



**MORRIS, ILLINOIS RIVER
WETLAND BANK SITE**

ISGS #49

Sequence #1306

Grundy County, near Morris, Illinois

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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.
- August 1999: ISGS began monitoring ground- and surface-water levels at the site.
- April 2003: During this month, drainage tile removal activities began in the east field, an area also known as the “spider” field. A second segment of tile was removed from this field during December of 2003. This concluded tile removal work at the bank site.
- Spring 2004: Trees were planted over large areas of the site. These areas, generally within soil units mapped by the NRCS and INHS as hydric, are fields slated for wetland restoration in the IDOT banking instrument.
- Spring 2006: Site instrumentation was altered in this year, as monitoring was discontinued at a total of 14 soil-zone wells in “mesic” areas. These areas have never met wetland hydrology criteria and are not slated for wetland preservation, enhancement, or restoration. Further, six soil-zone wells were added in mapped hydric-soil areas. Data collection was also discontinued at 11 deeper monitoring wells which were uninvolved in the monitoring of wetland hydrology at the site.

WETLAND HYDROLOGY CALCULATION FOR 2006

We estimate that the total area of the site that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2006 was 0.85 ha (2.1 ac) out of a total site area of 342 ha (844 ac). The same acreage of 0.85 ha (2.1 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the Midwestern Climate Center, the median date that the growing season begins in Morris, Illinois is April 13 and the season lasts 187 days; 5% of the growing season is 9 days and 12.5% of the growing season is 23 days.
- Total precipitation for the monitoring period was 86% of normal. In the critical March to June period, precipitation was 92% of normal. Despite the near-normal precipitation recorded nearby, the basin is still undergoing a persistent drought which began in 2005. According to data from the National Drought Mitigation Center, conditions at the site and/or within the basin of the Illinois River have ranged from D3 (extreme drought) to D0 (abnormally dry) between January 3 and April 25 of 2006 (National Drought Mitigation Center 2006).

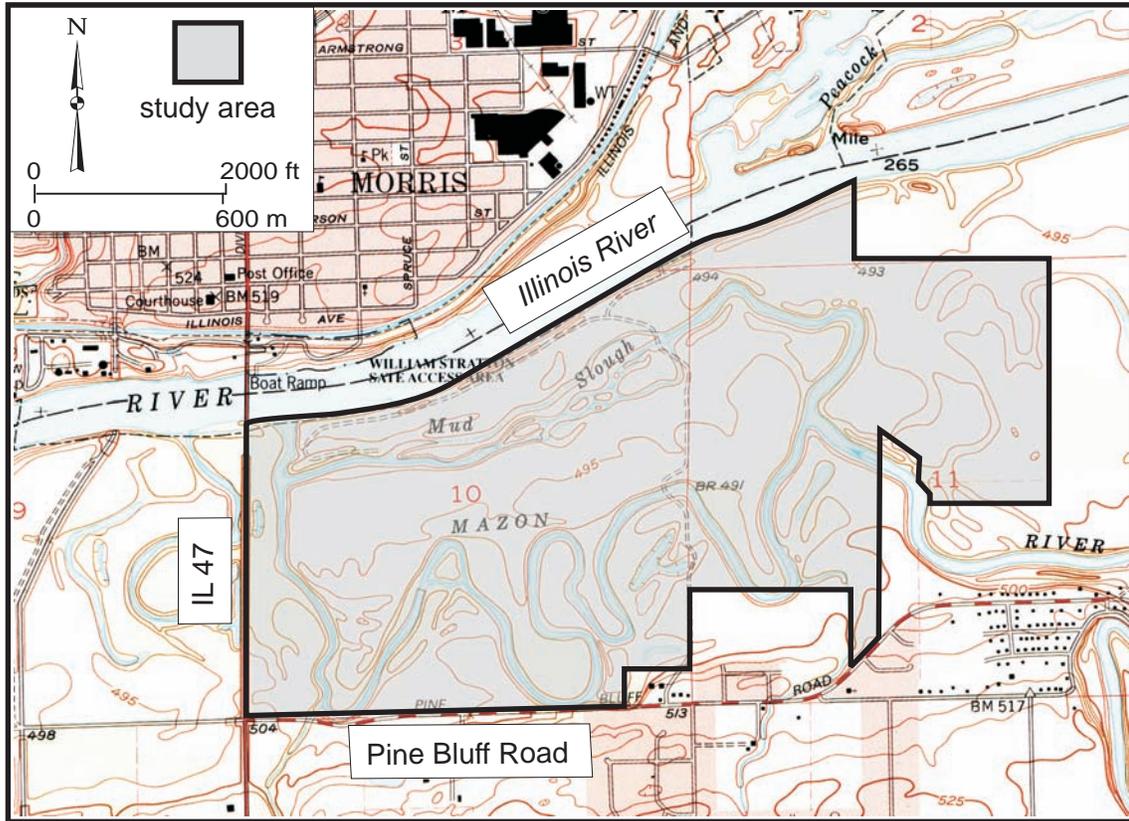
- Water levels measured in none of the 38 soil-zone monitoring wells satisfied wetland hydrology criteria.
- In the 2005–2006 season, an on-site data logger at SW2 showed that four river-flood events that occurred within the growing season reached peak stage values sufficient to exceed an elevation of 149.35 m (490 ft), which is the approximate bankfull elevation of the Mazon River and Mud Slough. However, these overbank floods, which peaked at 150.09 m (492.42 ft) on April 18, 149.63 m (490.91 ft) on May 25, 149.82 m (491.53 ft) on May 31, and 150.23 m (492.88 ft) on September 14, did not attain elevations sufficient to flood widespread areas of the site. Also, the four floods had an average duration over bankfull of only 2.0 days and a maximum duration of 2.4 days, insufficient to meet wetland hydrology criteria. Flood elevations of at least 150.27 to 150.57 m (493 to 494 ft) are required to encompass the majority of the areas of the site undergoing wetland restoration.
- According to staff-gauge data, a closed depression at SW5 with an area of 0.33 ha (0.82 ac) was inundated for a period greater than 5% of the growing season to a level of 149.84 m (491.60 ft). The same acreage of 0.33 ha (0.82 ac) was also inundated for a period greater than 12.5% of the growing season to a nearly identical level of 149.83 m (491.56 ft). Also, a second closed depression near SW7 with an area of 0.52 ha (1.28 ac) was inundated for a period greater than 5% of the growing season to a level of 149.29 m (489.79 ft). The same acreage of 0.52 ha (1.28 ac) was inundated for a period greater than 12.5% of the growing season to a level of 149.28 m (489.76 ft). Both of these locations are designated areas of wetland preservation in the banking instrument.
- As in previous years, perennial water bodies such as the creek channels were not included in areas having met wetland hydrology criteria.
- Limitations of the wetland hydrology determination are as follows:
 - On two separate occasions (May 31 and Sept 15, 2006), lack of site access to the “spider” field due to flooded overflow channels resulted in a loss of monitoring data for eight well nests and three staff gauges in this field. Subsequent data analysis has shown that no additional acreage of wetland hydrology was likely to result from the lost data in this monitoring year. Lack of access to this field has been an ongoing problem for several years, and a permanent repair of the drainageway crossings will guard against any data loss in the future.

