Uncovering the Mysteries of Ancient Colorado

2013 FIELD REPORT

Background Information

Lead PI: Susan Ryan
Report completed by: Susan Ryan

Period covered by this report: August-September, 2013
Date report completed: 2013-12-09 11:46:02
Dear Earthwatch Volunteers,

It is now winter and snow has blanketed the Dillard Site. I think back to the 2013 field season and am amazed at all of the work that was accomplished by our expeditions. Because of your involvement with this project, we have greatly enhanced our knowledge of the Dillard Site and, in particular, the great kiva that served to incorporate its community members.

Through our work, we have come to understand that the great kiva is circular, measuring 11 meters in diameter and built almost entirely below ground. Earthwatch volunteers revealed a masonry (coursed sandstone) bench and two adobe-plastered floor surfaces, both beautifully preserved. The presence of two floor surfaces suggests that the great kiva was remodeled, or refreshed, at some point during its use-life and that it was probably in use over several generations.

Additionally, the 2013 field season revealed that the organizational layout of the Dillard Site is far more complex than previously thought. Using electrical resistivity and magnetic geophysical imaging, two clusters of structures were found adjacent to the great kiva: one to the north and one to the south. Despite their proximity, the northern “neighborhood” was separated by a low fence. Your excavations have demonstrated that these neighborhoods are made up of a variety of structure types, many of which are not typical of habitation sites in the Mesa Verde region during the Basketmaker III period. Architectural features and artifacts found in these structures suggest that residential activities included permanent habitation, temporary lodging, food storage and processing, and communal cooking.

A combination of archaeomagnetic dating and accelerated mass spectrometry dating has found that both the northern and southern neighborhoods were occupied during from the late 6th century A.D. to the mid-7th century A.D. This suggests that the Dillard Site occupation was relatively early in the settlement of the central Mesa Verde region, indicating that site inhabitants probably moved into unclaimed and undeveloped territories. The thousands of artifacts and samples collected from exterior midden deposits will provided information on both the subsistence technologies and the migrant source(s) of the Dillard population in the near future.

In sum, the 2013 Earthwatch expeditions were a great success. As with most excavations, we now have more questions about the Dillard Site and its surrounding community than we had when we started the project! I hope that you will continue supporting Earthwatch and consider volunteering for the Uncovering the Mysteries of Ancient Colorado project during the 2014 field season. Thank you for your hard work and for your continued friendship.

Sincerely,

Dr. Susan C. Ryan
Principal Investigator, Uncovering the Mysteries of Ancient Colorado
SECTION ONE: Scientific Research Achievements

Top highlight from the past season

The 2013 field season revealed that the social organization of the Dillard Site is more complex than previously thought. The site includes an early public structure, or great kiva. This building is circular, measuring 11 meters in diameter and built almost entirely below ground. Using electrical resistivity and magnetic geophysical imaging, two clusters of structures were found adjacent to the great kiva; one to the north and one to the south. Despite their proximity, the northern "neighborhood" was separated by a low fence. Excavations have demonstrated that these neighborhoods are made up of a variety of structure types, many of which are not typical of habitation sites in the region. Architectural features and artifacts suggest that activities included permanent habitation, temporary lodging, food storage and processing, and communal cooking. In sum, the Dillard site was home to numerous families organized into neighborhoods and served as a center for community gatherings.

Reporting against research objectives

This project focuses on four primary research domains: 1) chronology, 2) social organization, 3) origins of the population, and 4) technological and subsistence strategies associated with the ancestral Pueblo Neolithic transition in the Mesa Verde region of the northern U.S. Southwest. The following provides a summary of the 2013 field season research results for the research domains listed above.

Chronology, Origins of the Population, Neolithic Transition: The Crow Canyon Archaeological Center (CCAC) and Earthwatch volunteers excavated portions of three small habitation sites (5MT10736, 5MT2032, and 5MT3875) during the 2013 field season. Two pithouses, three refuse middens, and three extramural areas were sampled with a total of 62 excavation units. Dating samples were collected from multiple contexts. The dating results from these samples will help clarify their temporal relationship to the large settlement at the Dillard Site and help us to understand how the community grew through time. This is discussed in detail below.

