

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

ISGS #52

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, and began on-site activities in Spring 2000.
- August 2002: IDOT tasked ISGS and INHS to prepare a draft wetland banking instrument, which was submitted to IDOT in January 2003.
- January 2005: A Level II 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, construction of a raised access road, and the excavation of a large basin in the north–central area of the site. Two large drainage tiles were located and removed by IDOT. A partial repair of the south levee breach was also completed by an adjacent landowner. In Fall 2006, 2,849 trees were planted in Fields 4 and 7.
- Spring and Summer 2008: Another round of winter flooding and ice action caused damage to planted trees. Trees were righted and baskets were removed in July. A total of 17 soil-zone wells and two staff gauges were also installed in April, both as replacements for damaged wells and gauges and as new units to increase coverage. Two long-duration floods affecting the site occurred in June and September of the monitoring year.

WETLAND HYDROLOGY CALCULATION FOR 2008

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 2008 was 560 ha (1384 ac) out of a total site area of 666 ha (1645 ac). Further, 505 ha (1248 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 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 137% of normal. During the four-month period from December 2007 to March 2008, precipitation was 157% of normal, resulting in atypically moist conditions entering the growing season. The April to August period continued moist, with precipitation at 136% of normal. An extreme September 2008 precipitation total (315% of normal) caused a long-duration overbank flood at the site.

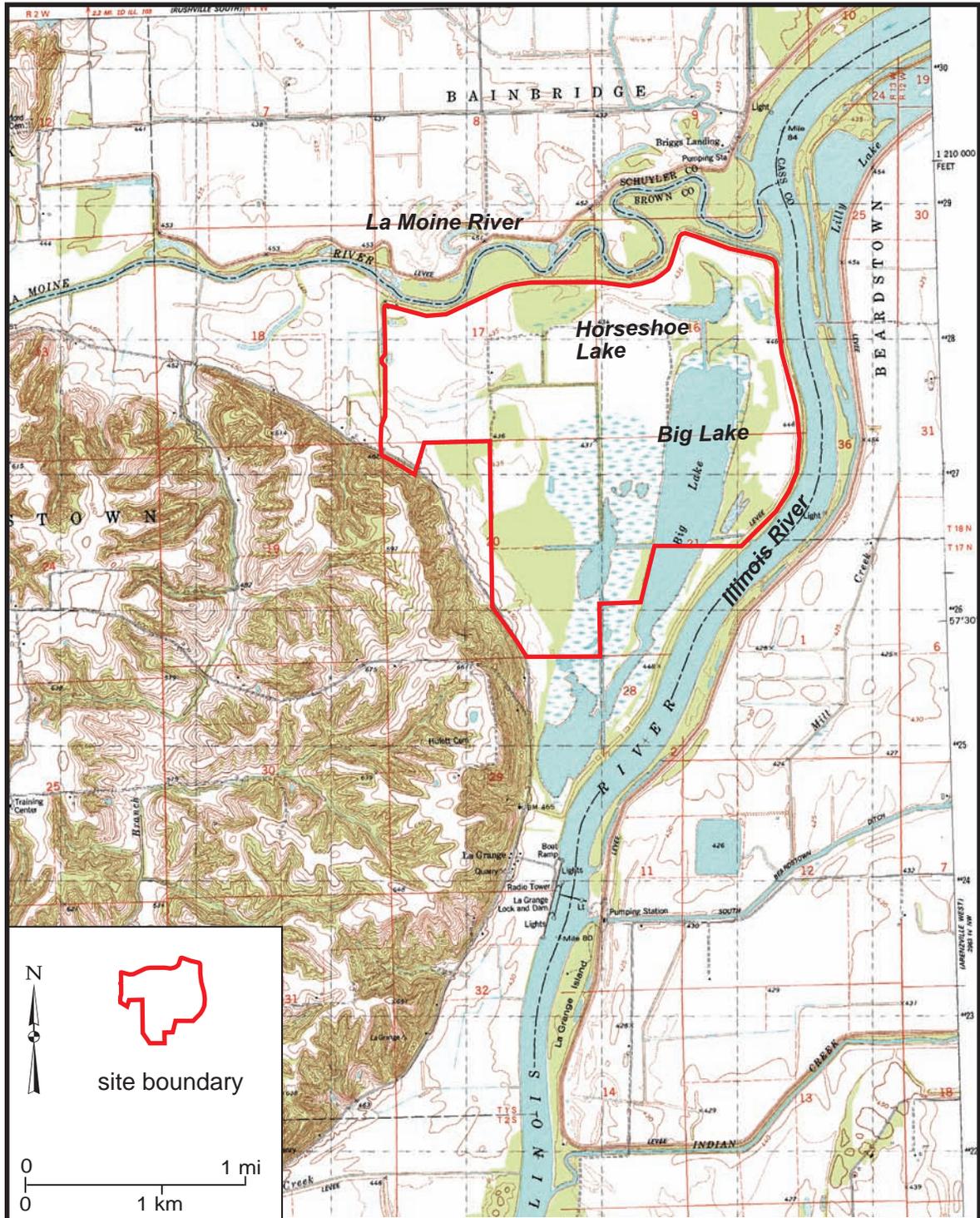
- A total of 32 wells satisfied wetland hydrology criteria for greater than 5% of the growing season, including 3SR2, 4SR, 5SR2, 6SR, 7SR, 8SR, 10SR, 11SR, 12SR, 13SR2, 15SR, 16SR, 17SR2, 21SR, 22SR, 23SR, 26SR, 27SR, 29SR2, 30SR, 31SR2, 32S, 35S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, 43S, and 44S. Further, 31 soil-zone wells satisfied wetland hydrology criteria for greater than 12.5% of the growing season, including 3SR2, 4SR, 5SR2, 6SR, 7SR, 8SR, 10SR, 11SR, 12SR, 13SR2, 15SR, 16SR, 17SR2, 21SR, 22SR, 23SR, 26SR, 27SR, 29SR2, 30SR, 31SR2, 32S, 35S, 36S, 37S, 38S, 39S, 40S, 41S, 42S, and 44S.
- Water levels recorded at all 10 stage gauges on site satisfied wetland hydrology criteria for greater than both 5% and 12.5% of the growing season. A combination of data from these on-site gauges and from the USACE La Grange stream-gauging station showed surface-water inundation for a period sufficient to satisfy wetland hydrology criteria at an elevation of at least 134.2 m (440.3 ft) for greater than 5% of the growing season, and at an elevation of at least 132.8 m (435.7 ft) for greater than 12.5% of the growing season.

PLANNED FUTURE ACTIVITIES

- Three flood-resistant data loggers will be added to the site in the spring of 2009. Soil-zone wells damaged in the 2008 flooding will also be replaced prior to the start of the growing season. In addition, three water-quality data loggers will be installed to measure turbidity, specific conductivity, pH, dissolved oxygen, and other parameters to help quantify site functions.
- Monitoring of hydrology will continue until no longer required by IDOT.

