

RECHARGE ZONES IN THE MISSISSIPPI - YAZOO ALLUVIAL PLAIN

OLWR Hydrologic Map 2011-7

Sheet 1 of 2

Recharge to the aquifer underlying the Mississippi-Yazoo Alluvial Plain ("Mississippi Delta") is variable. Much of the plain is underlain by an impermeable horizon of clay and silt that hinders infiltration of precipitation into the MRVA (Mississippi River Valley alluvial aquifer) below.

Two types of surficial deposits do allow significant recharge into the MRVA:

- 1) alluvial fans which lie at the foot of the bluff line from the Tennessee to the Louisiana state lines, and
- 2) permeable deposits found mostly along the Mississippi River and Deer Creek, including natural levees.

There are other minor and localized zones of high recharge, such as streambeds and pits, that are present but are not mapped on these sheets.

ALLUVIAL FANS

Fan boundaries were outlined by the authors based on digital elevation model (DEM) data from the United States Geological Survey (USGS), of 10-meter horizontal accuracy, and from digital contours derived by MARIS (Mississippi Automated Mapping Information System) from USGS topographic maps.

From Vicksburg north, LIDAR (Light Detection and Ranging) airborne laser datasets, of 1-meter horizontal accuracy, were used. Data collection was done by the U.S. Army Corps of Engineers in 2009-2010.

Fans were assigned names associated with local features, to facilitate communication among those conducting research in these areas.

PERMEABLE DEPOSITS

The soils in the alluvial plain are mapped as outlined and coded in the U.S. General Soil Map by the soil survey staff of the National Resource Conservation Service of the United States Department of Agriculture (NRCS- USDA).

Most of the soils in the alluvial plain are classified as hydric. This means that the soils, and the sediments beneath the soils, are poorly drained and tend to hold rather than transmit water.

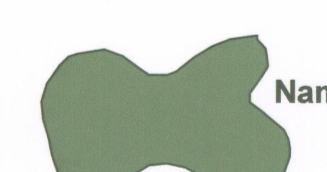
In alluvial fan areas, and in the permeable areas along the Mississippi River, the soils are classified as non-hydric and indicate areas which allow recharge to the aquifer. In the higher rolling terrain outside the Delta, most of the soils are also classified as non-hydric.

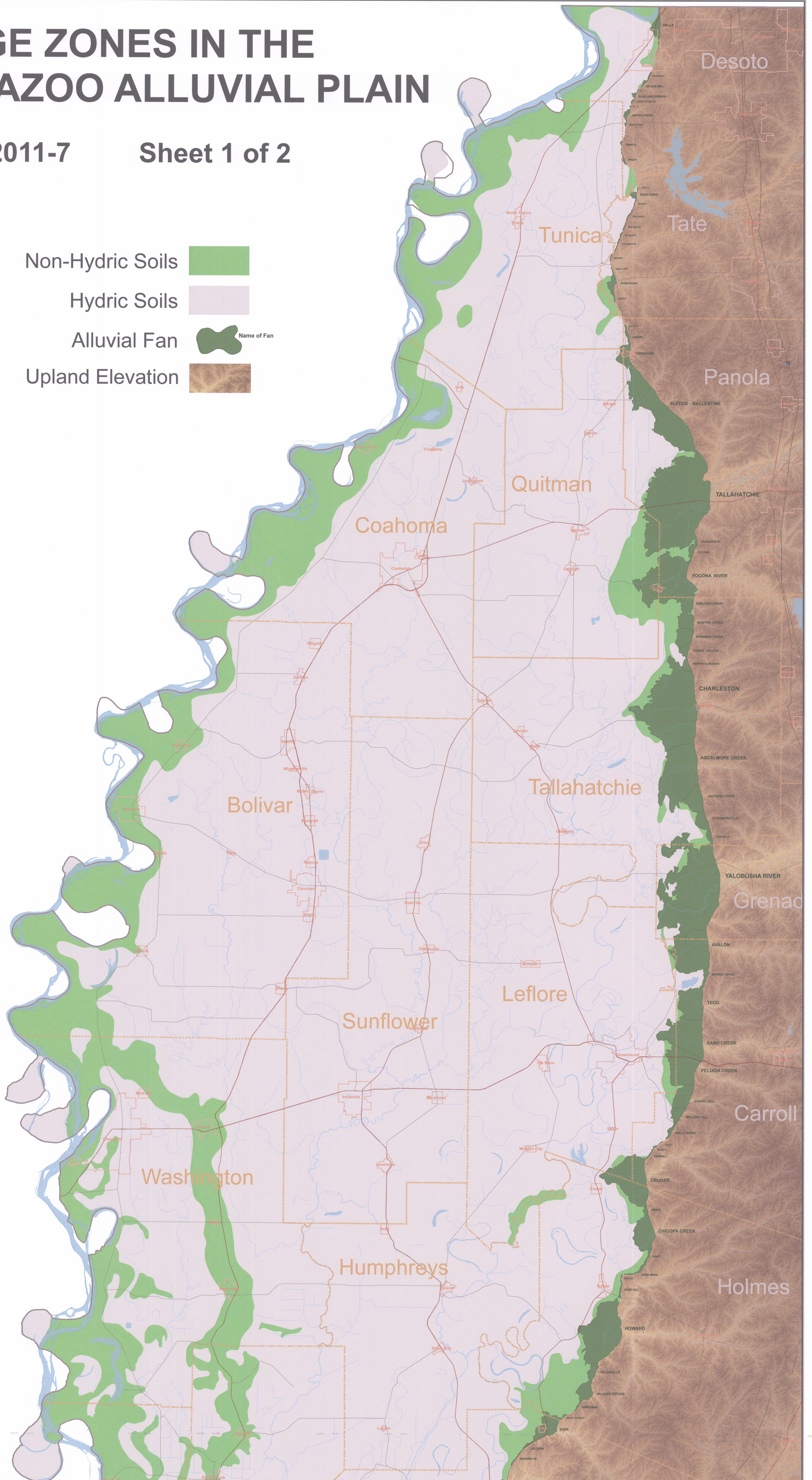
UPLAND TERRAIN

Terrain shading, which is illustrated only in the areas outside the alluvial plain, is derived from the 10-meter DEM constructed by the USGS, projected and distributed by MARIS.

BASE MAP

Base map data layers were supplied by MARIS, Tele Atlas NV (road network), and MDEQ (Mississippi Department of Environmental Quality).

- Non-Hydric Soils 
- Hydric Soils 
- Alluvial Fan  Name of Fan
- Upland Elevation 



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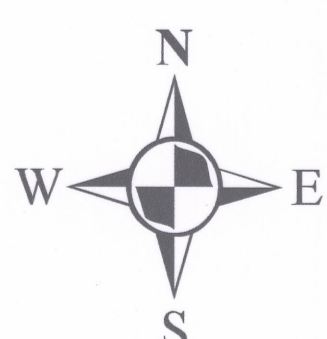
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1:216,000

1 inch = 18,000 feet

Note: This map presents general research regarding the location and extent of enhanced recharge zones. It can not and must not be used for siting, grading, or other site-specific analysis. If detailed data is required, site-specific mapping and research must be conducted.