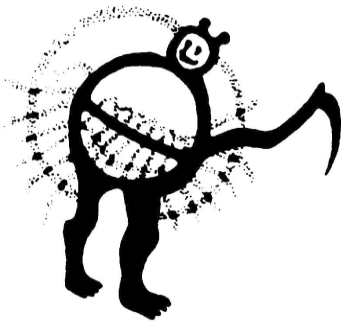


Montana Archaeological Society,
Wyoming Archaeological Society,
Wyoming Association of Professional
Archaeologists

60th Annual MAS Conference
April 26-29, 2018

Billings, Montana



WYOMING ASSOCIATION OF
PROFESSIONAL ARCHAEOLOGISTS

Program & Abstracts

Our thanks to the generous sponsors of the 2018 MAS/WAS Conference!

(Please also see page 21 and the inside and outside of the back cover for more sponsors.)



Northern Region



Billings Field Office

Montana State Office



**2018 (60th) Montana Archaeological Society Annual Conference
In conjunction with the Wyoming Archaeological Society and
The Wyoming Association of Professional Archaeologists
April 26-29, 2018
Billings, Montana**

Welcome to the 60th annual meeting of the Montana Archaeological Society in conjunction with the Wyoming Archaeological Society and the Wyoming Association of Professional Archaeologists in Billings, Montana! This year's conference is held at the Billings Hotel and Convention Center, in the Magic City. Please take the time to visit the poster displays.

The MAS Officers and Board Members responsible for this year's conference are:

Officers:

President – Weber Greiser (term ending April 28, 2018)
Vice President – Shannon Gilbert (term ending April 28, 2018)
Secretary – Mike Neeley (no term limit)
Treasurer – Elaine Hale (no term limit)
AIM Editor – Ann Johnson (no term limit)

MAS Board Members:

John Green (term ending April 2018)
Marsha Small (term ending April 2018)
Mary Williams (term ending April 2018)
Weber Greiser (term ending April 2019)
Michael Black Wolf (term ending April 2019)
Mark Baumler (term ending April 2020)
Shannon Gilbert (term ending April 2020)
Sydney Bacon (term ending April 2020)
Jenny Lee (term ending April 2020)

Election of new officers and board members will take place at the MAS General Meeting on Saturday, April 28 at 4:00 p.m.

Wyoming Archaeological Society

Sylvia Huber – President
Mavis Greer – 1st Vice-President
John Laughlin – 2nd Vice-President
Carolyn Buff – Secretary/Treasurer
Dr. Danny Walker – Editor
Madeline Mackie – Librarian
Dave Vlcek – Book Review Editor

Wyoming Archaeological Foundation

Judy Wolf – President, WAS Immediate Past President
Dr. Mary Lou Larson – Secretary
Marcia Peterson – Treasurer
Sylvia Huber – WAS President
Denise Tugman – Member-at-Large
Dr. Danny Walker – Member-at-Large
Dr. Greg Pearce – State Archaeologist, Ex-Officio
Dr. Jason Toohey – George C. Frison Institute Director
Dr. George Frison – Ex-Officio
Dr. Marcel Kornfeld – Hell Gap Site Manager

Wyoming Association of Professional Archaeologists

Naomi Ollie – President
Mike Bies – Vice-President
Kelly Pool – Secretary
Jason Bogstie – Treasurer
Richard Currit – Member-at-Large
Dave Vlcek – Member-at-Large
Marcia Peterson – Ex-Officio Past President

Election of new officers will be held at the 2018 Spring Meeting

Conference Events

Thursday Afternoon, 1:00 to 3:00 p.m., Parlors 1009 and 1019: MAS Committee Meetings:

The MAS Education Committee will meet in Parlor 1019.

The Conservation Committee will meet in the Parlor 1009.

These standing MAS committees invite any interested MAS member to attend and participate.

Thursday Afternoon, 1:30 to 4:00 p.m., WAPA Meeting, Parlor 1010.

Thursday Afternoon, 3:00 to 4:00 p.m., WAS Executive Committee Business Meeting, Boardroom.

Thursday Afternoon, 3:00 to 4:00 p.m., MAS Business Meeting, Parlor 1001.

Thursday Evening, 5:00-7:00 p.m., Western Heritage Center: Early Bird Social (2822 Montana Avenue Downtown Billings):

The annual gathering for early arrivals with cash bar and complimentary light appetizers.

Friday Morning, 9:00 a.m. to noon, Madison Room: Workshop, "Building Bridges Between Cultures.":

Led by Mr. Michael Black Wolf, Fort Belknap's Tribal Historic Preservation Officer (THPO); workshop attendance is limited to those pre-registered.

Friday Morning, 10:00 a.m. to noon, BLM Billings Curation Center:

The BCC, located at 5001 Southgate Drive and housing archaeological and ethnographic collections, will host an open house. Please remember to bring photo identification for entrance into the federal building.

Friday Noon to 1:00 p.m., WAS Scholarship Committee Meeting, Rosebud Room.