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

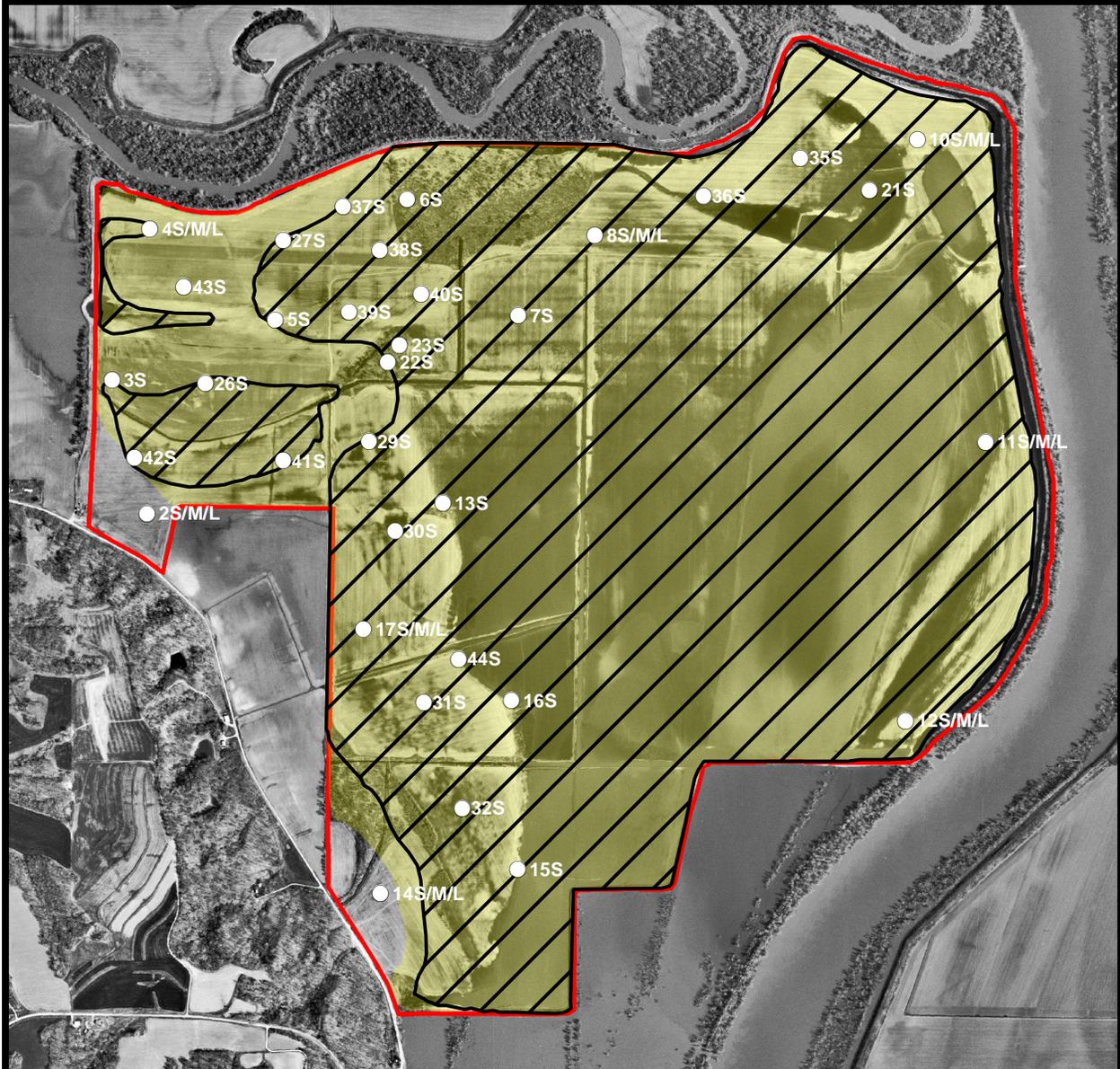
from the USGS Topographic Series, Cooperstown, IL 7.5-minute Quadrangle (USGS 1980)
contour interval is 10 feet



Former Wessel Property, La Grange Wetland Bank Site

Estimated Areal Extent of 2008 Wetland Hydrology

based on data collected between September 1, 2007 and October 10, 2008
 map based upon USGS digital orthophotograph, Cooperstown NE quarter quadrangle,
 produced from 4/14/98 aerial photography (ISGS 2002)



 site boundary

 staff (stage) gauge

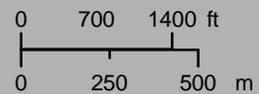
 rain gauge

 monitoring well(s)

