

**The Basketmaker Communities Project  
Annual Report, 2012 Field Season**

by

Shanna R. Diederichs  
and  
Steven R. Copeland



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## Introduction

In 2012, the Crow Canyon Archaeological Center conducted its second year of field research as part of the Basketmaker Communities Project, a multiyear study of early Pueblo community development in the central Mesa Verde region. The study focuses on a pivotal, but under-investigated, time in Pueblo history: the Basketmaker III period, which dates from A.D. 500 to 750. The focus of Crow Canyon's field research is a settlement cluster consisting of more than 100 Basketmaker sites located within a 4.9-km<sup>2</sup> area near the town of Cortez, in southwestern Colorado. In 2012, Crow Canyon conducted remote-sensing survey, subsurface probing, and excavations at one of these sites, the Dillard site (5MT10647), which dates from the seventh century A.D. and includes a great kiva, the only confirmed Basketmaker III great kiva in the central Mesa Verde region. In addition, Crow Canyon conducted testing at three small habitation sites as well as remote-sensing surveys and subsurface probing at two other sites exhibiting evidence of Basketmaker III occupation. Understanding the relationship between the Dillard site and the many surrounding Basketmaker III sites in the study area is essential to our understanding of how early Pueblo communities formed and were organized.

This annual report summarizes progress on the Basketmaker Communities Project during the 2012 field season, which ran from April through mid-November. Fieldwork and related Crow Canyon education programs were conducted by members of the research and education staff, with assistance from seasonal interns. Remote-sensing work was conducted by Mona Charles of Fort Lewis College and Meg Watters of *Time Team America*. (See the 2012 personnel list at the end of the report.)

Upon completion of all fieldwork, laboratory analyses, and synthetic studies, Crow Canyon will publish detailed results of the Basketmaker Communities Project on its Web site ([www.crowcanyon.org](http://www.crowcanyon.org)).

## Project Area Location and Ownership

The Basketmaker Communities Project study area is located in the central Mesa Verde region ([Figure 1](#))—more specifically, in the McElmo drainage unit, which is defined as the lands in southwestern Colorado that are drained by McElmo Creek. The settlement cluster that is the focus of Crow Canyon's research lies north of the creek, on a dissected upland between Alkali Canyon to the west and the less-substantial Crow Canyon to the east (not shown on map), just over 6 km (about 4 mi) northwest of Cortez, Colorado.

The project area is defined by the property boundaries of Indian Camp Ranch, a 1,200-acre, 31-lot private residential community developed in the late 1980s and early 1990s. There are 208 known archaeological sites in the Ranch (Ortman et al. 2011); evidence visible on the modern ground surface indicates that 107 sites date from the Basketmaker III period. [Figure 2](#) shows the boundaries of Indian Camp Ranch and individual lots, as well as the locations of the known or suspected Basketmaker III sites. Lots outlined in bold are those for which Crow Canyon has obtained permission from the individual landowners to conduct field investigations (see following section).

## **Permits and Permissions**

Excavations and site testing were conducted under State of Colorado archaeological permits 2012-67 and 2012-68 and with the permission of the Indian Camp Ranch Homeowners Association and individual landowners. Both the bylaws and covenants of Indian Camp Ranch were crafted to promote the preservation and research of archaeological sites (Indian Camp Ranch Homeowners Association 2007). In 2010, the homeowners association granted Crow Canyon permission to conduct field research at Basketmaker sites located within the Ranch, subject only to restrictions imposed by individual landowners and provided that the work complied with the professional and ethical standards established by the Society for American Archaeology and the Register of Professional Archaeologists.

Since that time, seven individual contracts between Indian Camp Ranch landowners and the Crow Canyon Archaeological Center have been signed. These contracts limit Crow Canyon activities on particular properties; two prohibit testing and excavation but permit surface mapping and remote sensing; a third permits less than 10 m<sup>2</sup> of excavation at two separate sites, which will limit our work to test excavations at those sites. Four other contracts give permission for excavations at Basketmaker III sites on the landowners' lots.

## **Public Involvement**

A diverse segment of the public benefitted from Crow Canyon's research during the 2012 field season. Through Crow Canyon's research and education programs, 540 people—ranging in age from middle school through adult—assisted in excavations at the Dillard site. At least 587 additional individuals participated in numerous formal tours offered as part of single-day field trips, multiday non-excavation school group programs, or other Crow Canyon-sponsored activities. The total number of people served reflects not only Crow Canyon's commitment to involving the public in its research but also the level of public interest in the ancient past of the Mesa Verde region.

In June 2012, Oregon Public Broadcasting conducted filming at the Dillard site for a one-hour episode of *Time Team America*, a popular PBS science-archaeology series. Using the latest technology and their own expertise, *Time Team* travels across the nation to study ancient and historic sites. *Time Team's* archaeologists are given 72 hours to help answer an archaeological question. They joined Crow Canyon staff at the Dillard site to help identify pit structures and other cultural anomalies and to map the extent of the settlement. *Time Team* surveyed the area with geophysical equipment and conducted an aerial survey using an advanced technique, Light Detection and Ranging (LiDAR). The results of this work will be discussed below (see Geophysical Survey and Subsurface Probing). This episode is scheduled to air in 2013 and could be viewed by approximately 3 million people. Through this television program, Crow Canyon aims to widen its audience and spread the message of an inclusive American past and the application of science to its study.

## **American Indian Involvement**

American Indians were involved in the Basketmaker Communities Project in several ways during 2012. Crow Canyon provided 168 scholarships for a total of \$27,205 to American Indian students during the year. A total of 37 American Indian students were recruited and supported by a National Science Foundation grant that funded the Time Team America Field School.

Scholarships were also provided to American Indian students attending Crow Canyon's Middle School Archaeology Camp, High School Field School, and High School Archaeology Camp. Additional American Indian students attended programs at the Center with school groups supported by Crow Canyon. These school groups include Southern Ute Montessori, Futures for Children, Hotevilla, Southern Ute Department of Education, Shiprock High School, and Shiprock Career School.

As part of Crow Canyon's ongoing Pueblo Farming Project, Hopi farmers visited campus to consult on the 2012 experimental gardens. During their stay, these advisors visited the Dillard site, sang a blessing for the ancestors and the archaeological work, and discussed their perspective on dryland farming with the field crew.

Crow Canyon's Native American Advisory Group contributed to the project in several ways. During the spring Native American Advisory Group meeting, members discussed unique items collected from the Dillard site. They also consulted on the content of rock art images in McElmo Canyon, Colorado and advised staff on the use of images by the Basketmaker Community Project. Finally, during Crow Canyon's annual board meeting, the Native American Advisory Group visited the Dillard site and heard updates on the progress made during the field season.

Throughout these activities, the insights and perspectives shared by American Indians informed Crow Canyon's research and enriched the experience of participants enrolled in the Center's education programs. We intend to build on our relationships with American Indians by providing scholarships for field programs and through continued consultation with the Native American Advisory Group and other interested parties as the Basketmaker Communities Project progresses.

