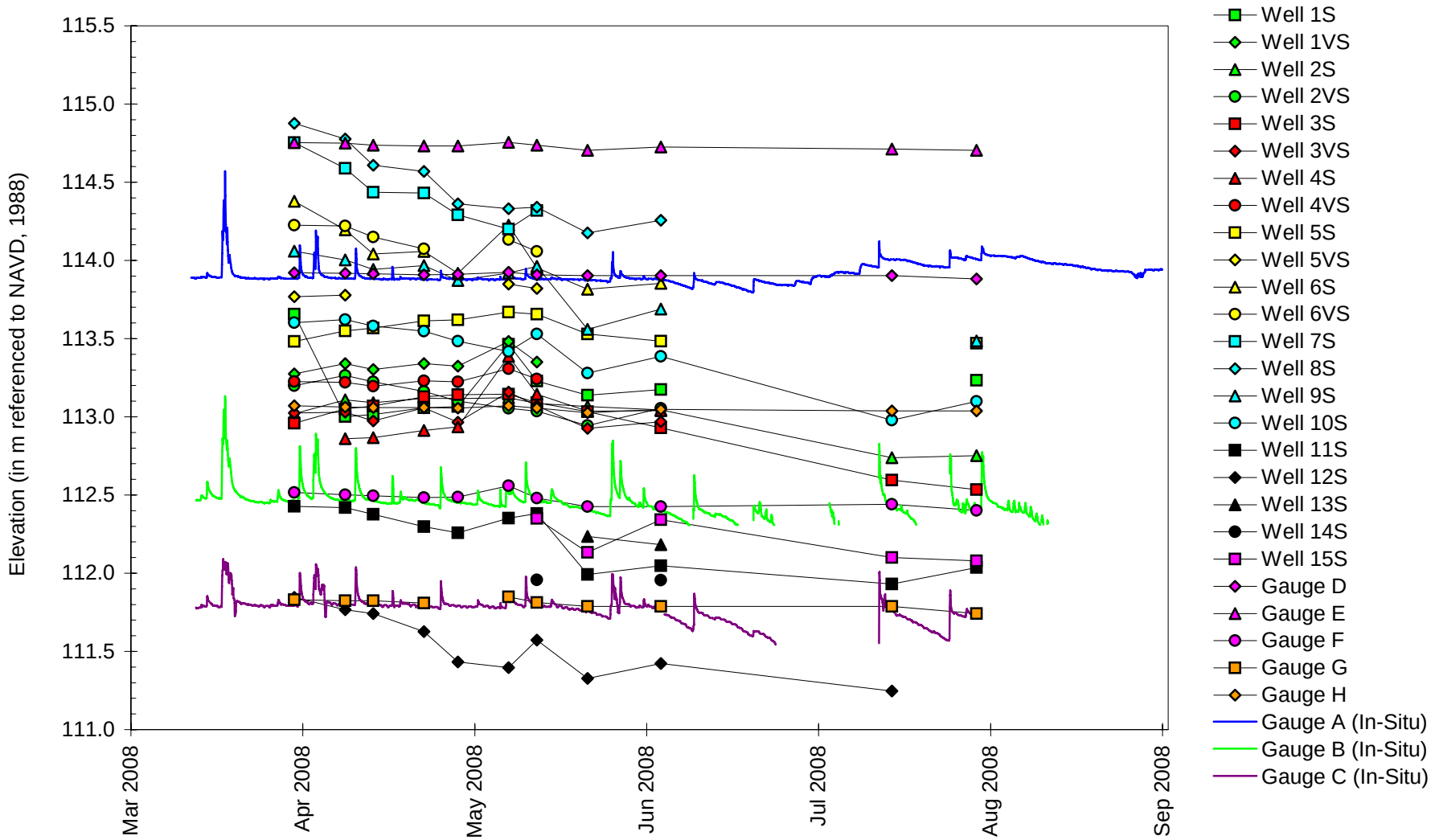
map based on USGS digital orthophotograph Harrisburg NW quarter quadrangle
from 3/17/2005 aerial photography and ISGS topography (ISGS 2006)