2008 Wetland Hydrology

 > 12.5% of growing season

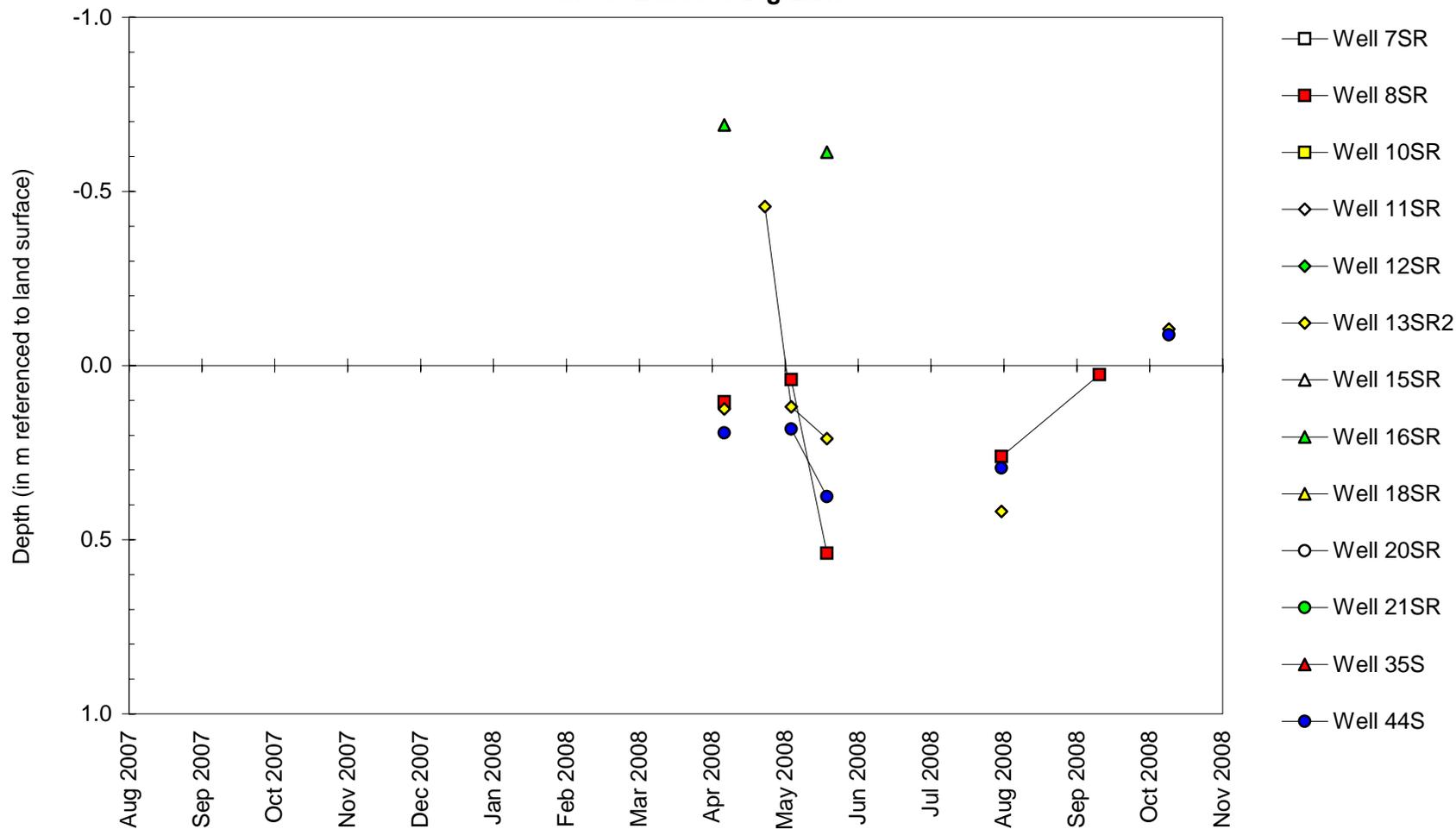
 > 5% of growing season



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008

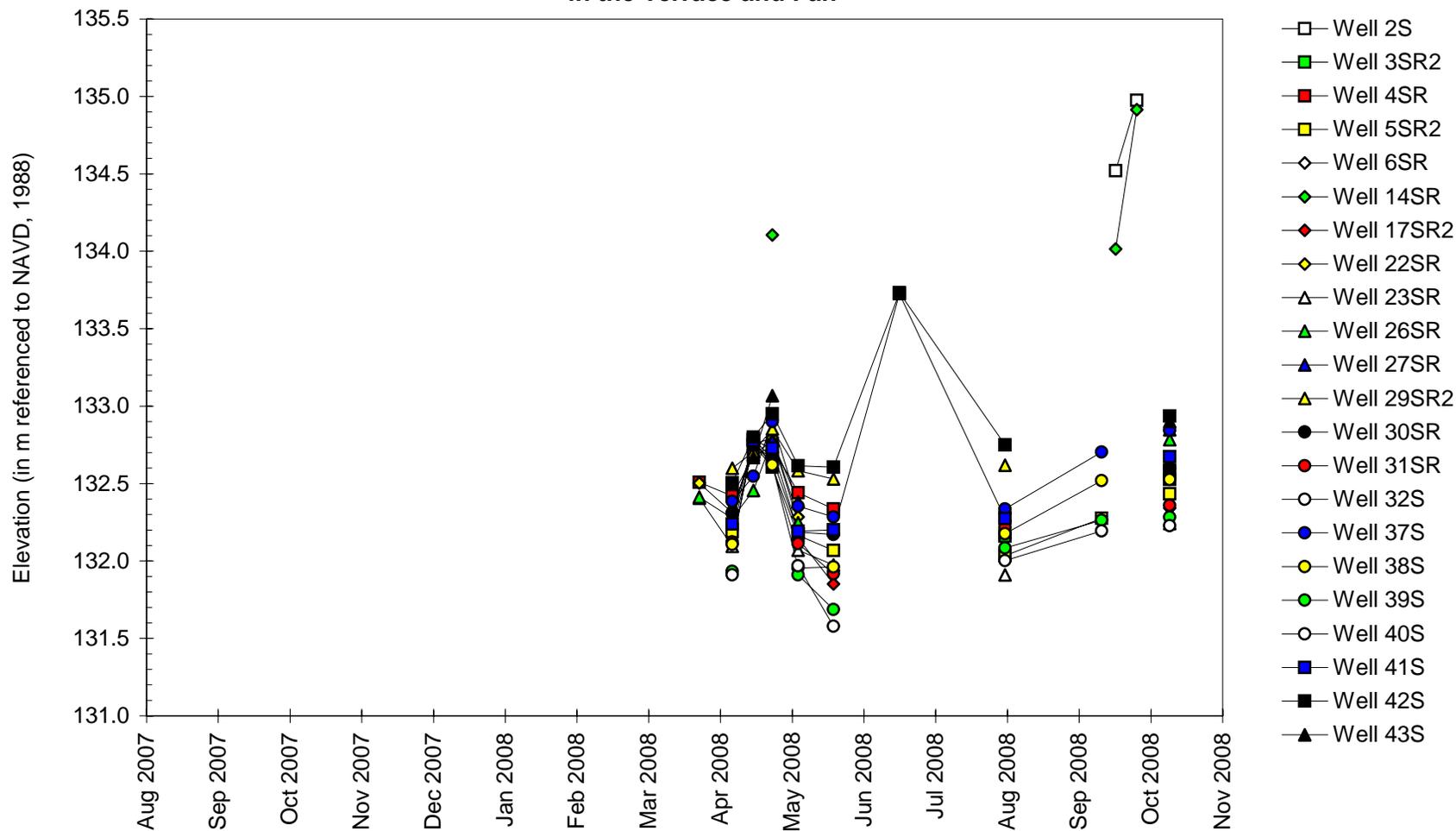
Depth to Water in Shallow Monitoring Wells in the Basin of Big Lake