## **Environmental Setting**

The Basketmaker Communities Project study area consists of gently rolling uplands where varying thicknesses of eolian silt loam overlie the Dakota Sandstone. The elevation at the center of the project area is about 1890 m (6200 ft). Approximately 100 million years of geologic history dating from the late Triassic/Jurassic through the middle Cretaceous are exposed to the west, in Alkali Canyon. The various geologic strata provided Pueblo people with construction stone and raw material for tools, and the permeable layers form a high-quality aquifer that gives rise to numerous springs at the interfaces between fine sandstone beds and less-permeable mudstones.

Indian Camp Ranch was probably once completely covered by pinyon-juniper woodland dominated by pinyon pine and Utah juniper, with an understory of bunch grasses, yucca, and prickly pear cactus. Today, remnants of this woodland can be found in the northwest and south-central portions of the Ranch, but elsewhere the native vegetation has been replaced (in the past 100 years) by rangeland and farm fields. Properties in the western third of the Ranch have been cultivated and are planted in winter wheat. Rangelands, including a portion of the tract on which the Dillard site is located, are dominated by big sagebrush, rabbitbrush, and bunch grasses.

## **History of Archaeological Investigations**

In 1984 and 1985, the Crow Canyon Archaeological Center recorded 11 sites on property that is now part of Indian Camp Ranch. The recorded sites are 5MT2032, 5MT3875, 5MT3873, 5MT3906, 5MT3907, 5MT3915, 5MT3919, 5MT3887, 5MT3890, 5MT3893, and 5MT3911. This documentation was part of the Center's early public education initiative, and no formal report was generated (Mark Varien, personal communication 2012).

In the fall of 1989, Woods Canyon Archaeological Consultants, Inc., conducted a reconnaissance of the newly created Indian Camp Ranch. The goal of this survey was to identify and briefly describe sites within the 1,200-acre development and plot them on an aerial photograph (Honeycutt and Fetterman 1991). From 1991 through 1993, Woods Canyon archaeologists formally recorded sites located during the reconnaissance, eventually documenting all 208 sites within Indian Camp Ranch, including the 11 sites recorded by Crow Canyon in the mid-1980s (Fetterman and Honeycutt 1994).

One of the most compelling features recorded during the Woods Canyon survey was a 10-m-wide depression on a tract located in the far western portion of the development. The depression and immediately surrounding area were designated Site 5MT10647; Crow Canyon later named it the Dillard site, after the landowner who in the meantime had purchased the tract. In 1991, Woods Canyon archaeologists excavated a 12-m-long dog-leg trench through this prominent feature, revealing a large, circular—but fairly shallow—structure (Fetterman 1991). Multiple, layered adobe floor surfaces were found about 1 m below the modern ground surface, and a low bench was defined around the perimeter of the exposed portion of the building. All visible characteristics indicated that the structure was a great kiva. One large, partly burned upright post was located in the southwest quadrant, suggesting that the structure had a four-post roof-support system. The presence of this burned post and the discovery of charred and fragmentary wood in the fill above the floor suggest that the structure might have burned at or after abandonment. Though that post was not tree-ring dated, a scatter of Chapin Gray sherds on the floor indicated that the structure dated from the Basketmaker III period.

A Basketmaker III presence has also been documented on adjacent lands to the south and east of Indian Camp Ranch. Approximately 300 hectares (740 acres) south of the ranch were surveyed for a fuel-reduction project for Canyons of the Ancients National Monument (Fetterman 2004). Thirty-seven sites with Basketmaker III components were recorded, including single- and multiple-habitation sites, field houses, and activity areas. The nearby Crow Canyon Archaeological Center, located south and east of Indian Camp Ranch, recently surveyed its campus of approximately 70 hectares, or 170 acres (Kuckelman and Powell 2009), and documented six Basketmaker III sites. Of these, three are single-habitation sites and three are limited-activity (probably resource-procurement) sites. The results of the Indian Camp Ranch, fuel reduction, and Crow Canyon surveys indicate that a very large Basketmaker III community once occupied more than 800 hectares (1976 acres) between Crow Canyon and Alkali Canyon. However, because there has been no comprehensive study of this settlement to date, the momentary population and exact nature of the community, as well as its relationship to neighboring communities, are mostly unknown.

## Research Objectives

The Basketmaker Communities Project is a study of seventh-century population growth and social organization in the Central Mesa Verde region. Data generated as a result of Crow Canyon's field and laboratory research will lead to a better understanding of settlement changes that occurred as hunter-gatherer societies transitioned into agricultural economies across the northern Southwest (Varien and Diederichs 2011). In addition to being a time of marked population growth, the Basketmaker III period was also witness to great technological and social change, including the expansion of dry farming, the addition of cultivated beans and new varieties of corn to the diet, the replacement of the spear and atlatl with the bow and arrow, the first manufacture of pottery, and the initial construction of public architecture. Taken together, these characteristics form what Kohler and Varien (2010:44) call the "full Neolithic package," and the appearance of this package kicked off the ancestral Pueblo "Neolithic Revolution" in the Four Corners area, including the Mesa Verde region

The cluster of Basketmaker III sites in the study area is unique in its potential to shed light on the Pueblo Neolithic transition. First, the density of Basketmaker III sites across Indian Camp Ranch is fairly high (about 1 site per every 4 hectares), indicating that the settlement was substantial. Second, the great kiva at the Dillard site is the only confirmed Basketmaker III great kiva in the central Mesa Verde region. The presence of this structure indicates that the site was a focal point for a burgeoning population and may constitute some of the earliest evidence of non-kin social organization in the region. Finally, at least 77 of the Basketmaker III sites in Indian Camp Ranch are single component, including the Dillard site. These sites are especially suitable for the study of Basketmaker III settlement patterns because architectural and other material remains are not obscured by later Pueblo sites with substantial masonry construction.

The research goals of the Basketmaker Communities Project are fourfold: (1) to date Basketmaker III households and public architecture across Indian Camp Ranch to determine the contemporaneity of sites in the settlement and calculate momentary-population estimates; (2) to determine the relationships among different households in the settlement and between sites with public architecture and those without; (3) to assemble data on imported cultural material and traditions; (4) and to identify the subsistence technologies and strategies employed by the Basketmaker III inhabitants. The results of our research will be used to examine three important questions: First, what was the source population for the Basketmaker III immigrants to the study area? Second, is there an identifiable community represented by the Indian Camp Ranch Basketmaker III settlement, and, if so, how was it organized? Third, what was the nature of the Neolithic transition during the Basketmaker III period, and what technological changes made the transition possible?

Research at the Dillard site and surrounding Basketmaker III sites will address these important questions as well as issues of general anthropological interest, including the nature of leadership; the development of, and/or resistance to, social inequality; and the role of public architecture in social complexity. The Basketmaker Communities Project research design is presented in *A Proposal to Conduct Archaeological Testing at Indian Camp Ranch, Montezuma County, CO* (Ortman et al. 2011).

## **Field Methods**

The ephemeral nature of Basketmaker III surface remains at open sites presents a special challenge to field archaeologists. As a result, Crow Canyon employed several tactics to locate, delineate, and test structures, activity areas, and middens in the project area. Field methods used during the 2012 field season included (1) site mapping, (2) remote-sensing survey combined with soil probing, (3) trowel- and shovel-stripping block areas in 2-x-2-m units, (4) excavating structures and structure chambers in quadrants (up to one-half the area of an individual structure), and (5) random testing of midden areas with 1-x-1-m units.

