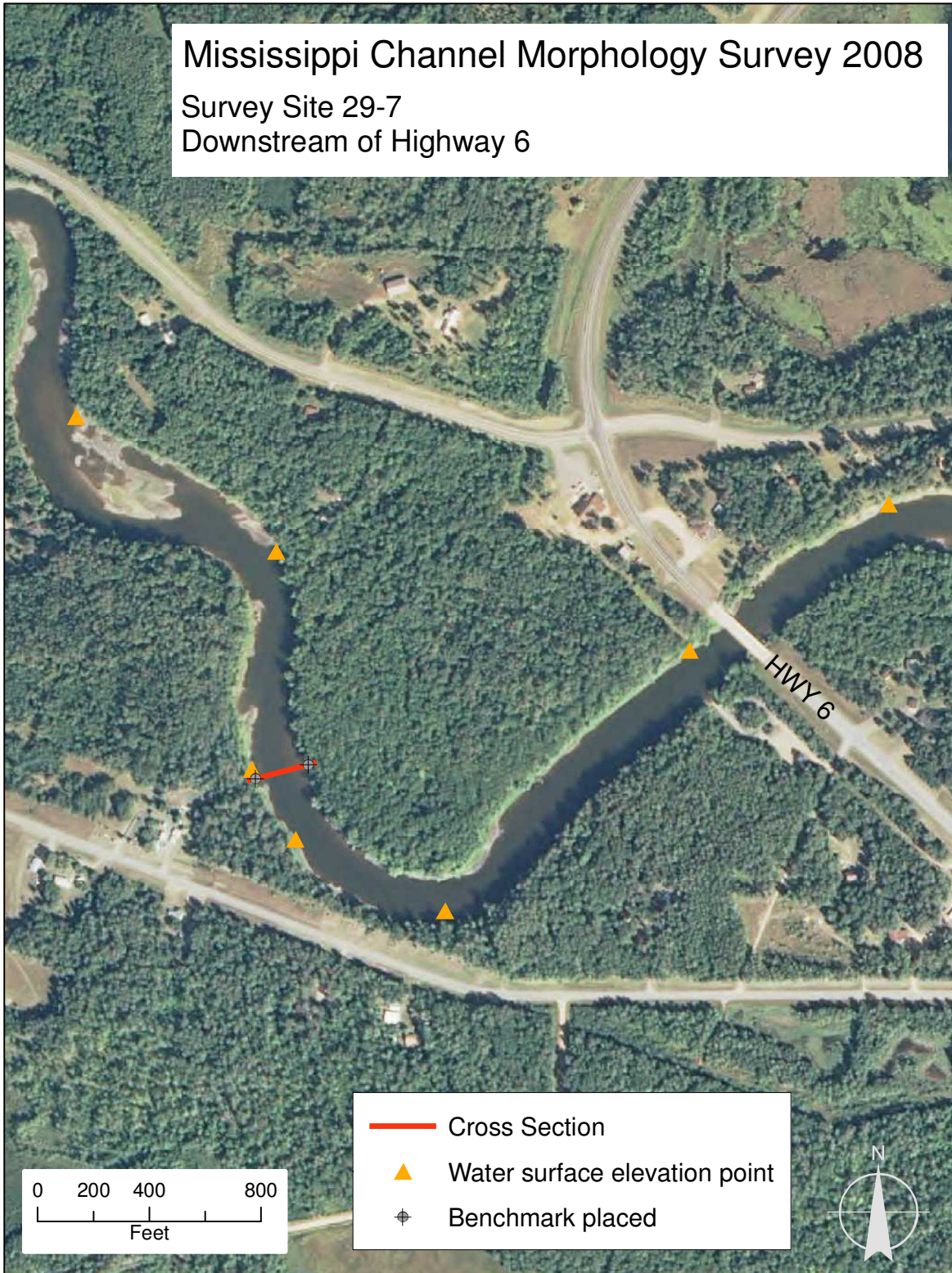


APPENDIX A

Site-specific maps of the channel survey and fish community sampling locations on the Mississippi River. Aerial images are from FSA 2008

Mississippi Channel Morphology Survey 2008

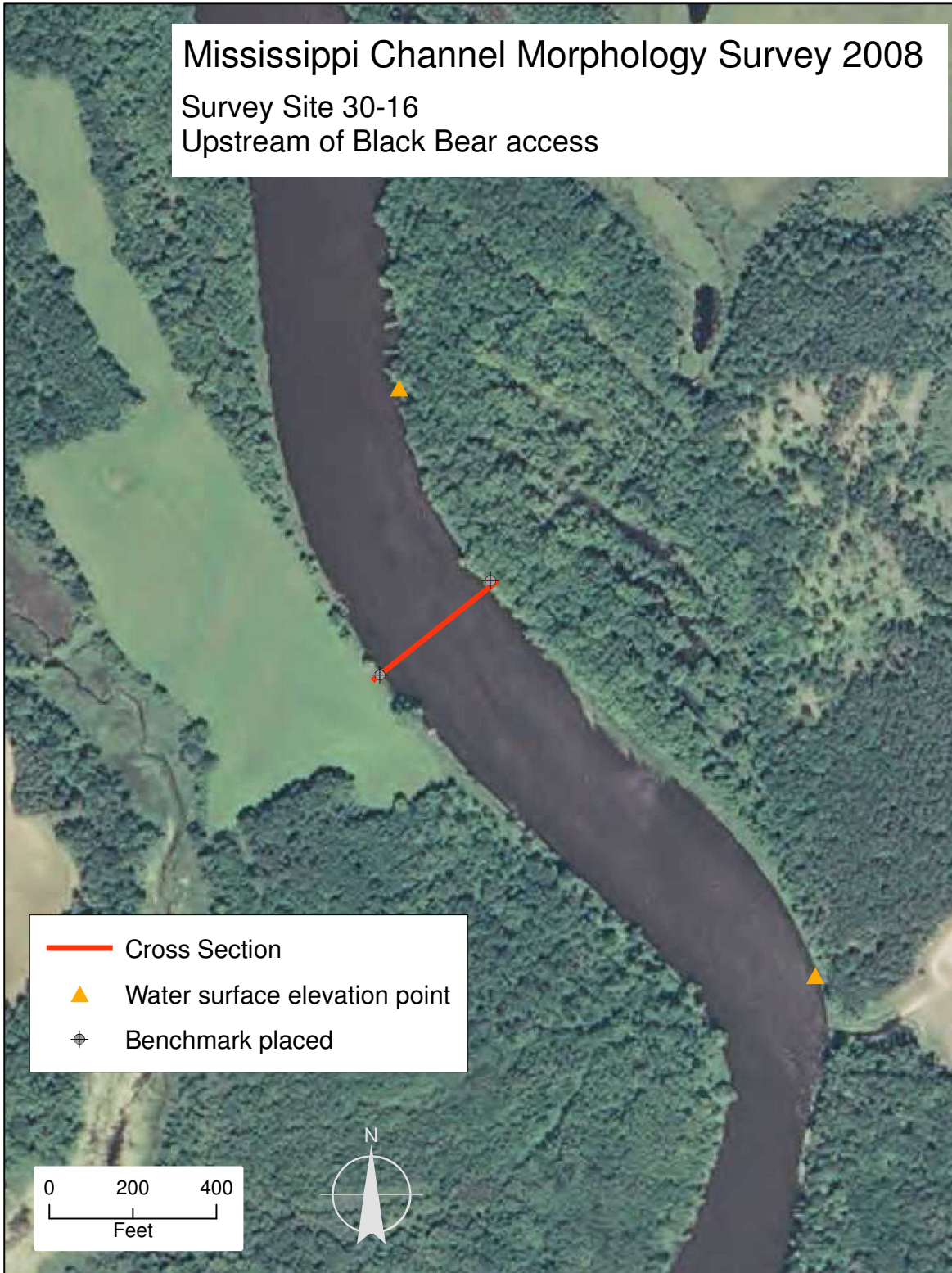
Survey Site 29-7
Downstream of Highway 6