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008

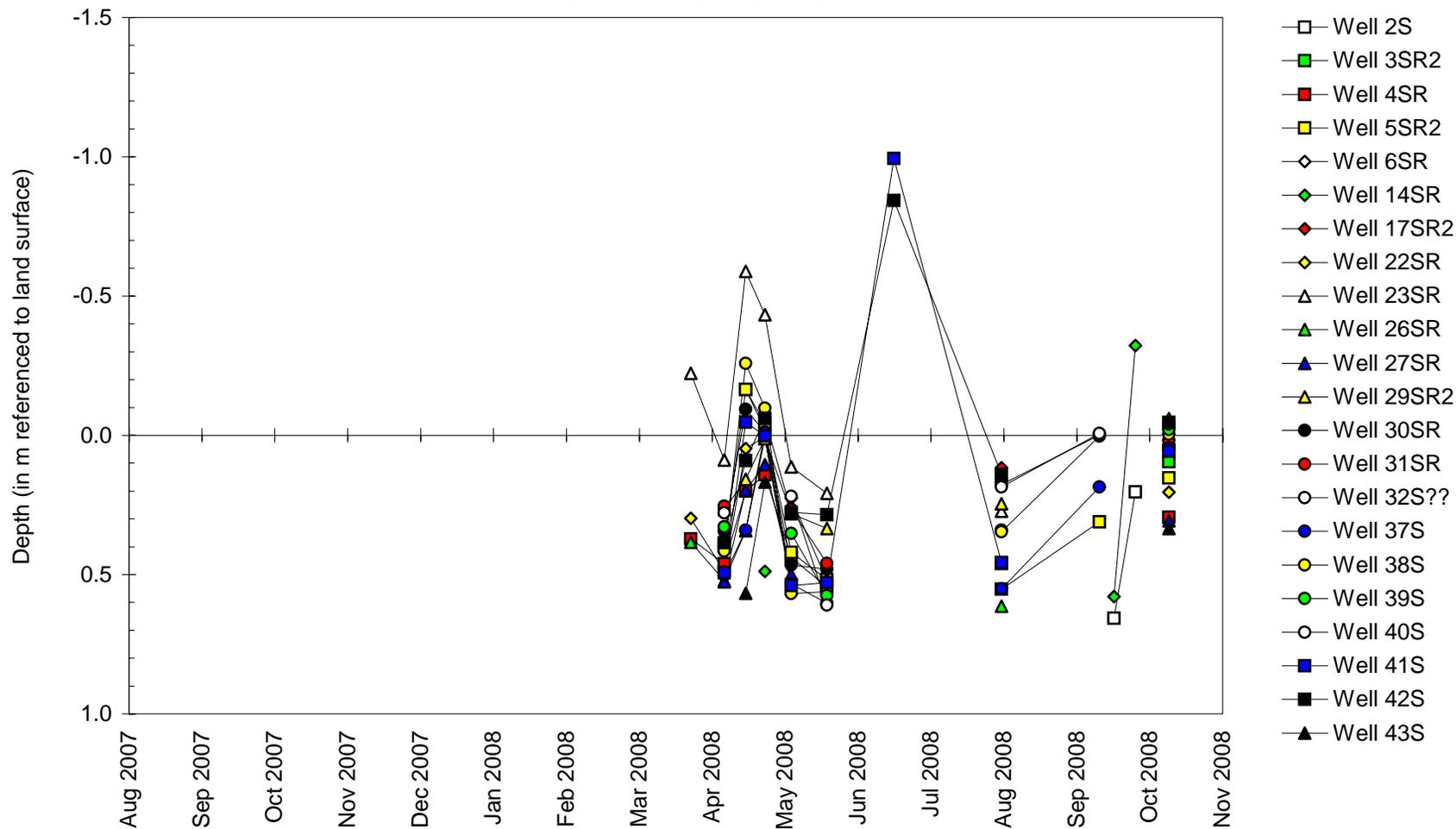
Water-Level Elevations in Shallow Monitoring Wells in the Terrace and Fan



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008

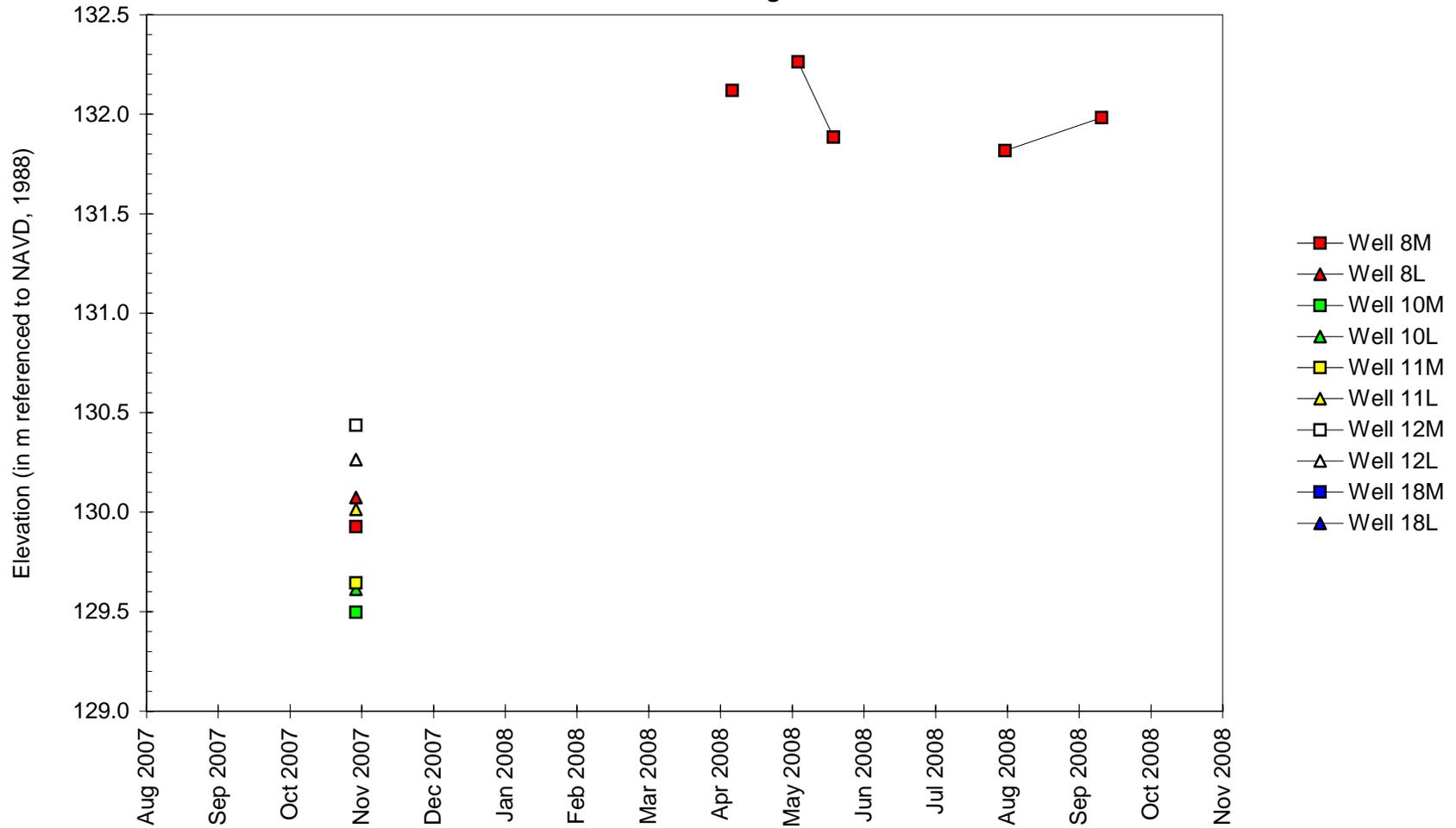
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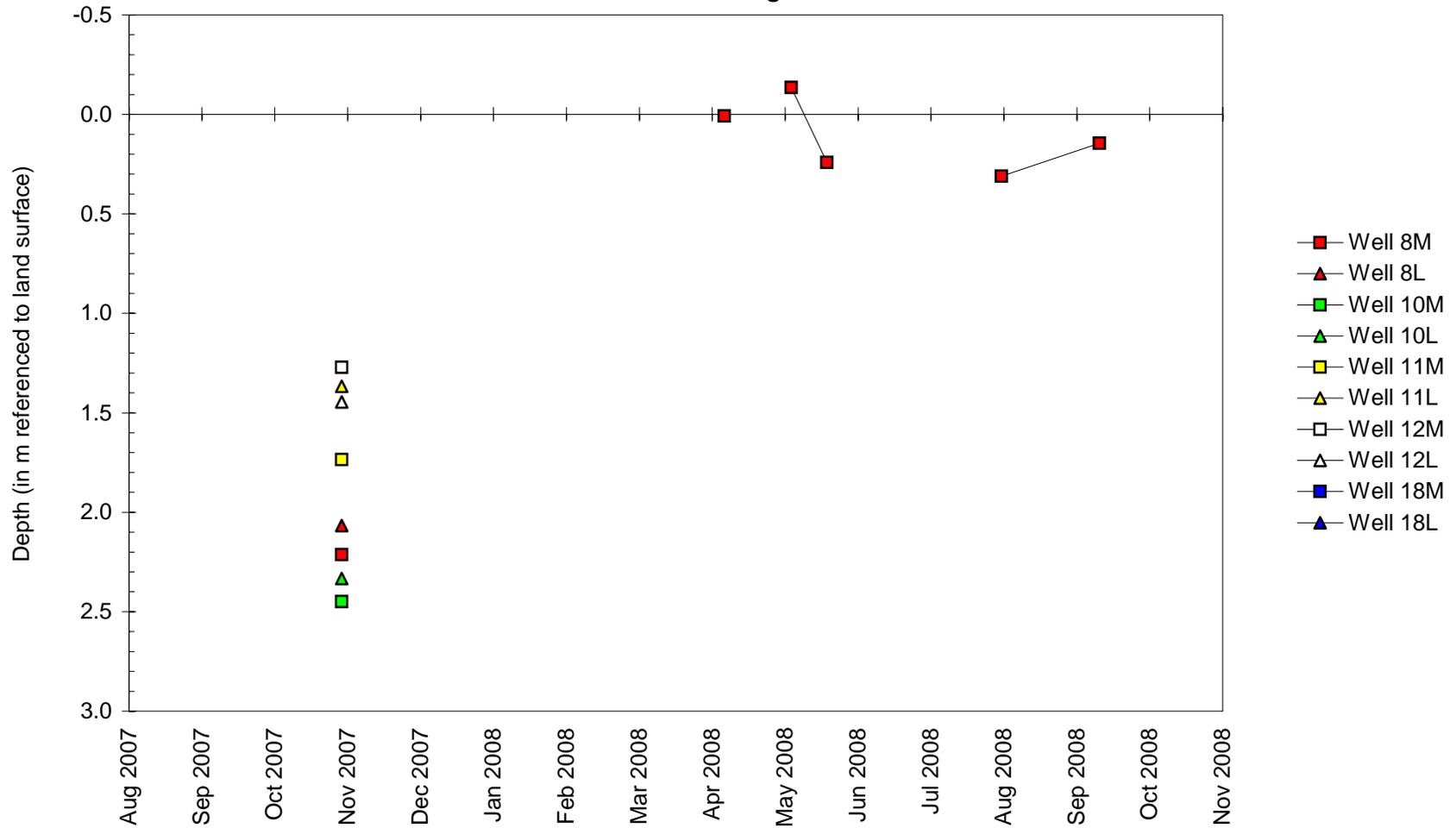
September 1, 2007 to November 1, 2008

