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Behavioral complexities at high elevation: assessing prehistoric landscape use in the alpine regions of the Greater Yellowstone Ecosystem

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Abstract Alpine landscapes capture our imaginations. Envisioning these forbidding regions occupied by humans in prehistory has drawn academic and public audiences alike. The history of these alpine regions is being rewritten the world over, due in part to recent archaeological discoveries made in the alpine regions of the Greater Yellowstone Ecosystem (GYE). These discoveries, some in the wilderness areas of Montana, have revealed a complex tapestry of prehistoric lifeways. Archaeological and paleobiological research in Montana's GYE alpine regions by Dr. Craig Lee (INSTAAR/ PCRG), Dr. Rachel Reckin (USFS) and Scott Dersam (PCRG) have spearheaded these continued multi-disciplinary studies in the region. Their efforts have focused on the climatological, ecological, as well as cultural impacts of ice patch use and alpine habitation on patterns of prehistoric occupation in the region. The UW-NPS Research Station Small Grant funded archaeological research and reconnaissance of the alpine regions of Montana's Beartooth wilderness during the summer 2019. The 2019-field season's discoveries added significant knowledge to regional research in high elevation studies, documenting the highest known stone circles, ceramics, and Paleoindian hunting activities in Montana.

Introduction

Regional background

The GYE consists of many differing and unique ecosystems, stemming from the distinctive volcanic geology surrounding the region. The high-elevation wilderness areas that are pertinent to this research are located in the Absaroka Beartooth Wilderness, which spans both the Shoshone and Custer-Gallatin National Forests of Wyoming and Montana (Figure 1). The Shoshone National Forest "is mountainous, characterized by peaks and ridges that give way to steep slopes dissected by streams with associated terraces, alluvial fans, floodplains, and meadows. The majority of the ground surface is unaltered by modern development" (Burnett and Todd, 2014: 4).

The Custer-Gallatin National Forest which hosts the Beartooth Wilderness, "is characterized by high elevations (3,000-3,666 masl), timbered forestlands and plateaus, perennial ice patches, limited areas of glacial activity, and dense accumulations of high alpine lakes between 2,750- 3,500 masl" (Dersam, 2019). The bedrock is different from the Shoshone, which consists of a mix of "younger limestone and Eocene volcanic conglomerate [as opposed to the] older predominantly Precambrian complex [of gneisses and amphibolite] in the northern Beartooths" (Todd, 2016; Love and Christiansen, 1985; Todd, 2009, 2015). The different geologies and ecologies of the Absaroka-Beartooth wilderness areas create the potential for interesting divergence in alpine land use strategies in prehistory.

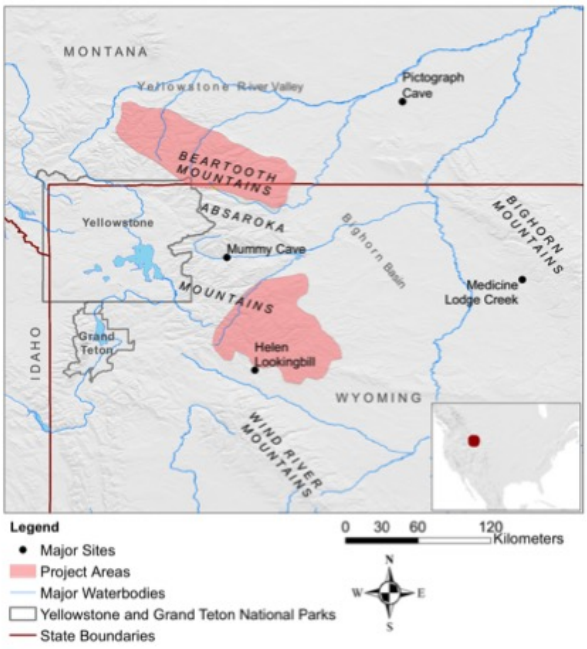

Figure 1. Beartooth Project Area. From Reckin (2018)

Figure 2. Photograph of the Eastern Shoshone taken by William Henry Jackson in 1871. Photo taken from the Smithsonian.

Prehistory

The High Plains region surrounding the GYE and Beartooth alpine ecosystems is host to a rich and diverse archaeological past. Within the region surrounding the GYE, there are 26 tribes that claim ancestral or spiritual connection to either Yellowstone National Park or the GYE (Loendorf and Stroupe, 2003; Loendorf and Stone, 2006; Reckin, 2018; Todd, 2015). With the creation of Yellowstone National Park in 1872, all native groups inhabiting the GYE were removed (Reckin, 2018). Of these 26 tribal groups affiliated to the GYE, the Crow and Eastern Shoshone were the primary inhabitants of the region at the creation of Yellowstone, and had occupied the area for a long duration prior to contact (Loendorf and Stone, 2006; Lowie, 1935).