Friday Sessions, 1:30 to 4:00 p.m., Ballroom:

Presentations/papers addressing all aspects of Montana and Wyoming archaeology and related topics are limited to 15 to 20 minutes in length; there will be a short, mid-afternoon break. WAAM posters will be available and MAS & WAS posters will be on display in the lobby.

Friday Afternoon, 4:00 to 5:00 p.m., WAS General Meeting, Madison Room.

Friday Evening, 7:00 to 10:00 p.m., Fund-raising Auction, Missouri Room:

The legendary MAS auction begins more or less promptly at 7:00 p.m. The auction ends whenever all items are sold, usually by 9:00 p.m. Auction proceeds support the annual meeting, the journal [Archaeology in Montana](#), committee work and scholarships. Auction items may be brought to the registration table Friday afternoon or to the auction room at 6:00 p.m. Donated auction items run the gamut from highly crafted artifact reproductions and fine art to thankfully-one-of-a-kind white elephants, gags and whatnots. (Donated books and posters are welcome and they are offered in a silent auction - we ask that book donors assign a recommended minimum bid.)

Saturday Sessions, 8:00 a.m. to 4:00 p.m., Ballroom:

Saturday is a full day of presentations describing all aspects of Montana and Wyoming archaeology and related topics. Presentations are 15 to 20 minutes in length, with mid-morning and mid-afternoon breaks.

Lunch break runs from noon to 1:30 p.m.

There is a restaurant in the hotel as well as numerous eateries within a reasonable distance.

Saturday Afternoon, MAS General Meeting, 4:00 to 5:00 p.m., Parlor 1009:

The annual meeting of MAS members begins promptly at 4:00. At this meeting MAS work-at-large is discussed, including Treasurer, Board and committee reports. Decisions addressing MAS issues, policy and membership concerns are made here. For the good and vitality of our small state organization, all members are encouraged to attend.

Saturday Evening, Banquet, 6:30 p.m. to 9:30 p.m. (Cash Bar opens at 6:30 p.m.)**Ballroom:**

The Saturday evening banquet program opens with socializing at the cash bar, and includes MAS award presentations. The after-banquet program will be presented by Aaron Brien. His presentation, "Informant to Investigator: A Story of Indigenous Archaeology". Aaron is a member of the Apsaalooke Nation, Big Lodge Clan and child of the Whistling Water Clan; also, a member of the Night Hawk Dance Society. Aaron was raised on the Crow reservation, has his M.A. from the University of Montana, and is on the Tribal Historic Preservation faculty at Salish Kootenai College. The talk is sponsored by Montana State Parks. Dinner is by pre-registration only, but the after-dinner program is open to all.

Sunday Morning, Field Trips:**Bars, Brothels, and Bok Choy: Exploring Minnesota Avenue:**

Join a walking tour of Billings' Southside led by Western Heritage Center staff. You'll walk the remnants of the historic bars, brothels, and Chinatown and learn the stories of these almost forgotten communities. The walking tour is approximately 90 minutes on relatively level pavement/asphalt. The cost for the tour is \$10 per person. Meet at the Western Heritage Center (2822 Montana Avenue, downtown Billings) at 9:00 a.m.

Castle Butte Self-Guided Field Trip:

Castle Butte is located 40 miles east-northeast of Billings. It comprises over 150 rock art panels of mostly petroglyphs with some pictographs that date to the Late Pre-Contact Period and Historic Periods. The self-guided tour involves relatively easy to difficult hiking for approximately ½ mile.

Alkali Creek Archaeological Site:

The Alkali Creek Site (24YL1607) is a stratified multicomponent site located near the Billings Logan International Airport with documented cultural components dating from before about 5200 years ago.

	THURSDAY April 26	FRIDAY April 27	SATURDAY April 28	SUNDAY April 29
7:30 AM		MAS & WAS Poster Session Vendors Lobby and Hallway	WAS & MAS Poster Session Vendors Lobby and Hallway	WY Arch Foundation Meeting Rosebud Room
8:00 AM			Paper Presentations Ballroom 8am-noon WAAM Posters Ballroom	
9:00 AM	Travel to Billings	Workshop – Building Bridges between Cultures Madison Room 9 am to Noon		Field Trip Alkali Creek Site OR Castle Butte (self-guided) OR Downtown Billings (guided by Western Heritage Center)
12:00 PM	<i>LUNCH (On Own)</i>	<i>LUNCH (On Own)</i> WAS Scholarship Committee Meeting Rosebud Room	<i>LUNCH (On Own)</i>	Travel Home
1:00 PM	MAS Education Committee Meeting Parlor 1019 MAS Conservation Committee Meeting Parlor 1009			
1:30 PM	WAPA Parlor 1010	Paper Presentations Ballroom WAAM Posters Ballroom	Paper Presentations Ballroom 1:30-4:00 pm WAAM Posters Ballroom	
3:00 PM	WAS Exec Committee Business Meeting Boardroom MAS Business Meeting Parlor 1001			
4:00 PM		WAS General Meeting Madison Room	MAS General Meeting Parlor 1009	
5:00 PM	Early Bird Gathering -- Western Heritage Center			
5:30 PM			Cash Bar Lounge – or -- possible poster area	
6:30 PM			Banquet Ballroom	
7:00 PM	<i>DINNER (On Own)</i>	Silent and Live Auction Missouri Room		
8:00 PM			Guest Speaker –Aaron Brien, Informant to Investigator: A story of Indigenous Archaeology”	