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



Former Wessel Property, La Grange Wetland Bank Site
September 1, 2007 to November 1, 2008

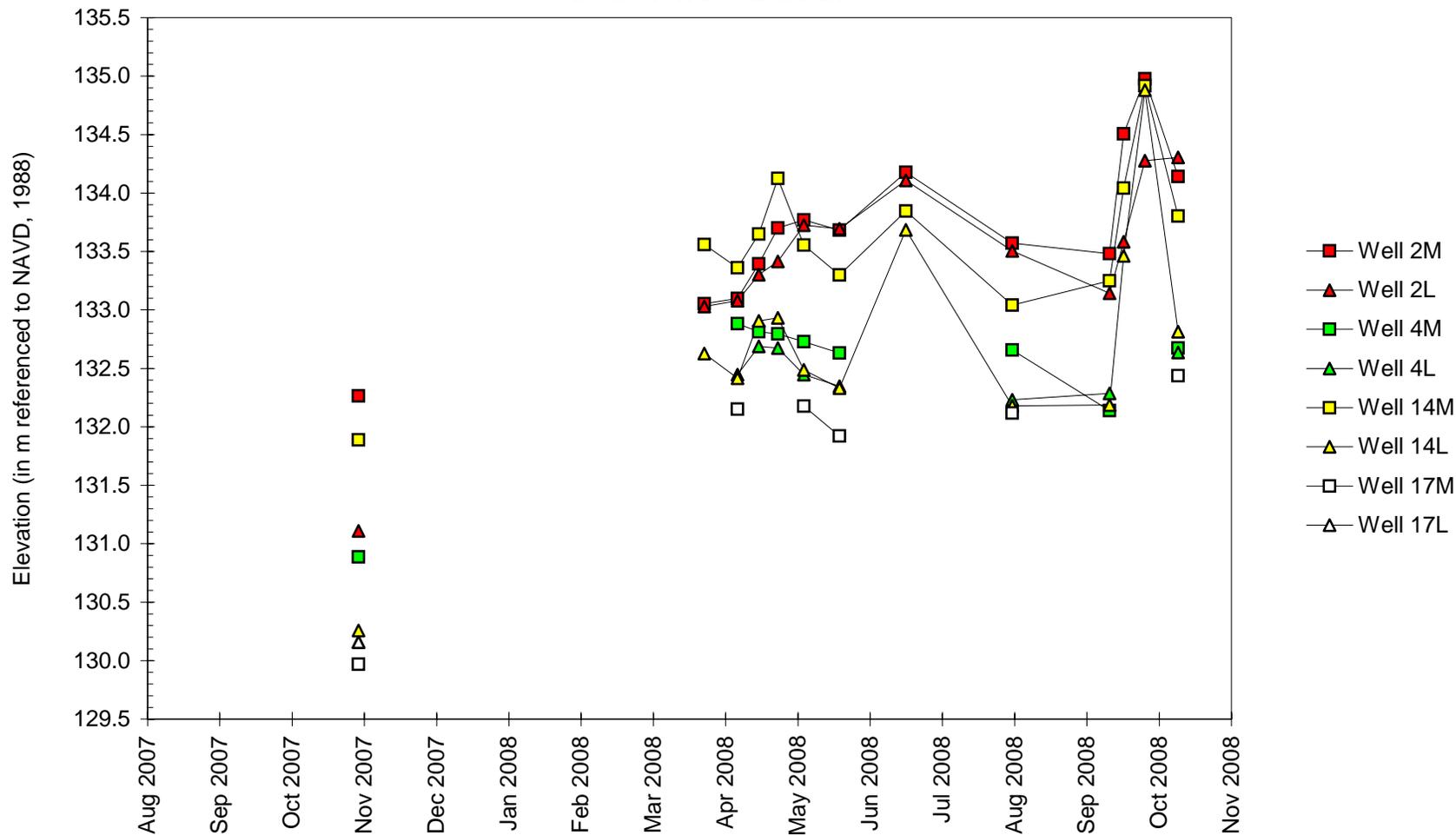
Depth to Water
in Deeper Monitoring Wells
in the Basin of Big Lake



