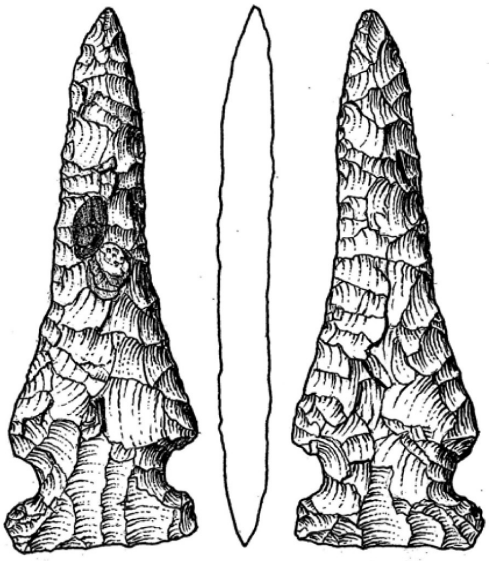
THE WYOMING ARCHAEOLOGIST



WYOMING ARCHAEOLOGICAL SOCIETY

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THE WYOMING ARCHAEOLOGIST

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Please send a minimum of two (2) hard copies of each manuscript submitted. A third copy would speed the process. Please contact the Managing Editor for instructions if the manuscript is available in electronic format. Readers should consult the articles in this issue for style and format. Deadline for submission of copy for spring issues is January 1 and for all issues is July 1. Reports and articles received by the Managing Editor after those dates will be held for the following issue.

The membership period is from January 1 through December 31. All subscriptions expire with the Fall/Winter issue and renewals are due January 1 of each year. Continuing members whose dues are not paid by March 31 of the new year will receive back issues only upon payment of $5.00 per issue. If you have a change of address, please notify the Executive Secretary/Treasurer. Your *WYOMING ARCHAEOLOGIST* will not be forwarded unless payment is received for return and forwarding postage. Back issues in print can be purchased for $5.00 each, plus postage. Back issues out of print are available at $0.25 per page plus postage.

Checks for chapter subscriptions and renewals should be sent to the chapter secretary involved. All other checks, subscriptions, and renewals should be addressed to the Executive Secretary/Treasurer. Correspondence and orders for back issues should be addressed to the Executive Secretary/Treasurer.

Society yearly subscription rates are as follows:

Individual Associate Member - $20.00
Institutional Member - $30.00
Canada and Other Foreign - $34.00

Other memberships may be available. Contact the Executive Secretary/Treasurer for information. Local chapter dues are in addition to state society dues. The Wyoming Archaeological Society is a Nonprofit Organization.

The Wyoming Archaeological Society, Inc. and its local chapters do not discriminate on the basis of age, gender, sexual orientation, gender identity, gender expression, ethnicity, disability, national origin, political affiliation, or religious belief.

THE WYOMING ARCHAEOLOGIST
VOLUME 56(1), SPRING 2012

Table of Contents

THIS ISSUE PUBLISHED MARCH 2013

WYOMING ARCHAEOLOGICAL SOCIETY 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., Mulloy or Frison Scholarship Funds, The Wyoming Archaeologist, ???????)

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

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***

Please specify where your donation is to be placed.
Jensen/Robson Research Grant _____; Jensen/Robson PhD Travel Award _____;
Hell Gap Research _____; WAF General Operations ____; Other _____.

WAF Funding Initiatives: George C. Frison Institute Endowment _____.

WAF has pledged $100,000.00 to the Frison Institute Endowment (2011 – 2016). Funds given to the GFI Endowment will be matched dollar for dollar by the Wyoming State Legislature, doubling your donation. For further information please contact RLKelly@uwyo.edu, Frison Institute Director.

Please make your check payable to the WYOMING ARCHAEOLOGICAL FOUNDATION and mail to Barbara Nahas, WAF Treasurer, P.O. Box 725 – Cody WY, 82414; 307-868-2685.

IN MEMORIUM

Pete "Bison" Pete Gardner
Passed in 2012

It is difficult to enter into a discussion of Plains Archaeology in general or Wyoming Archaeology in particular without some reference to *Bison*. All aspects of bison studies expanded rapidly in the 1960s with serious archaeological study of procurement sites. Along with this came the realization that a lack of information on bison physiology, paleontology and behavior were hindering research. This initiated a search for comparative faunal material and discussions with persons familiar with year-round management of bison.

Pete Gardner managed a herd of 500 bison in the Goshen Hole east of Wheatland, Wyoming. We contacted Pete in 1972 and inquired about skeletal material. He said he had a cow that had died several days before and that we were welcome to salvage anything we could. When Pete realized we were willing to retrieve the bones from an animal in an advanced stage of deterioration, he became a major source for materials to build up our present faunal collections, recognized as one of the best in existence.

In 1974, the Plains Anthropological Conference was held at the University of Wyoming. The highlight of the affair was a symposium on bison procurement and utilization. The results of the symposium were later published (Davis and Wilson, editors 1978). Pete Gardner was asked to participate in a panel discussion that included nearly everyone involved in bison studies at that time. Pete provided valuable information on managing a bison herd that was taken seriously by most members of the panel. I could add to the list of Pete's contribution to our archaeology program. I sincerely believe that he deserves a place in the history of Wyoming Archaeology.

George Frison
Professor Emeritus
University of Wyoming

REFERENCE CITED

Davis, Leslie B., and Michael Wilson (editors)
1978 Bison Procurement and Utilization: A Symposium. *Plains Anthropologist Memoir* 14. Lincoln, Nebraska.

NEWS AND ANNOUNCEMENTS

Wyoming Archaeological Society, Inc.
2012 Annual Meeting Minutes
8:05 a.m. – Best Western Tower West Hotel – Gillette, WY
Saturday, April 27, 2012

Presiding: Larry Amundson, President
Call to Order: 8:05 a.m.

Denise Tugman made several announcements re additional meetings and field trips.

Carolyn Buff announced the death of Tommie Butler's wife and asked that members sign a card that was going around. Tommie is the president of the Pumpkin Buttes Chapter.

Report of Credentials Committee/Roll Call of Delegates: Executive Secretary/Treasurer Carolyn Buff certified the voting delegates: Absaroka – Sylvia Huber and Gary Bingham; Ancient Trails – Cher Burgess and Alice Tratebas; Casper – Kerry and Christine Lippincott; Cheyenne – Dan Bach and Richard Currit; Fremont County – Leneigh Schrinar and Leonard Wegman; June Frison – Carmen Clayton and Dale Wedel; Pumpkin Buttes – Ron Cossette and Denise Tugman; Sheridan/Buffalo – absent; Sweetwater County – Bill Current; and Sublette County – Dawn Ballou and Dave Vlcek.

Roll Call showed nine chapters represented: Absaroka, Ancient Trails, Casper, Cheyenne, Fremont, June Frison, Pumpkin Buttes, Sublette, and Sweetwater. Absent was Sheridan.

Approval of Minutes of April 16, 2011: Motion by Denise Tugman, second by Leniegh Schrinar to approve as published in Volume 54(2) Fall 2010 issue of *The Wyoming Archaeologist*. Carried.

Treasurer's Report: Executive Secretary/Treasurer Carolyn Buff gave the treasurer's report showing a total net worth of $78,465.00, a net increase of $579.96 over 2011. Motion by Sylvia Huber, second by Leonard Wegman to file the report for audit. Carried.

Auditor's Report: Dan Bach, Michael Page, and John Laughlin performed the annual audit and found the accounts to be in order.

Editor's Report: Danny Walker – Has a wide variety of manuscripts available to publish two more issues of the journal, pending submission of the minutes of this meeting.

Librarian's Report: Danny Walker – Have received no new donations. We are receiving more newsletters than journals now.

Committee Reports: Scholarship: Carolyn Buff announced that the Scholarship Committee would meet at lunch to evaluate the scholarship applications.

SAA/COAS: Marcel Kornfeld announced that discussions are being held to include an edition for associated societies. COAS is also discussing an avocational award in addition to the Crabtree award for those persons who work across state lines for several different organizations. The latest newsletter is available, and Marcel asked for information from the chapters on their activities for publication in the next newsletter.

Chapter Reports: The chapter reports will be published in *The Wyoming Archaeologist*.

State Archaeologist's Report: Mark Miller announced that Danny Walker had been doing double duty for the last six months, serving as curator of the repository. The agency is close to filling the curator position. The department is in the process of preparing for an 8% budget cut.

Old Business:

Wyoming Archaeology Awareness Month – Judy Wolf reported that Wyoming had placed first again with the poster. She requested $250 for Archaeology Awareness Month in September and thanked the Society for the continued support. She announced that chapters could pick up posters and that t-shirts, aprons and caps were available. Motion by Dale Wedel, second by Carmen Clayton to donate $250. Carried.

Wyoming History Day: Danny Walker announced that there were no entries at Wyoming History Day that would qualify for the archaeological award. This year's topic did not lend itself to archaeology.

Friends of the George G. Frison Institute: Bill Scoggin, who has been designated as the liaison between the WAS and Friends group, reported that

his father passed away and he had received memorials which were donated to the Institute, and thanked the audience. He announced that a group was going back to reevaluate the UP Mammoth site which had been excavated by Agogino and the Irwins. It is an ongoing project with initial trenching to look at the deposits. He would like to involve the WAS if they can get the project going. The Institute provided some initial money. The bones are at the University of Wyoming and the artifacts are at the Peabody Museum.

Wyoming Archaeological Foundation: Janice Baars, Foundation president, announced that Hell Gap has been used for 4th graders in Wheatland with projects including measuring circles. This year the Jenson grant was funded by the Clovis to Cowboy poster. Hell Gap hosted the summer meeting with an atlatl contest. Field school was held in June and July. There was a tour bythe Pueblo Archaeological Society. She said that they always need help with fencing, sagebrush, weeds, etc.

Web Site: Dan Bach and John Laughlin reported that there had been over 10,000 hits to the site. They have requested a copy of Photoshop to aid in maintaining the site and could use it to enhance the site. Danny could get the program for about 1/3 that of list price. The web page is updated frequently and Dan is spending about 20 hours per month on it. If billed, it would equal about $12,000 per year. There is some difficulty in balancing the showing of private collections vs. pot hunting. Motion by Bill Current, second by Carmen Clayton to renew the web site. Carried. Motion by Carmen Clayton, second by Dale Wedel to purchase the Photoshop software. Amendment by same pending the cost, and then approval by the executive committee. Carried.

Names, addresses, etc. will be published and Carolyn Buff requested that names, addresses, phone numbers and emails be updated as soon as possible.

Wyoming Rock Art Interest Group: The group is inactive.

New Business

Frison Institute Fund Raising: Bob Kelly announced that a $100,000 pledge is to be matched by the state and that approximately $60,000 of that amount had been raised thus far and that they are trying to reach that goal. Several memorials have been received this year, with June Frison's having no specific earmark, just pursuit of Wyoming archaeology.

The Bill Tureeli fund will probably be able to give two $1,000 awards each year; the Patrick Mullen fund should be able to give approximately $1,000 for a graduate student in geoarchaeology analysis in Wyoming, New Mexico, or Alaska.

Stewardship Program: John Laughlin coordinates the program for the SHPO office and is working with the BLM. They want to expand the program to each chapter of the society. He asked each chapter to think about what project could be done and he will visit the chapters to train for the sites.

Survey Section: Paul Sanders announced that a crew would be working at Game Creek again this summer for eight, 10-day sessions beginning June 11, and that this is the last year for excavation on that site. The west side of the road will be worked on, with the east side pretty much done. He invited all to visit any time through the end of September.

Red Buttes Project: Carolyn Buff announced that there will be a 10-day session for phase two of the Red Buttes project, contracted by the Natrona County Historic Preservation Commission. Dr. Rory Becker from Eastern Oregon University and Dan Lynch from Amhurst University will conduct magnetometer surveys in the area. Cadaver dogs will survey the area in the spring. The project will be conducted July 9-18.

IGive: Carolyn Buff announced that there is a web presence which arranges for donations to the WAS from sales. Business partners are listed on the web site, betty.igive-694908-@igive.com, and instructions for the WAS to receive the donations are also on the web site. This is an easy way for the WAS to get a little more funding, and it is painless. Anyone ordering through the internet can participate.

Fall Activities: Mark Miller mentioned that WAPA would meet in Pinedale in conjunction with the Mountain Man conference.

Dr. Curtis Merean will speak at the Institute in Laramie on September 27 on the Middle Stone Age in Africa at the time of the first appearance of modern man.

Brochures, Letterhead, Envelopes, Membership Cards: are available from Carolyn Buff.

State Historic Preservation Office – Mary Hopkins announced that SHPO would be hosting the Preserve Wyoming Conference in Pinedale in May with a workshop on landscapes. They will be present-

ing some case studies in cultural landscapes. The workshops are free but there is a conference cost. Mitch Silver will be the keynote speaker. He is the president of the American Planning Association and will be talking about planning in the West. There will also be a session on conservation easement and an awards banquet on Friday night.

The SHPO is revising the report standards and each chapter will receive a copy of the draft electronically. Please make comments to Mary.

Correspondence: Carolyn Buff noted that there were thank-you notes on the table for perusal after the meeting.

Election of Officers: Judy Wolf, chair, June Frison Chapter; Sylvia Huber, Absaroka Chapter, and Margaret Harless, Fremont County Chapter. Nominated were Larry Amundson, president; Bill Scoggin, 1st vice president; Judy Wolf 2nd vice president; and Judith Reed, member-at-large to the Wyoming Archaeological Foundation. Motion by Denise Tugman, second by Leneigh Schrinar to cease nominations and cast a unanimous ballot. Carried.

Nominating Committee procedures will be posted to the web site and will be passed on to the next committee.

2013 Nominating Committee: Judy Wolf, 2nd vice president, June Frison Chapter, chair; Sylvia Huber, Absaroka Chapter, and Denise Tugman, Pumpkin Buttes Chapter. Discussion was held re using the nominating procedures that had been developed last year to get more input and be more transparent. Motion by Judy Wolf, second by Bill Current to approve nominating committee using procedures. Carried.

Selection of Site for 2013 Annual Meeting: The 2013 meeting will be held in Laramie and hosted by the June Frison Chapter.

Selection of Site for 2012 Summer Meeting: Mark Miller suggested that members visit the Game Creek Site when they can.

Announcements: Carolyn Buff asked for an updated list of chapter officers.

The Wyoming Archaeological Foundation will meet at 7:00 a.m., and the field trip will begin at 9:00.

Carolyn Buff announced that the membership database will be published in the journal, space permitting. Anyone not wanting their information published must make that request in writing.

Carolyn Buff announced that the WAS window clings and magnetic decals were available for sale. They are also available on the website.

Other Business to Come Before the Body: Danny Walker requested Powerpoint presentations from anyone giving a paper. Don and Eva Peden were forced to return to Riverton where Eva underwent emergency gall bladder surgery.

Denise Tugman announced that poster papers could be put on the wall.

Marcel Kornfeld announced that a table had been set up for the PIRL lab with the "Doing It the Wyoming Way" poster available; also with a slide show running of the symposium for Drs. Frison and Vance Haynes. They do have some summer projects scheduled, but no time-line is available yet.

Rich Adams invited members to the Shirley Basin Lodge site from Memorial Day to June 8. Copies of directions to the site are available from him.

Sylvia Huber reported that Bob Edgar has passed away and that a memorial service will be held at Old Trail Town on May 12. Edgar was a well-known amateur in the Cody area and had helped Wil Husted at the Mummy Cave Site.

Adjourn: There being no further business, the meeting adjourned at 9:30 a.m.

/s/ Carolyn M Buff
Executive Secretary/Treasurer

AUDITING COMMITTEE REPORT
March 31, 2012

In accordance with the bylaws, the Auditing Committee has reviewed the Treasurer's books and records for the Wyoming Archaeological Society, Inc. for fiscal 2010.

AUDITING COMMITTEE SUMMARY
March 31, 2012

The Wyoming Archaeological Society, Inc. owns one checking account, one savings account, two money market accounts, and two certificate of deposit accounts at the Reliant Federal Credit Union, 4015 Plaza Dr., Casper, WY 82604.

Balance on hand March 31, 2011 - $77,885.04

Receipts
Interest Earned – $823.91
Deposits – $9,271.32
Disbursements – $9,515.27
Balance on hand March 31, 2011 – $78,465.00

Includes no outstanding check(s), and no outstanding deposits.
Audited and found correct.

/s/ Michael Page Date April 27, 2012
/s/ John Laughlin Date April 27, 2012
/s/ Daniel Bach Date April 27, 2012

Wyoming Archaeological Society, Inc.
Scholarship Committee
Minutes
April 28, 2012 – Best Western Tower West Hotel – Gillette, WY
12:00 p.m.

Presiding: Carolyn Buff, Chair
Present: Larry Amudson, Dewey Baars, Janice Baars, Carolyn Buff, Bill Current, Mary Lou Larson, (ex officio), Mark Miller (ex officio), Barbara Nahas, Paul Sanders, Bill Scoggin, Danny Walker, and guest, Todd Guenther.

Todd Guenther expressed concern that the deadline for the David Reiss Memorial Scholarship for Community College students was too late for plans for field schools and student projects since most students are only at a community college for two years.

Motion by Bill Scoggin, second by Barbara Nahas to make the deadline for the Reiss Scholarship only February 15-20 (determined each year), with the announcement to the students on March 1, and that ALL scholarship applications should be submitted electronically. Carried.

Motion by Mark Miller, second by Barbara Nahas to award $1000 to Zachary Garhart for the Reiss Memorial Scholarship. Carried.

Motion by Bill Scoggin, second by Barbara Nahas to award $750 to Clara Copp-LaRocque for the Mulloy Undergraduate Scholarship. Carried.

Motion by Mark Miller, second by Judy Wolf to award $750 to Brigid Grund for the Frison Graduate Scholarship. Carried.

Motion by Mark Miller, second by Judy Wolf to award the $750 Henry and Clara Jensen Doctoral Travel Award to Heather Rockwell and Elizabeth Lynch, with $500 to Rockwell and $250 to Lynch. Carried.

Mark Miller has emailed Dr. Tom Buchanan, University of Wyoming President, asking if he was planning to match the scholarship amounts again this year. Based on his decision and after the protocols are established, the matching amounts will be forwarded to the students, thereby raising the scholarships to $2,000 and $1,500 respectively. Our thanks are extended to Dr. Buchanan and the University of Wyoming.

In an effort to entice more students to apply for the scholarships, the following people agreed to again visit classes beginning early in January as soon as the second semester begins, to speak with students and faculty re the Reiss Memorial Scholarship: Casper, Carolyn Buff; Central, Eva Peden; Western, Bill Current; LCCC, Cheyenne and Laramie, Mark Miller; Northwest, Sylvia Huber; Sheridan, Vi Gardner; Gillette, Denise Tugman; Eastern, Dewey Baars will locate a designee, and UW, Mark Miller. Each person will take the appropriate application forms and encourage students to apply and faculty to write recommendation letters. It was decided that just emailing faculty was not a viable option at this time; that we needed to present to students face-to-face since the opportunities were not reaching the students.
Adjourn: 12:55 p.m.

/s/ Carolyn M Buff
Scholarship Chair

WYOMING ARCHAEOLOGICAL SOCIETY, INC.
Treasurer's Report for Fiscal Year Ending March 31, 2012

CHECKING ACCCOUNT - RELIANT FFEDERAL CREDIT UNION

	INCOME	EXPENSES	BALANCE
Beginning Balance	$5,478.70		
Deposits	$9,271.32		
Interest Earned	$1.46		
TOTAL INCOME - Checking			**$14,751.48**

EXPENSES	
Secretary of State - Annual Corporation Dues	$25.00
Gene Smith - Refund	$130.00
Judy Wolf - WAAM	$250.00
Wyoming Archaeological Foundation - Annual Dues	$648.00
Jason Labelle - Honorarium	$300.00
Gale Brow - Reiss Scholarship	$500.00
William Elder - Reiss Scholarship	$500.00
Crystal Rae Rose Reynolds - Reiss Scholarship	$500.00
Jason Bogstie - Frison Scholarship	$500.00
Joseph Gingerich - Jenson Award	$250.00
Wyoming History Day	$100.00
Holiday Inn - Labelle Room	$169.46
USPS -Bulk Mailing	$190.00
Modern Printing - Mailing	$70.00
Dan Bach - Web Site Renewal	$129.40
Wyoming Archaeological Foundation - Jensen Award	$750.00
Gale Brow - Reiss Scholarship - UW Match	$500.00
Crystal Rae Rose Reynolds - Reiss Scholarship - UW Match	$500.00
William Elder - Reiss Scholarship - UW Scholarship	$500.00
Jason Bogstie - Frison Scholarship - US Match	$500.00
USPS - Postage	$44.00
Sheridan Chapter - Refund	$377.89
UW Foundation - UW Match	$500.00
Alzheimer's Associantion - June Frison Memorial	$100.00
Byron Walker Wildlife Area - Memorial	$25.00
USPS - Postage	$88.00
William Scoggin - Scoggin Sr Memorial	$25.00
Society for American Archaeology - Dues	$30.00
UW Copy Center - Journal Printing	$852.50
Danny Walker - Postage	$93.55
Secretary of State - Annual Corporation Dues	$25.00
Staples - Labels	$61.93
USPS - Postage	$3.82
Bloedorn Lumber - Trowel	$18.49
Contractor's Supply - Trowel	$9.74
Merback Awards - Trowel Engraving	$58.49
USPS - Bulk Permit	$190.00
TOTAL EXPENSES	**$9,515.27**

ENDING BALANCE - Checking Account			**$5,236.21**
SAVINGS ACCOUNT			
BEGINNING BALANCE		$126.43	
Interest earned		$0.20	
ENDING BALANCE			**$126.63**
MONEY MARKET ACCOUNT - 0040			
BEGINNING BALANCE		$7,751.91	
Interest Earned		$14.28	
ENDING BALANCE			**$7,766.19**
MONEY MARKET ACCOUNT - 0041 (BLM)			
BEGINNING BALANCE		$9,239.14	
Interest Earned		$17.00	
ENDING BALANCE			**$9,256.14**
Total available after March 31, 2011 = $7,013.18			
CERTIFICATE OF DEPOSIT - 00100			
BEGINNING BALANCE		$43,034.26	
Interest Earned		$726.64	
ENDING BALANCE			**$43,760.90**
CERTIFICATE OF DEPOSIT - 0101 - Reiss Account			
BEGINNING BALANCE		$12,254.60	
Interest Earned		$64.33	
ENDING BALANCE			**$12,318.93**
TOTAL NET WORTH AS OF MARCH 31, 2011			**$78,465.00**
Total Income	**$87,980.27**		
Total Expenses		**$9,515.27**	
Net Increase (Decrease)			**$579.96**
SCHOLARSHIP ACCOUNT			
Beginning Balance	$(10,086.00)		
Deposits (Donations)		$4,750.00	
Scholarships Awarded	$9,500.00		
Ending Balance			**$(14,836.00)**
iGIVE ACCOUNT			
Included in checking income.			
Beginning Balance	$-		
Deposits		$10.25	
ENDING BALANCE			**$10.25**

/s/ Carolyn M Buff
Executive Secretary/Treasurer

MINUTES
WYOMING ARCHAEOLOGICAL
FOUNDATION BOARD MEETING
Sunday, April 29, 2012 – Gillette, Wyoming

The annual meeting of the Wyoming Archaeological Foundation Board of Directors was held in conjunction with the 59th Annual Wyoming Archaeological Society Meeting in the Gillette Best Western at 7:30 am. Board members in attendance included: Janice Baars (President and WAS immediate past-president), Barb Nahas-Keiry (Treasurer, ex-officio), Mary Lou Larson (Secretary, University of Wyoming, Department of Anthropology, ex-officio), Mark Miller (State Archaeologist, ex-officio), Larry Amundson (WAS President), John Laughlin (Member-at-Large), Alice Tratebas (Member-at-Large), Judith Reed (Member-at-Large), Marcel Kornfeld (Hell Gap site caretaker), Bob Kelly (George C. Frison Institute). Nick Freeland, Judy Wolf, George C, Frison.

President Janice Baars called the meeting to order at 7:48 am.