Mississippi Channel Morphology Survey 2008

Survey Site 30-16

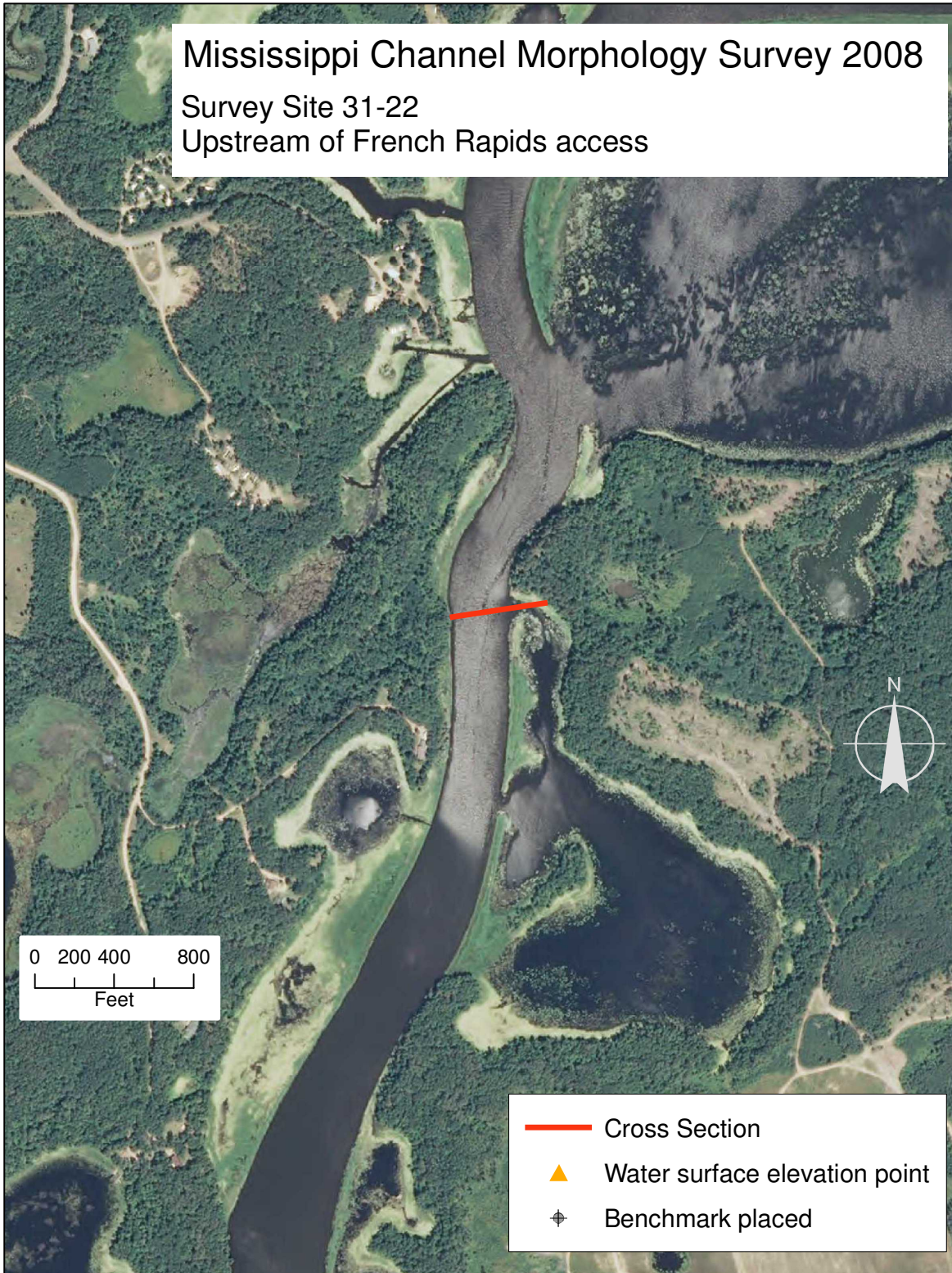
Upstream of Black Bear access



Mississippi Channel Morphology Survey 2008

Survey Site 31-22

Upstream of French Rapids access



Mississippi Channel Morphology Survey 2008

Survey Site 32-26

In Brainerd upstream of Hwy 210

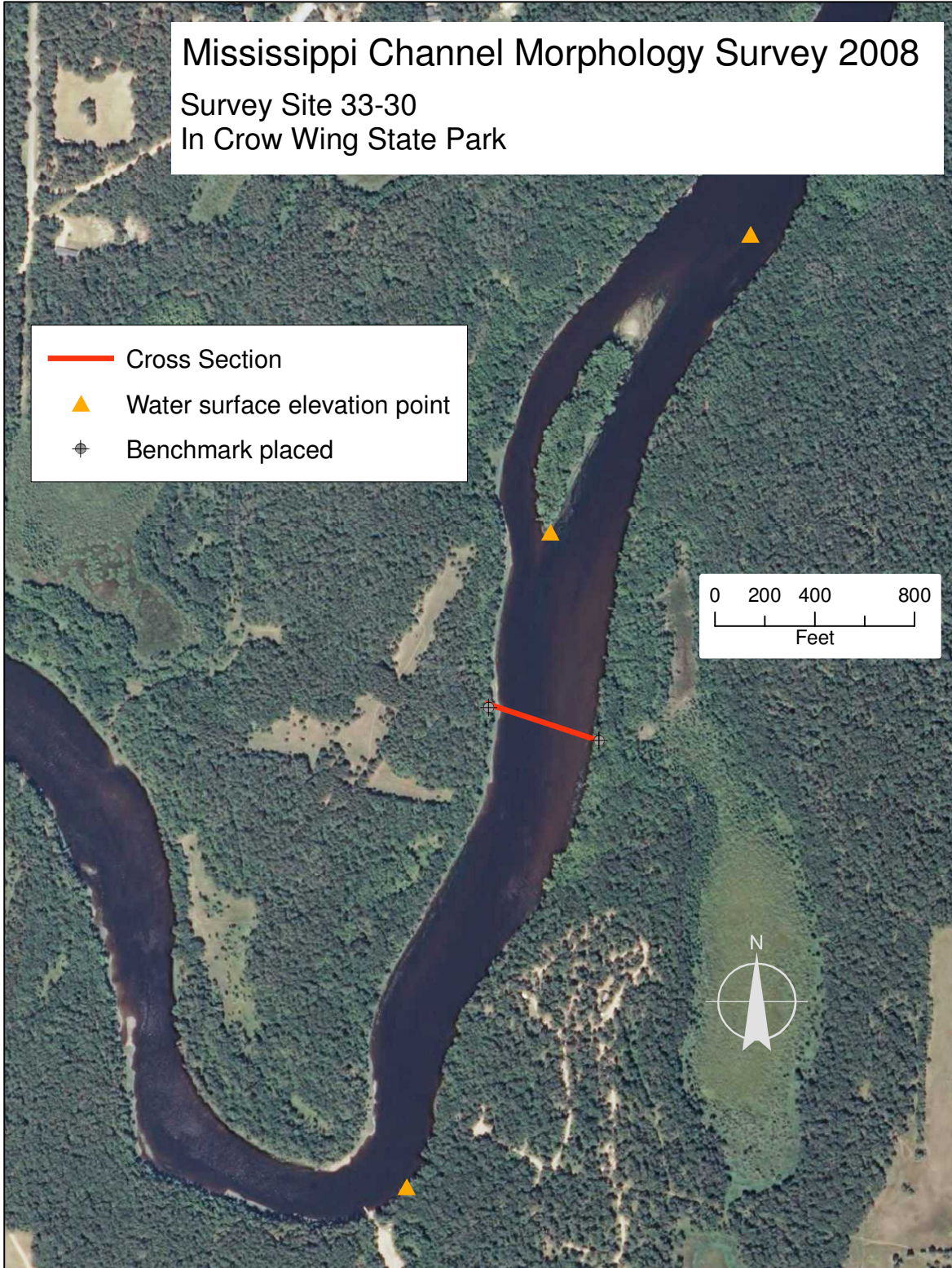


Mississippi Channel Morphology Survey 2008

Survey Site 33-30
In Crow Wing State Park

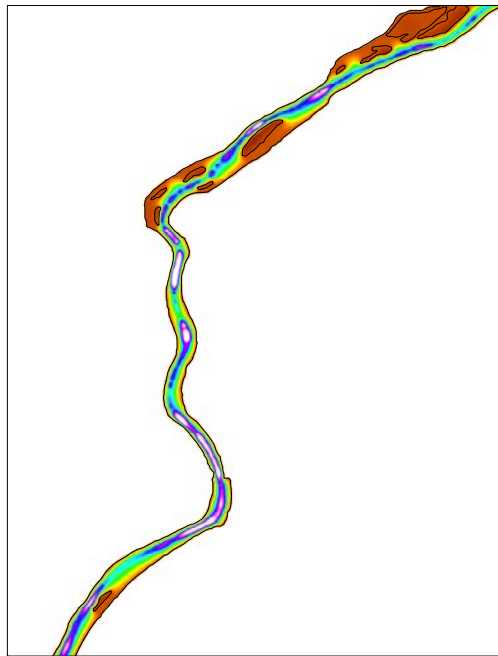
- Cross Section
- ▲ Water surface elevation point
- ⊕ Benchmark placed