PLANNED FUTURE ACTIVITIES

- ISGS has been asked by IDOT to continue the current concentration on the monitoring of areas slated for wetland preservation, enhancement, or restoration, with special attention in 2007 to areas of floodplain forest wetlands. Some additional soil-zone wells and data loggers will be employed in the spring in response to this request. An additional staff gauge or data logger will also be added to a closed depression in the central area of the site.
- Monitoring will continue until no longer required by IDOT.

Morris, Illinois River Wetland Bank Site General Study Area and Vicinity

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



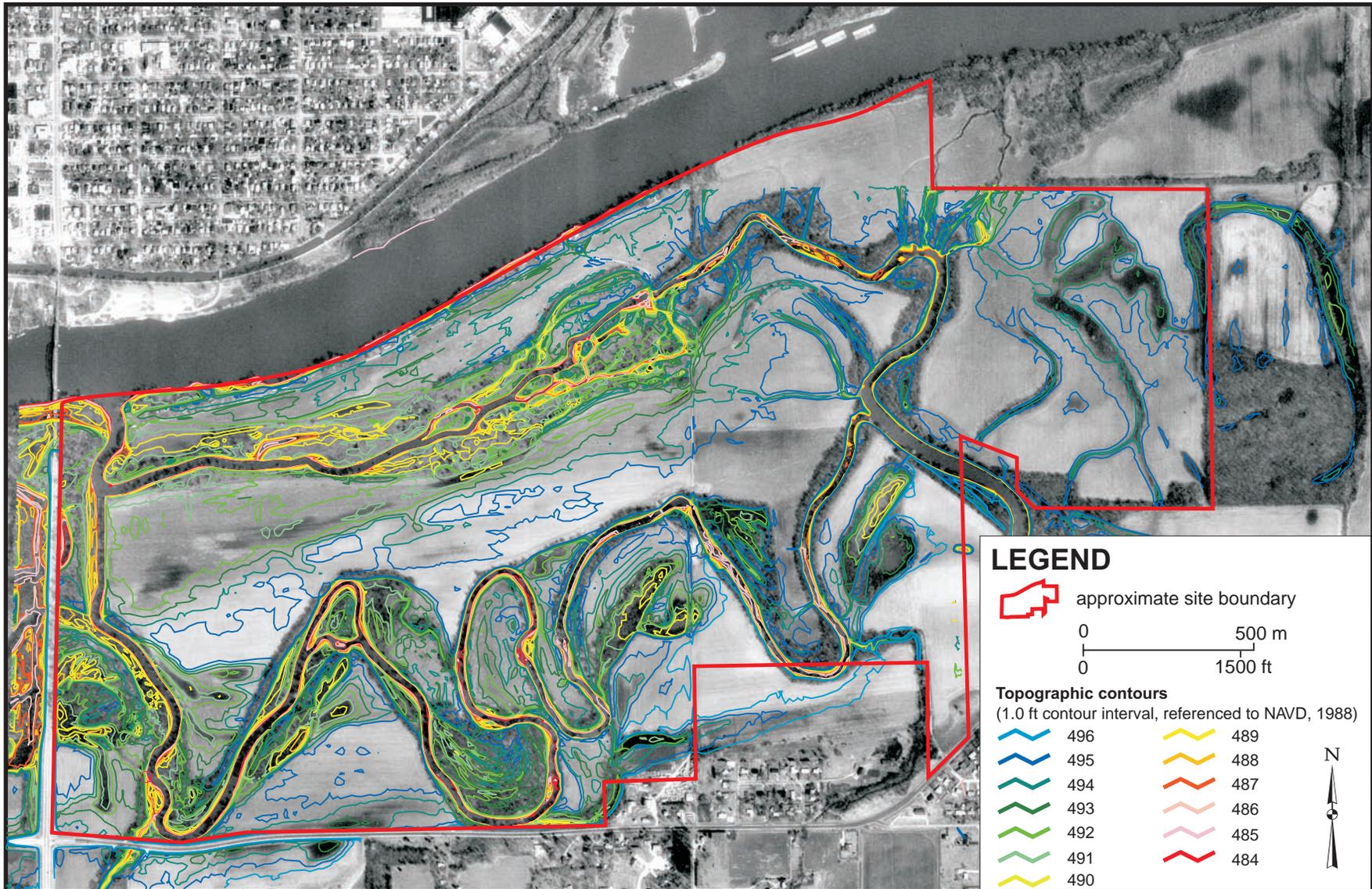
Morris, Illinois River Wetland Bank Site

