THE WYOMING ARCHAEOLOGIST

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THE WYOMING ARCHAEOLOGIST
VOLUME 46(2), FALL 2002

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WYOMING ARCHAEOLOGICAL SOCIETY
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In Memory of: _____

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Specify where you would like your money to go (e.g., Mulloy or Frison Scholarship Funds, The Wyoming Archaeologist, ???????)

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Please make your check payable to THE WYOMING ARCHAEOLOGICAL SOCIETY
Carolyn Buff, Executive Secretary/Treasurer, 1617 Westridge Terrace, Casper, WY 82604

REQUIEM FOR A SHEEPHERDER: HENRY EDWARD "HAL" JENSON AND WYOMING ARCHAEOLOGY

By
Mark E. Miller

Wyoming archaeology lost one of its staunchest champions on February 21, 2002 when Henry Jensen passed away at the age of 92. Henry had dedicated much of his life to the discovery and understanding of the state's cultural past, and even his final thoughts focused on the significance of our rich archaeological record. In the fall of 2002, the Wyoming Archaeological Society learned the Henry Jensen Trust had donated a substantial sum of money to further the goals of the Wyoming Archaeological Foundation. With typical humility, Henry had requested that the gift be given in memory of Donald M. Robson, Lovina Swaim Robson, Clara M. Jensen, and Henry Jensen. He was proud of his roots, and never failed to recognize the value of family and friends.

Henry lived a rewarding life, spending many fulfilling years with his wife Clara in north-central Wyoming around Lysite, Lost Cabin, and the Badwater country. His obituary (*Casper Star Tribune* February 22, 2002) listed several job skills and training he had received. Besides attending the University of Wyoming, Henry was a sheepherder and camp tender, a deliveryman, store owner, warehouse man, school teacher and administrator, and served on the Rural Electric Association Board of Directors for many years. His resume testifies to diverse experiences and a solid work ethic. These characteristics that made it easy for him to share his wisdom with fledgling archaeology students and seasoned professionals alike.

Jensen's collaborations with the Department of Anthropology and the State Archaeologist's Office at the University of Wyoming go back to the late 1960s. In 1967, Henry was instrumental in getting the statute passed establishing the position of state archaeologist. Two years later, he took George Frison on field trips throughout the Badwater area, showing him steatite quarries (Figure 1), rock alignments and stone cairns. Henry hosted several tours to these locations for interested people. One cairn line containing 136 known stone piles has been named "Henry Jensen's Trail" in his honor. In later years, Dr. Frison published an article describing this significant site (Frison 1981). Henry generously shared his vast knowledge of the southern Bighorns. Any archaeologist who participated in one of his treks will long remember the intimate relationship Henry had with the landscape and its past.

For many decades, Henry Jensen was a fixture at the annual spring meeting of the Wyoming Archaeological Society, an organization he served as President in 1967. He lavished fatherly attention on young archaeology students attending the meetings to present the first formal research papers of their careers to a public audience. His kindness and sense of humor soothed the nervous tension in each young scholar before their slide presentations. At one meeting in the early 1970s, a male student was standing at the registration desk to pay for a banquet ticket when Henry grabbed the money and stuffed it back in the young man,s pocket. "Students eat for free when they give us a program," he said. The tradition of generosity Henry instigated continues today at the annual meetings.

Henry,s support for Wyoming,s cultural heritage even crossed disciplines, because he also served as President of the Wyoming State Historical Society from 1974 to 1975. During preparations for the United States Bicentennial, Henry helped

Figure 1. Henry Jensen in 1971, standing at one of the steatite quarries he identified in the southern Bighorn Mountains. Photo courtesy of George Frison.

acquire two nineteenth century paintings of Fort Fred Steele, Wyoming Territory found in a New York gallery. The paintings eventually ended up at the Wyoming State Museum. The artistwho made the paintings was Colonel Phillippe Regis De Trobriand of the 13th Infantry, the commanding officer at the fort in 1872 and 1873. Henry was an octogenarian when he drove through a treacherous spring storm to deliver a scholarly paper about these historic treasures at a joint meeting of the Wyoming/Montana archaeological societies in Billings. At the beginning of his program, he hollered to the audience he was hard of hearing so they would have to bring him written questions after the talk. It was one of the best papers of the day. The audience loved it and gave Henry a hearty round of applause.

Members of the Wyoming Archaeological Society honored Henry,s lifetime of service to the state,s cultural heritage on September 16, 1991 in Casper. Governor Mike Sullivan presented him with a medal and a framed certificate to commemorate Jensen,s enduring contributions to Wyoming history and archaeology (Figure 2). The Wyoming Archaeological Foundation, with its generous share of the Henry Jensen Trust, is reminded just how enduring Henry,s commitment really was. We are all grateful for the legacy Henry Jensen and his family have left to this state.

REFERENCE CITED

Frison, George C.

1981 Linear Arrangements of Cairns in Wyoming and Montana. In *Megaliths to Medicine Wheels:*

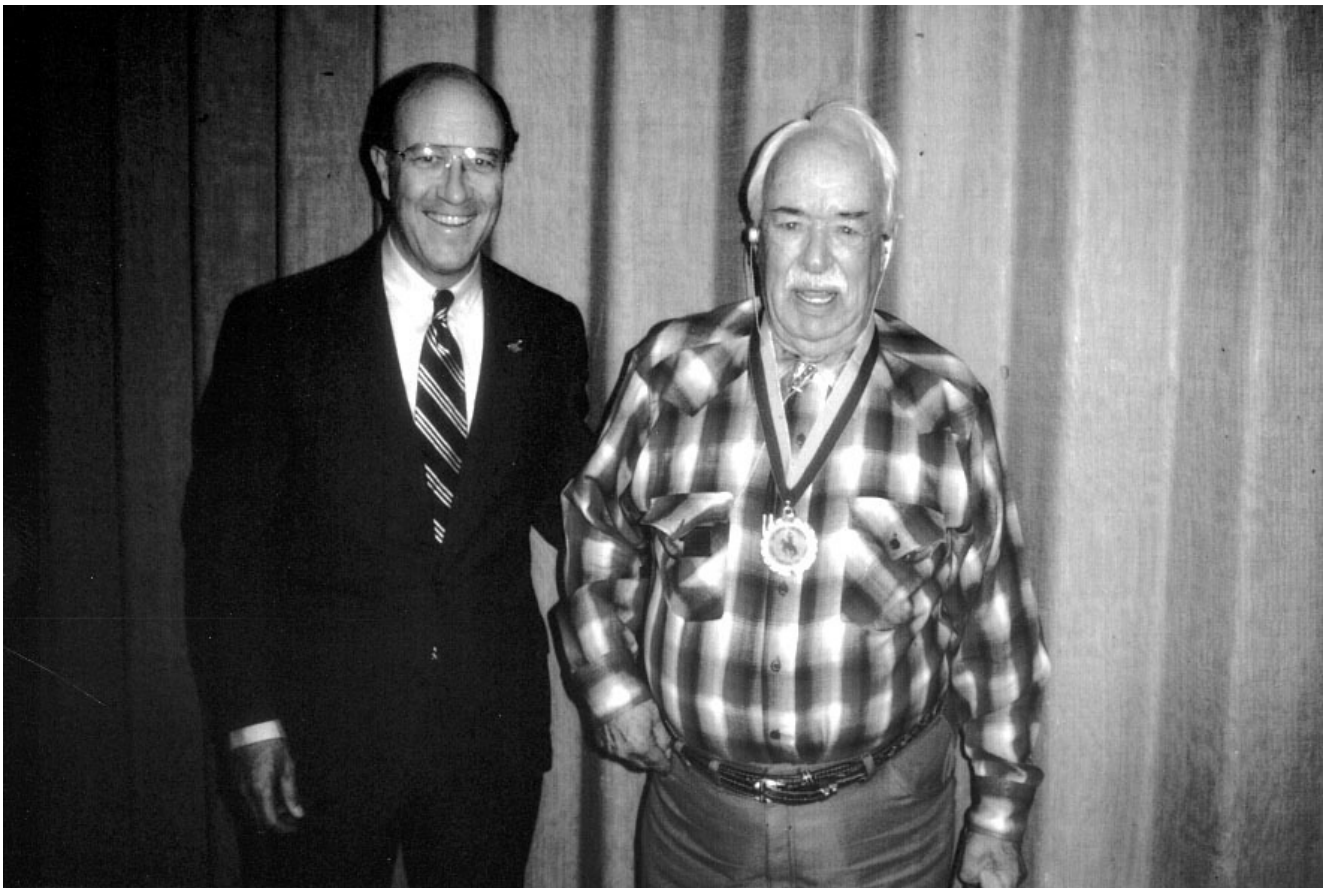

Figure 2. Henry with Governor Mike Sullivan in 1991 when Henry received his service award for enduring contributions to Wyoming history and archaeology. Photo courtesy of Mark Miller.

Boulder Structures in Archaeology, edited by Michael Wilson, Kathie L. Road, and Kenneth J. Hardy, pp. 133-148. Proceedings of the Eleventh Annual Chacmool Conference. The University of Calgary Archaeological Association.

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
2003 ANNUAL MEETING MINUTES

8:08 a.m. – Best Western Sheridan Center
Saturday, April 226, 2003
50th ANNIVERSARY

PRESIDING: Eva Peden, President

CALL TO ORDER: 8:08 a.m.

ROLL CALL AND CERTIFICATION OF DELEGATES: Secretary/Treasurer Carolyn Buff certified the voting delegates: Absaroka, Vicki Finley and Karen Green; Ancient Trails, Cher Burgess; Casper, John and Evelyn Albanese; Cherokee Trail, Kenneth and Alice Swanson; Cheyenne; Fremont, Roni McAuslan and Don Peden; June Frison, Carmen Clayton and Marcel Kornfeld; Sheridan/Buffalo, Scott Burgan and Orvella Burris; Teton, Alan Bartholomew and Mary Springer.

Roll call showed eight chapters represented: Absaroka, Ancient Trails, Casper, Cherokee Trail, Fremont, June Frison, Sheridan/Buffalo, and Teton. Not represented at the meeting was Sweetwater County. Cheyenne, High Plains, Platte County,

MINUTES, 2003 ANNUAL MEETING

and Rawlins are inactive.

MINUTES OF LAST ANNUAL MEETING April 20, 2002: Approved as printed in the spring 2001 issue of *The Wyoming Archaeologist.*

TREASURER,S REPORT: Secretary/Treasurer Carolyn Buff gave the treasurer,s report showing a total net worth as of March 31, 2001 of $36,963.91, an increase of $2,504.05.

AUDITOR'S REPORT: Dewey and Janice Baars performed the annual audit and found the accounts to be in order. Motion by Dewey Baars, second by Janice Baars to file the treasurer's report for audit. Carried.

EDITOR'S REPORT: Danny Walker: *The Wyoming Archaeologist* is one year behind in publication, due to a lack of manuscripts. Anyone can submit a manuscript—amateur or professional. Any information of interest is acceptable. The journal is now one year behind schedule, so any articles are welcome. The project is now being done electronically, which cuts costs and time

LIBRARIAN'S REPORT: Danny Walker reported 10 exchange journals on file in the Wyoming State Archaeologist's Office. Material in the library is available to members to check out.

Carolyn Buff commended Danny Walker on the research and compilation of the 50th Anniversary display.

SCHOLARSHIP COMMITTEE: Carolyn Buff announced the committee met Friday night to evaluate the scholarships.

Discussion was also held on the possibility of creating some kind of recognition for PhD candidates. Motion by Don Bailey, second by Alice Swanson to work with the anthropology department to determine a "best" award and criteria. Carried. Some ideas discussed were a monetary award, a plaque, requiring recipients present to the WAS, integration into WAS, and coordinate with department faculty. Mary Lou Larson, Stuart McKenzie and John Greer were appointed to work on the project.

SAA/COAS: Marcel Kornfeld: The Council of Affiliated Societies provides a link between the national organization (Society of American Archaeology) and the state and local chapters. The COAS sponsors the poster contest. Wyoming won second place this year, with first places in four of the last five years. The new president is Susan Edwards and the new editor of the newsletter is Marcel Kornfeld.

CHAPTER REPORTS: The chapter reports will be printed in *The Wyoming Archaeologist* if there is enough room.

STATE ARCHAEOLOGIST'S REPORT: Mark Miller: Wished happy birthday to the society, and reviewed some of the history of the organization: in 1967 the WAS played an integral role in establishing the state archaeologist's office; early site investigations from which the work of the society is still being referenced today, that database is the baseline for everything that has followed since; the Golden Trowel Award; the scholarships since 1960, the first scholarship of its kind available to students at the University of Wyoming in anthropology; two generations of the same family competing for the Mulloy scholarship; and over $19,500 has been awarded to 66 students

since that time. The society was the early keeper of the site files of what was known in Wyoming of the archaeological record at the time.

Memorials to departed members included Loucille Adams of Lander and Carlton Belz of Casper, both very active members throughout the years.

OLD BUSINESS: Wyoming Archaeology Awareness Month – Judy Wolf: Motion by Marcel Kornfeld, second by Vicki Finley to donate $200. Carried. The 2003 posters are available for distribution and chapter representatives can pick them up.

Wyoming History Day – Will be held on Monday, April 28. If there are any qualified entrants we will award the $100.

WEB PAGE: The Wyoming State Archaeologist's web page is in the process of being upgraded to fit the new required format.

FRIENDS OF THE GEORGE C. FRISON INSTITUTE: Marcel Kornfeld: Announced the latest bulletin is available. The fall meeting will be held in conjunction with the Institute on September 25 with the next speaker to be announced. Major projects include Hell Gap, Middle Park, CO, and the Bighorn Basin. Work is also being done to establish the terms of an endowment.

A directory of current members will be published in *The Wyoming Archaeologist* if there is room. If no room and if chapters want the directory, they can contact the secretary/treasurer and the information will be forwarded

NEW BUSINESS: Fall Meeting: Mark Miller: Will be held in conjunction with the Frison Institute lecture.

Guidelines for Honorary memberships were printed in the journal.

At Will Employee Contract (AWEC) – The Survey Section of the Office of the Wyoming State Archaeologist (Dave Eckles) would like to hire, on a temporary basis, people who would like to work for small compensation to do survey, testing, and some excavation on an intermittent basis. Persons must be able to do physical labor and walk up to ten miles per day. It would be on a contract basis only, with no guarantees of continued employment and no benefits. There is no requirement if you are called you have to go at any particular time. There is a short interview and each person must apply for the position each fiscal year. Dave can be reached at 307-766-5301.

New Brochures – New membership brochures are available. Members are asked to take a handful and distribute them to rest areas, libraries, motels, or any other place where the public may browse.

Fremont County Resolution: Motion by Ed McAuslan, second by Mary Springer that the WAS will donate $1000 to the George C Frison Institute, to be matched by the Fremont County Chapter. Carried.

Associate membership vs family, single, institutional: Carolyn Buff: All memberships will be accepted as they come in. There are five inactive or quasi-active chapters, but members still want to retain their memberships. Family and single memberships not affiliated with a chapter cannot be voting delegates. Cheyenne voted to go into inactive status, with ½ of their treasury going toward scholarships and ½ to the Foundation, but they will remain on the rolls, as will Platte County, Rawlins and Sweetwater County.

Don Bailey showed the group a card which the Fremont County membership carries to give out to prospective inquiries.

Reduced Rates for Students: Carolyn Buff, Mark Miller, and Danny Walker will meet to discuss the proposal and report at the 2004 meeting. Students

would include kindergarten through college.

WYOMING ARCHAEOLOGICAL FOUNDATION: Chris Lippincott announced the Foundation would have a breakfast meeting at 6:45 a.m. Sunday morning. The Foundation was named as a beneficiary of the Henry Jensen estate in the amount of $35,000 cash and $6,000 in stocks.