0 200 400 800
Feet



**MISSISSIPPI RIVER SURVEY REPORT
BRAINERD FISHERIES MANAGEMENT AREA
CROW WING COUNTY, MINNESOTA**

**APPENDIX B
RIVER DEPTH**

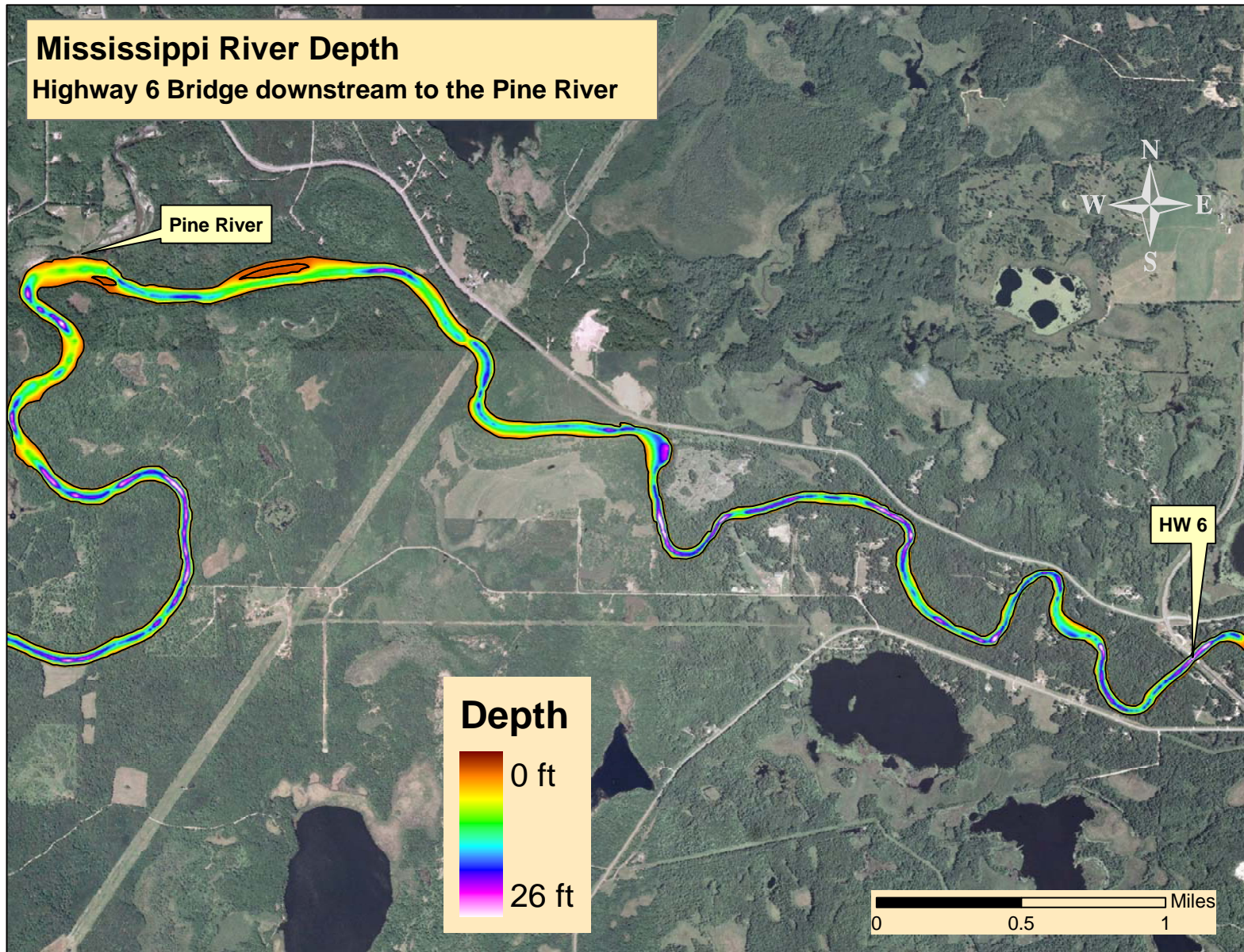


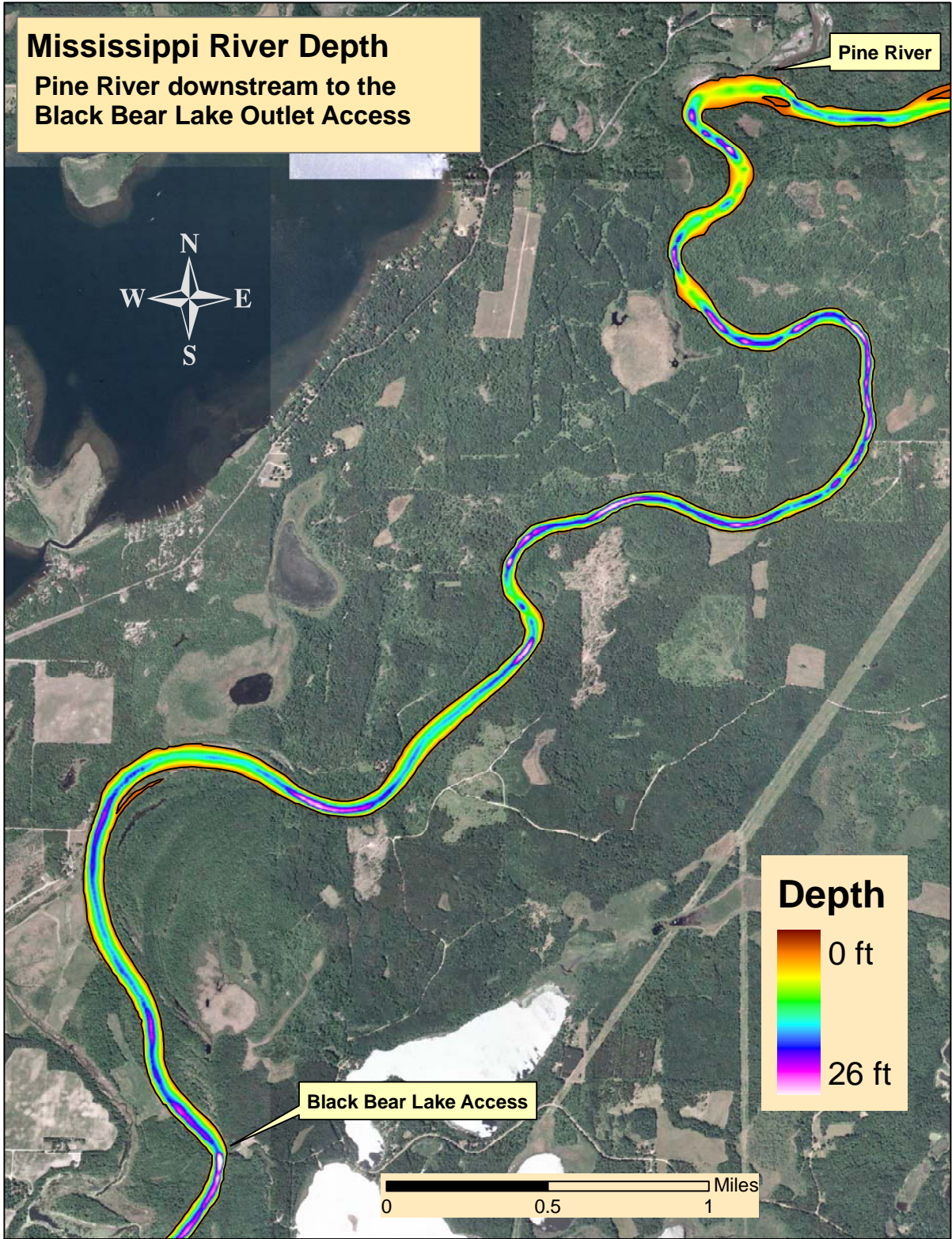
Owen Baird
Minnesota Department of Natural Resources
Section of Fisheries
Brainerd, Minnesota

