ANNUAL REPORT FOR ACTIVE IDOT WETLAND MITIGATION AND HYDROLOGIC MONITORING SITES

September 1, 2010 through August 31, 2011

James J. Miner
Jessica R. Ackerman
Steven E. Benton
Kathleen E. Bryant
Melinda C. Campbell
Keith W. Carr
Adrianne K. M. Knight
Jessica L. B. Monson
Eric T. Plankell
Geoffrey E. Pociask

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

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Bureau of Design and Environment, Wetlands Unit
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Springfield, Illinois 62764-0002

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Illinois State Geological Survey
Prairie Research Institute
University of Illinois at Urbana-Champaign

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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 sites being monitored for IDOT under grant IDOT 2011-05575, including current and potential wetland mitigation and bank sites. 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 and its online updates (Environmental Laboratory 1987), hereafter collectively referred to as the 1987 Manual, as well as areas meeting wetland hydrology criteria as outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (U.S. Army Corps of Engineers 2010), hereafter referred to as the 2010 Midwest Region Supplement. Additional site 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 23 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 field instruments such as wells and stage gauges, 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, 2010 through August 31, 2011, at IDOT's request, except where noted.

METHODS

The primary purpose of this report is to present the area within each wetland mitigation site that satisfies the wetland hydrology criteria listed in the 1987 Manual and in the 2010 Midwest Region Supplement. Both methods are used to delineate areas satisfying wetland hydrology criteria to compare results and because either may be applicable. However, to be a wetland, an area must also satisfy soils and vegetation criteria that are assessed by the Illinois Natural History Survey (INHS), who will combine the hydrologic data presented in this report with vegetation and soils data they collect, determine the total wetland area of each mitigation 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 using the 1987 Manual, or a minimum of 14 consecutive days when using the 2010 Midwest Region Supplement. 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, especially where soil and/or vegetation data are inconclusive or slow to respond after site construction activities. To assist in proper characterization of wetland mitigation sites, this report shows areas that are inundated or saturated at least 5% or 12.5% of the growing season, according to the 1987 Manual. Areas satisfying wetland hydrology criteria in the 2010 Midwest Region Supplement (14 consecutive days during the growing season) are also shown for comparison. 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 2011). In the 1987

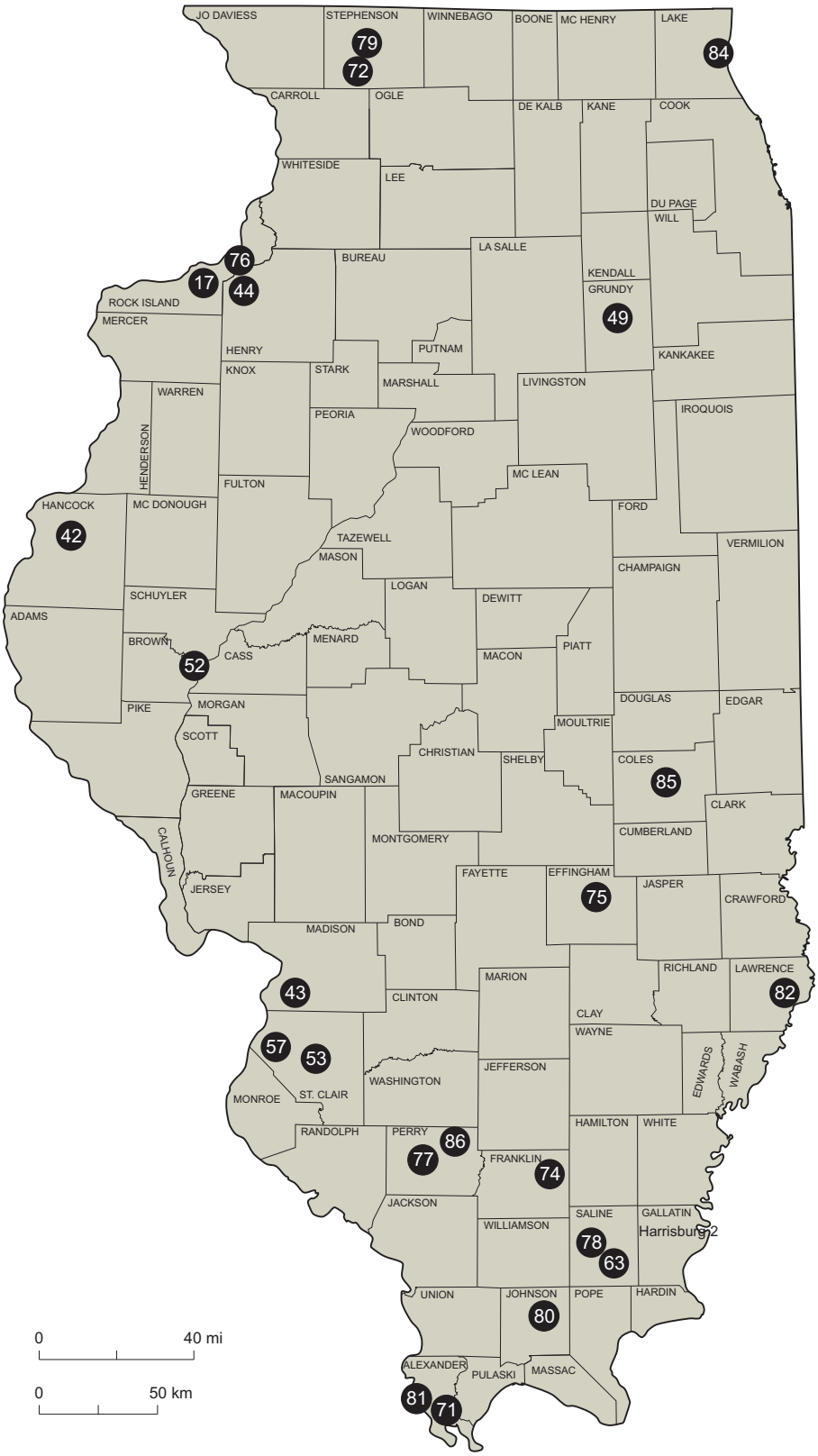

Figure 1 General locations of sites monitored by ISGS for IDOT between September 1, 2010 and August 31, 2011. Numbers indicate ISGS project numbers and are explained in Table 1.

ISGS #	Site Name Route # FAP # Sequence #
17	Milan Beltway, Airport Road Wetland Mitigation Site FAU 5822 Sequence #67
42	Hancock County near Carthage Wetland Mitigation Site IL 336 FAP 315 Sequence #235
43	Eckmann/Bischoff Wetland Mitigation Site FAP 14 Sequence #27
44	Milan Beltway, Green Rock Wetland Mitigation Site FAU 5822 Sequence #67
49	Morris Wetland Mitigation Bank Sequence #1306
52	La Grange Wetland Mitigation Bank Sequence #9579
53	Fairmont City Potential Wetland Mitigation Site FAP 14 Sequence #27
57	Former Tiernan Property Potential Wetland Mitigation Site FAP 14 Sequence #27
63	Harrisburg Wetland Mitigation Site US 45 FAP 332 Sequence #90
71	Tamms Wetland Mitigation Site IL 127 FAS 1907 Sequence #1026
72	Freeport Bypass West Wetland Mitigation Site 6W US 20 FAP 301 Sequence #10487
74	Sugar Camp Creek Wetland and Stream Mitigation Bank Sequence #9282
75	Green Creek Wetland Mitigation Site IL 32/33 FAP 774 Sequence #12505
76	Milan Beltway, Rock Island Wetland Mitigation Site FAU 5822 Sequence #67
77	Pyramid Site EC25 Wetland Mitigation Site Pyatts Blacktop FAS 864 Sequence #9778
78	Harrisburg, Site 2 Wetland Mitigation Site IL 14 FAP 857 Sequence #547
79	Former Weber Property Wetland Mitigation Site US 20 FAP 301 Sequence #10487
80	Max Creek Wetland Mitigation Site IL 147 FAS 932 Sequence #8717A
81	East Cape Girardeau Wetland Mitigation Site IL 146 FAP 312 Sequence #633A
82	Lawrence County Potential Wetland Mitigation Bank Sequence #14912
84	North Chicago Wetland Mitigation Site IL 56/IL 47 FAP 326 Sequence #13406
85	Coles County Wetland Mitigation Site TR 1000N and TR 41 Sequence #1273
86	Swan Road Wetland Mitigation Site TR 222 Sequence #12315

Table 1 ISGS project numbers and active IDOT wetland mitigation sites monitored by ISGS between September 1, 2010 and August 31, 2011.

Manual, the growing season is defined as the time period between the last occurrence of 28°F (-2.2°C) air temperatures in spring and 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. This method is used when determining the areas that satisfy wetland hydrology criteria under the 1987 Manual. The 2010 Midwest Region Supplement provides different methods for determining the growing season. While the above method is allowable, one of the two following site-specific methods is preferred. The first method relies on observations of vegetation growth and development, and defines the start of the growing season as when at least two different species of non-evergreen vascular plants begin to grow (colloquially referred to as "green-up"), as evidenced by various features such as emergence of herbaceous plants from the ground, bud burst, emergence or opening of flowers, and others. The second method relies on soil temperatures, with the growing season being the period when soil temperatures at a depth of 30 cm (1 ft) are continuously above 41°F (5°C). Site-specific observations of soil temperatures and vegetation were collected by field staff. The earliest date when either methodology was satisfied was determined to be the beginning of the growing season, and was used when determining areas that satisfy wetland hydrology criteria under the 2010 Midwest Region Supplement. Soil temperatures were collected by field staff using analog bimetal thermometers at a depth of 30 cm (12 in.) during site visits in 2011, and some sites were equipped with digital soil-temperature data loggers for continuous readings. Also, the Illinois State Water Survey operates climate stations throughout the state that measure soil temperatures at 20 cm (8 in.), and those data were obtained through the MRCC and used to supplement on-site readings as needed.

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 observations of saturation, small-scale topographic features, vegetation, soils, and other site features. The areas that satisfied wetland hydrology criteria were outlined and calculated (in hectares [ha] and acres [ac]) using the ArcGIS geographic information systems program. Alternatively, the area satisfying wetland hydrology criteria was plotted on the best available base map, then measured with a Tamaya Super Planix B digital planimeter.

The error of each area measurement will vary widely 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 were most often aerial imagery from the USGS National Aerial Photography Program (NAPP) or from the USDA Farm Service Agency National Agricultural Imagery Program (NAIP), but may include as-built surveys (done both by IDOT and ISGS), construction plans, U.S. Geological Survey (USGS) 7.5-minute topographic maps, and unrectified aerial photographs. Given the many potential sources of error, estimates of the amount of error are difficult to calculate and are not included. Site instruments were located using survey-grade GPS devices or a total station.

Water-level data ordinarily were collected monthly throughout the year, and biweekly during March through May, when highest water levels generally are observed in Illinois. As needed, biweekly readings were begun as early as February and/or extended into June and collected outside of the spring period during periods of flooding or heavy precipitation. Weekly readings were made at some sites to improve or check accuracy.

In 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 29 days using the methods of the 1987 Manual. 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. The same methods were used to determine duration of inundation or saturation to satisfy the 14-day requirement of the 2010 Midwest Region Supplement.

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 well construction and hydrogeologic setting, 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 they are not listed or discussed in the text of this report.

Graphs for each site show water-level elevations at wells and surface-water instruments, and depth-to-water below land surface at each well. The graphs follow the summary text for each site, and there may be multiple charts for each site. Depths are shown as negative values when water levels are above land surface. Elevations are shown relative to the North American Vertical Datum (NAVD) of 1988 unless otherwise labeled. 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).

Multiple data loggers were used to monitor water levels continuously at many sites. Several types of instruments were used, each made by a different manufacturer. Each type of instrument had 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 caused 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 Davis 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 unheated and therefore are not appropriate for recording winter precipitation, monthly precipitation data obtained from MRCC are also shown from climate observation stations that are maintained year-round. The closest weather station with an adequate period of record is used at each site, and additional stations or data collected by

ISGS on site 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 2011) and are all based on a 30-year period, between 1961-1990 or 1971-2000 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 also may be described as above or below "normal" (meaning average or mean).

This document is intended to be a summary of all hydrologic data collected 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.

This material is based upon work supported by the Illinois Department of Transportation under Award No. IDOT 2011-05575. Any opinions, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Illinois Department of Transportation. Publication of this report is authorized by the Director, Illinois State Geological Survey, Prairie Research Institute, University of Illinois Urbana-Champaign.

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

SITE HISTORY

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

- August 2004: Construction of the Milan Bypass began. The wetland mitigation plan was implemented with excavation of the southern portion of the site and the planting of trees.

- 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.

- August 2011: The ISGS was informed by IDOT that post-construction monitoring was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season was estimated to be 8.9 ha (22.0 ac) out of a total area of 8.9 ha (22.0 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 8.9 ha (22.0 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 8.9 ha (22.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the nearby Quad City International Airport weather station in Moline, Illinois, is April 13 and the season lasts 196 days (MRCC 2011); according to the 1987 Manual, 5% of the growing season is 10 days and 12.5% of the growing season is 25 days. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 15 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site.

- Total precipitation during the monitoring period, as recorded at the Quad City International Airport weather station in Moline, Illinois, was 90% of normal and precipitation in Spring 2011 (March through May) was 106% of normal.

- In 2011, all the monitoring wells satisfied wetland hydrology criteria for greater than 5% of the growing season and for greater than 12.5% of the growing season, according to the 1987 Manual. All of the wells also satisfied wetland hydrology criteria for 14 or more

consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Surface-water elevations measured by logger SW1R were at or above 172.16 m (564.86 ft) from April 23 to May 3 (11 days), long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season, and surface-water elevations were at or above 172.11 m (564.69 ft) from April 16 to May 11 (26 days), long enough to satisfy wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Surface-water elevations measured at SW1R were at or above 172.15 m (564.82 ft) from April 20 to May 5 (16 days), long enough to satisfy wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

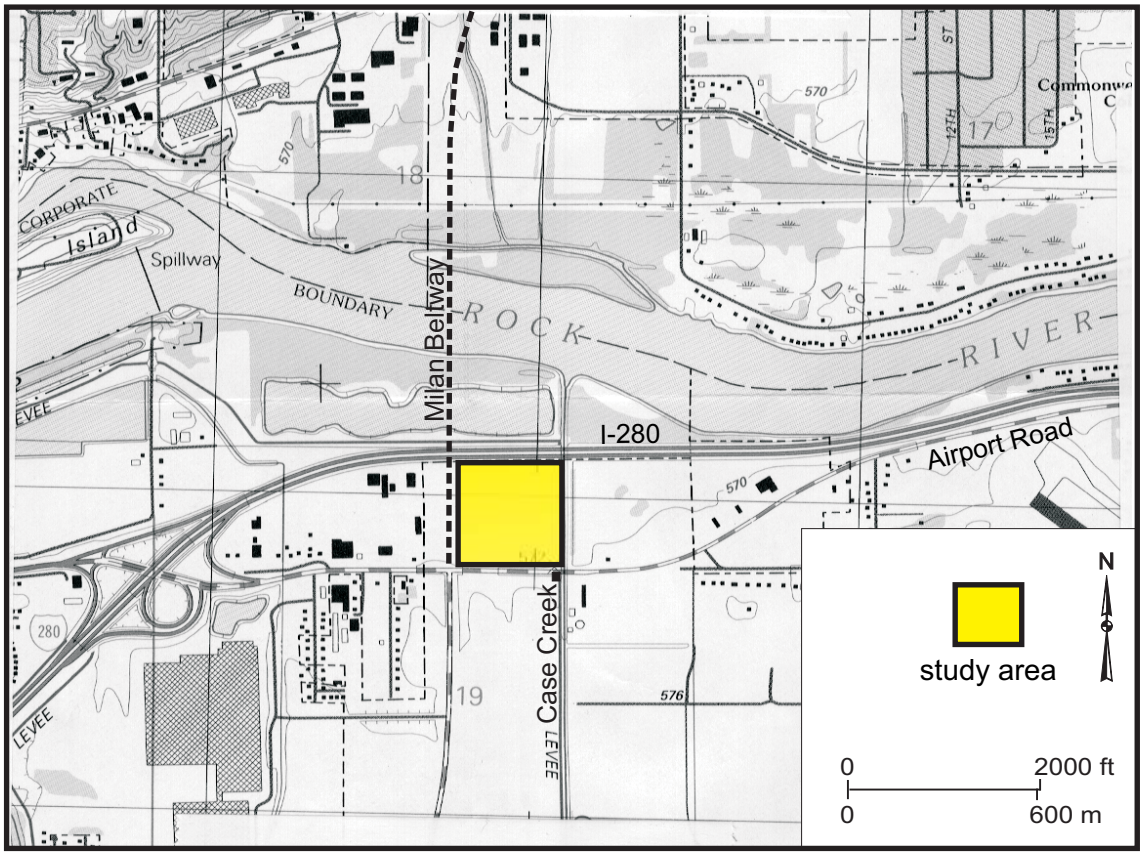
ADDITIONAL INFORMATION

- It was first noted in Fall 2009 that beaver had built a dam upstream of the outlet of the site, though surface-water data collected at the site that year indicate that construction of the dam began earlier in the year. Since the dam was built, the following changes have been observed at the site: the northern half of the site has become semi-permanently to permanently inundated due to the elevated water levels caused by the dam; cattails have colonized the portion of the site that was excavated in 2004, this year forming dense thickets of plants standing more than 8 feet tall; and muskrats have moved onto the site and begun clearing out the cattails, forming open-water areas that are used by waterfowl in the spring as nesting grounds.

Milan Beltway, Airport Road Wetland Mitigation 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

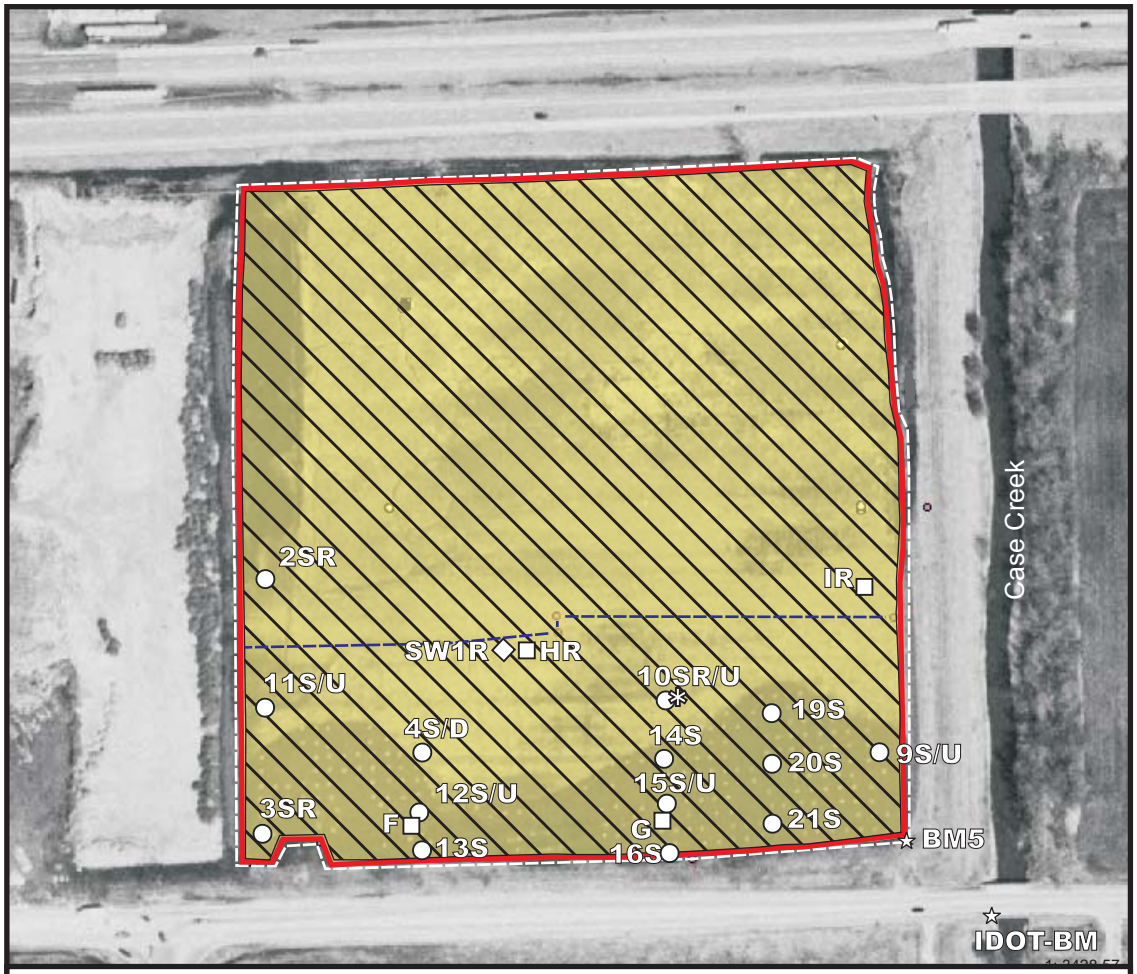


Milan Beltway, Airport Road Wetland Mitigation Site
(FAU 5822)

Estimated Areal Extent of 2011 Wetland Hydrology

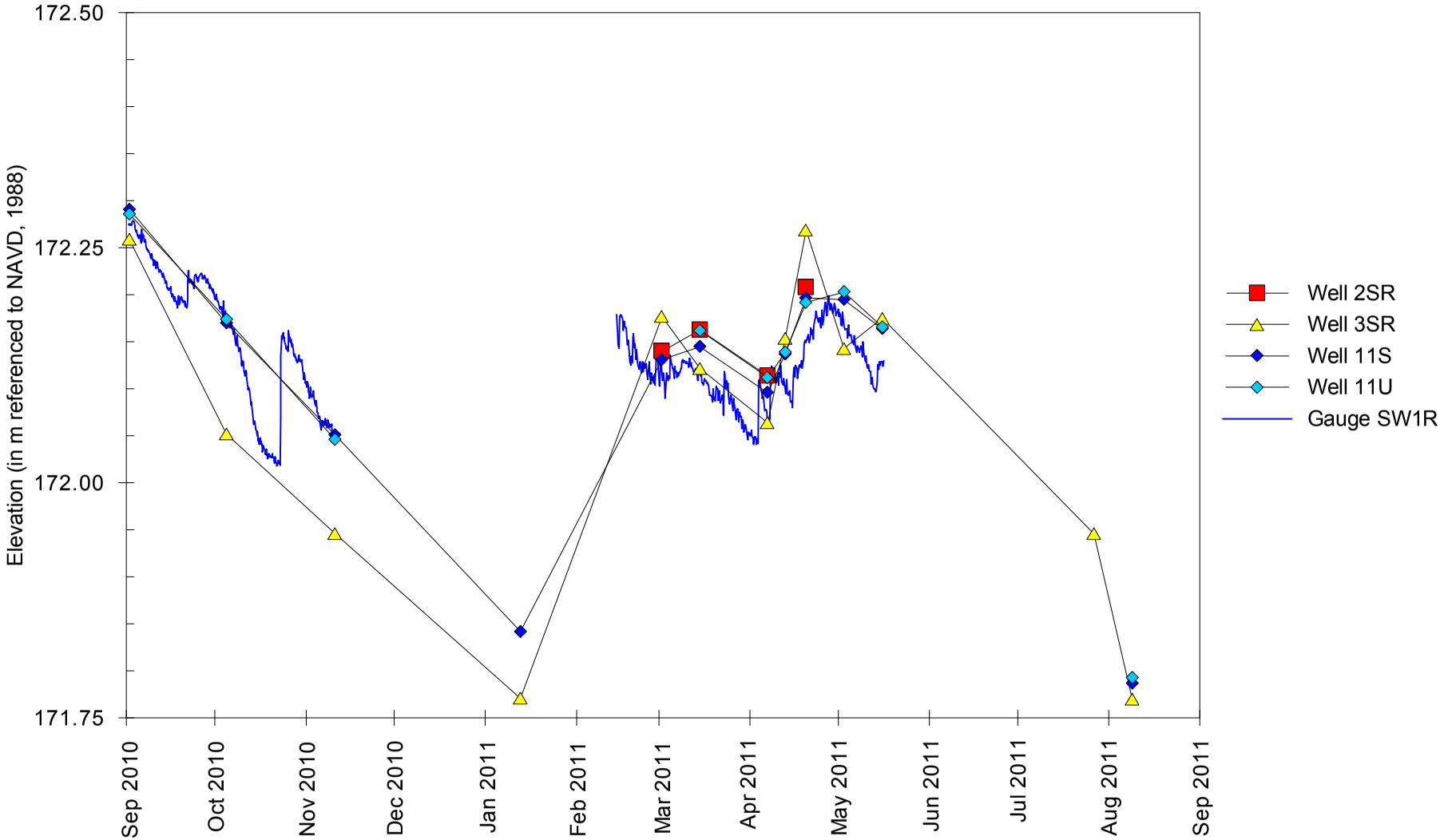
September 1, 2010 through August 31, 2011

Map based on USGS digital orthophotograph, Milan NE quarter quadrangle
from 03/28/2005 aerial photography (ISGS 2005)



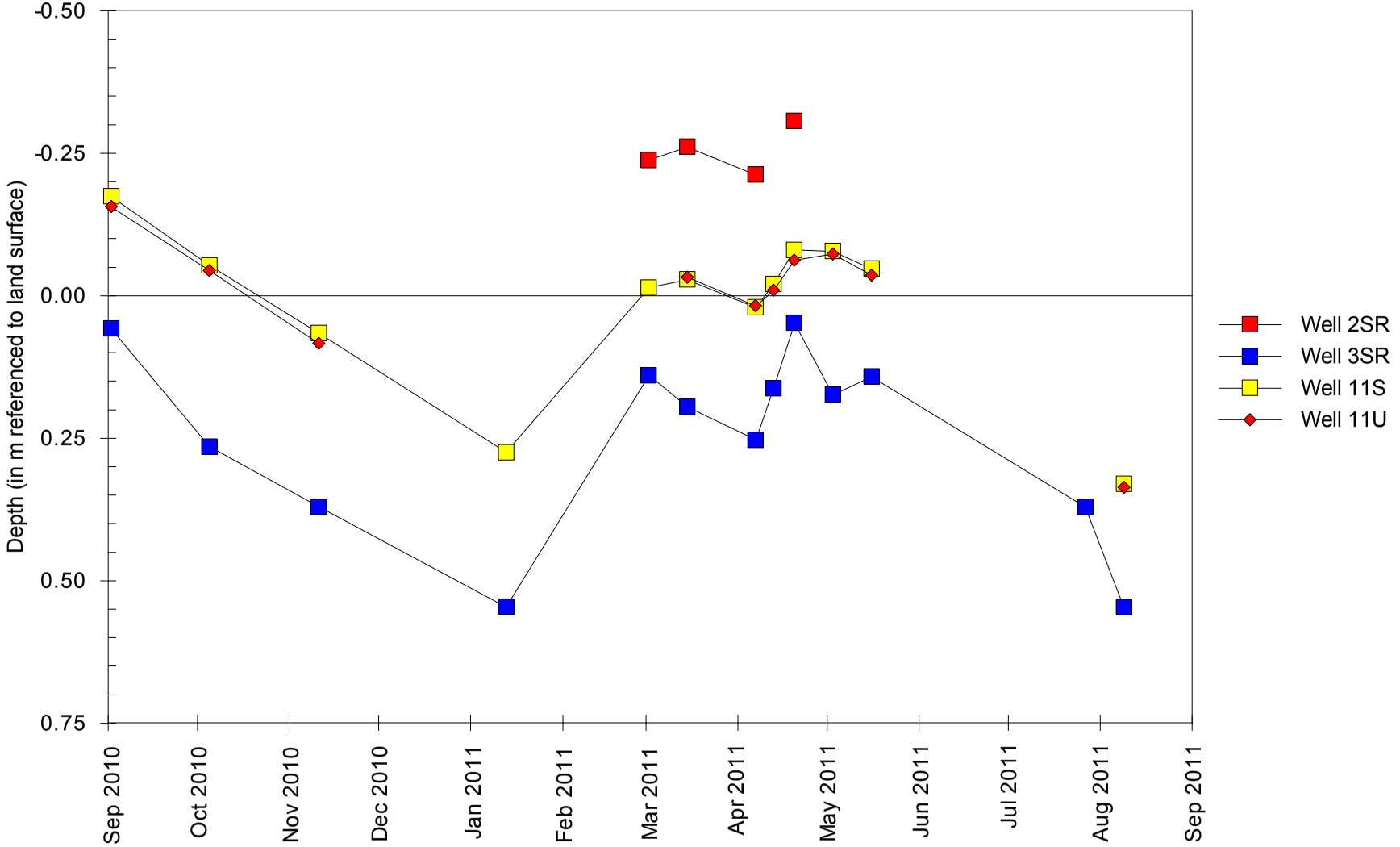
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges



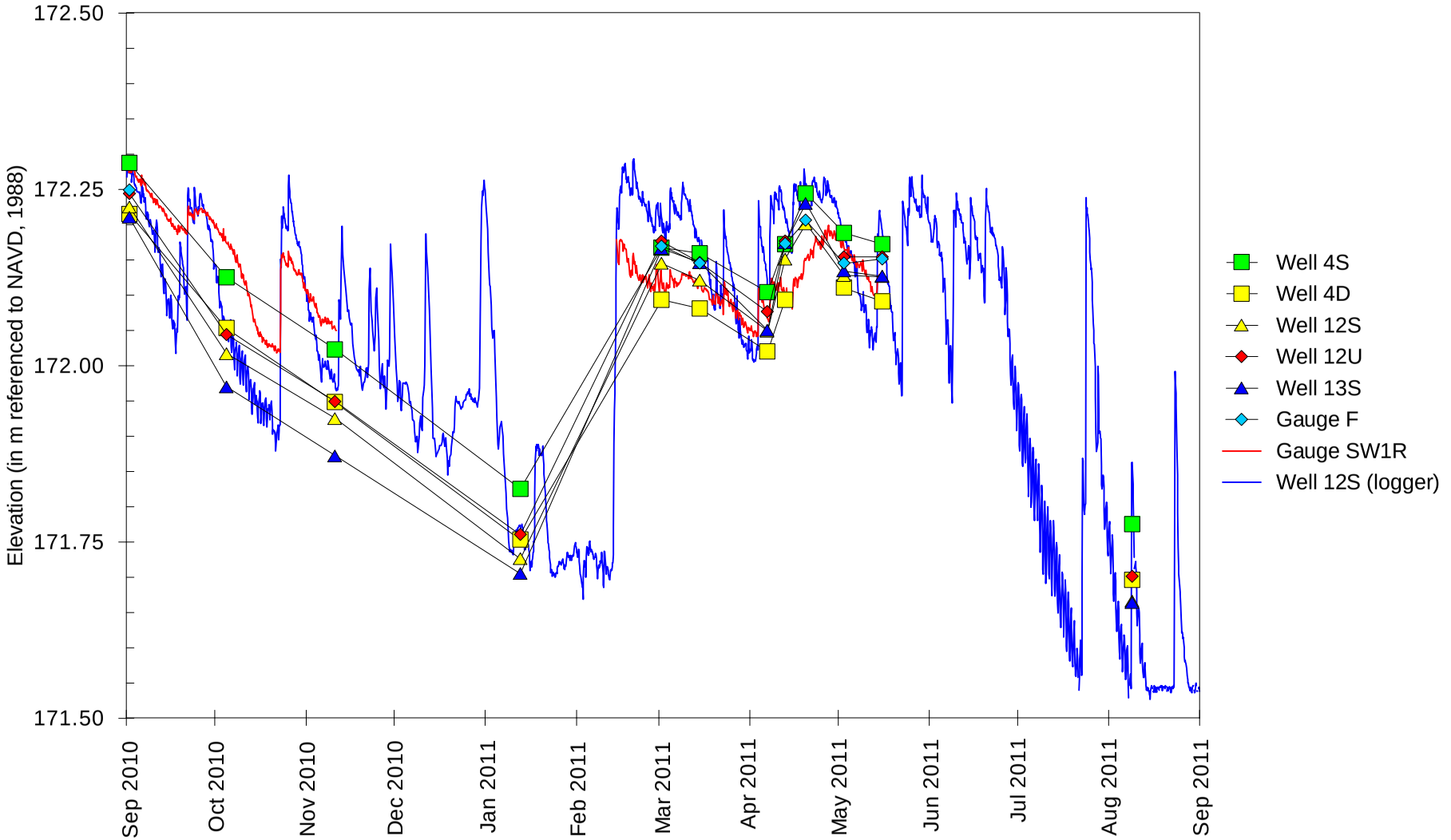
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells



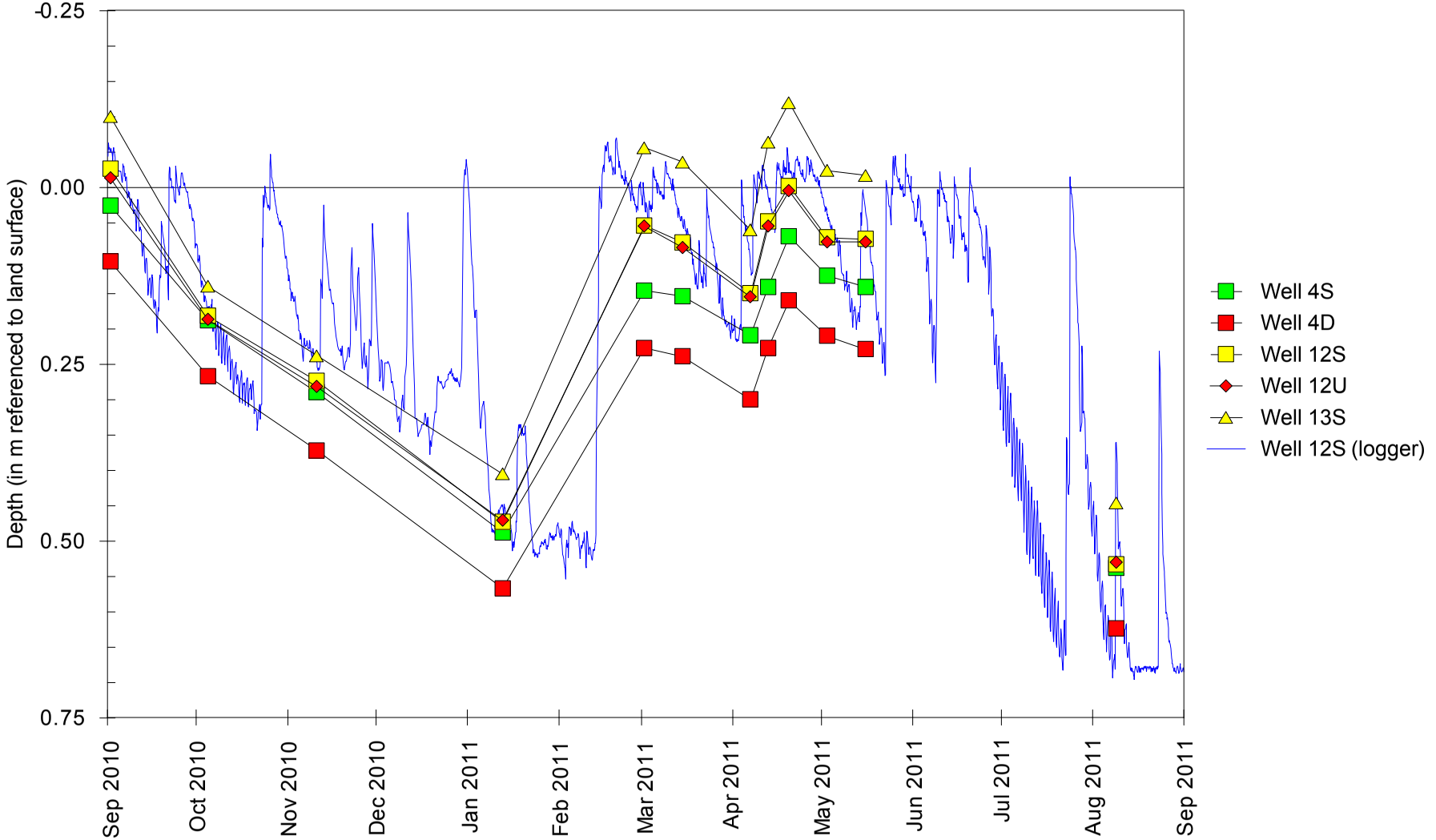
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges



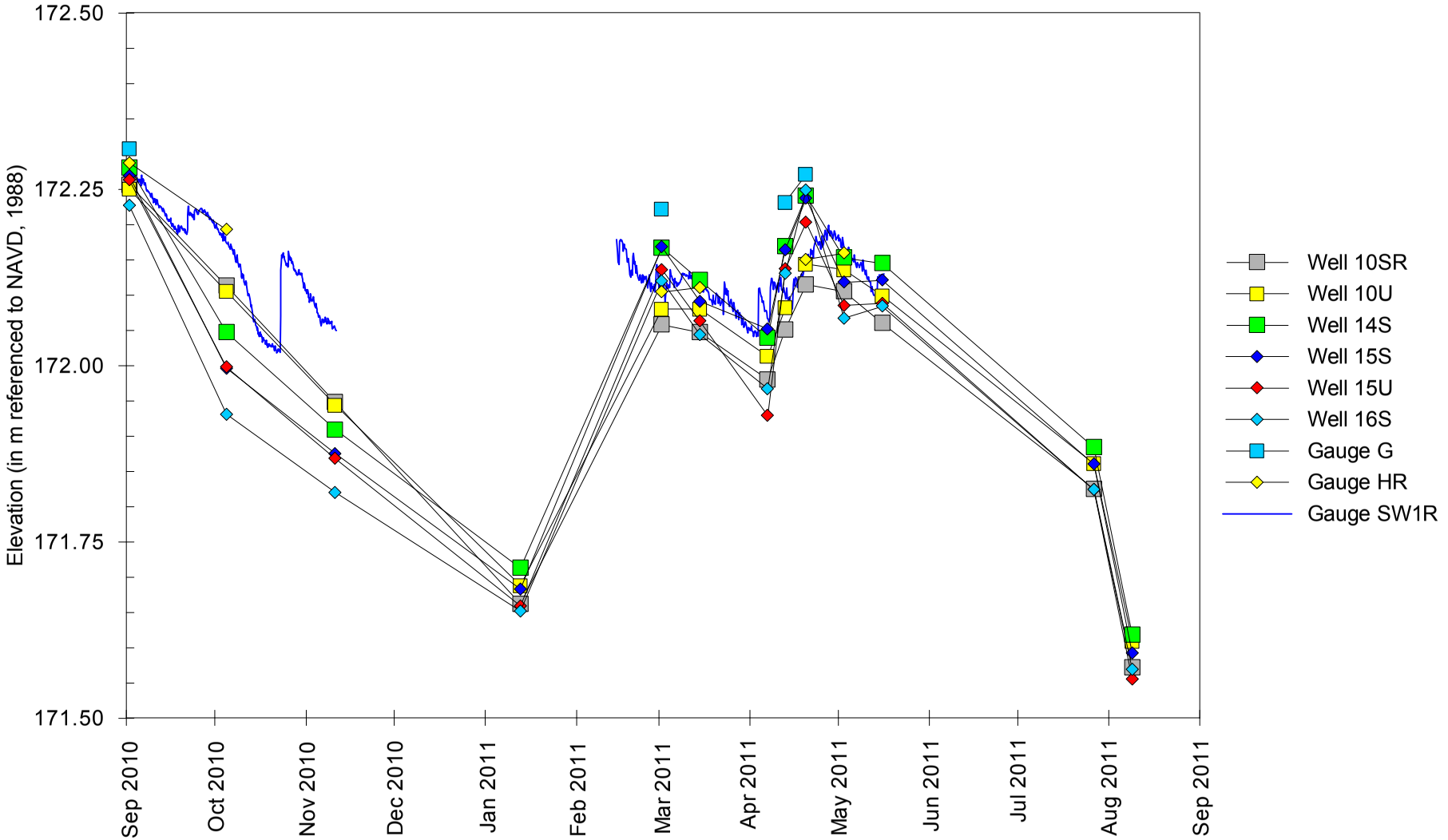
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells



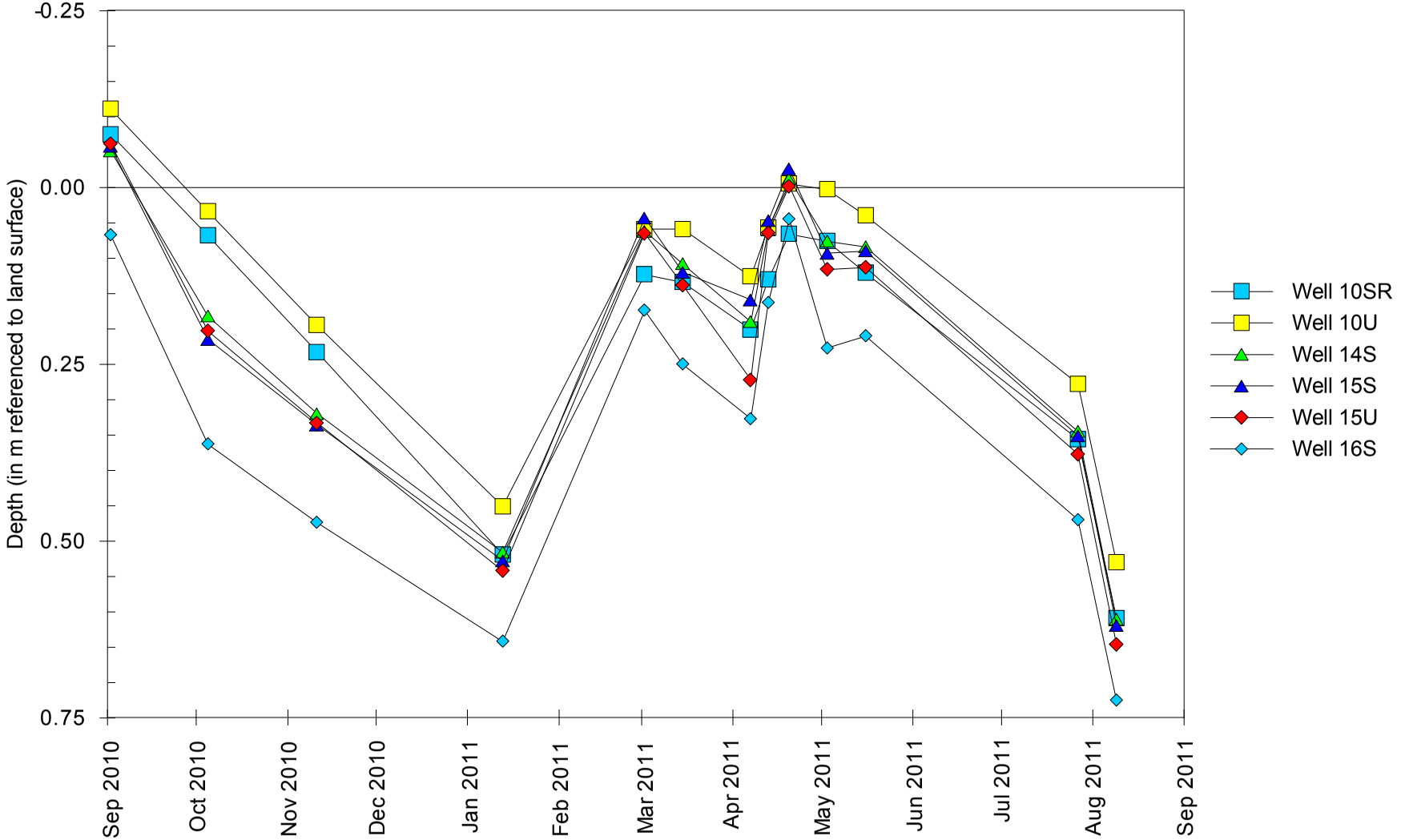
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges



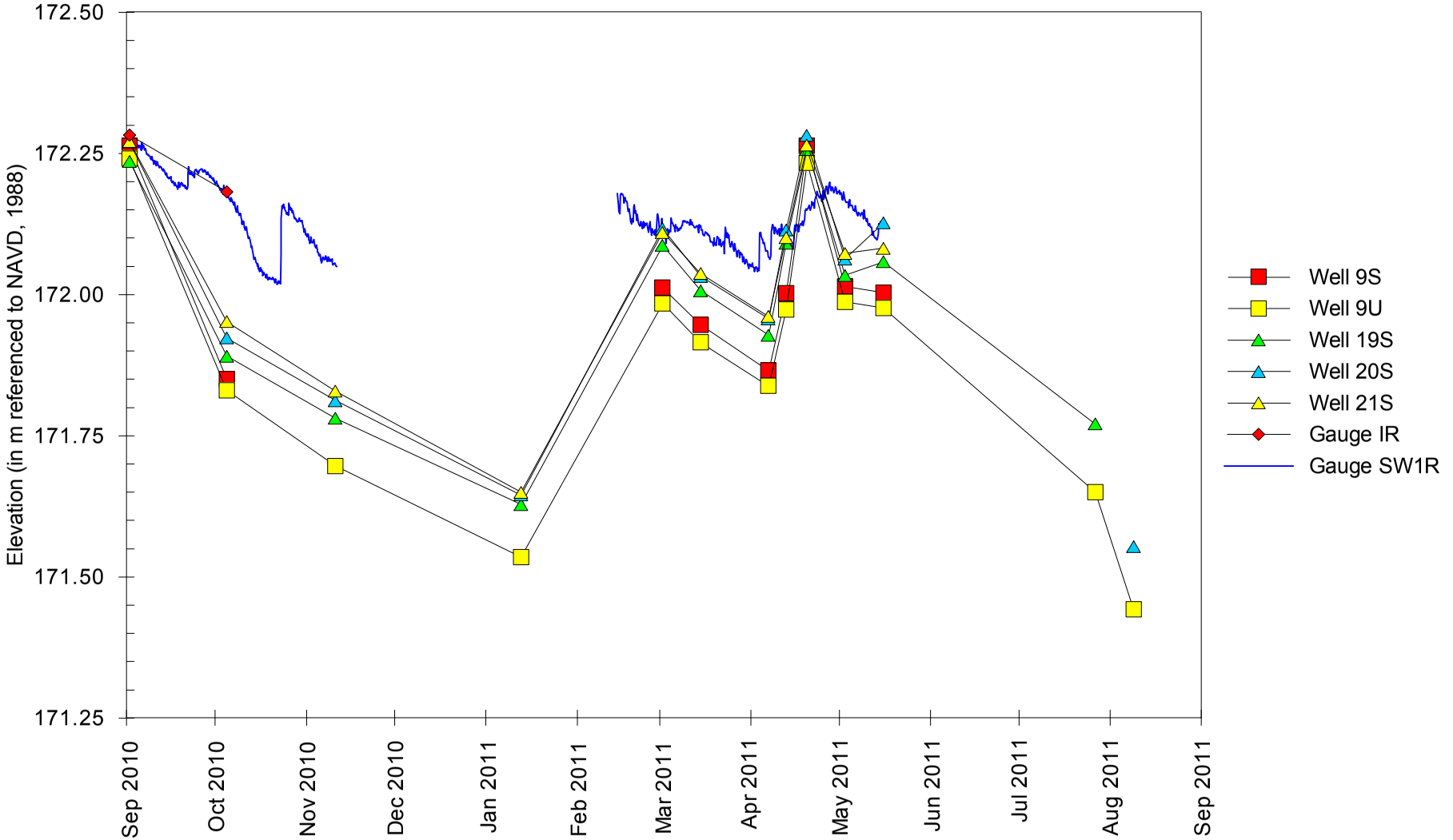
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells



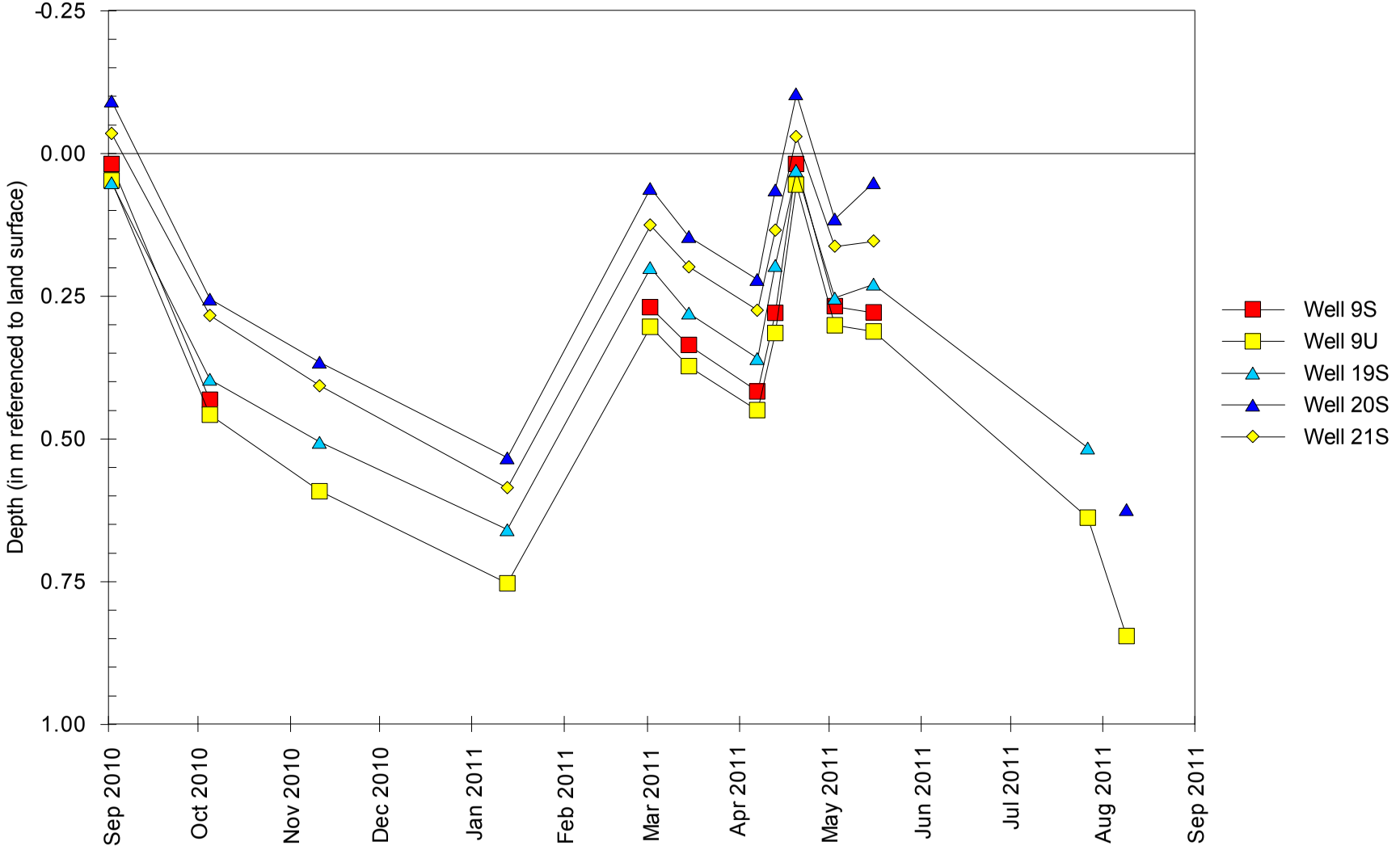
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges



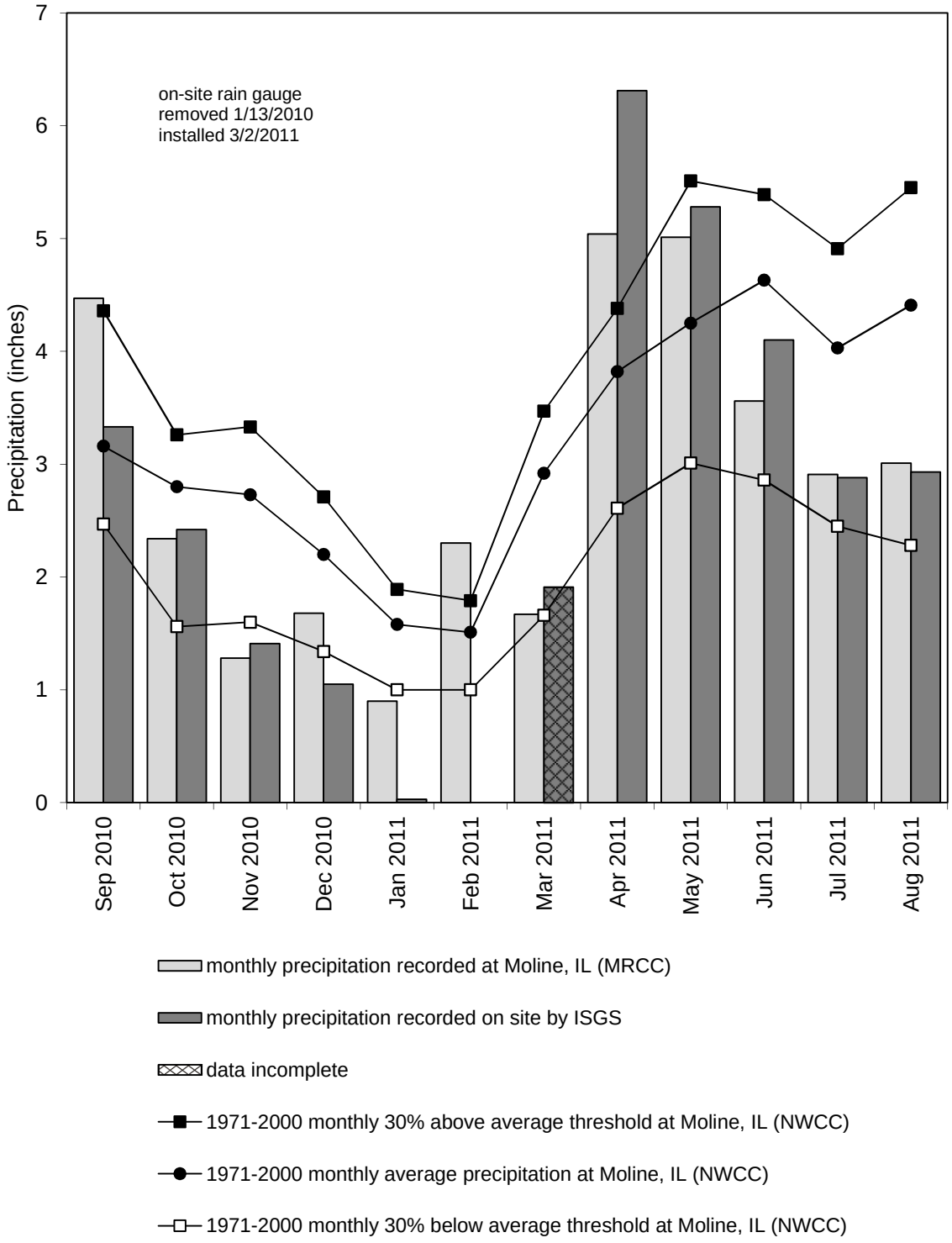
Milan Beltway, Airport Road Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells



Milan Beltway, Airport Road
Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Quad City International Airport, Moline, IL



Graph last updated 10/31/2011

HANCOCK COUNTY NEAR CARTHAGE **ISGS #42**
WETLAND MITIGATION SITE
IL 336
FAP 315
Sequence #235
Hancock County, near Carthage, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Ackerman

SITE HISTORY

- March 1997: The ISGS was tasked by IDOT 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.
- November 2006: The ISGS was tasked by IDOT to perform post-construction monitoring.
- July 2007: Tree planting was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2011 for greater than 5% of the growing season was estimated to be 12.3 ha (30.5 ac) out of a total area of 18.7 ha (46.1 ac), and the area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 6.7 ha (16.5 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 12.0 ha (29.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the La Harpe, Illinois, weather station is April 9 and the season lasts 196 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 14 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site.
- Total precipitation recorded at the Bentley, Illinois, weather station during the monitoring period was 111% of normal, and during Spring 2011 (March through May) it was 84% of normal. The wettest month was June; precipitation was 304% of normal for the month.
- In 2011, water levels measured in soil-zone monitoring wells 1U, 2U, 3U, 4U, 5U, 6U, 7S, 8U, 10S, 11S, 12S, 14S, 16S, 17S, 22S, 23S, 24S, 25S, 26S, 27S, 28S, 29S, 31S, 32S, and 36S satisfied wetland hydrology criteria for greater than 5% of the growing season, according to the 1987 Manual. Water levels measured in soil-zone monitoring wells 1U, 2U, 4U, 5U, 6U, 7S, 8U, 16S, 23S, and 36S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual.

Water levels measured in soil-zone monitoring wells 1U, 2U, 3U, 4U, 5U, 6U, 7S, 8U, 10S, 11S, 12S, 14S, 16S, 17S, 22S, 23S, 24S, 25S, 26S, 28S, 29S, 31S, and 36S satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Surface-water elevations recorded at the Gauge B data logger in June and July reveal that areas of the site at and below 165.70 m (543.66 ft) were inundated long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season, and that areas at and below 165.63 m (543.43 ft) were inundated long enough to satisfy wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Areas of the site at and below an elevation of 165.70 m (543.66 ft) were inundated for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Surface-water elevations recorded at the Gauge E data logger in June reveal that water overflowed the ditch (surface-water elevation $\geq$ 165.7 m [543.7 ft]) long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season, according to the 1987 Manual. Surface-water elevations also reveal that flooding lasted 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

- Stage data recorded at Colmar, Illinois, reveals that there were four flood events during 2011: May 26 through 29, June 15 through 18, June 20 through 23, and June 27 through 30. Surface-water elevations recorded by the Gauge B and Gauge E data loggers reveal that the site was affected by all four flood events, but none were long enough to satisfy any wetland hydrology criteria.

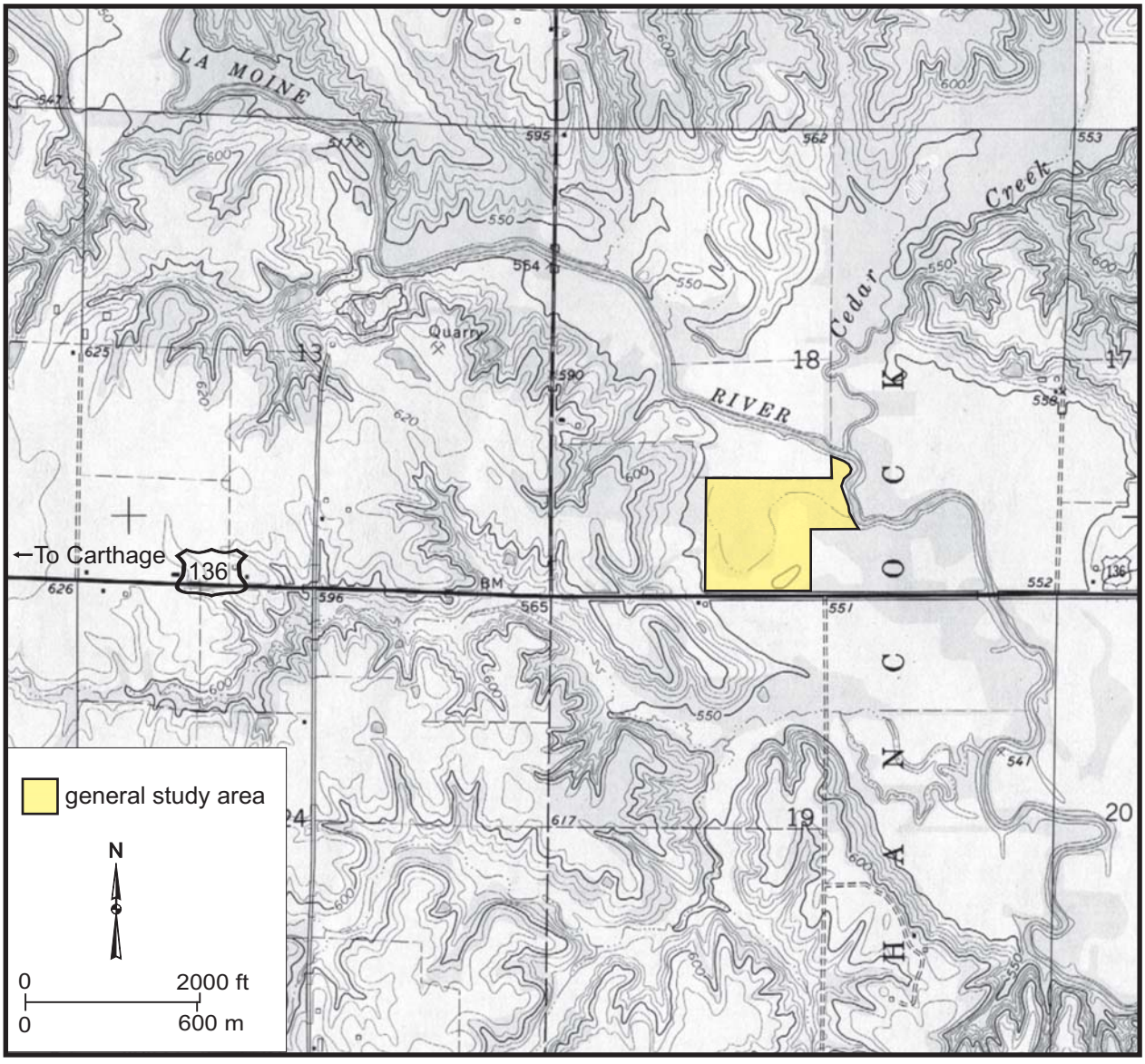
- This is the 5th year of the 5 year post-construction monitoring, which began in Spring 2007.

PLANNED FUTURE ACTIVITIES

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

Hancock County near Carthage
Wetland Mitigation Site
(IL 336, FAP 315)
General Study Area and Vicinity

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

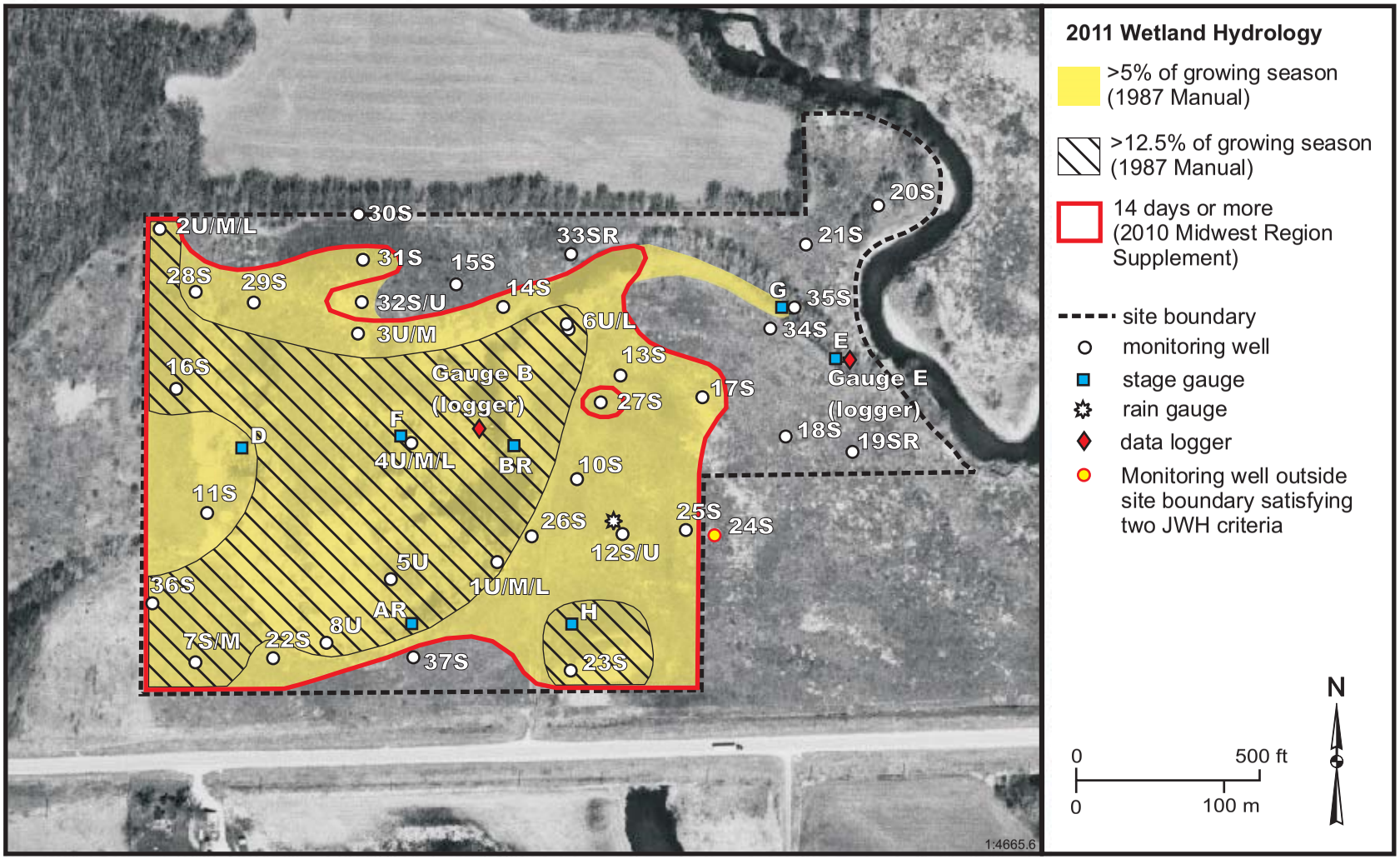


Hancock County near Carthage Wetland Mitigation Site (IL 336, FAP 315)

Estimated Areal Extent of 2011 Wetland Hydrology

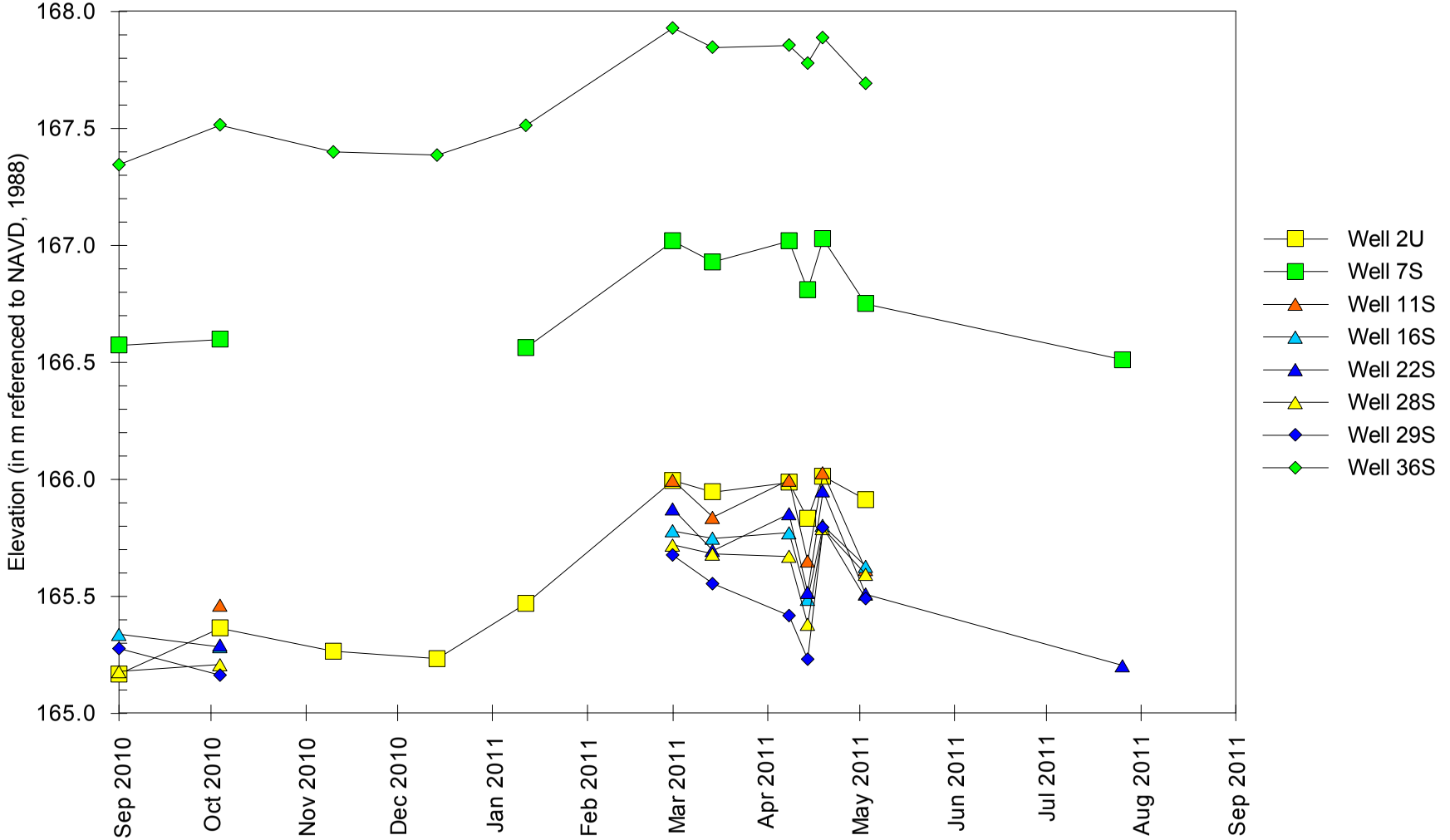
September 1, 2010 through August 31, 2011

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



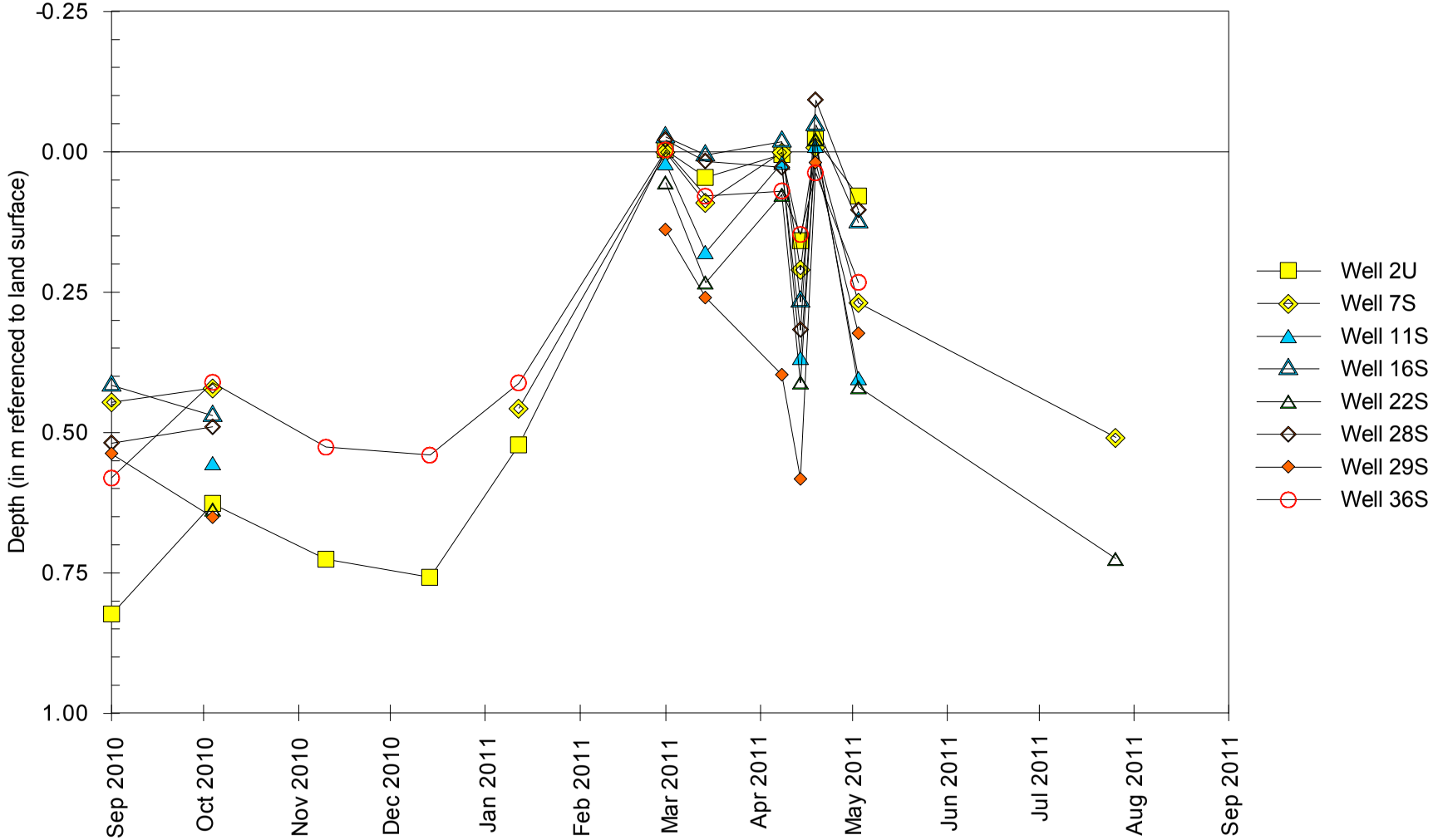
Hancock County near Carthage Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site
September 1, 2010 through August 31, 2011

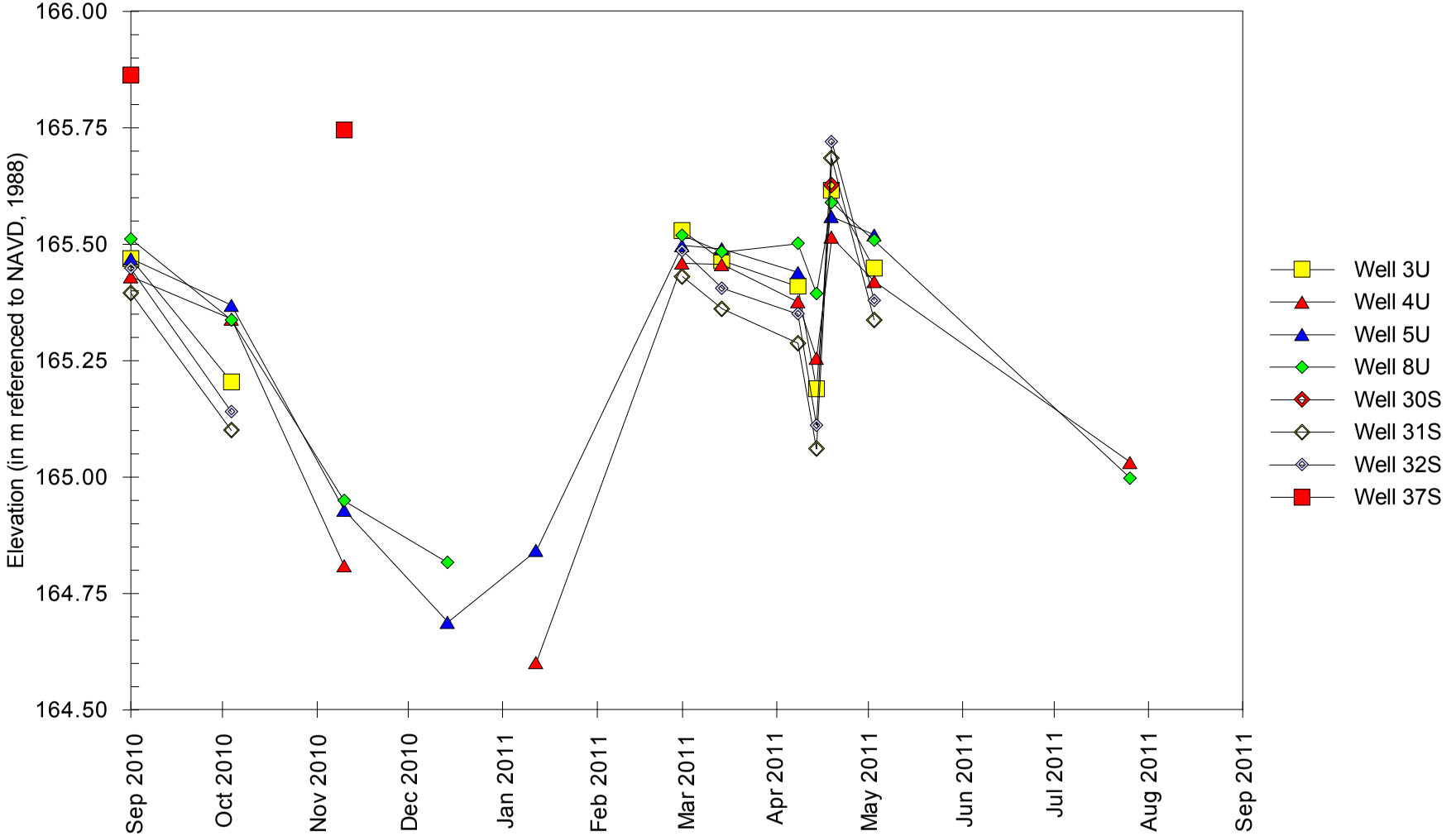
Depth to Groundwater in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

September 1, 2010 through August 31, 2011

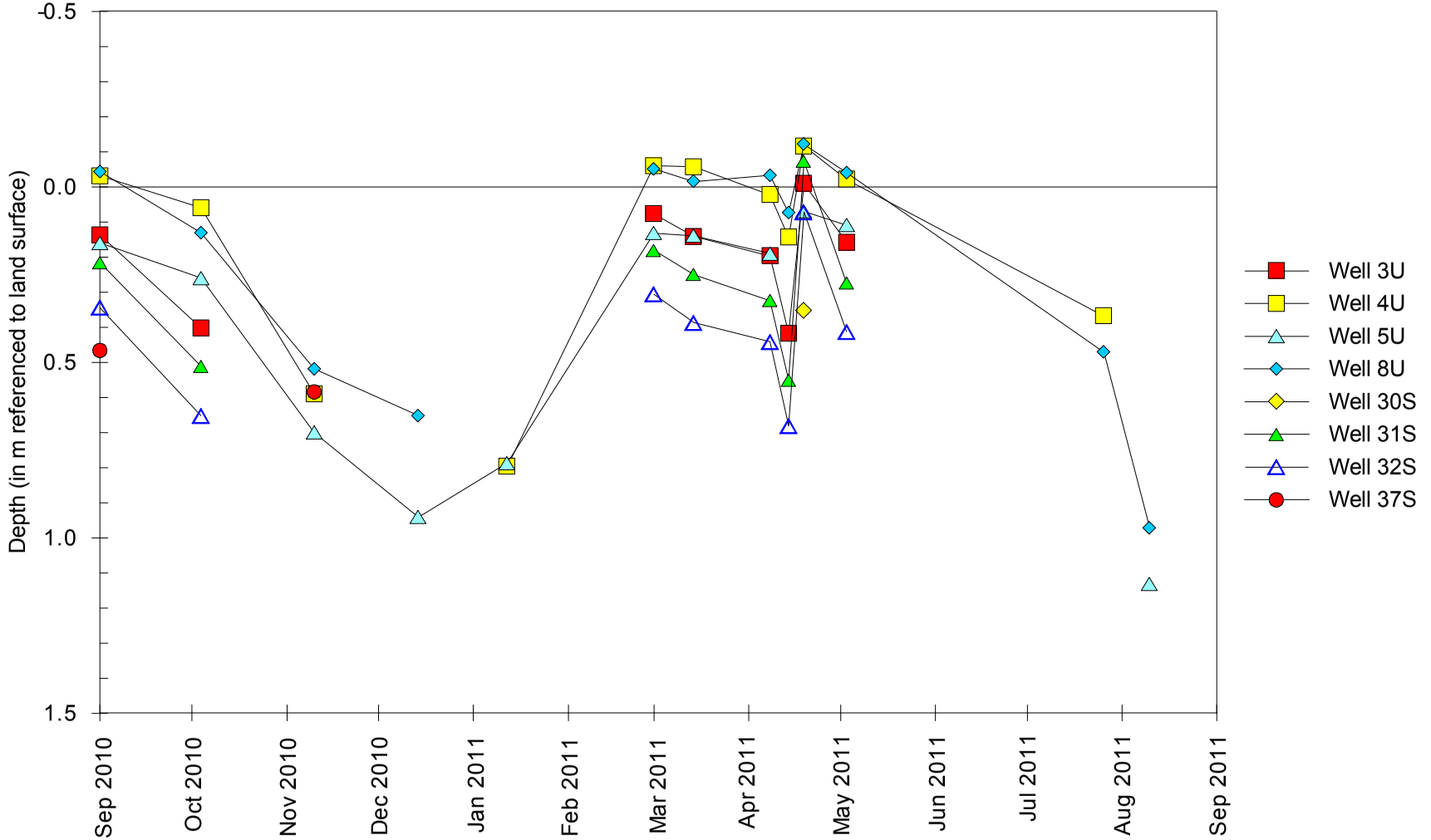
Water-Level Elevations in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

September 1, 2010 through August 31, 2011

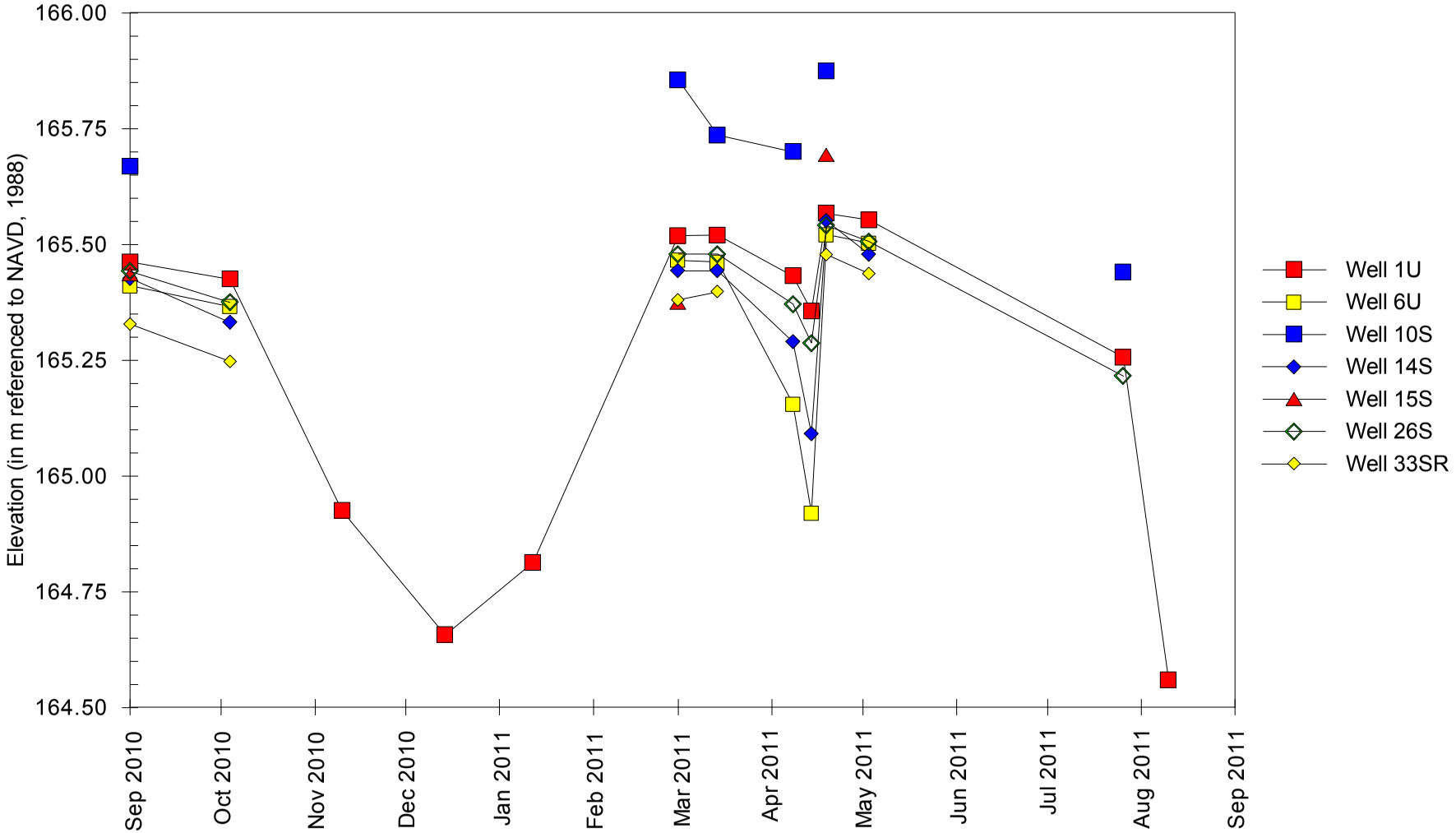
Depth to Groundwater in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

September 1, 2010 through August 31, 2011

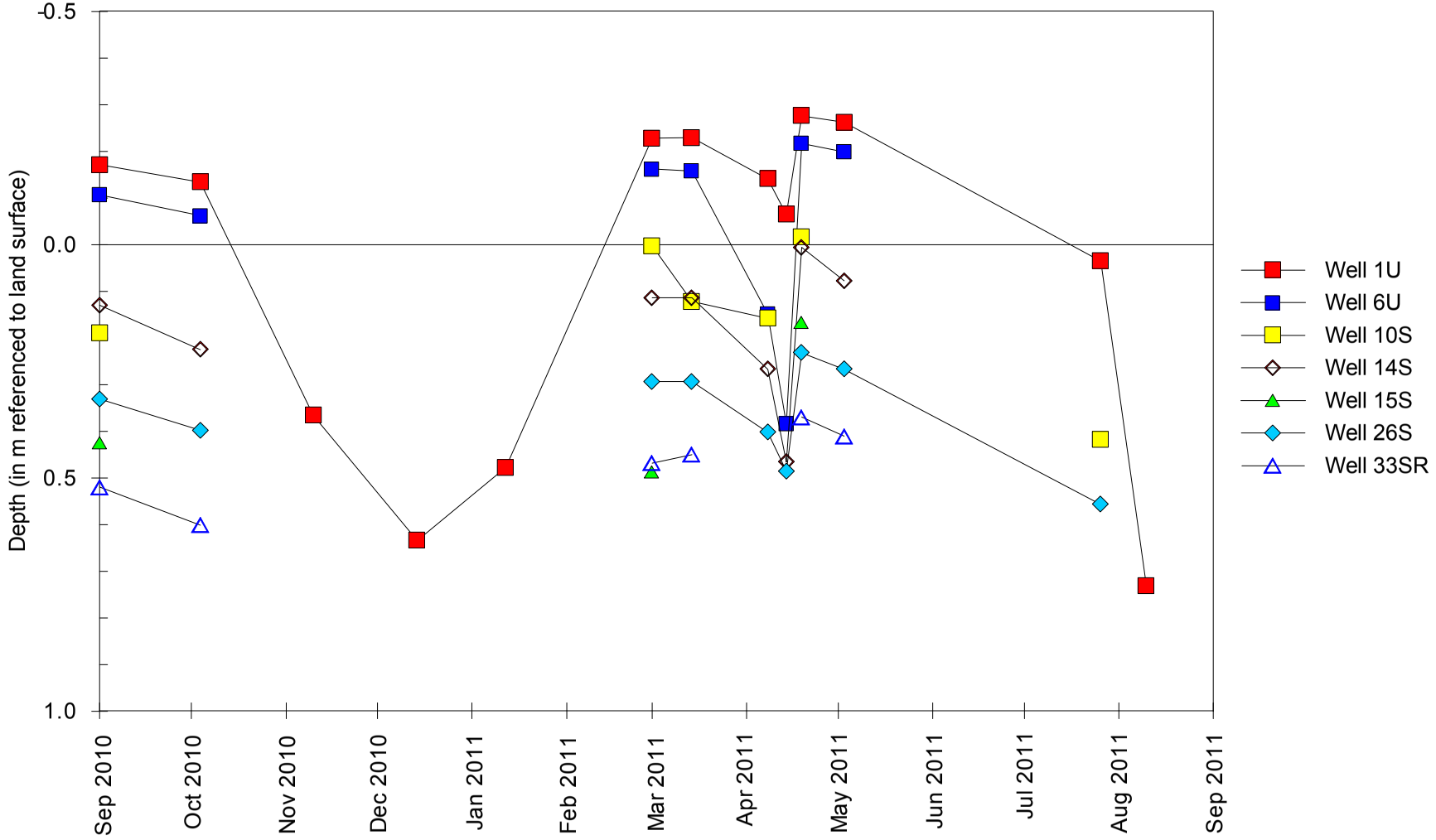
Water-Level Elevations in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

September 1, 2010 through August 31, 2011

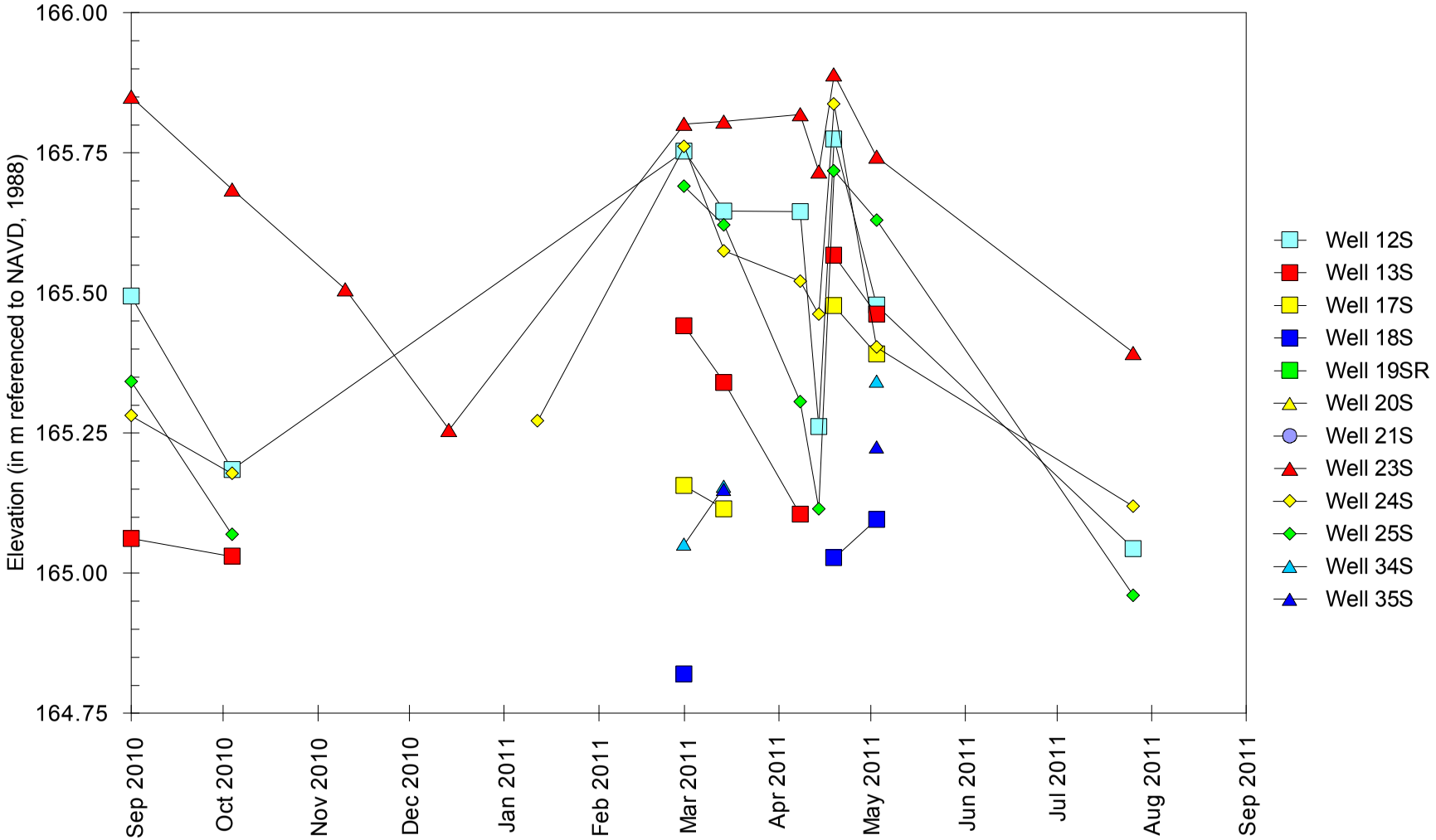
Depth to Groundwater in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

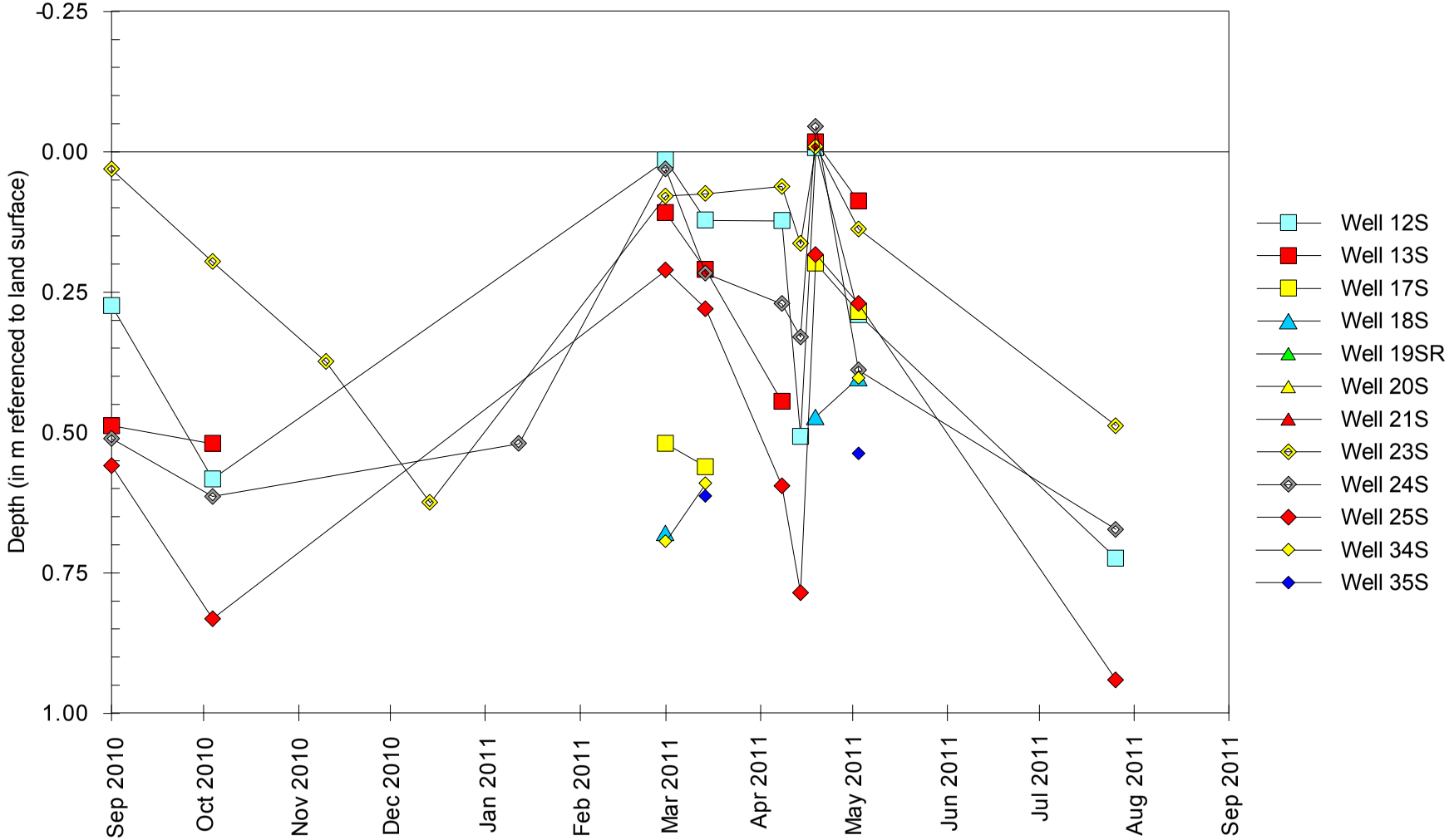
September 1, 2010 through August 31, 2011

Water-Level Elevations Soil-Zone in Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site
September 1, 2010 through August 31, 2011

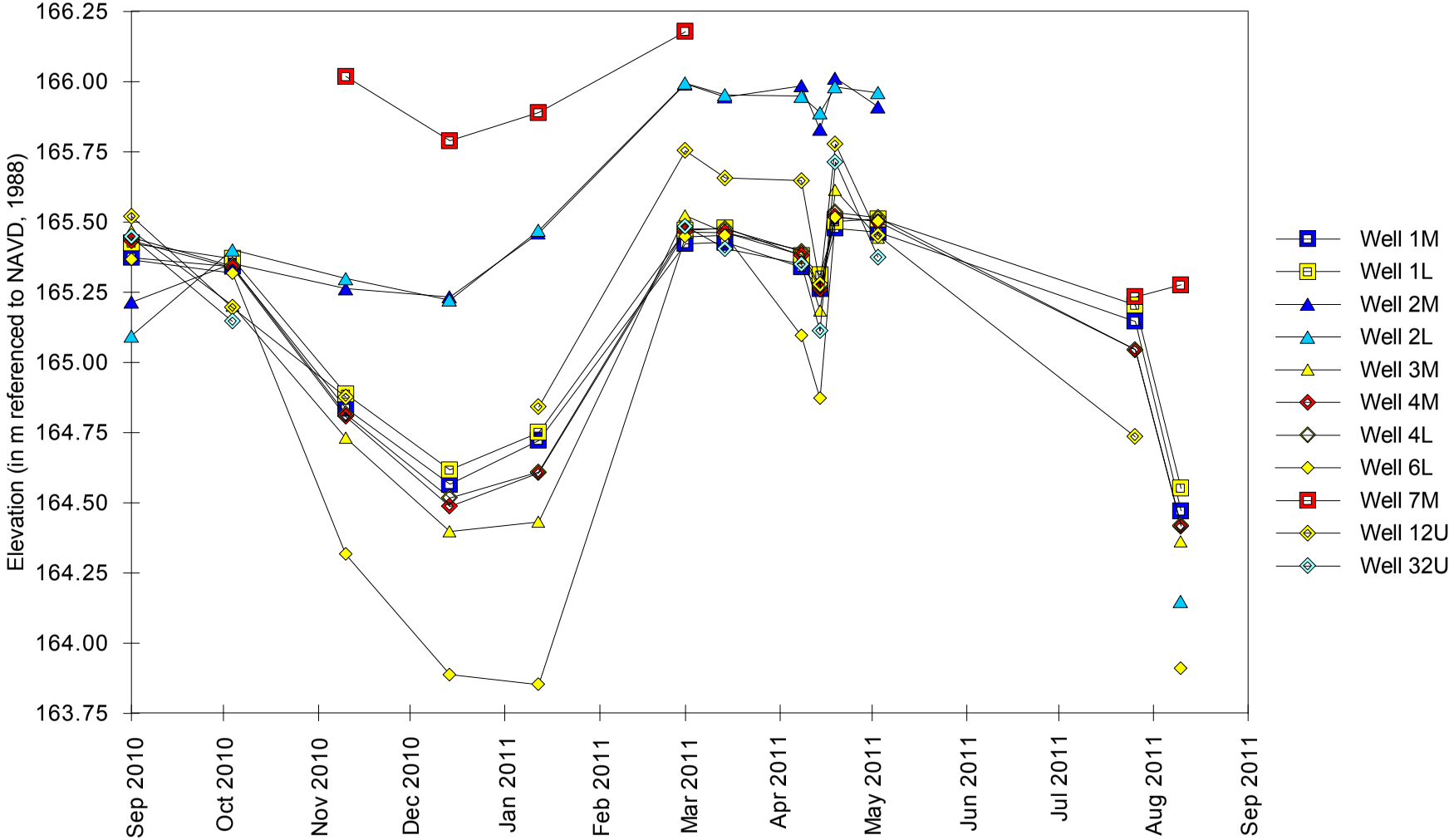
Depth to Groundwater in Soil-Zone Monitoring Wells



Hancock County near Carthage Wetland Mitigation Site

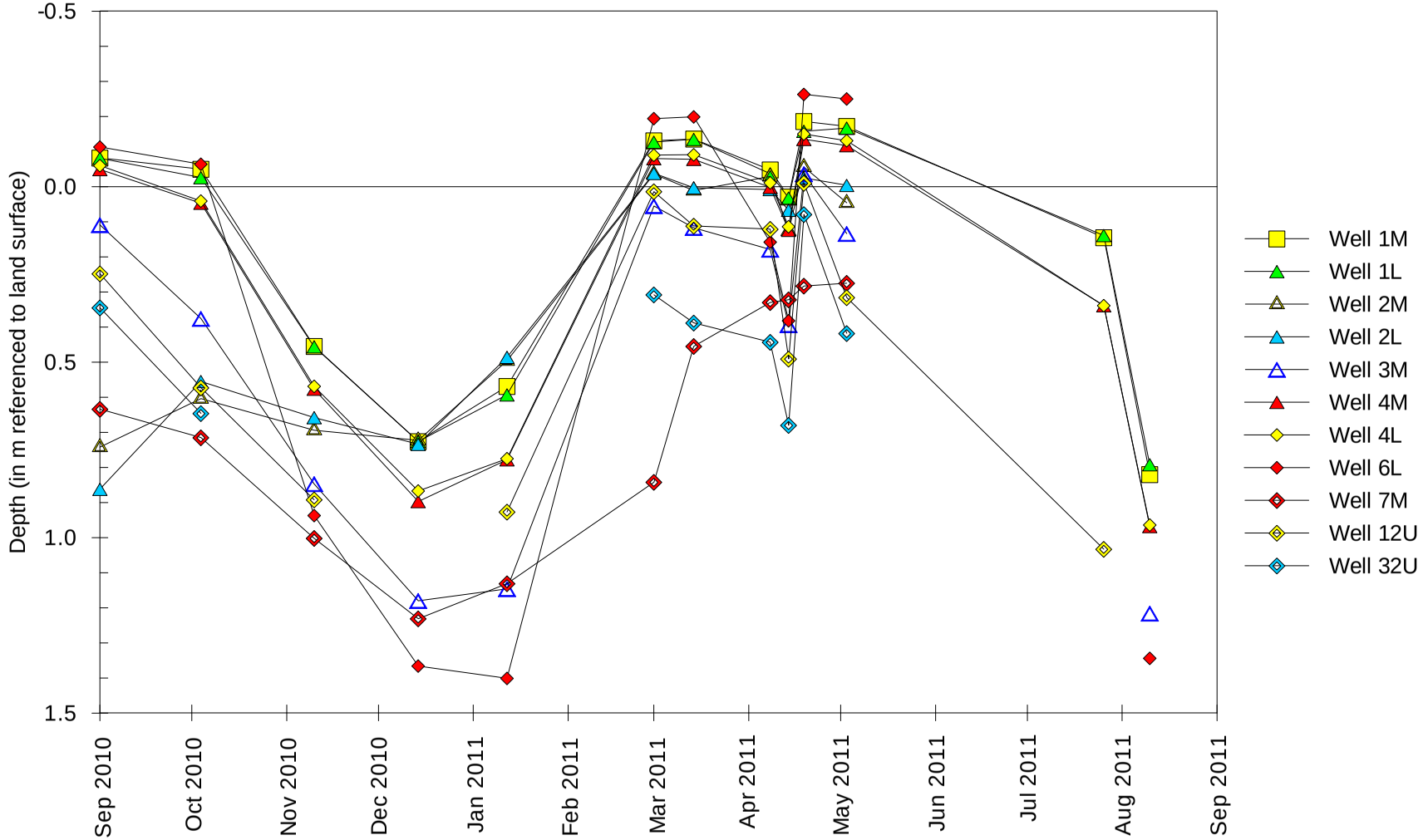
September 1, 2010 through August 31, 2011

Water-Level Elevations in Deeper Monitoring Wells



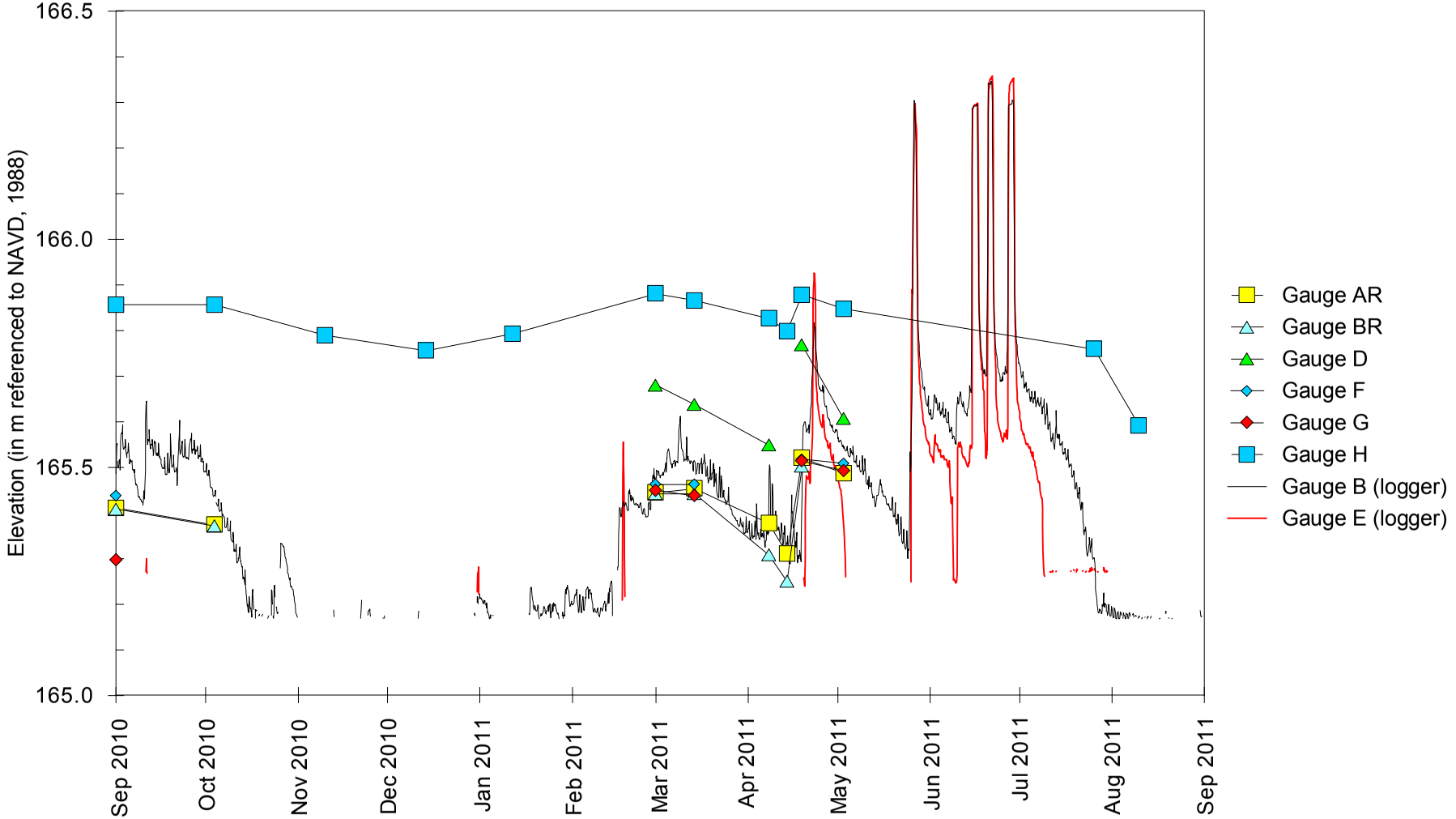
Hancock County near Carthage Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Deeper Monitoring Wells



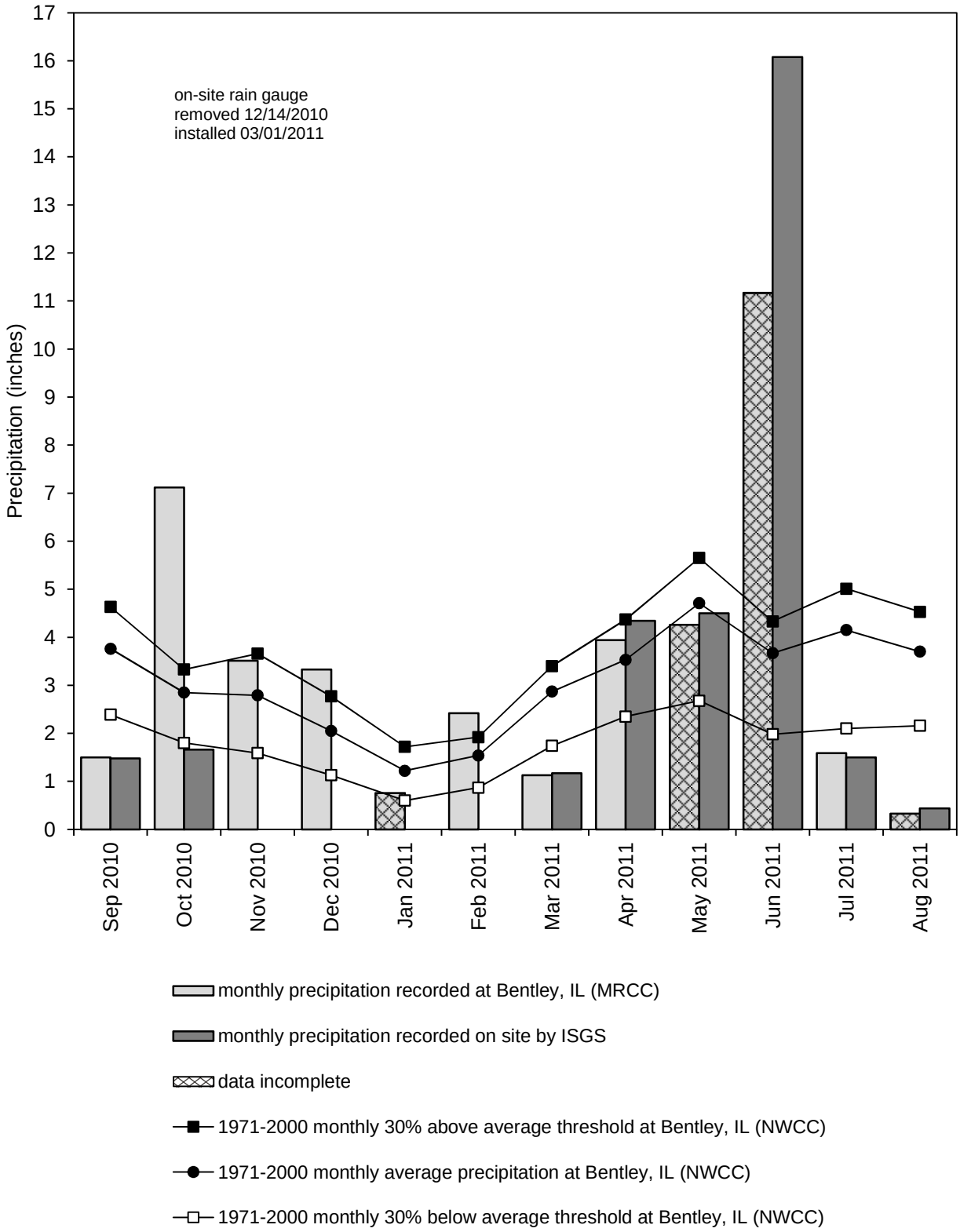
Hancock County near Carthage Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Gauges



Hancock County near Carthage Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Bentley, IL



Graph last updated 10/31/2011

ECKMANN/BISCHOFF **ISGS #43**
WETLAND MITIGATION SITE
FAP 14
Sequence #27
Madison County, near Collinsville, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Monson

SITE HISTORY

- March 2009: IDOT tasked the ISGS to resume monitoring of the site.

