

**LAWRENCE COUNTY
POTENTIAL WETLAND MITIGATION BANK**

ISGS #82

Sequence #14912

Lawrence County, near Lawrenceville, Illinois

Primary Project Manager: Steven E. Benton

Secondary Project Manager: not assigned

SITE HISTORY

- January 2009: The ISGS was tasked by IDOT to conduct an initial site evaluation (ISE), and the report was submitted to IDOT on June 18, 2009.
- July 2009: The ISGS was tasked by IDOT to conduct a level II hydrogeologic investigation of the site. A monitoring network was installed in October 2009.
- May 2010: The ISGS submitted a draft mitigation banking instrument to IDOT.

WETLAND HYDROLOGY CALCULATION FOR 2010

The estimated area that satisfied wetland hydrology criteria (Environmental Laboratory 1987) for greater than 5% of the 2010 growing season is 1.5 ha (3.8 ac) out of a total area of 29.6 ha (73.1 ac). The estimated area that satisfied wetland hydrology criteria for greater than 12.5% of the 2010 growing season is 1.3 ha (3.3 ac). Using the 2010 Midwest Region supplement (U.S. Army Corps of Engineers 2010) to the 1987 Manual, we estimate that 2.4 ha (6.0 ac) also satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season. These estimates are based on the following factors:

- According to the MRCC, the median date that the growing season begins at the Olney, Illinois weather station is April 7, and the season lasts 209 days; 5% of the growing season is 10 days, and 12.5% of the growing season is 25 days. According to methods outlined in the 2010 Midwest Region supplement, we estimate that March 8 was the starting date of the 2010 growing season based on soil temperature measured at the site.
- Total precipitation for the monitoring period as recorded at the Lawrenceville, Illinois, weather station was 118% of normal and precipitation in spring 2010 (March through May) was 99% of normal.
- In 2010, water levels measured in monitoring wells 1S, 5S, 6S, and 7S, and gauge A satisfied wetland hydrology criteria for more than 5% of the growing season. Water levels measured in monitoring well 5S, 6S, and 7S, and gauge A satisfied wetland hydrology criteria for more than 12.5% of the growing season. In addition, water levels measured in wells 1S, 2S, 3S, 4S, 5S, 6S, 7S, and 9S, and gauge A satisfied wetland hydrology criteria for 14 or more consecutive days during the growing season per the 2010 Midwest Region supplement.
- Surface-water levels measured by the data logger in Beaver Pond Ditch show that the water levels in the ditch overtopped the bank of the ditch 4 times during the monitoring period. Only one of these occurred during the growing season, and the duration was only about 2 days.

- During a site visit on June 22, it was observed that the Beaver Pond Ditch gravity drains were closed and one pump was running at the pumping station. The water in Beaver Pond Ditch was being maintained at a level about 0.6 m (2 ft) below the top of the bank. The culverts near the data logger in Beaver Pond Ditch were both underwater. In addition, floodwater outside the levee reached about halfway up the side of the levee. Embarras River stage data recorded by the U.S. Geological Survey gauge near Lawrenceville, Illinois, reveals that, at about the time of the site visit, the river was 0.41 m (1.34 ft) above flood stage (9.1 m [30.0 ft]). The highest stage (9.65 m [31.69 ft]) occurred on June 21, and the river was above flood stage for about 6 days.
- Inundation was observed in several areas on the site. Surface water measured at Gauge A in May was at and above an elevation of 99.11 m (325.18 ft) for more than 5%, and for more than 12.5% of the growing season. In addition, surface-water elevations measured at Gauge A in May were at and above an elevation of 99.11 m (325.18 ft) for 14 or more consecutive days of the growing season per the 2010 Midwest Region supplement.
- Inundation was observed south of monitoring well 4S and in the vicinity of monitoring well 1S. Though not monitored by wells or staff gauges, inundation was observed in these areas on successive site visits, which indicates that these areas may also have satisfied criteria for jurisdictional wetland hydrology.

