



**FORMER WESSEL PROPERTY
LA GRANGE WETLAND BANK SITE**

ISGS #52

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.
- Spring 2000: ISGS began on-site activities with the installation of surface-water monitoring equipment and monitoring wells in selected areas. Additional instruments have been added annually.
- August 2002: IDOT tasked ISGS and INHS to prepare a draft wetland banking instrument, which was submitted to IDOT in January 2003.
- December 2004: The bank site was declared an Exemplary Ecosystem Initiative by the Federal Highway Administration.
- January 2005: A Level II report on the site was submitted to IDOT on January 7, 2005 (ISGS Open File Series 2005-2).
- January 2005: A large Illinois River flood inundated most of the site in late January of 2005. Wave and ice action destroyed 16 of the 25 soil-zone wells on the site, as well as several staff gauges and data loggers. These wells were replaced in late May of 2005, and an additional 10 new soil-zone wells were added. An additional six soil-zone wells were found to have been pushed down by the ice and will be replaced in the spring of 2006.

WETLAND HYDROLOGY CALCULATION FOR 2005

We estimate that the total area of the site that satisfied the wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the growing season in 2005 was 85.2 ha (210.6 ac). In addition, 38.1 ha (94.1 ac) satisfied wetland hydrology criteria for greater than 12.5% of the growing season. These estimates are based on the following factors:

- According to the Midwestern Climate Center, the median date that the growing season begins in nearby Rushville, Illinois, is April 6 and the season lasts 208 days; 5% of the growing season is 10 days and 12.5% of the growing season is 26 days.
- Total precipitation for the monitoring period was 74% of normal. Further, in the critical April to July period, precipitation dropped off sharply to only 36% of normal.
- In 2005, water levels measured in none of the soil-zone wells satisfied wetland hydrology criteria for greater than 5% of the growing season.
- Also in 2005, on-site data loggers indicated surface-water inundation in the Big Lake basin to an elevation of at least 131.09 m (430.12 ft) for a period greater than 5% of the growing season. The same suite of loggers and gauges also showed surface-water inundation in

the Big Lake basin to an elevation of at least 130.8 m (429.1 ft) for a period greater than 12.5% of the growing season.

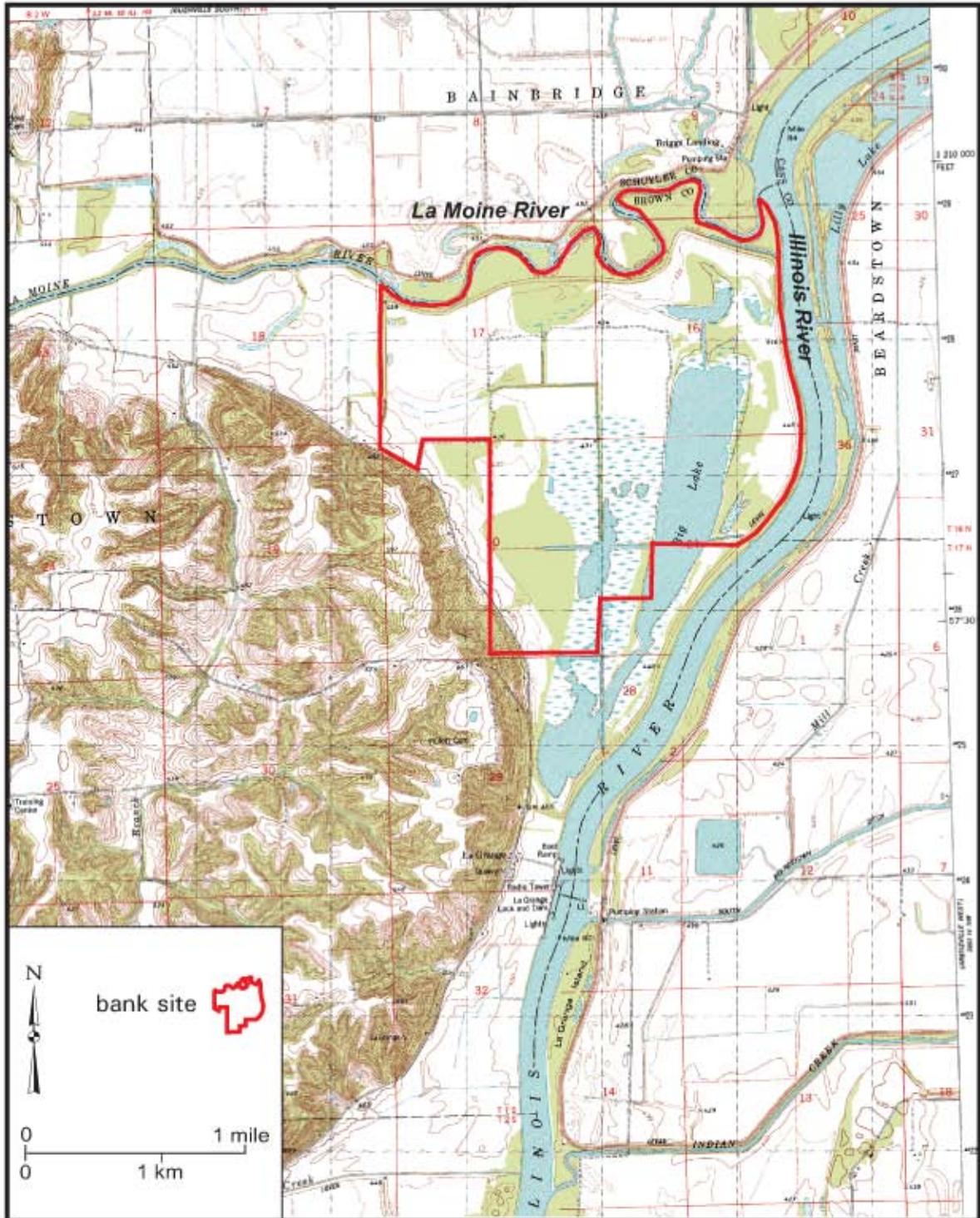
- Limitations of the wetland hydrology determination are as follows:
 - Many of the wells that may have shown wetland hydrology this year, generally those within the area below the break in slope, were damaged or destroyed during the flooding. A total of 16 damaged wells have since been replaced and 10 more added for the upcoming monitoring year.

