U.S. Department of the Interior
U.S. Geological Survey

National Water Quality Program

Scientific Investigations Map 3468
Sheet 1 of 3
Pamphlet accompanies map

A.

B.

Base from U.S. Geological Survey 1:2,000,000-scale digital data
Albers Equal-Area Conic Projection
Standard parallels 29.5° and 45.5°, central meridian −96°
North American Datum of 1983
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EXPLANATION

○ **Well screened in the MRVA (map *A*) or MCAQ (map *B*)**—symbol color
   is dissolved oxygen concentration, in milligrams per liter

□ **Well screened in the LCAQ (map *B*)**—symbol color is dissolved oxygen
   concentration, in milligrams per liter

   ■ <0.5
   ■ 0.5 to 1
   ■ >1 to 2
   ■ >2 to 5
   ■ >5 to 10
   ■ >10

Figure 3. Location of wells with dissolved oxygen data used in machine-learning models.
A., Mississippi River Valley alluvial aquifer (MRVA), *B.*, Middle and lower Claiborne
aquifers (MCAQ and LCAQ).

Mississippi River Valley alluvial aquifer (MRVA)
Depth range: about 15 to 200 feet

Middle Claiborne aquifer (MCAQ-layer 5)
Depth range: land surface to about 1,900 feet

Lower Claiborne aquifer (LCAQ-layer 10)
Depth range: land surface to about 3,400 feet

Upper confidence interval
(95th percentile) of probability
of dissolved oxygen
concentration greater
than 1 milligram per liter

Predicted probability of
dissolved oxygen
concentration greater
than 1 milligram per liter

Lower confidence interval
(5th percentile) of probability
of dissolved oxygen
concentration greater
than 1 milligram per liter

Base modified from U.S. Geological Survey digital data, various
scales; Albers Equal-Area Conic projection, standard parallels
are 29° 30' and 45° 30'; North American Datum of 1983

EXPLANATION
Predicted probability

■ 0 to 0.1   ■ >0.2 to 0.5   ■ >0.8 to 0.9   ■ Model area designated as
■ >0.1 to 0.2   ■ >0.5 to 0.8   ■ >0.9 to 1   different aquifer or
                                                 confining unit
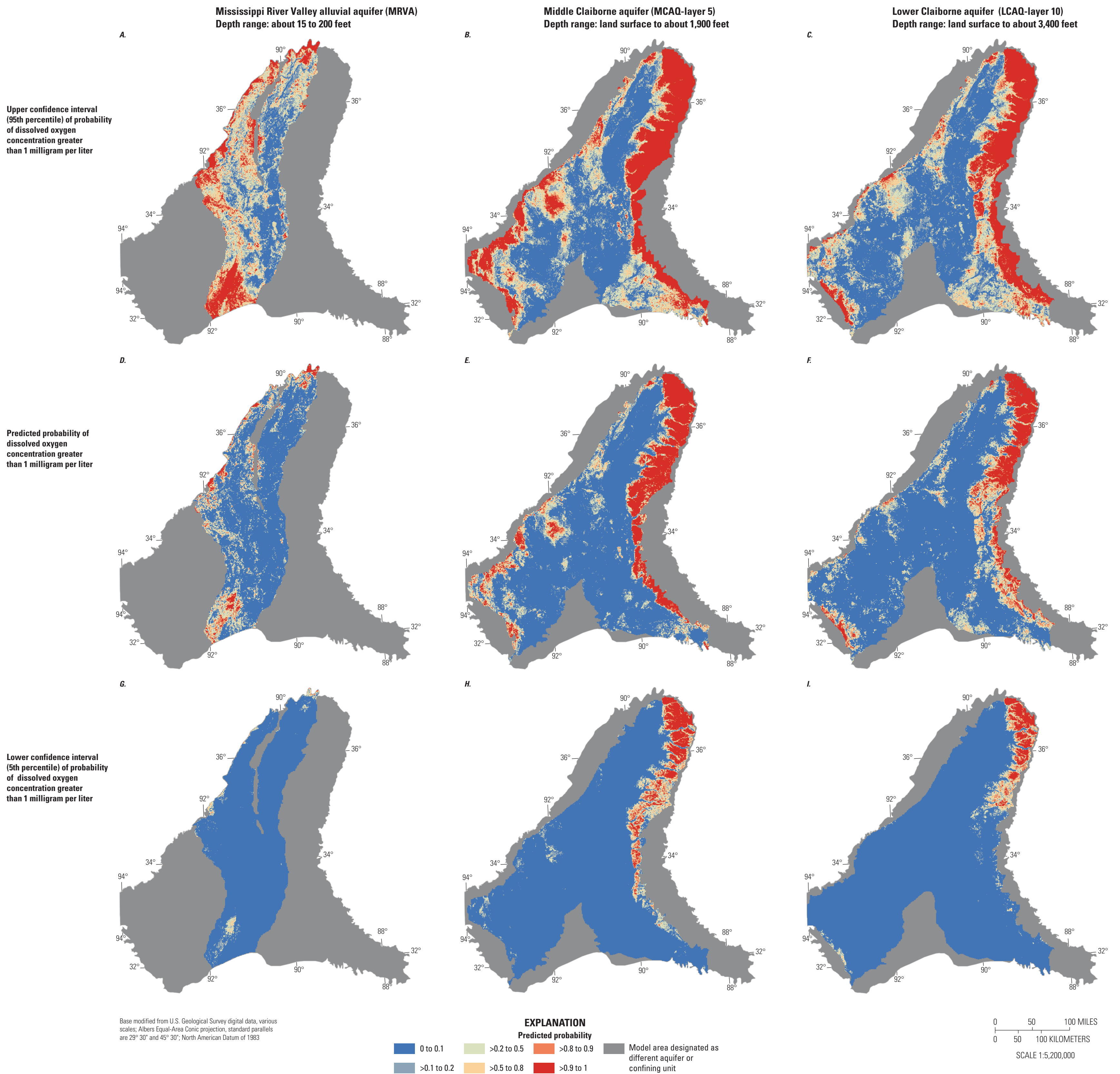
SCALE 1:5,200,000

Figure 8. Predicted probabilities of dissolved oxygen concentration exceeding a threshold of 1 milligram per liter.

Machine-Learning Predictions of Redox Conditions in Groundwater in the
Mississippi River Valley Alluvial and Claiborne Aquifers, South-Central United States

By

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