ELECTION OF OFFICERS: Don Bailey: President, Nick Palmer; 1st Vice President, Don Bailey; 2nd Vice President, Stuart McKenzie; and the three-year term on the Foundation, Dewey Baars. Motion by Don Bailey, second by Carmen Clayton to cast a unanimous ballot. Carried.

2004 NOMINATING COMMITTEE: Stuart McKenzie, chair, Ed McAuslan, Cher Burgess.

2003 SUMMER MEETING: Marcel Kornfeld invited the membership to visit the Hell Gap Site on June 6, 7, and 8.

2004 ANNUAL MEETING SITE: Will be in Jackson.

INTRODUCTION OF OFFICERS:

President – Nick Palmer
1st Vice President – Don Bailey
2nd Vice President – Stuart McKenzie
Wyoming Archaeological Foundation (term expires 2006) – Dewey Baars

ANNOUNCEMENTS: Papers to begin at 10:30.

Carolyn Buff mentioned she has membership cards available.

The need for current names, addresses, phone numbers, and e-mail addresses from chapters was reiterated.

Karen Green announced the Absoraka Chapter has developed a $100 Milford Hansen Book Scholarship for Northwest college students per semester.

Ranel Capron asked chapters get their calendar information to her ASAP so she can get the WAAM calendar published and distributed. Information needed includes meeting dates, chapter information, and any activities planned.

Marcel Kornfeld thanked the Society for the pledge to the George C Frison Institute.

Judy Wolf thanked the Society for the donation to Wyoming Archaeology Awareness Month.

Danny Walker announced work at Fort Laramie will begin June 9. Three 10-day sessions will be held, and all are welcome.

ADJOURN: 9:40 a.m.

LUNCH SPEAKER: A special presentation by Doug Owsley was presented on Civil War Burials and the forensic work he does with the Smithsonian Institute. This presentation was done in honor of his father, Bill Owsley.

A special "50th Anniversary" Golden Trowel award was presented to Bill Owsley, an original founder of the Wyoming Archaeological Society

BANQUET: Larry Loendorf presented his work on Rock Art.

GOLDEN TROWEL AWARD: Barbara Nahas-Keiry

/s/ Carolyn M. Buff
Executive Secretary/Treasurer

/s/ Eva Peden
President

WYOMING ARCHAEOLOGICAL SOCIETY, INC. SCHOLARSHIP COMMITTEE MINUTES – April 26, 2003

PRESIDING: Carolyn Buff, Chair

PRESENT: Dewey Baars, Don Bailey, Carolyn Buff, Mary Lou Larson, Mark Miller, Nick Palmer, Eva Peden

Motion by Mark Miller, second by Don Bailey to award the Frison Scholarship to Jeremy Moss, and the Mulloy Scholarship to Joseph Cheshier, both in the amount of $350. Carried.

The committee will request discussion from the Society on a "dissertation" award for a PhD candidate.

/s/ Carolyn M Buff, Chair

Total memberships as of March 31, 2003 - 260 (down from 261 in 2002 – a decrease of 1)

Absaroka =14 family, 8 single
Fremont County = 11 family, 11 single
Ancient Trails = 3 family, 4 single
Casper = 5 family, 13 single
Cheyenne = inactive
Cherokee Trail = 8 family, 8 single
High Plains = 3 family, 3 single (inactive)
June Frison = 6 family, 12 single
Platte County = 0 - inactive
Rawlins = 0 family, 6 single (inactive)
Sheridan = 9 family, 15 single
Sweetwater County = 0 family, 3 single
Teton County = 3 family, 14 single
Dept State Parks/Cultural Resources = 3
State Archaeologist = 2
Associate = 31
Exchange = 10
Single = 1
Family = 2
Honorary = 16
Institutional = 33
Library of Congress = 2

Chapters = 13 (3 inactive)

Of Chapters: Single = 56
Family = 77

2003 WAS CHAPTER REPORTS

ABSAROKA

Testing/Excavation – Platt Site (48PA848) Field School excavations – Two new units were opened in Block A. This is a continuing cooperative effort between the chapter and Northwest College. Uncovered in the excavation were a hearth (probably Late Prehistoric), pottery fragments, and artifacts, including obsidian. There now is enough material to do an obsidian source study, which we believe will suggest the movement of cultural groups or trade between the site and the source areas. The pottery fragments appear to be from five different vessels.

Public Education – Distributed Archaeology Awareness Month posters throughout the Bighorn Basin to schools, home school individuals, visitor centers, Chambers of Commerce, and other interested parties. Lab workshops were conducted each month from January through May, focusing on organizing, cleaning, and cataloging artifacts from the Platt Site. Two chapter members taught classes through Northwest College and presented numerous outreach programs to various institutions and groups throughout Park County.

Work With Other Organizations – Working with Northwest College, preliminary organization and fund-raising was completed for an Absaroka chapter-sponsored $300 annual memorial book scholarship to honor Milford Hanson. This scholarship (first awarded spring semester 2003) will benefit a Northwest College anthropology

major and will be awarded, $150 per semester, through the NWC Bookstore.

Publications/Reports – "Welcome Handbooks" were distributed to all new and potential members.

Programs Presented – Danny Walker, Fort Seminoe; Allen Madril, Kachinas of the Hopi Culture; Tom Thomas, Uncovering Human Remains; Bob Pickering, Egyptian Mummies; Norma Strand, Ghost Towns in the Bighorn Basin; Chris Finley, Cooperative Field School Efforts Between the Chapter, Northwest College and the University of Wyoming George C Frison Institute; Dave Reiss, Ten Years of Archaeology at Camp Guernsey; Brian Waitkus, Archaeology at the China Wall Site

Field Trips – South Fork of the Shoshone River to investigate bison jumps on the TE Ranch and the nearby Shoshone National Forest; local private ranch between Cody and Meeteetse to observe petroglyphs; outdoor potluck picnic at home of Forrest and Karen Green to discuss ideas for the Milford Hanson Book Scholarship

ANCIENT TRAILS

The chapter held only one meeting during the year. A planning meeting was held in February 2003. The chapter intends to meet quarterly for special programs and have the officers communicate between meeting for chapter business. The summer meeting would be a field work project or field trip is in the planning stage.

The planned field work project for 2002 was GPS mapping of the Cheyenne-Deadwood Trail ruts and stage stations. Due to bad weather the work was postponed.

In March Danny Walker presented a slide program on the excavations of Seminoe's Fort, a trading post on the Oregon Trail.

Survey and Research Projects – Cheyenne-Deadwood Trail byway drive. The chapter did not make any further progress last year with the project to develop this historic drive. During this summer the chapter plans to GPS map the trail segments and stage stations located in field work and still needs to complete the brochure and prepare a map for the byway.

Public Education – Chapter members helped sponsor the annual Island in the Plains conference on Black Hills archaeology and history, along with the Northern Hills Chapter of the South Dakota Archaeological Society and federal and state agencies. At the April 2002 conference four members presented papers. The conference poster featured the excavations of two society members in historic Deadwood, South Dakota.

CASPER

Programs Presented – Northeastern Brazil Archaeology by Dr. John Greer, Wyoming Highway Department Projects in Northeastern Wyoming by Dr. Julie Francis, Coalbed Methane Archaeology in Northeastern Wyoming by Dr. Mavis Greer, Tour of the National Historic Trails Interpretive Center by Jude Carino, Bioarchaeological Assessment of the Fort Casper No. 3 Burial by Rick Weathermon, Analytical Trajectories of River Bend Site Shell Ornaments by Dr. Kerry Lippincott, Preliminary Investigations at Sites in the Naval Petroleum Reserve, No. 3 by John Goss, The Cedar Ridge Site: 48NA2457, Cultural Resource Complexity and Multiple Use by Chris Arthur, Is Science Truly Objective? By David Brown

CHEROKEE TRAIL

Field Trips – Soapstone site, Jack Creek area with Rich Adams; Townsite of Carbon

Programs Presented – Archaeological sites in Wyoming, Historic and Recent Finds by Dan Eakin, Paleo sites Around Chain Lakes by Alan Wimer, First Americans, video, Buried in Ashes, video, Sights and Sounds of the Hopi, video, Big

Nose George by Mark Miller, Westward Trails, video

FREMONT COUNTY
Testing/Excavation – South Pass City, Sherlock Home; Fort Laramie, magnetometer work

Public Education – Have begun posting notices of meetings and programs on public service channel on cable TV, public and commercial radio and local newspaper, and invite public to our meetings

Work With Other Organizations – Wyoming State Archaeologist; Frison Institute

Programs Presented – Moundville: Visit to the Past, China, Seminoe's Fort, American Stonehenge, Africa, Urban Archaeology

JUNE FRISON
Testing/Excavation – Assisted the George Frison Institute at Hell Gap

Programs Presented – Mark Miller, Military Sites; Rachel McGraw, Phoenician Archaeology; George Frison, Archaeology of the Sheridan Area; Danny Walker, Seminoe's Fort; Allison Byrnes, Late Prehistoric Village in Central Ohio; Rich Adams, Sheepeaters and Steatite; Dave Reiss, Archaeology of Camp Guernsey; Pamala Huter, Use of Exotic Raw Material at Helen Lookingbill Site

Work With Other Organizations – Assist the Frison Institute when possible

Other – Sponsored 2001 Annual Meeting of WAS

SWEETWATER
Programs Presented – Petroglyph site tours

TETON
Survey – Fall Creek Road survey - recovered artifacts from disturbed road construction area; Snow King Mountain Survey – identified possible sites on Forest Service land, road chairlift to summit and hiked back; Ski Lake Survey – identified prehistoric mountain site on Forest Service land; Miller Butte Tour – led two tours for Historical Society and Earthwatch groups

Testing/Excavation – Southsider Shelter and Juniper cave; South Park

Public Education – R Lazy S Ranch – members mingled with dudes; show and tell of collection of Terry Amrein; attended Frison Institute fund raiser at Ed Cheremy Ranch; Heather Petty did forensic ID for human remains at JH Historical Society; Alan Bartholomew served as Humanities Scholar for American Indian culture speakers program for JH Historical Society

Vandalism Report – saw reports in newspaper of vandalism of sites (and arrests) in Grand Teton National Park and in Yellowstone National Park

Work With Other Organizations – Allied with the Teton Science School, the Teton Historic Preservation Board and the Jackson Hole Historical Society and Museum

Programs Presented – Lecture of work on the National Elk Refuge by Earthwatch, Park Projects and Policy by Jacquelin St. Clair, Findings South of Jackson by Dan Eakin, JH Historical Society and Museum's Collection of Steatite Vessels by Rich Adams

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
Treasurer's Report for Fiscal Year Ending March 31, 2003

CHECKING ACCOUNT - NC SCHOOL EMPLOYEES FEDERAL CREDIT UNION	**INCOME**	**EXPENSES**	**BALANCE**
Beginning Balance	$3,601.52		
Deposits	$5,013.50		
Interest Earned	$41.21		
TOTAL INCOME - CHECKING			$8,656.23
EXPENSES			
Casper College - Postage		$34.00	
Builder's Mart - Trowel		$13.59	
Teton Chapter - Overpayment		$8.00	
Merback Awards - Trowel Engraving - Paul & Margo Joy		$19.97	
Wyoming Archaeological Foundation - Annual Payment		$257.00	
John Laughlin - Scholarship		$350.00	
Britt Starkovich - Scholarship		$350.00	
Michael Fosha - Honorarium		$300.00	
Holiday Inn - Fosha Lodging		$108.00	
Casper College - Postage		$37.00	
Casper College - Postage		$37.00	
Secretary of State - Exempt Status		$6.00	
Check #292 later voided and redeposited		$100.00	
Danny Walker - Journal Printing		$890.40	
Danny Walker - Journal Printing		$1,780.80	
Casper College - Postage		$37.00	
USPS - Bulk Permit		$500.00	
SAA - Annual Membership		$30.00	
USPS - Bulk Permit		$150.00	
Secretary of State - Corporation Tax		$25.00	
Mountain States Lithographing - Brochures		$744.65	
TOTAL EXPENSES		$5,778.41	
ENDING BALANCE - Checking Account			$2,877.82
SAVINGS ACCOUNT			
BEGINNING BALANCE	$118.86		
Interest Earned	$1.94		
ENDING BALANCE			$120.80
MONEY MARKET ACCOUNT			
BEGINNING BALANCE	$4,306.16		
Deposits	$1,807.50		
Interest Earned	$120.89		
ENDING BALANCE			$6,234.55

CERTIFICATE OF DEPOSIT ACCOUNT			
BEGINNING BALANCE	$32,133.27		
Interest Earned	$1,375.88		
ENDING BALANCE			$33,509.15
TOTAL NET WORTH AS OF MARCH 31, 2003			**$36,963.91**
Total Income	**$42,742.32**		
Total Expenses		**$5,778.41**	
Net Increase			**$2,504.05**
SCHOLARSHIP ACCOUNT			
Beginning Balance	($8,430.00)		
Deposits	$634.00		
Scholarships Awarded		$700.00	
Balance			$(8,451.00)
ARCHAEOLOGY WEEK ACCOUNT	$(212.48)		
Deposit		$200.00	
Balance			($12.48)

/s/ Carolyn M Buff
Executive Secretary/Treasurer

WYOMING ARCHAEOLOGICAL FOUNDATION MEMORIAL GIFT or CONTRIBUTION FORM

Given by: **Miss, Mrs., Mr., Ms., Dr.** ***$*** _____
Amount

_____

Name ***Last*** ***First*** ***Middle***

_____

Address ***City & State*** ***Zip***
Donor phone number ( ) _____
Type of Gift: _____

General Contribution [ ] **Specific Contribution [ ]**

In Memory of: _____

Name ***City & State***

In Honor of: _____

Name ***City & State***

Specify where you would like your money to go _____

(e.g., Hell Gap Site Research, other, ???????)

Please make your check payable to THE WYOMING ARCHAEOLOGICAL FOUNDATION
Barbara Keiry, Secretary/Treasurer, P.O. Box 3146, Cody, Wyoming 82414 — 307-868-2685

A CANID FOOT BONE BEAD WORKSHOP AT A BISON HUNTING CAMP IN THE POWDER RIVER BASIN

by
Kerry Lippincott, Steven Wallace, Kathy Winham, and R. Peter Winham

Introduction

Archaeologically recovered workshop materials and the activity areas in which they occur are somewhat uncommon but are able to give considerably more information to modern researchers than the mere facts of something having been manufactured. They may contain evidence of raw materials and their procurement, other tools used in production, discarded bits and pieces or rejected attempts, clues about who was involved, how the production area might have meshed with the rest of the site area, and other social or ideological interpretations. When coupled with evidence for the same kinds of artifacts from other contract archaeologists and a crew from the sites, we may learn something of the production, distribution, and consumption of the articles being produced. On the Northwestern Plains, because of the vicissitudes of preservation, workshops usually mean a production area for lithic tools. However, in the present case, it is a workshop for canid foot bone beads.

This canid foot bone bead workshop/ activity area was discovered at 48CA1366, the Harrier Nest site, a stratified, multicomponent camp along the Belle Fourche River (Figure 1). The major components at the site included Late Prehistoric tipi rings on the surface, a sequence of at least two buried occupations by ceramic bearing peoples with ties to Missouri River earthlodge villages, and a deeply buried Middle/ Late Archaic living structure. Radiocarbon dates are available for each of the components. The site was extensively excavated as part of a mitigation program for the Cordero/Rojo Mine complex. The excavations were conducted by independent, Archeology Laboratory, Augustana College, Sioux Falls, SD under a contract between John Albanese and Cordero/Rojo. A full report of the project results was submitted to Cordero/Rojo (Winham et al. 2000). The area formerly occupied by the site has since been completely stripped away and destroyed.