**Montana Archaeological Society
Joint Annual Meeting with the Wyoming Archaeological Society
Billings, Montana
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2018 Program Abstracts**

Thursday, April 26

5:00 – 7:00 PM at the Early Bird Gathering

Archaeology on Ice – Craig Lee, Institute of Arctic and Alpine Research

Just as the technological development of the aqualung and submersibles opened the oceans to archaeology and other research opportunities, global warming is opening the cryosphere as a new research frontier. The identification of rare, unique and important artifacts and paleobiological specimens at melting ice patches holds the potential to revolutionize anthropological theories and concepts pertaining to human adaptation and utilization of the Alpine. This exhibit, funded by the Institute of Arctic and Alpine Research (INSTAAR) and featuring science produced by the Camp Monaco Prize, conveys some of the exciting results stemming from ice patch research in the Greater Yellowstone and beyond.

Friday, April 27

1:30 – 1:35 PM

Welcome and Opening Remarks

MAS President, Weber Greiser

1:35 – 1:55 PM

Applications of Vegetation In Archaeology - John S. Harris, UM-Missoula

Unbeknownst to many archaeologists, the surface vegetation component of standard cultural resource site forms contains a diversity of underutilized ecological information. By drawing on behavioral archaeology, historical ecology and case studies, this presentation attempts to raise awareness of how archaeologists could better utilize this site vegetation information in their analyses and interpretations. My observations are compared with a national survey of current perceptions, methods and uses of site vegetation documentation by archaeologists. By giving greater attention to local vegetation data, researchers can enlarge our understanding of ancient identity, belief, place, landscape, and trade.

1:55 – 2:15

Athabascan Migration from the Arctic to the Desert Southwest - Sara Bales, Central Wyoming College

Family tradition holds that the author's great-great-grandfather was the famous Lipan/Mescalero known as the Apache Kid. What was an Athabascan speaker with origins in the Yukon doing in the desert southwest? This paper looks at archaeological, ethnographic, genetic, and linguistic evidence tracing the migration of the Arctic, cold-adapted Diné/Athabascan people south where they "became" Apaches and Navajos in Texas, New Mexico, Arizona and Mexico. Special attention is given to Wyoming sites that may be associated with their passage through the Central Rockies.

2:15-2:35

Historical Overview of the Four Dances Natural Area - Jenny Aiello and Jason D. Weston, Cultural Resource Analysts, Inc.

The Four Dances Natural Area overlooks Billings from the Rimrocks above the Yellowstone River. The BLM acquired this Special Recreation Management Area from private landowners in 1999. Five miles of trails allows visitors access to a variety of recreational opportunities near the city. This natural area is named Four Dances, after a Crow man who experienced a vision on top of the cliffs. Although cultural resources are not yet fully inventoried, existing evidence indicates that people used Four Dances for hundreds and perhaps thousands of years. Cultural Resource Analysts, Inc., performed a Class III cultural resource inventory of the area and synthesized existing historic, archaeological, and ethnographic information. The resulting information, which we summarize here, provides insight into cultural resource site types and themes within the Four Dances Natural Area. This information is assisting the BLM in their management of the area and development of public education-outreach programs.

Afternoon Leg Stretch and Yoga Poses: 2:35-2:45

2:45-3:05

Cultural Resource Inventory in the Cloud Peak Wilderness Area, Bighorn National Forest - Ken Hladek, University of Wyoming

In 2015, the Office of the Wyoming State Archaeologist (OWSA) began conducting cultural resource inventories in the Cloud Peak Wilderness Area of the Bighorn National Forest. In 2017, I received a William T. Mulloy Grant from the Wyoming Archaeological Society to continue this work. I surveyed two trails, including one that connects the Mistymoon Lake, Lost Twin Lakes and Elk Park trails. Nine new archaeological sites and six isolated resources were identified. Small-scale testing was also completed at prehistoric site 48BH4596 along the Lost TwinLake

Trail. My presentation describes the results of the inventory, testing and obsidian sourcing work completed to date and offers preliminary insights into the prehistoric settlement patterns in this part of the Cloud Peak Wilderness Area.

3:05-3:25

Vertical Series Rock Art and Tobacco - Lawrence Loendorf, Sacred Sites Research, Inc.