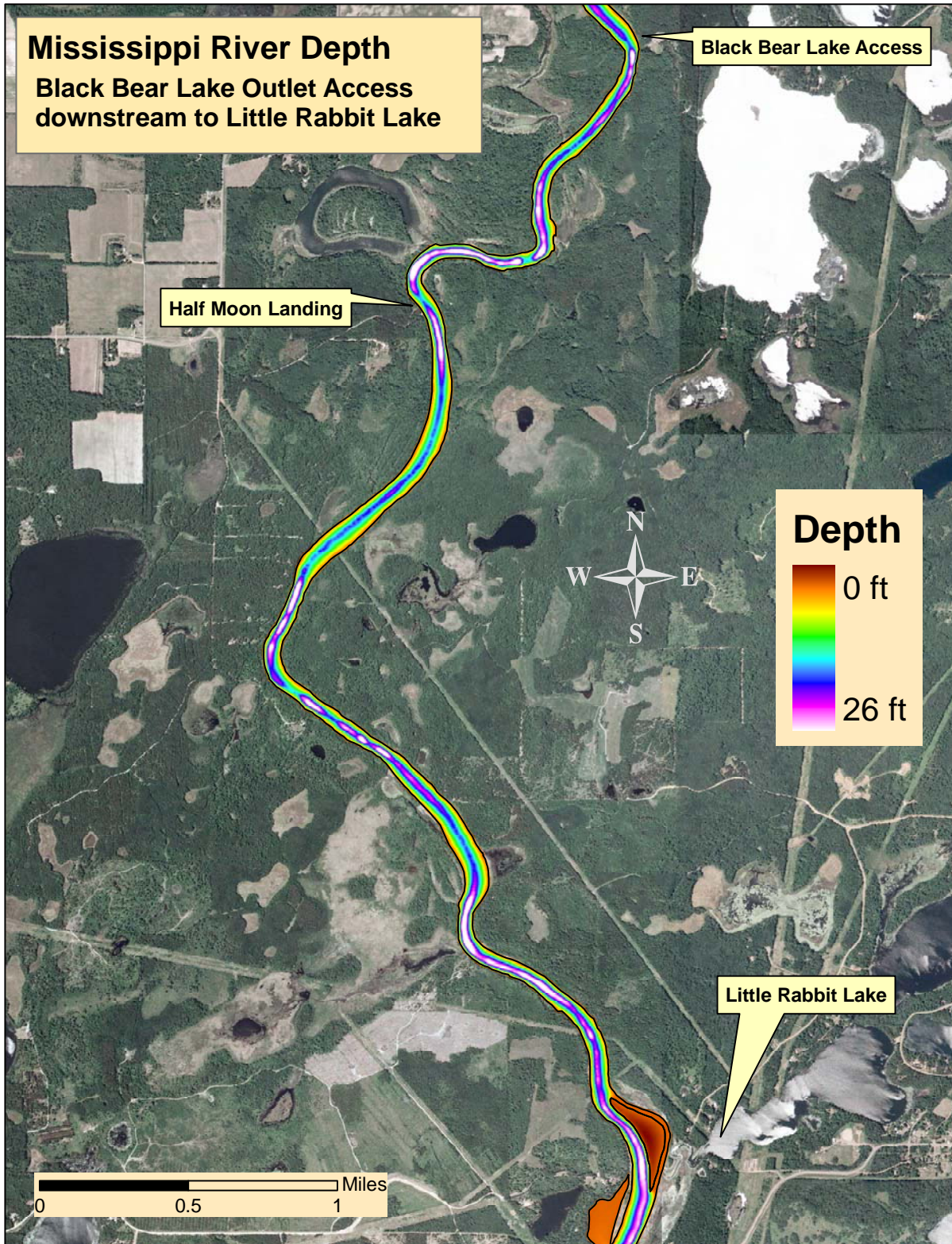
April 2008

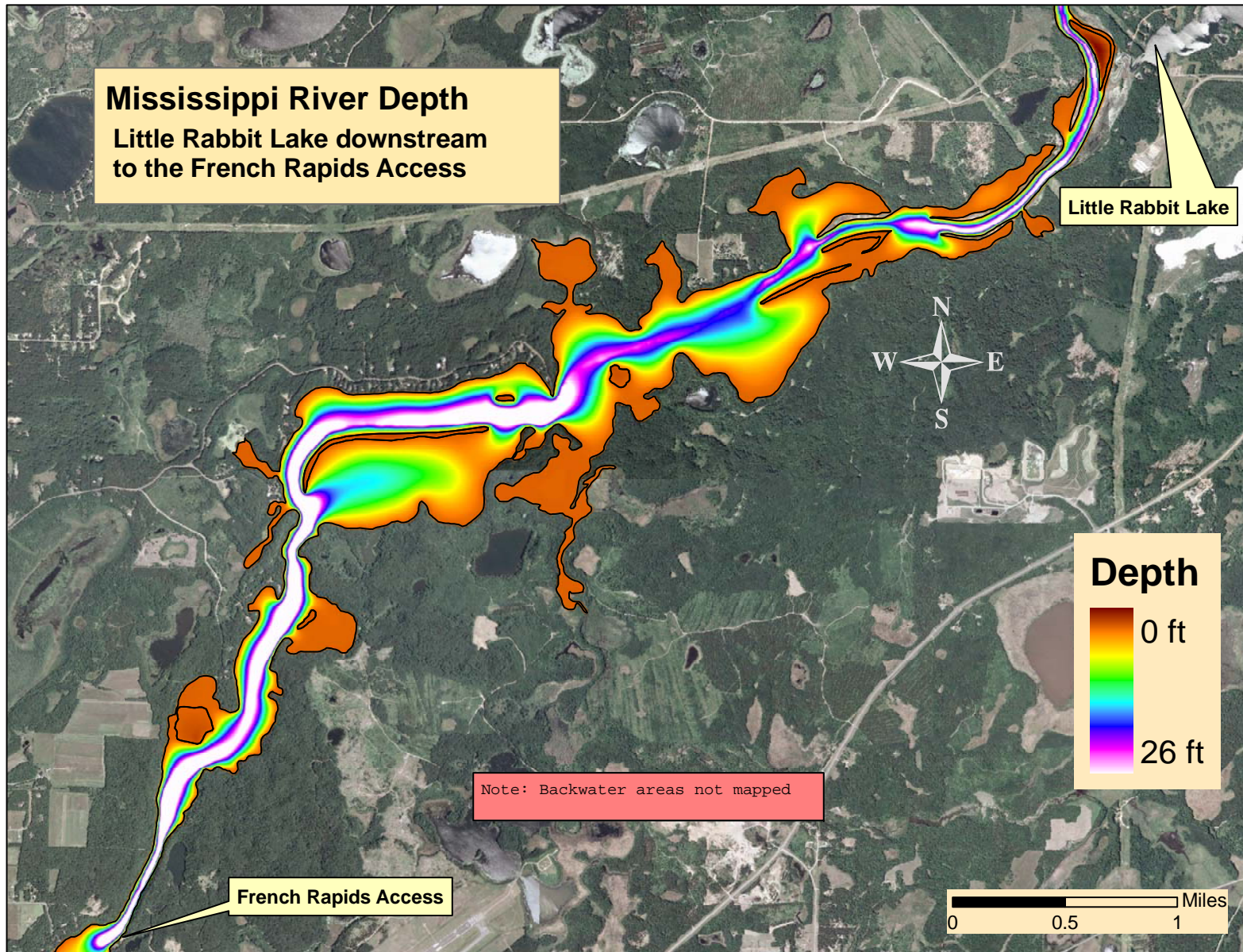
Depth Maps

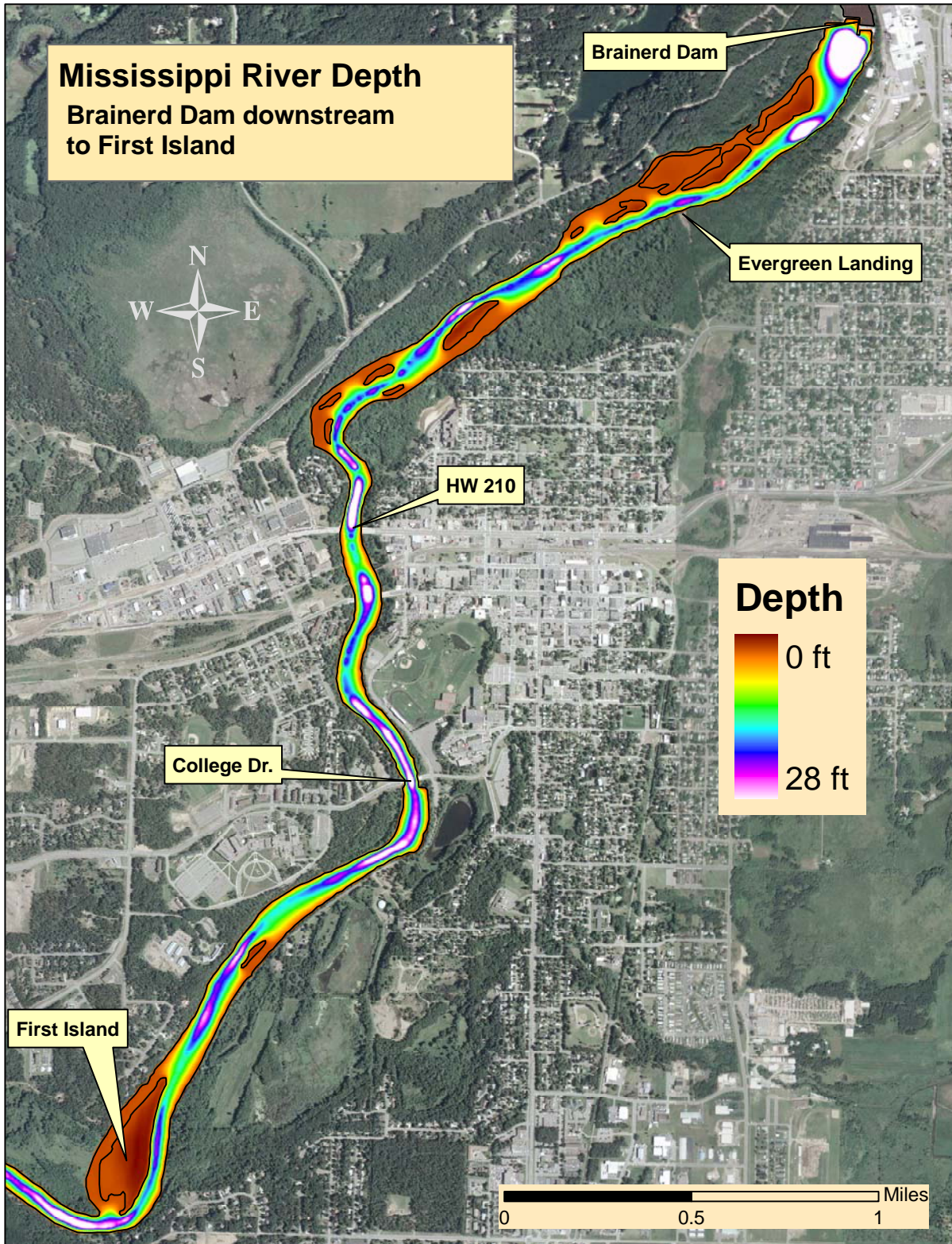
The digital elevation models (DEM) of the Mississippi River depth were created by interpolating the thalweg depth track recorded with a Garmin 178C GPS/Sounder with ESRI ARCGIS topo to raster tool. A line of the shore, including islands was used as a zero depth contour. In areas with multiple channels around islands or areas with extensive backwaters, such as above French Rapids, depths outside of the main channel thalweg are most likely erroneous and should not be relied upon. The color scale used to depict the depth was chosen to provide maximum detail, however, it appears that all deep pools are over twenty feet deep based on the scale, but this is however, not true. To determine actual depths consult the depth graphs found after the depth maps. The best use of these maps is for relative depth. Actual depth will vary widely depending on river discharge. These maps are not intended for and should not be used for navigation. In the future additional depth mapping may be done in areas with islands and multiple channels to improve the map quality. A DNR bathymetric map of Rice Lake including the Mississippi River upstream to Little Rabbit Lake is a better source for river depths in that area, particularly outside of the thalweg.