PLANNED FUTURE ACTIVITIES

- Six more wells which were pushed down will also be replaced in the spring of 2006.
- Monitoring of hydrology will continue until no longer required by IDOT.
- Construction related to development of the bank site may require the relocation of several monitoring stations in the spring of 2006. Flood-tolerant data loggers will also be installed in the southeast corner of the site in 2006.

Former Wessel Property, La Grange Wetland Bank Site General Study Area and Vicinity

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



Former Wessel Property, La Grange Wetland Bank Site

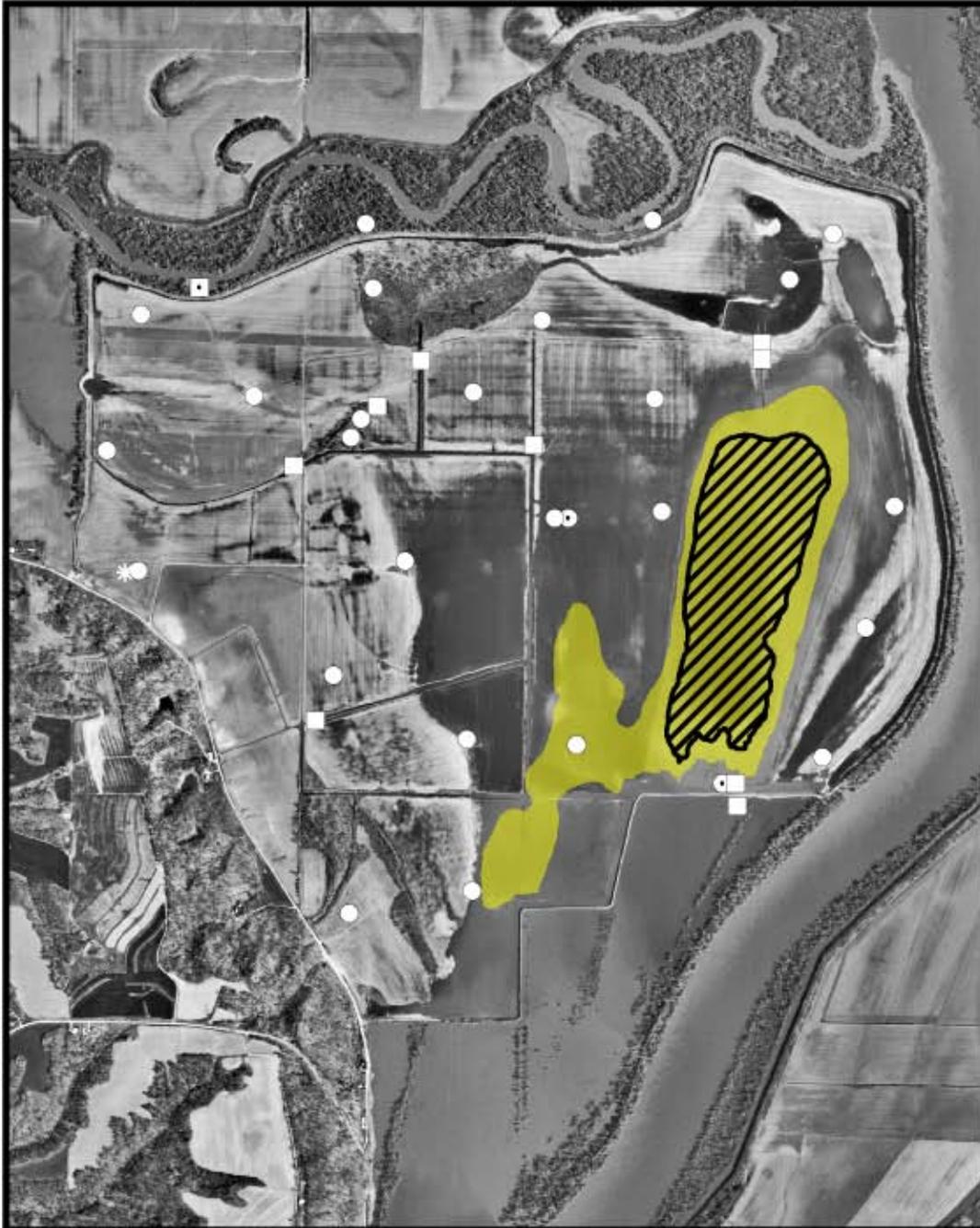
Locations of ISGS Monitoring Equipment

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