Vertical Series is recognized rock art type that is found in Alberta, Montana, Wyoming, and South Dakota. Some researchers claim it is Archaic in age while others think it dates to the Protohistoric and Historic periods. Both are probably correct. Recent research links Vertical Series to tobacco motifs at the Tensleep Alcove, a site that was likely the location of a former tobacco garden. Vertical Series petroglyphs at the Wold Ranch in Wyoming include plant motifs that may represent tobacco and other medicinal plants. The evidence, including ethnography, suggests that Vertical Series motifs were part of a code used for medicinal reasons.

3:25-3:45

The Dinwoody Bison Jump – 2017 Field Season Discoveries at This Controversial Site - Morgan Robins, Central Wyoming College & University of Wyoming

During the 2017 field season, university field school students discovered a third and older driveline converging with the others at the Dinwoody Bison Jump by walking systematic transects. Also discovered were numerous previously unrecorded cairns and hunting blinds, a Late Paleo Parallel Oblique spear point, and the remnant of a vertical wooden “flag pole” which carbon dated to 2,910+/-10 BP. Students also point-plotted a forest of ancient stumps and logs on the mountain side below the jump which carbon dated between 1,100 and 2,155 years B.P. showing that timberline then was 152m/500 ft higher than it is today. New discoveries in the valley below the jump include the apparent remnants of a wood wickiup; a large quarry gneiss/hornblende quarry with a mining tool, stone bowl and metate fragments (instead of the usual steatite); lodge pads and stone circles; open campsites, and lithic scatters. Diagnostic projectile points, trade beads, and radiocarbon dates place these occupations within the Late Archaic, Late Prehistoric, and Protohistoric time periods.

3:45-4:05

The Alkali Creek Site (24YL1607) – Steve Aaberg, Aaberg Cultural Resource Consulting Service.

The Alkali Creek Site (24YL1607) is a stratified multicomponent site located near Billings Logan International Airport. The site, discovered in 2005, was divided into Area A, adjacent to Alkali Creek, and Area B on an upland bench on the south side of Airport Road. Excavations documented cultural components dating prior to 5200 years ago. The oldest, undated cultural

deposits are estimated to be of Late Paleoindian or early Middle Precontact Period age. Projectile points in various later components include Pelican Lake, Besant, Late Precontact and Protohistoric period side-notched and tri-notched points. This same time range is represented at Pictograph Cave and the Billings Bison Trap, also located along Alkali Creek. The high percentage of endscrapers (hide processing tools) from Alkali Creek suggests the site may be linked to the use of the Billings Bison Trap.

Saturday, April 28

8:00-8:20

Ice Patch Archaeology, a short video - Craig M. Lee, INSTAAR/Metcalf/MSU; Halcyon LaPoint, Custer Gallatin National Forest; Shane Doyle, Native Nexus; Larry Todd, GRSLE; Beth Horton, Yellowstone National Park; Mike Bergstrom, Custer Gallatin National Forest; Ben Skudlark, MT PBS

Archaeological resources emerging from retreating ice patches can capture public interest and integrate education about archaeology and Native American cultures with ancient and modern climate change. This new video provides an overview of archaeological materials found in ice patches in the Greater Yellowstone region and the effects of climate change on them. This work began in 2005 with support from the USDA Forest Service's Custer-Gallatin National Forest Heritage Program and the Region 1 Heritage Stewardship Enhancement (HSE) Program, and Montana PBS and the Institute of Arctic and Alpine Research (INSTAAR) made the video with support from the HSE Program. The target audience includes all of the citizens of Montana, but it will be of particular interest to all of the citizens of the Greater Yellowstone Area (Montana, Idaho, and Wyoming) as well as to people living elsewhere in the Rocky Mountains or other areas with alpine snow and ice in North America and around the world.

8:20-8:40

Mountain Bison? Isotopic and metric analysis of bison crania collected above 3,048masl / 10,000ft in the Wind River Mountains, Wyoming - Falon Norford, Central Wyoming College

Did bison live in the high alpine regions of the Wind River Mountains? Critics have stated that the Dinwoody Bison Jump could not be a kill site because bison did not range up to 3,353 to 11,000 ft masl. Yet, U.S. Forest Service personnel have recorded and collected bison crania at high elevations in the Winds since the 1930s. This project utilizes those and other skeletal remains for isotopic and metric analyses to address questions of bison range and migration behavior, existence of possible subspecies, and when bison lived at elevation.