Site Topographic Map (IDOT / INHS)

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

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

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Morris, Illinois River Wetland Bank Site
Estimated Areal Extent of 2006 Wetland Hydrology
 based on data collected between September 1, 2005 and September 26, 2006
 Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
 from 4/5/1998 aerial photography (ISGS 2001)

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LEGEND

2006 WETLAND HYDROLOGY

- > 5% of the growing season
- > 12.5% of the growing season
- approximate site boundary
- soil-moisture probe
- stage gauge
- Infinites sonic data logger
- RDS data logger
- rain gauge
- ISGS monitoring well
- Global data logger

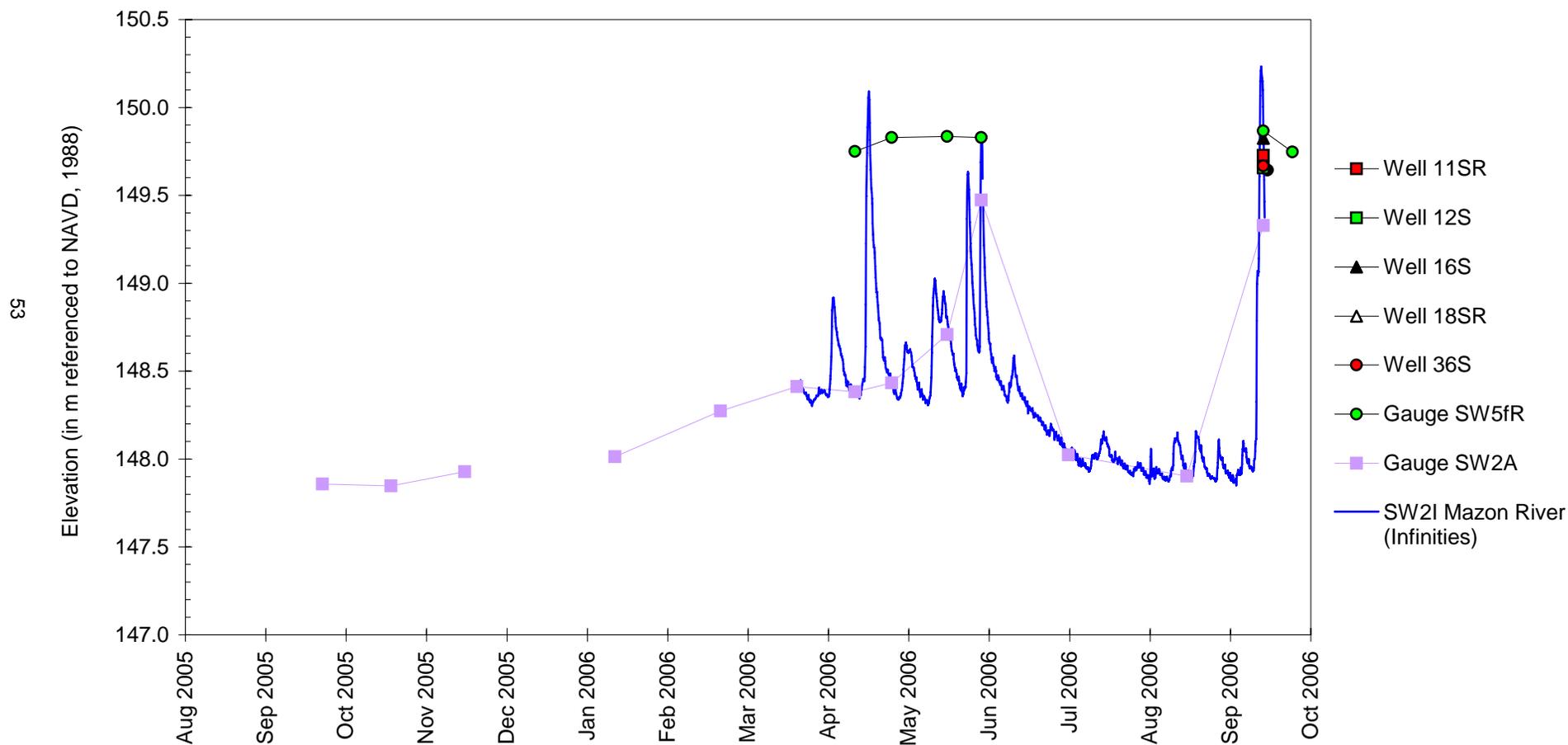
0 500 m
0 1500 ft

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Morris, Illinois River Wetland Bank Site

