



**MORRIS, ILLINOIS RIVER
WETLAND BANK SITE**

ISGS #49

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.
- March 2001: Two letters were sent by ISGS to IDOT Central Office. The first was a review of a wetland mitigation plan proposed by IDOT. The second provided general information regarding site hydrological conditions.
- 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 underlain by mapped hydric soils, were fields slated for wetland restoration in the banking instrument.

WETLAND HYDROLOGY CALCULATION FOR 2004

We estimate that the total area of the site that satisfied wetland hydrology criteria for greater than 5% of the growing season in 2004 was 13.62 ac (5.52 ha). Also in 2004, 9.1 ac (3.69 ha) 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 from September 2003 to March 2004 was 90% of normal, leading to fairly typical moisture conditions entering the growing season. In the April 2004 to August 2004 period, however, precipitation was 76% of normal. The precipitation during each of these five months either above or below normal, ending with a very wet August during which precipitation was 265% of normal. When averaged for the entire September 2003 to August 2004 monitoring period, however, precipitation was near the 1971–2000 average.
- In 2004, water levels measured in 14 of the 43 soil-zone monitoring wells satisfied the wetland hydrology criteria of the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual for a period greater than 5% of the growing season. Further, 8 of the 43 soil-zone monitoring wells satisfied wetland hydrology criteria for a period greater than 12.5% of the growing season in 2004.

- Soil-zone wells which showed inundation or saturation for greater than 5% of the growing season included wells 11S, 12S, 16S, 18S, 21S, 35S, 42S, 43S, 43VS, 44S, 44VS, 46S, 48S and 51S.
- Soil-zone wells which showed inundation or saturation for greater than 12.5% of the growing season included wells 11S, 21S, 42S, 43S, 43VS, 44S, 44VS, and 48S.
- In 2004, two combined Illinois and Mazon River floods occurred within the growing season that had a peak stage value sufficient to inundate areas at or below 150.27 m (493 ft). This elevation encompasses the most extensive of the areas slated for wetland restoration. The flood duration, however, was short, as was the case in previous years, amounting to only 2.4 days and 2.8 days of inundation (respectively) on average in these restoration areas.
- Based upon both surface-water data and data from soil-zone wells 21S, 42S, 43S, and 44S (listed above), a total of 3.74 ac (1.51 ha) satisfied wetland hydrology criteria for a period greater than 5% of the growing season in the "spider" field. This area, also known as the "east" field, underwent drainage tile removal in April and December of 2003. A data logger in the field showed surface-water inundation to a level of 150.50 m (493.77 ft) for a period greater than 5% of the growing season. The same logger also showed surface-water inundation to a level of 150.49 m (493.73 ft) for a period greater than 12.5% of the growing season. As these elevations are within 1.0 cm (0.4 in) of one another and the same four wells noted above also met the 12.5% criteria, the acreage for the 12.5% threshold will be the same at 3.74 ac (1.51 ha).
- Also, according to staff gauge data, a closed depression near SW5 exhibited surface-water elevations that met wetland hydrology criteria for a period greater than both 5% and 12.5% of the growing season to a level of 149.81 m (491.50 ft). Also, according to staff gauge and logger data, an additional closed depression near SW7 exhibited surface-water elevations that met wetland hydrology criteria for a period greater than both 5% and 12.5% of the growing season to a level of 150.34 m (493.24 ft).
- 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:
 - The area of wetland hydrology was calculated planimetrically from an INHS-generated topographic map with a 0.3 m (1.0 ft) contour interval. The raw data for this map were provided by IDOT, and were generated through an aerial survey tied to 28 benchmarks set out on site by IDOT using a survey grade GPS. Although the contours and surface elevations seem to generally reflect the land surface and match ISGS-determined elevations, the accuracy of this contour map is unknown. ISGS well locations were determined via GPS and superimposed upon this geo-rectified map.

ADDITIONAL INFORMATION

- At the Morris site, past monitoring has shown that significant areas of floodplain forest exhibiting predominantly hydrophytic vegetation are present at elevations above those that are saturated or inundated for greater than 12.5% of the growing season. Further, these areas normally have not demonstrated wetland hydrology for periods greater than 5% of the growing season. In contrast to previous years when none of these areas met wetland

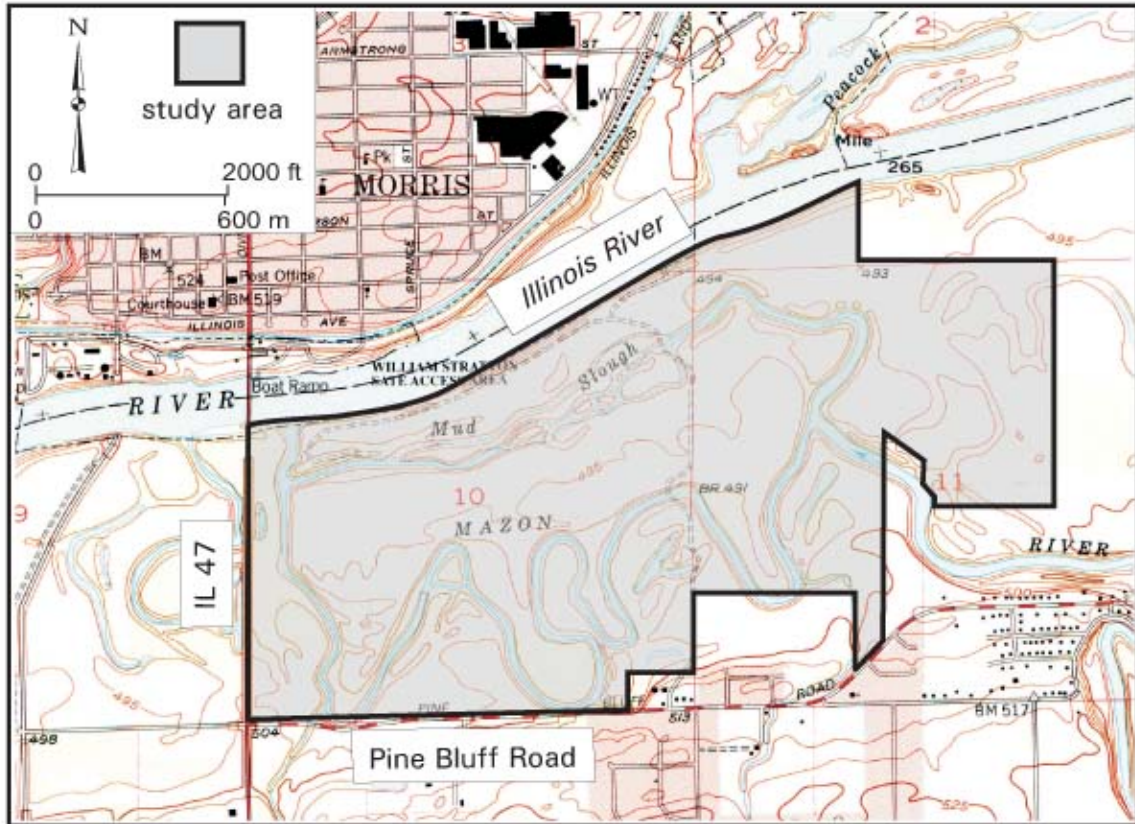
hydrology criteria, lower-lying portions of this floodplain forest were somewhat wetter in 2004. According to data from two soil-zone wells, coupled with topographic data, flood-water elevations, and first-hand observations, several limited areas of this floodplain forest satisfied wetland hydrology criteria for a period exceeding 5% of the growing season. In addition, a smaller area satisfied wetland hydrology criteria for a period exceeding 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.
- A Level II hydrogeological characterization report is under preparation for submission to 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
Estimated Areal Extent of 2004 Wetland Hydrology
 based on data collected between September 1, 2003 and September 1, 2004