Janice introduced Judith Reed, new member-at-large of the WAF board. One change to the agenda – suggestions on how members-at large are selected.

Minutes of the Last Meeting:

Janice asked if there were any additions, corrections on the 2011 meeting of the WAF Board Meeting. Pumpkin Buttes (Gillette Chapter) Ancient Trails sponsored last year's meeting. Motion to accept the minutes passed unanimously by voice vote. Motion made by John, seconded by Barb. Carried.

TREASURER'S REPORT

Barb presented and discussed the Treasurer's Report.

Balance in checking as of 04/01/2011	$3,077.94
Income:	
Henry Jensen Estate (Oil Royalties) $2,560.94	
WAS Dues years 2010/2011	$ 648.00
University of Wyoming – Matching Funds	$ 750.00
Jensen Doctorial Award – WAS/WAPA	$ 500.00
Book Royalties	$ 196.97
Clovis to Cowboy Posters	$ 125.00
WYRul Electric	$ 16.13
Total Income	$4,797.04

Expenditures:	
Traveler's Insurance	$1,682.00
Wells Fargo – Safe Deposit Box	$ 10.00
Goshen County Treasurer	$ 419.09
Wyoming Secretary of State Annual Report	$ 25.00
Postmaster – Annual P.O. Rental/Postage	$ 70.00
Hell Gap Maintenance	$ 16.13
Jensen Doctorial Awards	$1,500.00
Total Expenditures	($3,722.22)
Balance in Checking as of 03/31/2012	$4,152.76
Reserve Funds	
Foundation Operations	
Certificate of Deposit #6026430 (a/o 04/01/11)	$13,877.11
Interest paid 2011/2012	$ 13.77
Balance Ending (a/o 03/31/2012)	$13,890.88
Money Market Account #20098502 (a/o 04/01/11)	$17,642.30
Interest Paid 2011/2012	$ 27.97
Deposit 2011	$ 872.00
Withdrawals 2011	($ 2,700.00)
Balance Ending (a/o 03/31/2012)	$15,842.27
Foundation Operations Sub-Total	$29,733.15
Henry E. Jensen Trust	
Certificate of Deposit #6015170 (a/o 04/01/11)	$18,784.77
Interest Paid 2011//2012	$ 9.84
Balance Ending (a/o 03/31/2012)	$18,794.61
Certificate of Deposit #6213161 (a/o 04/01/11)	$ 5,589.42
Interest Paid 2011/2012	$ 2.76
Balance Ending	

(a/o 03/31/2012)	$ 5,592.18
Jensen Research Grant	
Certificate of Deposit #6015170	
(a/o 04/01/11)	$21,109.86
Interest Paid 2011/2012	$ 9.84
Balance Ending	
(a/o 03/31/2012)	$21,119.70
Jensen Trust Sub-Total	$45,506.49
Clovis to Cowboy Fundraiser	
Money Market Account #20098502	
(a/o 04/01/2011)	$845.00
Deposit 2011	$ 27.00
Withdrawal 2012	($872.00)
Balance Ending (a/o 03/31/2011)	$ 0.00
Fundraiser Sub-Total	$ 0.00
George Frison Endowment	
Money Market Account #20098502	
(a/o 04/01/2011)	$20,187.00
Interest Paid 2011/2012	$ 17.00
Deposits 2011/2012	$44,484.00
Withdrawal 2011	($24,785.00)
Balance Ending	
(a/o 03/31/2012)	$39,903.00
Endowment Sub-Total	$39,903.00
Total Net Worth as of	
March 31, 2012	$119,295.40

John moved, Mark seconded that we accept the treasurer's report. Motion carried.

Registered agent – Barb noted that John Albanese was registered agent for the WAF. After discussion, the registered agent will be changed to Barb.

This year's audit was completed by Alice Tratebas (chair), John Laughlin, and Janice Baars. The books were reported to be in order. Janice appointed Judith Reed and Larry Amundson to the next year's audit committee. Mark moved and John seconded that we accept the auditor's report. Motion carried.

No correspondence.

OLD BUSINESS

Foundation Stationery: BJ Earle said we are # 3 on her list of art work to do. Barb asked that Alice give her BJ's email and phone number.

Foundation Inventory: Not done this year, but Barb will try to get down this year; hopefully during the Frison Institute meeting. Mark noted that Barb should check with Danny at the repository and Mary Lou's records.

Oil Lease – Fremont County. Barb called Brad to make sure that he had received the re-offer from the Foundation. She hasn't heard anything back from him. After discussion, the board decided to have Barb call him and ask him where we are and that we want to continue.

NEW BUSINESS

Jensen/Robson Research Grant Application: Unfortunately this year, no one applied this year. She had contacted previous recipients of the grant and they had reported that they hadn't had time. John should put it on the WAPA/WAS web site. Discussion centered growing the research grant application – or spending it and how to disperse the information to WAS members. No decisions were made.

Hell Gap Report: Marcel passed out a power point presentation on improvements etc at the HG site. The board commented on Marcel's presentation to the WAS yesterday. Mary Lou asked how often we should present an overview of the HG site to the membership.

Care and upkeep needs: Over the past several years, UW and others have done a number of improvements to the property. These improvements and additions include (see power point).

Fire Plan: Marcel reported on his and Dewey's visit to the Fire Marshall. MK asked where the impetus came from to make a fire plan. Barb stated that she received a letter – will send it to MK for his review. HG is in two different fire districts, Fort Laramie and Lusk. MLL noted this all came about after the fire numerous years ago. Marcel discussed the map in his handout. Stipulations include:

Barb said that she contacted insurance – we have fire coverage only on the house. ? was asked about what happens if we don't blade and burn. (Nothing). Janice noted that Dewey contacted Camp Guernsey and they will contact Guernsey in case of a fire. Alice explained the "chain of command" (between cities/counties/federal agencies).

Oil and Gas: MK reported most of the land

in the area has private minerals, but MK hasn't checked on our land. Barb has copies of the leases and will check the ownership. Alice reported that Casper BLM has put "no surface occupancy" on the property. Janice reported mine detectors are looking into gold in the area. Dewey suggests filing on the mine before anyone else does – the presence of the gate indicates our interest in the mine. Alice and Judith noted that certain amounts of $$ has to be spent to maintain the status of the claim. Need to know about who owns the minerals – the first step.

Use in 2012: MK doesn't think there is any use planned in 2012, except for two hearths near Locality IV (the eastern end of the HG drainage), which are eroding out. He has a date of ~1200 bp from a hearth in the area. He thinks it is a Late Prehistoric camp site. He would like to set it up so it could be worked on in the future.

Peterson/Loc III & V: Ed Peterson sold part of his ranch, including the plot of land where his house used to be and moved across the road. He still owns the localities at Hell Gap.

Mine Status: Nothing to report.

Need 20-30 steel posts to do fence if anyone comes to do fence. Also need to work on the auto gates, which Dewey will do (MK said he'd help). Bulls have been in all winter. Dewey & Janice will donate a Coleman 4000. Motion to buy 30 steel posts and to repair the autogate. Barb moved and Mark seconded a motion for Dewey to purchase steel posts and repair autogates – if over $1000, will advise the board prior to spending the money. Motion carried.

National Historic Landmark Nomination: Judy Wolf reported on efforts to write a NHL briefing statement (the first step). She has been working with Charlie Hacker with the NPS to help us get the nomination through the process. Nick Freeland discussed what a NHL nomination is and how it differs from a National Register listing; this is the point of comments returned from C. Hacker. The nomination/listing has certain benefits for funding and is a much larger block to any development on the property. Judy discussed the comments from NPS Will get the go-ahead to send to Washington, DC. Need the right person to write the nomination and need some money to pay for this. Judy asked for letters of support for the nomination as well as perhaps a few thousand to match what could be a $15,000 expense. Park Service wants to work with Judy on the project and they are interested in visiting the site this summer. Nick noted that we have limited the NHL nomination to Localities I and II.

Barb asked if a 2,000 match of the $15,000 would be appropriate and when the request would come in. Judy explained her thoughts on that process. Funding would come from an emergency fund request from Judy after October 1 (fiscal year).

Board will wait until Judy finds out how much the write-up of the NHL will cost and return to the board with a request for a match once she has the information. The secretary will write the letter of support from the board to NPS.

Frison Institute Endowment Fund

Bob Kelly reported that the WAF has approximately $62,000 to the meet the state-match. He entered into a conversation with the Newell-Sargent Foundation (who funded the museum in Worland) about helping the Institute/WAF meet the $100,000 goal set last year. The current fund doesn't have to make a payment until 2015.

Todd Surovell will be acting Director of the Institute next year while Bob is on sabbatical.

Election of officers: Barb nominated Janice Baars as President and Mary Lou Larson as Secretary. Mark seconded. Janice asked the Board accepted the nomination of officers. (Barb is treasurer by appointment by the board therefore no nomination necessary. She is considered member-at-large of WAS without a term on the WAF Board).

Foundation Board Member-at-Large nominations.

Janice Baars noted that the WAS nomination committee should be including avocationals and students on the Board. It is becoming top-heavy with professionals and not other members of WAS. Discussion followed. Judy (chair of the WAS nominating committee for next year) asked the Board to think of people to nominate for next year.

ANNOUNCEMENTS

Jensen Travel Funds: One PhD graduate students from UW was awarded the Jensen Travel Fund for 2011. WAS, WAF and WAPA all participate in the funding for the Henry & Clara Jensen Doctoral Travel Award at $250.00 each and Heather Rockwell and Liz Lynch funding from the fund. Heather will be given $500.00 and Liz, $250. The University of Wyoming President's Office may match the total

amount of the award ($750.00) per discussions between Tom Buchanan (UW President) and Mark Miller.

Next Foundation Meeting: The next WAS Spring Meeting will be in Laramie, Wyoming; date to be announced.

Motion to adjourn: Mary Lou moved and Barb seconded that the meeting adjourn. Janice adjourned the meeting at 9:48 am.

WAF Board Members 2011-2012:

Janice Baars (WAF President, WAS Immediate Past President)
Barb Nahas (WAS Member at large -Treasurer)
Mary Lou Larson (Secretary, University of Wyoming, ex-officio)
Mark Miller (State Archaeologist, ex-officio)
Larry Amundson (WAS President)
Alice Tratebas (Member-at-Large – Term Expires 2012)
John Laughlin (Member-at-Large – Term Expires 2013)
George C. Frison (Lifetime member)
Robert L. Kelly (George C. Frison Institute)
Marcel Kornfeld (Hell Gap Site Manager)
Dewey Baars (Hell Gap Site Manager)

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Larry Amundson (WAS President)
John Laughlin (Member-at-Large – Term Expires 2013)
Judith Reed (Member-at-Large – Term Expires 2014)
George C. Frison (Lifetime member)
Robert L. Kelly (George C. Frison Institute)
Marcel Kornfeld (Hell Gap Site Manager)
Dewey Baars (Hell Gap Site Manager)

WYOMING ARCHAEOLOGICAL SOCIETY, INC. CHAPTER REPORTS FOR THE 2011-2012 YEAR

Absaroka: Activities – Members participated in an archaeology research trip to Greece, volunteered at the Game Creek Site, and visited the excavation in Yellowstone National Park.

Public Education - Distributed Archaeology Awareness month posters around the Bighorn Basin, monthly chapter meetings open to the public, and presented WAS Scholarship information to Northwest College students.

Work With Other Organizations – Built fences around the Rosenberg homestead in the Bighorns with the BLM; continued with the Site Stewardship program; awarded the Milford Hanson Scholarship through Basin-wide high schools; chapter member was campground host at Legend Rock; rebuilt Mountain Man monument at Old Trail Town; and rebuilt/replaced several markers along the Shoshone Irrigation Project.

Other – Continued to expand the Chapter Library with a collection of DVDs, articles and books that can be checked out, and awarded a Certificate of Lifetime Membership to Wilma Jeanette McLaughlin Morris, 100 years old.

Programs Presented – Mike Bies, "Worland: Ten Sleep Rock Art Conservancy Project;" Lisa Marks, "Cody: Ancient Life and Environments of the Bighorn Basin;" Dr. Danny Walker, "Fort Laramie;" movie night, popcorn, candy and "Dinosaur Wars;" Rosemary Ginger, "Greece;" summer field trips, Medicine Lodge, Greybull South site, and Yellowstone Park site; Carolyn Buff, "WAS and WAF Backgrounds and Goals;" Jim Platt demonstrated flint knapping; and the Christmas Party and gift exchange.

Ancient Trails: Programs Presented – Sponsored a public talk by Neffra Matthews and Tom Noble on photogrammetry. They were recently invited by the government of Tanzania to photograph the 3.6 million year old Laotoli human footprints. The talk showed the African countryside and related how the 3D photographs of the footprints were taken. They also showed 3D photos of the Whoopup Canyon petroglyphs which they have been photographing for three years; and Cher Burgess, "Public Archaeology."

Public Education – Chapter members helped sponsor 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, held at the Hot Springs Mammoth Site. The chapter also assisted the Pumpkin Buttes chapter in organizing and hosting the annual spring meeting in Gillette.

Casper: Programs Presented – John Albanese, "Three Paleoindian Sites;" Dan Bach, "Year 2010 Excavations at the Raven's Nest Site (48SU3871), located near Pinedale, WY;" Dr. Mavis Greer, "Review of Wyoming Rock Art;" Dr. Danny Walker, "History of the University of Wyoming Archaeological Repository (UWAR): Past, Present, and Future;" Chuck Carrig, "The Vernacular Architecture of Soledad Canyon, New Mexico;" Dora Ridenour, "The Five Eagles Site: 10,000 Years of Occupation Along the Clearwater River Idaho;" Dr. Todd Surovell, "Folsom Households at the Barger Gulch Site, Middle Park, Colorado;" and Dr. Nicole Waguespack, "Changing Interpretations of Clovis Subsistence."

Cheyenne: Programs Presented – Bryon Schroeder, "The Case for Conflict: Fortifications, Defensive Sites, and Violence in the Wyoming Region;" Orrin Koenig, "Does this Hearth Have a Home? A Hearth Centered Spatial Analysis;" Dr. Steve Cassells and Dan Bach: Dr. Cassells introduced the topic of forensic anthropology and human osteology and discussed what types of information one can glean from human skeletal remains, while Bach reviewed the prehistoric skeletal record from Wyoming, discussing dental health and diet, prehistoric homicides and warfare, accidental deaths, and burial mounds and how burial practices change over time; Kevin Malloy, "Research in the Scottish Highlands During the Spring and Summer of 2010, on Medieval Park Landscapes that were Usually Associated with Royal Residencies;" Dr. Robert Kelly, "Wyoming's Bighorn Basin: 14,000 Years of Climate and Human Population Change;" John Laughlin "The Finley Site and Its Significance to Paleoindian Studies;" Russell Richard, "Scraped Stain: Middle Archaic and Late Prehistoric Features of Oven Town, Site 48FR5928, Fremont County, WY;" Dan Eakin, "Archaeological Investigations Along the Nez Perce National Historic Trail, Yellowstone National Park;" and Michael Page, "The Game Creek Site: 9,500 years of Intermittent Use, Jackson, WY."

Other – Dan Bach donated $100 to the Cheyenne Chapter to be applied to future grant or scholarship applications.

Fremont County Chapter: Survey – Members helped with the Seminoe Cutoff Tour, Oregon Trail; fundraising for the Frison Institute, and research of rock art and ruins in Southern Utah.

Testing/Excavation – Mathews Site, south of Jeffry City, Barnes Site, Thermopolis, depths of cultural resources, University of Wyoming, and the Game Creek Site in Jackson.

Public Education – Central Wyoming College.

Work With Other Organizations – Central Wyoming College.

Publications/Reports: Printed booklets for Fremont County Archaeological Society, containing programs, membership and history.

Programs Presented: Margaret and Tom Harless, "Ancient Wyoming Rock Art Video;" Dr. Danny Walker, "Fort Laramie Barracks;" Drs. John and Mavis Greer, "Rock Art in the Caves of Southern France and Northern Spain;" Michael Page, "Game Creek Site, Jackson;" Tom Lucas, flint knapping demonstration; John Grieve, "Seminoe Cutoff Tour;" Dr. Rich Adams and Larry and Betty Mathews, "Soapstone Bowl Dig;" Melinda Bobo, "Sheep and Eagle Traps: High Altitude Hunting Aides;" Dr. Rich Adams, "High Mountain Archaeology;" and Larry Amundson, "Prehistoric Utah Rock Art."

June Frison Chapter: Survey – Caldwell Basin in the Shoshone National Forest (later burned in the Norton Point fire); Soapstone Lake area; evaluation of select sites in Yellowstone National Park including military and Nez Perce sites in Lower Geyser Basin, Lower Nez Perce Creek, Spurgin's Beaver Slide, Nez Perce Ford, and Indian Pond.

Testing/Excavation – Volunteer and testing at Larry Mathews site. Volunteers excavated two hearths containing a soapstone bowl. This makes the Mathews bowl the most securely dated soapstone bowl in WY.

Excavations continued at the Hell Gap Site, owned by the Wyoming Archaeological Foundation into the Cody and Alberta levels, bringing further understanding to the chronostratigraphy of this nationally significant site.

Excavations continued at Last Canyon Cave in Montana.

Public Education – Richard Adams taught the Introduction to World Prehistory at Colorado State University.

Rich Adams and Maria Voza-Cuadrios taught the anthropology segment of the University of Pittsburgh Honor College's Summer Ecological Field School.

The summer meeting was held at Hell Gap. Included in the activities were a site tour, opportunities for excavation, lab work, flint knapping demonstrations, a world atlatl championship and other activities for young and old. Houston Martin presented a lecture on the History of Hell Gap excavations to the town of Guernsey to kick off the festivities and Devin Pettigrew presented a lecture on atlatl use throughout the world to guests at the meeting.

Work With Other Organizations – Rich Adams worked on yearly surveys in the Wind River and Absaroka Mountains on Shoshone National Forest land. He also collaborated with the Dubois Museum and the Frison Institute on high altitude research. The second High Altitude Summit brought nationally-known archaeologists David Hurst Thomas and Robert Bettinger, along with Adams, Bryon Schroeder and Matt Stirn to the White Mountain Villages in eastern California. These villages occur between 10,000 and 12,500 feet above sea level and are similar to the High Rise Village in the Wind River Range and Alta Toquima Village at 11,000 feet in Nevada.

Dan Eakin negotiated the release of information from Shoshone National Forest for Jim Mecham, University of Oregon, to use mapping data published in the Atlas of Yellowstone, published by the University of Oregon. He also granted permission to same for the use of a bighorn sheep trap catch pen photograph. He completed a tour guide for the Nez Perce National Historical Trail Foundation summer program in Yellowstone.

Dr. Bill Scoggin and Carmen Clayton assisted Mary Prasciunas, Vance Haynes, Fred Nials, and others with preliminary work at the UP Mammoth Site.

Publications/Reports – Dan Eakin completed the "Report of 2010 Cultural Resource Investigations Along Five Sections of the Nez Perce National Historic Trail, Yellowstone National Park." Marcel Kornfeld presented the results of the Middle Park Paleoindian Project to the Fort Collins chapter of the Colorado Archaeological Society. He also presented "Living on Top of the World: the First Rocky Mountaineers and their Descendents" at the 50th Anniversary of the Alberta Archeological Society at the Calgary Center.

Programs Presented by members: Rich Adams, "The Larry Mathews Site;" Dan Eakin, "Shifting Landscapes in the GYE: Potential Effects of Pine Bark Beetle on Native American Wooden Structures;" "Investigations Along the Nez Perce National Historic Trail;"

Programs: Elizabeth Lynch, "Grinding Landscapes of the Southern Plains: Placemaking and the Preservation of Social Space;" Dr. Dudley Gardner, "Mongolia Archaeological Survey Along the Russian Border;" Colleen Reese, "A Little About the Emanuel Point Shipwrecks;" Dan Bach, "Year 2010 Excavations at the Raven's Nest Site located Near Pinedale, Wyoming;" Dr. Danny Walker, "The Fort Laramie Quartermaster Dump 1994-2011: One Hundred and Twelve Years of Riverbank Erosion and Stabilization;" Dr. Charles Reher, "The Lost Effigy at Spanish Diggings;" Dr. Steve Cassells, "Doing Archaeology in the Colorado Tundra;" Dr. George Frison, "Wyoming Archaeology, the Wyoming State Archaeologist and the University of Wyoming."

Pumpkin Buttes Chapter: Survey – One field trip to conduct a site survey on what has been tentatively determined to be a possible Native American single episode kill site on private property. Artifacts located during the surveys included various fragments of bison bone.

Testing/Excavation – During the site survey, the landowner had removed approximately one to two feel of overburden in what was thought to be an area of concentrated artifacts. The excavated areas were surveyed and one bison tooth and a bone fragment were located. A small portion of the overburden was screened; no artifacts were found. Future testing and excavations are planned for the summer of 2012.

Public Education – As the Chapter, with the Ancient Trails chapter, was selected to host the 2012 WAS/WAPA conference, we have been busy

creating the conference information fliers and registration forms..

Work With Other Organizations – Chapter members participated in the Native American Artifact Show hosted by the Rock Pile Museum where several members had their private collections on display.

Programs Presented – Tour of the Sorenson Family's archaeological site which consisted of historic metal artifacts, wagon ruts, and stone circles; Gene Munson conducted a field trip for the chapter at a site within the North Antelope Rochelle Coal Mine area and three members were able to volunteer and assist GCM in excavating the Hearthside Site; Drs. John and Mavis Greer, "Rock Art of Wyoming;" Dr. Richard Adams, "High Altitude Villages;" and Cher Burgess "Public Archaeology."

Other – One Chapter member volunteered with the South Dakota School of Mines and Technology, Department of Geology and GeoIE on a paleontological site in the Black Hills of Wyoming, adjacent to I90, where numerous fossil remain were recovered.

Sheridan-Johnson County: No report was submitted.

Upper Green River Basin Chapter: Survey and Work with Other Organizations – Five members had an opportunity to help with a survey being conducted on the Lander Trail-New Fork River Crossing site by Drs. Ken and Molly Cannon, USU Archaeological Services, and their crew. The site is an 82 acre property acquired in 2010 as part of mitigation by three companies for their impacts on the Lander Trail due to activity in the Pinedale Anticline natural gas field. The mitigation agreement was between the Bureau of Land Management and Shell Oil, Ultra Petroleum, and Pacific Corp. The companies agreed to buy 82 acres at the Lander Trail Crossing and donate the property to the Sublette County Historical Society for the purpose of the creation of an historic park. The Historical Society hired Drs. Ken and Molly Cannon and crew to do a surface survey, georeferencing, magnetometer, and ground-penetrating radar work. The Lander Trail, or Road, was the first federally-funded road west of the Mississippi, built in 1857 and 1858 by Frederick Lander. Thirteen thousand immigrants used it the first year in 1859 with hundreds of immigrants a day and thousands of livestock, crossing the New Fork River. It is part of the National Oregon/California/Mormon Trails System.

Programs Presented: Dr. Robert Kelly, "Human Population and Climate Change in the Bighorn Basin;" Dr. Ken Cannon. "Archaeological Research at the Stinky Springs Site in Hoback Canyon;" and with the Museum of the Mountain Man and Shell, Ultra and QEP, hosted a public presentation; Mike Page, "Work on the Game Creek Site;" Dr. Mark Miller, "Trapper's Point;" and Bill Current, "New Finds Discovered Along the Pinedale Anticline."

ARCHAEOLOGICAL INVESTIGATIONS AT THE MINITRUE SITE (48UT1984) IN THE GREEN RIVER BASIN, WYOMING

by
Richard Adams
Paul Sanders
Mark E. Miller

ABSTRACT

We summarize here results of a data recovery effort at the MiniTrue site, 48UT1984. Between 1998 and 2000, the Office of the Wyoming State Archaeologist conducted testing and excavation at the site on behalf of the Wyoming Department of Transportation. MiniTrue is a Uinta Phase pronghorn processing locale in the Green River Basin, Uinta County, Wyoming. Two components were identified, both being short-term, task specific activity areas. Radiocarbon dates establish the oldest component at about 1700 years ago and the youngest about 1200 years ago. Site integrity was adequate to allow interpretation of the function of each component in the Late Prehistoric settlement system.

