



## Our Surveyors, Sometimes Overlooked but Always Essential

Becky Sitch, Land Surveyor

The Helena National Forest has over 1600 miles of National Forest boundary lines. The Property Boundary Management program includes the responsibility of surveying and marking these lines on the ground. Currently only about 600 miles have been marked and posted to Forest Service standards, so we've got lots of work to do. Forest activities, such as timber sales, thinning projects, mine reclamation, encroachment/trespass issues, and hazardous fuel reduction projects all dictate where landline projects will be accomplished. With land prices and the value of land resources increasing, boundary location is becoming a greater priority for both the government and private sector.

With any survey, we retrace the steps of the original surveyor. This includes acquiring copies of the notes and plats of the original survey which include information on corner monument descriptions, accessories to the corner, bearings and distances between corners, topography calls and tons of other interesting information. The Helena Forest Supervisor's Office maintains a microfiche copy of all the original Homestead Entry Surveys, Mineral Surveys and Township/Range surveys for all lands within or near the Helena Forest Boundary.

Searching for evidence of the original survey is the fun part of the job. Many of the projects we are involved with date back to the 1870's with scribed stones

or wooden posts used as corner monuments. It is always a thrill to locate monumentation that was established over 100 years ago. In some cases, corner monuments are so badly deteriorated that we remonument them with aluminum monuments that will perpetuate the corner location for future use, and we record this information in the Clerk and Recorder's Office. We blaze and paint existing trees located on or near the boundary line and attach signs to mark the boundary. If no trees are available, we use steel posts. A record of boundary lines that have been marked in the past is also kept at the Supervisor's Office. If you have a question on a certain boundary, we may be able to assist you.

Other types of work performed with the boundary management program are site surveys (for bridges, trailheads, archaeological sites, stream rehabilitation), control surveys for photogrammetry projects, rights-of-way surveys, encroachment/trespass surveys, Small Tracts Act surveys. It is also necessary to provide drawings, plats, exhibits and/or legal descriptions for these projects. The diversity of projects that we deal with keep the job interesting and rewarding!

## Managing and Preserving Painted Prehistoric Images on the Helena Forest

Sara Scott, Archaeologist and Interpretive Specialist

Since 1997, the Helena National Forest has actively searched for and recorded over 20 prehistoric pictograph sites in the Big Belt Mountains. Canyon mouths and rockshelters are likely locations to find these ancient sites. Painted images include tally marks, dots, elongated human figures, snake and lizard-like figures, handprints, rayed circles, and geometric designs. The pigment used to paint canyon walls was iron oxide mixed with blood, fat, berry and plant juice, charcoal, water, and urine.

Two of the largest Big Belt rock art sites in Hellgate Gulch and the Gates of the Mountains have been recorded at full scale using photography and stipple tracing. The detailed site recording

provides a baseline by which the sites can be monitored for natural deterioration and/or vandalism. In addition, modern graffiti was removed from the Hellgate site to discourage future vandalism. A large forest fire in the north Big Belts in 2000 precipitated post-fire erosion control at the Hellgate pictographs.

In an effort to protect and conserve pictograph sites, the Forest contracted with a rock art conservation expert in 2000-2001 who visited the pictograph sites and noted the condition of each image. Damage to images was recorded along with what caused the damage (natural deterioration or vandalism) and what could be done to slow it down or reverse it. At four sites where painted images



Prehistoric pictograph in the Gates of the Mountains.

were flaking from the rock surface they were created on, small amounts of paint pigment were collected and were radiocarbon dated through a contract with Texas A&M University. The radiocarbon dates for these sites show that they were used between 1440 to 1170 years ago.

Archaeological and ethnographic information about early Montana Indian people suggest pictographs sites may have been used by

shamans as an interface or portal into the supernatural world. Shamans possessed great power and were sought out to cure sickness, control the weather, and find game. Pictograph sites were also used as vision quest sites where young initiates would fast in isolation and await visions of protective spirits. The pictographs that remain today likely reflect images seen in the minds of shamans and vision questing individuals.