PECAN ISLAND (AP) - Scientists are analyzing a small trailer load of bones, pottery and other artifacts from the only known complex of Indian mounds along Louisiana's coast.

"There are several other very small mounds scattered along the coast. Small, single mounds. This is the only major site along the Louisiana coast," said Jeffrey Brain, a researcher at Harvard University's Peabody Museum.

"It was a very important ceremonial center for the region during a period about a thousand years ago, from A.D. 500 to 900. It's a period we have very little information on, particularly in that area."

Brain works with Harvard professor Stephen Williams, who is directing an archeological survey of the lower Mississippi Valley.

The survey's latest dig was at Pecan Island, where Indians built mounds north, south, east and west of a clear "plaza" about 160 to 190 feet across, said Rick Fuller, field director for the dig.

Fuller and his wife, Diane Fuller, run an archaeological laboratory in Mobile, Ala. They spent Aug. 12 to Nov. 2 at Pecan Island, Mrs. Fuller said.

The archeologists sifted through the western mound - the only one still in good enough shape for research, Brain said in a telephone interview from Cambridge.

One was destroyed many years ago, and another was excavated in the 20s by the Smithsonian Institution, Brain said.

"One question we are trying to resolve is why there is a major mound site at this location and not elsewhere," Brain said.

He said it was a rich area, so people would have gathered there, and there is evidence that they were in contact with people from as far away as Florida and Texas.

The area's richness is indicated by the large variety of bones and shells in a trash deposit on the slope of the mound.

Deer, raccoon, muskrat, and opossum are among the many mammals apparently eaten by the Indians, Fuller said in a telephone interview from his archaeological laboratory in Mobile, Ala. There are catfish, gar and other fish, birds, turtle, alligator, crabs, oysters and clams.

"We're separating the animal bones for specialists to identify. That will increase our list of species considerably and give an idea of the relative role each species played in the diet of the mound people," Fuller said.

In addition, he said, soil samples are being analyzed to see if there's any evidence of agriculture, such as fragments of corn cobs or squash seeds. Other tests will include radiocarbon dating, Fuller said.

He said there actually were two buildings on the mound, one - going by pottery styles - apparently used sometime between 450 to 600 A.D., and the other built in the same spot between 700 and 1000 A.D.

Brain and Fuller said the buildings on the mound were probably occupied by a chief or other important personage.

"Basically, these types of buildings were vacant. Only important people and their friends lived there. Most of the society probably lived on the beaches and bayous some distance away, and came to the site on important days, feast days, whatever," Brain said.

Most of the tools found in the trash pile were bone - not surprising in the swamplands, where stone is rare.

"There were butchering marks on quite a lot of the bones - scrapes and cuts on the bone itself. So they didn't throw away. It was kept, reworked. People were very careful not to discard or lose it."

Pottery fragments are another indication of dealings with people outside the Louisiana swamps, the archaeologists said.

"We did find potsherds that had to have come from parts of Florida, parts of Texas, up the Mississippi Valley as far as central Mississippi itself," Brain said.

How the pottery got to Louisiana is another question.

"It could be trade, could be gifts, could be people moving back and forth, selling of clays. There are all kinds of possibilities."

Long-distance contact was fairly common among American Indians, Brain said. "What's interesting is that no other site can show these same patterns of contact. It was hooked into a network all its own."