ADDITIONAL INFORMATION

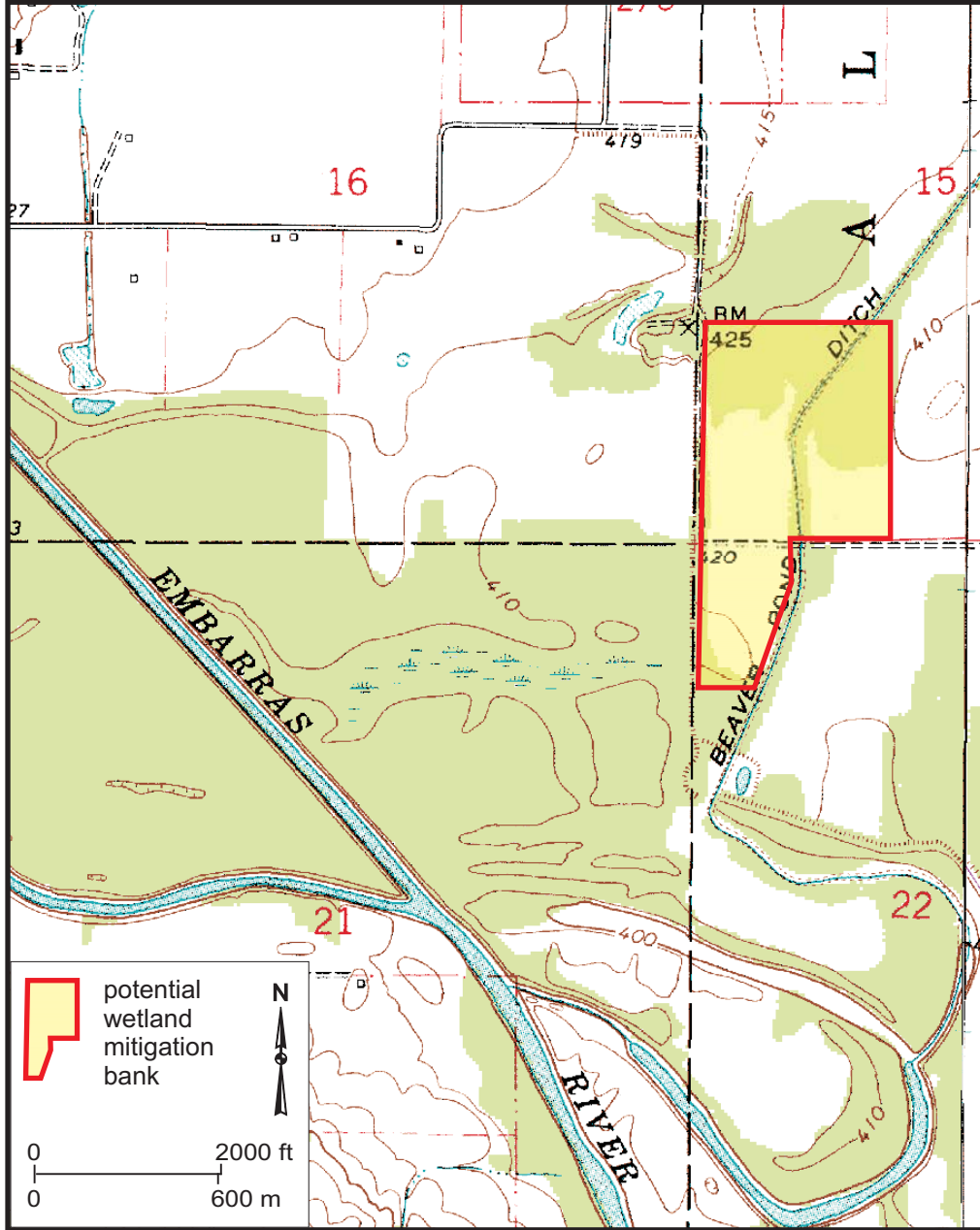
- Analysis of historic Embarras River stage data recorded at Lawrenceville, Illinois, for water-years 2002 to 2009 (October 2001 to September 2009), reveals that there have been 39 flood events during the period. April was the most flood-prone month, with a total of 8 flood events during the period, occurring in 5 out of 8 water years, with the greatest number (3) occurring in water-year 2009. The next most flood-prone months were March and May with a total of 6 flood events each during the period, occurring in 4 out of 8 water-years each. The least flood-prone months were August and September with no flood events, and October, November, and July with 1 flood event each.

PLANNED FUTURE ACTIVITIES

- Monitoring will continue at the site until no longer required by IDOT.

Lawrence County Potential Wetland Mitigation Bank General Study Area and Vicinity

