JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MC HENRY
LAKE
CARROLL
OGLE
DE KALB
KANE
COOK
WHITESIDE
LEE
DU PAGE
WILL
LA SALLE
BUREAU
KENDALL
GRUNDY
49
ROCK ISLAND
MERCER
HENRY
PUTNAM
KANKAKEE
KNOX
STARK
MARSHALL
LIVINGSTON
WARREN
PEORIA
IROQUOIS
WOODFORD
HENDERSON
MC LEAN
FULTON
HANCOCK
MC DONOUGH
FORD
TAZEWELL
VERMILION
MASON
CHAMPAIGN
SCHUYLER
LOGAN
DEWITT
ADAMS
BROWN
CASS
MENARD
PIATT
MACON
PIKE
MORGAN
DOUGLAS
EDGAR
SCOTT
MOULTRIE
CHRISTIAN
SHELBY
COLES
SANGAMON
GREENE
MACOUPIN
CLARK
CALHOUN
MONTGOMERY
CUMBERLAND
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
RICHLAND
LAWRENCE
MARION
CLINTON
CLAY
WAYNE
EDWARDS
WABASH
WASHINGTON
JEFFERSON
MONROE
ST. CLAIR
HAMILTON
WHITE
RANDOLPH
PERRY
FRANKLIN
JACKSON
SALINE
GALLATIN
WILLIAMSON
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC

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

SITE HISTORY

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

- April and December 2003: Drainage tile removal was undertaken in the east field, also called the "spider" field. This concluded tile removal work at the bank site.

- Spring 2004: Trees were planted over large areas of the site within soil units mapped by the National Resources Conservation Service (NRCS) and INHS as hydric. These areas are slated for wetland restoration in the IDOT banking instrument.

- Spring 2006: Monitoring was discontinued in 11 deeper monitoring wells which were not involved in monitoring wetland hydrology at the site, and also at 14 soil-zone wells located in "mesic" areas not slated for wetland preservation, enhancement, or restoration. Further, six soil-zone wells were added in mapped hydric-soil areas.

- Spring and Summer 2007: During field visits on April 13 and August 28, water was seen flowing into and out of the "spider" field. A topographic survey was done on May 8 to investigate the possibility of building a berm to capture this water and potentially expand the area of wetland hydrology.

WETLAND HYDROLOGY CALCULATION FOR 2007

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 2007 was 11.3 ha (27.9 ac) out of a total site area of 342 ha (844 ac). Further, 6.0 ha (14.8 ac) also satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins in 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 116% of normal, primarily due to extreme precipitation in August of 2007. During the four-month period from December 2006 to March 2007, precipitation was 111% of normal, resulting in slightly wetter than normal conditions entering the growing season. In the critical April to July period, however, precipitation dropped off to only 71% of normal. High August precipitation totals (298% of normal) plus heavy up-basin rains caused a large overbank flood at the site, which peaked on August 25 and enhanced wetland hydrology in this monitoring year.

- In 2007, of the 40 soil-zone wells on site, 11 satisfied wetland hydrology criteria for greater than 5% of the growing season (11SR, 16S, 21SR, 42S, 43S, 43VS, 44S, 44VS, 48SR,

51S, 57S). Further, seven of these wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season (21SR, 42S, 43S, 43VS, 44S, 44VS, 57S).

- Staff gauges or data loggers in closed depressions at SW5, SW7, SW8, SW9, and SW10 indicated inundation for a period greater than 5% of the growing season. The same gauges, with the exception of SW8, also showed inundation for a period greater than 12.5% of the growing season.

- In the 2006–2007 season, an on-site data logger at SW2 and the nearby USACE gauge showed that two flood events during the growing season reached the bankfull elevation of the Mazon River and Mud Slough, roughly 149.4 m (490 ft). The first of these floods, which peaked at 150.46 m (493.64 ft) on April 27, attained an elevation sufficient to flood most areas of the site slated for wetland restoration, but was of short duration (5 days over bankfull). The second flood, with a stage height unprecedented since ISGS monitoring began in 1999, flooded the entire site. This flood, which peaked at 152.44 m (500.12 ft) on August 25, was also of short duration (5 days over bankfull). As in previous years, the flood duration itself was not sufficient to meet wetland hydrology criteria, nor did widespread areas of the site retain water for sufficient periods after the flood to do so.

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

PLANNED FUTURE ACTIVITIES

- Monitoring will continue until no longer required by IDOT.

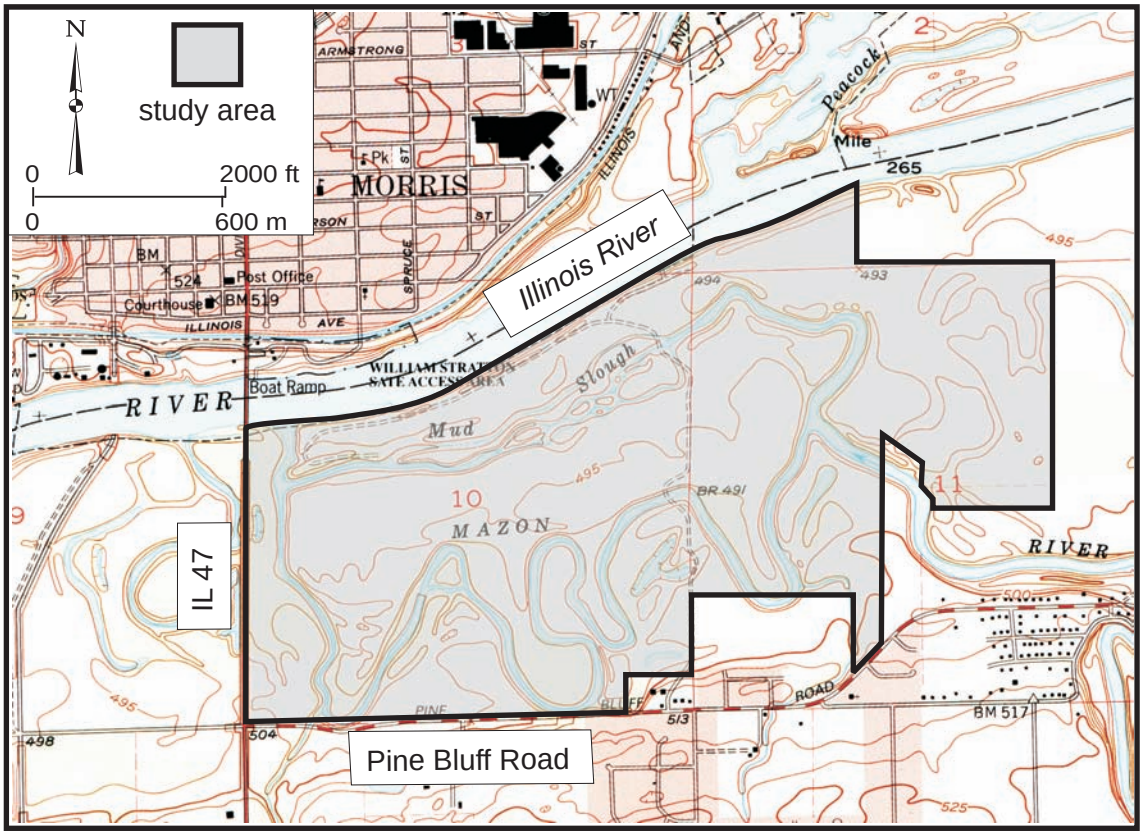
- The feasibility of building a berm in the “spider” field to capture additional water will be studied. Topographic data collected in 2007 will be amalgamated with an existing onsite topographic map to determine the likelihood that a berm could expand the area of wetland hydrology significantly.