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

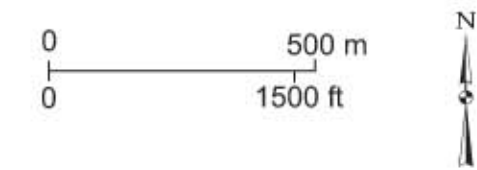


LEGEND

2004 WETLAND HYDROLOGY

- > 5% of the growing season
- > 12.5% of the growing season
- approximate site boundary

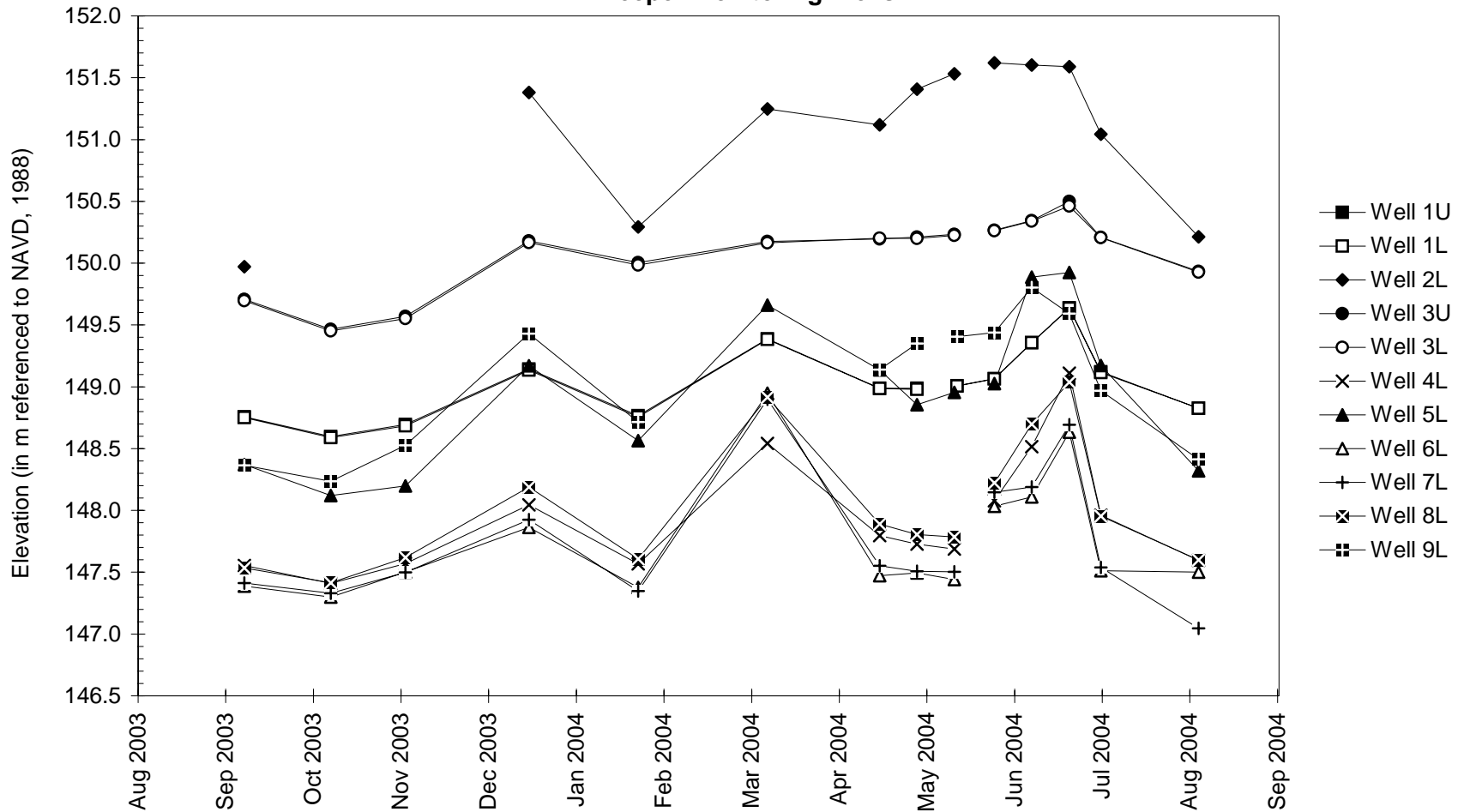
- soil-moisture probe
- stage gauge
- Infinities sonic data logger
- RDS data logger
- rain gauge
- ISGS monitoring well
- Global data logger



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

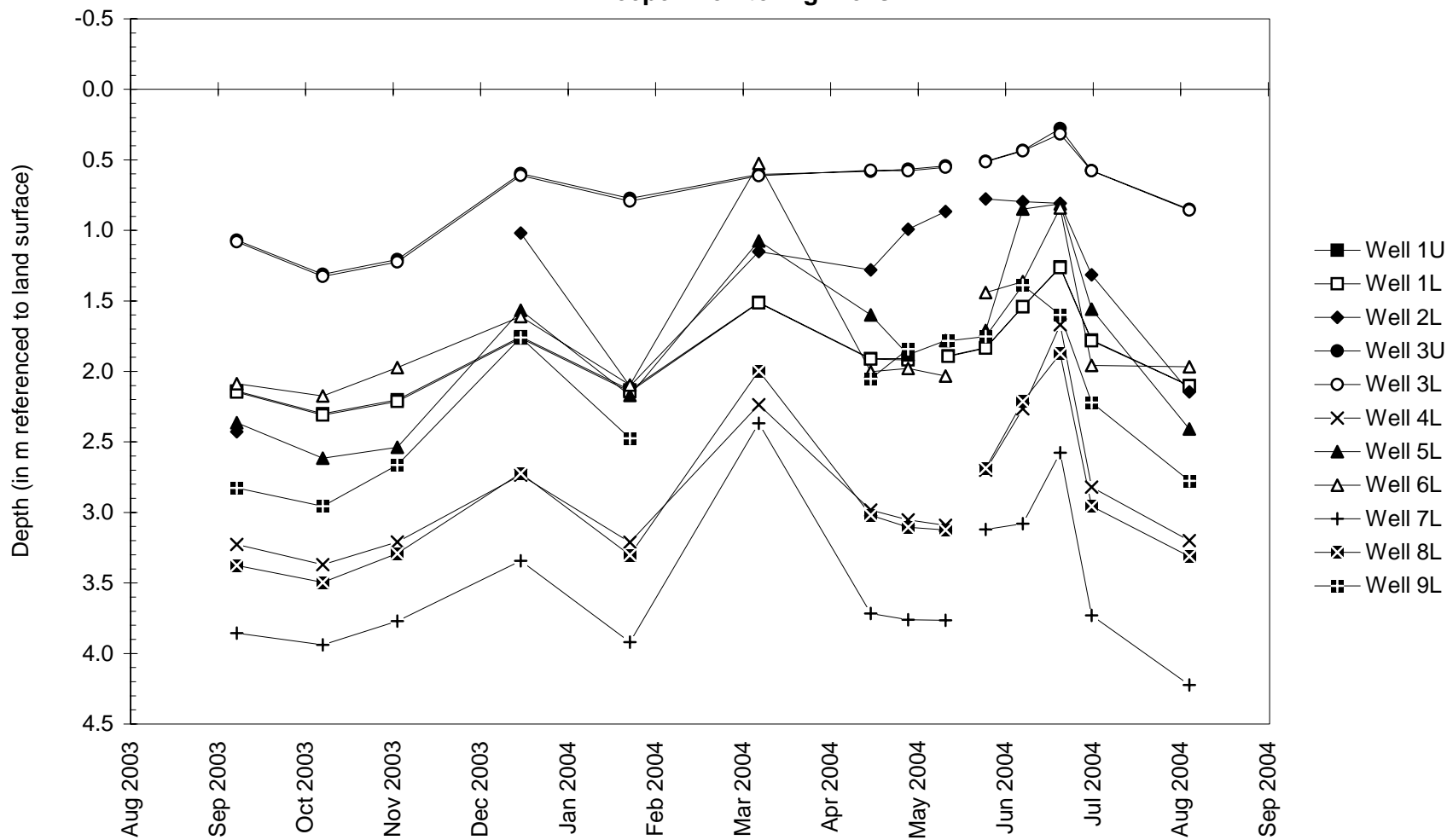
Water-Level Elevations in Deeper Monitoring Wells