Social Organization: Crow Canyon Archaeological Center purchased a Geoscan Research RM15 Resistance Meter in the spring of 2013. Resistivity surveys were conducted at seven sites (Table 1) in order to locate buried pit structures. A total of 1,440 square meters were surveyed and nine probable structures were located (Table 1 and Figure 1). An especially interesting structure was found on Windrow Ruin, Site 5MT3890. The resistivity survey captured an image (Figure 2) of a double-chambered pithouse nearly triple the size of average habitation structures found at the Dillard Site (Site 5MT10647). Other oversized pithouses have been found in the Mesa Verde region, but are rare. These structures most likely represent high-ranking households or a form of public architecture.
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**Table 1**

![Dillard Site 5MT10647](image)

**Figure 1**
Chronology and Social Organization: At the Dillard Site (Site 5MT10647), both the great kiva and the light refuse scatter surrounding it were sampled this year. A quarter of the great kiva was under excavation along with a north-south trench that spans the full diameter of the building. During the 2013 field season, several tons of collapsed construction stone were removed (Figure 3). This stone appears to have been integrated into the roof of the building which would have given it a monumental presence among the earthen pithouses at the site. Excavations are now down to 10 centimeters above the floor and the periphery bench on the interior of the structure. Twelve units were used to sample a light refuse scatter south of the great kiva. It was our hope that this material would shed light on the activities that occurred within the adjacent structure. Unfortunately, cultural deposits in these locations were very shallow and did not provide evidence for activities associated with the great kiva.
Chronology, Origins of the Population, Neolithic Transition, and Social Organization: Testing of structures, refuse middens, and extramural areas in the northern and southern neighborhoods at the Dillard Site continued in 2013. These areas were sampled with a total of 48 excavation units. As discussed in the “Highlights” section above, the sampled structures were highly varied and may have had specialized functions. A combination of archaeomagnetic dating and accelerated mass spectrometry C14 dating has found that both the northern and southern neighborhoods were occupied from the late 6th century A.D. to the mid-7th century A.D. This suggests that the Dillard Site occupation was early in the settlement of the central Mesa Verde region and further indicates that the site inhabitants probably moved into an unclaimed and undeveloped landscape. The thousands of artifacts and samples collected from exterior midden deposits will provide information on both the subsistence technologies and the source of the Dillard population in the near future.

Origins of Population: Fifteen fragments of obsidian found at the Dillard Site were geologically sourced during the 2013 field season. An energy-dispersive X-ray fluorescence (XRF) analysis of obsidian artifacts from the Dillard Site shows that four different sources of obsidian were used by residents. The four sources—consisting of two outcrops in the Jemez Mountains of north-central New Mexico, specifically the Valles Calderas, one outcrop from Government Mountain near Flagstaff, Arizona, and one outcrop from Mount Taylor near Gallup, New Mexico—are more diverse than those found at archaeological sites dating to later time periods in the Four Corners region. This suggests that the residents of the Dillard Site had an expansive range of social networks that provided them with materials from these distant lithic sources.
Neolithic Transition: Macrobotanical analysis by Karen Adams and Nikki Berkebile (Berkebile and Diederichs 2013) along with pollen analysis by Suzie Smith (Smith 2013) has provided a glimpse of the subsistence strategies of the inhabitants of the Dillard Site. The plant data discussed here comes from Crow Canyon Archaeological Center’s online publication "Plant Use by Native Peoples of the American Southwest: Ethnographic Documentation" and can be accessed at crowcanyon.org/ResearchReports/Archaeobotanical/Plant_Uses/plant_uses.asp. Adams and Berkebile have confirmed that the inhabitants of the Dillard Site were growing two types of domesticates, maize (Zea mays) and squash (Cucurbita sp.). Maize was found in nearly every context at the Dillard Site and, amazingly, whole burned cobs have been recovered (Figure 4). This maize appears to be a flour variety which, unlike antecedent dent varieties, allowed it to be ground without additional popping or cooking.