SETTING

Site 48CA1366 was a large site on a terrace directly adjacent to the Belle Fourche River, in southeastern Campbell County, WY. The site was originally discovered in 1981 during the initial cultural resources survey of the Cordero Mine area (Farmer et al. 1982). The site, as described, was a scatter of lithic, ceramic, and faunal materials along with the remains of an eroded hearth covering a 35 x 15 m area. Because of the hearth remnant, the ceramics, and the possibility for buried and intact deposits the site was recommended for mitigation. Mitigation recommendations included excavation of a stratigraphic trench designed to determine how far south the site's materials extended into the river terrace. If warranted, excavation of the entire site was proposed.

The progress of coal mining at the Cordero/ Rojo Mine Complex eventually led to a time when the site would have to be mitigated. The effort began with a contract between Cordero Mining Co. and John Albanese, Consulting Geoarchaeologist, to prepare a mitigation plan. The plan was written, revised, and approved in June, 1997 (Lippincott and Albanese 1997). By late June, archaeologists were on the site and had begun to prepare to carry out the recommended mitigations, which included controlled hand-excavated test units and

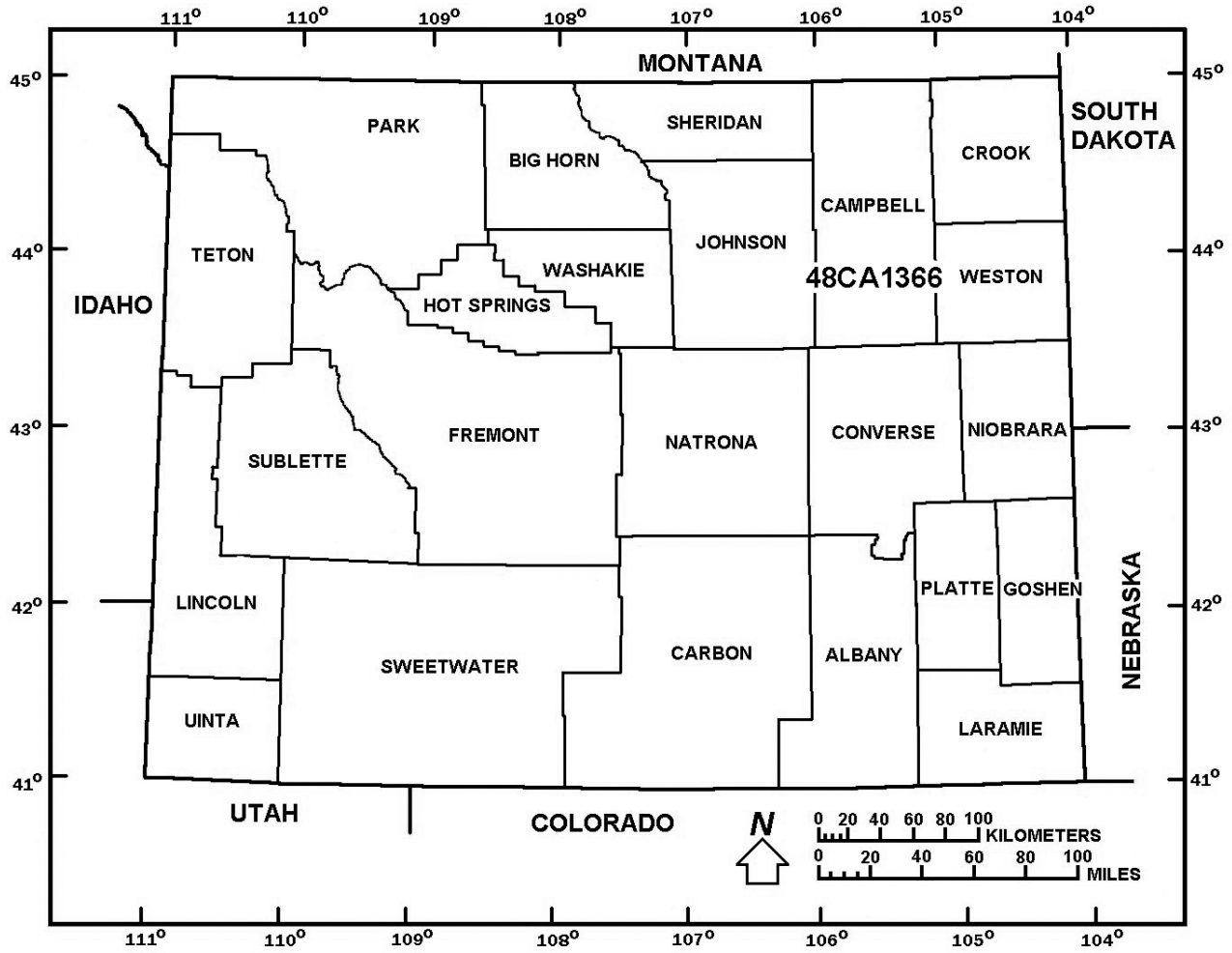

FIGURE 1: Locality map for 48CA1366, southern Campbell County, Wyoming.

two backhoe trenches. Another area of cultural materials was discovered eroding from the river terrace about 16 m from the original location and two complete and one partial tipi rings were discovered near the eastern edge of the terrace. Obviously, the site was larger than had been reported.

The hand-excavated units started with a 1 x 2 m test excavation near the center of the original site discovery location. Additional 1 x 1 m units were placed at what was thought to be near the eastern and western limits of the site. Multiple, stratified cultural materials were uncovered in all locations. The test units revealed there were at least two buried cultural strata at the site, one at approximately 20 cm below the surface and another one at approximately 40 cm below surface. The upper strata contained a thin, discrete band of charcoal, small bone fragments, and pieces of sandstone while the lower contained ceramics (including a large rim sherd fragment with rim form and decoration similar to Middle Missouri wares), chipped stone tool debitage, large bone fragments, and fire-cracked rock. The lower strata appeared to be horizontally oriented as if it were a layer of prehistoric occupational debris or a sheet midden. If that were indeed the situation, a wide range of materials could be expected to be recovered. Buried cultural materials were also encountered in the backhoe trenches. Many of those materials were isolated bone or FCR fragments but by this time it was known the site contained an abundance

of those kinds of materials. At four locations in the backhoe trench, remnants of features were located. These were charcoal and reddened earth stains, rock and bone fragments associated with a charcoal stain, and similar kinds of evidence of deliberate activities.

The mitigation plan changed accordingly. Rather than complete excavation, only a sample of the site could be collected. Additional backhoe trenches were excavated and a 10 m grid of power auger postholes was placed across the entire river terrace. These subsurface records gave a faster and better idea of the site's actual extent. The eastern limit of the site was identified where the trenches and auger hole encountered only loose, unconsolidated alluvial sand. Two deeply buried components were recognized on the elevated terrace and contained the tipi rings. Obviously, the site was both larger and more complex than had been first recorded (Figure 2).

Although buried Archaic components (Goss 2000) and surface tipi rings (Lippincott 2000) are interesting, the major focus of excavations at the site was the component of stone-lined hearths and other features and the sheet midden with ceramic

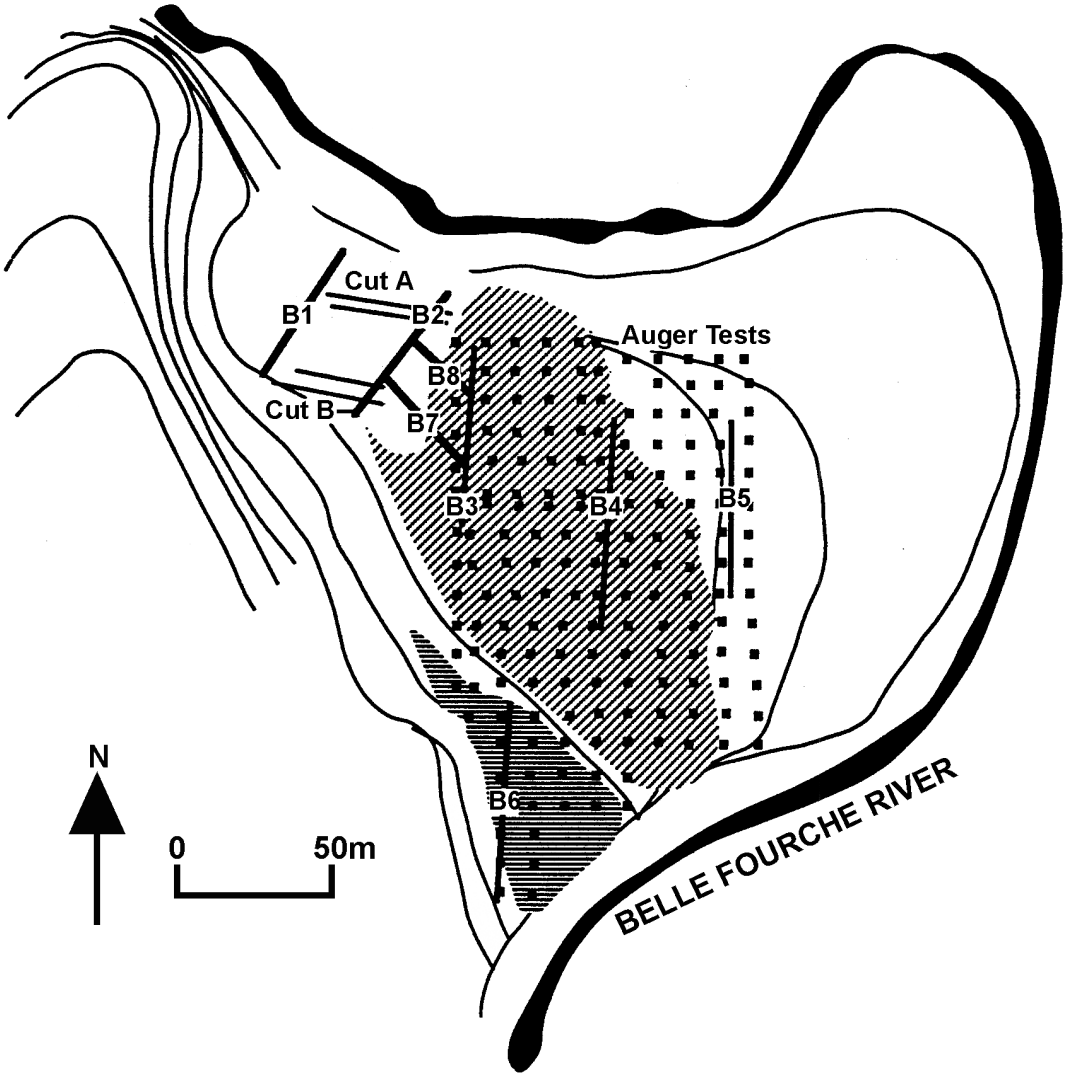

FIGURE 2: Belle Fourche River terrace with 48CA1366 main site area, backhoe trenches (B1-B8), auger test grid and grader cuts (A and B).

sherds, chipped stone tools, fragmented bison bones, and fire-cracked rock. Three radiocarbon dates from this component ranged from 510 to 560 B.P. or A.D. 1390 to 1440. Archaeological ceramics from the component, a minimum of 36 rim sherds and 763 body sherds reconstructed into seven individual vessels, were varied. At least one, and possibly two, vessels were identified as Fort Yates Cord Impressed based on vessel paste, rim form, and decoration and two or three vessels as Riggs Plain ware (Berg 2000). Fort Yates Cord Impressed is a type common in Extended and Terminal Middle Missouri variant sites. Middle Missouri tradition sites are the remains of sometimes ditch and palisade fortified, long rectangular earthlodges, village dwelling, bison hunting, corn growing horticulturalists along the Missouri River in central South and North Dakota. Middle Missouri tradition chipped stone tools, such as arrowheads and thin bifaces, were often made using Knife River flint as a raw material. Dates for components of those variants extend from A.D. 1100 - 1600, or within the range of those from 48NA1366 (Johnson 1996; Winham and Calabrese 1998).

Of particular interest here is a feature and workshop area at the extreme eastern portion of the site provisionally assigned to the Middle Missouri component. This area appears to have emphasized the raw materials and residual debris from the production of beads made from the foot bones (metacarpals and metatarsals) of large canids.

CANID FOOT BONE BEADS

Feature 42 was exposed and first identified in the western wall of Back Hoe Trench 3 (Figure 3). The feature was expressed as a relatively long, 80 cm, but shallow, 5 cm, dark and reddened stain about 27 cm below the surface within a brown, massive sand matrix. A 2 x 3 m excavation block was established over the stain and excavated to the upper exposure of the feature (Figure 4). When exposed in plan view, the feature consisted of a large, irregular-shaped, red-stained area 150 cm N-S and 129 cm E-W, (incomplete measurement due to missing portion within the backhoe trench). The overwhelming predominance of artifacts recovered from the excavations around this feature were related to canid foot bone bead manufacture.