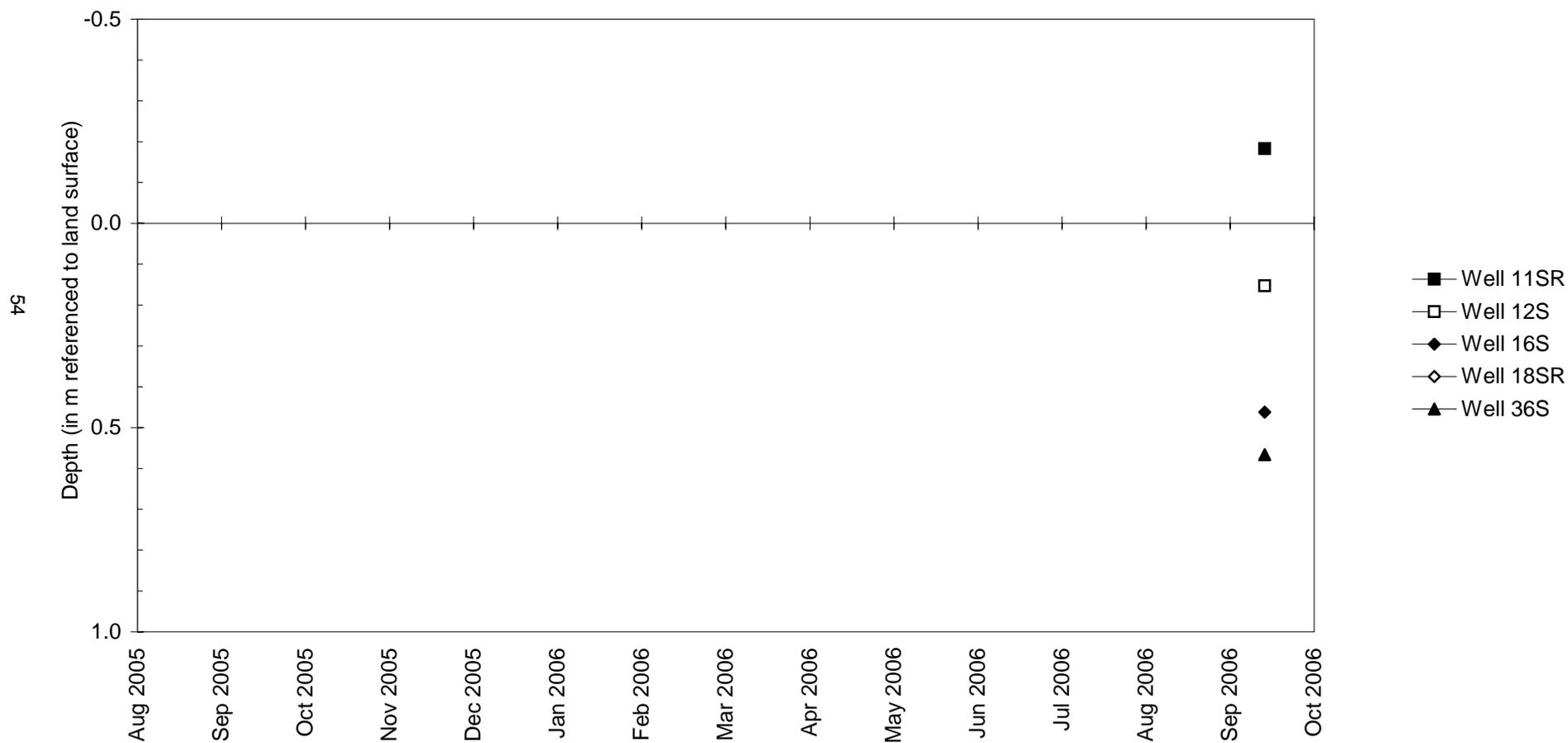
September 1, 2005 to September 26, 2006

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



Morris, Illinois River Wetland Bank Site
September 1, 2005 to September 26, 2006

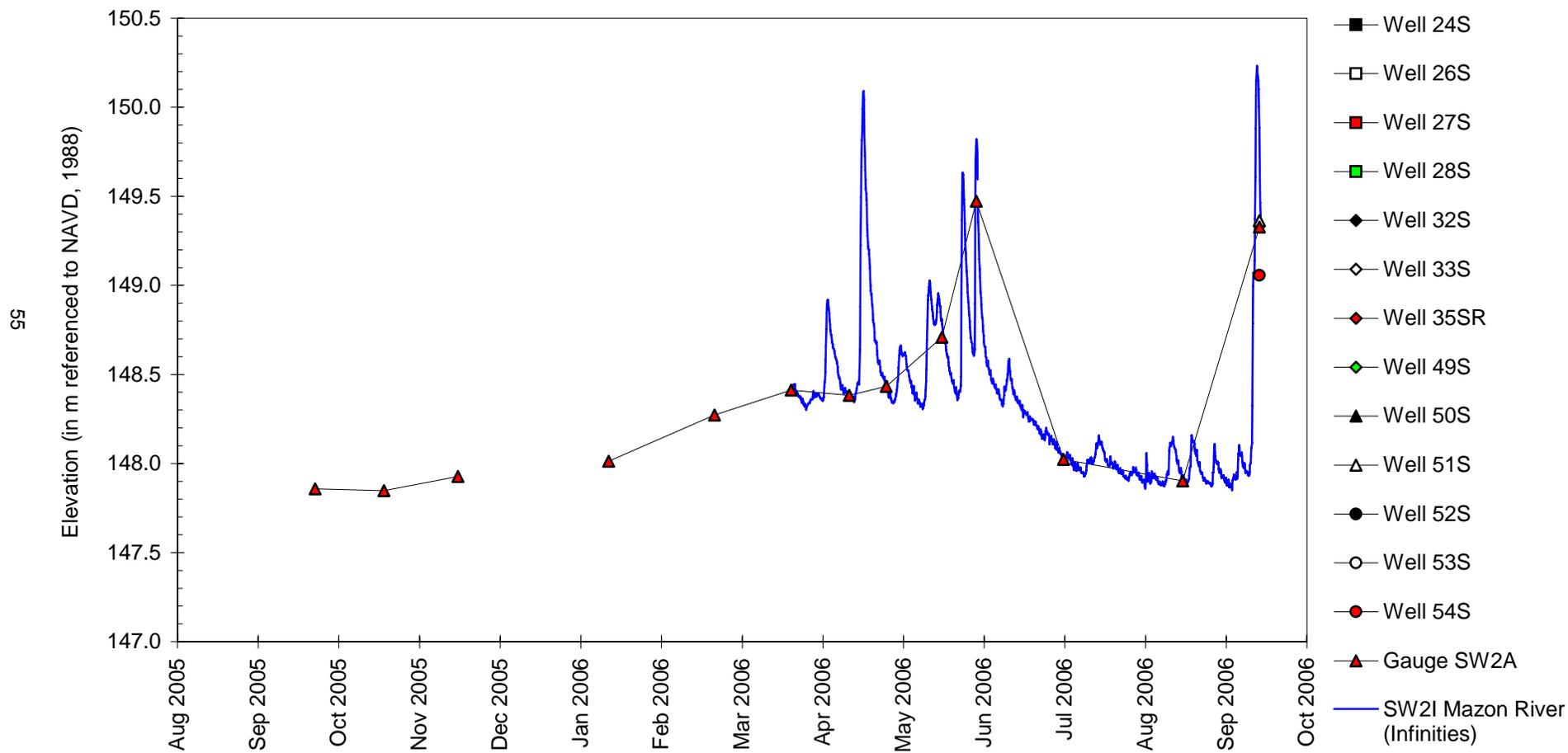
Depth to Water
in Soil-Zone Monitoring Wells
South of the Mazon River