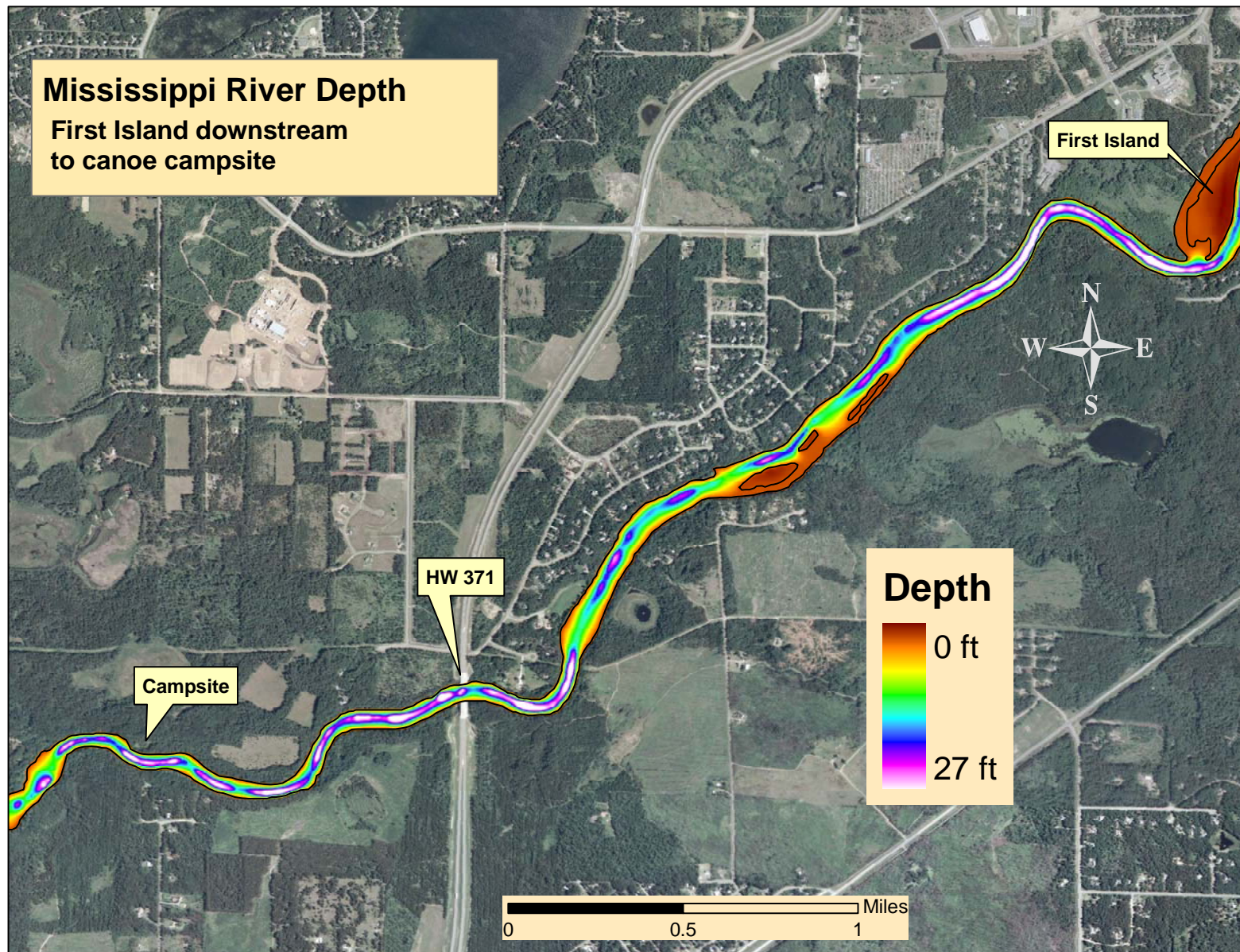


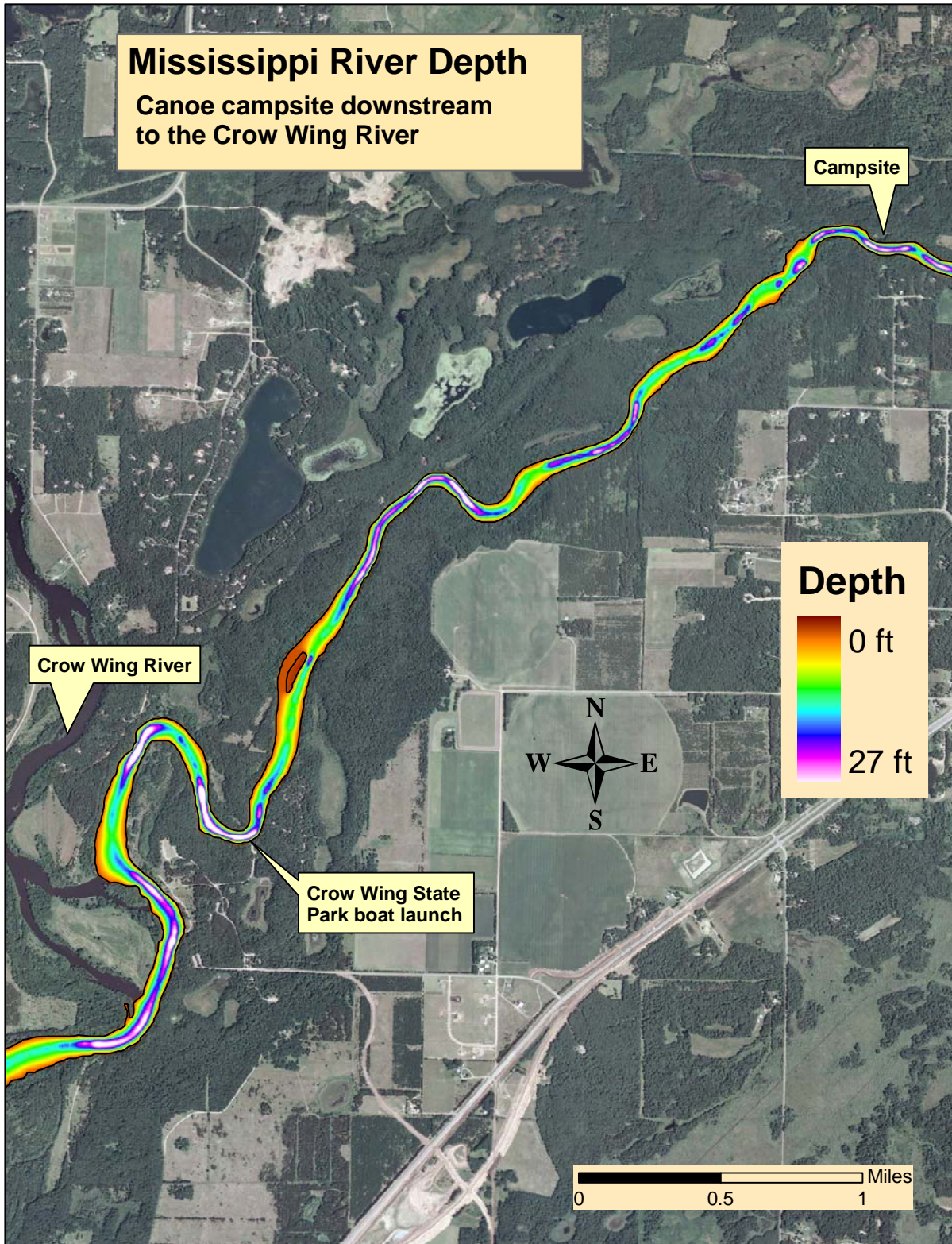


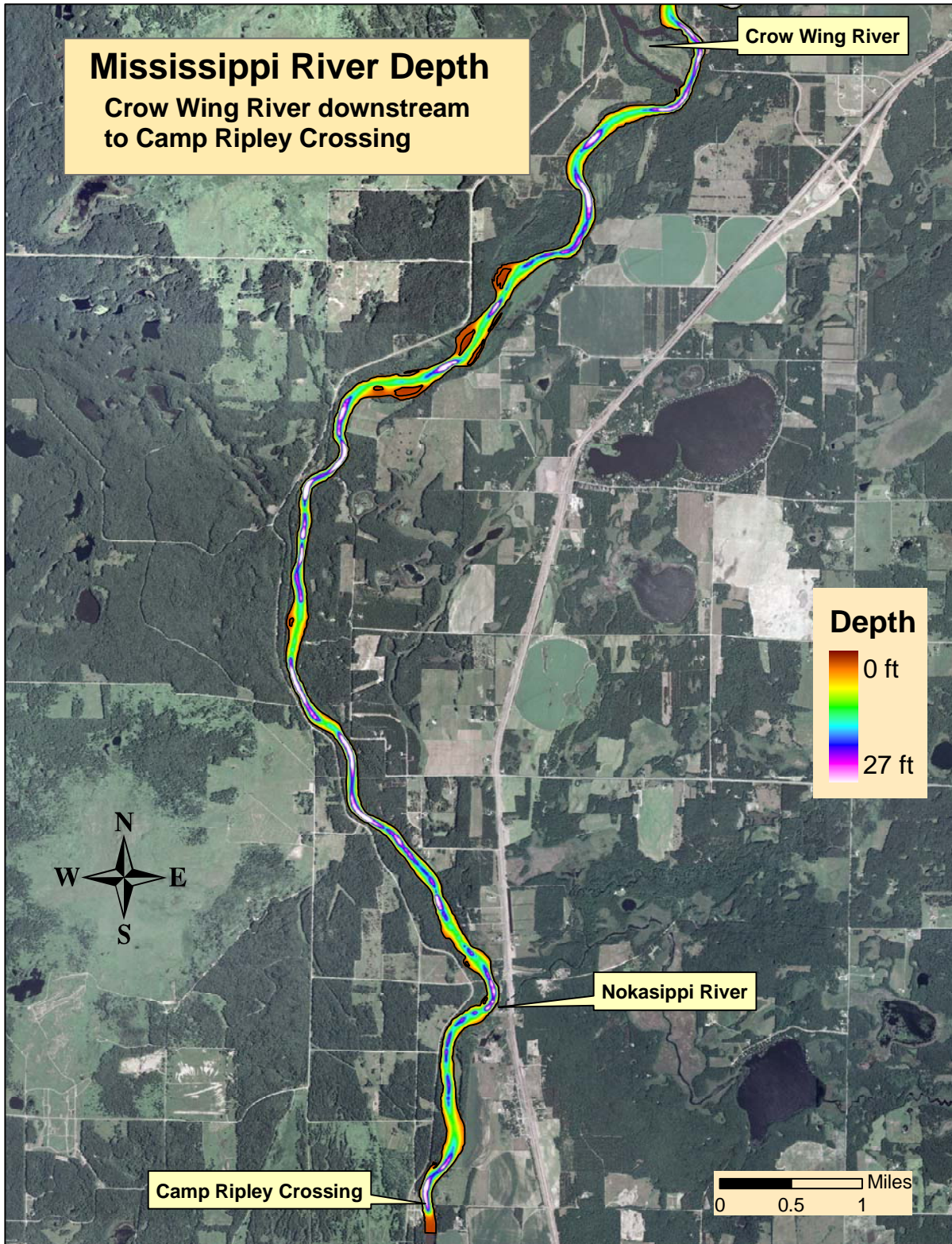












Depth Graphs

The following depth profile graphs of the Mississippi River in Crow Wing County, Minnesota were derived from the DEMs of the river depth. River depth should be viewed as relative as the actual depth will vary widely based on river