![Figure 4](image.png)

Other plant resources, while not domesticated, may have been valued enough to be cultivated nearby. Parched seeds of weedy annuals known as goosefoot (Chenopodium sp.) and pigweed (Amaranthus sp.) were found in many locations. Ethnographically, these greens were boiled or eaten fresh and the seeds were parched, ground into meal, or cooked into a mush. Leaves were also used in medicine for treating burns and repelling mosquitoes, as well as utilized in some ceremonial events.

There is also a possibility that cholla cactus was imported and cultivated. Cholla pollen was found in a pithouse storage bin at the Dillard Site (Smith 2013). Native cholla is rare in the project area but was prized throughout the Southwest for its flower buds that were harvested just before the flowers opened, typically around May (Hodgson 2001). Transplanted cholla was cultivated outside of its natural range in the Jemez Mountains of New Mexico and, at modern Zuni Pueblo and some Rio
Grande Pueblos, ritual use has been documented (Housely 1974). Macrobotanical evidence for cholla is rare because the soft flower buds quickly degrade, but one striking example comes from Mexican Springs located northwest of Gallup, New Mexico where cholla buds were recovered in a Basketmaker pithouse along with evidence for ceremonial use of Datura, a plant with known psychotropic properties (Brandt 1996).

Wild tobacco may also have been cultivated by residents of the Dillard Site. A parched tobacco seed (Nicotiana sp.) was found on the floor of a small pitroom, Structure 228. Since wild tobacco flourishes in burned grassland patches, the inhabitants may have encouraged its growth with controlled burns (Adams and Toll 2000).

Other wild plants were also utilized by the Dillard Site inhabitants. Bulrush pollen and cattail parts have been recovered from the site. Ethnographically, bulrush seeds were eaten, but the stems, stalks, and roots were also used for food (raw or cooked), medicine, and in ceremonies (Smith 2013). Likewise, every part of the cattail plant is either edible or useful, and Curtin (1997) discusses the value of cattail roots as a source of starch, equal to that of corn and rice. The edible herbs of tansy mustard (Descurainia sp.) and purslane (Portulaca sp.) were retrieved from the same pitroom where the tobacco seed was found. Likewise, carrot family (Apiaceae) pollen was found in several structures (Smith 2013).

Most carrot family members grow in wet meadows or riparian borders, but there are dryland species, notably an ethnobotanical resource called waferparsnip or springparsley (Cymopterus and Pseudocymopterus). Springparsley roots were eaten raw or baked by several Southwest tribes and the aromatic leaves widely used as a spice (Moerman 1998).

Finally, beeweed pollen was found in several locations. It was used for medicine and food, and was made into a superior black paint or dye that even today is prized by contemporary Pueblo artists (Adams et al. 2002).

The wide variety of cultivated and wild plants that were used along side the domesticated corn and squash at the Dillard Site, highlight how knowledgeable the inhabitants were of local resources and testifies to their ability to exploit and cultivate these resources at multiple scales of intensity. This information is key to understanding one of our primary research objectives: to shed light on the nature and tempo of the Neolithic transition in the northern Southwest.
SECTION TWO: Impacts

Partnerships

Colorado State Historic Preservation Office: Excavation, site testing, and site survey were conducted for the Basketmaker Communities Project under State of Colorado archaeological permits 2013-47 and 2013-48 during the 2013 field season.

Indian Camp Ranch Homeowners Association: Indian Camp Ranch, a private landowner development in Cortez, Colorado, is a primary partner to the Basketmaker Communities Project. The project area includes 30 residential lots within the ranch and 107 archaeological sites dating to the Basketmaker III period (A.D. 500-750) on those properties. Both the bylaws and covenants of the Indian Camp Ranch Homeowners Association 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 Archaeological Center permission to conduct field research at Basketmaker-III-period sites located within the ranch, subject to restrictions imposed by individual landowners and provided that the work was conducted following the professional and ethical standards established by the Society for American Archaeology and the Register of Professional Archaeologists.