INTRODUCTION

The MiniTrue site (48UT1984), investigated in 1998 and 2000, is a largely intact, stratified site dating to the Late Prehistoric Period. Two Uinta Phase components were exposed in block excavations near Interstate 80. The site is in the Moxa Arch area of the Green River Basin, a region known from decades of archaeological investigations to have a relatively high archaeological site density (Thompson and Pastor 1995). Archaeological remains at MiniTrue consisted of chipped stone tools, debitage, fire-cracked rock, burned and unburned pronghorn (*Antilocapra americana*) bones, small sandstone spheres, and fire hearth features buried in a sand shadow near an ephemeral rill not far from the Black's Fork River (Figure 1). Site boundaries encompass a little over 2,000 m^2 based on surface artifact distributions found during survey as well as the extent of a small sand sheet. A barren cobble landscape of residual origin with no potential for buried cultural deposits surrounds most of the site. Field research addressed the nature of site integrity and described evidence for pronghorn processing in the two Uinta Phase occupations. More extensive details of project methodology, analytical procedures, and interdisciplinary research are provided in the technical report (Adams et al. 2011), which this article summarizes here.

Fifty-eight and a half square meters were excavated at the site, 37.5 m^2 in the North Block of the site grid and 21 m^2 in the South Block. Approximately 31,000 archaeological objects were recovered from buried contexts. Unlike many locations in the Green River Basin, the MiniTrue site did not contain large areas of charcoal stained sediment although two localized charcoal stains and two hearth features were found. Four radiocarbon dates were obtained from the site, three from the North Block and one from the South Block. The North Block contains the remains of both Uinta Phase components, the deepest dating to 1710±70 B.P. (before present) (Beta 144946), and the shallowest dating around five hundred years later from two radiocarbon samples, 1210±70 B.P. (Beta 148372) and 1260±69 B.P. (Beta 127086). There appears to be some mixing between these two chronologically

Figure 1: Two views of MiniTrue site after excavation. Upper: looking northwest from Interstate. Lower: looking southwest with I-80 in background.

separated components in the North Block, although in most excavation units they could be distinguished stratigraphically to allow analysis of each occupation. The fourth radiocarbon date comes from the South Block and dates a well-preserved southerly extension of the deepest component noted in the North Block. The radiocarbon age here is 1760±110 B.P. (Beta 144019). The South Block excavation is discussed first, because it contained the single component whose contextual integrity was fairly high.

SOUTH BLOCK

This block exposed a dump feature or similar activity area containing heavily fragmented bones and stone objects in an area defined by distinct horizontal and vertical boundaries around a nearly solid mat of fire-cracked rock (Feature 6, Figure 2). Investigators found over a thousand pieces of debitage (dominated by local quartzite), 17 chipped stone tools, nearly 16,000 bone fragments, and about 144 kg of fire-cracked rock. Bone splinters tended

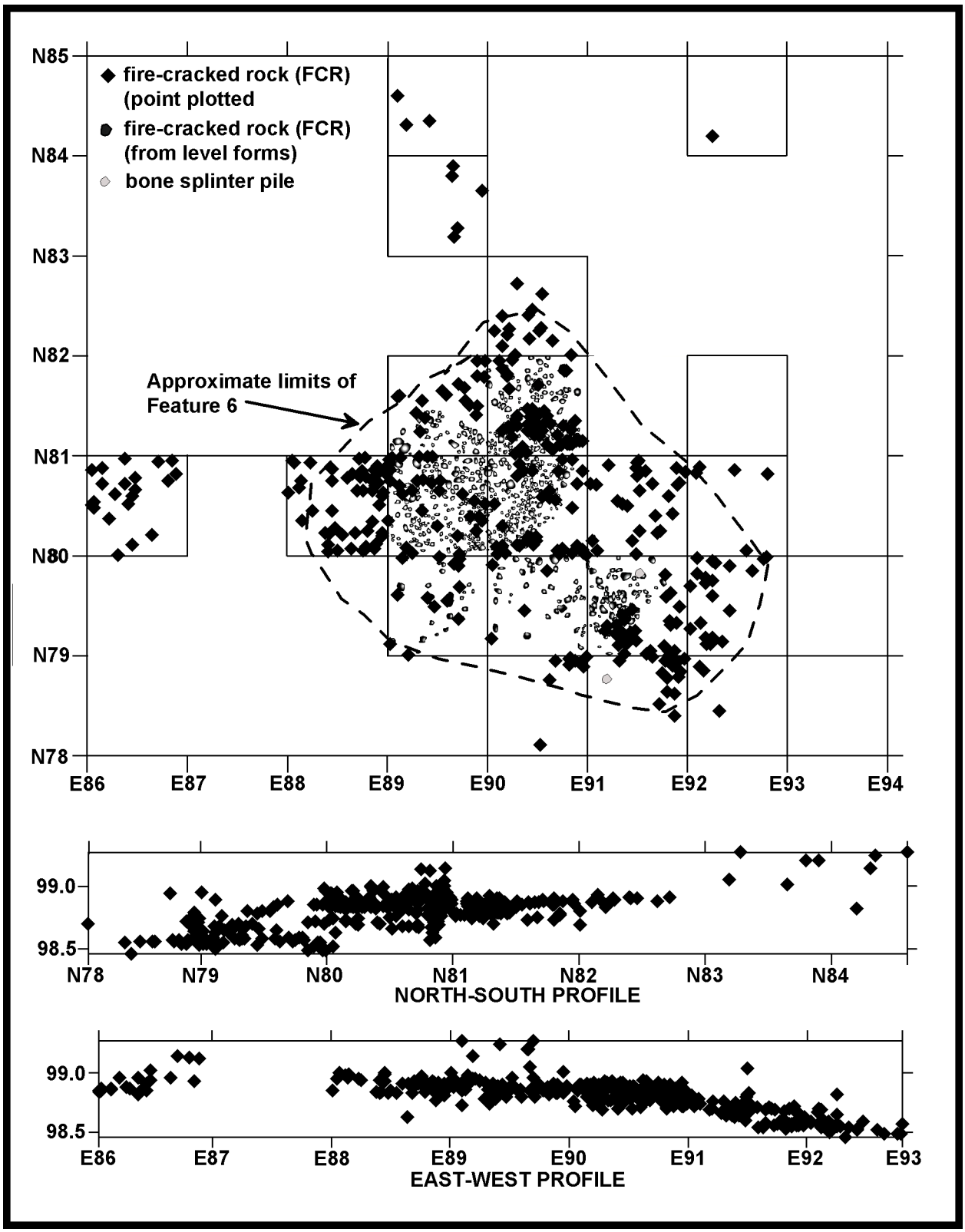

Figure 2: Plan view and profiles of fire-cracked rocks in South Block.

to be found deeper in the component than lithic items. Additionally the debitage was concentrated in the northwestern part of the block, while bone fragments were more frequent in the southeastern portion (Figure 3).

The South Block tool assemblage is best characterized as a collection of expedient flake tools made from local quartzite cobbles occurring in large numbers in lag gravels on blow-out surfaces throughout the area. Many of the utilized working edges occur on primary and secondary flakes, revealing the weathered cortex typical of the local gravels (Figure 4). Such raw material would be easy to obtain and flakes from them easy to produce, eliminating the need to maintain a tool kit by repeatedly sharpening individual tools.

Faunal remains in this block include predominantly bone fragments from pronghorn (*Antilocapra americana*) and deer/pronghorn sized animals. Both burned and unburned fragments were found. Only two fragments show possible cut marks, while 96 percent of the assemblage has been splintered and dispersed into bone scatters and piles. These discards could be the remains of a single, processed pronghorn carcass.

Evidence from the South Block excavation led investigators (Adams et al. 2011) to suggest the intact occupation surface represents a bone grease processing dump where spent fire-cracked rock, utilitarian flake tools, and splintered bones were discarded. The area does not appear to have been a cooking or roasting facility since fire hearths were not found. The contextual integrity of the component is represented by a solid, undisturbed mat of fire-cracked rocks with adjacent rock refits. Some long bone fragments adjacent to each other also refit. Two

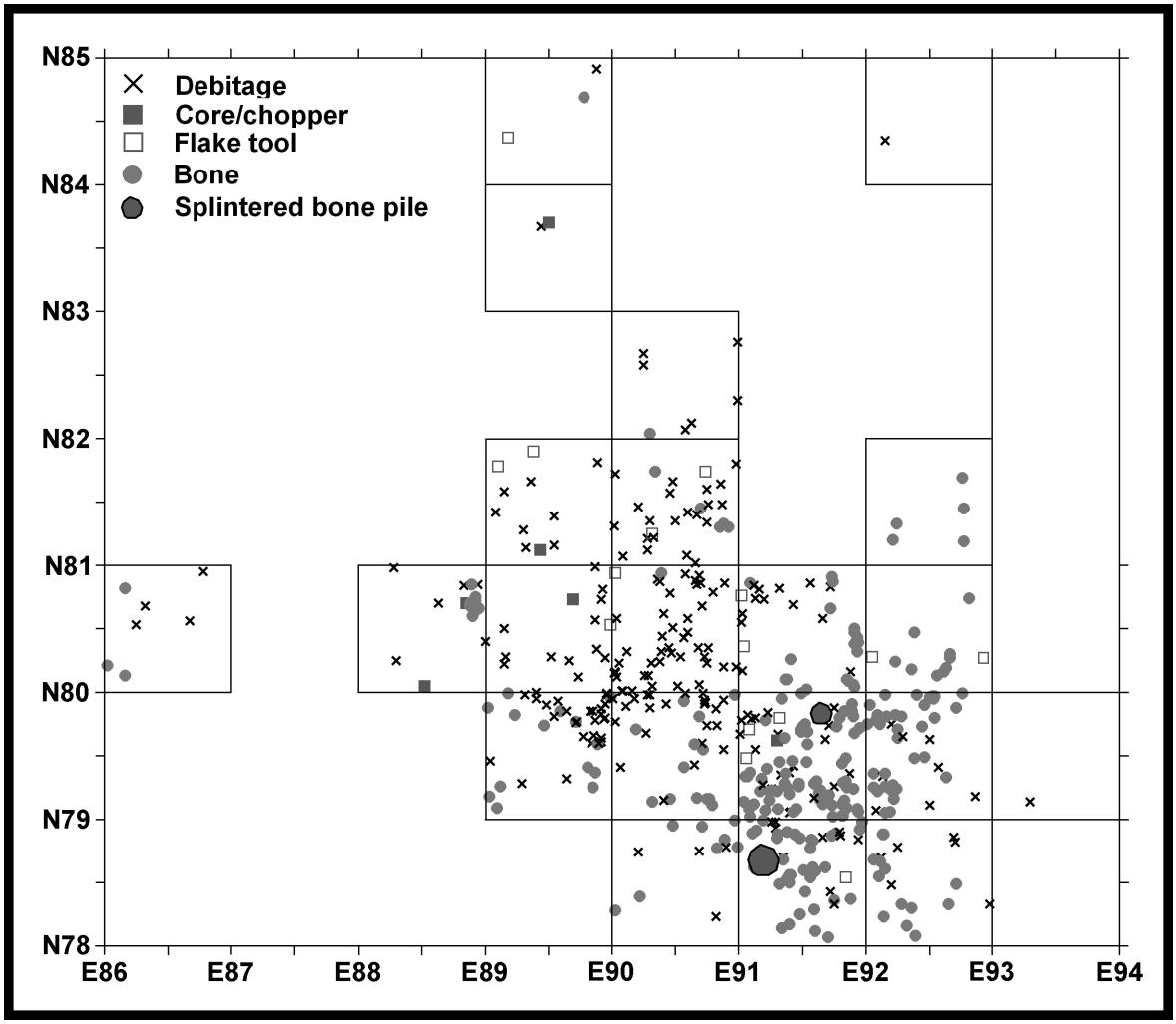

Figure 3: Point plotted artifacts in the South Block.

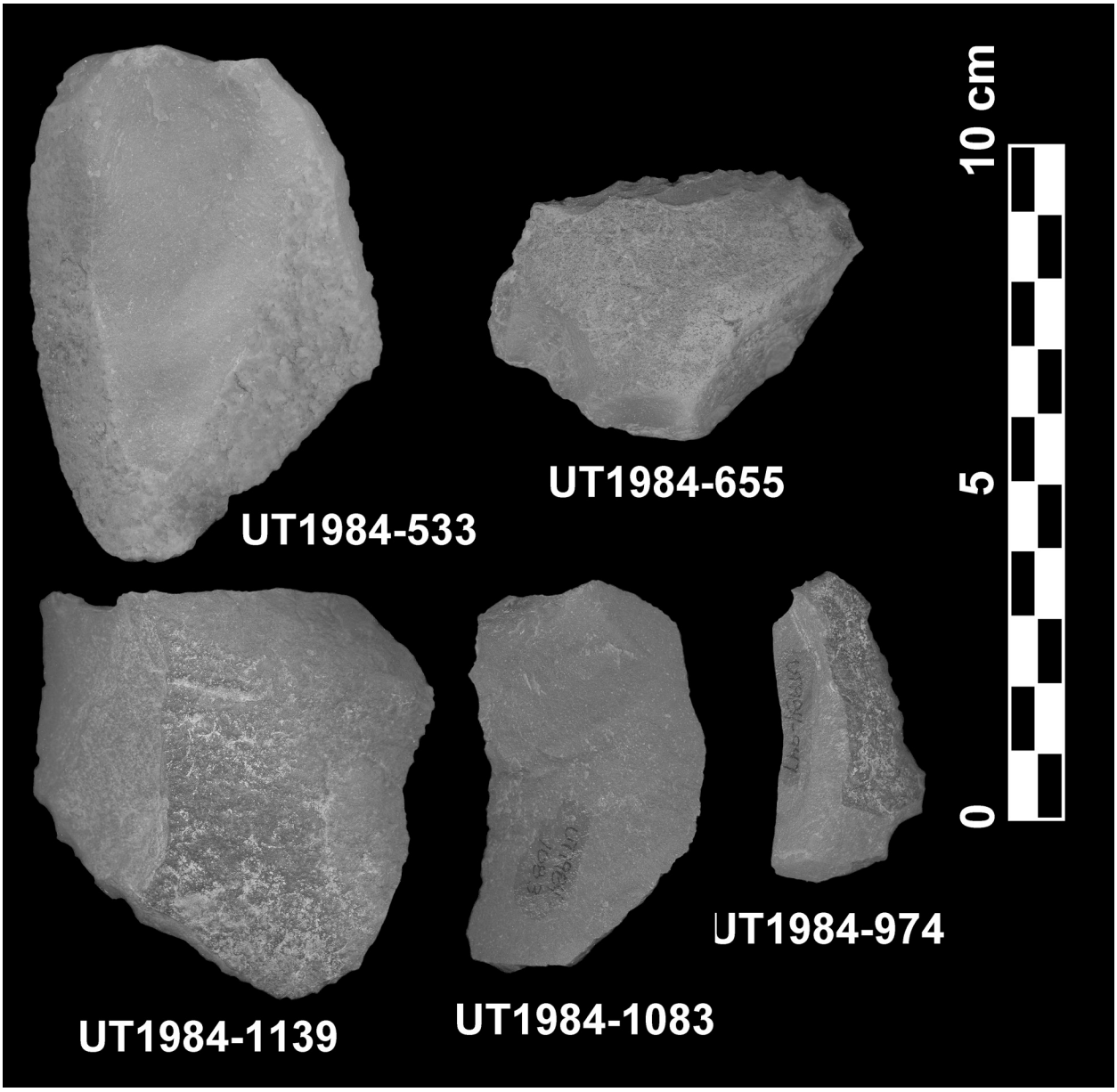

Figure 4: Retouched flakes from the South Block.

intact bone piles exhibit relatively tightly massed bone fragments. Furthermore, the fire-cracked rock consists of heavily fragmented, small interior pieces with little remaining cortex. This suggests the stones were fired repeatedly when used for heating or roasting elsewhere, then were discarded here after they exploded into small, unusable pieces. Additionally, the flake tools found in the component are considered expendable and quickly discarded when dull. More heavily curated artifact classes like projectile points or patterned bifaces were not found.

NORTH BLOCK

Two superimposed, Late Prehistoric Uinta Phase components are present in the North Block excavations. The deepest component is an ill-defined zone containing a hearth (Feature 4) dating to 1710 B.P. (Figure 5). This may be the dispersed northern limit of the intact cultural stratum of the same age found in the South Block. In many North Block excavation units, this stratum grades upward into the lower limits of the second (younger) cultural component, which dates five hundred years later. The age of this

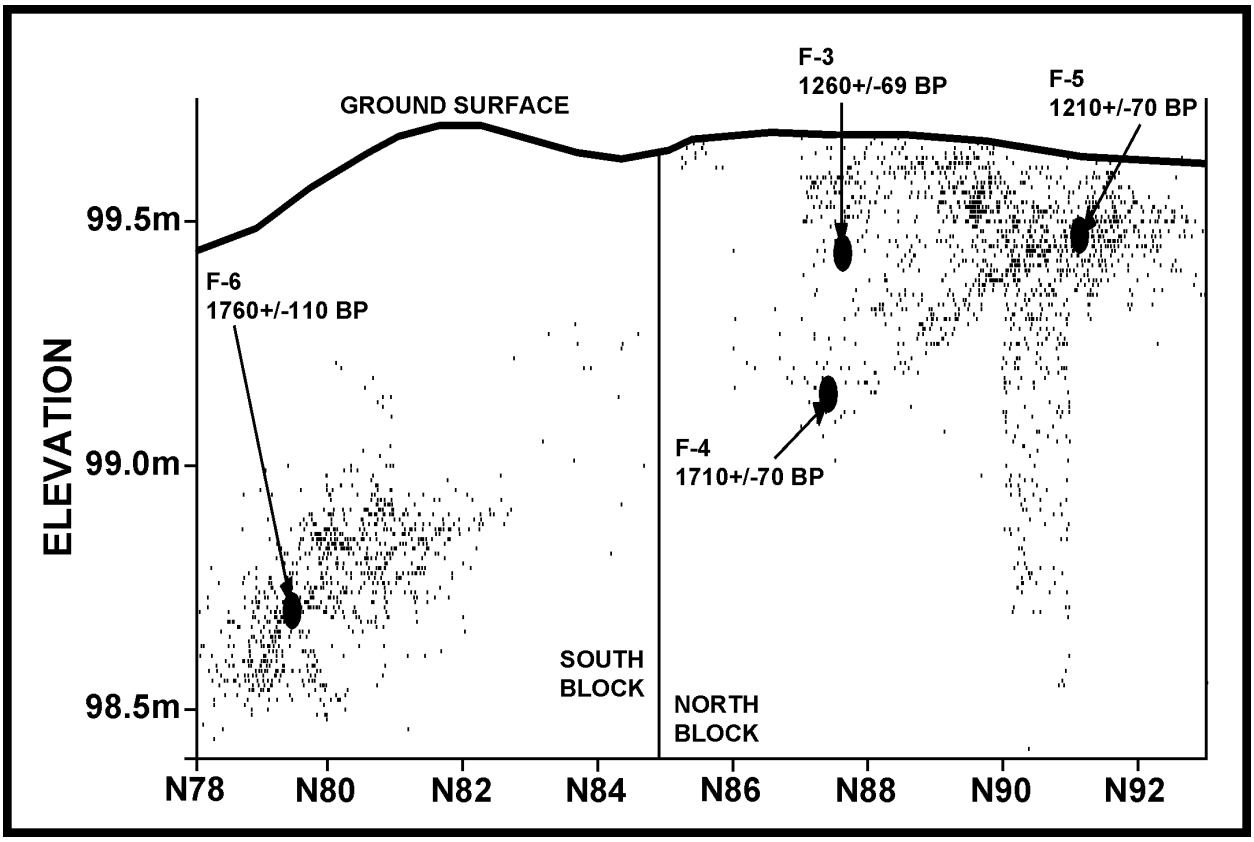

Figure 5: Backplot of point plotted artifacts and radiocarbon dates from South Block and North Block.

upper component is based on charcoal from a fire hearth (Feature 3, 1260 B.P.) and a separate charcoal stain (Feature 5, 1210 B.P.).

Features include two scatters of fire-cracked rock, two fire hearths, and a charcoal stained area. In contrast with the South Block quartzite assemblage, 57 percent of the over 4,500 pieces of debitage found in the North Block were chert, while only 42 percent were quartzite. The chipped stone tool assemblage is larger and more diverse in this block as well. The presence of bifacial tools stands in contrast to the South Block, suggesting more technological preparation of the tool kit in the North Block area. Four projectile points were recovered in excavations and testing units, and all are more or less reminiscent of Uinta Phase assemblages (Figure 6). All are bow and arrow size projectiles. A fifth bow and arrow projectile point was found on the surface, but is unrelated chronologically to the Uinta Phase components. Anvil stones, mano fragments, a metate, and a pestle also were found. Dozens of unmodified stone spheres and paddles were recorded as well (Adams et al. 2011:92-97).

A bison horn core and 45 pronghorn bones were recovered along with 262 deer/pronghorn sized bone fragments and various other pieces, many of which were in two intact bone piles. Two adult pronghorn appear to be represented in the faunal assemblage from the upper component. One fetal pronghorn was present based on several recovered elements, which led investigators to suggest the seasonality for this occupation was late winter through spring.

The North Block area appears to be the remains of a pronghorn processing area rather than a residential camp. No indications were found of dwelling floors or structures. The site also does not appear to have been a butchering area, because of the low proportional representation of identifiable bone elements (see Frison 1971:261). Recognizable elements and articulations are few, and vertebral columns are almost completely lacking. More habitation and work tasks related to processing probably took place here compared to the older component in the South Block, which may simply have been a refuse heap. Unfortunately, some portions of the occupation area in the North Block have been com-

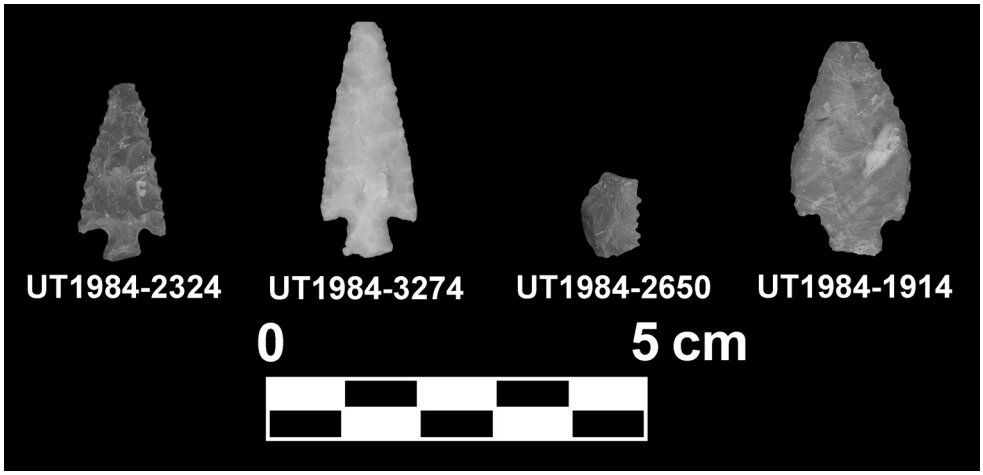

Figure 6: Hafted bifaces (Uinta Phase projectile points) from North Block. UT1984-2324 and UT1984-3274 resemble Rose Springs projectile points. UT1984-2650 may be fragment of Rose Springs projectile point, while UT1984-1914 may be variant of Uinta Phase projectile point technology.

promised by deflation and mixing, though the bone piles in particular show higher integrity.

One of the most intriguing aspects of the MiniTrue site is the spheres and pebbles (Figure 7). Briefly, the spheres average about 20 mm in diameter and are concretions of the local Bridger Formation sandstone which have not been modified in any way. The pebbles are not nearly as uniform as the spheres and, like the spheres, have not been culturally modified in any way. In the field, we called the pebbles "paddles," not to imply any particular function but because they look like paddles. They are quite different from the few naturally-occurring clasts found in the sandy matrix. The spheres and paddles found mostly in the North Block are enigmatic artifacts. Their function is not obvious from their size and shape and they are best classified as manuports. Excavators discussed the possibility the paddles and spheres were toys. The spheres appear to have been selected for their nearly uniform size.