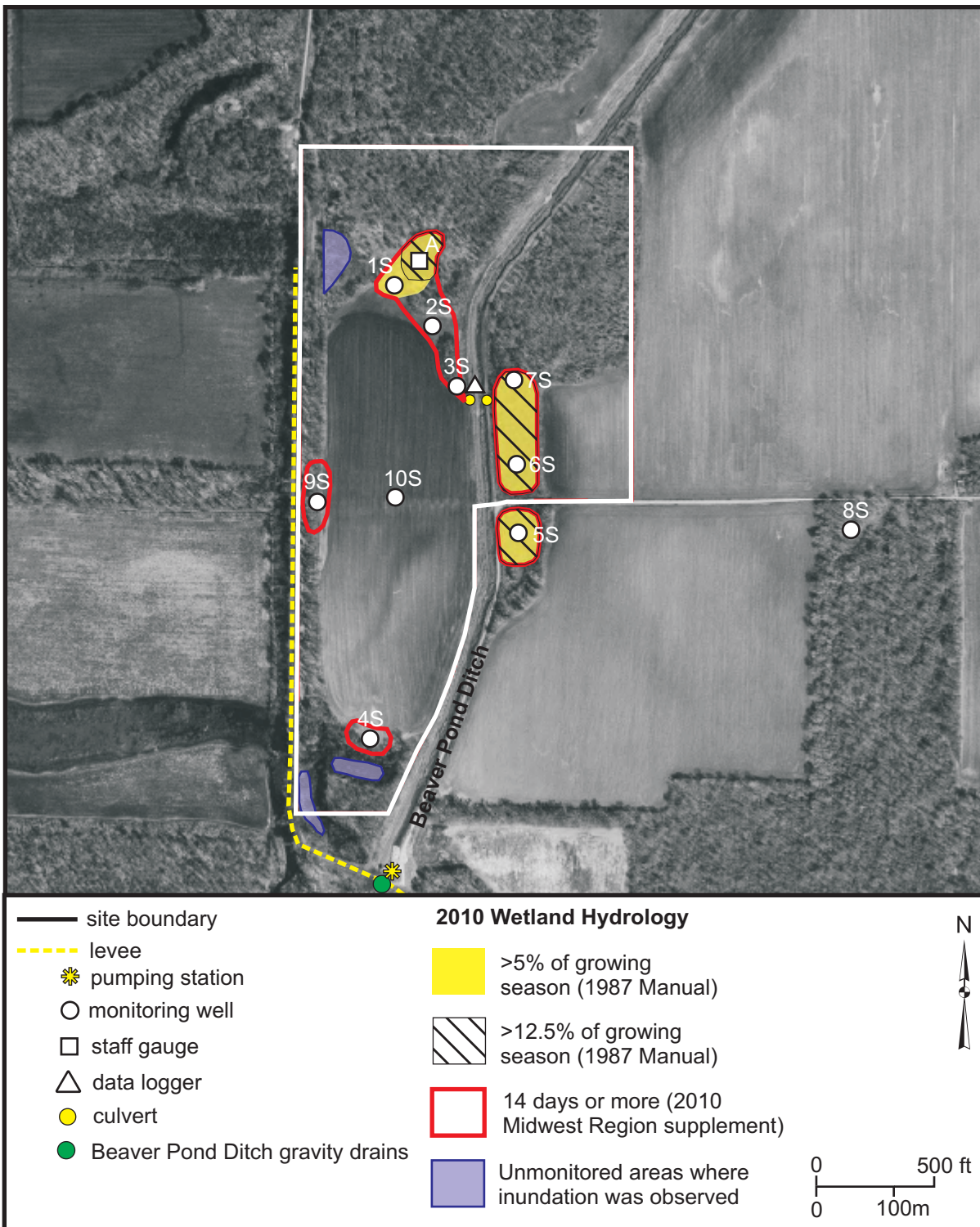
from the USGS Topographic Series, Lawrence, IL, 7.5-minute Quadrangle (USGS 1977)
contour interval: 10 feet



Lawrence County Potential Wetland Mitigation Bank Estimated Areal Extent of 2010 Wetland Hydrology

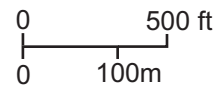
September 1, 2009 through August 31, 2010

Map based on USGS digital orthophotographs,
Lawrenceville SE and Vincennes SW
quarter quadrangles (ISGS 2009)



