2005 Remote Sensing at the Bryson-Paddock Site, 34KA5

by Richard R. Drass

During the week of April 17, magnetic and electrical conductivity studies were conducted at the Bryson-Paddock site, 34KA5. Jim Bruseth and Bill Pierson of the Texas Historical Commission and Dick Gregg and Bob Crosser of the Fort Bend Archaeological Society in Houston brought remote equipment designed to evaluate subsurface features at this Wichita village. Assisting with the survey were Susan Vehik (OU) and Stephen Perkins (OSU), students Liz Tereba, Lauren Cleeland, and Mike McKay, and volunteers Mary Ann Drass and Fred Schneider. We spent three days covering large parts of the village, supplementing the data we obtained from the 2003 remote sensing.

The earlier magnetic and electrical resistivity survey provided important information on a 30 x 60 m area in the Paddock pasture (Grid A) and a 30 x 30 m area in the Cheek wheat field (Grid G). Testing of some of the anomalies found during the 2003 remote sensing indicated that the magnetics and resistivity provided information on pits and hearths. This small initial survey revealed at least three large pits in the wheat field and over 25 pits or hearths as well as other anomalies in the pasture. With such promising results, we wished to expand the remote sensing to obtain information on the distribution of a much larger portion of the village.

The Texas magnetometer is mounted on a wheeled cart, allowing rapid coverage of areas (Figure 1). During the survey, we were able to expand the magnetic survey over three times as much of the Paddock pasture (Grid A) as was surveyed in 2003. We

Figure 1. Bill Pierson pulling the magnetometer cart during the 2005 survey at the Bryson-Paddock site (34KA5).
also surveyed portions of the Cheek pasture in Grid F and southern portions of the Paddock pasture. The latter area included a mound (Grid H) that had never been investigated. We had hoped to examine the Cheek wheat field to obtain data on a possible fortification trench, but the wheat was too close to maturity to disturb. We did cover part of the visible trench in the Paddock pasture.

The electrical conductivity survey was with a hand-held instrument and coverage was more limited. Electrical conductivity surveys included the Grid H mound and a large section of Grid A in the Paddock pasture. Another small area of the south Paddock pasture (Grid I) was also surveyed. In general, the conductivity results were less promising than the magnetics, but the data should complement the magnetics.

Although we are still analyzing the remote sensing data, initial evaluation of the maps reveals a large number of magnetic anomalies that are similar to the pits and hearth recorded in 2003 and tested/evaluated in 2004. This provides us with information on the density of past activities in several areas of the site. The number of pits/hearths suggests that a large part of Grid A was used extensively. There are also indications of iron artifacts scattered throughout this grid. We found evidence of pits or hearths toward the north end of the site in Grid F and to the south in Grids H and I.

A number of other features were also observed with the magnetometer. A visible mound, tested in 1975, was recorded as an area of dense anomalies. Three five-foot test squares in this mound were also easily discerned. The magnetic values for this mound were very similar to the values on the other visible, untested mound in Grid H. Using this data, we detected a couple of other possible mounds in Grid A that are not readily observed on the surface. These possible mounds need to be verified by testing.

Two other 1975 excavation grids (B and E) were detected by metal nails left in the backfill of the excavations. These nails obscured the outline of the excavations, but easily mark the locations. At least two old farm roads or trails that are no longer visible on the surface were identified. Because of obvious wheel spacing, these are recent historic trails; however, their presence was not known by the current landowners.

The possible fortification trench seen on the west side of the Paddock pasture in Grid A was well defined by the magnetics. The remaining trench includes a 45° turn to the southwest before the trench is disturbed by a modern driveway. We attempted to identify the extension of the trench north on the Cheek property along a 10 meter wide strip just north of the fence and next to the wheat field. Unfortunately, it appears that soil has accumulated off the slope of the wheat field, deeply burying any features. A modern gravel drive also obscures some of the magnetics. We hope to get a magnetometer back to the site some time when the field can be traversed to identify the presence of the fortification trench and its shape. Descriptions in the 1920s and 1930s suggest that the trench extended into the Cheek wheat field and then back south into the Paddock wheat field.