Stone spheres occur at other hunter-gatherer sites in the region. A round sandstone concretion was found at the McGinnis Site (48SU1499) in a level radiocarbon dated to the Firehole Phase of the Late Prehistoric (Pastor and Thompson 2001). It measures 34 mm in diameter, which is about 12 mm larger than the MiniTrue average. To the best of our knowledge, they have not been found at other southwest Wyoming sites; however, two larger, but otherwise similar spheres, were found amidst fire-cracked rocks at a Late Prehistoric site (48CA2762, Stonewall Buttes) in Campbell County (Adams 1994).

INTERPRETATIONS

Quantities of splintered bone are the most frequently occurring archaeological signature at the site. Similar manifestations generally are interpreted ethnographically to be the remains of bone grease production (Binford 1978:157; Vehik 1977; but see also Church and Lyman 2003). Bone grease production seems to be the most parsimonious interpretation for the highly fragmented array of bones at the MiniTrue site. Some of the most intact features were the four excavated bone piles (two in each block) which contained between 30 and 200 pieces of splintered bone each. Fewer than 20 percent of the fragments in each pile exhibited burning. These piles are interpreted as being primary discarded by-products remaining from food processing activities after animal carcasses had been dismembered and bone elements fractured.

MiniTrue represents a limited activity site where bones from a small number of pronghorn carcasses (and limited other species) were broken, then boiled to obtain bone grease and juice. It fits criteria for special purpose faunal processing sites outlined by Vehik (1977:173-174) and Creasman et al. (1985). The two Uinta Phase occupations are separated by about 500 years. Lacking secondary refuse piles, the site also is interpreted as being used only for a short time during each of its two occupations. Interest-

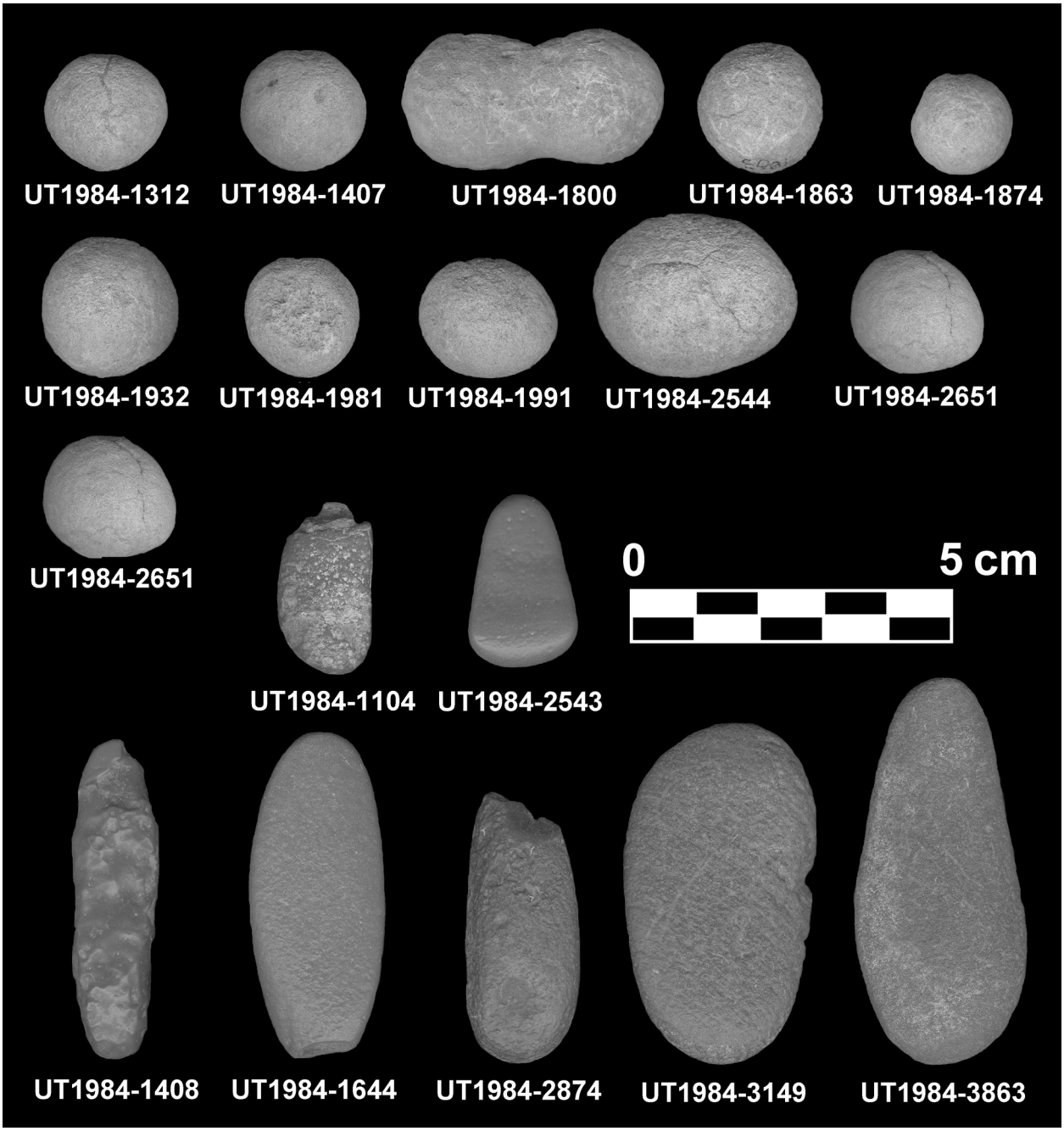

Figure 7: Enigmatic stone spheres and paddles.

ingly, this site is estimated to be a late winter-spring pronghorn processing locale located in an area considered to be severe winter habitat for modern pronghorn as identified by the Wyoming Game and Fish Department and reported by Sanders and Wedel (1999:318). Therefore, it is tempting to argue the seasonal movements of pronghorn in prehistory are mirrored to a degree by the seasonal movements of the modern Sublette herd (see Miller et al. 1999). This area of Wyoming continues to represent an important biome for pronghorn adaptation in the intermountain west.

Investigations at the MiniTrue site add important data to the growing record of prehistoric pronghorn utilization in the Green River Basin (Frison 1971; Lubinski 1997; Miller et al. 1999; Pastor and Lubinski 2000). Small, ephemeral processing sites are likely an important part of a larger cultural system

targeting the enduring, ubiquitous pronghorn in their prime intermountain habitat. Successful exploitation of these animals seems to have contributed to a regional human settlement pattern intersecting the seasonal ranges of pronghorn at strategic points and times on the landscape. One can expect many more of these sites in the Green River Basin where one or two animals were processed by a single or extended family, adding to a model of seasonal subsistence/settlement which continues even when human groups are not coalesced for larger, communal kill operations.

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THE CROOKS GAP HOUSEPIT SITE AND OTHER NEARBY MID-HOLOCENE HOUSEPITS

by
Craig S. Smith
Marcia Peterson

INTRODUCTION

This article summarizes excavation results at the Crooks Gap Housepit site (Site 48FR6260) completed by Cardno ENTRIX in 2010 and then compares those results with 20 other excavated housepits at eight sites located within 20 km of the site (Figure 1). The results are provided in more detail in Peterson and Smith (2012). The Crooks Gap Housepit site is a multicomponent site situated in aeolian deposits near Crooks Creek in southeastern Fremont County, Wyoming. One of the components contains the remains of four housepits dating between 5420 and 5170 years BP. It is one of a growing number of sites in the Wyoming and Big Horn Basins containing excavated housepits dating to the mid-Holocene (Buenger and Goodrick 2011; Larson 1997; Rose 2008; Smith 2003). The site is in an area where 20 additional housepits have been excavated, thereby providing an opportunity to examine comparatively this subset of excavated housepits.

The Crooks Gap Housepit site is in Crooks Gap directly between Green Mountain to the east and Crooks Mountain to the west and at the southwest edge of the Sweetwater Arch near the northern edge of the Great Divide Basin in the center of the Wyoming Basin. The gap comprises a prominent natural pass between the Great Divide Basin to the south and the Sweetwater River valley to the north. The site is east of Crooks Creek, a small perennial creek which flows northward through Crooks Gap to the Sweetwater River. Natural grass meadows are present along the creek and its tributaries, some of which were developed as historic hay meadows. The site is approximately 12 m higher than the creek and provides a good view of the creek and adjacent valley bottom to the west and north.

The deposits encapsulating the cultural remains at the site consists of aeolian silt to silty sand which accumulated in the lee of a low ridge spur to the south. Those sediments rest on top of a deposit comprised primarily of granite cobbles and boulders and were in turn capped by a surface veneer of granite cobbles and small boulders deposited subsequent to formation of the aeolian deposit.

The Crooks Gap Housepit site is at a modern ecotone providing access to resources associated with sagebrush steppe and riparian biomes within the Crooks Creek valley bottom, escarpment-foothill transition and limber and lodgepole woodlands biomes in the adjacent mountains, and the desert shrub biome in the Great Divide Basin. The Wyoming big sagebrush community dominates the area surrounding the site with shrub-dominated riparian vegetation with wet meadows along Crooks Creek and a band of limber pine and juniper along the east edge of the Crooks Creek valley floor. Limber pine woodland is also present on the mountain slopes adjacent to the site.

Potential toolstone material sources in the site area are limited. The Tertiary formation underlying the site area is a poor source of quality toolstone material, and most local toolstone, if any, comes from secondary sources. Much of the prehistoric toolstone acquisition associated with the site involved the use of secondary gravel and cobbles from lag and fluvial deposits in the area. Some toolstone material may also have originated from the Laney and Tipton members of the Green River formation, which outcrop along the face of the Delaney Rim escarpment at the south edge of the Great Divide Basin/north edge of the Washakie Basin approximately 90 km south of the site.

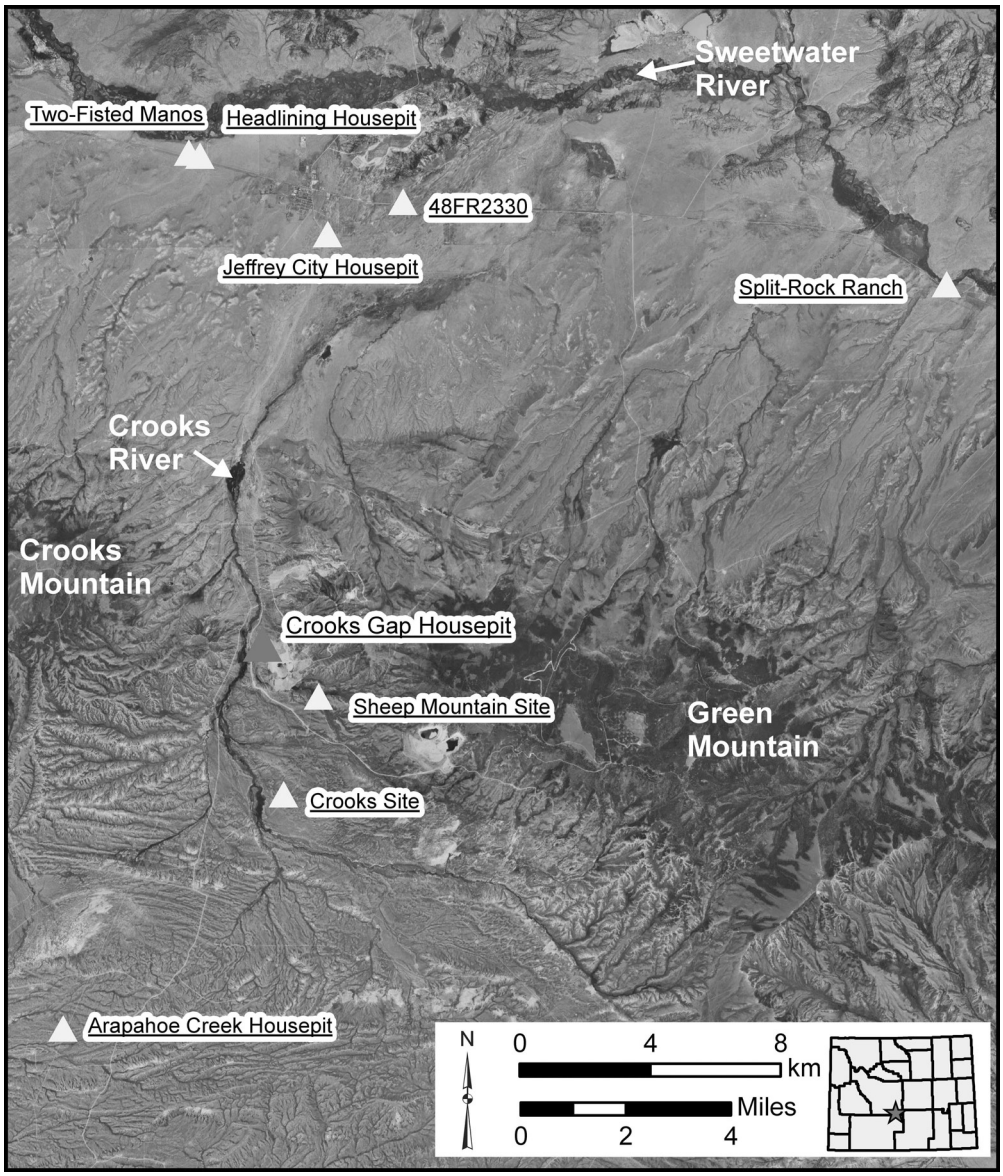

Figure 1: The Crooks Gap Housepit site and other nearby excavated housepit sites.

THE CROOKS GAP HOUSEPIT SITE

A 6 x 14 m (84 m^2) block was excavated at the site (Peterson and Smith 2012). Two cultural components were distinguished within the excavation block. Component I consisted of a dense palimpsest of features and cultural material dating mostly to the early Opal phase between 5420 and 5170 years BP with one radiocarbon age estimate of 8010 years ago. The component contained 57 features, including four housepits and possible housepits, 355.698 kg of heat-altered rock, six projectile points, four bifaces, four flake tools, two modified cobbles, one groundstone fragment, 410 pieces of debitage, 765 bone specimens, and 27 charred goosefoot seeds from six features. Most of the remains assigned to Component I appears to be the result of multiple short-term, occupations over a 250 year period. The remains from these many reoccupations occur as a single archaeological layer within the aeolian deposits at the site.

Component II dated to the late Opal phase at 3690 and 3680 years BP and yielded only three features (one rock-filled stained basin and two stained basins), two projectile points, two bifaces, 177 pieces of debitage, 42 bone fragments, and 36.989 kg of heat-altered rock. Component II likely

represents a single, relatively short-term residential occupation where limited generalized domestic activities were conducted.

Fifteen radiocarbon age estimates ranging from 8010 ± 50 to 3680 ± 40 years BP were obtained during the data recovery excavations at the Crooks Gap Housepit site (Table 1). An additional age estimate of 4830 ± 40 years BP (Beta-240374) was previously obtained from Feature T28-F1A in the pipeline trench wall during the open trench inspection phase of the project (McNees and Denoyer 2008).

The radiocarbon age estimates are tightly grouped from 5420 and 5170 years ago (n=11), and including all but two of the age estimates associated with Component I. One outlying age estimate from Component I dates to the early Great Divide phase at 8010 years B.P. Several diagnostic projectile points consistent with that age estimate were also recovered from the block, suggesting the component includes some material from a limited early Great Divide phase occupation. Those projectile points fall within various types associated with the foothill/mountain Paleoindian complexes defined by Frison (e.g., 1992, 1997) and sometimes designated as the Frontier complex (Kornfeld et al. 2010). They are classified as a Lovell Constricted point base, a James Allen point base, and a probable James Allen point midsection. The other outlying age estimate of 4390 years B.P. from Component I post-dates the rest of the estimates from the cultural layer. Based on the stratigraphic position of the feature from which it was obtained, the age estimate appears too recent. It was the only estimate obtained by dating organic material extracted from stained sediment. Based on these considerations, it is considered unreliable.

The two radiocarbon age estimates from Component II are virtually contemporaneous at 3690 and 3680 years B.P., respectively. They suggest a single short-term occupation of the site near the end of the Opal phase. The only undated feature assigned to the upper cultural layer was a rock-filled basin different from any of the other features excavated at the site.

The deposits at the site generally consist of aeolian silt to silty sand. Those deposits rest on a colluvial deposit primarily consisting of a dense bed of granite boulders and cobbles probably Pleistocene

Table 1: Radiocarbon age estimates, Crooks Gap Housepit site.

COMPONENT	FEATURE NUMBER	FEATURE TYPE	LAB NO. (BETA)	AGE ESTIMATE (YEARS BP)[1]	CALIBRATED AGE ESTIMATE (YEARS BP)[2]
I	12	Small stained basin in Housepit 59	291489	5280 ± 40	6190 – 5930
I	16	Medium stained basin	291490	5290 ± 40	6190 – 5940
I	19	Medium stained basin in Housepit 59	294191	5260 ± 40	6180 – 5920
I	29	Medium stained basin in Housepit 59	291492	5200 ± 40	6000 – 5900
I	31	Small stained basin in Housepit 1	291493	5290 ± 40	6190 – 5940
I	36	Housepit	291494	5170 ± 40	5990 – 5900
I	39	Housepit	291498	5420 ± 40	6290 – 5180
I	48	Medium stained basin	291499	8010 ± 50	9020 – 8700
				8670 – 8650	
II	2	Medium rock filled stained basin	290143	3690 ± 40	4150 – 3910
I	15A	Large bell-shaped pit in Housepit 59	290144	5330 ± 40	6270 – 6240
				6210 – 5990	
II	18	Medium stained basin	290145	3680 ± 40	4140 – 4120
				4100 – 3900	
I	21	Small stained basin in Housepit 1	290146	5250 ± 40	6180 – 6140
				6120 – 5920	
I	57	Large stained basin	290147	5390 ± 40	6290 – 6170
				6150 – 6110	
				6070 – 6060	
				6050 – 6020	
I	54	Medium stained basin in Housepit 36	294513	5260 ± 30	6180 – 6150
				6120 – 5930	
I	58	Stained basin	294738	4390 ± 30[3]	5040 - 4860

[1] Conventional radiocarbon age estimate in radiocarbon years before present (years BP), not calibrated; all age estimates obtained through AMS process. .

[2] Calibrated age estimate range provided at two sigmas.

[3] Dated obtained on charcoal-stained sediment.

in age. The aeolian deposits accumulated in the lee of a low rise to the south. The prehistoric inhabitants of the site initially constructed their housepits and features after a shallow aeolian leeside deposit had formed over the underlying granite boulders. In several instances, these features encountered subsurface boulders the prehistoric inhabitants had not anticipated and which required modification of the features. The aeolian deposits then continued to aggrade slowly during the span of occupations represented in the excavation block, until sometime after the final occupation, when the ground surface stabilized and a soil formed. The modern surface deposit is a mix of aeolian deposits and colluvium with a surface veneer of granite cobbles and boulders.

Four stratigraphic units and two stained cultural layers were defined (Figure 2). Stratum I consists of light olive brown colluvial and alluvial sediment over and around the underlying granite boulder deposit. It is a slightly consolidated poorly sorted sand, mostly medium grains with some coarse grains and approximately 25% small gravel. The stratum lacks root channels at this depth, but there is extensive charcoal staining leached and intermixed by burrowing animals from above.

Stratum II consists of aeolian yellowish to light yellowish brown silty poorly sorted sand with slightly finer-grained sand and more silt than Stratum I. It is approximately 20% small gravel and <1% root channels. The tops of the large granite boulders begin to appear in the bottom of this stratum. This stratum contains the two stained cultural layers, which range from grayish brown to very dark gray. Excavation was halted at or near the base of this stratum across the excavation block, except in the south end of the block, where portions of Stratum I were excavated.

Stratum III is well consolidated brown to pale brown silt with some fine- to medium-grained sand. It consists of a continuation of the aeolian deposits comprising Stratum II and is a possible A horizon with some possibly very lightly stained sediment. It is approximately 10-15% small gravel and ≤1% root channels.

Stratum IV is the reclaimed topsoil on the pipeline right-of-way. It was removed across the excavation block before start of excavations.

The two stained cultural layers with which Components I and II are associated are encapsulated within Stratum II across the entire block. The cultural deposit generally consists of an upper lightly stained layer with which Component II is associated and an underlying moderately to darkly stained layer with which Component I is associated.

The two stained layers followed the slope of the aeolian deposit from south to north across the excavation block. However, the lower layer sloped at a slightly greater angle as the depth of the deposit increased from south to north. As a result, the cultural layers were more vertically compressed relative to each other in the south part of the block, and more distinct in the central part of the block. They taper off in the northern part of the block, where the upper stained layer intersected the ground surface and the staining associated with the lower cultural layer faded away and the cultural layer thickened. The intermixing of material from the early Opal phase occupations and the Great Divide phase occupation(s) occurred primarily in the north part of the block.

COMPONENT I

The remains assigned to Component I—including four housepits with many overlapping interior stained basins—appear to be the result of repeated residential, though perhaps short-term, occupations occurring over the 250 year period dating between 5420 and 5170 years BP. This time span falls within the early Opal phase of the Early Archaic period. The remains from these reoccupations occur as a single archaeological layer within the sand deposits at the site. The component also contains a smaller amount of cultural material from an earlier occupation.

FEATURES

The 57 features assigned to Component I includes one housepit (Feature 36) with up to nine interior features, one housepit (Feature 39) with up to four interior features, one possible housepit (Feature 59) with up to 12 interior features, and one possible housepit (Feature 1) with up to eight features. Features found outside of the housepits are 13 stained basins, three heat-altered rock scatters, one heat-altered rock filled basin, one post mold, and two large bell-shaped pits (Figure 3; Table 2).

Housepit Feature 36 was a darkly stained but poorly defined housepit with up to nine interior basins (Figures 4 and 5). The boundaries and interior

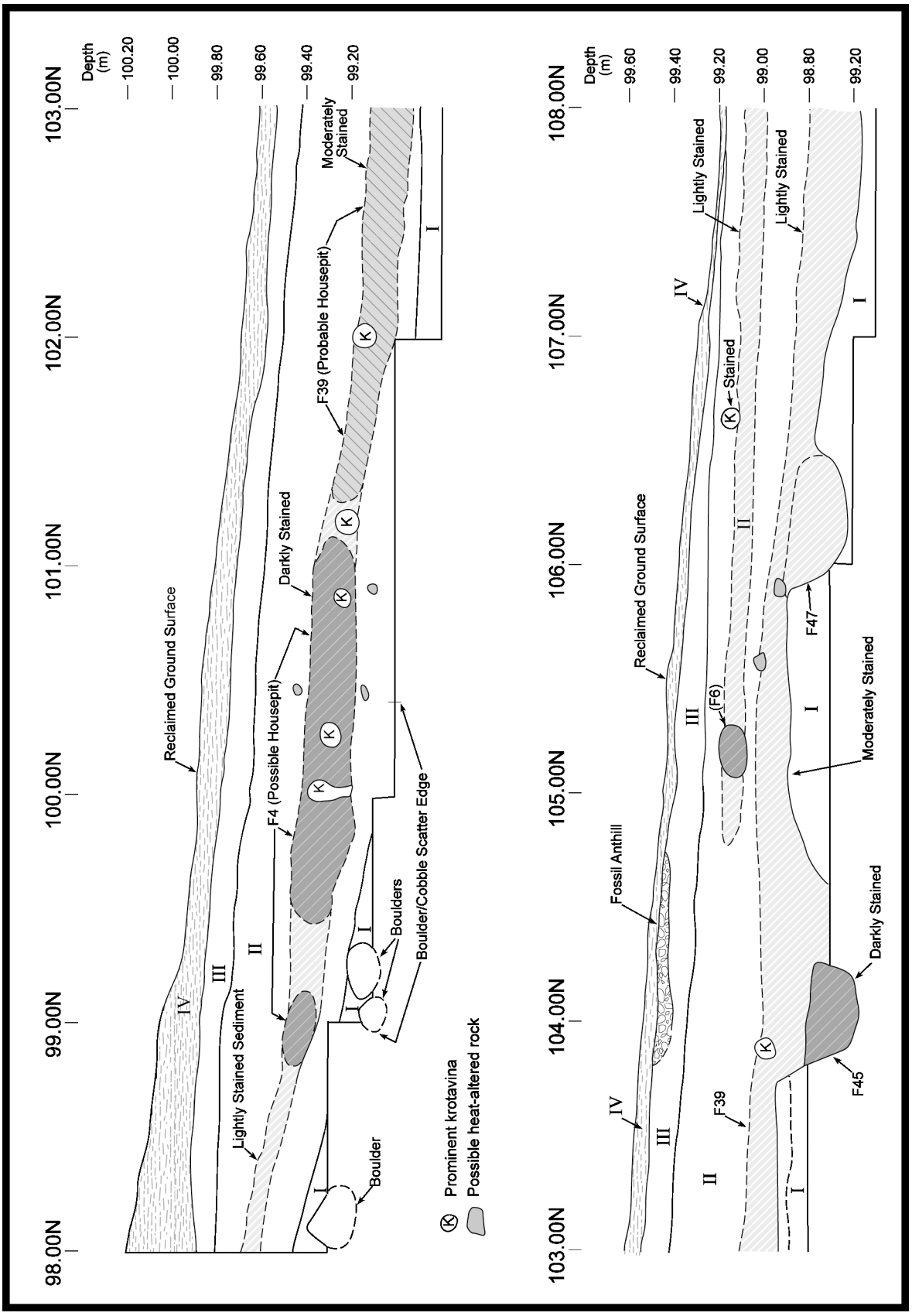

Figure 2: Stratigraphic profile of the west wall of the excavation block from 98.00N to 108.00N, Crooks Gap Housepit site.

