

# Sacred Sites Research, Inc.

## Annual Report

### 2015

The past year has been a successful one for Sacred Sites Research, Inc. (SSR). First, in importance is the election of Mark Willis to the SSR Board of Directors. Mark is an archaeologist with a long history of working across the American Southwest and adjacent areas of the Great Plains, although he works all over the world. His main area of expertise is aerial site mapping where he pioneered the use of kite photography and now has turned his talents to the use of drones to capture images of the archaeological features on the ground. In recent years, he has also introduced a number of new rock art recording methods that employ digital photography and computer programs.

The election of Mark to the Board represents the SSR strategy to have a board with working skills related to protecting and preserving rock art sites. Some other non-profits tend to fill their boards with individuals who have wealth or prestige to achieve their goals. The strategy used by SSR is to have individuals knowledgeable about sacred sites and thereby maximize our efforts toward protecting the rock art.



*Figure 1. Mark Willis using a remote controlled camera on a painter's pole to photograph painted figures on the ceiling of a large overhang. These sites which are called star ceilings exhibit hundreds of crosses and dots. However, at this one there are tiny images of horses and bison as seen on the right. Star ceiling sites were made by the Navajo but archaeologists do not know how they got up to the ceiling to paint the figures. At this site some of the figures are only a few inches across but they are 40 feet above the ground.*

## The Frozen Leg Cave Project

The major site recording project undertaken by SSR in 2015 was at Frozen Leg Cave. Frozen Leg Cave is actually a series of interconnected caves on private property near Fort Smith, Montana in the west wall of Bighorn Canyon. While there are relatively few paintings in the cave, they are very important to understanding Crow Indian tobacco ceremonialism. The site has been recorded by previous researchers but because the caves are so difficult to get into, the prior work has been rushed and incomplete.

The first task was to establish better access to the caves. Fortunately, we were able to obtain the help of Loren Rausch of Red Lodge, Montana, who is an experienced climber. He crawled into the cave and moved a chain-link ladder to create a stable way to enter the caves. Unfortunately, the access to the bottom of the ladder proved too difficult for some of the recording crew. None the less, those that did get in were able to photograph paintings not seen in previous site visits.



*Figure 2. The left photograph shows the caves from across the canyon. The reservoir is about 500 feet deep. In the right photograph, Loren Rausch is descending the ladder he installed to help with access. The immediate drop is about 15 feet but the secondary drop, below the underlying ledge, is hundreds of feet.*



*Figure 3. Overview photograph of the left side of the main panel at Frozen Leg Cave.*



Perhaps the most impressive discovery in the cave was the red paintings in a totally dark section that include hand prints and finger swipes. We were also able to get tracings of a jumbled mass of painted lines so as to understand what they represent. The project was a success but more recording is needed in the dark zone with the red paintings.



*Figure 4. It is exciting to shine a light into the dark wall of a cave to expose a red human handprint. You can see other figures surrounding the handprint. These red paintings are thought to represent a different style than the yellow-brown paintings in other parts of the cave system. The tracing on the right represents a jumbled mass of paint on the right side of the main panel.*

### The Fortified Cave

During the time SSR was at Frozen Leg Cave, it was possible to get to another cave, called the Fortified Cave, also in the west wall of Bighorn Canyon. Lawrence Loendorf and Kent Good (1981) originally reported this site as containing defensive rock-filled ramparts designed to fortify the cave. A small rockshelter adjacent to the cave has two painted panels of pictographs.

The SSR visit to the cave was important for a number of reasons. We were able to obtain good digital images of the pictographs in the adjacent rockshelter but, perhaps of more importance, we discovered red (possibly painted) walls in the deeper cave. In other parts of the region to the east of the Rocky Mountains, it was relatively common for prehistoric artists to smear interior cave walls with red paint. The problem for archaeologists is to determine if the red stains are actually paint or if they represent natural iron-stained water on the interior cave walls. The Fortified Cave is an active cave with stalactites, stalagmites, flow stone and soda straws, so it remains possible that the red walls are natural stain.

Differentiating human-made paint from nature-made paint is not an easy task. SSR is strongly supportive of Dr. Marvin Rowe's research, and others at the New Mexico Center for Archaeology, to radiocarbon date rock paintings. Importantly, Center for Archaeology scientists are trying to learn the makeup of the binders in the paint in these rock art paintings. If they accomplish this, it should be possible to sample the Fortified Cave red stains to learn if they contain animal fats or paint resins, used to bind the pigment into paint, or if these ingredients are

absent. Animal fats or plant resins could only become part of the red stains with human involvement so we would learn if the stains were natural or cultural.