- Several monitoring wells and a data logger will be added to the site to the west of the Illinois Route 47 bridge Right Of Way. Spring flooding in 2007 precluded this emplacement during the current year.

Morris, Illinois River Wetland Bank Site

General Study Area and Vicinity

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

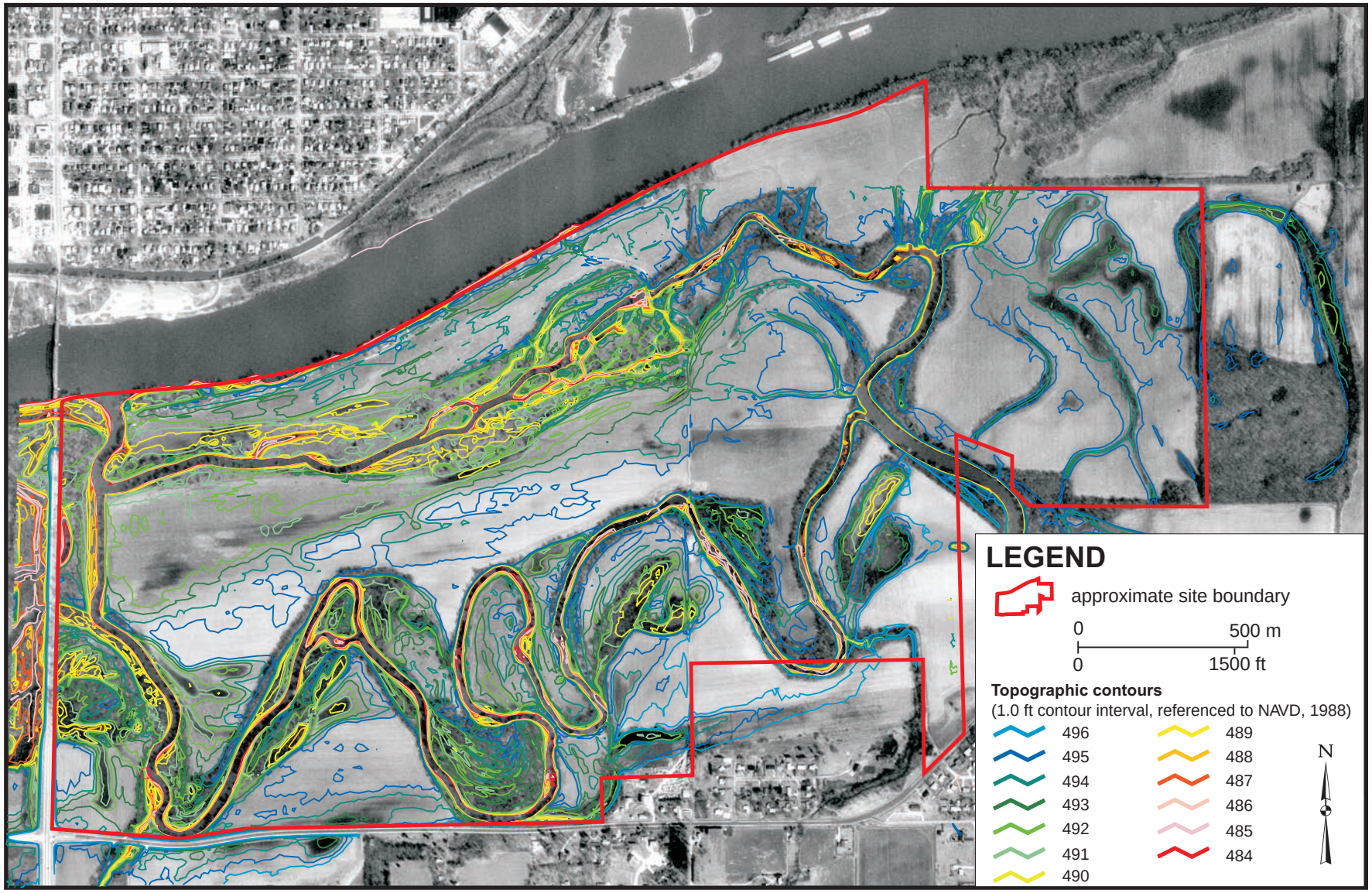


Morris, Illinois River Wetland Bank Site

Site Topographic Map (IDOT / INHS)