discharge. River discharge during mapping is presented in Table 1.

Diamonds across the top to the graphs represent river miles. The triangles represent major landmarks within each reach.

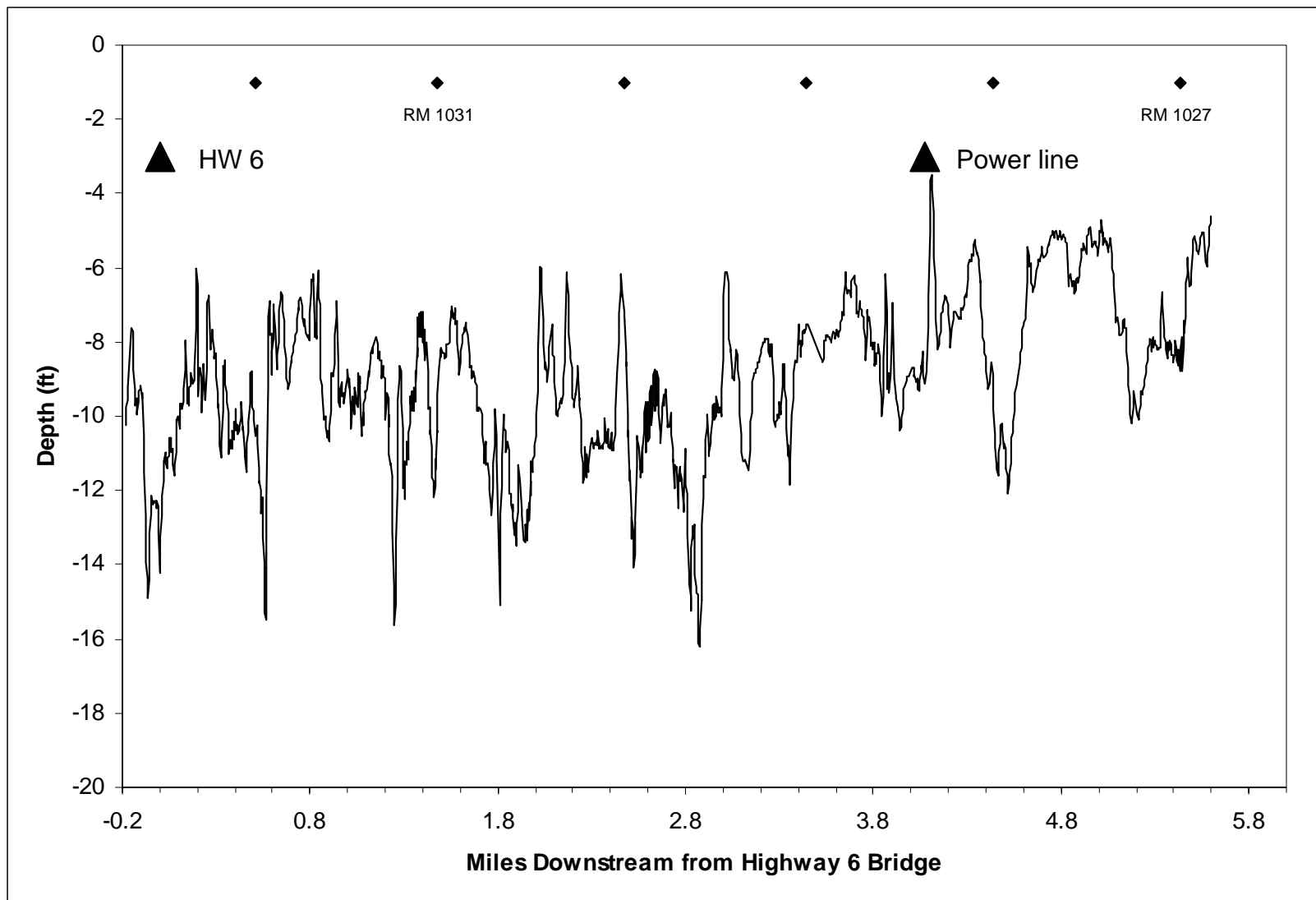


Figure B-9. Thalweg depths of the Mississippi River in the lower half of reach 29 from the Highway 6 bridge downstream to the mouth of the Pine River.