- April 2009: ISGS installed a monitoring network at the site and resumed data collection.

WETLAND HYDROLOGY CALCULATION FOR 2011

We estimate that the area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2011 for greater than 5% of the growing season was 23.1 ha (57.0 ac) out of a total area of 23.1 ha (57.0 ac), and the area of the site that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 11.3 ha (27.9 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 23.1 ha (57.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 2 was the starting date of the 2011 growing season at this site based on plant growth and development.

- Total precipitation recorded at the Belleville, Illinois, weather station during the monitoring period was 114% of normal, and precipitation in Spring 2011 (March through May) was 144% of normal.

- In 2011, water levels measured in all soil-zone monitoring wells satisfied wetland hydrology criteria for greater than 5% of the growing season, and water levels measured in none of the soil-zone monitoring wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Water levels measured in all soil-zone monitoring wells satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

- Surface-water elevations measured at the SW1 data logger reveal that areas of the site at and below an elevation of 124.25 m (407.66 ft) were inundated for greater than 5% of the growing season, and that areas at and below an elevation of 124.10 m (407.17 ft) were inundated for greater than 12.5% of the growing season, according to the 1987 Manual. In addition, areas of the site at and below an elevation of 124.20 m (407.50 ft) were inundated for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

- It was observed that the beaver dam in Schneider Ditch has not been rebuilt, and no other beaver activity was observed at the site during the monitoring period.

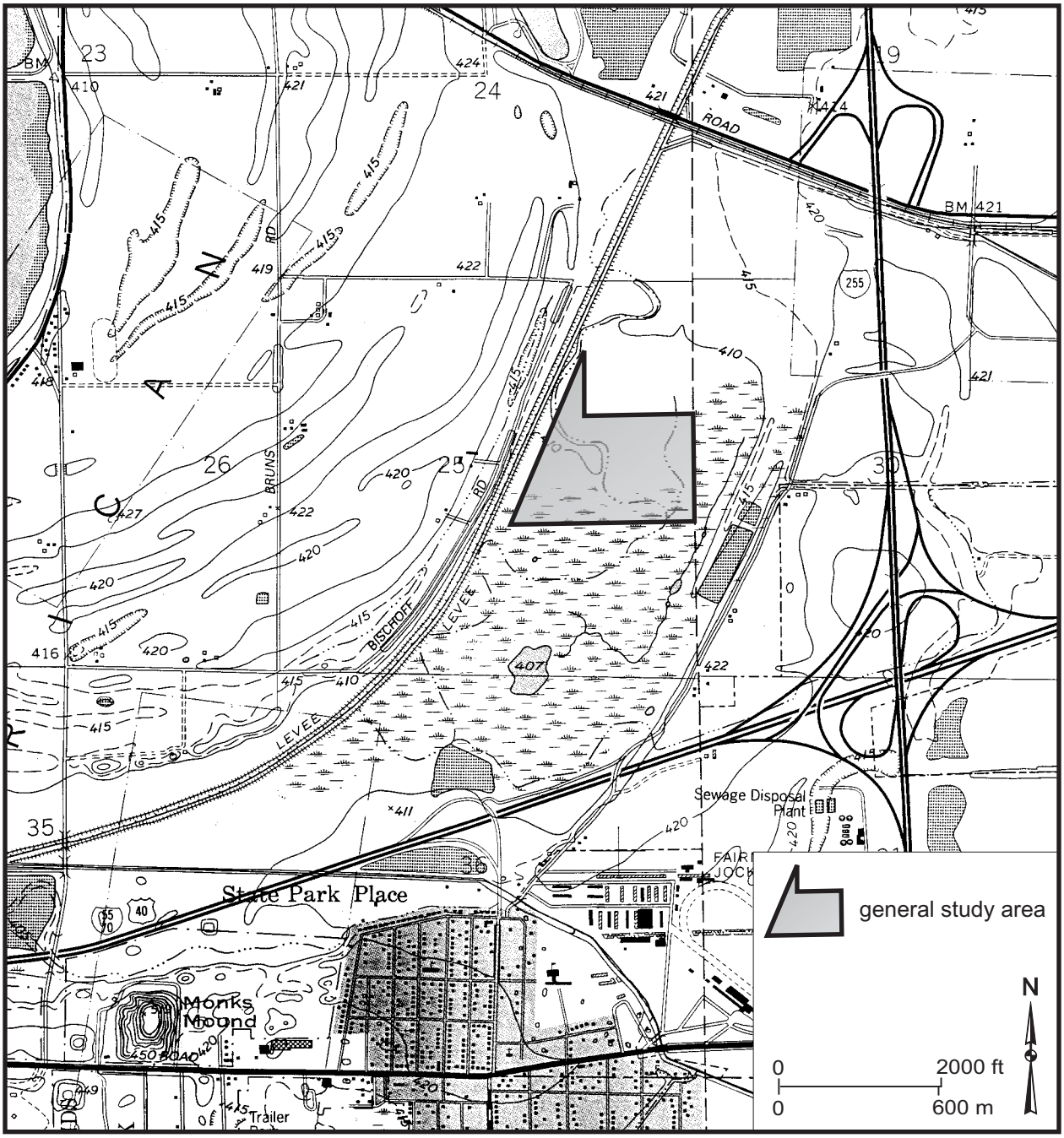
- The removal of the beaver from the site, and the breaching of their dams in Schneider Ditch, mean that surface-water levels on the site are controlled by the invert elevation of the culvert in the Cahokia Canal levee, which is at an elevation of about 123.69 m (405.83 ft). Despite this, wetland hydrology criteria were satisfied site wide at 5% (Environmental Laboratory 1987) and 14 days (U.S. Army Corps of Engineers 2010).

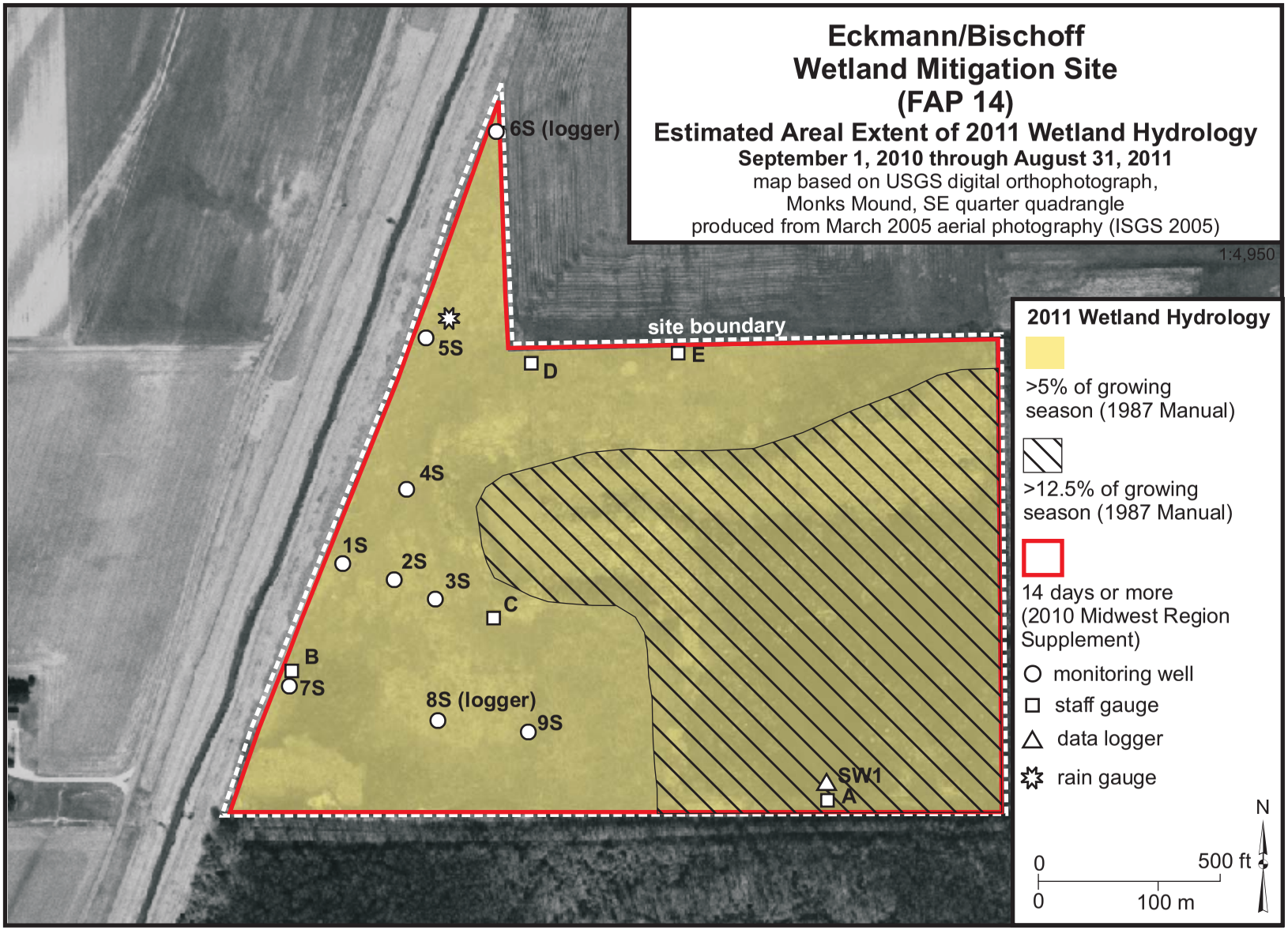
PLANNED FUTURE ACTIVITIES

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

Eckmann/Bischoff
Wetland Mitigation Site
(FAP 14)
Study Area and Vicinity

from the USGS Topographic Series, Monks Mound IL, 7.5-minute Quadrangle
(USGS 1954, photorevised 1993)
contour interval is 10 feet

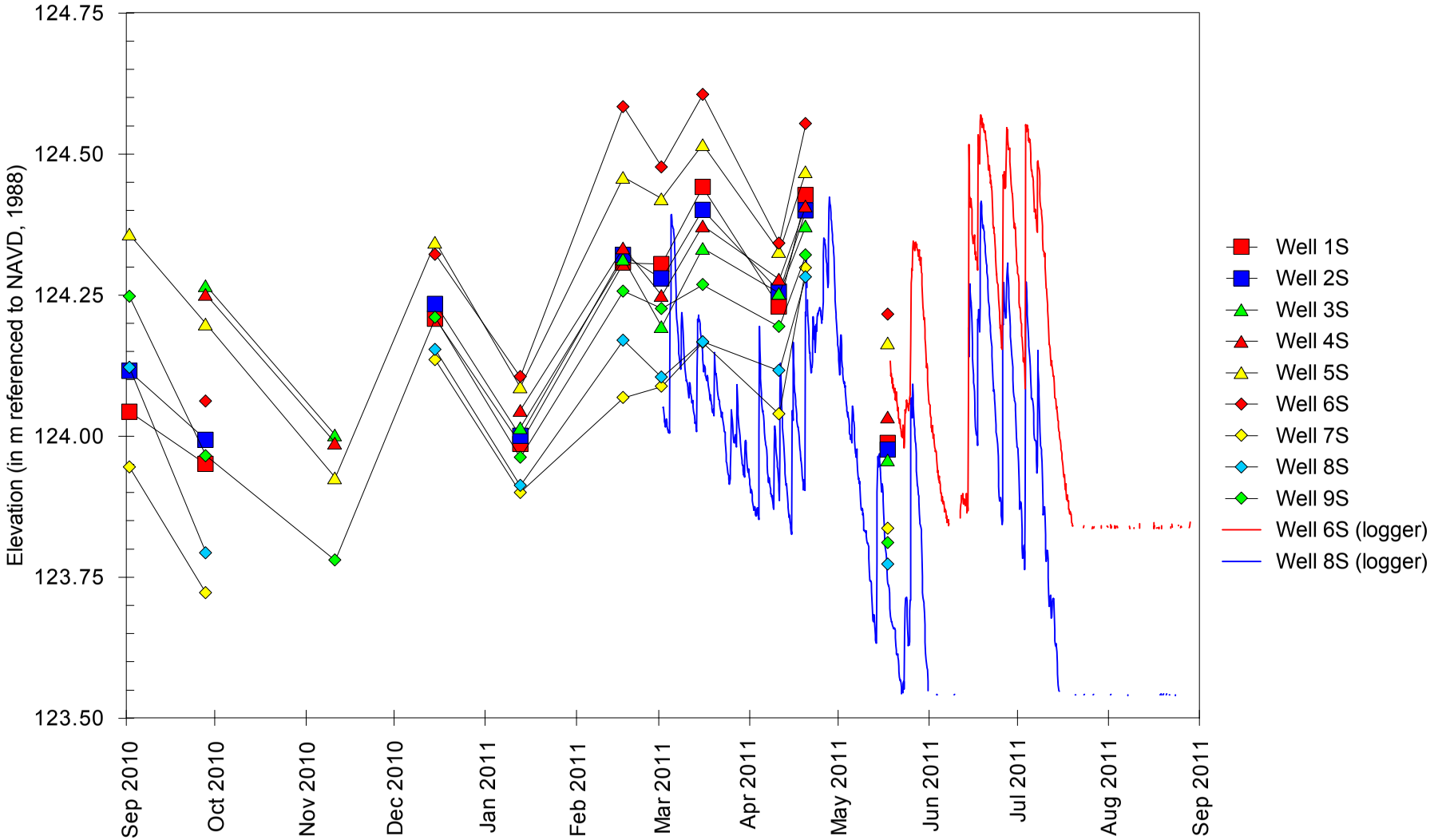



Eckmann/Bischoff
Wetland Mitigation Site
(FAP 14)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011
map based on USGS digital orthophotograph,
Monks Mound, SE quarter quadrangle
produced from March 2005 aerial photography (ISGS 2005)
1:4,950
6S (logger)
site boundary
5S
D
E
4S
1S
2S
3S
C
B
7S
8S (logger)
9S
SW1
A
2011 Wetland Hydrology
>5% of growing season (1987 Manual)
>12.5% of growing season (1987 Manual)
14 days or more (2010 Midwest Region Supplement)
monitoring well
staff gauge
data logger
rain gauge
N
0
500 ft
0
100 m

Eckmann/Bischoff Wetland Mitigation Site

September 1, 2010 through August 31, 2011

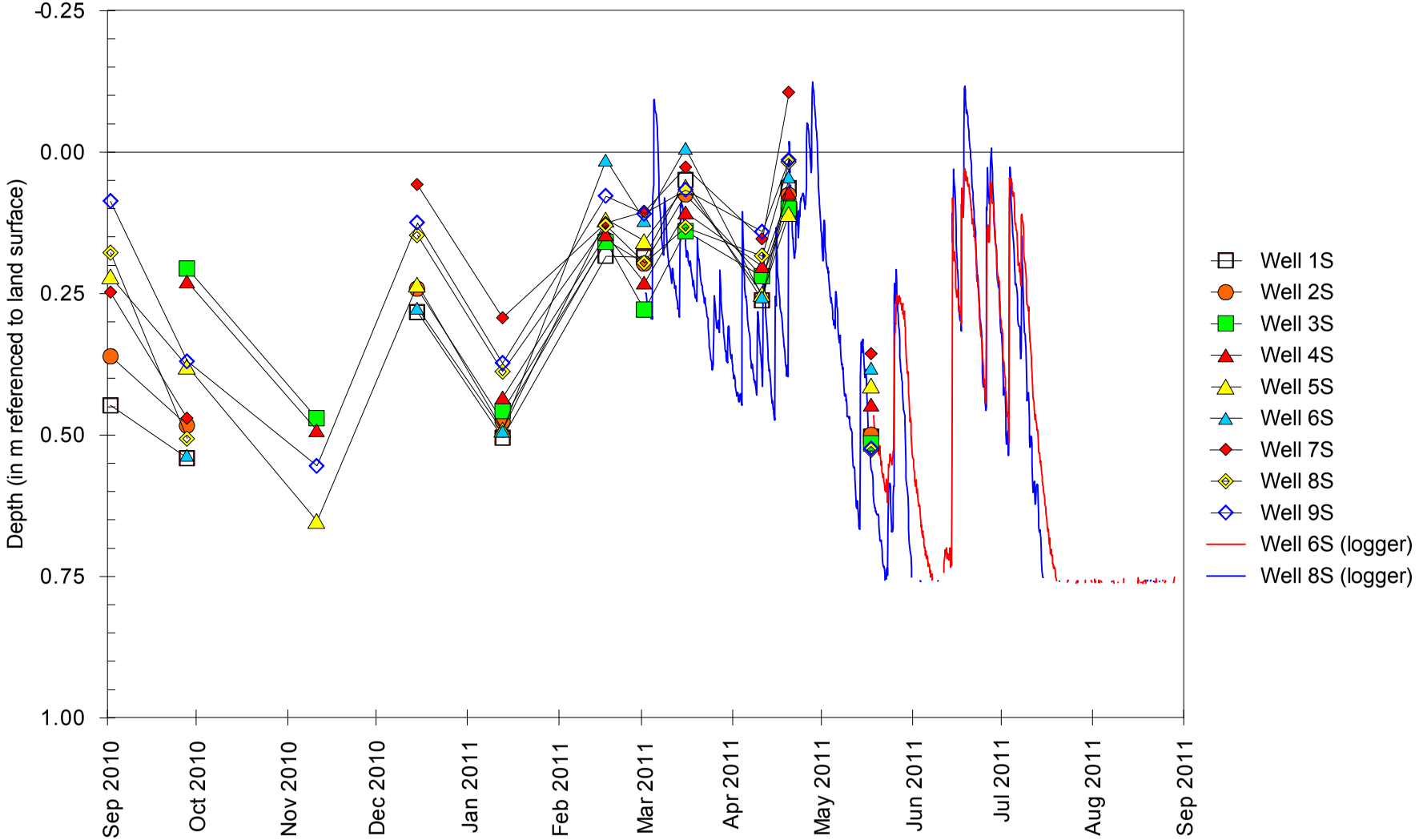
Water-Level Elevations in Monitoring Wells



Eckmann/Bischoff Wetland Mitigation Site

September 1, 2010 through August 31, 2011

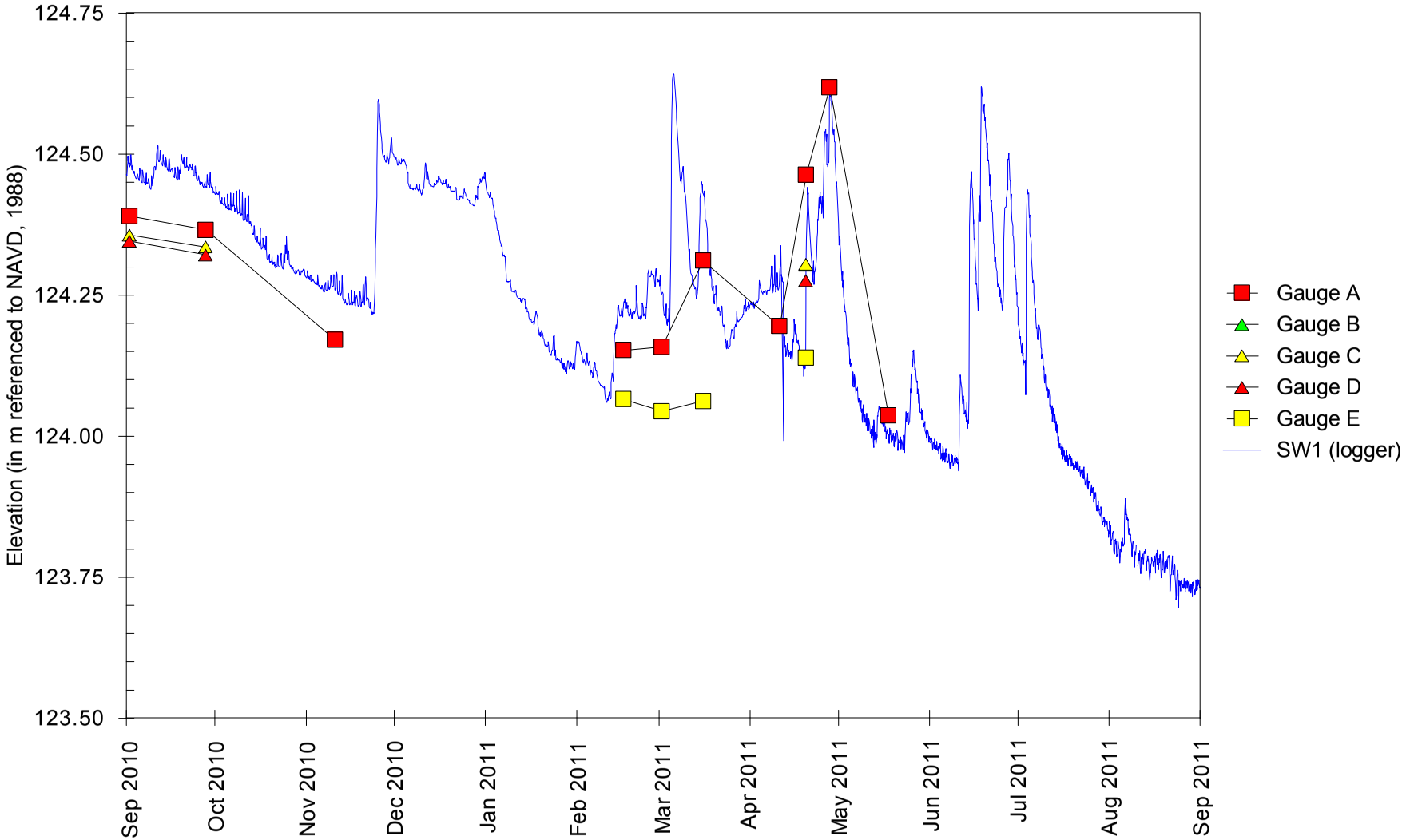
Depth to Groundwater in Monitoring Wells



Eckmann/Bischoff Wetland Mitigation Site

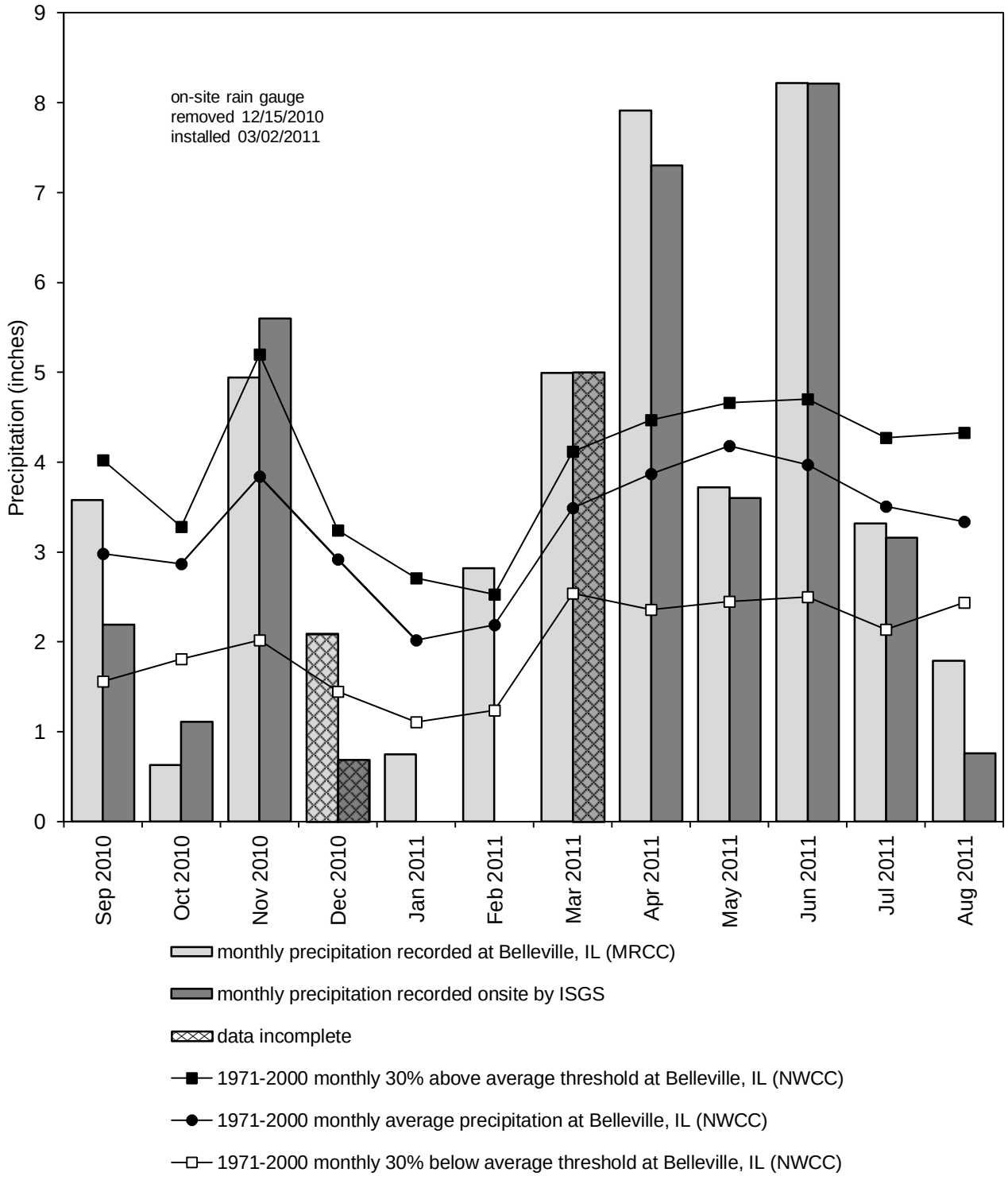
September 1, 2010 through August 31, 2011

Surface-Water Elevations at Surface-Water Gauges



Eckmann/Bischoff
Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Southern Illinois University Research Center, Belleville, IL



Graph last updated 10/31/2011

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

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 by ISGS on Phase I of the site.
- November 2007: The monitoring network was installed by ISGS on Phase II of the site.
- April 2011: Monitoring of Phase I of the site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

Monitoring of Phase I is complete, therefore, no estimate of the area of jurisdictional wetland hydrology was made in 2011. In 2011, 4.0 ha (9.8 ac), out of a total area of 4.3 ha (10.7 ac) in Phase II, satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season and for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 4.0 ha (9.8 ac) of Phase II satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the nearby Quad City International Airport weather station in Moline, Illinois, is April 13 and the season lasts 196 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 15 was the starting date of the 2011 growing season based on soil temperatures measured at the mitigation site.
- Total precipitation during the monitoring period as recorded at the Quad City International Airport weather station in Moline, Illinois, was 90% of normal and total precipitation in Spring 2011 (March through May) was 106% of normal.
- In 2011, water levels measured in all of the soil-zone monitoring wells in Phase II satisfied wetland hydrology criteria for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual. Water levels measured in all of the soil-zone monitoring wells in Phase II satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.
- Rock River stage data recorded at Moline, Illinois, and surface-water data recorded by an on-site data logger (Sluice SW), reveal that the site was flooded six times during the monitoring period, with three of these floods (April 19 through May 2, May 26 through

June 4, and June 10 through 13) occurring during the 2011 growing season. Using depth to groundwater in monitoring well 18U as a proxy record of on-site inundation in Phase II, the longest period of inundation resulted from the floods that occurred in May and June. The data reveal that the portions of Phase II at and below an elevation of 173.10 m (567.94 ft) were inundated long enough to satisfy wetland hydrology criteria at 5% of the growing season, and that portions at and below an elevation of 173.00 m (567.61 ft) were inundated long enough to satisfy wetland hydrology criteria at 12.5% of the growing season, according to the 1987 Manual. Portions of Phase II at and below an elevation of 173.02 m (567.68 ft) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season as per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

- Four monitoring wells in Phase I (8S, 9S, 10S, and 15S) were retained in order to determine if wetland hydrology occurs up to the boundary between Phase I and Phase II.

- The ISGS has now completed 4 years of post-construction monitoring of Phase II.

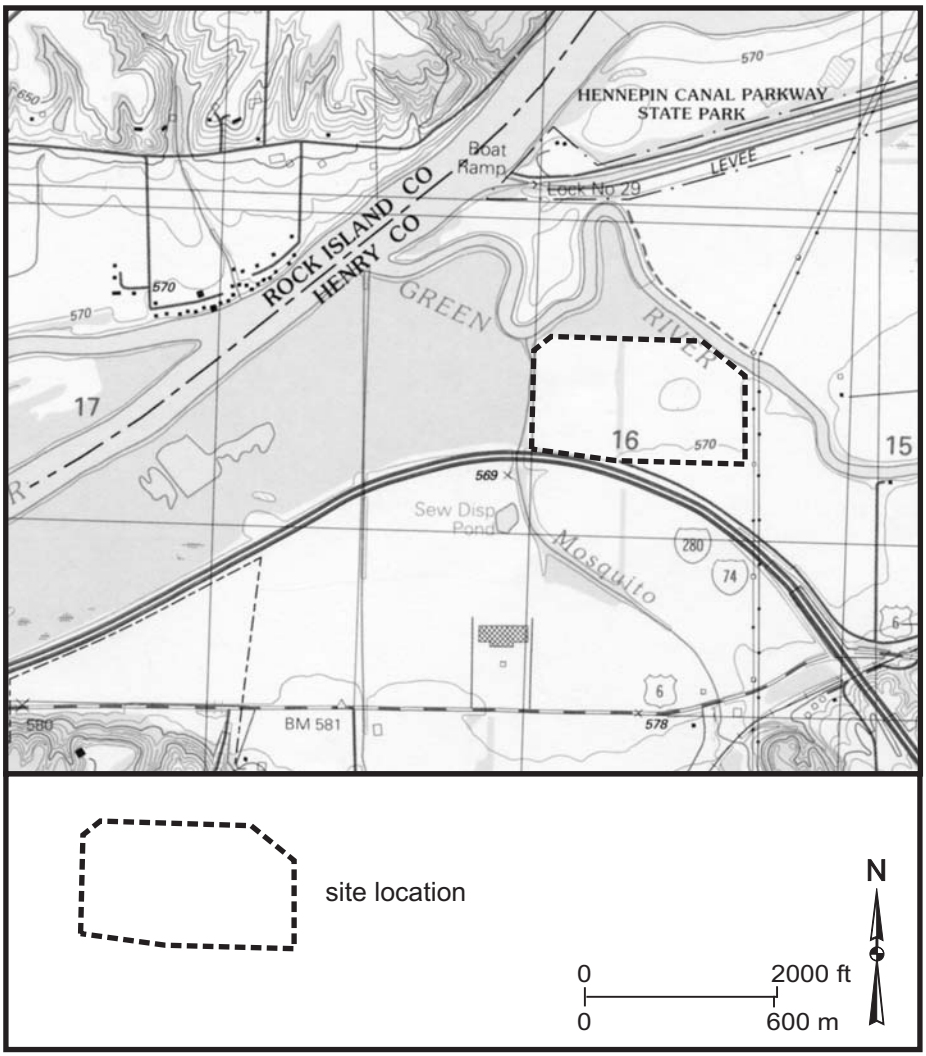
PLANNED FUTURE ACTIVITIES

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

Milan Beltway, Green Rock Wetland Mitigation 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

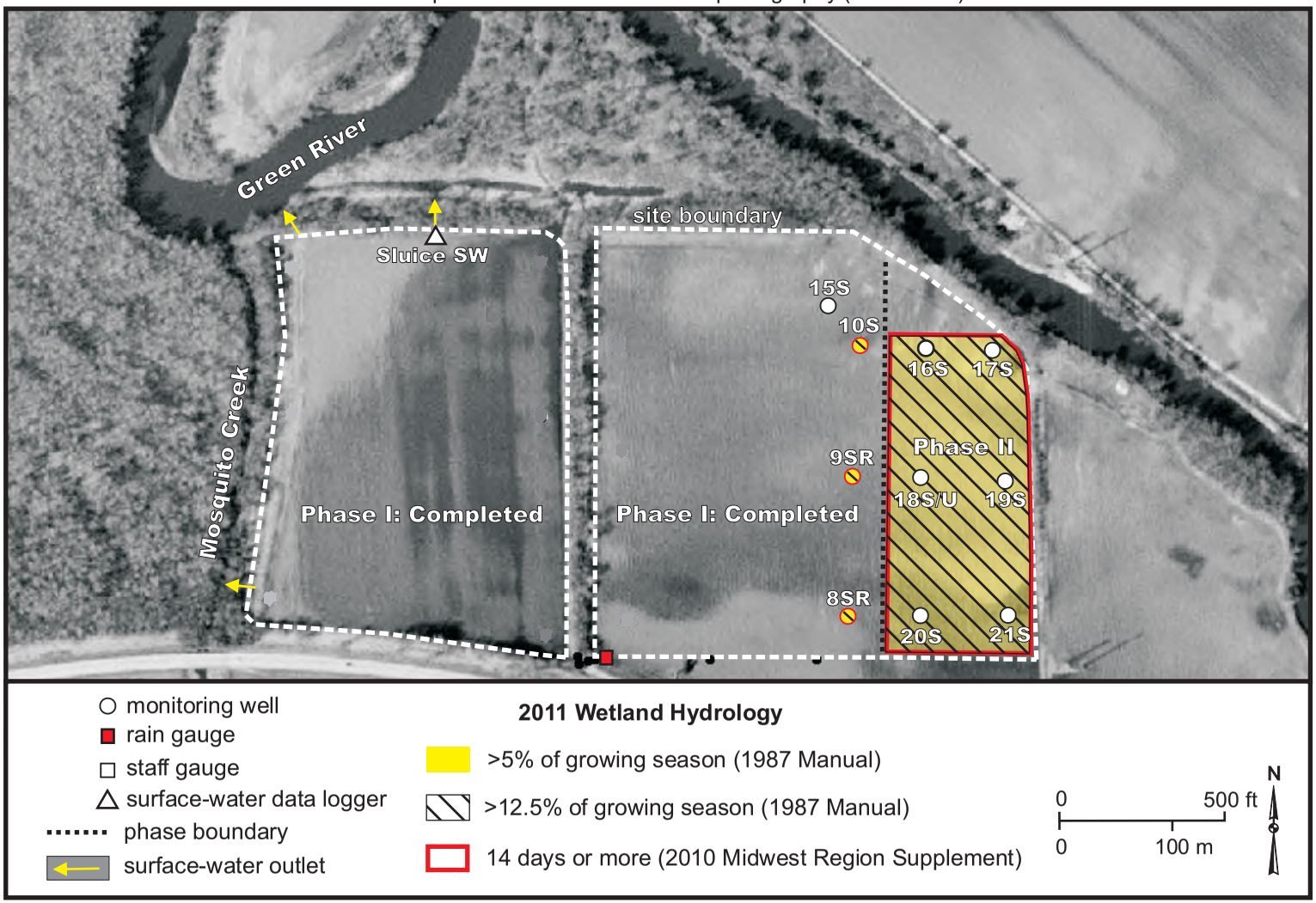


Milan Beltway, Green Rock Wetland Mitigation Site (FAU 5822)

Estimated Areal Extent of 2011 Wetland Hydrology

Based on data collected September 1, 2010 through August 31, 2011

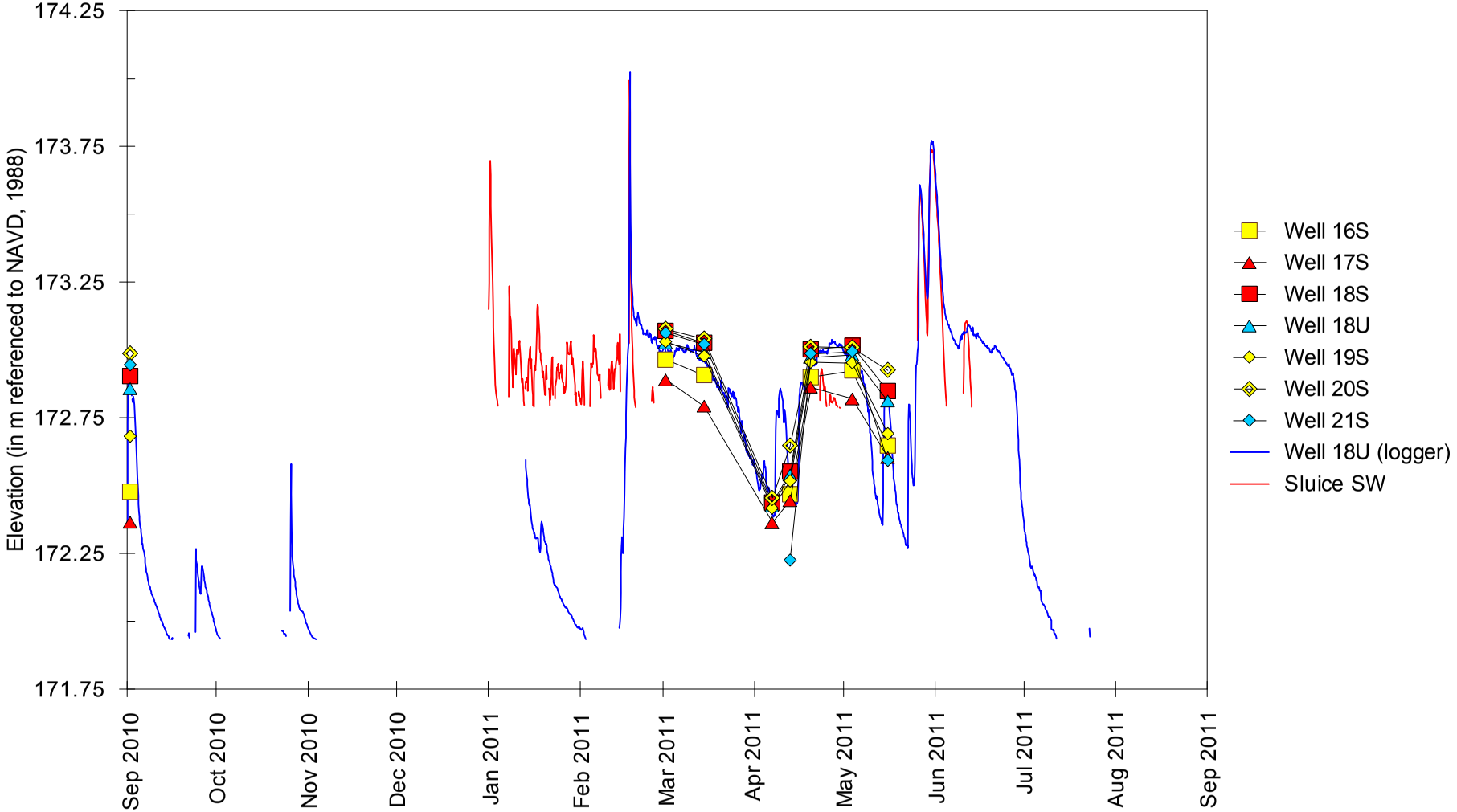
Map based on USGS digital orthophotograph, Coal Valley NE quarter quadrangle
produced from 4/14/98 aerial photography (ISGS 2006)



Milan Beltway, Green Rock Wetland Mitigation Site

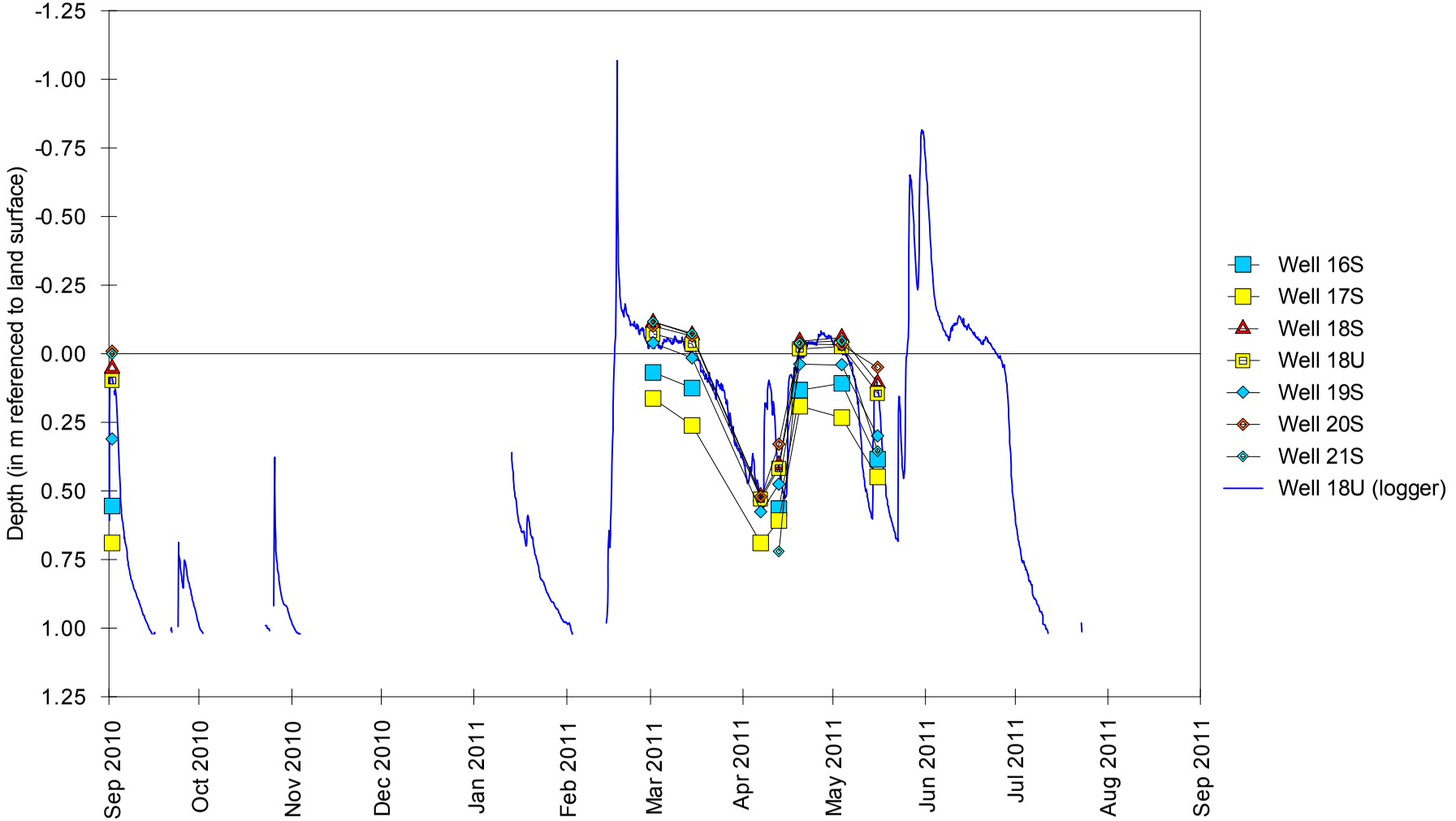
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges in Phase II



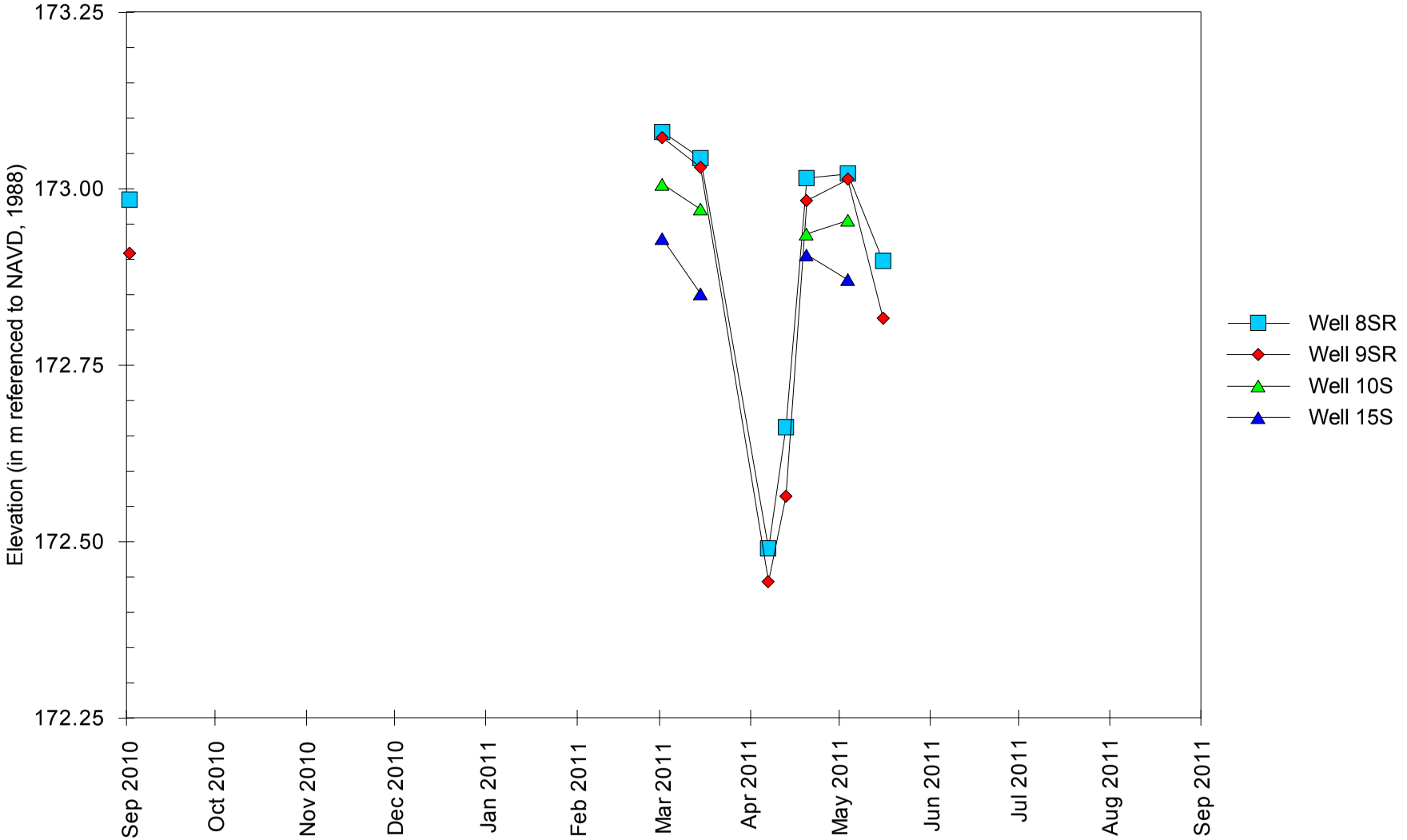
Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells in Phase II



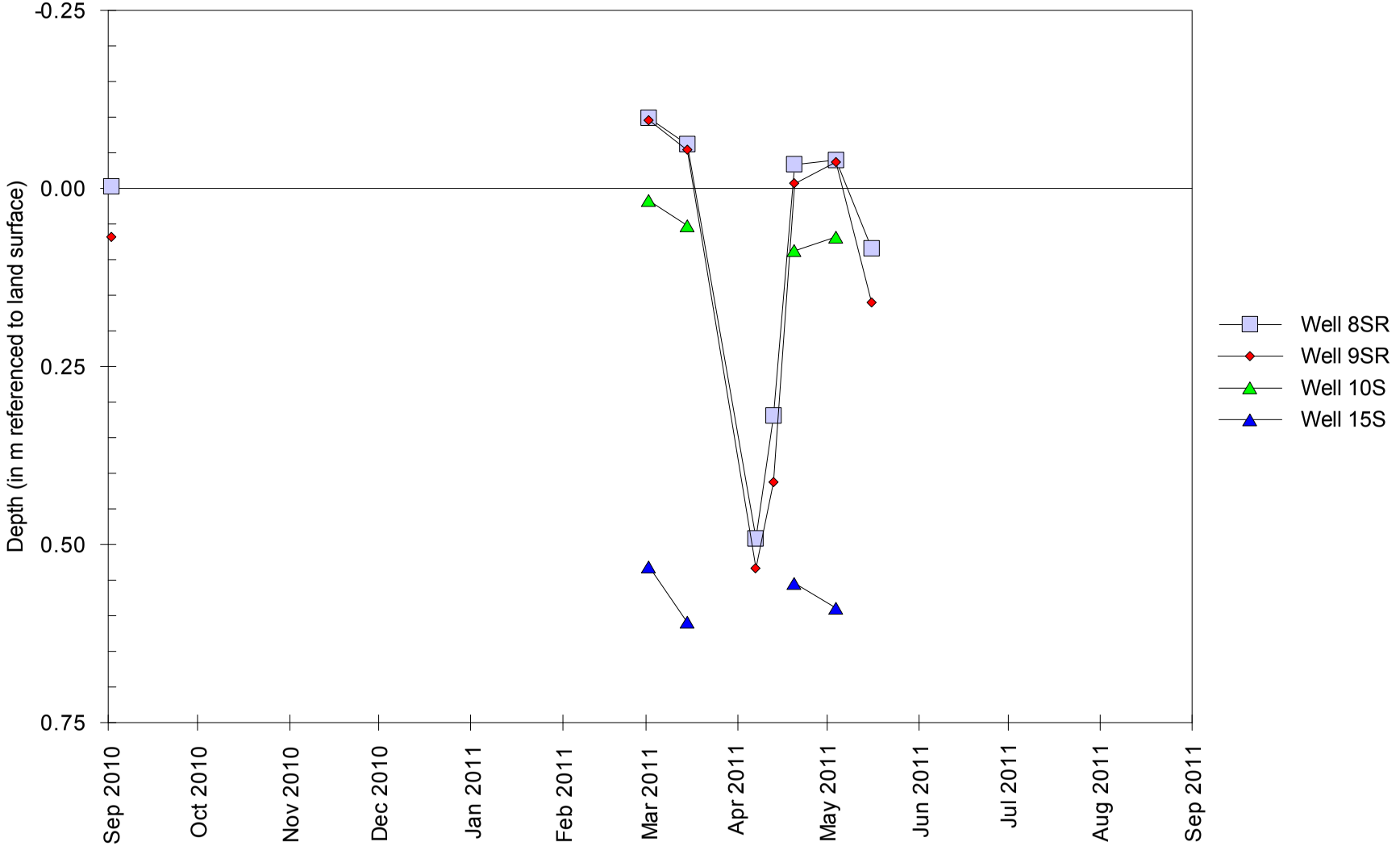
Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells Adjacent to Phase II



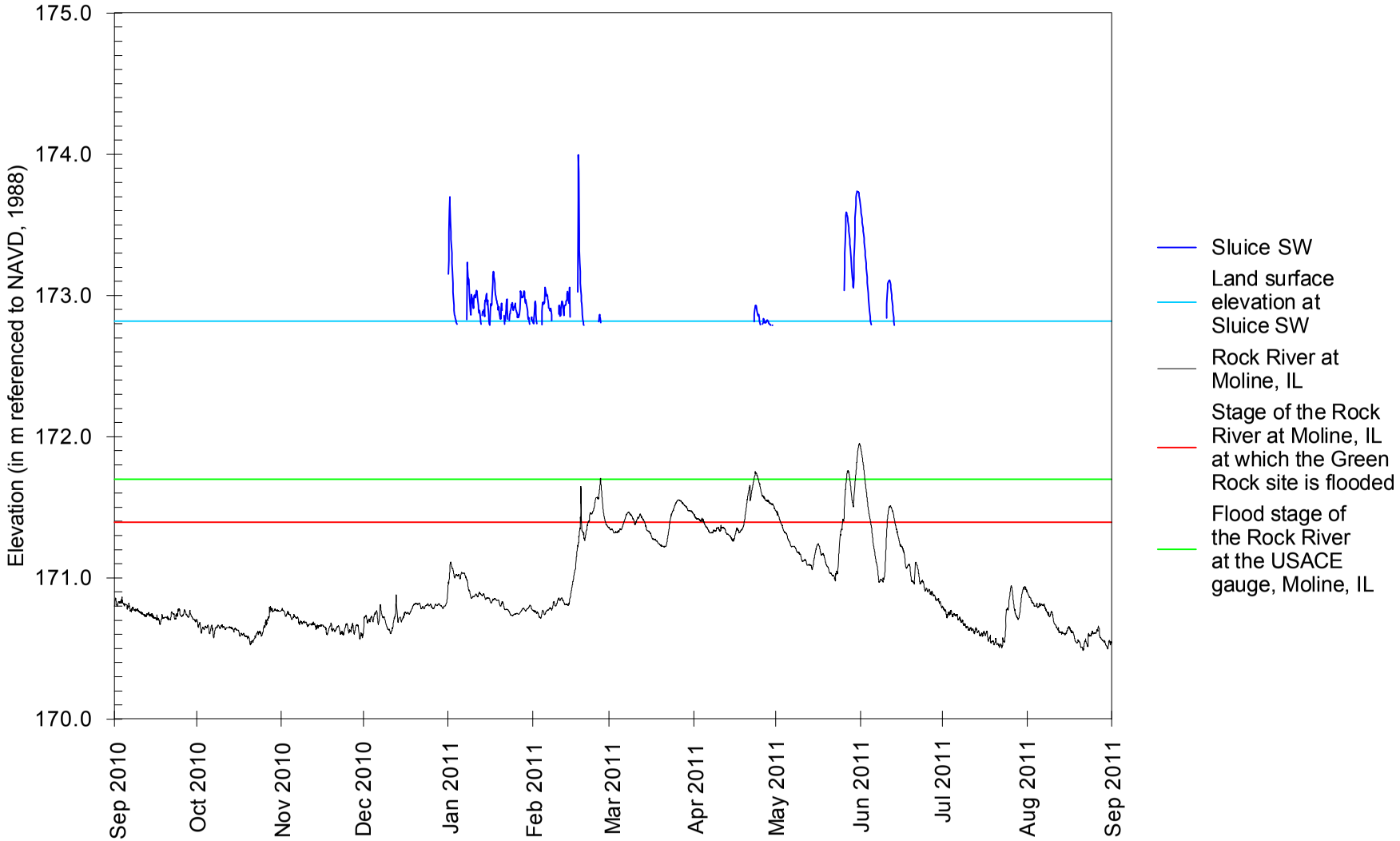
Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells Adjacent to Phase II



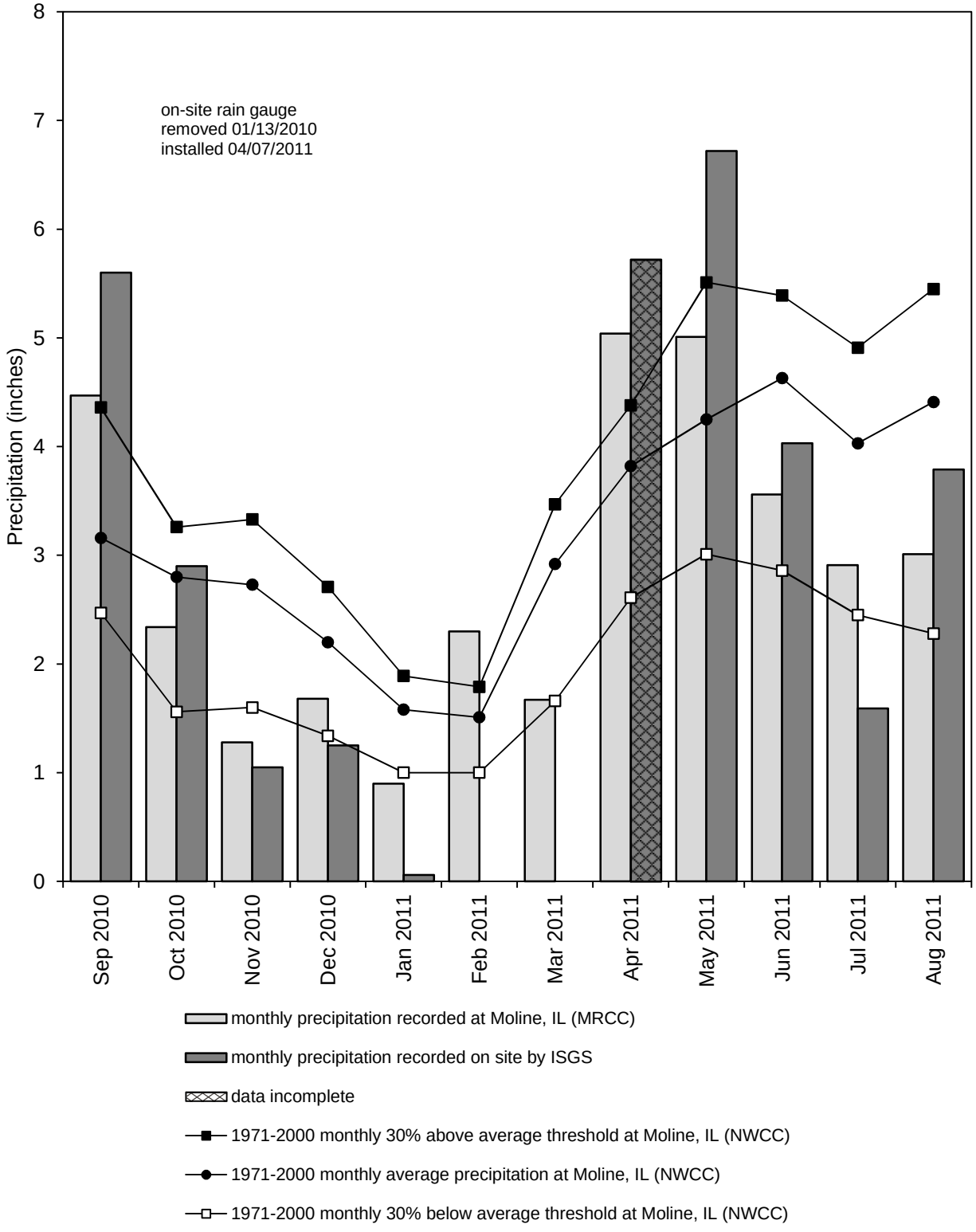
Milan Beltway, Green Rock Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Surface-Water Elevations



Milan Beltway, Green Rock Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Quad City International Airport, Moline, IL



Graph last updated 10/31/2011

MORRIS **ISGS #49**
WETLAND MITIGATION BANK
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.

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

- February 2009: IDOT specified that monitoring of surface-water inundation and floodwater storage functions would be limited to an off-site USACE river gauge and two on-site data loggers.

WETLAND HYDROLOGY CALCULATION FOR 2011

We estimate that the total area of the site that satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011 was 57.6 ha (142.4 ac) out of a total site area of 342 ha (844 ac), and 6.2 ha (15.3 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 6.2 ha (15.3 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. In 2011, a much larger portion of the site satisfied wetland hydrology criteria than in previous years as a result of an unusual flood event. The close timing of three rainfall events in the Mazon River watershed resulted in a broad peak that flooded the lower lying areas of the site for long enough to satisfy wetland hydrology criteria. These estimates are based on the following factors:

- The median date that the growing season begins in Morris, Illinois, is April 13 and the season lasts 187 days (MRCC 2011); 5% of the growing season is 9 days and 12.5% of the growing season is 23 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 16 was the starting date of the 2011 growing season based upon measurements from an on-site soil-temperature data logger.

- Total precipitation for the monitoring period at the nearby Morris weather station was 120% of normal. During March through May 2011, precipitation was 134% of normal, leading to wetter on-site conditions early in the growing season than are typical. Sustained above-normal precipitation in June resulted in additional short-duration flooding events at the bank site.

- The SW8 data logger, located in a closed depression in the “spider field”, indicated inundation for a period greater than 5% of the growing season at an elevation of 150.64 m (494.22 ft), and for greater than 12.5% of the growing season at an elevation of 150.46 m (493.63 ft), according to the 1987 Manual. According to the 2010 Midwest Region Supplement, the SW8 data logger also showed inundation satisfying wetland

hydrology criteria for 14 or more consecutive days during the growing season at an elevation of 150.57 m (493.99 ft). The SW2I data logger in the Mazon River also showed inundation for a period greater than 5% of the growing season at an elevation of 150.0 m (492.12 ft), according to the 1987 Manual. As in previous years, the areas of the stream channels on site were excluded from wetland hydrology calculations. These excluded areas generally lie below an elevation of 149.35 m (490 ft).

- In 2010-2011, the site continued in its role of providing off-line floodwater storage as well as sediment removal from the Illinois River. According to an off-site USACE gauge and on-site ISGS data loggers, four short-duration (<5 day) floods and one longer-duration flood (9 days) affected the site area during the monitoring period. As in previous years, sediment deposition was observed in some closed depressions on site, as well as on flat surfaces and on leafy vegetation.

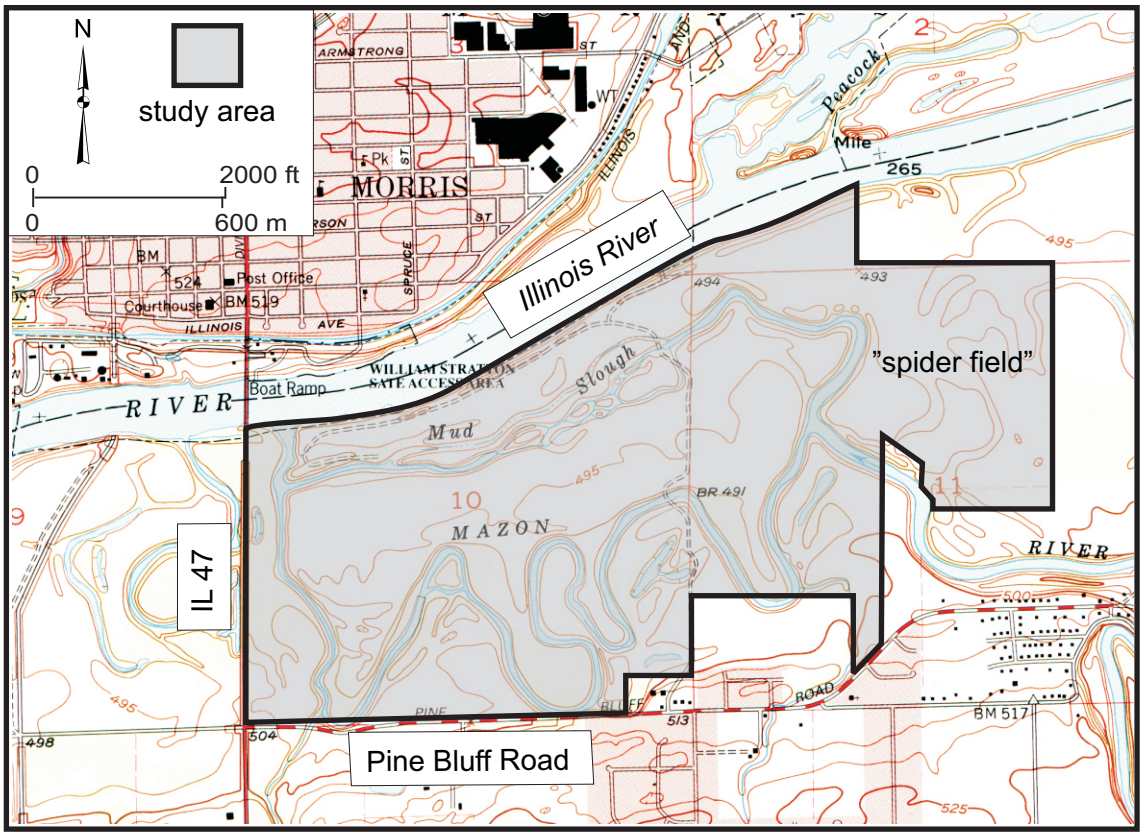
PLANNED FUTURE ACTIVITIES

- Monitoring of surface water via two on-site ISGS data loggers and an off-site USACE river gauge will continue until no longer required by IDOT. The continued aim will be to watch for significant changes in the on-site wetland hydrology acreage or site functions.

Morris Wetland Mitigation Bank

General Study Area and Vicinity

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

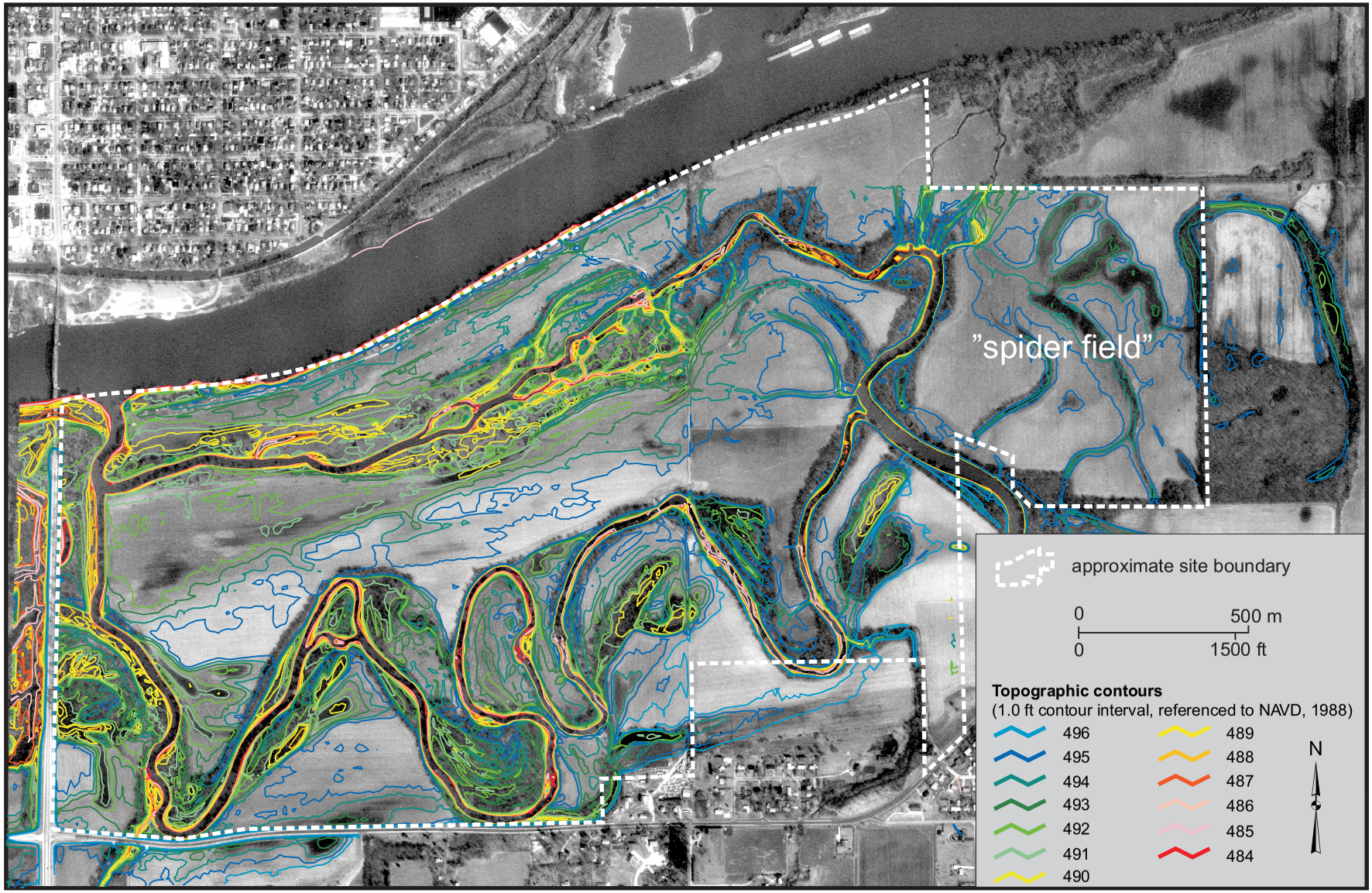


Morris Wetland Mitigation Bank

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)

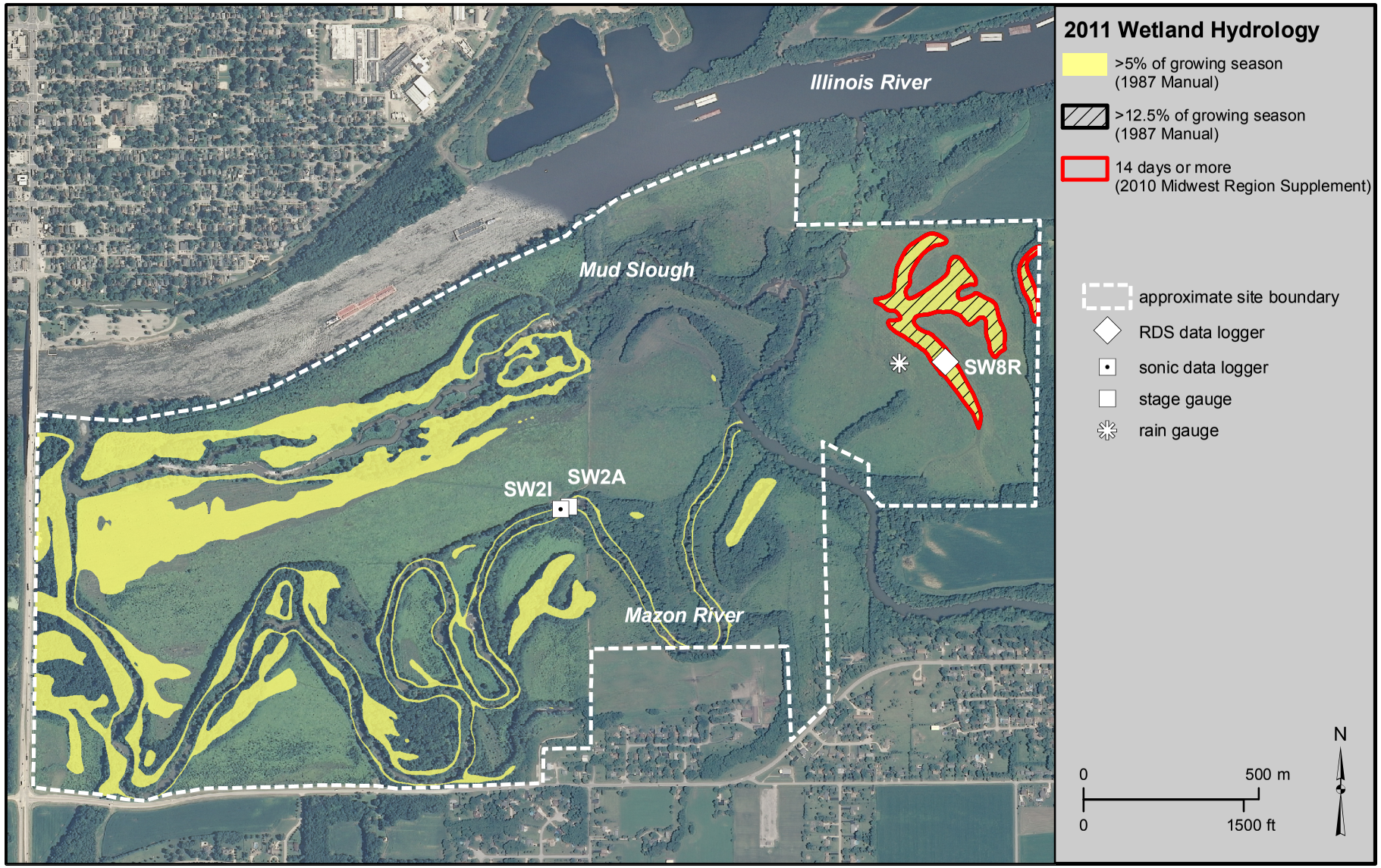


Morris Wetland Mitigation Bank

Estimated Areal Extent of 2011 Wetland Hydrology

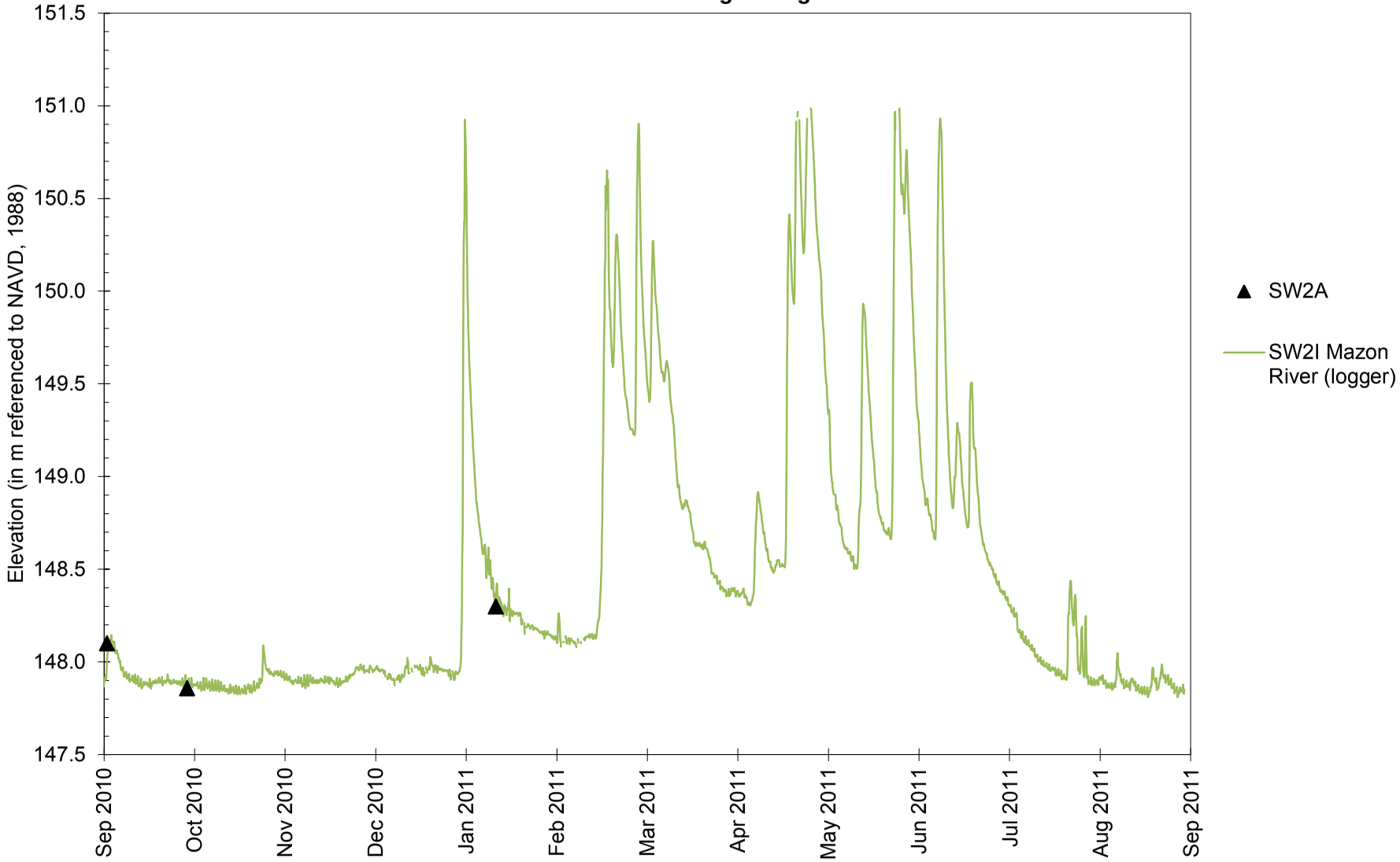
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Morris NE quarter-quadrangle, taken 7/1/2010 (USDA-FSA 2010).



Morris Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

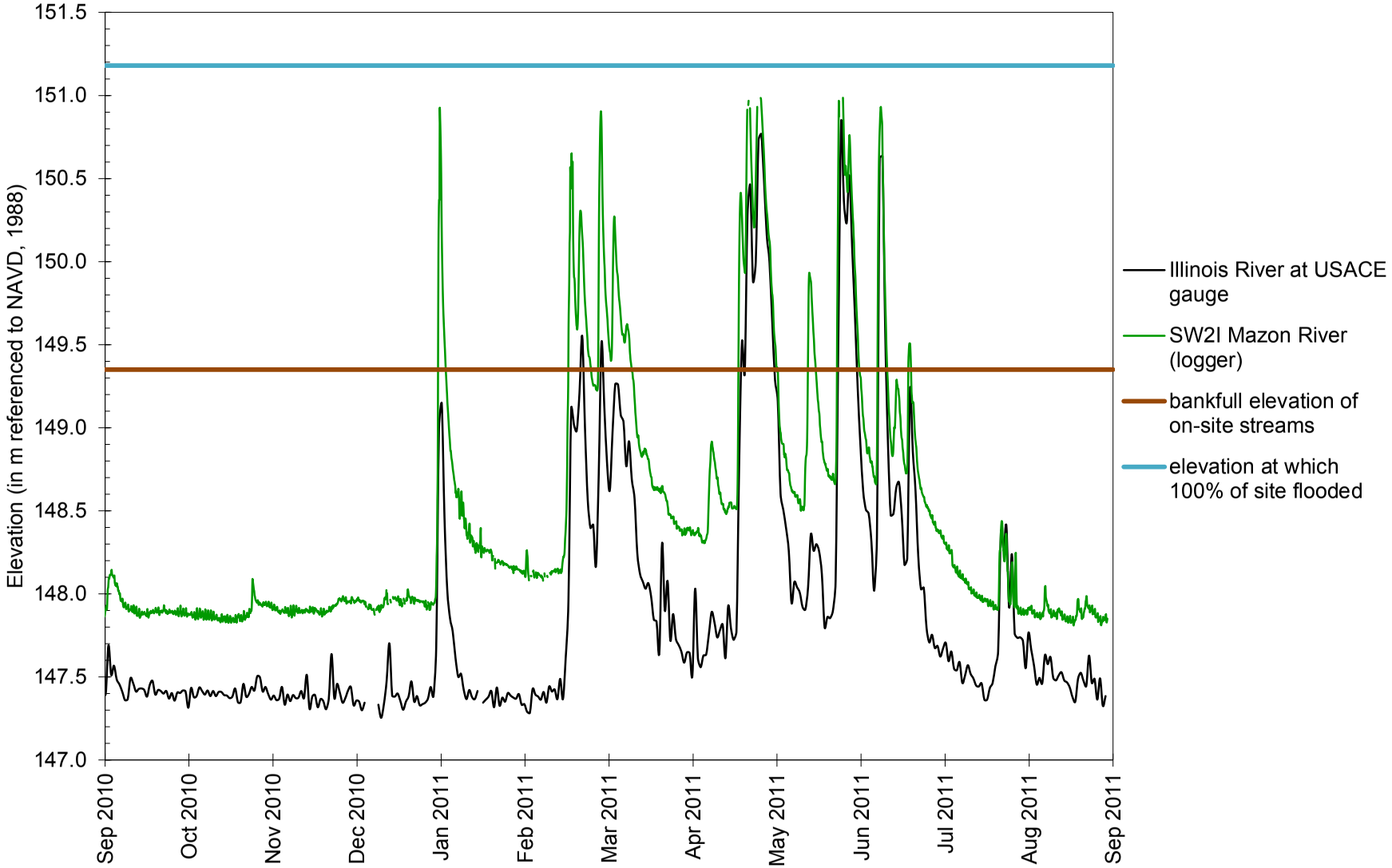
Water-Level Elevations at a Stage Gauge in the Mazon River



Morris Wetland Mitigation Bank

September 1, 2010 through August 31, 2011

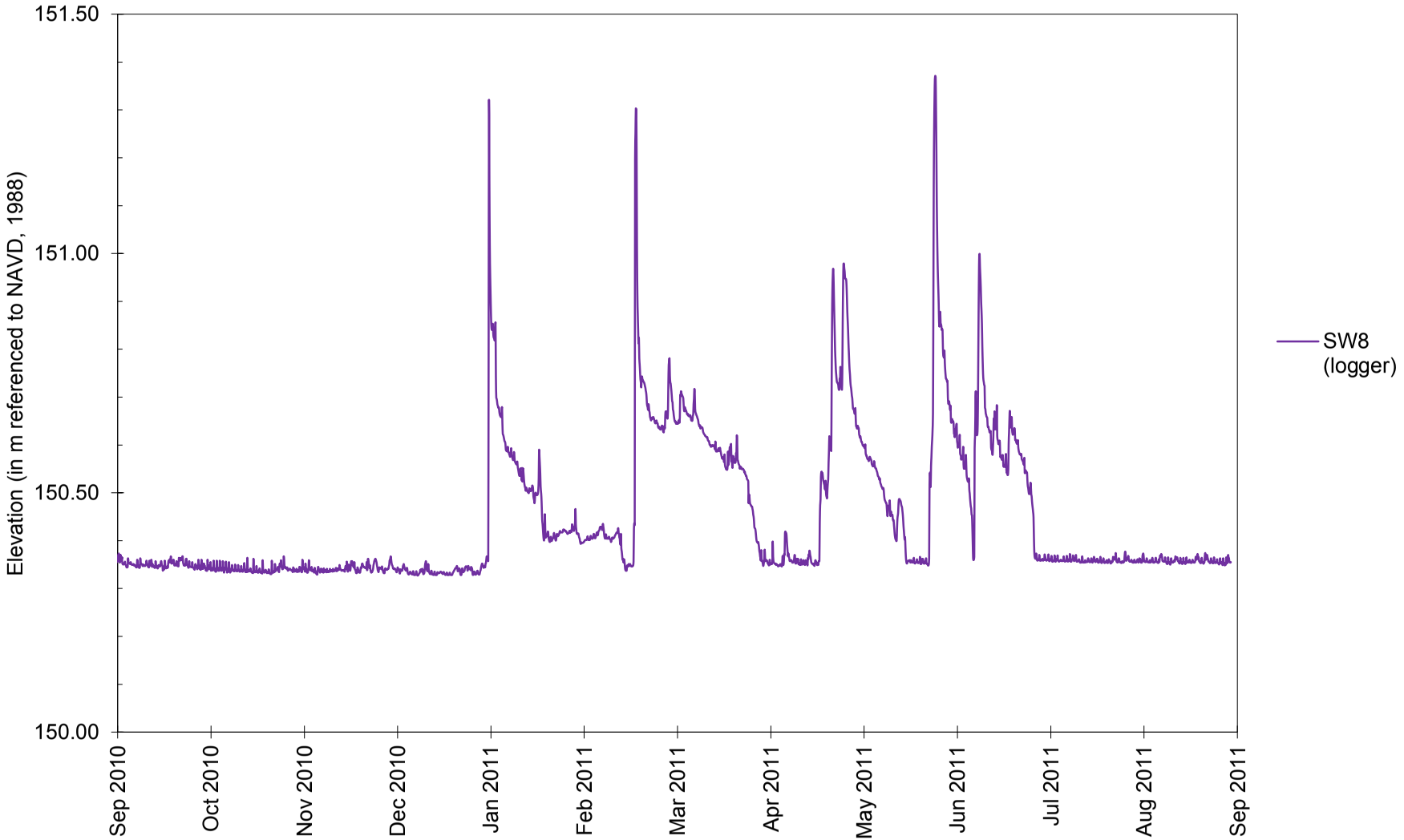
Water-Level Elevations at Selected Data Loggers



Morris Wetland Mitigation Bank

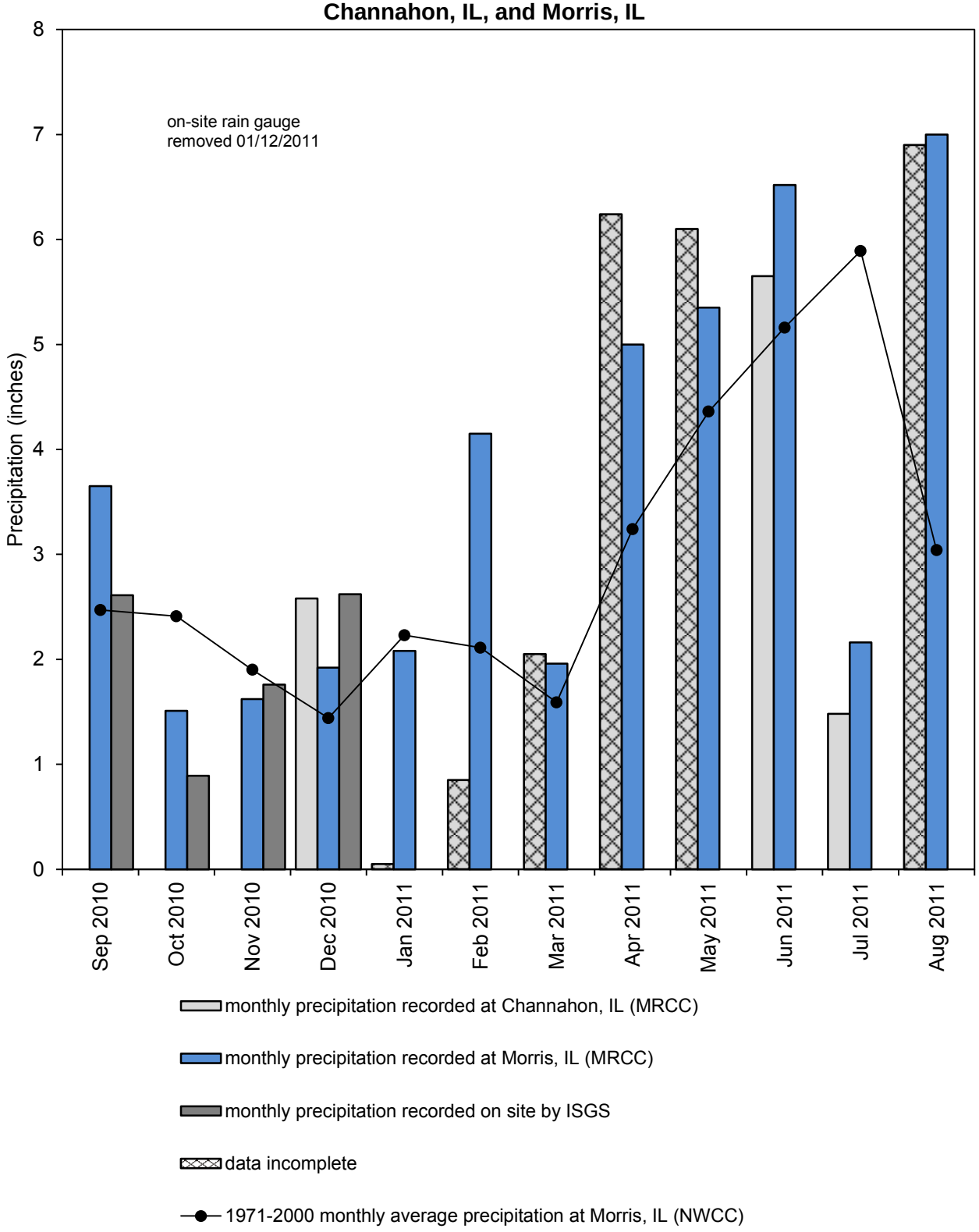
September 1, 2010 through August 31, 2011

Water-Level Elevations at a Surface-Water Data Logger in the "Spider Field"



Morris Wetland Mitigation Bank
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Channahon, IL, and Morris, IL



Graph last updated 10/31/2011

LA GRANGE **ISGS #52**
WETLAND MITIGATION BANK
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.

- January 2003: ISGS submitted a wetland banking instrument to IDOT.

- January 2005: A Level II hydrogeologic characterization 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, constructing a raised access road, and excavating a large basin in the north-central area of the site.