Former Wessel Property, La Grange Wetland Bank Site

September 1, 2007 to November 1, 2008

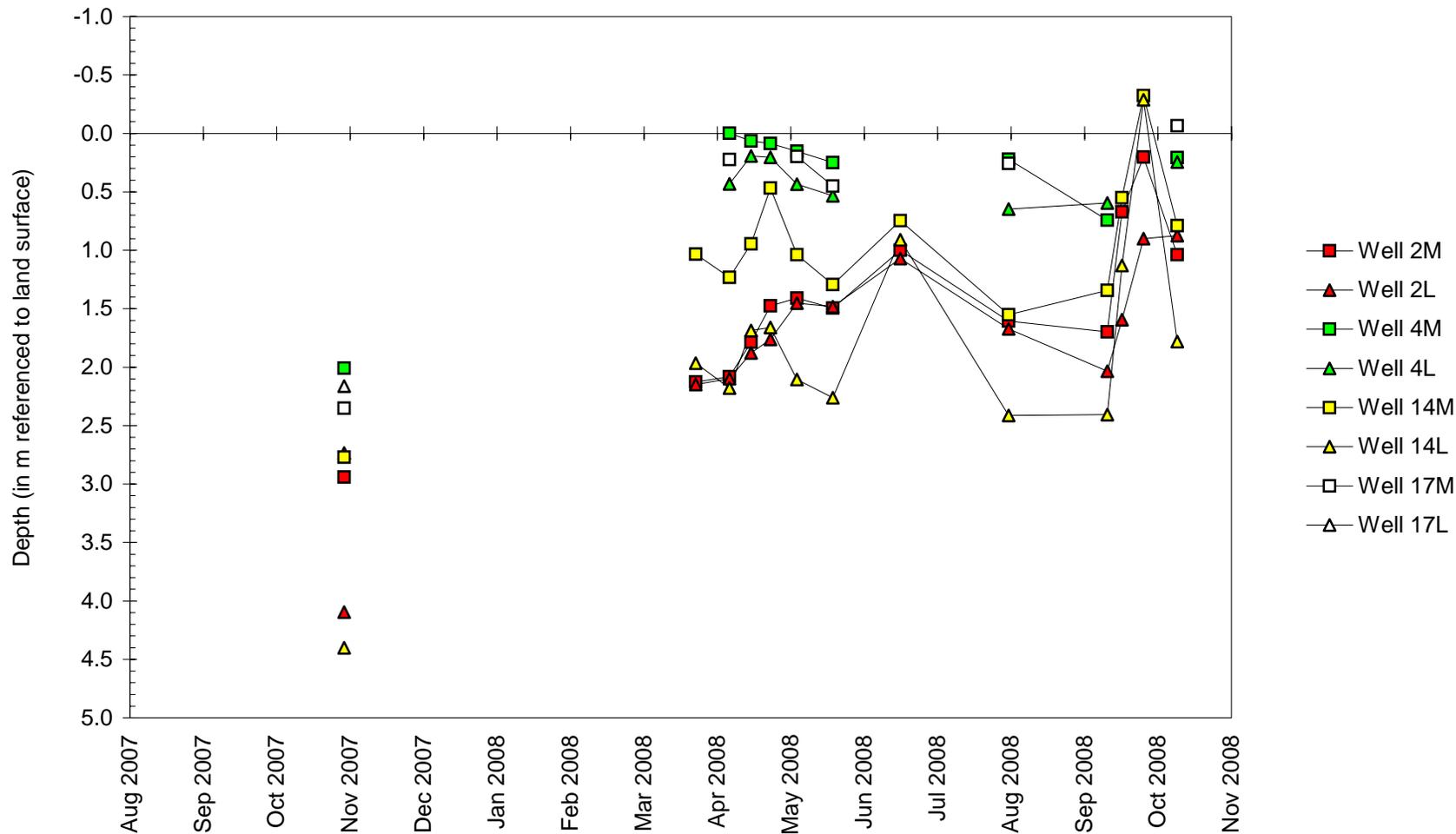
Water-Level Elevations in Deeper Monitoring Wells in the Terrace and Fan



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September 1, 2007 to November 1, 2008

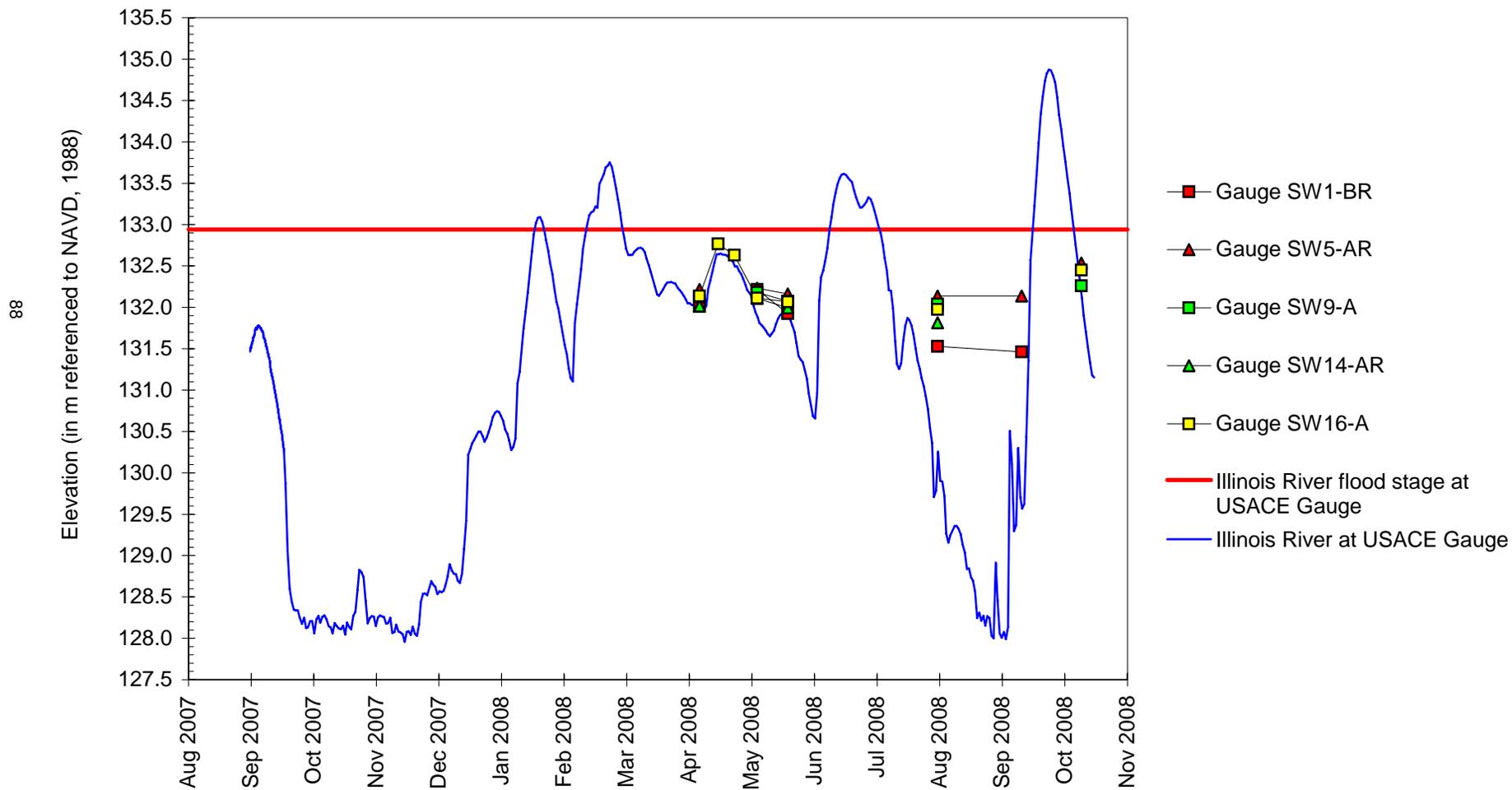
Depth to Water in Deeper Monitoring Wells in the Terrace and Fan