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

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

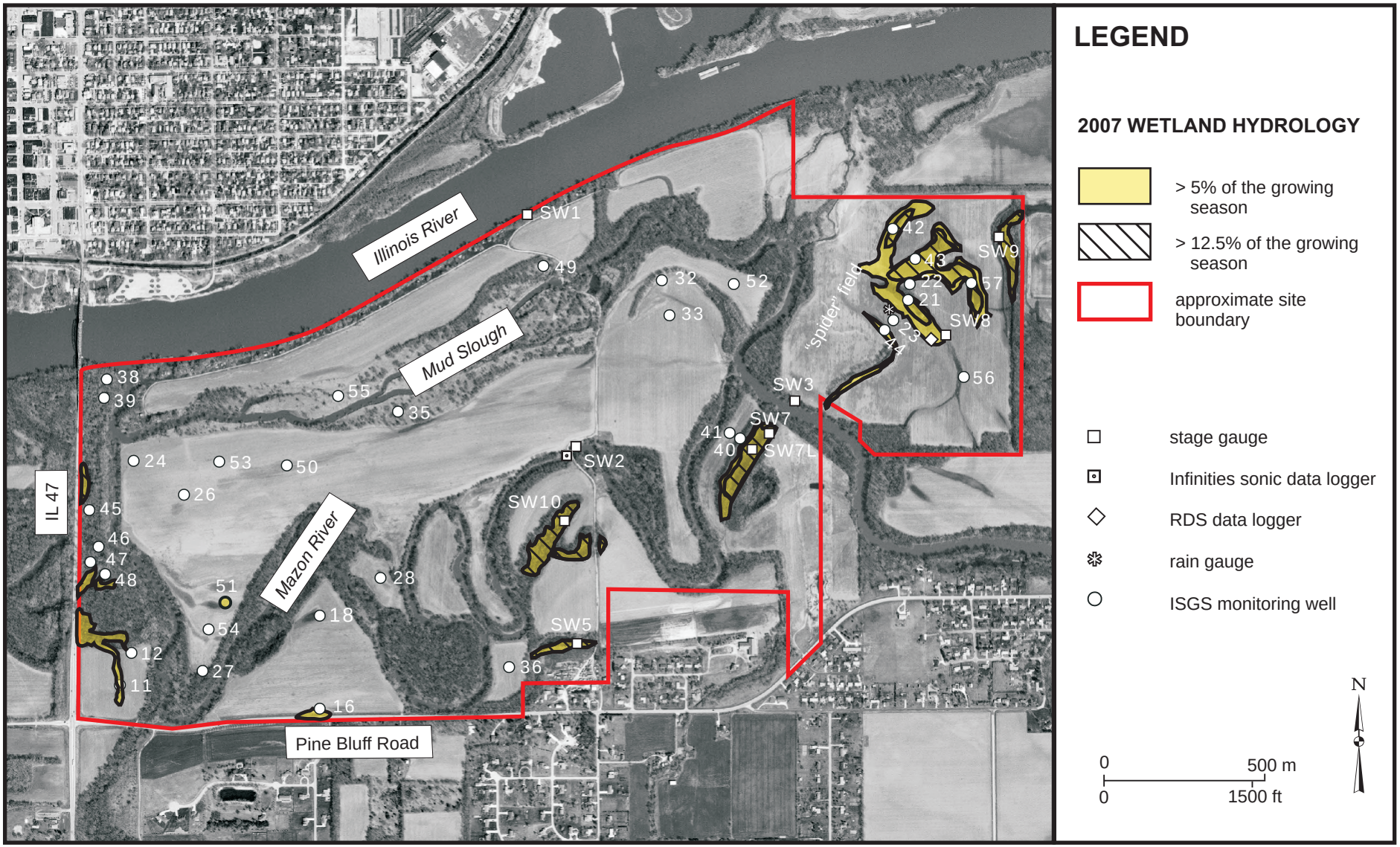


Morris, Illinois River Wetland Bank Site

Estimated Areal Extent of 2007 Wetland Hydrology

based on data collected between September 1, 2006 and September 18, 2007

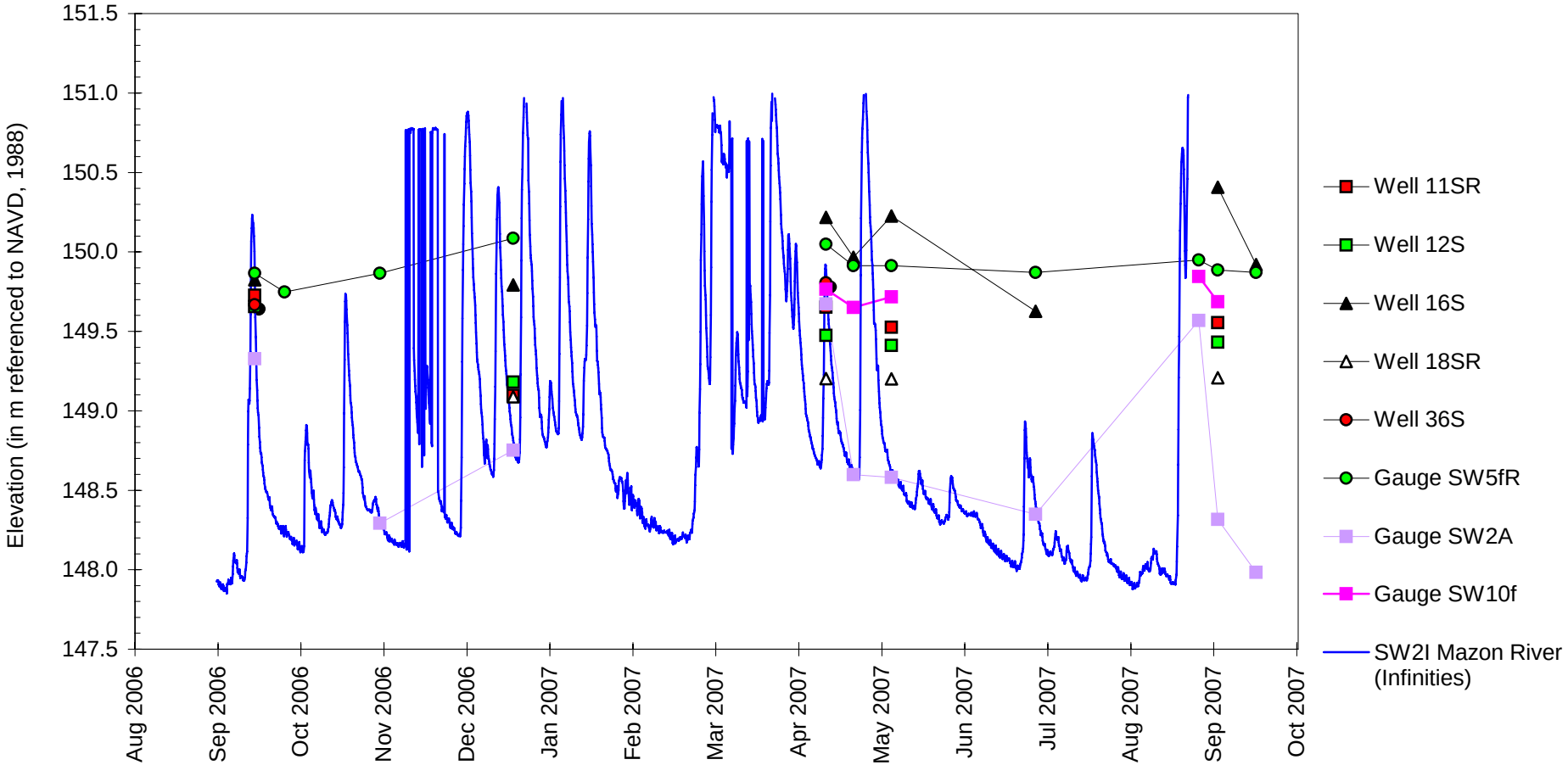
Map based on USGS digital orthophotograph, Morris NE quarter quadrangle
from 4/5/1998 aerial photography (ISGS 2001)