8:40-9:00

Cougar Creek: Native American Procurement of a Minor Obsidian near West Yellowstone, Montana - Douglas H. MacDonald and Brandon J. Bachman, University of Montana; Elizabeth A. Horton, Yellowstone National Park

Yellowstone National Park and vicinity is home to at least 15 sources of obsidian and other lithic materials utilized by Native Americans over the last 11,000 years. As such, the area is one of the richest regions in northwestern North America for toolstone. While much is known about the famous Obsidian Cliff obsidian source, most of the other Yellowstone lithic material sources are not as well documented. In this paper, we present results of a 2017 archaeological survey of the Cougar Creek, Gneiss Creek, and Madison River valleys near West Yellowstone, Montana. During the survey, we mapped Cougar Creek obsidian quarry outcrops, procurement areas, and secondary processing sites. Native American hunter-gatherers mined pits and trenches at the quarry during the Paleoindian and Archaic periods. There is a significant distance-decay in its use, with local sites reflecting intense exploitation. In contrast, only a handful of regional lithic artifacts have been sourced to Cougar Creek, suggesting limited distribution beyond the local area. We present results of a weighted z-score analysis, which compares seven of the prominent obsidians of the region to better understand lithic raw material selection by hunter-gatherers in Yellowstone.

9:00 – 9:20

Manifestations of the Ten Forts Site (48NA5597) in the North-Western Laramie Mountains: Battlefield, Hunting, or Spiritual Complex? - Rebecca L. Mashak and William G. Elder, Central Wyoming College

Site 48NA5597 is a multicomponent site including ten small, individual fortifications constructed of stacked stone, and an associated lithic scatter. The 2017 Central Wyoming College Field School discovered the site. Nine of the ten stone features are intact and concentrated atop a prominent bluff in the northwestern reaches of the Laramie Mountains that overlook Bates Hole and the North Platte River Valley. The arrangement of the fortifications may indicate warfare, hunting, or perhaps have spiritual connotations. Further investigation revealed four deflated stone circles, sparse affiliated lithic artifacts, a hearth, and evidence of historic and modern human occupation. These findings indicate that the stone fortifications are a single occupation, whereas the stone circles and other features are suggestive of separate occupation. 48NA5597 is one of several known archaeological sites in central Wyoming that consist of hilltop fortifications discussed in historic accounts of nineteenth century conflicts. My paper introduces the site within a framework of comparable investigated sites, as well as modern drone technology, to address a range of possible site functions including a battlefield, hunting blind complex, or spiritual site.

9:20-9:40

Bear Warriors at the Carbone Site, Big Horn County, Montana - Garren Meyer, Ethnoscience

This paper describes rock art recordation and analysis at the Carbone or Decker site (24BH404) in southeastern Montana. Located on the Spring Creek Mine several miles northeast of Decker in Big Horn County, Crow tribal members call Carbone/Decker the place "Where the bears dance." My presentation focuses on the large shield-bearing warrior and bear petroglyphs. Based on superimpositions and differential weathering, these large Ceremonial Tradition petroglyphs constitute the most recent episode of rock art production since there is no indication of later Biographic Tradition rock art here. Bear imagery and symbolism is an overriding theme and appears to cut across stylistic and possibly temporal boundaries (some unusual rectilinear abstract compositions clearly pre-date the Ceremonial Tradition art here). Shield heraldry, bear anatomical features, proximity and style all tie the petroglyphs together. The large, well-executed petroglyphs may relate to bear ceremonialism and warfare, and were created by one or more members of a military society.

Morning Coffee and Sugar Break, 9:40-9:50

9:50 – 10:10

“If I can’t find a university job, I’ll just fall back on CRM” - Cheryl M. Burgess, Black Hills National Forest

In the 1990s, a chasm between Cultural Resource Management (CRM) and Academic archaeology seemed evident. Despite this division, students often expressed the idea that if they could not obtain a university position, they would “just do CRM.” However, the lack of academic emphasis on CRM basics including preservation law, site documentation, survey and evaluation techniques, curation and other issues only emphasized this deep division and gave students choosing CRM careers steep “on the job” learning curves. Those archaeologists who managed to stay and advance in CRM, and new ones to the field, still face a multitude of old and new managerial, technical, legal, cultural and supervisory challenges. As my offices prepare for the 2018 field season, I wonder... has anything really changed?

10:10-10:30

Opening MacHaffie 2017: A Prelude to the Les Davis Film - Daniel J. Smith, ooLite Media LLC

This video is part of a documentary film in development that explores the contributions of renowned Montana archaeologist Dr. Leslie Davis. In the heat and smoke of late August of 2017, a team of archaeologists and volunteers completed small-scale excavations at the MacHaffie site (24JF4), located a few miles south of Helena. Richard Forbis of Columbia University first dug the stratified MacHaffie site in 1951, exposing 10,500 year-old Folsom and 9,000 year-old

Scottsbluff Paleoindian occupations, and more recent Indian camps. Les Davis of Montana State University excavated at McHaffie in the 1980s-1990s. He hoped to “get to the bottom” of the site but was perpetually hampered by the water table just below the Folsom level. Recent drought years and lower water tables led landowner Pamela Bompart to authorize work in 2017. The 2017 fieldwork, directed by Patrick Rennie, DNRC Trust Lands Archaeologist, is documented in this video trailer as a prelude to the hour-long Les Davis documentary to be released in 2019.