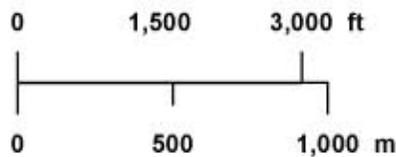
- | | | | |
|---|--------------------|---|---------------------|
| △ | RDS data logger | ○ | monitoring well |
| ✱ | rain gauge | □ | staff (stage) gauge |
| ⊙ | Global data logger | ▣ | Sonic data logger |

Former Wessel Property, La Grange Wetland Bank Site
Estimated Areal Extent of 2005 Wetland Hydrology
 based on data collected between September 1, 2004 and September 1, 2005
 Map based upon USGS digital orthophotograph, Cooperstown, NE quarter quadrangle
 produced from 4/14/98 aerial photography (ISGS 2002)



Legend

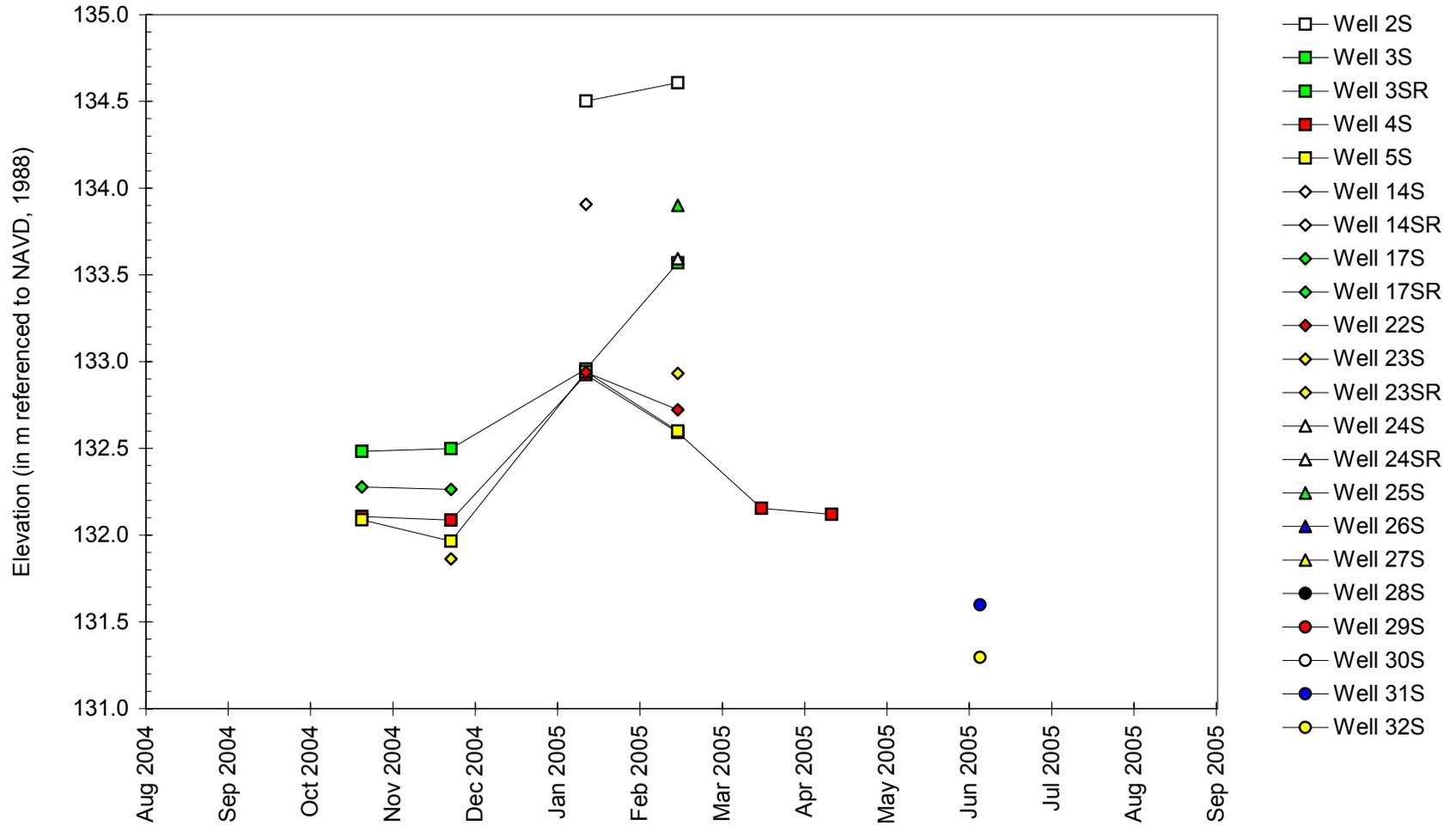
- monitoring well (s)
- rain gauge
- staff (stage) gauge
- ◻ Sonic data logger
- ◐ Global data logger
- > 5% of growing season
- ▨ > 12.5% of growing season