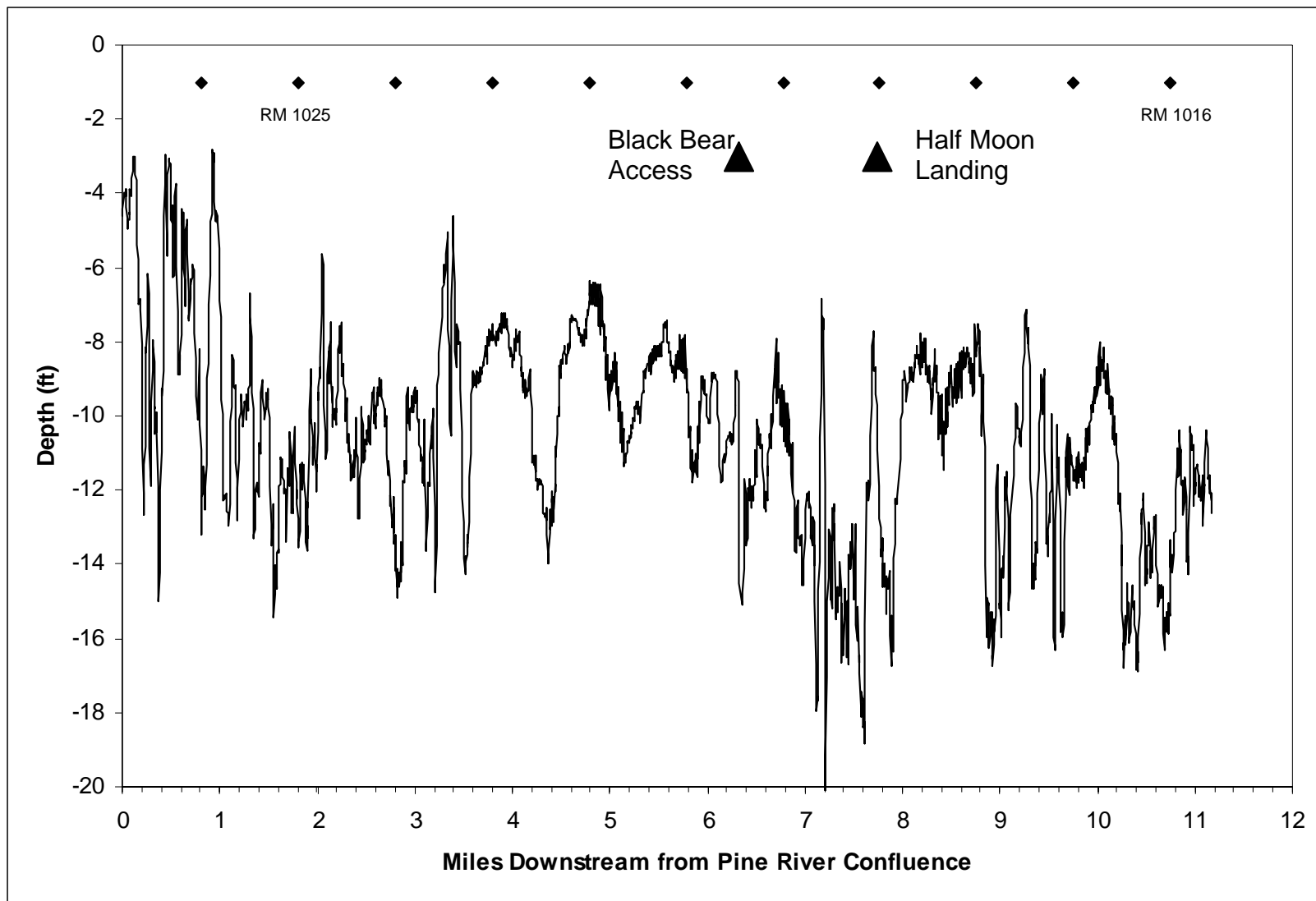


Figure B-10. Depth of the Mississippi River reach 30 from the Pine River mouth downstream to Little Rabbit Lake.

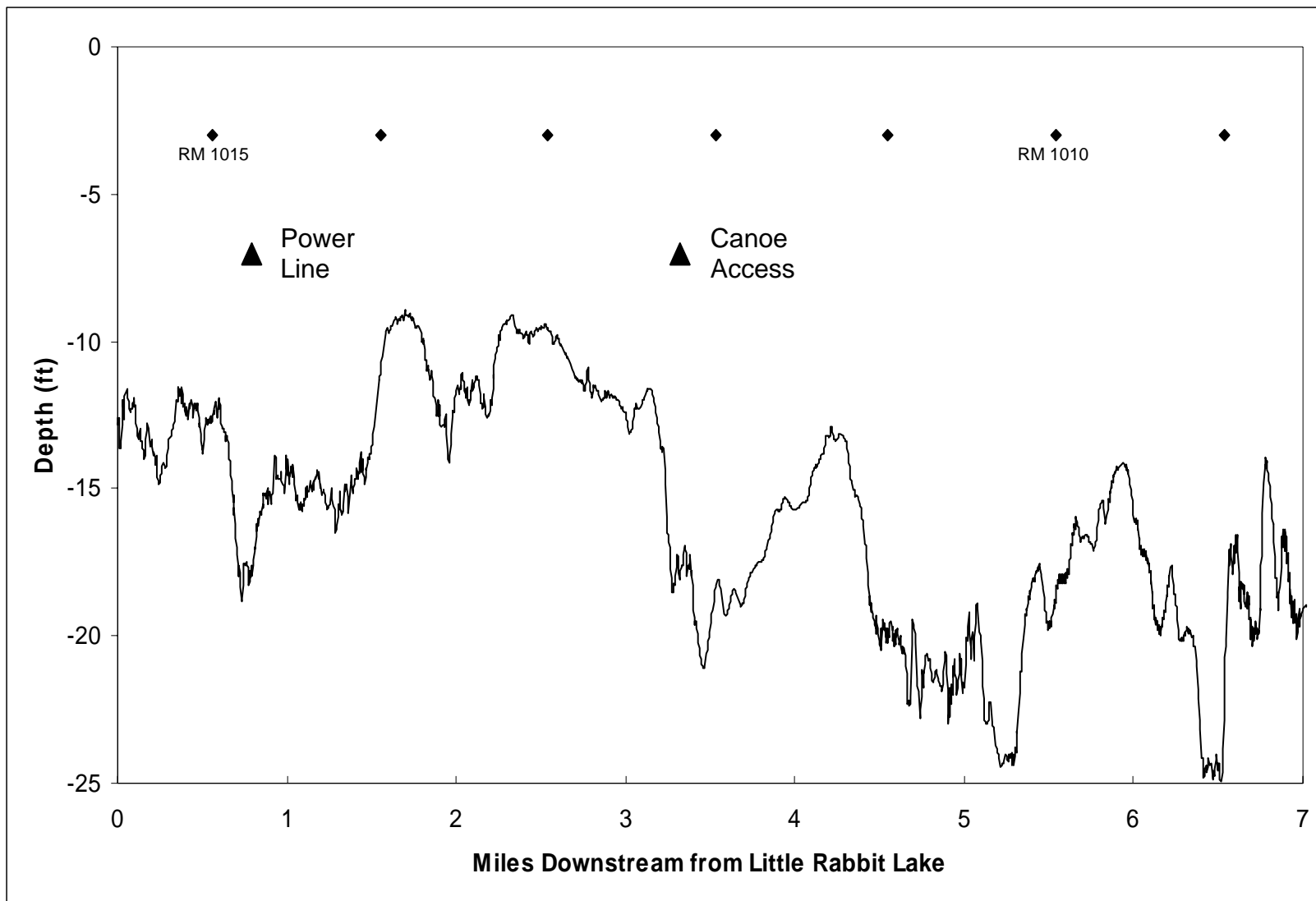


Figure B-11. Depth of the Mississippi River reach 31 from Little Rabbit Lake downstream to the French Rapids Access.

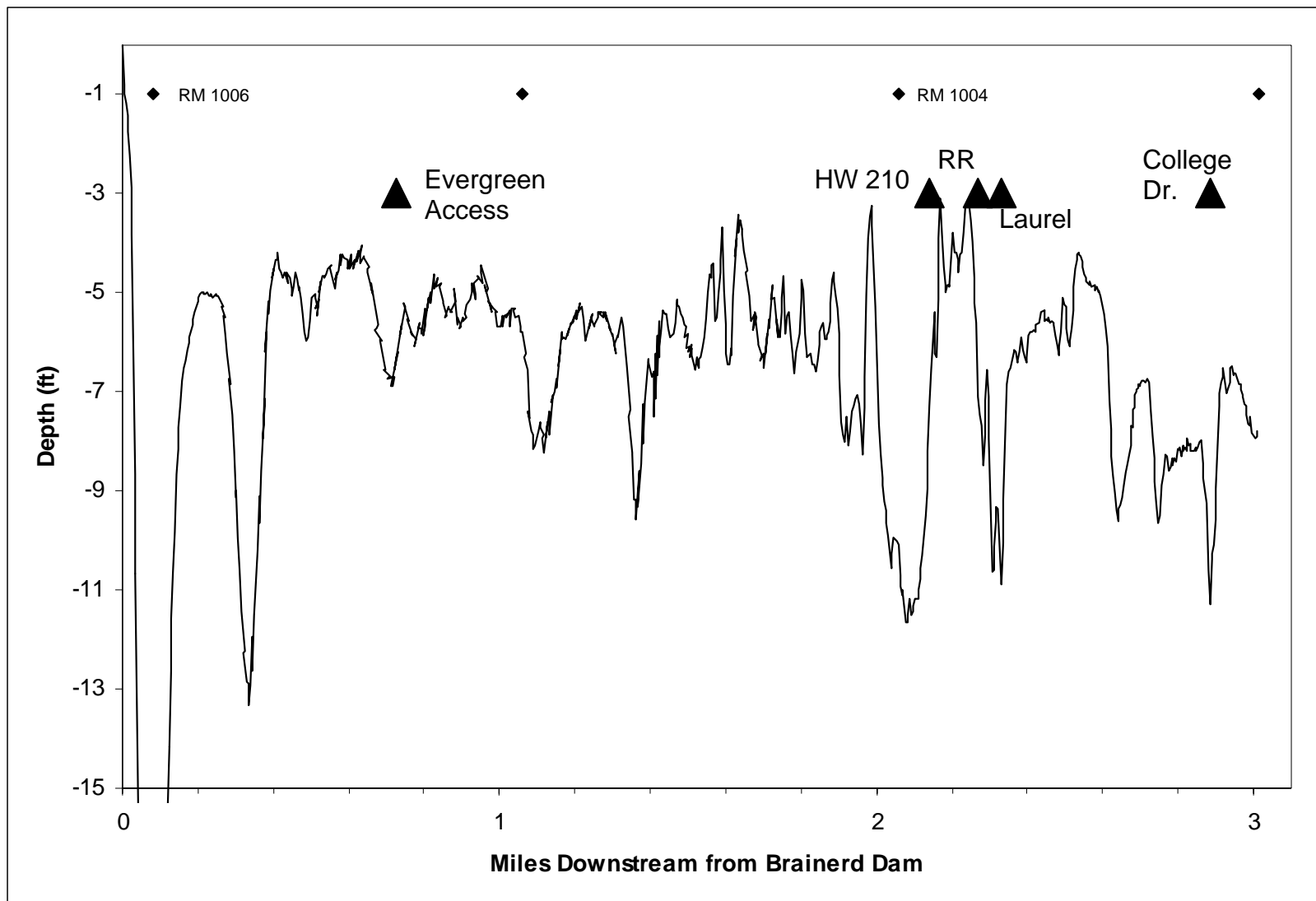


Figure B-12. Depth of the Mississippi River reach 32 from the Brainerd Dam downstream to the College Drive bridge. The maximum depth in the Brainerd Dam tailrace pool is about 27 ft.