Since that time, eight 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, and a third permits less than 10 square meters of excavation at two separate sites. Five other contracts give permission for extensive excavations at Basketmaker-III-period sites on the landowners’ lots.

In September 2011, Crow Canyon Archaeological Center nominated the Indian Camp Ranch Archaeological District to the National Register of Historic Places (Varien and Diederichs 2011). 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 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 of time that provided the foundation for the development of Pueblo Indian society.

Crow Canyon Archaeological Center’s partnership with Indian Camp Ranch continues to be active. CCAC reports to the Indian Camp Ranch Board of Directors on a quarterly basis. All new contracts with individual landowners are approved by the Indian Camp Ranch Board of Directors. CCAC holds an annual reception for landowners where they are updated on the project’s progress. Jane Dillard, owner of the Dillard site, has been interviewed by local and national media and she has presented papers at professional archaeological conferences summarizing her experience of being involved in
archaeological research as a private landowner. The partnership between CCAC and Indian Camp Ranch is a unique and successful example of not-for-profit and private landowner cooperation.

**Oregon Public Broadcasting:** The State of Colorado State Historic Fund provided a small grant to contract Oregon Public Broadcasting to provide 3-D modeling images of the Dillard Site great kiva.

**University of Colorado:** University of Colorado professors Scott Ortman and Steve Lekson are listed as a PI and Co-PI, respectively, on a National Science Foundation grant that supports Basketmaker Community Project research. During the 2013 field season, graduate student Marcus Espinosa reanalyzed pottery collected from Yellowjacket Pueblo dating to the Basketmaker III period to provide a comparative collection to those recovered from the Basketmaker Community Project.

**Woods Canyon Archaeological Consultants:** To clarify the settlement sequence within the Basketmaker Communities Project study area, 71 habitation sites dating to the Basketmaker III period occupation were revisited by Woods Canyon Archaeological Consultants. As contracted by the BCP, Woods Canyon Archaeological Consultants remapped architectural elements and retailed pottery to create a detailed picture of the residential surface signature of each site. Combined with CCAC’s testing program of habitation sites, a more nuanced chronology of Basketmaker III period cultural traits will be developed in the future. In turn, this will inform researchers about the demographic history of the community under investigation.

**Resistivity Data Analysis and Reporting:** Mona Charles of the Center for Southwest Studies at Fort Lewis College, located in Durango, Colorado, was contracted by Crow Canyon Archaeological Center to process the raw RM15 Resistivity Meter data, identify possible anomalies, and report on the resistivity survey results. During the 2013 season, she processed 14,400 square meters of data and identified 12 anomalies with pit structure characteristics.

**Archaeomagnetic Sampling:** Kay Barnett of the National Park Service was contracted by Crow Canyon Archaeological Center to collect archaeomagnetic dating samples from burned hearths in pithouses at the Dillard Site and one small habitation site within the BCP. Barnett collected six samples during the 2013 season. Results will be available in 2014.

**Botanical Analysis:** Crow Canyon Archaeological Center research associate Dr. Karen Adams and one graduate student intern analyzed over 70 botanical samples from the Dillard Site, producing a short article on their findings for Crow Canyon Archaeological Center’s eNews.

**CNN:** In September 2013, CNN filmed individuals excavating at the Dillard Site and working in the CCAC laboratory. This footage will be shown in airports around the nation to promote adventure travel programs for individuals and families.
Contributions to Conventions, Agendas, Policies, and Management plans

**National and Regional:** 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 District Number 12000145 and was given the Smithsonian trinomial designation 5MT19927. This district, which includes all Basketmaker III period 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.