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2004 to September 1, 2005

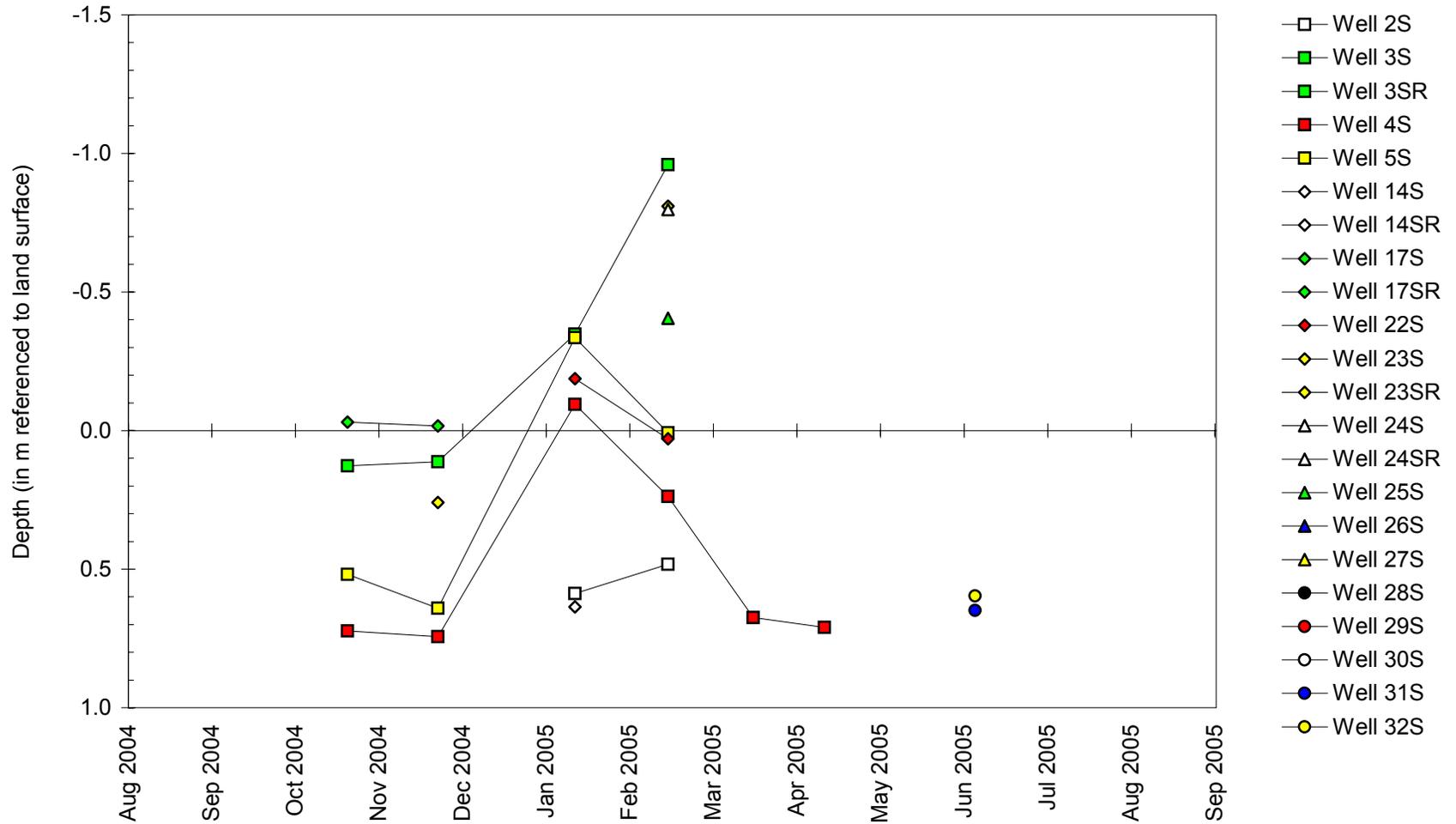
Water-Level Elevations in Shallow Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2004 to September 1, 2005