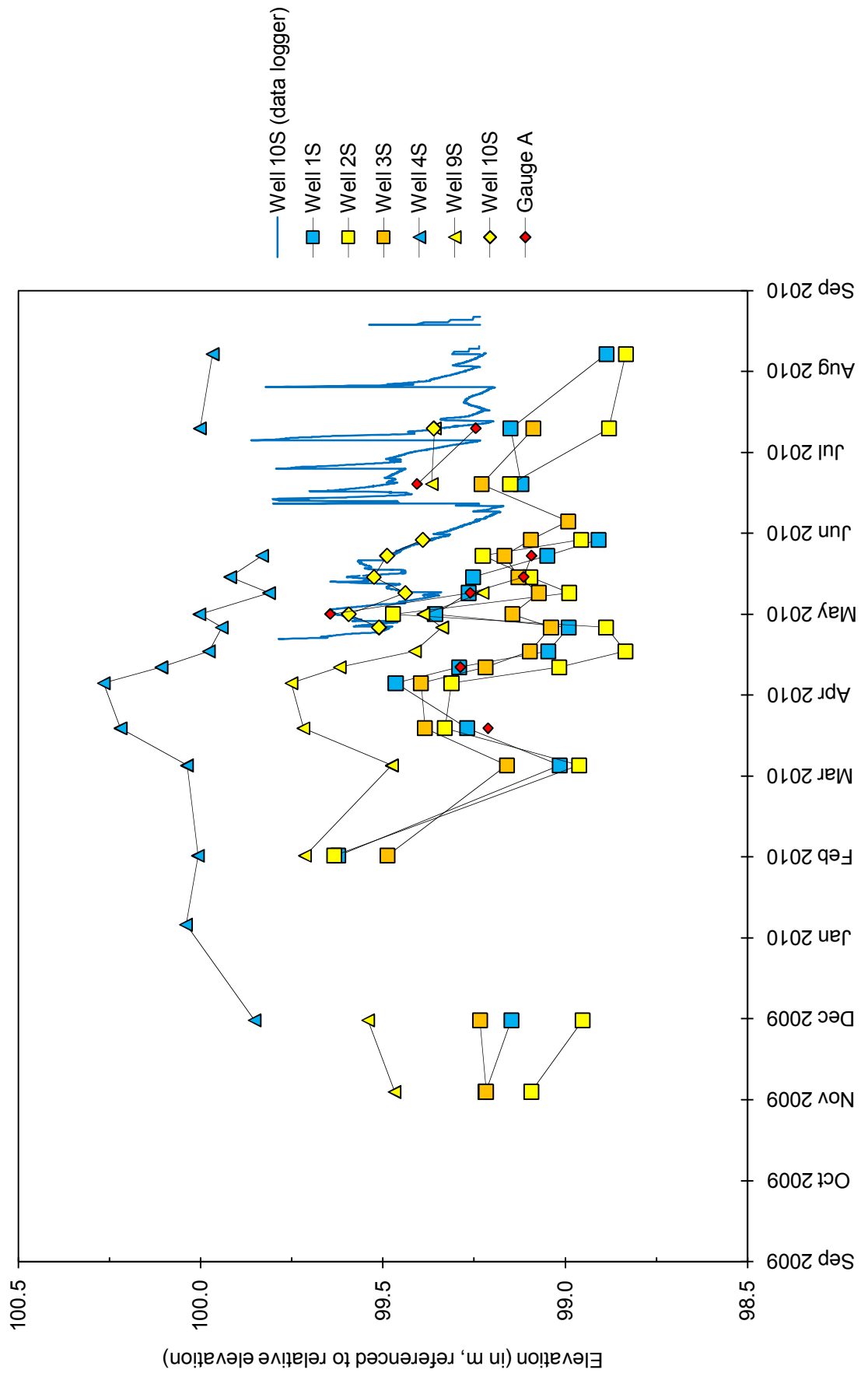
- site boundary
- - - levee
- ☀ pumping station
- monitoring well
- staff gauge
- △ data logger
- culvert
- Beaver Pond Ditch gravity drains

- 2010 Wetland Hydrology**
- >5% of growing season (1987 Manual)
 - ▨ >12.5% of growing season (1987 Manual)
 - 14 days or more (2010 Midwest Region supplement)
 - Unmonitored areas where inundation was observed

