



# Project Summary

US Army Engineer  
Research and Development Center  
Waterways Experiment Station

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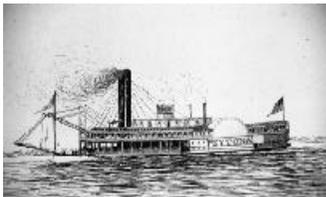
## Archaeological Geophysics / Geoarchaeology / Cultural Resource Management

**Principal Investigators:** [Dr. Dwain K. Butler](#) and [Dr. Janet Simms](#), (601) 634-2217/-3493

**Objectives:** To provide non-invasive methodology for cultural resource management applications, site geologic characterizations, artifact detection and location, and spatial pattern recognition

**Approach:** Determining the presence and location of archaeologically significant sites and features can be a costly and time consuming process. By incorporating geophysics into the archaeological survey plan, both the cost and time requirements can be reduced. The USAE Waterways Experiment Station has the unique capability of providing geophysical, geological, and archaeological services.

Geophysics can initially be used to reconnoiter a large spatial area to allow prioritization of regions based on their potential archaeological significance. More intense geophysical surveys performed over these smaller regions further narrows the spatial area over which an archaeological investigation is required.



*Type of steamship being excavated*

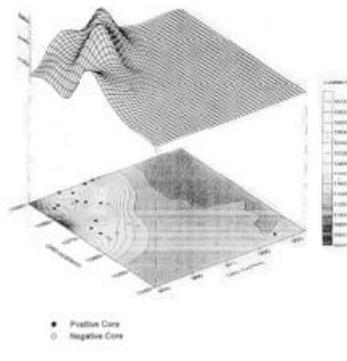


*Military buttons and primer caps recovered from investigation site*

Geophysical methods typically employed include magnetics, electromagnetics, and ground penetrating radar. Seismic refraction/ reflection and microgravity are used in special circumstances. The geophysical surveys map contrasts in soil conductivity and magnetic susceptibility, magnetic field strength, and soil layers. These data are used to discriminate between metallic and non-metallic material, ferrous and nonferrous metallic objects, and identify areas of

soil disturbance.

Waterways Experiment Station personnel have been involved in several cultural resource management projects, including the search for the Kentucky steamship in Louisiana, Indian villages in Georgia and Louisiana, Hawaiian ceremonial grounds (Heiau), the Wright Brother's hangar in Ohio, and burial sites.



*Magnetic contour of investigation site*

For additional information regarding geophysical investigation of archaeological sites, contact Dr. Dwain K. Butler, (601) 634-2217, email [butlerd@wes.army.mil](mailto:butlerd@wes.army.mil), or Dr. Janet Simms, (601) 634-3493, email [simmsj@wes.army.mil](mailto:simmsj@wes.army.mil) (CEWES-GG).