A detailed description of Crow Canyon's field methods and provenience system can be found in the online field manual ([www.crowcanyon.org](http://www.crowcanyon.org)); in addition, project-specific methods are outlined in the project research proposal (Ortman et al. 2011).

### **Test vs. Intensive Excavations**

The research design for the Basketmaker Communities Project calls for both test and intensive excavations. Test excavation, as defined by the Colorado State Historic Preservation Office, is limited excavation of noncontiguous units totaling less than 10 m<sup>2</sup> at any given site; intensive excavation is excavation that exceeds 10 m<sup>2</sup> (Office of Archaeology and Historic Preservation 2011). In 2012, we conducted intensive excavation at only the Dillard site; smaller sites were investigated with test excavations. Other small sites may be investigated with intensive excavations beginning in 2013.

### **Structure-Numbering Convention**

Crow Canyon's field-recording system requires the detailed documentation of all architecture exposed in the course of excavation. For structures, that documentation includes recording the following: structure stratigraphy, length, width, height/depth, and diameter; specific characteristics of individual walls and surfaces; and detailed information about features. Basketmaker III pithouses pose a particular challenge for recording because the typical structure consists of two chambers—a main chamber and an antechamber—and the architectural characteristics of the two are often quite different. For example, floors of many main chambers are deeper than floors of the associated antechamber, a bench may be present in one chamber but not the other, and the construction of the walls and floors can differ markedly between the two parts of the pithouse. Therefore, although the main chamber and antechamber constitute a single domicile, our recording system requires that we document them as separate structures. Throughout this report, and in all related field records and databases, we have assigned two structure numbers to each pithouse that has an antechamber: one number is assigned to the main chamber, and the other number is assigned to the antechamber. Both numbers are provided on maps and the first time a given structure is introduced in text—for example, Structure 205 (main chamber) and Structure 226 (antechamber). Thereafter, the structure is referred to in the singular as “the pithouse,” “the structure,” or as a hyphenated compound (in this example, Structure 205-226), to make clear that the discussion refers to just one pithouse.

## **Non-Excavation Fieldwork in 2012**

### **Temperature Monitoring**

In 2011, two monitors were installed to record temperature data in the western portion of the project area. These electronic monitors are very precise and can operate unattended for months at

a time. The monitors were placed at two geographically distinct sites. The first was installed at a small habitation site, 5MT2032, which sits on a ridgetop at an elevation of 1932 m (6340 ft). The second monitor was installed in the center of the Dillard site, at 1925 m (6315 ft). Five other comparable monitors are recording data on experimental farm plots across Crow Canyon's campus, 3 km to the east, to determine the corn productivity of particular environmental settings. The electronic monitors on Indian Camp Ranch have been downloaded twice each year to confirm that they are in working order and to establish a backup record. With the data from these monitors, we hope to determine if temperatures and growing-season length are currently adequate for maize farming at particular locales in and near the Basketmaker Communities Project study area.

### **Mapping**

During the 2012 field season, selected sites were mapped using a Topcon GT-203 electronic total station surveying instrument in combination with AutoCAD Light and Adobe Acrobat software. In addition to mapping site boundaries, we also mapped structures, middens, and rock concentrations discernible on the modern ground surface. The resulting maps were then used to delineate architectural blocks. An architectural block consists of spatially related buildings, middens, and extramural spaces. Because most Basketmaker III structures are undetectable on the modern ground surface, we defined architectural blocks primarily on the basis of other evidence visible on the surface, such as concentrations of artifacts and possible construction stone. As we discovered in Block 200 at the Dillard site, a single block may encompass many structures and features. Using numerous instrument-established datums, we also mapped the marker pole that had been placed at each site during the development of Indian Camp Ranch, and we relocated and mapped the limits of the Woods Canyon excavations at the Dillard site. In addition, we used the total station to set in excavation units.

### **Geophysical Survey and Subsurface Probing**

A combination of geophysical surveys and subsurface probing was conducted at three sites with the potential to yield information on Basketmaker III settlement patterns. This work had two primary objectives: (1) to locate subsurface structures and activity areas and (2) to help develop plans for future targeted excavations. The sites surveyed in 2012 include the multiple-habitation Dillard site, one site of moderate size near the west edge of the project area, and one hamlet near the northeast edge ([Figure 3](#)). In all, a total of 11,600 m<sup>2</sup> was surveyed using geophysical sediment mapping during 2012 ([Table 1](#)). At the Dillard site, three different methods were used, overlapping 4400 m<sup>2</sup> of imaging across the site. The net result of all efforts was the identification of at least 20 probable pithouses and several other possible cultural anomalies. Thirteen probable pithouses had been identified in 2011, resulting in a total of 33 probable structure anomalies identified at these three sites on Indian Camp Ranch by geophysical survey or subsurface probing.

To generate comparable data across the Basketmaker Communities Project study area, remote-sensing survey was conducted in a standard grid measuring 20 x 20 m. These remote-sensing blocks were laid out on a generally north-south axis, south of any probable storage features, in an effort to detect pit structures and extramural activity areas. Anomalies that on the basis of preliminary data seemed most likely to indicate the presence of pit structures were probed with 1-inch-diameter soil augers by Crow Canyon staff, who described the characteristics of any



cultural deposits and recorded the depth of the reddish-brown loess that marks undisturbed native sediment.

### ***Electrical Resistivity Survey***

Mona Charles, from the Center of Southwest Studies, Fort Lewis College, with a crew of undergraduate students, conducted electrical resistivity surveys at three sites in the project area (Charles 2012). A total of 17 grids measuring 20 x 20 m (6,800 m<sup>2</sup>) were surveyed with a Geoscan RM-15 Electrical Resistance meter. The twin-electrode array configuration, at a 50 cm distance, was used throughout the survey. Samples were collected using a sample interval of 50 cm and a 1-m traverse interval in a zigzag mode. Twenty anomalies of possible cultural origin were identified by the survey.

At the Dillard site, a total of 4,400 m<sup>2</sup>, or 11 blocks measuring 20 x 20 m blocks, north of the great kiva were surveyed with electrical resistivity. Eleven anomalies were identified ([Figure 4](#)). A series of soil probes and test units confirmed that at least four of these locations contain deep cultural deposits reflecting the presence of buried pit structures. The other anomalies will be investigated in 2013.

Two smaller sites, one in the western portion of Indian Camp Ranch and the other in the eastern portion ([Figure 3](#)), were also surveyed with electrical resistivity by the team from Fort Lewis College. Site 5MT10711 is located upslope to the west of the Dillard site along a ridgetop. The survey of four grids measuring 20 x 20 m resulted in the detection of six anomalies ([Figure 5](#)). One anomaly has been positively identified as a pit structure.

Two grids measuring 20 x 20 m were surveyed on Site 5MT10736 in the east-central portion of Indian Camp Ranch. Electrical resistivity identified three anomalies. Test excavations in the location of one of these anomalies revealed a circular, slab-lined room. One or more pit structures might be present outside the surveyed grids. Additional remote sensing at the site is scheduled for 2013.

### ***Magnetometer and Conductivity Survey***

The geophysical survey team for *Time Team America*, directed by archaeologist Meg Watters, conducted geophysical surveys at the Dillard site during filming of that television segment in June 2012. A final report of the survey is due in January 2013. This report will provide details of the survey methods, results, and recommendations for future testing and mapping of the Dillard site.