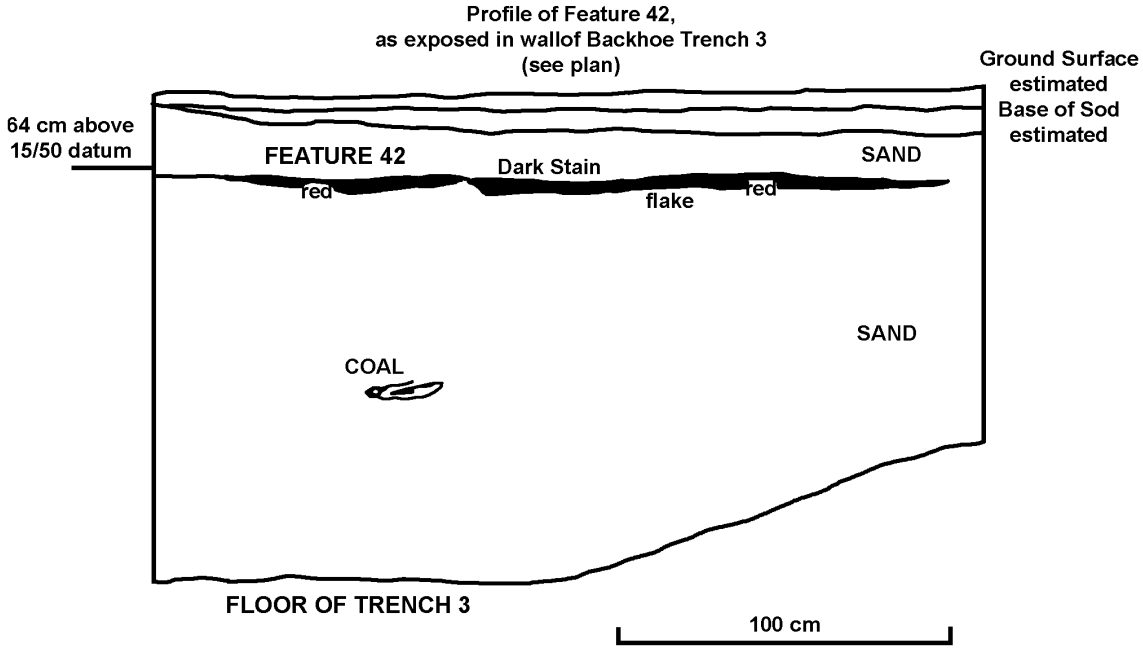

FIGURE 3: Profile of Feature 42, as exposed in Wall of Backhoe Trench

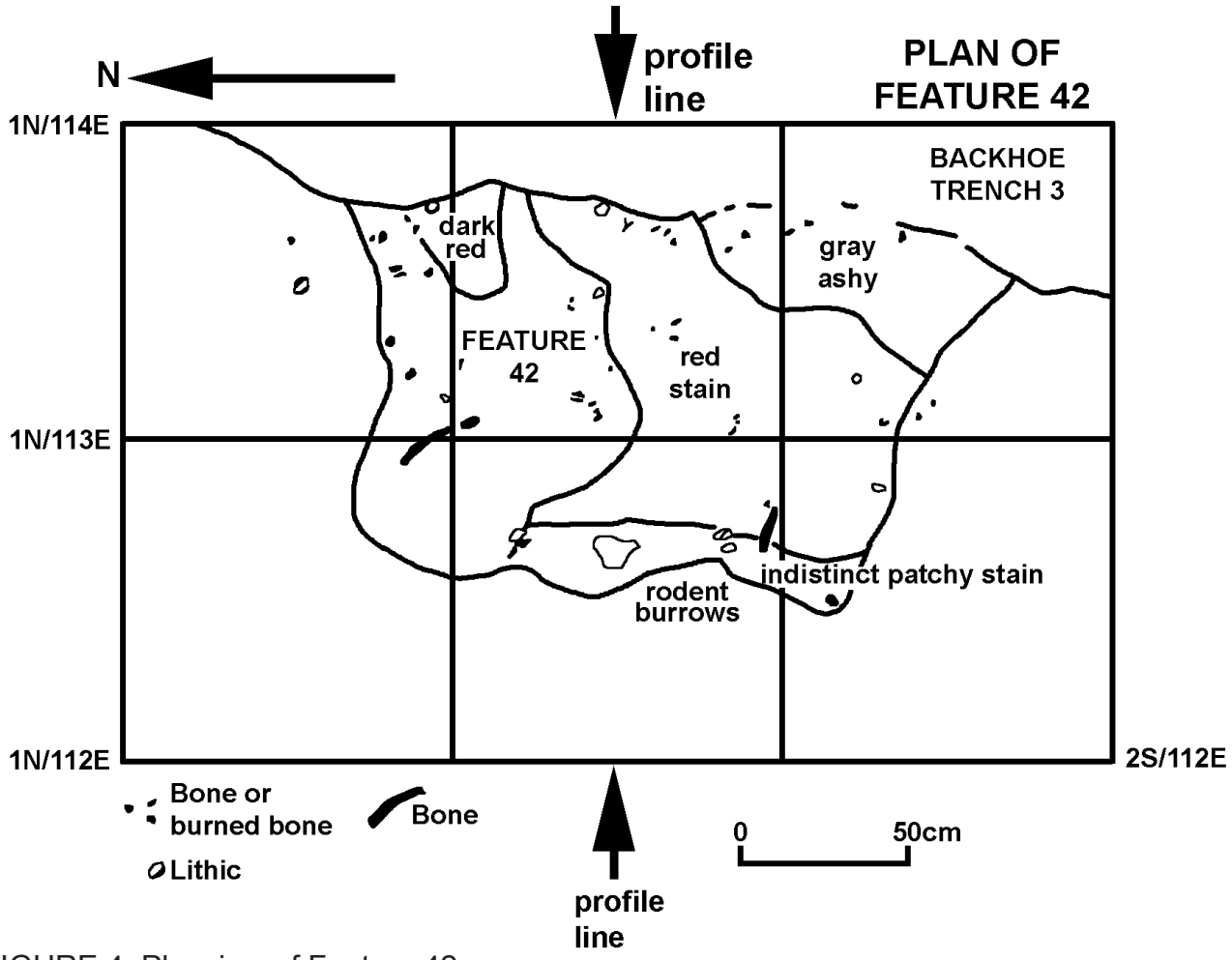

FIGURE 4: Planview of Feature 42.

Canids are digitigrade walkers, that is, they walk on the tips of their toes all of the time. Like humans, canids have five digits on each of their fore limbs (although Digit 1 is a relatively short "dewclaw") but only have four toes on their hind limbs. Each digit has three phalanges (just like us), the third or final one with a claw, and either a metacarpal or a metatarsal which connects with the wrist or ankle joint. The hind limb metatarsals are considerably longer than the fore limb metacarpals. Only metacarpals or metatarsals were used in bead production. Individual canids could have up to 18 metapodial elements as potential bead raw material. Although they are long and slender, canid metapodials are relatively robust and thick-walled with the medullary cavity as a small, smoothed, tunnel-like opening throughout most of the length. In cross section, the exterior shape changes from the proximal to the distal articular ends. The proximal end is often angular, since four or five metapodials need to articulate with the elements in the ankle or wrist joint, and the shaft near the end is also somewhat angular. The distal end is almost hemispherical where it articulates with the proximal phalanx and the shaft at that end is more oval to circular.

A large sample of worked bone debris, chipped stone tools probably associated with bead production, and red ochre were recovered from the general level screening, point plots of specific items, the feature itself, and bulk soil sample of feature fill (Wallace and Winham 2000). The

subject of this analysis, the bone materials, was the overwhelming majority of the cultural materials. Over 2600 pieces were identified as simple bone fragments but the numbers and varieties of worked and identifiable bones were more relevant. Many of these had various stages of cut marks on the ends of the fragments (Figures 5 and 6). These were initially placed in categories of modified (n=15), bead related (n=3), bead debris (n=83), and bead blanks (n=6). For those identified as bead blanks, one specimen had retained rings or grooves for division into five individual beads and another was marked for separation into two beads. Some of the bones could be identified only to a general category, such as the 21 bone shaft fragments, while others could be identified to the level of genus, element, side, and portion as well as the form and location of the modification or alteration. In cases in which a genus determination was made, the designation was as a wolf-sized *Canis* sp. In dealing with post cranial elements of members of the genus *Canis*, it is difficult to distinguish between wolves and large dogs or between coyotes and medium-sized dogs. Various metatarsal fragments (n=10) were slightly more common than those identified as metacarpals (n=8) and fractions of distal portions (n=8) were more common than those identified as proximal fragments (n=6). One midsection shaft was identified only as a generic metapodial.

The sequence of production for these beads first requires one or more large, dead canids, either wolves or robust dogs. A minimum of three individuals were used at 48CA1366, based on the presence of two right metacarpal II elements and a distal metacarpal IV from a slightly larger size class individual. Either taxonomic group should have been readily available at a prehistoric hunting camp, with abundant bison bone refuse attractive to such scavengers (Walker and Frison 1982). However, the bones of these animal's feet are tightly bound together with various tendons and ligaments and are not easily removed from the foot capsule. Considerable cutting, scraping, boiling, or other form of extractive effort would have been necessary to acquire a sizeable supply of the basic raw materials. Once the bone elements

FIGURE 5: Canid metapodial bone bead manufacturing debris.

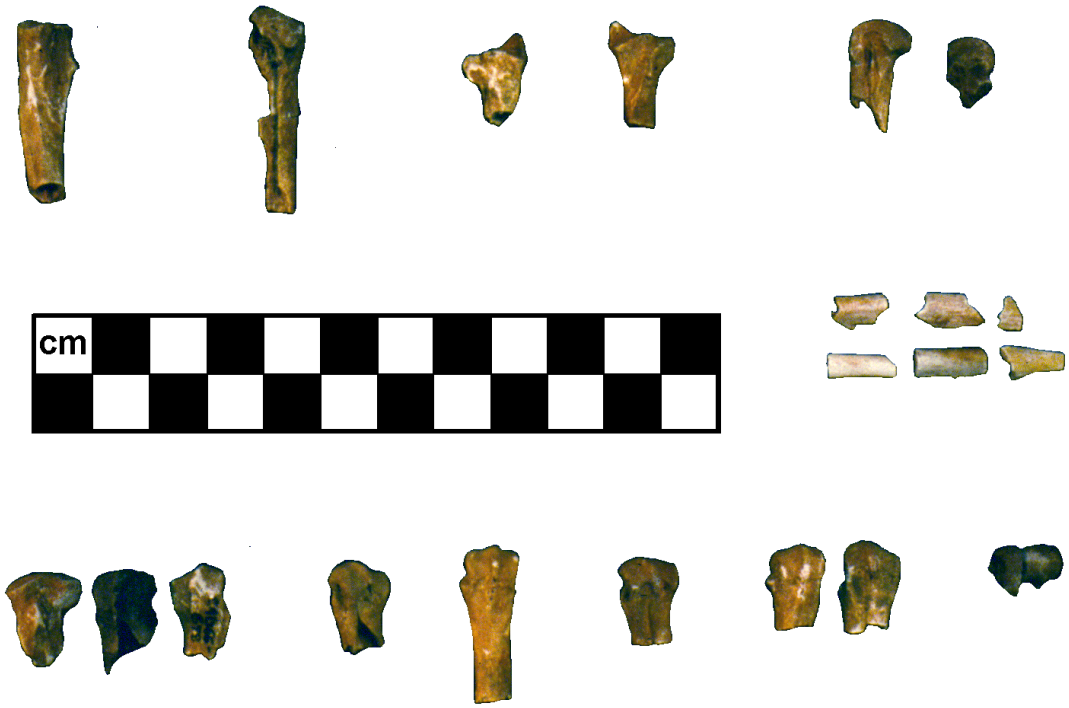

FIGURE 6: Canid metapodial bone bead manufacturing debris.

were acquired the bead making process could have been fairly begun. The evidence from Feature 42 showed the technique for producing beads involved an encircling groove (or grooves) (see also Frison et al. 1978). Grooves were most commonly close to the proximal or distal end of the bone as possible, with six pieces of terminal debris retaining only 1/8th of the bone shaft; one piece retained 1/4, four had 1/3, and one had a full 1/2 shaft. After the ends were removed, individual beads needed to be ringed and snapped. However, two examples indicated multiple bone segments were grooved before any were snapped. After the bead blank was snapped, or even if the grooving penetrated all the way through the bone, it was part of the process to smooth and round the ends of the beads. There is no indication canid foot bone bead production was an "assembly line" affair. Several different trajectories or sequences could have been followed and the resulting beads would have been indistinguishable from one another.

Red ochre staining was common on almost all bones from the feature. Twenty-nine and seven/tenths grams of red ochre material was recovered from within the feature fill. Most of the bead making debris was stained red. Presumably, the finished beads would have also been stained. That step in the process does not appear to have been followed at other Wyoming sites with bead making debris (see below).

The chipped stone tools recovered from the hearth and its vicinity could be indicative of some of the kinds of tools used in bead production. Those tools included a chipped stone projectile point blade and refitted base, two scrapers, a biface fragment, an end of a biface tool, two retouched and utilized flakes, a possible utilized cobble flake, and 152 pieces of lithic debitage. The projectile point was identified as likely made from Hartville Uplift Chert. The scrapers were chert, the large biface fragment was quartzite (possibly Flint Hill quartzite), the biface tool end fragment was

quartzite, and the retouched/utilized flakes were chert. Animal bones, especially the outer cortex, are quite dense but are not particularly hard; they rank around 2.5 on Mohs' hardness scale. They could be readily cut with those kinds of chipped stone tools; rated at 6.5 to 7 on the Mohs' scale. The projectile point and the bifacial tools would have had the kinds of edges to cut through bone and the retouched/utilized flakes show sections along the working edges with evidence of retouch, nibbling, and polish on the edges.

No grinding stones were recovered from the feature vicinity. The finishing by abrading and smoothing the cut edges of the bone beads might have taken place elsewhere or the grinding stones were removed from the area. It is also possible these tools were just outside the excavated area.

ANALYSIS

The location of Feature 42 was somewhat separated from the highest density of occupational debris at the site. Feature 42 was the only feature recorded in Backhoe Trench 3 and was approximately 15 m from the nine features recorded in the northern portion of Backhoe Trench 2. Therefore, the activities surrounding the feature could be seen as separate and distinct from the common, everyday activities taking place at rest of the site. Considering the space available on the Belle Fourche River terrace top, 15 m is not an especially long distance but it should at least be mentioned the activities at Feature 42 were distinctive. Also of note is these activities took place around a well defined hearth area. The combination of a charcoal-stained center and a hematite-reddened surrounding nimbus is an indication spatially distinct activities took place in the immediate area. The limited extent of the excavation (2 x 3 m) centered on the hearth also may serve as indication the activities which had taken place were quite bounded (Figure 4).

The associations at the canid foot bone bead workshop consisted only of the hearth and the adjacent artifacts. Because the hearth was, in some senses, an isolated find in Backhoe Trench 3 and no other exploratory excavations were conducted in the vicinity, no other hearths or features are known from the near vicinity. The surface staining of charcoal and ochre for Feature 42 was intense within its limits but the cross section indicated a depth of only 3 cm, without indication of either preparation or reuse. It would appear use of the feature was a distinct, one time event.

OTHER EXAMPLES

Other examples of canid foot bone beads and/or manufacturing debris may be found at these other sites excavated around the Northwestern Plains.

Pictograph Cave, 24YL1, is a deeply stratified, multicomponent rock shelter near Billings, MT which provided some of the first evidence for the time depth and complexity of human occupation on the Great Plains (Mulloy 1958). At the time of its excavation, four thick strata were recognized and described separately by Mulloy. Stratum I, identified as the Early Middle Period and roughly comparable to the current Middle Plains Archaic, yielded two "bone tubes" said to have been made from small, unidentified bones. "Also common are severed epiphyses of small bones which seem to be the manufacturing of tubes" (Mulloy 1958:47). The referenced illustration shows what are most likely ringed and snapped proximal and distal canid metapodial fragments. The same situation is evident in the materials from Stratum II and III (Late Middle Period and Late Prehistoric Period), from which five and 13 bone tubes were recovered. The illustration for selected bone tools from Stratum III shows a canid metapodial with five full encircling grooves but not divided into individual segments.

The Kobold site, 24BH406, is a multicomponent, stratified rock shelter, buffalo jump, and rock art site in south central Montana (Frison 1970). The lowest strata, the rock shelter occupation, contained projectile points typologically dated to the late Early Plains Archaic, possibly around 3000 to 3500 B.C. A canid metacarpal distal epiphysis and shaft fragment

had been ringed and snapped and interpreted as a step in the production of a canid foot bead (Frison 1970:26). The date of this evidence would make it the earliest Northwestern Plains example of a canid foot bone bead currently known.

More evidence of the steps in the bead making process came from the Big Goose Creek site, 48SH313, of Late Prehistoric affiliation and located in north central Wyoming (Frison et al. 1978). The site contained both a bison kill and a combined processing and camp areas that may or may not be contemporaneous. Three complete canid bone beads were recovered from the campsite. Canid faunal materials from the camp area were identified as coyote, wolf and/or dog, and large canid. All (n = 11) of the metapodial shafts, proximal and distal ends identified as coyote had been culturally modified by deep grooves (Frison et al. 1978:39). Thirty of the 49 elements identified as wolf and/or dog were identified as metacarpals, metatarsals, or metapodials, mostly distal fragments. For the 64 elements identified simply as large canid "thirteen distal and seven proximal metapodial fragments . . . had been grooved deeply and broken in the preparation of bone beads" (Frison et al. 1978:40).

The Piney Creek sites, like Big Goose Creek, included both a bison kill and a butchering/processing area (48JO312), in addition to a widely separated tipi ring habitation component (48JO311) (Frison 1967). The kill and butchering/processing areas are of either Late Prehistoric or Protohistoric Period, depending on whether or not a blue glass trade bead found on the surface was directly associated with the site. The other cultural materials, features, pottery, a suite of chipped stone, ground stone, and bone artifacts, were similar to those from the Big Goose Creek site. Frison identified eleven bone tubes or beads and four proximally and six distally cut canid "phalanges" (the two illustrated specimens are clearly metapodials). One unfinished specimen, with a full groove, was useful as a demonstration of the basic, ring and snap manufacturing technique (Frison 1967:20).