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

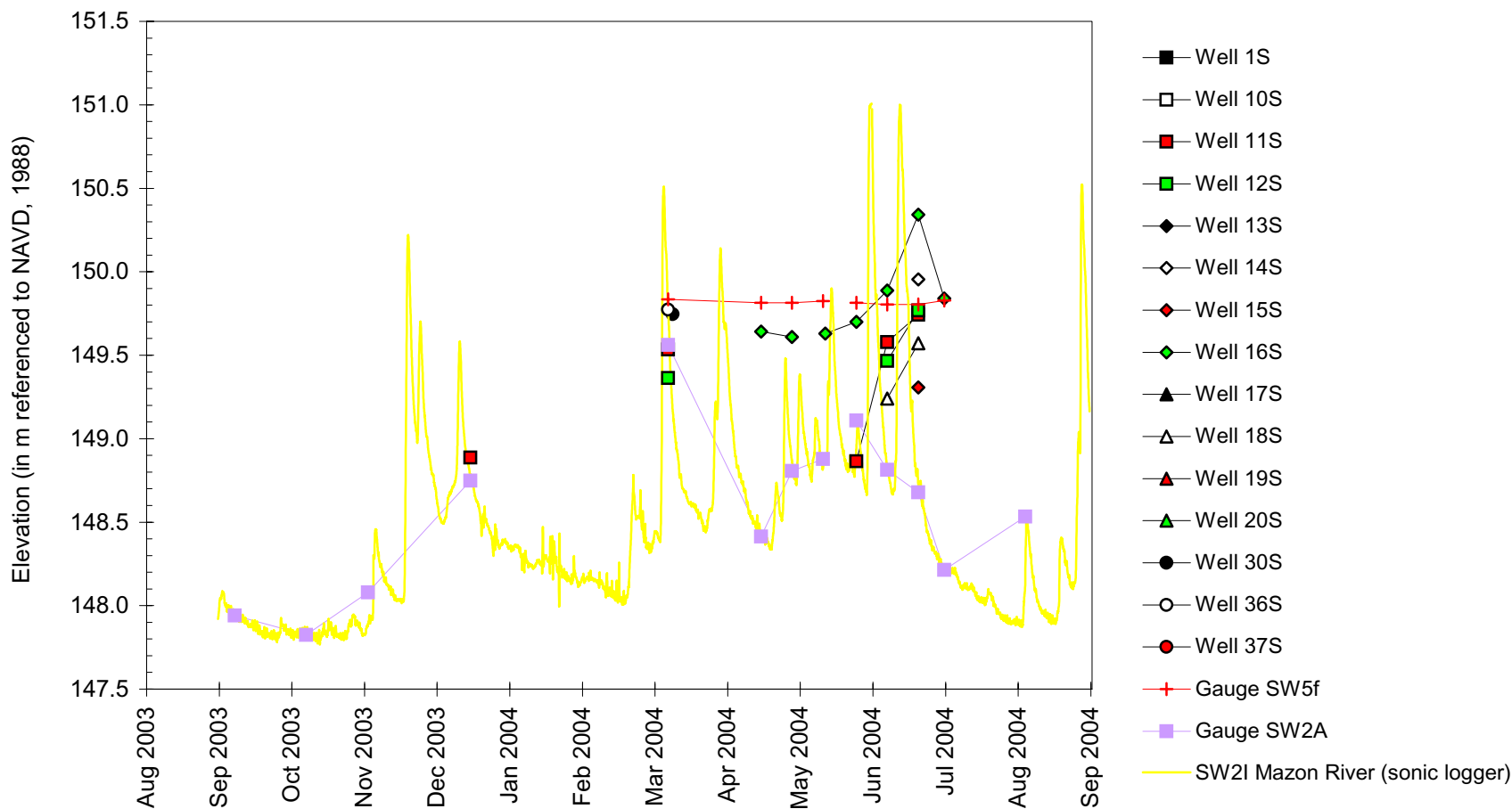
Depth to Water in Deeper Monitoring Wells



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

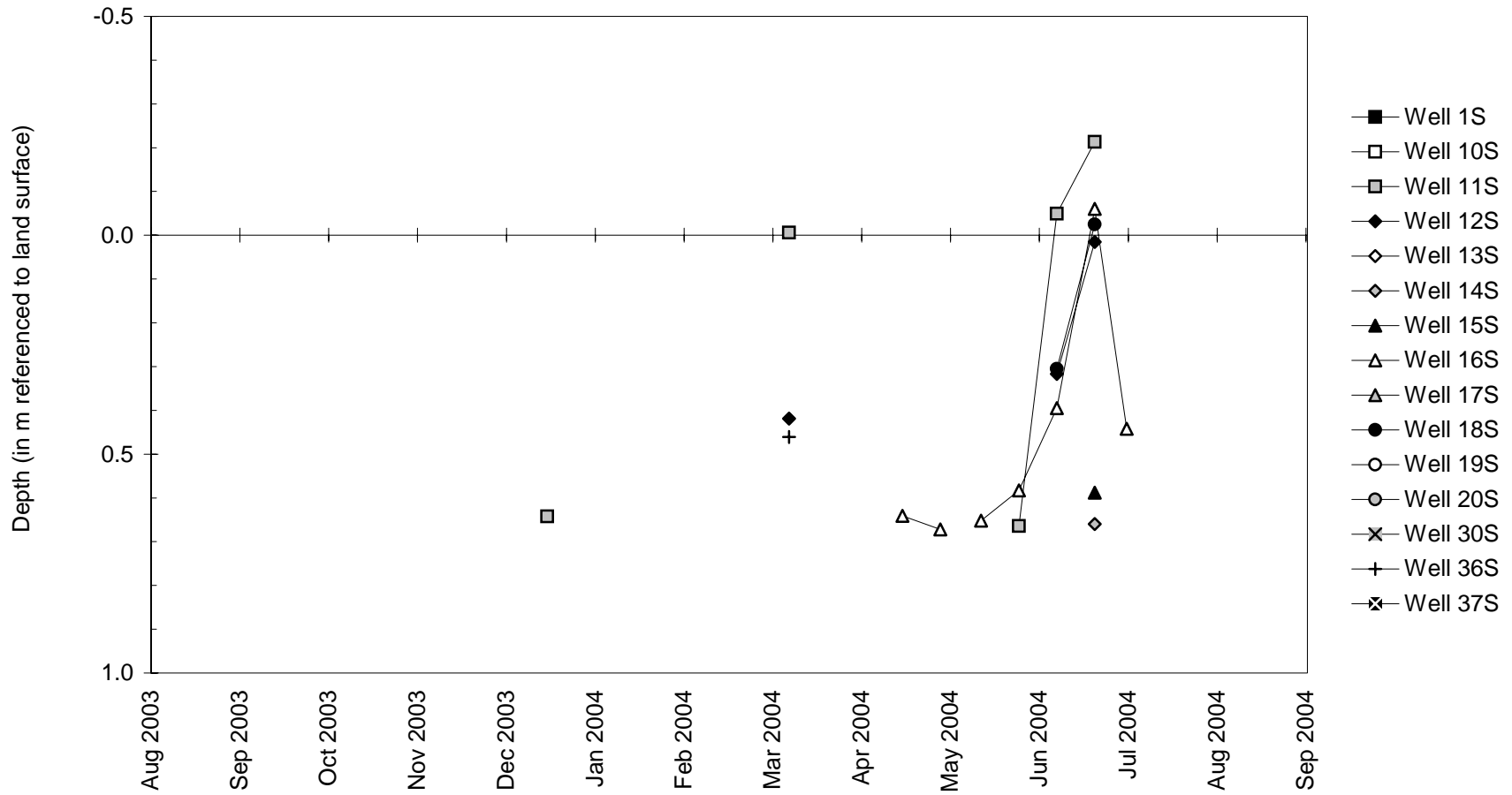
Water-Level Elevations in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges South of the Mazon River