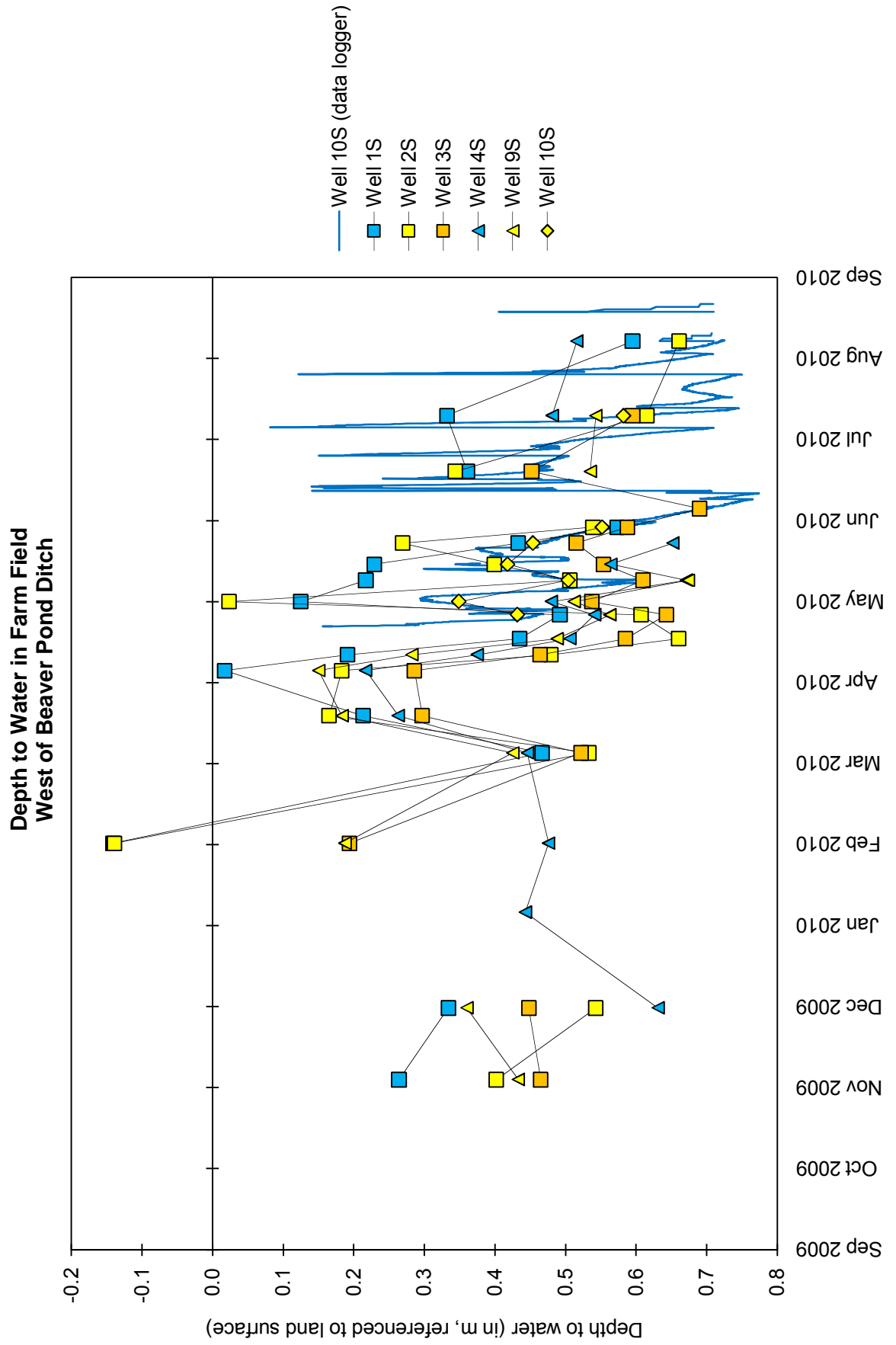


Lawrence County Potential Wetland Mitigation Bank September 1, 2009 through August 31, 2010