Magnetic-gradient and electromagnetic-induction (which collects conductivity and magnetic susceptibility) methods were used during the survey. Ground-penetrating radar was tested in a small area and ruled out as an effective technique because the high content of clay in the background sediments would tend to obscure radar waves. [Figure 6](#) shows the area coverage with magnetic-gradient (dark gray) and conductivity (light gray) methods.

The survey team used the Bartington 601 fluxgate gradiometer to conduct the magnetic gradient survey. Data were collected in a zigzag pattern at a sample rate of 0.125 with transect spacing of 50 cm. The magnetic survey data were processed using Geoplot 3.0 and processing techniques

included de-spiking, grid/transect mean zeroing, 3-x-3 low-pass- and 10-x-10 high-pass filtering. Once processed, data were interpolated along the x-axis.

Electromagnetic induction survey was performed using the Geonics EM38B instrument, which uses a coil separation of 1 m in a vertical dipole mode. Both quadrature phase and in-phase readings were simultaneously collected for each station, relating to conductivity and magnetic susceptibility properties respectively. This specification results in a maximum depth sensitivity of about 1 m for the conductivity. For the magnetic susceptibility, the penetration is significantly shallower. Electromagnetic induction readings were taken every 2 m from south to north in transects measuring 50 cm wide. The resulting data were processed using Geoplot 3.0. Null values were added in a text editor so that grid lengths and widths were in multiples of ten meters, and these were used to create a single composite dataset. Post-processing methods include a de-spike operation and a 3-x-3 low-pass filter, as well as the addition of a 10-x-10 high-pass filter to a second version.

Both magnetometer and conductivity survey methods identified prehistoric structures. Magnetometry identified approximately seven possible pit structures, along with a series of pits or postholes that may be evidence of a stockade and/or extramural use spaces ([Figure 7](#)). Electromagnetic susceptibility anomalies correspond with a few of the magnetic anomalies but indicate additional areas of activity.

### ***LiDAR Mapping***

*Time Team America* contracted the Natural Resource Analysis Center at West Virginia University to conduct LiDAR (Light Detection and Ranging) mapping of the Dillard site and surrounding topography. LiDAR is an optical remote-sensing technology that can create a three-dimensional map of an area using laser light. In April 2012, staff from the Natural Resource Analysis Center arrived with OPTECH ALTM-3100C mounted in a Piper Navajo plane. The plane flew crisscrossing acquisition passes at an altitude of 1,100 m (3,609 feet) over the Dillard site to yield ground LiDAR point densities of 15–20 per square meter (vertical accuracy of 15 cm). In all, 300 acres of Indian Camp Ranch were mapped; the Dillard site was positioned in the south-center area of the survey. These LiDAR data will be employed in the creation of Digital Elevation Models (DEMs), Digital Terrain Models (DTM), landscape feature extraction, and many other research applications.

### ***Summary***

Remote sensing has been invaluable to our research during the first two years of the Basketmaker Communities Project. Even on pristine sites, Basketmaker III surface signatures are, by their nature, ephemeral and difficult to interpret; sites in disturbed settings, such as cultivated fields, can be nearly impossible to decipher. With remote-sensing technology, researchers are collecting site-size and layout information comparable to that obtained through pedestrian survey of later ancestral Pueblo sites. We plan to continue remote-sensing surveys at Basketmaker III sites in the project area wherever feasible in order to assemble a more accurate picture of the settlement and the distribution of sites within it.

## 2012 Excavations

Excavations during the 2012 field season were conducted at four sites: 5MT10647 (the Dillard site), 5MT10718, 5MT10719, and 5MT10736. [Appendix A](#) provides a summary of the excavation units, organized by site and architectural block. The table also specifies which units have been completed and which will be continued in 2013. As of December 2012, 174 excavation units, totaling 424.43 m<sup>2</sup>, have been opened during the project. Approximately 123.60 m<sup>3</sup> of sediment was excavated during the 2012 field season. A total of 106 excavation units have been completed, fully documented, and backfilled. Before backfilling, exposed walls and floors of structures were protected with Geocloth, which will not deteriorate unless exposed to ultraviolet light. The backfilled sediment was tamped to reduce settling, and the ground surface was restored as much as possible to its original configuration. At the close of the field season, the 68 excavation units that were still in progress were covered with plywood and sealed with plastic sheeting. These measures were taken as a safety precaution and to protect the units from damage during the winter.

Many Basketmaker III structures in the Mesa Verde region have been fully excavated, but previous investigations have not emphasized the recovery of comparable data from multiple sites in the same settlement cluster. The Basketmaker Communities Project is an opportunity to remedy this lack. First, we are examining multiple sites within a single large settlement cluster; second, we are using similar sampling strategies at all sites, which will ensure a high degree of comparability. These strategies include (1) exposing the shape and size of selected pit structures by stripping away the postoccupational deposits both above the structures and around their perimeters; (2) excavating a trench through selected structures to better define structure boundaries, expose stratigraphy, and locate floor features; and (3) excavating an additional one-quarter to one-half of the trenched structures to expose the hearth, ritual features, and intramural storage features.

The sampling strategy for the Basketmaker Communities Project also calls for the excavation of randomly selected 1-x-1-m units in concentrated midden (refuse) deposits located outside of structures. The artifact assemblage data for the middens will be used to (1) establish a basic site chronology, (2) identify the types of activities that occurred in different architectural blocks, (3) make inferences about ancient subsistence practices and exchange networks, and (4) reconstruct the past environment. The data will also be used in a variety of intrasite and intersite comparative studies.

### **The Dillard Site (5MT10647)**

During the 2012 field season, excavation at the Dillard site focused on the south half of the site, but middens and structures were also tested in the north half ([Figure 8](#)). Most cultural deposits at the Dillard site are very shallow, ranging from 2 to 35 cm thick. This may indicate that the site has suffered sediment deflation since its occupation approximately 1,300 years ago. A distinct layer of pre-occupation, reddish-brown eolian loess underlies the cultural deposits at the site. Though additional sampling of this substrate is planned, most excavation units are terminated at this sediment horizon.

### ***Architectural Block 100***

During 2012, excavation in the great kiva (Structure 102) was primarily focused south of the 1991 trench in order to fully expose the northwest quadrant of the structure. The exposure of the northwest portion of the building has resulted in a revised estimate of 11.5 m for the original diameter the great kiva, which is slightly larger than previously estimated. A segment of a burned juniper beam measuring 38 cm in diameter was recovered from collapsed construction material in the northern portion of the building, which indicates that the roof was robust and that it was at least partly burned. Collapsed masonry was exposed just inside the edge of the structure and consists of overlapping large stones as many as seven stones deep that cascades down toward the center of the building. A few of these stones are immense, measuring more than 1 m in length. After we remove the collapsed masonry in the spring of 2013, approximately 40 cm of fill will remain on the floor in the northwest quadrant. Notable items recovered from the collapsed construction material in the great kiva include two projectile points, a gypsum crystal, and a lid of shaped stone.