CONCLUSIONS

Binford (1983:147-8) identified concepts of 'activity', 'toolkit', and 'activity area' as an integrated set of tasks, a set of tools used in the execution of a task, or places where technological, social, or ritual activities occur. He advocated analyzing archaeological sites in relation to activity areas, when they can be defined independently, or teased from the archaeological record, by multivariate statistical techniques. Ethnographic examples of activity areas recorded by Binford were often centered on hearths. Activity area analysis in Wyoming seems to have concentrated more on the theoretical concepts of how activity areas might be expressed archaeologically than on actual examples (Thompson and Pastor 1995:138-144). A cursory review of the literature reveals a few examples of analysis of living activities centered on hearths (Frison 1971; Harrell 1989; Fisher and Frison 2000). Workshop areas were mapped at three of the lodges identified and excavated at the Eden-Farson site (Frison 1971). Hearths and their surroundings were analyzed at the Buffalo Hump site (Harrell 1989). Fisher and Frison (2000) compared the hearths and surrounding materials at the Boar's Tusk site to ethnoarchaeological examples from Africa. One of the activity areas at the Buffalo Hump site concentrated, among other things, on the production of bone tubes (or beads) and also included the disposal of proximal and distal residual bone discards. Three bone tubes and seven pieces of discarded terminal debris were recovered from within Activity Area B of Component 2. The bone tubes and discards were made from jackrabbit (*Lepus* sp.) long bones and metapodials (Harrell 1989). In her interpretive summary, Harrell lists the contributions excavation of the Buffalo Hump site has made to a better understanding of the Uinta Phase. They include tighter controls on chronology, advances in seasonal subsistence and community/settlement patterning, and other archaeological concerns. In addition, she notes the relative abundance of ornamental or decorative objects, such as bone

beads, not accorded much status in a description of artifacts essential to a complete catalogue of the Uinta phase.

So it might have been with a critical appraisal of the canid foot bone bead artifacts from 48CA1366. The site certainly contained an array of different types of features and artifacts. Based on the few initial finds, who would have predicted a site covering a whole terrace? Would there have been expectations of remains of several large pottery vessels related to other sites hundreds of miles to the east? How can the occurrence of relatively elaborate sandstone-ringed hearth features be explained when more simple, expedient hearths might have served their purpose just as well? Finally, what needs, after the basics of food and shelter were assured, were fulfilled by the production of an apparently large number of personally satisfying, ornamental bone beads?

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CASTLE GARDENS CERAMIC VESSEL

BY
Lawrence Loendorf

INTRODUCTION

In 1987 a broken ceramic vessel was discovered at the Castle Gardens site in central Wyoming. Craig Bromley, Bureau of Land Management, assisted by members of the Wyoming Archaeological Society, conducted a test excavation recovering about 80% of the pot. Gail Gossett carefully restored the pot (Figure 1). In 1996, the Bureau of Land Management asked me to examine the restored pot; to offer a description of its manufacturing technique and its other attributes; and to compare the pot to other ceramic wares (Loendorf 1996). The subsequent report is part of the "gray" literature and unfortunately not available for general use. This is apparent in an article on the Carter Site – a site less than 50 kilometers northeast of Castle Gardens. William Martin (2000) who reports on the excavations of the Carter Site does not include the Castle Gardens vessel in his comparative analysis. It is clear the Castle Gardens report should be published so other archaeologists can use the information in future ceramic comparisons.

THE CASTLE GARDENS SITE

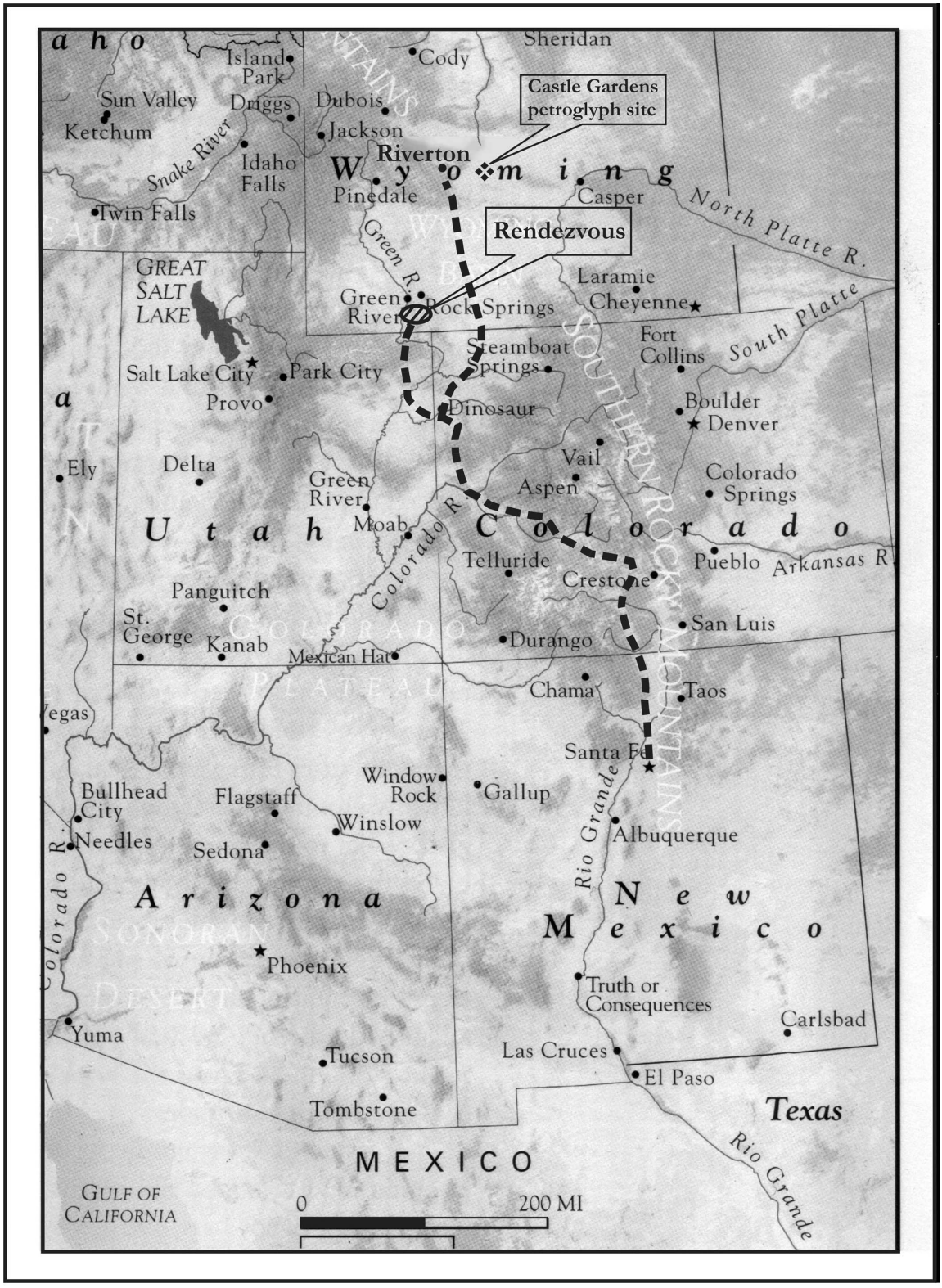
The Castle Gardens site is located in central Wyoming about 25 kilometers south of Moneta and 60 kilometers east of Riverton (Figure 2). Castle Gardens is known primarily as a rock art site but the location also contains a rich inventory of other cultural remains. Although other investigators undoubtedly noticed the non rock art cultural material at the site, it was not formally reported until 1950 when Richard Wheeler of the Smithsonian Institution River Basin surveys collected artifacts from the site's surface. Wheeler's collection included an unknown number of pottery sherds. The sherds are located at the Smithsonian Institution in Washington DC; they have not been studied. Whether they resemble the pottery recovered by Bromley's test excavation is not known.

Excavations at a site located on an access road to the Castle Gardens site revealed stratified deposits and produced samples for radiocarbon dating (Walker and Todd 1984). The stratified deposits in the site contain two primary cultural levels with burned bone remains intermixed with hearths, chipped stone, and ground stone tools, The age of the lower level was established by three radiocarbon dates, 780 + 110 BP, 750 + 100BP, and 660 + 100 BP. These dates are consistent with the age of the Castle Garden Shield style of pictographs found at the nearby rock art site (Francis and Loendorf 2002:142)

The uppermost cultural level in the excavation produced tri-notched projectile points, concave base-side-notched projectile points, end scrapers, other lithic artifacts, bone tools, and pottery. The ceramics included 34 sherds ranging in size from less than a centimeter to 3.2 cm in maximum dimension (Walker and Todd 1984:35). All represent body sherds are too small to reconstruct vessel shape. Temper is rounded crushed quartz suggesting collection from stream deposits. The paste exhibits small mica particles. Color ranges from light yellowish brown to dark brown. Some color may be the product of secondary firing during use for cooking. At least two sherds have black residue on the interior surface.

The pottery is thought to represent two vessels. Neither exhibits evidence of coiling and the only decoration is light brushing. Walker and Todd (1984:35) consider the pottery too fragmented to

FIGURE 1: Pottery vessel from Castle Gardens Site, Fremont County, Wyoming.



Old Spanish Trail - North Branch

FIGURE 2: Locality map for Castle Gardens site, Fremont county, Wyoming, with other localities discussed in text.

assign to a cultural group, but in general they do not believe it is related to the flat bottom Intermountain wares. They tentatively suggest a Crow association, based mainly on the suspected age of AD 1500 to AD 1600 for the associated projectile points.

THE CASTLE GARDENS CERAMIC VESSEL

The Castle Gardens ceramic vessel was found in an eroded area about 35 meters from the nearest rock art panel. The site was named the Castle Gardens Potbreak – 48FR108. Test excavations at this location did not reveal any features, however flaking detritus, charcoal flecks, and bone were recovered. This suggests there may be features in the vicinity of the excavation.

The Bureau of Land Management submitted a sample of organic residue from the pot to Beta Analytic for an AMS radiocarbon age estimate. The age is 150 + 55 RCYBP (Beta 72835). The one sigma calibrated age is AD 1670 to AD 1890 and AD 1910 to AD 1950. The latter is too recent and the older age is more appropriate for the vessel. The midpoint between AD 1670 and AD 1890 is AD 1780, which is a reasonable average estimate for the pot.

The reconstructed ceramic vessel is a wide-mouthed jar with a slightly flaring rim, a constricted neck, and wide, low shoulders with a conoidal base. The vessel is 28 cm in height, from lip to base and an opening diameter of 19.4 cm. The uniform rim circumference is 66.5 cm, with the neck circumference narrowing to 57 cm and flaring out to 70 cm at its widest point at the shoulders. The wall thickness is almost uniform throughout, measuring 7 mm at the rim, 6 to 7 mm at mid-body and 6 to 7 mm at the base.

There are seven patch holes throughout the pot. Four of these are in sets, as follows: one set of two patch holes is near the rim. They are l.9 cm below the rim and are 2.6 cm apart. A second set is in the body area, 10.1 to 10.2 cm below the rim and 2.1 cm apart. There is a vertical crack down the body of the pot in this area.

The color of the pot varies, from buffish-red to light gray to black, with black as the dominant color. The black appears to be from secondary firing, the pot is carbonized inside – more heavily at the base – both inside and out.

The construction appears to be coil and scrape, from the base up. The vessel is smooth inside but the coils are detected by running a fingertip up and down the inside walls. The coils appear to be 9 mm to 10 mm wide after scraping and flattening. There is no visible evidence of paddle and anvil application The outside of the pot is completely decorated by rows of vertical thumb nail or finger nail impressions. These rows of impressions are closer together at the rim and widen at the neck and body.

Based upon close inspection of the sherd edges, the clay was primarily tempered with micaceous sand/grit of rounded, sub-rounded, and angular quartzite, and quartz pebbles which measure from 1 to 5 mm maximum. Occasional pieces of feldspars also occur. The paste is fine, nearly carbonized; the core is carbonized as though it was nearly consumed by fire, more so at the bottom. The vessel appears to have been used to contain a fire, as well as sit upon fire, and it appears to be a pot that was cared for, patched and kept for years.

WYOMING CERAMICS

Chomko (1994) reviewed the State Historic Preservation Office cultural records to identify sites containing ceramics, either from the surface or from excavated components. He identified 221 ceramic sites in Wyoming. When the sites with a single sherd or the sites with poor provenience are removed, he found 136 sites with reliable information. Although this number of sites appears high, it represents less than one third of one percent of the recorded prehistoric sites in the state leading to the conclusion ceramic sites are rare in Wyoming. The Eden-Farson site with eleven vessels is one of the largest known samples in Wyoming while most reported sites contain only a half dozen sherds (Chomko 1994:404).

Using Chomko's synopsis, the ceramics

identified as part of the Intermountain Tradition are found at 51 sites in southwestern and northwestern Wyoming. Intermountain pots have a distinctive "flower pot" shape with a circular flat bottom and out flaring straight sides. They do not have handles or holes in them. Rims are usually slightly thickened and flat on the top suggesting the pots were placed upside down on a flat surface while wet (Mulloy 1958:197-198). Temper is often sand or coarse quartz fragments. More or less globular vessel shapes are also identified as Intermountain Tradition ceramics. The pots were made by molding or paddle and anvil.

Intermountain pottery is found in Montana, across much of Wyoming, into northern Colorado and southern Idaho. In Nevada and areas west of Wyoming/Utah border, the pottery is usually termed Shoshonean while east of this border it is called Intermountain.

The pottery has a range of radiocarbon dates from 625 BP to less than 250 BP (Chomko 1994:409). Attempts have been made to differentiate between the straight sided forms and the more globular forms, but the few numbers of sites and pots do not make for very convincing arguments (see Creasman et al. 1990).

"Crow Indian" pottery is apparently contemporary with the Intermountain ware. Chomko (1994:413) reports 45 sites in Wyoming are reported to contain these wares. Frison offers the description for "Crow" Indian ceramics in Wyoming and suggests they are highly variable. Vessels are globular and pointed. some rims are s-shaped while others are variable, Decoration is highly variable; it includes lips that are incised, punctate, marked with a card-wrapped rod. and plain (Chomko 1994:413). Bodies are often plain, but check-stamping does occur and can be used as a diagnostic marker of these ceramics. Dates for the ceramics are between 530 and 230 BP.

Johnson (1979) argues this heterogeneous group of pots represent a variety of cultural groups and the term "Crow" pottery is probably inappropriate in some cases. Chomko (1994:416) offers the term "Transplains Ware" as a substitute to account for this group of diverse pottery types are found along the eastern border of Wyoming.

Dismal River pottery, identified in eastern Colorado, Kansas and Nebraska is reported from four sites in southeastern Wyoming (Chomko 1994:416). These ceramics, attributed to the Plains Apache by Gunnerson (1960), are usually dark to black globular jars with constricted necks and straight to outward flaring rims, The surface is usually smoothed, but it can be polished or simple stamped. Decoration is uncommon, and if it occurs, it is confined to the lip.

Plains Woodland pottery is known from 16 sites in southeastern Wyoming (Reher 1973; Chomko 1994:404), but they are reported as far north as Sheridan (Frison 1978.67; Chomko 1994:404). The pots have a conoidal base; they are frequently cord-marked with oblique impressions from the rim across the upper body. Rim decoration is rare and variable when it is found. The ceramics are dated between 1800 and 500 BP (Butler 1986; Chomko 1994:404) in Colorado.

Upper Republican ceramics are reported from 14 sites in southeastern Wyoming (Chomko 1994:406). These vessels have a smooth ceramics are lump modeled with fine sand temper. The vessels are cord roughened and some have patch holes. Their shape is globular, round body and base. They have constricted necks and mouth. Upper Republican ceramics are dated in Colorado at 700 to 1300 BP.

Fremont ceramics have been identified at 20 sites in southwestern Wyoming (Chomko 1994:405). These ceramics, a mixture of the gray wares which characterize Fremont assemblages, are combined by Creasman et al (1990) into Black Buttes Gray Ware. Some vessels have distinct shoulders while others have more globular shapes. Bases are rounded or pointed. The pots are apparently made by paddle and anvil with a variety of temper materials. Decoration is rare. Based on comparison to dated materials in Utah these ceramics are suggested to date from 650 to 1300 BP.

Chomko (1994) also identifies some other

miscellaneous ceramic types including some Siouan wares and the possibility of Ute ceramics. The latter is of interest to this report.