Morris, Illinois River Wetland Bank Site

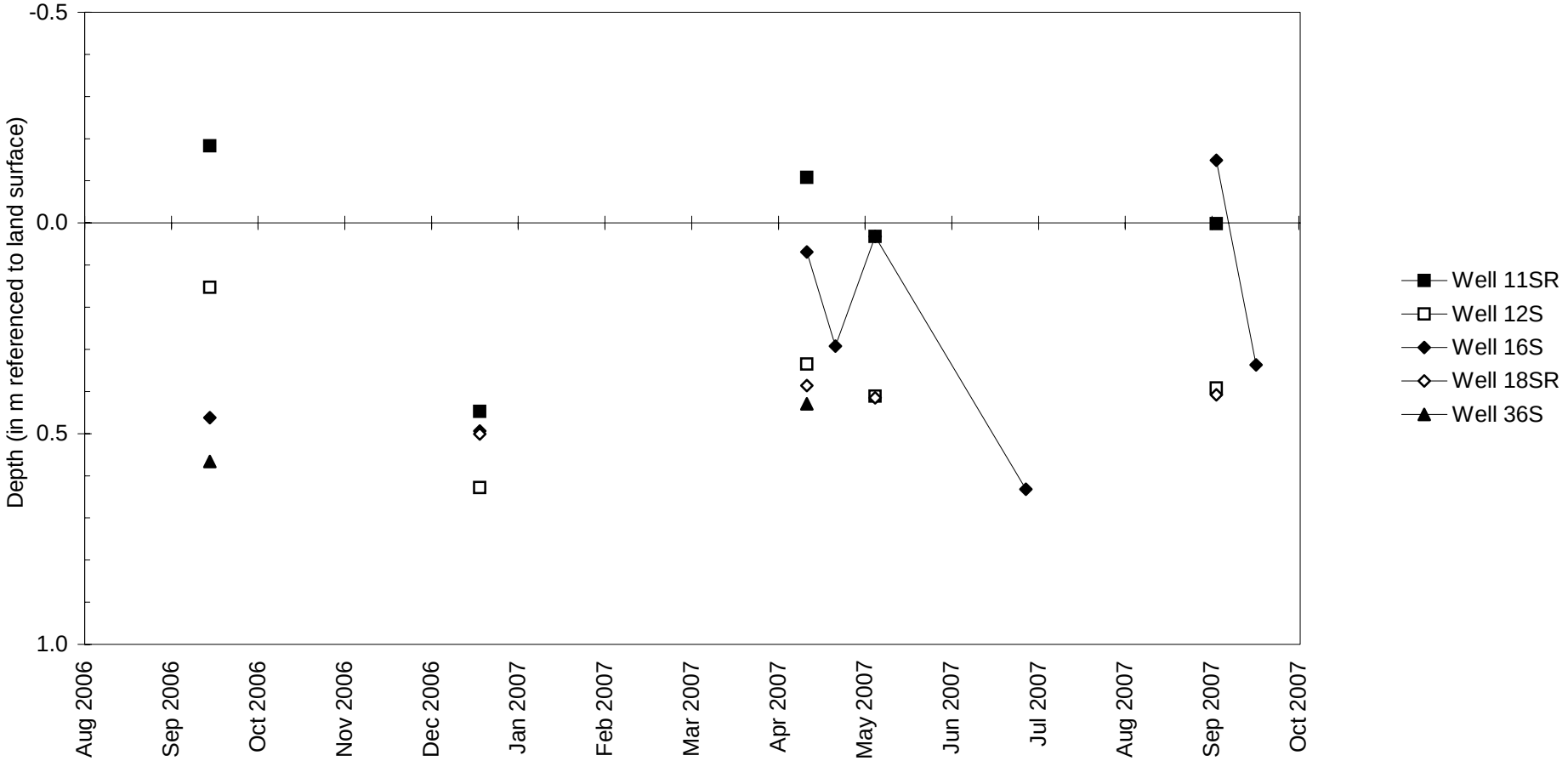
September 1, 2006 to September 18, 2007

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, 2006 to September 18, 2007

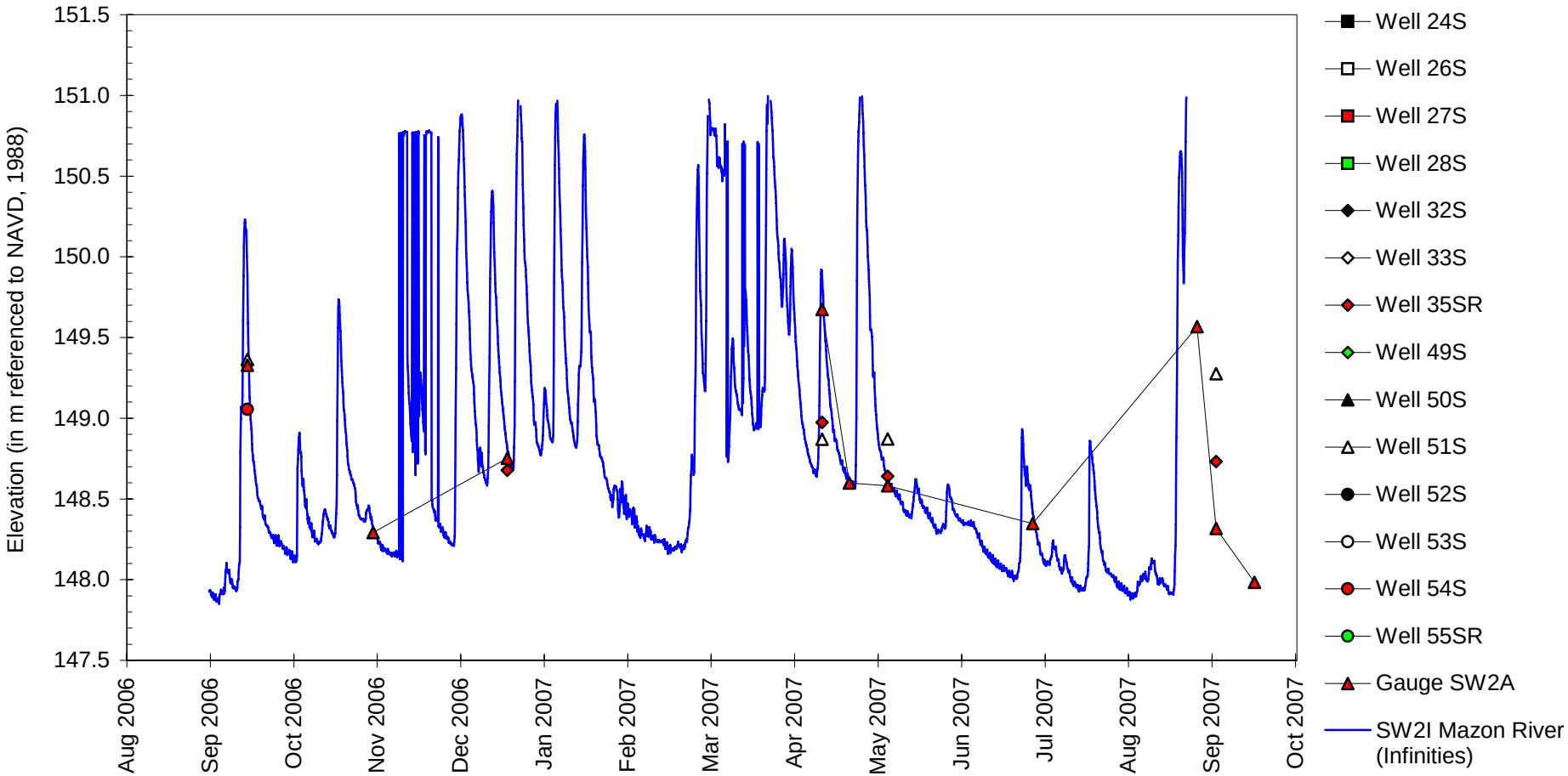
Depth to Water
in Soil-Zone Monitoring Wells
South of the Mazon River