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

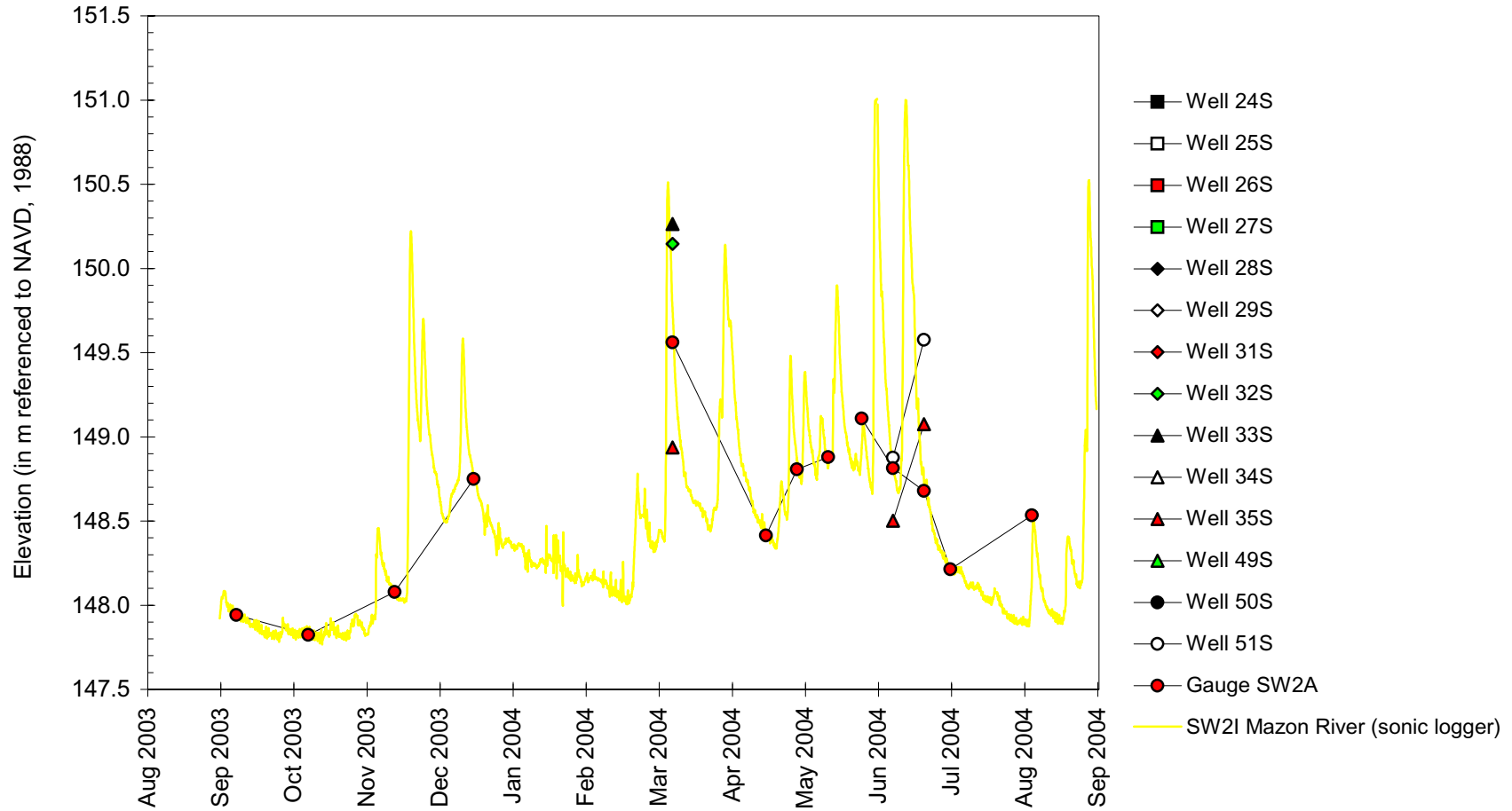
Depth to Water in Soil-Zone Monitoring Wells South of the Mazon River



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

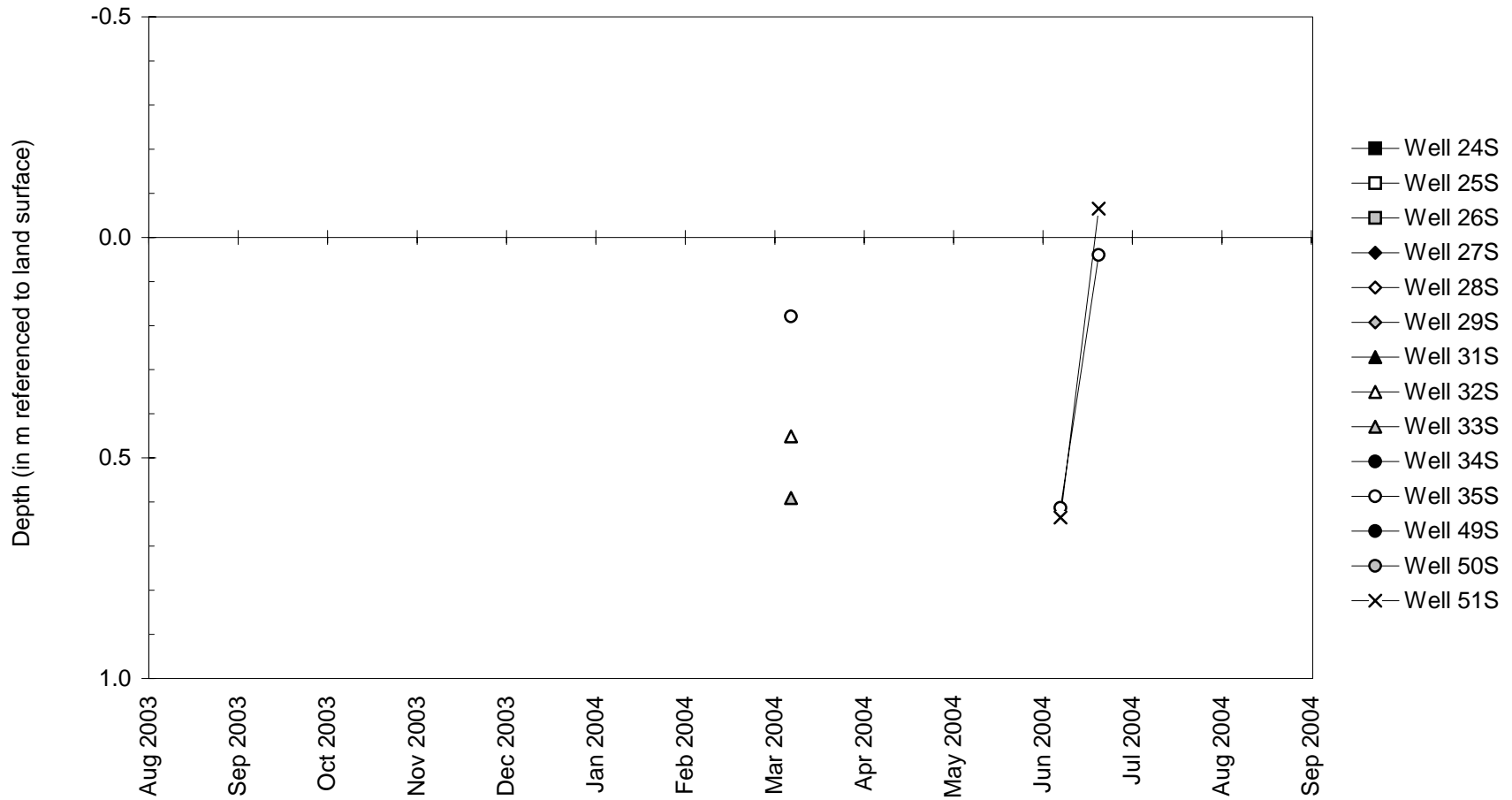
Water-Level Elevations in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges North of the Mazon River