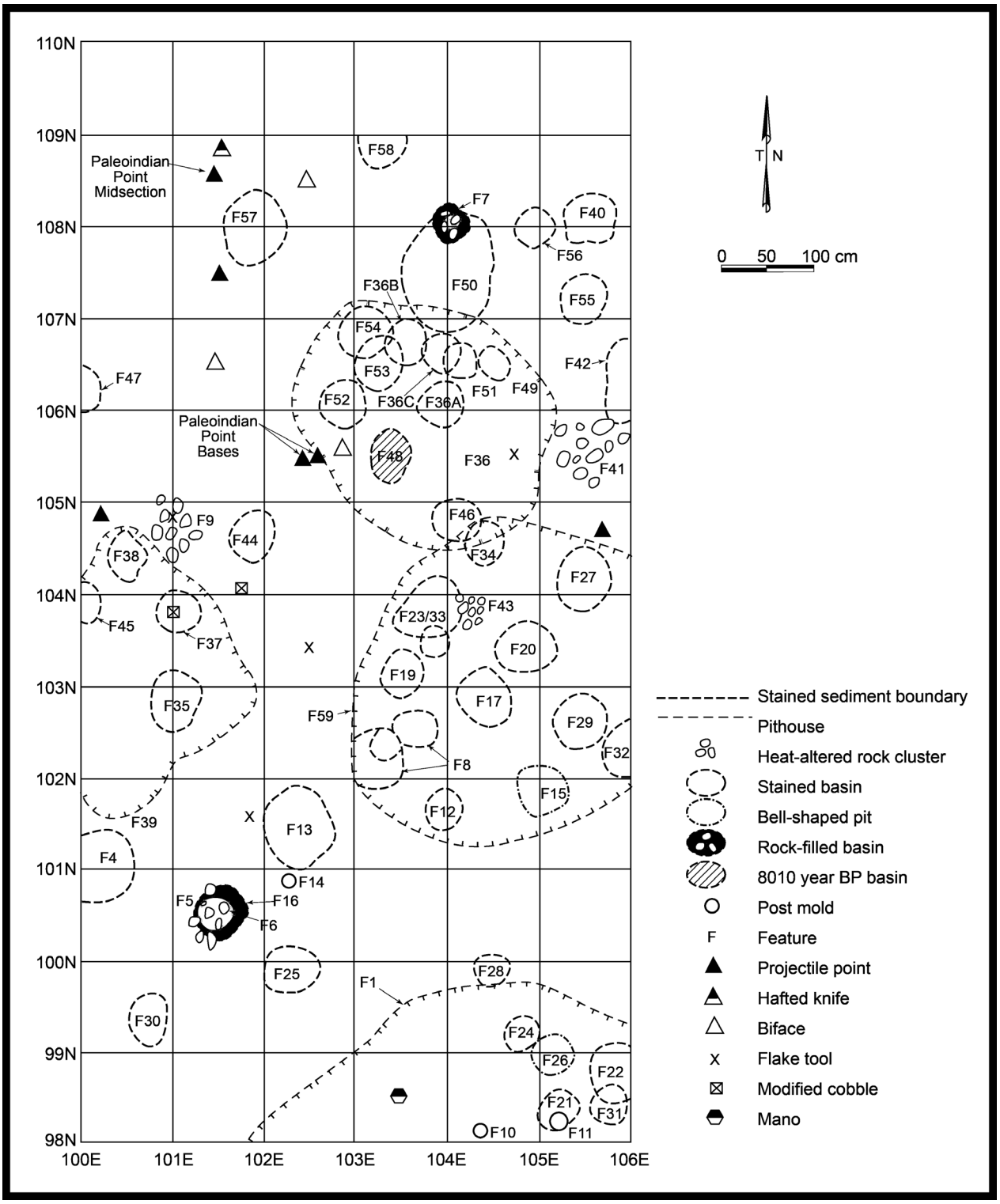

Figure 3: Spatial distribution of features and tools, Component I, Crooks Gap Housepit site.

Table 2: Summary of cultural features, Component I, Crooks Gap Housepit site.

NO.	FEATURE TYPE	DIMENSIONS (CM)[1] L	W	D	TOP OF FEATURE	HEAT-ALTERED ROCK NO.	WEIGHT (KG)	NO. OF FLAKES	ARTIFACTS FROM FILL NO. OF FAUNAL	OTHER	AGE EST. (YEARS BP)[2]
HOUSEPIT FEATURE 36 AND ASSOCIATED INTERIOR FEATURES											
36	Housepit	310	240	30	99.00	183	8.989	15	80	Biface	5170 ± 40
36A	Deep interior stained basin	52	45	30	98.92	16	0.180	5	3	--	--
36B	Medium interior stained basin	55	46	12	98.68	8	0.150	2	4	--	--
36C	Medium interior stained basin	50	44	13	98.70	--	--	2	8	--	--
46	Medium stained basin	50	49	9	98.70	--	--	5	--	--	--
49	Small, deep stained basin	44	34	24	98.60	--	--	1	4	--	--
51	Small stained basin	39	37	18	98.60	--	--	4	5	--	--
52	Medium stained basin	55	49	25	98.68	12	0.070	4	17	--	--
53	Medium stratified stained basin	58	48	24	98.60	9	1.120	0	20	--	--
54	Medium stained basin	63	61	20	98.60	19	0.475	1	3	--	5260 ± 30
HOUSEPIT FEATURE 39 AND ASSOCIATED INTERIOR FEATURES											
39	Housepit	320*	184*	20	99.10	213	2.846	6	14	Modified cobble	5420 ± 40
35	Large interior stained basin	81	80	40	98.90	69	0.720	1	9	--	--
37	Medium interior stained basin	50	47	29	98.90	52	0.150	--	5	--	--
38	Medium interior stratified stained basin	65	43	34	98.90	73	0.179	--	1	--	--
45	Stained basin	45	17*	22	98.77	8	0.035	0	1	--	--
HOUSEPIT FEATURE 59 AND ASSOCIATED INTERIOR FEATURES											
59	Possible housepit	368	300*	30	99.20	207	8.076	48	57	Projectile point	--
8	Stained basins	58	56	17	99.01	21	0.372	5	111	--	--
		49	44	24	99.09						
		35	34	13	99.01						
12	Small stained basin	51	40	12	99.30	--	--	--	19	--	5280 ± 40
15	Large bell-shaped pit/ Medium stained basin	69	57	65	99.22	159	4.057	5	0	--	5330 ± 40
		57	55	23	99.20	--	--	0	64	--	
									0		
17	Medium to large stained basin	72	60	36	99.10	--	--	1	13	--	--
19	Small to medium stained basin	52	47	16	99.07	26	0.089	0	6	--	5260 ± 40
20	Medium stratified stained basin	69	67	31	99.00	72	0.637	--0	9	--	--
23/33	Stained basins	43	41	27	99.00	1	0.400	--	19	--	--
		68	59	31	98.90	--	--	--	--	--	--
27	Large stained basin	73	66	31	99.00	24	0.515	6	69	--	--
29	Medium stratified stained basin	57	56	11	99.15	--	--	--	3	--	5200 ± 40
32	Stained basin	66*	47*	26		--	--	5	4	--	--
34	Medium stained basin	49	45	13	99.01	2	0.061	--	18	--	--

Table 2: (continued).

NO.	FEATURE TYPE	DIMENSIONS (CM)[1] L	W	D	TOP OF FEATURE	HEAT-ALTERED ROCK NO.	WEIGHT (KG)	NO. OF FLAKES	ARTIFACTS FROM FILL NO. OF FAUNAL	OTHER	AGE EST. (YEARS BP)[2]
POSSIBLE HOUSEPIT FEATURE 1 AND ASSOCIATED INTERIOR FEATURES											
1	Possible housepit	410*	175*	--	99.40	--	--	--	--	--	--
10	Probable post mold	12	12	9	99.40	--	--	--	0	--	--
11	Possible post mold	22	20	7	99.30	--	--	--	--	--	--
21	Small stained basin	45	40	5	99.62	2	0.125	--	--	--	5250 ± 40
22	Small to medium stained basin	65	40*	19	99.54	--	--	1	27	--	--
24	Small stained basin	40	37	7	99.55	--	--	--	4	--	--
26	Small bell-shaped pit	35	32	35	99.50	--	--	1	9	--	--
28	Small stained basin	42*	26*	8*	99.49	--	--	--	1	--	--
31	Small stained basin	43	41	13	99.40	10	0.035	--	16	--	5290 ± 40
NON-HOUSEPIT/EXTERIOR FEATURES											
4	Medium to large stained basin	87	61*	20	99.46	3	0.600	5	21	--	--
5	Heat-altered rock scatter	83	50	18	99.52 99.34	17	7.920	--	--	--	--
7	Structured heat-altered rock filled basin	43	39	34	98.82 98.48		37	20.270	--	4	-- --
9	Large heat-altered rock scatter	76	74	14	99.09 98.95	38	17.380	--	--	Modified cobble; flake tool	--
13	Large bell-shaped pit	94	84	30	99.20	19	0.350	5	17	--	--
14	Possible post mold	15	15	7	99.30	1	0.200	--	--	--	--
16	Medium stained basin	65	64	23	99.25	4	1.400	2	--	--	5290 ± 40
25	Stained basin	67*	44*	11	99.43	--	--	1	--	--	--
30	Medium stained basin	59	43	23	99.36	--	--	1	--	--	--
40	Medium stained basin	65	57	17	98.73	1	0.022	--	3	--	--
41	Heat-altered Rock Scatter	100	100	19	98.84	23	11.720	--	1	--	--
42	Large stained basin	100	26*	20	98.70	4	0.960	3	1	--	--
44	Medium stained basin	56	50	13	98.87	2	0.100	--	1	--	--
47	Stratified stained basin	50*	21*	28	98.90	--	--	--	1	--	--
48	Medium stratified stained basin	64	54	25	98.69	8	0.022	8	1	--	8010 ± 50
50	Large bell-shaped pit	142	100	42	98.60	123	5.360	3	13	--	--
55	Medium stained basin	60	59	25	98.55	15	0.127	3	26	--	--
56	Small stained basin	49	43	11	98.55	2	0.025	2	1	--	--

Table 2: (continued).

NO.	FEATURE TYPE	DIMENSIONS (CM)[1] L	W	D	TOP OF FEATURE	HEAT-ALTERED ROCK NO.	WEIGHT (KG)	NO. OF FLAKES	ARTIFACTS FROM FILL NO. OF FAUNAL	OTHER	AGE EST. (YEARS BP)[2]
57	Large stained basin	87	70	32	98.60	13	0.450	0	23	--	5390 ± 40
58	Stained basin	50*	34*	37	98.40	14	0.300	0	7	--	4390 ± 30[3]

[1] L = length; W = width; D = depth; * = partial dimension.
[2] Conventional radiocarbon years before present, not calibrated.
[3] Insufficient charcoal present to date, so a bulk sediment sample was dated. The sediment sample was likely contaminated with soil humates resulting in the younger date.

constituents of this housepit were difficult to discern from the surrounding matrix given the extensive amount of stained sediment and overlapping stained basin features. Basin Features 36A, 36B, and 36C were clearly associated with the floor of the housepit. The association of the other basin features with the housepit floor was more poorly defined, because of the indistinct and diffuse nature of the floor and the top of the overlapping basin features. The housepit fill was stratified. The top stratum was very dark grayish brown silty sand with approximately 7% small gravel, and the bottom stratum was very dark gray silty sand with approximately 7% small gravel.

Housepit Feature 39 was a poorly defined, deflated housepit with up to four interior subfloor basins (Features 35, 37, 38, and 45) located along the western edge of the excavation block. The relationship of the partly excavated Feature 45 to the housepit floor is not completely clear. The housepit fill was dark grayish brown silty sand with 10-15% small gravel. No oxidized sediment or visible charcoal was present.

Feature 59 was a poorly defined, deflated housepit feature consistind of a large stained lens with as many as 12 interior features (Features 8, 12, 15, 17, 19, 20, 23/33, 27, 29, 32, 34, and 43) (Figure 6). It overlapped with the southeastern side of Housepit Feature 36. The housepit fill ranged from faintly to very darkly charcoal-stained (brown to very dark grayish brown) silty fine to medium-grained sand with 10-15% small to medium gravel. The feature fill was not identified as stratified during excavation. No oxidized sediment or visible charcoal was present.

Feature 1 was a large generalized stain which was probably a shallow, amorphous deflated and poorly preserved housepit feature. It contained eight associated interior basins (Features 10, 11, 21, 22, 24, 26, 28, and 31). The feature consisted of moderately charcoal-stained sediment with no oxidized sediments. The boundary with the surrounding sediment was diffuse, and the stain was difficult to define. The stain became more diffuse with depth. Features were also situated outside definable housepits. These consist of 13 stained basins, three heat-altered rock scatters, one heat-altered rock filled basin, one post mold, and two bell-shaped pits. Most of these features appear to date to the early Opal phase between 5420 and 5170 years BP, the period represented by the housepits and most of the other excavated remains at the site. However, a radiocarbon age estimate from one stained basin feature (Feature 48) situated among the early Opal phase features and just below Housepit Feature 36 dated to the early Great Divide phase (8010 ± 50 years BP). Nine hundred and sixteen pieces of heat-altered rock with a combined weight of 89.386 kg were recovered scattered across the general occupation surface outside features in Component I.

FLAKED STONE ARTIFACTS

Flaked stone artifacts recovered from Component I consist of six projectile points, four bifaces, four flake tools, two modified cobbles, one groundstone fragment, and 410 pieces of debitage.

Six projectile points were recovered from Component I (Table 3; Figure 7). Specimen FR6260-46 was located next to Housepit Feature 39 and is the proximal portion of a medium-sized opaque dark red heat-altered chert side-notched dart point. This point style is common in regional Early Archaic Opal phase occupations, which is consistent with the conventional radiocarbon date from Feature 39 (5420 ± 40 years BP).

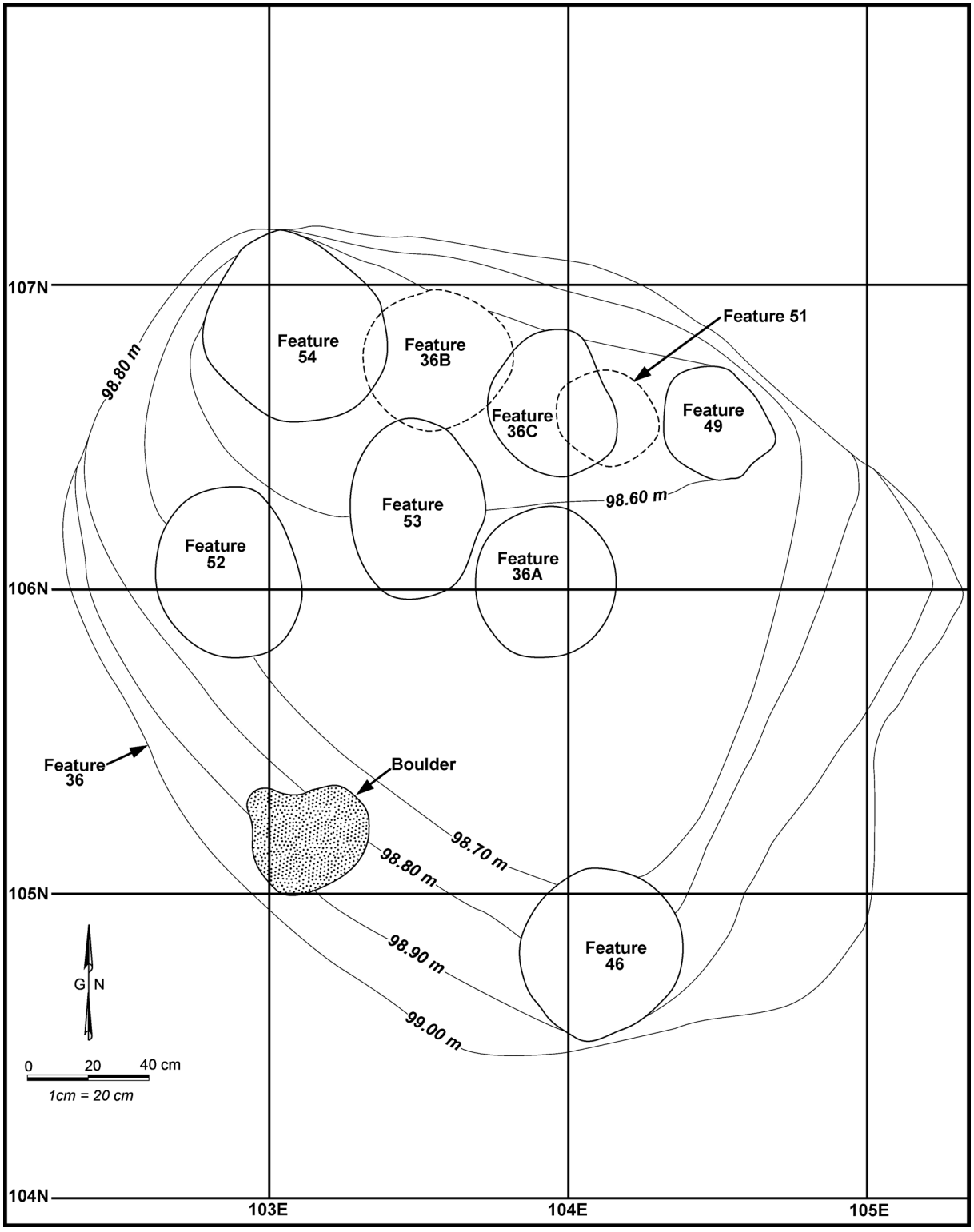

Figure 4: Plan map of Housepit Feature 36, Crooks Gap Housepit site.

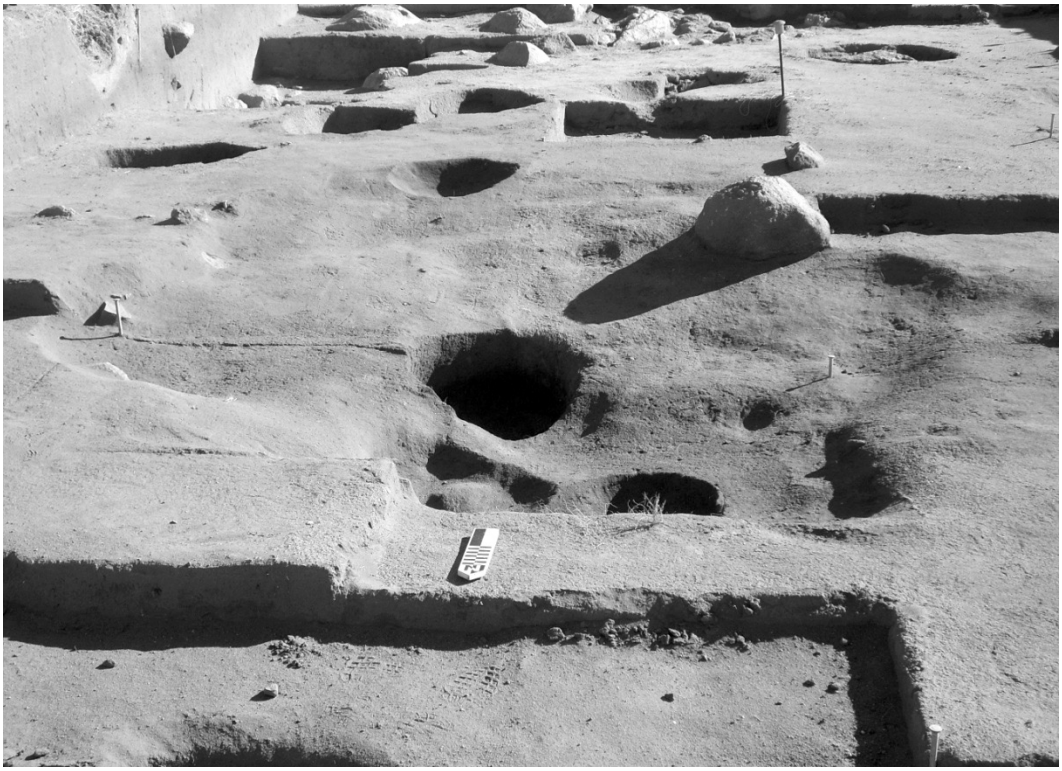

Figure 5: Overview of Housepit Feature 36 after excavation facing south, Component I, Crooks Gap Housepit site.

Specimen FR6260-116 was in the excavation level just above and near to Feature 57 and is a nearly complete medium-sized opaque brown chert side-notched dart point. This point style is also common in regional Early Archaic Opal phase occupations, which is consistent with the conventional radiocarbon date obtained from Feature 57 (5390 ± 40 years BP).

Table 3: Projectile points, Component I, Crooks Gap Housepit site.

CAT. NO.[1]	POINT STYLE	PORTION	UNIT NORTH	UNIT EAST	UNIT LEVEL	DIMENSIONS (MM)[2] L	W	T	NECK W	BASE W	MATERIAL
46	Medium side-notched	Proximal	104	100	9	30*	17	6	12	15*	Opaque dark red heat-altered chert
116	Medium side-notched	Complete	107	101	14	26	19	3	12	16	Brown opaque chert
268	Unknown	Midsection	104	105	11	24*	16	4	--	--	Off-white opaque chert
122	Unknown	Midsection	108	101	16	31*	23*	4	--	--	Brown opaque/ semitranslucent chert
157	Medium stemmed	Proximal	105	102	9	19*	20*	5	--	17	Pink and tan fine-grained quartzite
158	Medium lanceolate	Proximal	105	102	11	11*	18	4	--	18	Opaque fossiliferous chert

[1] Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness; * = incomplete measurement.

