

A BISON TALE

AN ARCHAEOLOGICAL
ASSESSMENT OF THE CULTURALLY MODIFIED BISON BONE
ELEMENTS OF NORTHWEST AND WEST CENTRAL COLORADO
(SHF 2016-AS-008)
+ THE WESTERN COLORADO BISON PROJECT +

A Project Update Presented By Holly "Sonny" Shelton



+ DOMINQUEZ ARCHAEOLOGICAL +
RESEARCH GROUP

Carl Conner, President Grand Junction, Colorado

This Bison Tale began in the Fall of 2012 with intensive monitoring of the construction of a gas pipeline trench in the Piceance Basin.



Pipeline trench



Rim of the Piceance Basin



Subsequent excavations revealed unexpected evidence, at several locations, of the presence of *Bison bison* in the form of multiple faunal elements, many of which exhibited cultural modification.

During the report preparation process for this and several other projects, it became apparent that there was very little historic or archaeological data available regarding the presence of bison and evidence of bison procurement west of the Continental Divide.



This sparked the idea of initiating an assessment project to collect and assimilate data related to the presence of bison and culturally modified bison bone specific to Colorado's western slope.

The Western Colorado
Bison Project!
(WCBP)

On May 9th, 2016, the day President Obama designated the Bison the national mammal of the United States of America, an archaeological assessment grant application was submitted to, and ultimately accepted by, the Colorado Historical Society State Historical Fund (2016-AS-008).



The Project primarily consists of analysis and documentation of bison faunal elements for evidence of cultural modification via:

- ❖ Investigation and analysis of bison bone elements and associated information curated in regional and private museums,
- ❖ A review of selected archaeological reports within the study area
- ❖ Visual, microscopic, and non-destructive ultra-violet analysis of bison faunal specimens for cultural modification

And when completed will include:

- ❖ Photographic documentation of each specimen
- ❖ Radiocarbon dates of selected faunal elements
- ❖ Inclusion of the resultant radiocarbon data into the DARG Colorado Radiocarbon Database Project
- ❖ Development of an interactive Map Query consisting of bison bone locations and associated data and photos
- ❖ Completion of an extensive comparative database; and
- ❖ The provision of non-invasive bone stabilization and preservation technique information to all participating curation facilities.

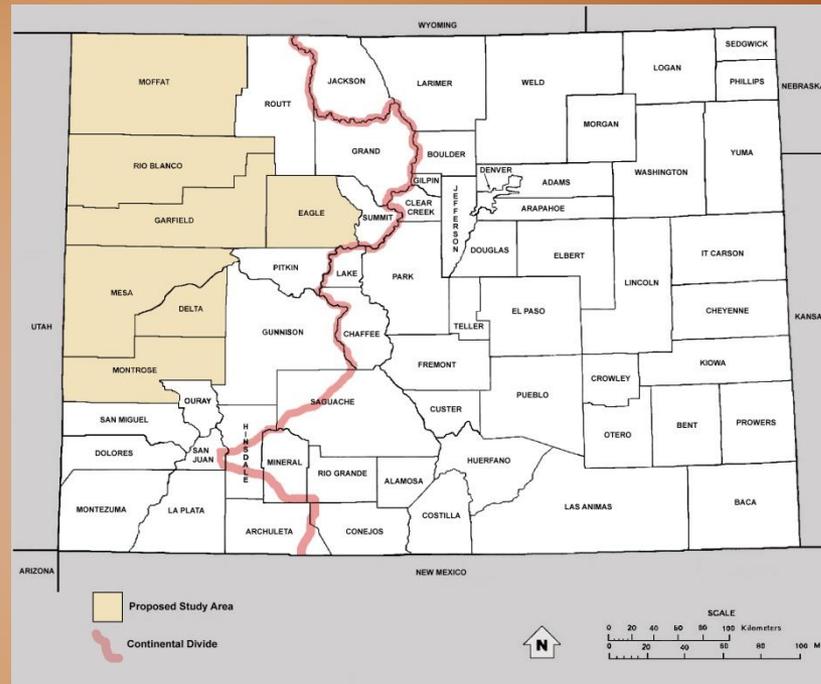
The Dominquez Archaeological Research Group (DARG), through the efforts of Carl Conner and Michael Berry, has developed the **Colorado Radiocarbon Database Project (CRDP)**, a comprehensive, multi-year project that has compiled over 2000 radiocarbon dates from 712 archaeological sites in Colorado.

Radiocarbon dates obtained from culturally modified bison bone artifacts will be incorporated into the CRDP and thereby made available to the professional community.