Water-Level Elevations in Farm Field
West of Beaver Pond Ditch

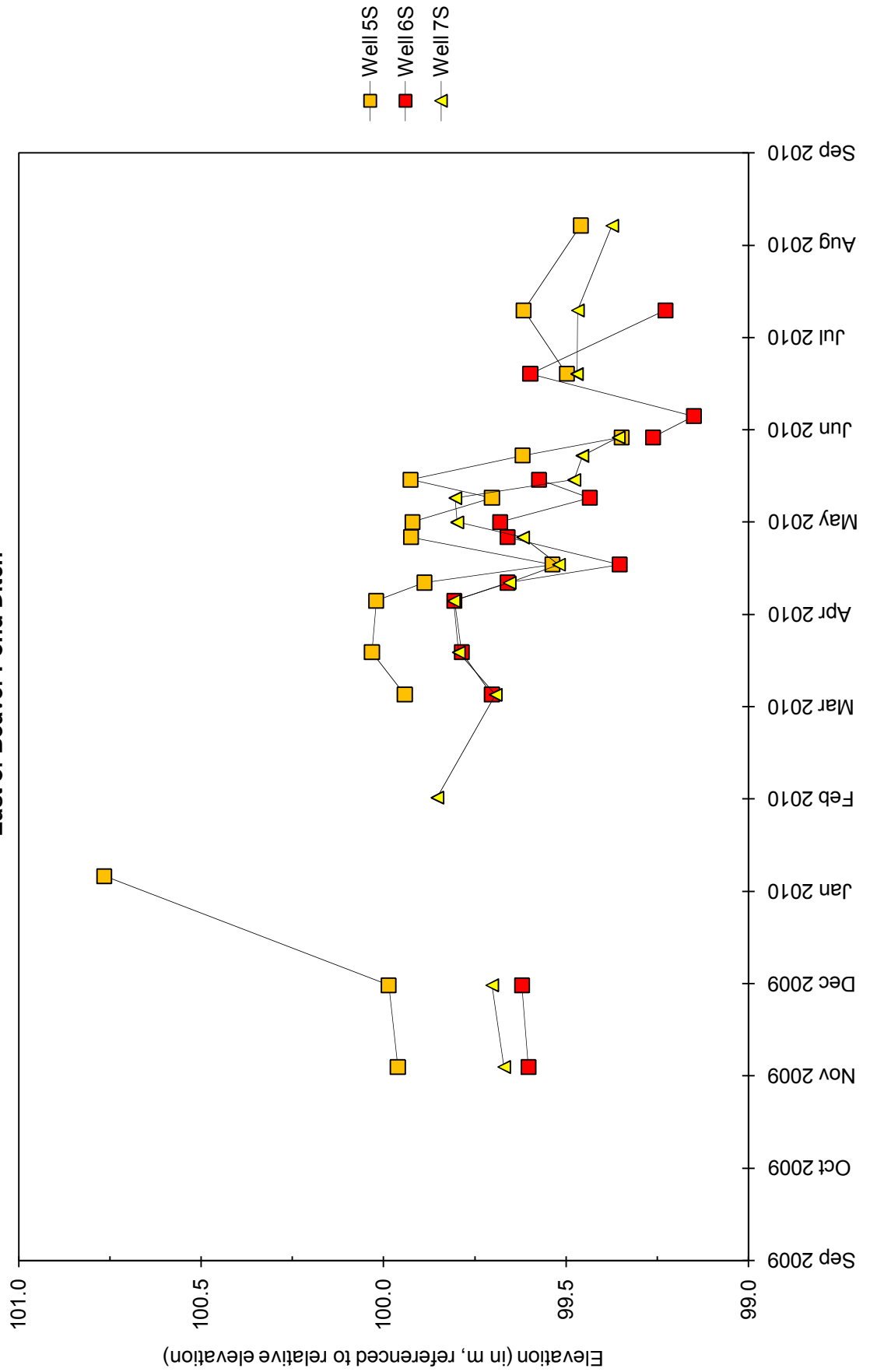


Lawrence County Potential Wetland Mitigation Bank September 1, 2009 through August 31, 2010



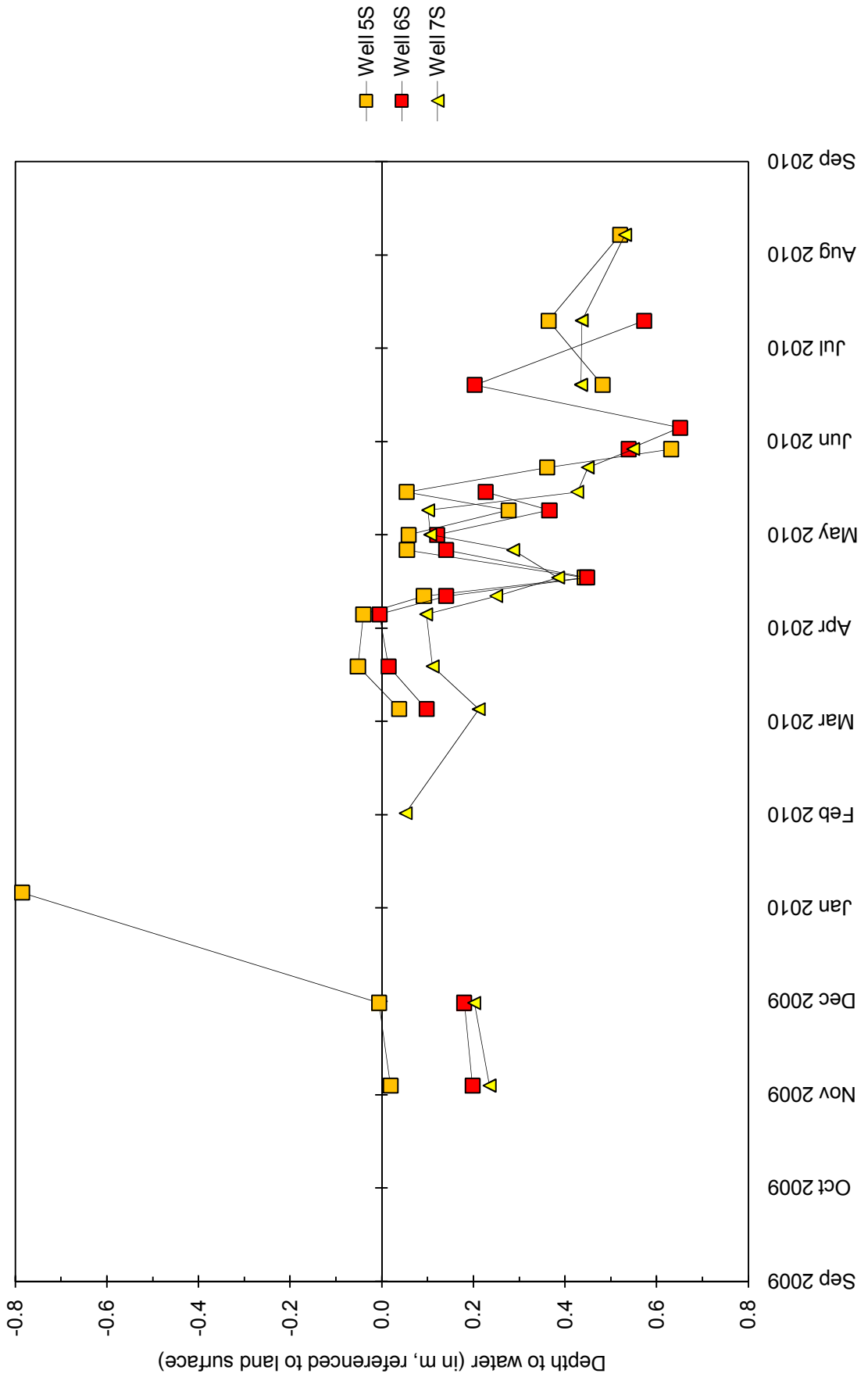
Lawrence County Potential Wetland Mitigation Bank September 1, 2009 through August 31, 2010