**Local:** Crow Canyon Archaeological Center’s (CCAC) partnership with Indian Camp Ranch continues to be active. CCAC reports to the Indian Camp Ranch Board of Directors on a quarterly basis. All new contracts with individual landowners are approved by the Indian Camp Ranch Board of Directors. CCAC holds an annual reception for landowners where they are updated on the project’s progress. Jane Dillard, owner of the Dillard Site, has been interviewed by local and national media. She has also presented papers at professional archaeological conferences on the experience of being involved in archaeological research as a private landowner. The partnership between CCAC and Indian Camp Ranch is a unique and successful example of nonprofit and private landowner cooperation.

**Developing Environmental Leaders**

As noted in more detail in the section below, the Basketmaker Communities Project public education program has reached hundreds of students and adult volunteers from not only Colorado, but the entire nation, including a significant number of American Indian students from the Four Corners region. The BCP promotes an understanding of, and appreciation for, the cultural diversity and cultural heritage that is part of our state and our Nation. The students benefit the most from the educational experiences that this project provides and we hope that they will draw on these experiences as they become future leaders.

In addition, the BCP provided 10 college-level internships during the 2013 field season in the field and laboratory. These internships were 10 to 15 weeks in duration, depending on the position. BCP interns were students with an undergraduate degree or in their initial years of a graduate program. These students are dedicated to the discipline of anthropology and specialize in subfields including archaeology, archaeobotany, faunal analysis, and remote sensing technologies. As with the younger students mentioned above, the BCP provides college students with the educational experiences needed to become future leaders within their communities and the discipline as a whole.

**Actions or activities that enhance natural and/or social capital**

There is an important public benefit to having a more complete understanding of Pueblo history. This is true for all citizens in Colorado, but especially true for those in southwestern Colorado.
where the public is increasingly diverse, including an American Indian population that is rapidly growing. It is critical that American Indian history be included in the lessons taught in both formal and informal settings so that American Indian students are not disenfranchised from their past. Moreover, it is critical that non-Indian students understand, respect, and value American Indian history. The Basketmaker Communities Project public education program has reached hundreds of students from not only Colorado, but the entire Nation, including a significant number of American Indian students from the Four Corners region. The BCP promotes an understanding of, and appreciation for, the cultural diversity and cultural heritage that is part of our state and our larger nation.

**Conservation of Taxa**

Although not stated in the prompt, "conservation significance" may refer to taxa of biological and/or cultural significance. The Basketmaker Communities Project (BCP) has provided an important model for the preservation of archaeological resources on private land. This model demonstrates to private land owners that preserving archaeological sites is in their long-term interest and provides them with a model for how this can be implemented. The BCP's primary model is that of stewardship and the promotion of cultural preservation as a norm. Through this ongoing work, the BCP will contribute to the preservation of culturally significant places in southwestern Colorado and beyond by building sustainable stewardship practices and stressing the importance of our Nation's shared cultural heritage.

**Conservation of Habitats**

Indian Camp Ranch has been disturbed by historic and modern farming and chaining activities. Because the project area is located on private property, Crow Canyon Archaeological Center is unable to modify the property without land owner permission. This project will not focus on enhancing, restoring, or maintaining natural habitats. However, we do encourage local landowners to revitalize and maintain the natural habitats within their private holdings.

**Ecosystem Services**

As noted above, Indian Camp Ranch has been disturbed by historic and modern farming and chaining activities. Because the project area is located on private property, we cannot contribute to enhancing, restoring, or maintaining ecosystems. However, we do encourage local landowners to revitalize and maintain the natural habitats within their private holdings.

**Conservation of Cultural Heritage**

The Basketmaker Communities Project (BCP) is critically important to Pueblo people living today and to the future viability of Pueblo communities. Pueblo people face an enormous challenge--how to maintain Pueblo identity in a rapidly changing society where they are not the dominant culture. A critical means by which Pueblo people maintain their identity is by ensuring a direct connection to their past and creating a full understanding of Pueblo history. The BCP assists in this challenge
by collaborating with American Indians, including the descendants of ancestral Pueblo people, on the design, implementation, and public dissemination of knowledge gained from this project. For example, Crow Canyon Archaeological Center’s Native American Advisory Group gathered twice during the 2013 field season to discuss BCP research findings and to provide our staff with comments and suggestions for ongoing research. Group members take this information back to their respective communities and further disseminate knowledge generated from the BCP.