10:30-10:50

Which is Better? Side-by-Side Comparisons of Three GIS Technologies in Archaeological Site Mapping - Ashley Harris, Central Wyoming College/ University of Wyoming

GIS skills are an increasingly important component of archaeological site recording. CWC Archaeology students are encouraged to earn 21-credit credentials in GIS as part of their Anthropology degrees. Field school students conducted simultaneous side-by-side comparisons of three different commonly used GIS systems to determine which worked most efficiently. This paper provides the results of those tests, offering valuable information to other organizations to select their field and mapping equipment wisely.

10:50-11:10

Unmanned Aerial Systems (Drones) and Quarry Archaeology: A Case Study on the California Creek Quarry - Alex Schwab, Ethnotech LLC and UM-Missoula

The diverse and complex geology of Western Montana contains rich deposits of lithic material used in prehistoric stone tool manufacturing. Cryptocrystalline silicates (cherts) were of primary importance in the traditional tool technologies of local Indian tribes and were extensively mined. Geology enables archaeologists to better understand the frequency and distribution of toolstone quarries. Regional ethnohistorical data helps to contextualize prehistoric quarry sites and understand their role in the lifeways and land use patterns of Indian peoples. However, toolstone quarry sites are difficult and expensive to document and map. Recent developments in Unmanned Aerial Systems (drone) technology give archaeologists the ability to collect highly accurate spatial data at the landscape scale in a cost-efficient manner. This case study uses a multi-pronged approach to document and describe the California Creek quarry in Western Montana.

11:10-11:30

WyoARCH: Increasing the Impact of Archaeological Collections through a Spatially-Enabled Web Platform - Marieka Arksey, Office of the Wyoming State Archaeologist; Paddington Hodza, University of Wyoming Geographic Information Science; and Greg Pierce, Office of the Wyoming State Archaeologist

The University of Wyoming Archaeological Repository (UWAR) is the largest archaeological collection and the only federally regulated repository in Wyoming, providing an unprecedented

centralized location for researchers and the public to discover and engage with the 12,000 years of human occupation in this part of North America. However, the current collections management system at UWAR does not facilitate public dissemination of this data, nor does it enable curatorial staff the ability to properly support researchers, educators, or the public in making effective use of the collections. The Wyoming Archaeological Research and Community Hub (WyoARCH) project seeks to resolve this situation through collaboration between UWAR and the Wyoming Geographic Information Science Center (WyGISC) to develop a public access interface to interact with a new spatially enabled collections management system.

11:30-11:50

Reimagining Non-Representational Rock Art through Proto-Historical Indigenous Cartographic Traditions - Kevin M. O'Briant, PaleoSystems CRM Consulting

When confronted with apparently non-representational forms at prehistoric rock art sites, North American researchers tend to categorize such imagery as abstract symbols, shamanic art, or entoptic phenomena. Drawing on research in the field of historical geography and utilizing a direct-historical, ethnoarchaeological approach linking historical ledger art, the Plains “biographic” and other rock art traditions, as well as proto-historical maps drawn by native informants for Euro-American colonists and traders, many of these “abstractions” may be effectively re-interpreted as cartographic elements symbolizing topographic, political or sacred geographies.

A Really Nice Lunch Somewhere Close 11:50-1:30

1:30-1:50

The Bomber Falls Crash: A World War II B-24 Liberator Crash in Wyoming's Wind River Mountains - Bailey Lewis, Central Wyoming College

Early in the afternoon of August 14, 1943, a B-24E Liberator, four-engine heavy bomber with an inexperienced crew of eleven took off from the Pocatello (Idaho) Army Air Base on a training flight to photograph the new bombing ranges fifty miles southwest of the base. An hour and a half later, the entire crew was killed when the aircraft crashed and burned 150 air miles in the opposite direction just above a scenic waterfall deep in the Wind River Mountains near Dubois, Wyoming. This tragedy is an example of how bad leadership by an officer can result in the deaths of the soldiers under his command. The CWC Archaeological Field School recorded the horrific debris field at the crash site in 2017. This paper describes the archaeological evidence of, and the causes behind, the crash, as well as the biographies of the soldiers who perished 75 years ago.

1:50-2:10

Richardson Farm Archaeological Site: an update after 50 years - David Schwab, Ethnotech LLC

The Richardson Farm site first came to the attention of the archaeology community in 1963 with a brief report in the *Archaeology in Montana* journal by George Arthur (V5, No. 3, pp19-22). Arthur reported that the site, visited by a University of Montana field trip, contained nearly 30 projectile points, bifaces, scrapers, pestles, and mauls that were all collected by the Richardson family in their plowed fields along lower Six Mile Creek in the Missoula Valley. Over 50 years later, in 2014, the Montana Department of Transportation contracted with Ethnotech to conduct an archaeological survey and subsurface testing of the site prior to its acquisition from the Richardson family for a wetland mitigation project. This paper provides an update and discussion about the archaeological collection made by the Richardson family, a summary of surface reconnaissance and testing results, and analysis and preliminary interpretation of the site's setting and archaeological context.