Although not presently reported in Wyoming, "Ute" ceramics should be mentioned. The Ute were the principal inhabitants of the Colorado mountains during the historic contact period (Buckles 1968), and were in the area at least by A.D. 1600 (Goss 1968, 1977) if not considerably earlier (Stewart 1966). While there is some debate whether the Ute made ceramics (Stewart cited in Benedict 1985), there is some indication they did so, at least in small quantities (Barber 1876; Lowie 1924; Opler 1939; Smith 1974) (Chomko 1994:418).

Chomko's suggestion Ute ceramics should be found in Wyoming is prophetic.

UTE ETHNOGRAPHY AND CERAMICS

Perhaps the most complete discussion of Ute ceramics is found in an ethnographic study by Anne Smith for which the field work was completed in 1936 and 1937, but the report was not published until nearly forty years later (Smith 1974). Smith outlines several references to the manufacture of pottery by the Utes (Barber 1876; Lowie 1924) and a personal conversation with Alden Mason in 1938 as the evidence for Ute ceramics. Smith's Ute consultants indicated the pots were made by coiling, pinching the first coil onto a flat base lump of clay:

Each coil was one-half inch thick and almost two inches high. Each coil went around the pot once; any remaining coil was pinched off. A thin mixture of clay and water, kept in a pail, was rubbed aver the inside and the outside of the pot with hands to obliterate the coils (Smith 1974:86).

Temper was suggested to be vegetable and identified by one consultant as the dried leaves of prickly pear cactus pots used for cooking were usually taller than brand and same had handles near the rim. Bottoms were more often rounded, rather than flat. The Ute did not decorate their cooking pots, but one consultant recalled a pot was decorated with semi-circles in white paint around the neck (Smith 1974:87). The use of finger nail impressions is not described.

The Ute used their pots for cooking meat. The pot was placed near the fire, and hot ashes were heaped around it. Hot atones could be put in the pot to speed up the boiling process (Smith 1974:87).

The Ute also used pots they found in Fremont or other ancient ruins. They also traded for pots with the Southern Paiute neighbors.

Several points in the ethnographic description are noteworthy. The pots were made by coiling and the exterior surfaces were smoothed by hand. One consultant remembered the use of a small stick in the smoothing, but the paddle and anvil process is not described. This description fits well with the pot from Castle Gardens. On the other hand, vegetable fiber is not used in the Castle Gardens pot and although a row of painted semi-circles around the rim may have resembled finger nail impressions, the Ute did not describe finger or thumb nail impressions as a means of decoration. It is also important to recognize they traded pots.

UTE ARCHAEOLOGY AND CERAMICS

Archaeologically derived ceramics known as the Brownwares are generally assigned to the Paiute and their linguistic kinsmen in the Desert West. Brownware ceramics found in Colorado, defined by Buckles (1971) as Uncompahgre Brown Ware are regarded as Ute (Reed 1995:120). The historic distribution of the Ute Indians corresponds closely with the sites where Brownware ceramics have been recovered. This territory did not include Central Wyoming, however, and the Castle Gardens site example is ca 300 kilometers north of traditional Ute territory. Brownware ceramics are dated after A.D. 1100 in Colorado (Reed 1995:121-122) and they continue into historic period. It is not uncommon to get radiocarbon dates of 140 $\pm$ 50 BP or 180 + 40 BP, ages well after the acquisition of horses and guns in western America.

Brownware ceramics are made by coiling.

They are finished by scraping and wiping while the clay was still plastic (Reed 1995:122). They appear to have been fired in poorly controlled atmospheres, apparently open fires. Local clays appear to have been used with quartz and quartzite tempers. The surface color is variable, ranging from light gray to light brown to black. None are polished nor do any exhibit slips (Reed 1995:123).

The vessels range in height between 19 cm and 27 cm and have a maximum width of 17 cm to 28 cm. They have globular forms with slightly flaring rims, wide mouths, and low shoulders. They usually have pointed bases although rounded bases are reported (Buckles 1971). These vessels are often undecorated but if they have decoration it is finger nail impressions covering the entire exterior of a vessel. These finger nail impressions are usually aligned in parallel rows encircling the vessel.

Other decoration like stick impressions is found, but very rare. No pots are painted.

IDENTIFICATION OF THE CASTLE GARDENS CERAMIC VESSEL

In my opinion, the Castle Gardens vessel is an example of the Uncompahgre Brownware known primarily from western Colorado. The manufacturing attributes of the pot and its size and shape are consistent with the brownware types. The most compelling evidence, however, is the fingernail or thumb nail impressions used to decorate the Castle Gardens specimen. This is a unique style of decoration.

What is a western Colorado variety of ceramics doing in Wyoming? Before answering the question we need to be reminded that throughout North America, ceramics are the most common artifact type used to define cultural association. Archaeologists continue to use ceramics as an indicator of cultural identity despite the fact they are not very reliable. Citing studies by Dozier 1970) and Brugge (1963), Cordell (1979:147) reminds us "virtually all ethnographic studies indicate there is no relationship between language spoken and ceramics manufactured." Ceramics are portable and carried or traded from one region to another. Ceramic makers, usually women, are intermarried and captured so the ideas of diverse cultures can travel from one region to another.

The question as to why a pottery vessel presumably made by the Utes in Colorado is found in Wyoming is best answered by the ethnography. Smith (1974:88) notes the Ute traded their pottery. Ewers (1955:14) points out, all things being equal, the best trading agreements were between linguistic relatives. The horse was in use in Wyoming by AD 1725 and by AD 1800 and the Eastern Shoshone was the primary trading tribe in the region. The horses were coming from the Spanish settlements to the south in New Mexico and then traded up along the Intermountain Trail (Ewers 1954). The precise route of the Intermountain Trail is not determined, but like other western trails, it undoubtedly follows multiple paths in trail system rather than a single route. The trails from Santa Fe to western Colorado are best established because they are part of the Old North Trail system or the Old Spanish Trail. This route was used throughout Spanish control of the region to travel between New Mexico and California. The Dominquez-Escalante expedition traveled on this trail in 1776; expedition diaries report the route with sufficient accuracy between Santa Fe and present Rangely, Colorado it can be followed with confidence (Escalante 1976). The Dominquez-Escalante expedition was assisted by Ute Indians in northern Colorado so it is clear their route follows an existing Indian tail.

The course of the trail to the north into Wyoming is less well-established. The routes probably went to the east and the west of the rough canyon country in Dinosaur National Monument, over the routes subsequently used by early trappers and generally followed by present day highways. The western route reached the Green River near present Rock Springs, Wyoming vicinity where an ancient and well-established Indian trading rendezvous took place every spring (Ewers 1954; Wood 1980). The eastern route offered access to the interior Wyoming basins and over South Pass to the Castle Gardens locale.

Castle Gardens is a geological oddity that serves as a "landscape reference point" or a location a trading rendezvous could be scheduled where the Utes would bring horses to trade with the Shoshone, and the Shoshone would then keep or trade these horses to their northern neighbor the Crow. This is the most logical explanation for the Ute pot at Castle Gardens.

CARTER SITE COMPARISON

As noted in the introduction, since I wrote this paper, a relatively large ceramic assemblage was excavated at the Carter Site, 48NA1425, located near Hell's Half Acre, less than fifty kilometers northeast of Castle Gardens (Martin 2000). The recovered artifacts include one complete and three fragmentary Late Prehistoric side-notched Plains projectile points, two definite and another possible Cottonwood projectile point, and a possible Rose Springs projectile point. The latter types have Great Basin affiliations. A variety of other chipped stone tools were also recovered in association with a hearth feature radiocarbon dated at 580 $\pm$ 60 BP -- corrected to AD 1280 to AD 1440.

A total of 535 ceramic sherds were in the site assemblage including 334 body, 73 neck and 23 rim sherds. The ceramic fragments are believed to represent at least three small coiled pots tempered with micaceous grit. About half the pots were undecorated and the other half has finger nail impressions on their exterior surfaces. The Carter site ceramics are very similar to the Castle Gardens vessel and the two ceramic assemblages are apparently Uncompahgre Brownwares. Although not familiar with the Castle Gardens pot, Martin reached the same conclusion.

Perhaps most important, Martin indicates the site is single component and the remains are all associated with the radiocarbon age of AD 1280 to 1440. This age is at least 300 years earlier then the date for the Castle Gardens ceramic vessel. Single radiocarbon ages are always problematic but this is true for the single date for the Castle Gardens pot as well. The Carter Site date is on unidentified wood charcoal and there could be a problem with the "old wood" factor but this should not expected to affect the age by more than a century. It is also noteworthy the Carter site projectile points are dated in other sites to 500 year before the present which lends credence to the Carter site's radiocarbon age.

If the Carter site and the Castle Gardens ceramic vessel are correctly dated, it suggests the Ute traveled to central Wyoming for several centuries. This might suggest an old and well-established trading relationship between the Ute and Plains groups but it may also indicate the Ute used a much wider territory throughout the Prehistoric and Protohistoric periods.

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OBSIDIAN SOURCE UTILIZATION AT THE TRAPPERS POINT ANTELOPE KILL SITE 48SU1006

BY
Carmen Clayton and Raymond Kunselman

ABSTRACT

X-ray fluorescence (XRF) spectroscopy was used to study obsidian artifacts collected from the Trappers Point Site, a multicomponent Early Archaic pronghorn processing site, located west of Pinedale, Wyoming in Sublette County. The trace element concentrations for artifacts were compared to trace element concentrations from known sources. The majority (80%) of the identified materials were from the closest sources in Jackson Hole. The rest came from Obsidian Cliff in Yellowstone National Park and two sources in Idaho.

INTRODUCTION

In 1992, personnel from the Office of the Wyoming State Archaeologist (OWSA) conducted data recovery excavations at the Trapper's Point site (48SU1006) located adjacent to U.S. 191 a few miles west of Pinedale, Wyoming (Figure 1). The work was performed on behalf of the Wyoming Department of Transportation to mitigate potential adverse effects of road construction (Francis 1999:1).

The site is located on the eastern slope of a hill on the drainage divide between the Green and New Fork Rivers. "Bedrock in the site vicinity belongs to the New Fork Tongue of the Wasatch formation (Eocene). It consists of lacustrine mudstone, sandstone, and limestone (Love and Christiansen 1985). Late Pleistocene and Holocene alluvium forms the floor of the adjacent Green River and New Fork river valleys, and a thin veneer of Cenozoic gravel caps Cora Butte to the northwest of the site. (Eckerle et al. 1999:5)."

This paper focuses on the three main cultural levels (Strata III, V and VII), all dating to the Early Archaic Period between7880 to 4690 years ago. Stratum III had two associated dates (6180±200 and 7880±60 B.P.) which indicate the stratum was exposed for a period of time and subject to multiple occupations. Eleven dates from Stratum V range from 5160±210 to 6010±130 B.P., which, when probability distributions are overlain, suggests a single occupational event, between 5700 and 5500 years ago. Only one radiocarbon date is available from stratum VII (4690±110 B.P.) which puts that occupation at the end of the Early Archaic Period (Francis and Sanders 1999).

The artifact density in Stratum III was high with many lithics and bone, but few tools. Forty percent of the tools were bifaces or projectile points, consistent with expectations of a kill and processing locality. Obsidian was present in a proportionally higher percentage in Stratum III than in either Stratum V and VII (Francis and Sanders 1999:40-43). Thirteen obsidian artifacts were sourced from Stratum III. All but one were from sources in Jackson Hole. The non-Jackson Hole artifact was sourced from the Bear Gulch, Idaho source.

Stratum V is a distinct 10-20 cm thick cultural horizon tightly packed with well preserved bone and lithic artifacts. "The generally good preservation of the faunal assemblage, including pronghorn mandibles and fetal remains, permitted far more accurate assessments of season of animal death and by inference, season of human occupation, than is typical for many sites in the Green River Basin. The presence of pronghorn

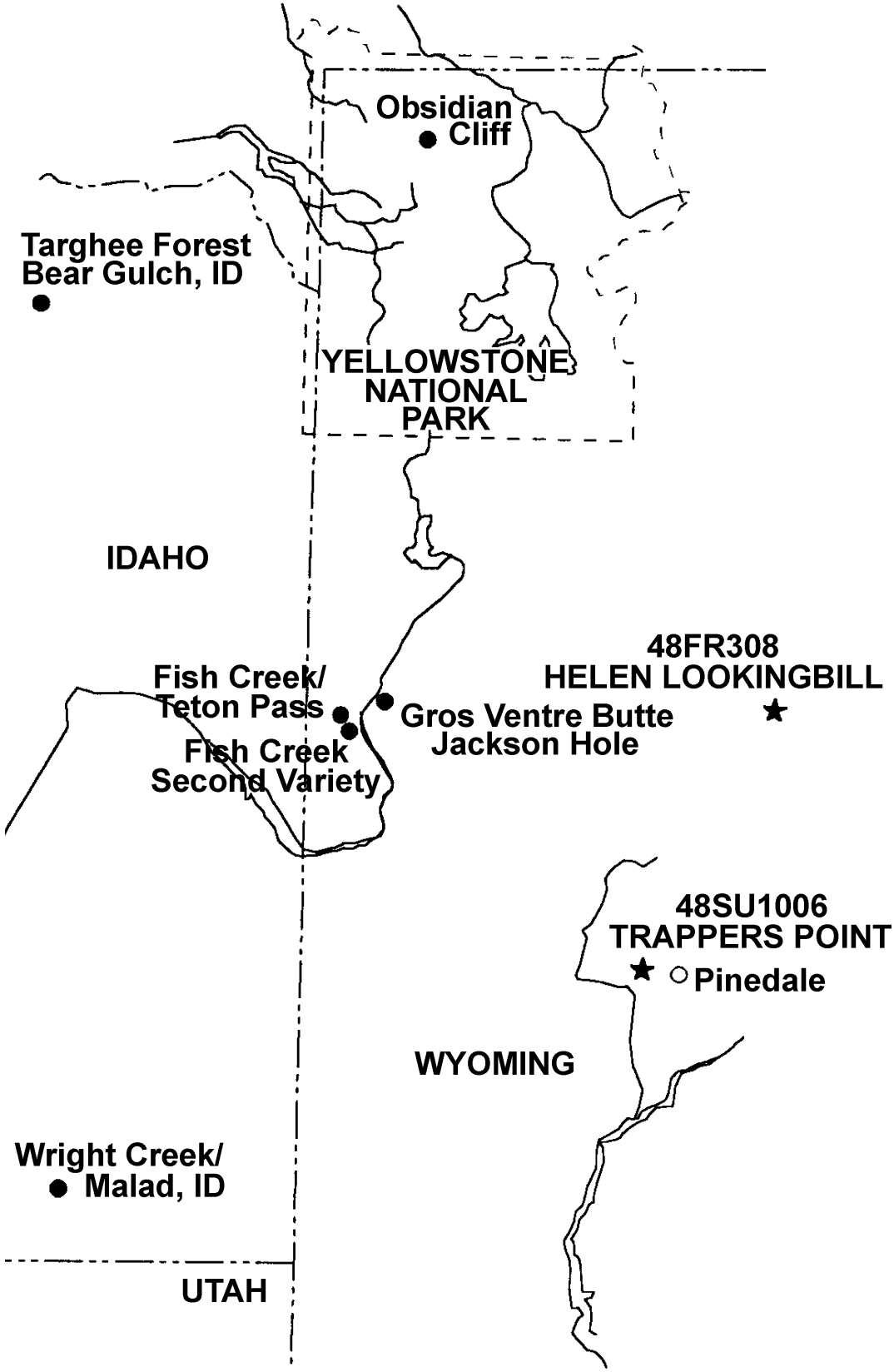

FIGURE 1: Obsidian source localities identified in the Trappers Point lithic assemblge.

mandible fragments permitted analysis of tooth eruption and wear pattern, and the analysis of post-cranial fetal remains in conjunction with pronghorn birthing times, both indicate utilization of the site during the March to April time frame (Francis and Sanders 1999:51)."