Morris, Illinois River Wetland Bank Site

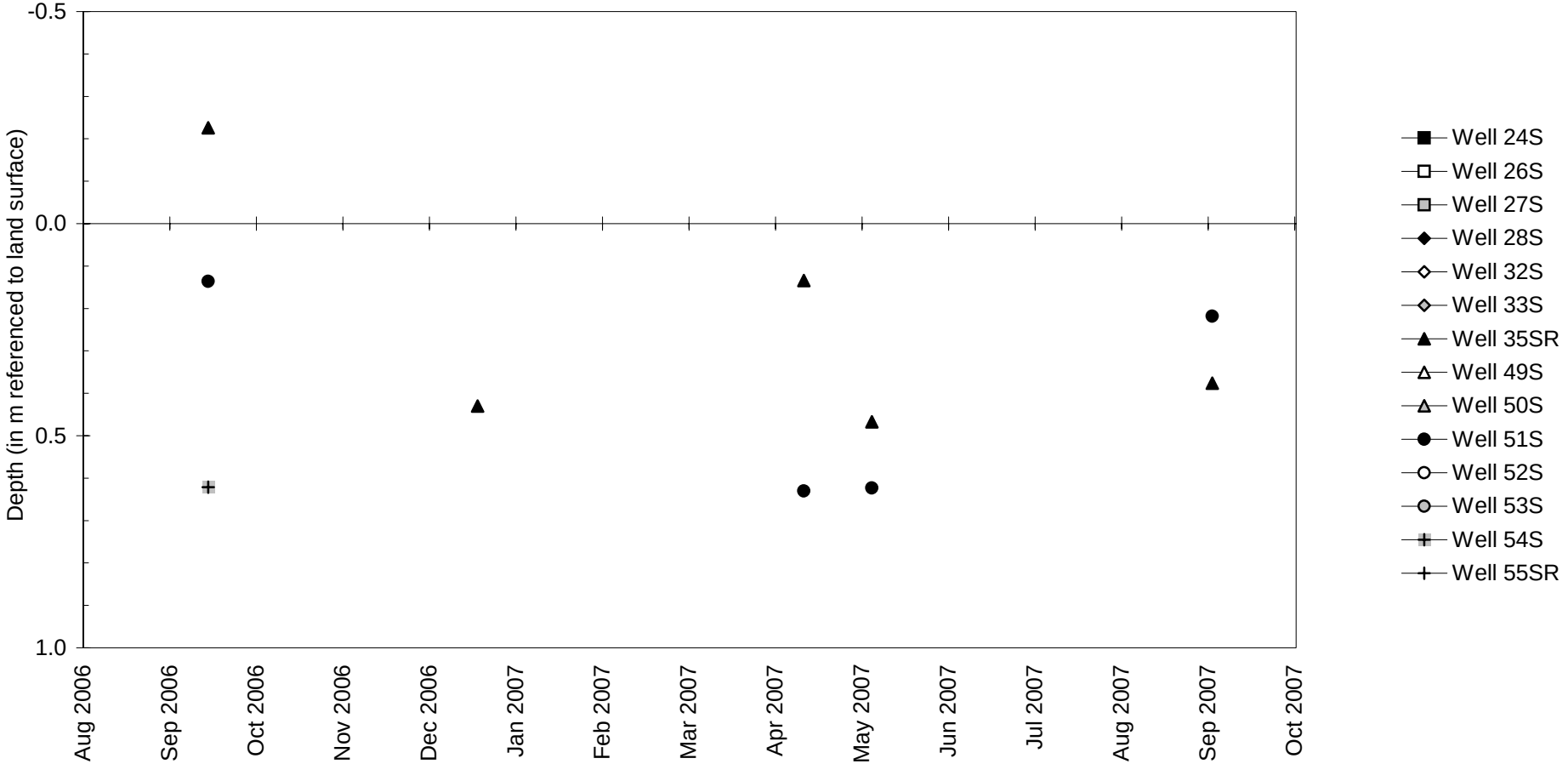
September 1, 2006 to September 18, 2007

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, 2006 to September 18, 2007

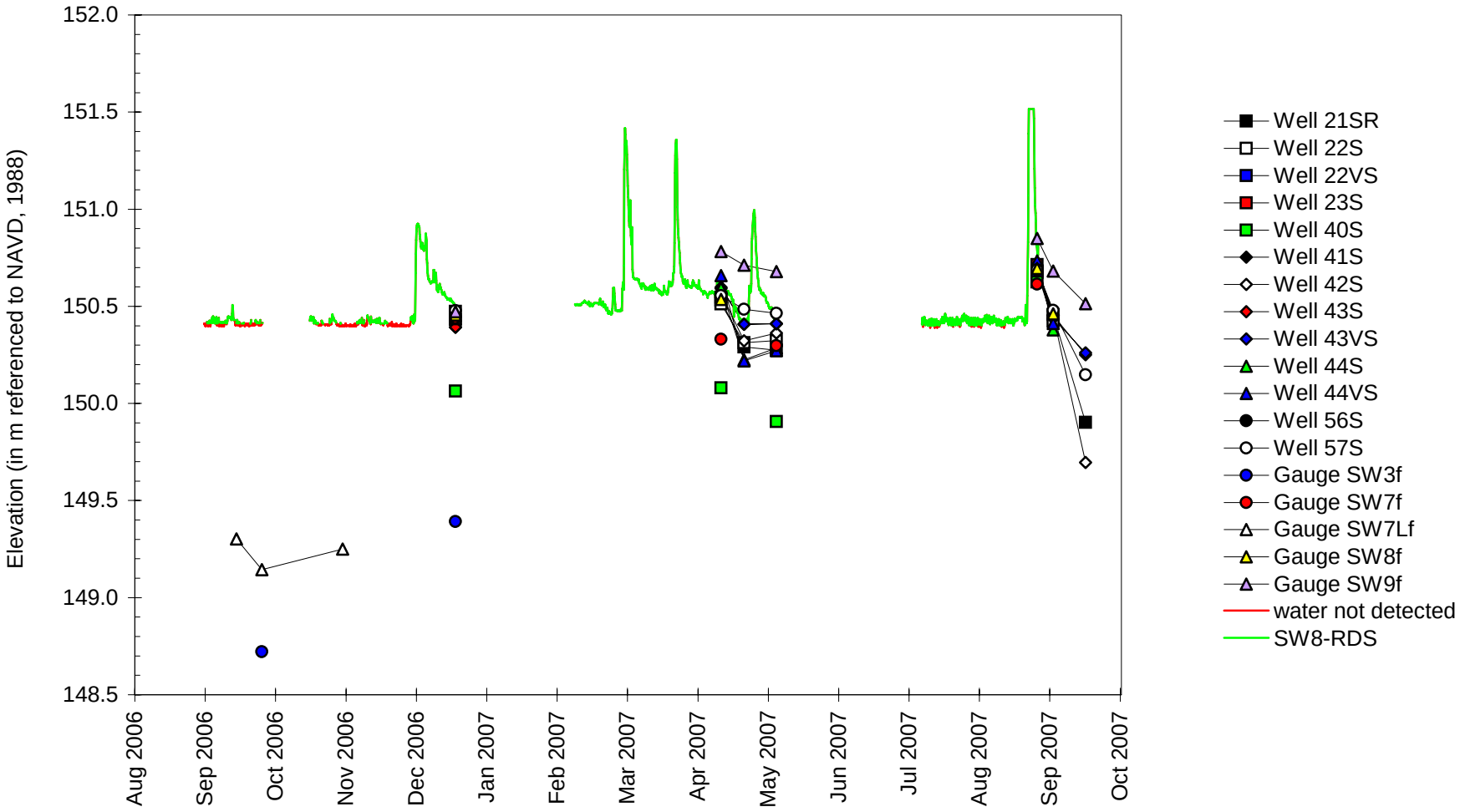
Depth to Water
in Soil-Zone Monitoring Wells
North of the Mazon River



