

# Airborne Geophysical Surveys

The U.S. Geological Survey (USGS) is developing high-resolution, regional maps of the shallow geology in the Mississippi Alluvial Plain (MAP) by collecting airborne geophysical data to support water resources planning in the region. Starting in late February and running through early March 2018, a high-resolution airborne geophysical survey will be acquired in the area just north and west of Greenwood, MS including the vicinities of the Sunflower, Ruleville, and Philipp communities (see map).

The survey will be conducted by CGG Airborne, a private company who specializes in the collection of airborne geophysical data around the world. Data are collected using specialized instruments towed beneath a low-flying helicopter along a grid of pre-planned flight paths. The helicopter will not land within the survey area, and does not fly directly populated areas.

USGS scientists will use these data to produce 3D maps of aquifer properties to depths of up to about 200 feet below ground. This information will form the basis for groundwater models that are being

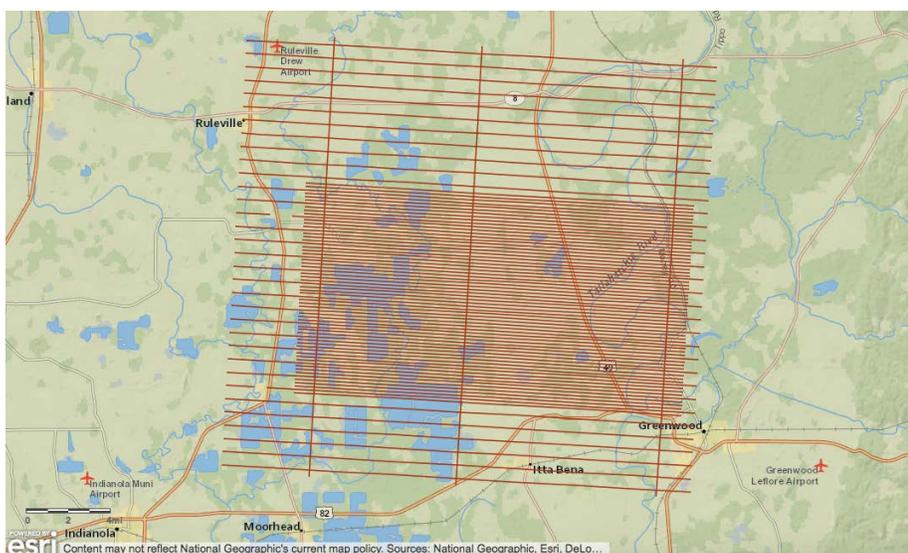
developed by the USGS to improve water management decisions in the area.

This work is part of the USGS Mississippi Alluvial Plain (MAP) Regional Water Availability project and will provide vital information for local water users and managers to better understand their groundwater resources and aquifer systems. All data, maps, and analyses generated by the geophysical surveys will be publically available at no cost.

By mapping the location and depth of freshwater aquifers over the surveyed areas, local and regional water management agencies will gain a better understanding of the variability and spatial distribution of properties such as aquifer depth, saturated thickness, and potential recharge pathways. The USGS has used this method throughout the U.S. for mapping geology and groundwater resources. Recent examples of results from USGS airborne geophysical surveys in Nebraska and South Dakota can be found online at:

<https://pubs.usgs.gov/sir/2011/5219/> and

<https://pubs.er.usgs.gov/publication/fs20163075>



Map of the survey area and planned flight lines (left). Image of the RESOLVE instrument in flight (right). An online map of the proposed flight lines can be found at: <http://arcg.is/1ieCLD>