2:10-2:30

An Experiment to Determine Alternatives: Edge-Modified Ground Stone in Wyoming and the Colorado Plateau - Chase M. Mahan, University of Wyoming

Edge ground cobble stone tools have not been a major source of debate in the archaeological literature. A review of Wyoming and Colorado archaeological literature, and from the Southwestern United States and California, revealed that edge-ground cobbles are frequently interpreted as plant processing tools. I conducted an archaeological experiment with naturally occurring cobblestones, which fell within the average dimension of artifacts in assemblages from the Fossil Creek (Hopi) sites in the WALPI Archaeological Project and Pinyon Canyon Maneuver Site. My selected cobblestones were used to process a large mammal hide, which were then analyzed under low power lens to determine use-wear. Results from my study offer an alternative explanation for the use of edge-ground cobbles as hide-processing tools.

2:30-2:50

Bringing the East Gallatin Cemetery Back to Life - Terri Wolfgram, Principle Investigator, and Elaine Skinner Hale

The East Gallatin or Hamilton Cemetery is one of the earliest formal burial grounds in southwestern Montana. Pioneer families, some who abandoned the gold fields and violent Gold Rush communities in Alder Gulch for the rich farm of the Gallatin Valley, established it in 1865. The cemetery has 260 marked graves (representing four family generations) and over 200 unmarked burials in a "Pauper Section." The severe droughts of 1919 and the 1930s caused many families to leave the area and the cemetery was abandoned. In 2016, a group of local preservationists cleaned the historic cemetery. The revived East Gallatin Cemetery Board then

obtained funds to record graves and identify unmarked burials. MAS Conservation Committee, Historic Preservation Board of Gallatin County and other funding and labor sources contributed to this preservation work. This paper describes our magnetometry, Ground Penetrating Radar and other grave documentation efforts, which will eventually enable us to create an accurate basemap of all burial locations.

More Sugar and Stuff 2:50-3:00

3:00-3:20

Using Geoarchaeology to Determine the Remaining Extent of Historic Era Sites: The Fort Laramie 1851 Horse Creek Treaty Site, Morrill, Nebraska - William Eckerle, Western GeoArch Research, LLC and Dan Eakin, Office of the Wyoming State Archaeologist (retired)

In early September 1851, approximately 10,000 Native American Indians and a much smaller U.S. government contingent gathered at the Horse Creek-North Platte River confluence to sign a treaty related to the impact of increasing traffic along the Oregon Trail. Contemporary accounts indicate that the signing ceremony occurred in a shade-arbor situated on the North Platte River valley bottom at the confluence of the two drainages. Geoarchaeological investigations were undertaken for the National Park Service to document the extent of post-treaty confluence migration and fluvial erosion to inform archaeological inventory efforts. Field results suggest that North Platte River flooding during the historic-era has reworked the river valley, potentially destroying part, or all, of the signing locus. The spatial extent of the event campgrounds and horse pastures is estimated from NRCS mapped forage production needed to feed upwards of 10,000-20,000 horses under loose-herded management. An assessment of landform preservation and archaeological potential for the camp area is made

3:20-3:40 Antiquities on Montana's Public Lands: A History of Indians, Amateurs and Archaeologists - Nancy Mahoney, MSU-Bozeman

American archaeology emerged during the late 19th century, amidst enduring disagreements over access to the public domain in the rural West, the nature of property rights, and the meaning of national heritage. Historical tensions surrounding race and class informed the passage of federal antiquities laws and transformed indigenous cultural remains into the most highly restricted resource within the public domain. This history is particularly complicated on the Northern Plains, a region that is both the territorial homeland of once-nomadic Plains tribes and the final frontier of Euro-American settlers. This fact, coupled with the delayed entrance of professional archaeologists into Montana, sowed the seeds of opposition and misunderstanding among the region's three major stakeholders: Native American tribes, resident amateurs, and career archaeologists. This presentation explores both the underlying cultural history of archaeological practice in Montana, as well as more recent trends in collaboration and stewardship that effectively incorporate the broader concerns of both descendant and resident communities.

3:40-4:00

Where Should We Start Looking? Predictive Model for Bison Jump Sites in the Wind River Mountains, Wyoming - Mara Gans, Central Wyoming College & Middlebury College

Is the Dinwoody Bison Jump a fluke? Located at 3,353masl / 11,000ft, it is 732m/2,400ft higher than the next highest documented jump site of what is typically regarded as a Plains phenomenon. If this site is unique, it is merely interesting. But if other similar sites are located it becomes significant as part of a regional hunting strategy. Perhaps the Sheep Eater Indians also used high-elevation communal hunting practices to kill bison on a wider scale than currently known. This paper identifies several environmental factors necessary for jumps and campsites, then applies them to the length of the Wind River Range to create a predictive model guiding future researchers seeking to locate additional alpine bison procurement sites.