A 20 x 40 m survey grid near the north end of the site in the Cheek pasture (Grid F) revealed another possible mound that was not visible, as well as pits and a few other anomalies. One trench-like feature can be discerned in this grid. Only a portion of this trench is within the survey grid and it extends over an area roughly 25 m in diameter. This could be a second “fortification” trench but it needs to be evaluated with excavations.
diameter was noted on the magnetic map. In the center of this circle is another anomaly that may be a large central hearth or pit. In 1975, excavations uncovered a 40 ft diameter circular house in Grid A. This house had a central hearth constructed over a pit that was probably used for a support post during construction of the house. The anomaly in Grid I is the first direct evidence of such a probable structure seen on the magnetic maps, but others may be present when we manipulate the data. In fact, another less clear circular anomaly of about the same size is present further north in Grid I.

The 2005 magnetic and electrical conductivity surveys of the Bryson-Paddock site greatly expand our information on this important Wichita village. We knew the site was very large, but the remote sensing provides us with information on the density of activities based on the presence of features such as pits, hearths, mounds, and houses. Such data would not otherwise be available without extensive and long-term excavations, something that is usually not feasible given the expense of excavations and analyses. With the remote sensing maps, we can direct future excavations to obtain specific data about the site and confirm the types of features and activities in diverse areas of the village. Large earthworks such as the fortification ditch or ditches can be mapped in detail with excavations only needed to confirm construction methods such as the use of posts for a stockade. Some day, remote sensing may even pick up the post molds at the site.

Our understanding of the 18th century Wichita and French contact village at Bryson-Paddock has been significantly enhanced by the remote sensing data, and we very much appreciate the time and efforts of Jim Bruseth, Bill Pierson, Bob Crosser, Dick Gregg, and all of the volunteers who assisted with the work. We are also indebted to Mrs. Rose Paddock and Mr. Terry Cheek for allowing us access to the site, their hospitality and their interest in the research. We plan to continue research at this important village and hope to conduct more remote sensing.

HISTORY DETECTIVES TAKE ON CALF CREEK BISON

Taking public outreach to a new level, the PBS show “History Detectives” has been summoned to investigate the authenticity of a projectile point embedded in a bison skull found in the Arkansas River. Detective Elyse Luray interrogated Kim (who discovered the skull) and archaeologists Marjy Duncan, Don Wyckoff, Leland Bement, and Kent Buehler to probe the mysterious find. Armed with comparative skull measurements, CT scans, and a radiocarbon date, the intrepid sleuth investigated every nick and cranny of a partial bison skull exhibiting a Calf Creek projectile point. Leaving no stone unturned, Elyse coerced the experts to reveal the clues needed to determine if the find was authentic or a hoax (Figure 4, next page). Followed by a cameraman, sound crew, writer, and producer, the team visited a river (Figure 3), house, and scientific labs. The result — well, you’ll have to wait until the episode is aired on your local PBS station in late July or early August.

[For more information about, and a photo of, the bison skull with the embedded point, check out the article by Bement, Lundelius, and Ketchum in the April 2004 Survey newsletter.]

Figure 3. Crews re-enact the discovery of the bison skull with embedded Calf Creek point.
Survey Hosts 2005 Caddo Conference

On March 17 - 19, the 2005 Caddo Conference was held at the Sam Noble Oklahoma Museum of Natural History (SNOMNH) on the OU campus. About 75 professional and amateur archeologists, as well as members of the Caddo Nation, attended. On Thursday evening, the conference opened with a reception in the plaza of SNOMNH. On Friday and Saturday, paper sessions were held in the museum’s auditorium, with both archeologists and Caddos presenting talks. One of the highlights of the conference has always been the Caddo dance held on Saturday night. Thanks to all of the Caddos who attended and helped make the conference a success.

Next year’s conference will be held in northeastern Texas. The time and place have not yet been set, but it will be in the Nacogdoches area sometime in March.

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