Water-Level Elevations in Forested Areas
East of Beaver Pond Ditch

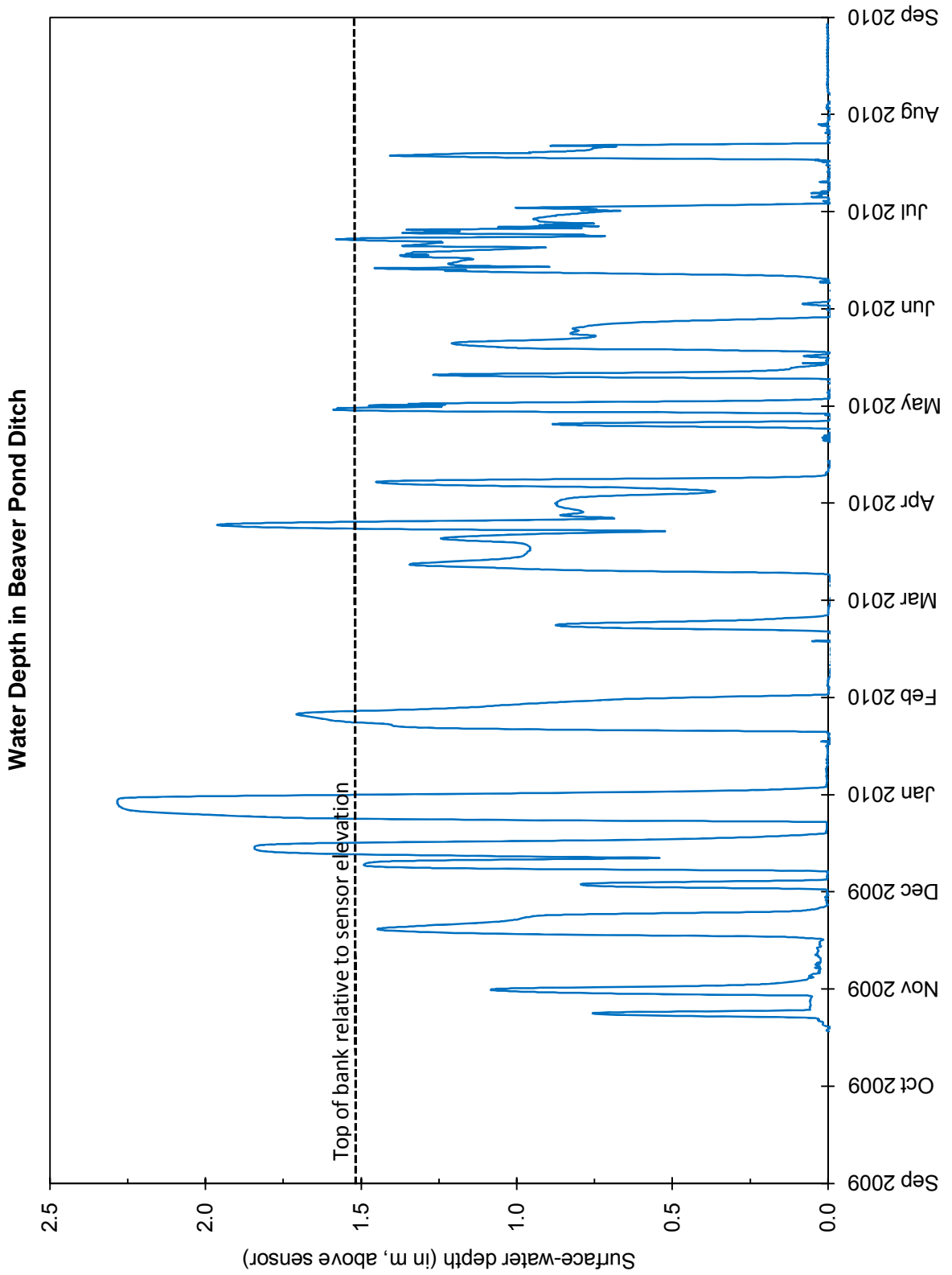


Lawrence County Potential Wetland Mitigation Bank September 1, 2009 through August 31, 2010