<http://www.dargnet.org/net/RCPublic/>

Or accessible via the DARG Website
dargnet.org

The area of investigation for the first phase of the Project included 7 northwestern and west central Colorado counties. It is hoped that subsequent phases of the Project will allow for assessment in all western slope counties.



Identifying culturally modified bison faunal elements and obtaining radiocarbon dates is the primary focus of the WCBP.



To date, documented types of cultural modification have included impact craniectomy...

Stone Tool Chop Marks



Stone tool and bone to bone impact indentation



Impact Indentations

Spiral fracturing and impact
crushing likely due to butchering
to obtain marrow



Deep, faceted stone tool
butchering cut marks

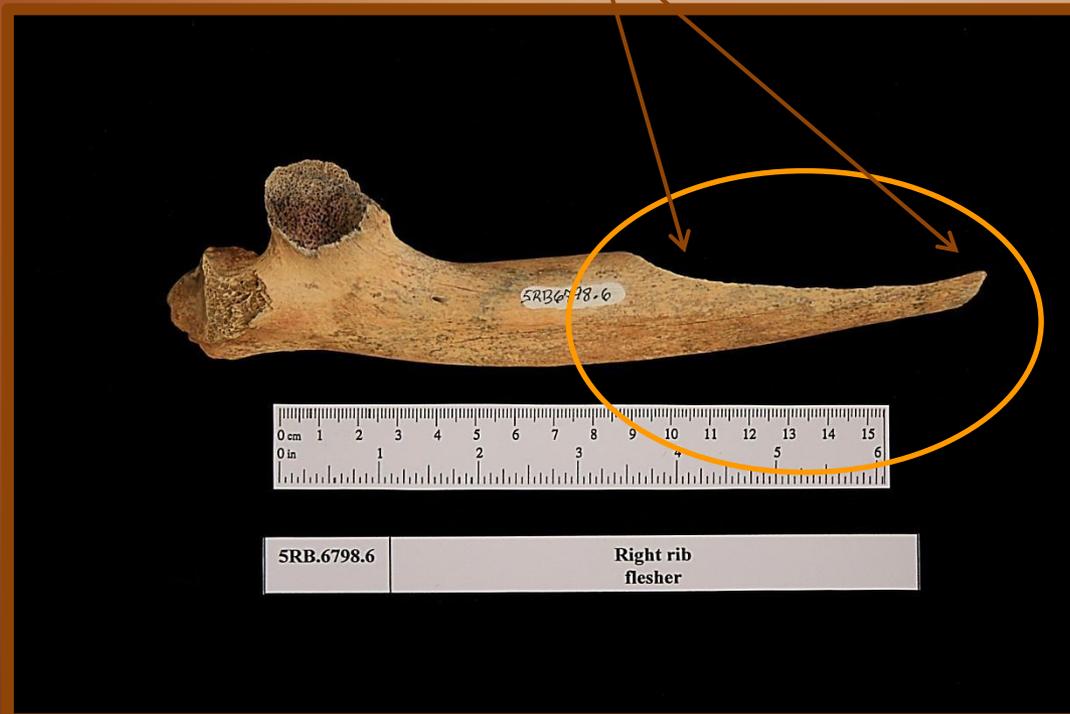


Shallow multidirectional
stone tool fillet cut marks

Bone Tools and Associated Artifacts

McKean point retouched to a knife edge

Use wear polished edge with multidirectional striations



Intentionally Applied Pigment



Historic bison skull with applied pigment.
Note painted ring.



Original image

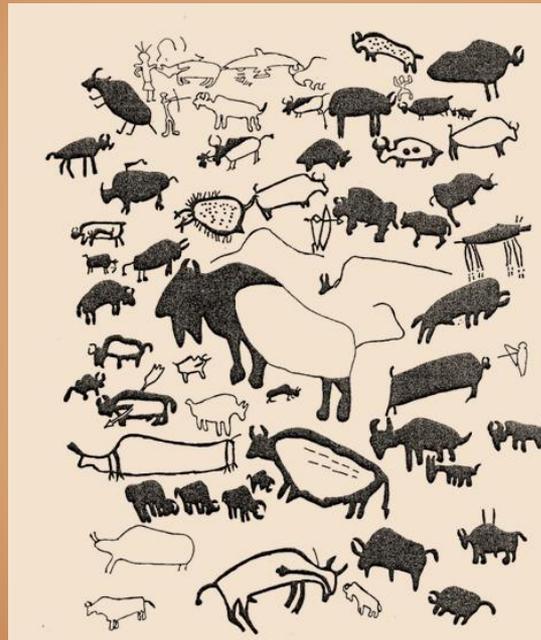


Enhanced to reveal possible ring of pigment

Metal Tools and Projectile Points also leave identifiable marks; some a little more obvious than others!