Morris, Illinois River Wetland Bank Site

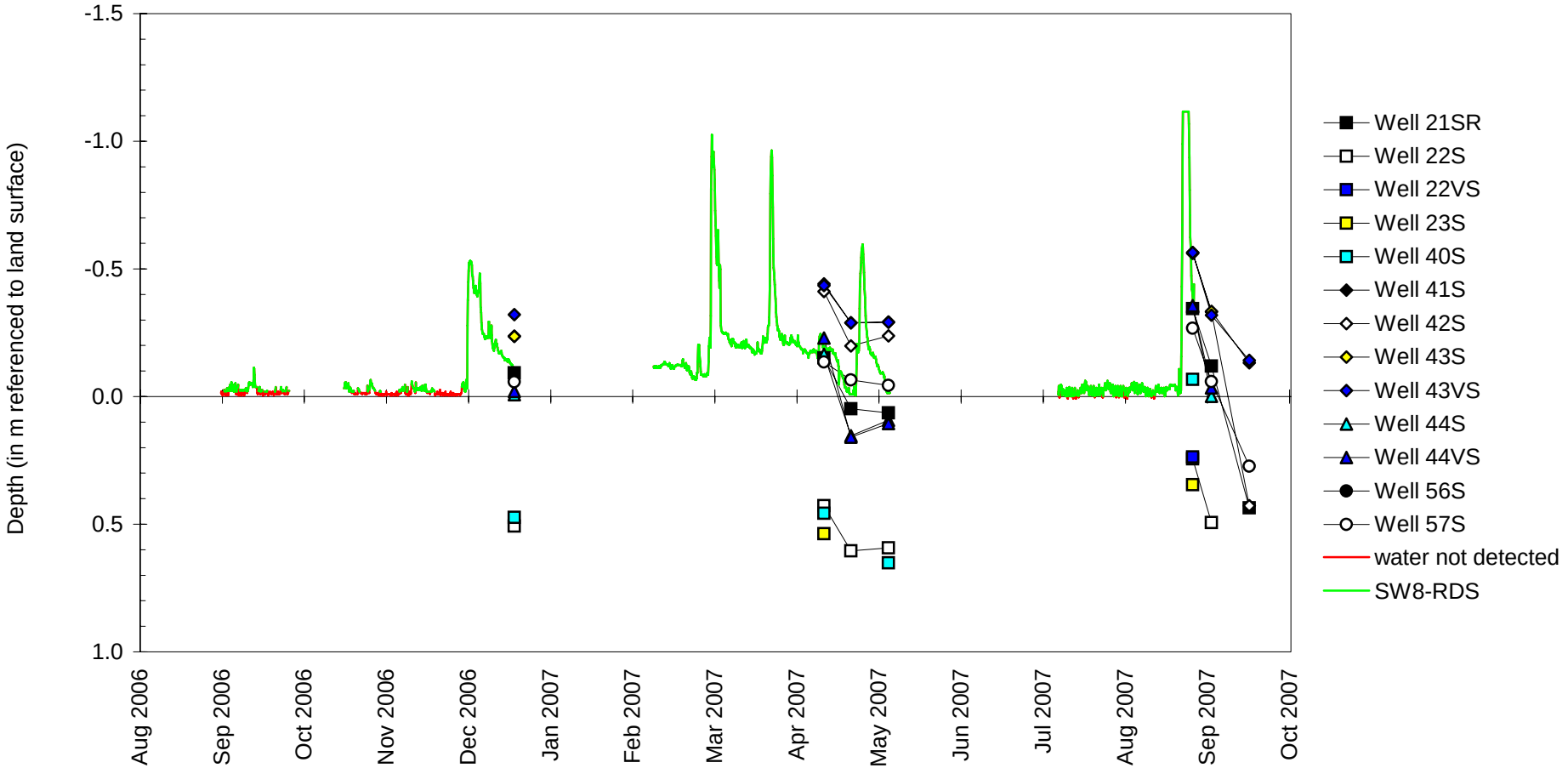
September 1, 2006 to September 18, 2007

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



Morris, Illinois River Wetland Bank Site
September 1, 2006 to September 18, 2007

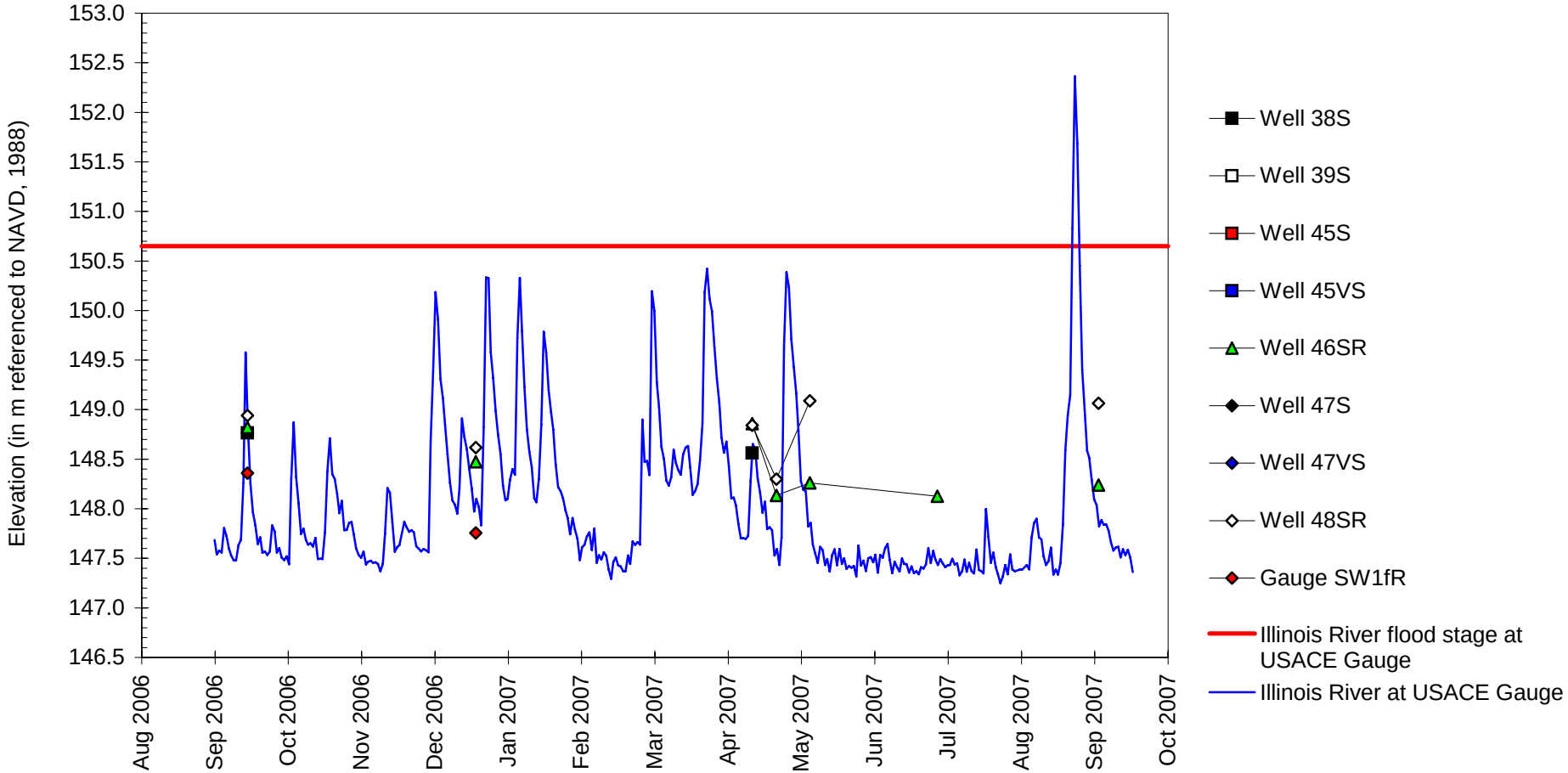
Depth to Water
in Soil-Zone Monitoring Wells and Data Loggers
in the East Field and near the Natural Slough