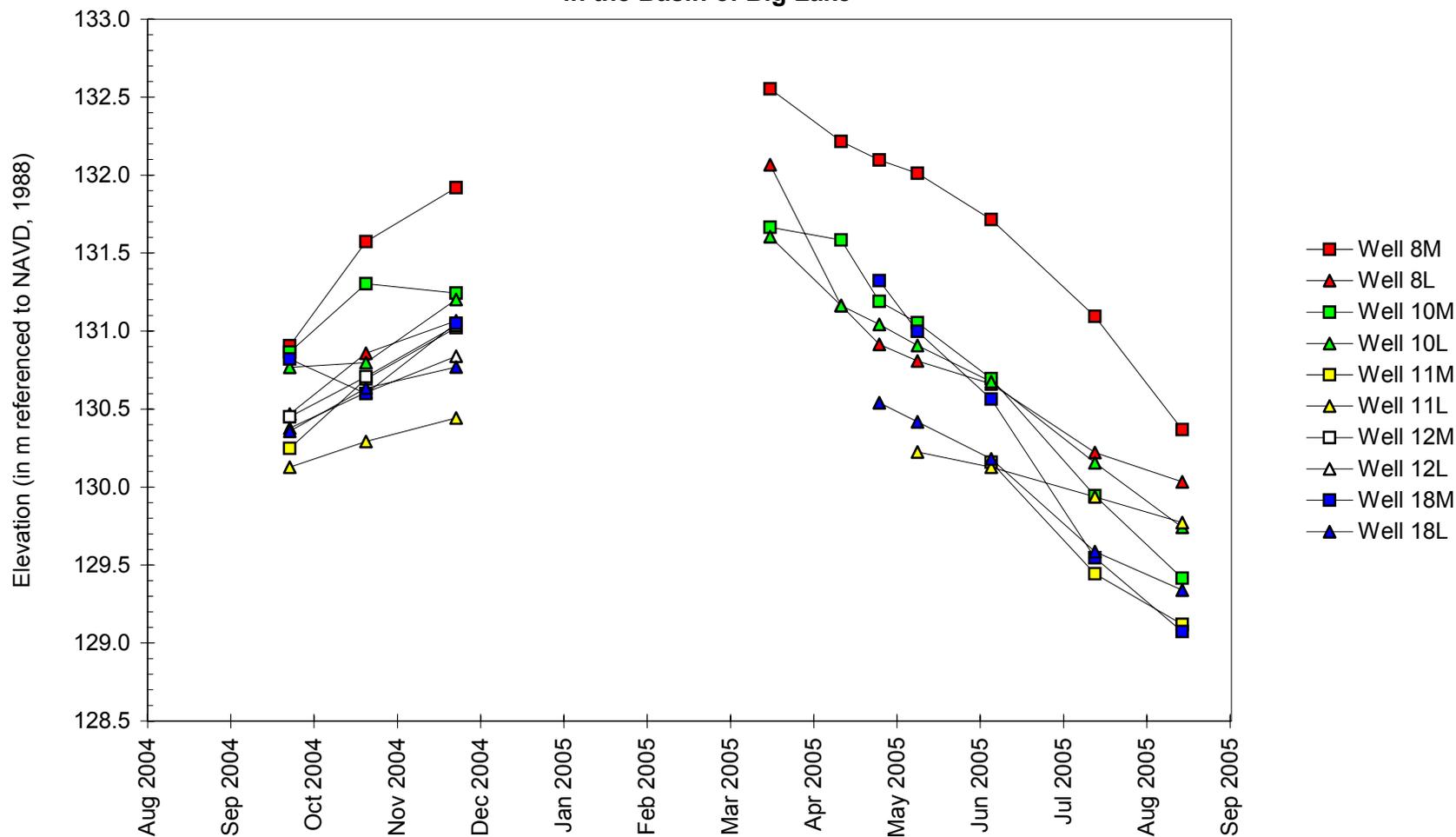
Depth to Water in Shallow Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2004 to September 1, 2005