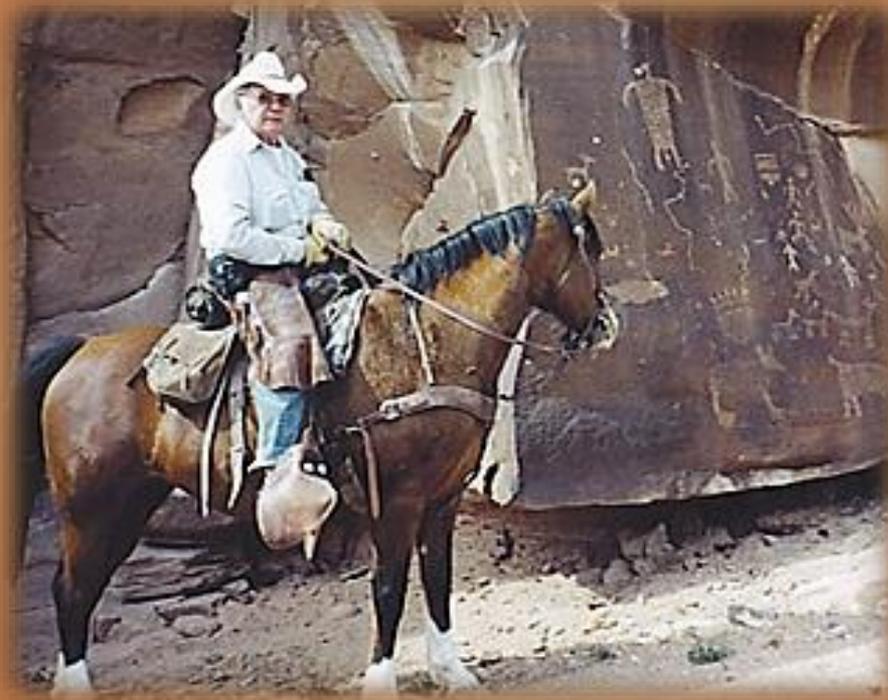


In addition to bone analysis and testing the WCBP will also note the occurrence of rock art depicting bison within the study area. The relationship of the location and concentration of faunal elements and the frequency of bison rock art will be considered.



Bison illustrations from the Colorado Plateau.
Agenbroad and Hesse, 2004, p. 194.

Anecdotal information provided by cowboys, ranchers, farmers, hunters, and others familiar with the region will also be noted in the study.



George Decker, Awesome Cowboy, Regional Historian
And Respector of All things Archaeological

RESULTS TO DATE

- Bison faunal elements were verified in the collections of *EVERY ONE* of the 11 museums visited during the initial phase of the study.
- Bone collagen samples were recovered from all but four available museum specimens.
- Data from 192 additional specimens was gleaned from archaeological reports encompassing the study area.
- Two Specimens were originally recovered from altitudes above 10,000'!
- The majority of the cultural modification observed results from stone tool use with a minimal amount secondary to metal tool use.

At present, data has been collected from 230 faunal elements, 95 (41%) of which present with some form of cultural modification...

Western Colorado Bison Project: Comprehensive Faunal Element Table									
County	Curated	DARG #	Site #	Accession # (T=Temporary)	Element	Cultural Mod*	Other Mod**	WX Stage	Comments
Delta	Delta County Museum	DARG 1	NA	(90.67.1) D002(T)	Skull	NA	12, 16	3	Bison crania fragment with partial crania and deteriorated horn cores. Collected from the Grand Mesa at approximately 10,000' southeast of state Hwy 65 and FS 100 Rd. No visible cultural modification.
Delta	Delta County Museum	DARG 2	NA	D001(T)	Skull	NA	16	2	Crania fragment collected in the 1920s by Bill and Velma Shreeves in the upper Escalante (per her son) from the Shreeves ranch that encompassed the confluence of Escalante Creek and the Gunnison River; Escalante Creek to the Lower Huffinton ranch; the VXV ranch on and above the North Fork of the Escalante, and three quarter sections on the Uncompahgre Plateau. No visible cultural modification. Donated by Velma Shreeves.
Eagle (Bocco I)	Museum of the West (MOWGJ), Grand Jct. (Bocco I)	DARG 3	5EA2742	5EA2742.1	Skull	6		1-4	A winter kill 4 yo female bison (small horn cores). Crania minus sphenoid, face minus vomer. Cranial left side foreskull impact indentation. Intentional placement of skull on upright sandstone slabs oriented 50 deg SSE (winter Sunrise), suggestive of ceremonial use. Excavated from Little Ice Age soils, Late Prehistoric era. Previously at the Colorado River Valley BLM office. Repatriated by the Northern Ute Tribe as supported by NAGPRA in July or August of 2016.
Eagle	MOWGJ	DARG 4	5EA2742	5EA2742.2	Mandible (L&R)	9		1	Molars present indicating 4 yo female, winter kill. Metal knife cut and gouge marks are apparent on the medial surfaces of both sides of the mandible indicating the tongue was harvested.
Eagle	MOWGJ	DARG 5	5EA2742	5EA2742.3	atlas (C1 vertebra)	2		1	The processes of the atlas are missing; broken by a bone chopper during disarticulation of the skull.
Eagle	MOWGJ	DARG 6	5EA2742	5EA2742.4	vertebra, T10	9		1	A cut mark made by a metal knife, identified by the smooth, V-shaped impression, is obvious on the left side of the dorsal spine about 3cm above the top of the centrum or body of the vertebra.
Eagle	MOWGJ	DARG 7	5EA2742	5EA2742.5	vertebra, T11	0		1	Manipulated during butchering process.