The lithic assemblage in stratum V contained 78 projectile points, 97 percent of which are fragmentary, which shows broken points still in the shaft were brought to the site to be replaced with new weaponry. Other common artifacts in the assemblage included utilized flakes, cores, hammerstones, choppers, bifaces, retouched flakes, utilized flakes and scrapers, supporting the argument animals were killed and processed on the spot (Francis and Sanders 1999:52).

Stratum VII is the uppermost cultural level. The artifact density is much less than Stratum III and V, but there are proportionally more projectile points in Stratum VII than the others. Like the other strata, the lithic assemblage is artifacts suggesting the site was used to kill and butcher wild game. Obsidian occurs in fairly high relative frequencies (Francis and Sanders 1999:55-56).

OBSIDIAN

Obsidian is volcanic glass, usually of rhyolite composition, characterized by conchoidal fracture (Bates and Jackson 1984). Colors of obsidian vary from glossy black, dull black, brownish, reddish, grey, to olive green, and there can be bands, bubbles, or perlite inclusions. The element variations of materials from one volcanic or magma event have characteristic trace element amounts, regardless of being red or black obsidian, ignimbrite or pumice. Most of one obsidian flow is uniform in element concentrations but variations can be produced from mixing of magma pools during one event or incorporation of extraneous materials from the vent escape route. Obsidian from two distinct sources can appear visually identical, but have variation in constituent elements (Kunselman 1998).

XRF METHODOLOGY

XRF was used as a signature for reliable sourcing to determine element content. Fluorescence occurs when an incident x-ray non-elastically removes an inner shell electron which is then refilled by another electron producing the final detected x-ray. The Compton x-rays are scattered from atomic shell electrons. From the view point of the detector, these sub-microscopic atomic physical differences within the artifact are indistinguishable and the fractions are related.

By using several diagnostic elements, the chances are negligible two artifacts could be from different sources and still produce an identical XRF signature. Element composition signatures from various sources shows overlap of some elements but differences in other elements. The signature is determined when a source and artifact agree to within two standard deviations for each element.

The concept if XRF analysis includes (1) using a non-destructive analysis procedure, (2) using a flexible apparatus and procedure to analyze both large artifacts and small flakes (because they all contain source information), (3) wanting a reliable XRF procedure to not have false identifications leading to wrong statements about behavior and, (4) wanting a simple procedure quick, cheap, and repeatable when necessary to resolve ambiguities. The essential emphasis is for a procedure able to include small flakes on the order of one gram in size and weight.

The XRF energy spectrum is the data produced from utilizing the detector. The diagnostic peaks of main interest for obsidian sorcing are iron (Fe), and five trace elements: rubidium (Rb), strontium (Sr), yttrium (Y), zirconium (Zr) and niobium (Nb). To collect a statistically reliable sample of the trace elements concentration, samples are run for 20 minutes at a current of two micro amps. By using appropriate calibrated rock samples, measured artifact data can be converted to parts per million (ppm), to be used for comparisons. Concentrations of elements in ppm for sourced obsidian artifacts from Trappers Point are presented (Table 1). Artifact data for

Rubidium and Zirconium are pictured (Figure 2) as a bivariate distribution.

For adequately thick artifacts, the criteria for analyses are met by normalizing trace element XRF data to the Compton scattering which then represents elastic scattering of x-rays from the total number of electrons. This normalization is reliable because it considers beam changes. All data are appropriately manipulated to determine ppm of the measured elements in the obsidian. The data are then used to determine the possible

TABLE 1. Trace element concentrations in ppm (parts per million) for sourced obsidian from Trappers Point.

ARTIFACT NUMBER (SU1006-)	RB	SR	Y	ZR	NB	CHEMICAL SOURCE
1	157	15	104	430	85	TA
3	218	0	136	212	89	YC
5	127	84	56	129	43	WC
7	100	132	45	106	39	FC
160	114	80	64	116	46	WC
188	128	151	61	120	29	FC
230	156	8	92	396	74	TA
240	125	151	60	166	66	FC
251	119	164	61	178	44	FC
275	111	131	45	102	45	FC
279	128	161	83	128	20	FC
280	127	160	59	104	40	FC
281	108	194	49	182	44	FS
283	130	202	56	209	38	FS
302	164	47	81	374	83	TA
305	120	147	51	121	59	FC
308	111	171	42	193	22	FS
311	137	178	75	130	3	FC
316	108	154	46	130	38	FC
345	121	165	67	137	34	FC
349	114	151	55	144	39	FC
351	110	133	30	107	51	FC
1745	109	140	62	147	56	FC
3004	90	117	79	147	36	FS
3051	103	127	50	105	33	FC
6254	123	156	57	138	47	FC
6899	94	158	39	161	23	FS
7421	126	159	47	120	32	FC
7659	119	85	67	126	32	WC
7758	118	124	41	91	15	FC
7800	120	142	44	110	28	FC
7972	77	203	49	308	47	GB
8137	122	146	80	142	39	FC
8786	109	193	49	205	64	FS
8819	126	159	64	161	45	FC
9673	169	49	85	408	105	TA
10124	79	177	51	160	39	FS
11287	116	190	56	195	28	FS
12906	129	196	74	165	45	FC
13468	86	85	30	104	47	FC
13505	90	150	40	167	18	FS
13526	234	0	145	200	85	YC
13562	102	165	43	182	66	FS
13933	123	162	57	141	53	FC
14018	79	255	36	300	33	GB
14856	112	135	46	126	41	FC

Rb - Rubidium Sr - Strontium Y - Yttrium Zr - Zirconium Nb - Niobium

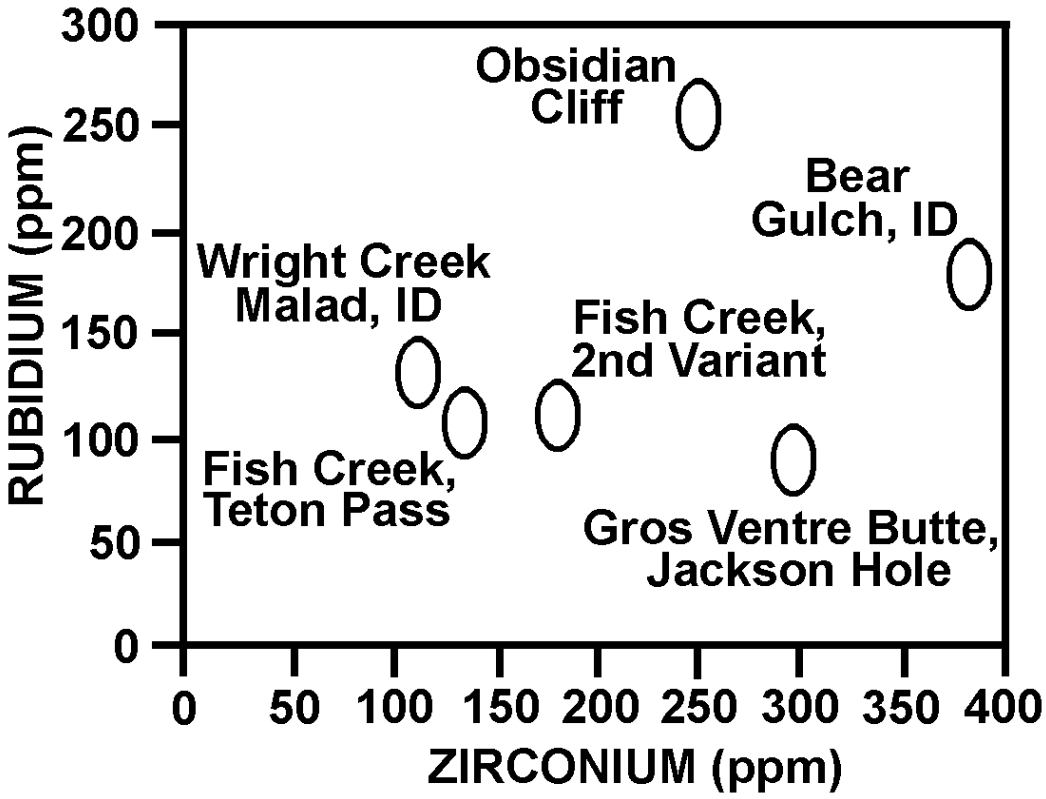

FIGURE 2: Bivariate plot of element distributions for identification of Trappers Point obsidian sample.

source candidates. If one source remains as a candidate because all six elements agree to within two standard deviations, then that one source is assigned as the unknown sample obsidian source location. The source ppm concept is in agreement with Hughes (1984), Nelson (1984) and Giaque et al. (1993).

With a thin artifact, some incident x-rays will go through the artifact and produce no fluorescence x-rays for the detector. The ideal artifact is several millimeters thick and produces as many x-rays as an effectively infinitely thick artifact would produce. Other discussions and testing of non-destructive procedures for thick and thin artifacts exists (Giaque et al. 1993).

RESULTS

At Trappers Point, 1,686 pieces of obsidian were recovered in the excavation, or 2.2 percent of the total lithic assemblage. Of these, 46 artifacts (selected for optimum size, including 28 projectile points, seven tools, and eleven flakes) were sourced at the University of Wyoming, Department of Physics (Table 2). The artifacts were found to have come from six different sources; West Gros Ventre Butte in Jackson Hole (n = 2); Fish Creek (includes Teton Pass) (n = 25); second variety of Fish Creek (n = 10); Obsidian Cliff in Yellowstone National Park (n = 2); Wright Creek near Malad, Idaho (n = 3); and Bear Gulch in the Targhee National Forest (n = 4) (Figure 1).

There are two Fish Creek obsidian sources located in Jackson Hole near Wilson. Both are isolated vents on the west side of the Snake River (Figure 1) and located less than one kilometer apart. Each source has a unique trace element signature. Most of the Trappers Point sourced obsidian artifacts (18 projectile points, four tools and three flakes) were from the Fish Creek One source (Table 2), also known as the Teton Pass

TABLE 2. Summary of all sourced obsidian artifact types from Trappers Point. The sources are arranged from closest to farthest away from the site.

SOURCE AREA	POINTS	TOOLS	FLAKES	TOTAL
Gros Ventre Butte/ Jackson Hole (GB) 95 km	-	1	1	2
Fish Creek/Teton Pass (FC) 104 km	18	4	3	25
Fish Creek Second Variant (FS) 104 km	3	1	6	10
Wright Creek/ Malad, Idaho (WC) 199 km	2	-	1	3
Obsidian Cliff/Yellowstone National Park (YC) 233 km	1	1	-	2
Targhee National Forest/Bear Gulch, Idaho (TA) 256 km	4	-	-	4
TOTAL	**28**	**7**	**11**	**46**

source. Three projectile points, one tool and six flakes were from the Fish Creek second variant source roughly 104 km (65 miles) from the site in a direct line.

Four obsidian projectile points came from the Bear Gulch/Targhee National Forest source (Table 2). Bear Gulch is located in the Centennial Mountains of the Targhee National Forest, in east central Idaho, 256 km (160 miles) from Trappers Point in a direct line (Figure 1). One projectile point and one tool were sourced to Obsidian Cliff in Yellowstone National Park, located 233 km (138 miles) from the site (Figure 1). One tool and one flake were from the Gros Ventre Butte/Jackson Hole source (Table 2) which is located on the east side of the Snake River across from the Fish Creek sources. It is 95 km (59 miles) from the site. Two points and one flake were from the Wright Creek/Malad Idaho source (Table 2). This quarry is located in the southeast corner of Idaho, north of Malad City, and is 199 km (123 miles) from the site (Figure 1).

It is possible, but not probable, some of the smaller artifacts were procured from pebbles on the high Pleistocene terraces flanking the Green River. Most of the obsidian pebbles are smaller than the Early Archaic projectile points and other tools recovered from Trappers Point, and there was no visible example of pebble cortex on any obsidian artifacts.

DISCUSSION

The most important potential sources of Trappers Point obsidian are the several volcanic fields to the west and northwest from the Snake River Plain to the Yellowstone hot spot. These fields are on a track that has shifted over the last 15 million years as the North American plate moved across a hot spot (Pierce and Morgan 1992). The hot spot has been under the Yellowstone volcanic field for the last 600,000 years. A specific obsidian source has a unique geochemistry because of differences in the underlying geology of the region. The XRF method identifies the element composition of the obsidian but cannot tell whether the material was from the primary geological source or from secondary cobble sources.

It is interesting to note 80 percent of the source material is from the three closest Jackson Hole sources. Fish Creek/Teton Pass, Fish Creek Variety 2 and Gros Ventre Butte have several sources near the Snake River and Wilson, Wyoming. These sources are about half the straight line distance from Trappers Point to the three furthest sources (Wright Creek, Bear Gulch and Obsidian Cliff). If one assumes an inverse squared fall-off of source material with distance ($1/d^2$), then the expected amounts would be four times as much for the three closest sources as for the three furthest sources (Kunselman 1994). This is in agreement with 80 percent of the Trappers Point obsidian from Jackson Hole and 20 percent from the other three sources. An inverse squared fall-off is usually associated with a three dimensional situation, whereas the earth surface is two dimensional. The discrepancy may be from mountain ranges,

unfavorable terrain, and the presence of other cultural groups. It is also possible to speculate an expedient usage as to why these three sources were the main part of the tool kit. The tooling up before hunting efforts at Trappers Point might be by a group based in Jackson Hole, or coming from there, preceding the kill.

The Helen Lookingbill site (48FR308) is a Late Paleoindian and Early Plains Archaic occupation located northeast of Trappers Point and also contains obsidian artifacts (Figure 1). Obsidian frequencies and sources were compared to Trappers Point. At Lookingbill, obsidian from Fish Creek, Targhee, and Yellowstone, which are not equidistant from the site, were equally represented (Kunselman 1994). In comparison, 80.4 percent (37 of 46) of the sourced obsidian artifacts from Trappers Point came from the nearest sources, Fish Creek/Teton Pass, Fish Creek Second Variant, and Gros Ventre Butte, all in Jackson Hole. Differences in the obsidian source percentages at these two sites are probably related to several factors, including seasonal rounds, curation and direct versus embedded lithic procurement strategies. The primary issue concerning obsidian use at Trappers Point, especially for Stratum V, is Jackson obsidian sources probably would have been covered by snow when the Stratum V occupation occurred (i.e., March-April) (Clayton 1999). Given obsidian accounts for only 1.2 percent of the stratum V debitage and 2.1 percent of the projectile points and tools, it would seem likely groups exploited the Jackson sources in the fall and then wintered in the Green River Basin, where most of the site's lithic materials are derived. Estimation of how many groups came together at Trappers Point and their individual seasonal rounds, based on the lithic raw material sources, would be highly speculative.

Based on the sources of the lithic toolstone recovered from Trappers Point, it appears Early Archaic groups moved along the edges of the Green River Basin and around the Rock Springs Uplift, to acquire their raw lithic materials. They also used the nearby Jackson Hole resources for obsidian and some Morrison Formation quartzite. A small amount of chipped stone material also came from the Absaroka Plateau area.

In all three cultural strata, high levels of tertiary and thinning flakes indicate most of the core/biface reduction occurred away from the site area. Debitage indicative of primary and secondary reduction activity was almost exclusively from Pleistocene cobbles materials, such as metaquartzites, Laney Member cherts, Miocene cherts and Bridger Formation cherts. In other words, most formal tools and points were brought to the site already modified or nearly finished, and the site debitage suggests only final stages or manufacture, maintenance or repair.

After the original acquisition of the obsidian, one cannot assume the obsidian was moved directly to the location where it was found (Renfrew 1977). The path of transport and the time of transport may have not been direct. Further data from other sites would be necessary to distinguish whether the obsidian artifacts represent (1) logistical organization with trade or exchange, (2) collection as part of specific collecting trips, (3) foraging behavior of collection during seasonal migrations or (4) gifts.