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

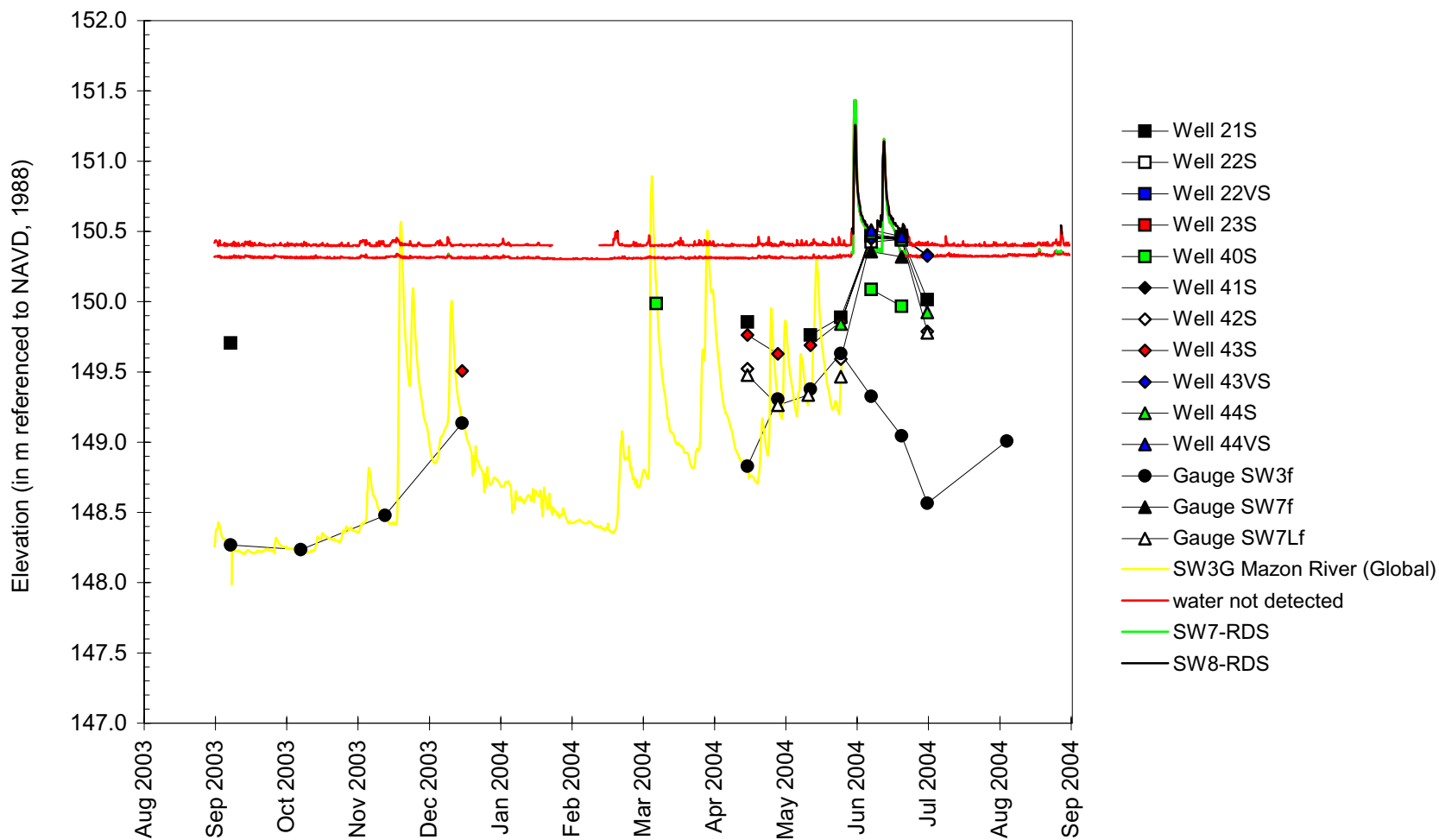
Depth to Water in Soil-Zone Monitoring Wells North of the Mazon River