Morris, Illinois River Wetland Bank Site

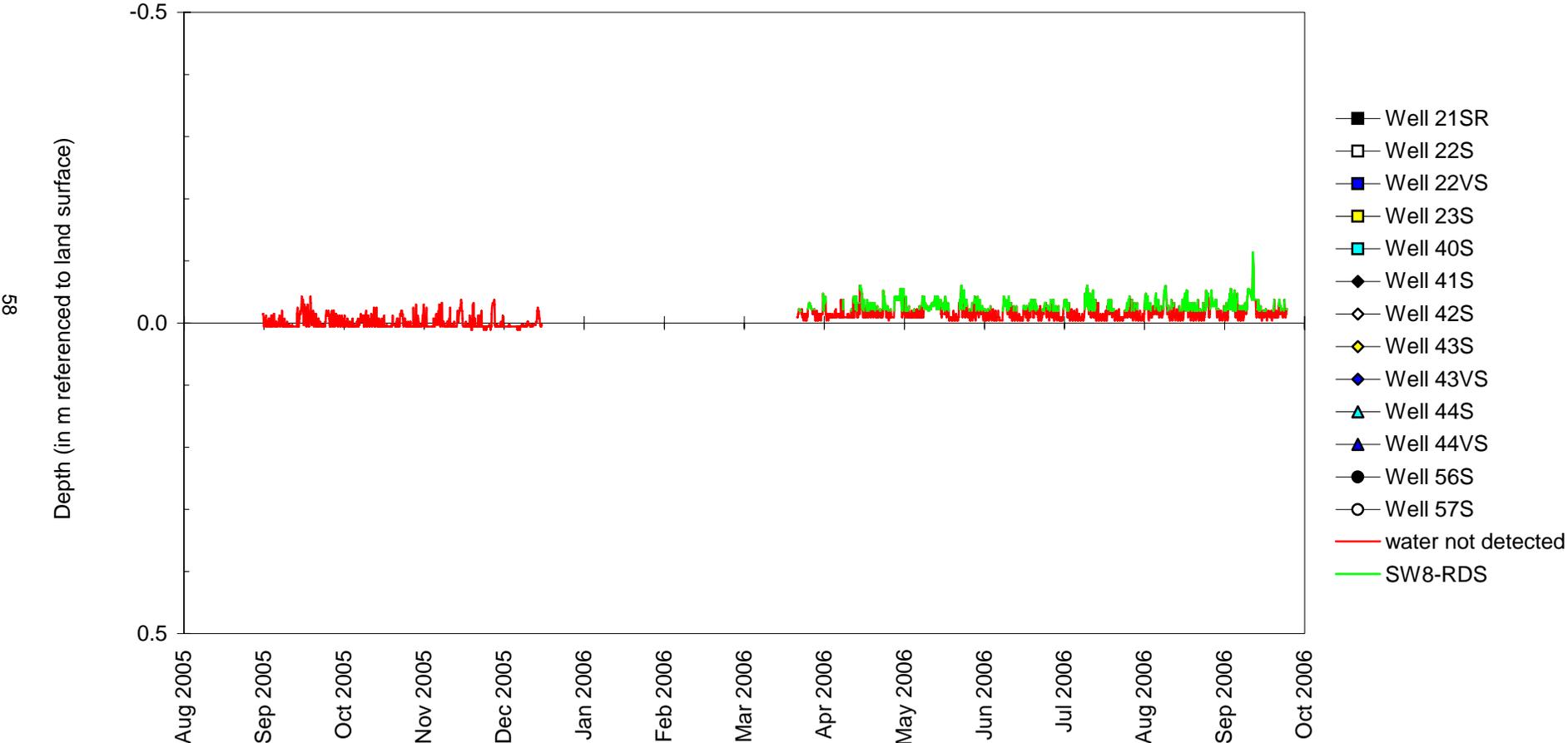
September 1, 2005 to September 26, 2006

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



Morris, Illinois River Wetland Bank Site
September 1, 2005 to September 26, 2006