*Figure 4. The Fortified Cave from the exterior. Mark Willis is entering the cave, so as to show the scale. This cave is much easier to access than Frozen Leg Cave.*



*Figure 5. The interior photograph on the left shows that the Fortified Cave is active with developing cave features. We do not know if the red on the walls, shown on the right, is natural iron stains or human-made paint.*

## Radiocarbon Dates

Sacred Sites Research is strongly committed to incorporating rock art into regional archaeological chronologies. We strive to meet this obligation by establishing the age of the rock art at any site we record. An important part of this effort is to obtain radiocarbon dates for rock paintings, which we do whenever it is possible. In the past year we obtained three radiocarbon dates. The first was processed by Karen Steelman for the Ruby Canyon site near Carlsbad, New



Mexico. The date, for an eroded red zigzag, was 3140 years before the present or an age in the Archaic time period across the region.



*Figure 6. The left photograph shows where the sample was removed from the Ruby Canyon pictograph. You can see that we do not do much damage to the paintings to get samples for dating. The right side is the ceiling at the Doña Ana site where we obtained the sample for the radiocarbon date.*

The second date, processed by Marvin Rowe, was from a painted ceiling at the Doña Ana site north of Las Cruces, New Mexico. The age was 1975 years before the present or a time at the end of the Archaic Period in the area. Both dates are for abstract figures which suggests the colorful abstract style has its roots in the Archaic in southern New Mexico.

Another radiocarbon date, also processed by Marvin Rowe, was for a painted figure on the block of sandstone that fell out of the canyon wall at the Medicine Lodge Creek site, Wyoming. With the support of Wyoming State Parks, we were able to obtain a small sample of the red pigment in an abstract design on the fallen sandstone. The pigment was analyzed by the plasma oxidation method and submitted for a radiocarbon date. The resulting age of 800 years before the present fits well with the Foothills Abstract style of rock art that is common in central Montana. We actually now think that the red paintings in Frozen Leg Cave, the small rockshelter at the Fortified Cave, and the abstract figures at Medicine Lodge Creek are part of the same tradition. The Medicine Lodge Creek date shows the importance of keeping the SSR radiocarbon dating program as a high priority for future projects.



*Figure 7. The left photograph shows the chunk of the Medicine Lodge Creek wall that fell out of a panel of paintings. On the right, the arrow points to where the sample was removed for radiocarbon dating.*

## Excursions and Seminars

Throughout the year, SSR maintained its strong commitment to public outreach. One of the more successful events was a seminar on Montana rock art that was co-sponsored by SSR and the Carbon County Arts Guild in Red Lodge, Montana. The program on Tuesday and Thursday nights for two weeks in April was so popular that it had to be moved from the Arts Guild building to the Catholic Church. There were about 100 participants on each of the four nights.

In June, SSR worked with Crow Indian Grant Bull Tail to lead a Natural History Institute of the Rockies program. We went from Red Lodge to Chief Plenty Coups park and museum, and then into Wyoming where we visited Medicine Lodge Creek and the Tensleep Nature Conservancy alcove site. As a part of the excursion, Grant offered an excellent program at the Washakie Museum in Worland, Wyoming.

In August, SSR had a strong presence at the International Federation of Rock Art Organizations meeting in Caceres, Spain. The opening plenary lecture for the entire meeting was presented by Matthias Strecker of Boliva and Lawrence Loendorf of SSR with the topic "The Oldest Rock Art in the Americas." Strecker summarized the evidence for South America while Loendorf did the same for North America.

During the year, Loendorf also presented papers at the Montana Archaeological Society, the Albuquerque Archaeological Society, and the American Rock Art Research Association. An enjoyable presentation was at the La Veta, Colorado library where about 50 people of the town's 700 residents showed up to learn about regional rock art. The next night there was a larger audience in Pueblo, Colorado to learn about Apache rock art. We appreciate the opportunity to visit with individuals across the United States and the World about the importance of protecting and preserving sacred sites.

Finally, we would like to thank the volunteers on various projects through the year. These include Cobe Chatwood, Jon Harman, David Kaiser, James Regnier, Loren Rausch, Laurie White and Mark Willis on Frozen Leg and the Fortified Cave. We also had monetary support from a number of individuals which is really appreciated. Thanks to Marion de Cruz, Elaine Holmes, Colleen Winchell, Nancy Krekeler, James and Linda Regnier, Tom Doerk, Warren Nolan, Paula Reynosa, Harold Williams, Jack Exley and Kathie Osmun.

Thanks to all. We anticipate an exciting 2016 with several sponsored projects already underway

## Reports and Publications

Loendorf, Lawrence, Mark Willis, Greg White, Laurie White and J. Claire Dean

2015 Wildhorse Cliff Petroglyph Site (45WT242), Snake River, Washington: Rock Image Documentation, May 2014. Submitted by Applied Earthworks to the United States Army Corps of Engineers, Walla Walla District.

Loendorf, Lawrence, Mark Willis, Laurie White, Paula Reynosa and Rahman Abdullayev

2015 The Doña Ana site (LA66667): Formative Period Abstract Rock Art. *American Indian Rock Art* 41:99-109; Edited by James Keyser and David Kaiser, American Rock Art Research Association, San Jose, CA.