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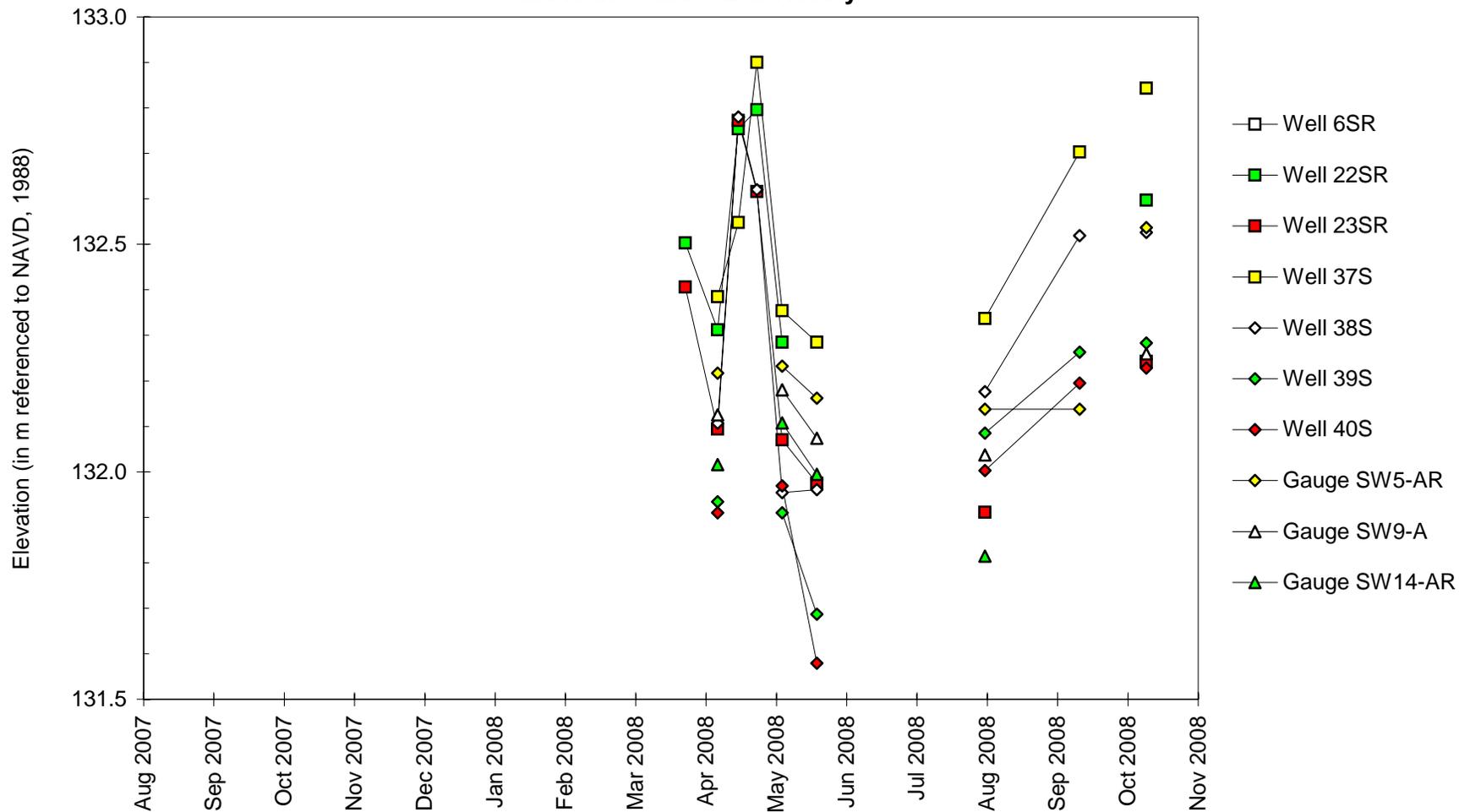
Water-Level Elevations on Surface Water Gauges