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

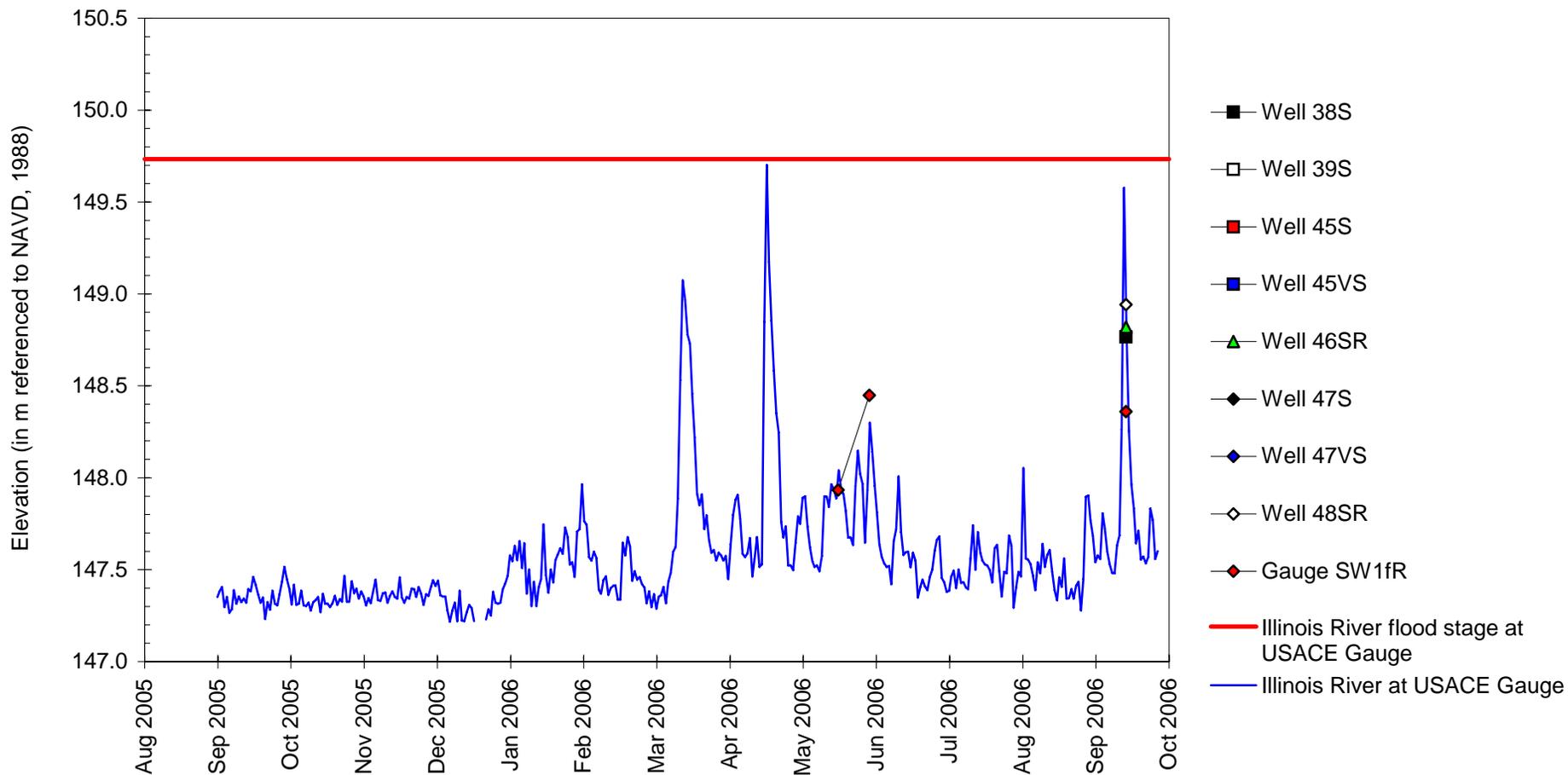


Morris, Illinois River Wetland Bank Site

September 1, 2005 to September 26, 2006

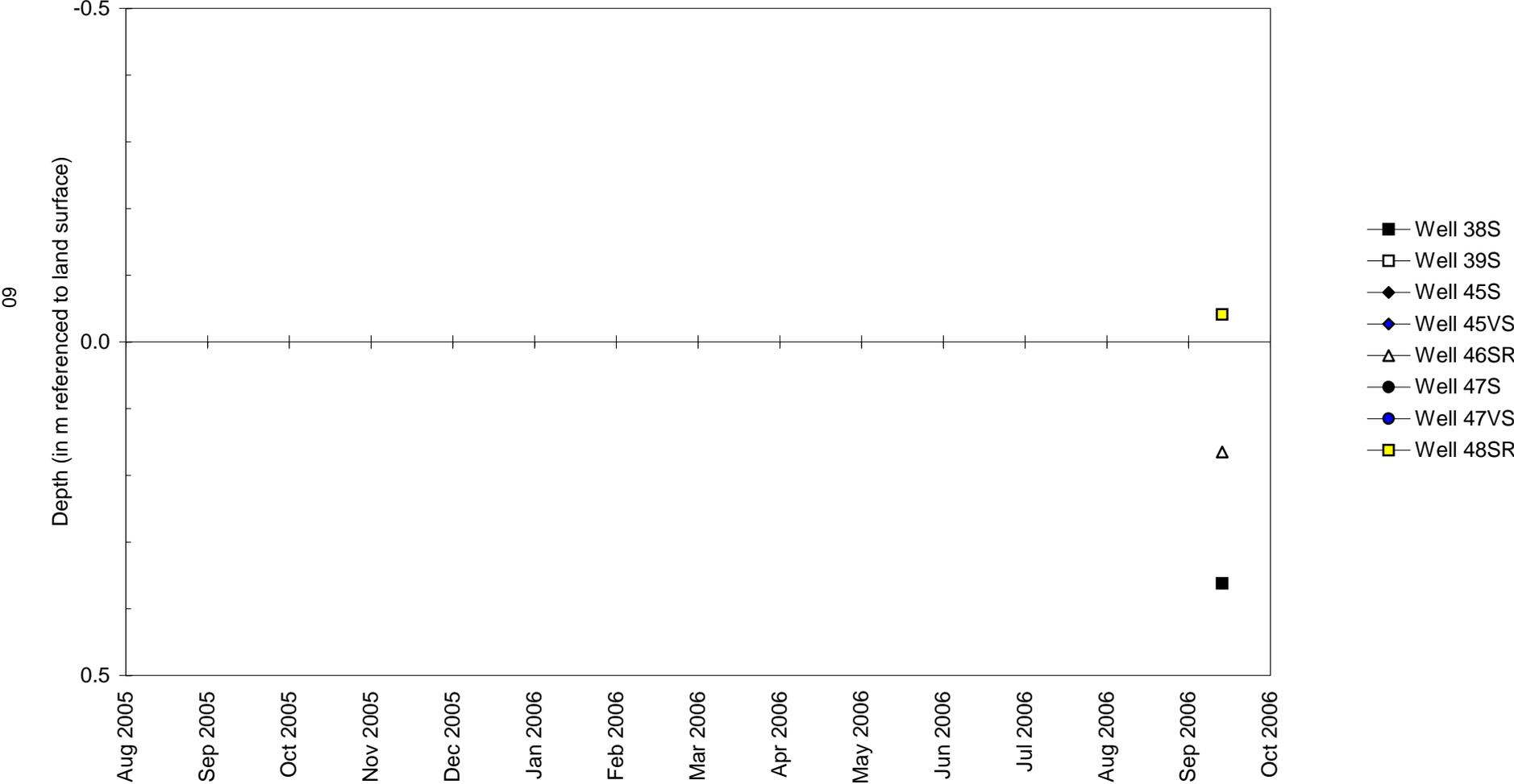
Water-Level Elevations in Monitoring Wells, Data Loggers, and Stage Gauges near the Illinois River Floodplain Forest

