

Bob Kelly, University of Wyoming, Judson B. Finley, Northwest College, and Laura L. Scheiber, Indiana University, worked on this project with the archeologist at Bighorn Canyon NRA (BICA), Chris Finley.

The project, which involved five educational institutions and 53 students from across the country, is an outstanding example of cooperative efforts and collaboration. Through this project, students and faculty at these RM-CESU and other universities worked to update the Archeological Sites Management Information System (ASMIS) and other cultural resource information for Bighorn Canyon NRA. To accomplish this work, students and faculty carried out magnetic field gradient surveys on four historic ranches located in the park. The objective of the survey was to locate and map potential buried archaeological features to provide a reliable database concerning the actual footprint and historic use of the cultural landscape of each ranch for management and interpretive purposes. Of particular interest will be the identification of anomalous magnetic fields created by buried fire-altered features to determine prehistoric use of the landscape prior to settlement of the sites by early homesteaders and ranchers.

Field school participants also surveyed stone circle sites, commonly referred to as “tipi rings,” one of the few forms of prehistoric domestic architecture known on the northern High Plains, where Plains Indians used stones as tipi weights. Once moved, stones often stayed in place preserving, to some extent, the superstructure characteristics of the lodge. Today stone circle studies remain important to archaeological research because they allow researchers to focus on social and economic organization, use of space, ideology, and daily practice. More than 120 stone circle sites were documented at BICA and the surrounding landscape. The primary goal of ongoing research at Bighorn Canyon NRA is to develop and implement a research design that efficiently and effectively collect data from stone circle sites using student field camps. The fieldwork uses a three-stage strategy that includes surface mapping, remote sensing, and excavations. Integrated GPS and GIS methodology provided data that creates an accurate digital model of stone circle distributions in BICA. The 4th season of the field school was completed in FY 2008, and consisted of 2 professors, 3 graduate students and 16 undergraduate students. The 2008 field school was publicized by a front-page article in The Billings Gazette, and the story received state wide coverage in Montana and Wyoming newspapers. TCT Public Television did a 30-minute program that aired in the Bighorn Basin several times over a two-week period. The widespread publicity drew over 200 visitors to the site during the course of the project.

**11 photos submitted, in folder entitled “CESU[1]”. Captions below.**



**GPS and artifact coding.JPG**

Judson Finley and Maureen Boyle (in back) record artifact locations with the GPS while Ashley Howder (in front) collects attribute data for each flake and tool.



**GPS with PDA.JPG**

Christopher Nicholson, Laura Scheiber, and Maureen Boyle map tipi rings at the Coyote Circle Site



**Green team mapping at Two Eagle.JPG**

Field school students map tipi ring at the Two Eagles site, Bighorn Canyon NRA, overlooking Bighorn Mountains to the southeast. L-R: Anna Casserly, Chris Clerc, Matt Clapp.



**Mapping closeup.JPG**

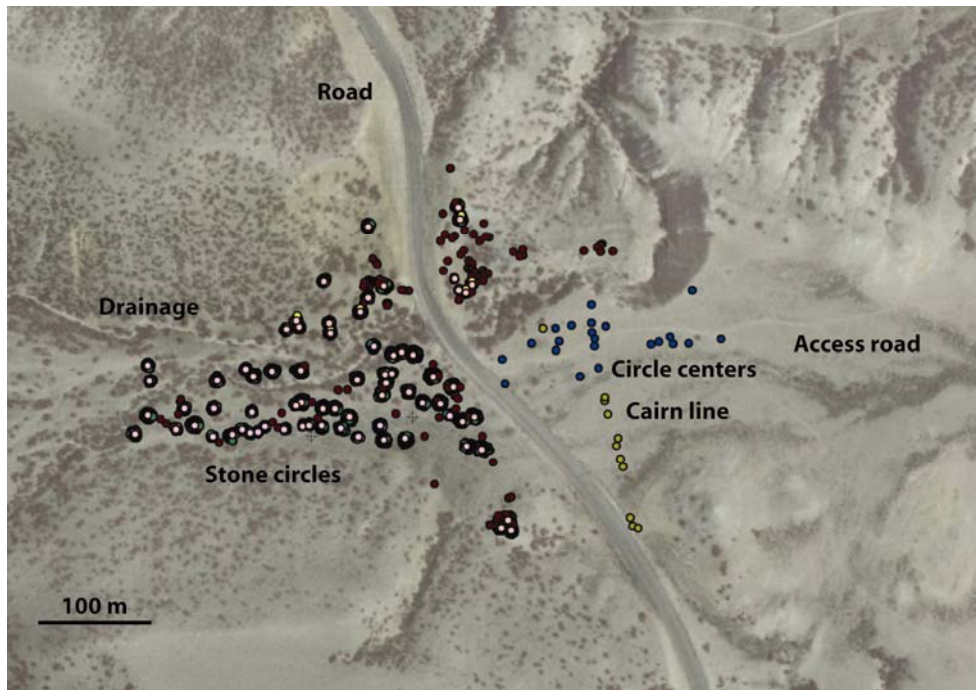
Each rock is mapped to scale on graph paper using a compass and ruler.





### Measuring every rock.JPG

Measuring diameters of each rock in a tipi ring with a standard tape measure. Data are then entered directly into PDAs.



### Orthophoto map.JPG

Tipi ring locational data overlay on orthophoto map using ESRI ArcGIS.



**PDA.JPG**

Data entered directly into a PDA.



**Set up GPS for field school.JPG**

Graduate student Maureen Boyle gives a GPS demonstration to the archaeology field school. L-R: Patrick Hill, Ted Preator, Karina Black, Catherine Page, Kelly Branam, Ed Herrmann, Zac Muller, Jake Gee, Kirk Chambers, and Ashley Howder.





**Site Overview.JPG**

Field school students map tipi rings at Mustang Flat, Bighorn Canyon NRA, overlooking Bighorn Canyon and the Bighorn Mountains to the east. L-R: Evan Lewis, Karina Black, Catherine Page, Ashley Howder, Ed Herrmann, Patrick Hill, Kirk Chambers, Zac Muller, Kelly Branam, and Ted Preator.



**Stone circle overview 2.JPG**

Tipi ring at Two Eagles site, 2008.



**Yellow Team mapping at Two Eagle 01.JPG**

Field school students map tipi ring at the Two Eagles site, Bighorn Canyon NRA, in front of the Pryor Mountains to the west. L-R: Tim Schmidt, Dan Goldblatt, Rosemary Ginger, David Harvey.