Former Wessel Property, La Grange Wetland Bank Site

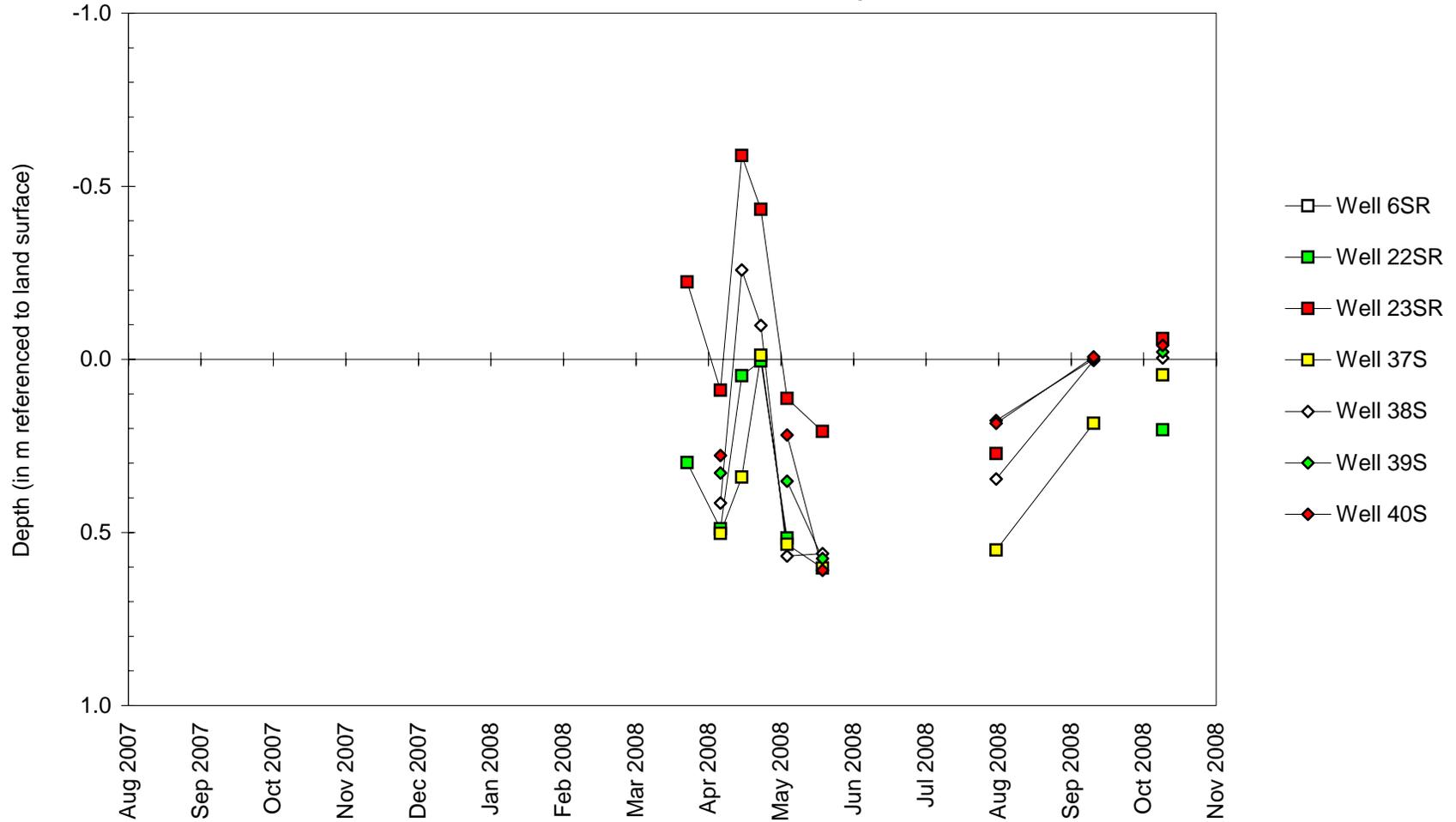
September 1, 2007 to November 1, 2008

Water-Level Elevations in Shallow Monitoring Wells and on Stage Gauges in Fields 4 and 7 and Vicinity



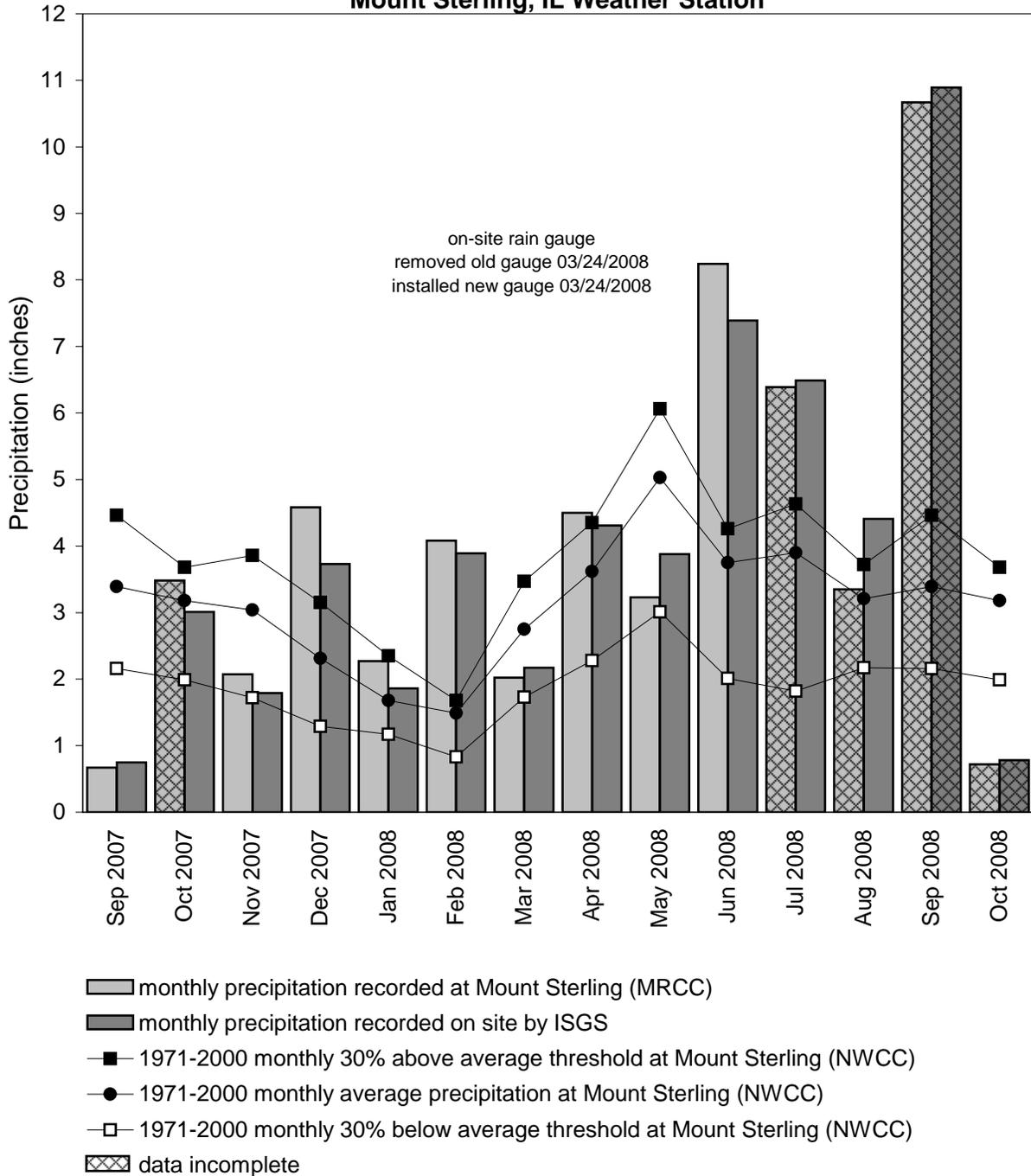
Former Wessel Property, La Grange Wetland Bank Site
September 1, 2007 to November 1, 2008

Depth to Water
in Shallow Monitoring Wells
in Fields 4 and 7 and Vicinity



**Former Wessel Property,
La Grange Wetland Bank
September 1, 2007 through October 10, 2008**

**Total Monthly Precipitation Recorded On Site and at the
Mount Sterling, IL Weather Station**



Graph last updated October 10, 2008