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Morris, Illinois River Wetland Bank Site
September 1, 2005 to September 26, 2006

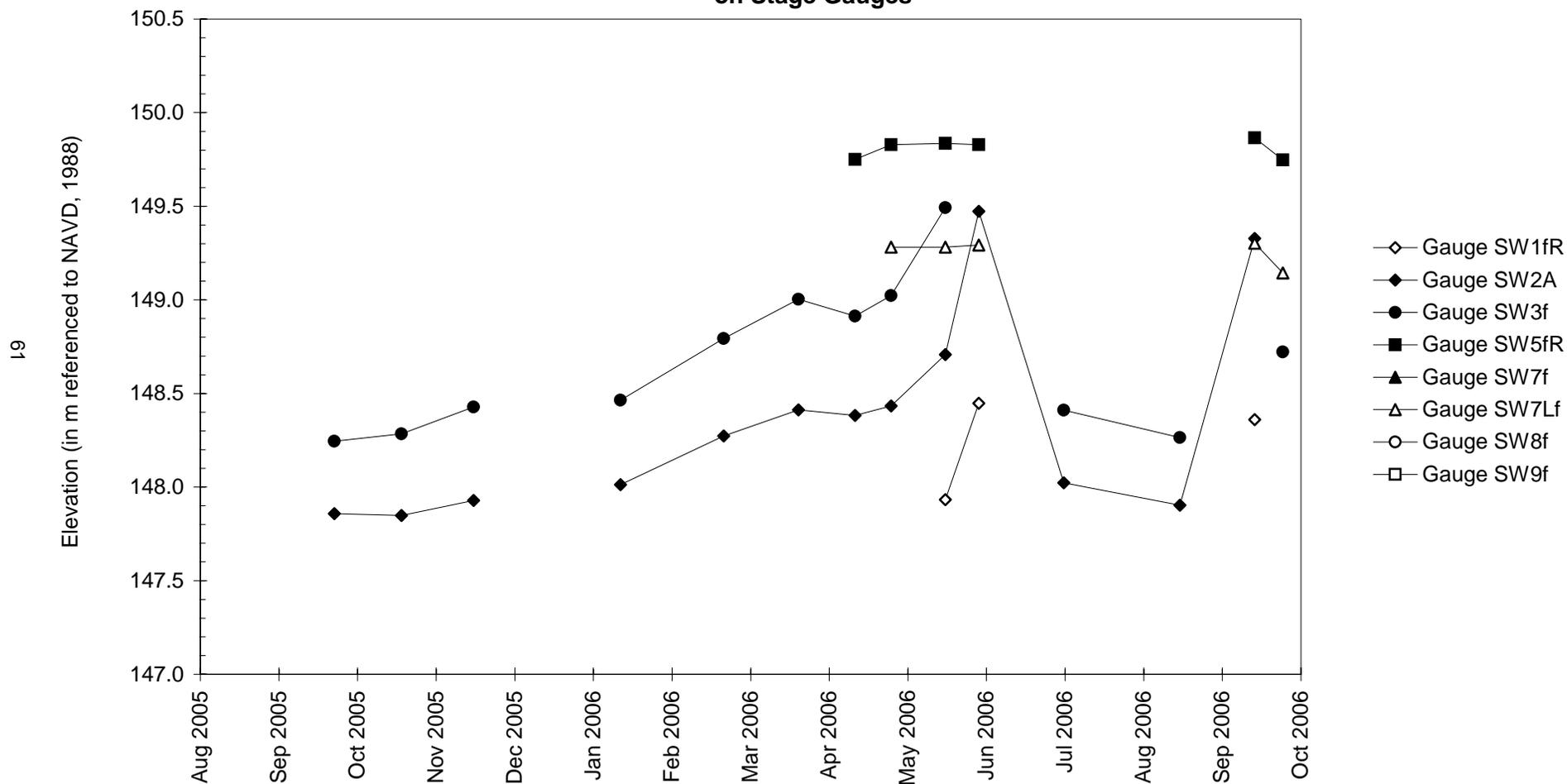
Depth to Water
in Monitoring Wells
near the Illinois River Floodplain Forest