Poster Presentations (Located in the Lobby)

A new and unusual rock art site in the Northern Black Hills - Jena J. Rizzi and Sari B. Dersam

Our study provides a comparative approach to a new rock art site and style that is unique for the Northern Black Hills region. The site consists of two petroglyph panels, one of which contains elements that are consistent with numerous archaeological sites found throughout the state of Wyoming and the Black Hills. The second panel is unique and contains elements that, at present, have not been found within the Black Hills region. This second panel contains abraded circles, or cupules, which are more common in the Great Basin cultural regions. Cupules in the Great Basin are ethnographically recorded to be more often a mark of women and generally for medicinal or ritual practices. Often they are found on horizontal surfaces, but this is not the case at this site. The placement and pattern of these circles on a near-vertical rock surface, and the fact that the entire length of the panel only contains these symbols, has been undocumented in the Black Hills until now. These petroglyph panels provide new perspectives on the cultural diffusion that occurred over time within the Great Plains populations and throughout the Black Hills.

OWSA Black Hills Survey - Greg Pierce, Wyoming State Archaeologist

Recent fieldwork by the Office of the Wyoming State Archaeologist in the Black Hills sought to investigate the apparent disparity in site densities between lowland and upland locations. Wyoming State Historic Preservation Office records reveal hundreds of sites in the upland regions of the Black Hills while sites in the Red Valley number in the dozens. This disparity may be due to differences in public versus private land ownership and the intensity of cultural resource compliance investigations. However, there are other possible explanations. The valley floor contains numerous stream channels, causing some to question whether the lack of identified

sites comes as a result of fluvial erosion or from archaeological deposits, which have been deeply buried from flooding. This paper will relate recent fieldwork to these phenomena as a means of exploring differential site densities in the Wyoming Black Hills.

Ice Patch Research in the Teton Mountains - Marcia Peterson, Assistant Wyoming State Archaeologist

Since 2015, I have been investigating ice patches in the Jedediah Smith Wilderness Area of the Caribou Targhee National Forest and Grand Teton National Park. To date, I have recovered one prehistoric and several historic artifacts. The prehistoric artifact is a modified whitebark pine stick of unknown function that dates to 3,158-2,960 cal B.P. The historic artifacts include a 1940s wallet; a carved Boy Scout walking stick; and two additional modified pine sticks that date to the protohistoric/historic periods. Also, numerous paleobiological specimens were collected. These include two wood samples from dead trees and several bison bones melting from the ice patches. The wood samples were identified to species and/or radiocarbon dated, if possible, and these data were used to reconstruct past tree line elevations and as proxies for prehistoric climate regimes. The bison bones were identified to element and radiocarbon dated when possible. These data are used to reconstruct the prehistoric lifeways of bison in the higher elevations of the Greater Yellowstone Area. This poster presents the combined results of these investigations and their implications for future work.

Medicine Lodge Shield Warrior as Calendar Keeper - Ivy Merriot, Sky Traditions

A careful study of rock art at Medicine Lodge Creek in the Bighorn Mountains of Wyoming shows a surprising shadow calendar which may have called attention to the coming winter, very useful for years when seasons are unusually long (or short) and plant and animal life are not dependable for signaling the move to higher or lower ground. The petroglyph “Half-Az Man” signals a week in August when the Sun’s rising position is exactly half way between the longest day of the year and the equinox, and more importantly when the height of the Sun will begin a greater drop in height per day, causing a rapidly decreasing daily energy output of solar energy.

The solar noon shadows on Half-Az Man walk through a set of pecked arcs totaling a week of calendar time, making the calendar petroglyph useful even if some days are cloudy and the shadow can’t be seen. This “shield” petroglyph is found on the north-south running canyon wall of Medicine Lodge Creek, employing a meridian-based, solar noon astronomy method of skywatching. This method compliments the horizon astronomy found at the Bighorn Medicine Wheel where a 360 degree horizon is present.

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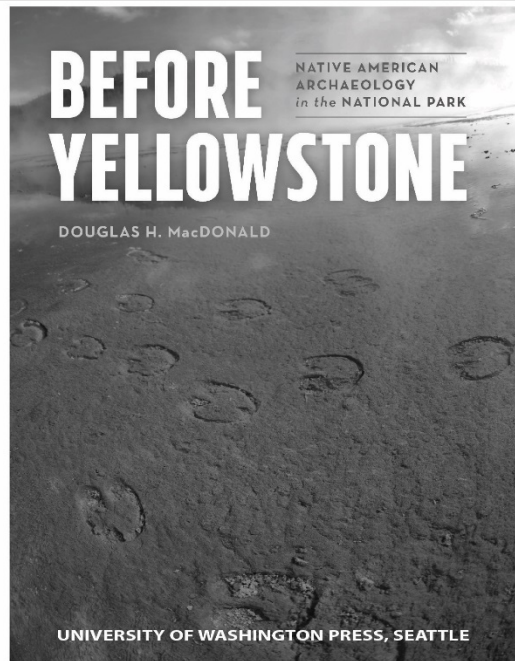
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