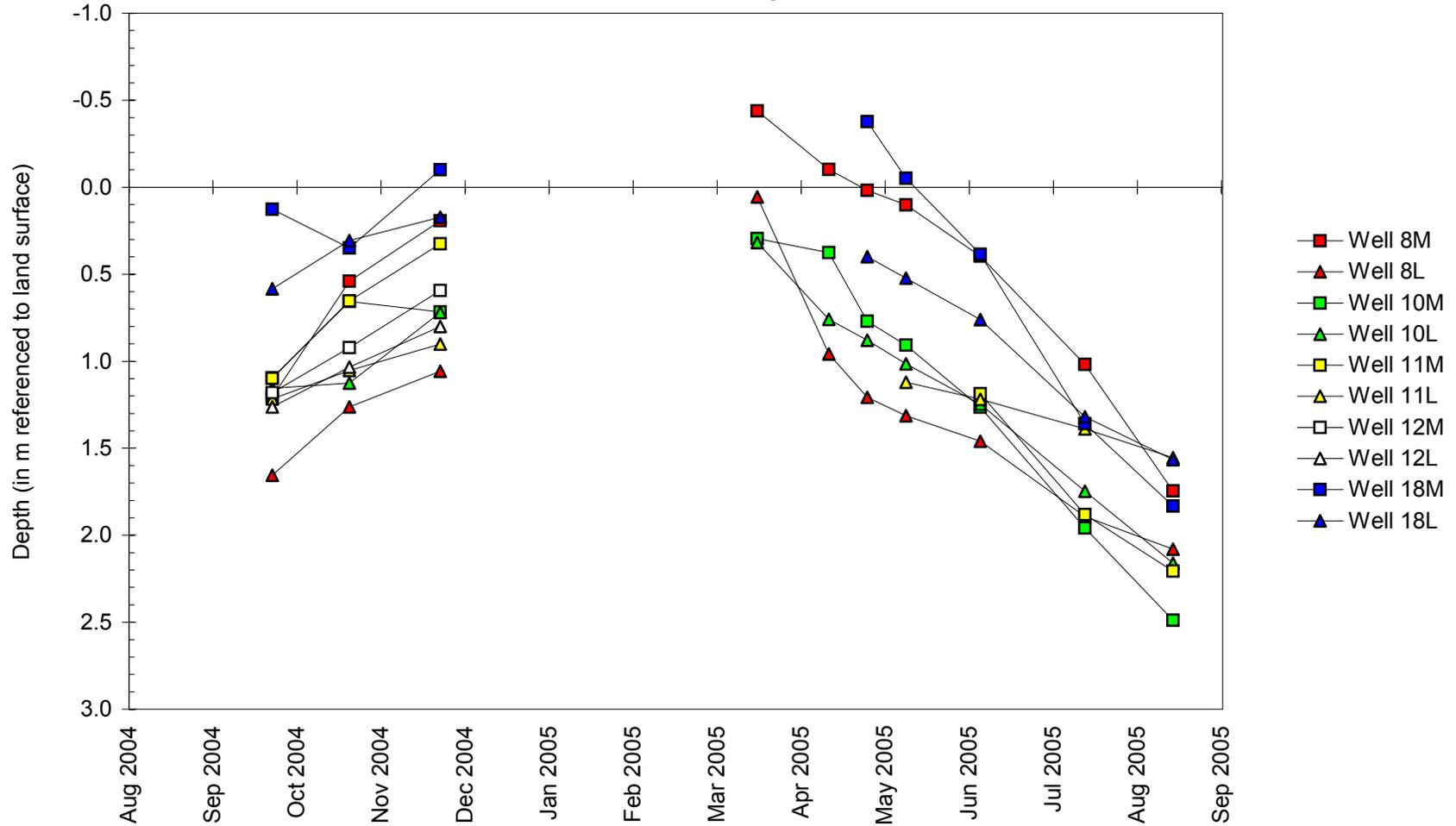
Water-Level Elevations in Deeper Monitoring Wells in the Basin of Big Lake