and 34 radiocarbon dates ranging from 11,700BP to AD1830.

Western Colorado Bison Project: RADIOCARBON DATES						
County	Curated	Site #	FS # or Accession # (T=Temporary)	Element	Conventional Age	Calibrated Age
Delta	Delta County Museum		90.67.1 or D002(T)	Crania fragment	460+/- 40 BP	Cal 1400 - 1500 AD (93.4%) Cal 1600 - 1620 AD (2.0%)
Eagle (Bocco I)	Repatriated by the Northern Ute Tribe	5EA2742	5EA2742.1	Crania frag	1830 +/- 40 BP	Cal 1700 - 1720 AD Cal 1820 - 1920 AD
Eagle (Bocco III)	Museum of the West, Grand Jct.	5EA2944	5EA2944.s10	Skull	350+/- 30 BP	Cal 1458 - 1635 AD
Garfield	Museum of the West, Grand Jct.	5GF2416	5GF2416.1	Skull	400 +/- 30	Cal 1440 - 1520 AD (76.4%) Cal 1570 - 1620 AD (19.0%)
Garfield	Rifle, CO Private	N/A	5GF PW001 (T) was GF A3	Skull	80 +/- 20 BP	Cal 1690 - 1730 AD (24.8%) Cal 1810 - 1920 AD (70.6%)
Garfield	Rifle, CO Private	N/A	GFP W002 (T) (was GF A5)	Metacarpal	140+/- 30 BP	Cal 1670 - 1780 AD (43.1%) Cal 1800 - 1890 AD (36.8%) Cal 1910 - 1945 AD (15.5%)
Garfield	Rifle, CO Private	N/A	GFP W003 (T) (was GF A4)	Tibia	130+/- 30BP	Cal 1670 - 1780 AD (38.1%) Cal 1800 - 1890 AD (42.4%) Cal 1900 - 1940 AD (14.9%)

The final report, including completion of all comparative databases; compilation of all radiocarbon dates; and installation of interactive maps in the Colorado Radiocarbon Database Project; is anticipated before the Fall of 2017.



WHY THIS BISON TALE MATTERS!

Gaining a better understanding of where bison were located in western Colorado, the occurrence of culturally modified bison bone, and the time frame in which bison were present will provide cultural resource professionals, land managers, historians, and the interested public with data and insight regarding the importance of bison in the past.

Most importantly, information gleaned from the assessment will provide modern Native Americans with information related to their ancestral homelands, settlement patterns, landscape utilization, and ceremonial sites.



American bison galloping, by Eadweard Muybridge, 1887: *Animal Locomotion*

ACKNOWLEDGEMENTS

Dominquez Archaeological Research Group expresses their sincere appreciation to:

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Delta County Museum, Delta, CO

Rangely Outdoor Museum ,Rangely, Colorado

Frontier Historical Museum , Glenwood Spgs., CO

Rifle Creek Center for Historical Preservation

Montrose County Historical Museum , Montrose CO

Rio Blanco County Historical Society and White River
Museum, Meeker, CO

Museum of the Mountain West, Inc. , Montrose , CO

Ute Indian Museum, Montrose, CO

Museum of Northwest CO, Craig, CO

Wyman Museum, Craig, CO

Museum of the West, Grand Junction, CO

U. S. Department of the Interior
Bureau of Land Management :
Colorado River Valley Field Office
Grand Junction Field Office
Kremmling Field Office
Little Snake Field Office
Uncompahgre Field Office
White River Field Office

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~ THE END ~