- Summer 2011: Further earthworks were undertaken at the site. The former basin of Amelia Barker Lake was widened and the fill utilized for road construction. Similar to 2010, large magnitude and long-duration floods affected the site. The site remained flooded over most of its area from late April to early July.

WETLAND HYDROLOGY CALCULATION FOR 2011

We estimate that the total area of the site that satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011 was 578 ha (1,428 ac) out of a total site area of 666 ha (1,645 ac); 564 ha (1,393 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 575 ha (1,420 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Rushville, Illinois, is April 6, and the season lasts 208 days (MRCC 2011); 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 3 was the starting date of the 2011 growing season, based on measurements from an on-site soil-temperature data logger.

- Total precipitation for the monitoring period at the Rushville, IL, weather station was 101% of normal. During the March to May period, precipitation was 92% of normal. As in previous years, large precipitation events upstream in the watershed led to widespread and sustained flooding of the site during this period. Precipitation in June, however, was 243% of normal, which contributed to sustained flooding into July.

- In 2011, wells 41S and 42S satisfied wetland hydrology criteria for greater than 5% of the growing season and also for greater than than 12.5% of the growing season,

according to the 1987 Manual. According to the 2010 Midwest Region Supplement, wells 41S and 42S also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. Wells 2S and 14S did not satisfy wetland hydrology criteria.

- Two long-duration flood events occurred during the growing season in 2011. According to the U.S. Army Corps of Engineers gauge at the nearby La Grange lock and dam and one on-site data logger in a monitoring well (Well 41S), the site was inundated for a period sufficient to satisfy wetland hydrology criteria at an elevation of at least 134.10 m (439.96 ft) for greater than 5% of the growing season and at an elevation of at least 133.50 m (437.99 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, surface-water levels at the USACE gauge and the Well 41S data logger also satisfied wetland hydrology criteria at an elevation of at least 133.90 m (439.30 ft) for 14 or more consecutive days during the growing season.

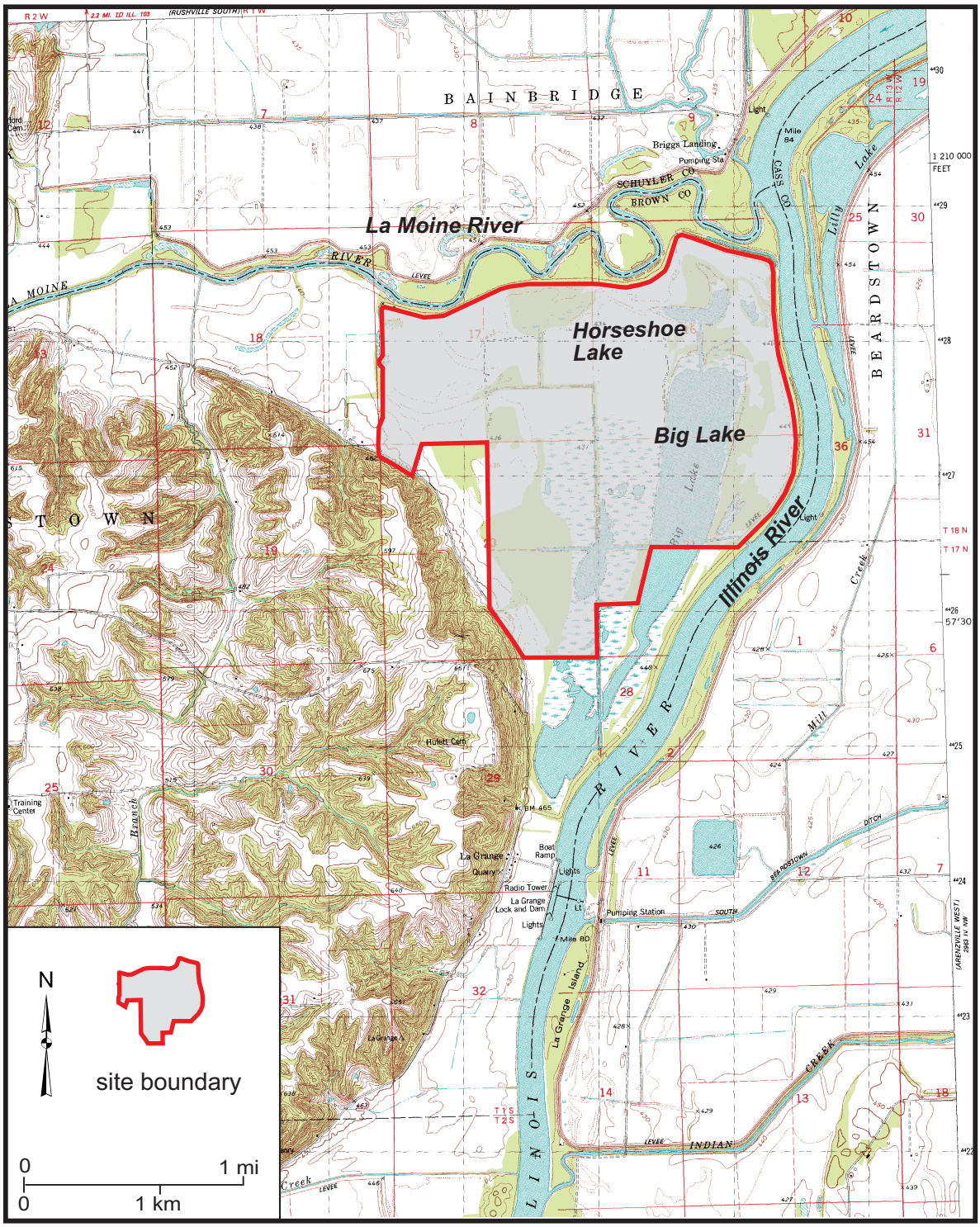
PLANNED FUTURE ACTIVITIES

- Additional flood-resistant data loggers will be added to the site in the Fall of 2011.
- Monitoring of hydrology will continue until no longer required by IDOT.

La Grange Wetland Mitigation Bank

General Study Area and Vicinity

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

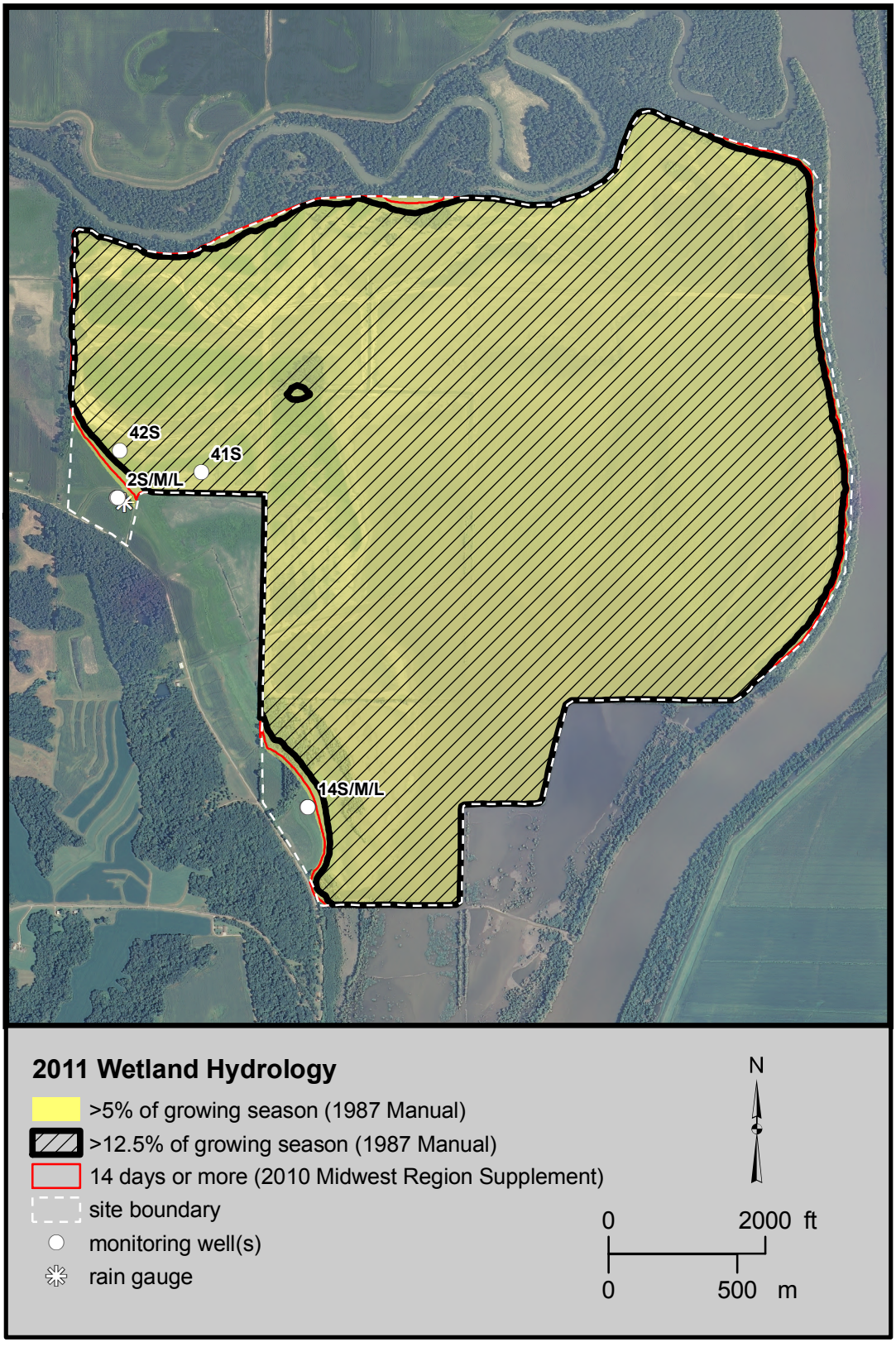


La Grange Wetland Mitigation Bank

Estimated Areal Extent of 2011 Wetland Hydrology

September 1, 2010 through August 31, 2011

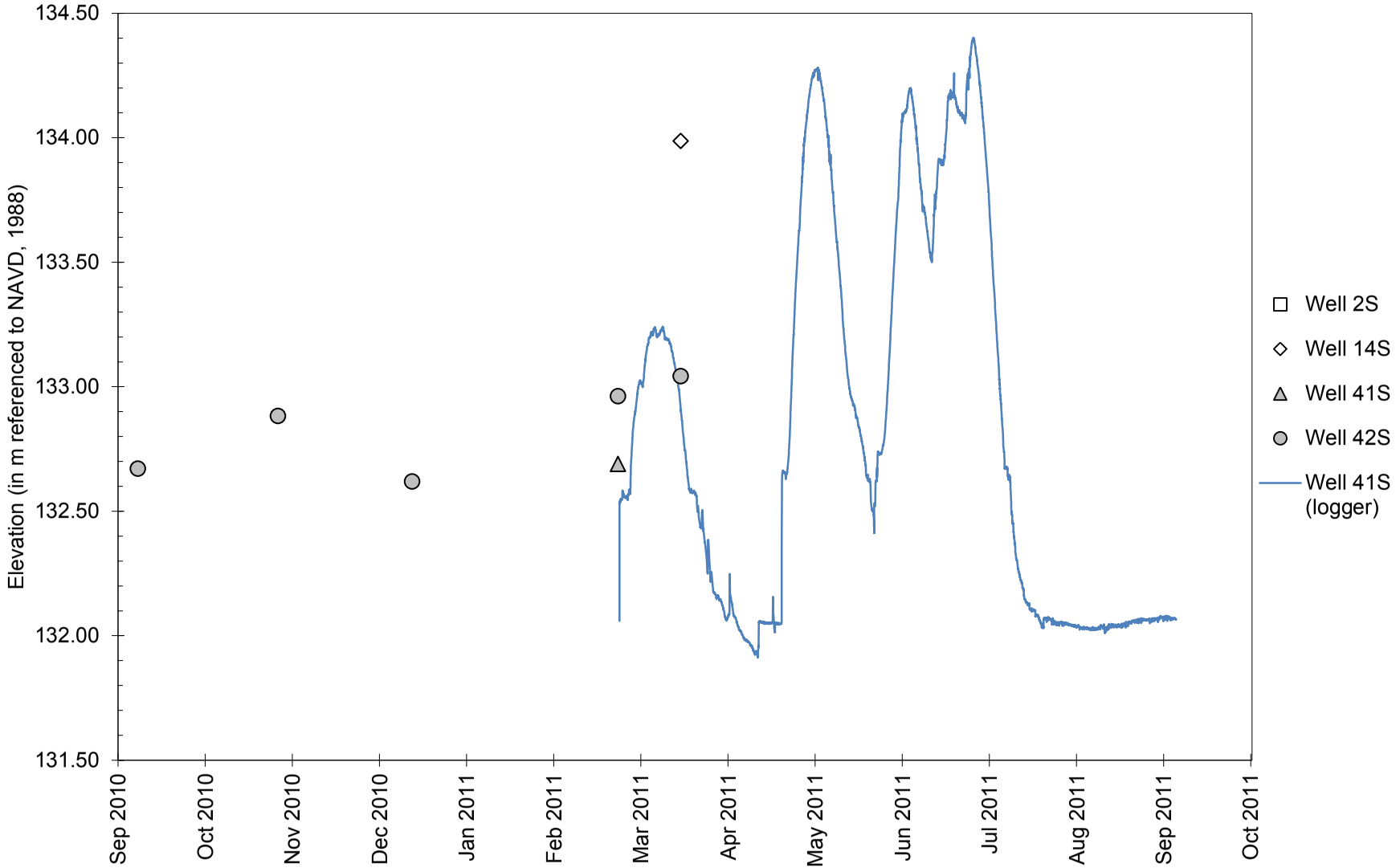
Map based upon Illinois National Agriculture Imagery Program (NAIP) digital orthophotograph, Cooperstown NE quarter quadrangle, taken August 8, 2010 (USDA-FSA 2010)



La Grange Wetland Mitigation Bank

September 1, 2010 through October 1, 2011

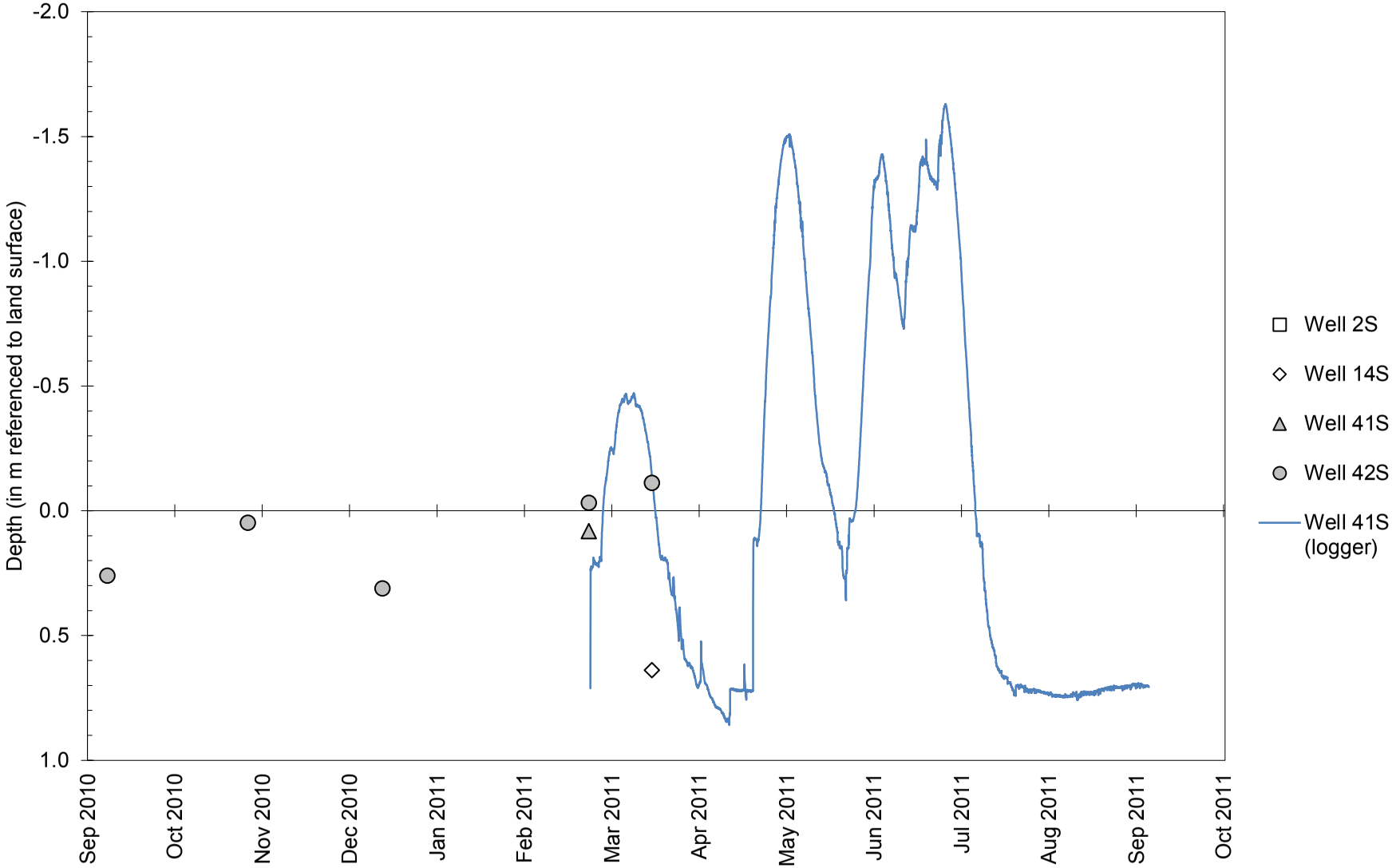
Water-Level Elevations in Shallow Monitoring Wells



La Grange Wetland Mitigation Bank

September 1, 2010 through October 1, 2011

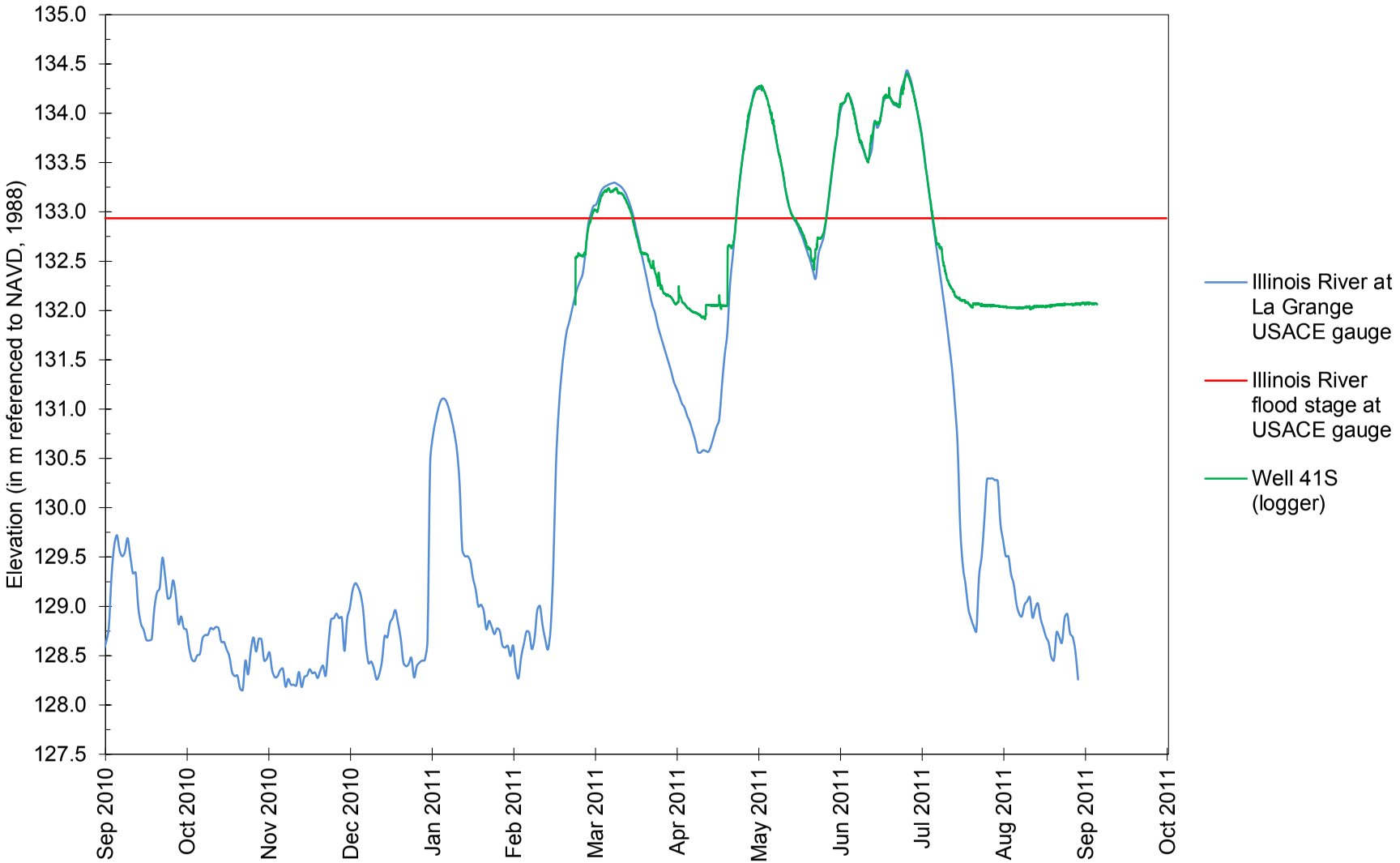
Depth to Water in Shallow Monitoring Wells



La Grange Wetland Mitigation Bank

September 1, 2010 through October 1, 2011

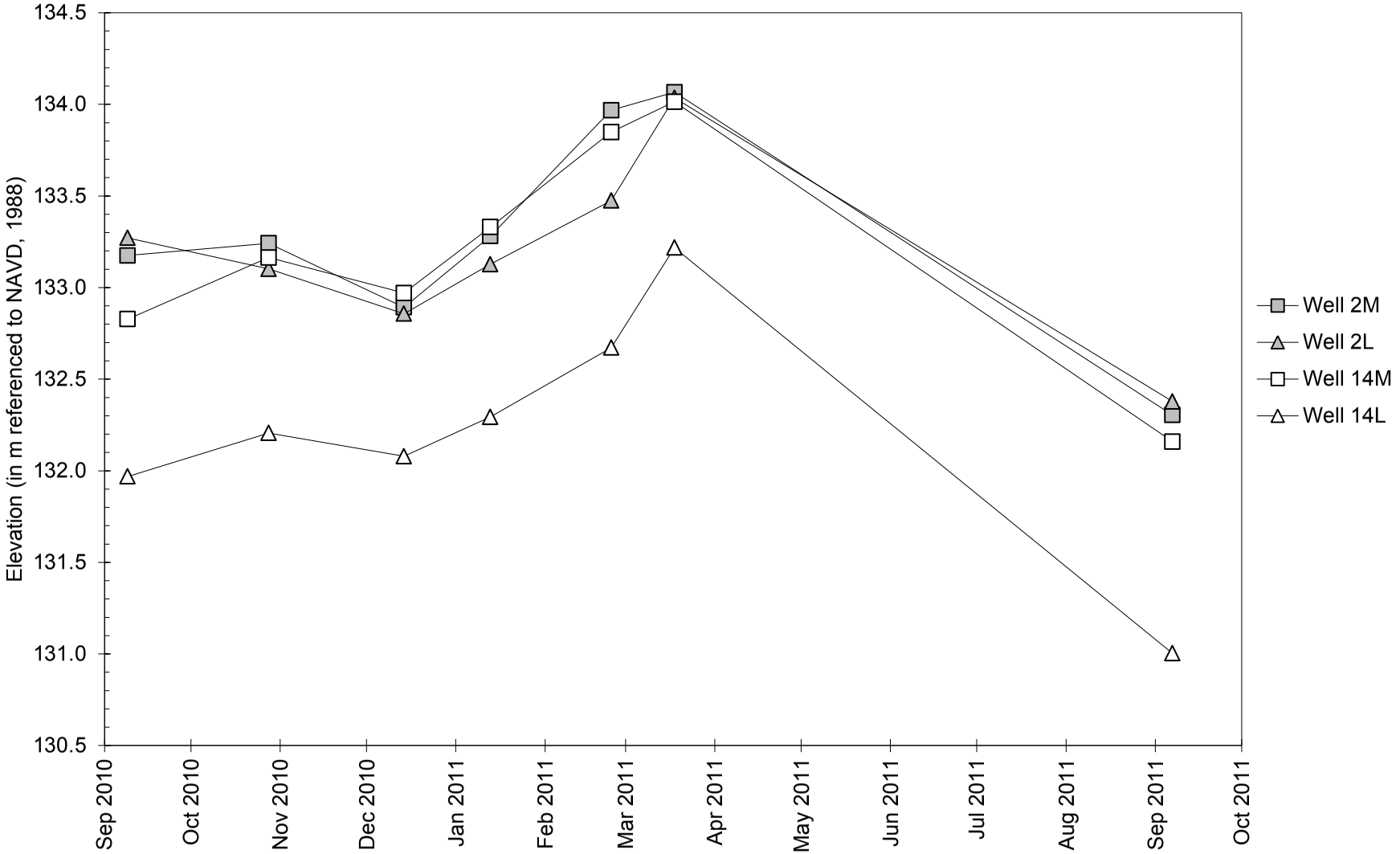
Water-Level Elevations at the La Grange USACE Gauge and an On-Site Data Logger



La Grange Wetland Mitigation Bank

September 1, 2010 through October 1, 2011

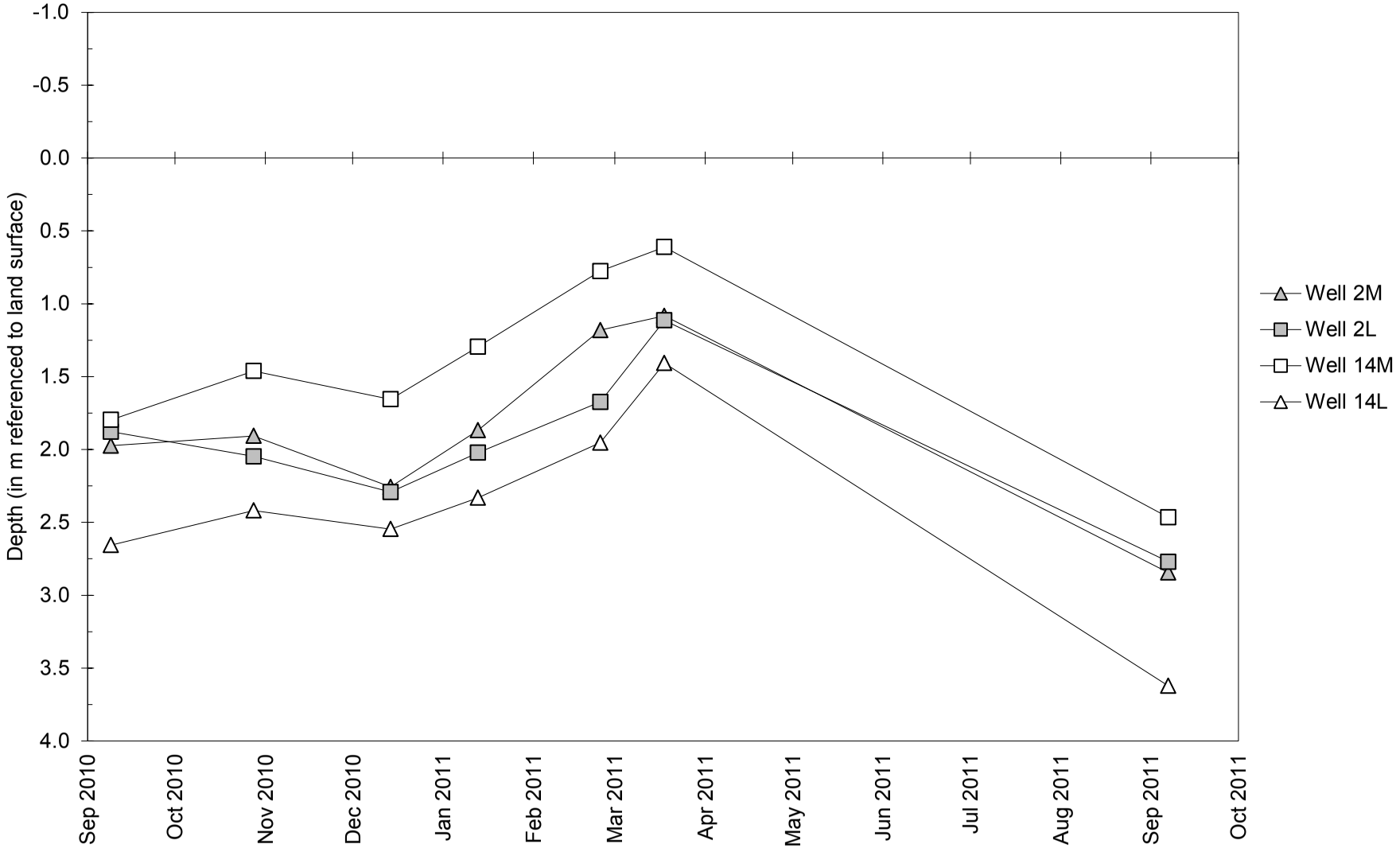
Water-Level Elevations in Deeper Monitoring Wells



La Grange Wetland Mitigation Bank

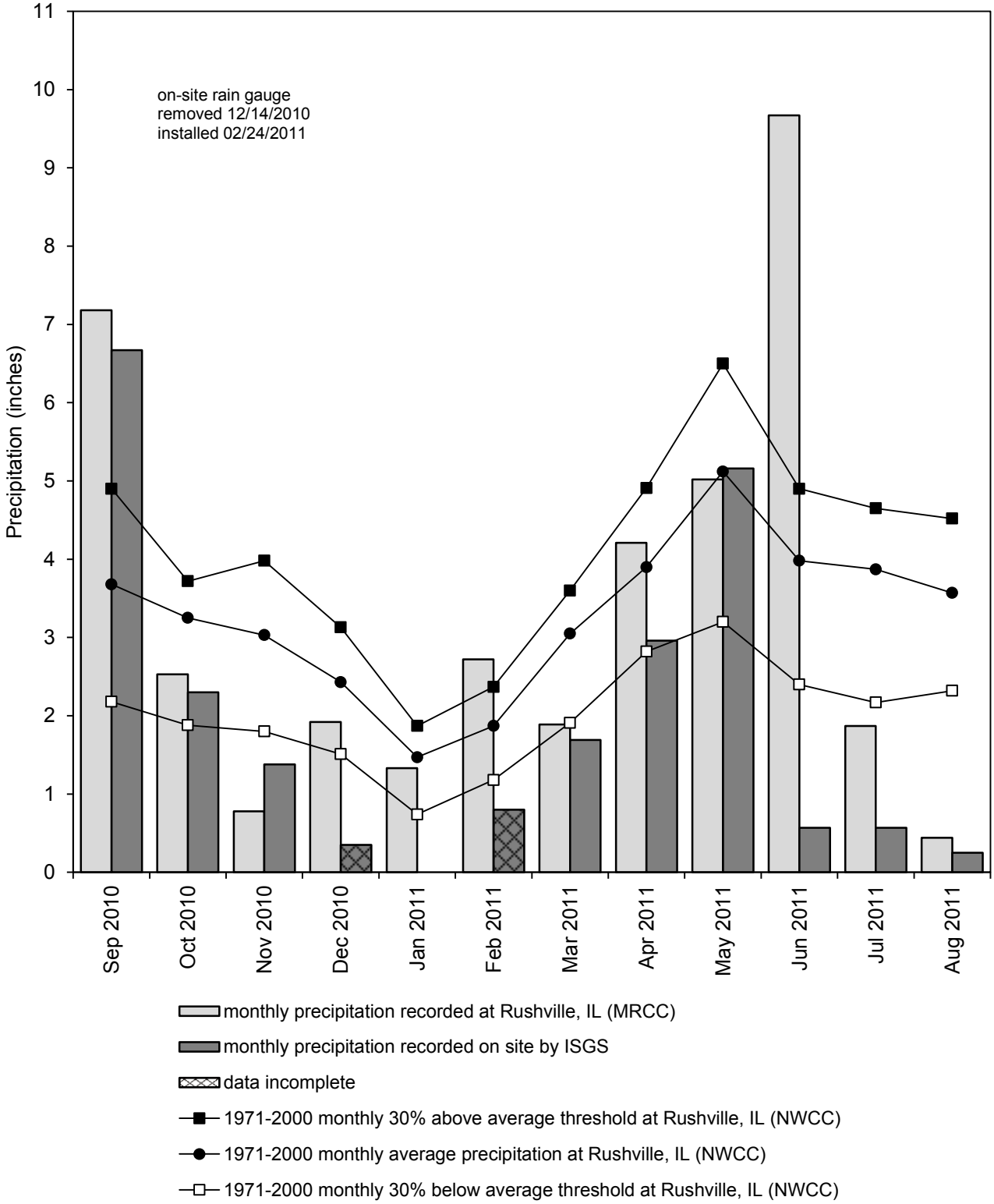
September 1, 2010 through October 1, 2011

Depth to Water in Deeper Monitoring Wells



La Grange Wetland Mitigation Bank
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Rushville, IL



Graph last updated 10/31/2011

FAIRMONT CITY **ISGS #53**
POTENTIAL WETLAND MITIGATION SITE
FAP 14
Sequence #27
Saint Clair County, near Fairmont City, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Monson

SITE HISTORY

- August 1999: The ISGS conducted an initial site evaluation.
- September 2000: ISGS began monitoring groundwater and surface-water levels.
- March 2003: A Level II hydrogeologic characterization report was submitted to IDOT (ISGS Open-File Series 2003–04).

WETLAND HYDROLOGY CALCULATION FOR 2011

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2011 for greater than 5% of the growing season was estimated to be 14.5 ha (35.9 ac) out of a total area of 32.4 ha (80.0 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season was estimated to be 13.9 ha (34.3 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 14.5 ha (35.9 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

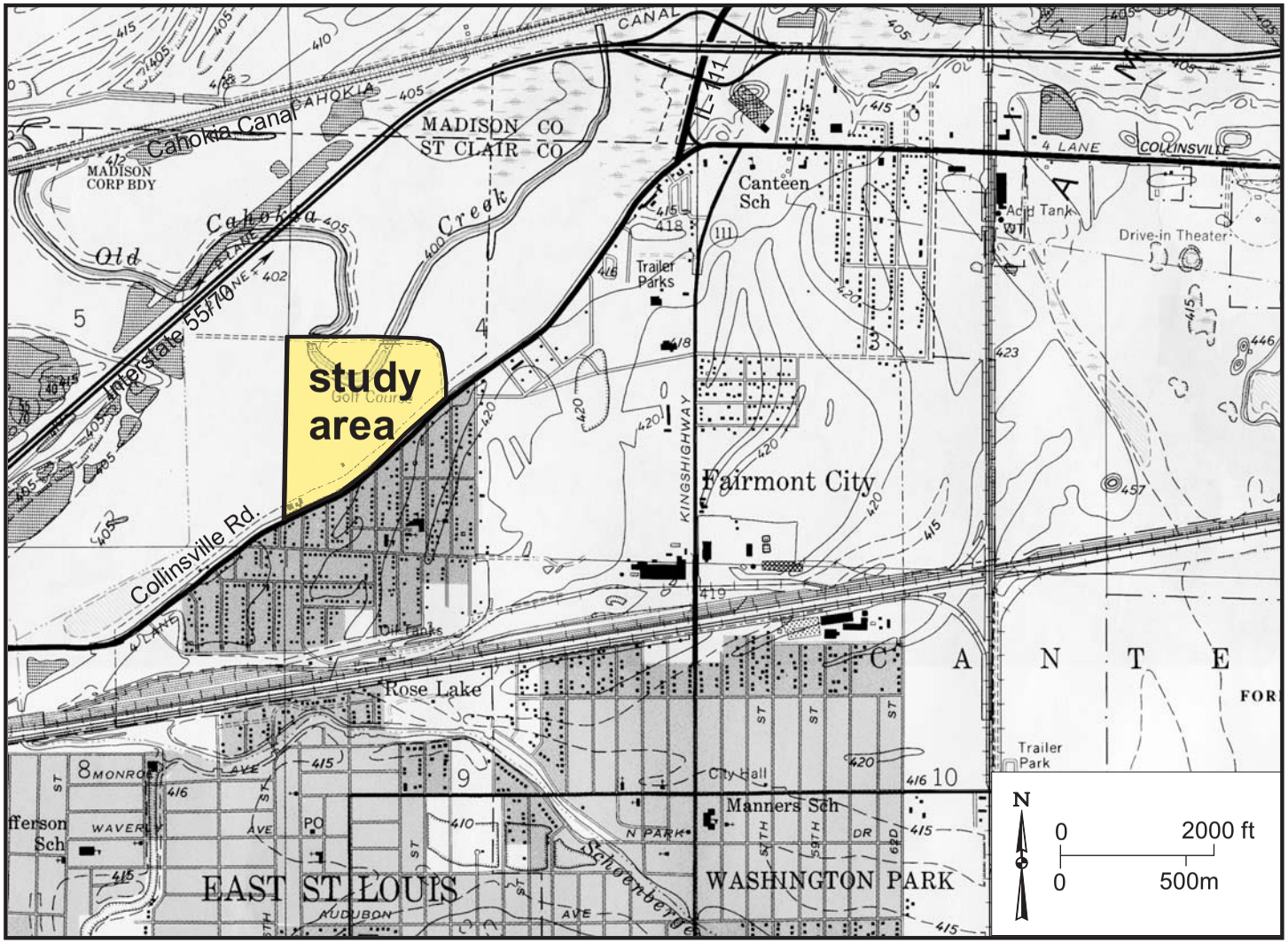
- The median date that the growing season begins in nearby Belleville, Illinois, is April 6 and the season lasts 199 days (MRCC 2011); 5% of the growing season is 10 days and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 4 was the starting date of the 2011 growing season based on both vegetation growth and development and soil temperatures measured at the wetland mitigation site.
- Total precipitation recorded at the Belleville, Illinois, weather station during the monitoring period was 114% of normal, and total precipitation in Spring 2011 (March through May) was 144% of normal.
- In 2011, water levels measured in all of the soil-zone monitoring wells satisfied wetland hydrology criteria for greater than 5% of the growing season, and all of the soil-zone monitoring wells, except 6S, satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Water levels measured in all of the soil-zone monitoring wells satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.
- Surface-water elevations measured in the pond (SW Pond [data logger], Gauge AR2) and the drainage ditch along the base of the terrace (Gauge BR) reveal that surface water was at or above 122.30 m (401.27 ft) for greater than 5% of the growing season, and at or above 122.29 m (401.23 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. In addition, these gauges reveal that surface-water was

at or above 122.29 m (401.23 ft) for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.

PLANNED FUTURE ACTIVITIES

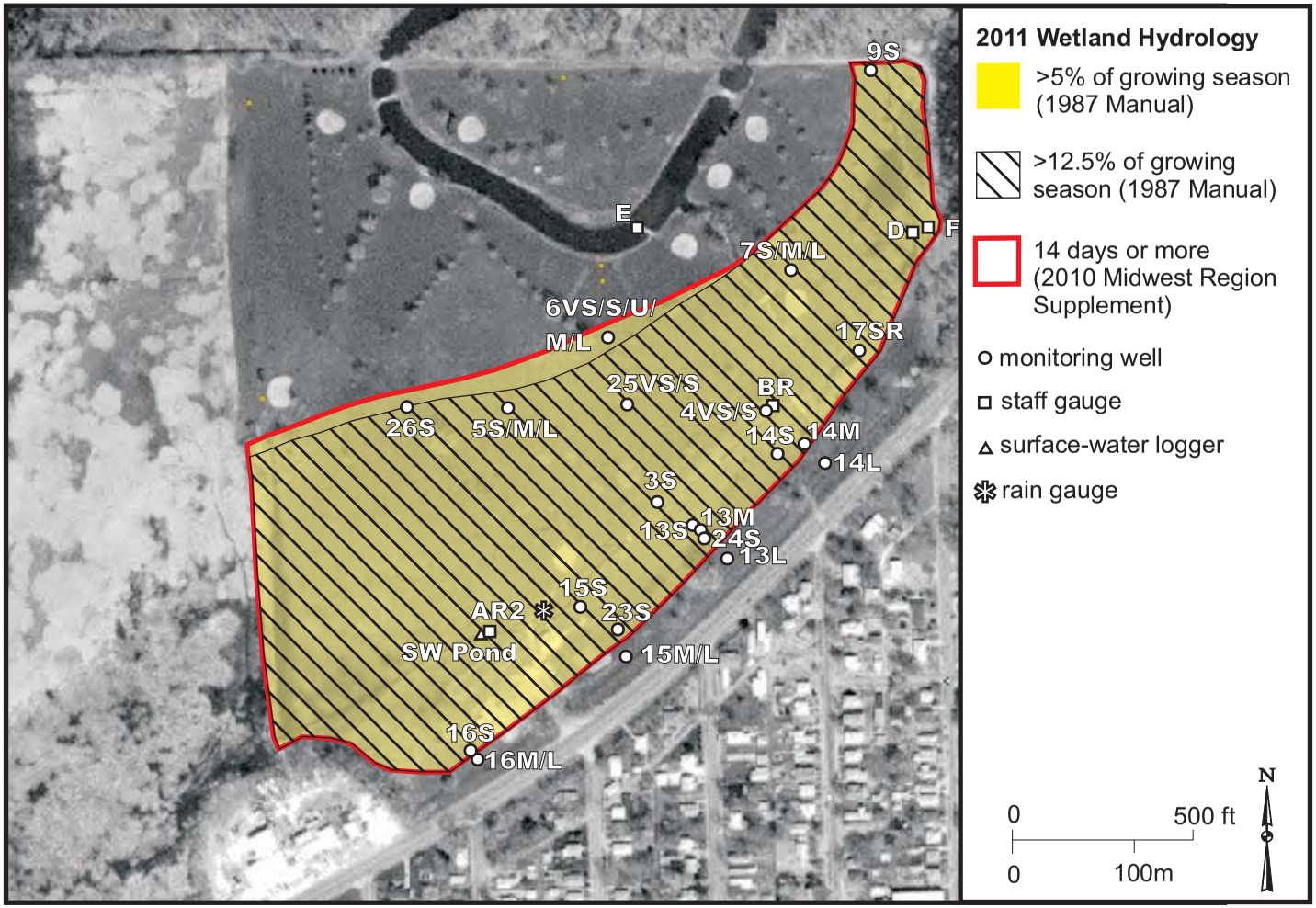
- Monitoring will continue at this site until notified otherwise by IDOT.

Fairmont City Potential Wetland Mitigation Site
(FAP 14)
General Study Area and Vicinity
from the USGS Topographic Series, Monks Mound, IL, 7.5-minute Quadrangle (USGS 1993)



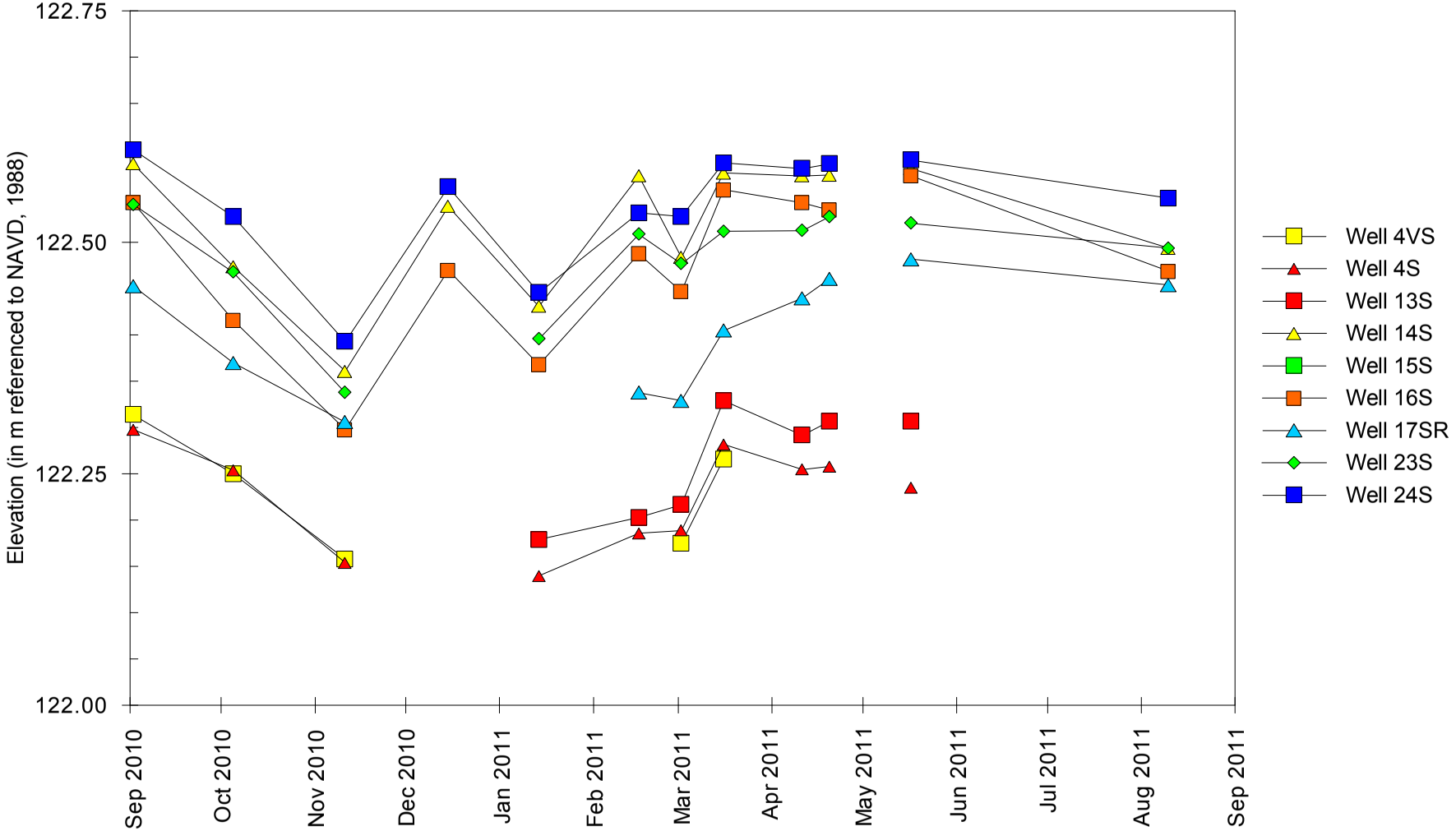
Fairmont City Potential Wetland Mitigation Site
(FAP 14)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on USGS digital orthophotograph, Monks Mound SW quarter quadrangle
produced from 04/08/1999 aerial photography (ISGS 2001)



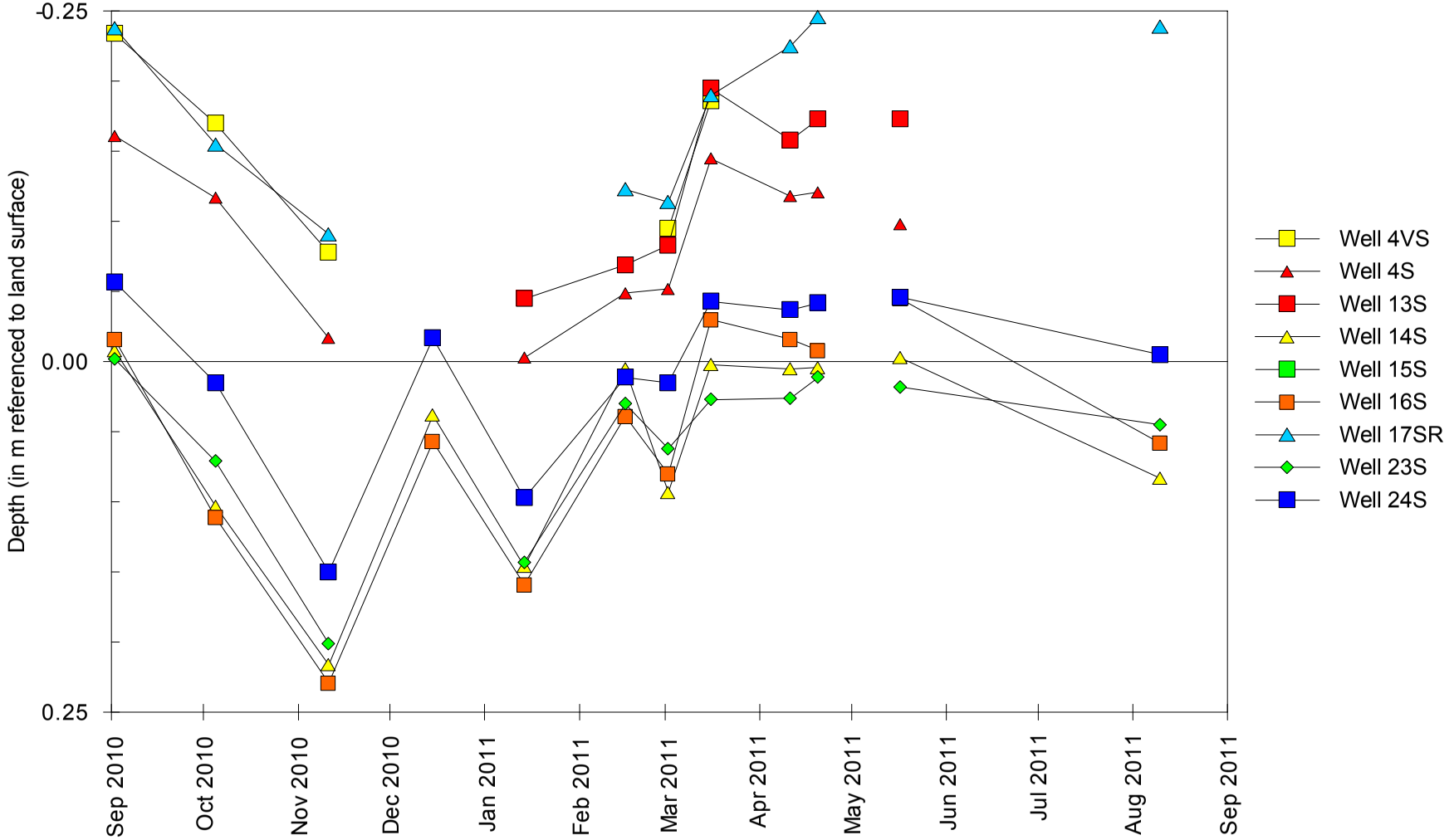
Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in S and VS Monitoring Wells South of the Drainage Ditch



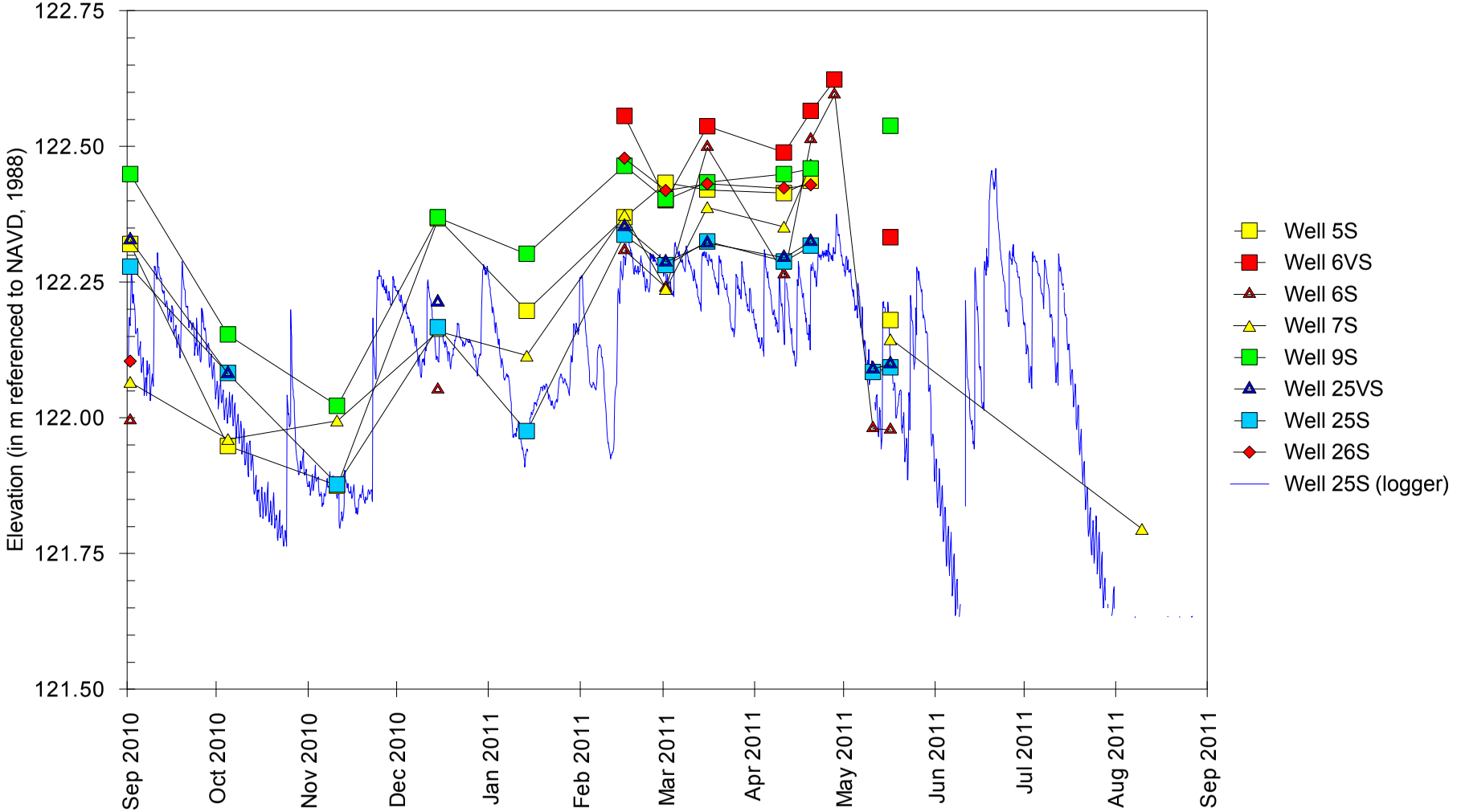
Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in S and VS Monitoring Wells
South of the Drainage Ditch



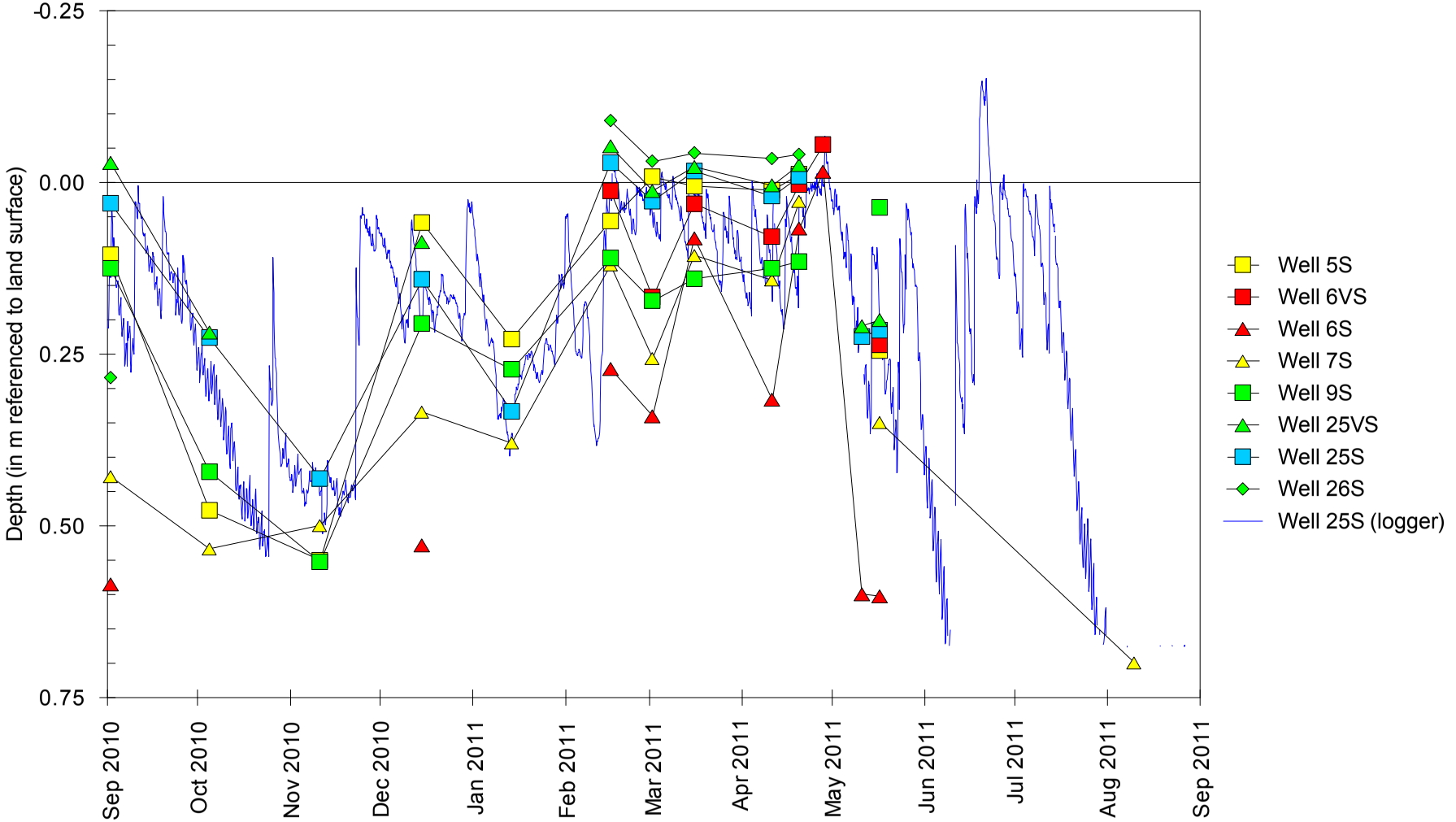
Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in S and VS Monitoring Wells North of the Drainage Ditch



Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

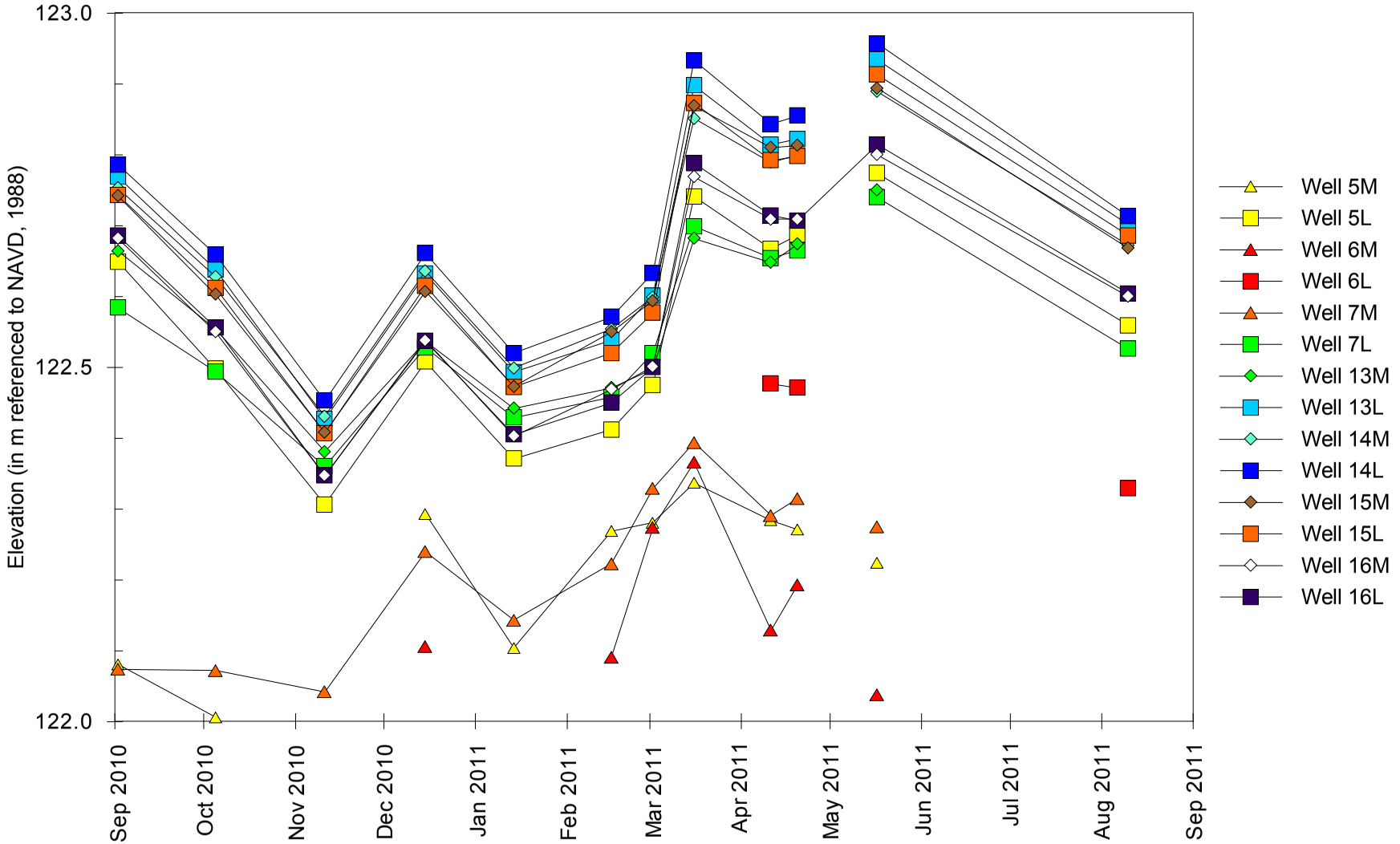
Depth to Groundwater in S and VS Monitoring Wells
North of the Drainage Ditch



Fairmont City Potential Wetland Mitigation Site

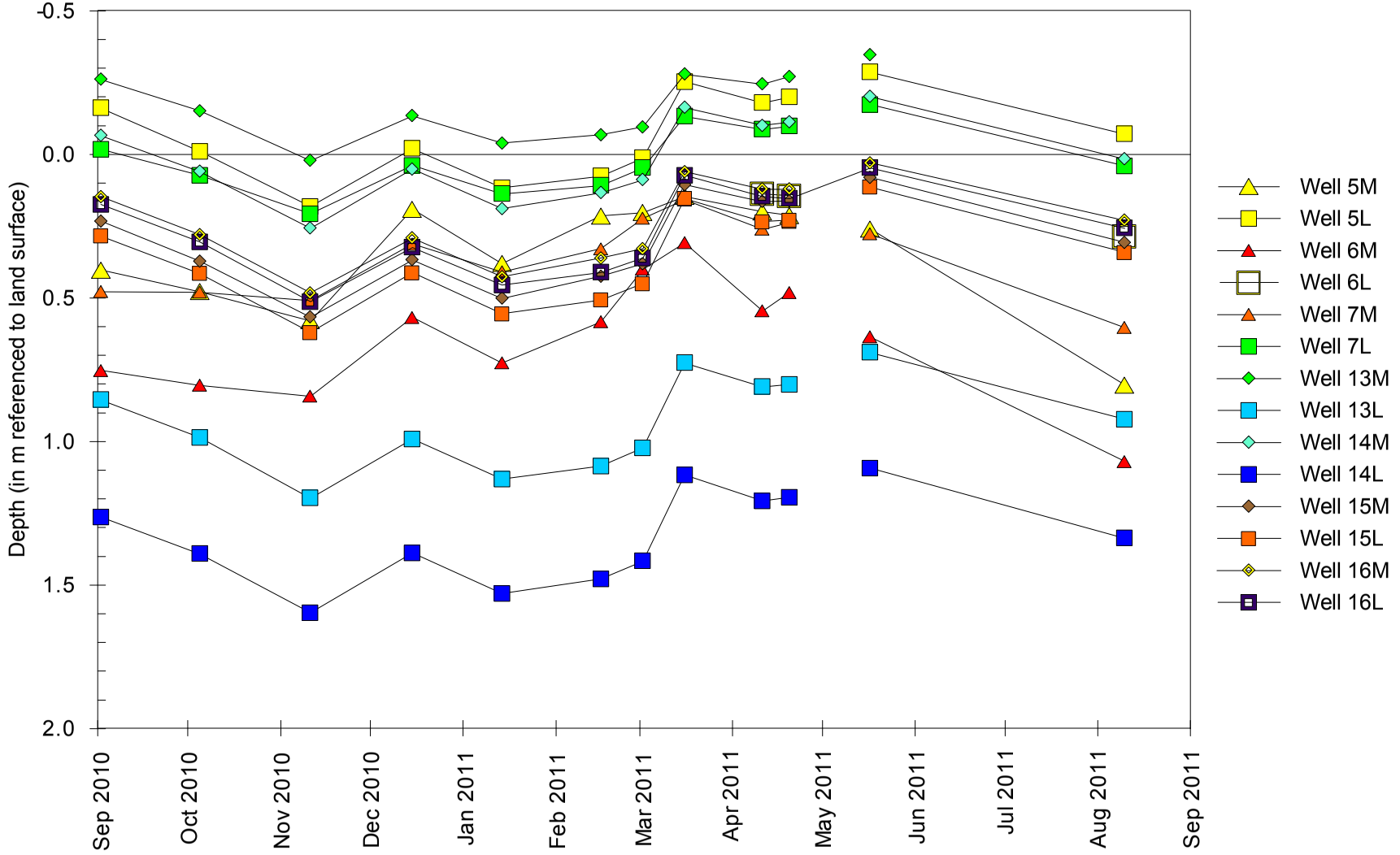
September 1, 2010 through August 31, 2011

Water-Level Elevations in M and L Monitoring Wells



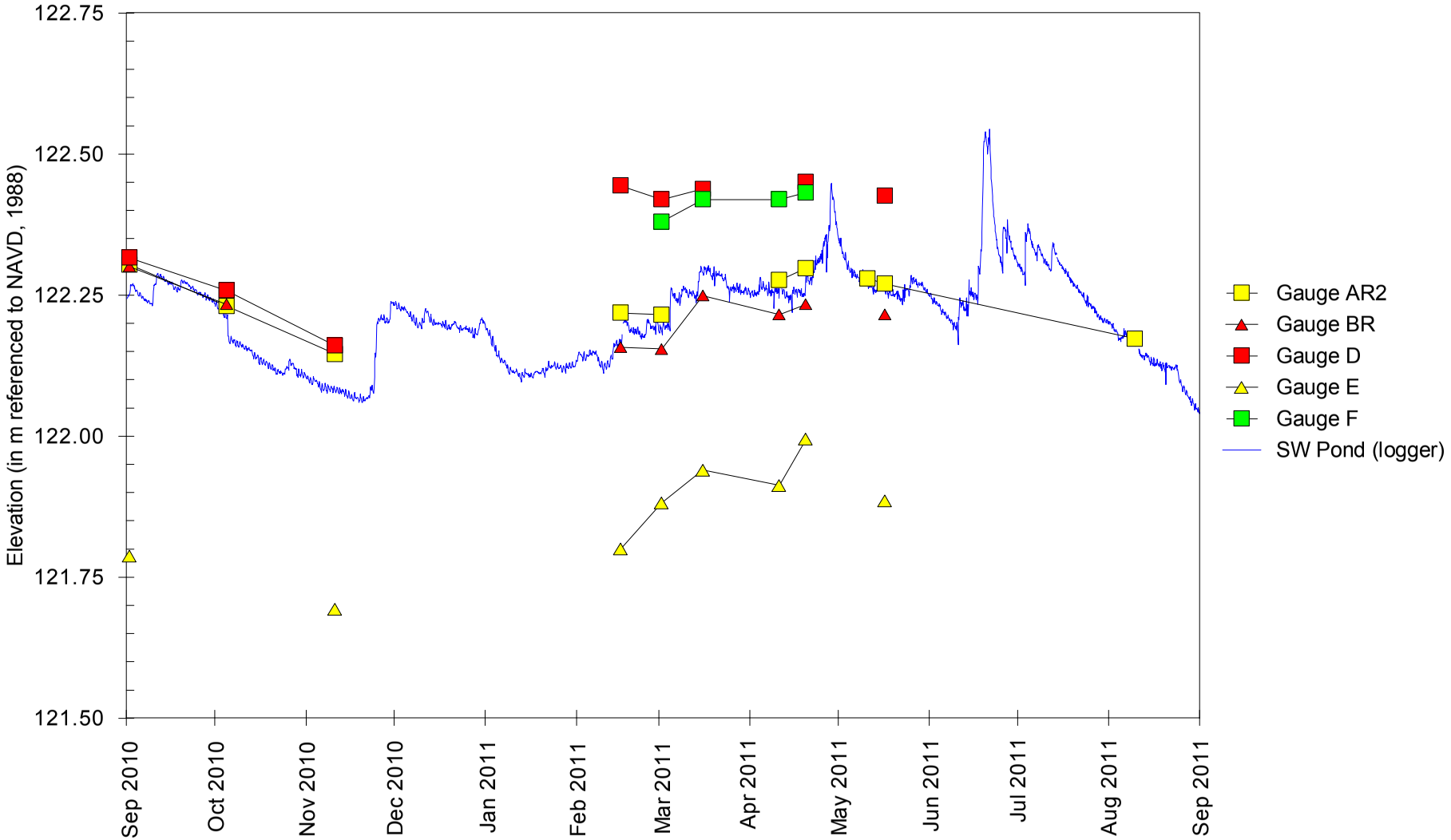
Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in M and L Monitoring Wells



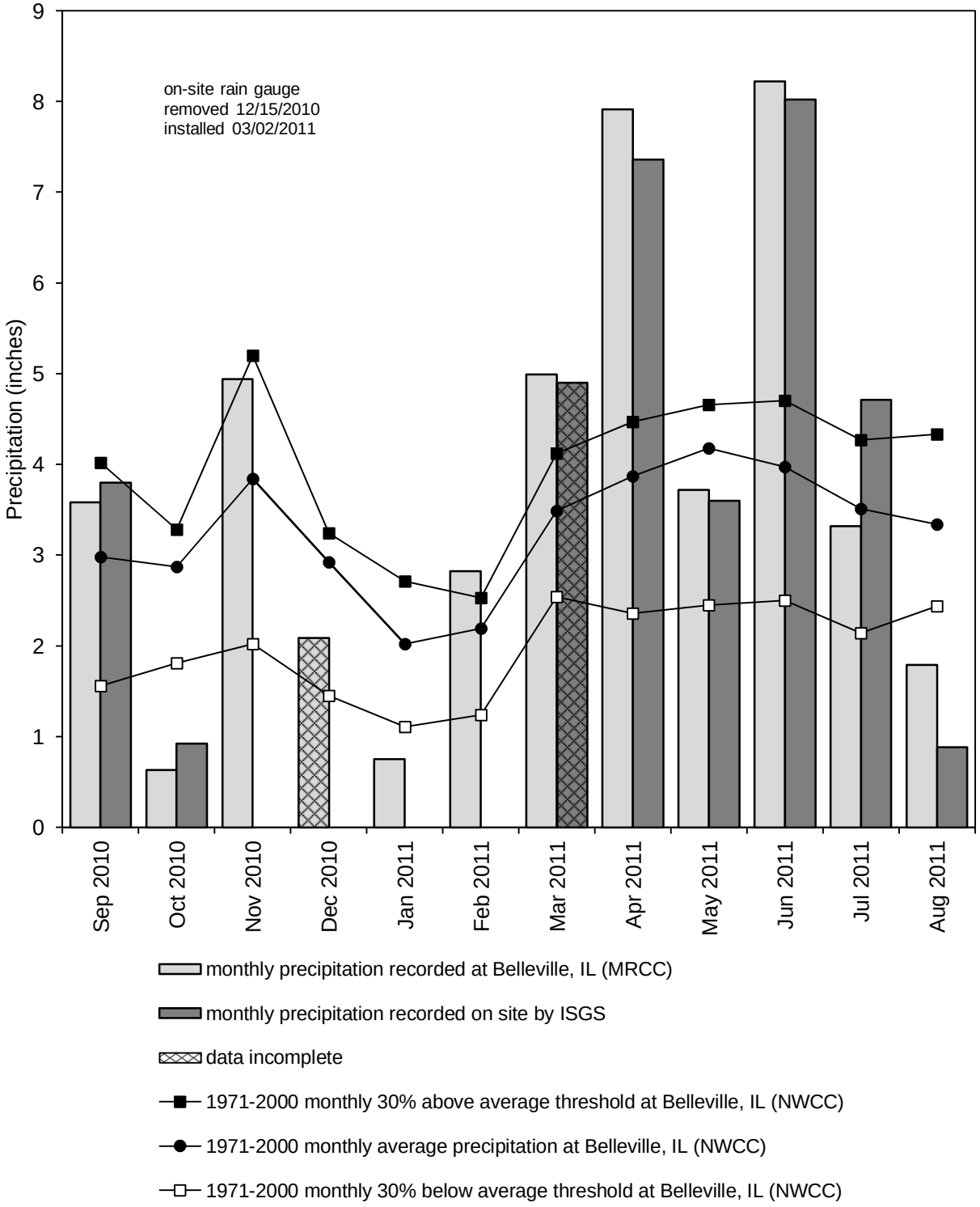
Fairmont City Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Surface-Water Elevations at Staff Gauges and Data Loggers



Fairmont City
Potential Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Southern Illinois University Research Center, Belleville, IL



Graph last updated 10/31/2011

FORMER TIERNAN PROPERTY **ISGS #57**
POTENTIAL WETLAND MITIGATION SITE
FAP 14
Sequence #27
Saint Clair County, near Cahokia, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Monson

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 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) in 2011 for greater than 5% of the growing season was estimated to be 21.7 ha (53.7 ac) out of a total site area of 26.4 ha (65.3 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season was estimated to be 21.4 ha (52.9 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 21.7 ha (53.7 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Cahokia, Illinois, is April 2 and the season lasts 214 days (MRCC 2011); 5% of the growing season is 11 days and 12.5% of the growing season is 27 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 1 was the starting date of the 2011 growing season based on soil temperatures measured at the potential wetland mitigation site.

- Total precipitation recorded at the Belleville, Illinois, weather station during the monitoring period was 114% of normal, and total precipitation in Spring 2011 (March through May) was 144% of normal.

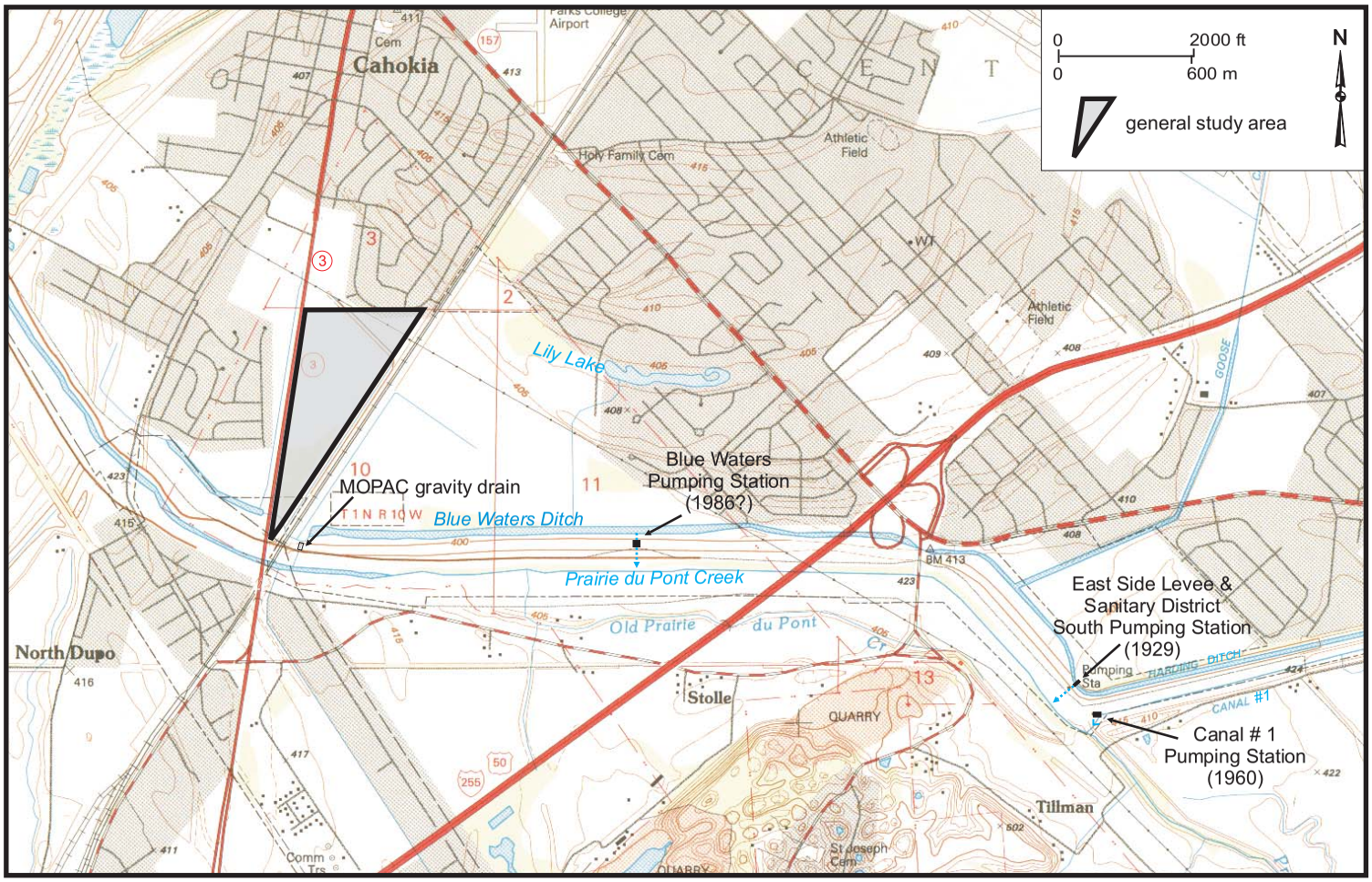
- In 2011, water levels measured in all of the soil-zone monitoring wells, except 6S and 23VS, satisfied wetland hydrology criteria for greater than 5% of the growing season, and water levels measured in all of the soil-zone monitoring wells, except 6S, 23VS and 23S, satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, water levels measured in all of the soil-zone monitoring wells except 6S and 23VS satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

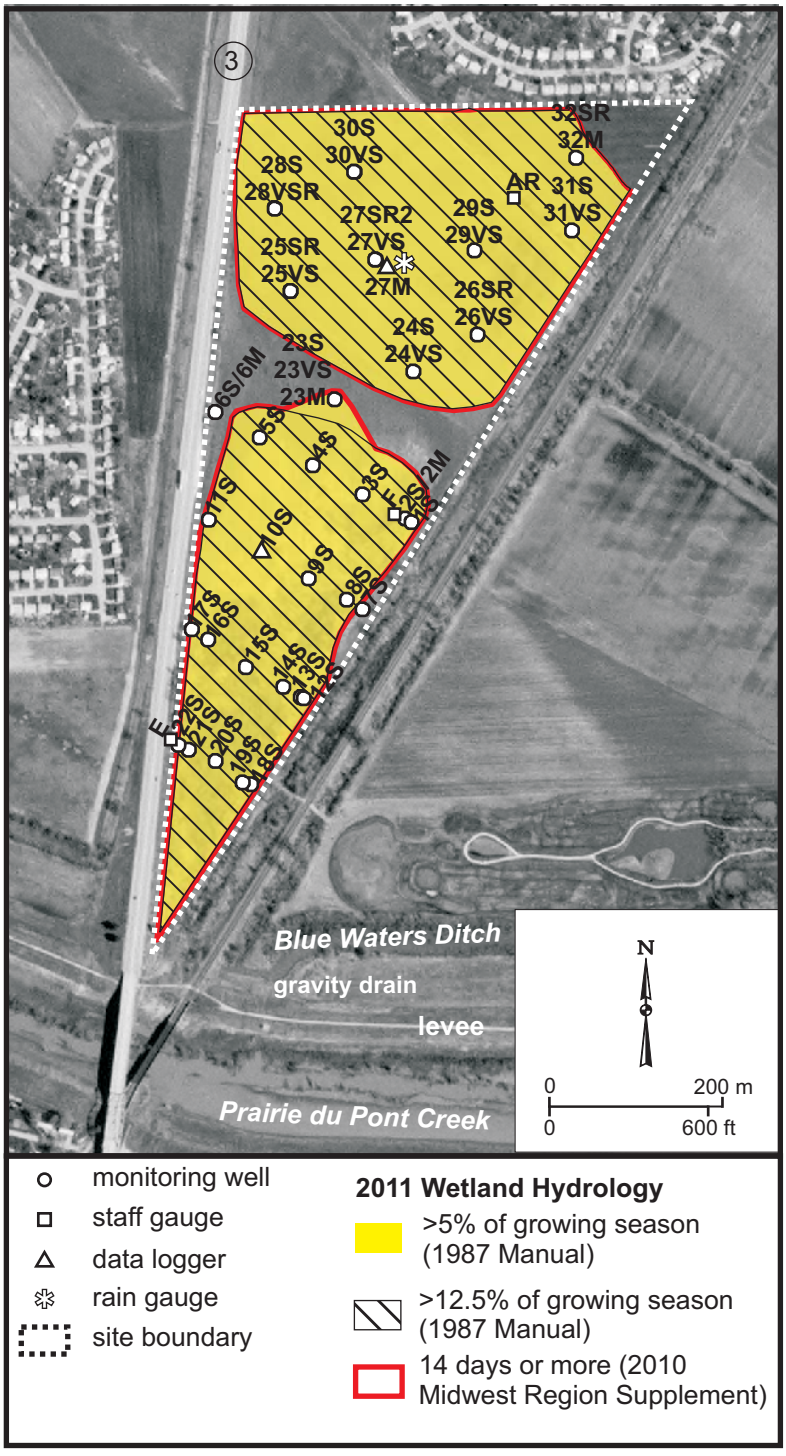
Former Tiernan Property Potential Wetland Mitigation Site
(FAP 14)
General Study Area and Vicinity

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



Former Tiernan Property
Potential Wetland Mitigation Site
(FAP 14)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

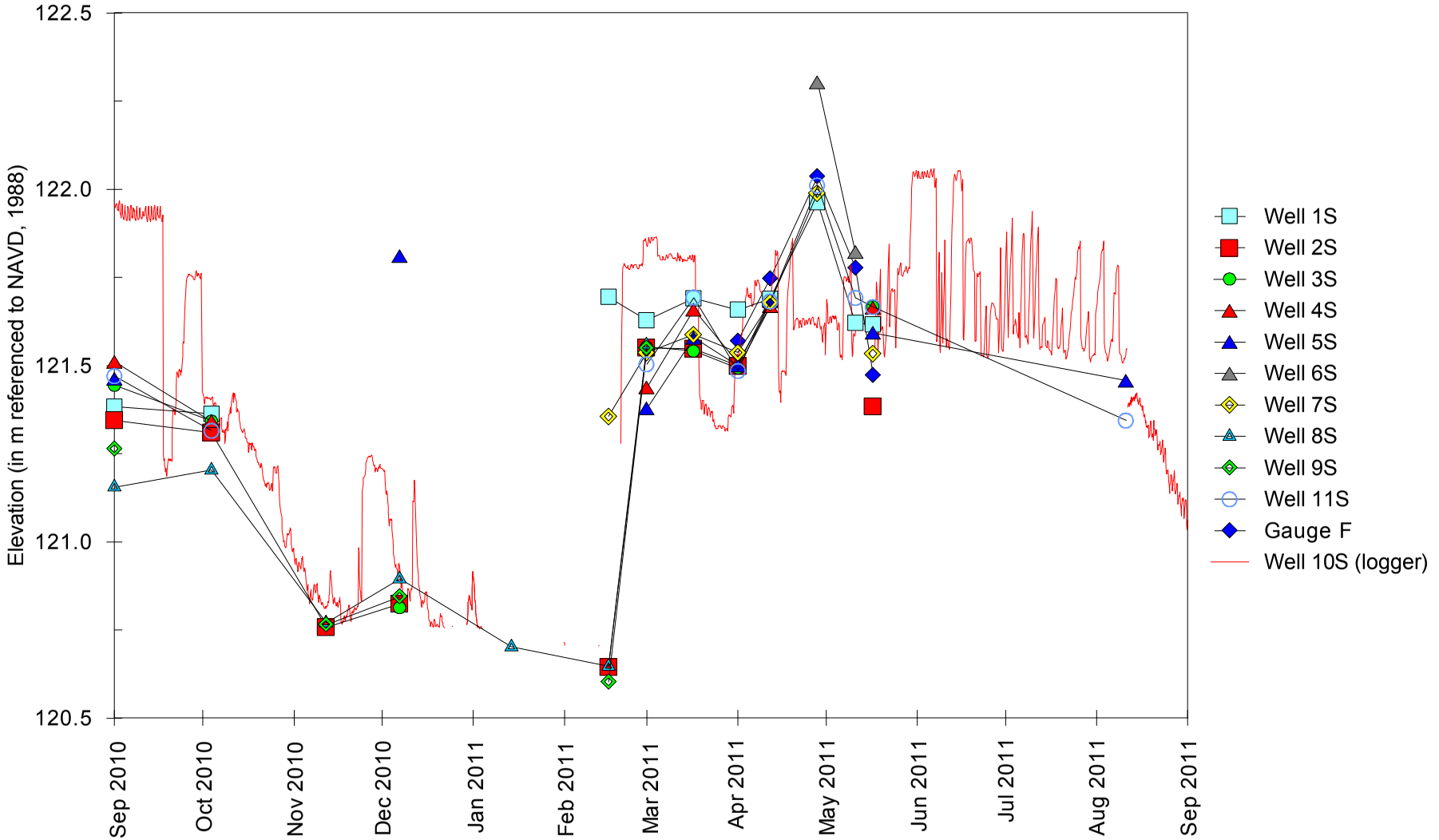
Map based on USGS digital orthophotograph, Cahokia SW quarter quadrangle
produced from 04/02/98 aerial photography (ISGS 2000)



Former Tiernan Property Potential Wetland Mitigation Site

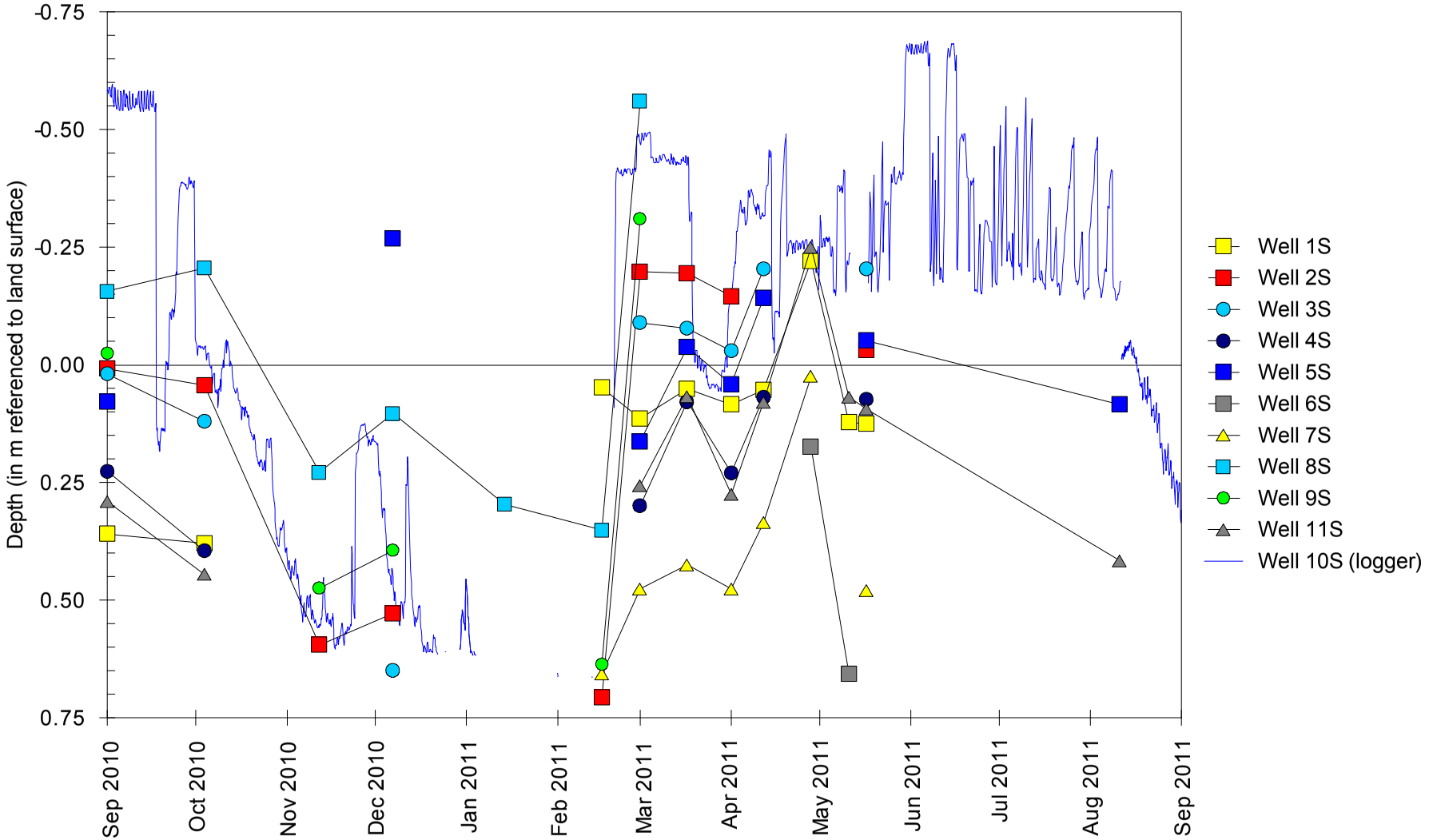
September 1, 2010 through August 31, 2011

Water-Level Elevations in S Monitoring Wells and at Surface-Water Gauges



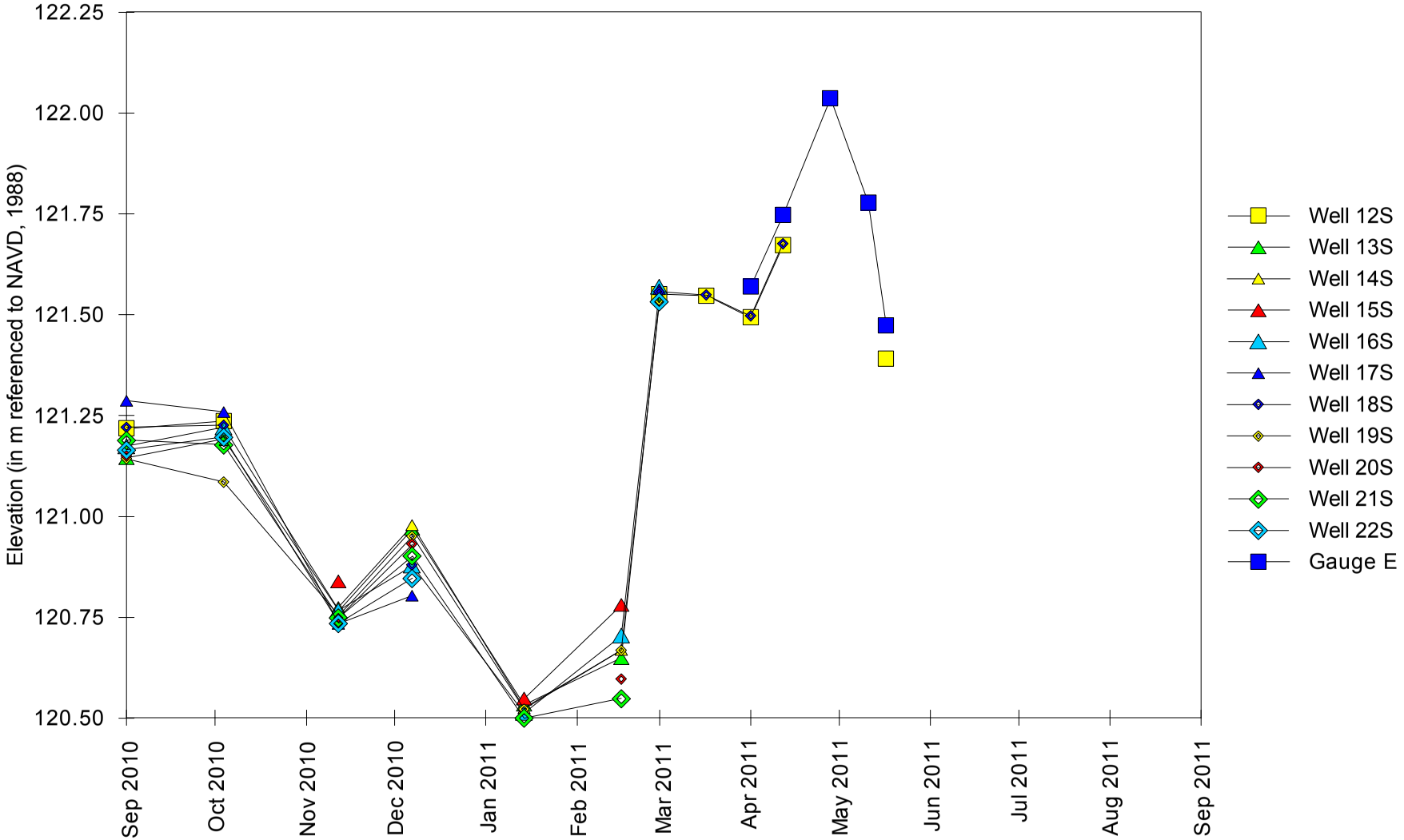
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in S Monitoring Wells



Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

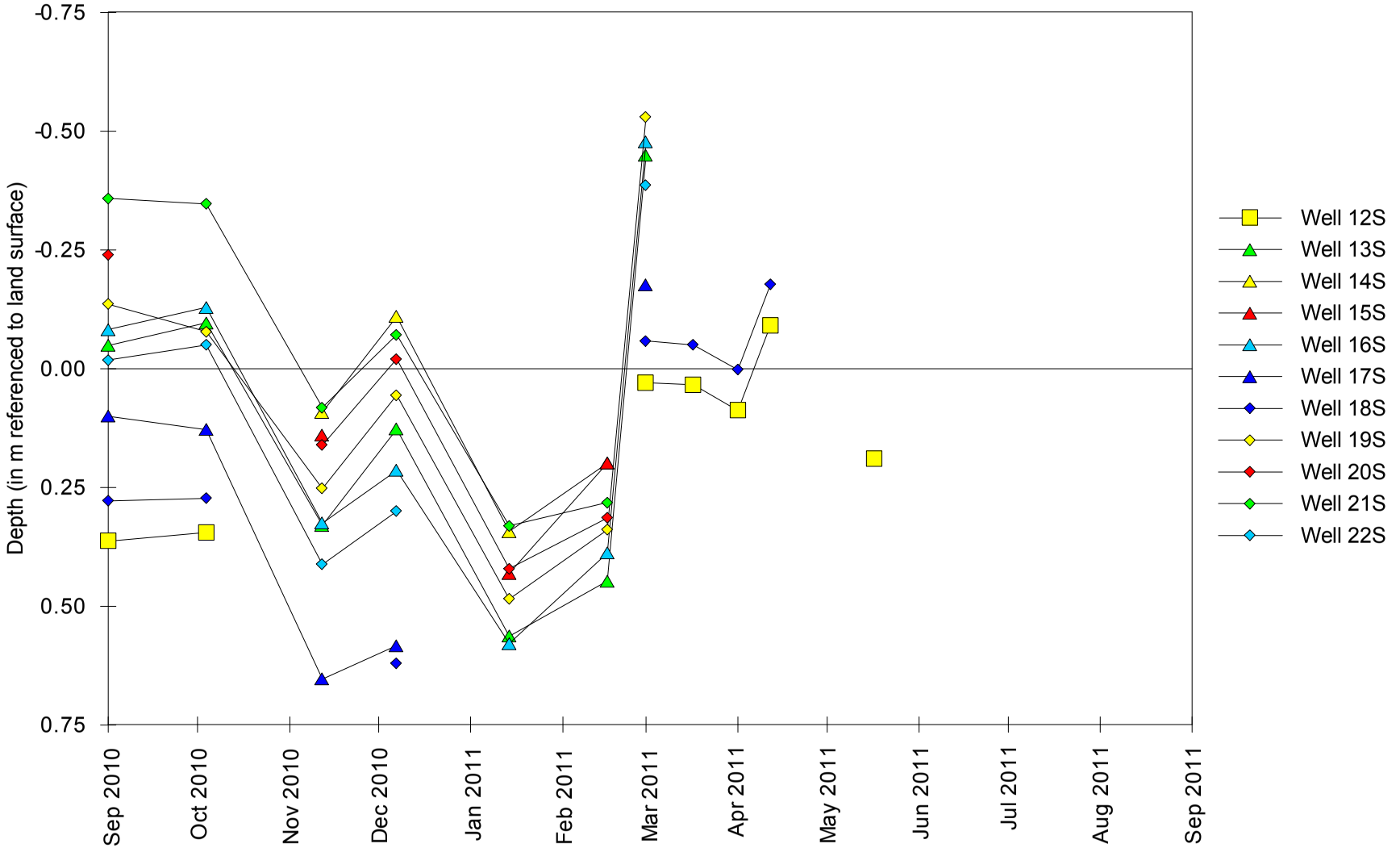
Water-Level Elevations in S Monitoring Wells and at Surface-Water Gauges