Former Wessel Property, La Grange Wetland Bank Site

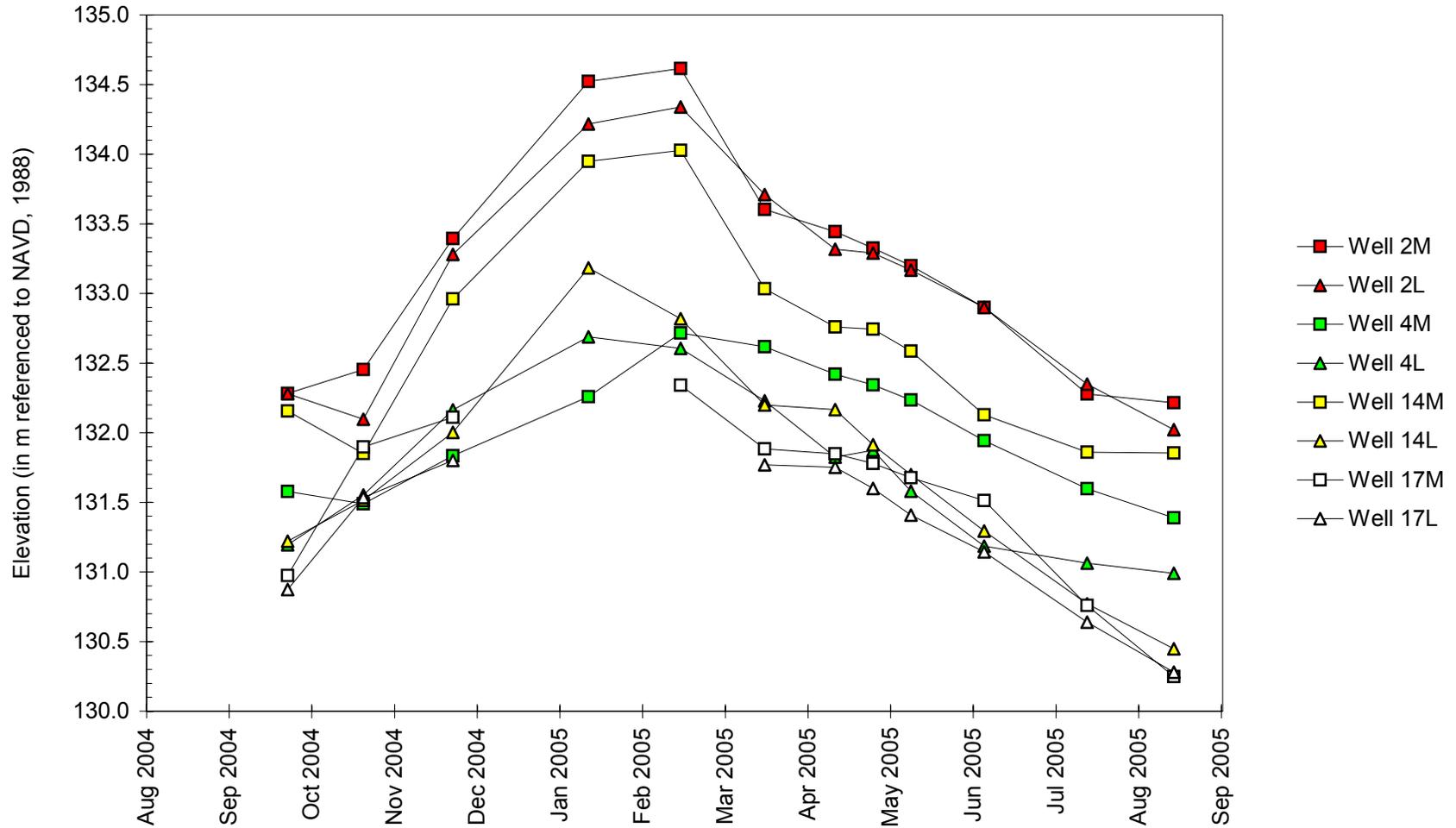
September 1, 2004 to September 1, 2005

Depth to Water in Deeper Monitoring Wells in the Basin of Big Lake



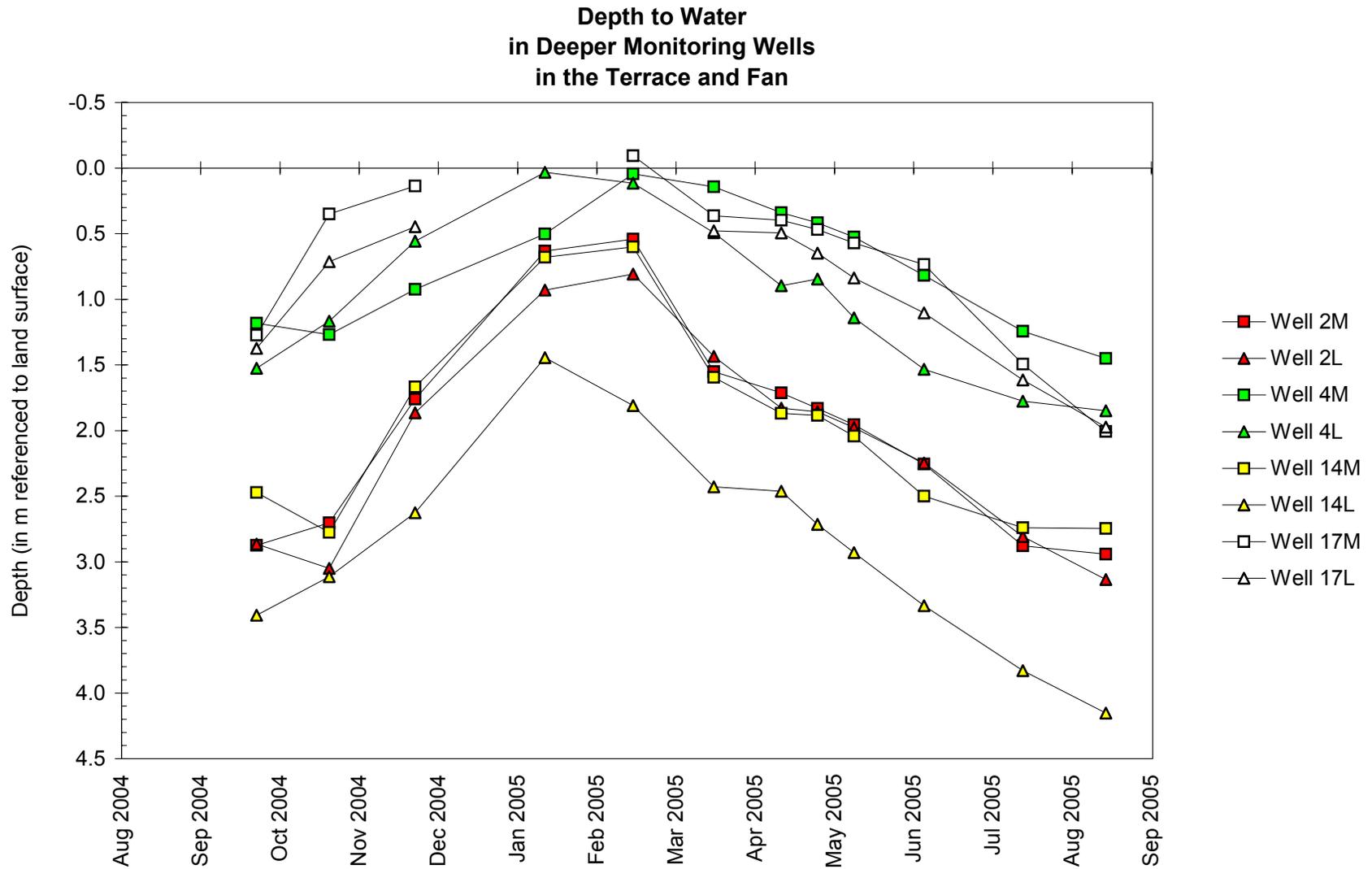
Former Wessel Property, La Grange Wetland Bank Site
September 1, 2004 to September 1, 2005