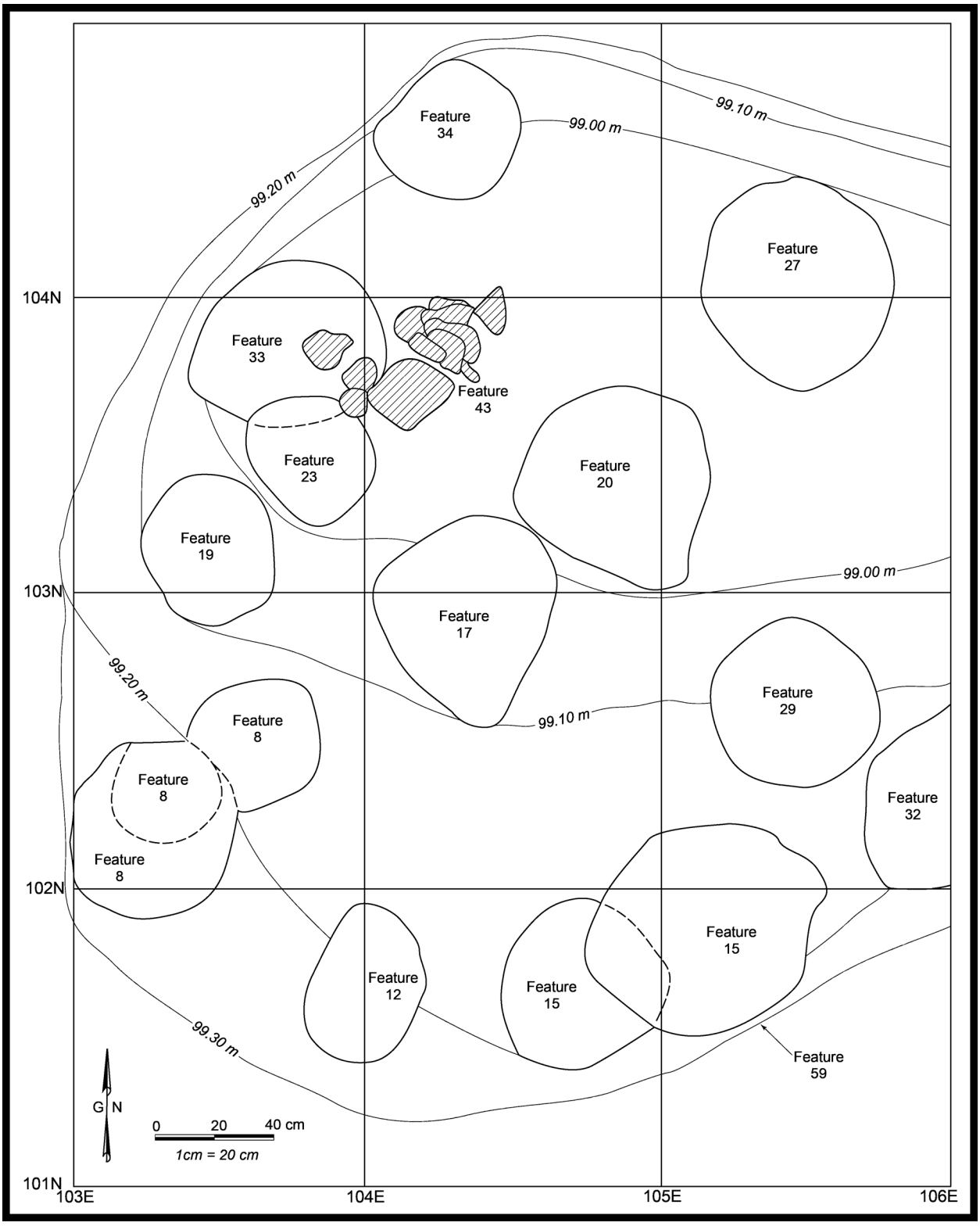

Figure 6: Plan map of Housepit Feature 59, Component I, Crooks Gap Housepit site.

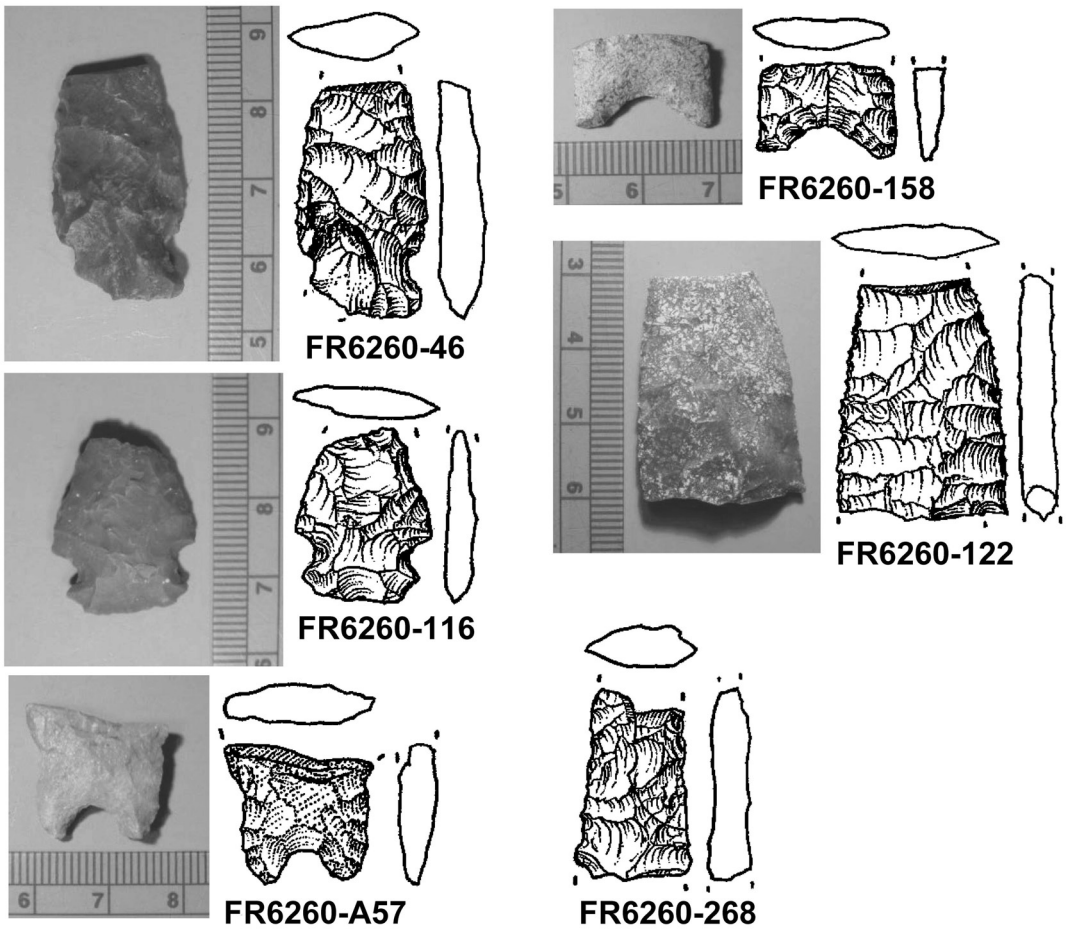

Figure 7: Projectile points, Component I, Crooks Gap Housepit Site.

Two specimens appear to be late Paleoindian in form (Specimens FR6260-157 and FR6260-158). They were both located in the unit adjacent to Feature 48, the one feature dated to the late Paleoindian period (8010 ± 50 years BP). However, both of these points were located several excavation levels above the level where Feature 48 was identified. The top of Feature 48 may have been obscured by the staining from Housepit Feature 36, so it could have been at the same levels as the projectile points. Specimen FR6260-157 is the proximal portion of a medium-sized split-stemmed projectile pointh resembling a Lovell Constricted point base. Lovell Constricted point types have been dated throughout Wyoming to around 8,500 to 8,000 years BP (Frison 1991; Kornfeld et al. 2010). Specimen FR6260-158 is the proximal portion of a medium-sized lanceolate projectile point with a deeply convex base. This point fragment resembles a base of an Allen-type Frontier Complex projectile point, which dates to the late Paleoindian period from as early as 10,000 to around 8000 years BP (Frison 1991; Kornfeld et al. 2010).

Specimen FR6260-122 is a midsection fragment of what would have been a finely worked, thin, medium to large projectile point. It was located in close proximity both stratigraphically and spatially with Feature 57.

Specimen FR6260-268 consists of two refitted fragments of a projectile point midsection recovered near Feature 27 and Housepit Feature 59. The form of the fragments is consistent with the other Early Opal phase projectile points.

Four bifaces were recovered from Component I (Table 4). The bifaces consist of one hafted knife, one indeterminate final biface, and two preblanks. The hafted knife FR6260-120) is a complete large side-notched hafted knife common to the Early Archaic Opal phase occupations (Figure 8). It has been heavily reworked to the extent the blade has an almost diamond cross-section and resembles a large hafted awl.

Table 4: Characteristics of bifaces, Component I, Crooks Gap Housepit site.

CAT. NO.[1]	REDUCTION STAGE	SIZE CLASS	PORTION	FUNCTIONAL CLASS	UNIT	LEVEL	DIMENSIONS (MM)[2] L	W	T	MATERIAL
111	Final biface	Unknown	Lateral	Unknown	106N 101E	13	20*	11*	4*	Semitranslucent chert
120	Final biface	Large	Complete	Hafted knife	108N 101E	14	78	28	7	Gray and dark gray banded and mottled fine-grained quartzite
349	Preblank	Medium	Terminal	Unknown	105N 102E	12	23* (F36)	37	14	Glossy opaque creamy grayish white and gray chert
418	Preblank	Large	Complete	Unknown	108N 102E	15	51	28	14	Red, yellow, and brown mottled opaque chert

[1] Catalog Number; Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness; * = incomplete measurement.

Four flake tools were recovered during excavation (Table 5). Two of the flake tools are modified flakes and two are expedient flake tools. One is a unifacially and bifacially modified flake (Specimen FR6260-86), and one is a bifacially modified flake (Specimen FR6260-201). The expedient tools (Specimens FR6260-452 and FR6260-488) have only use retouch on the lateral and/or terminal margins.

Two modified cobbles were recovered from Component I features (Table 6). One modified cobble (Specimen FR6260-372) was recovered from Housepit Feature 39 and is a complete large tabular modified cobble roughly bifacially flaked on one margin with at least six flakes scars visible. Specimen FR6260-320 was identified approximately 50 cm southeast of Feature 9, a heat-altered rock scatter. It is a large complete modified cobble with at least 10 flakes removed. It was unifacially flaked around all margins. Four hundred and ten flakes were recovered from Component I, including 256 flakes from the general component and 154 flakes from

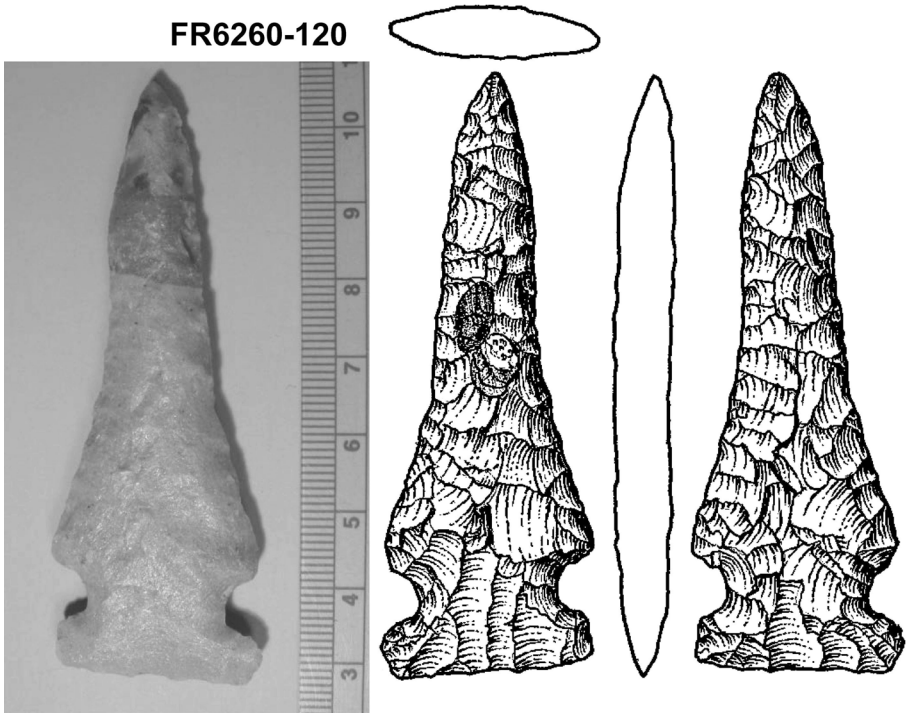

Figure 8: Side-notched biface , Component I, Crooks Gap Housepit site.

Table 5: Characteristics of flake tools, Component I, Crooks Gap Housepit site.

CAT. NO.[1]	TOOL TYPE	SIZE CLASS	PORTION	FUNCTION CLASS	UNIT	LEVEL	DIMENSIONS (MM)[2] L	W	T	MATERIAL
452	Expedient	Medium	Complete	Indeterminate	103N 103E	10	34	24	4	Brown dendritic semitranslucent chert
488	Expedient	Medium	Complete	Indeterminate	104N 100E	9/11	49	28	8	Light brown dendritic pebble chert
86	Modified	Medium	Complete	Indeterminate	101N 101E	8	35	26	4	Dark red fine-grained quartzite
201	Modified	Small	Lateral	Indeterminate	105N 104E	10	24*	15*	3	Tan medium-grained quartzite

[1] Catalog Number; Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness; * = partial measurement.

Table 6: Characteristics of modified cobbles, Component I, Crooks Gap Housepit site.

CAT. NO.[1]	SIZE TYPE	CLASS	PORTION	FLAKE SCARS	UNIT	LEVEL/ FEATURE	DIMENSIONS (MM)[2] L	W	T	MATERIAL
372	Possible digging rock	Large	Complete	6	103N 101E	11 (F39)	192	119	27	Tan and gray coarse-grained quartzite
320	Possible chopper	Large	Complete	10	104N 101E	11 (F9)	137	116	54	White quartz

[1] Catalog Number; Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness.

features. The debitage assemblages from the general component and the features are very similar. Chert flakes consisting of translucent, semitranslucent, and opaque chert flakes dominate both assemblages (73% of the general component assemblage and 77% of the feature assemblage). The other common material types present between the two assemblages are also present in similar quantities. Fifty-four (21%) fine-grained and medium-grained quartzite flakes were recovered from the general component and 28 (18%) fine-grained and medium-grained quartzite flakes were recovered from the features.There were twelve quartz flakes (5%) in the general component and five quartz flakes (3%) in the features. Flakes smaller than 3 cm dominated both the general component and the feature assemblages (96% and 97%, respectively). Ten flakes (4%) greater than 3 cm in size were recovered from the general component and four flakes (3%) from the feature.

GROUNDSTONE

One quartzite mano fragment was recovered from Component I (Table 7). It has one lightly ground face, and with no evidence of shaping, battering, or pecking on the faces or margins.

BONE SPECIMENS

One thousand and thirty-five nonintrusive bone and tooth fragments were recovered from Component I, including 294 fragments from the general component and 741 fragments from the Component I features.

The 294 fragments from the general component consist of eight tooth enamel fragments and 286 bone fragments. The general component bone assemblage is comprised of 226 (77%) medium mammal fragments, 61 (21%) small mammal fragments, four (1%) mammal fragments of an unknown-sized mammal, and three (1%) unidentifiable bone fragments. The 226 medium mammal fragments include two pronghorn (*Antilocapra americana*)

Table 7: Characteristics of Groundstone, Component I, Crooks Gap Housepit Site.

CAT. NO.[1]	TOOL TYPE	PORTION	NUMBER OF FACES	UNIT	LEVEL	DIMENSIONS (MM)[2] L	W	T	WEIGHT (KG)	MATERIAL
430	Mano	Complete	1	98N 103E	4	68	64	48	0.340	Quartzite

[1] Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness.

tooth fragments, one fragment of a pronghorn first phalange, one complete pronghorn second phalange, one proximal fragment of a pronghorn second phalange, one distal fragment of a pronghorn second phalange, and one complete pronghorn third phalange, representing an unknown number of pronghorn individuals. The remaining 219 medium mammal specimens are from medium mammals not identifiable to species and include four tooth enamel fragments, 52 fragments identifiable to element, and 163 not identifiable to element. The 52 fragments identifiable to element include one flat bone, two left distal humerus condyle, 16 long bone diaphyses, one right proximal metatarsal, two first phalange, seven pubis and obturator foramen, one left proximal radius, one radius diaphysis, eight unknown carpal, five unknown metatarsal or metacarpal condyles, two unknown distal carpals, one unknown distal metatarsal or metacarpal condyle, two unknown ribs, one unknown rib head, and two unknown vertebrae fragments.

The 61 small mammal bone fragments include one unidentifiable rabbit tooth enamel fragment and 60 fragments not identifiable to species. The 60 fragments include 22 fragments identifiable to element, one tooth enamel fragment, and 37 fragments not identifiable to element. The 22 specimens identifiable to element include 13 long bone diaphysis, five unknown long bone, one unknown rib head, one unknown rib, and two unknown flat bone fragments.

Overall, the general component bone assemblage is comprised primarily of fragments measuring less than 3.0 cm (n=277; 94%). Twelve (4%) medium mammal bone fragments measure between 3.0 and 4.0 cm, including the pronghorn first phalange fragment and complete third phalange. Three fragments, including the medium mammal left distal humerus, radius diaphysis, and one long bone diaphysis fragments, measure between 5.0 and 6.0 cm. One medium mammal unknown long bone diaphysis fragment measures 7.5 cm, and one medium mammal unknown long bone diaphysis fragment measures 8.3 cm. Seven hundred and forty-one bone specimens were recovered from the features, including 657 bone fragments and 84 tooth fragments. Bone specimens were recovered from 45 of the 57 features. The feature specimens include 355 (48%) small mammal bone and tooth fragments, 352 (47%) medium mammal bone and tooth fragments, one (0.1%) very small mammal bone fragment, and 33 (4%) unidentifiable bone fragments. One hundred and eighty specimens were identifiable as portions of specific elements and are dominated by small and medium mammal tooth fragments (n=84) and long bone diaphysis fragments (n=63). Medium mammal accounts for most of the specimens identifiable to element (n=134; 74%), and small mammal accounts for 46 (26%) of the specimens identifiable to element.

PLANT MACROFOSSILS

One hundred and eighty-three bulk feature fill samples with a combined volume of approximately 700 liters were collected and floated for plant macrofossils. Forty-five macrofossil remains were recovered from 14 of the 57 features from Component I. These remains include 28 burned goosefoot seeds from Feature 4 (13 seeds), Feature 7 (5 seeds), Feature 17 (2 seeds), Feature 36 (2 seeds), Feature 38 (2 seeds), Feature 39 (2 seeds), and Feature 57 (2 seeds), seven unburned seeds, one piece of carbonized wood, 11 *sclerotia* spores, and four pieces of insect chitin. The unburned seeds, *sclerotia* spores, and insect chitin should be considered intrusive.

COMPONENT II

Component II likely represents remains from a single, short-term residential occupation during

the late Opal phase. The two radiocarbon dated features from the component yielded radiocarbon age estimates of 3690 and 3680 years BP. The low density of artifacts and features associated with this component suggests limited generalized domestic activities were conducted during this occupation, potentially including the baking of root resources using the rock-filled basin.

FEATURES

One medium stained basin, one medium basin, and one medium heat-altered rock filled stained basin are assigned to Component II (Figure 9; Table 8).

Forty-six heat-altered rock fragments with a combined weight of 3.251 kg were recovered from Component II.

FLAKED STONE ARTIFACTS

Flaked stone artifacts recovered from Component II are two projectile points, two bifaces, and 177 pieces of debitage.

Two projectile points were recovered from Component II (Table 9; Figure 10). Specimen FR6260-69 is an almost complete tan opaque chert side-notched dart point with shallow side notches. The point is only missing a small portion of one proximal lateral margin of the base. This type of side-notched dart point is typical of Early Archaic late Opal phase occupations. Specimen FR6260-262 is a very small gray siltstone projectile point fragment. It is a lateral portion of the base and side notch.

Two bifaces were recovered from Component II (Table 10). They consist of one final biface and one preform. The final biface (Specimen FR6260-262) appears to be a midsection. The preform (Specimen FR6260-429) is in two refitted pieces and is missing its extreme distal end. One hundred and seventy-seven flakes were recovered from Component II, including 169 flakes from the general component and eight flakes from the features. Several similarities and differences were noted between the general component and the feature debitage assemblages. Both assemblages had a majority of medium-grained quartzite flakes (47.9% of the general component assemblage and 71.4% of the feature assemblage). Additionally, flakes smaller than 3 cm dominated both the general component and the feature assemblages (94.1% and 100.0%, respectively).

Table 8: Summary of cultural features, Component II, Crooks Gap Housepit site.

NO.	FEATURE TYPE	DIMENSIONS (CM)[1] L	W	D	TOP OF FEATURE	HEAT-ALTERED ROCK NO.	WEIGHT (KG)	NO. OF ARTIFACTS FROM FILL FLAKES	BONE	OTHER	AGE EST.[2] (YEARS BP)
2	Medium Heat-altered Rock Filled Stained Basin	64	55	13	99.46	44	32.863	6	33	--	3690 ± 40
3	Medium Basin	60	49	26	99.34	11	0.875	2	26	--	--
18	Medium Stained Basin	52*	40	8	99.80	--	--	--	--	--	3680 ± 40

[1] L = length; W = width; D = depth; * = partial measurement.
[2] Radiocarbon years before present, not calibrated.

Table 9: Characteristics of projectile points, Component II, Crooks Gap Housepit site.

CAT. NO.[1]	POINT STYLE	POINT TYPE	PORTION	UNIT NORTH	UNIT EAST	LEVEL	DIMENSIONS (MM)[2] NECK L	NECK W	NECK T	BASE W	BASE W	MATERIAL
69	Medium side-notched	Dart	Almost complete	98	101	3	35*	14	4	10	11	Tan opaque chert
262	Side-notched	Indeterminate	Proximal Lateral	104	105	7	14*	8*	3*	--	--	Gray siltstone

[1] Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness; * = incomplete measurement.

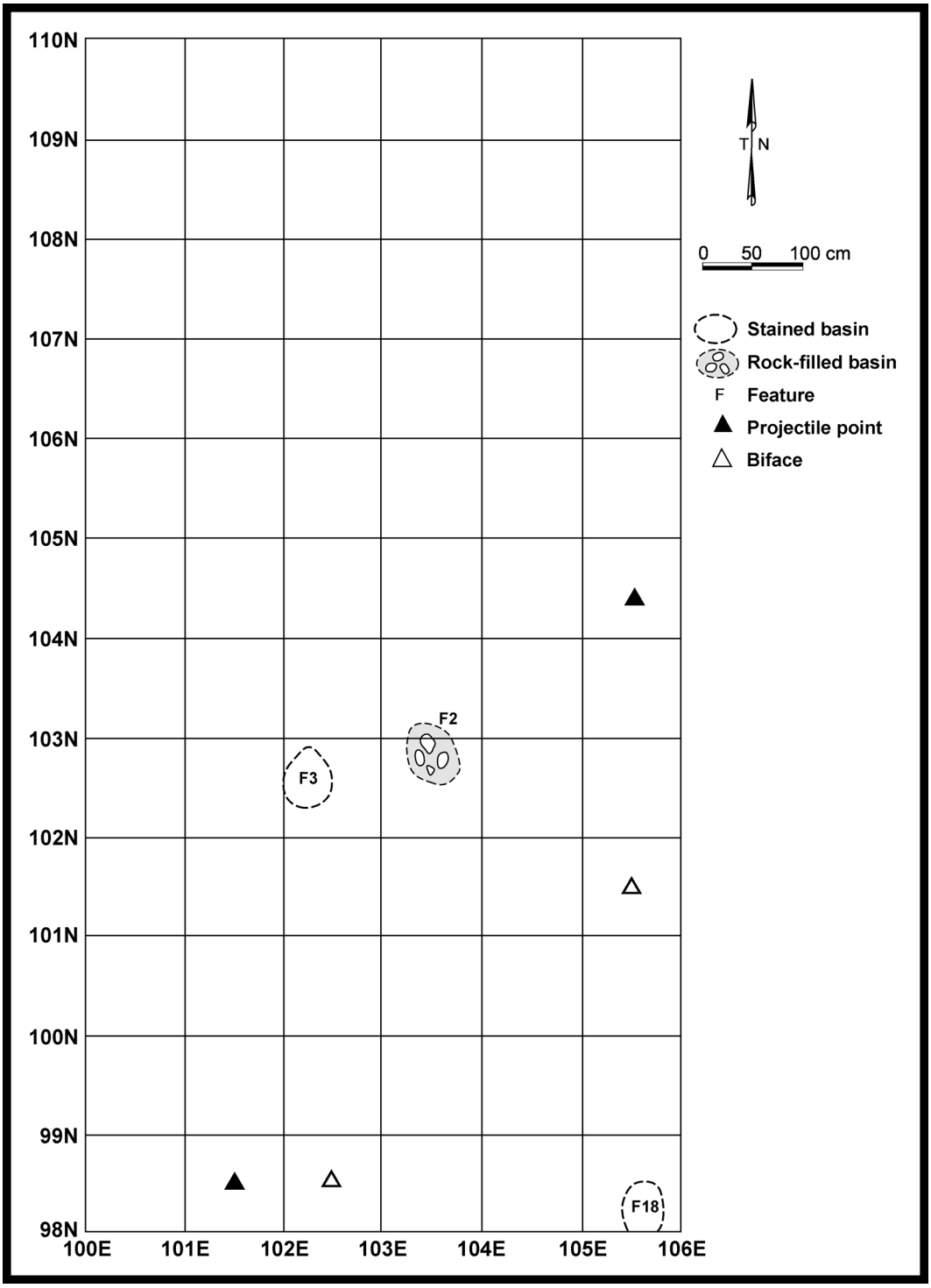

Figure 9: Spatial distribution of features and tools, Component II, Crooks Gap Housepit site.