06

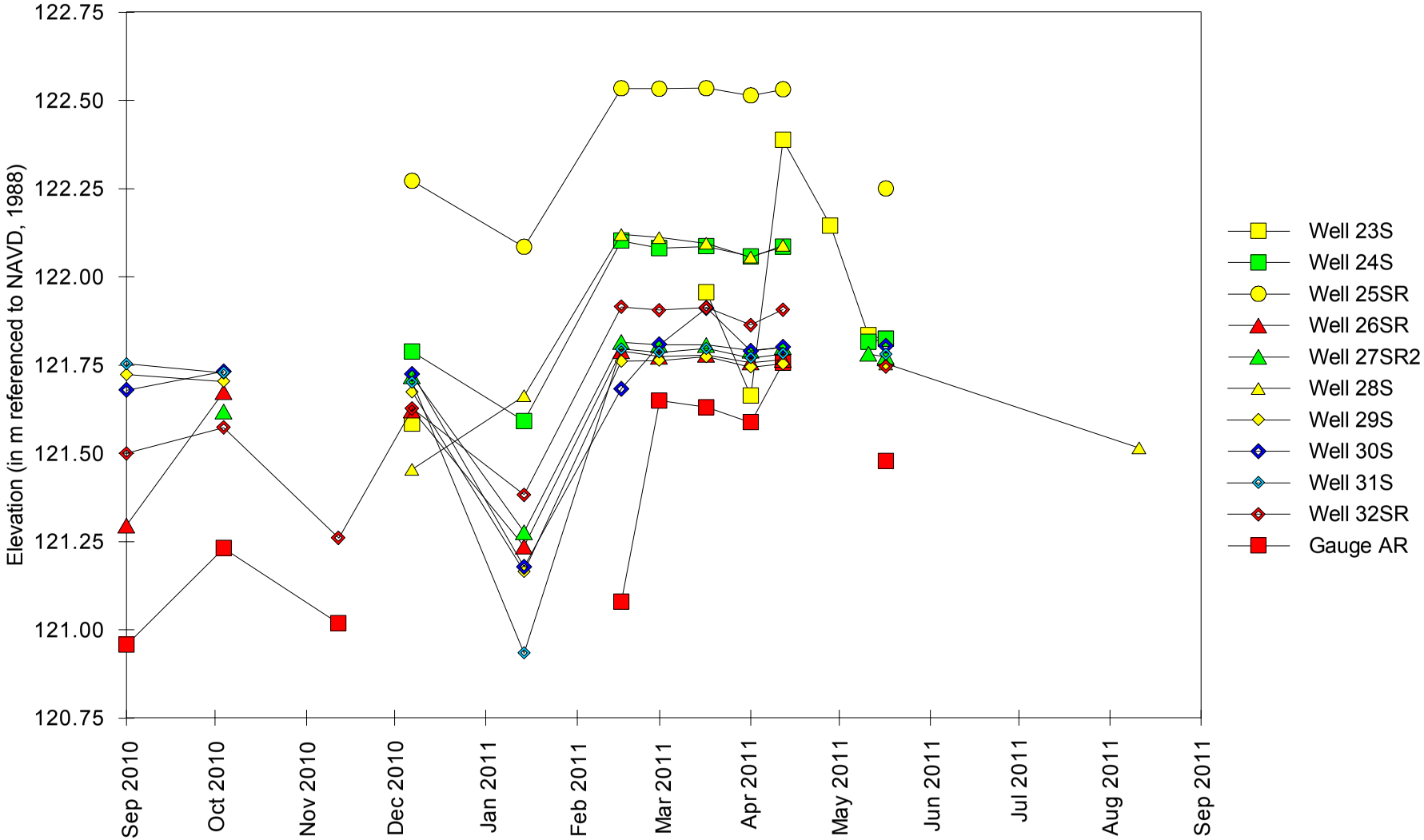
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in S Monitoring Wells



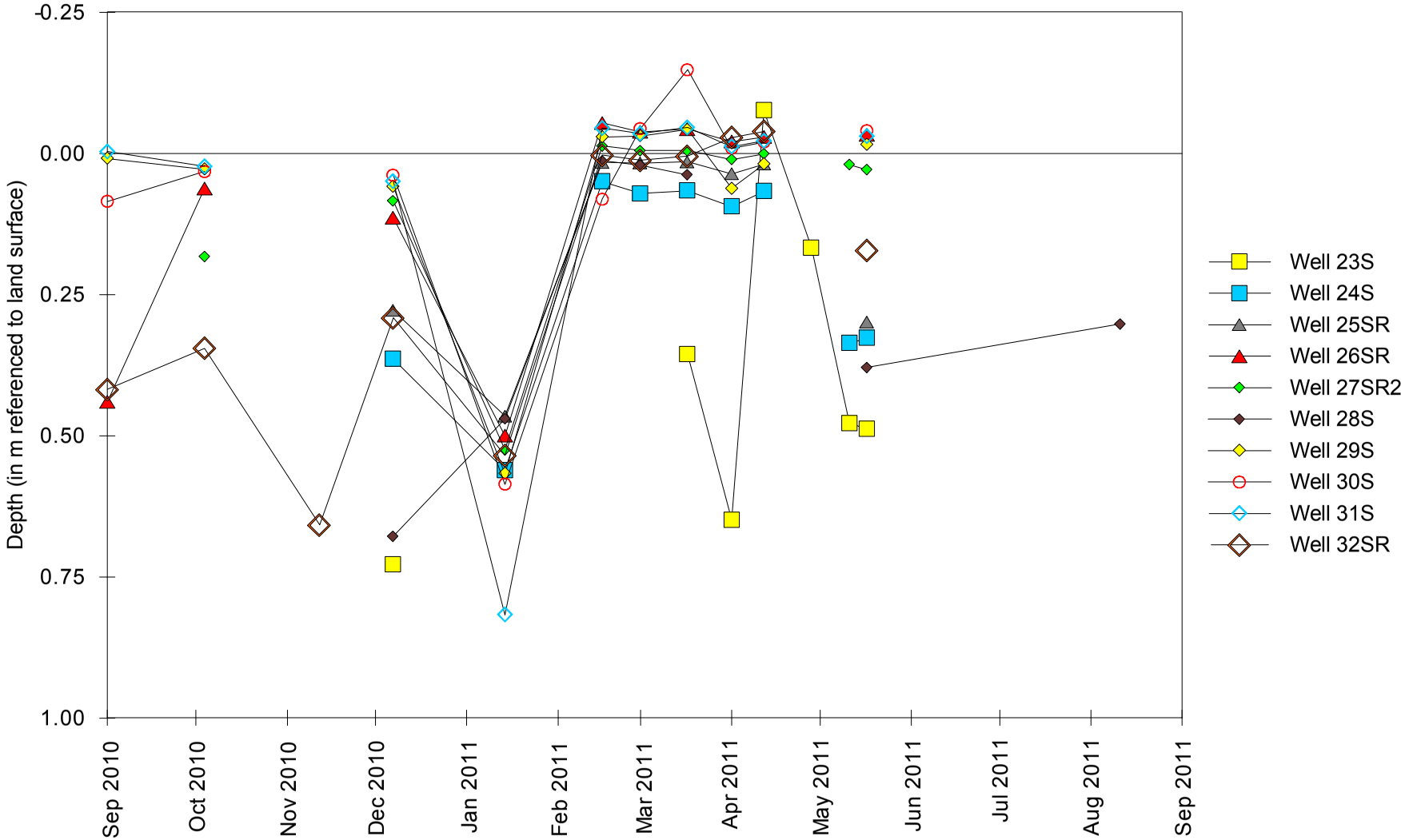
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in S Monitoring Wells and at Surface-Water Gauges



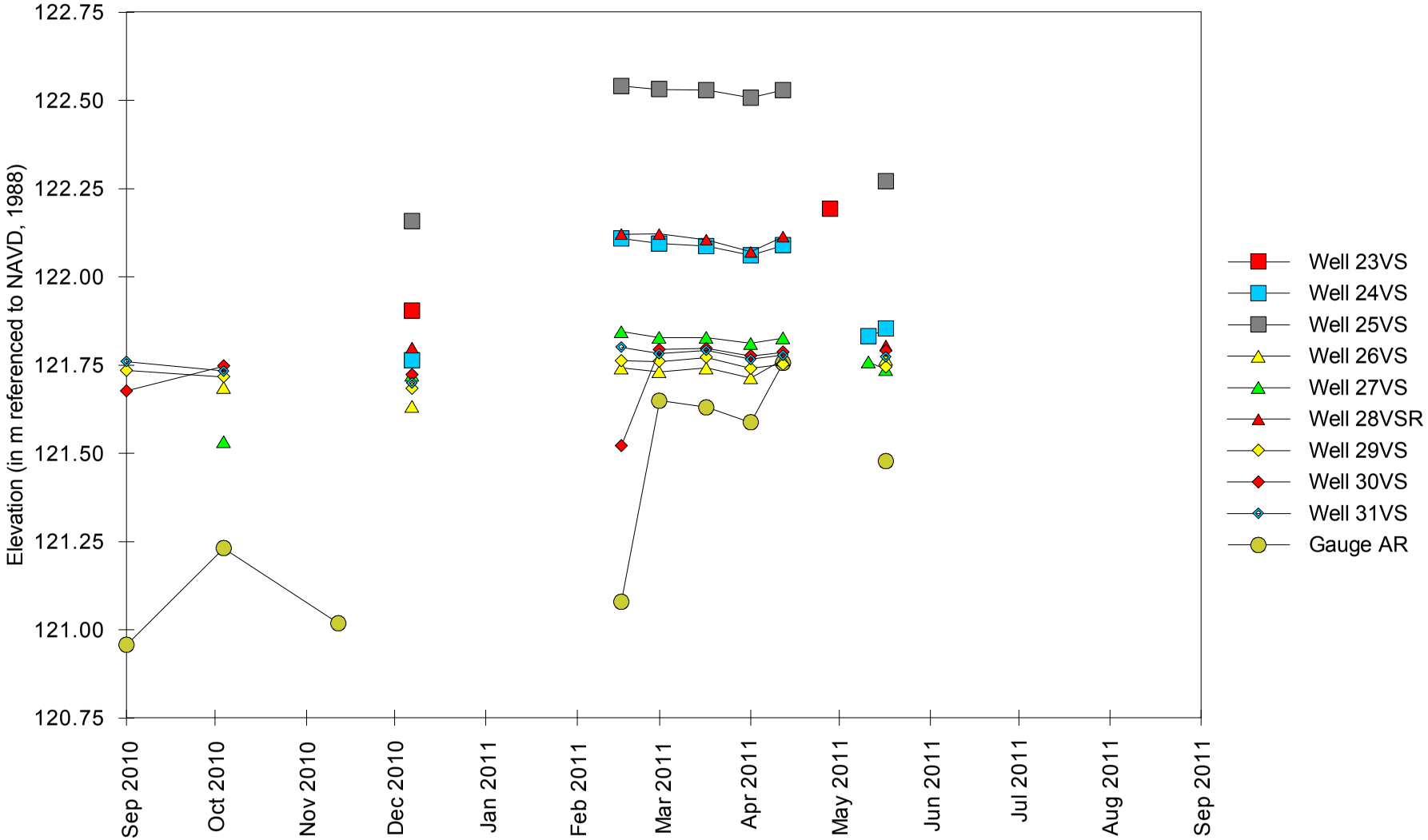
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in S Monitoring Wells



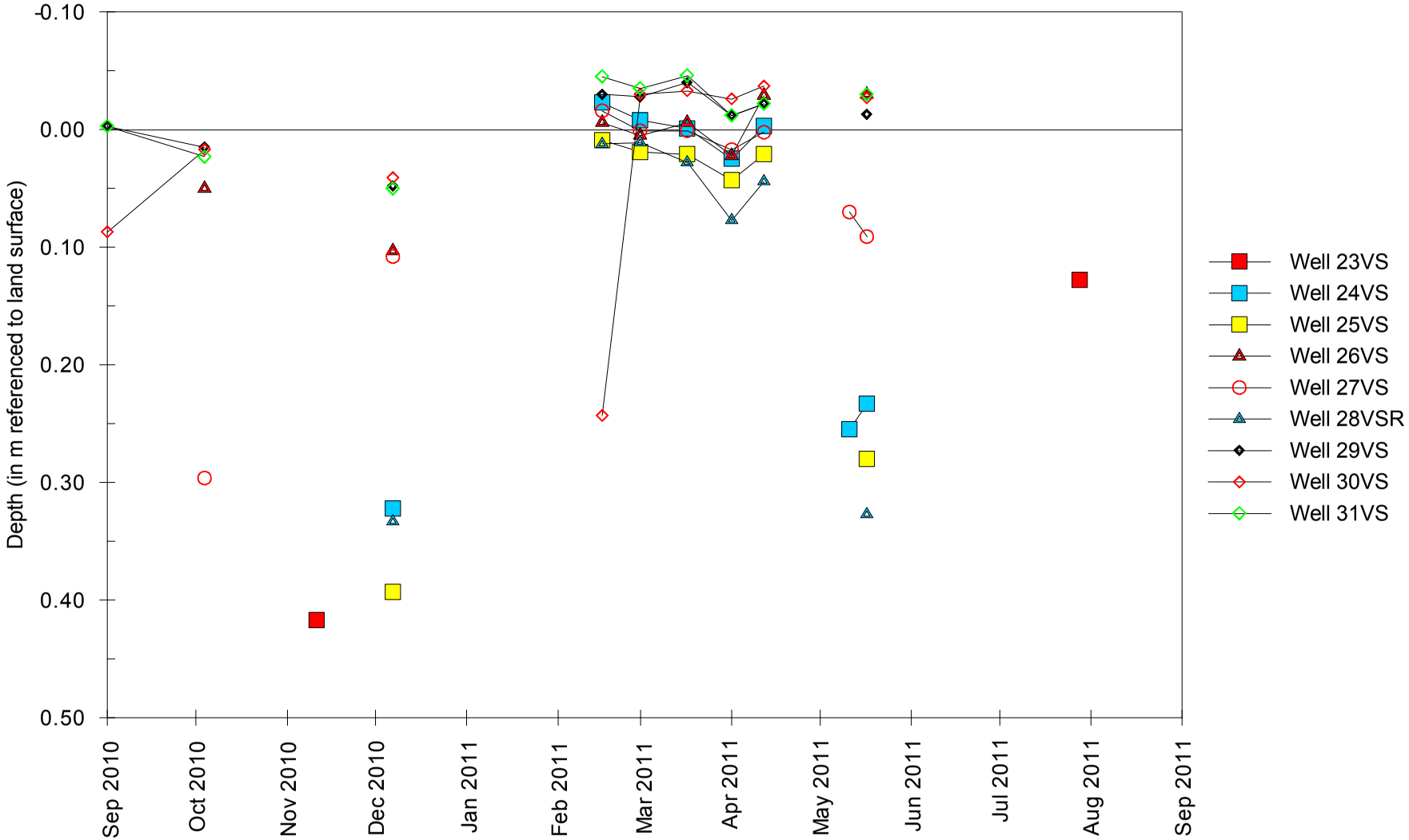
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in VS Monitoring Wells and at Surface-Water Gauges



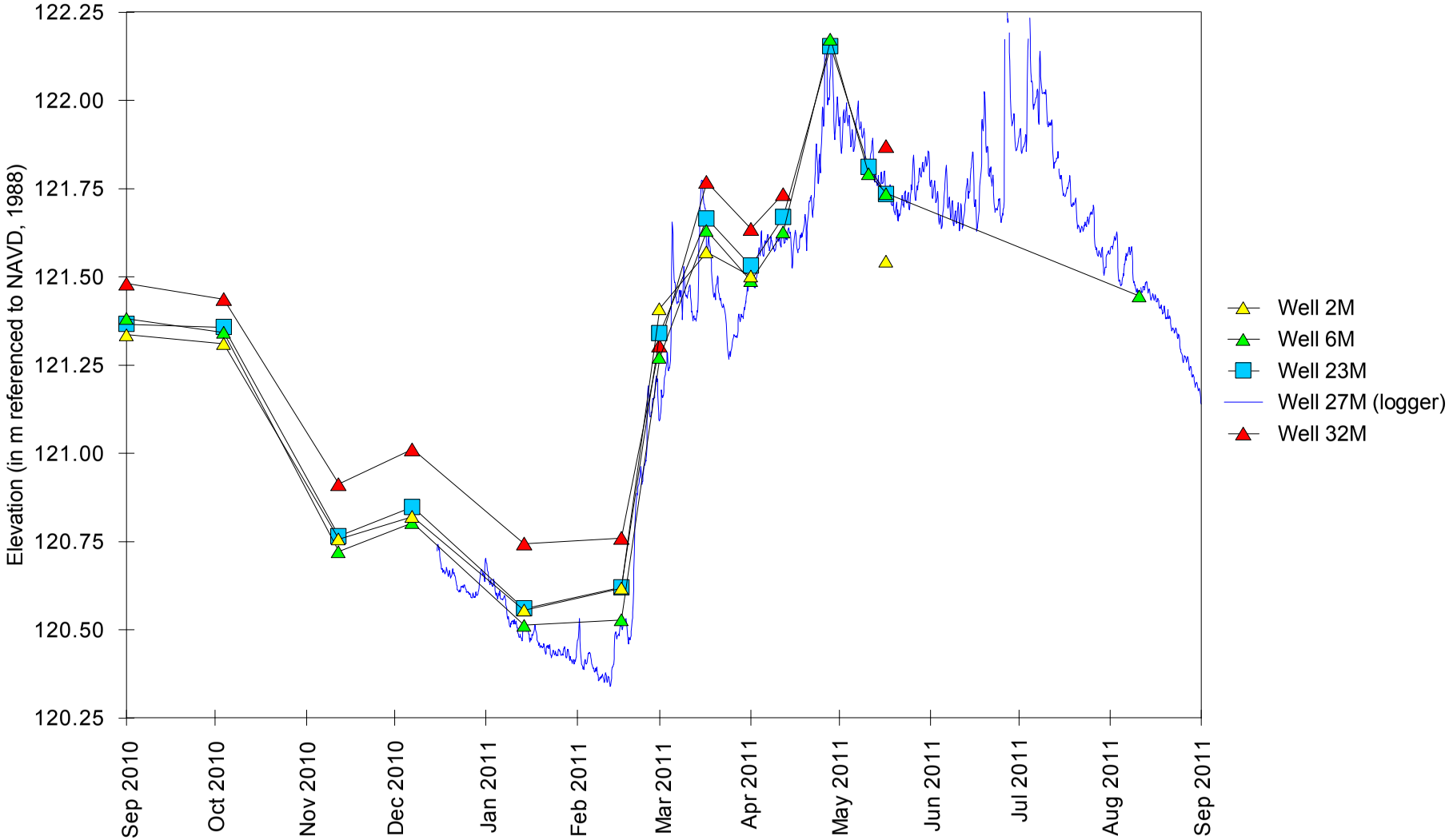
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in VS Monitoring Wells



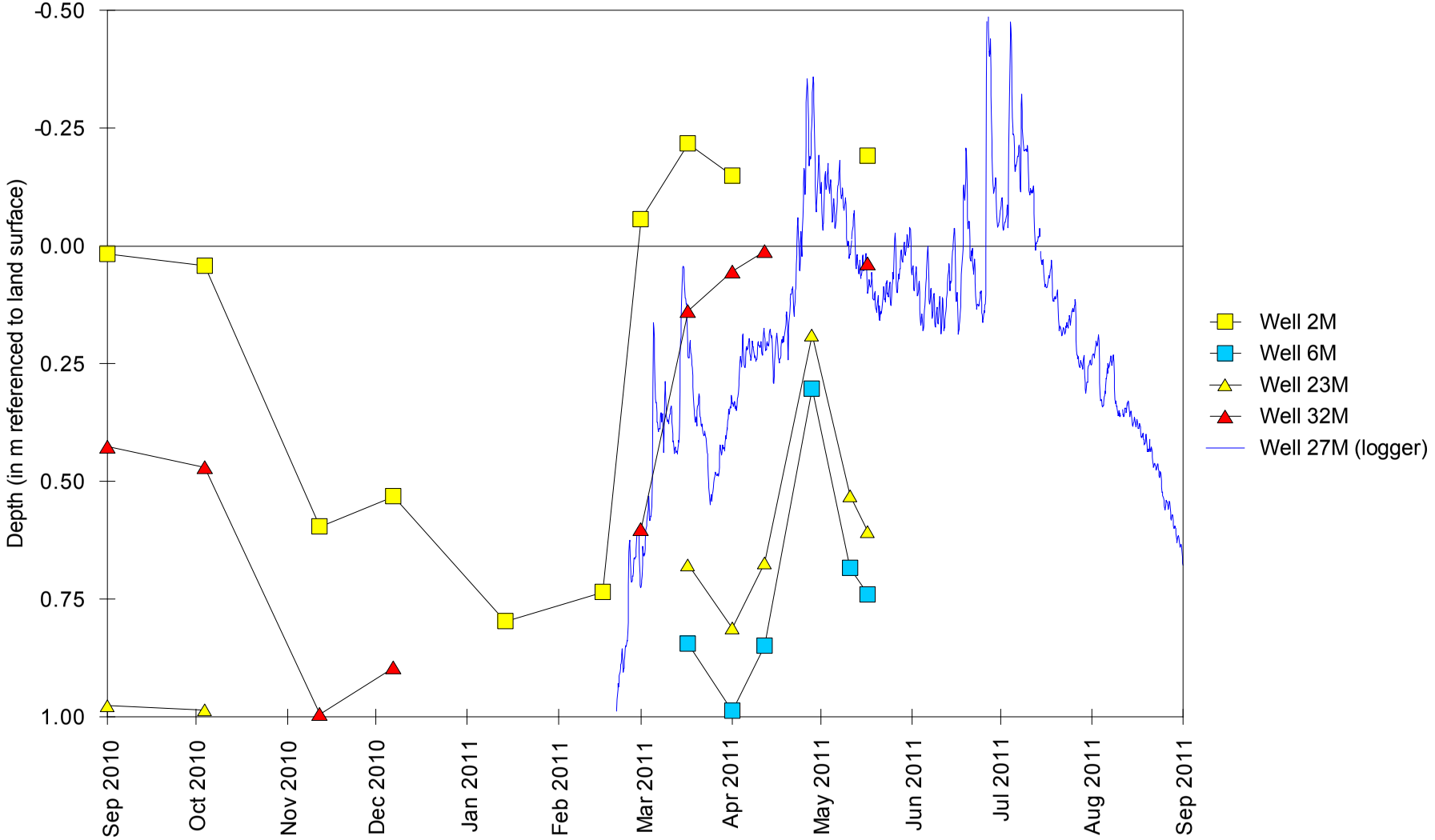
Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in M Monitoring Wells

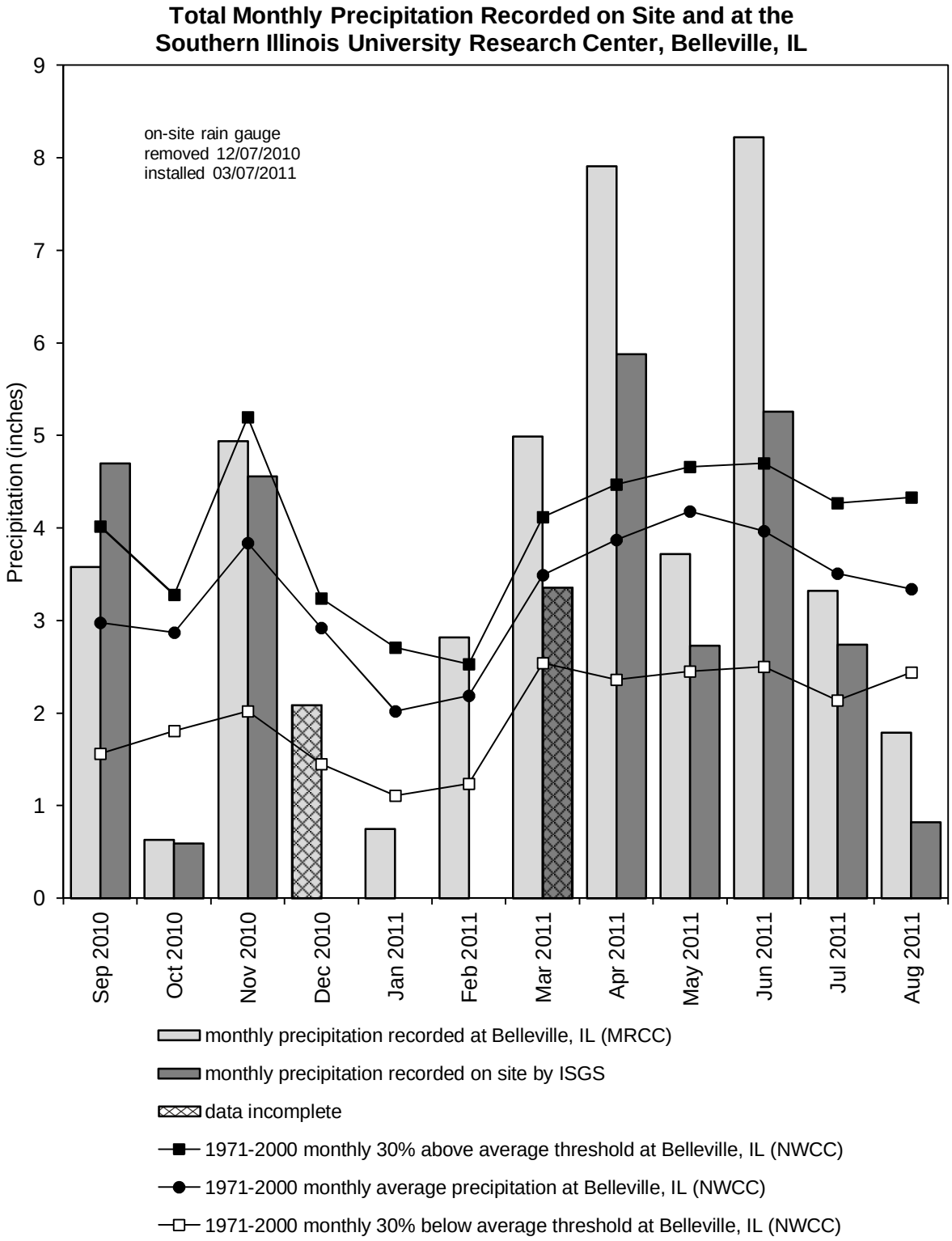


Former Tiernan Property Potential Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in M Monitoring Wells



Former Tiernan Property
Potential Wetland Mitigation Site
September 2010 through August 2011



Graph last updated 10/31/2011

HARRISBURG **ISGS #63**
WETLAND MITIGATION SITE
US 45
FAP 332
Sequence #90
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Jessica L. Monson

SITE HISTORY

- May 2004: Construction at the wetland mitigation site was completed.
- December 2005: ISGS was tasked by IDOT to monitor post-construction water levels.
- August 2010-August 2011: Road construction associated with the new alignment of Illinois Route 13 reduced wetland area at the site.

WETLAND HYDROLOGY CALCULATION FOR 2011

Using the 1987 Manual (Environmental Laboratory 1987), 5.6 ha (13.9 ac) out of a total site area of 8.1 ha (20.0 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011, whereas 5.4 ha (13.3 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 5.7 ha (14.0 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days and 12.5% of the growing season is 26 days. According to the 2010 Midwest Region Supplement, February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site and data from the Illinois Climate Network station at Dixon Springs, Illinois (ISWS 2011).
- Total precipitation at the Du Quoin, Illinois, weather station for the period from September 2010 through August 2011 was 136% of normal, and Spring 2011 (March through May) precipitation was 216% of normal.
- In 2011, all wells satisfied wetland hydrology criteria for greater than 5% and 12.5% of the growing season according to the 1987 Manual. Furthermore, all wells satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season according to the 2010 Midwest Region Supplement.

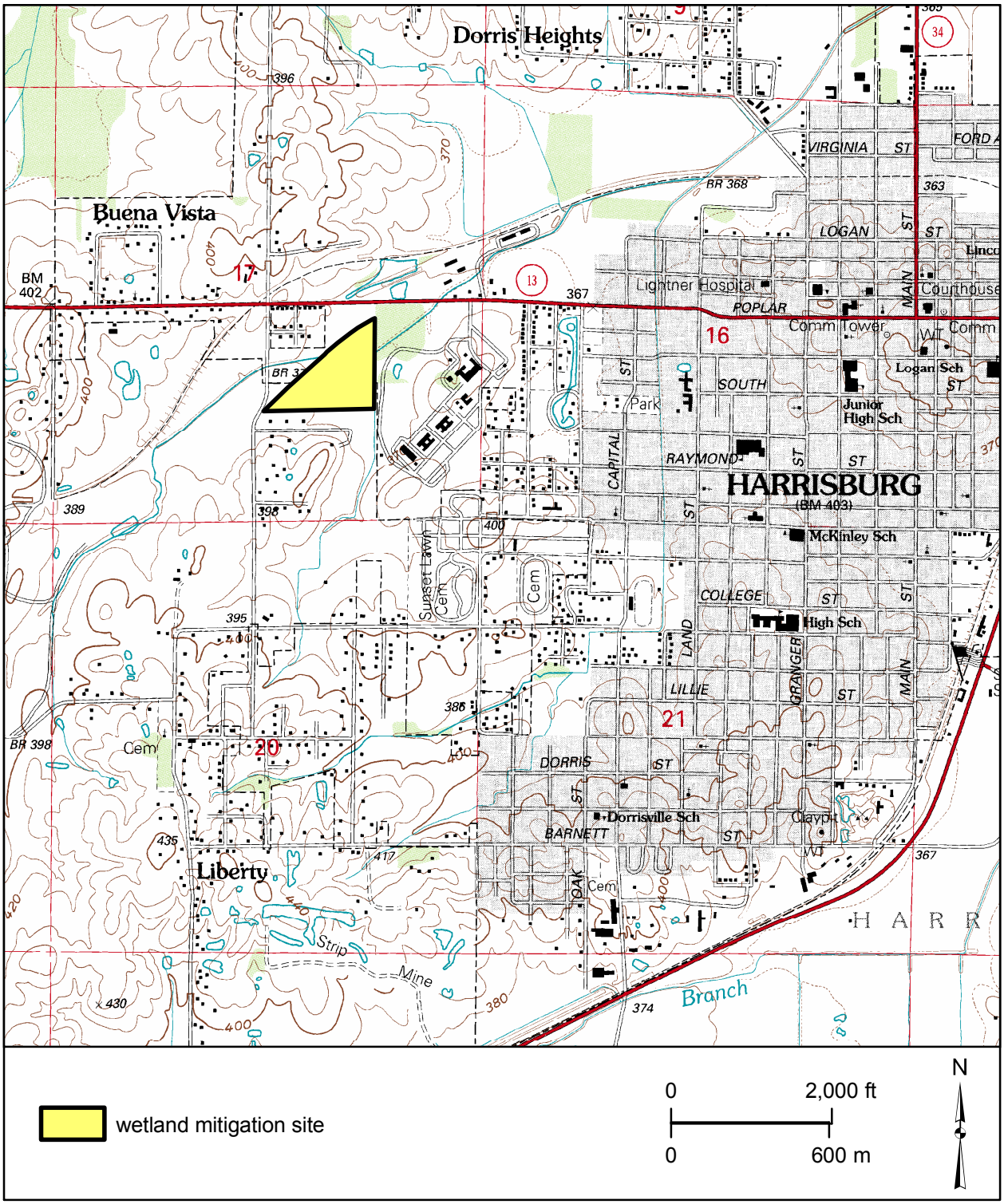
PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

Harrisburg Wetland Mitigation Site
(US 45, 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



Harrisburg Wetland Mitigation Site
(US 45, FAP 332)

Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph,
Harrisburg NW quarter quadrangle, taken June 25, 2010 (USDA-FSA 2010) and ISGS topography

2011 Wetland Hydrology

- >5% of growing season (1987 Manual)
- >12.5% of growing season (1987 Manual)
- 14 days or more (2010 Midwest Region Supplement)
- monitoring well
- rain gauge
- berm
- road construction limits
- site boundary

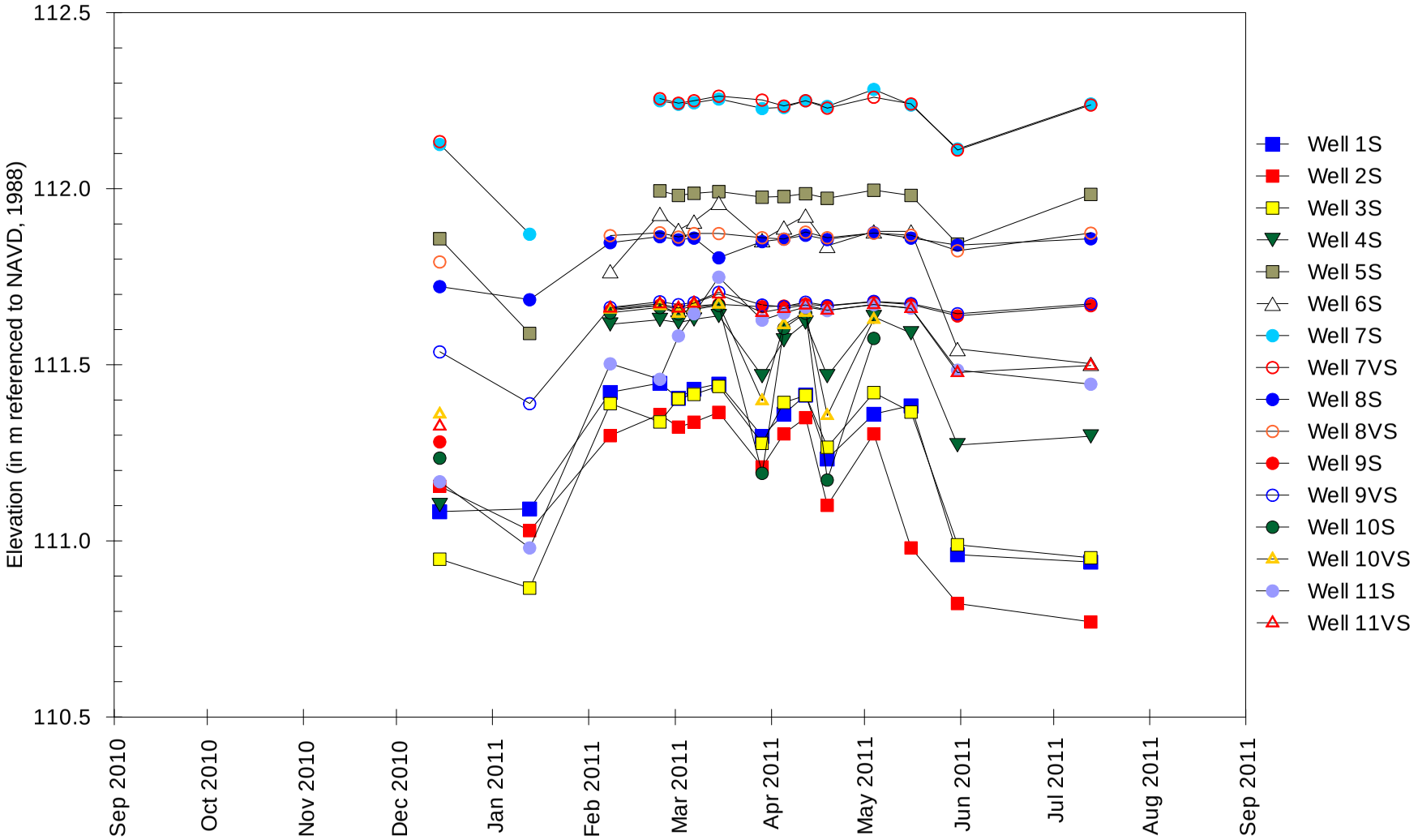
N

0 250 ft

0 75 m

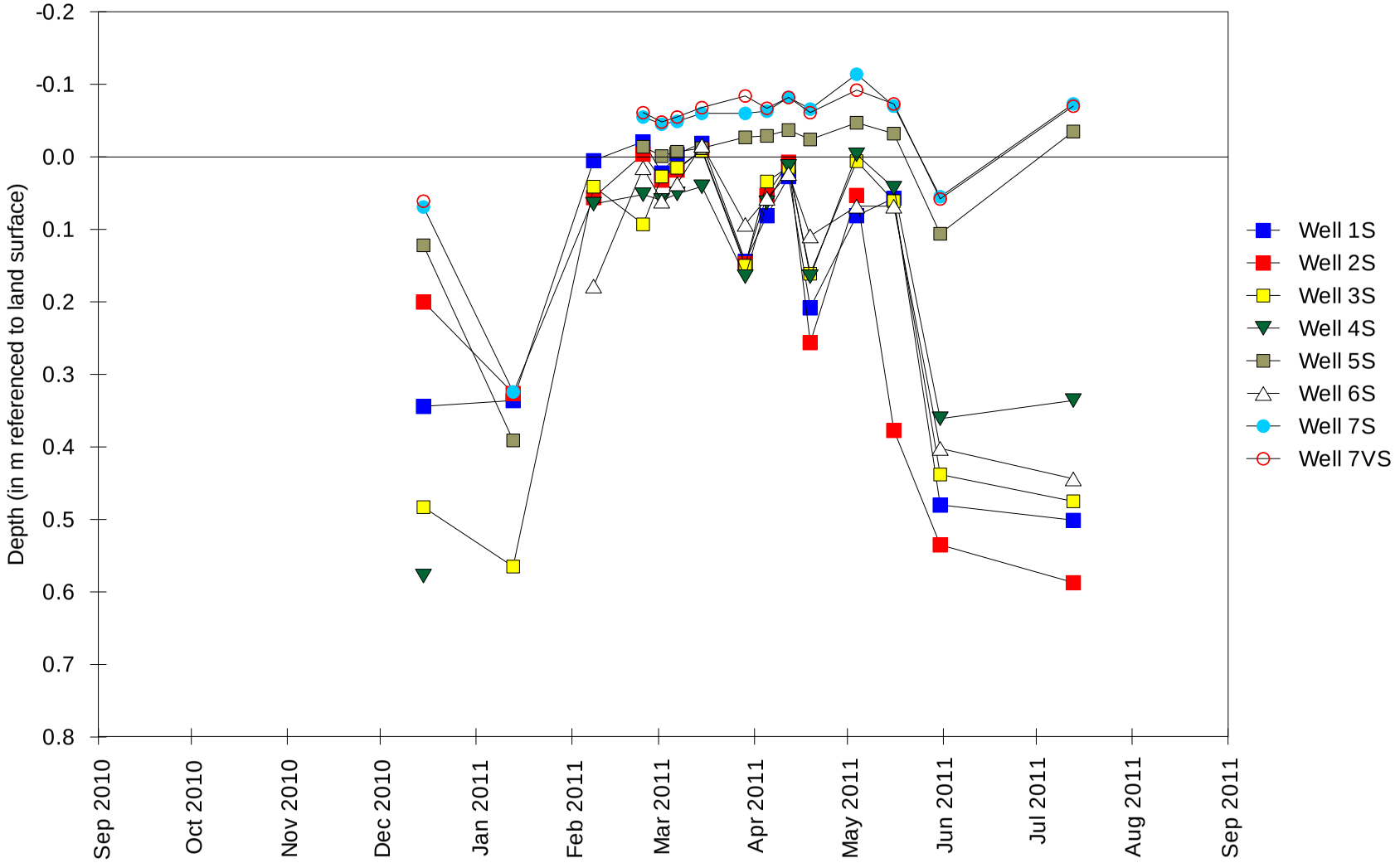
Harrisburg Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Shallow Monitoring Wells



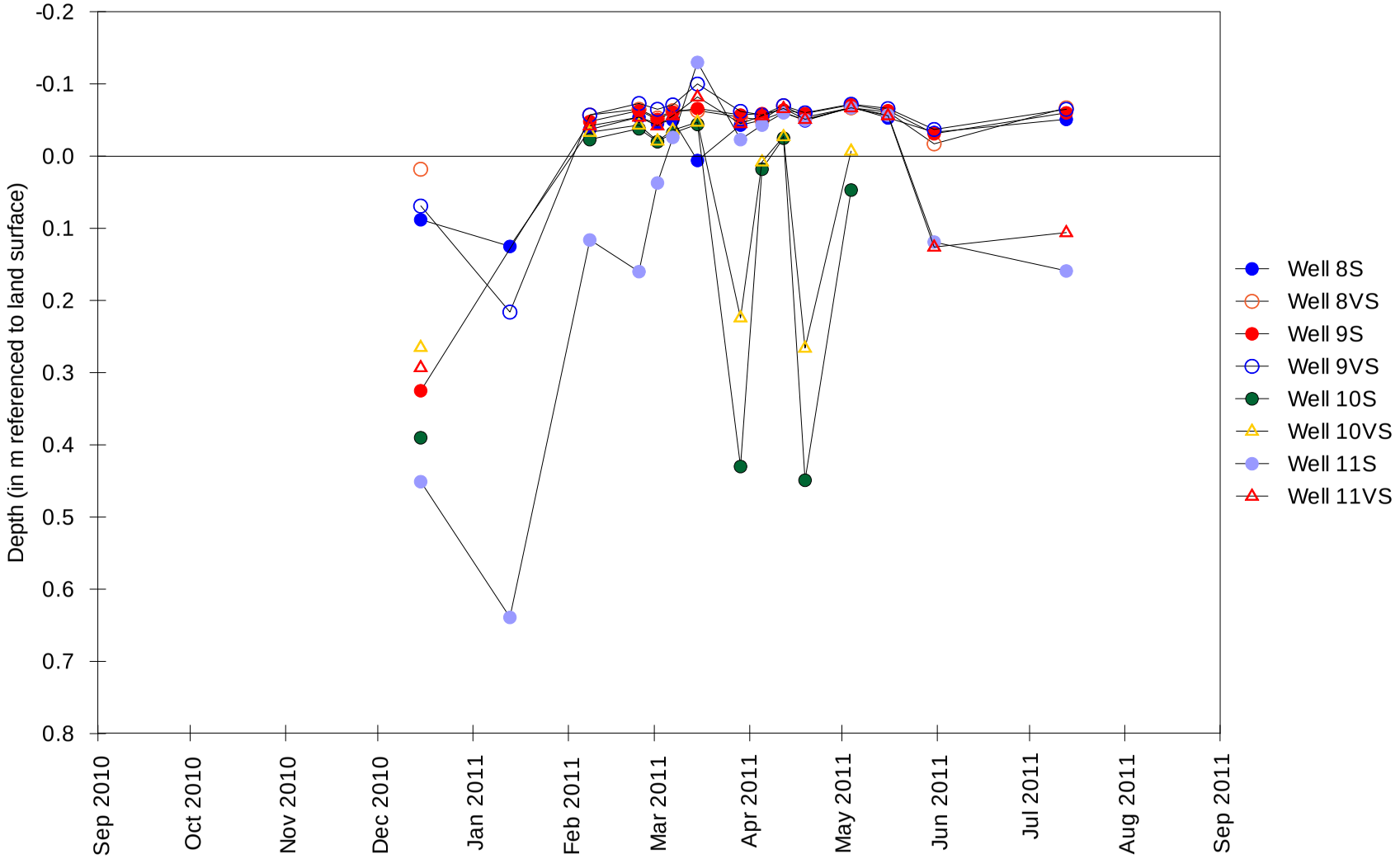
Harrisburg Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Shallow Monitoring Wells



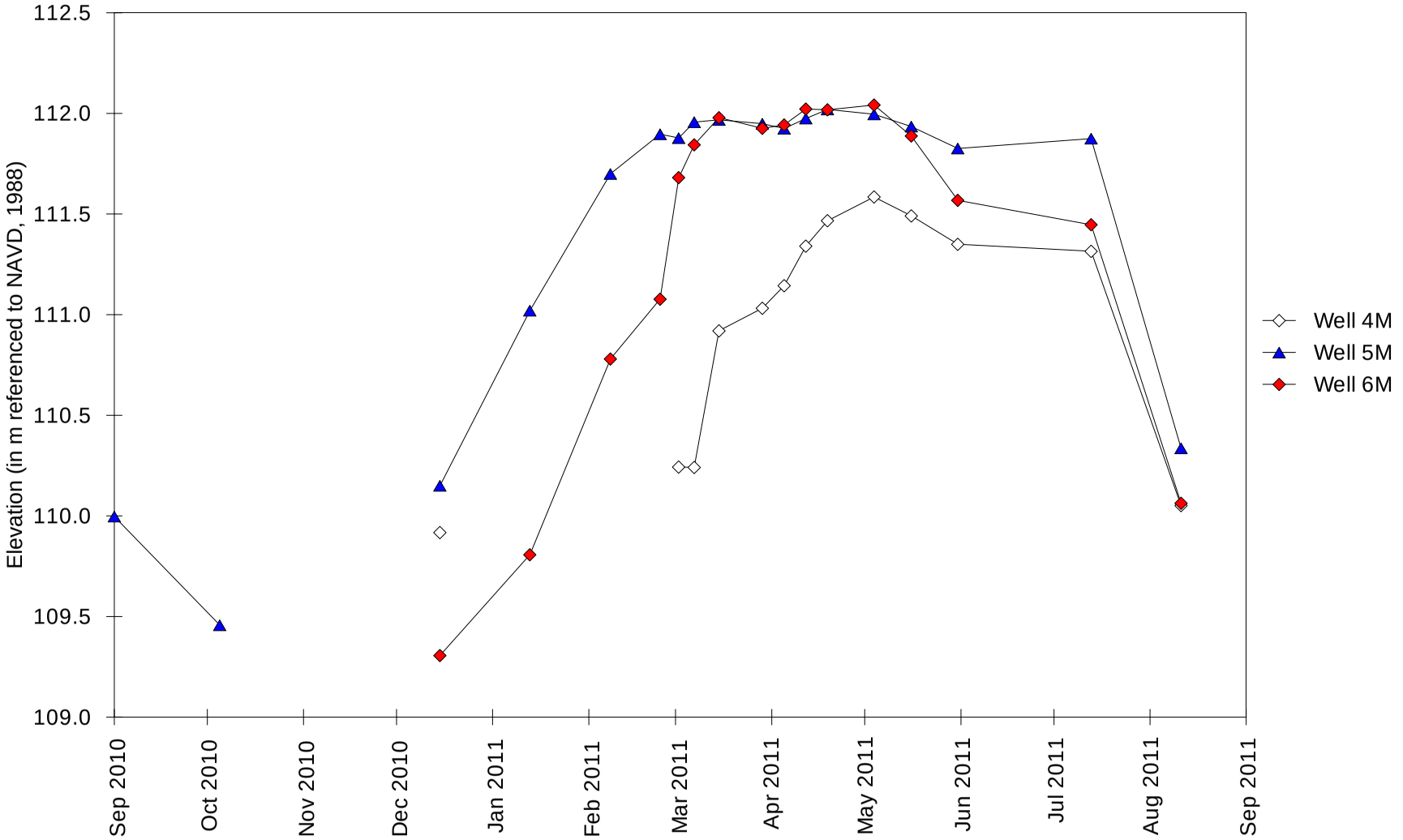
Harrisburg Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Shallow Monitoring Wells



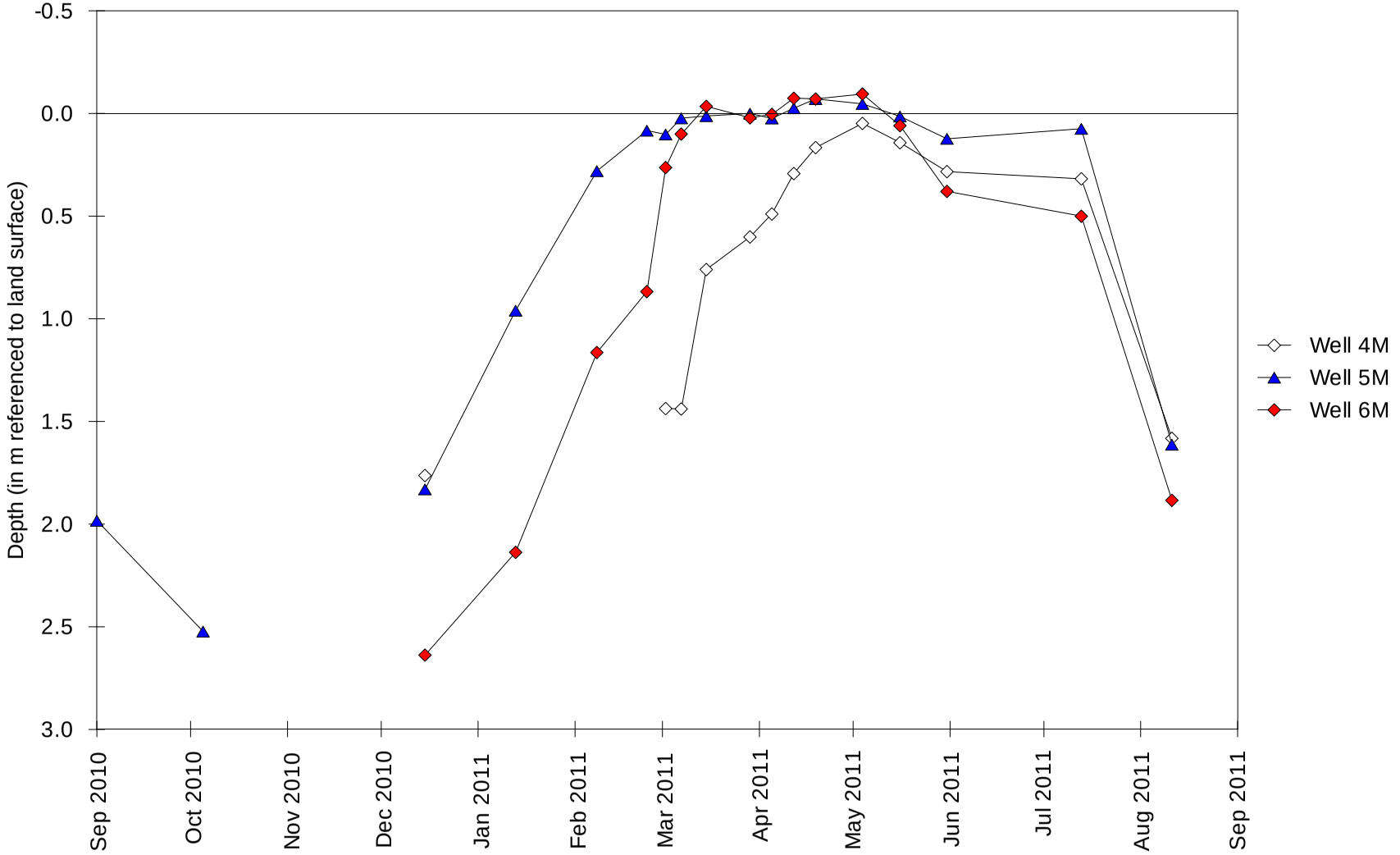
Harrisburg Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Deeper Monitoring Wells



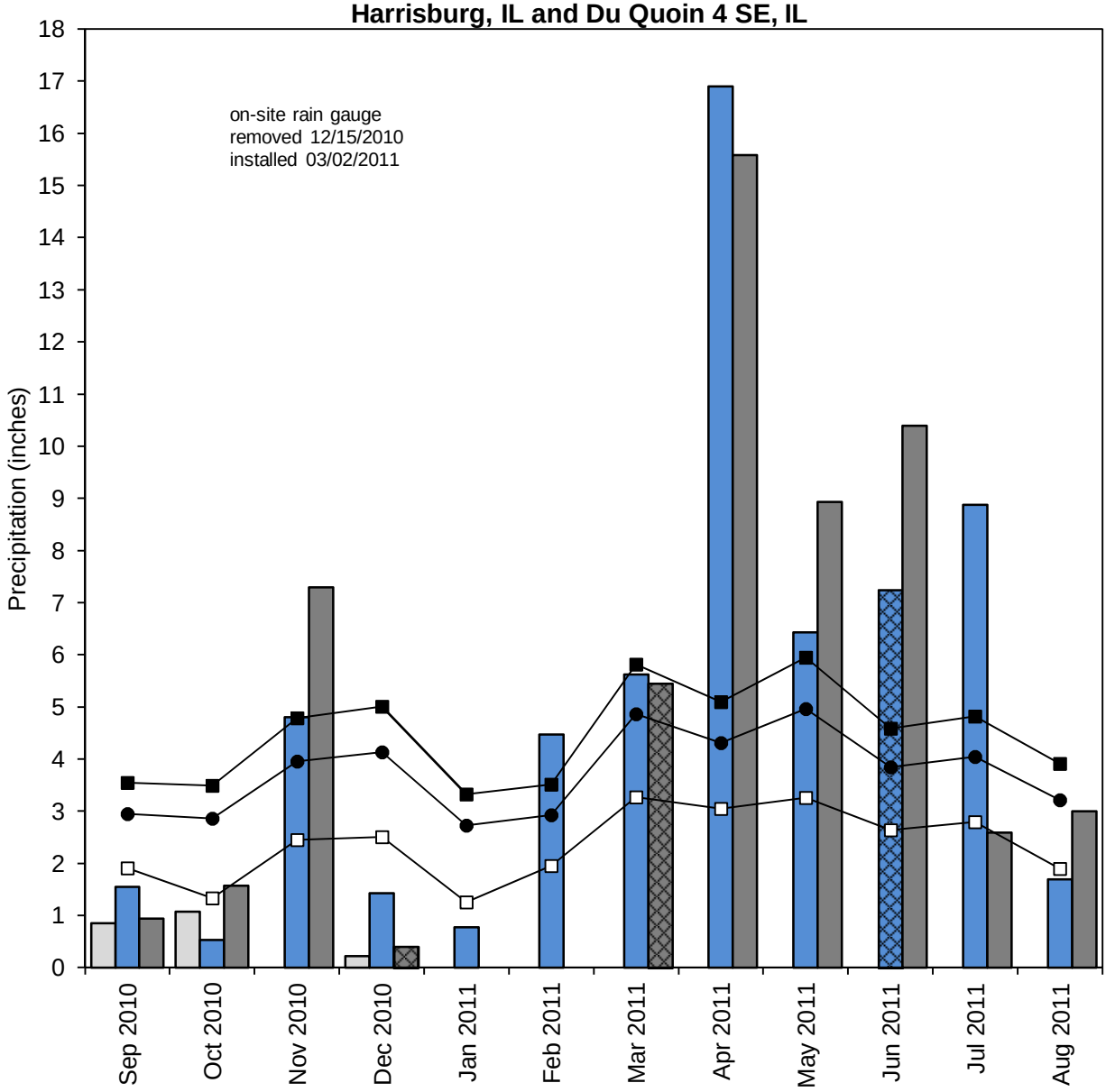
Harrisburg Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Deeper Monitoring Wells



Harrisburg Wetland Mitigation Site
September 2010 through August 2011

Total Precipitation Recorded on Site and at Harrisburg, IL and Du Quoin 4 SE, IL



monthly precipitation recorded at Harrisburg, IL (MRCC)

monthly precipitation recorded at Du Quoin, IL (MRCC)

monthly precipitation recorded on site by ISGS

data incomplete

1961-1990 monthly 30% above average threshold at Harrisburg, IL (NWCC)

1961-1990 monthly average precipitation at Harrisburg, IL (NWCC)

1961-1990 monthly 30% below average threshold at Harrisburg, IL (NWCC)

Graph last updated 10/31/2011

TAMMS **ISGS #71**
WETLAND MITIGATION SITE
IL 127
FAS 1907
Sequence #1026
Union County, near Tamms, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Jessica L. Monson

SITE HISTORY

- Summer 2001: The wetland mitigation 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 2011

Using the 1987 Manual (Environmental Laboratory 1987), 3.1 ha (7.8 ac) out of the 6.3-ha (15.6-ac) site satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011, whereas 2.2 ha (5.6 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 3.1 ha (7.8 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Anna, Illinois, is March 31 and the season lasts 225 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days and 12.5% of the growing season is 28 days. According to the 2010 Midwest Region Supplement, February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site.
- Total precipitation at the Cape Girardeau, Missouri, weather station for the period from September 2010 through August 2011 was 126% of normal, and Spring 2011 (March through May) precipitation was 220% of normal.
- In 2011, all soil-zone wells satisfied wetland hydrology criteria for greater than 5% of the growing season, and wells 3S, 5S, 6S, 7S, 8S, and 10S also satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Furthermore, all soil-zone wells also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.
- Surface-water data from the Gauge A data logger showed that areas at the north end of the site at or below 103.28 m (338.84 ft) were inundated for greater than 5% of the growing season, and areas at or below 103.14 m (338.38 ft) were inundated for greater than 12.5% of the growing season, according to the 1987 Manual. Areas at or below 103.27 m (338.80 ft) were inundated for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Surface-water data from the Gauge B data logger showed that areas at the south end of the site at or

below 102.41 m (335.99 ft) were inundated for greater than 5% of the growing season, and areas at or below 102.38 m (335.89 ft) were inundated for greater than 12.5% of the growing season, according to the 1987 Manual. Areas at or below 102.41 m (335.99 ft) were also inundated for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.

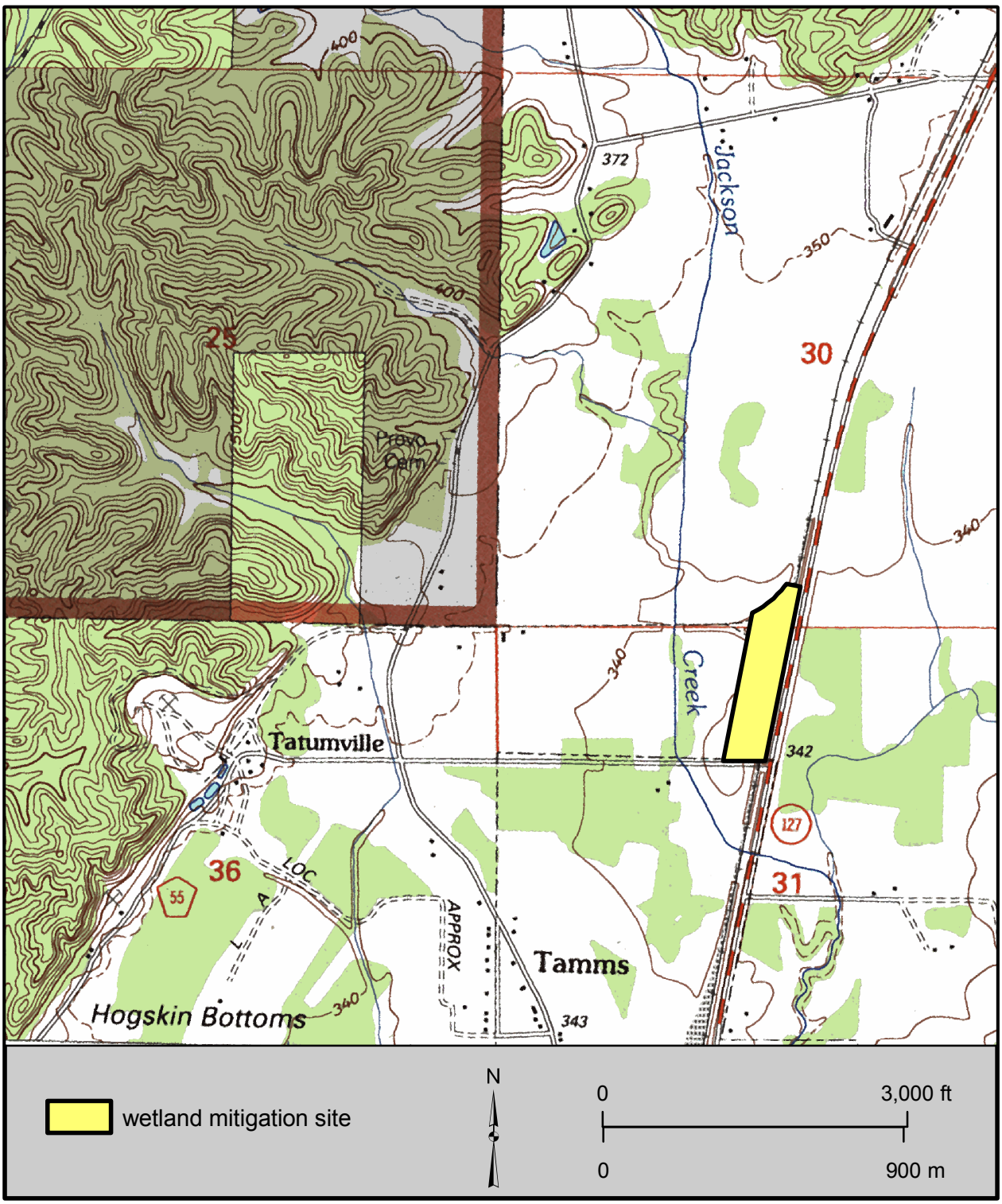
PLANNED FUTURE ACTIVITIES

- Water-level monitoring will continue until no longer required by IDOT.

Tamms Wetland Mitigation Site
(IL 127, 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

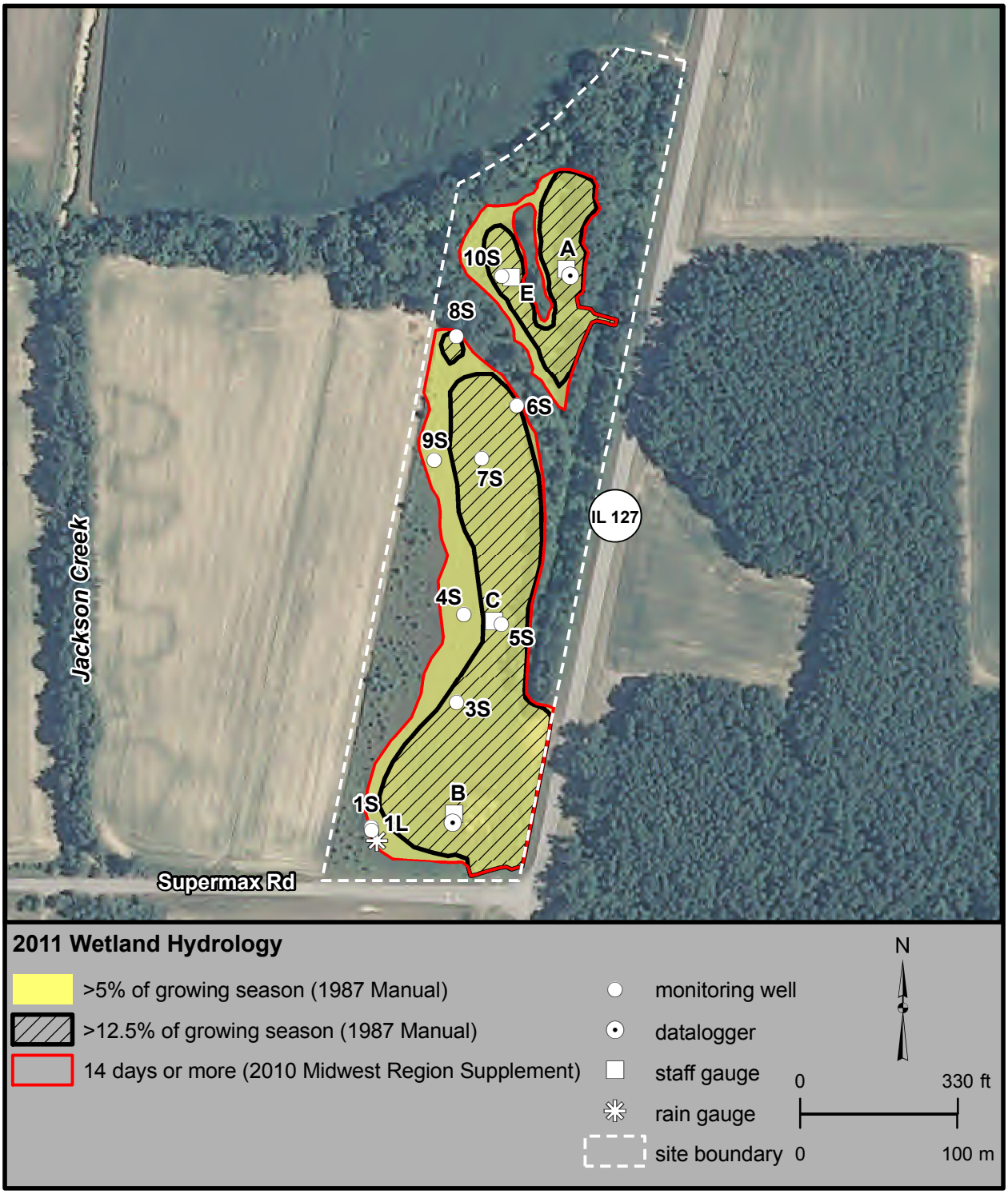


Tamms Wetland Mitigation Site
(IL 127, FAS 1907)

Estimated Areal Extent of 2011 Wetland Hydrology

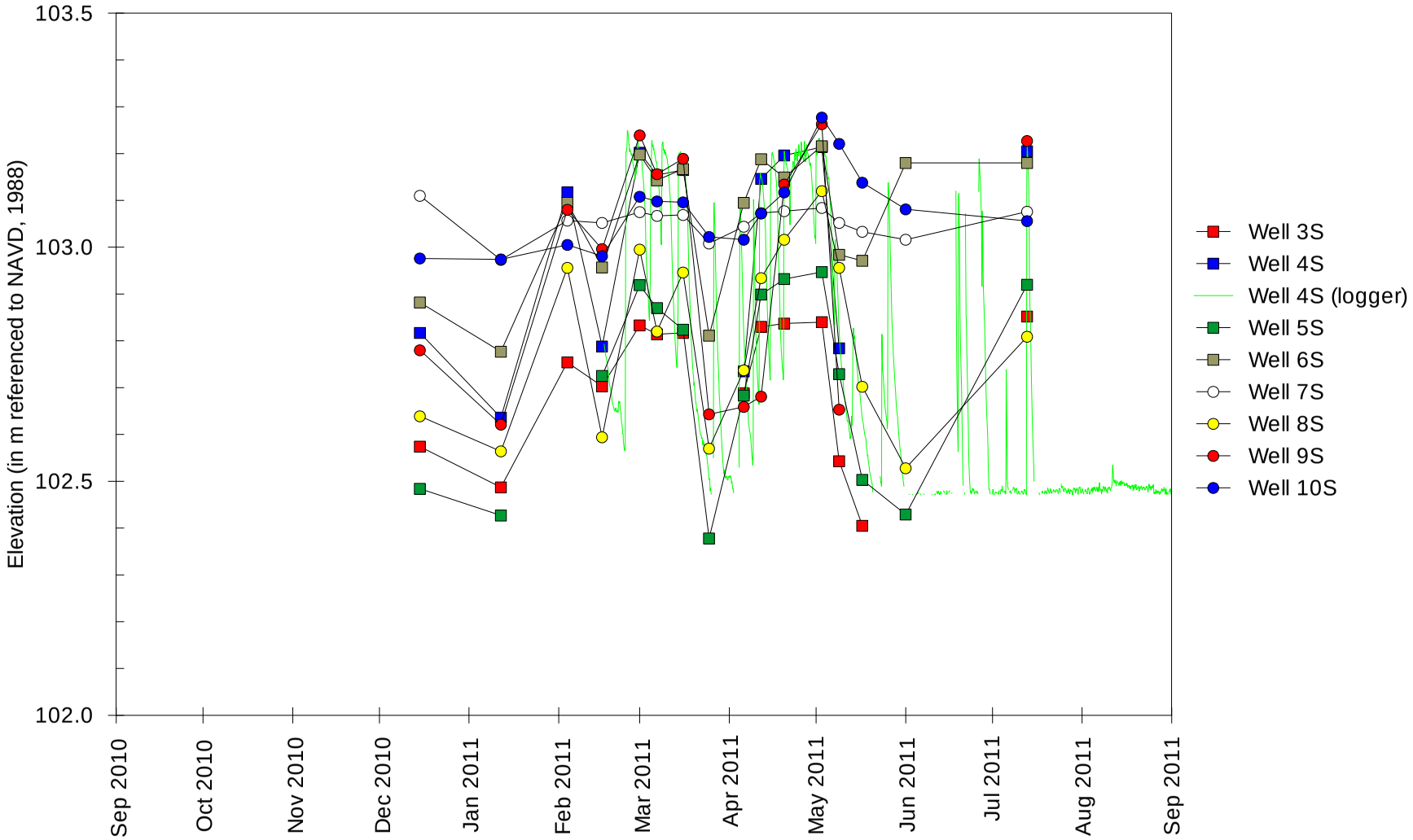
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph,
Mill Creek SE quarter quadrangle, taken July 1, 2010 (USDA-FSA 2010) and ISGS topography.

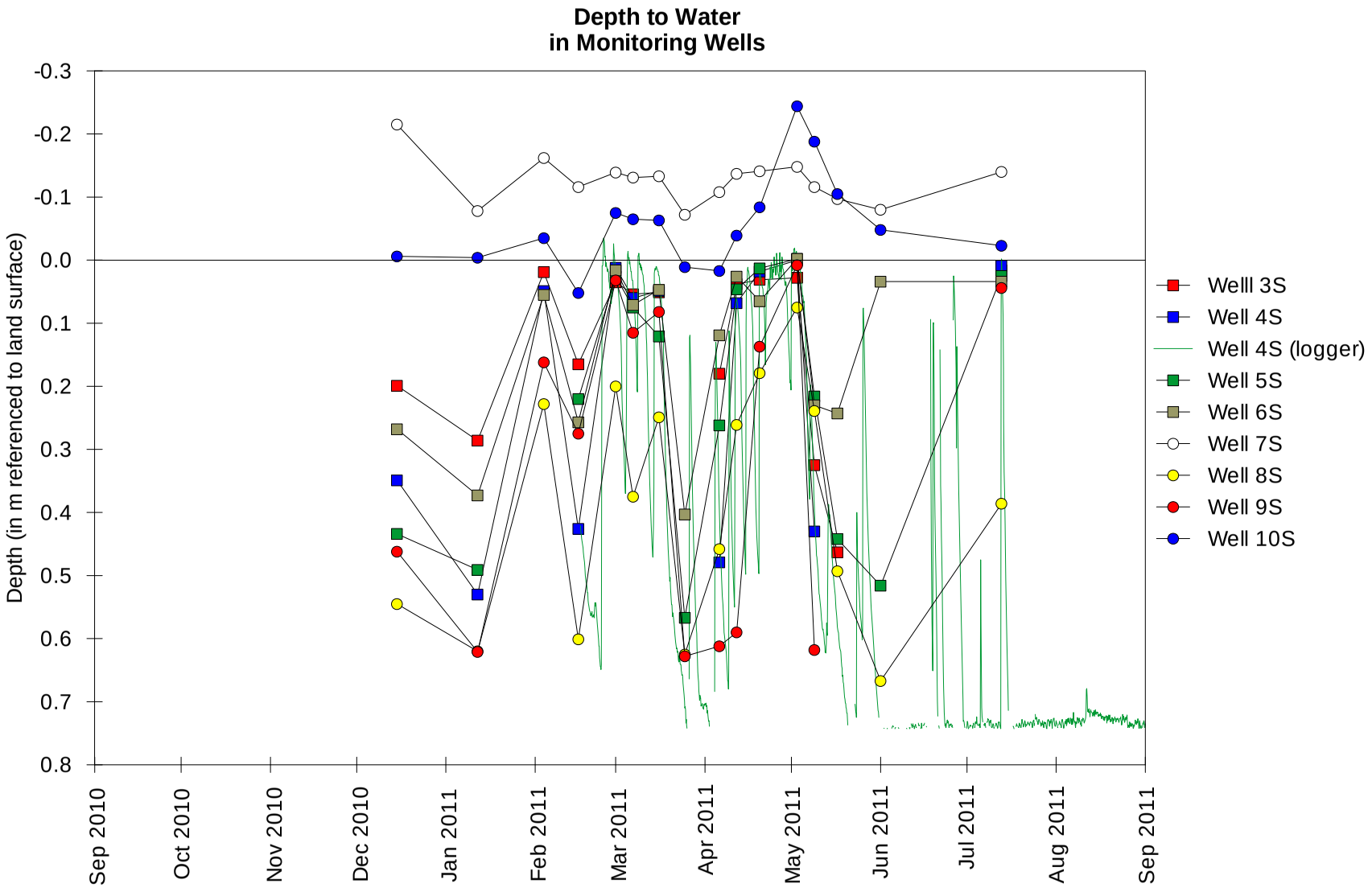


Tamms Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Shallow Monitoring Wells

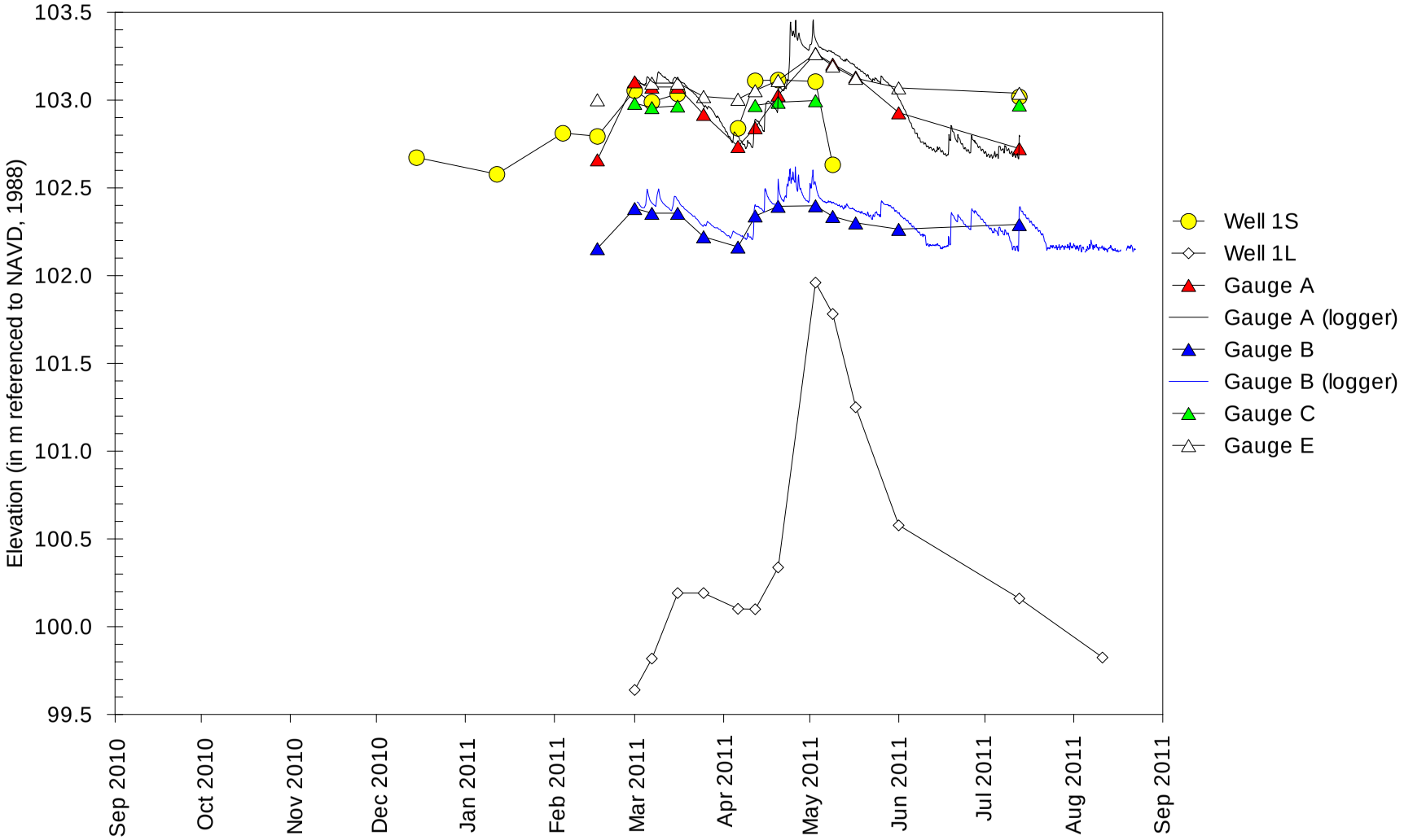


Tamms Wetland Mitigation Site
September 1, 2010 through August 31, 2011



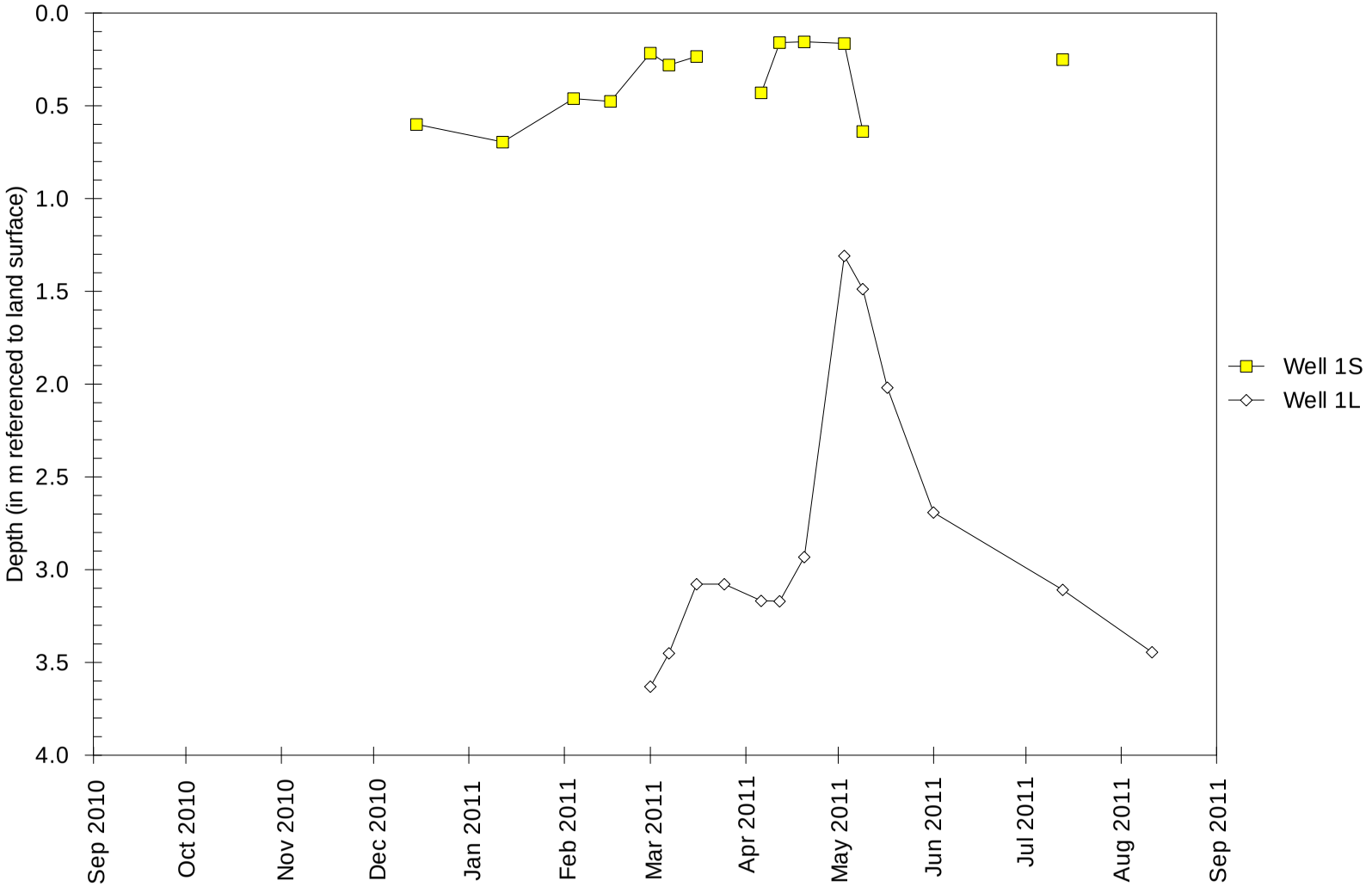
Tamms Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells and at Staff Gauges and Data Loggers



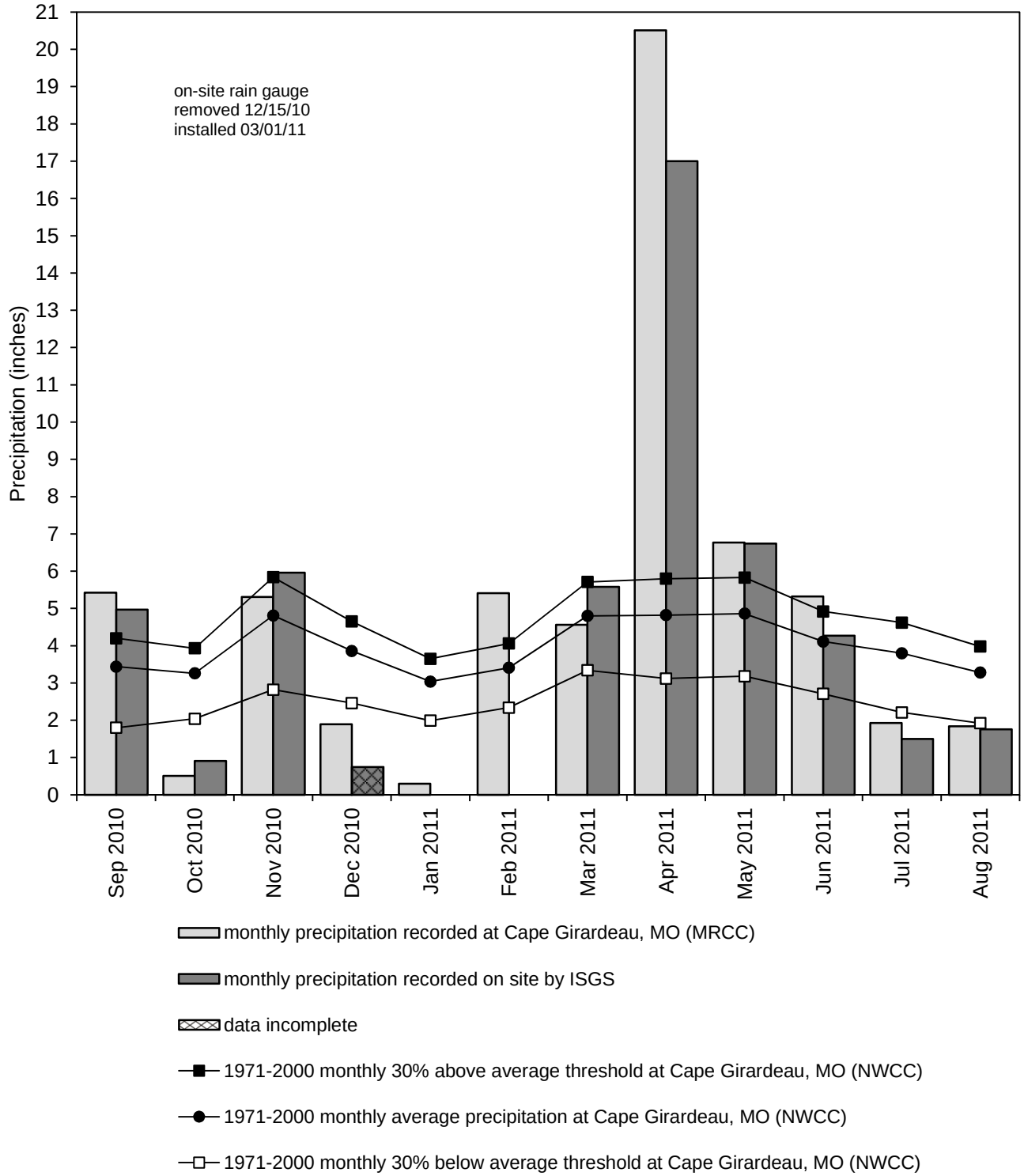
Tamms Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells 1S and 1L



Tamms Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Cape Girardeau Regional Airport, MO



Graph last updated 10/31/2011

FREEPORT BYPASS WEST **ISGS #72**
WETLAND MITIGATION SITE 6W
US 20
FAP 301
Sequence #10487
Stephenson County, near Freeport, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- 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 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 3.2 ha (8.0 ac) out of a total site area of 9.6 ha (23.6 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is estimated to be 2.7 ha (6.7 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 3.3 ha (8.2 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in Freeport, Illinois, is April 13, and the season lasts 183 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that March 16 was the starting date of the 2011 growing season based on soil temperatures measured at the mitigation site.
- Total precipitation for the monitoring period, as recorded at the Wastewater Treatment Plant weather station in Freeport, Illinois, was 121% of normal, and was 142% of normal for the period March through May 2011. Nearly 10.5 inches of precipitation were recorded on site from July 21-31. The subsequent late-season flood on the Pecatonica River peaked on July 28 and resulted in the highest water levels recorded on the site during the 2011 growing season. However, these water levels were not sustained long enough to increase the areas that satisfied wetland hydrology criteria in Spring 2011.
- In 2011, water levels measured in monitoring wells 2S, 7S, 10S, 15S, and 17S satisfied wetland hydrology criteria for greater than 5% of the growing season, and water levels measured in wells 2S, 7S, and 10S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, water levels measured in wells 2S, 3S, 7S, 10S, 14S, 15S, and 16S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season.

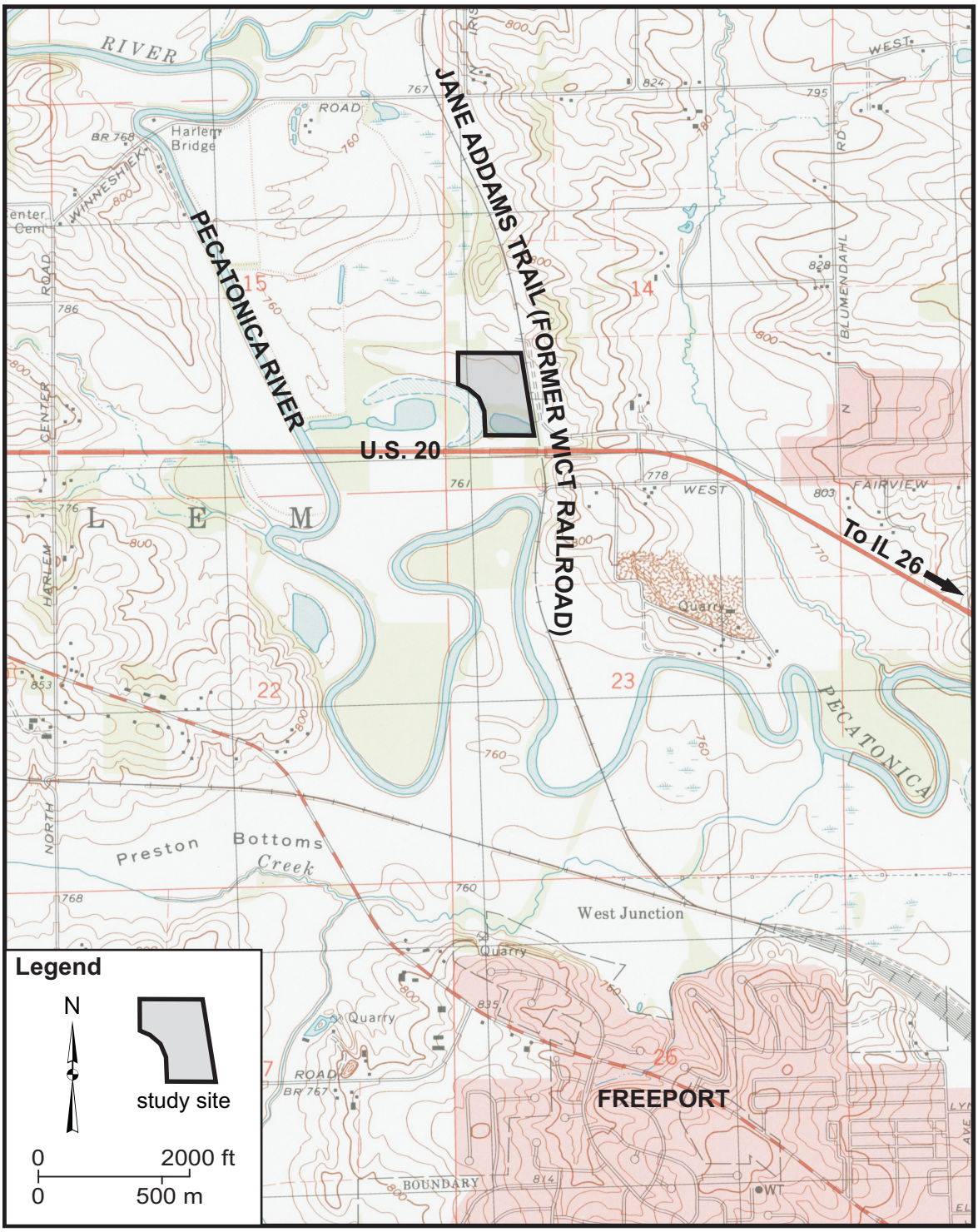
- Water levels recorded by the data logger at Gauge C indicated on-site inundation at or above 230.82 m (757.28 ft) for greater than 5% of the growing season, and inundation at or above 230.75 m (757.05 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. Based on the 2010 Midwest Region Supplement, water levels recorded by the data logger at Gauge C indicated inundation at or above 230.83 m (757.32 ft) for 14 or more consecutive days of the growing season.