### ***Architectural Block 200***

#### **Structure 205 and Structure 226**

Structures 205 and 226 refer to the main chamber and antechamber, respectively, of one of the pithouses identified with electrical resistivity in 2011. This pithouse is located about 25 m south of the great kiva, along the western edge of the ridge. Despite the slight western aspect in this location, the structure is oriented northwest-southeast, with the antechamber southeast of the main chamber.

The outline of the pithouse was fully exposed in 2011, and the north half of the structure was targeted for excavation. Excavations exposed the floor of the antechamber in 2011, whereas 25 cm of fill was left in the main chamber at the end of that field season. In 2012, the main chamber was excavated to floor ([Figure 9](#)) and several exposed features were investigated.

The main chamber of the pithouse is large and sub-rectangular, measuring about 4.8 m long and 5.5 m wide. It is generally 1 m deep, or 20 cm deeper than the antechamber. The main chamber was constructed without an encircling bench. Paralleling the interior of the north and west walls are 22 small postholes. Four of these, along the west wall, were excavated; all four are vertical, 10 cm in diameter, and contained remnants of burned wood. One of the postholes is 20 cm deep, and the other three are less than 6 cm deep. More feature excavation is scheduled for 2013, but the current evidence suggests that the superstructure might have been cantilevered over the walls of the pit to cover the full footprint of the main chamber, and the ephemeral vertical walls along the sides would have extended straight up to meet the roof.

As in the antechamber (see the annual report for 2011), a light scatter of artifacts was found on the floor of the main chamber. Many of these are the remains of utilitarian items such as half of a gray ware jar, gray ware sherds, chipped-stone debris, a chipped-stone tool, manos, a nodule of raw clay, and fragments of worked bone. Several other less-utilitarian items were also found, including a bone bead, a gypsum crystal, an obsidian tool, an azurite ball, a chunk of ground malachite, and a mineral shaped into a disc. The fact that these items are scattered across the floor suggests that they are not associated with ritual abandonment of the structure, but are personal items left with the rest of the discarded items.

### Structure 220 and Structure 234

Structures 220 and 234 are located directly east of Structure 205-226. Though additional excavation is needed to confirm this, Structure 234 appears to be an antechamber at the east edge of Structure 220. In 2011, we began stripping the sediments above and immediately surrounding these chambers to expose their shape and size. Stripping continued in 2012, which exposed the entire outline of Structure 220 and the west half of Structure 234. Both structures are nearly circular in plan view. Structure 220 is 4.75 m in diameter, whereas Structure 234 is approximately 3.55 m in diameter. Five postholes have been identified along the southern perimeter of the structures.

Structure 220 was bisected on a northeast-southwest axis and the southern quadrant of each structure was targeted for excavation. Although only a minimal amount of excavation has taken place inside the structure, the deposits exposed are ash stained and contain abundant charcoal, suggesting that the structure was burned. The tops of upright slabs are now exposed in the southwest and southeast corners of the room. These slabs probably indicate the presence of large storage bins. In fact, several fragments of burned corn and several burned juniper seeds have been collected in the vicinity of these slabs. Two of these burned remnants were radiocarbon dated and yielded two sigma dates of cal A.D. 610 to 670 and cal A.D. 620 to 670 ( $p=0.95$ ) (Beta Analytic Laboratory Numbers 322011 and 322012), which dates the abandonment of the structure to the mid-seventh century.

The deposits above and surrounding Structures 220 and 234 are dense with artifacts and are stained dark gray from charcoal and ash. Thousands of artifacts were recovered from this 20-cm-thick stratum, indicating that this location was used as a midden after the structures were abandoned. In addition to the common gray ware sherds and chipped-stone debris are unusual items such as basket-impressed gray ware sherds, minerals, shell, arrow and dart points, a sandstone disc, and an effigy made from pottery clay (see the annual report for 2011).

### Structure 228

A 1-x-1-m unit excavated into Structure 228 in 2011 was expanded with the addition of a 2-x-1-m unit in 2012. Several soil probes were also taken in the vicinity in order to determine the full extent of the structure. Investigation of Structure 228 was completed ([Figure 10](#)) and the excavation units were backfilled at the end of the 2012 season.

Structure 228 is a shallow circular pit room, 8 m north-northwest of Structure 205-206. It measures 2.17 m in diameter and just 19 cm deep. Two postholes were found; each was half inside and half outside of the north edge of the structure. Both were substantial, the larger measuring 22 cm in diameter and extending 66 cm below the prehistoric ground surface. These postholes were vertical, suggesting that they were part of a vertical wall. The entrance to the pit room was probably on the south-southwest side of the building where the floor ramps upward to meet the prehistoric ground surface. Charcoal nodules found throughout the collapsed construction fill and inside the postholes suggest that the room was minimally burned.

Built against the south wall of the pit room is a shallow but heavily used hearth. Remodeling reduced its diameter from 52 cm to 30 cm. Both the bottom of the feature and the south wall of

the structure adjacent to it were fire reddened. This feature will be sampled for archaeomagnetic dating in 2013. This room also contains a small bin excavated into the wall of the pit room near the hearth. Only a light scatter of artifacts was found on the floor of the room: gray ware sherds (including two seed jar rims), a few pieces of chipped-stone debris, a broken mano, and a metate fragment. These items were probably left as refuse when the structure was abandoned.

### Structure 231

Near the south edge of the site, a pit structure was detected with a soil probe during the 2011 field season. In 2012, this location was tested with a 5-x-1-m excavation unit and additional soil probing, which revealed the north end of Structure 231, which is 88 cm deep. The shape of the structure could not be determined, but the pit appears to measure slightly more than 4 m north-south. The structure thus appears to be smaller in plan but deeper than many of the other structures defined at the site. No associated antechamber has been found.

Like Structure 205-226 to the north, Structure 231 appears to have been constructed without a bench. A thick layer of partly burned construction material was documented on the floor of the structure, but no postholes were detected; the method of roof construction and support is thus unknown. The floor had not been prepared, but six features had been excavated into this surface ([Figure 11](#)). Four are circular to oval basins that had been purposefully filled with loam. Another pit is more irregular and was not filled when the structure was abandoned. One small posthole is located near the center of the structure. The post it held might have been part of an internal feature such as a wing wall that was designed to divide space. Few artifacts were found on the floor of Structure 231: one gray ware sherd and one piece of chipped-stone debris. We tentatively infer that Structure 231 is the main chamber of a pithouse.

### Structure 232

In the south-central portion of Block 200 is Structure 232, which was identified as a result of the 2011 electrical resistivity survey. Initial investigations with a series of soil probes and a 3-x-1-m excavation unit revealed that Structure 232 is not a pithouse but rather a fairly shallow pit room. An additional 3-x-3-m unit was opened in the northwest quadrant of this building during the 2012 field season. Structure 232 appears to be a circular pit room, 5 m in diameter but excavated just 45 cm into the prehistoric ground surface. The walls of the room are vertical; no postholes have been identified. The structure is inferred to have been roofed, because collapsed construction material fills the depression of the building. No artifacts were resting on the floor, but many items were collected within 10 cm of the floor, including unfired pieces of pottery, chipped-stone debris, more than 30 gray ware sherds, and several fragments of animal bone (probably turkey). In the center of the room is a large circular hearth filled with ash and charcoal from its final uses; the rim of the feature is highly fire reddened. An archaeomagnetic sample taken from the hearth should yield an abandonment date for the structure.