Artifact provenience and source location information may help understand the kinds and amounts of contacts between prehistoric peoples. Stone tools were a necessity and thus a motivation for people to come together for trade or exchange of information and acquisition of obsidian and lithic materials. Contacts would have allowed exchange of ideas either directly or observation during any meetings.

Acquisition and distribution of material goods is of interest for study of prehistoric cultures. Obsidian utilization system was a part of lithic resource organization, technology, economic issues, trade and exchange, and perhaps political, social and ideological organization. It is likely all components of the total lifeway were affected by other parts. It is difficult to imagine a part of the behavior independent of any other part (Frison 1991).

Determining the geographic locations of toolstone is an important line of research in the delineation of prehistoric economies. The occurrence of artifacts from geographically distinct sources underlies much of the present understanding of exchange networks and mobility patterns (Renfrew 1977; Dixon et al. 1968). Identification of raw material source areas provides basic data for any study of prehistoric economics. Once raw material sources are identified, why materials were transported, or not transported, is more difficult to determine. Nonetheless, inferences about trade and exchange, procurement tactics, procurement efficiency, and mobility patterns all require source identification. Source identification is only one step in investigation of prehistoric economies. It remains incumbent upon the archaeologist to determine the behavior that resulted in distinct distributions of materials.

CONCLUSIONS

The prehistoric people visiting the Trappers Point site were mobile and had connections to the reasonably great distance of Yellowstone, Malad, Idaho, and the Centennial Mountains of Idaho. The identification of sources proves some connection but does not inform whether there was trade and exchange, or direct collection by the group at the source location. The absence of sources in other directions where obsidian sources do not exist, such as to the east, does not prove there were not other connections. This absence is not an indication of possible barriers or preferences. The eight percent predominance of Jackson Hole obsidian sources suggests Jackson Hole was a likely location in a series of prehistoric settlement sites for these pronghorn hunters of the Trappers Point site.

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THE CRAZY WOMAN CODY SITE, JOHNSON COUNTY, NORTHEASTERN WYOMING

by
Mavis Greer and John Greer

ABSTRACT

A Scottsbluff point was recently found in an upland area on a sand-covered slope next to an intermittent drainage. No additional materials were noted on the surface, but there is a potential for buried cultural deposits of interest to Paleoindian studies.

INTRODUCTION

This brief note is intended to provide basic information on a Paleoindian site (48JO1676) found during initial surface inspection of a proposed energy project in northeastern Wyoming (Figure 1). A single Scottsbluff point was found

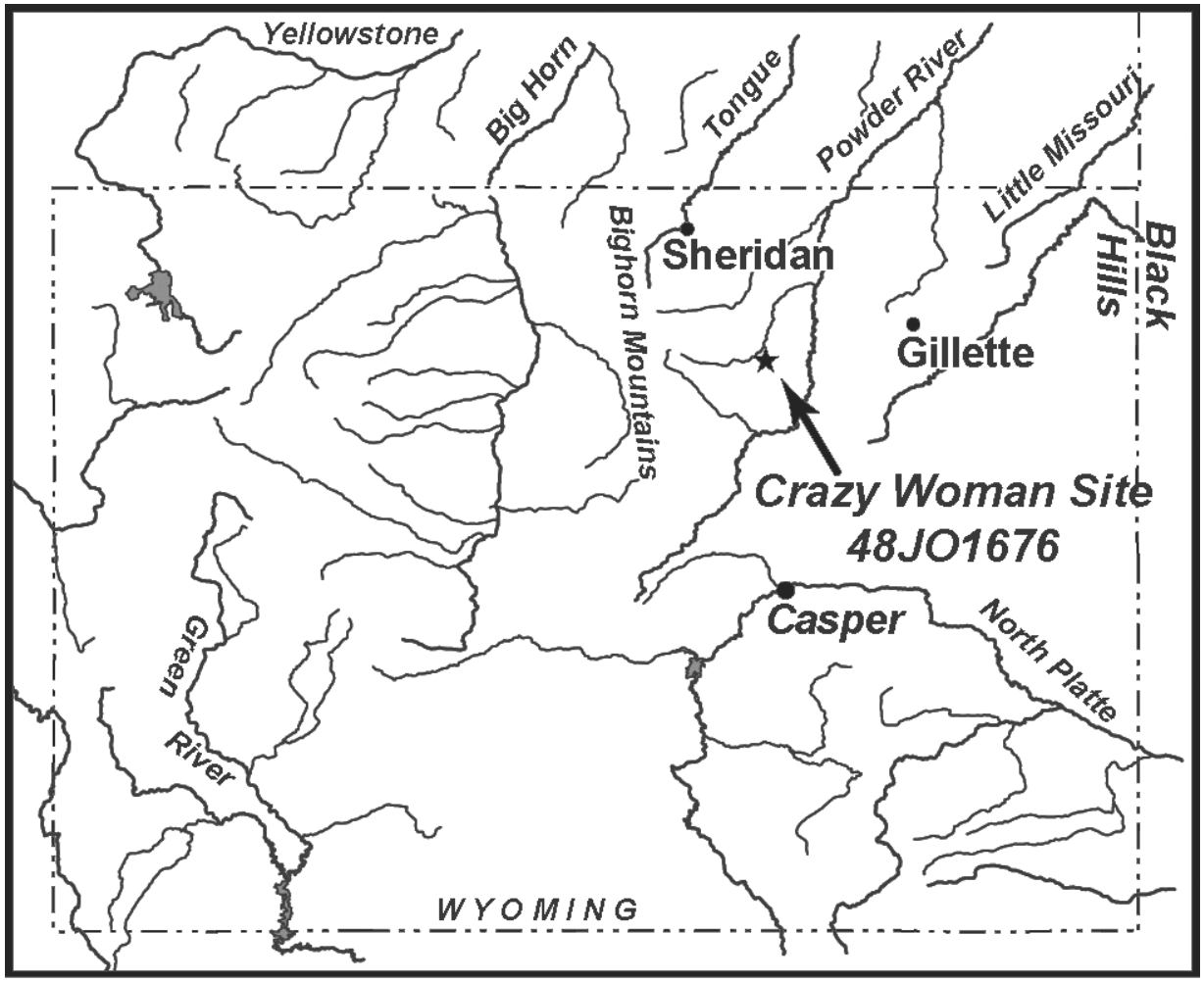

FIGURE 1: Site location for Crazy Woman Site, 48JO1676.

in an actively eroding area, and presently it is not known if this is an isolated artifact or the only recognizable exposed evidence of a much larger site. No subsurface testing or excavation was done, but this description can be used in morphological and locational comparisons. Sites of this age are not common, and even such limited information as this may be of use in synthesis studies on Paleoindian occurrence and assemblages in North America, specifically northeastern Wyoming. More details on the location, including the site map and legal information, are on file with the Wyoming SHPO and the BLM (Greer and Greer 2000).

SETTING

The site is on the west side of the Powder River Basin of northeastern Wyoming. The area is a high plains of rolling grasslands and gentle drainages almost immediately bordered on the west by the dramatic escarpment of the Big Horn Mountains. The site is about 15 miles east of the mountains, just past the main snow shadow that dumps seasonal moisture along the slightly lower fallout zone between the site and the mountains. In historic times this was a favored Native American hunting zone and apparently had been such for a long period, perhaps partially because of its rolling yet protected nature, good water and drainage, and excellent pasturage. Major trails through the region were heavily utilized during the frontier expansion period for Euroamerican access north to the Yellowstone River and the gold fields to the west.

The dart point is on an eroded slope just off the crest of a sandy ridge spur and above the terrace of an eroded drainage flowing northwest into Crazy Woman Creek (Figure 2). It is in a general area of rolling hills and low ridges that character-

FIGURE 2: Location of point, looking northwest.

ize the area south of Crazy Woman Creek, whose valley proper is visible from the site. The artifact is in an area where the lateral tributary begins to have a more developed and defined channel than just upstream. Downstream from the artifact, the drainage continues to downcut but remains a relatively narrow channel for as far as can be seen from the site. The drainage is flanked by low slopes with moderate inclines but with intermittent erosional bare areas exposing underlying bentonite and clay sediments overlain by compact sand, which appears to be at least a foot thick. The artifact is on a gentle slope that almost flattens out at this location but rises somewhat more steeply up to the low crest to the southwest. Vegetation is sparse and spaced and consists of a ground-level sod cover of prickly forbs and short grasses interspersed with erosional bare areas. Short grasses, sage, and prickly pear also occur. Vantage is northwest down the drainage, with an excellent view of the Big Horn Mountains on the western horizon.

SCOTTSBLUFF POINT

The single Scottsbluff point at this location (Figure 3) is made of a somewhat variegated medium brown to light gray chert, which at least along the edges is semi-translucent. This is a high quality non-local material similar to cherts in the Lubbock area of the southern Plains (i.e., northwestern Edwards Plateau chert). Origin of the material, however, is not known. The point is finely bifacially flaked and is bilaterally symmetrical in both cross sections. Fairly evenly spaced flakes were driven straight toward the center of the blade, much in the normal collateral fashion, but these are small and many end in slight hinge fractures less than 30% across the blade. The point subsequently was finely marginally retouched on all edges. The stem and basal edges are lightly ground as are the extreme proximal ends of the blade edges just above the slight barbs to strong shoulders. The distal tip is snapped, apparently caused by a weak imperfection in the chert at the break. There was no attempt to resharpen the point. The artifact has been lying in its current position for quite some time as the dorsal face is lightly patinated with white to very light gray patina. The ventral face has no patination. The point (minus the tip) measures 64 x 34 mm x 5 mm thick.

DISCUSSION

The Cody Tradition is generally viewed

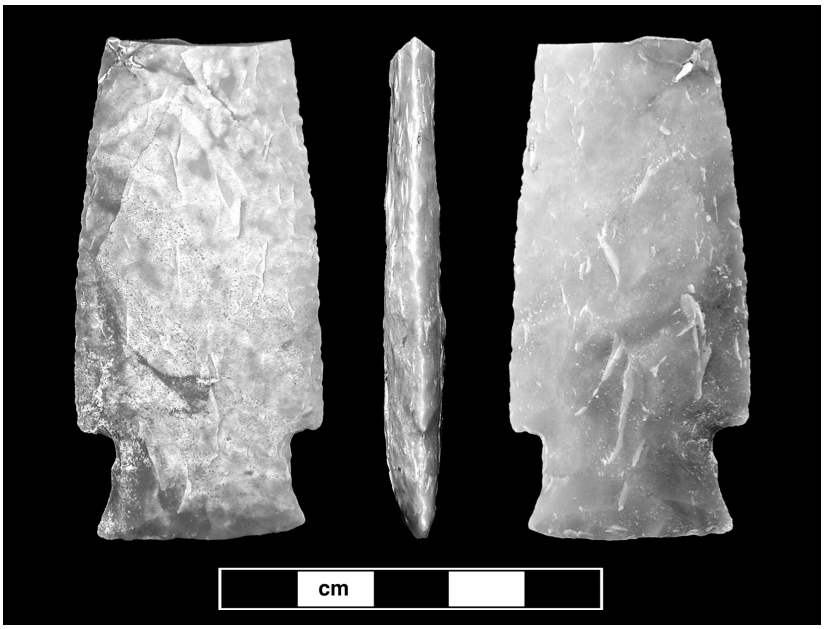

FIGURE 3: Scottsbluff projectile point recovered from 48JO1676.

in the Northern Plains as composed of the Alberta and Cody complexes. In practice it might be best to think of these as the Alberta and Cody phases of the overall Cody Complex since the two are so closely related and are mostly separated by slightly differing projectile point forms with incredible internal diversity of morphological traits and slightly different ages. Alberta points are generally slightly larger, with more rounded basal corners, fairly strong shoulders, and may be slightly earlier. The various forms of Cody points, at least from most of Wyoming and Colorado, generally have sharper basal corners, ephemeral sharp shoulders, and appear to be slightly later. The original Scottsbluff type, a name which we use here to facilitate communication, falls within the later, or Cody Complex, of the overall tradition. That type, however, like its parent complex, covers a wide variety of morphological variation across Wyoming. For instance, a distinctive form occurs, together with small, thin Cody knives, in parts of southwestern Wyoming, perhaps best known from the Larson Cache (Ingbar and Frison 1990; Frison 1991:353-354) but also reported at several other sites (Vlcek 1980; also SHPO files for sites 48CR2001, 48CR2911, 48CR3050, 48CR2960, 48SW1930, 48SW4712, 48SW13620). Small points of nearly identical shape also occur at some Cody kill sites (particularly Horner; Frison and Todd 1987) while some southern Wyoming sites such as 48SW1930 (Vlcek 1980) also contain Eden and other more lanceolate forms. The meaning of the variation, like most traits of the overall complex, are not understood. Any review of these problems is clearly beyond the purpose of this paper.

Frison (1991) summarizes Cody Complex ages in Wyoming, with dates from excavated deposits ranging 8000-9000 B.P. Dates for the Cody occupation at Horner are 7880-8840 B.P., Finley 8950-9026 B.P., Medicine Lodge Creek 8830 B.P, and Hell Gap estimated at 8650 B.P.

Cody points are found sporadically across much of Wyoming, from lower elevations within the intermountain basins up to timberline, seemingly with an increase of traditionally recognizable forms in the northern mountains and foothills (Frison 1978:34; 1991:62; Zeimens *et al*. 1977:97). Although a few sites have been reported, and related artifacts are found in museums and private collections, intact sites from this period are rare in northeastern Wyoming. Primary reported sites with Cody deposits in Wyoming include Finley in southwestern Wyoming, Horner and Medicine Lodge Creek in the Bighorn Basin, Carter-Kerr McGee in the Powder River Basin, and Hell Gap and Agate Basin (although no intact deposits have been found yet) in the far eastern part of the state (Frison 1984, 1991; Frison and Todd 1987). Since only the largest and most intensively investigated sites have been reported, and then mostly only partially, almost nothing is known of the occurrence, distribution, numbers, morphology, setting, or associations of other known Cody materials.

Cody Complex sites, especially camp areas, are typically quite large and may encompass several acres. Horner, Carter-Kerr McGee, and Finley are good examples of the large size. Large extent may be more common than is usually assumed for many Paleoindian camps of other periods also. Thus, when assessing site size, usage, character, or possible subsurface extent, it is often useful to consider depositional areas in which no artifacts are exposed but into which cultural layers could extend. This has been the case at several excavated sites and is pertinent to Crazy Woman.

The dart point at Crazy Woman is large, and its size, overall form, and distinctive stem shape are representative of what we refer to as the eastern tradition of Scottsbluff. As such it is assumed to be about 8000-9000 years old. It is clearly dissimilar from the smaller, thinner Cody Complex points, usually made of local material, found across much of southwestern Wyoming. It is made of nonlocal material, as is common for projectile points from this period. Use of exotic materials has been reported specifically at Horner (Frison 1991:66).

The location has not been studied in detail and presently is little understood. The dart point is the only artifact noted during the initial inspection.

The adjacent ridgecrest, lateral slopes, areas along the drainage, and slopes across the drainage were inspected, but no additional artifacts recognizable from this period were found. The area is naturally covered with a substantial veneer of compact sand, and there is a potential other artifacts, associated features, or cultural deposits are obscured by sheetwash or areas of grass cover. It could be this is an isolated artifact, perhaps lost during hunting, and may represent a single episode event by a single person, or perhaps a small camp or activity station utilized by only one or two people for a very short period of time. Equally likely, however, the point could be exposed on the edge of an associated larger camp representing a more complex cultural presence. The depth of surrounding sandy sediment indicates the area has a potential for buried cultural materials and features, such as artifacts and hearths, that could provide information on the use, function, and complexity of the occupation. The site is not within a proposed construction impact area and hopefully will withstand the constant onslaught of surface disturbance associated with unending mineral development in the Powder River Basin.

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