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

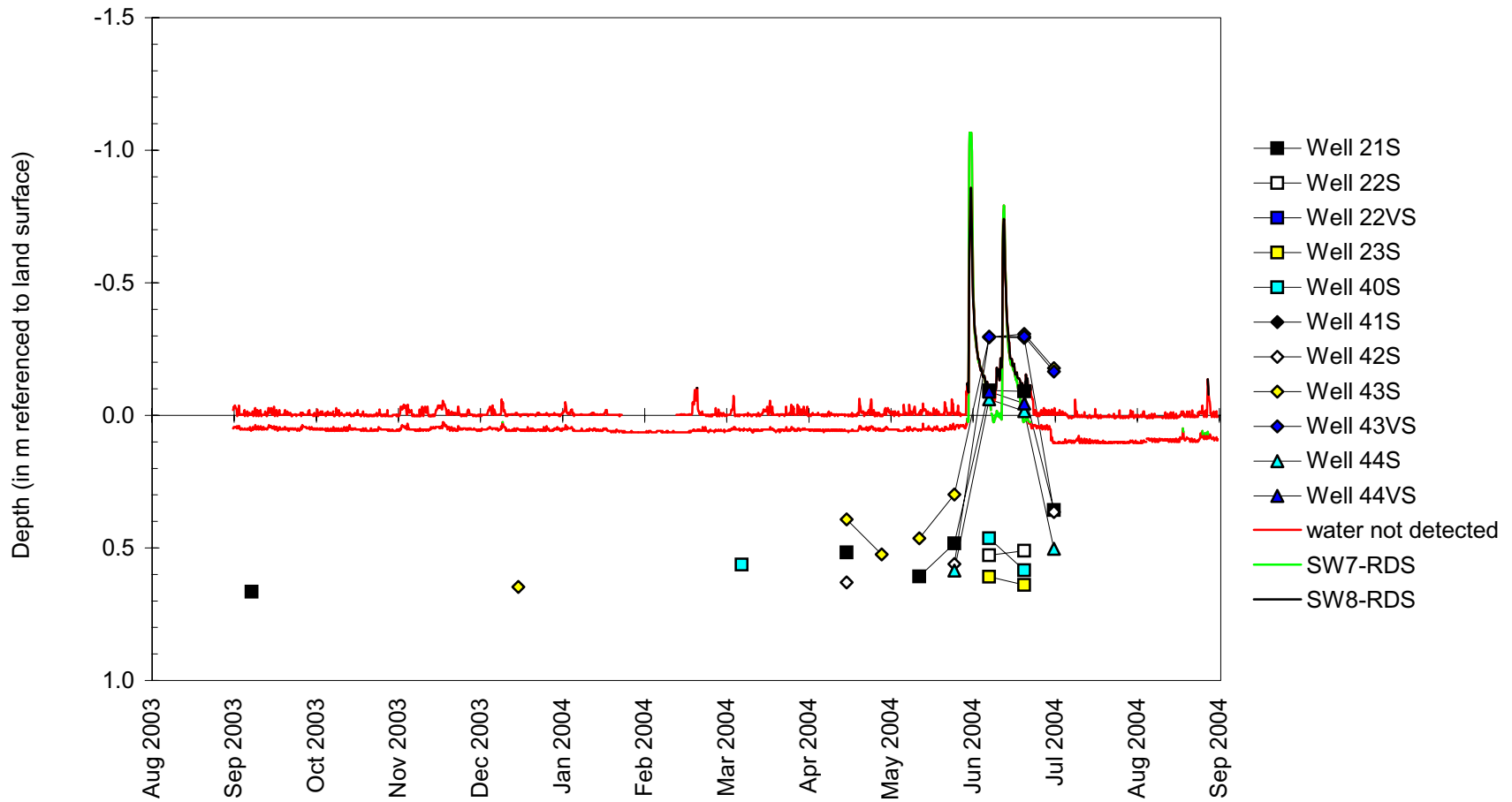
Water-Level Elevations in Soil-Zone Monitoring Wells, Data Loggers, and Stage Gauges in the East Field and near the Natural Slough



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

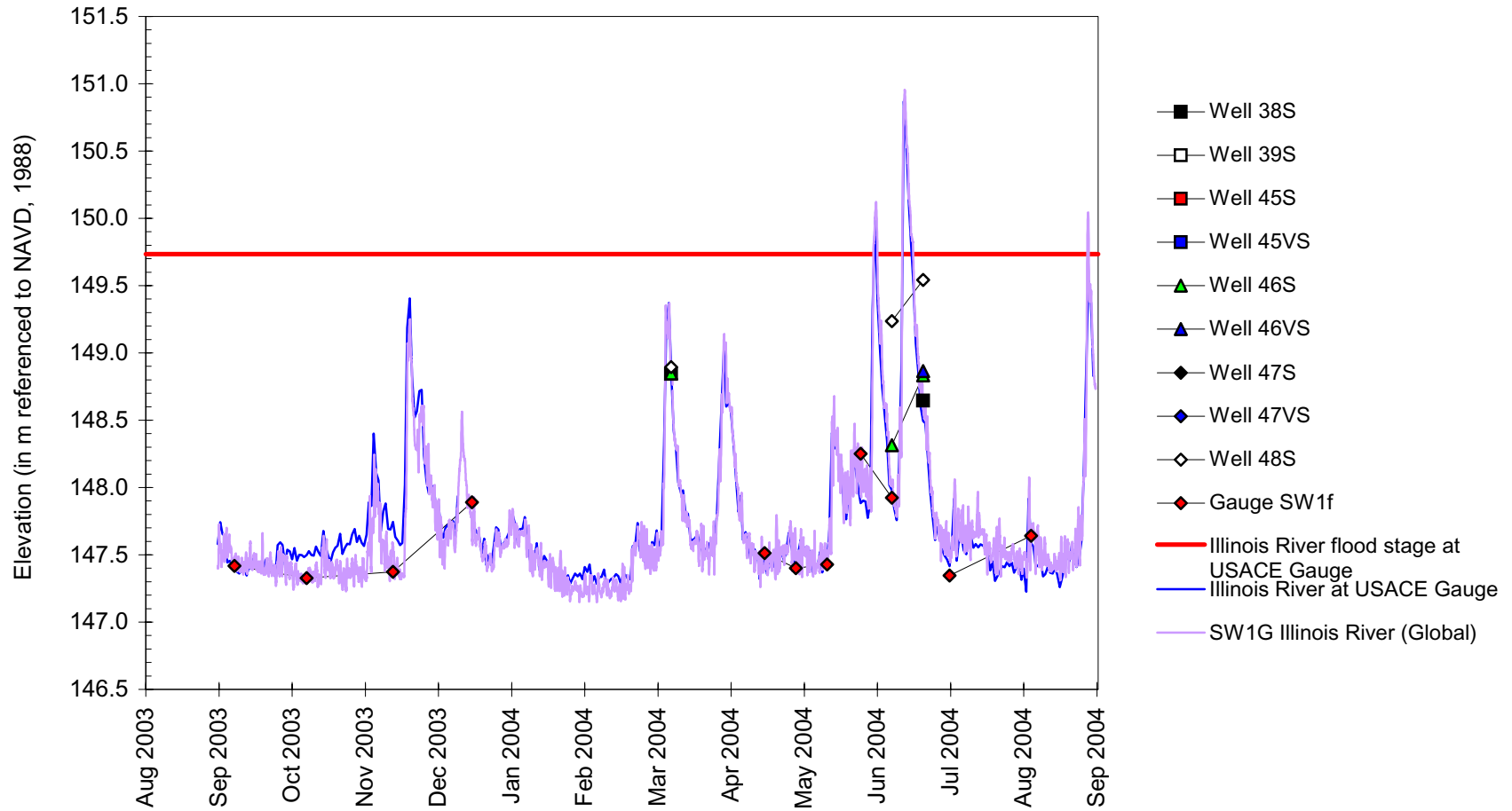
Depth to Water in Soil-Zone Monitoring Wells and Data Loggers in the East Field and near the Natural Slough