BONE SPECIMENS

One hundred and two nonintrusive bone and tooth fragments were recovered from Component II, including 43 fragments from the general component and 59 fragments from the features.

The Component II non-feature bone assemblage is comprised of one (2%) large mammal bone fragment, 40 (93%) medium mammal fragments, one (2%) small mammal fragment, and one (2%) flat bone fragment from an unknown-sized mammal. The large mammal bone fragment is a

Table 10: Characteristics of bifaces, Component II, Crooks Gap Housepit site.

CAT. NO.[1]	REDUCTION STAGE	SIZE CLASS	PORTION	UNIT NORTH	EAST	LEVEL	DIMENSIONS (MM)[2] L	W	T	MATERIAL
241	Final bifaces	Indeterminate	Medial	101	105	5	18*	16*	6	Dark red opaque chert
429	Preform	Medium	Proximal	98	103	2	44*	21	7	Tan semi-translucent chert

[1] Begins with prefix "FR6260-".
[2] L = length; W = width; T = thickness; * = incomplete measurement

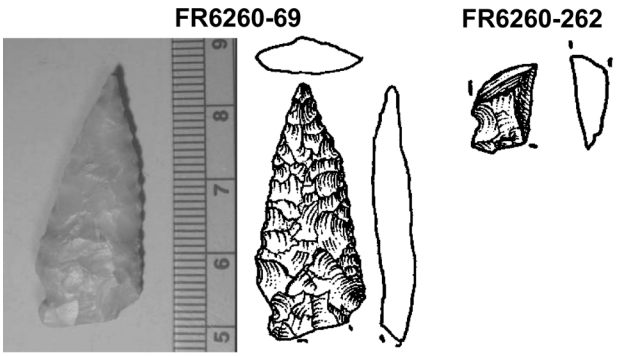

Figure 10: Projectile points, Component II, Crooks Gap Housepit site.

probable bison (*Bison bison*) complete third phalange. The 40 medium mammal specimens include three pronghorn (*Antilocapra americana*) pillared molar tooth fragments. The remaining 37 medium mammal specimens are not identifiable to species. They include four tooth enamel fragments, seven specimens identifiable to element, and 26 specimens not identifiable to element. The seven specimens identifiable to element include two long bone diaphyses, one third phalange, one humerus diaphysis, one unknown metatarsal or metacarpal condyles, and two distal metacarpal or metatarsal unfused condyle (from an unknown aged mammal) fragments. The small mammal bone fragment is a long bone diaphysis fragment.

Fifty-nine bone specimens were recovered from two of the three features identified in Component II. Feature 2 had 33 fragments, which consisted entirely of small mammal fragments. Feature 3 had 26 fragments, which included two medium mammal fragments, 17 unknown rodent fragments, two vole (rodent) tooth fragments, and five small mammal fragments.

PLANT MACROFOSSILS

Fourteen bulk feature fill samples with a combined volume of approximately 53 liters were floated from the excavated features from the three features. Five charred goosefoot seeds were recovered from Feature 3.

COMPARSIONS WITH OTHER NEARBY HOUSEPITS

Twenty housepits at eight sites have been excavated within 20 km of the Crooks Gap Housepit site (Table 11). The Crooks Gap Housepit site is situated in Crooks Gap, a natural pass between the Sweetwater River to the north and the Great Divide Basin to the south. Five of the sites in the sample occur in the Sweetwater River valley north of the Crooks Gap Housepit site. The other three sites are south along the northern edge of the Great Divide Basin.

These sites are all in the general vicinity of major perennial water sources, but not immediately adjacent to them. The Crooks Gap Housepit site is near Crooks Creek, a small perennial creek flowing north through Crooks Gap to the Sweetwater River. The Headlining, Two-Fisted Manos, and Split Rock Ranch sites are situated on a broad, fairly level terrace about 0.5 km south of the Sweetwater River. The Jeffrey City site and Site 48FR2330 also are on the Sweetwater River terrace between the river and Crooks Creek, but further from these perennial water sources. Of the sites along the northern edge of the Great Divide Basin, the Crooks site is about 1.5 km from Crooks Creek. The Sheep Mountain Site is 2.4 km from Crooks Creek and the Arapahoe Creek Housepit site is about 2.6 km from Arapahoe Creek

CHRONOLOGY

The excavated mid-Holocene housepits have uncorrected radiocarbon ages ranging from approxi-

Table 11: Summary of excavated housepits located near Crooks Gap.

SITE NAME	DIMENSIONS HOUSEPIT NO.	(CM)[1] L	W	D	RADIOCARBON AGE ESTIMATE RANGE[2] YEARS BP ()[B]	REFERENCE(S)
Split Rock Ranch (48FR1484)	1	550	400	70	6180 ± 170 – 4430 ± 60 (5)	Eakin (1987); Eakin et al. (1997)
	2	280	280	40	5630 ± 180 (1)	
	3			-	5730 ± 190 (1)	
	4	345	380	48	5870 ± 180 – 3400 ± 180 (7)	
	6		-		5760± 160 – 3080 ± 160 (2)	
Crooks (48FR1602)	A	390	370	48	4850 ± 70 (1)	McKern (1987)
	B	343	320	20	4300 ± 70 (1)	
	D	400	370	25	4360 ± 90 (1)	
48FR2330	16	460	440	125	7160 ± 150 –	Reiss (1990) 5390 ± 100 (3)
Jeffrey City Housepit (48FR4398)	2.0	323	362	60	5320 ± 40 – 5200 ± 30 (2)	McClelland and Smith (2002)
Two-Fisted Manos (48FR4516)	A	270	220	30	5240 ± 40 (1)	Fleming (2005a)
	B	277	250	31	5190 ± 40 (1)	
Headlining Housepit (48FR4464)	A	320	250	16	5520 ± 40(1)	Fleming (2005b)
	B	250	200	23	5250 ± 40(1)	
	C	330	330	43	5390 ± 40(1)	
	D	280	280	30	5330 ± 40(1)	
Arapahoe Creek (48SW13152)	1 ½	386	270	63	5530 ± 170 – 5210 ± 40 (2)[3]	Lowe (2005)
	C	342	232	24	5572 ± 40 – 5560 ± 40 (2)[c]	
Crooks Gap Housepit (48FR6260)	36	310	240	30	5260 ± 30 – 5420 ± 40 (1)	Peterson and Smith (2012)
	39	320	184	20	5330 ± 40 –	
	59	368	300	30	5170 ± 40 (2) 5200 ± 40 (4)	
	1		-		5290 ± 40 – 5250 ± 40 (2)	
Sheep Mountain (48FR5125)	1	355	350	36	5040 ± 50 – 4650 ± 50(3)	Buenger and Goodrick (2011)
	15	305	309	40	6100 ± 40 – 5850 ± 40(2)[3]	

[1] L = length; W = width; D= depth.
[2] Conventional radiocarbon age estimates, uncalibrated; (x) = number of age estimates for housepit.
[c3] Age estimates obtained on sediment samples are not included.

mately 8200 to 3600 years ago, although most date between 6000 and 4000 years ago (Smith 2003). The earlier housepits dating in the 8000 to 7000 years ago range are located in the Upper Green River Basin and are unique compared to most of the other excavated housepits in the Wyoming and Big Horn Basins which date to the Opal phase between approximately 6000 and 4000 years ago. Comparisons of the average ages of the four housepits from the Crooks Gap Housepit site with those of the 41 excavated housepits dating to the Opal phase analyzed by Smith (2003) show the Crooks Gap housepits belong to the 400 year period with the most dated Opal phase housepits (Figure 11).

The average ages of the 24 excavated housepits from the nine sites in the immediate vicinity of

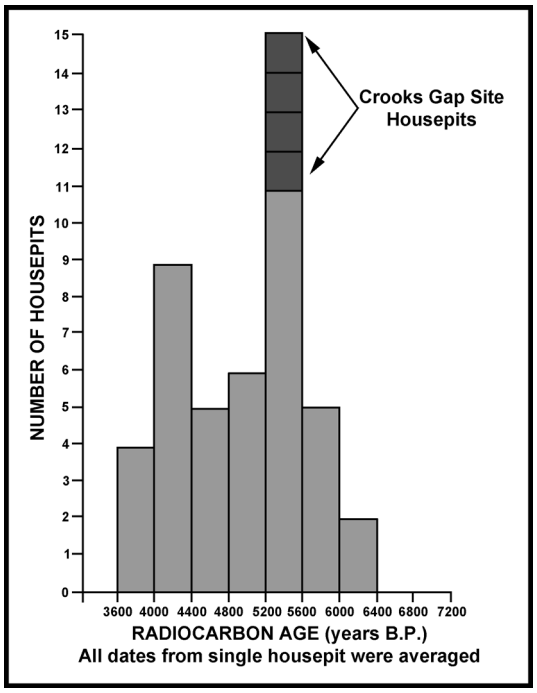

Figure 11: Distribution of radiocarbon age estimates of excavated Opal Phase housepit sites in the Wyoming and Big Horn Basins (after Smith 2003).

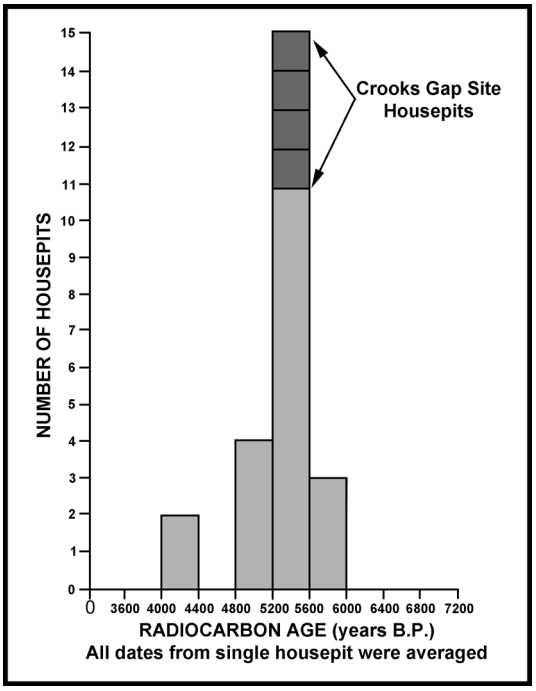

Figure 12: Distribution of radiocarbon age estimates of excavated Opal Phase housepits near Crooks Gap.

Crooks Gap listed (Table 11) have a similar, though tighter, distribution than the overall sample from the Wyoming and Big Horn Basins (Figure 12). Multiple dates from the same housepit were averaged for the plot. The outlier date of 7160 years BP from Housepit 16 at Site 48FR2330 was not used in averaging the other two dates (5770 and 5390 years ago) from that housepit. The distribution of the ages of the 24 housepits indicate the height of the prehistoric use of housepits in the area surrounding Crooks Gap was the 400 year period from 5600 to 5200 years ago. Fifteen of the housepits date to this period and an additional seven housepits have average radiocarbon ages belonging to the 400 year periods just before and after this 400 year period. Only two housepits, both from the Crooks site, have later ages in the 4400 to 4000 years ago period. In contrast to the overall age distribution for the Wyoming and Big Horn Basins, no peak in radiocarbon dates occurs in the 4400 to 4000 years ago period for the housepits in the Crooks Gap area, suggesting housepits were used in the Crooks Gap area for a more limited time period than the overall Wyoming Basin.

HOUSEPIT CHARACTERISTICS

The excavated housepits from the Wyoming and Big Horn Basins consist of generally circular to elliptical basins containing charcoal-stained fill. They typically have an irregular plan view suggesting informal construction. The sample of 41 excavated housepits analyzed by Smith (2003) measure from 1.70 to 6.00 m in diameter, with an average of 3.15 m. Their depths range from 14 to 125 cm with an average of 44 cm. Most of the housepits have diameters less than 4.0 m and are less than 60 cm deep. Most appear to have resulted from the mixing of charcoal, artifacts, and other trash in a confined space.

The four housepits from the Crooks Gap Housepit site conform to this overall pattern. The three measurable housepits (Features 36, 39, and 59) have average diameters ranging from 2.75 to 3.34 m with an average of 3.10 m. Their depths range from 20 to 30 cm. They are also generally elliptical and irregular in plan view. Because of the nature of the sediment, the charcoal stained sediment in these housepits was often faint and difficult to discern suggesting houses were of an ephemeral and informal nature.

The 20 excavated housepits from the eight sites surrounding Crooks Gap are also similar to those excavated at the Crooks Gap Housepit site, as well as the overall sample from throughout Wyoming. The average diameter of the 19 measurable housepits is 3.28 m with an average depth of 44 cm. The housepit with the largest diameter (5.50 x 4.00 m) from the eight sites is Housepit Feature 1 at the Split Rock Ranch site. The next largest (4.60 x 4.40 m) is Housepit Feature 16 at Site 48FR2330. It is also the deepest with a depth of 125 cm. The smallest excavated housepit of the sample (2.50 x 2.00 m) is Housepit Feature B at the Headlining site.

Evidence for the type of superstructure built over these shallow housepits is limited. Some housepits and surface structures in the Upper Green River Basin are ringed with up to 26 postholes indicating they originally possessed superstructures with posts anchored around the perimeter of the house basin (McKern and Harrell 2003; Nelson and Richard 2006). In general, however, the mid-Holocene housepits most typically contain only a few postholes or lack evidence of postholes altogether. Only 11 of the 41 excavated housepits analyzed by Smith (2003) display possible postholes and most of these contain only one. The most postholes from sites in the sample include four and five from two housepits at the Split Rock Ranch site, one of the sites near the Sweetwater River near the Crooks Gap Housepit site (Eakin 1987).

Of the four excavated housepits from the Crooks Gap Housepit site, only one (Housepit Feature 1) has possible postholes (two). Only six of the 20 housepits from the eight sites near the Crooks Gap Housepit site have postholes (Table 12). The largest number of postholes (nine), were identified from Housepit B at the Headlining site. Housepit C at this site also has four postholes, while the other two housepits from the site lack postholes. Three of the six housepits at the Split Rock Ranch site have five, four, and two postholes, respectively. The last housepit near the Crooks Gap Housepit site, the Arapahoe Creek Housepit C, has four postholes. Overall, 29% of the housepits in the Crooks Gap area have postholes which compares similarly to the overall 41 housepit sample from throughout Wyoming at 27%. Except for the housepits from the Upper Green River Basin which are often ringed with postholes, the superstructures of the housepits in the vicinity of Crooks Gap area appear to have been constructed in a similar manner to those found throughout the Wyoming and Big Horn Basins.

An important characteristic of the housepits from the Wyoming and Big Horn Basins is the presence of at least one fairly large pit feature. Only one of the 41 excavated housepits in Smith's (2003) sample lacked at least one pit measuring over 40 cm in diameter and 15 cm deep. Some of the larger pits measure over 80 cm in diameter and over 70 cm deep. The number of pits found within the housepits or on their edge range from one to seven.

Each of the four housepits excavated at the Crooks Gap Housepit site contain large pit features with some measuring up to approximately 60 cm in diameter and 65 cm deep (see Table 12). Each housepit has at least one interior feature measuring over 50 cm in diameter and 30 cm deep and several others measuring over 40 cm in diameter and 15 cm deep. Housepit Feature 59 has the most of these larger pit features with five and Housepit Feature 39 has three of these larger features. The presence of these larger pit features in each of the four housepits at the Crooks Gap Housepit site compares well with the overall housepit sample from the Wyoming and Big Horn Basins. However, the overall number of pit features in some of the Crooks Gap Housepit site housepits was higher than typically found in most excavated housepits. Housepit Feature 59 contained 15 interior pit features and Housepit Feature 36 has nine features. These numbers are considerably higher than most of the excavated Wyoming housepits including the sample of 20 housepits from the sites surrounding the Crooks Gap Housepit site. Two of these housepits (Housepit 4 at the Split Rock Ranch site and Housepit 16 at Site 48FR2330) have seven interior features, but the remaining 18 housepits have four or fewer features. The higher number of interior features in some of the housepits at the Crooks Gap Housepit site is probably the result of reoccupation of the housepits where new pits were excavated into the loose sediment and used during subsequent visits. These reuse episodes are evidenced by the presence of many overlapping features in the housepits. In contrast, many of the other housepits in the Crooks Gap area sample appear to have been constructed into firmer and more stable sediments which preserved the interior pit features so they could be reused during repeated

Table 12: Characteristics of excavated housepits located near Crooks Gap.

Site Name	Housepit No.	Total Interior Features	Large Interior Features[1]	Oxidation[2]	Possible Post Holes	Heat-Altered Rock[2, 3]	Flaked Stone Artifacts[3]	Ground-stone[3]	Bone Specimens	Charred Seeds
Split Rock Ranch	1	4	4	P	4	NR	881	2	1291	36
	2	3	3	P	0	NR	393	0	275	5
	3	1	1	P	0	NR	409	0	223	1
	4	7	7	P	2	NR	834	1	874	45
	6	2	2	P	5	NR	335	0	230	2
Crooks	A	2	2	P	0	2.982	153	2	281	0
	B	2	2	P	0	3.270	59	2	1009	2
	D	3	3	A	0	1.000	21	0	61	0
48FR2330	16	7	6	NR	0	NR	101	12	1263	655
Jeffery City	2.0	3	2	NR	0	NR	105	2	105	0
Two-Fisted Manos	A	1	1	A	0	6.155	6	0	21	1
	B	3	1	A	0	10.460	7	5	114	0
Headlining	A	3	3	P	0	0.522	20	0	77	0
	B	1	1	A	9	0.010	17	3	113	0
	C	3	3	P	4	3.255	17	2	72	1
	D	1	1	P	0	1.695	32	0	26	0
Arapahoe Creek	½	2	2	P	0	0.000	27	0	7	0
	C	4	3	P	4	0.000	148	0	202	0
Crooks Gap	36	9	5	A	0	10.984	40	0	144	2
	39	4	4	A	0	3.930	7	0	30	4
	59	15	10	P	0	14.207	104	0	392	2
	1	6	1	A	2	0.160	2	0	57	0
Sheep Mountain	1	3	2	NR	0	<1	133	3	57	0
	15	3	3	A	0	6.6	72	4	176	0

[1] Basin features larger than 40 x 40 x 15 cm
[2] P = Oxidation present on at least one feature in Housepit; A = not present; NR = not recorded
[3] Total specimens for housepit and all interior features

visits without having to excavate new features.

Based partly on the number and layout of the large interior basins, McNees (2005) classified the 16 Opal phase housepits excavated for the Lost Creek Pipeline project, a nearby pipeline. Type A housepits have a single interior feature offset from the housepit center, Type B housepits have elliptical outlines with a large interior feature at each opposite edge of the housepit, Type C housepits have three large interior basins, and Type D housepits are more structurally complex with an elliptical patch of oxidized sediment at the center and a slight bench. Eleven of the 20 housepits from four of the eight sites (the Headlining, Two-Fisted Manos, Arapahoe Creek, and Jeffrey City sites) in the vicinity of the Crooks Gap Housepit site were excavated during the Lost Creek Pipeline project and classified by McNees (2005). He classified four of the housepits as Type A, four as Type B, and three as Type C. His analysis found no obvious temporal differences in the distribution of housepits types, but the possibility of geographical differences.

The Crooks Gap Housepit site housepits could not be easily classified into McNees' (2005) types, because of the number of interior features excavated over several reuse episodes which disrupted any discernible patterns. Housepit Feature 36 could possibly be classified as a Type A housepit based on the presence of one somewhat deep pit feature offset from the housepit center. Housepit Features 39 and 59 appear to be most closely similar to Type C housepits. If these classifications are correct, then comparisons with the housepit sites in the vicinity of the Crooks Gap Housepit site indicate the Crooks Gap Housepit site is similar to the sites located along the Sweetwater River. These sites along the Sweetwater River, including the Two-Fisted Manos, Headlining, and Jeffrey City sites, have Type A and C housepits.

SUBSISTENCE

Faunal Remains

Bone remains from the excavated housepits from the Wyoming and Big Horn Basins are fragmentary and are usually present in low quantities resulting in only a limited number of specimens being identified to taxa. Of the 41 housepits analyzed by Smith (2003), only 27 contained bone identifiable to at least one taxon. Identified bison bone was rare in the sample and consisted of only three specimens from two housepits at the Split Rock Ranch site. Bone assemblages from sixteen of the 27 housepits (59%) included either deer or pronghorn in small numbers. In contrast, 25 of the 27 housepits (93%) had identified jackrabbit or rabbit bone or both. Additionally, rabbit-size or smaller animals represented over 90% of the bone fragments classifiable only to animal size class from 29 or the 34 housepits in the sample with classifiable bone. The remaining five housepits of the 34 had from 50 to 80% of the classifiable bone included in the rabbit or smaller size classes. The results of the comparison of the Wyoming housepit sample indicate the prehistoric occupants of the housepits typically relied on small mammals, especially rabbits, and to a lesser extent on deer or pronghorn. Bison are represented only rarely and only in the better-watered areas such as along the Sweetwater River near the Split Rock Ranch site.

The results of the excavation of the four housepits at the Crooks Gap Housepit site indicate both medium mammals such as pronghorn, as well as small mammals including rabbits, were exploited (Table 13). Two of the four housepits contained remains identified as pronghorn and all four had medium mammal bone. All four also yielded small mammal bone including two with remains identified as rabbit (jackrabbit or cottontail). None of the housepits contained remains identified as bison or large mammal bone. The presence of evidence for the use of medium mammals at all the housepits at the Crooks Gap Housepit site contrasts with the overall sample of 41 excavated housepits from throughout the Wyoming and Big Horn Basins where many of the housepits lacked evidence for the use of medium-sized mammals.

Comparisons with the 20 excavated housepits at the eight sites in the vicinity of the Crooks Gap Housepit site also indicate a focus on medium-sized mammals in addition to small mammals. Thirteen of the 20 housepits (65%) contained remains identified as either pronghorn or deer and all housepits had bone classified as medium mammal. Of the 20 housepits, only two housepits from the Split Rock Ranch site along the Sweetwater River had three specimens identified as bison; the only two housepits in the entire Wyoming and Big Horn Basin housepit sample to have bison bone. The Jeffrey City site,

Table 13: Summary of taxa identified in housepits near Crooks Gap.