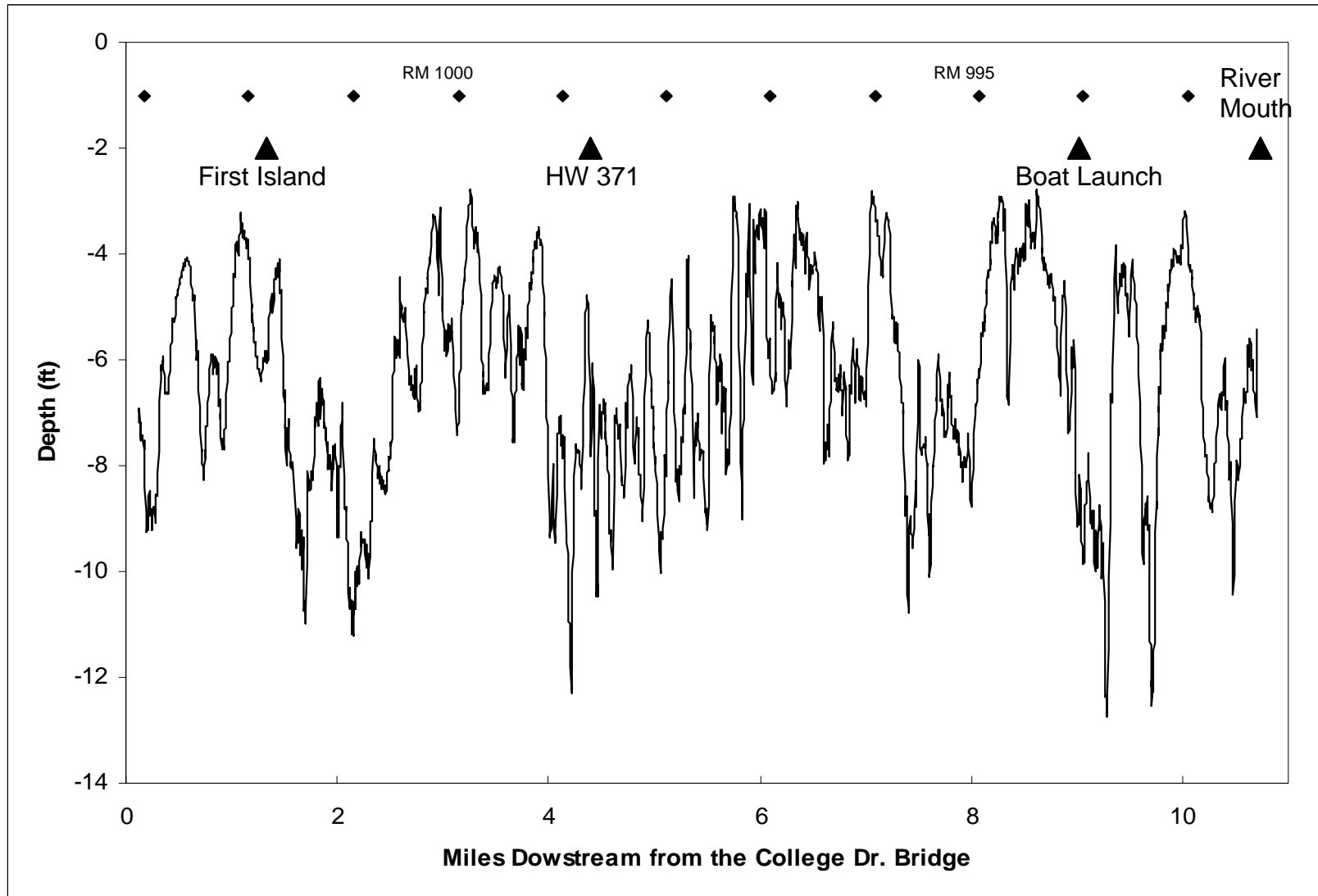


Figure B-13. Depth of the Mississippi reach 33 from the College Drive bridge downstream to the mouth of the Crow Wing River.

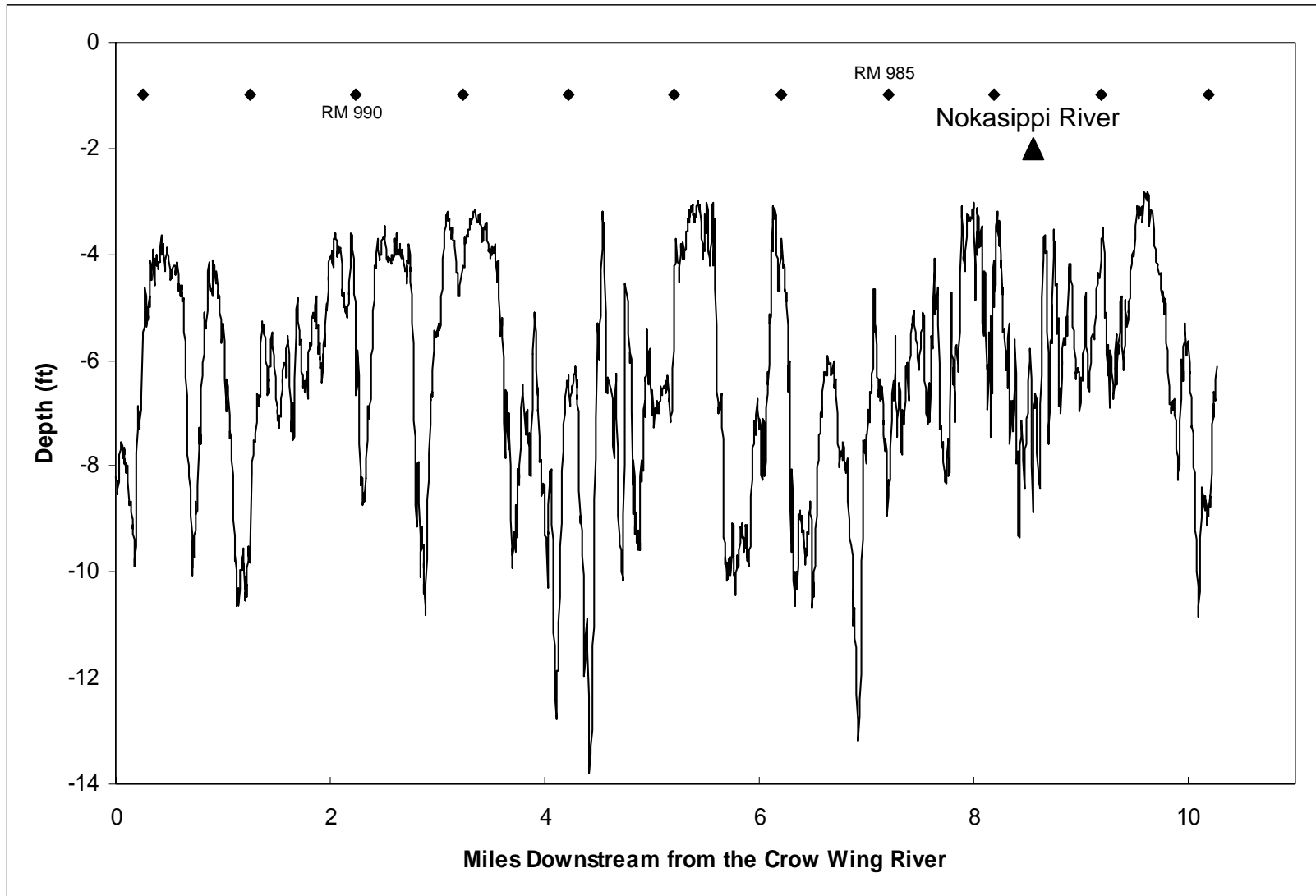


Figure B-14. Depth of the Mississippi reach 34 from the mouth of the Crow Wing River downstream to the Crow Wing County line and the Camp Ripley crossing.