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

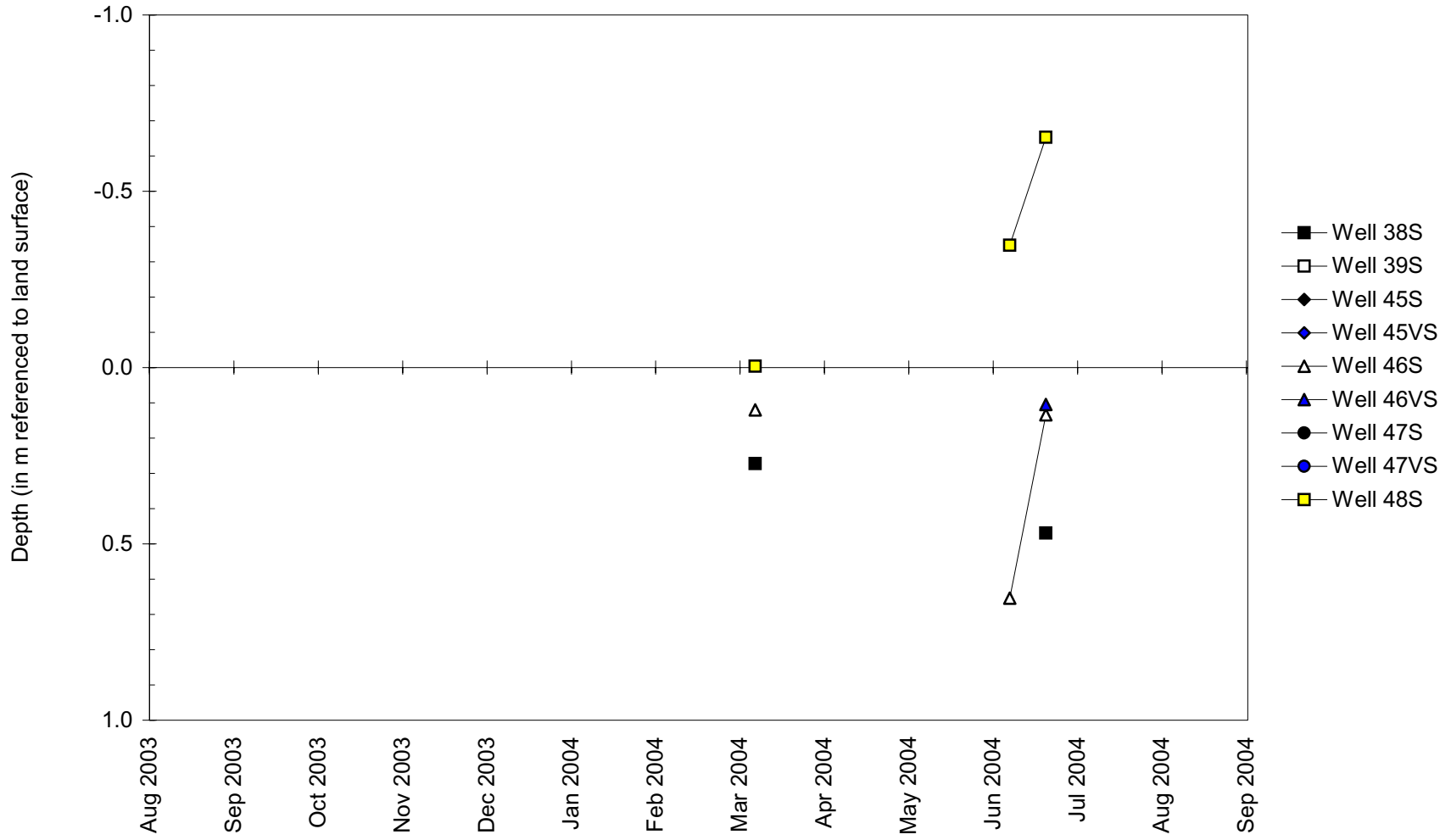
Water-Level Elevations in Monitoring Wells, Data Loggers, and Stage Gauges near the Illinois River Floodplain Forest



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

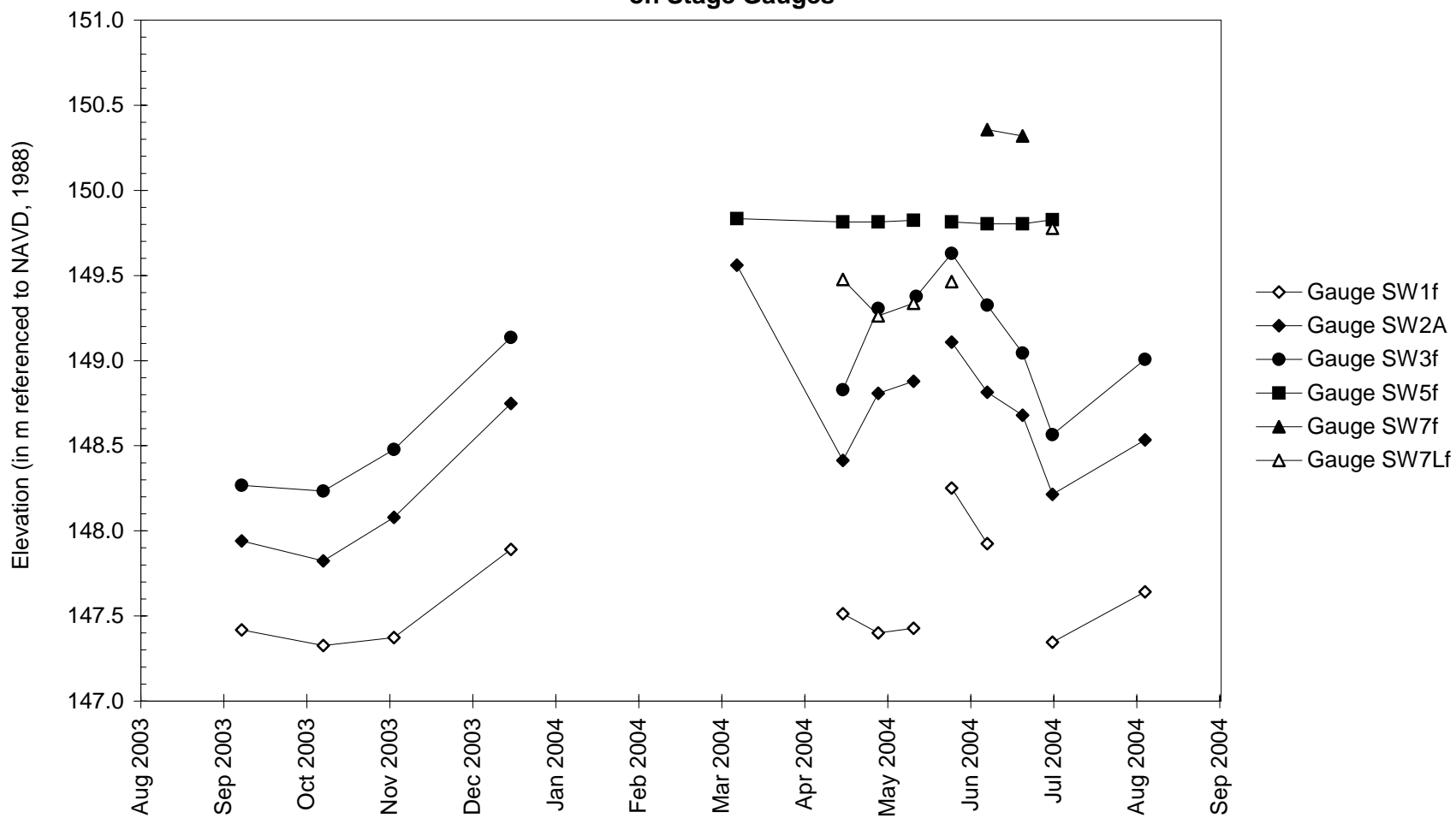
Depth to Water in Monitoring Wells near the Illinois River Floodplain Forest