Morris, Illinois River Wetland Bank Site

September 1, 2006 to September 18, 2007

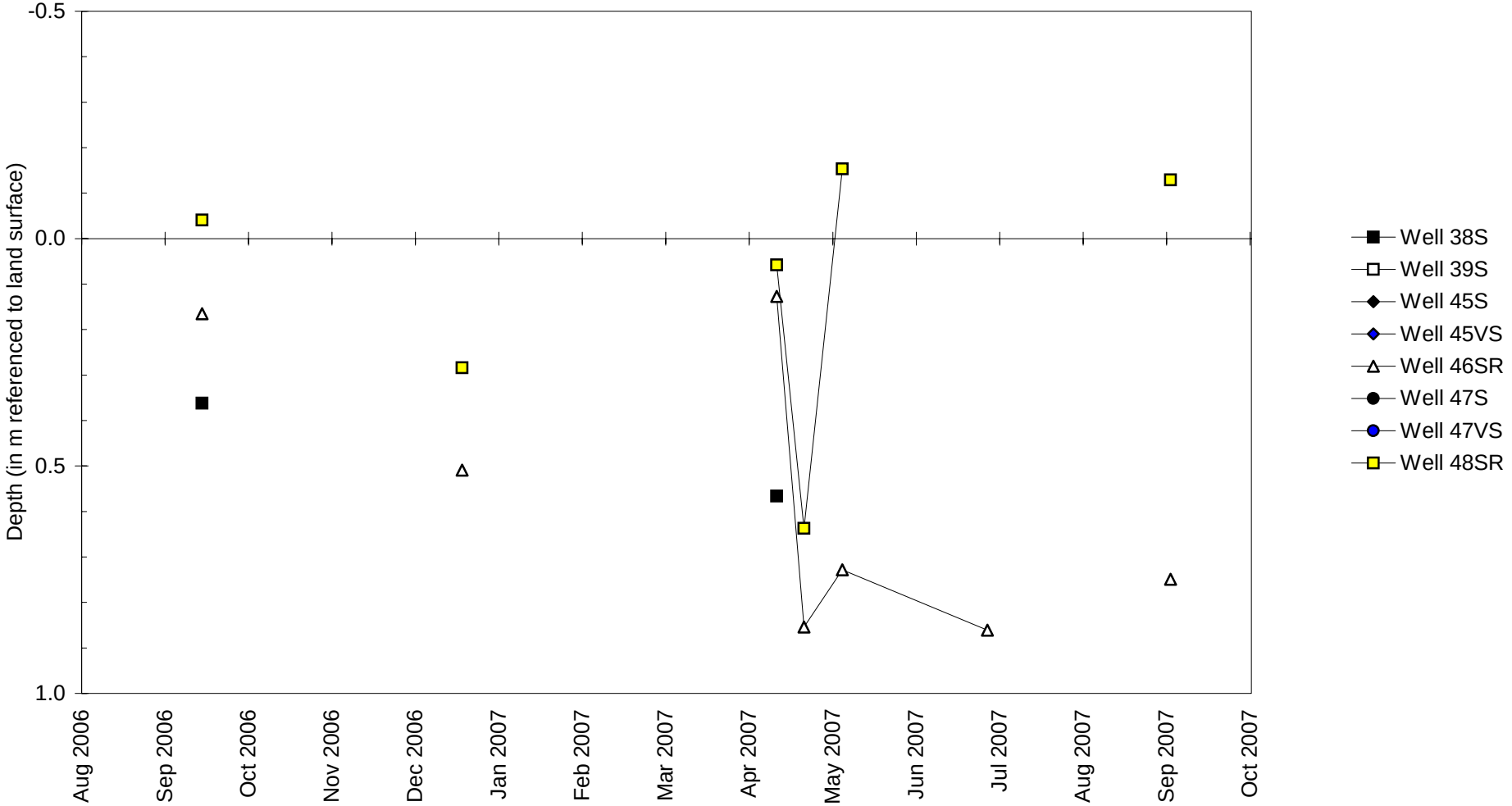
Water-Level Elevations
in Monitoring Wells, Data Loggers, and Stage Gauges
near the Illinois River Floodplain Forest