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



Former Wessel Property, La Grange Wetland Bank Site

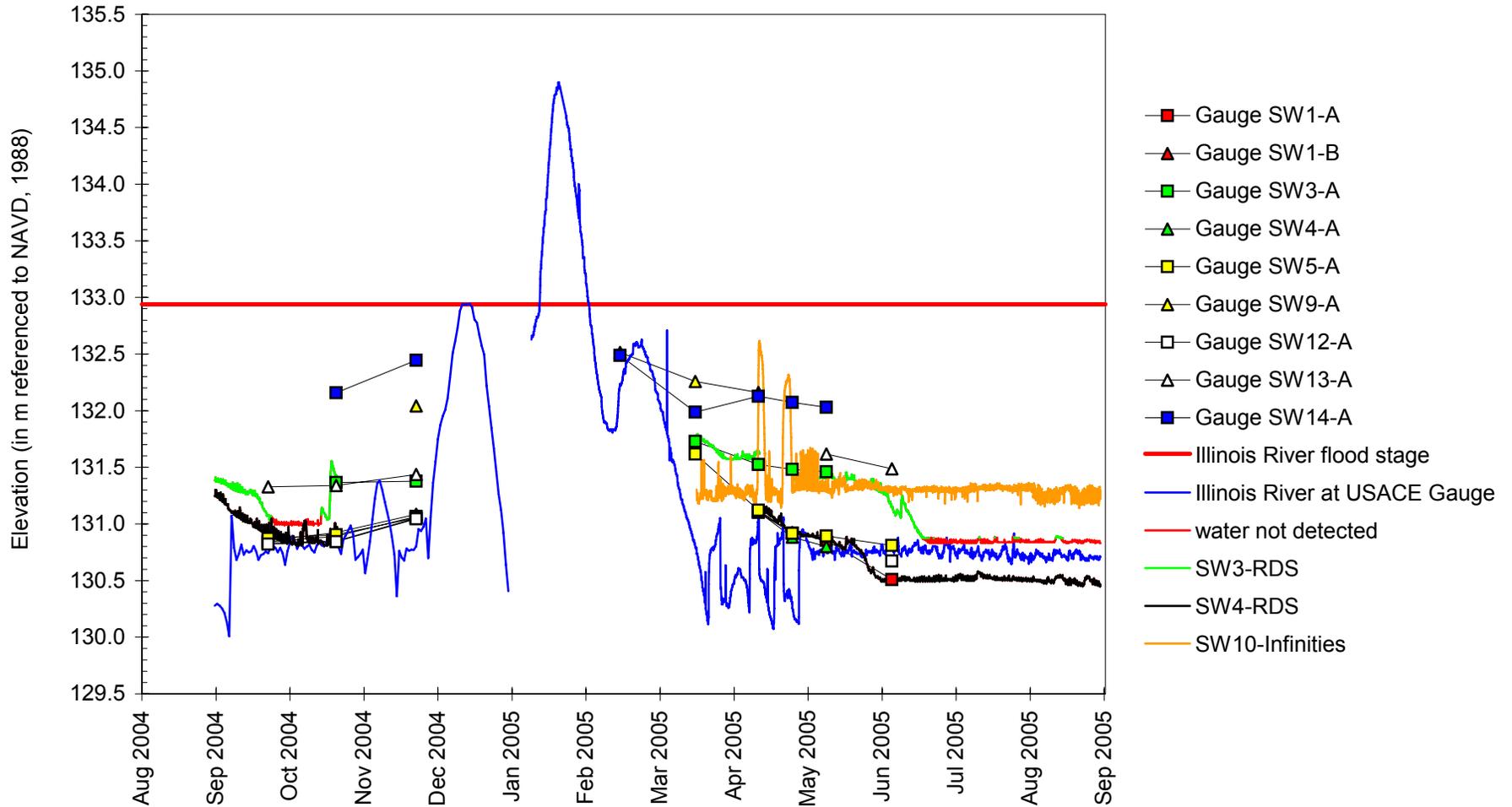
September 1, 2004 to September 1, 2005



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2004 to September 1, 2005

Water-Level Elevations on Surface Water Gauges



**Former Wessel Property,
La Grange Wetland Bank Site
September 2004 through August 2005
Total Monthly Precipitation Recorded On Site and at the
Beardstown, IL and Rushville, IL Weather Stations**