SITE NAME (SITE NUMBER)	HOUSEPIT NO.	TAXA IDENTIFIED (NUMBER OF SPECIMENS)								
		BISON	LG-M	PRONG-HORN	DEER	MD-M	RABBIT	SM-M	VS-ML	OTHER
Split Rock Ranch	1	2	--	--	2	22	104	587	739	9
(48FR1484)	2	--	--	--	1	11	4	133	3	3
	3	--	--	1	2	13	4	118	8	9
	4	1	--	--	1	9	16	221	93	10
	6	--	--	--	--	2	5	45	9	1
Crooks	A	--	--	2	--	118	2	72	--	--
(48FR1602)	B	--	--	6	--	111	4	628	--	--
	D	--	--	2	--	13	--	43	--	--
48FR2330	16	--	--	--	2	93	14	1072	76	--
Jeffery City (48FR4398)	2.0	--	2	--	--	49	--		881	--
Two-Fisted Manos	A	--	--	--	--	2	--	4	15	--
(48FR4516)	B	--	--	3	--	34	3	17	56	--
Headlining	A	--	--	5	--	46	--	17	--	--
(48FR4464)	B	--	--	2	--	100	--	8	--	--
		--	--	--	--	20	--	43	--	--
	D	--	--	--	--	12	--	12	--	--
Arapahoe Creek	½	--	--	--	--	3	--	--	--	--
(48SW13152)	C	--	--	25	--	68	--	--	63	--
Crooks Gap	36	--	--	--	--	47	--	75	--	--
(48FR6260)	39	--	--	1	--	8	--	21	--	--
	59	--	--	43	--	134	1	132	1	--
	1	--	--	--	--	3	1	53	--	--
Sheep Mountain	1	--	--	--	--	56	--	--	1	--
(48FR5125)	15	--	--	--	1	170	--	--	1	--

[1] Lg-m = large mammal – animals larger than mule deer; includes bison, elk, moose, and horse; Md-m = medium mammal – animals ranging in size from coyotes to mule deer; includes pronghorn, mountain sheep, mule deer, most canids, etc.; Sm-m = small mammal – animals from cottontail rabbit to smaller than coyote in size; includes cottontail, jackrabbit, marmot, beaver, raccoon, porcupine, etc.; Vs-m = very small mammal – animals smaller than cottontail rabbit; includes ground squirrel, kangaroo rat, pocket gopher, and other small rodents; Other = other taxa identified.

also located along the Sweetwater River, had two specimens classified as large mammal. Eighteen of the 20 housepits had bone specimens classified as small or very small mammals. Of these, nine housepits had bone identified as rabbit (jackrabbit or cottontail). The only housepit without small mammal bone was a housepit at the Arapahoe Creek site with only three medium-mammal bone specimen. The two housepits encountered at the Sheep Mountain site contained only one small mammal bone each with the rest of the bone being identified as deer or medium mammal.

Overall, the prehistoric inhabitants of the housepit sites in the vicinity of Crooks Gap relied on both medium and small mammals as part of their subsistence including at times even bison along the Sweetwater River. This subsistence focus contrasts partly with the overall 41 housepit sample from the entire Wyoming and Big Horn Basins where small mammals and especially rabbits were most commonly identified taxa in excavated housepits with bone (Smith 2003). The better-watered area along the Sweetwater River probably supported larger populations of pronghorn, deer, and, at times, bison than the drier areas surrounding many of the other excavated housepits in the overall Wyoming and Big

Horn Basin sample. The presence of higher quantities of these mammals along the river provided the opportunity for the occupants of the housepits in the vicinity of the Crooks Gap Housepit site to encounter and hunt these animals in larger numbers than in other areas of the arid intermountain basins of Wyoming.

Seeds

The mass processing of seeds appears not to have been an important subsistence activity at most of the excavated housepits throughout the Wyoming and Big Horn Basins (Smith 2003). Only a few charred seeds and plant remains characterize most excavated housepits. Twenty of the 41 housepits analyzed by Smith (2003) lacked charred seeds and most of the others contained less than one seed per liter of examined sediment. The predominant charred seed types include goosefoot (*Chenopodium* sp.) and pricklypear (*Opuntia* sp.) cactus. Such low numbers of charred plant remains from most housepits were probably introduced into the archaeological record as a result of the natural prehistoric seed rain and do not necessarily represent extensive processing activities (Bach 1997).

Only a few excavated housepit assemblages of the 41 housepit sample analyzed by Smith (2003) have quantities of charred seeds which might suggest some processing activities. The sites include the Split Rock Ranch site (Eakin 1987), Site 48FR2330 (Reiss 1990), Site 48HO120 (Reiss 1991), Sinclair site (Smith and Reust 1992), and Medicine House (McGuire et al. 1984). Of these, two sites (Split Rock Ranch site and Site 48FR2330 occur along the Sweetwater River and are part of the 20 housepit sample near Crooks Gap (see Table 12).

The Split Rock Ranch site yielded a wide diversity of charred seed taxa, though the number of recovered seeds from each housepit was limited. The most common taxa included 27 rose (*Rosa* sp.), 26 saltbush (*Atriplex* sp.), and 17 goosefoot seeds. Charred seeds from the six housepits included 35 seeds representing 24 taxa from Housepit Feature 1, five seeds identified to three taxa from Housepit Feature 2, one saltbush seed from Housepit Feature 3, 45 seeds representing 16 taxa from Housepit Feature 4, and two goosefoot seeds from Housepit Feature 6. The prehistoric inhabitants may have processed the seeds from some of these taxa.

The housepit at the other site along the Sweetwater River, Site 48FR2330, yielded 642 charred pricklypear cactus (*Opuntia* sp.) seeds, four charred goosefoot seeds, and nine other charred seeds. The presence of large numbers of pricklypear cactus seeds suggests this taxon was processed at the site.

The housepits at the other six sites near Crooks Gap contained only limited charred plant remains. Housepit B at the Crooks site yielded only a charred chokecherry (*Prunus virginiana*) and an unknown seed; Housepit A at the Two-Fisted Manos site had one charred Indian ricegrass seed; and Housepit C at the Headlining site contained only a possible charred prickly pear cactus tissue. The remaining housepits lacked charred seeds. The Crooks Gap Housepit site also contained only limited charred plant remains. All the recovered charred seeds were goosefoot and included two from Housepit Feature 36, four from Housepit Feature 39, and two from Housepit Feature 59. The limited remains from these sites probably do not represent extensive seed processing activities.

Except for possibly two sites located along the Sweetwater River which have some evidence for seed processing, the extensive processing of seeds appears not to have been an important subsistence activity at the sites near Crooks Gap. These results are similar to those from the overall 41 housepit sample from the entire Wyoming and Big Horn Basins (Smith 2003). The apparent limited use of seeds associated with mid-Holocene housepits agrees with previously observed patterns (Smith 1988).

The paucity of charred seeds recovered from most housepits may also be partly the result of preservation issues. The presence of charcoal flecks in many of the housepit features indicates at least some charcoal is being preserved which suggests charred plant macrofossils would also be preserved if originally present. Also, several sites, including the Split Rock Ranch site and Site 48FR2330 located in similar depositional contexts, contain larger numbers of charred seeds indicating seeds are preserved in similar contexts. The issue of preservation needs to be explored further.

Additional possible evidence for the use of seeds comes from the occurrence of groundstone at some of the housepit sites. No groundstone was recovered from the housepit or possible housepit features at the Crooks Gap Housepit site, though one mano was found in a non-feature context. Eleven of the 20 housepits (55%) from the eight sites in the

vicinity of the Crooks Gap Housepit site yielded groundstone. The groundstone may have been used for other activities instead of seed processing such as root or small animal processing.

Roots

Another resource possibly collected and processed at the Crooks Gap Housepit site and other housepit sites in the Wyoming and Big Horn Basins is roots. Direct evidence for the processing of roots is lacking at the housepit sites, but the presence of large pit features, containing charcoal, darkly stained sediment, and often oxidized walls, which may have functioned as pit ovens indicates this resource may have been important to the prehistoric occupants. These pit features are present in each of the excavated housepits at the Crooks Gap Housepit site, in all of the 20 housepits in the vicinity of Crooks Gap, and in all except one of the 41 housepits in the sample analyzed by Smith (2003). Although only one of the four housepits at the Crooks Gap Housepit site had features with oxidized walls, 12 of the 16 (75%) housepits (where the presence or absence of oxidation was recorded) from the eight sites in the vicinity of Crooks Gap had pit features with oxidation (see Table 12). Approximately 73% of the housepits (where the attribute was recorded) in the 41 housepit sample analyzed by Smith (2003) had pit features with oxidation. The presence of the oxidation and charcoal stained sediment indicates direct heat or fire was applied at some point in conjunction with the pits. Although other vegetable resources, fatty meats, and small animals were also sometimes baked in pit ovens, these features with evidence of direct heat or fire are of the ideal size and shape for baking plant resources such as roots (Wandsnider 1997).

A heating element of rock is typically included in many pit ovens to bake roots, especially those ovens used to bake roots containing the complex carbohydrates inulin and fructan, which require moderate or high processing temperatures over an extended period of time (Thoms 2008; Wandsnider 1997). The Wyoming housepits and their interior pit features are characterized by limited quantities of heat-altered rock indicating a heating element was not employed as part of the technology associated with these pit features. Rose (2008) found more than half of the interior pit features included in her study of Wyoming housepits lacked heat-altered rock.

Two of the housepits (Housepit Features 36 and 59) at the Crooks Gap Housepit site had some of the higher weights of heat-altered rock than most housepits in the Wyoming and Big Horn Basins with 10.984 and 14.207 kg, respectively (see Table 12). Only one housepit site, the Two-Fisted Manos site, of the housepit sites in the vicinity of Crooks Gap had heat-altered rock weights similar to those from the Crooks Gap Housepit site. One housepit at the Sheep Mountain site also had approximately 6.6 kg of heat-altered rock. The remaining sites where the weight of heat-altered rock was recorded had only limited rock. Even these higher weights of heat-altered rock for the two housepits at the Crooks Gap Housepit site probably does not represent the use of heating elements in the baking process. These rock weights are all from interior features within a housepit and most can be attributed to scattered rock throughout the actual housepit and not concentrated rock in a single pit feature. Documented pit ovens in the area with a heating element dating to 1300 and 1000 years ago typically have at least 40 kg and at times over 100 kg of heat-altered rock (Smith et al. 2001). Larger pit ovens in the upper Green River Basin of Wyoming have hundreds of kilograms of heat-altered rock (Francis 2000).

Because the pit features associated with the housepits most likely did not involve a rock heating element, they were probably not used for the long-term baking of inulin- or fructan-rich root species. They may have been used for more starch-rich roots which still requird some baking for digestibility, but not long-term baking. Some possible starchy roots probably in the environment at the time of housepit occupation include biscuitroot (*Cymopterus* sp.) and bitterroot (*Lewisia rediviva*). Biscuitroot grows on dry open areas in open or clayey soil and bitterroot is found on gravelly to heavy, usually dry soil. Both habitats occur in the area of the Crooks Gap Housepit site and other Wyoming housepits.

MOBILITY

An often considered dimension of residential mobility is duration of site occupation. As evidenced by the design and preservation of the housepits and the density and distribution of the recovered remains, the duration of site occupation associated with the Wyoming housepit sites appears to be relatively short (Smith 2003). The irregular outlines

of the Wyoming housepits and the lack of prepared floors and walls suggest low energy construction usually associated with houses at short-term camps. Most excavated Wyoming housepits also contained only low quantities of flaked stone artifacts and bone. Nineteen of the 41 housepits analyzed by Smith (2003) had fewer than 50 flaked stone artifacts and debitage and only housepits at three sites including the Split Rock Ranch site had more than 300 artifacts per housepit. Quantities of the highly fragmentary bone exhibited similar patterns with 18 of the 41 housepits containing fewer than 100 bone fragments and 32 of the housepits having fewer than 350 fragments. The Split Rock Ranch site and Site 48FR2330 were among the few sites with the greatest quantities of bone specimens. These bone quantities are still relatively low, considering the highly fragmentary nature of the assemblages.

The results from the excavations at the Crooks Gap Housepit site indicate a short-term duration of occupation similar to the overall Wyoming housepit sample. The Crooks Gap Housepit site housepits have irregular outlines and lack prepared floors and walls and appear to represent low energy construction. The quantities of flaked stone artifacts and debitage range from two to 104 specimens per housepit, which is similar to the range for most Wyoming housepits. The bone quantities ranging from 30 to 392 fragments per housepit are also in the range for the overall Wyoming housepit sample.

Comparisons with the 20 excavated housepits from the eight sites near Crooks Gap also indicate similar patterns as evident at the Crooks Gap Housepit site and the overall Wyoming housepit sample, although some of the sites display somewhat higher quantities of recovered remains than average. The Split Rock Ranch site is the housepit site containing the greatest quantities of flaked stone artifacts and bone of the overall Wyoming housepit sample. Artifact quantities ranged from 335 to 881 specimens and bone quantities were from 223 to 1291 fragments (see Table 12). Housepit 16 at Site 48FR2330 and Housepit B at the Crooks site also had higher than average bone quantities at 1263 and 1009 bone fragments, respectively. The remaining sites and housepits had fairly low quantities of fewer than 153 artifacts and 202 bone fragments. Overall, the small quantities from most of the housepits suggest occupations of short duration with the possibility of more extensive occupations at a few. However, the higher quantities of remains at these few housepits may be the result of more repeated occupations and use.

HOUSEPIT REUSE

An important aspect of hunter-gatherer settlement patterns is their long-term land-use strategies spanning decades, centuries, or millennia. Stable long-term land use patterns would result in the periodic and redundant reuse of some sites over an extended period of time. The Wyoming housepit dataset shows persistent land-use patterns including the reuse of housepits and sites over at least a two thousand year period (Smith and McNees 2011). This evidence includes the reuse of the actual housepit, the construction of new housepits at the same site, and the use of different sites within the larger locale. Excavations at the Crooks Gap Housepit site provide additional evidence of the reuse of the actual housepits over a period of several visits.

One means of documenting reuse of housepits is provided by stratigraphic evidence where the house depression partly fills with sediment between occupations and new interior pit features are constructed during these subsequent visits. The most dramatic example of this type of evidence for the reuse of housepits comes from the Moneta Divide Housepit site located in the southwest corner of the Wind River Basin of central Wyoming (Smith and McNees 2011). The Feature 11 housepit was a deeply stratified basin containing evidence of at least eleven occupational floors. The housepit was repeatedly occupied over a period of time during which aeolian deposits were rapidly aggrading both within and adjacent to the housepit, resulting in the concurrent rising of both the house floor and the surrounding surface. Radiocarbon dates from interior basins at the base, middle, and top of the feature suggest the series of these occupations occurred over a period of a century.

The excavation of the four housepits or possible housepits at the Crooks Gap Housepit site provides a different line of evidence for the reuse of housepits over a period of years. The land surface during the occupations of the housepits was in a non-aggrading environment so the rare opportunity to document repeated occupations through the internal stratification of the housepits as at the Moneta Divide

Housepit site was not possible. Instead, evidence for the repeated reuse of the housepits at the Crooks Gap Housepit site comes from the periodic construction of new interior pit features which overlapped previous ones. The repeated occupations at the site occurred on the same stable, non-aggrading land surface, but the previously constructed pit features within the housepit became obscured in the relatively loose sediments of the site. Upon revisits to the site, the previous pit features were not evident within the housepit so new ones were constructed and often overlapped the earlier ones.

Repeated reuse of Housepit Feature 36 is evident by the overlapping interior pit Features 36B, 53, and 54 which suggest at least three periods of use. Pit Features 36C and 51 also overlap providing additional evidence of reuse. Dramatic evidence for housepit reuse over several subsequent visits comes from Housepit Feature 59 which contains at least 15 interior pit features. For example, pit Feature 8 appears to consist of three overlapping features indicating at least three periods of use. Other overlapping features include two features recorded as Feature 15 and the features designated as Feature 23/33. Housepit Features 36 and 59 and their adjacent pit Features 46 and 34 also appear to overlap slightly suggesting they may have been constructed during different site occupations although their radiocarbon age estimates are similar. Because of the loose sediment, distinguishing the edges of the housepit basins was difficult.

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BOOK REVIEW

Across Atlantic Ice: The Origin of America's Clovis Culture by Dennis J. Stanford and Bruce A. Bradley. 2012. University of California Press, Berkeley, Los Angeles, London. 319 pages; figures, maps, tables. Hard cover $34.95; paperbound $27.95.

Across Atlantic Ice is a long awaited presentation of Dennis Stanford and Bruce Bradley's work on the origins of New World Clovis culture and possible links with the Paleolithic Solutrean Culture of France. Written in a very readable format, this volume brings the reader up to date with much of the recent work on early Paleoindian sites along the eastern seaboard. There are two parts to the volume with ten chapters, a conclusions appendix and Cluster Analysis sections. Part one consists of five chapters reviewing the history of Clovis and early Paleoindian sites and literature. A primer on flaked stone technology is useful to the uninitiated and Clovis lithic technology and projectile point variation is clearly presented. Critical sites like Gault, Cactus Hill, Meadowcroft and Kincaid are discussed, as is the "Clovis First" model (now held by many in disrepute). Wyomingites will read of the work of George Frison, but also John Albanese. Intriguing early and abundant finds made on the East Coast and even offshore are presented. The section concludes with a presentation of the Solutrean Culture of Southwestern Europe, which will be especially useful to those not familiar with it.

Part two presents quantitative and qualitative analyses of Solutrean lithic technology, tools and tool kits. Solutrean lithic technology is compared to the lithic assemblages of Beringia, Asia, and the United States in a very readable format. Bone antler and even art forms are analyzed. Chapters eight and nine discuss Solutrean maritime adaptations, modeling the coast of Spain, presenting paleoclimatic models, sea depth measurements including what would have been dry land during terminal Pleistocene times and during the Last Glacial Maximum. The environment along the edge of Pleistocene glaciers is discussed. Chapter ten then presents what it would have taken for Solutrean peoples to traverse the mid Atlantic to arrive in the New World via Greenland, Iceland, or the edge of the Late Pleistocene ice sheet. Multiple resource exploitation centering upon seal hunting, but including fishing, the need for boats and overall ice edge challenges is presented. An analogy to the Inuit Culture is used to model Solutrean or pre Clovis peoples. Clovis "travel" is discusses, using examples such as Knife River Flint artifacts appearing in New York. The volume concludes with a discussion of new sites, new research direction, a lack of a Siberian Clovis, the overall diversity of Clovis technology and post Clovis diagnostics including Goshen and Plainview, familiar to Wyomingites.

The authors make an extremely strong argument for, at a minimum, the partial peopling of the New World via a mid Atlantic crossing. The high numbers of paleoindian sites along the East Coast can no longer be ignored, or under-interpreted. The volume also includes delightful inserts and anecdotal presentations of the authors own personal musings over many decades of Paleoindian research, fieldwork and insights. Across Atlantic Ice is an essential volume for all paleoindian scholars, interested avocationals and those studying issues surrounding the Peopling of the New World. Its highly readable format will be a delight to the non scholar. Every Wyoming archaeologist will need to be familiar with the data presented within. It is thus highly recommended. (Less expensive volumes are available via Amazon Books, as is a kindle release).

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WYOMING ARCHAEOLOGICAL SOCIETY

2013 Spring Meeting
April 26-28, 2013
Laramie, Wyoming

Welcome to Laramie!
The June Frison Chapter is pleased to host the 2013 Spring Meeting of the Wyoming Archaeological Society (WAS) and the Wyoming Association of Professional Archaeologists (WAPA).

Meeting Location: All WAS meetings, the silent auction, the Wyoming Archaeological Foundation meeting, and the Saturday banquet will be held at the host hotel, the Hilton Garden Inn, 2229 Grand Ave., Laramie, WY 82070. Events will take place in Salons E and F in the University of Wyoming Conference Center at the Hilton. Room blocks have been reserved at the Hilton Garden Inn and the Comfort Inn. Individuals will need to make their own room reservations.

The **WAPA** meeting will be held from 12:00 – 4:00 Friday, April 26, in the Agriculture building, room 1032 on the University Campus.

Room Reservations:

Call: 307-745-550 for the Hilton Garden Inn. Mention you are with the **Wyoming Archaeological Society** to get the special rate of $99.00 + tax. The room block is being held until April 12, 2013.

Call 307-721-8856 for the Comfort Inn. Mention you are with the **Wyoming Archaeological Society** to get the special rate of $80.00 + tax. The room block is being held until March 26, 2013.

Mulloy Lecture (*4:10 pm, Friday 4/26, Agriculture Auditorium, University Campus*)

Dr Webb Keane will discuss **The Priest, the Commisar, and the Peasant: On the Clash of Semiotic Ideologies**. An important development in linguistic anthropology has been the concept of language ideology, which draws attention to the social and political consequences of speakers' reflexive understandings of language's formal and pragmatic dimensions. By introducing the term semiotic anthropology, we mean to expand the scope of the reflexivity in question to signfiying phenomena more generally. Semiotic ideology thus concerns people's intuitive notions or explicit theories about what does or does not count as a sign, what knowledge signs are or are not capable of conveying, what powers they might contain, and what intentions they might reveal. To shed light on some of these questions, this talk begins by examining a conflict among three stances toward religious relics in early revolutionary Russia. In doing so, it explores some of the general features and implications of semiotic ideology, with particular attention to their potential contribution to an anthropology of ethics. Finally, it offers an argument against certain strong forms of social construction and a defense of a principled approach to comparison in anthropology.

Webb Keane grew up in New York City and studied at Yale College and the University of Chicago. After several years on the faculty of the University of Pennsylvania, he joined the Department of Anthropology at the University of Michigan, where he is now professor, associated with both the Social-Cultural and the Linguistic Anthropology subfields. His other affiliations include the Program in Anthropology and History

and the Center for Southeast Asian Studies. His writings cover a range of topics in social and cultural theory and the philosophical foundations of social thought and the human sciences. In particular, he is interested in semiotics and language; material culture; gift exchange, commodities, and money; religion, morality, and ethics; media and public cultures. At present he is involved in two major projects. The first is a book about morality, ethics, and virtue as special, even constitutive, problems for social science. The second centers on religious piety, language, and media in Indonesia.

Welcome Social: The welcome social on Friday, 4/26 is from 5:30 pm to 10:00 pm in the Salon E at the Hilton Garden Inn. There will be a no host cash bar and hors d'oeuvers. Please come and mingle with the group!

Banquet Speaker (*Saturday evening, 4/27*)

Dr. David Whitley will discuss **Petroglyph Dating and the Peopling of the Americas**: Two topics have historically bedeviled North American archaeologists: the peopling of the Americas, and the dating of petroglyphs. Though it is still uncertain when humans first entered the continent, the evidence now suggests it was roughly 15,000 years ago, but little beyond that is really known. Headway was made in petroglyph dating during the 1980s and 1990s, but research was stymied by an unfortunate controversy in 1998. Though this only involved a single dating technique, it effectively stalled all research on this problem for a decade. A recent re-analysis of existing and new petroglyph dates using the varnish microlamination and cation-ratio techniques has resulted in a suite of 60 petroglyph ages for the Coso Range, California, many of which have been cross-checked in a variety of ways. When compared to dated rock art from other North and South American regions, these indicate that at least four art traditions existed by Paleoindian times. This suggests that, despite a widespread fluted projectile point tradition, significant cultural diversity had already developed prior to about 10,000 YBP.

David S. Whitley received his Ph.D. from UCLA in 1982. He is a Principal at ASM Affiliates, Inc., an archaeological consulting firm, and an Adjunct Professor at the School of Geographical Sciences at Arizona State University. He has conducted rock art research in Guatemala, South Africa, and the European Upper Paleolithic, but his primary research region is western North America. His research emphasizes interpretation, especially ethnographic interpretation; the origins of religion and art; chronometric dating; and heritage management. Some of his recent books include *The Art of the Shaman: Rock Art of California* (2000), the edited *Handbook of Rock Art Research* (2001), and *Introduction to Rock Art Research* (2005, second edition 2011). His latest book is *Cave Paintings and the Human Spirit*: *The Origin of Creativity and Belief* (2009). He lives in Tehachapi, California.

Field Trip/ Wyoming Territorial Prison State Historic Site Private Tour (*Sunday 4/28, meeting at the Hilton lobby, 9:00 AM*).

Silent Auction: The annual fund-raising auction provides a variety of items for your bidding pleasure. If you have items you would like to donate to the auction, please bring them with you to the meeting. Please direct any questions to Carmen Clayton at Carmen.Clayton@wyo.gov.

Vendors: If you are interested in selling archaeologically related items at the meeting, please check the web site for an application.

*Please check the WAS web site for information or forms:*http://www.wyomingarchaeology.org

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