As with several other pit structures in Block 200, Structure 232 was covered with a layer of midden after the roof collapsed. This dense refuse is nearly 30 cm thick. Hundreds of pottery sherds have been collected from this deposit, along with chipped-stone debris, pigment, animal bone, an arrow point, and a dart point.

### Structure 236

Structure 236 was detected as an anomaly in the 2011 electrical resistivity survey results. The north edge of the structure and collapsed construction material were identified in a 3-x-1-m unit during the 2012 field season; excavation will continue in this structure in 2013.

### Structure 239

In the center of Block 200 is Structure 239, which appeared as an oblong anomaly in the 2011 electrical resistance survey. Using a soil probe, we determined that the building is generally circular, about 5 m in diameter, and 30 cm deep. A 3-x-1-m unit excavated down the middle of the structure revealed a large circular hearth in the center of the building ([Figure 12](#)). Collapsed construction material filled the structure and rested on the floor. The few artifacts on or near the floor included gray ware sherds, chipped-stone debris, and some large mammal bone. The hearth contained only postoccupational deposits. Archaeomagnetic samples were taken from the hearth surface. Structure 239 is very similar to Structure 232 to the south; both are large, shallow, circular pit structures with central hearths.

### Nonstructure 241

Soil probes and a 3-x-1-m excavation unit were used to test an amorphous electrical resistivity anomaly along the northwest edge of Block 200. Though there appears to be redeposited, mixed sediments in this location, it is not certain that they are associated with a buried pithouse. Excavation did, however, reveal several prehistoric features on one or more surfaces above the mixed deposits. The largest feature appears to be an ephemeral hearth or basin-shaped pit filled with charcoal-stained cultural deposits. Arcing northwest from this feature are at least four postholes spaced about 50 cm apart. These features may be part of an ephemeral surface structure, possibly dating to a later occupation of the site.

### Midden Testing

Testing of the two large middens in Block 200 began in 2011 and was completed in 2012. One of the identified middens is on the west slope of the north-south ridge; the other is on the east slope. Together, they flank the south half of the Dillard site. Three percent of each midden was excavated in randomly selected units.

Eight-meter-wide swaths through the centers of both middens have been disturbed by modern heavy equipment. These areas were probably the locations of windrows formed when vegetation was cleared by chaining in the 1960s. Burn piles and small “push piles” are evident at intervals in the disturbed swaths. The disturbed areas were not included in our random sample area of the middens.

Nonstructure 203: Nonstructure 203 is the larger of the two middens flanking the southern half of the site. It is located on the west slope of the ridge and measures roughly 56 m long by an average of 16 m wide. This 1,100-m<sup>2</sup> midden probably served as a discard area for at least four, and possibly up to six, pithouses, including Structure 205-226 and Structure 228. During the 2011 field season, 20 1-x-1-m units were excavated to test Nonstructure 203. Fourteen of these units were completed, documented, and backfilled in 2011. Of the remainder, five were

completed and backfilled this year. The final unit is still in progress. It is situated just south of Structure 205-226 and will be documented with the extramural surfaces in that area.

The artifact density on the modern ground surface in Nonstructure 203 is low. The midden measures 8 to 25 cm thick. The artifact density is moderate, and chipped-stone artifacts and gray ware pottery sherds were the most common items recovered. No features were found within Nonstructure 203.

Nonstructure 213: Nonstructure 213 is located on the east slope of the ridge; it is approximately 53 m long, 13 m wide, and 6 to 26 cm thick. This midden served as the refuse-disposal area for the residents of two to four pithouses, including Structure 220 and Structure 236. In 2011, eight 1-x-1-m units in Nonstructure 213 were excavated, documented, and backfilled. In 2012, a total of 12 units were excavated, recorded, and backfilled.

The density of artifacts on the modern ground surface in Nonstructure 213 is low except in sparse pockets of sediment deflation. A few pottery sherds dating from later pueblo periods were found near the modern ground surface. These items were probably deposited by later occupants of the area. No features were found, but clusters of burned rock on the modern ground surface indicate that there may be thermal or storage features nearby.

### ***Architectural Block 300***

Geophysical surveys conducted early in 2012 detected numerous anomalies in Block 300, directly north of the great kiva. Subsequent testing has confirmed that at least three of these anomalies are pit structures. Three other anomalies have been probed, and they too are probably the remains of pit structures. This cluster of buildings is near the great kiva and thus is of particular relevance to the Basketmaker Communities Project.

#### **Structure 309**

Structure 309 was detected as a pronounced anomaly in all three geophysical surveys. A 3-x-1-m unit was excavated into the anomaly during the filming of the *Time Team America* episode. None of the walls of the pit structure was exposed in this unit. The floor of the building was found 1.10 m below the modern ground surface. No artifacts were found on the floor, but patches of gray-green sand were detected across the surface.

Three features that were aligned north-south had been excavated into the floor of Structure 309 ([Figure 13](#)); these features are interpreted as a sipapu, hearth, and an ashpit. This is the first structure in which this classic suite of features, or features intentionally aligned north-south, has been found at the Dillard site. The mouth of the ashpit is oval and 35 cm long. The feature is only 22 cm deep but bells out 15 cm to create a pocket on its south side. The large (90 cm diameter) circular hearth is 35 cm north of the ashpit, and the sipapu is 30 cm north of the hearth. The sipapu is a conical pit 66 cm deep and filled with alternating layers of greenish-gray sand and reddish-brown sand.

The sediments that filled Structure 309 are heavily disturbed by animal burrows. In fact, the remains of a badger were found in a large burrow that truncated a portion of the hearth. Many



artifacts were found above the collapsed structural material, suggesting that inhabitants deposited refuse in this location after the roof of Structure 309 collapsed.

#### Structure 311

A 1-x-3-m unit excavated into a geophysical anomaly 13 m north of Structure 309 revealed the east edge of a pit structure (Structure 311). To further define this structure, we will continue excavations in this unit in 2013. Artifact density in the deposits overlying the structure was lower than in many other locations across the site.

#### Structure 312

Structure 312 is the largest geophysical anomaly that was mapped north of the great kiva in 2012. It appears to represent a structure that is oriented southeast-northwest and consists of both an antechamber and main chamber. Structure 312 is 10 m directly north of the great kiva and west of the other structures found in Block 300.

The west edge of the main chamber of Structure 312 was exposed by stripping the sediments to the level of the prehistoric ground surface. To accomplish this goal, approximately 15 cm of overburden was stripped from 11 units measuring 2 x 2 m. A soil probe was then used along the southwest edge of the main chamber to find its intersection with the antechamber. Additional stripping and excavation is planned for both chambers in 2013.

#### Nonstructure 302

Down slope to the east of Structures 309, 311, and 312 is a midden measuring 20 m wide and 28 m long. Three percent of this midden was sampled with 12 randomly selected 1-x-1-m units. The refuse is only about 15 cm thick but contains numerous pottery sherds and chipped-stone fragments along with minerals, projectile points, and ground-stone tools. Fewer post-Basketmaker III sherds were found in this midden than in the east midden of Block 200, located to the south along the same slope.