Morris, Illinois River Potential Wetland Banking Site

September 1, 2003 to September 1, 2004

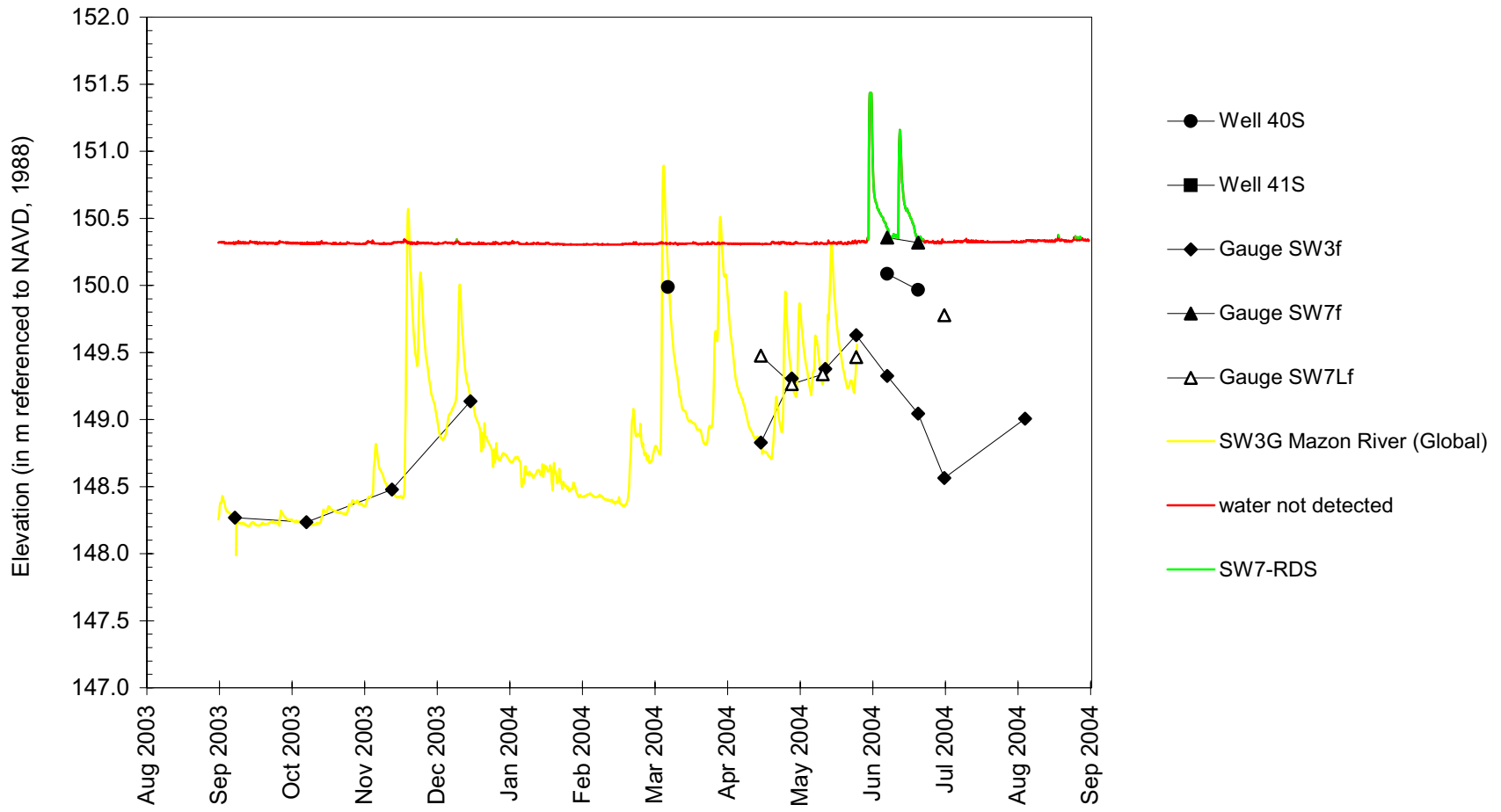
Water-Level Elevations on Stage Gauges



Morris, Illinois River Potential Wetland Banking Site

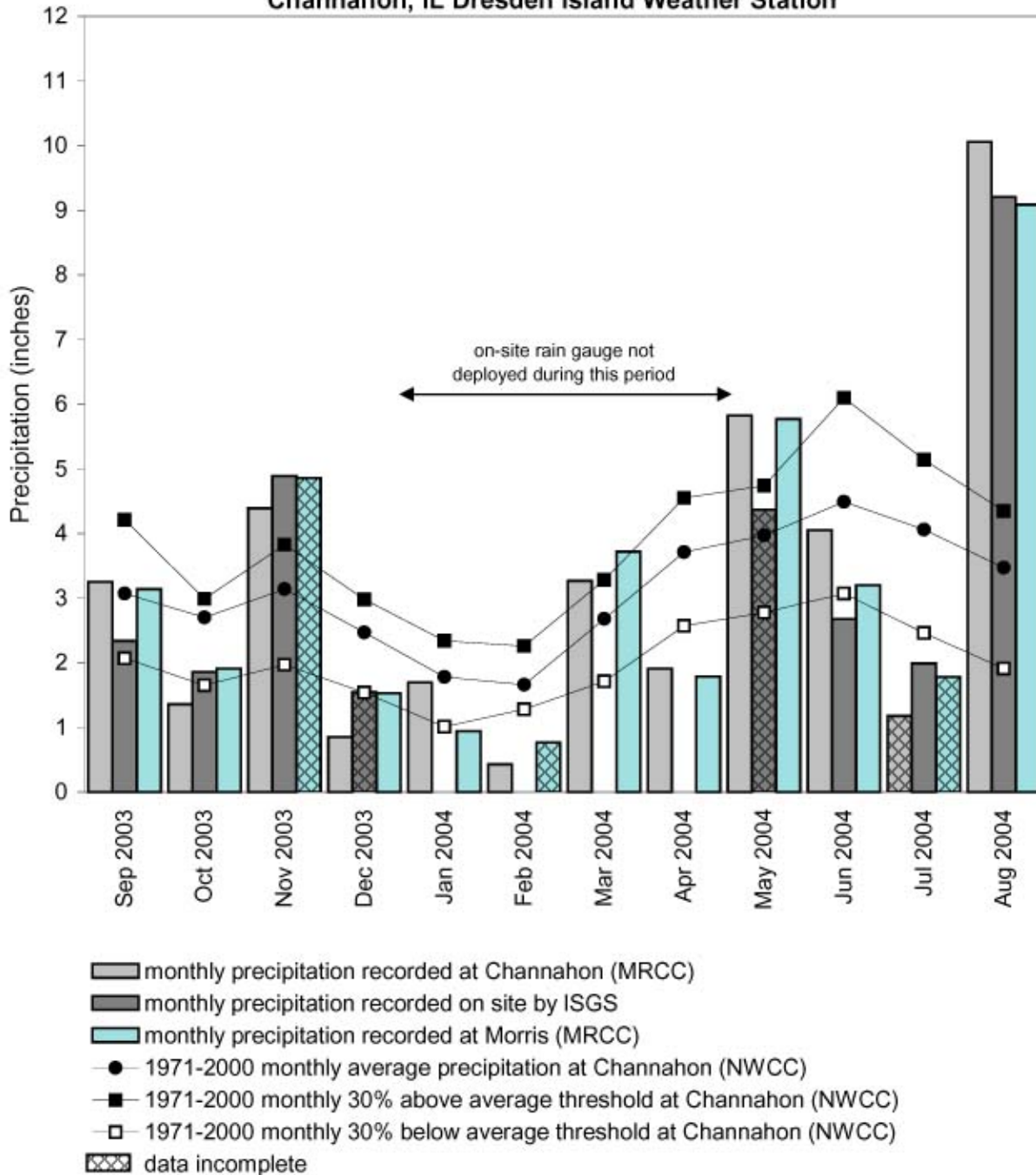
September 1, 2003 to September 1, 2004

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



Morris, Illinois River Potential Wetland Banking Site September 2003 through August 2004

Total Monthly Precipitation Recorded On Site and at the
Channahon, IL Dresden Island Weather Station



Graph last updated October 7, 2004