PLANNED FUTURE ACTIVITIES

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

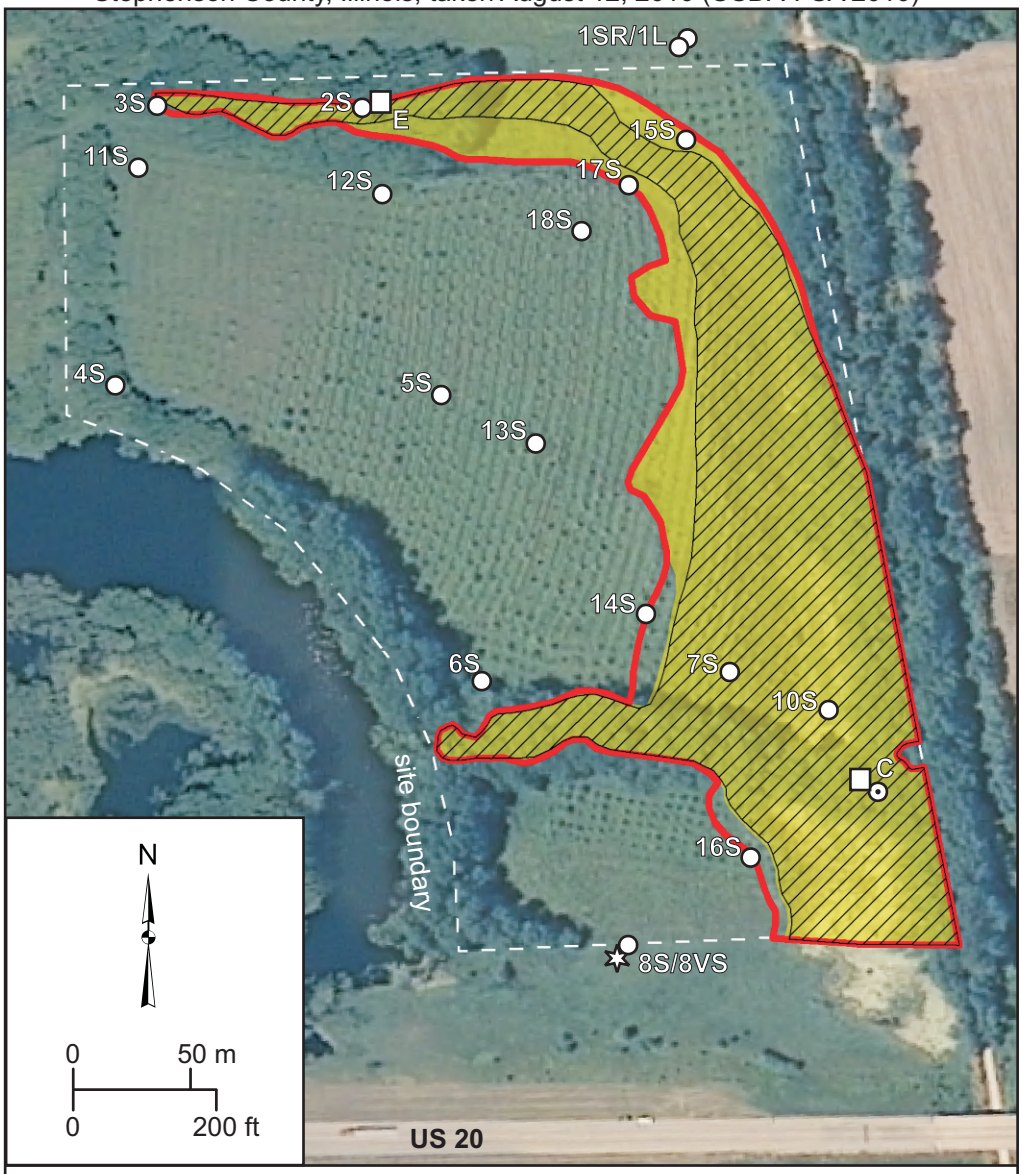
Freeport Bypass West
Wetland Mitigation Site 6W
(US 20, FAP 301)
General Study Area and Vicinity

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



Freeport Bypass West
Wetland Mitigation Site 6W
(US 20, FAP 301)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Stephenson County, Illinois, taken August 12, 2010 (USDA-FSA 2010)

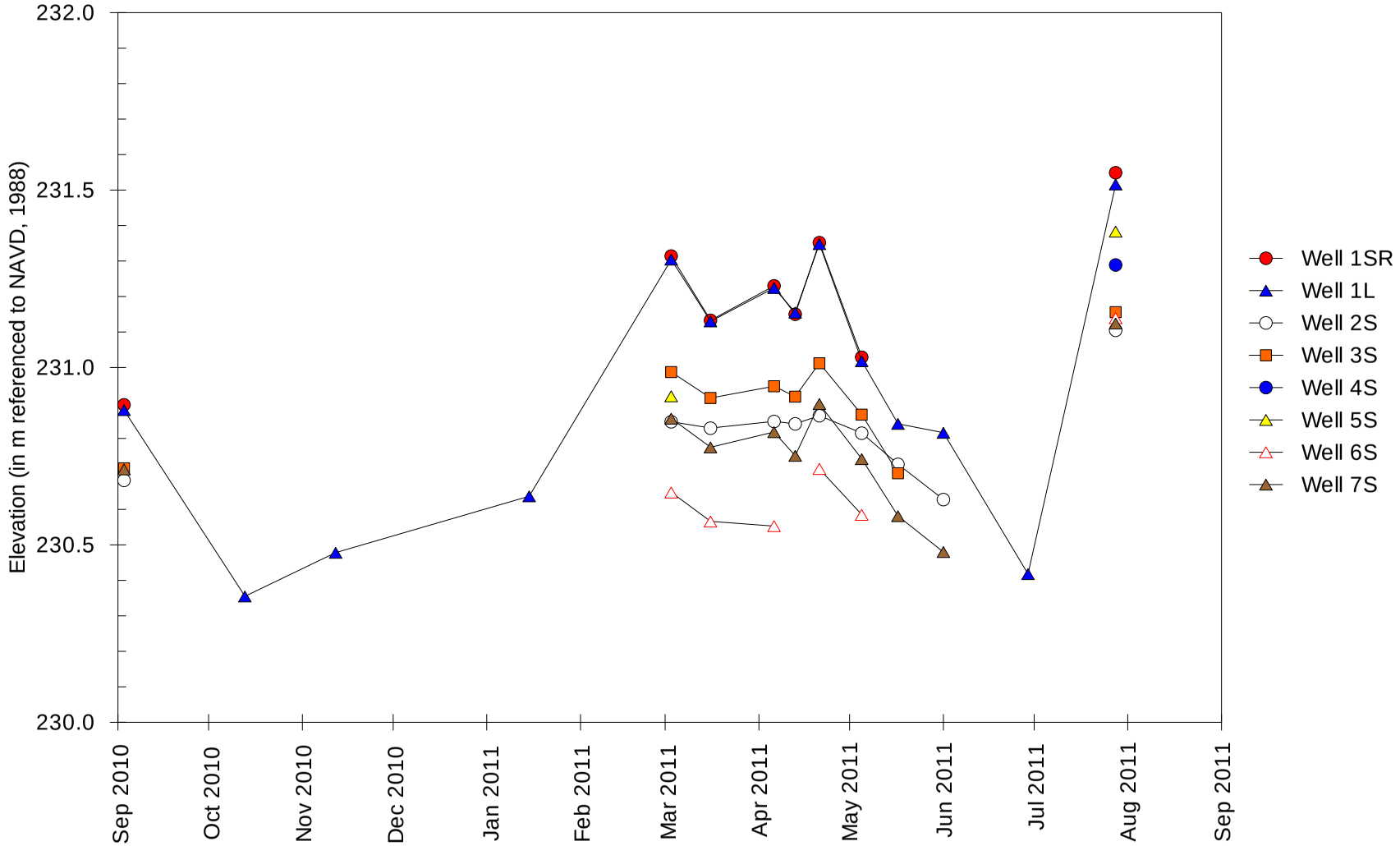


2011 Wetland Hydrology

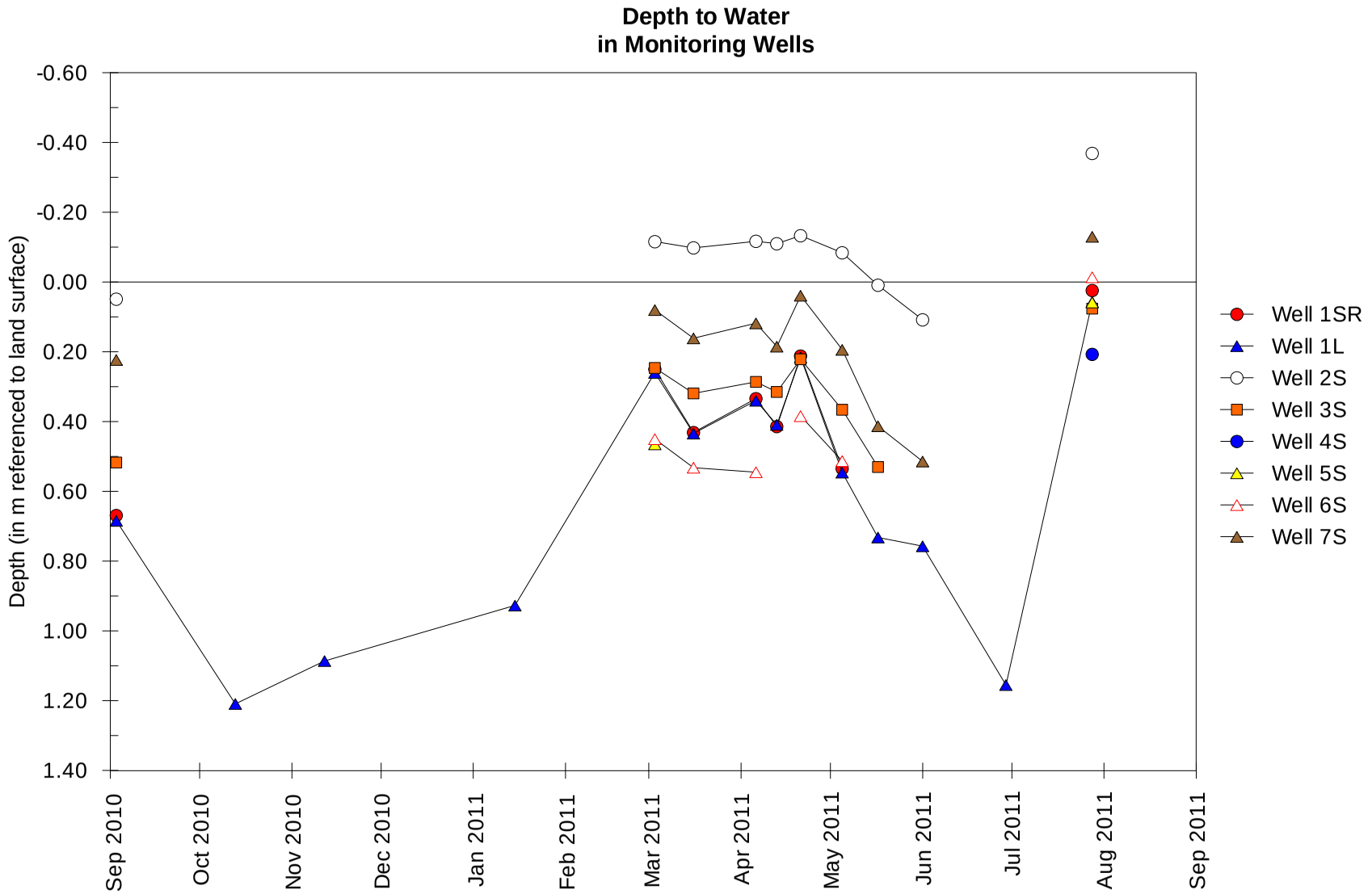
- monitoring well
- staff gauge
- data logger
- rain gauge
- > 5% of the growing season (1987 Manual)
- > 12.5% of the growing season (1987 Manual)
- 14 days or more (2010 Midwest Region Supplement)

Freeport Bypass West Wetland Mitigation Site 6W
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells

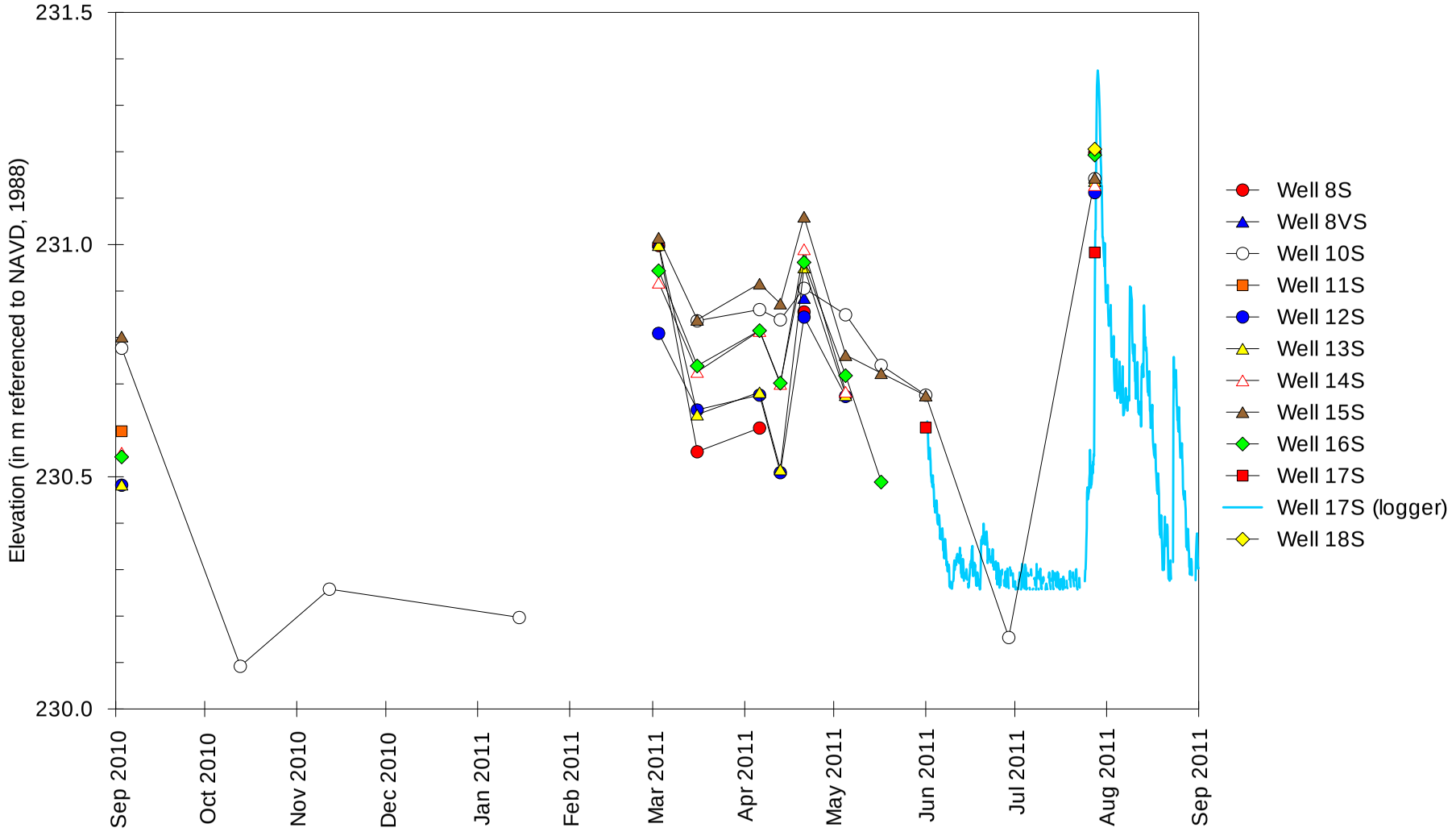


Freeport Bypass West Wetland Mitigation Site 6W
September 1, 2010 through August 31, 2011

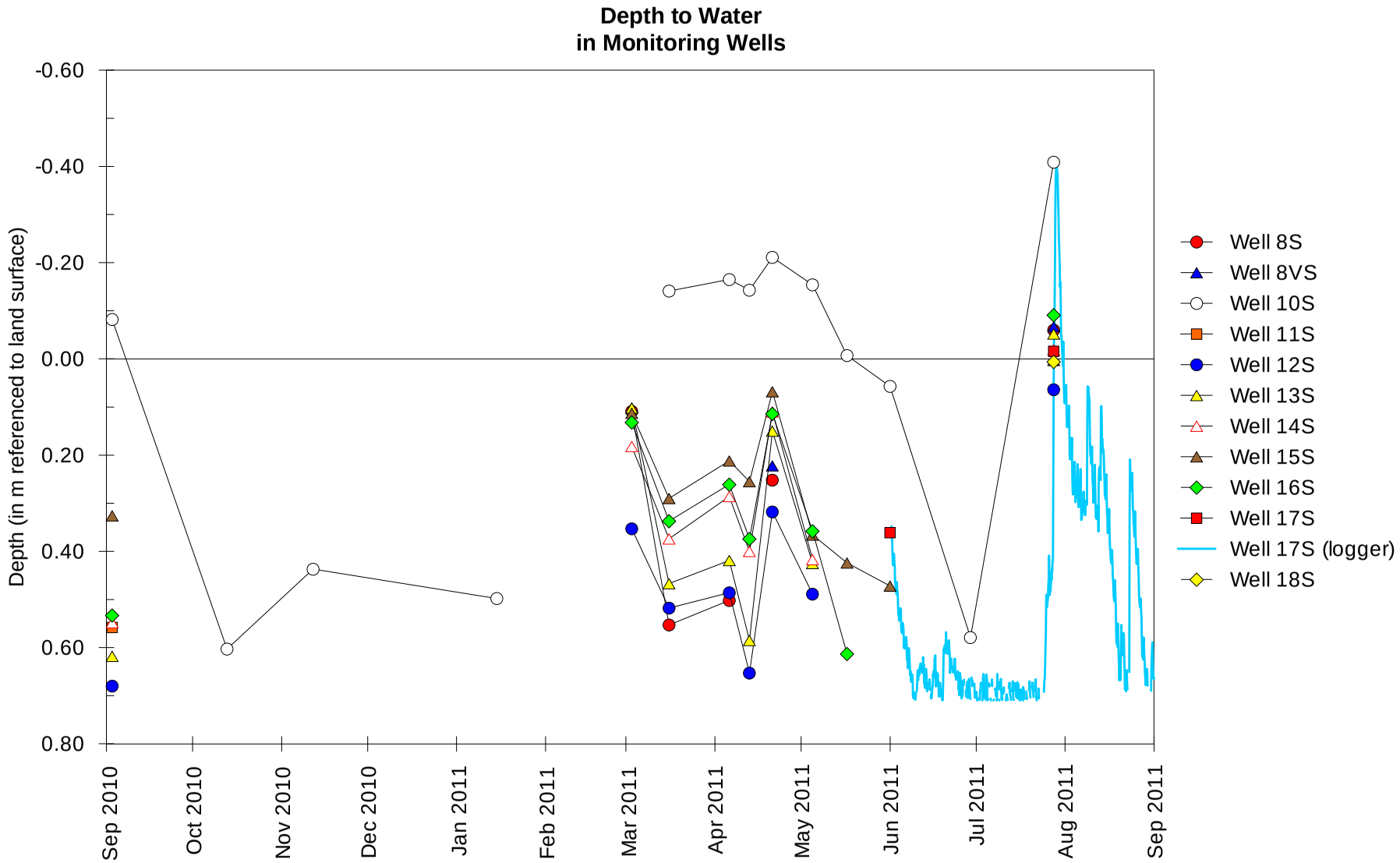


Freeport Bypass West Wetland Mitigation Site 6W
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells

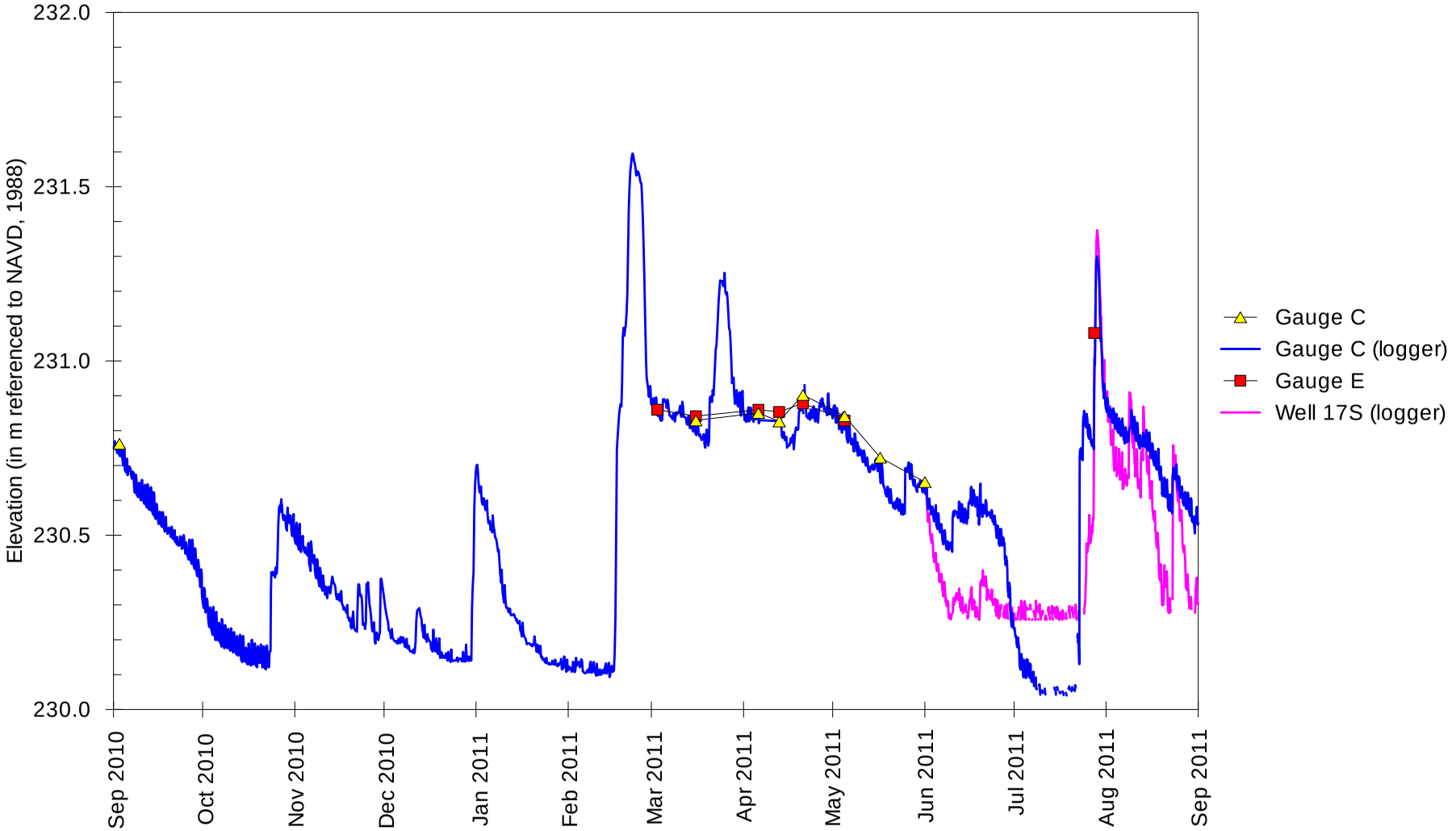


Freeport Bypass West Wetland Mitigation Site 6W
September 1, 2010 through August 31, 2011



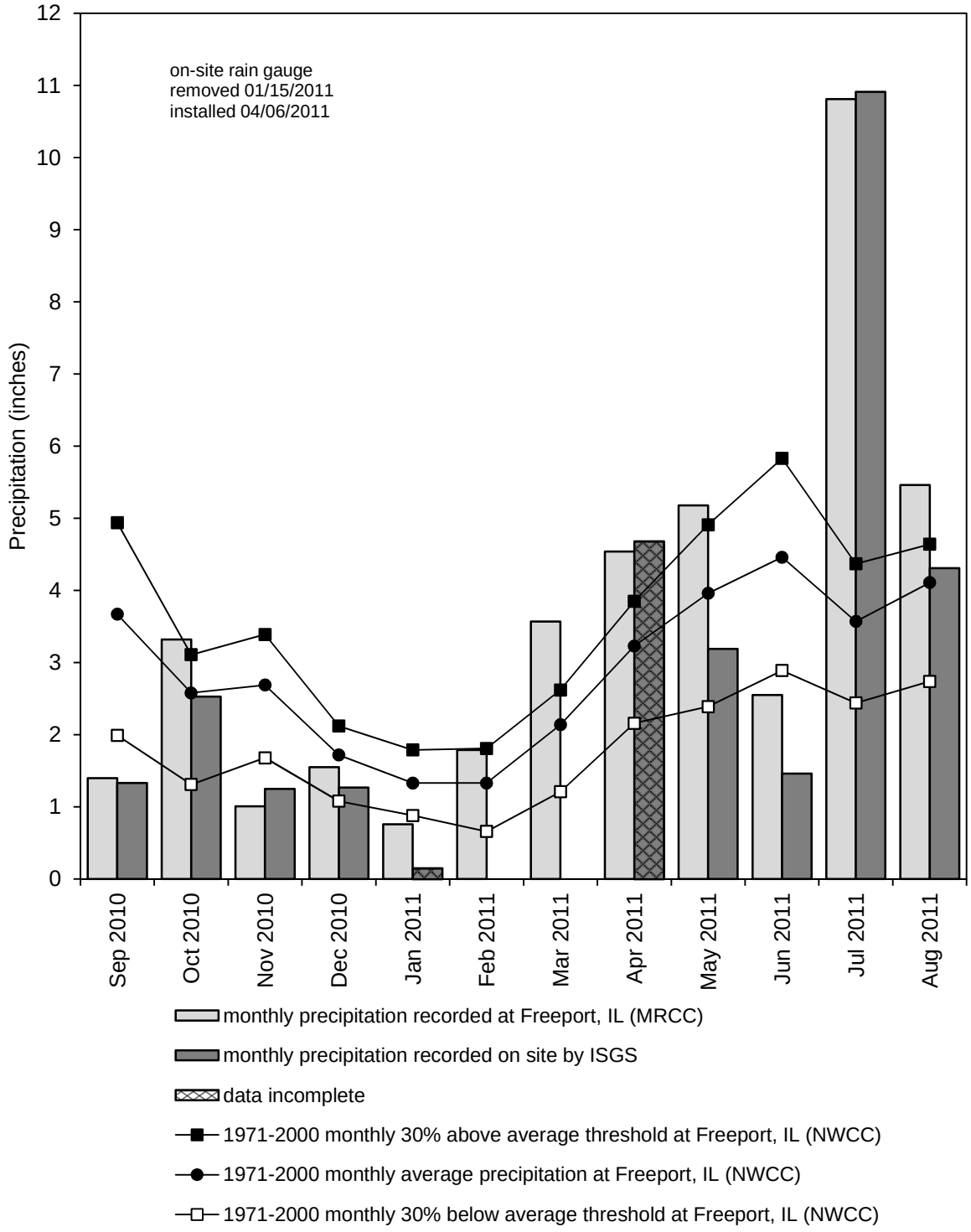
Freeport Bypass West Wetland Mitigation Site 6W
September 1, 2010 through August 31, 2011

Water-Level Elevations
at Staff Gauges and Data Loggers



Freeport Bypass West
Wetland Mitigation Site 6W
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Freeport Wastewater Plant, IL



Graph last updated 10/31/2011

SUGAR CAMP CREEK **ISGS #74**
WETLAND AND STREAM MITIGATION BANK
Sequence #9282
Franklin County, Northern Township, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Jessica L. Monson

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).
- June 2009: Wetland and stream mitigation banking instrument was approved by the Interagency Review Team.
- August 2010: IDOT received notification that mitigation was complete for the portion of the site designated for Illinois Route 3 (FAP 312) mitigation. Construction began on Phase 1 of the mitigation bank.

WETLAND HYDROLOGY CALCULATION FOR 2011

Using the 1987 Manual (Environmental Laboratory 1987), 27.3 ha (67.4 ac) of the total bank area of 42.6 ha (105.2 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011, whereas 25.3 ha (62.4 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Within Phase 1 of the wetland mitigation bank, 13.9 ha (34.3 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, of which 13.4 ha (33.0 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 27.8 ha (68.6 ac) of the entire wetland bank and 14.3 ha (35.5 ac) of Phase 1 satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Du Quoin, Illinois, is April 5 and the season lasts 207 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days. According to the 2010 Midwest Region Supplement, February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland bank.
- Total precipitation at the Du Quoin, Illinois, weather station for the period from September 2010 through August 2011 was 137% of normal, and Spring 2011 (March through May) precipitation was 218% of normal.

- In 2011, all wells except well 37S satisfied wetland hydrology criteria for greater than 5% of the growing season, and all wells except 25S, 37S, and 40S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Furthermore, according to the 2010 Midwest Region Supplement, all wells satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season.

- Data from gauges A and E in Sugar Camp Creek indicated that 19 floods (above 123.00 m [403.54 ft]) inundated portions of the site during the 2011 growing season, and that the duration of inundation outside of the creek from each of these floods was not sufficient to satisfy any wetland hydrology criteria.

- Surface-water readings at Gauge G showed that water-level elevation was at or above 123.78 m (406.10 ft) for greater than 5% of the growing season and was at or above 123.76 m (406.03 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. Furthermore, water-level elevation at Gauge G was at or above 123.77 m (406.06 ft) for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Surface-water readings at Gauge K showed that water-level elevation was at or above 123.10 m (403.87 ft) for greater than 5% of the growing season and at or above 122.78 m (402.83 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. Furthermore, water-level elevation at Gauge K was at or above 123.10 m (403.87 ft) for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Surface-water readings at Gauge L showed that water-level elevation was at or above 123.98 m (406.75 ft) for greater than 5% of the growing season and was at or above 123.76 m (406.58 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. Furthermore, water-level elevation at Gauge L was at or above 123.96 m (406.69 ft) for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.

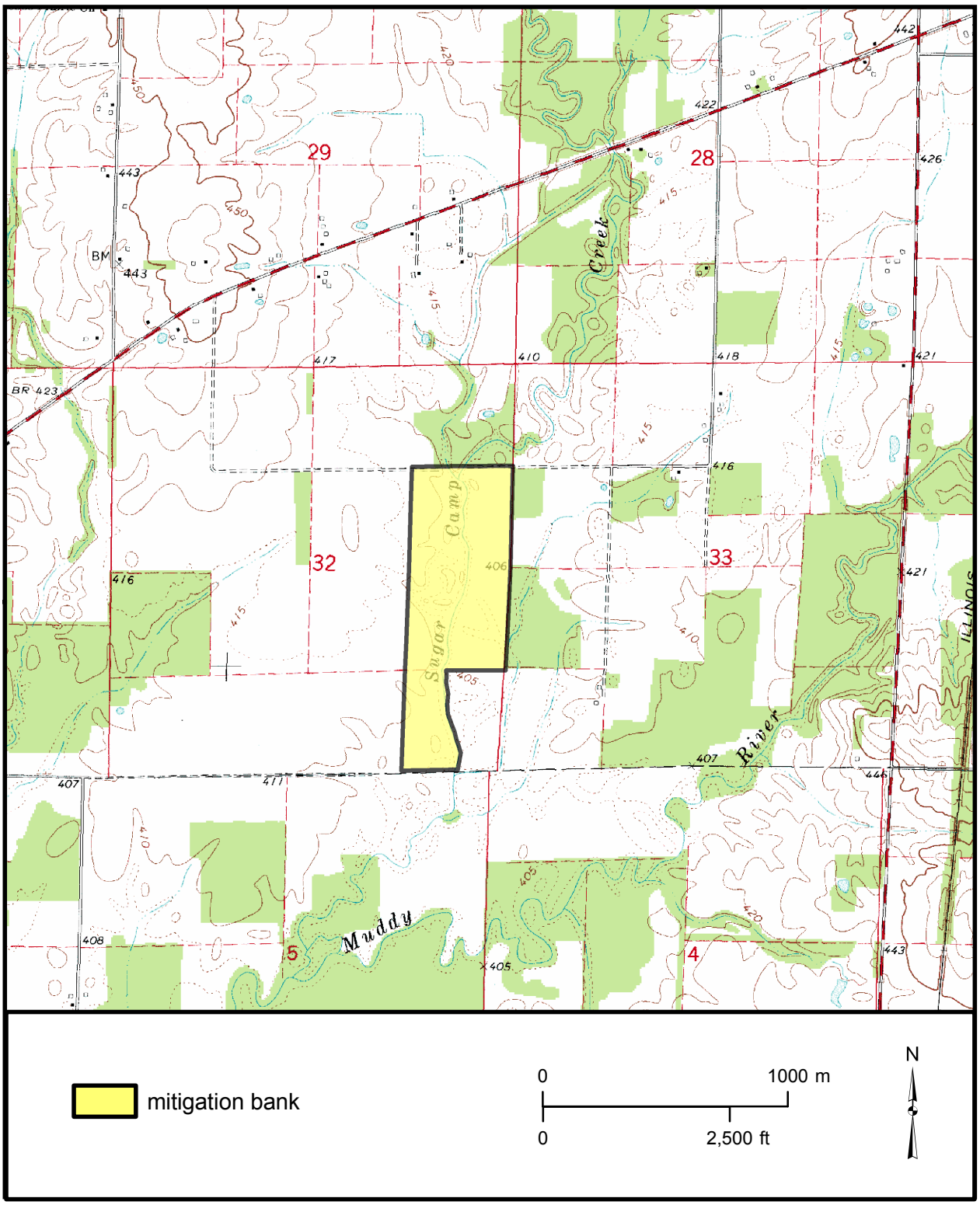
PLANNED FUTURE ACTIVITIES

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

Sugar Camp Creek Wetland and Stream 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

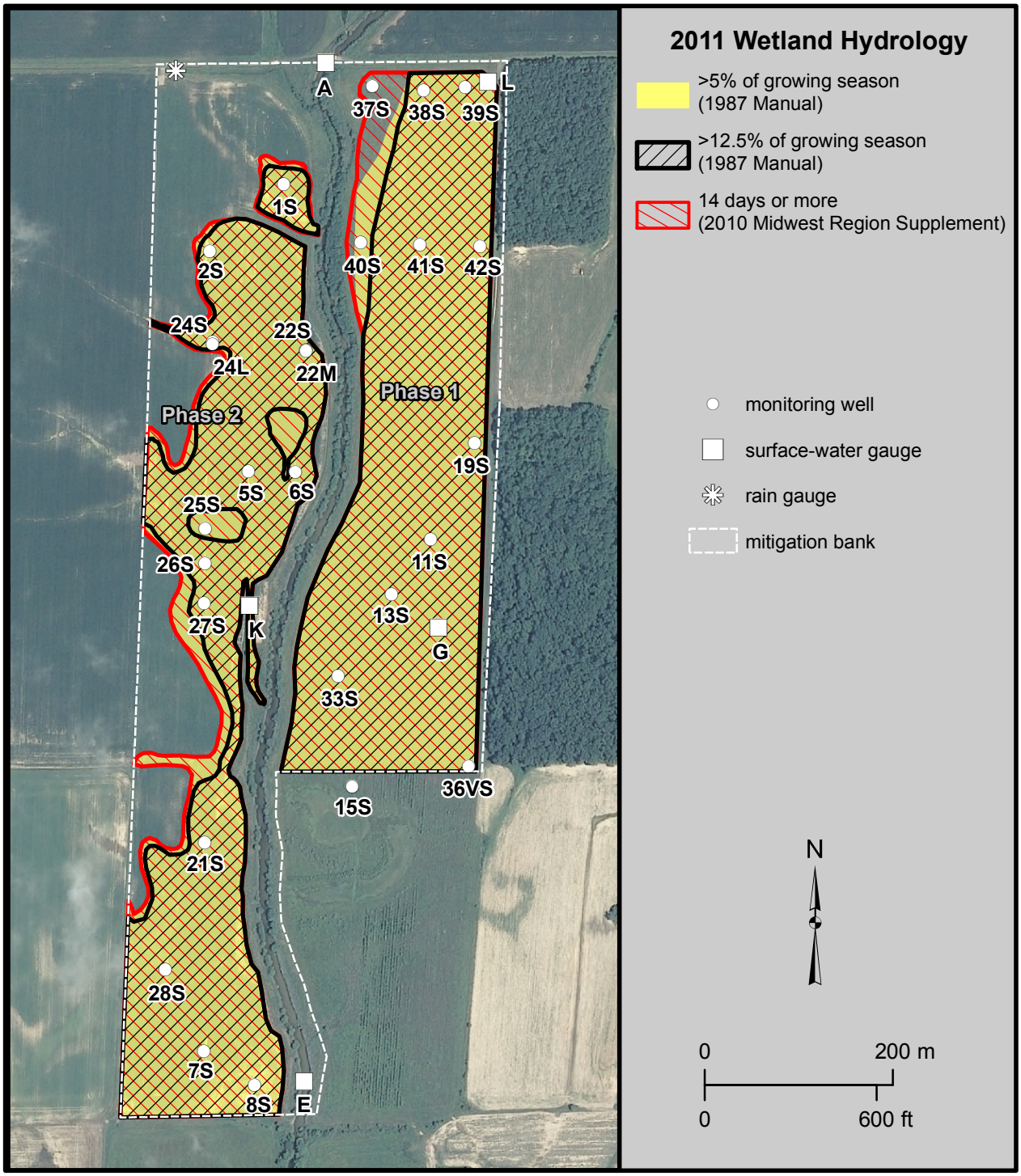


Sugar Camp Creek Wetland and Stream Mitigation Bank

Estimated Areal Extent of 2011 Wetland Hydrology

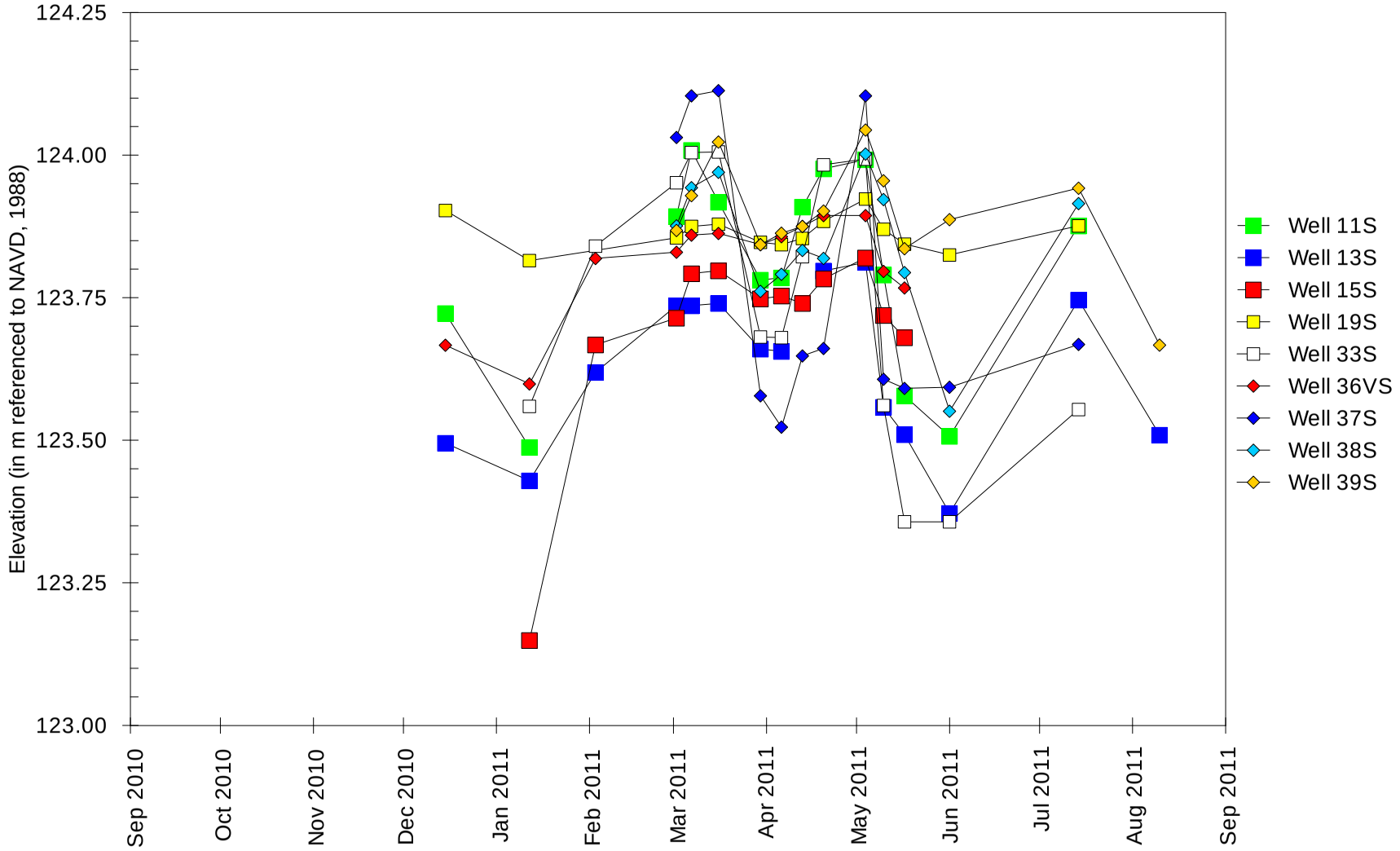
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph,
Ewing SE quarter quadrangle, taken June 25, 2010 (USDA-FSA 2010)



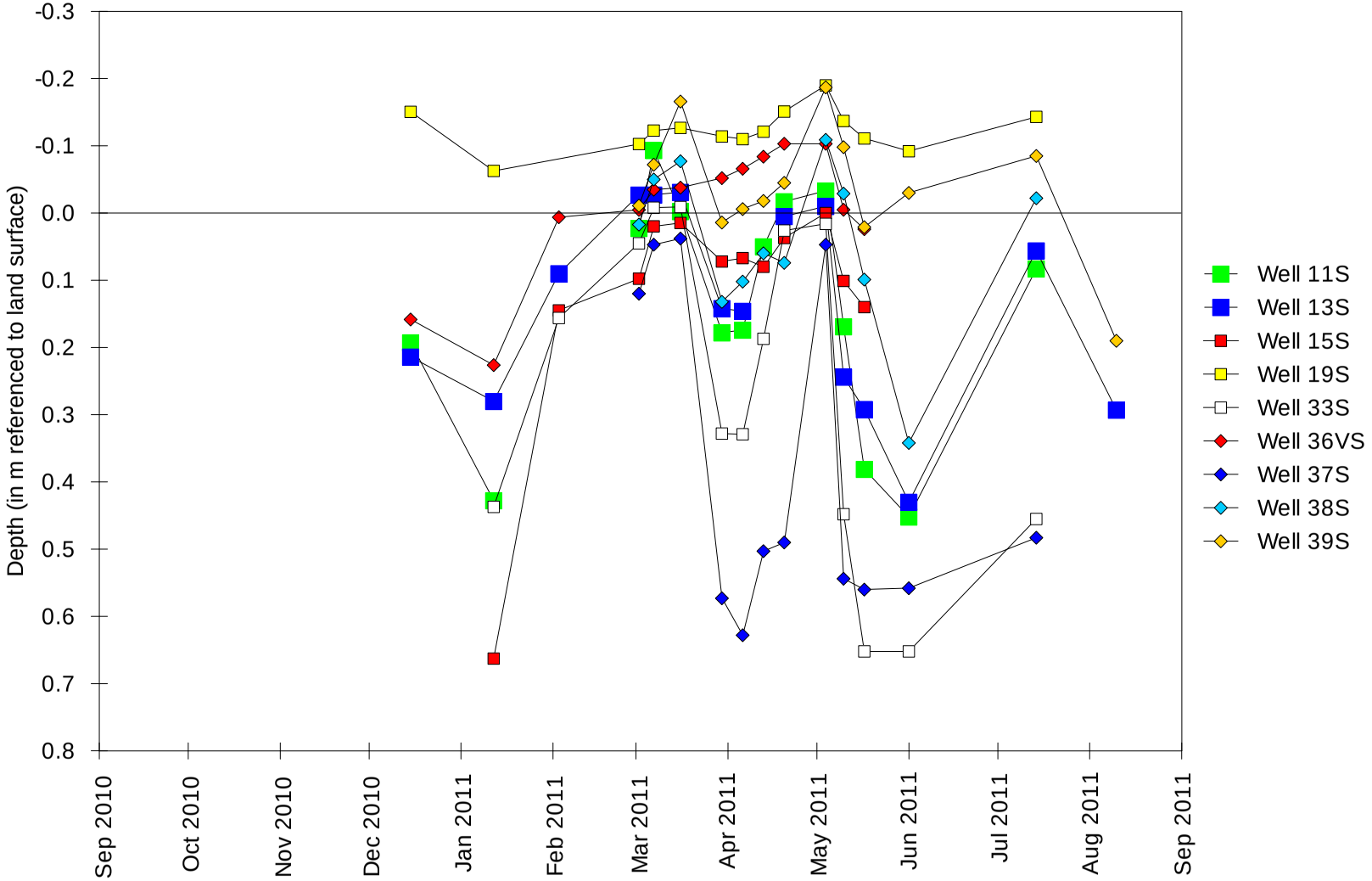
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells East of Sugar Camp Creek



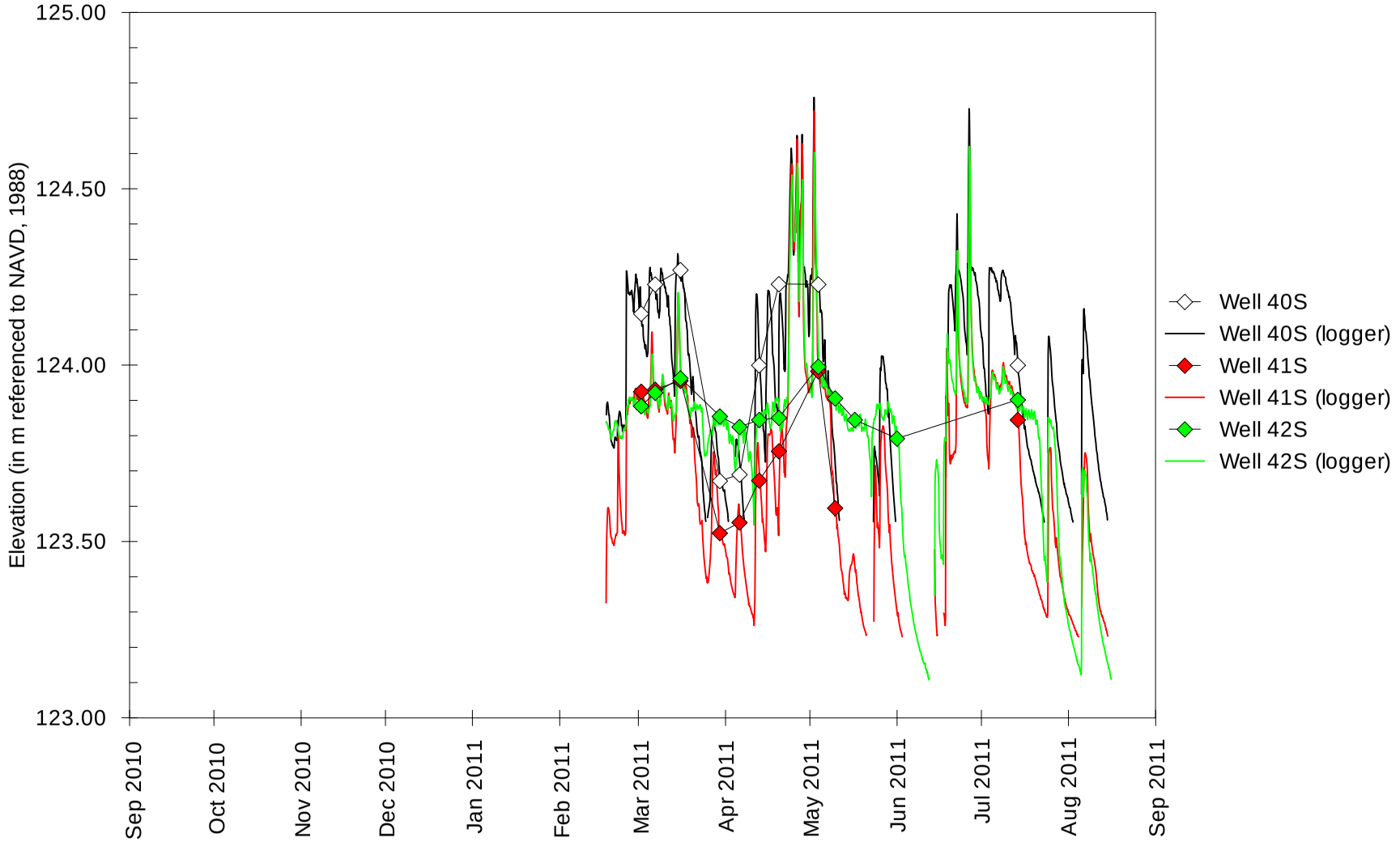
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells East of Sugar Camp Creek



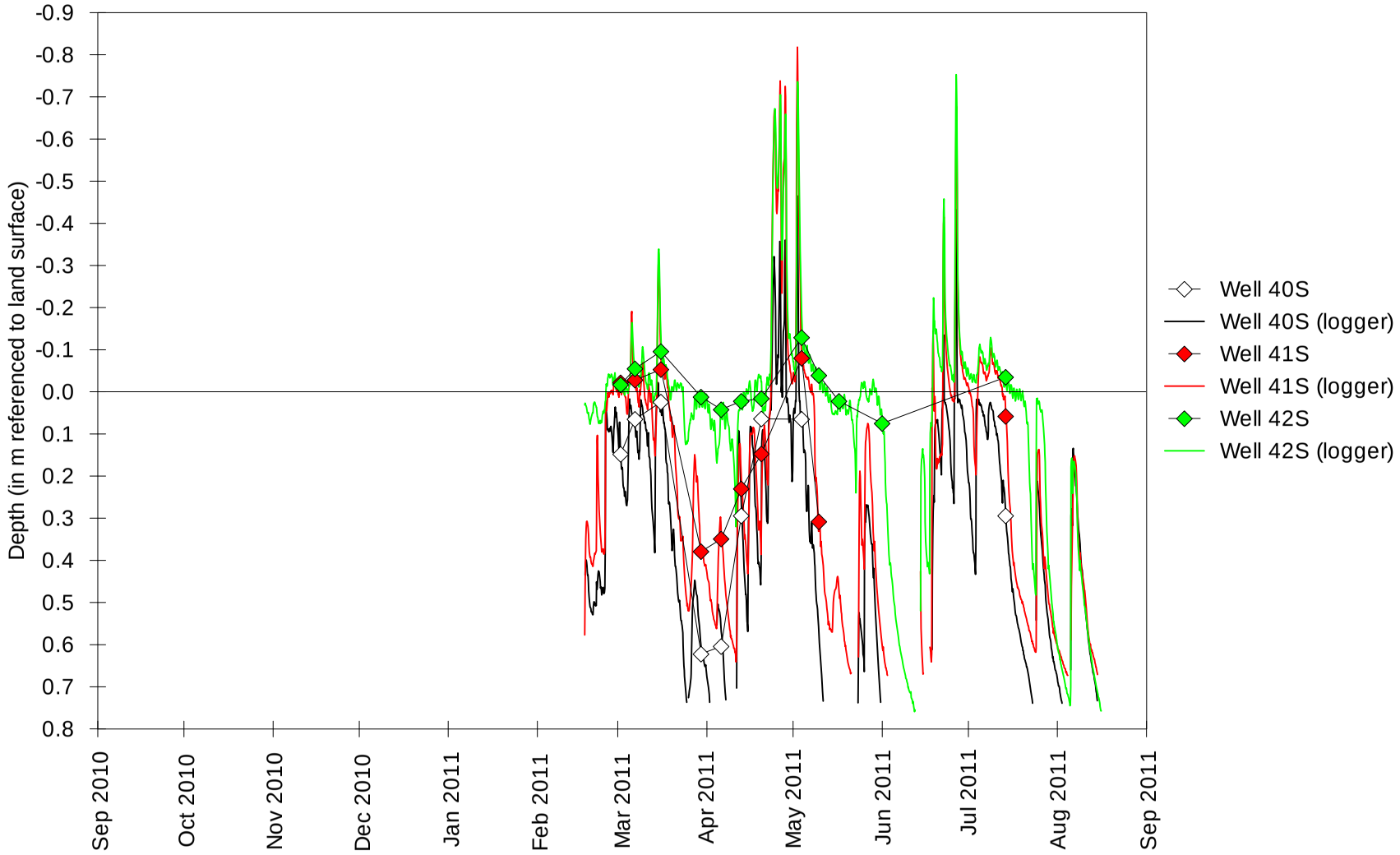
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells East of Sugar Camp Creek



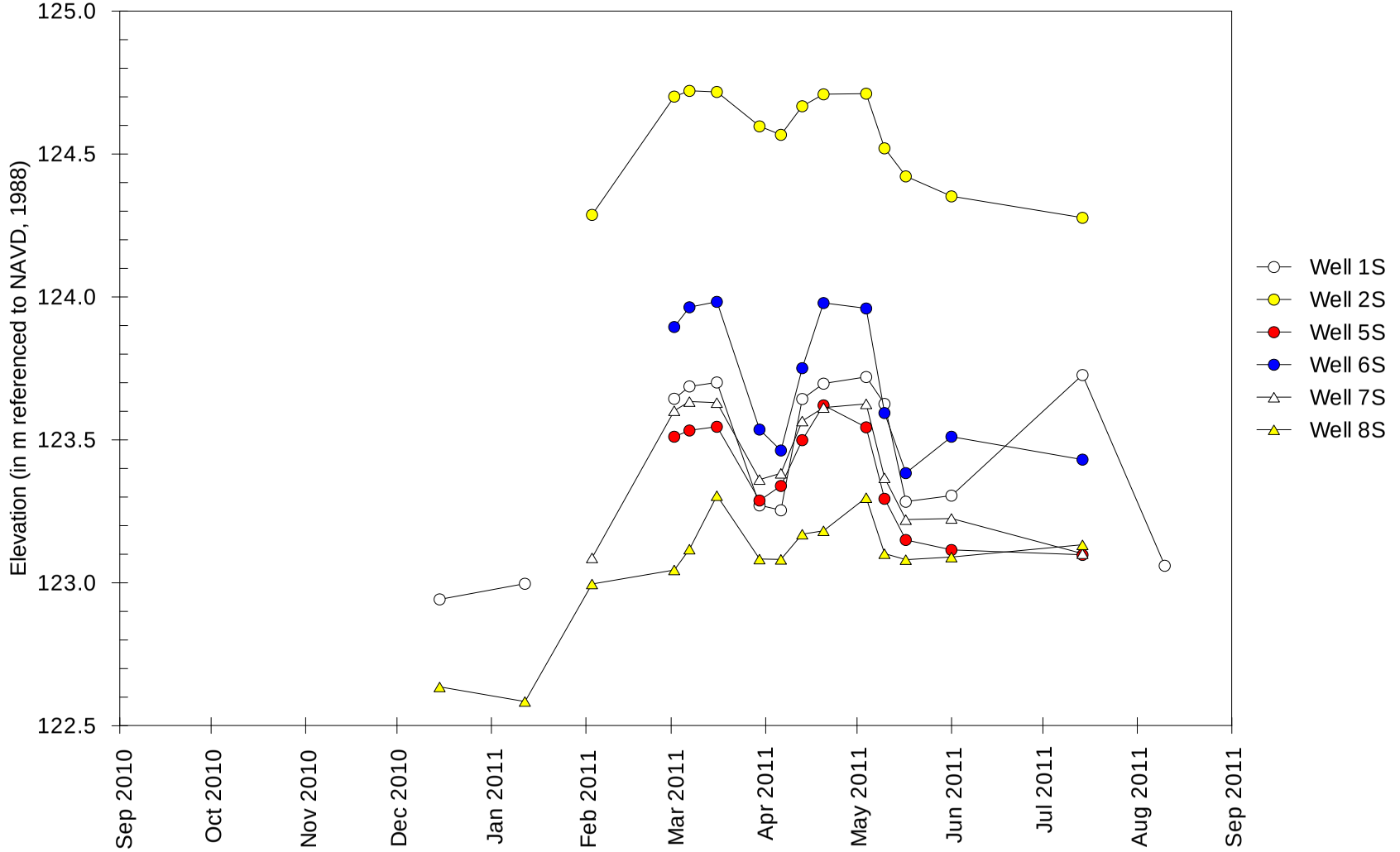
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells East of Sugar Camp Creek



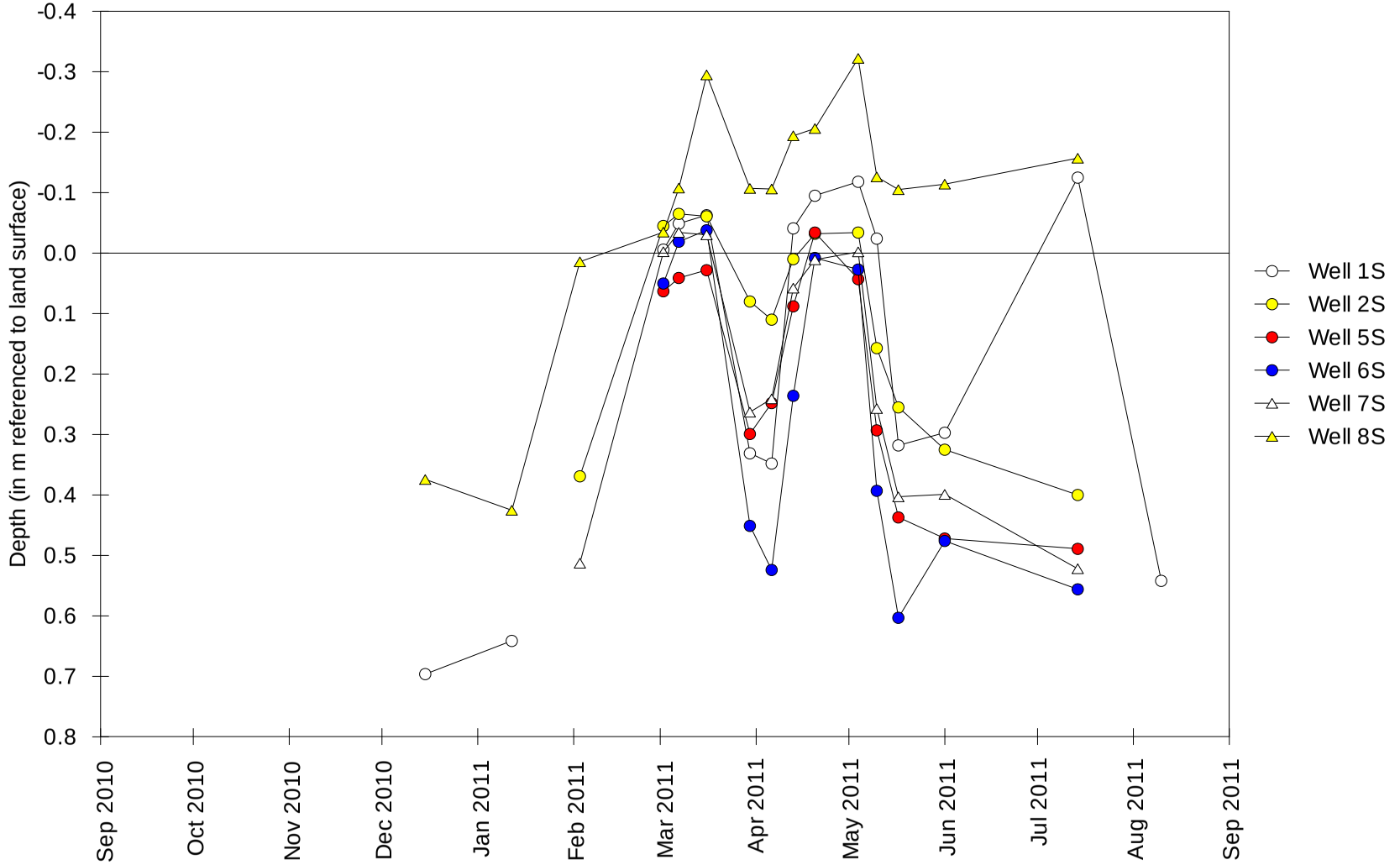
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells West of Sugar Camp Creek



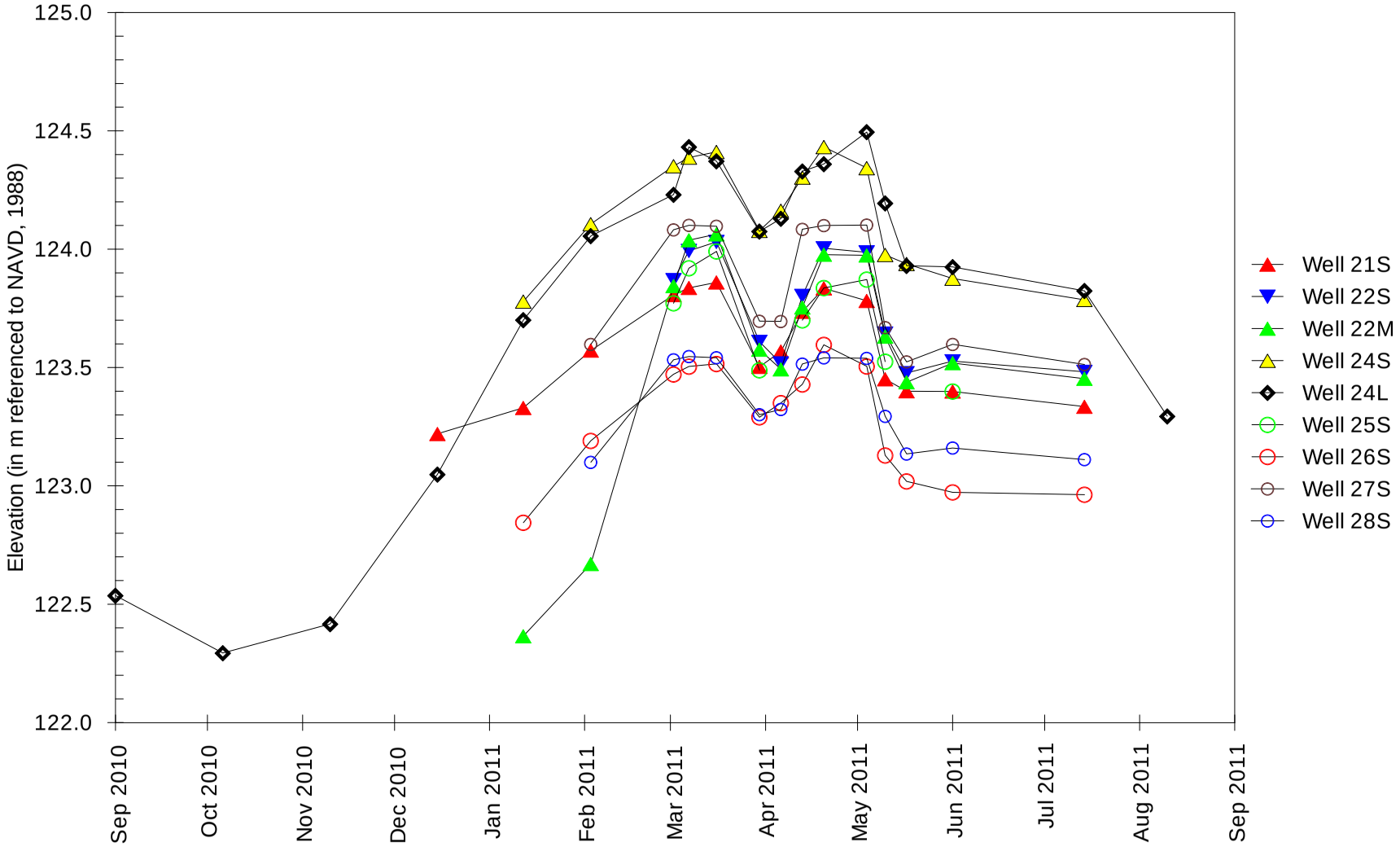
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells West of Sugar Camp Creek



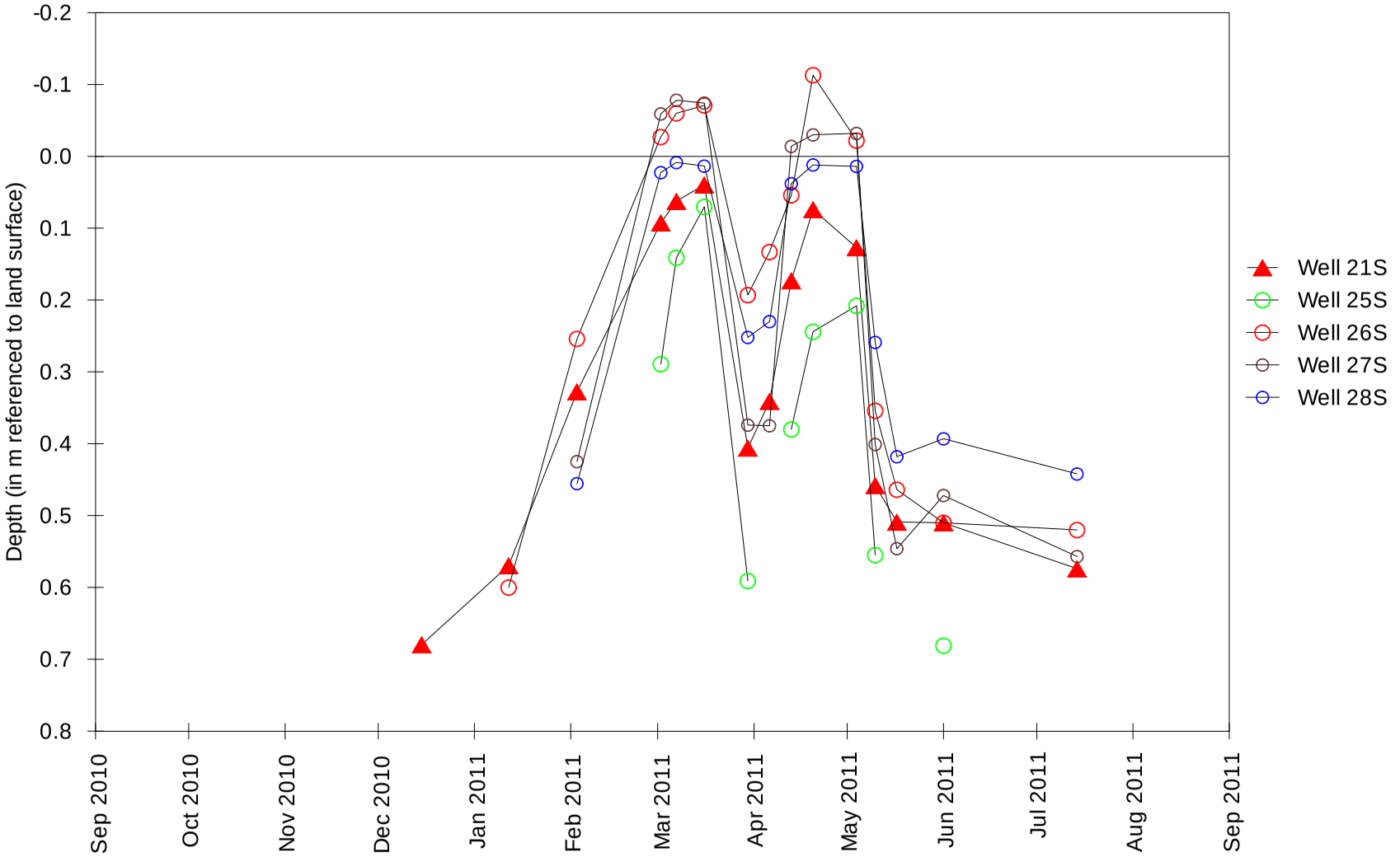
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells West of Sugar Camp Creek



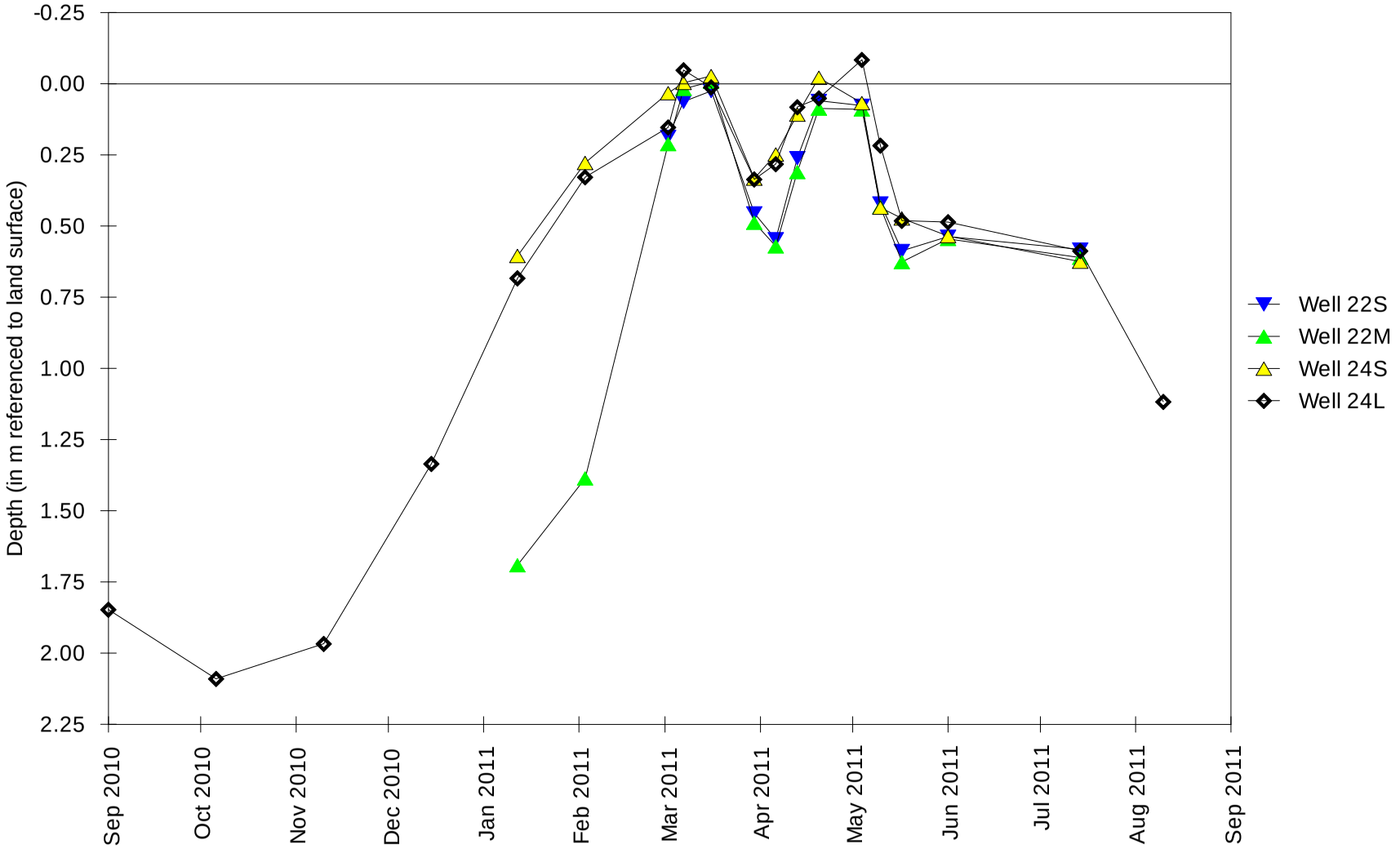
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells West of Sugar Camp Creek



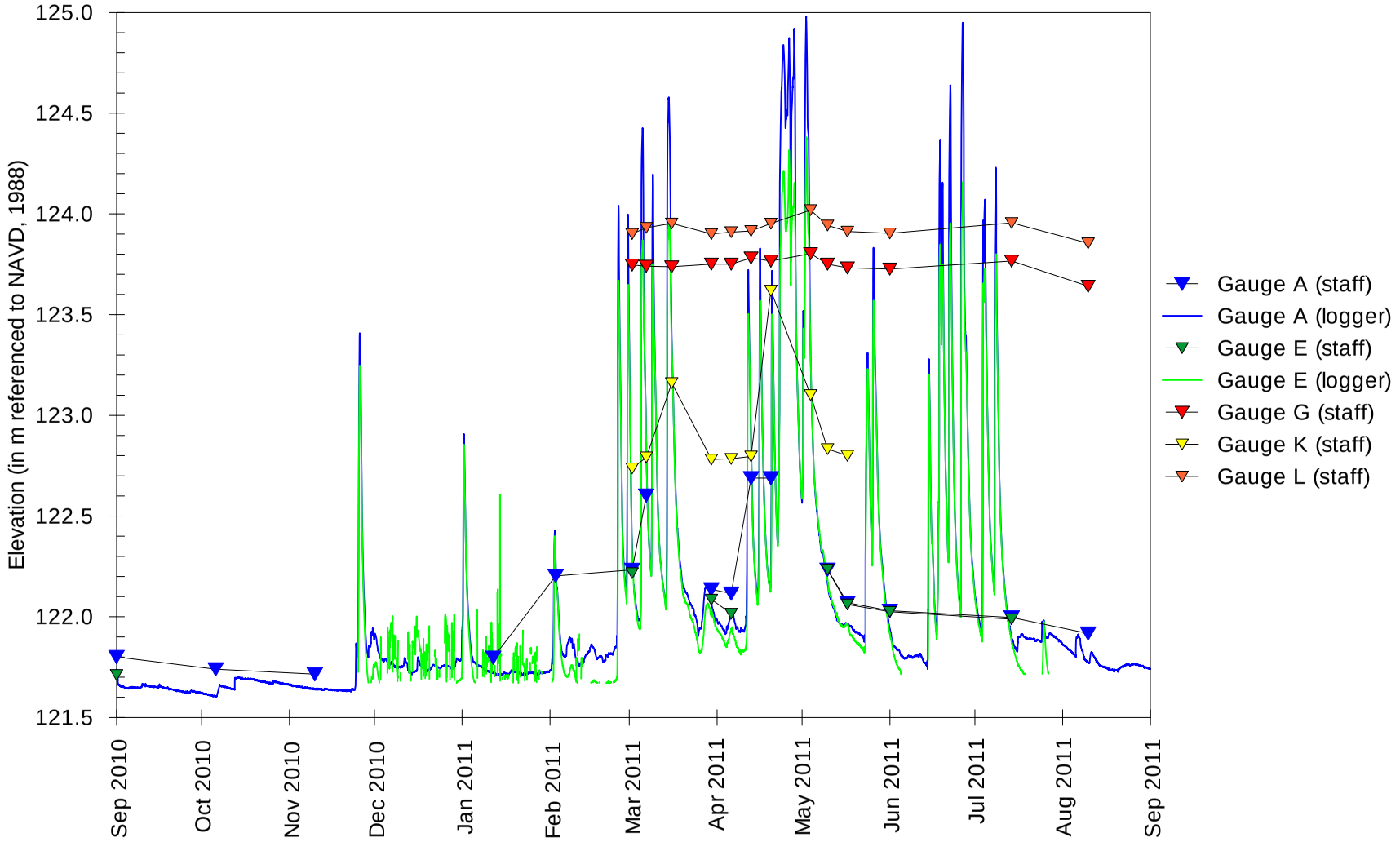
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells West of Sugar Camp Creek



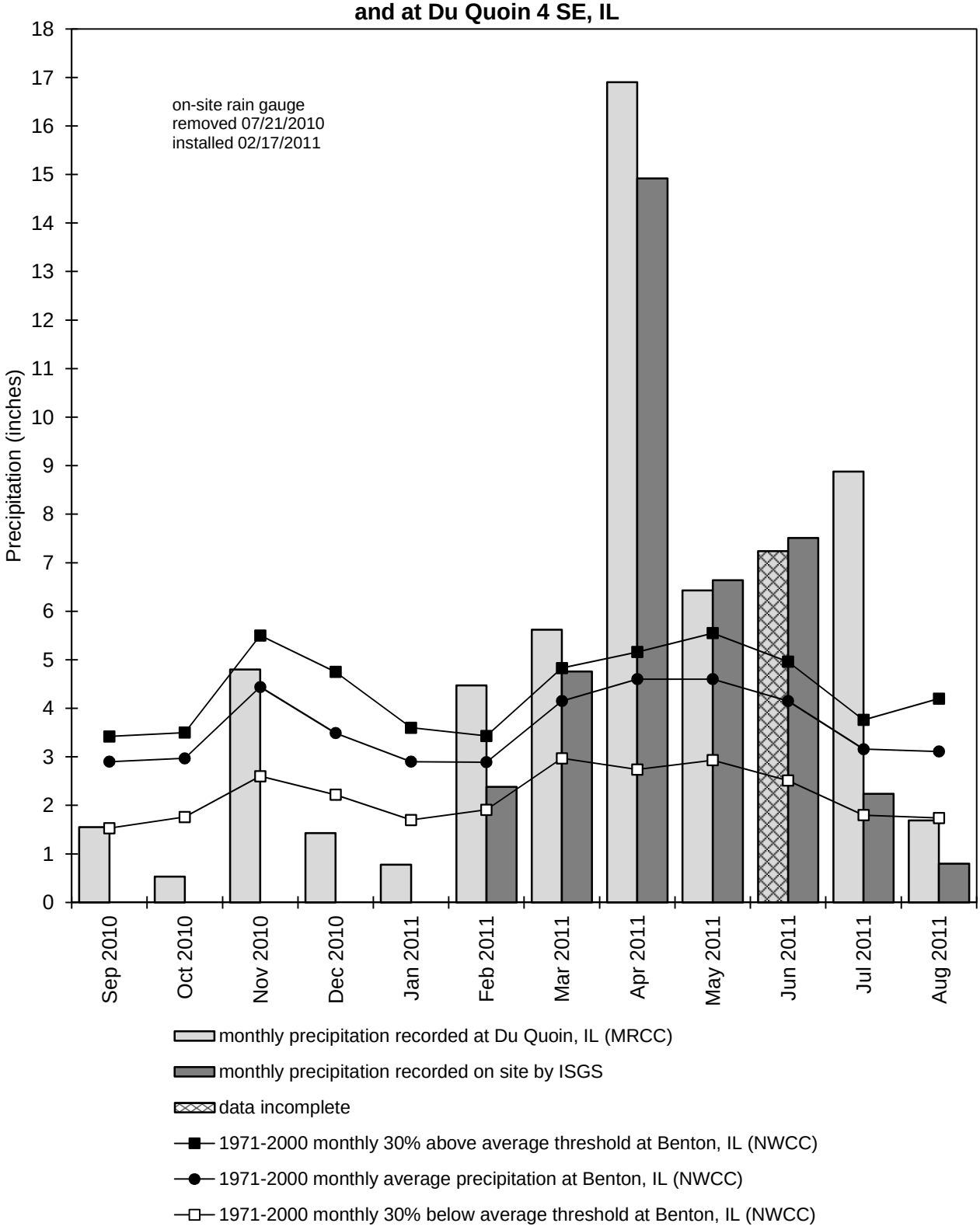
Sugar Camp Creek Wetland and Stream Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Surface-Water Gauges and Data Loggers



Sugar Camp Creek Wetland and Stream Mitigation Bank
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Du Quoin 4 SE, IL



Graph last updated 10/31/2011

GREEN CREEK **ISGS #75**
WETLAND MITIGATION SITE
IL 32/33
FAP 774
Sequence #12505
Effingham County, near Effingham, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- September 2006: ISGS submitted a Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2006–03).

- June 2007: Construction at the wetland mitigation site was completed.

- November 2007: Additional post-construction monitoring instruments were installed.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 2.0 ha (5.0 ac) out of a total site area of approximately 4.1 ha (10.0 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is estimated to be 1.5 ha (3.8 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 2.0 ha (5.0 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Effingham, Illinois, is April 6, and the season lasts 210 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days, and 12.5% of the growing season is 26 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that March 3 was the starting date of the 2011 growing season based on both vegetation growth and development observed and soil temperatures measured at the site.

- Total precipitation for the monitoring period, as recorded in Effingham, Illinois, was 120% of normal, and was 142% of normal for the period March through May 2011.

- In 2011, water levels measured in monitoring wells 1U, 3S, 4S, 8SR2, 11SR, 12SR, and 14S satisfied wetland hydrology criteria for greater than 5% of the growing season, and water levels measured in wells 3S, 4S, 11SR, and 12SR satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, wells 3S, 4S, 8SR2, 9SR, 11SR, 12SR, 13S, and 14S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season. Wells 9SR, 13S, and 14S were damaged during spring flooding at the site and thus could not be evaluated for the entire 2011 growing season.

- Water-level records for Gauge B indicated inundation west of the main ditch at or above 160.46 m (526.44 ft) for greater than 5% of the growing season, but not greater than

12.5% of the growing season, according to the 1987 Manual. Based on the 2010 Midwest Region Supplement, surface-water inundation west of the main ditch was recorded at Gauge B at or above 160.46 m (526.44 ft) for 14 or more consecutive days of the growing season. Additionally, water-level records for Gauge ER indicated inundation east of the main ditch at or above 160.80 m (527.56 ft) for 14 or more consecutive days of the growing season, according to the 2010 Midwest Region Supplement. Gauge ER was damaged during spring flooding at the site and thus could not be evaluated using the 1987 Manual.

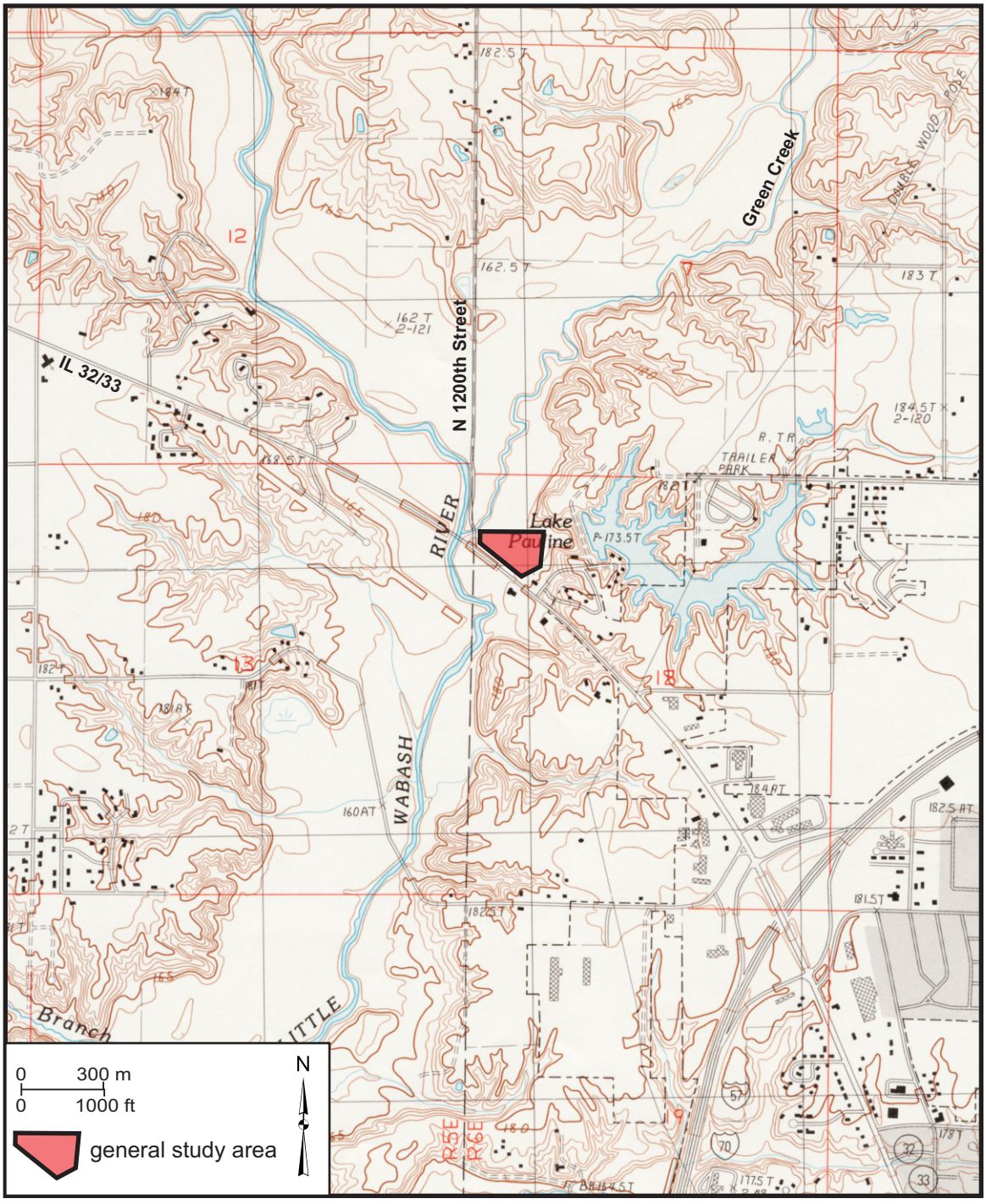
- According to the data logger at Gauge C, water levels in Green Creek reached an elevation sufficient to flood all or most of the site four times during the 2011 growing season. These events occurred on March 5, April 20, April 28, and June 19. The two floods occurring in April resulted in the areas west of the main ditch that satisfied wetland hydrology criteria for greater than 5% of the growing season, according to the 1987 Manual.

PLANNED FUTURE ACTIVITIES

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

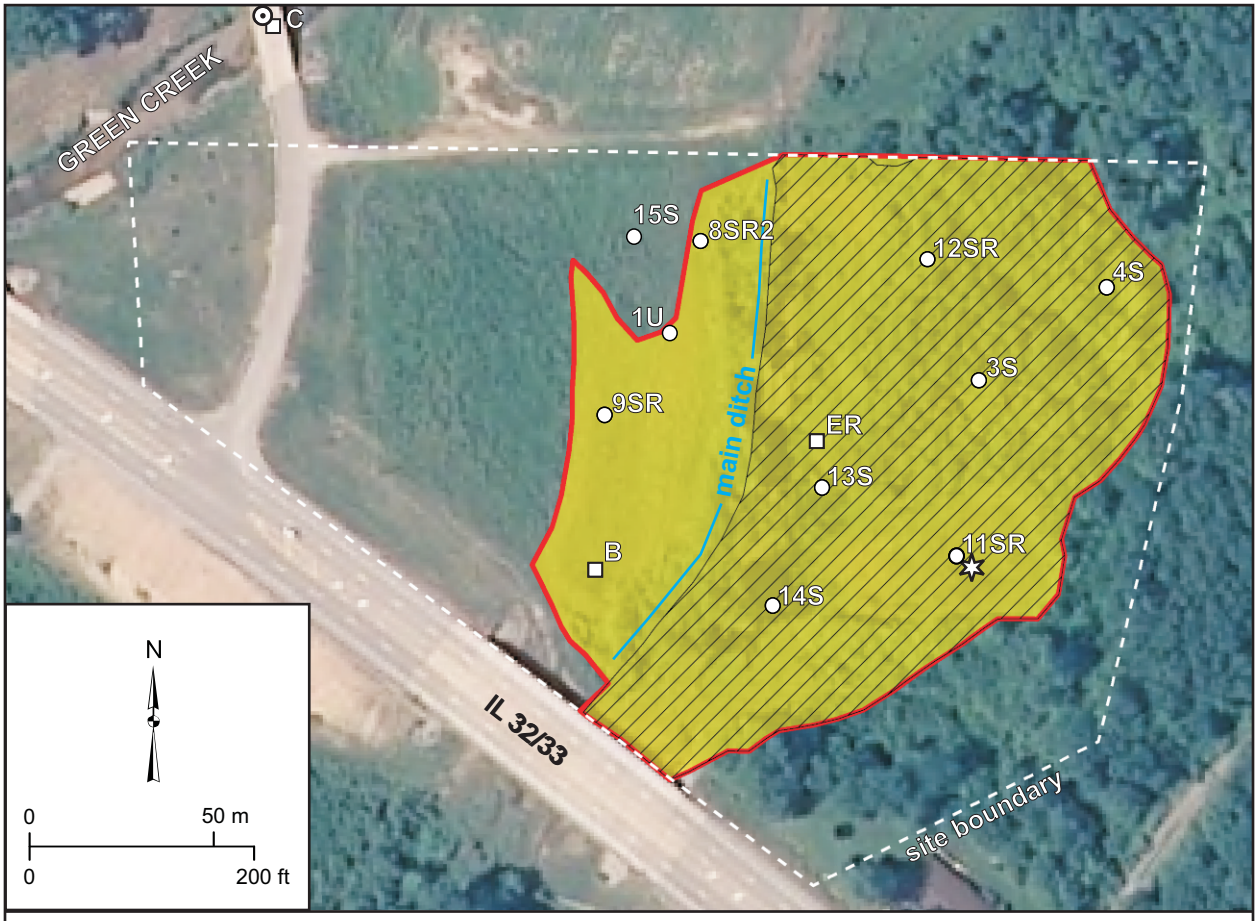
Green Creek Wetland Mitigation Site
(IL 32/33, FAP 774)
General Study Area and Vicinity

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



Green Creek Wetland Mitigation Site
(IL 32/33, FAP 774)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph,
Effingham County, Illinois, taken August 12, 2010 (USDA-FSA 2010)



monitoring well

stage gauge

rain gauge

data logger

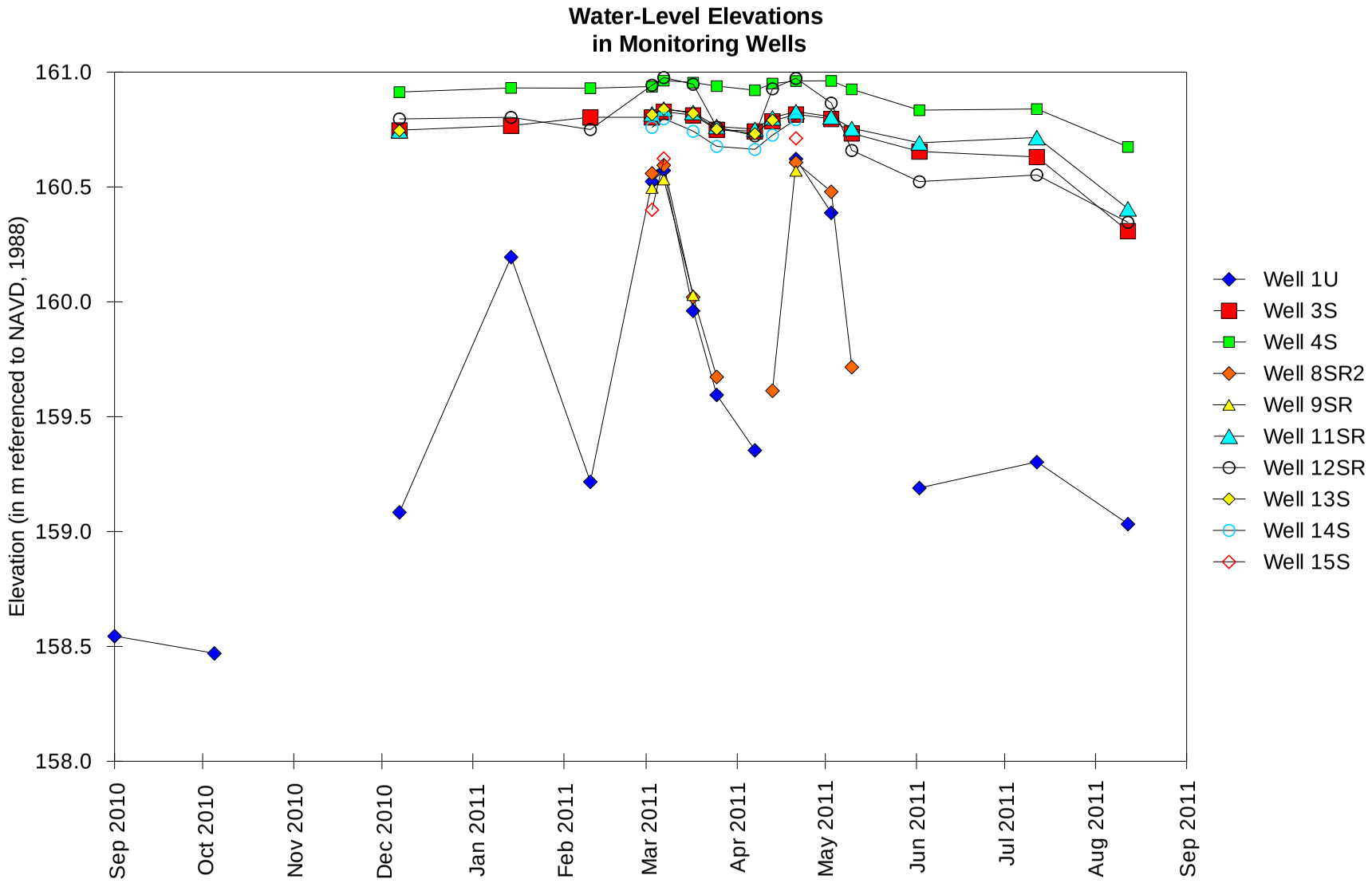
2011 Wetland Hydrology

> 5% of the growing season (1987 Manual)

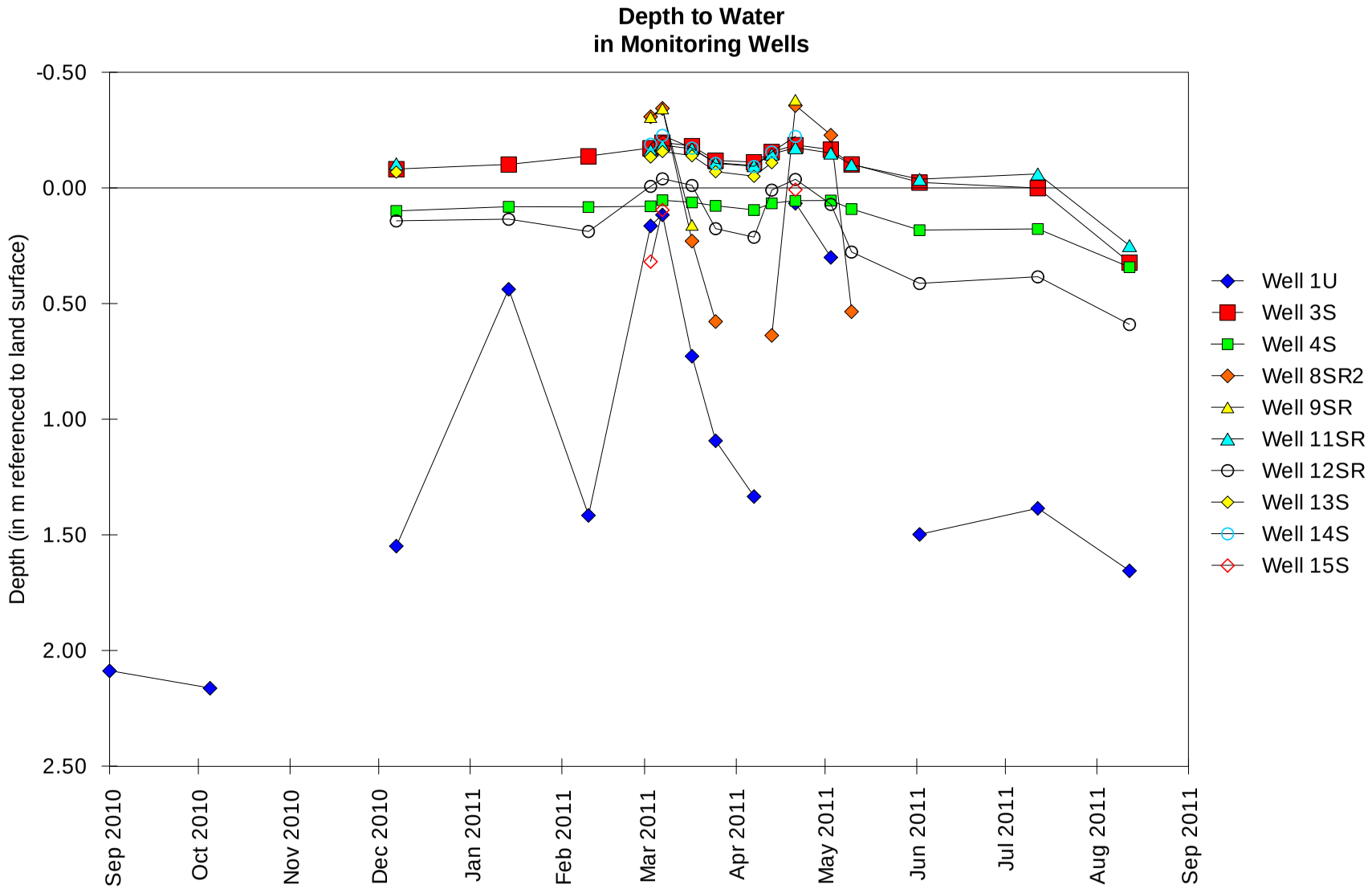
> 12.5% of the growing season (1987 Manual)

14 days or more (2010 Midwest Region Supplement)

Green Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011

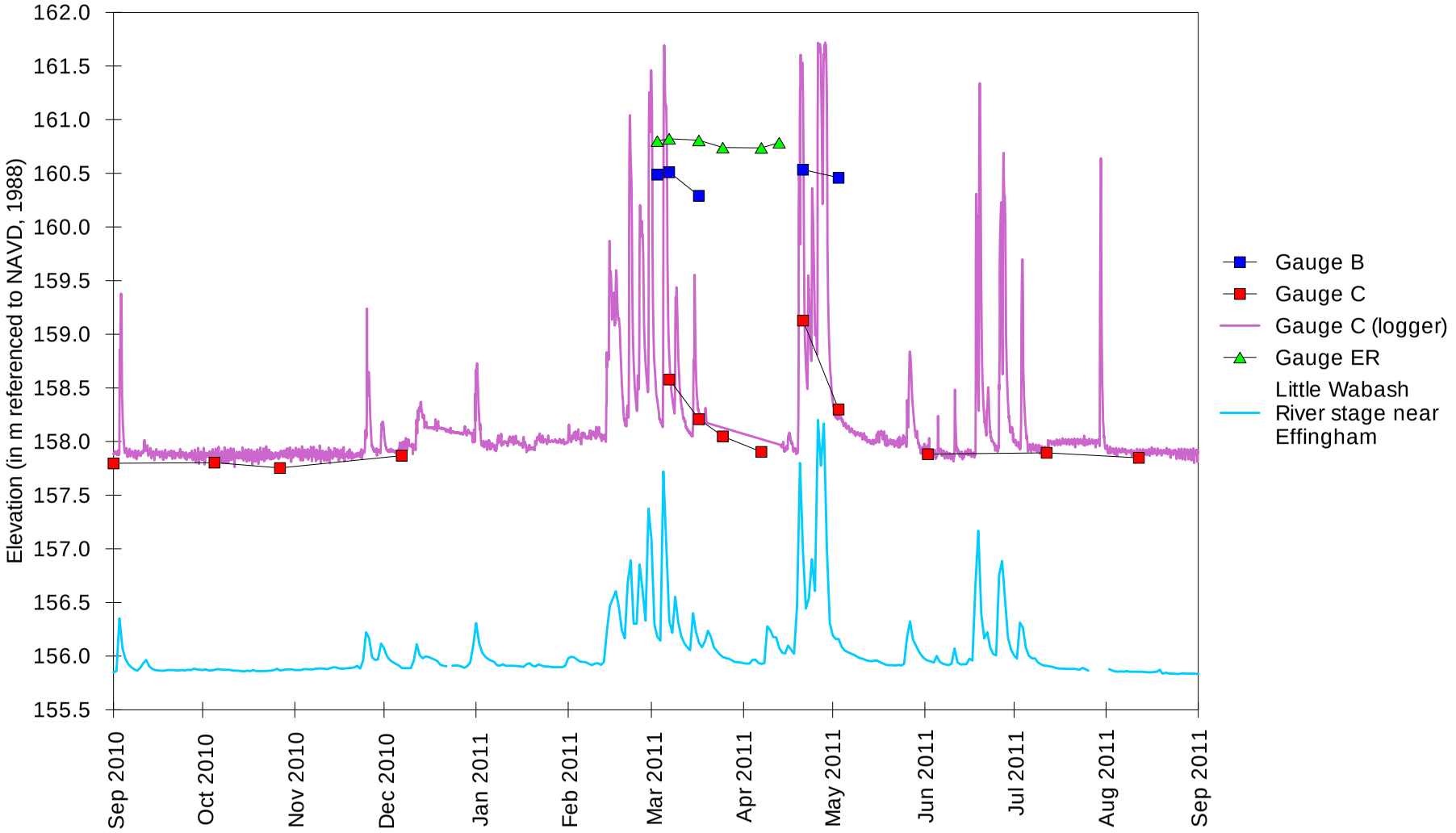


Green Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011



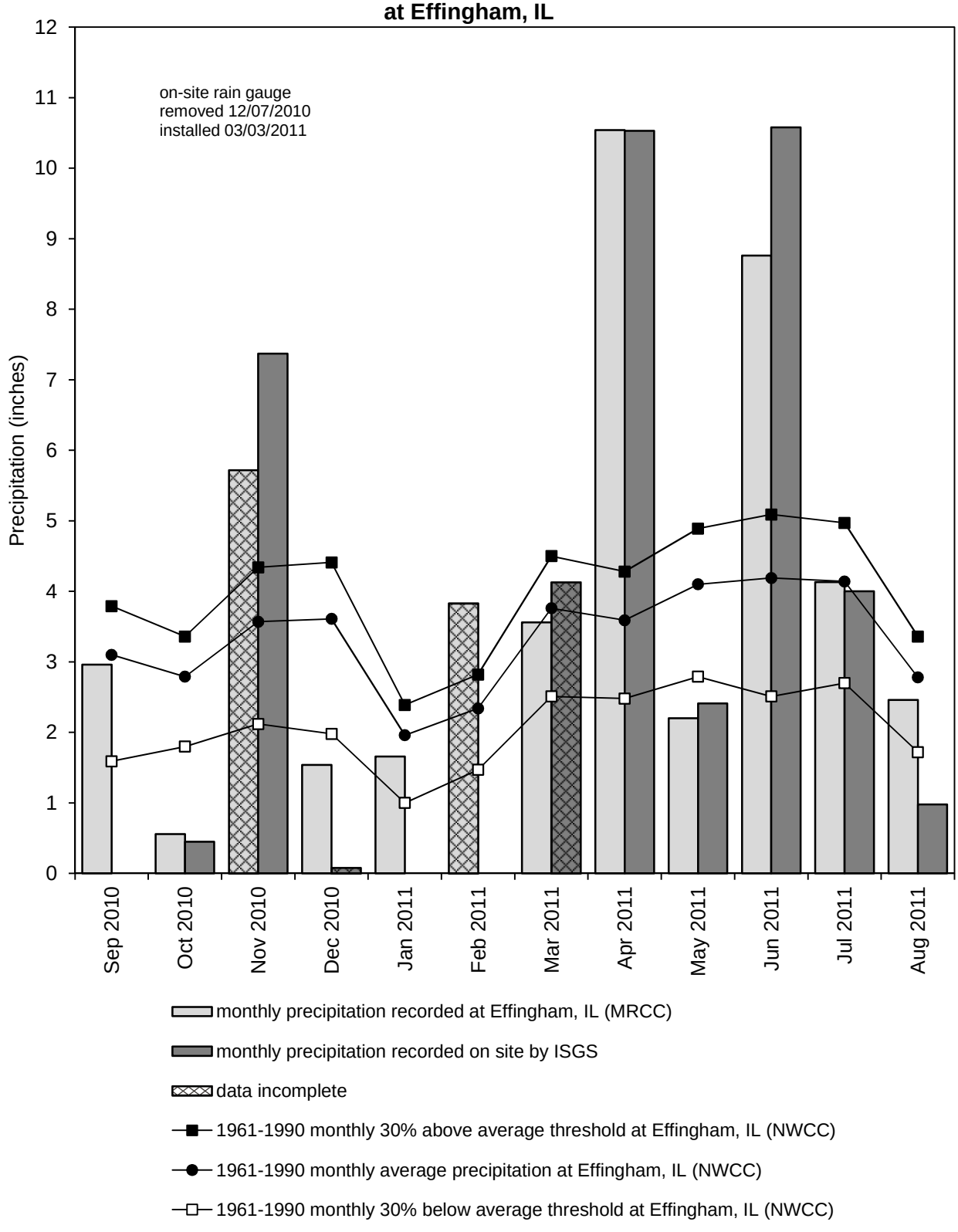
Green Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Gauges



Green Creek Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Effingham, IL



Graph last updated 10/31/2011

MILAN BELTWAY, ROCK ISLAND **ISGS #76**
WETLAND MITIGATION SITE
FAU 5822
Sequence #67
Rock Island County, near Moline, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Ackerman

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 by the ISGS.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season was estimated to be 2.9 ha (7.2 ac), and for greater than 12.5% of the growing season was estimated to be 2.1 ha (5.1 ac) out of a total area of 4.1 ha (10.2 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 2.8 ha (7.1 ac), out of a total area of 4.1 ha (10.2 ac), satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. See Additional Information below for individual wetland hydrology acreages in areas A, B, C, D, and E. These estimates are based on the following factors:

- The median date that the growing season begins at the nearby Quad City International Airport weather station in Moline, Illinois, is April 13 and the season lasts 196 days (MRCC 2011); 5% of the growing season is 10 days, and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that March 15 was the start date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site.
- Total precipitation during the monitoring period as recorded at the Quad City International Airport weather station in Moline, Illinois, was 90% of normal, and total precipitation in Spring 2011 (March through May) was 106% of normal.
- In 2011, wetland hydrology occurred for greater than 5% of the growing season at soil-zone monitoring wells 2S, 6S, 7S, 8S, 12S, 13S, 14S, 15S, 16S, 18S, 18VS, 19S, 20S, 21S, 21VS, 22S, 23S, and 24S, and for greater than 12.5% of the growing season at monitoring wells 12S, 13S, 14S, 15S, 16S, 18S, 18VS, 19S, 20S, 21S, 21VS, and 22S, according to the 1987 Manual. In addition, all of the monitoring wells except 1S, 2S, 3S, 4S, and 17S satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.
- Portions of Area D were inundated for the entire monitoring period. Surface-water elevations measured at Gauge C reveal that the portions of Area D at and below an elevation of 172.50 m (565.97 ft) were inundated for periods long enough to satisfy wetland hydrology criteria for greater than 5% of the growing season and for more than 12.5% of the growing season, according to the 1987 Manual. In addition, portions of Area D at and below an elevation of 172.50 m (565.97 ft) were inundated for 14 or more

consecutive days during the growing season per the 2010 Midwest Region Supplement. Surface-water elevations at data loggers Augustana 1 and Augustana 2 reveal that the Rock River flooded the ditches numerous times during the monitoring period. However, none of the resulting peaks resulted in inundation in any of the wetland areas on the site long enough to satisfy wetland hydrology criteria.

ADDITIONAL INFORMATION

- The following are acreages of jurisdictional wetland hydrology in each area of the site: <0.1 ha (0.2 ac) of Area A, <0.1 ha (0.2 ac) of Area B, 0.7 ha (1.9 ac) of Area C, 1.2 ha (3.0 ac) of Area D, and 0.8 ha (2.1 ac) of Area E satisfied wetland hydrology criteria for more than 5% of the growing season (Environmental Laboratory 1987); 0.0 ha (0.0 ac) of Area A, 0.0 ha (0.0 ac) of Area B, 0.7 ha (1.9 ac) of Area C, 1.2 ha (3.0 ac) of Area D, and 0.8 ha (2.1 ac) of Area E satisfied wetland hydrology criteria for more than 12.5% of the growing season (Environmental Laboratory 1987); <0.1 ha (0.2 ac) of Area A, 0.0 ha (0.0 ac) of Area B, 0.7 ha (1.9 ac) of Area C, 1.2 ha (3.0 ac) of Area D, and 0.8 ha (2.1 ac) of Area E satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.

- The construction of the bicycle/walking path has created an opportunity to alter the hydrology of the site and increase the duration of jurisdictional wetland hydrology in areas A and B. The path crosses the west ditch via a culvert and is raised above the surrounding landscape. A water-control structure across the ditch, upstream of the culvert, would inundate areas adjacent to the ditch by retaining runoff. The height of the structure would have to be determined by an elevation survey of the site in order to maximize the area of inundation/saturation without inundating the path.