Morris, Illinois River Wetland Bank Site

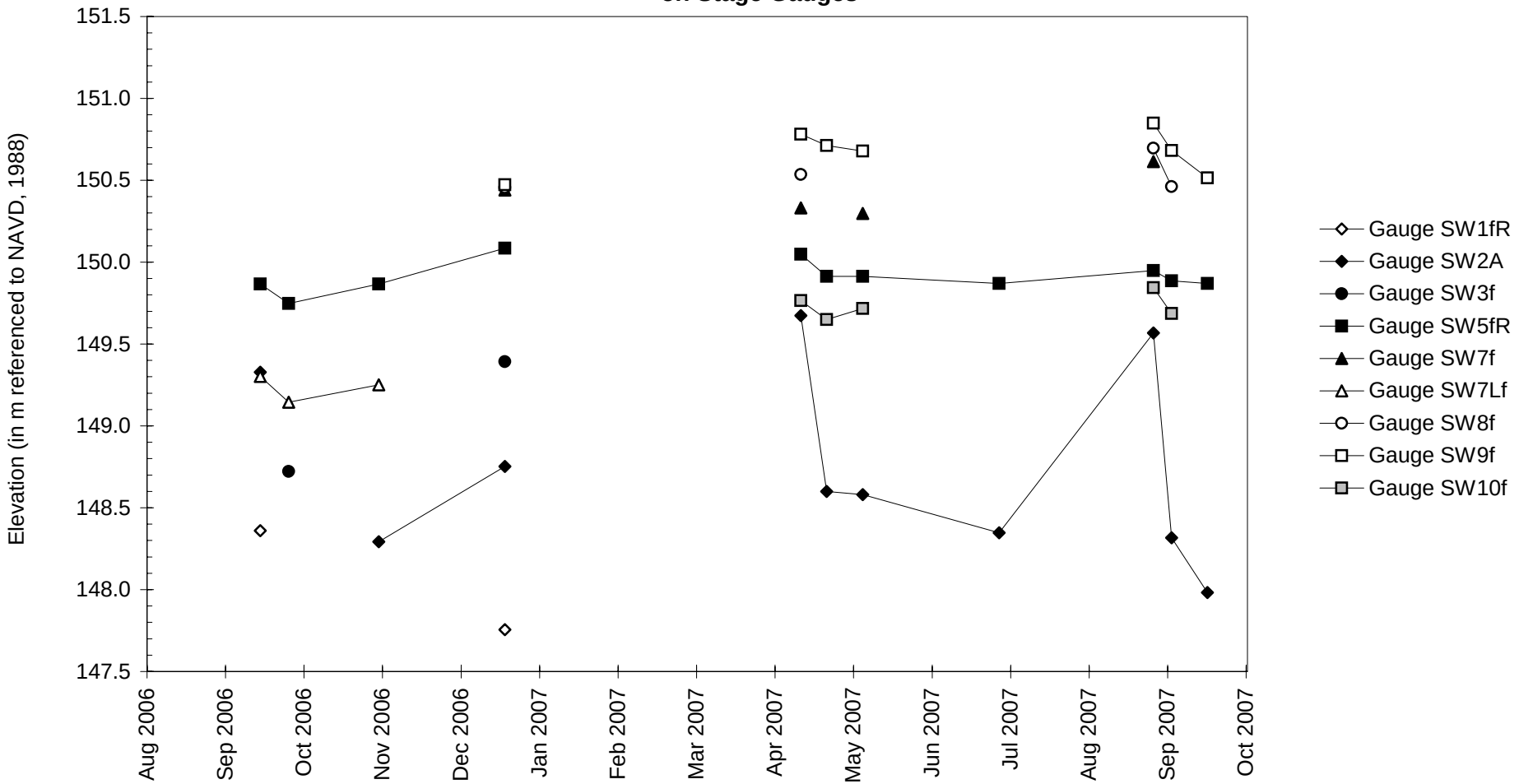
September 1, 2006 to September 18, 2007

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



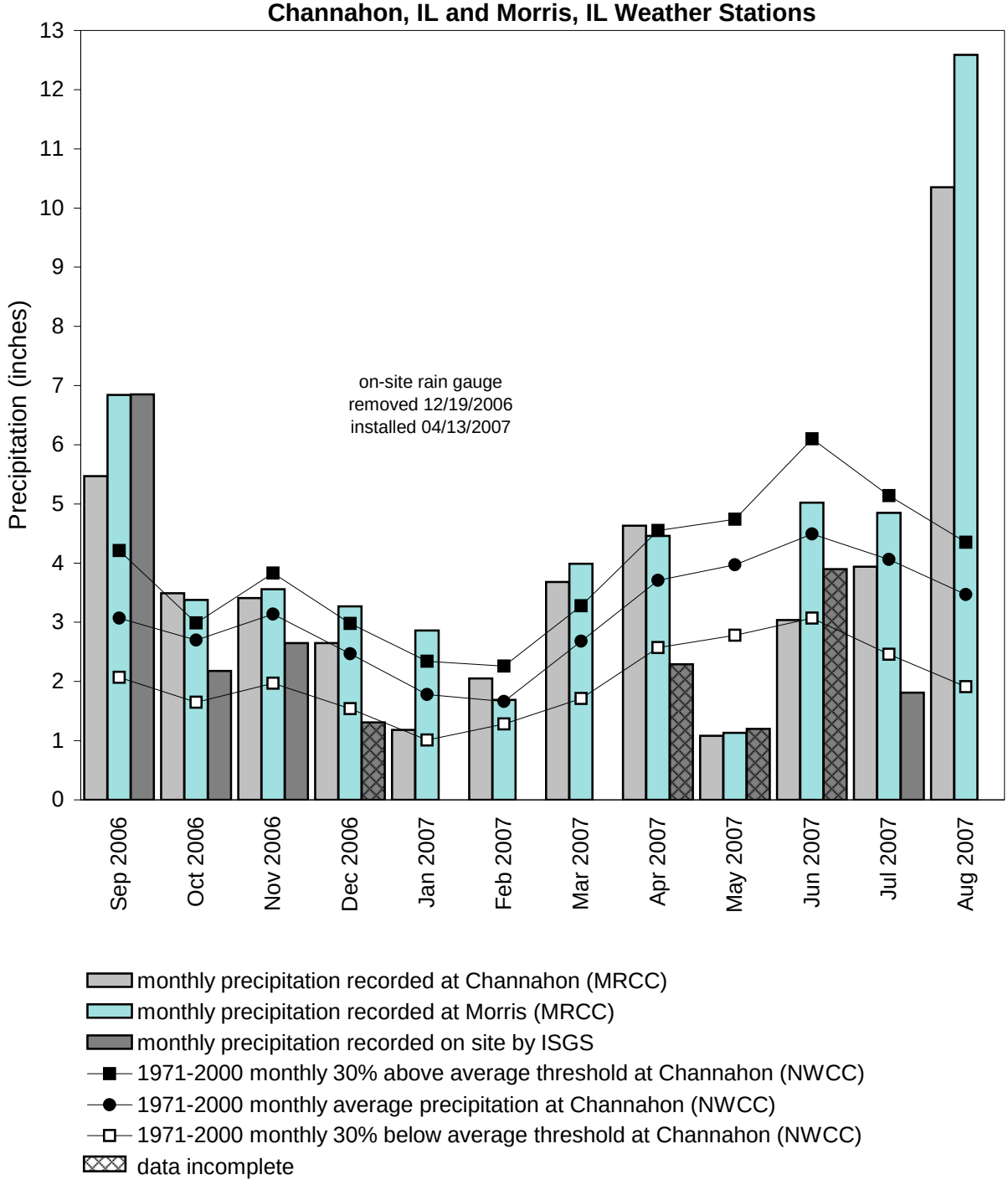
Morris, Illinois River Wetland Bank Site
September 1, 2006 to September 18, 2007

Water-Level Elevations on Stage Gauges



Morris, Illinois River Wetland Bank Site
September 2006 through August 2007

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



Graph last updated October 10, 2007