In two of the randomly selected units, a series of postholes was found on the prehistoric ground surface below the midden deposits. Two 2-x-2-m units were excavated in adjacent areas to detect any additional postholes nearby. A total of five postholes have now been documented below the midden across a 20 m area. They appear to be aligned north-south along the slope and probably were part of a fence or stockade encircling one or more structures to the west. We will conduct additional stripping in 2013 to determine the extent of this posthole alignment.

#### ***Architectural Block 400***

Block 400 encompasses a 40-meter-long stretch of ridgetop just northwest of Block 300. It is characterized by sparser cultural material than the rest of the site. A cluster of sandstone was documented along the top of the ridge, and a light scatter of artifacts on the west slope was identified as a possible midden. Sampling in 2012 yielded very little evidence of cultural activity across the block; further investigation is scheduled.

Nonstructure 403 was identified as a possible midden on the basis of a consistent surface scatter of artifacts in a 25-x-10-m area on the west slope of the ridge. Six randomly selected 1-x-1-m units were excavated to sample the scatter. In most units, undisturbed native sediment was

exposed 10 cm below the modern ground surface. Few artifacts were found across the sample area, and Nonstructure 403 is thus inferred to have been mostly open space in the settlement, used only lightly during the Basketmaker III period.

The geophysical surveys along the top of the ridge in Block 400 identified an anomaly that may be a buried pit structure. Overlapping this anomaly is a concentration of sandstone rocks. A 2-x-2-m unit was excavated into the rock concentration and revealed a single posthole excavated into the prehistoric ground surface, designated Nonstructure 407. No other features or artifacts were found nearby. The anomaly was also tested with perpendicular rows of soil probes, which failed to reveal identifiable buried structure deposits. Additional investigation is planned for this location in 2013 to determine the context of the lone posthole and whether a pit structure is present.

### ***Architectural Block 500***

Along the northwest edge of the Dillard site is Nonstructure 502, a small but moderately dense artifact scatter. Six randomly selected 1-x-1-m units were excavated across the sample area, which measured 23 x 15 m. Most units yielded few artifacts from the 10-cm-thick cultural deposits resting on undisturbed native sediment. However, the edge of a burned pit structure was exposed in a unit near the center of the artifact scatter. Additional geophysical mapping identified a pit-structure-size anomaly in this location, and soil probing revealed burned construction materials to a depth of 75 cm. This probable pit structure is interesting because it is 80 m from the nearest confirmed pit structure at the site and is thus relatively isolated. In 2013, we will further define and sample the pit structure and attempt to identify any activity areas or surface rooms associated with it.

### **Sites 5MT10718 and 5MT10719**

Approximately 150 m north-northeast of the center of the Dillard site lie two adjacent Basketmaker III sites (5MT10718 and 5MT10719). The sites are situated at the head of a drainage that trends southward along the east edge of the Dillard site. Together the sites cover an area measuring 82 x 45 m; a light scatter of artifacts dating from the Basketmaker III period is observable on the modern ground surface. Site 5MT10718 is located on a slope, and Site 5MT10719 sits above it. The two sites are separated by a rock outcrop that is 1 m tall. The density of artifacts on the modern ground surface between the sites is consistent with the density on the sites themselves. As requested by the landowners, no more than 10 m<sup>2</sup> was excavated at each site. Geophysical mapping was not conducted at either site for several reasons, including the presence of the bedrock outcrop, a high density of tree cover, and steep topography.

### ***Site 5MT10718***

Two features were documented at Site 5MT10718 when it was first recorded in 1993: the remnants of a slab-lined roomblock and a sandstone concentration. Our research identified the remnants of a heavily disturbed midden and a buried pithouse.

### **Structure 107**

A series of soil probes was used to locate a buried pit structure (Structure 107) 11 m down slope from the remains of a roomblock (Structure 108). Additional soil probes were used to determine that the pit structure is about 6 m long northwest-southeast and 4 m wide. We were not able to

detect an associated antechamber. A 2-x-1-m unit was excavated into the center of the building, and the floor was defined 77cm below modern ground surface. A slab-lined feature measuring 60 cm long and 31 cm wide had been excavated into the use-compacted floor. Though a metate was not found inside the feature, the characteristics of the feature suggest that it served as a metate bin. The only artifact on the structure floor was one gray ware sherd, which suggests that belongings were removed from the building when it was abandoned. Unburned, collapsed construction material rested on the floor.

#### Structure 108

Structure 108 ([Figure 15](#)) is the easternmost of five or more slab-lined rooms that form an informal roomblock. Before excavation, at least four upright slabs were visible at the edges of the room. The structure was tested with a 2-x-1-m unit excavated into its northeast edge. The room measures approximately 1.6 m in diameter. Slabs set vertically around the perimeter ([Figure 14](#)) formed a 40-cm-high base for the wall. The floor appeared to have been lightly plastered. A scatter of artifacts was found on the floor, including gray ware sherds, nonhuman bone, a chipped-stone tool, and gizzard stones.

#### Arbitrary Unit 101

A 10-m-wide swath across the southern section of the site appears to have been chained and the remnant windrow burned and scraped by heavy equipment. Today, many artifacts are visible on the modern ground surface in this disturbed area, which suggests that the chaining impacted substantial midden deposits. In an attempt to sample intact refuse, we tested three areas of moderate artifact density around the pit structure (Structure 107) and outside the chained area with 1-x-1-m randomly selected units. A total of seven units were excavated and yielded artifacts including gray ware sherds, chipped-stone debris, nonhuman bone, and one shaped piece of petrified wood. However, artifact density was too low in these units to qualify these areas to be designated as middens.

#### ***Site 5MT10719***

The survey documentation for Site 5MT10719 describes a possible roomblock, pithouse depression, extramural upright slabs, and a midden. As part of The Basketmaker Communities Project, we remapped the site and with a soil probe discovered that in most areas sediments were too shallow to accommodate a pit structure. We sampled and augered along the east edge of the site where sediments are deeper but found no evidence of a pit structure in this location either. The absence of a habitation structure at Site 5MT10719 suggests that the features and refuse found there are associated with the occupation of nearby Site 5MT10718.

At Site 5MT10719, two areas of refuse were identified, mapped, and designated Nonstructure 102. The largest deposit is located on the east slope of the site and was tested with six 1-x-1-m units. Most deposits were approximately 10 cm thick. In some places, refuse rests on bedrock. Artifact density was higher in this midden than at Site 5MT10718. Artifacts include gray ware sherds, chipped-stone debris, gizzard stones, and a projectile point.

#### **Site 5MT10736**

Site 5MT10736 ([Figure 16](#)) is a Basketmaker III site near the northeast edge of Indian Camp Ranch. Several features associated with the site were recorded during the construction of the

Indian Camp Road. The remainder of the site is under active wheat cultivation and has been severely disturbed by heavy equipment. The plow zone is about 20 cm thick, but cultural deposits are intact below this zone.

In an attempt to find buried pit structures at the site, two grids measuring 20 x 20 m were surveyed for electrical resistivity in 2012. The grids were positioned just south of a rock scatter that may be structural remains. Several ambiguous anomalies were identified, and one was selected for testing. Excavation of a unit measuring 3 x 1 m exposed the remains of a surface room in that location. Excavation of this structure will continue in 2013. We plan to conduct additional remote sensing at this site to locate and test any pit structure that might be present.