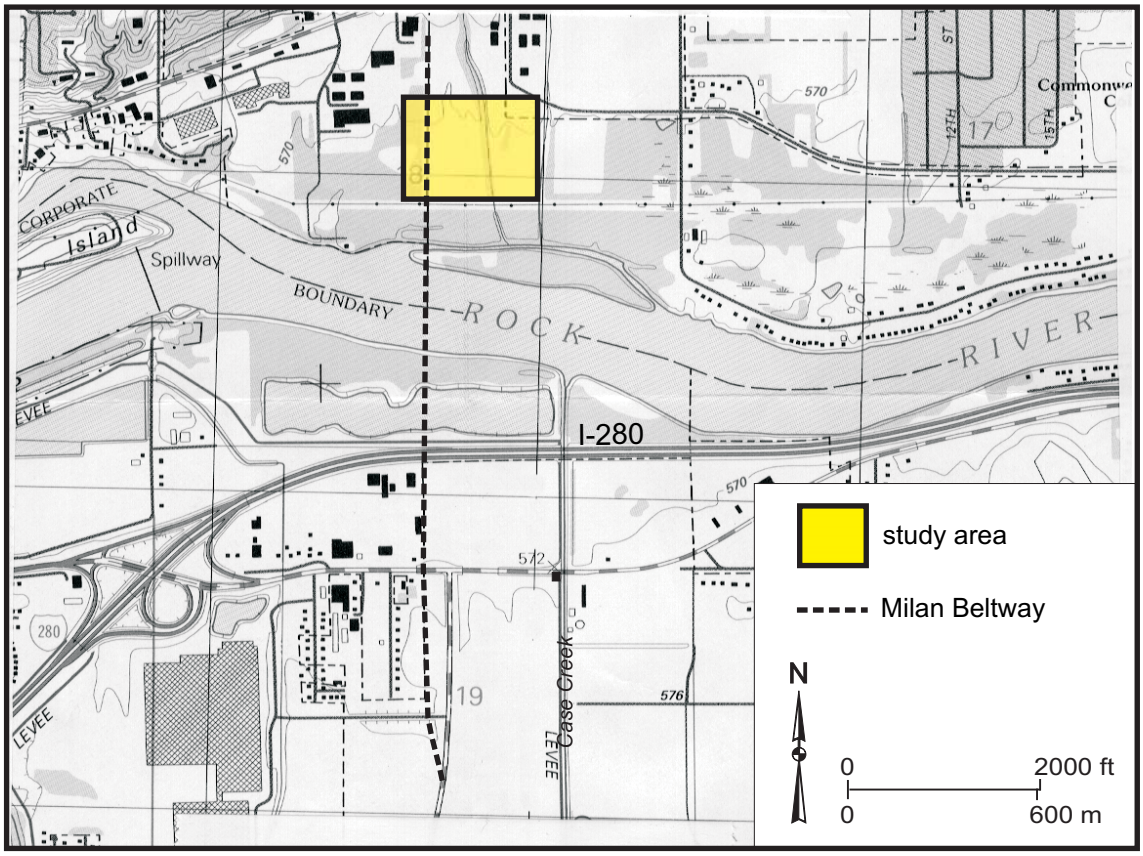
PLANNED FUTURE ACTIVITIES

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

Milan Beltway, Rock Island Wetland Mitigation 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

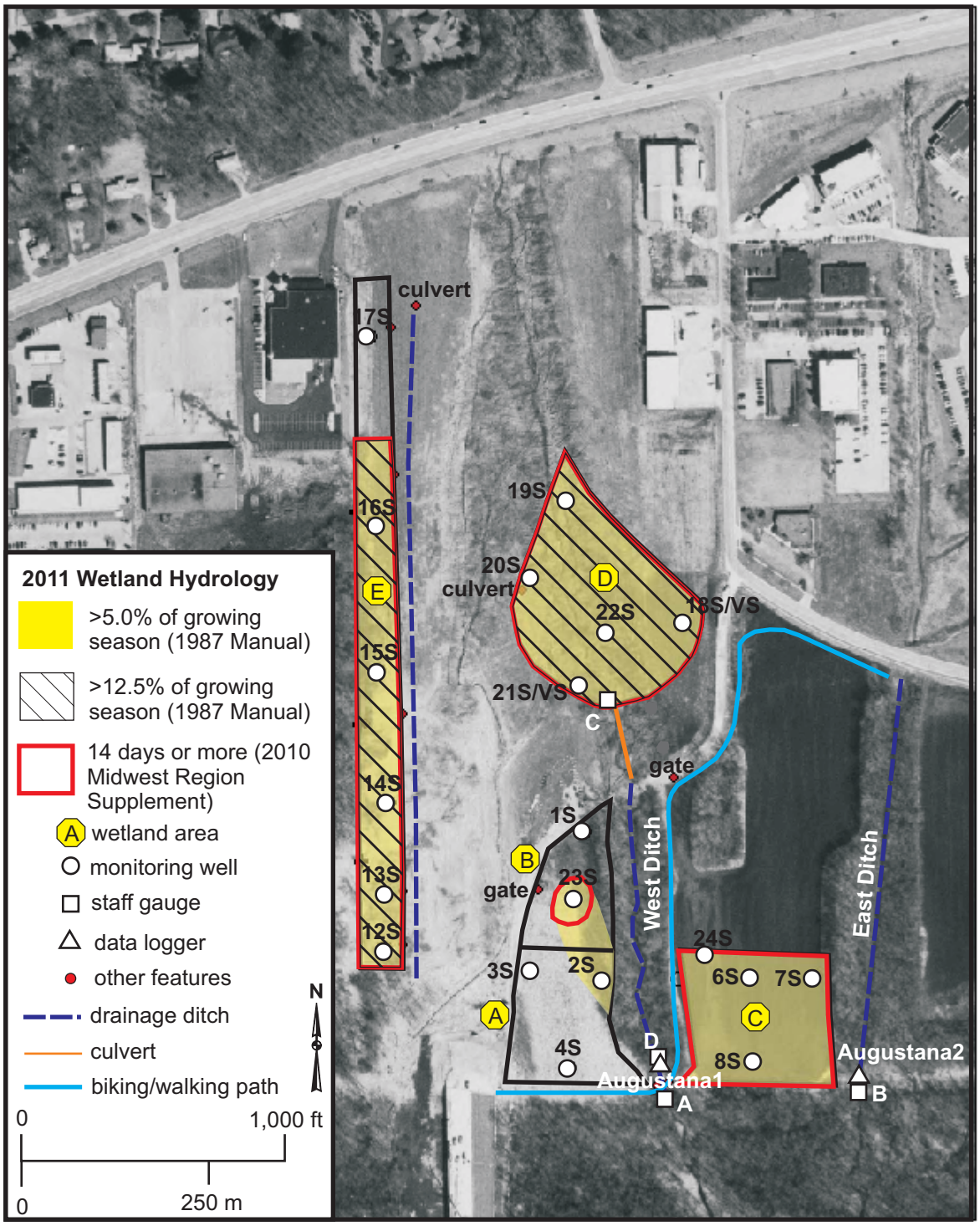


Milan Beltway, Rock Island
Wetland Mitigation Site
(FAU 5822)

Estimated Areal Extent of 2011 Wetland Hydrology

September 1, 2010 through August 31, 2011

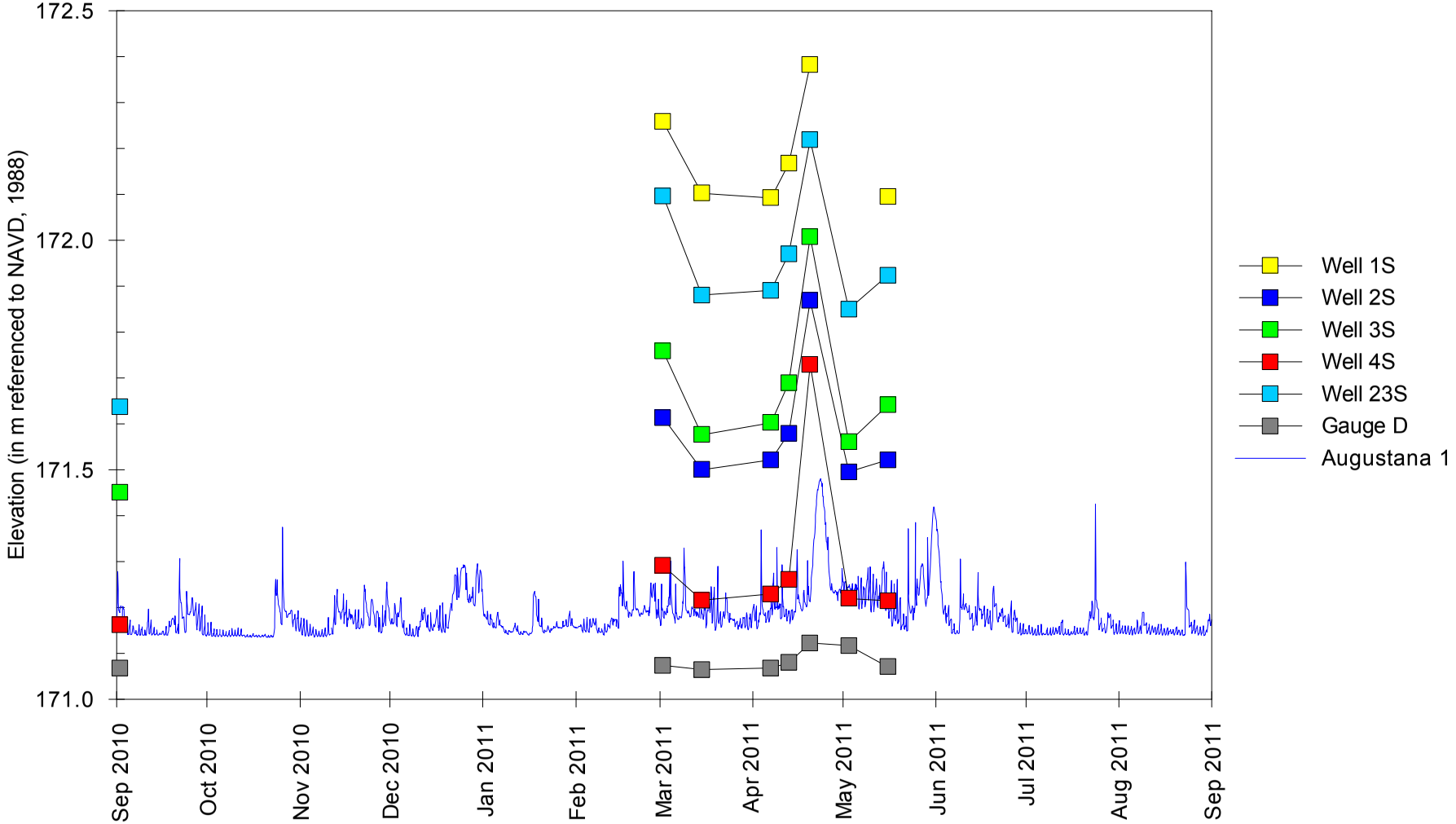
Map base is USGS digital orthophotography, Milan NE quarter quadrangle (ISGS 2009)



Milan Beltway, Rock Island Wetland Mitigation Site

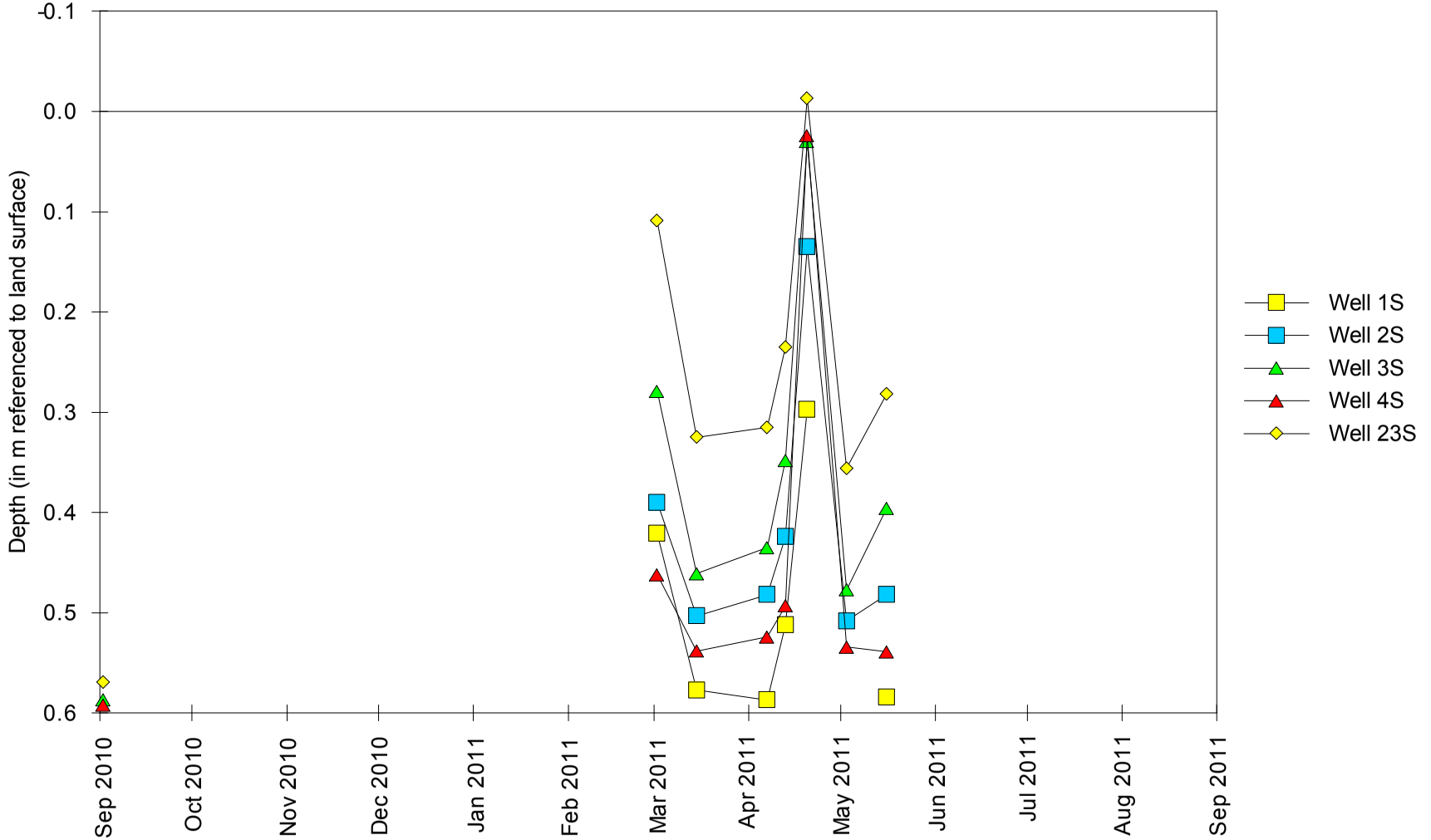
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges
Areas A and B



Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

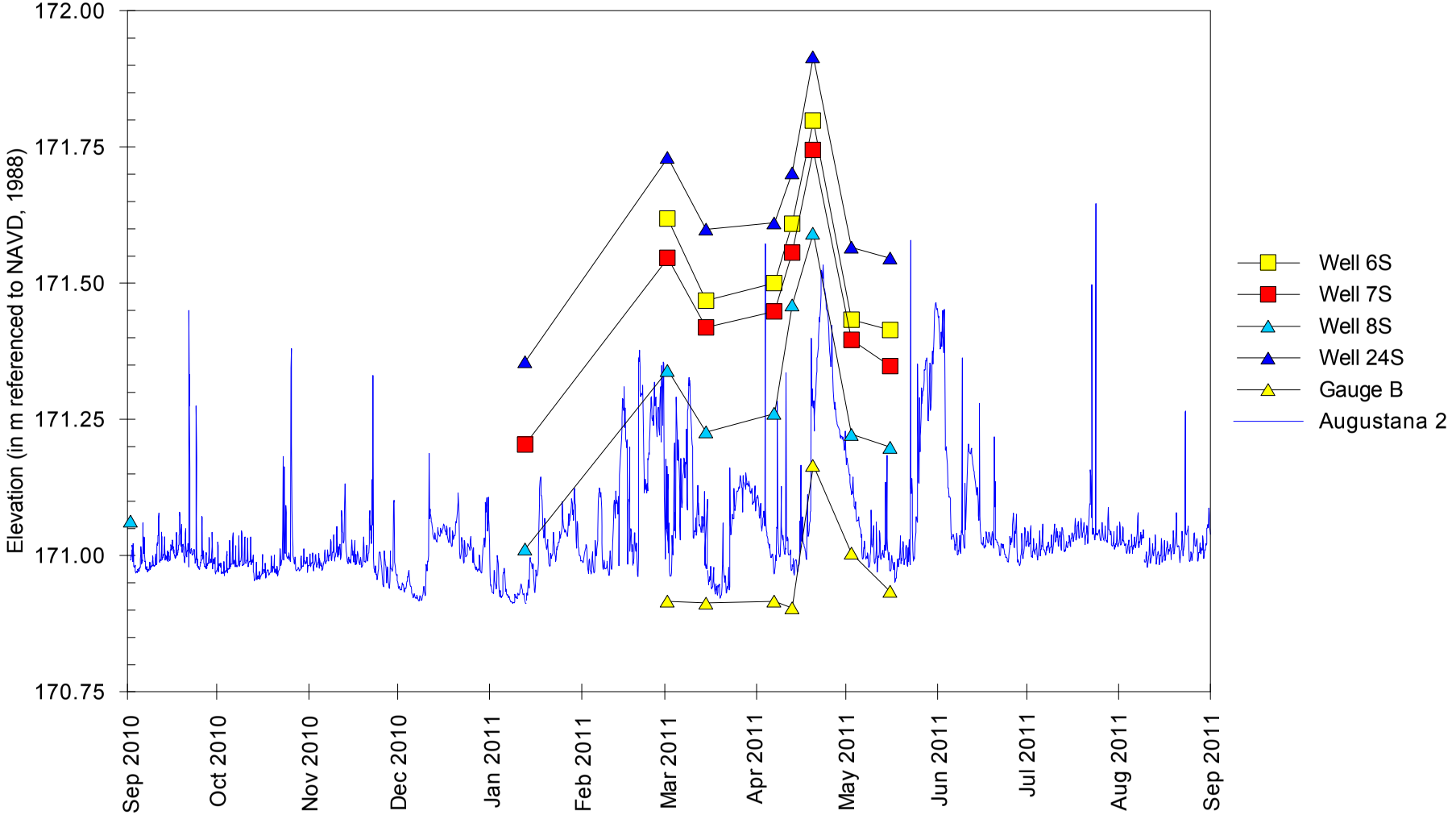
Depth to Groundwater in Monitoring Wells
Areas A and B



Milan Beltway, Rock Island Wetland Mitigation Site

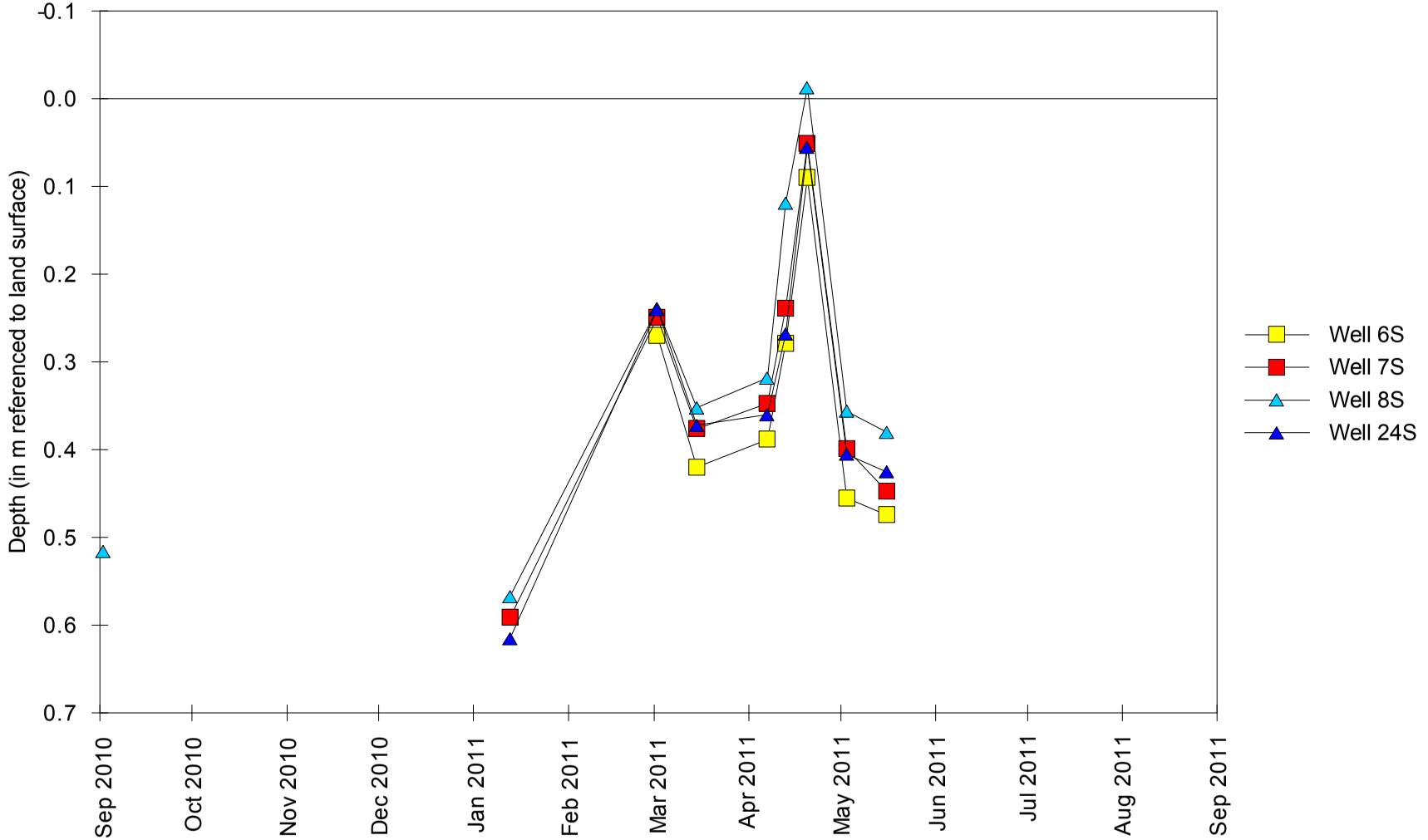
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges
Area C



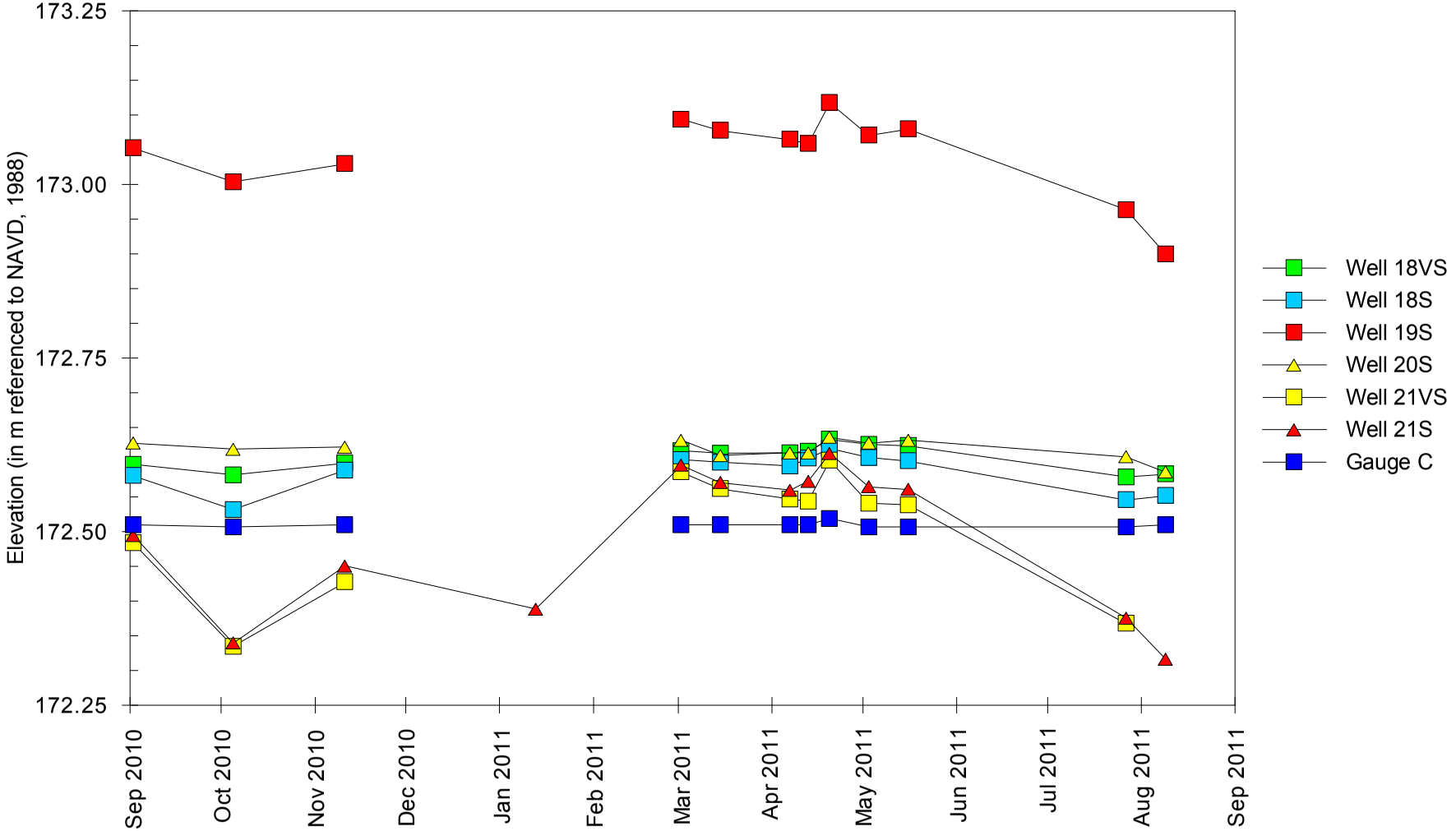
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells
Area C



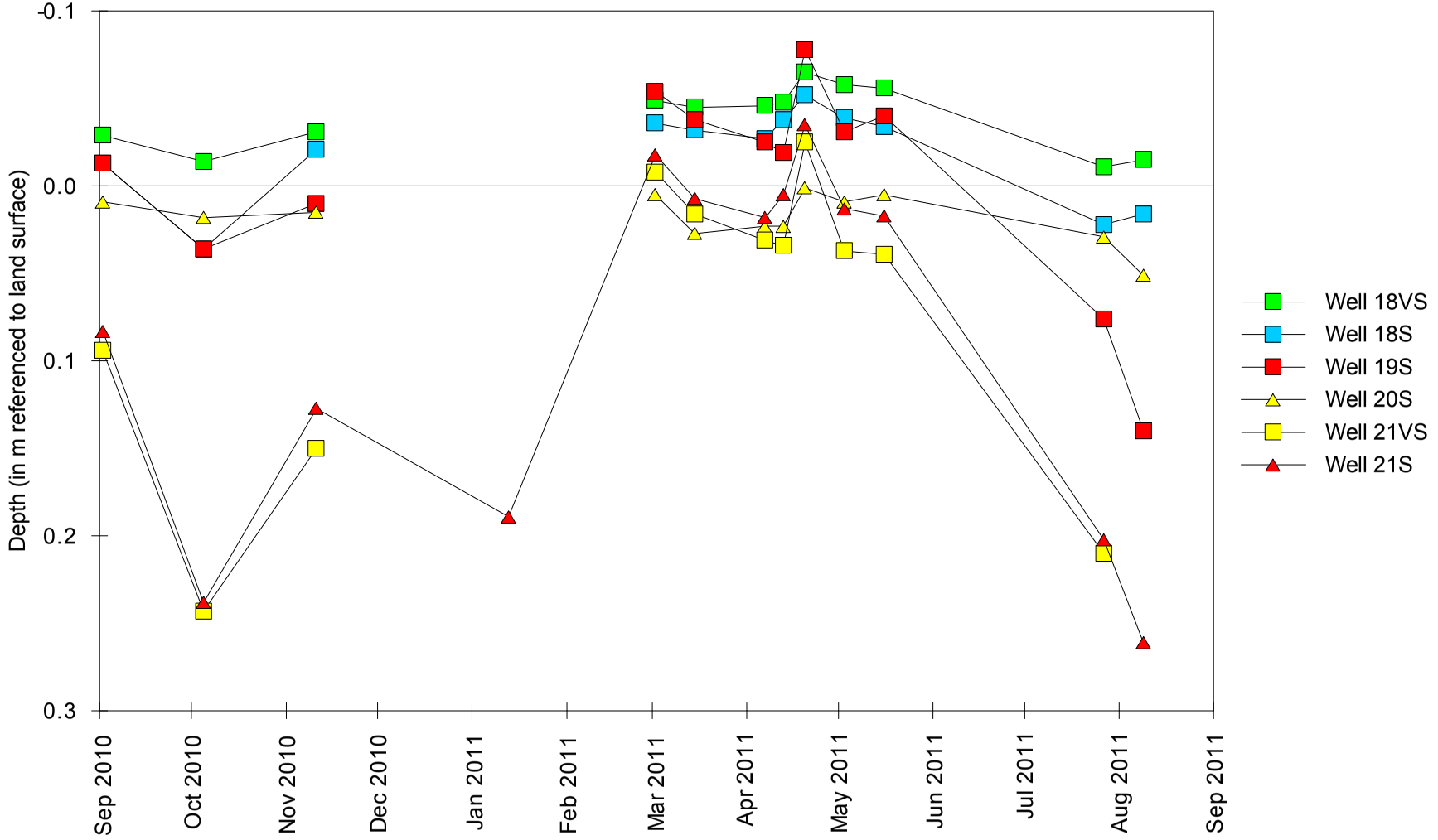
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Surface-Water Gauges
Area D



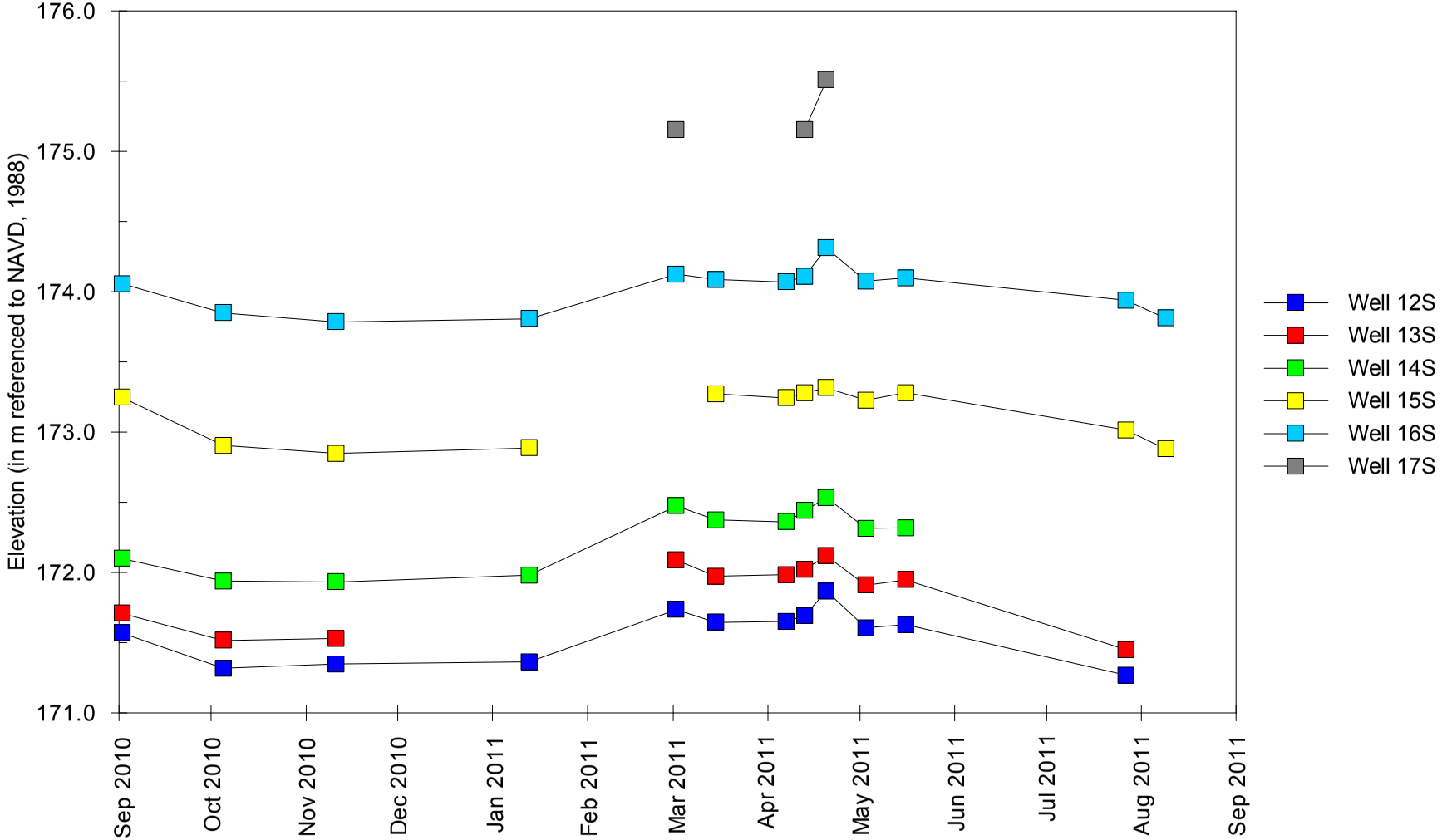
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells
Area D



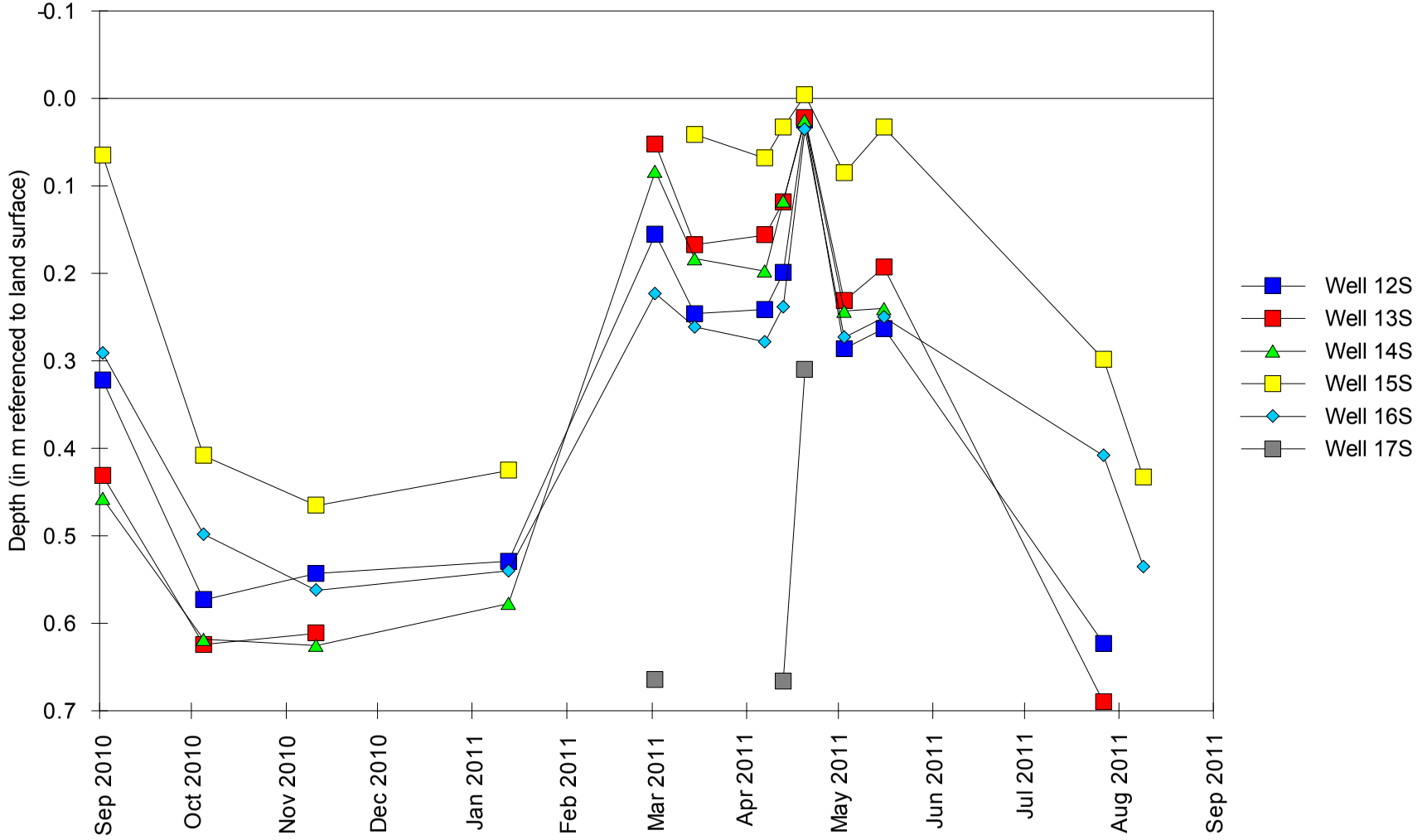
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells
Area E



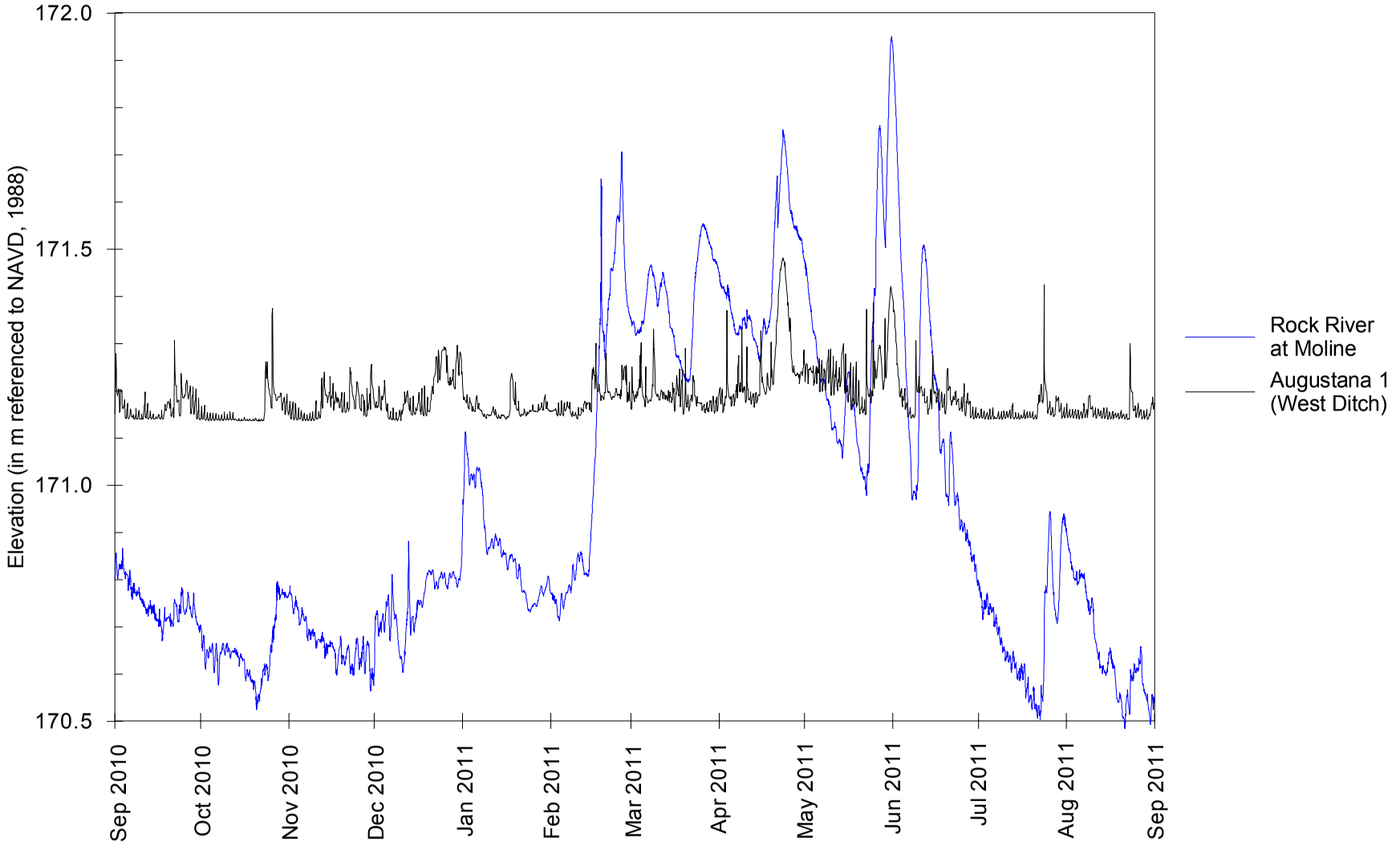
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells
Area E



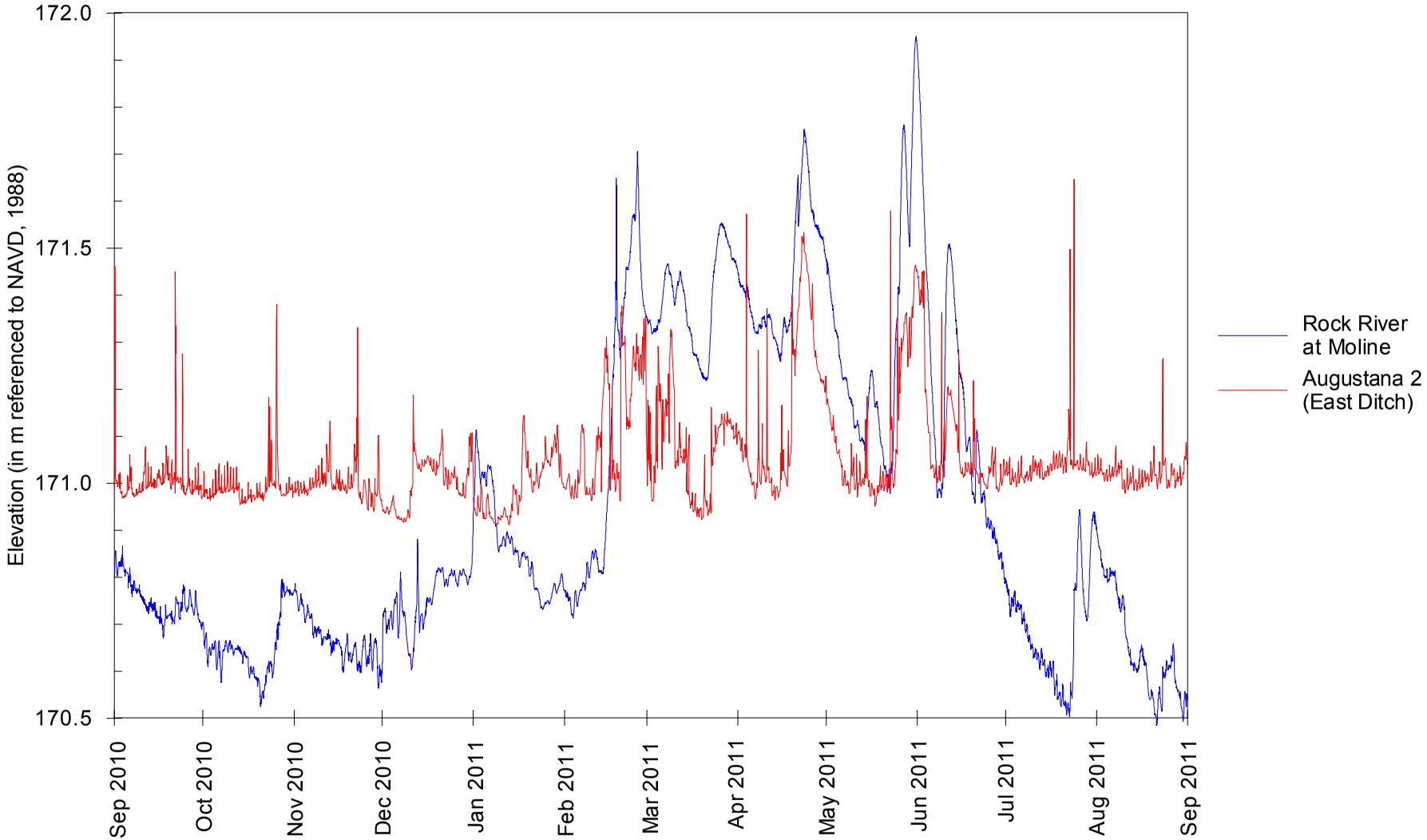
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Data Loggers



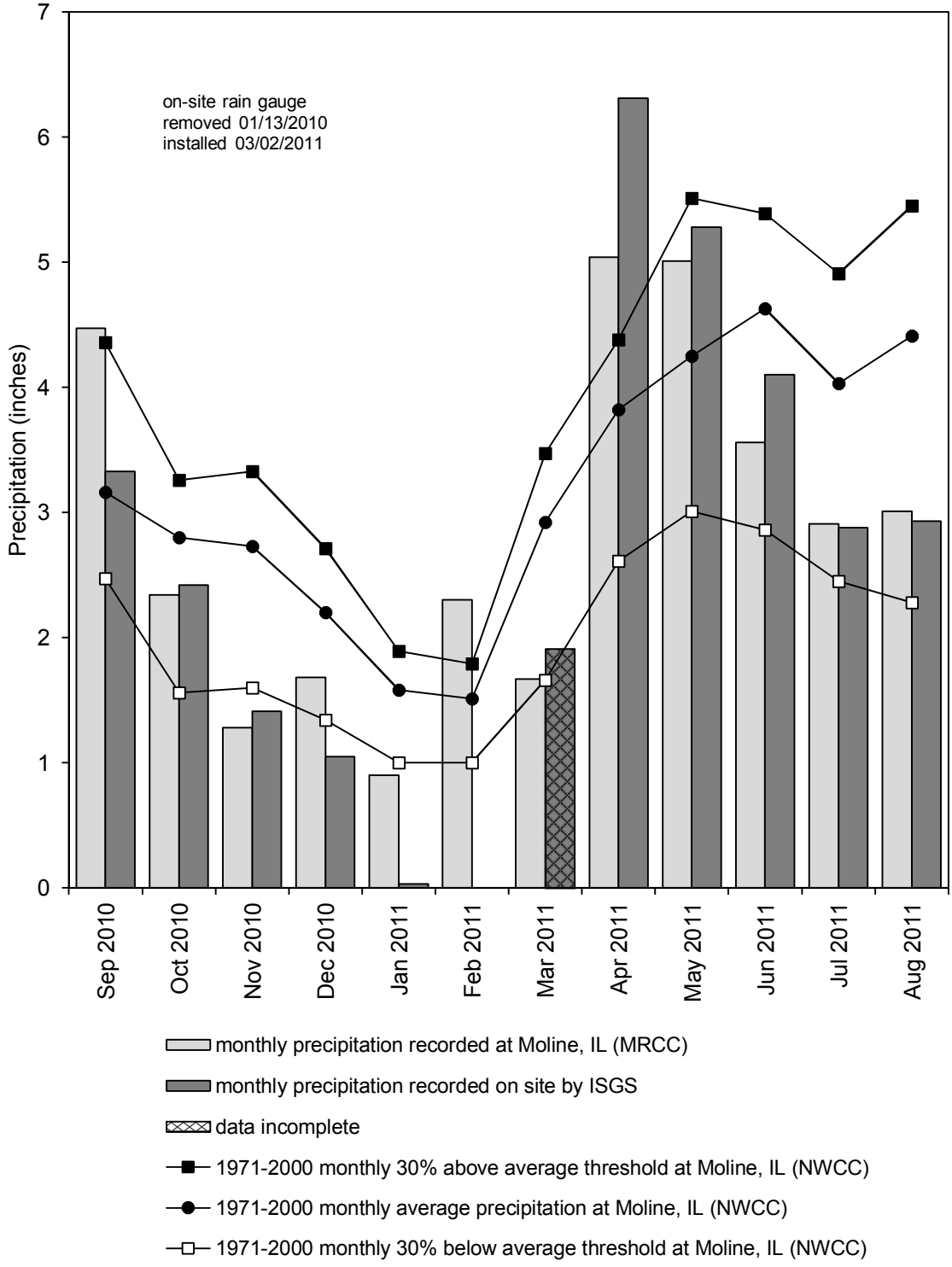
Milan Beltway, Rock Island Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Data Loggers



Milan Beltway, Rock Island
Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Quad City International Airport, Moline, IL



Graph last updated 10/31/2011

PYRAMID SITE EC25 **ISGS #77**
WETLAND MITIGATION SITE
Pyatts Blacktop
FAS 864
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.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 5.3 ha (13.1 ac) out of a total site area of approximately 5.3 ha (13.1 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is also estimated to be 5.3 ha (13.1 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 5.3 ha (13.1 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

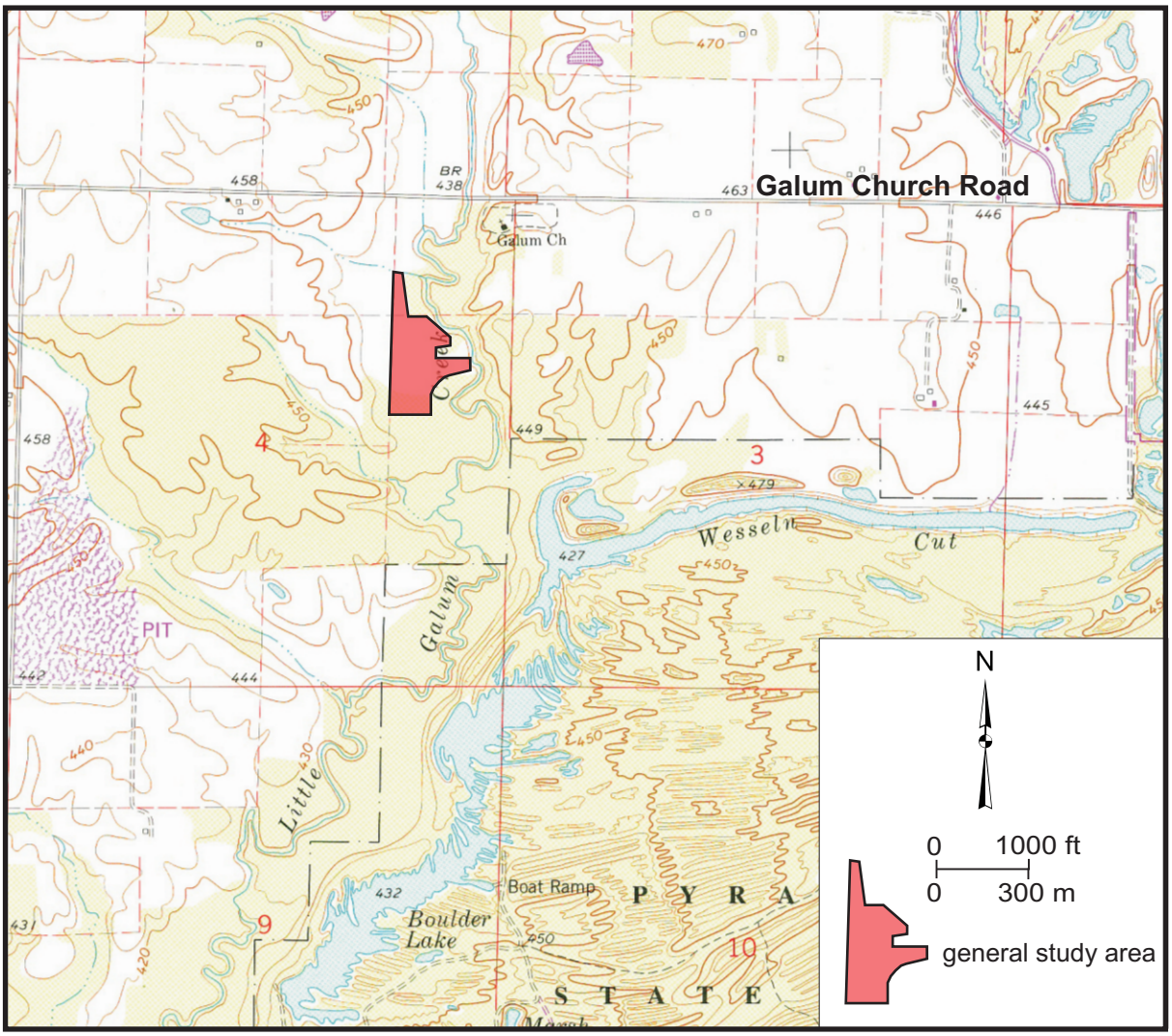
- The median date that the growing season begins in nearby Du Quoin, Illinois, is April 5, and the season lasts 207 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that February 17 was the starting date of the 2011 growing season based on soil temperatures measured at the mitigation site and those recorded at Illinois Climate Network monitoring stations in the nearby towns of Carbondale and Ina, Illinois (ISWS 2011).
- Total precipitation for the monitoring period, as recorded in Du Quoin, Illinois, was 137% of normal, and was 218% of normal for the period March through May 2011.
- In 2011, water levels measured in all monitoring wells satisfied wetland hydrology criteria for greater than 5% and 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, all monitoring wells satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season.
- The data logger at Gauge B in Little Galum Creek was damaged and did not provide any useable data for the monitoring period.

PLANNED FUTURE ACTIVITIES

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

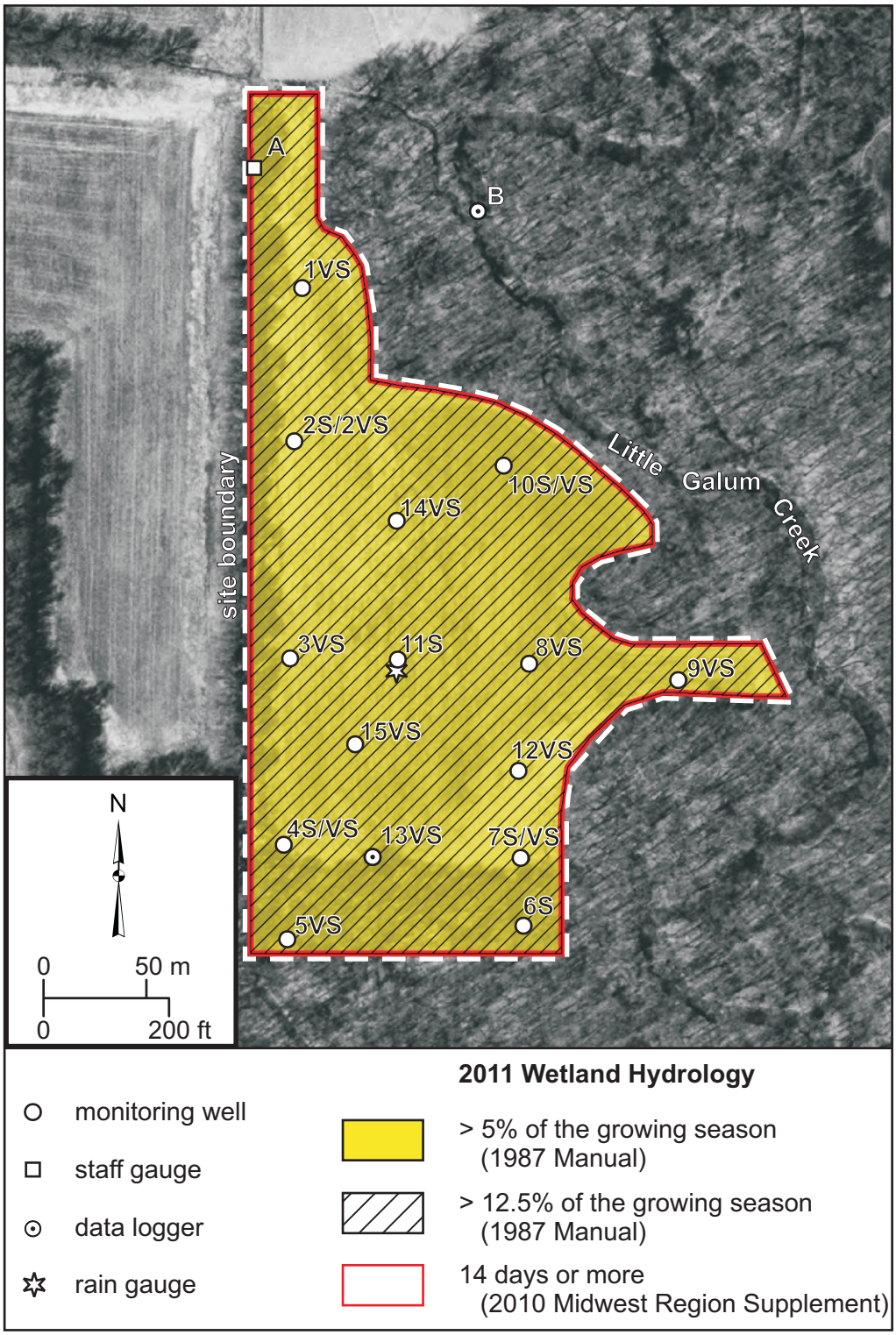
Pyramid Site EC25 Wetland Mitigation Site
(Pyatts Blacktop, FAS 864)
General Study Area and Vicinity

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



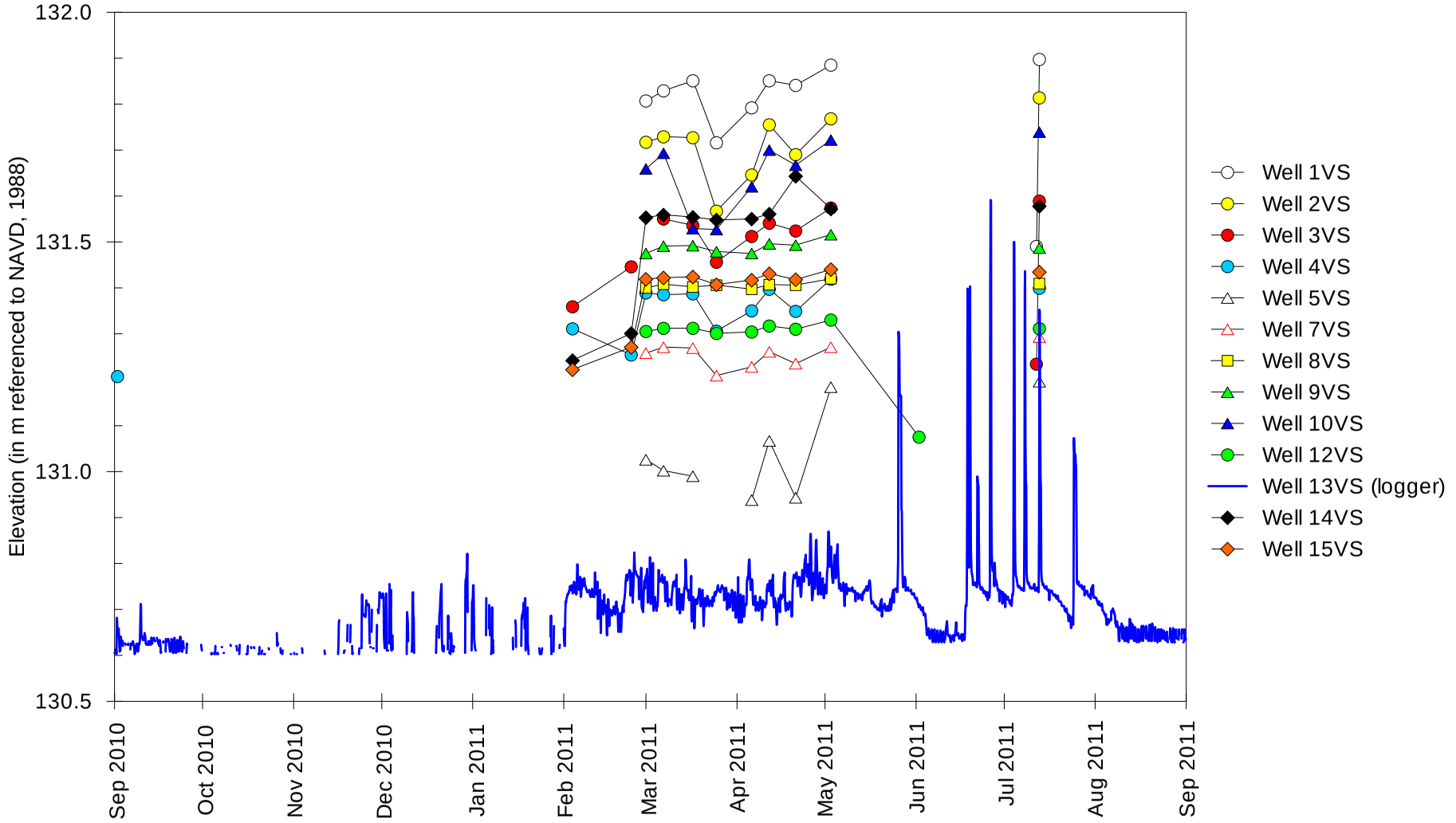
Pyramid Site EC25 Wetland Mitigation Site
(Pyatts Blacktop, FAS 864)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

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



Pyramid Site EC25 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

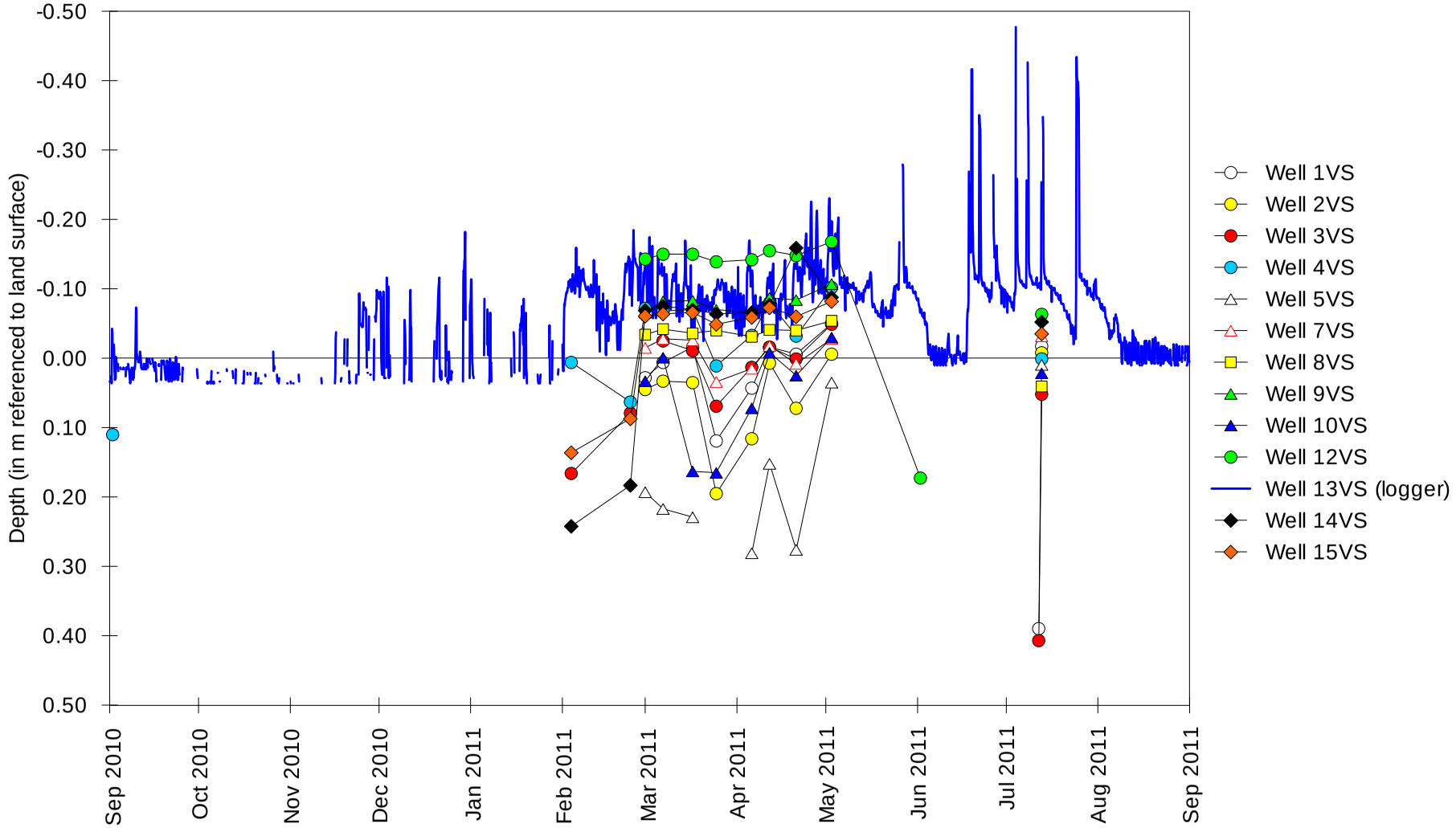
Water-Level Elevations
in Very Shallow (VS) Monitoring Wells



Pyramid Site EC25 Wetland Mitigation Site

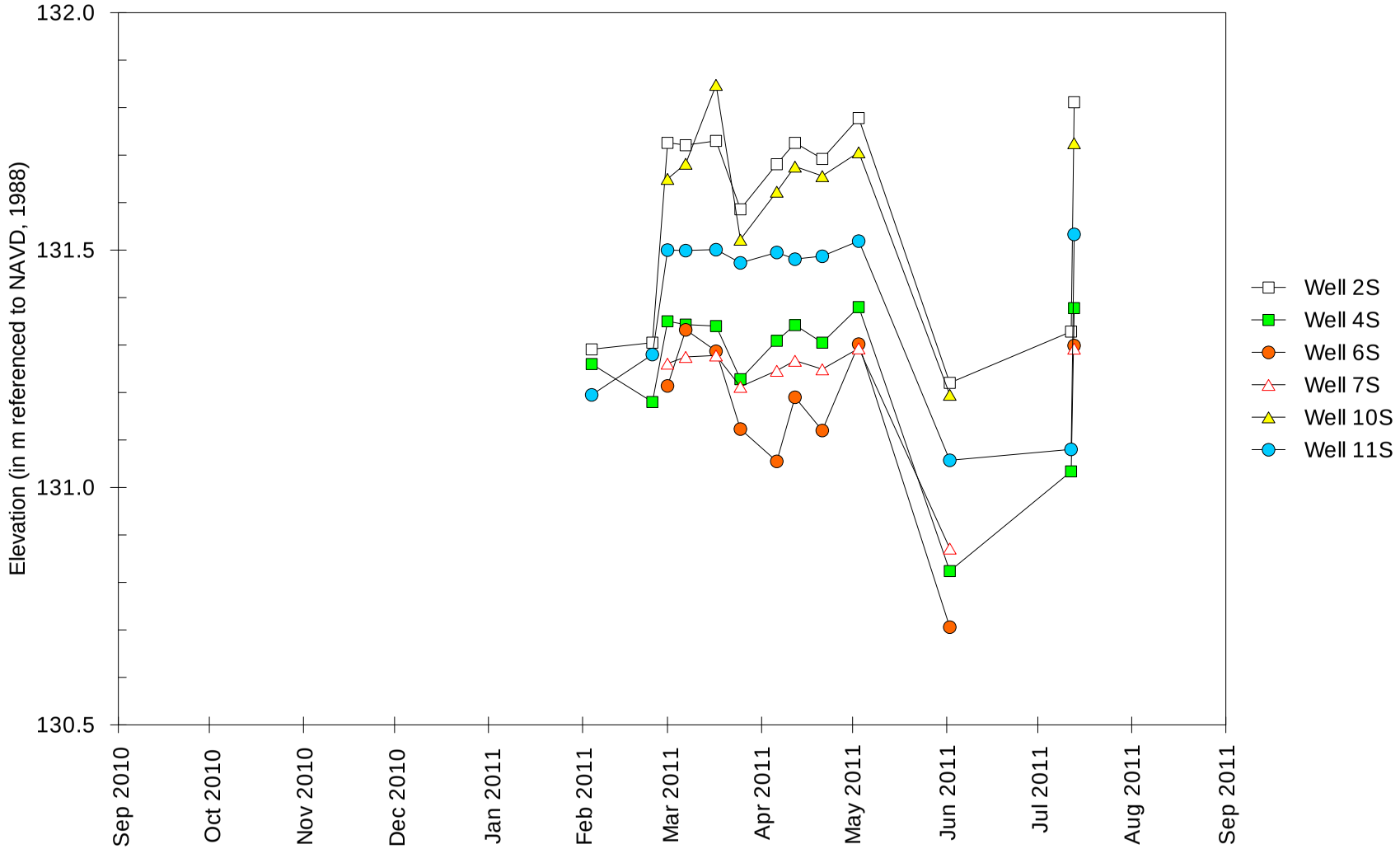
September 1, 2010 through August 31, 2011

Depth to Water
in Very Shallow (VS) Monitoring Wells



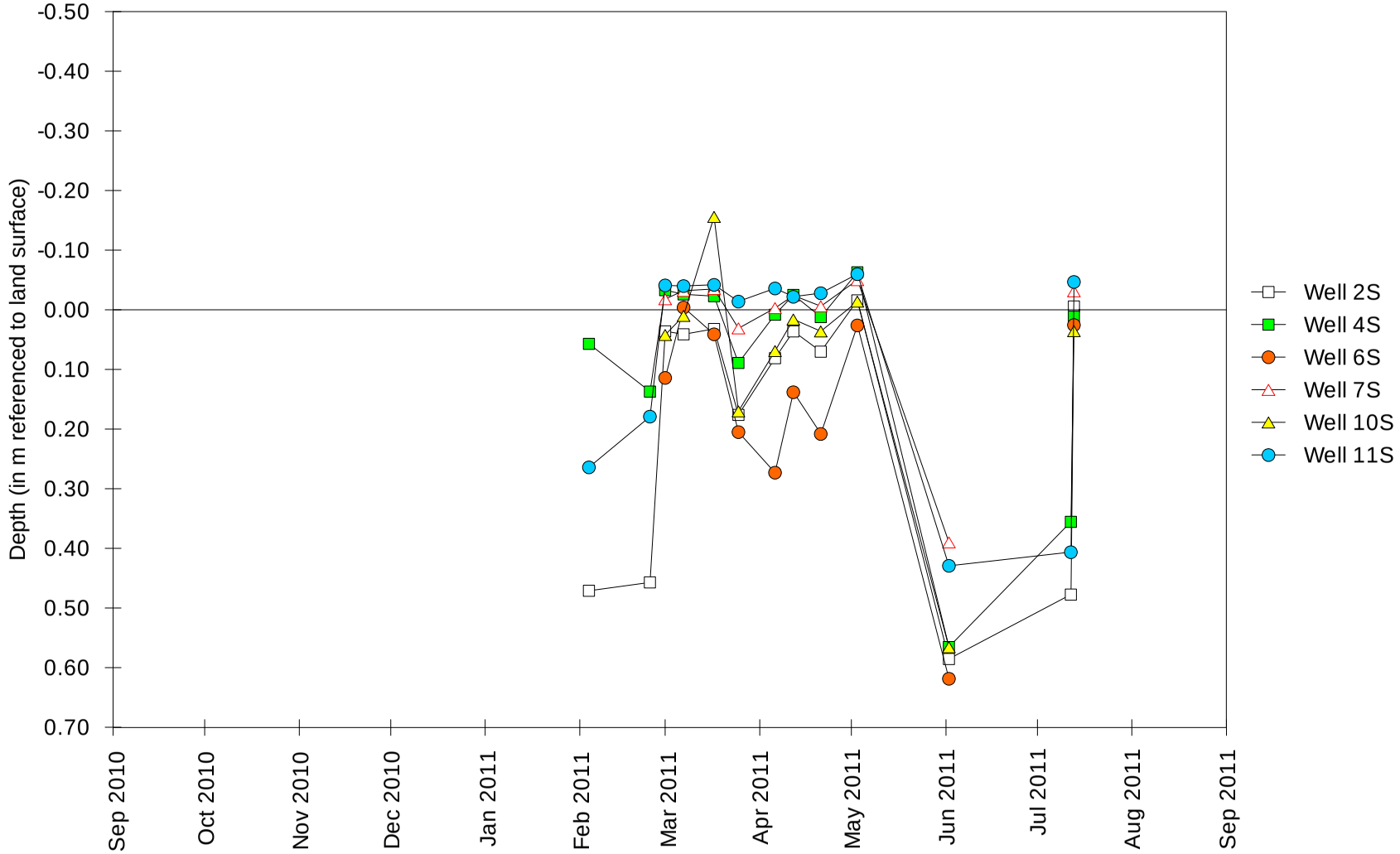
Pyramid Site EC25 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Shallow (S) Monitoring Wells



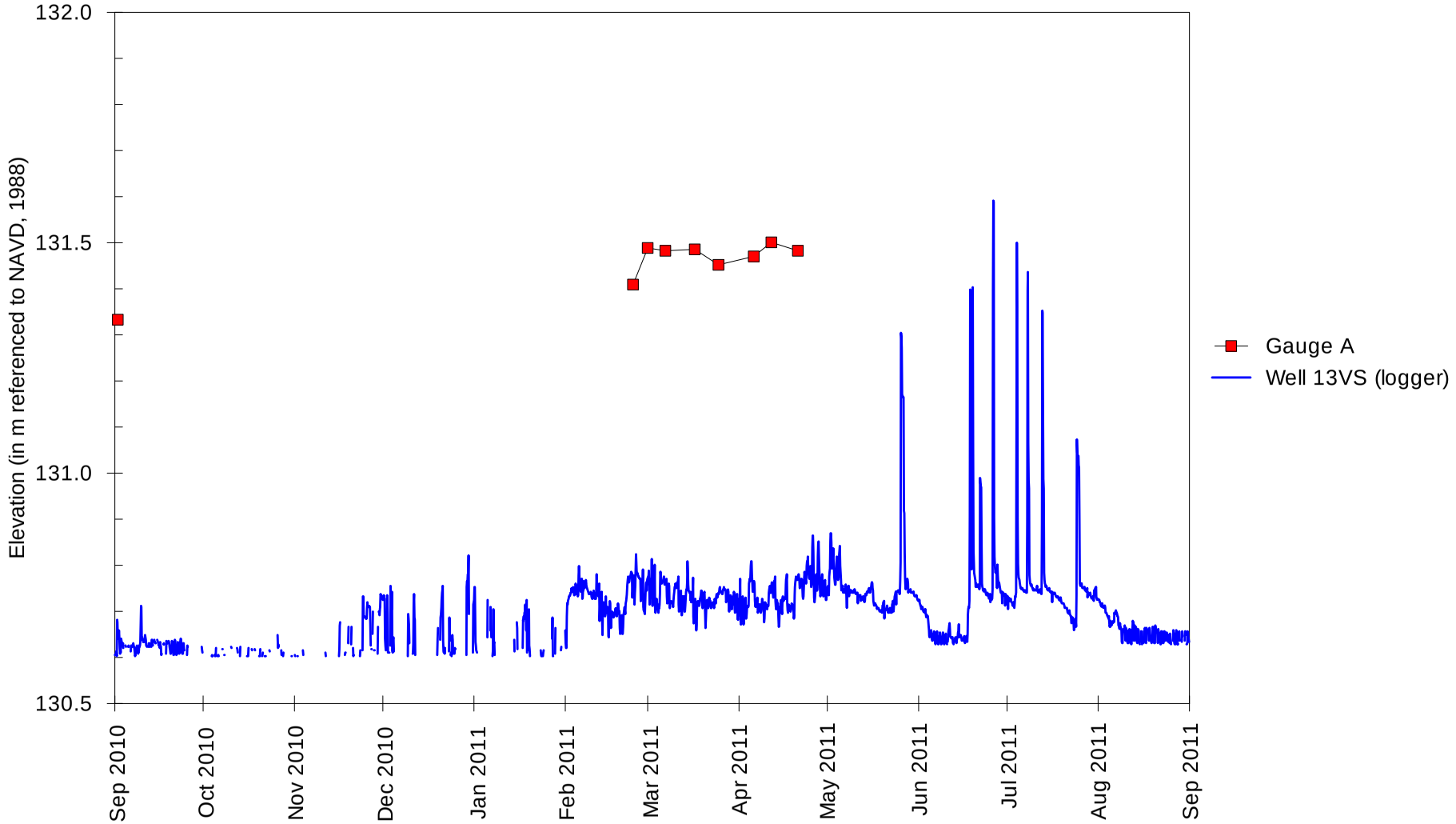
Pyramid Site EC25 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Shallow (S) Monitoring Wells



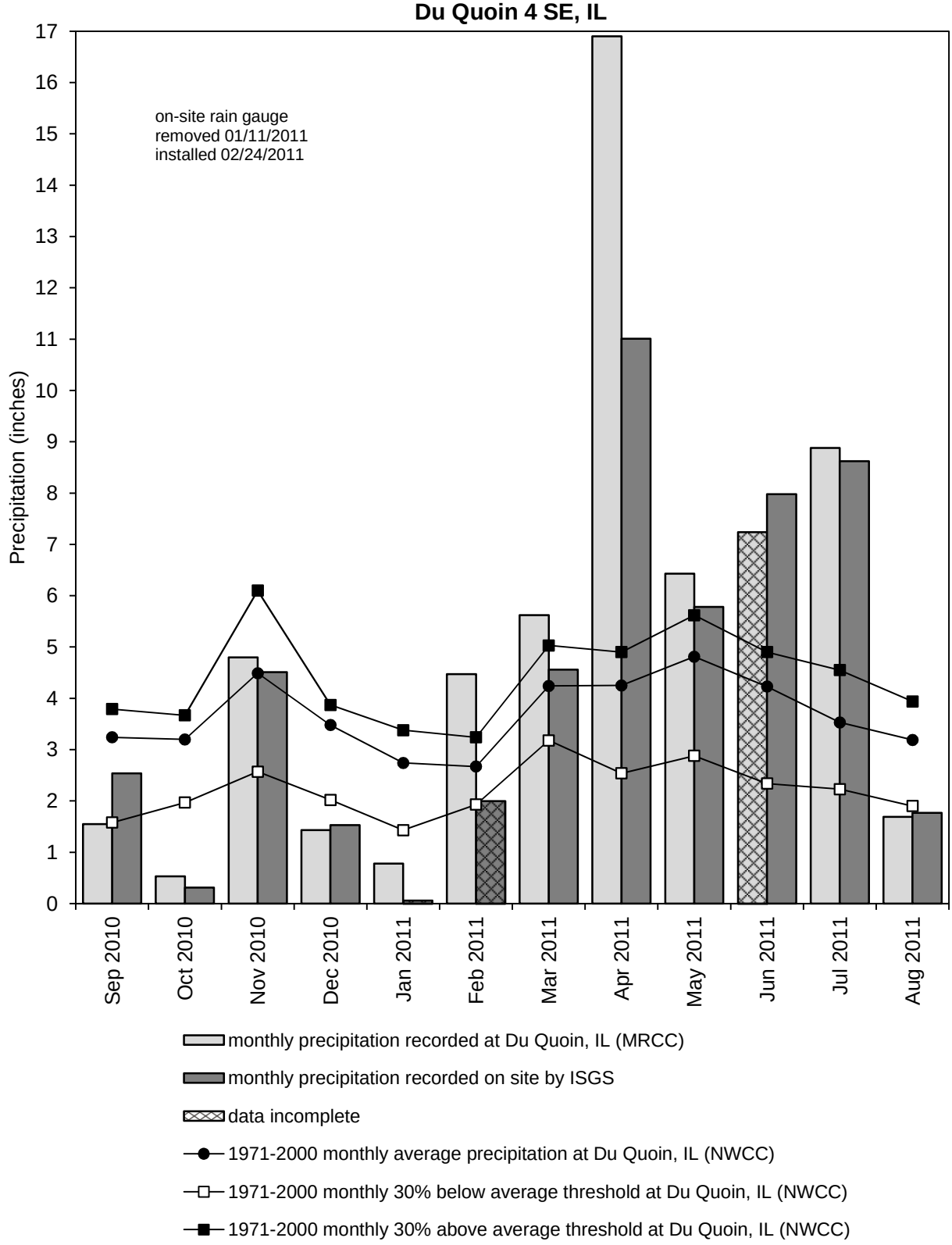
Pyramid Site EC25 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
at Staff Gauges and Data Loggers



Pyramid Site EC25 Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Du Quoin 4 SE, IL



Graph last updated 10/31/2011

HARRISBURG, SITE 2 **ISGS #78**
WETLAND MITIGATION SITE
IL 14
FAP 857
Sequence #547
Saline County, near Harrisburg, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Jessica L. Monson

SITE HISTORY

- October 2007: Construction began at the wetland mitigation site.
- 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 mitigation site was completed.

WETLAND HYDROLOGY CALCULATION FOR 2011

Using the 1987 Manual (Environmental Laboratory 1987), 9.1 ha (22.6 ac) out of a total site area of approximately 14.2 ha (35.0 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season, whereas 9.1 ha (22.4 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 10.4 ha (25.6 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in Harrisburg, Illinois, is April 1 and the season lasts 211 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days and 12.5% of the growing season is 26 days. According to the 2010 Midwest Region Supplement, February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site and data from the Illinois Climate Network station at Dixon Springs, Illinois (ISWS 2011).
- Total precipitation at the Du Quoin, Illinois, weather station for the period from September 2010 through August 2011 was 136% of normal, and Spring 2011 (March through May) precipitation was 216% of normal.
- In 2011, all wells except 5S, 18VS, and 19VS satisfied wetland hydrology criteria for greater than 5% and 12.5% of the growing season, according to the 1987 Manual. Furthermore, all wells except 5S satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.
- Data from the Gauge A data logger showed that water-level elevation was at or above 113.87 m (373.58 ft) for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual, and for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Gauge B showed

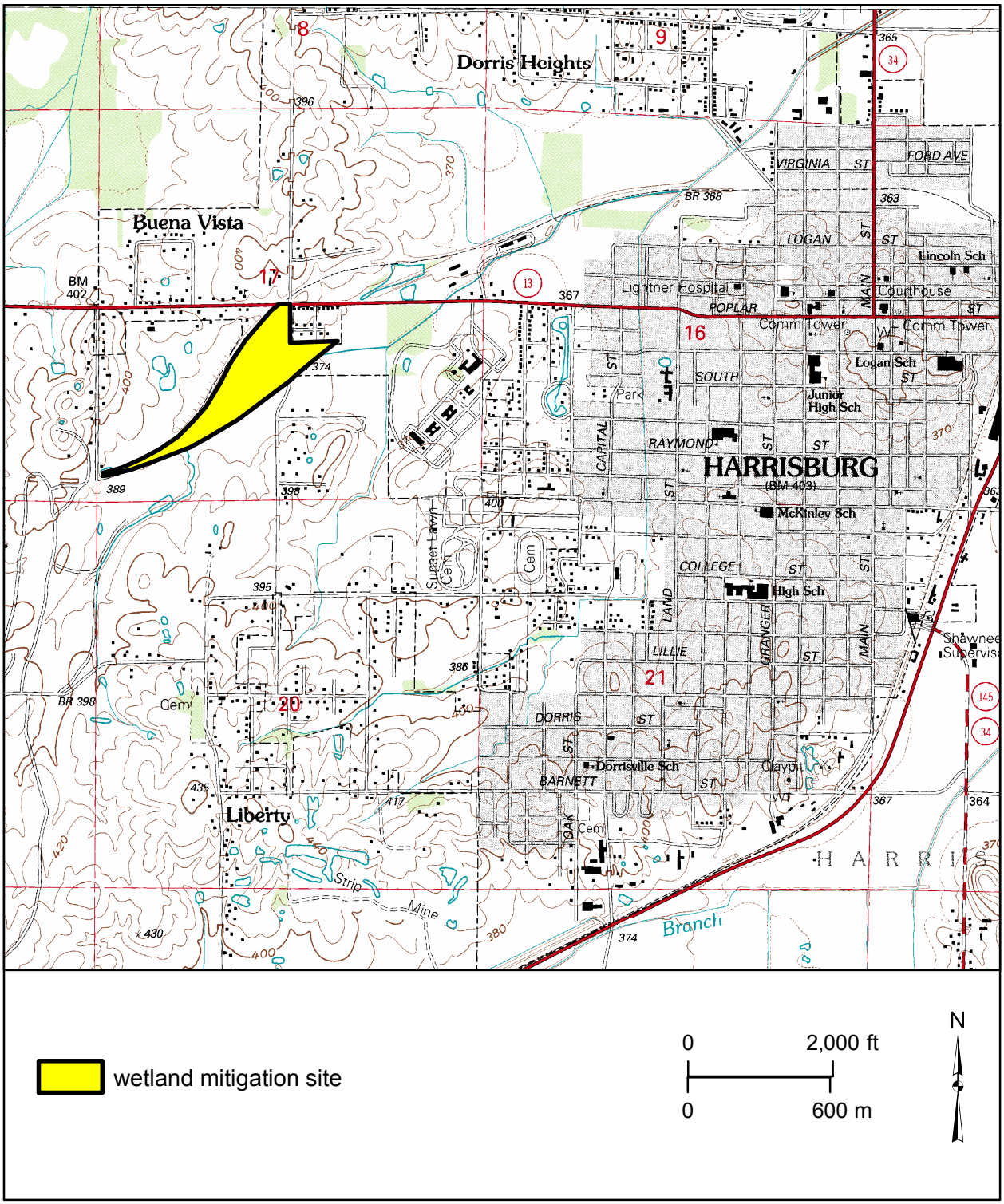
water levels at or above 112.47 m (360.99 ft) for greater than 5% and greater than 12.5% of the growing season, according the 1987 Manual, and for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Gauge E showed water levels at or above 114.73 m (376.41 ft) for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual, and at or above 114.75 m (376.47 ft) for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Gauge G showed water levels at or above 111.88 m (367.05 ft) for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual, and for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement. Gauge H showed water levels at or above 113.08 m (370.99 ft) for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual, and for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.

PLANNED FUTURE ACTIVITIES

- Water-level monitoring is expected to continue through 2013 or until no longer required by IDOT.

Harrisburg, Site 2 Wetland Mitigation Site
(IL 14, 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

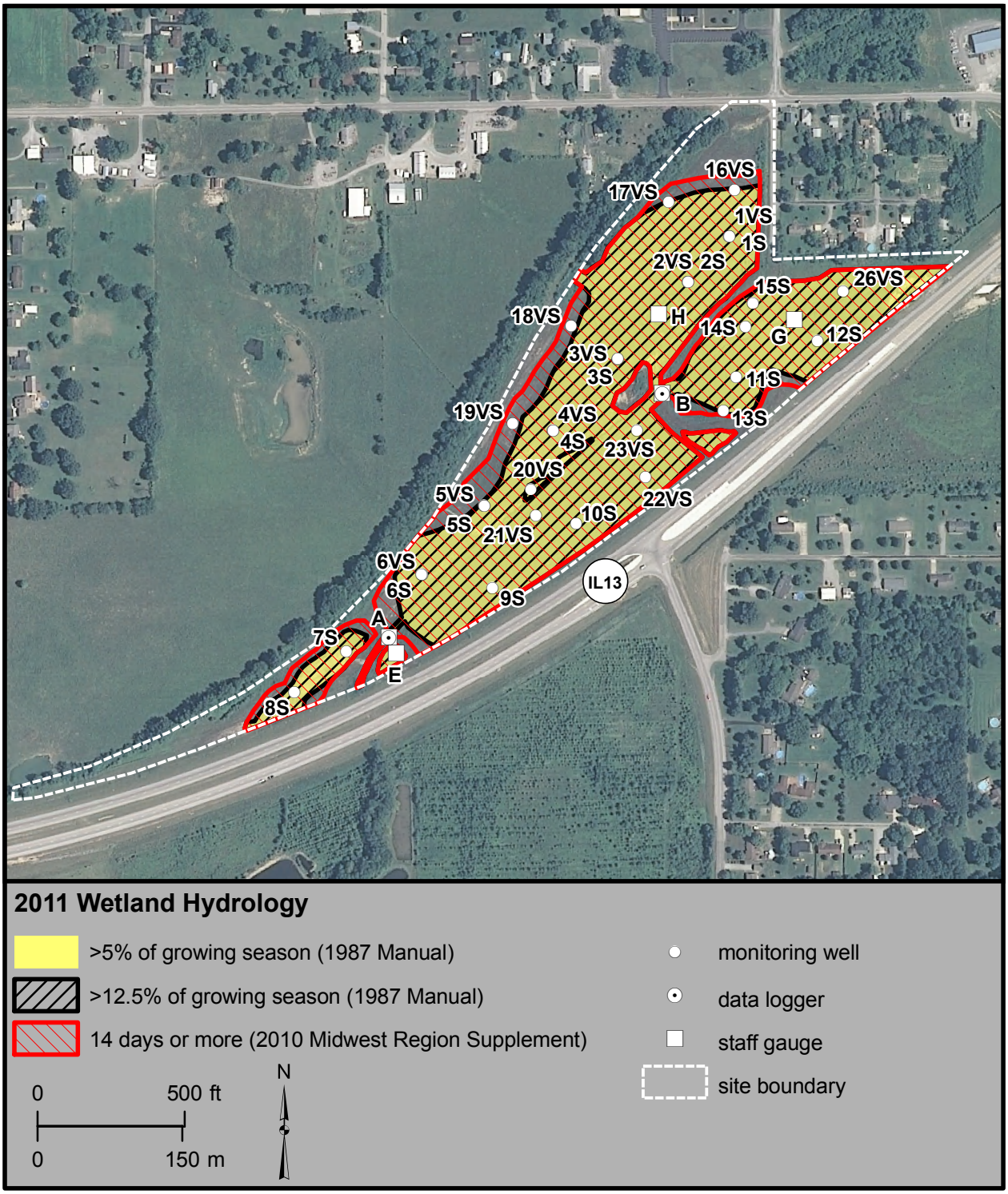


Harrisburg, Site 2 Wetland Mitigation Site
(IL 14, FAP 857)

Estimated Areal Extent of 2011 Wetland Hydrology

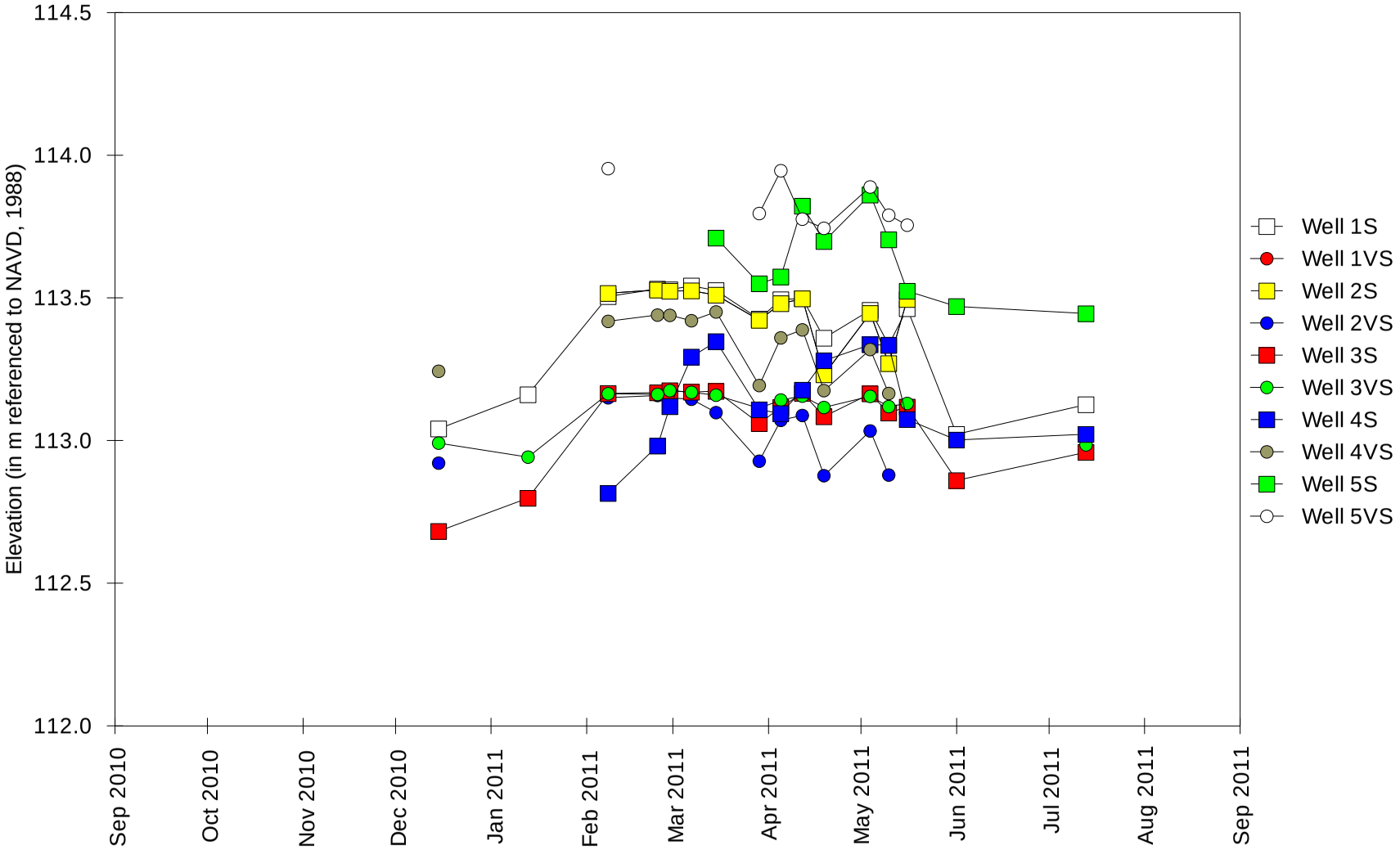
September 1, 2010 though August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph,
Harrisburg NW quarter quadrangle, taken June 25, 2010 (USDA-FSA 2010) and ISGS topography



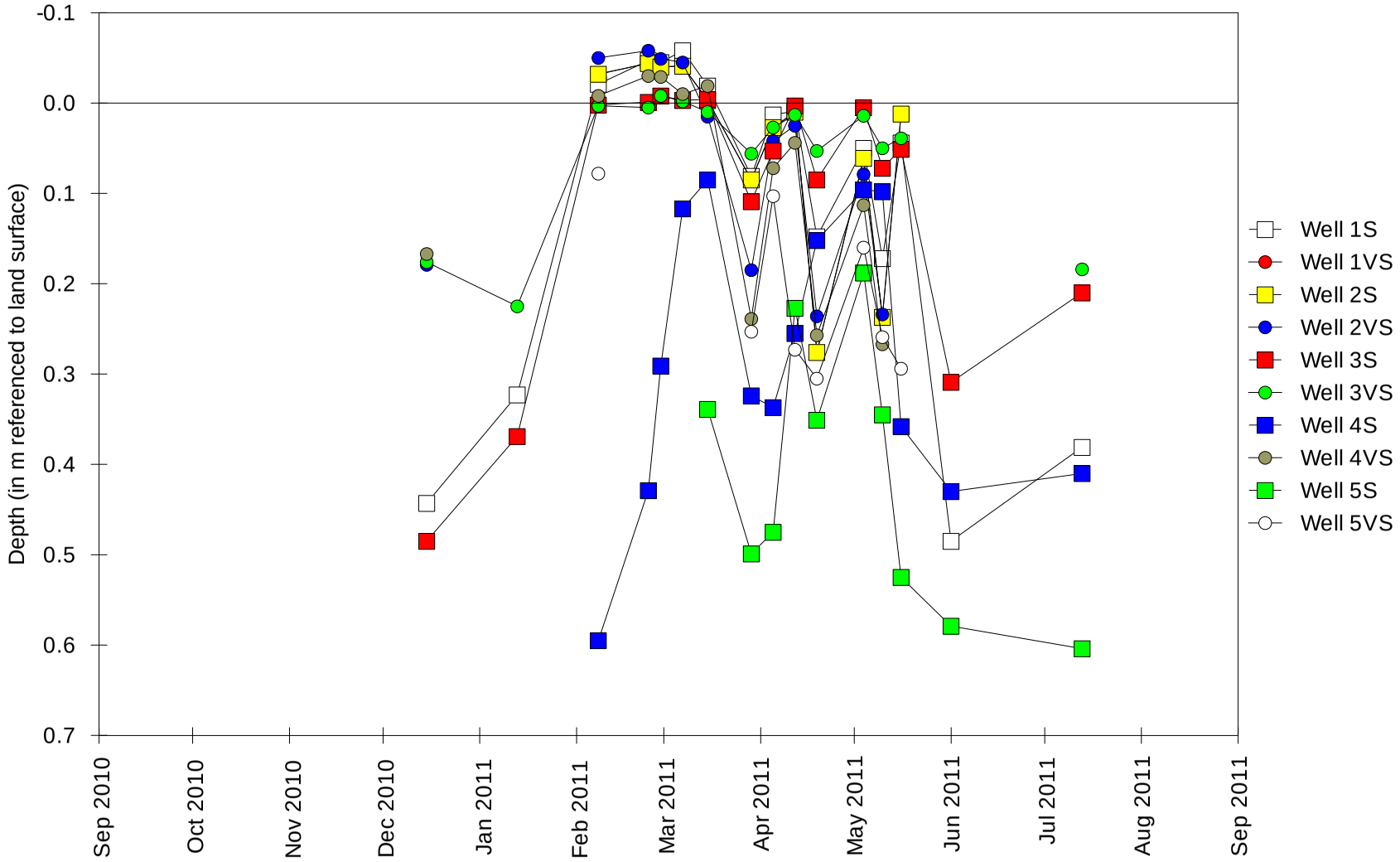
Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells (North)



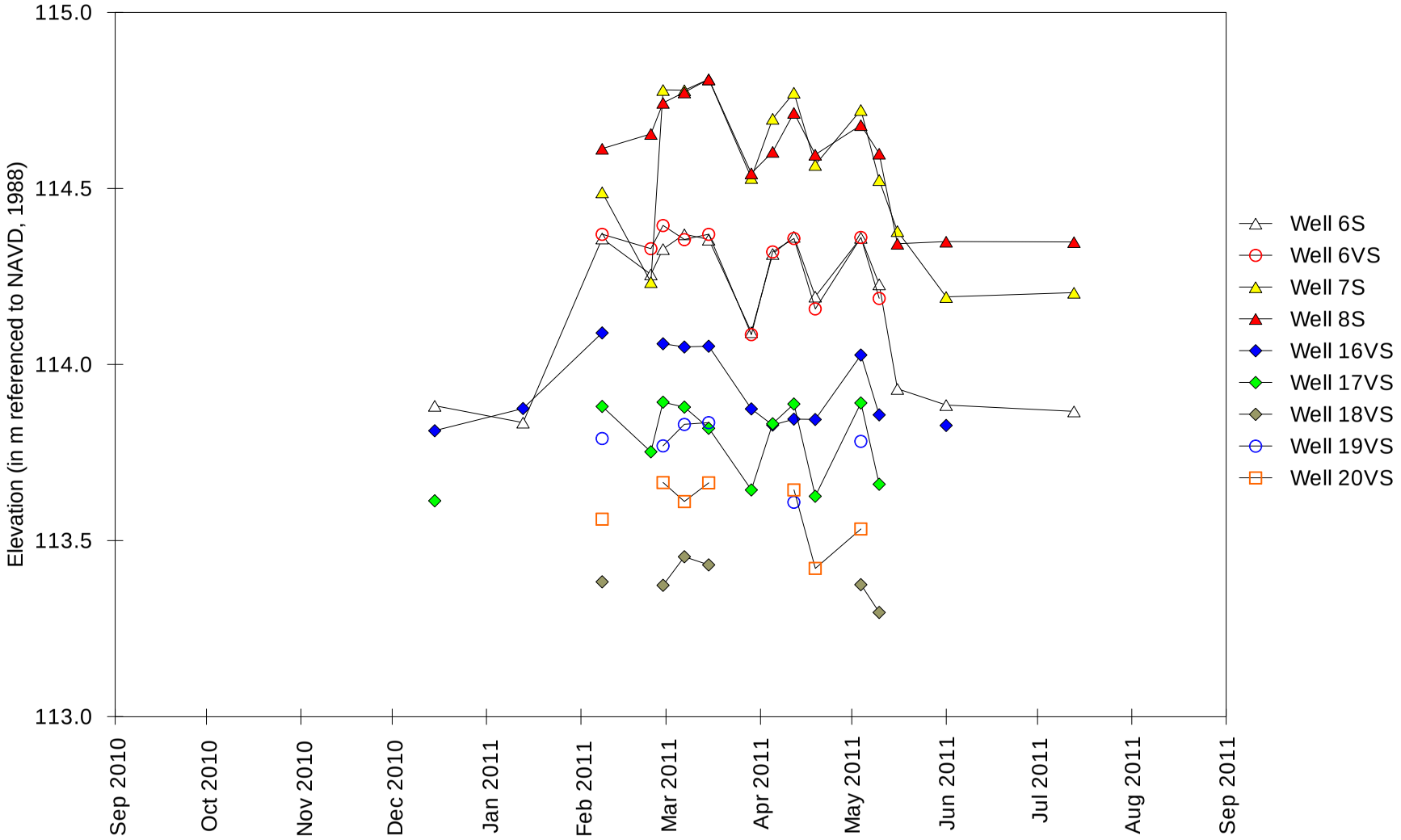
Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells (North)