**Impacting Local Livelihoods**

The BCP has significant economic benefits for southwestern Colorado. This project will bring thousands of students of all ages to the region, and these visitations support the local economy. In addition, the BCP public education programs have impacted hundreds of students this year alone through Internet publications, print publications, press coverage, public lectures, and on-site experiential learning experiences. Our wide dissemination of BCP research findings draws the attention of nationwide and worldwide audiences to the remarkable archaeology of southwestern Colorado and to the culture history of the ancestral Pueblo people. This attention actively promotes tourism in the region.

Heritage tourism is an important component of the economy of southwestern Colorado today and is a sustainable economic resource that is important to the future well-being of this part of the state. Cultural tourism is sustainable as long as cultural resources are preserved and ongoing research demonstrates that the study of these resources generates new knowledge that benefits humanity.

**Local Community Activities**

Our local community is involved in our research in two distinct ways. First, we have ten retired professionals who volunteer in our laboratory and aid in the washing, sorting, analyses, and organization of material culture recovered during BCP excavations. These generous individuals volunteer between four and eight hours per week, and contributed over 2,000 hours of service to Crow Canyon Archaeological Center during the 2013. Second, material culture recovered from the BCP excavations, specifically pottery and stone tools, has been used to provide special analyses training to members of the local Colorado Archaeological Society chapter. This chapter is comprised of adult avocational archaeologists who volunteer their time to promote cultural preservation and site stewardship practices of archaeological resources in southwestern Colorado.

**Dissemination of Research Results**

**Scientific peer-reviewed publications**

Watters, Meg and Shanna Diederichs. 2013. Archaeological geophysical surveys reveal the Basketmaker III population at Dillard Site. *International Society for International Prospection News* 35. Please see the Appendix for the full article.
Grey literature and other dissemination

CNN: In September of 2013, CNN filmed volunteer participants excavating at the Dillard site and working in the CCAC laboratory. This footage will be shown in airports around the nation to promote adventure travel programs for individuals and families.

Papers at Professional Conferences and Lectures:


SECTION THREE: Anything Else

Project funding
In addition to our 2013 Earthwatch grant, Crow Canyon Archaeological Center has successfully secured funding from the National Science Foundation and History Colorado’s State Historical Fund to help support the Basketmaker Communities Project.

Earthwatch support is critical to the success of the Basketmaker Communities Project. Through accomplished marketing efforts, Earthwatch provided Crow Canyon Archaeological Center with 46 volunteers. Earthwatch volunteers comprised half of the total number of adult individuals that participated in the Basketmaker Communities Project during the 2013 field season. This support is invaluable as it is crucial to the ongoing success of the project in addition to the success of Crow Canyon’s mission.

Is there anything else you would like to tell us?
As a project investigator, I would like to take the opportunity to express my sincere gratitude to Earthwatch for supporting the Basketmaker Communities Project. Earthwatch volunteers are some of the most interesting, intelligent, and hard-working individuals that I have had the pleasure of working with, and I look forward to future collaborations!