Harrisburg, Site 2 Wetland Compensation Site

March 12, 2007 to September 1, 2008

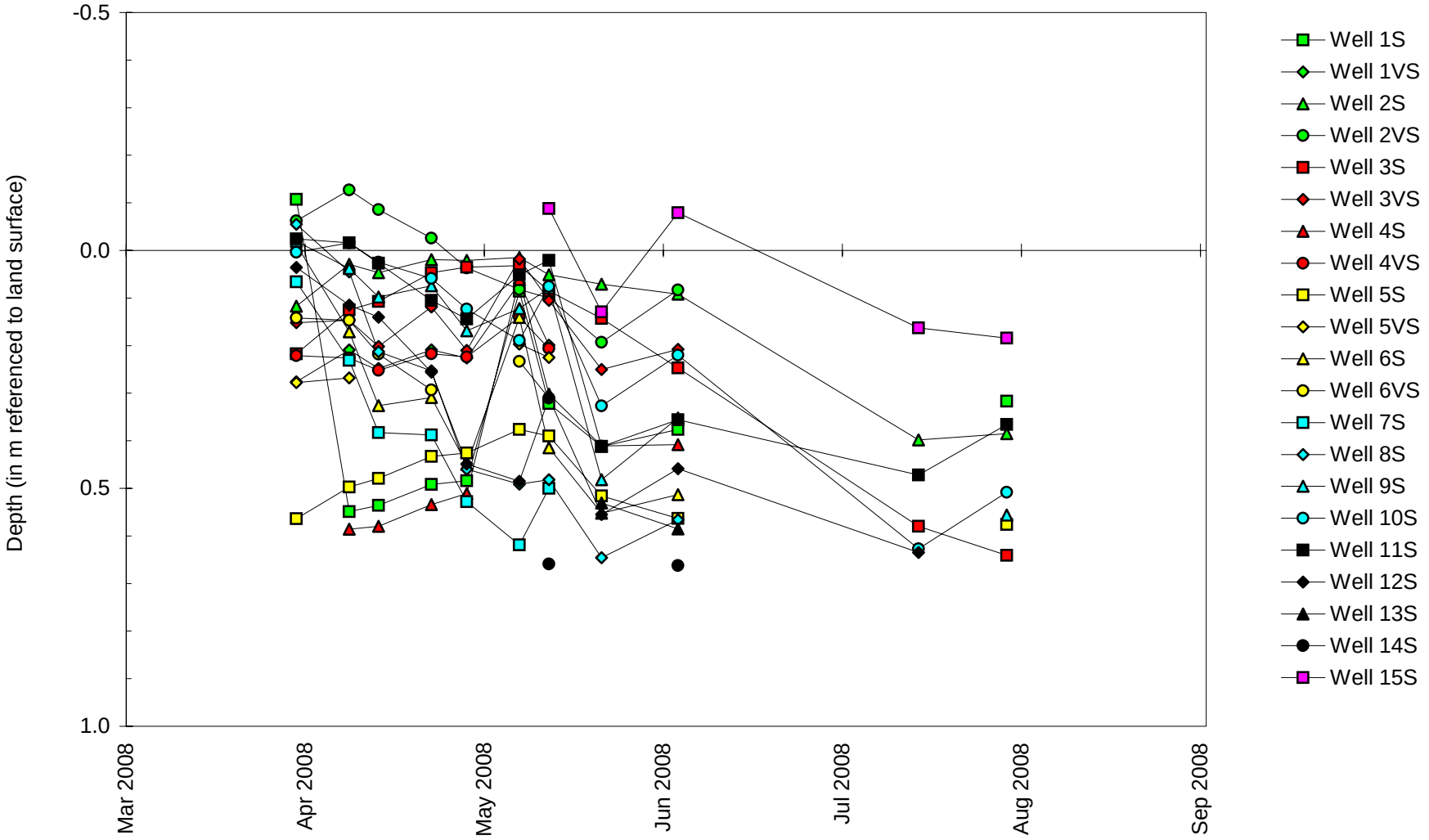
Water-Level Elevations



Harrisburg, Site 2 Wetland Compensation Site

March 12, 2008 to September 1, 2008

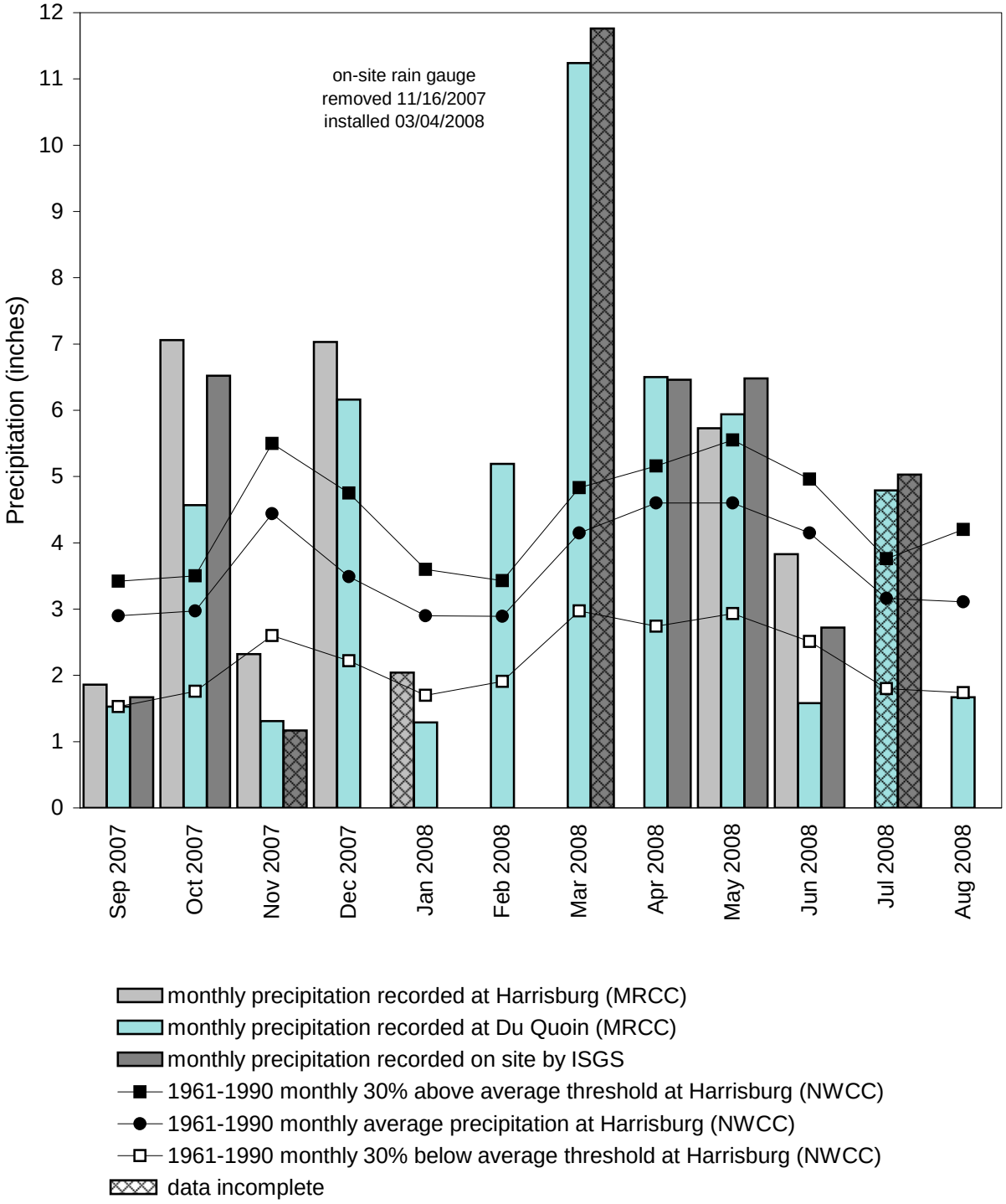
Depth to Water



Harrisburg, Site 2 Wetland Compensation Site

September 2007 through August 2008

Total Monthly Precipitation Recorded On Site and at the Harrisburg, IL and Du Quoin, IL Weather Stations



Graph last updated October 7, 2008