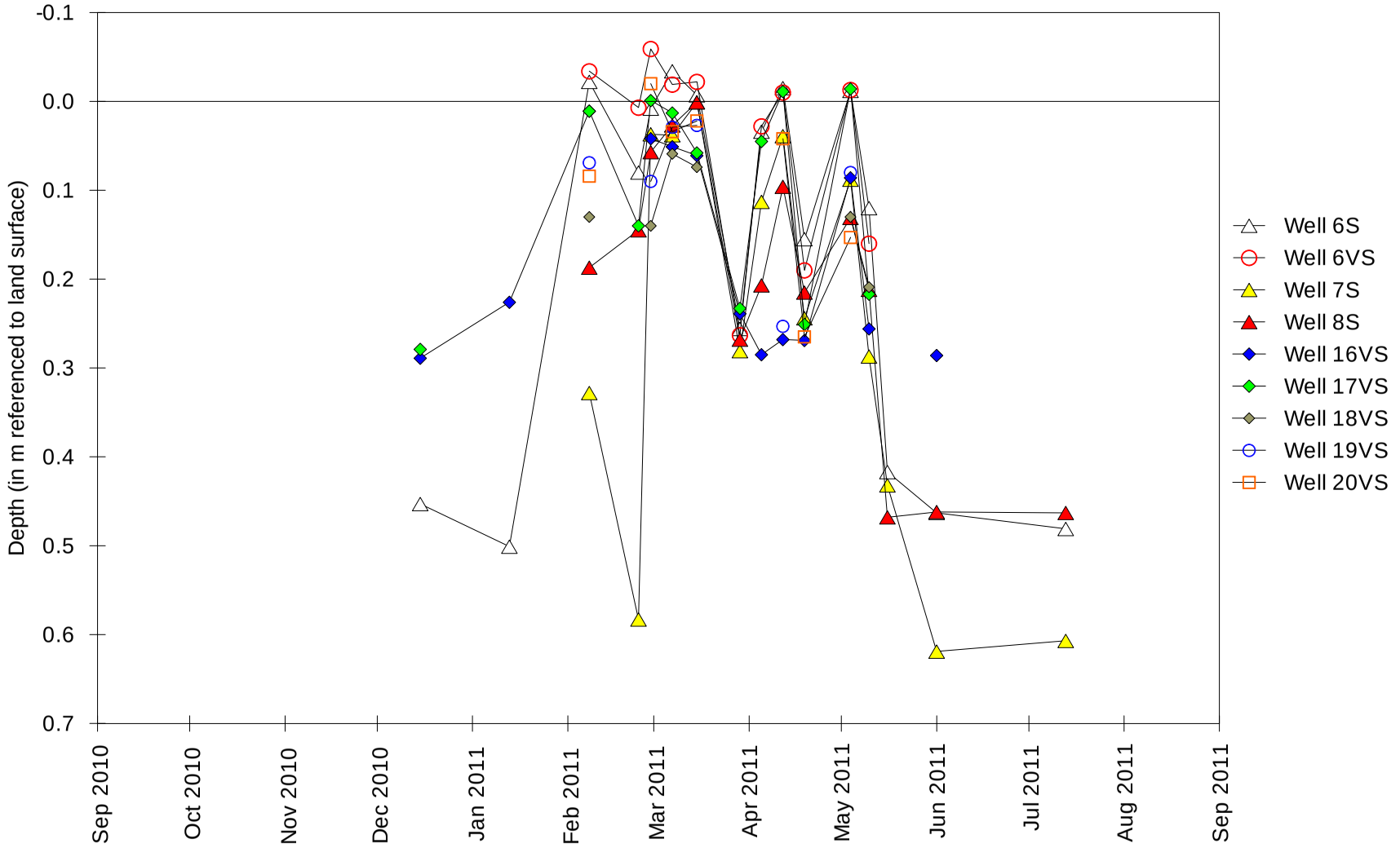
Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells (North)



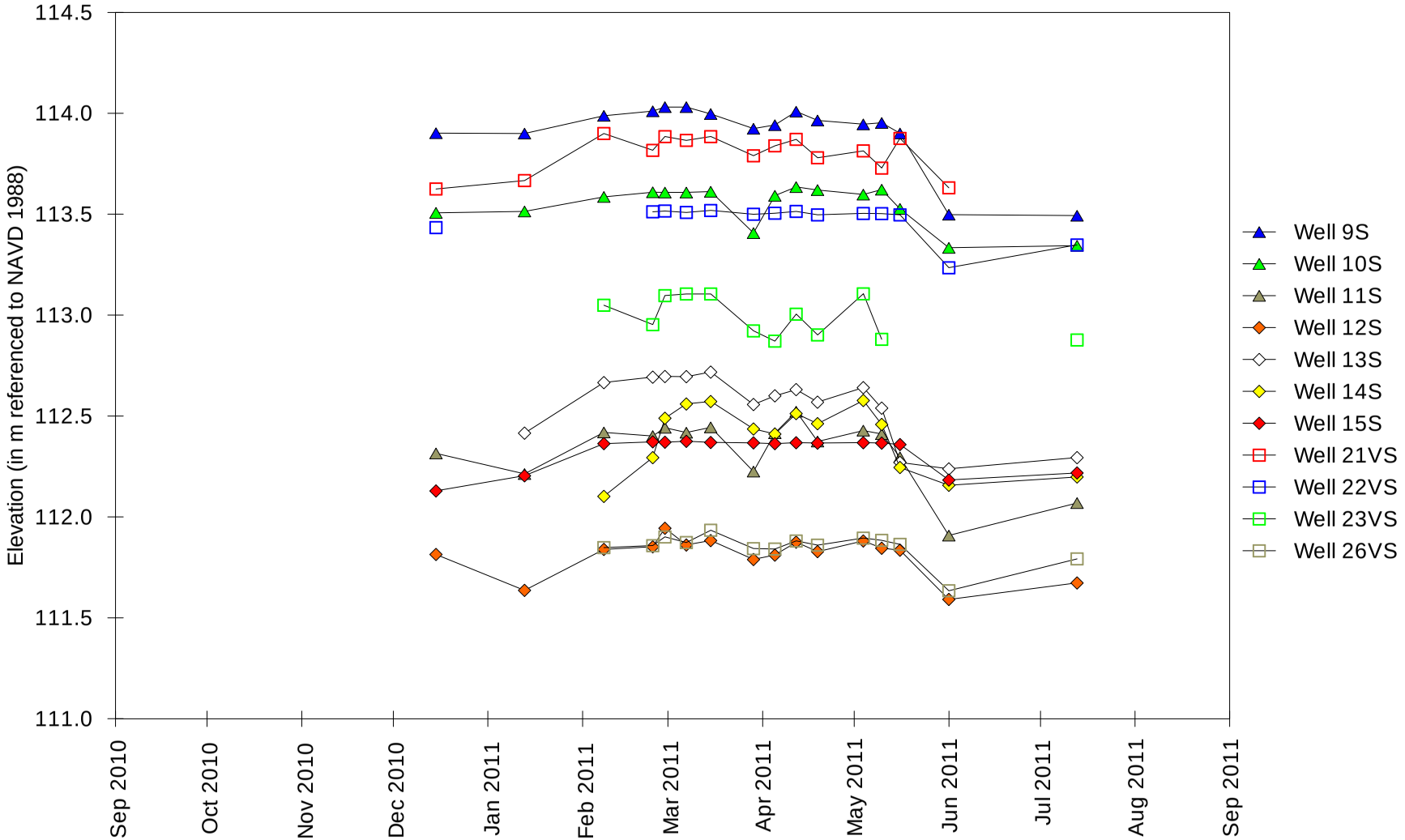
Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Monitoring Wells (North)

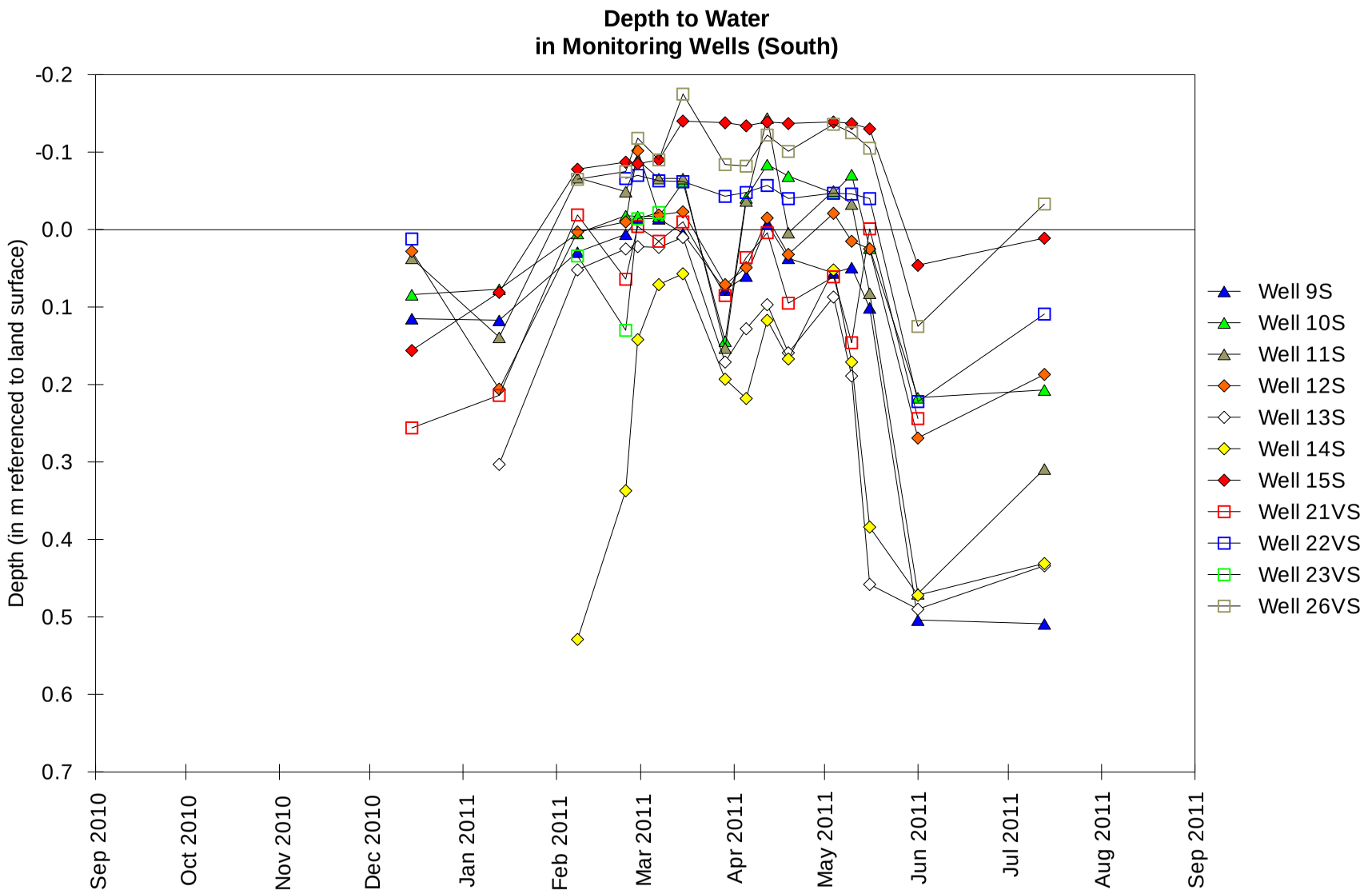


Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Monitoring Wells (South)

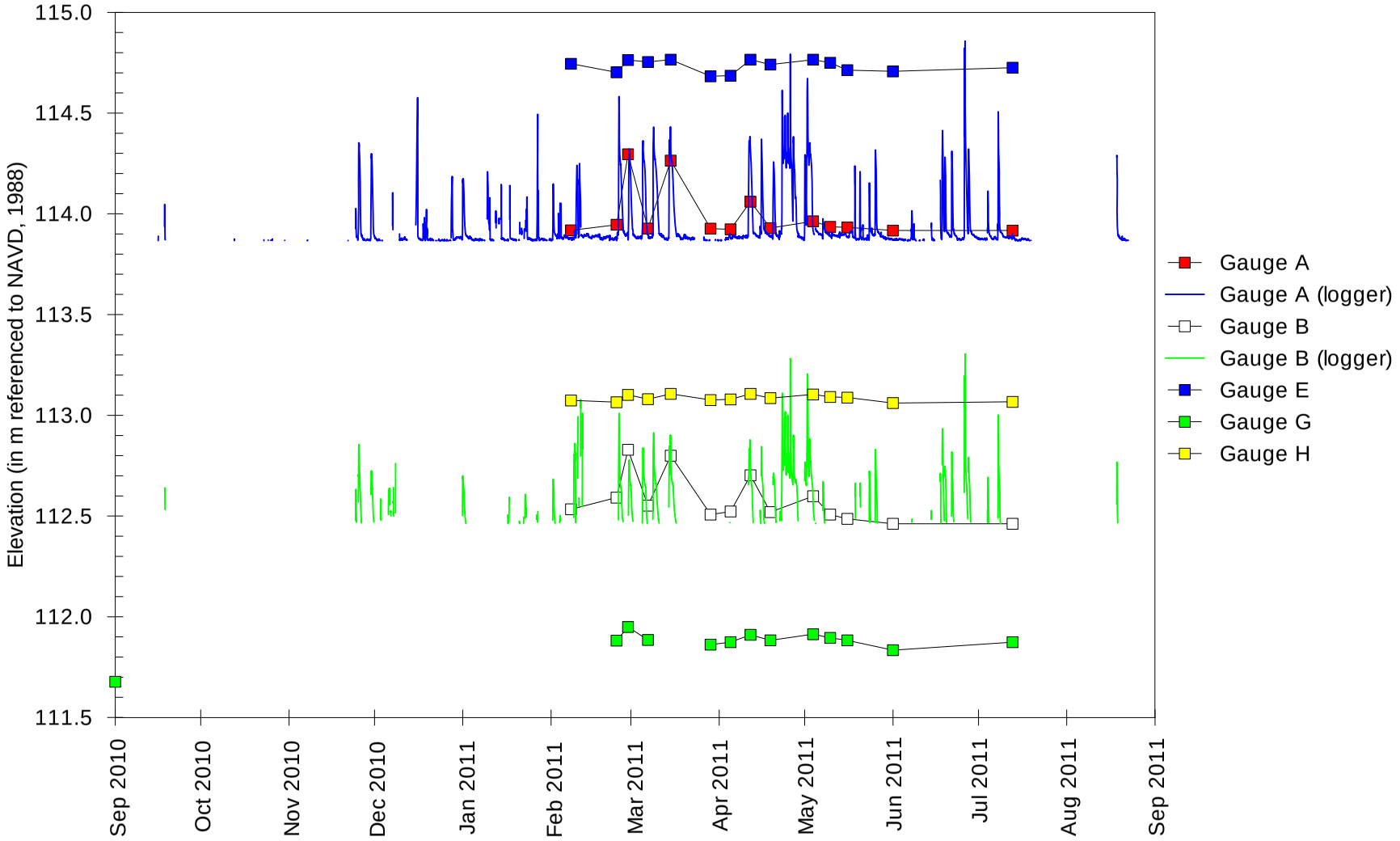


Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011



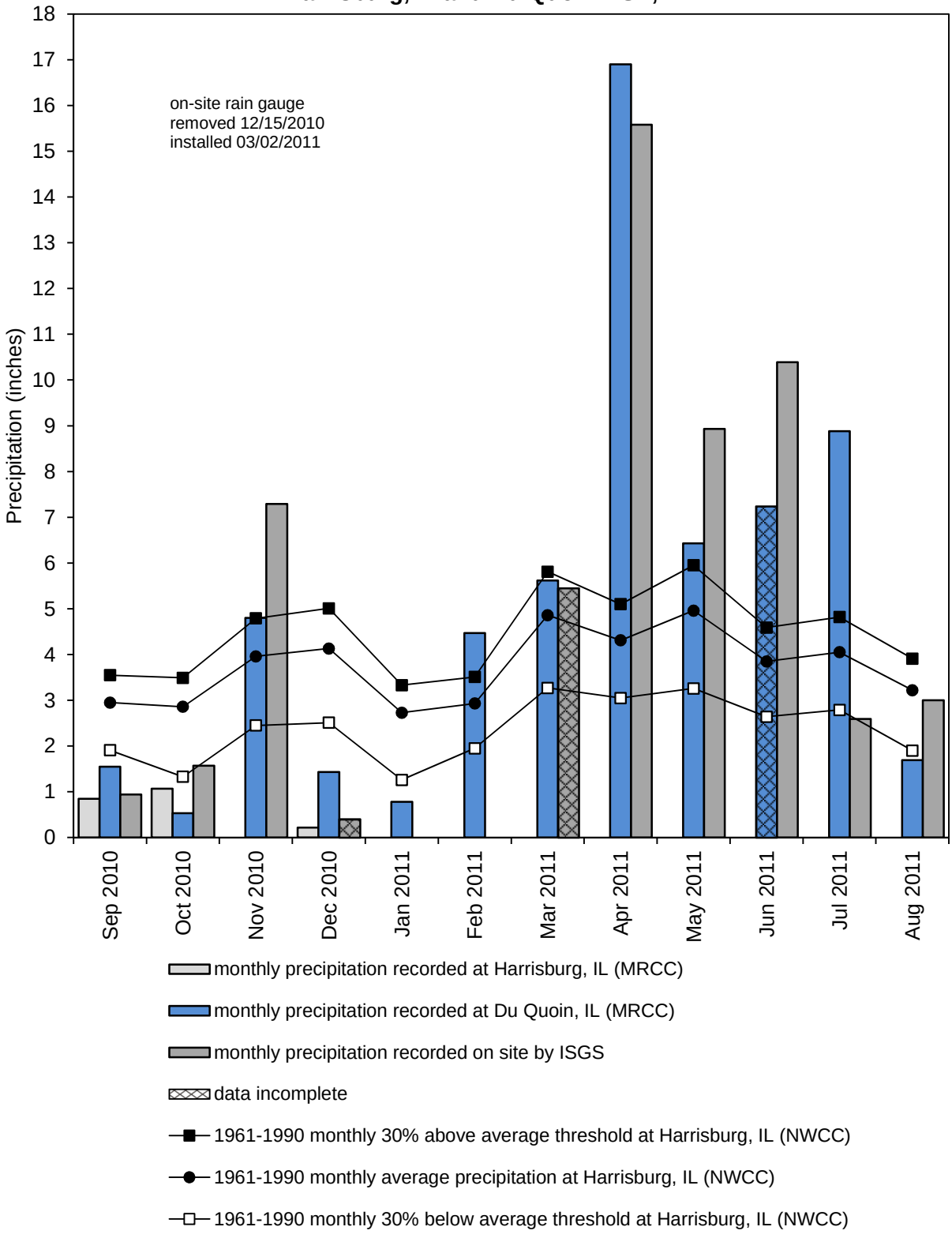
Harrisburg, Site 2 Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
at Staff Gauges and Dataloggers



Harrisburg, Site 2 Wetland Mitigation Site
September 2010 through August 2011

Total Precipitation Recorded on Site and at Harrisburg, IL and Du Quoin 4 SE, IL



Graph last updated 10/31/2011

FORMER WEBER PROPERTY **ISGS #79**
WETLAND MITIGATION SITE
US 20
FAP 301
Sequence #10487
Stephenson County, near Freeport, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- September 2010: IDOT District 2 requested that ISGS prepare conceptual plans for wetland creation, and plans were provided by ISGS.

- November 2010: Wetland construction was completed, and ISGS was tasked by IDOT to monitor wetland hydrology.

- May 2011: ISGS installed a post-construction monitoring network.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 1.7 ha (4.3 ac) out of a total site area of 5.8 ha (14.3 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is estimated to be 1.5 ha (3.8 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 1.7 ha (4.2 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in Freeport, Illinois, is April 13, and the season lasts 183 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 9 days, and 12.5% of the growing season is 23 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that March 16 was the starting date of the 2011 growing season based on soil temperatures measured at the adjacent Freeport Bypass West Wetland Mitigation Site 6W (ISGS #72).

- Total precipitation for the monitoring period, as recorded at the Freeport Wastewater Plant was 121% of normal, and was 142% of normal for the period March through May 2011. Nearly 10.5 inches of precipitation were recorded on site during July 21-31, 2011. The subsequent late-season flood on the Pecatonica River peaked on July 28 and resulted in the highest water levels recorded on the site during the 2011 growing season.

- In 2011, water levels measured in monitoring wells 8S and 9S satisfied wetland hydrology criteria for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, wells 8S and 9S also satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season.

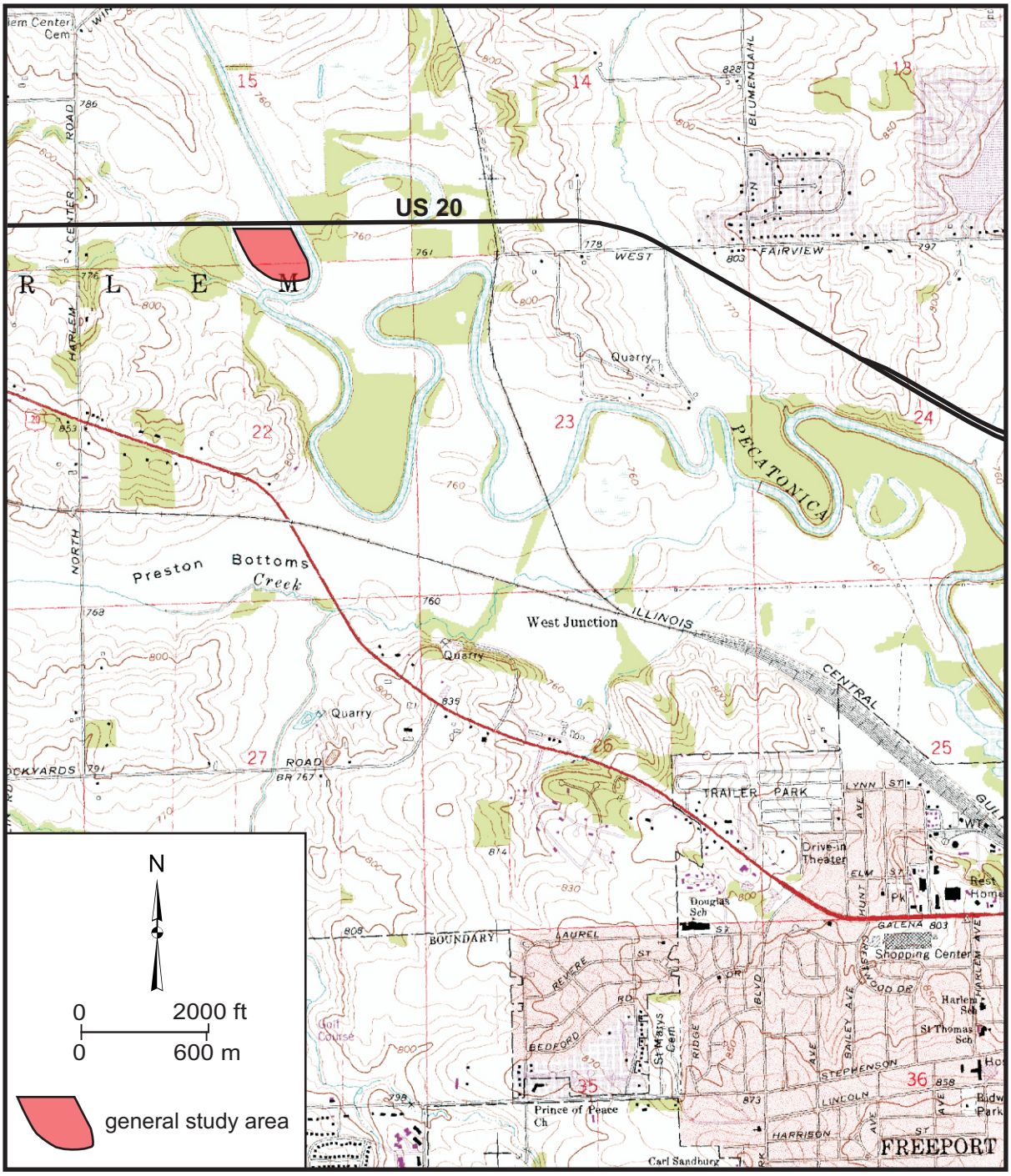
- Surface-water levels measured by the data loggers at Gauges A, E, and F indicated inundation at or above 230.40 m, 230.40 m, and 231.12 m (755.91 ft, 755.91 ft, and 758.27 ft), respectively, for greater than 5% of the growing season, and inundation at or above 230.33 m, 230.33 m, and 231.08 m (755.68 ft, 755.68 ft, and 758.14 ft), respectively, for greater than 12.5% of the growing season, according to the 1987 Manual. Per the 2010 Midwest Region Supplement, surface-water levels measured by the data logger at Gauges A, E, and F indicated inundation at or above 230.41 m, 230.37 m, and 231.11 m (755.94 ft, 755.81 ft, and 758.23 ft), respectively, for 14 or more consecutive days of the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

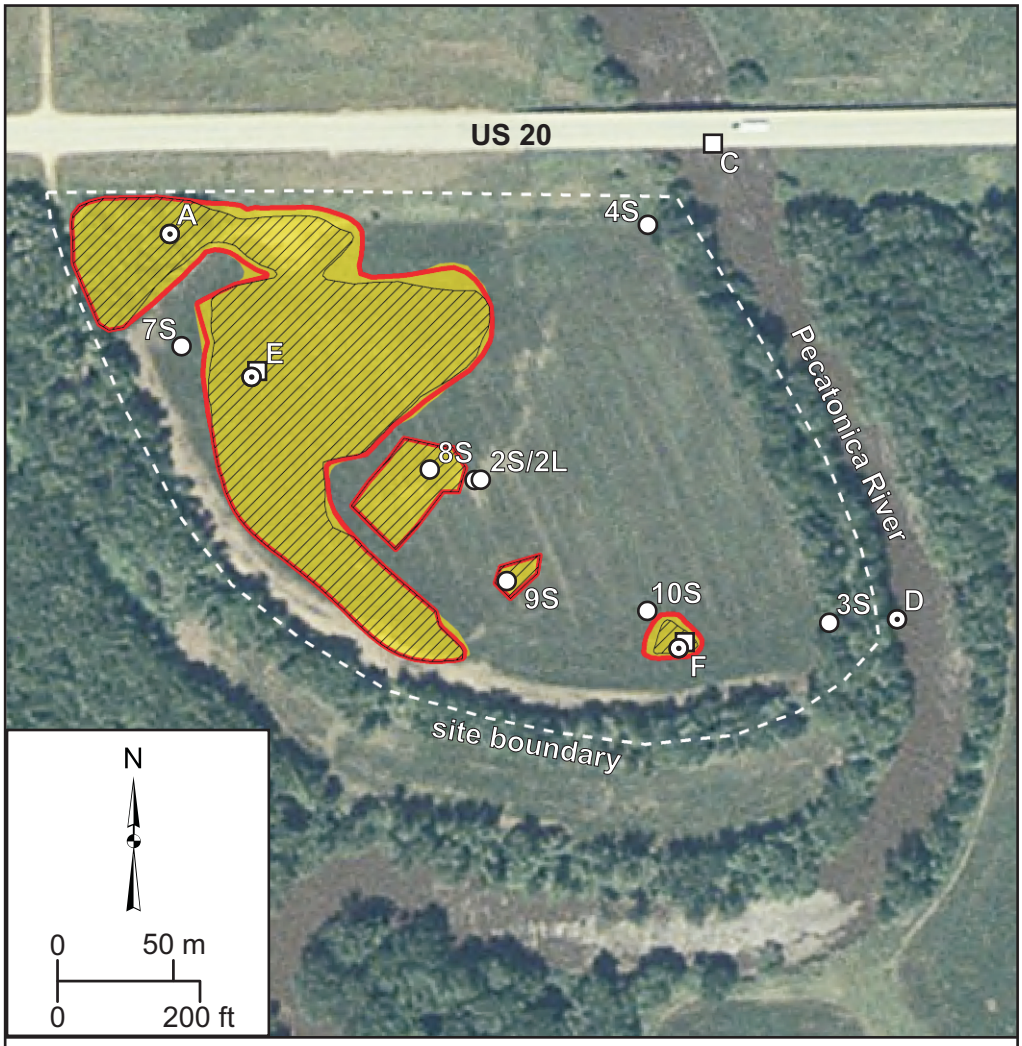
Former Weber Property Wetland Mitigation Site
(US 20, FAP 301)
General Study Area and Vicinity

Map based on the USGS Topographic Series, Freeport West, IL, 7.5-minute Quadrangle
(USGS 1971, photorevised 1978). Contour interval is 10 feet.



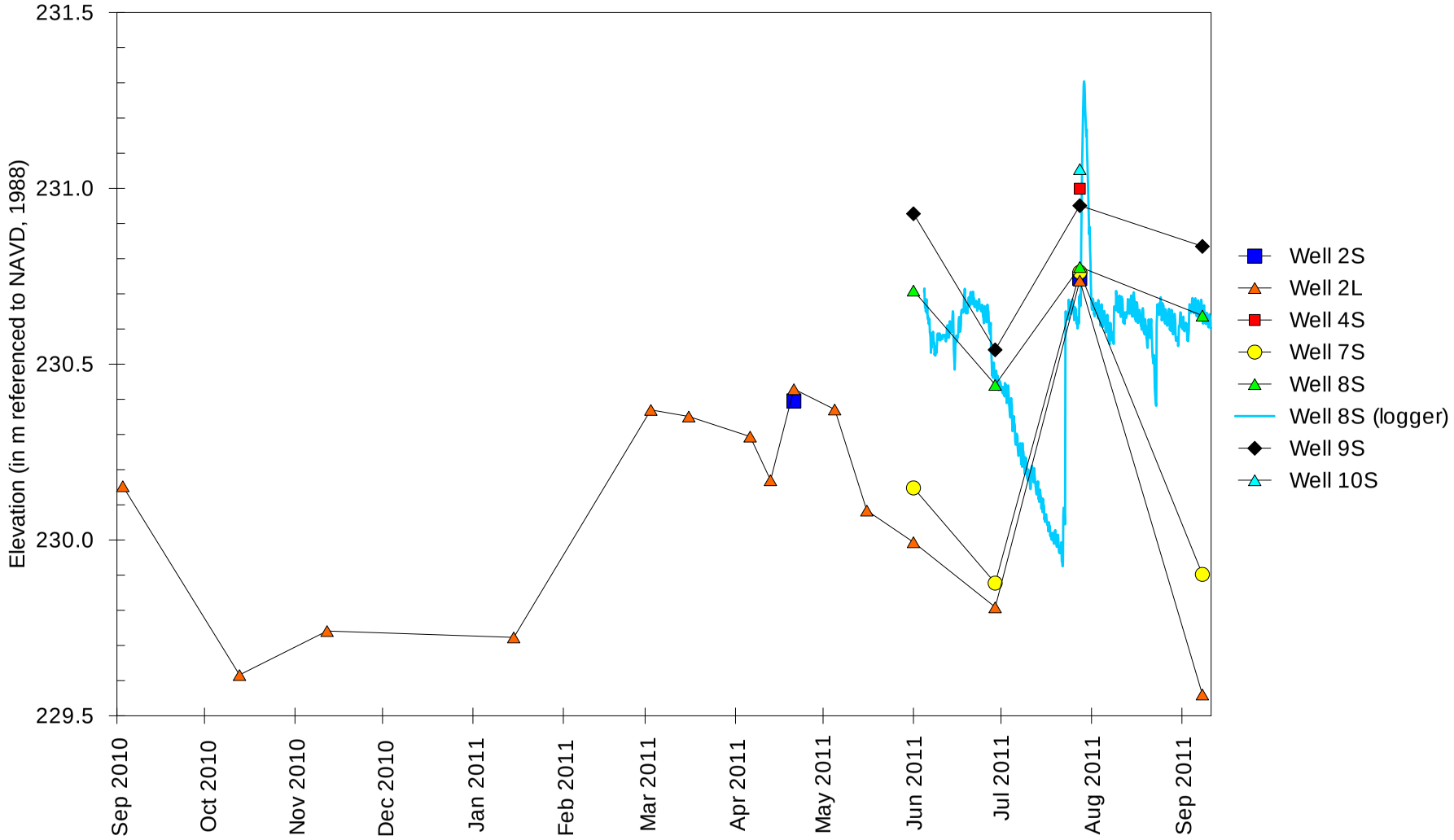
Former Weber Property Wetland Mitigation Site
(US 20, FAP 301)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through September 8, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Stephenson County, Illinois, taken August 20, 2007 (USDA-FSA 2007)



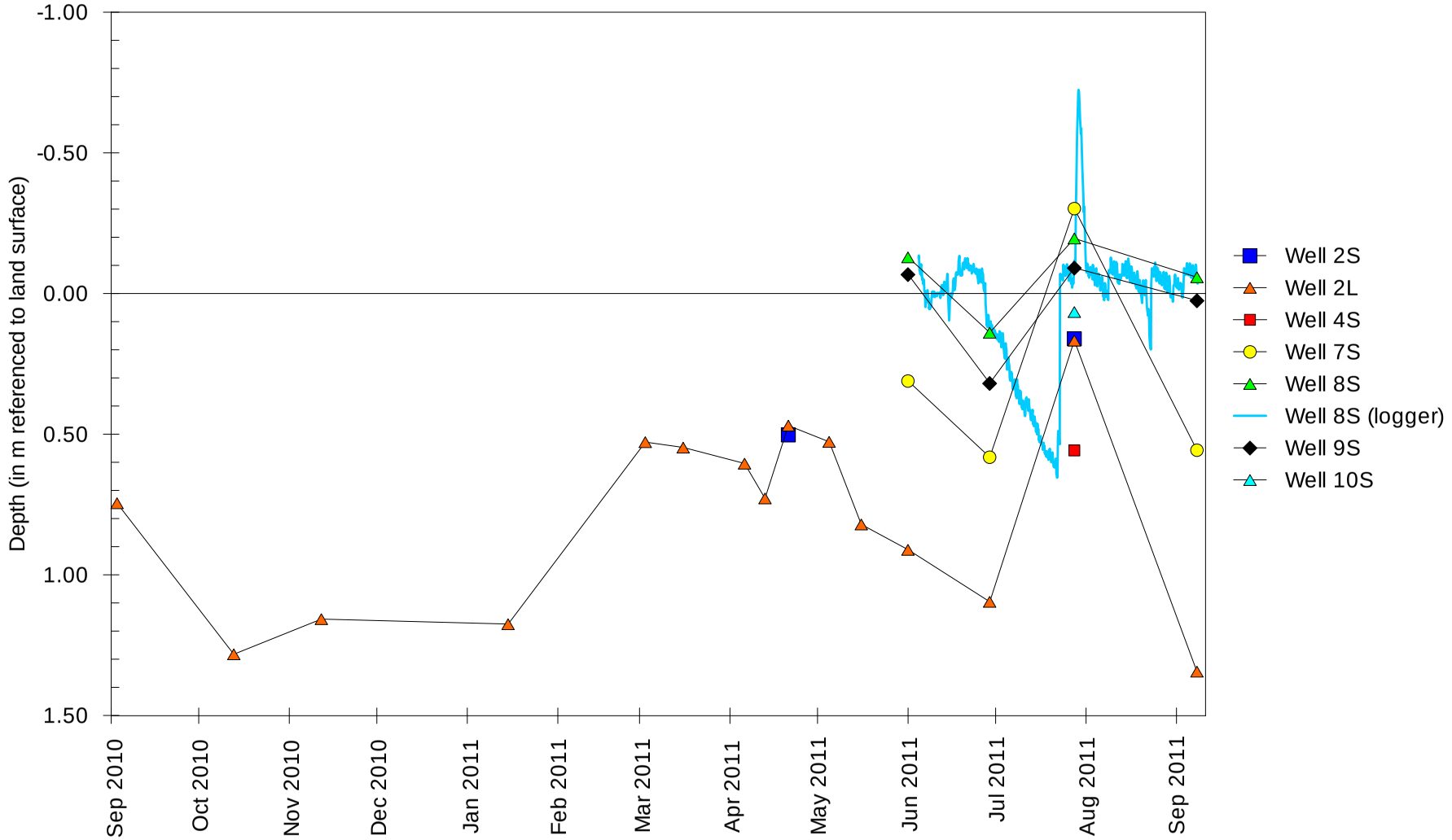
Former Weber Property Wetland Mitigation Site
September 1, 2010 through September 8, 2011

Water-Level Elevations in Monitoring Wells



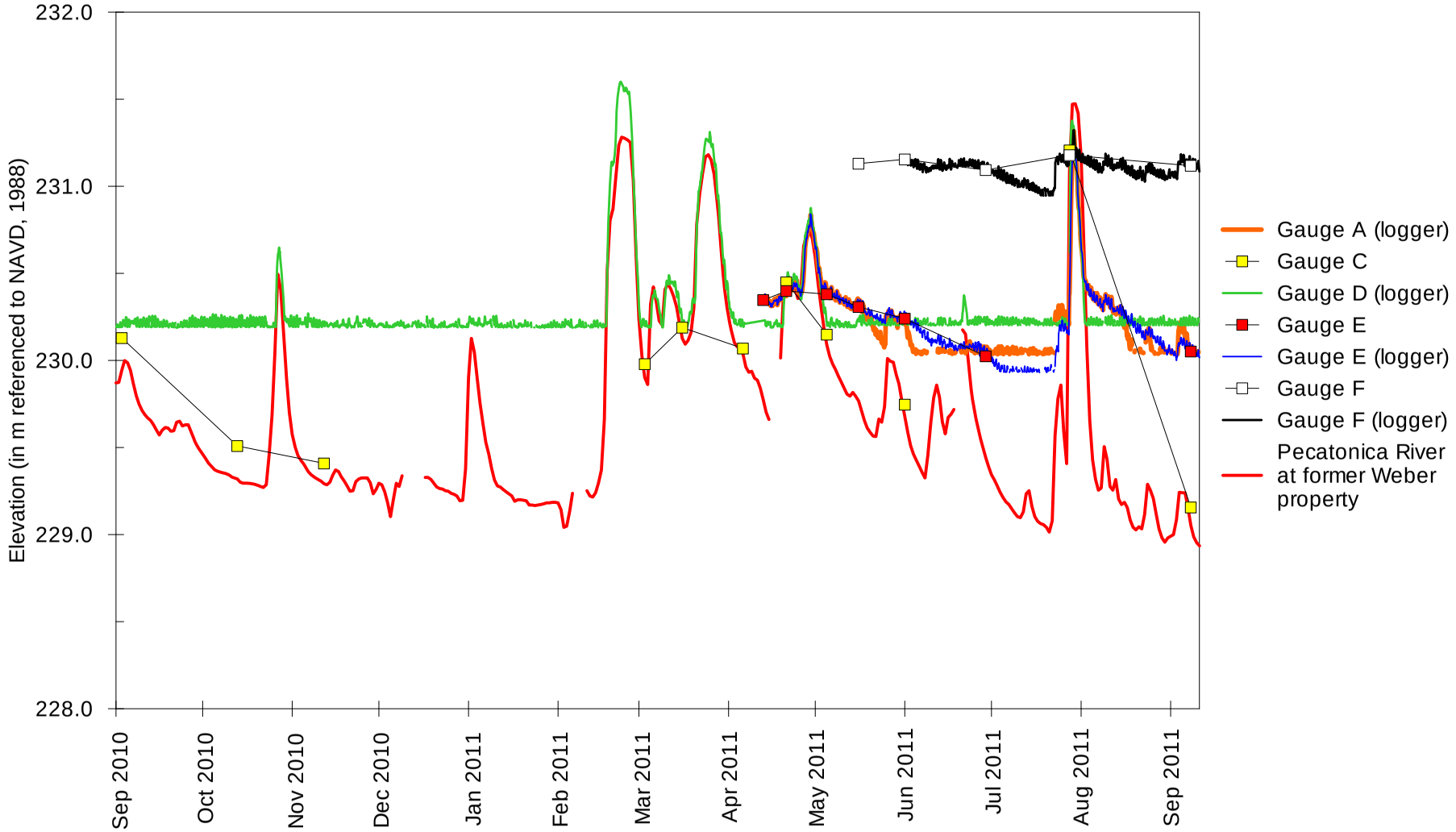
Former Weber Property Wetland Mitigation Site
September 1, 2010 through September 8, 2011

Depth to Water in Monitoring Wells



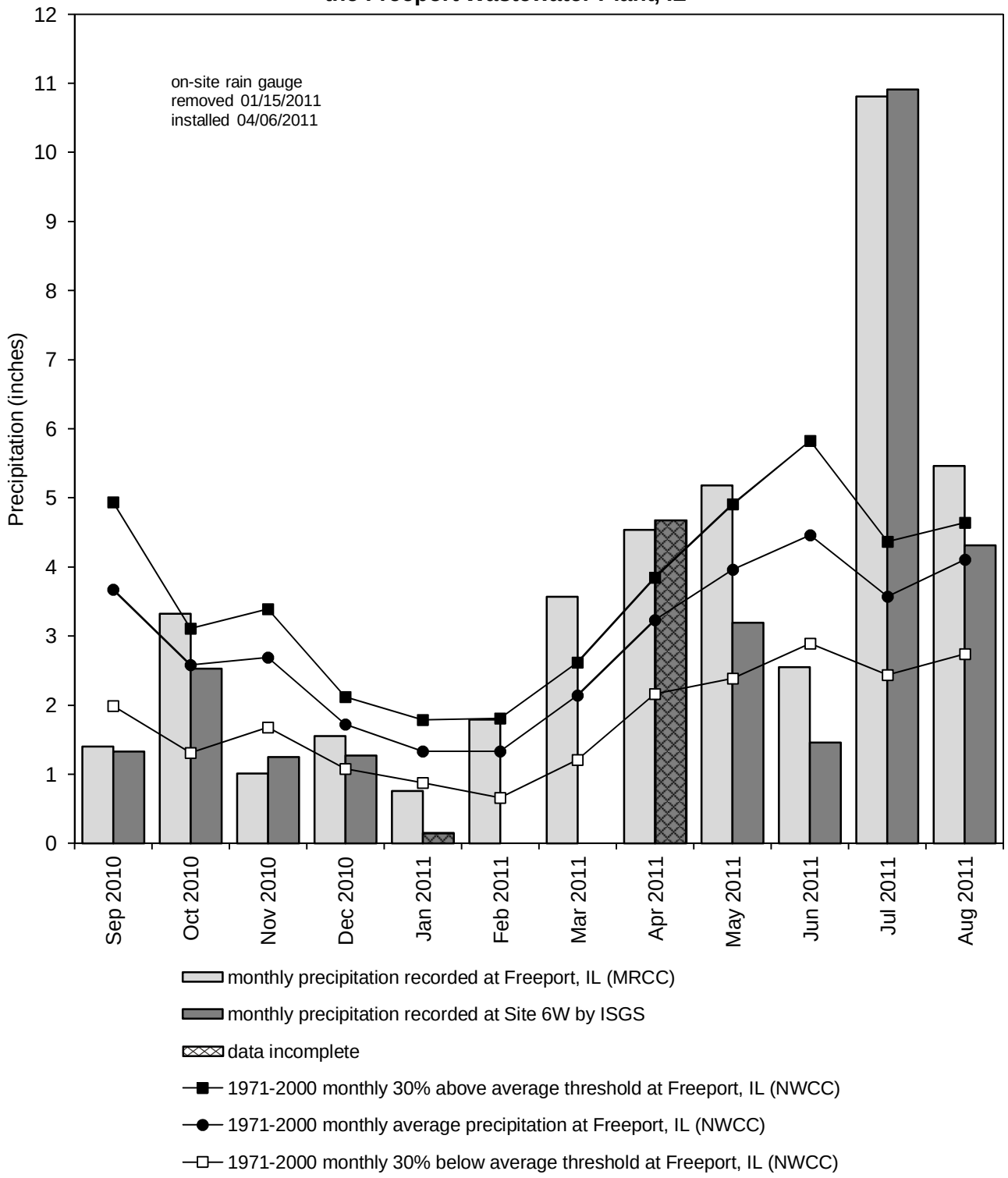
Former Weber Property Wetland Mitigation Site
September 1, 2010 through September 8, 2011

Water-Level Elevations at Surface-Water Gauges



Former Weber Property
Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded at Site 6W and at the Freeport Wastewater Plant, IL



Graph last updated 10/31/2011

MAX CREEK **ISGS #80**
WETLAND MITIGATION SITE
IL 147
FAS 932
Sequence #8717A
Johnson County, near Simpson, Illinois
Primary Project Manager: Geoffrey E. Pociask
Secondary Project Manager: Jessica L. Monson

SITE HISTORY

- July 2008: An Initial Site Evaluation was submitted to IDOT.
- December 2008: Water-level monitoring was initiated.
- August 2009: Construction at the wetland mitigation site began.
- Spring 2011: ISGS was notified by IDOT to begin post-construction monitoring.

WETLAND HYDROLOGY CALCULATION FOR 2011

Using the 1987 Manual (Environmental Laboratory 1987), 1.04 ha (2.57 ac) out of a total site area of approximately 1.2 ha (3.0 ac) satisfied wetland hydrology criteria for greater than 5% of the growing season in 2011, whereas 0.99 ha (2.45 ac) satisfied wetland hydrology for greater than 12.5% of the growing season. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, 1.04 ha (2.57 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Anna, Illinois, is March 31 and the season lasts 225 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days and 12.5% of the growing season is 28 days. According to the 2010 Midwest Region Supplement, February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the wetland mitigation site and data from the Illinois Climate Network station at Dixon Springs, Illinois (ISWS 2011).
- Total precipitation at the Cape Girardeau, Missouri, weather station for the period from September 2010 through August 2011 was 126% of normal, and Spring 2011 (March through May) precipitation was 220% of normal.
- In 2011, all wells satisfied wetland hydrology criteria for greater than 5% and 12.5% of the growing season, according to the 1987 Manual. Furthermore, according to the 2010 Midwest Region Supplement, all wells satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season.
- Data from the Gauge E data logger indicated that Max Creek flooded the site seven times during the 2011 growing season. However, the duration of inundation from each of these floods did not satisfy any wetland hydrology criteria.

- The Gauge E data logger showed that ponded surface water was at or above 115.69 m (379.56 ft) for greater than 5% and greater than 12.5% of the growing season, according to the 1987 Manual, and for 14 or more consecutive days during the growing season, according to the 2010 Midwest Region Supplement.

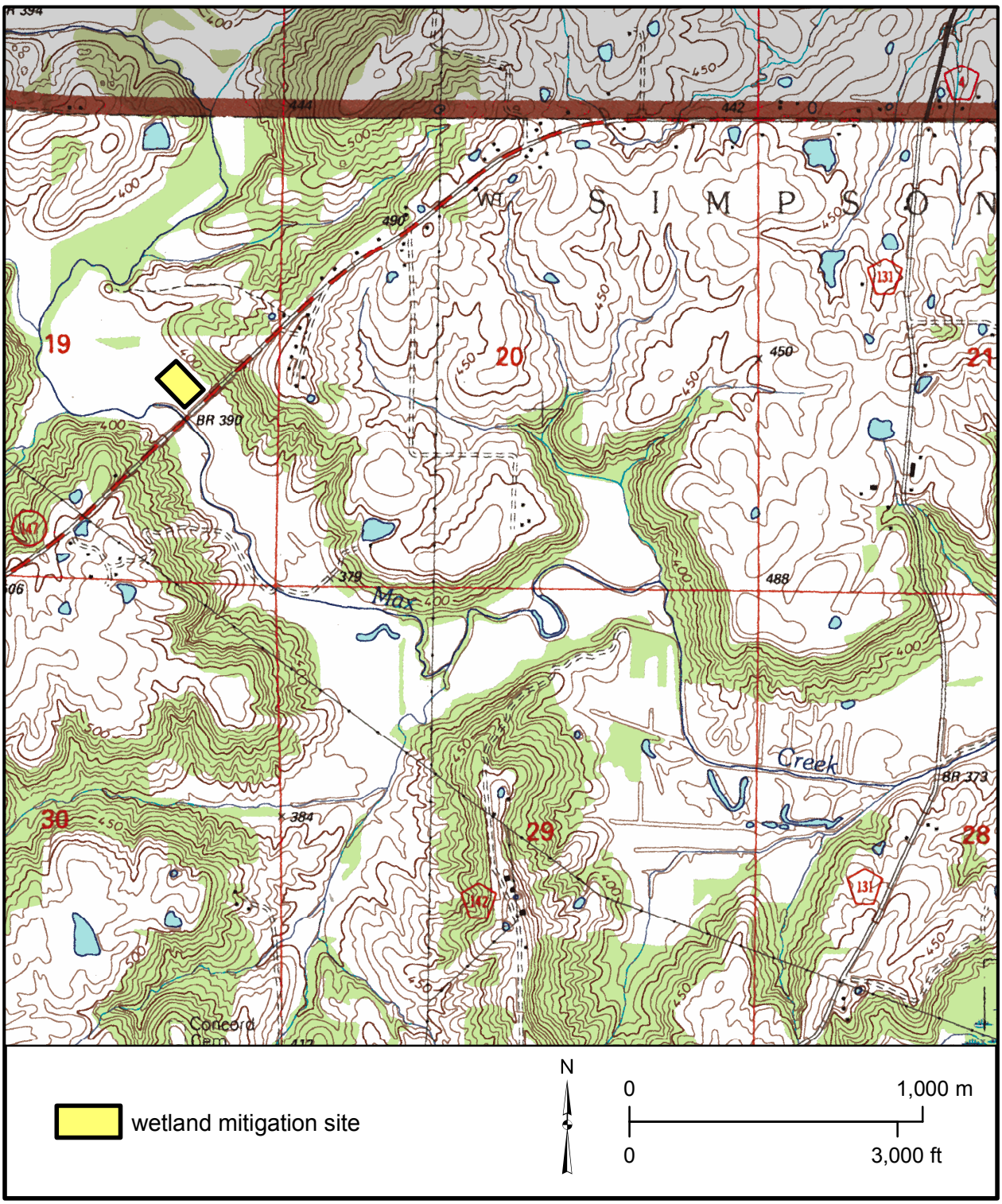
PLANNED FUTURE ACTIVITIES

- Water-level monitoring is expected to continue through 2016 or until no longer required by IDOT.

Max Creek Wetland Mitigation Site
(IL 147, FAS 932)

General Study Area and Vicinity

from the USGS Topographic Series, Bloomfield, IL 7.5-minute Quadrangle (USGS 1996)
contour interval is 10 feet

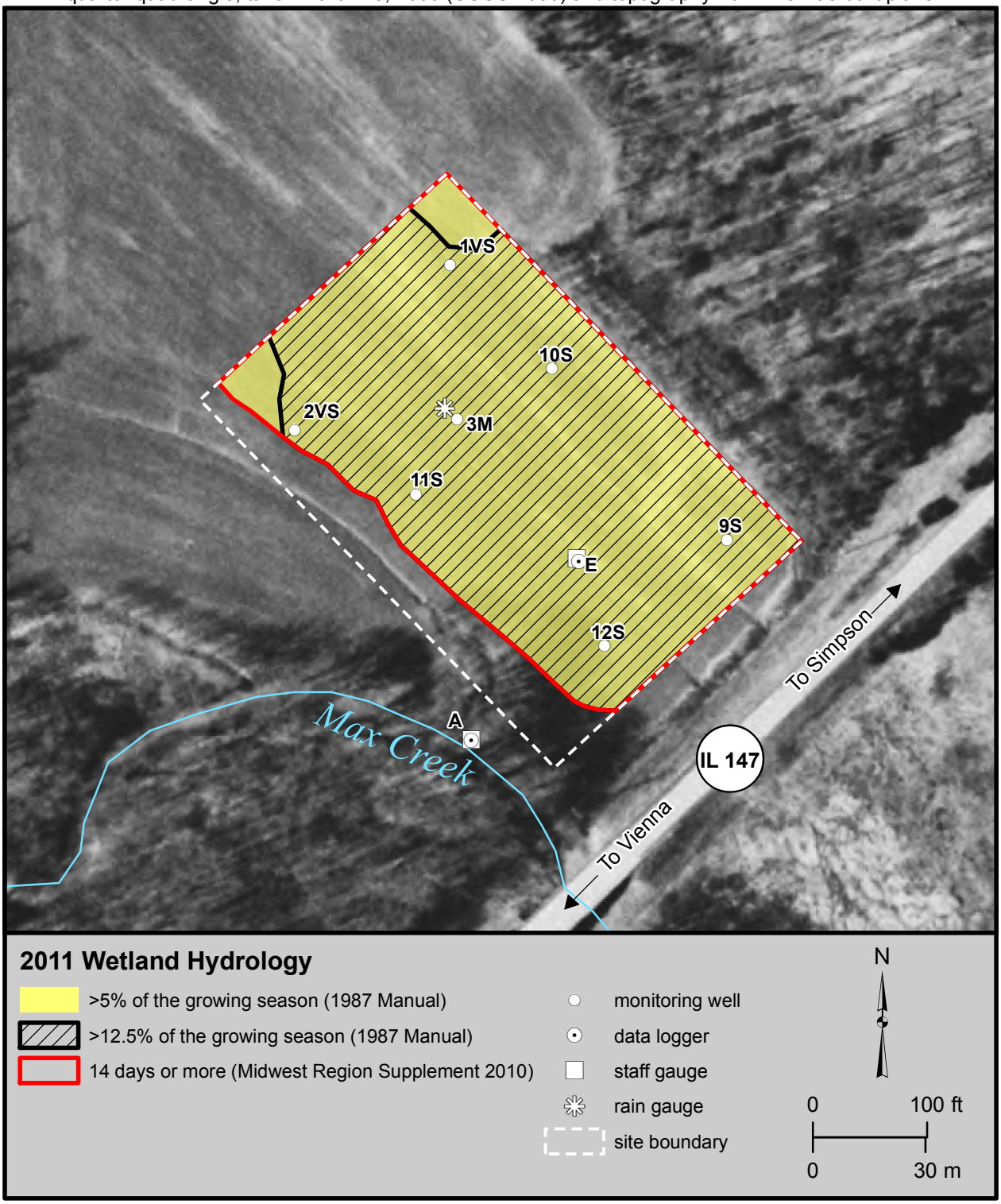


Max Creek Wetland Mitigation Site
(IL 147, FAS 932)

Estimated Areal Extent of 2011 Wetland Hydrology

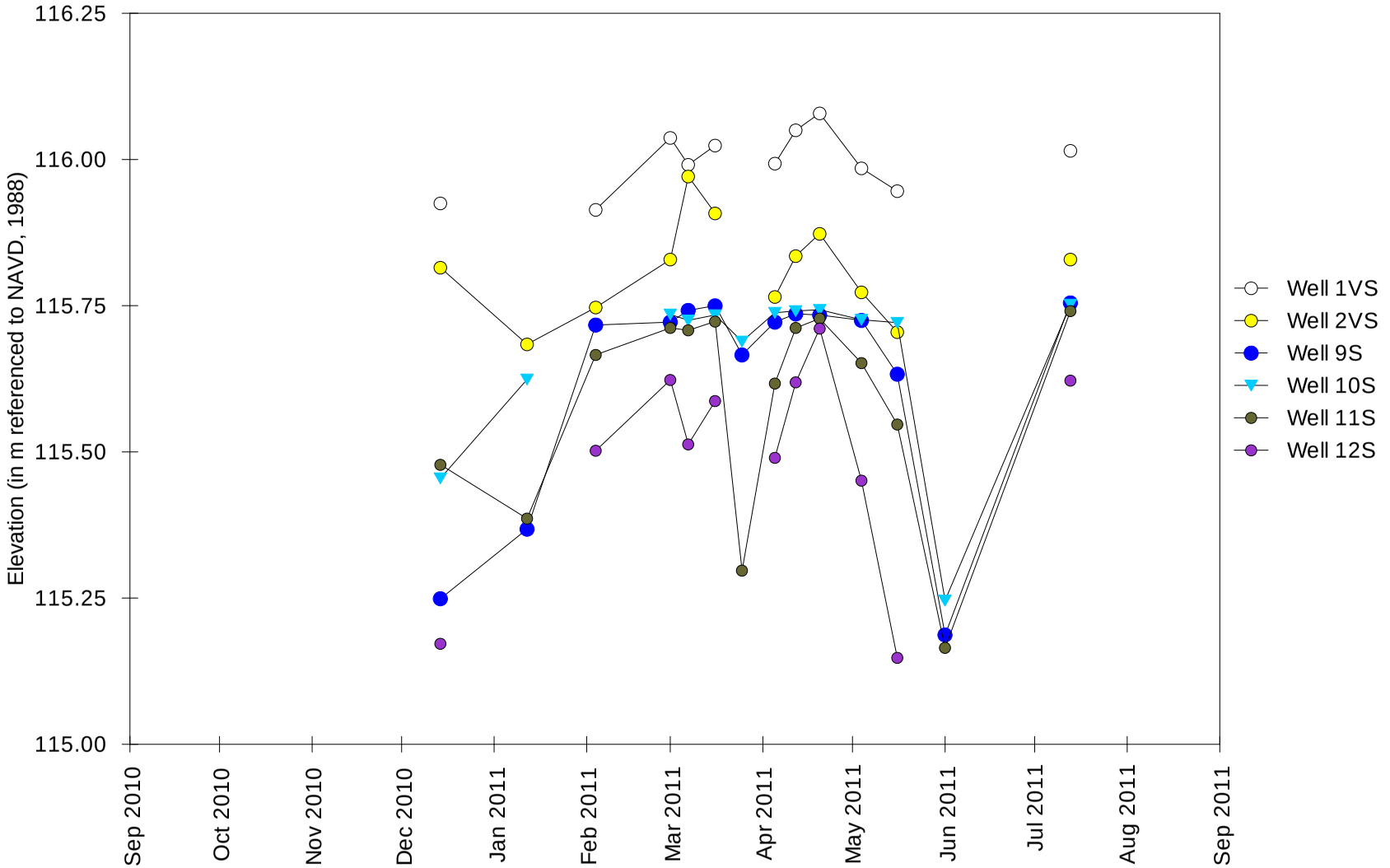
September 1, 2010 through August 31, 2011

Map based on National Aerial Photography Program (NAPP) digital orthophotograph, Bloomfield NE quarter quadrangle, taken March 28, 2005 (USGS 2006) and topography from IDOT as-built plans



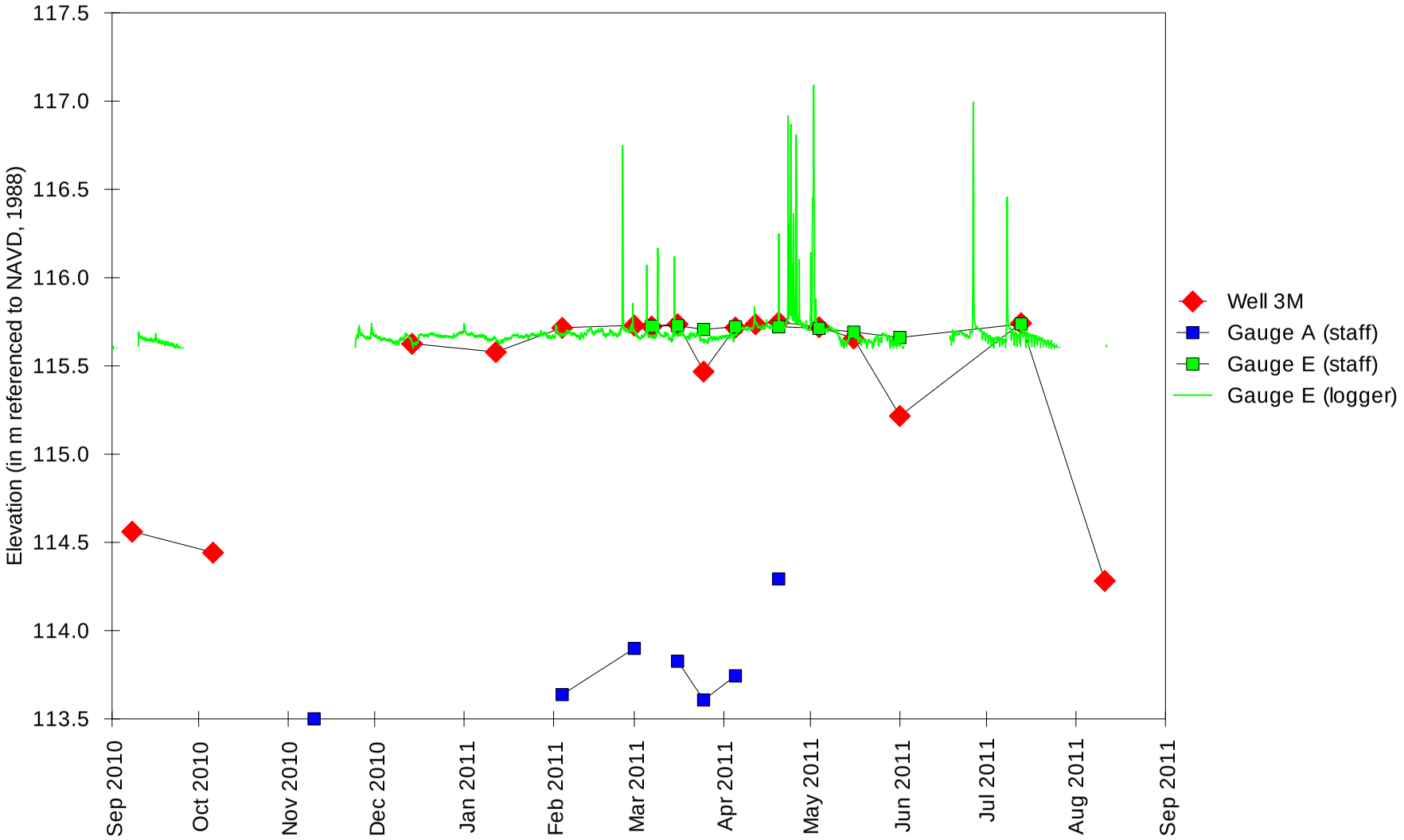
Max Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Shallow Monitoring Wells



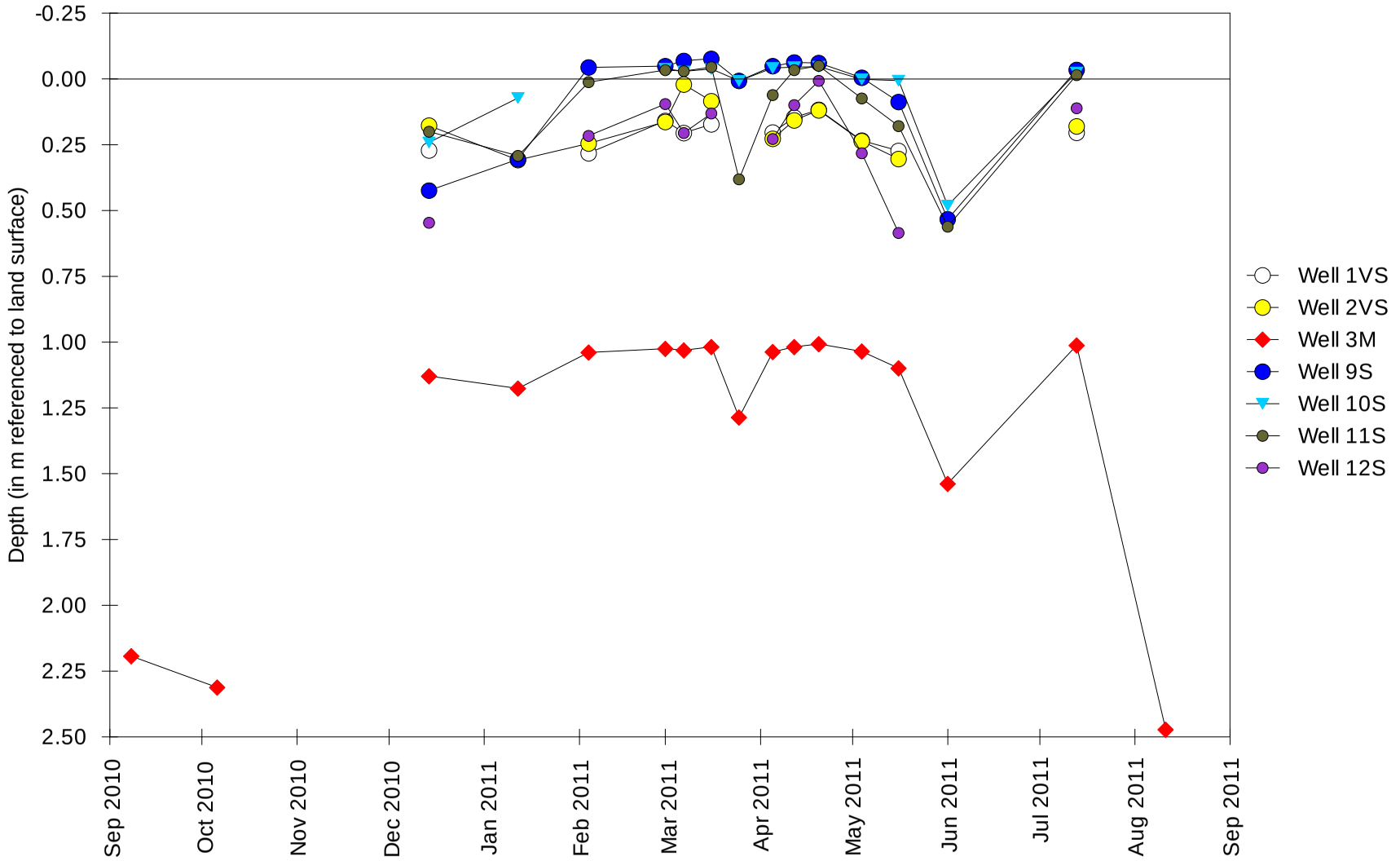
Max Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells and at Gauges



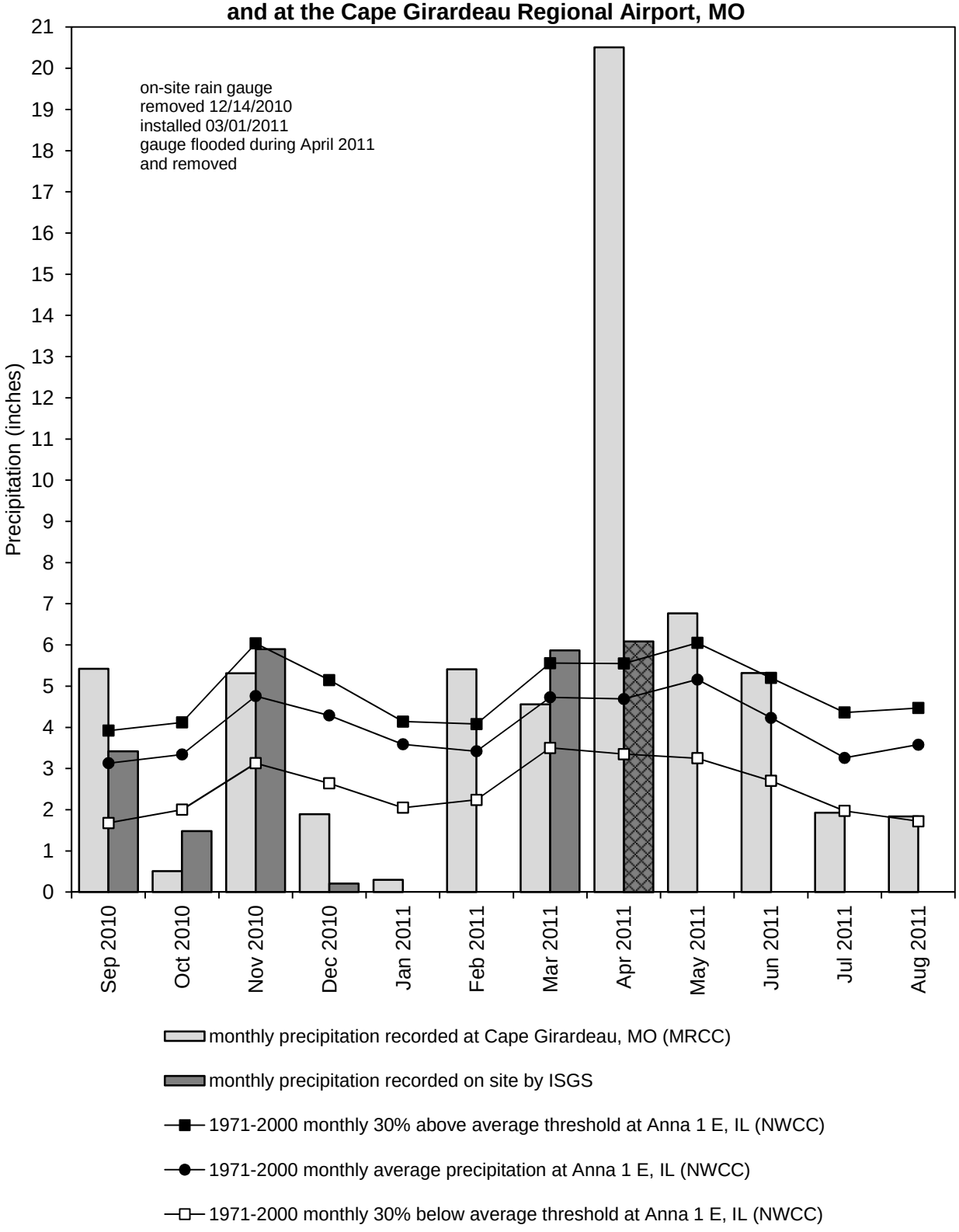
Max Creek Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth To Water in Monitoring Wells



Max Creek Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Cape Girardeau Regional Airport, MO



Graph last updated 10/31/2011

EAST CAPE GIRARDEAU **ISGS #81**
WETLAND MITIGATION SITE
IL 146
FAP 312
Sequence #633A
Alexander County, near East Cape Girardeau, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- Fall 2009: Wetland construction was started.
- March 2010: ISGS submitted a Level II hydrogeologic characterization report to IDOT (ISGS Open-File Series 2010-3).
- February 2011: ISGS installed a new monitoring network.
- August 2011: IDOT reported the site had been graded and drainage control structures were completed. ISGS was tasked by IDOT to monitor the site for performance criteria outlined in the wetland compensation plan, and post-construction water-level monitoring was initiated.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 6.2 ha (15.2 ac) out of a total site area of approximately 6.2 ha (15.2 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is also estimated to be 6.2 ha (15.2 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 6.2 ha (15.2 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Cape Girardeau, Missouri, is March 26, and the season lasts 228 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 11 days, and 12.5% of the growing season is 29 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that February 16 was the starting date of the 2011 growing season based on soil temperatures measured at the site.
- Total precipitation for the monitoring period, as recorded at the Cape Girardeau Regional Airport in Missouri, was 126% of normal, and was 220% of normal for the period March through May 2011, with 20.51 in. of precipitation recorded in April.
- In 2011, water levels measured in all monitoring wells satisfied wetland hydrology criteria for greater than 5% of the growing season and for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, water levels measured in all monitoring wells satisfied the wetland hydrology criteria for 14 or more consecutive days of the growing season.

- Surface-water levels measured by the data loggers at Gauges A, B, and E indicated inundation at or above 102.63 m, 102.47 m, and 102.58 m (336.71 ft, 336.19 ft, and 336.55 ft), respectively, for greater than 5% of the growing season, and inundation at or above 102.58 m, 102.44 m, and 102.55 m (336.55 ft, 336.09 ft, and 336.45 ft), respectively, for greater than 12.5% of the growing season, according to the 1987 Manual. Per the 2010 Midwest Region Supplement, surface-water levels measured by the data loggers at Gauges A, B, and E indicated inundation at or above 102.63 m, 102.47 m, and 102.58 m (336.71 ft, 336.19 ft, and 336.55 ft), respectively, for 14 or more consecutive days of the growing season.

ADDITIONAL INFORMATION

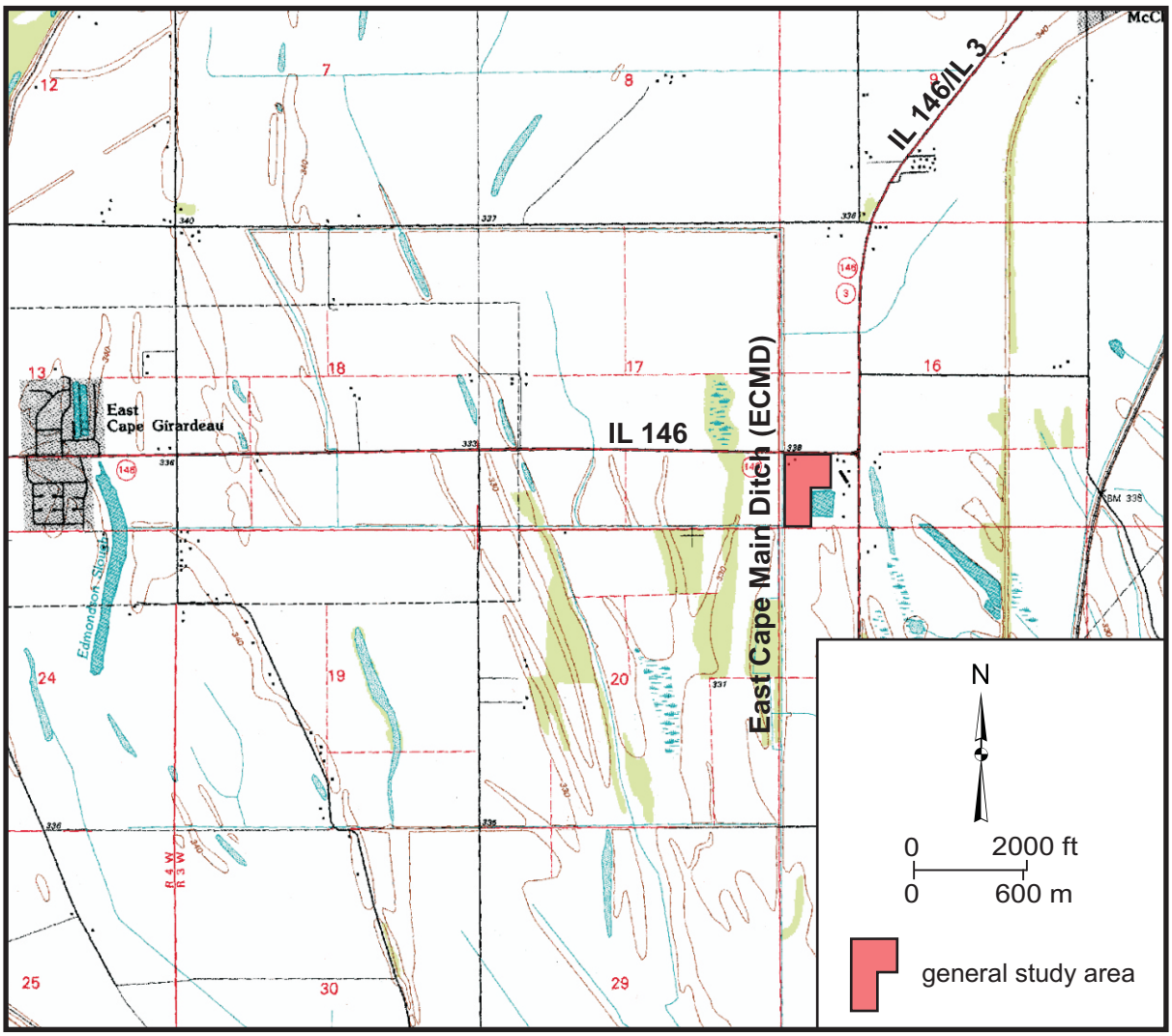
- Beginning in April 2011, elevated water levels on the Mississippi River at Thebes, Illinois, resulted in water backing up in the East Cape Main Ditch (ECMD), thereby resulting in flooding at the site that was sustained through the end of the monitoring period.

PLANNED FUTURE ACTIVITIES

- The ISGS plans to produce a post-construction topographic map of the site.
- Monitoring will continue at the site until no longer required by IDOT.

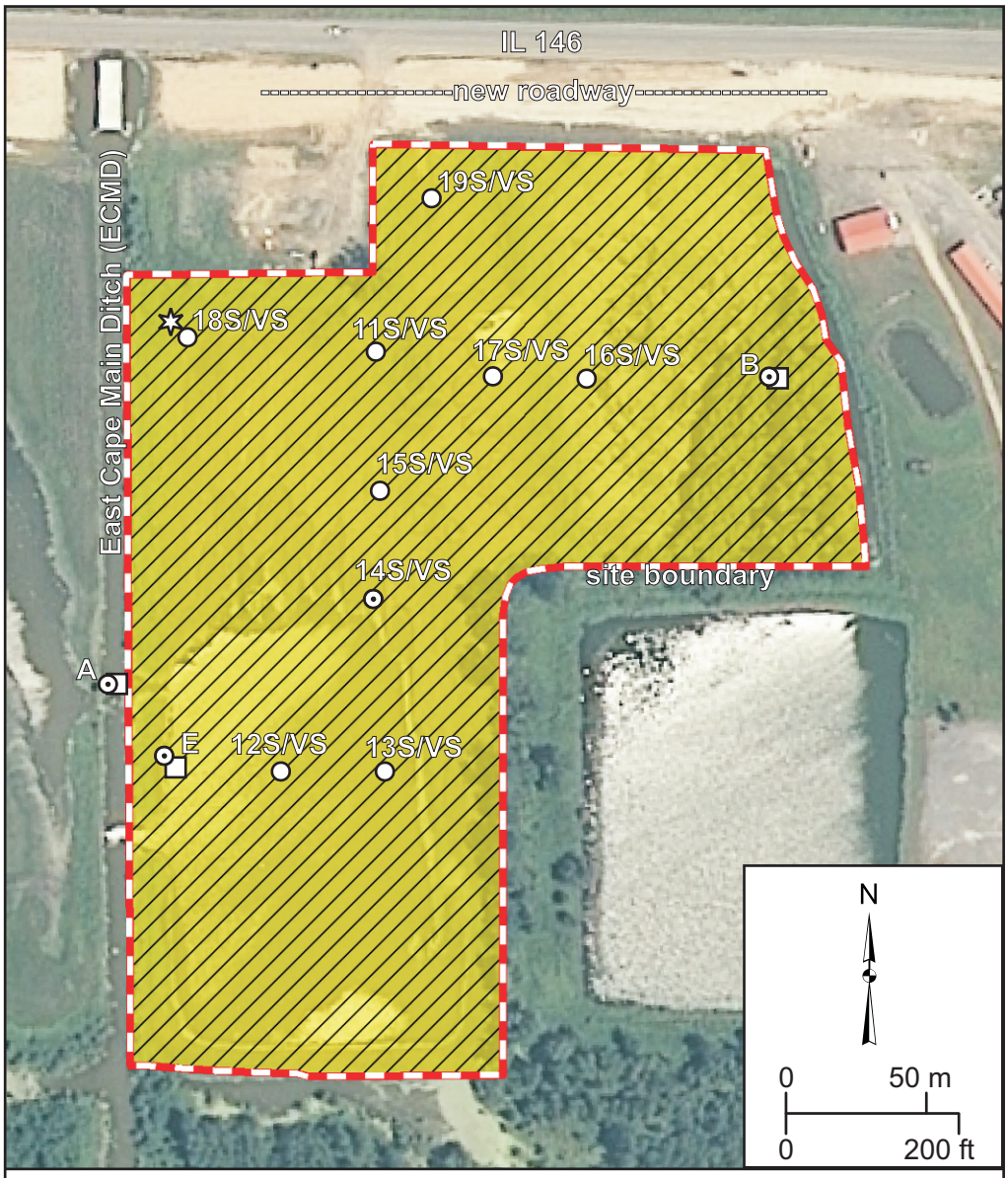
East Cape Girardeau Wetland Mitigation Site
(IL 146, FAP 312)
General Study Area and Vicinity

from the USGS Topographic Series, McClure, IL-MO, 7.5-minute Quadrangle (USGS 1993)
contour interval is 20 feet, with supplementary contour interval of 10 feet



East Cape Girardeau Wetland Mitigation Site
(IL 146, FAP 312)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Alexander County, Illinois, taken August 12, 2010 (USDA-FSA 2011)



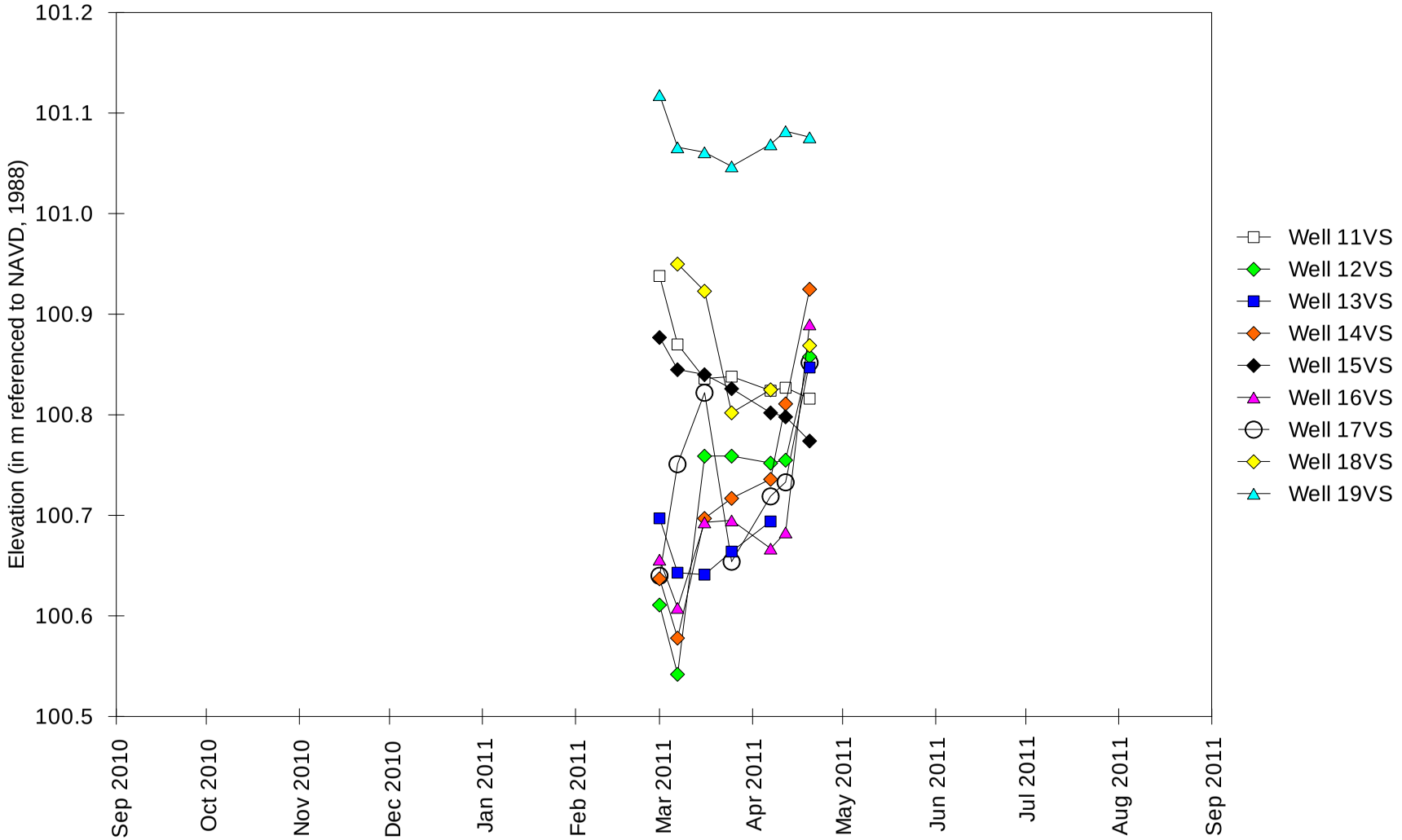
2011 Wetland Hydrology

- monitoring well
- staff gauge
- data logger
- rain gauge

- > 5% of the growing season (1987 Manual)
- > 12.5% of the growing season (1987 Manual)
- 14 days or more (2010 Midwest Region Supplement)

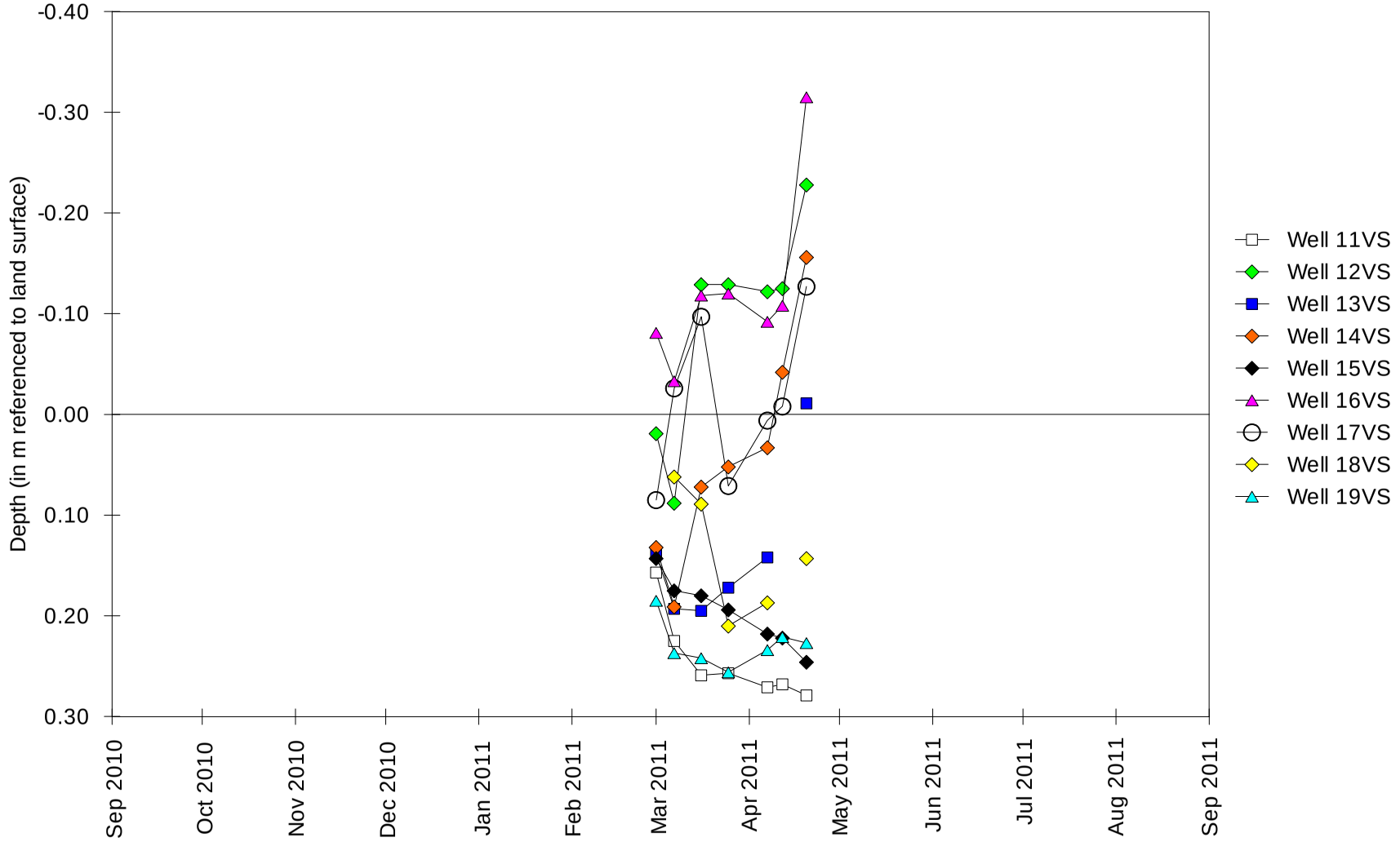
East Cape Girardeau Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Very Shallow (VS) Monitoring Wells



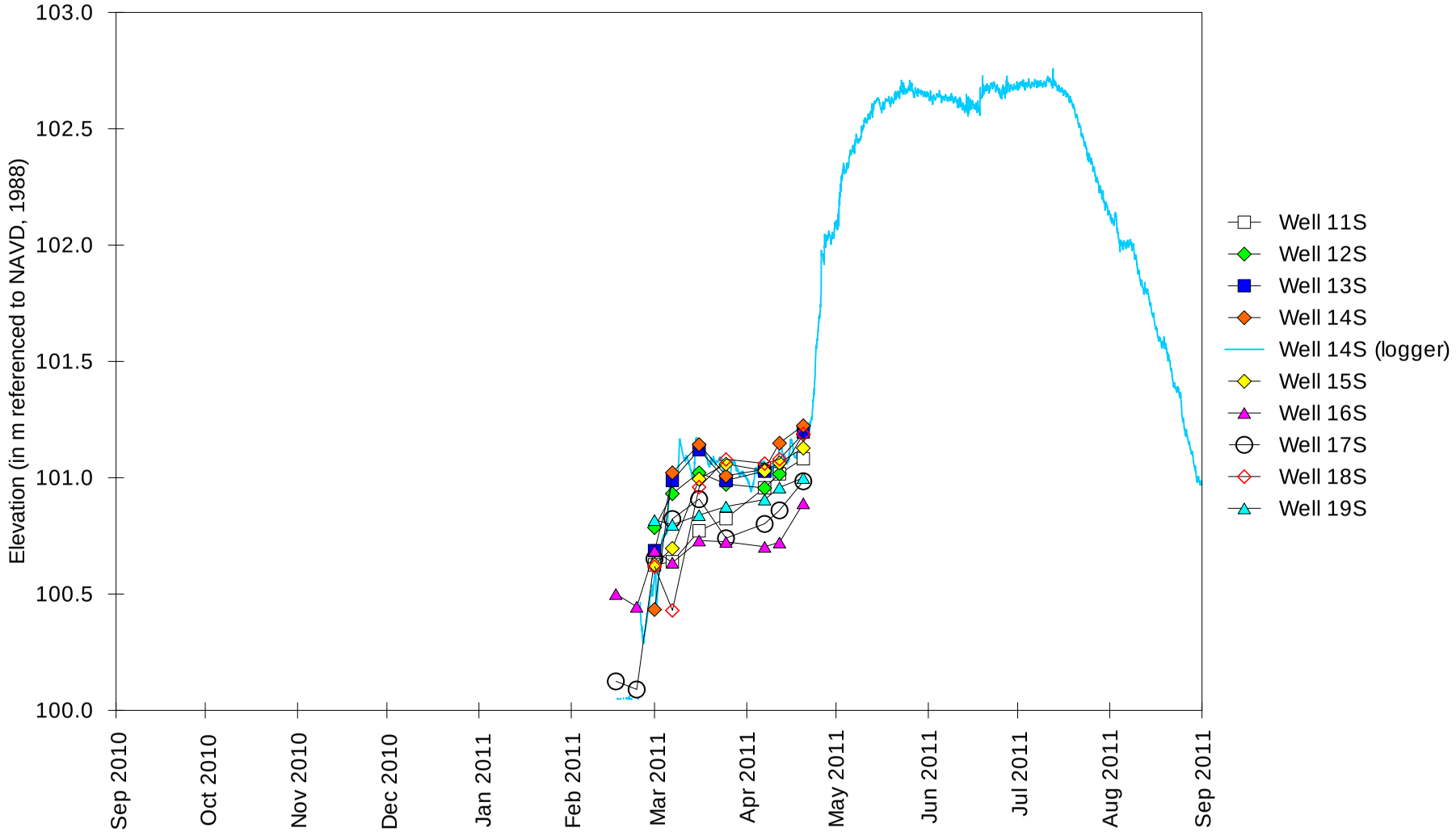
East Cape Girardeau Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth To Water
in Very Shallow (VS) Monitoring Wells



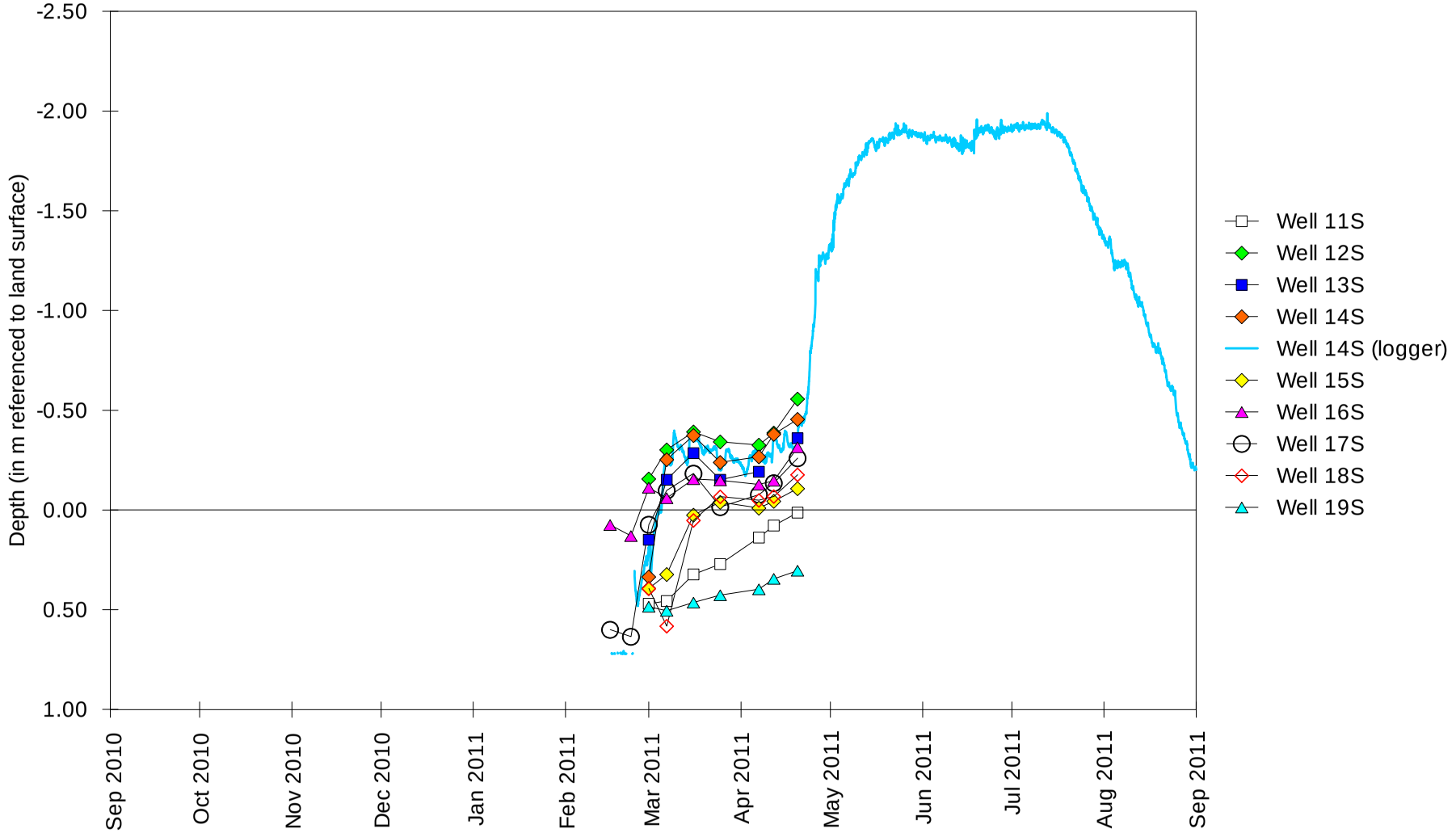
East Cape Girardeau Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations
in Shallow (S) Monitoring Wells



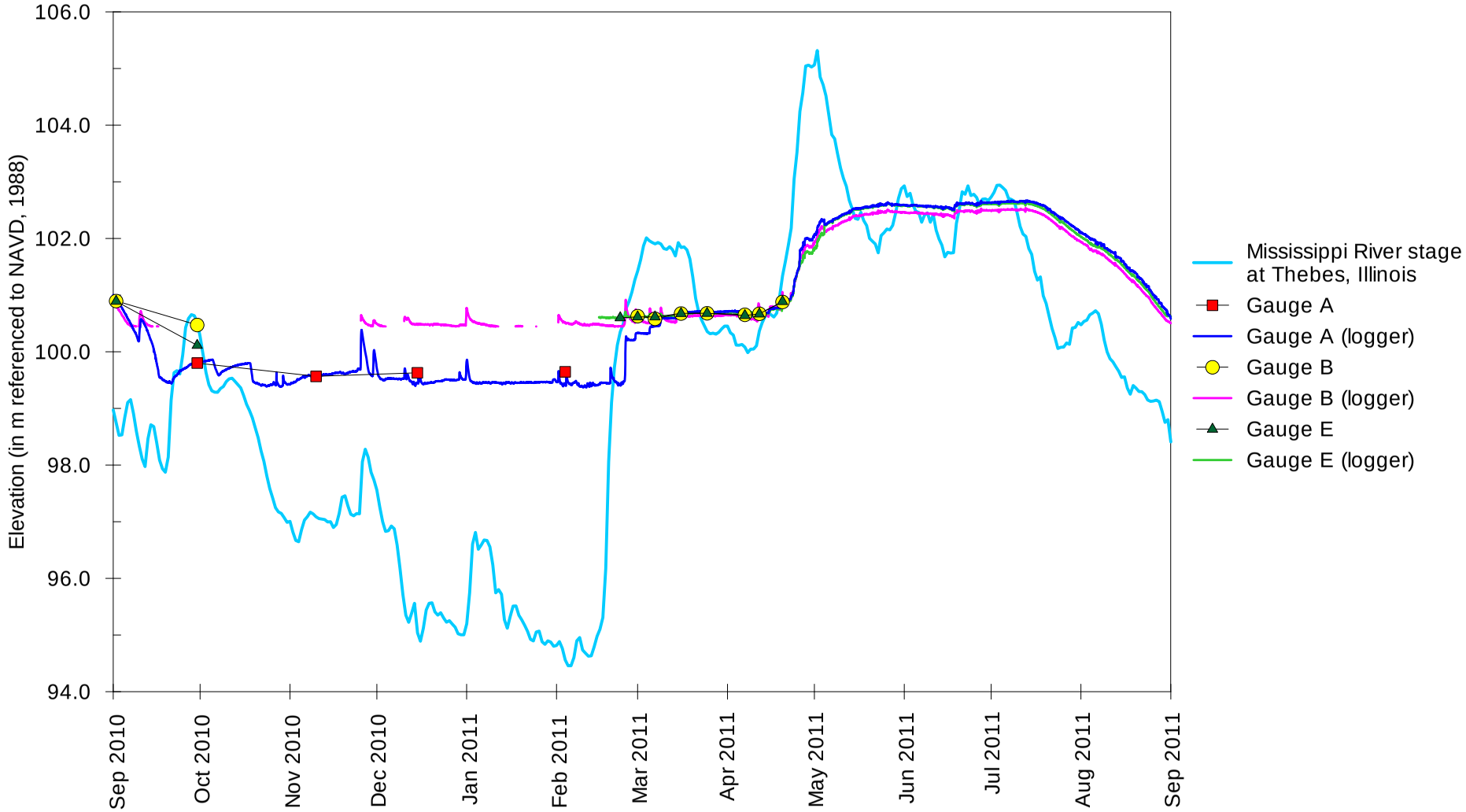
East Cape Girardeau Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water
in Shallow (S) Monitoring Wells



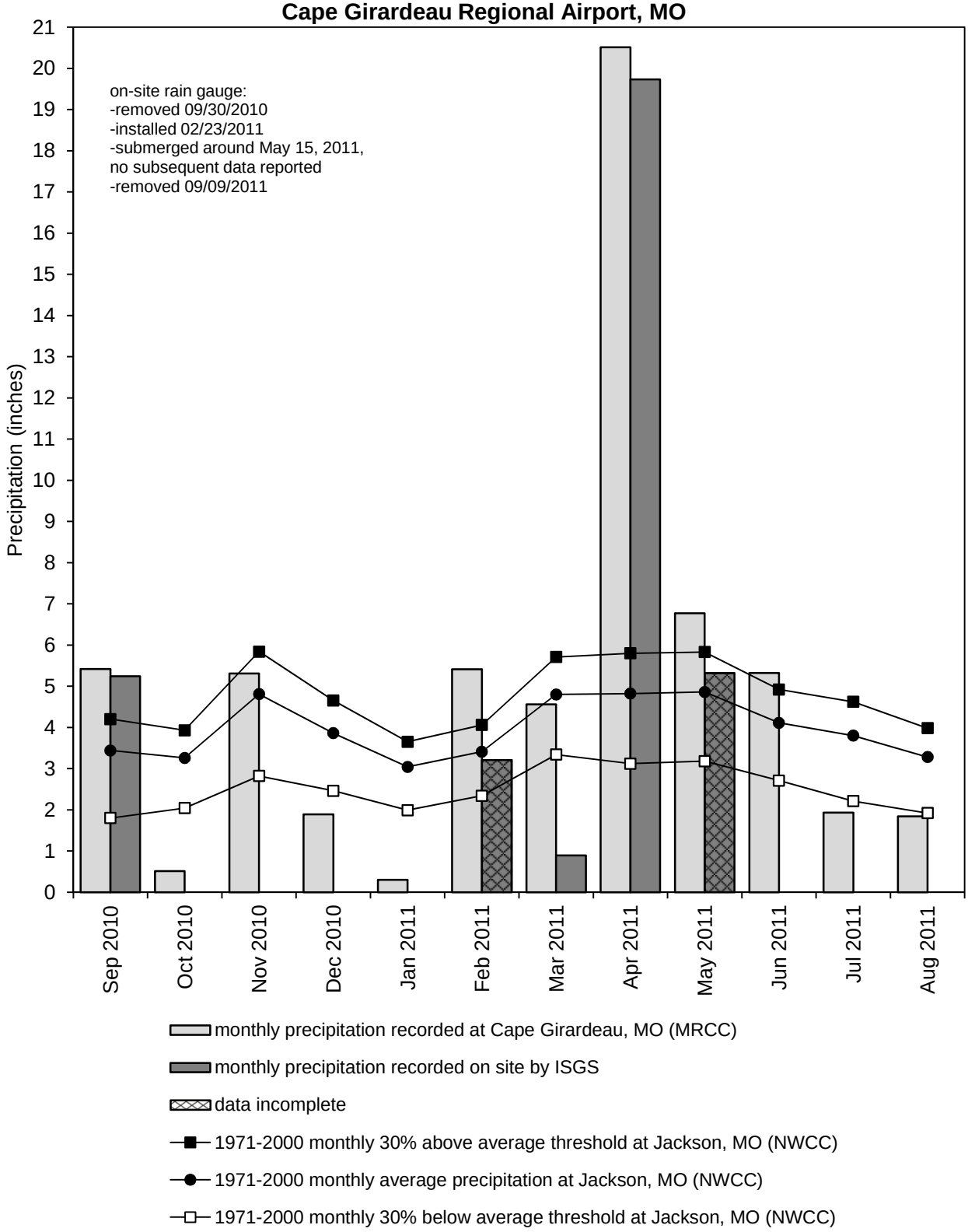
East Cape Girardeau Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Gauges



East Cape Girardeau Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at the Cape Girardeau Regional Airport, MO



Graph last updated 10/31/2011

LAWRENCE COUNTY **ISGS #82**
POTENTIAL WETLAND MITIGATION BANK
Sequence #14912
Lawrence County, near Lawrenceville, Illinois
Primary Project Manager: Steven E. Benton
Secondary Project Manager: Jessica Monson

SITE HISTORY

- January 2009: An Initial Site Evaluation report was submitted to IDOT on June 18, 2009.