Depth to Water in Forested Areas
East of Beaver Pond Ditch

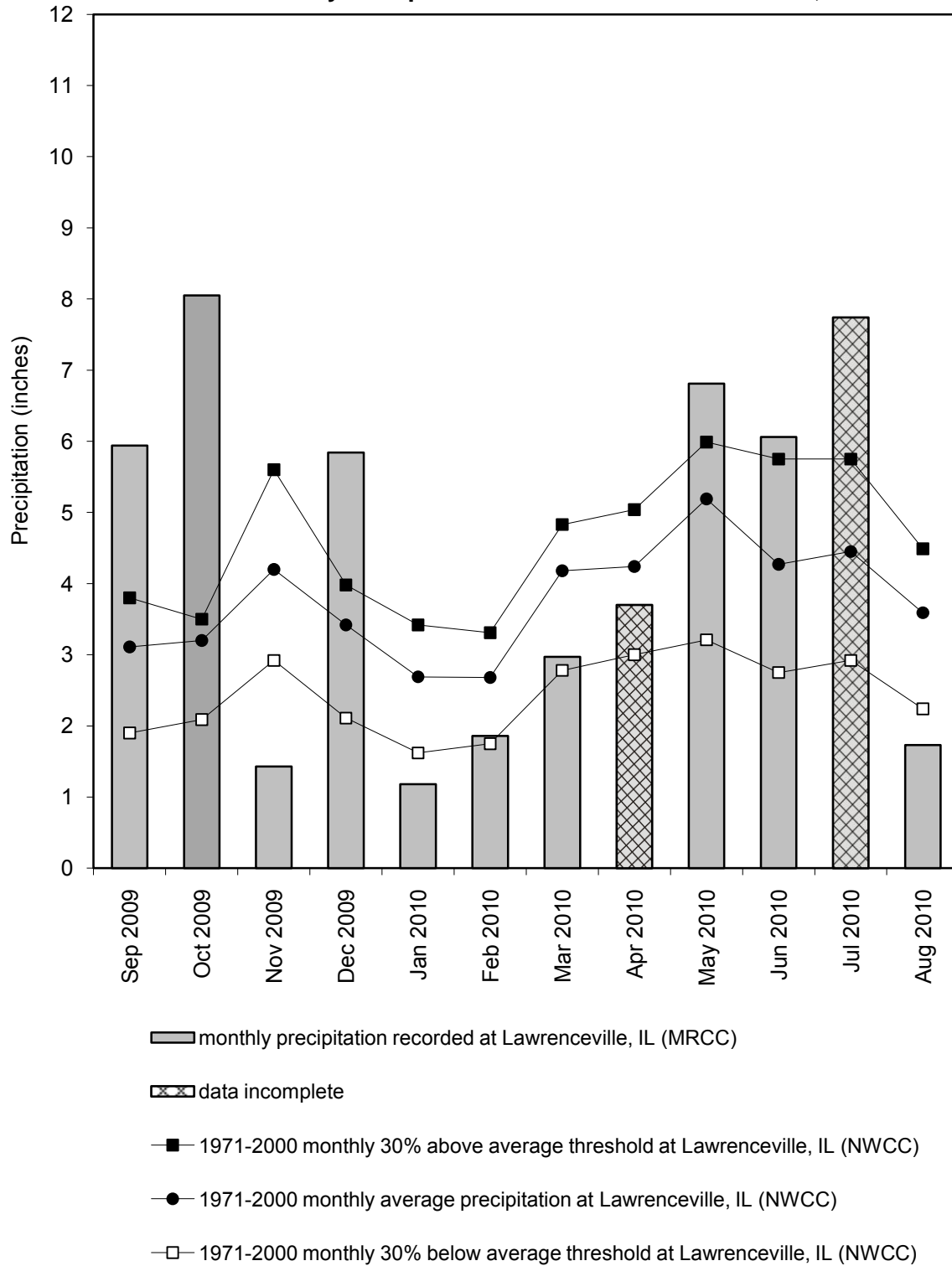


Lawrence County Potential Wetland Mitigation Bank September 1, 2009 through August 31, 2010



Lawrence County, Potential Wetland Mitigation Bank September 2009 through August 2010

Total Monthly Precipitation Recorded at Lawrenceville, IL



Graph last updated September 29, 2010