## **Analysis and Curation**

Crow Canyon researchers have processed and have begun analyzing much of the material collected during the 2011 and 2012 field seasons. More than two dozen tree-ring samples were sent to the Laboratory of Tree-Ring Research, Tucson, Arizona, in the spring of 2011; however, none of the samples was datable. One sample was identified as a Douglas fir, which does not naturally grow in the project area. Three fragments of isolated human bone were analyzed by Kathy Mowrer, an osteological analyst contracted by Crow Canyon.

The analysis of Basketmaker III pottery is requiring modification of Crow Canyon's analysis system, which was designed for dating pottery from the Pueblo I, II, and III periods. Analytic criteria have been expanded by Kari Schleher, Crow Canyon's Laboratory Analysis Manager, to accommodate the more subtle and nuanced technological and stylistic variability of Basketmaker III pottery. During preliminary analysis, she found a dominance of gray ware pottery and smaller quantities of brown ware and painted gray ware sherds. A portable X-ray fluorescence machine was used to analyze mineral content in the paint of Chapin Black-on-white pottery sherds collected from the Dillard site. Results are preliminary but suggest that paint recipes were highly variable, possibly because of technological variation.

X-ray fluorescence was also used to identify trace minerals in obsidian artifacts from the Dillard site. Results indicate that all obsidian tested originated in the Jemez Mountains of New Mexico. Alyson Thibodeau, a doctoral candidate in the department of Geosciences at the University of Arizona, attempted to determine the source of azurite and malachite fragments found at the Dillard site. Though she was not able to directly source any of the samples, the turquoise sample matched turquoise found at Pueblo Bonito, and several of the azurite samples matched azurite found at Basketmaker III sites in southwestern Utah. These analyses are preliminary and the reported results were obtained through personal communication with the analysts.

Also in 2012, Crow Canyon developed a raw-material sourcing program to identify sources of the chipped-stone material and pottery clay found in artifact assemblages from the project area. Survey conducted during 2012 focused on upper Crow Canyon, which borders the east edge of the project area. Several potential clay sources were identified, and plasticity and re-firing tests indicate that they contain viable pottery clays. This research was done with the assistance of Crow Canyon participants and will be continued in future years.

Several discussions between the Anasazi Heritage Center and the Crow Canyon Archaeological Center have taken place regarding the final curation of the Basketmaker Communities Project collections. Details of the agreement are being negotiated, and we expect a final agreement to be signed in 2013.

## **National Register District**

In September 2011, Crow Canyon nominated the Indian Camp Ranch Archaeological District to the National Register of Historic Places (Varien and Diederichs 2011), and on March 28, 2012 the District was listed on the National Register of Historic Places and on the Colorado State Register of Historic Properties. It is listed under the district number 12000145 and was given the Smithsonian trinomial designation 5MT19927. This district, which includes all contributing Basketmaker III sites within Indian Camp Ranch, was accepted to the Register because of its unique ability to convey information about the Basketmaker III era, a period that provided the foundation for the development of Pueblo Indian society.

## **Summary and Conclusions**

The research conducted in the first two years of the Basketmaker Communities Project has already contributed to our understanding of Basketmaker III social organization in the Mesa Verde region. Before this work, our understanding of the Dillard site was drawn from the 1989 survey (Fetterman and Honeycutt 1994) and subsequent testing (Fetterman 1991) by Woods Canyon Archaeological Consultants. The great kiva had been confirmed as a community-size structure, and archaeologists at Woods Canyon Archaeological Consultants and at Crow Canyon had speculated that a smaller pithouse might be present north of the great kiva. However, the quantity of structures defined by the Basketmaker Communities Project thus far has greatly exceeded all previous estimates. Using remote sensing, subsurface probing, and excavation, researchers have identified 14 probable pit structures at the Dillard site during the past two field seasons.

For more than 20 years, Crow Canyon has focused much of its research on ancestral Pueblo community centers (Varien 1999). It has become clear that these centers were key nodes of interaction that played instrumental roles in structuring the social life of Pueblo people across the Mesa Verde region from A.D. 600 to 1300 (Brown et al. 2008; Cattanaach 1980; Glowacki 2010; Glowacki and Bocinsky 2011; Hurst and Till 2009; Lipe and Ortman 2000; Varien 1999). The Dillard site fits the criteria that have been used to identify early Pueblo community centers in that it appears to have at least 10 pithouses and includes public architecture (see Lipe and Varien [1999] and Varien [1999] for definitions of a community center). These two factors make the Dillard site the first confirmed Basketmaker III community center in the central Mesa Verde region.

The great kiva at the Dillard site is the only known Basketmaker III great kiva in the central Mesa Verde region, but Basketmaker III great kivas have been documented elsewhere. The best-known example is the excavated great kiva at Shabik'eshchee Village, which dates from the mid-sixth century and is located in Chaco Canyon in northwestern New Mexico. Excavations by Roberts (Roberts 1929) and by Hayes (Hayes 1964) make Shabik'eshchee the most completely excavated example of a Basketmaker III pithouse village. Excavations and surface mapping at that site revealed as many as 15 pithouses and 45 storage cists radiating out from a central great kiva.

Though there is debate about how intensively Shabik'eshchee was inhabited at any given time (Roberts 1929; Wills and Windes 1989; Wills et al. 2011), the site is nevertheless an example of early Pueblo aggregation and village organization. The Dillard site is almost certainly smaller in scale than Shabik'eshchee Village, but the aggregation of at least 14 pit structures around a great kiva could qualify the Dillard site as a settlement focal point. Studying the relationship of the Dillard site to other sites in the community will help us understand the development of community institutions during the Pueblo Neolithic transition—institutions that are part of the anthropogenic legacy of the Pueblo people.

## **Plans for 2013**

Crow Canyon researchers will continue to conduct remote-sensing surveys and excavations across Indian Camp Ranch in 2013. At the Dillard site, excavation will continue in the great kiva and in pit structures to the north and south of that structure. The focus will then shift to small hamlets such as Site 5MT2032 and Site 5MT10736. Several analyses are planned for 2013. Pollen, archaeomagnetic dating, and additional tree-ring samples have been selected and submitted to specialists. Also scheduled for 2013 is the analysis of botanical remains and obsidian.

In 2013, the Basketmaker Communities Project will be funded in part by a Colorado State Historical Fund grant and a grant from the National Science Foundation that will also support additional site survey and specialized analyses.

## **Personnel, 2012 Field Season**

Unless otherwise noted, personnel are or were employees of the Crow Canyon Archaeological Center

### **Crow Canyon Research Staff**

Shanna Diederichs, supervisory archaeologist and project director

Steve Copeland, research archaeologist

Caitlin Sommer, seasonal archaeologist

Grant Coffey, research archaeologist

Susan Ryan, research archaeologist

Jamie Merewether, curation manager

Amanda Hernandez, intern

Lydia DeHaven, intern

Annie Danis, intern

Kyle Bocinsky, intern

### **Crow Canyon Education Staff**

April Baisan

Carole Graham

Josephina Chang-Order

Paul Ermigiotti

Rebecca Hammond

Deloria Lomawaima

Molly Englert

### **Remote-Sensing Consultants**

Mona Charles (Fort Lewis College)

Meg Watters (*Time Team America*)

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