- July 2009: The ISGS was tasked by IDOT to conduct a Level II hydrogeologic investigation of the site. A monitoring network was installed in October 2009.

- May 2010: The ISGS submitted a draft mitigation banking instrument to IDOT.

WETLAND HYDROLOGY CALCULATION FOR 2011

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is 23.4 ha (57.7 ac) out of a total area of 29.6 ha (73.1 ac), and the estimated area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is 15.8 ha (39.1 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 20.0 ha (49.4 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins at the Olney, Illinois, weather station is April 7, and the season lasts 209 days (MRCC 2011); 5% of the growing season is 10 days, and 12.5% of the growing season is 25 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that February 28 was the starting date of the 2011 growing season based on soil temperatures measured at the site.

- Total precipitation for the monitoring period as recorded at the Lawrenceville, Illinois, weather station was 109% of normal, and precipitation in Spring 2011 (March through May) was 139% of normal.

- In 2011, water levels measured in all of the soil-zone monitoring wells except 14S satisfied wetland hydrology criteria for greater than 5% of the growing season, and all wells except 11S, 14S, 16S, and 17S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. In addition, water levels measured in all of the soil-zone monitoring wells except 14S satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.

- Surface-water levels measured by the data logger in the agricultural field west of Beaver Pond Ditch show that inundation occurred on the site several times during the monitoring period. This was the result of flooding on the Embarras River causing water to back up Beaver Pond Ditch. In May, portions of the site at and below an elevation of 125.4 m (411.4 ft) were inundated for 11 days (May 4-May 14), long enough to satisfy

wetland hydrology criteria for more than 5% of the growing season, and portions of the site at and below 124.2 m (407.5 ft) were inundated for 25 days (April 24-May 18), long enough to satisfy wetland hydrology criteria for 12.5% of the growing season, according to the 1987 Manual. In addition, portions of the site at and below 125.2 m (410.8 ft) were inundated for 14 days (May 2-May 15), long enough to satisfy wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region Supplement.

ADDITIONAL INFORMATION

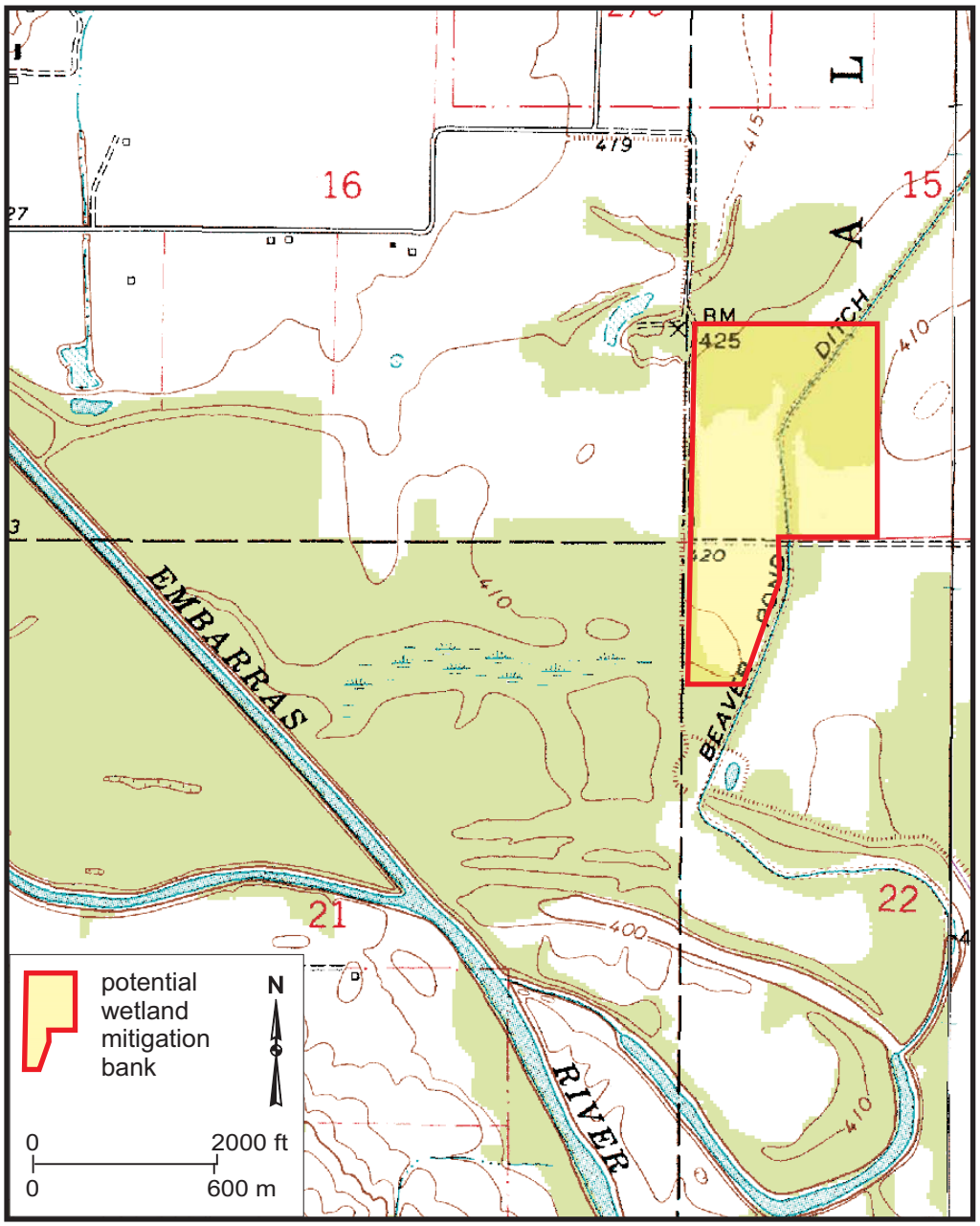
- On-site observations, and analysis of historic Embarras River stage data recorded at Lawrenceville, Illinois, reveal that water begins backing up Beaver Pond Ditch when the Embarras River at Lawrenceville reaches action stage (8.2 m [27.0 ft]), and the flapper gates on the gravity drains in the Russell-Allison levee close when the Embarras River reaches flood stage (9.1 m [30.0 ft]) at Lawrenceville.

PLANNED FUTURE ACTIVITIES

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

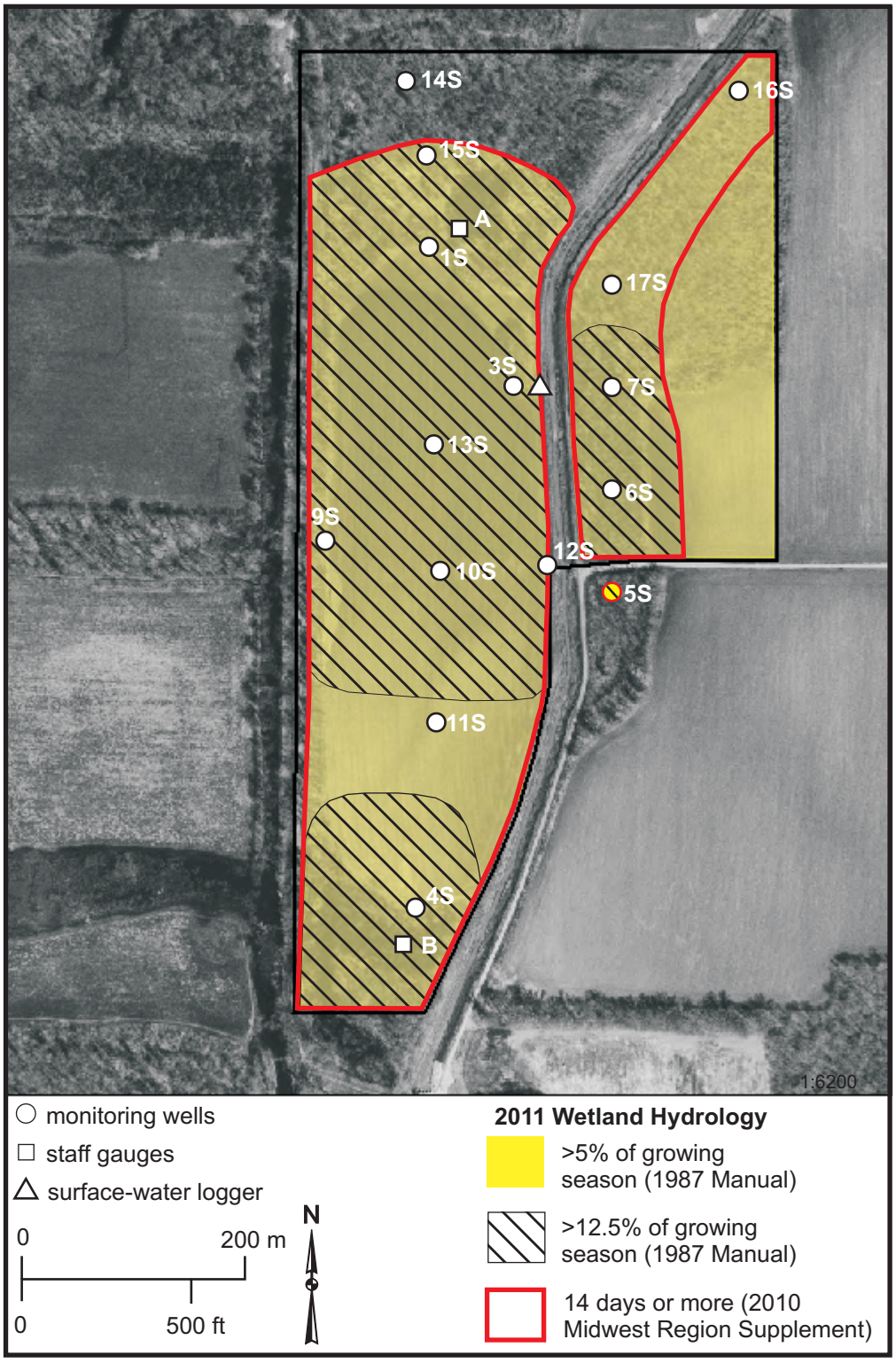
Lawrence County
Potential Wetland Mitigation Bank
General Study Area and Vicinity

from the USGS Topographic Series, Lawrence, IL, 7.5-minute Quadrangle (USGS 1977)
contour interval: 10 feet



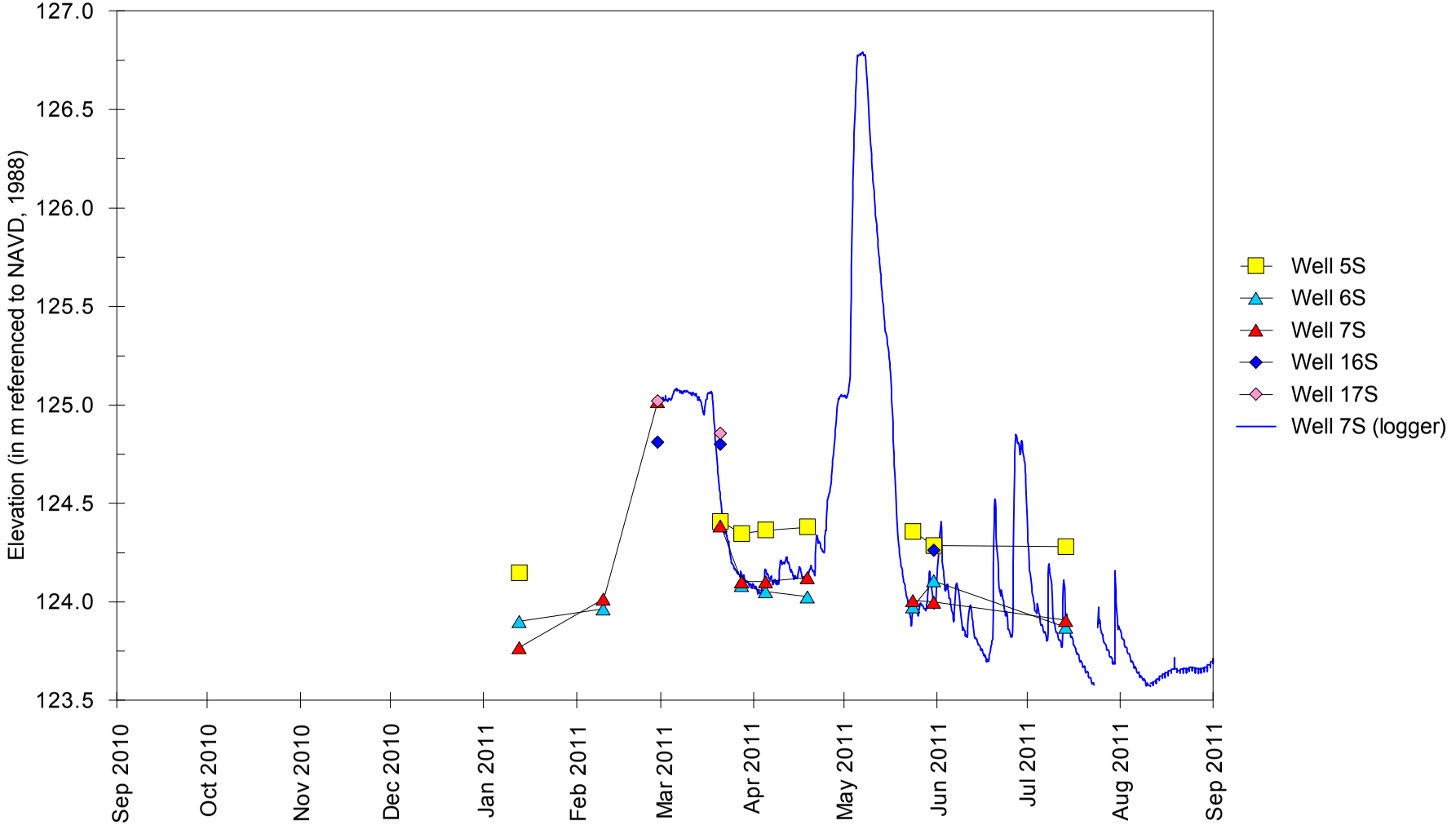
Lawrence County
Potential Wetland Mitigation Bank
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on USGS digital orthophotographs,
Lawrenceville SE and Vincennes SW
quarter quadrangles (ISGS 2009)



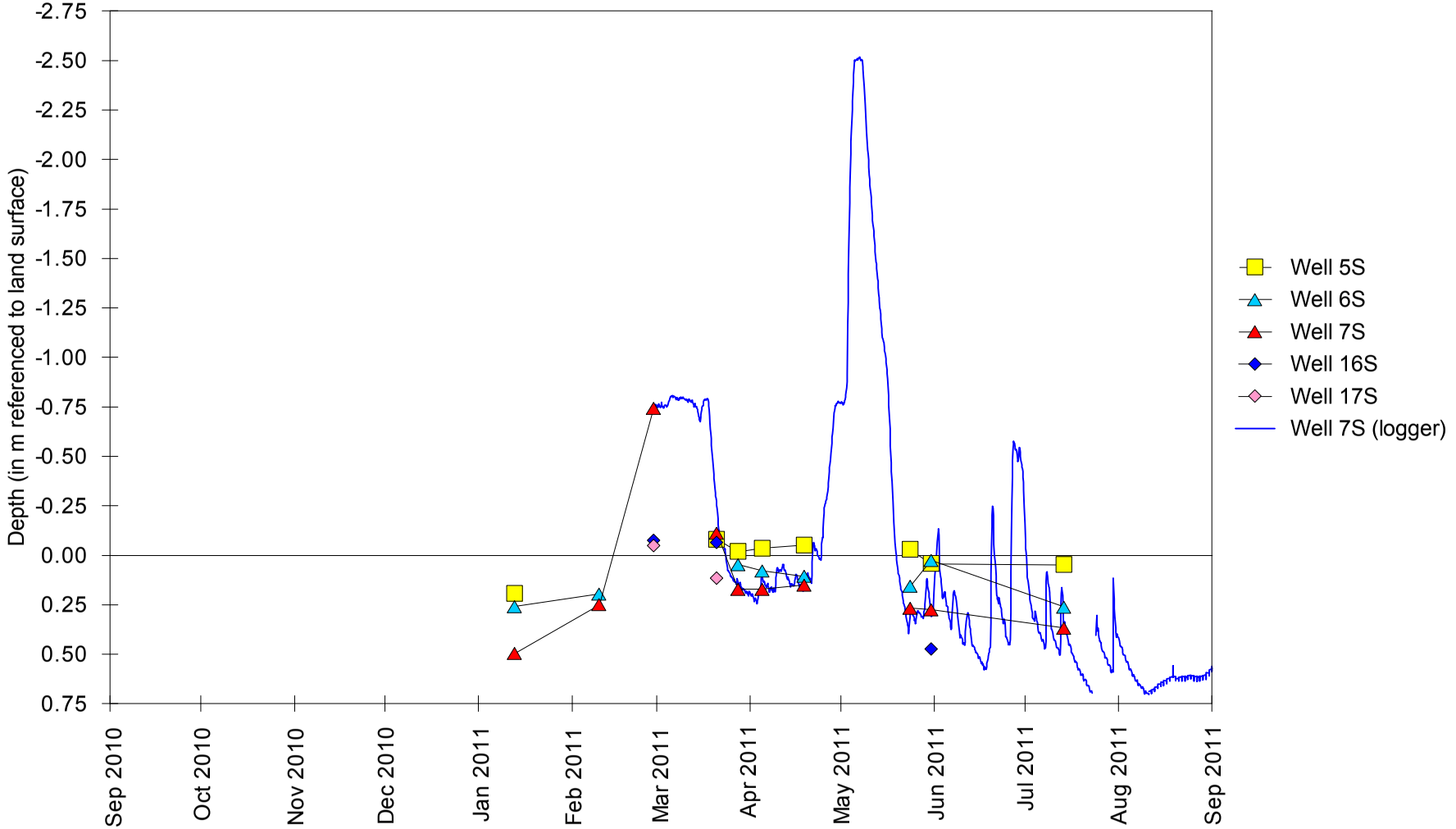
Lawrence County Potential Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells
East of Beaver Pond Ditch



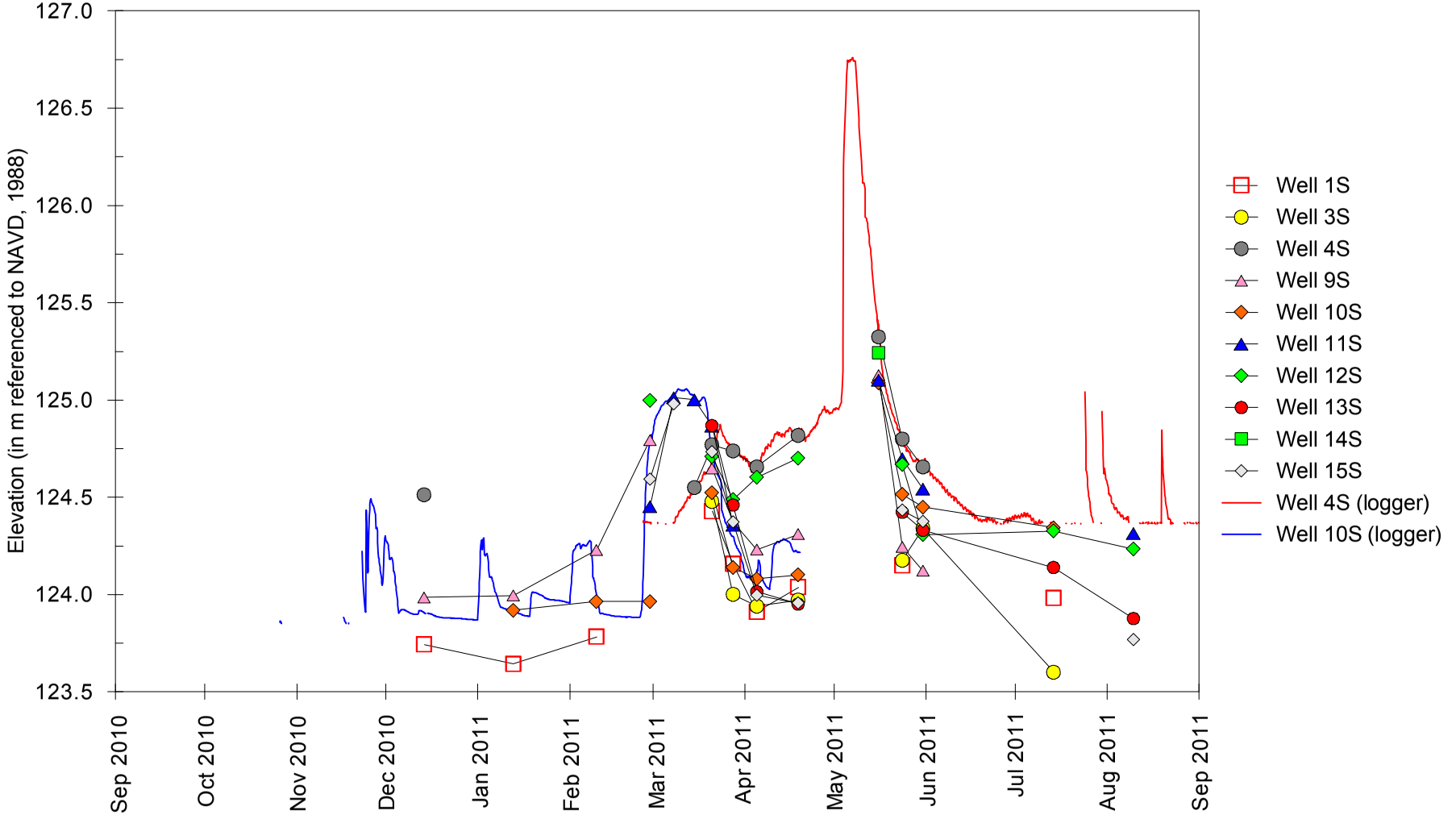
Lawrence County Potential Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells
East of Beaver Pond Ditch



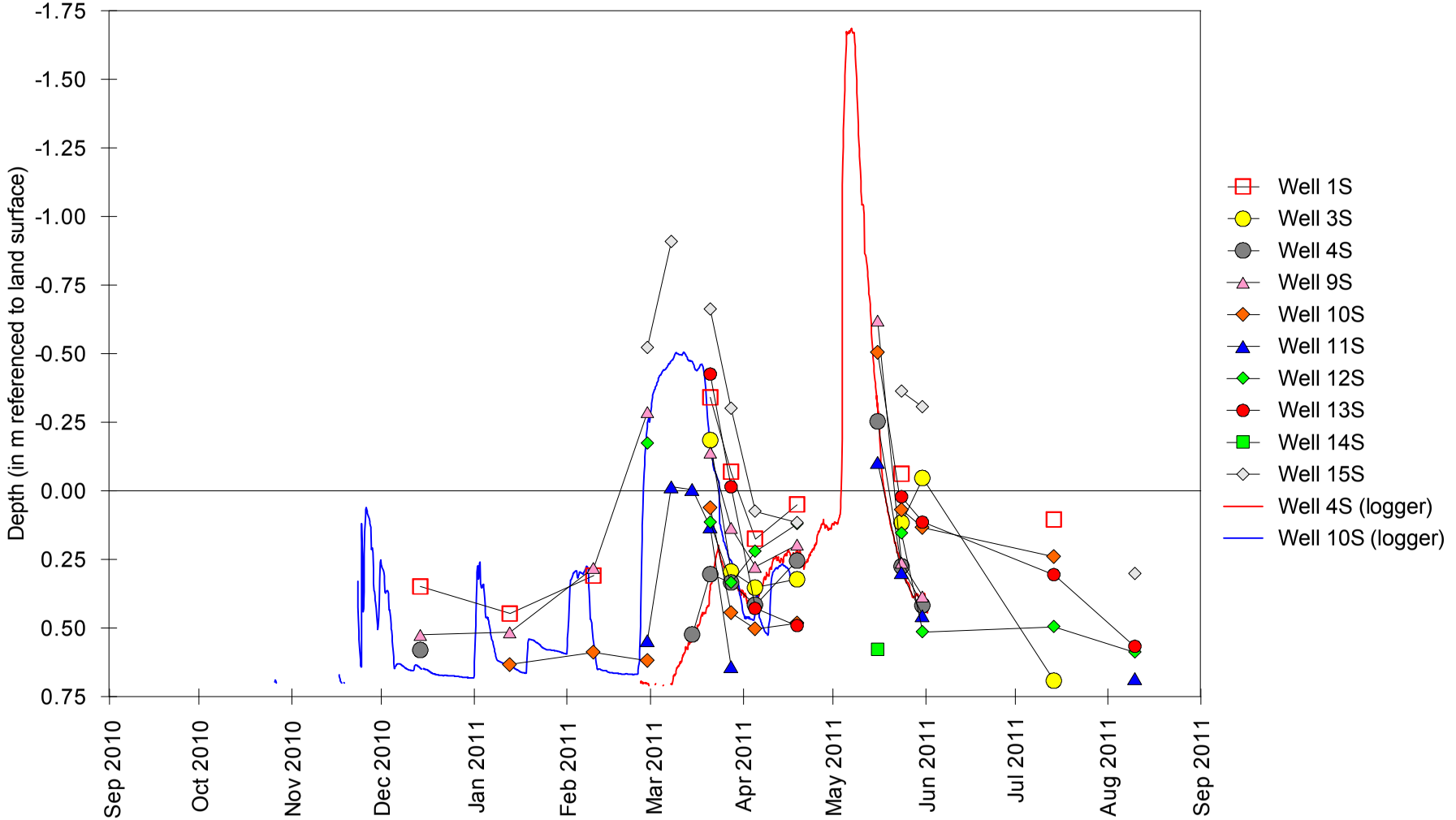
Lawrence County Potential Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells
West of Beaver Pond Ditch



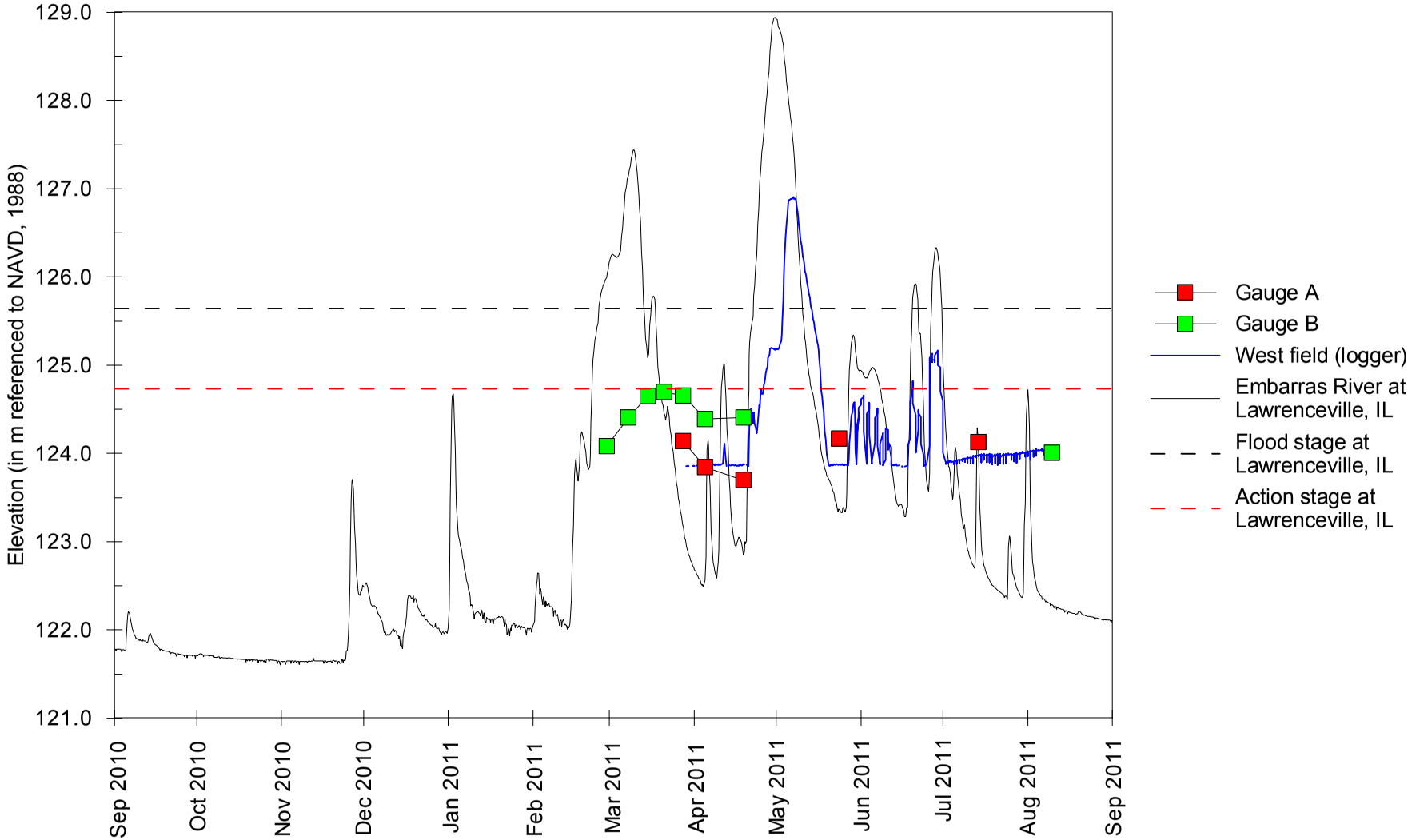
Lawrence County Potential Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

Depth to Groundwater in Monitoring Wells
West of Beaver Pond Ditch



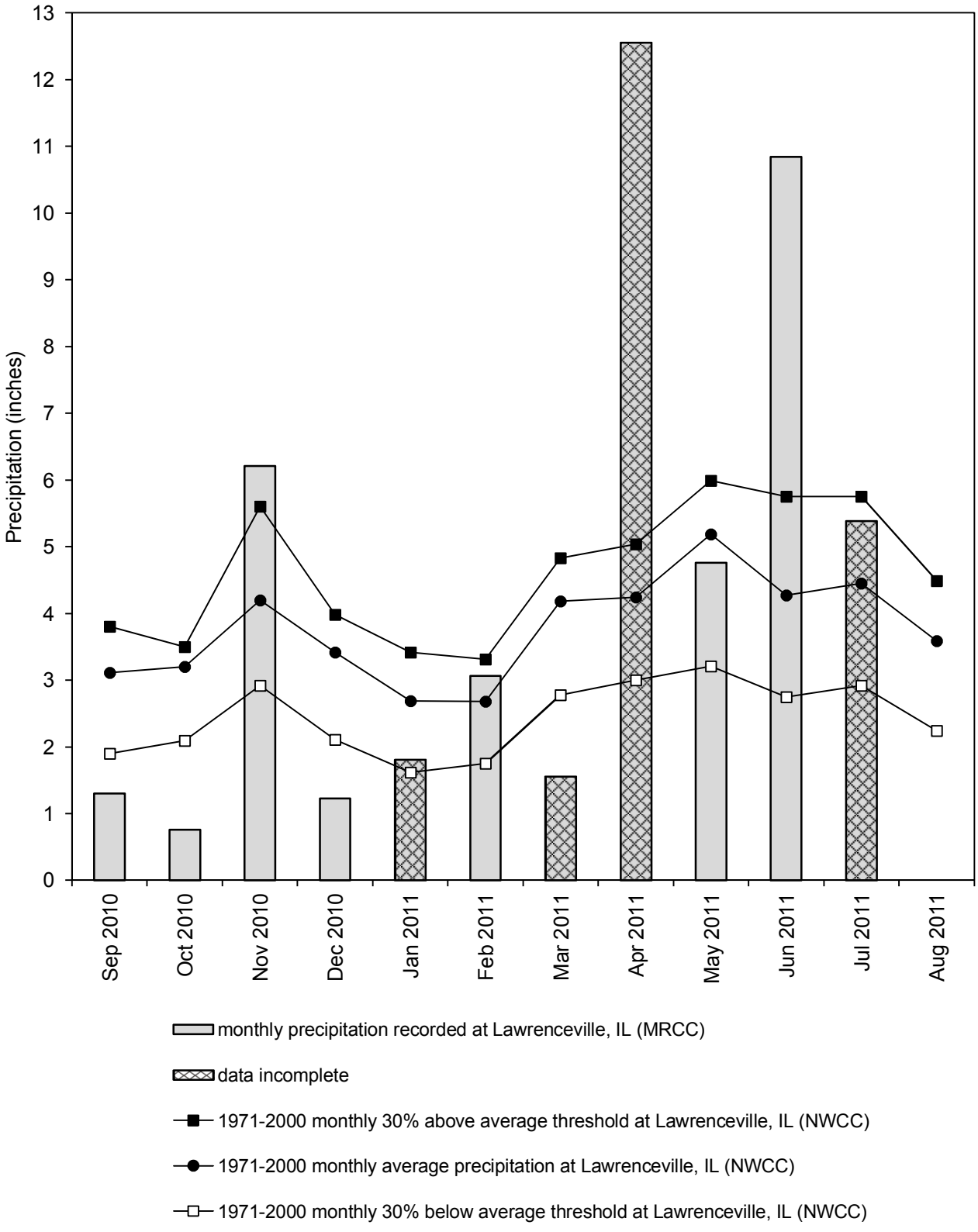
Lawrence County Potential Wetland Mitigation Bank
September 1, 2010 through August 31, 2011

Surface-Water Elevations at Staff Gauges and Data Loggers



Lawrence County Potential Wetland Mitigation Bank
September 2010 through August 2011

Total Monthly Precipitation Recorded at Lawrenceville, IL



Graph last updated 11/2/2011

NORTH CHICAGO **ISGS #84**
WETLAND MITIGATION SITE
IL 56/IL 47
FAP 326
Sequence #13406
Lake County, North Chicago, Illinois
Primary Project Manager: Keith W. Carr
Secondary Project Manager: James J. Miner

SITE HISTORY

- 1995-2002: Previous site studies occurred during this period, prior to monitoring being suspended by IDOT in Spring 2002.

- Spring 2009: IDOT re-started monitoring. ISGS installed monitoring wells in the northernmost part of the site to document restoration potential associated with tile removal in that area.

- Spring and Summer 2010: Drain tiles and invasive vegetation were removed.

- August 2011: ISGS added 14 shallow monitoring wells and one surface-water station (all equipped with data loggers) to monitor various wetlands on site. These will provide data for the 2011-2012 monitoring season and onwards.

WETLAND HYDROLOGY CALCULATION FOR 2011

Wetland acreage is not calculated for this site due to the limited scope of monitoring. In 2011, the northernmost part of the site was monitored by eight ISGS soil-zone monitoring wells previously installed to document hydrologic changes from tile removal. Only the wetland hydrology status at each of these point locations are presented.

Given the above limitation, six of the eight monitoring wells located in the north portion of the site satisfied wetland hydrology criteria for greater than 5% of the growing season and for greater than 12.5% of the growing season, according to the 1987 Manual. Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, the same six wells also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in Waukegan, Illinois, is April 14, and it lasts 195 days (MRCC 2011); 5% of the growing season is 9 days, and 12.5% of the growing season is 24 days, according to the 1987 Manual. According to methods outlined in the 2010 Midwest Region Supplement, we estimate that April 3 was the starting date of the 2011 growing season based upon on-site soil temperature readings augmented by WARM soil temperature data from the nearest Illinois Climate Network station in St.Charles, IL (ISWS 2011).

- Total precipitation for the monitoring period at the Chicago O'Hare International Airport weather station, Chicago, IL, was 129% of normal. During the March through May period of 2011, precipitation was 152% of normal, leading to wetter on-site conditions early in the growing season than are typical. Although the site became drier in June,

July precipitation was 317% of normal, maintaining high water levels on site for later in the year than is typical.

- In 2011, wells 09-01, 09-02, 09-05, 09-06, 09-07 and 09-08 satisfied wetland hydrology criteria for greater than 5% of the growing season and for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, the same wells also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. Well 09-04 did not satisfy wetland hydrology criteria and well 09-03 was destroyed just prior to the growing season and was not considered in 2011.

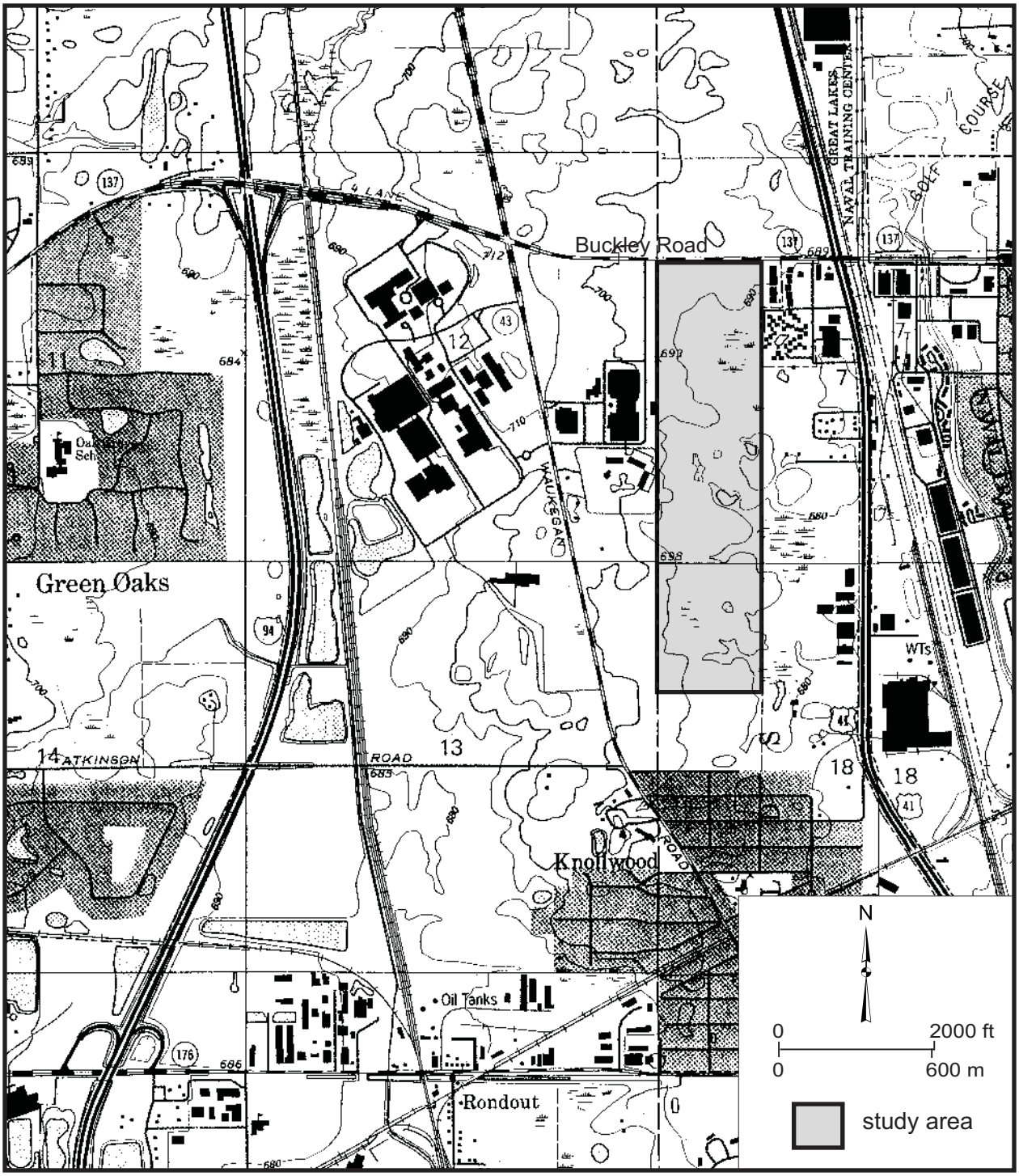
PLANNED FUTURE ACTIVITIES

- ISGS will monitor additional points on site using 14 recently installed shallow monitoring wells equipped with data loggers as well as a surface water data logger, all of which were added in August 2011. An on-site rain gauge will also be added to the site.

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

North Chicago Wetland Mitigation Site
(IL 56/IL 47, FAP 326)
General Study Area and Vicinity

from the USGS Topographic Series, Libertyville, IL (W) (USGS 1993) and Waukegan, IL (E) (USGS 1993)
7.5-minute Quadrangles



North Chicago Wetland Mitigation Site (IL 56/IL47, FAP 326)

Wells Meeting Wetland Hydrology Criteria

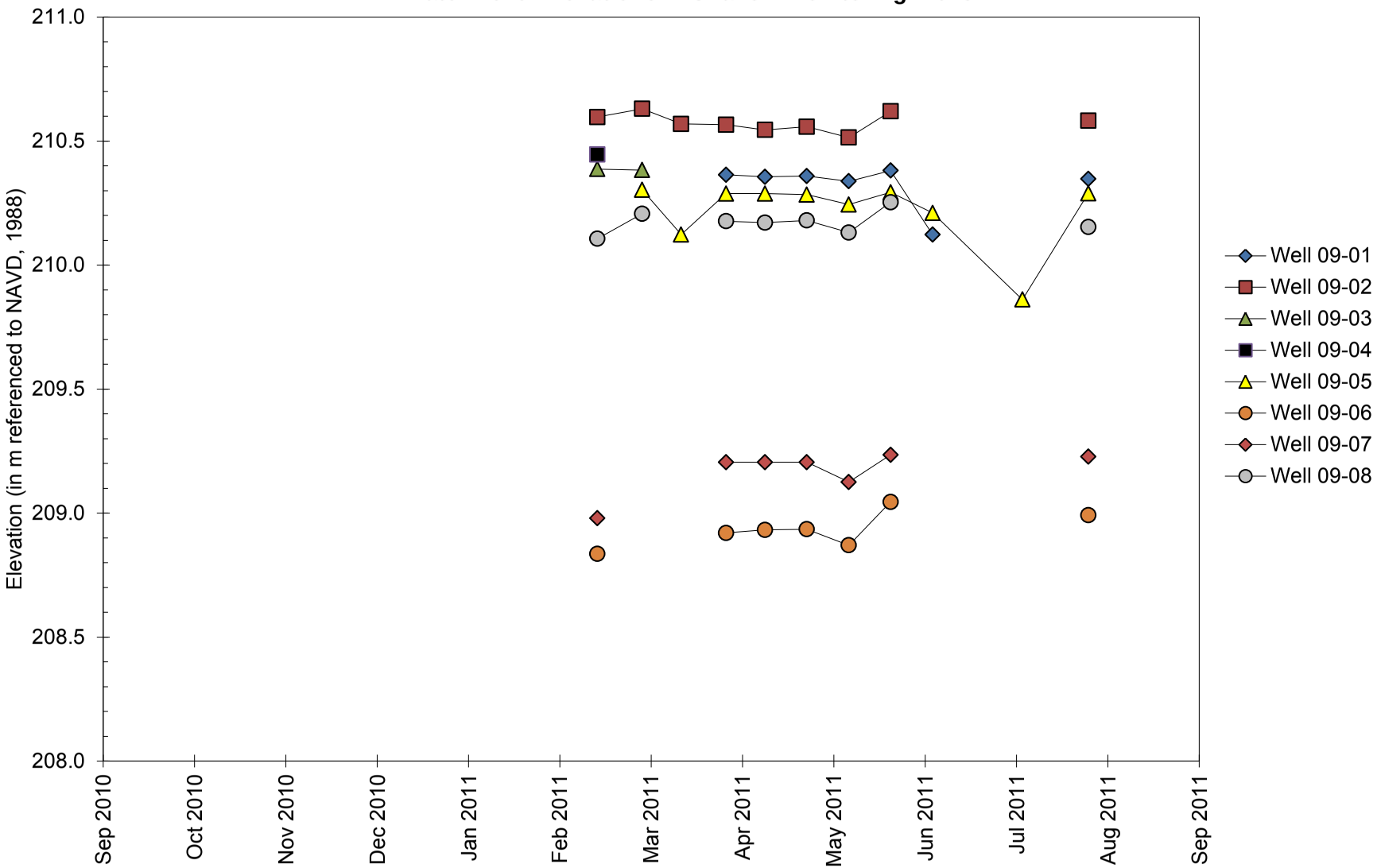
September 1, 2010 through August 31, 2011

Map based on USGS High Resolution Orthoimagery for the Chicago, IL, Urban Area (USGS 2005)

North Chicago Wetland Mitigation Site

September 1, 2010 through August 31, 2011

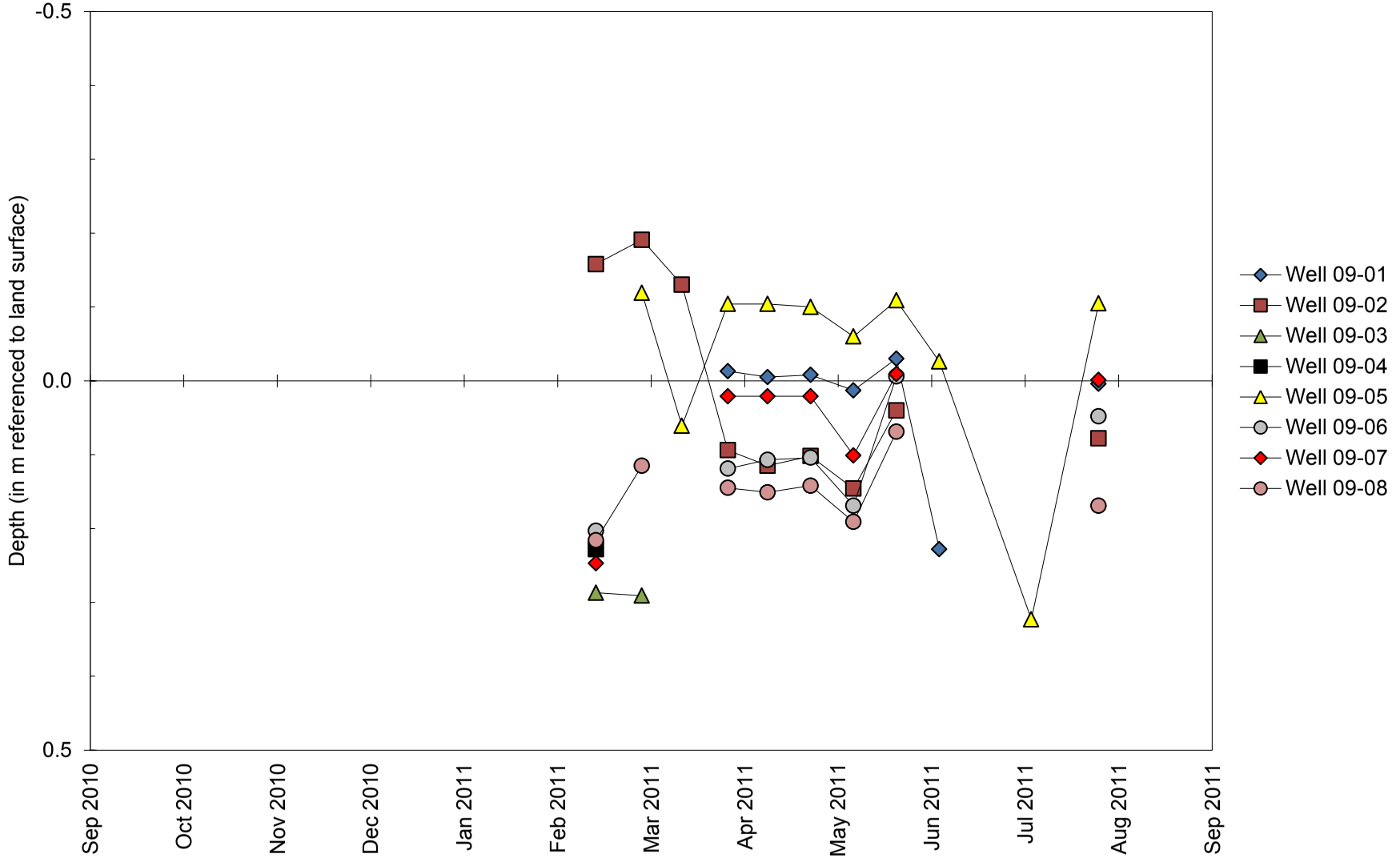
Water-Level Elevations in Shallow Monitoring Wells



North Chicago Wetland Mitigation Site

September 1, 2010 through August 31, 2011

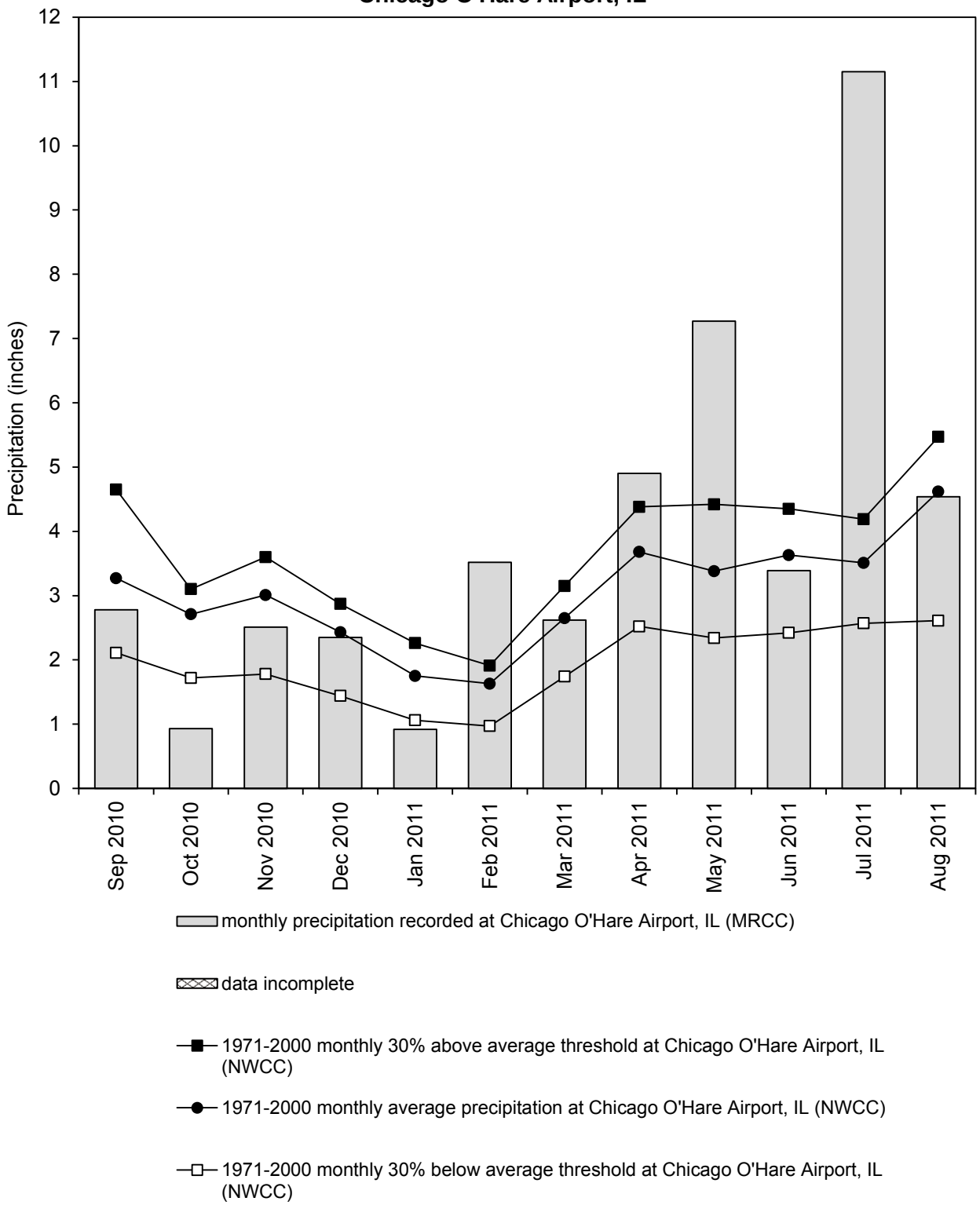
Depth to Water in Shallow Monitoring Wells



North Chicago Wetland Mitigation Site

September 2010 through August 2011

Total Monthly Precipitation Recorded at the Chicago O'Hare Airport, IL



Graph last updated 10/31/2011

COLES COUNTY **ISGS #85**
WETLAND MITIGATION SITE
TR 1000N and TR 41
Sequence #1273
Coles County, near Mattoon, Illinois
Primary Project Manager: Eric T. Plankell
Secondary Project Manager: not assigned

SITE HISTORY

- March 2008: Wetland construction was completed.
- August 2010: ISGS was tasked by IDOT to monitor the site for performance criteria outlined in the wetland compensation plan.
- March 2011: ISGS installed a monitoring network.

WETLAND HYDROLOGY CALCULATION FOR 2011

The area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2011 growing season is estimated to be 1.32 ha (3.26 ac) out of a total site area of approximately 2.08 ha (5.13 ac), and the area that satisfied wetland hydrology criteria for greater than 12.5% of the 2011 growing season is estimated to be 1.14 ha (2.82 ac). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, it is estimated that 1.29 ha (3.18 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Mattoon, Illinois, is April 8, and the season lasts 207 days (MRCC 2011). According to the 1987 Manual, 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days. According to methods outlined in the 2010 Midwest Region Supplement, it is estimated that March 17 was the starting date of the 2011 growing season based on soil temperatures measured and plant growth and development observed at the site.
- Total precipitation for the monitoring period, as recorded in Mattoon, Illinois, was 109% of normal, and 156% of normal for the period March through May 2011. In April, the on-site rain gauge recorded 10.31 in. of precipitation. This excessive rainfall resulted in elevated surface-water and groundwater levels across the site during the early part of the growing season.
- In 2011, water levels measured in monitoring wells 2S, 3S, 4S, 5S, 6S, and 7S satisfied wetland hydrology criteria for greater than 5% of the growing season, and water levels measured in wells 2S, 3S, and 5S satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. According to the 2010 Midwest Region Supplement, water levels measured in monitoring wells 2S, 3S, 5S, 6S, and 7S satisfied wetland hydrology criteria for 14 or more consecutive days of the growing season.
- Surface-water levels measured by the data logger at Gauge A indicated inundation at or above 207.02 m (679.20 ft) for greater than 5% of the growing season, and inundation

at or above 206.98 m (679.07 ft) for greater than 12.5% of the growing season, according to the 1987 Manual. Per the 2010 Midwest Region Supplement, surface-water levels measured by the data logger at Gauge A indicated inundation at or above 207.00 m (679.13 ft) for 14 or more consecutive days of the growing season.

PLANNED FUTURE ACTIVITIES

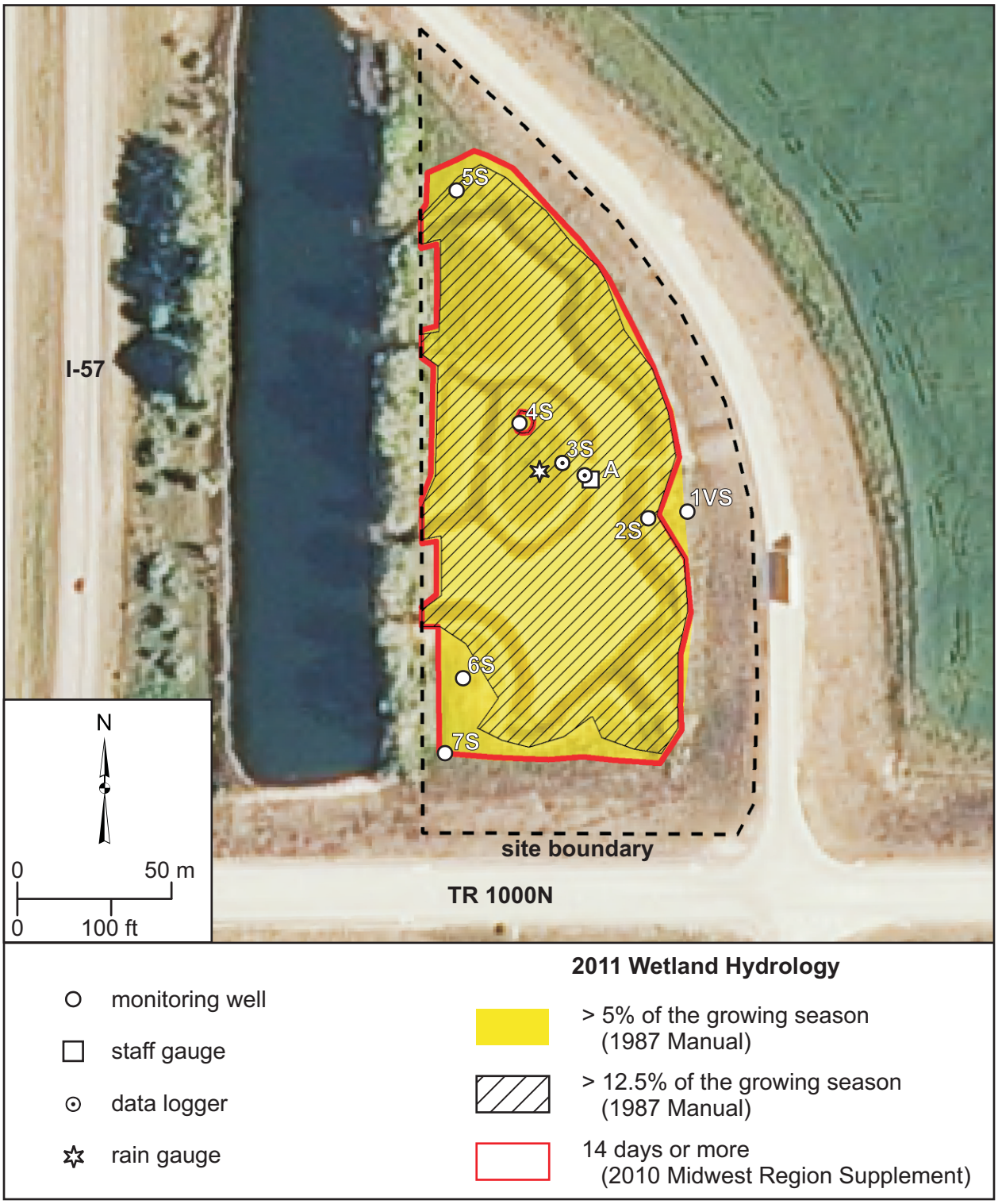
- Monitoring will continue at the site until no longer required by IDOT.

Coles County Wetland Mitigation Site
(TR 1000N and TR 41)
General Study Area and Vicinity

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Coles County, Illinois, taken September 29, 2011 (USDA 2011)

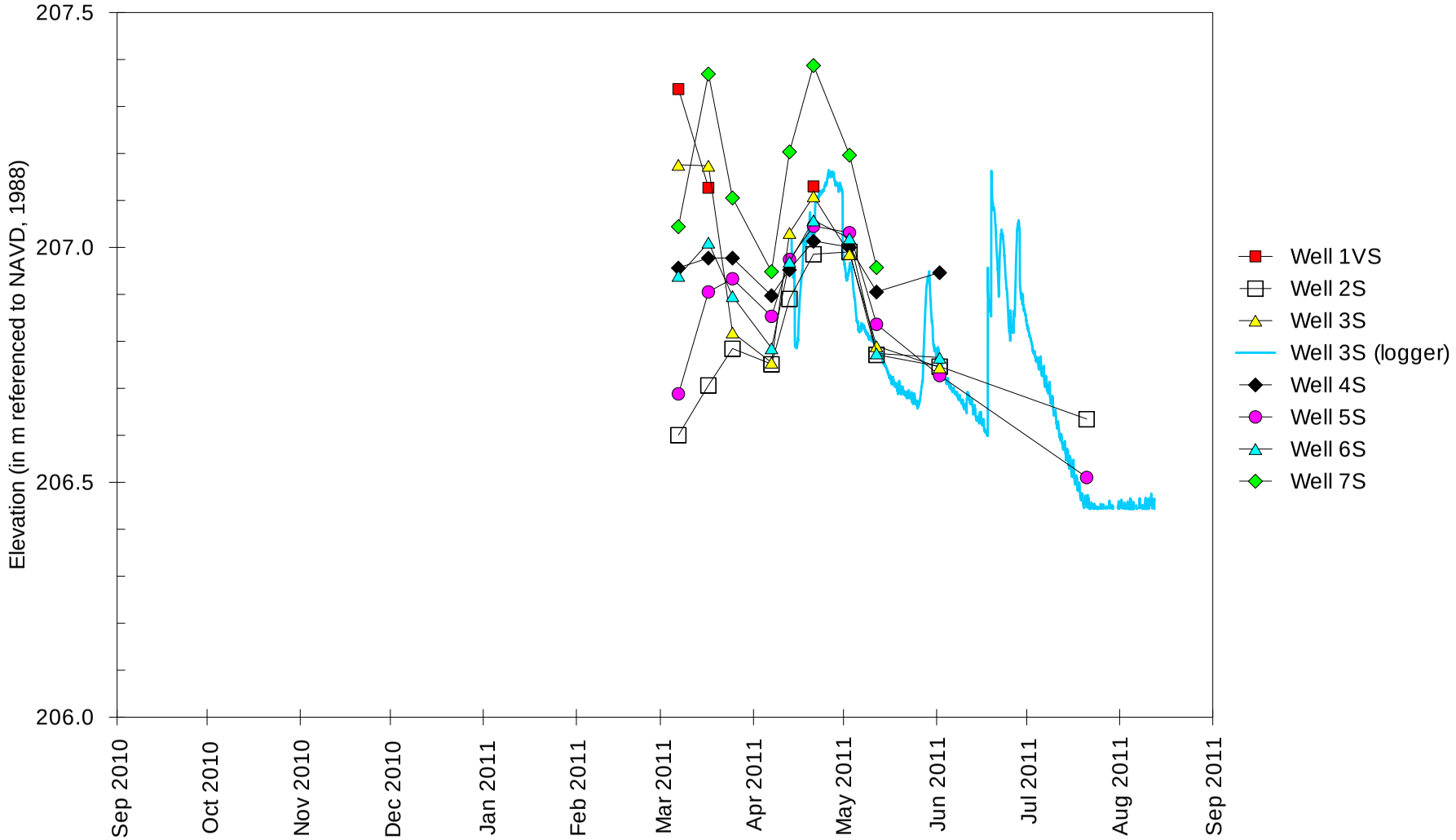
Coles County Wetland Mitigation Site
(TR 1000N and TR 41)
Estimated Areal Extent of 2011 Wetland Hydrology
September 1, 2010 through August 31, 2011

Map based on National Agricultural Imagery Program (NAIP) digital orthophotograph, Coles County, Illinois, taken September 29, 2011 (USDA 2011)



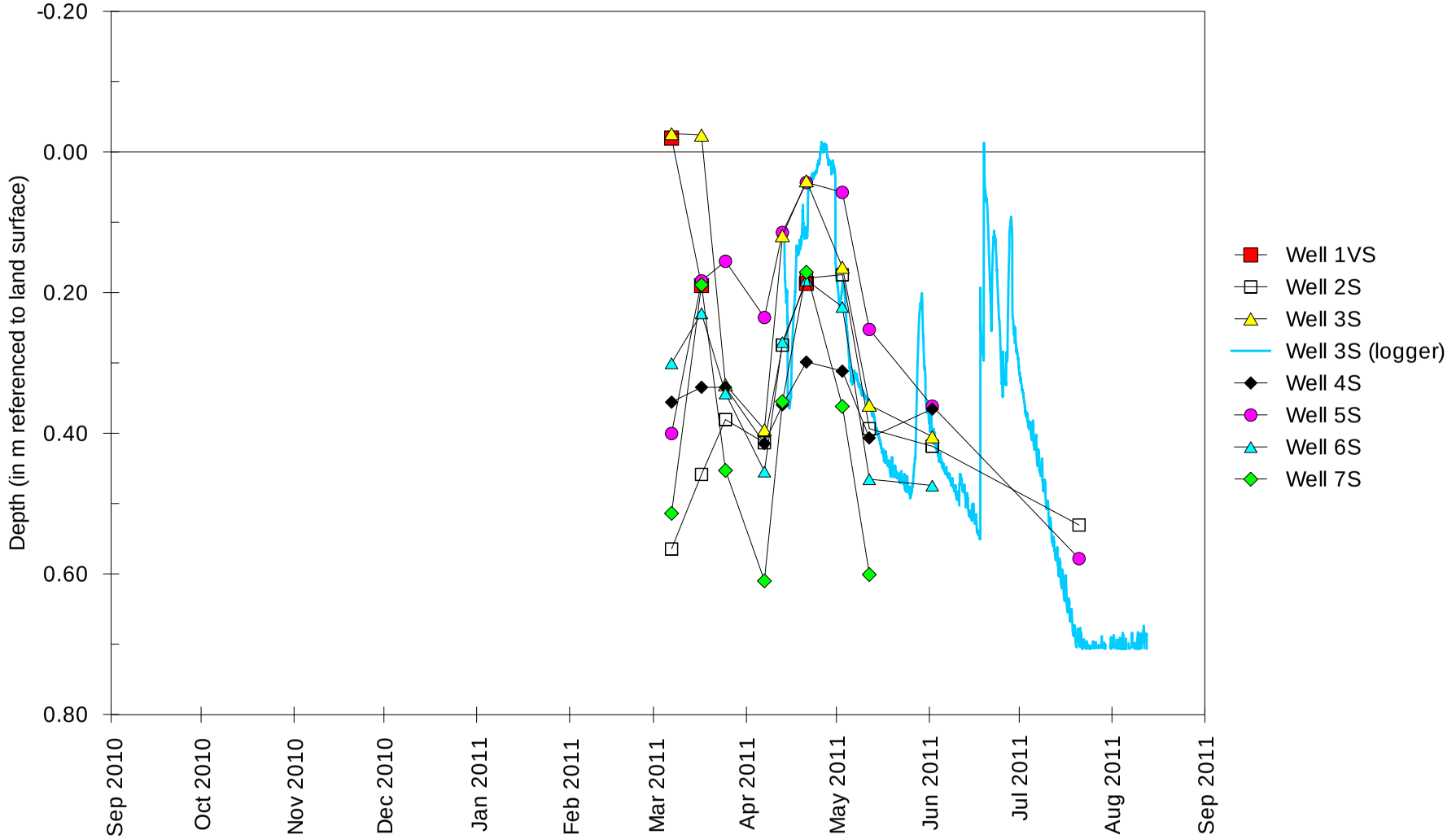
Coles County Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations in Monitoring Wells



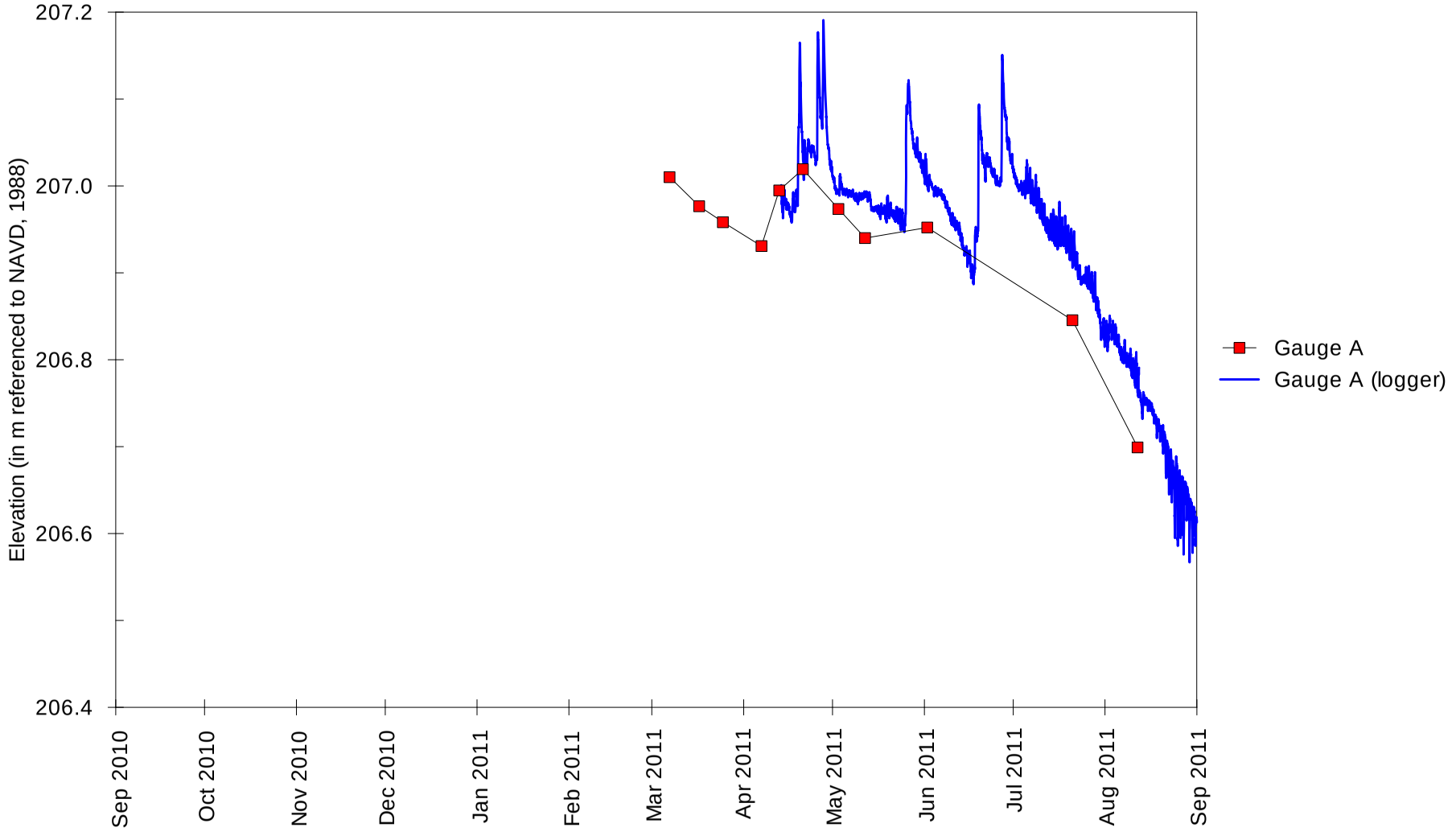
Coles County Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Depth to Water in Monitoring Wells



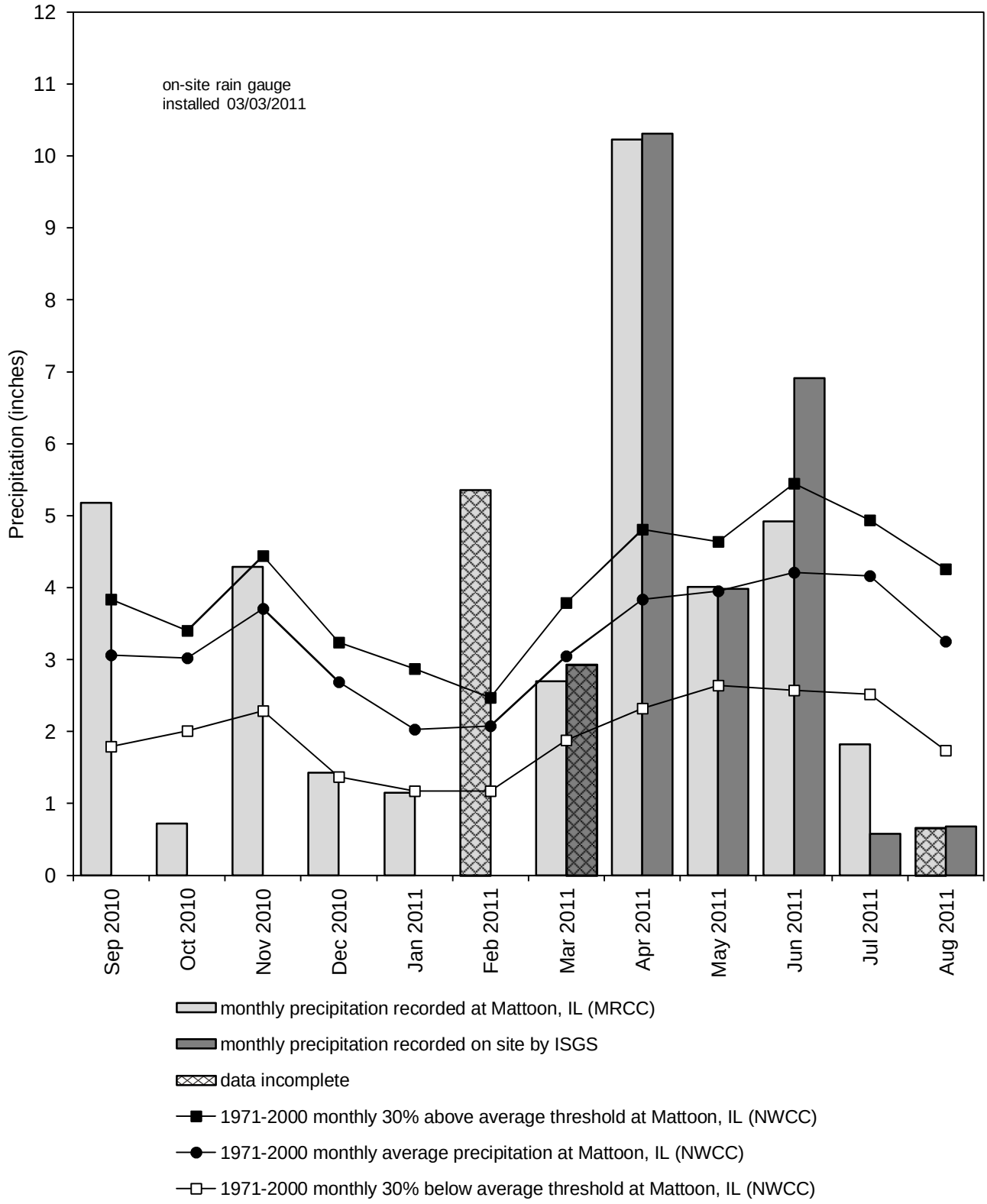
Coles County Wetland Mitigation Site
September 1, 2010 through August 31, 2011

Water-Level Elevations at Surface-Water Gauges



Coles County Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded on Site and at Mattoon, IL



Graph last updated 10/31/2011

SWAN ROAD **ISGS #86**
WETLAND MITIGATION SITE
TR 222
Sequence #12315
Perry County, near Tamaroa, Illinois
Primary Project Manager: Melinda C. Campbell
Secondary Project Manager: Jessica Monson

SITE HISTORY

- April 2011: ISGS was tasked to monitor wetland hydrology at the site.
- May 2011: Water-level monitoring was initiated.

WETLAND HYDROLOGY CALCULATION FOR 2011

We estimate that 0.2 ha (0.6 ac) out of a total site area of approximately 0.4 ha (1.1 ac) satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2011. Wetland hydrology criteria were not satisfied for greater than 12.5% of the growing season (Environmental Laboratory 1987). Using the 2010 Midwest Region Supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 0.2 ha (0.6 ac) satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- The median date that the growing season begins in nearby Du Quoin, Illinois, is April 5, and lasts 207 days (MRCC 2011); 5% of the growing season is 10 days, and 12.5% of the growing season is 26 days, according to the 1987 Manual. Monitoring of the site began after the start of the growing season, therefore visual observations of vegetation development and manual soil temperatures were not made to help define the start of the growing season, as per the 2010 Midwest Region Supplement.
- Total precipitation recorded in Du Quoin, Illinois, for the monitoring period was 137% of normal, and was 218% of normal for the period March through May 2011.
- In 2011, wells 1S, 3S, and 4S satisfied wetland hydrology criteria for greater than 5% of the growing season, while none of the wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season, according to the 1987 Manual. Further, according to the 2010 Midwest Region Supplement, wells 1S, 3S, and 4S satisfied wetland hydrology for 14 or more consecutive days during the growing season.
- Data from the loggers in wells 1S and 2S indicated that Little Beaucoup Creek flooded the site five times during the portion of the 2011 growing season after monitoring began in May. However, the duration of inundation from each of these floods was less than 5% of the growing season, according to the 1987 Manual.
- Because water levels in the early part of the growing season were not measured, additional areas may have satisfied wetland hydrology criteria.

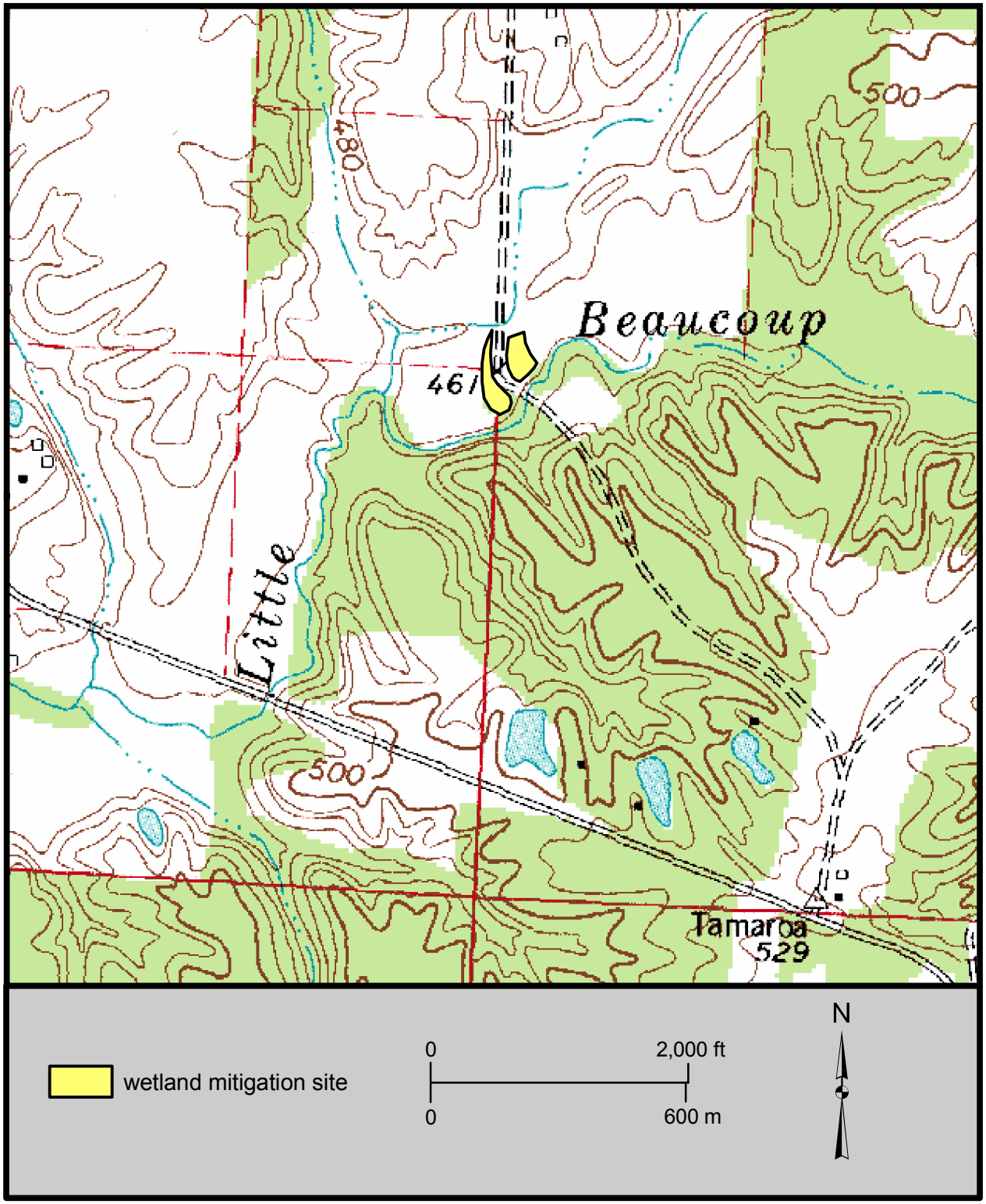
PLANNED FUTURE ACTIVITIES

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

Swan Road Wetland Mitigation Site

General Study Area and Vicinity

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

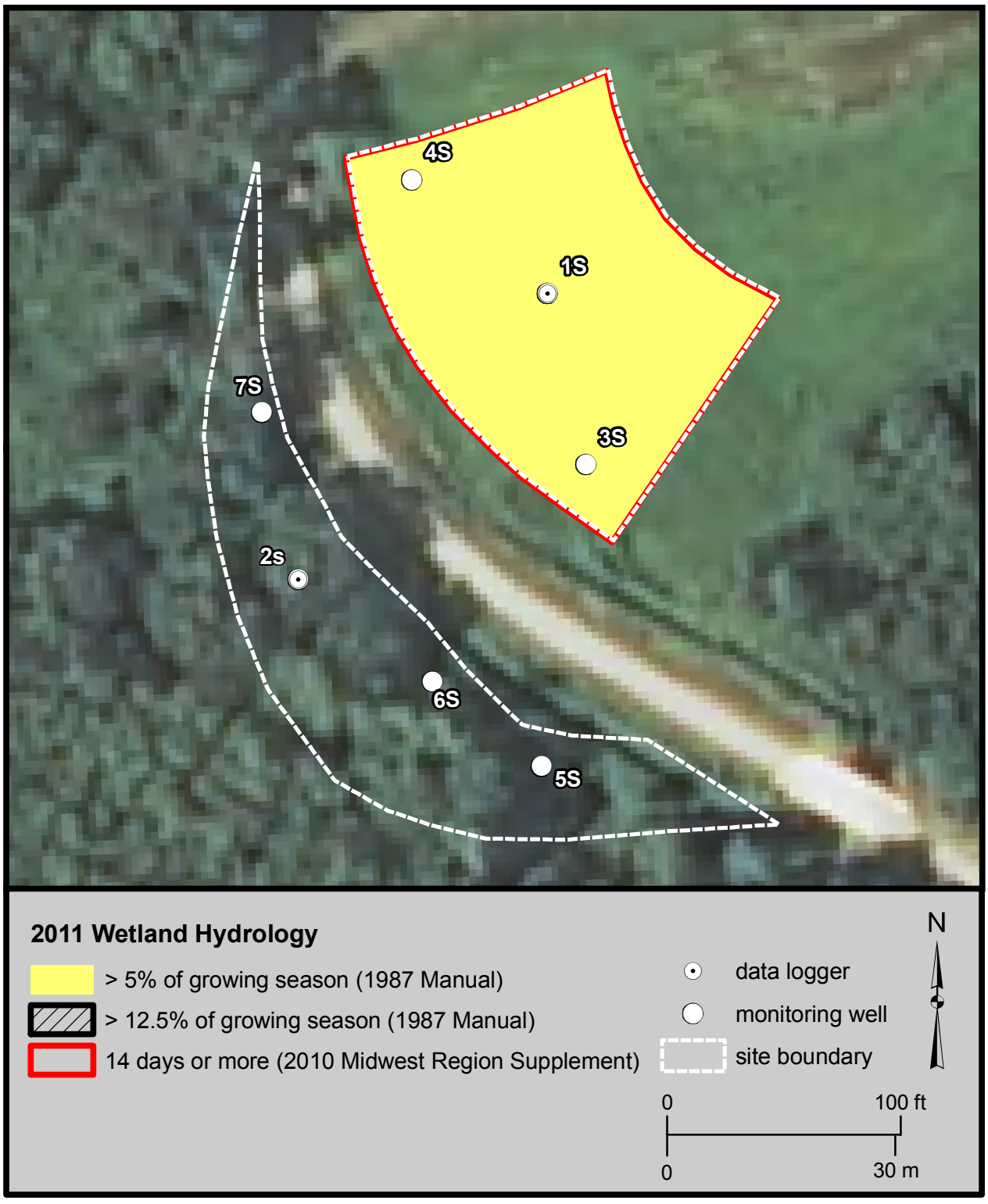


Swan Road Wetland Mitigation Site

Estimated Areal Extent of 2011 Wetland Hydrology

September 1, 2010 through August 31, 2011

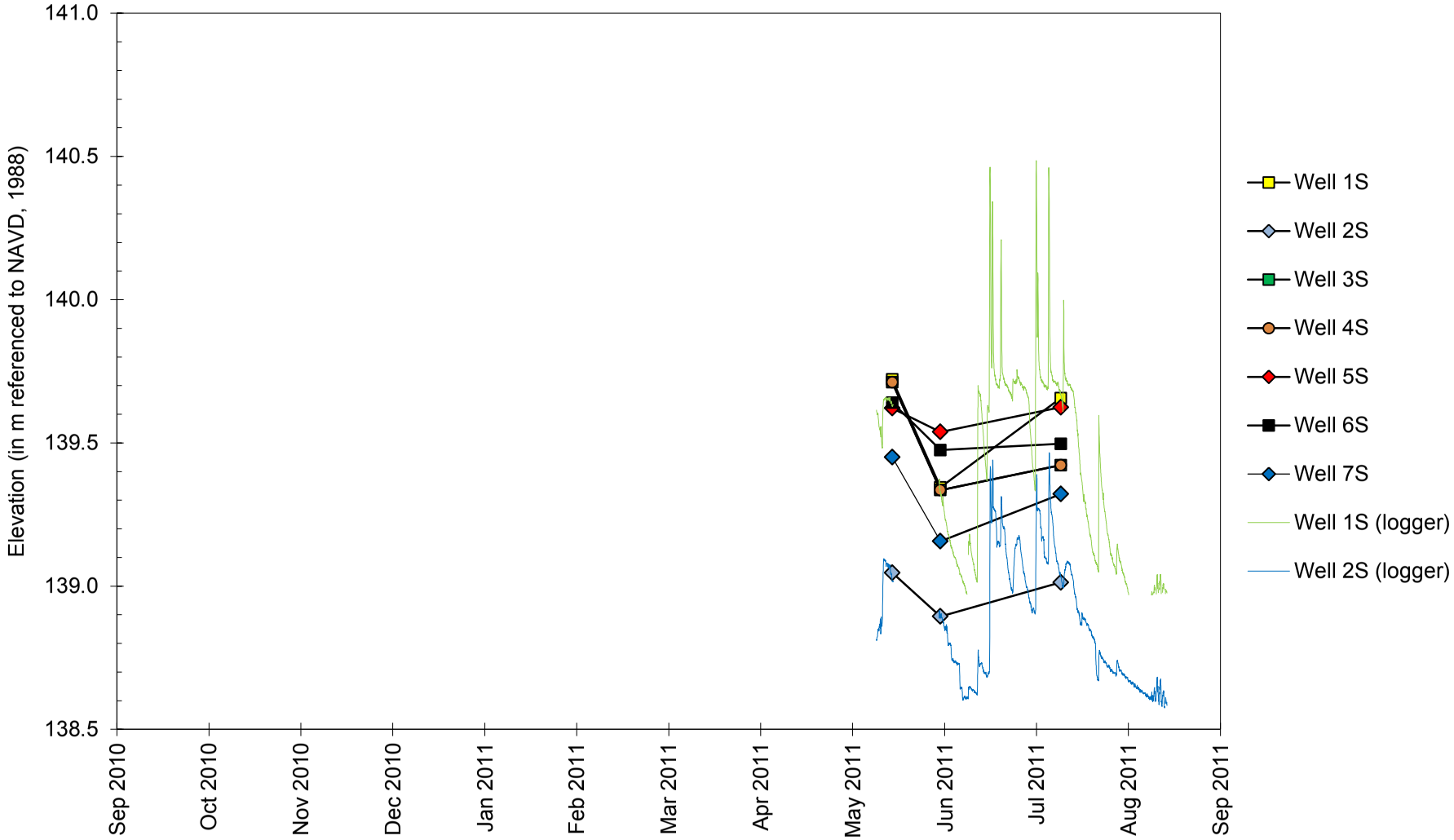
Map based on National Agricultural Imagery Program (NAIP)
digital orthophotograph, (Perry County, Illinois), taken 2011 (USDA-FSA 2011)



Swan Road Wetland Mitigation Site

September 1, 2010 through August 31, 2011

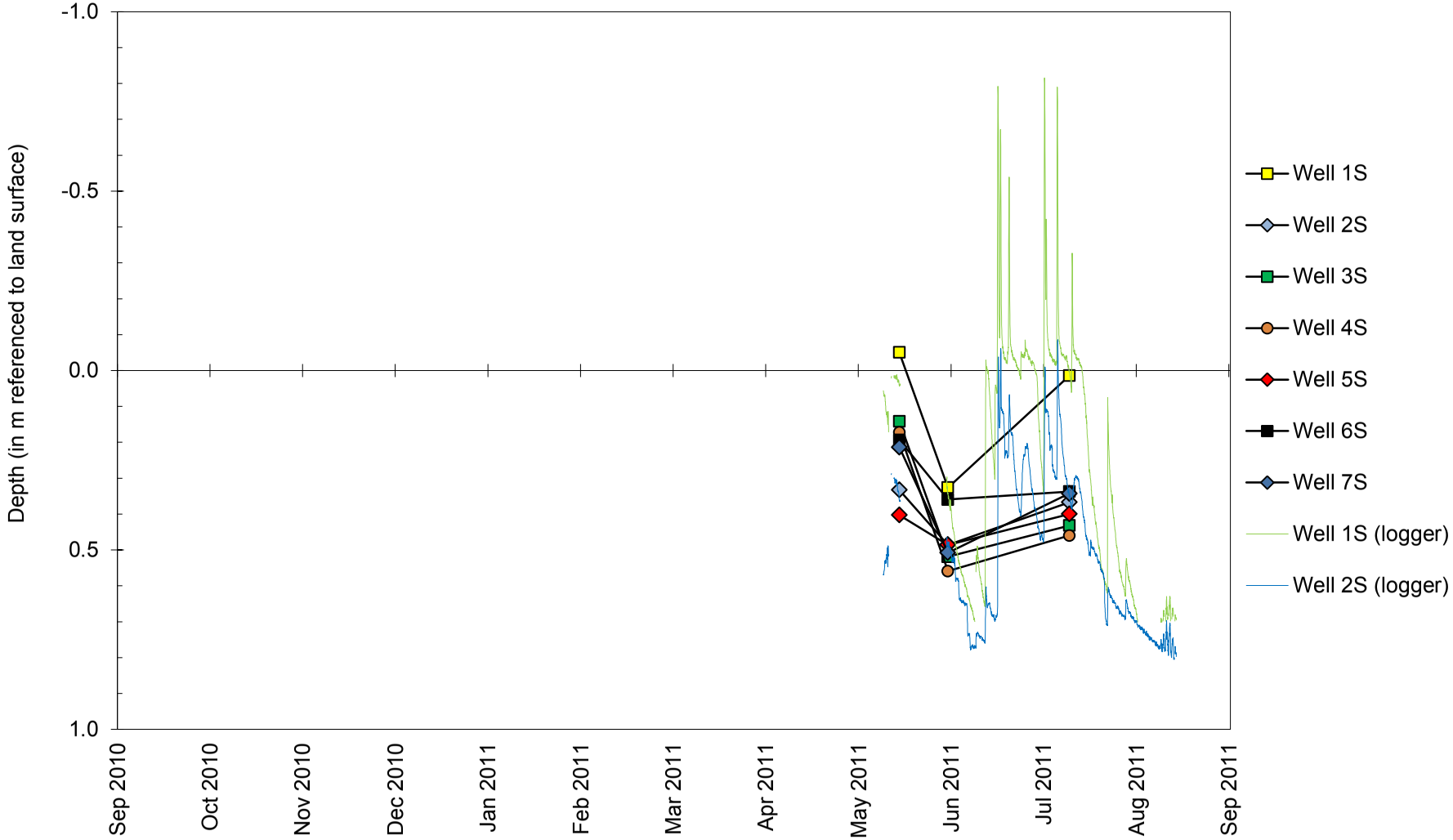
Water-Level Elevation
in Monitoring Wells and Data Loggers



Swan Road Wetland Mitigation Site

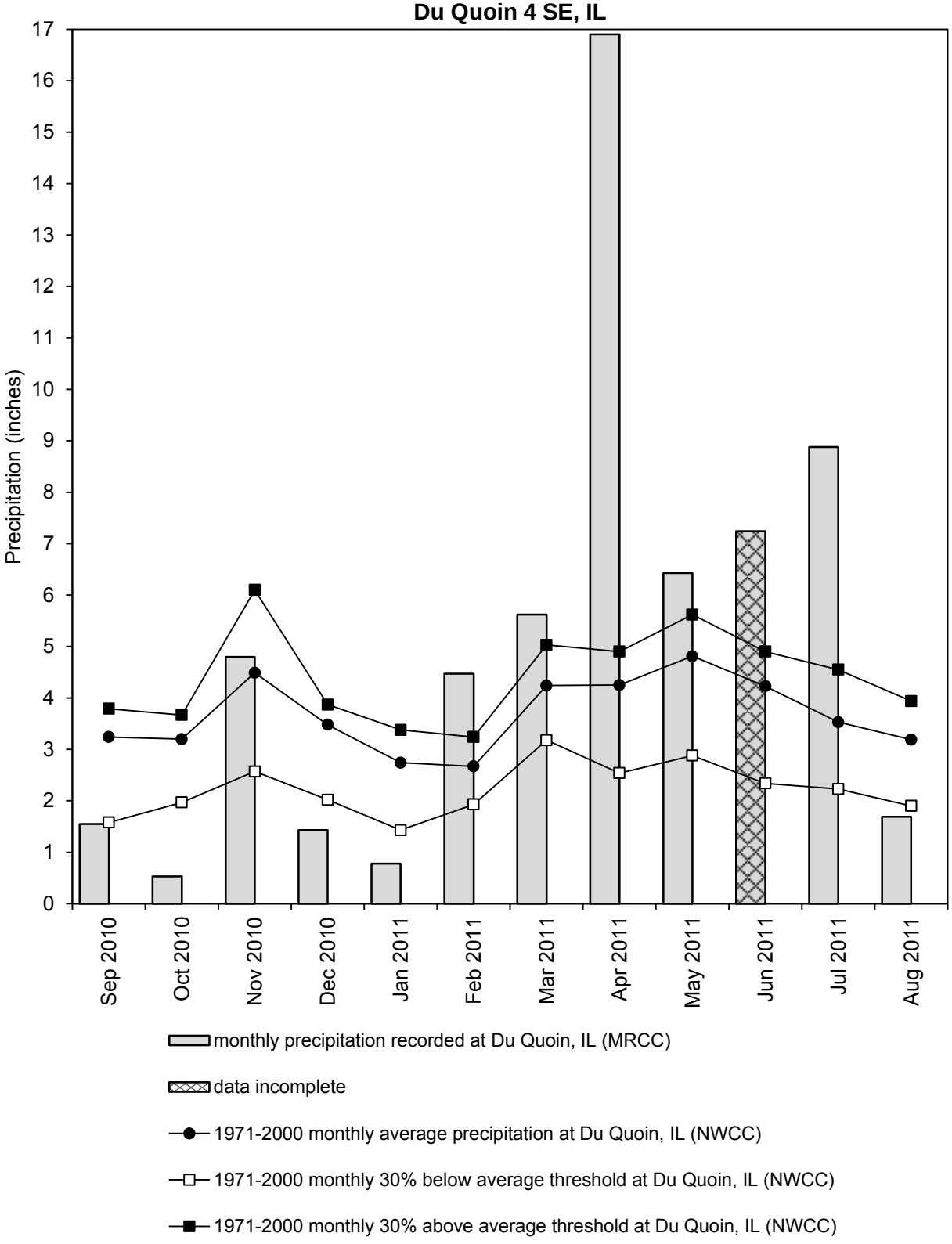
September 1, 2010 through August 31, 2011

Depth to Water in Monitering Wells



Swan Road Wetland Mitigation Site
September 2010 through August 2011

Total Monthly Precipitation Recorded at Du Quoin 4 SE, IL



Graph last updated 10/31/2011