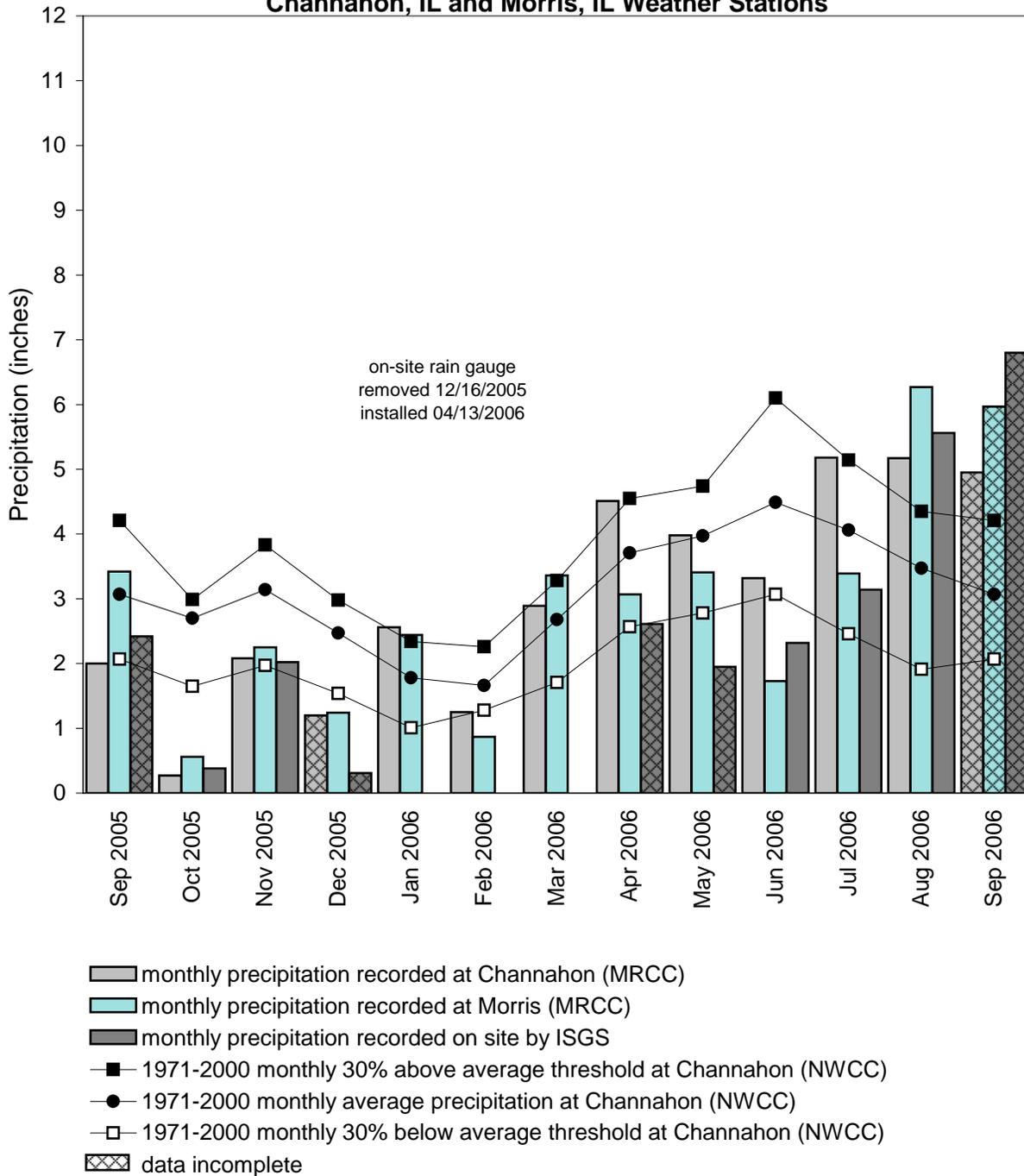
Morris, Illinois River Wetland Bank Site

September 1, 2005 to September 26, 2006

Water-Level Elevations on Stage Gauges



**Morris, Illinois River
Potential Wetland Banking Site
September 1, 2005 through September 30, 2006
Total Monthly Precipitation Recorded On Site and at the
Channahon, IL and Morris, IL Weather Stations**



On-site rain gauge last downloaded on September 26, 2006
Graph last updated October 13, 2006