Acknowledgements
Crow Canyon Archaeological Center would like to acknowledge and thank all of the 2013 Earthwatch volunteers who made our field season a success. We would also like to thank Earthwatch employees Sarah Ryan, Heather Pruiksma, Stacey Monty, and Mark Chandler for their continued support of the Basketmaker Communities Project. Finally, we would like to thank Jane Dillard: without her support this project would not be possible.
APPENDIX:
Archaeological geophysical surveys reveal the
Basketmaker III population at Dillard Site
In the southwestern region of Colorado the 7th century AD was a period of transformation, migration, and advancing technologies. This is a period when the bow and arrow replaced the atlatl, where beans and true cooking pottery were introduced, public architecture in the form of great kivas were invented, and communities were beginning to form as a result of the transition from gathering to farming. Time Team America joined the Crow Canyon Archaeological Center (CCAC) in June 2013 to investigate the Dillard site (Figure 1), a community center during the Basketmaker III (BM III) period, A.D. 500-725. The Time Team America challenge at the Dillard site was to (1) try to determine the site population, (2) to better understand why a Great Kiva was built here (the only one within 100 miles), (3) and to gain insight into the organization of the site, (5) its context to the broader landscape, and (6) what this meant for the development of community.

BM III settlements cannot be identified or analyzed from the ground surface, they simply are not visible. Over the past three years CCAC investigations have identified eight pit structures to the south of the Great Kiva through systematic auguring, excavation, and a small amount of resistivity. In the three days of geophysical surveys (Figure 2) conducted by Time Team America, an additional eight to nine pit structures were identified through a combination of magnetic, resistivity, and EM surveys (Figure 3). Through ground-truthing (excavation and auguring) geophysical anomalies, recovery of a variety of artifacts, and two C14 samples, the site is firmly dated to A.D. 610 to 670.

One pit structure identified in all of the geophysical survey methods was sampled as part of the Time Team America Program (Figure 3 A). A formalized suite of ritual features was revealed on the floor of the structure. The features include a sipapu, a formal hearth, and an ash pit, aligned North-South (Figure 4), in contrast to the northwest to south east orientation of floor features in other pit structures at the site. All three features were ritually closed prior to abandonment of the structure. Though these features are often found in BM III pithouses, the orientation and formality of the construction and closing of the features may be a result of their close proximity and the structures relationship to the great kiva.

The identification of pit structures though the geophysical surveys begins to give us an idea of the distribution of structures and an estimate of the population of the site. We went a step further to begin to try to better understand the use of space between structures by employing the coring method used by Kvaamme (2003) at Huff Village.

**Figure 1** Dillard site, Basketmaker III, Crow Canyon Archaeological Center, Cortez, CO.

**Figure 2** Bartington 601 magnetometer, Geoscan RM15 resistivity meter (survey collaboration with Mona Charles, Fort Lewis College), Geonics EM38B conductivity meter.
As part of the auguring, we focused on what appeared as a double ‘ring’ of magnetic point anomalies encircling several pit structures to the north of the Great Kiva (Figure 5). Preliminary results identify four of these point anomalies as pits and thus, suggest an alignment of postholes that would have been associated with a fence. This reveals not only information on the organization of space but also begins to provide insight to social and community organization.

Viewing the site and interpreted features draped on a LiDAR DEM shows its location within the broader natural and cultural landscape. The site’s orientation to local landmarks such as the San Juan Mountains to the east, the Mesa Verde questa to the south, and lone Ute Mountain to the west confirm the site’s expansive viewshed of the prehistoric Mesa Verde Region. Despite this emphasis on viewshed, the LiDAR DEM demonstrates that the site sits on one of many low lying ridges, making it easily accessible to the 107 known BMIII habitation sites in the surrounding settlement providing insight on its role in the larger community.

CCAC will continue to investigate every anomaly that was identified in the geophysical surveys in future seasons. They have purchased their own resistivity meter and will incorporate it into all of their field public education programs as well as continue to engage magnetic gradient surveys as part of their ongoing investigations of the BM III and the archaeological landscape (Diederichs and Copeland 2012).

The material in this report is based upon the work supported by the National Science Foundation under Grant number 1114113. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.
Figure 5 (left). The navy blue points identify a double ‘ring’ of what are thought to be pits associated with a fence that bounds the cluster of structures to the north of the Great Kiva.

Figure 6 (below). LiDAR DEM and the broader landscape with BM III site distribution in reference to the Dillard site (red)

References


Report prepared for: Crow Canyon Archaeological Center, Cortez, CO.