The common theory regarding Crow origins, stemming from their linguistic connections nationally, has their origin in the Midwest, migrating westward more than 400 years ago (Greiser, 1994; Nabokov and Loendorf, 2004; Wood and Downer, 1977). The Crow historically were a plains and foothill transitional culture that subsisted primarily on big-game bison hunting, and seasonal broad-spectrum subsistence patterns during times of resource stress (Lowie, 1935). Today the Crow Reservation is located in southern Montana, South of Hardin, on the Southern periphery of the Beartooth Mountains and Northern periphery of the Bighorn Mountains.

The other tribal group inhabiting Yellowstone at contact and through proto-historic interactions was the “Sheep Eaters” or Eastern Shoshone (Figure 2).

Ethnographic materials and first hand accounts place the Sheep Eaters as heavily spread throughout the GYE alpine areas and lower Yellowstone region at contact (Nabokov and Loendorf, 2004; Wood and Downer, 1977). The Shoshone were a broad–spectrum foraging and hunting culture, who specialized these adaptations to high-elevation landscapes. The Shoshone subsisted on multiple large game species, specializing in big horn sheep; additionally they relied heavily on foraged food such as seeds and plant resources including tubers (Adams, 2010; Loendorf and Stroupe, 2003; Loendorf and Stone, 2006; Reckin, 2018; Todd, 2015).

Regional archaeology

Initial archaeological interest in the GYE’s mountainous regions began in the 1960’s and 70’s (Benedict and Olson, 1978; Frison, 1976; Husted and Edgar, 2002; McCracken, 1978). This was due in part to the

burgeoning research in the high-elevations of Central Colorado, under James Benedict and Wilfred Husted (Benedict, 1974; Husted, 1965).

Seminal archaeological sites, many that helped form initial chronologies for the High-Plains are located within and surrounding the GYE (Frison, 1976; Mulloy, 1958; Reckin, 2018), sites such as; Pictograph Cave (Mulloy, 1958), Mummy Cave (Husted and Edgar, 2002; McCracken, 1978), and Medicine Lodge Creek (Frison, 1991; Reckin, 2018). Many of these sites host well stratified occupation levels dating back to over 13,000 Cal YBP (Robert Kelly, personal communication 2019; Reckin, 2018).

Additionally the only known Clovis age burial and Montana Clovis cache, the Anzick site, is located approximately 100 miles North of the project area (Owsley and Hunt, 2001). These well-examined sites give testament to the long occupation histories of the GYE landscapes and High-Plains ecosystems. In the alpine regions surrounding the GYE far less archaeological research has been conducted.

In the alpine

Archaeological investigations and locations of import within the project areas alpine and foothill locations include, The Helen Lookingbill site (48FR308) (Figure 1), a well-stratified high-elevation workshop site near Dubois Wyoming, which hosts two separate Paleoindian components (Angostura and Fishtail complexes) dating back to ~10,400 (Frison, 1976, 1978, 1991; Kornfeld et al., 2001). The Dead Indian Creek site (48PA551) which is a multi-component Middle Archaic wintering camp attributed to the McKean complex, with several AMS dates and over 500 recovered projectile points (Frison and Walker, 1984). In addition, the well-recorded Bugas-Holding site (48PA563) (Rapson and Todd, 1999, 1992, 1999), displays a winter occupation surface from the Late Archaic, linked to both bison and big horn sheep subsistence (Rapson and Todd, 1999).

The largest efforts in alpine archaeological research in the region have come from the Greybull River Sustainable Landscape Ecology (GRSLE) project, headed by Larry Todd. These efforts have been concentrated in the Shoshone National Forest and Washakie Wilderness (Figure 1). The efforts made by GRSLE have recovered 100's of diagnostic tools, recorded 100's of sites, exposed informative aspects of prehistoric material culture, and continue to creatively expand dialogues concerning behavior and use of alpine landscapes in prehistory (Reckin, 2018; Todd, 2015).

Figure 3. Beartooth alpine landscape at 10,000 feet in elevation. Photo taken by S. Dersam.

In the Beartooth Wilderness of Montana (Figure 1 and 3), a majority of the research has been based off the Vern Waples collection. Amassed in the Custer Gallatin National Forest, it is the largest known lithic artifact collection from any alpine ecosystem in North America (Reckin, 2018). Yet, other than the Waples collection, little has been documented in the high elevations of the Beartooth wilderness. In the 1990's and mid 2010's, renewed interest in the region, spear headed by forest archaeologist Halcyon LaPoint, as well as archaeologists Craig Lee (2012) and Rachel Reckin (2013, 2018) expanded upon the regions high elevation archaeology (Reckin, 2018). Their continued efforts have revealed a wealth of data revolving around the phenomena of prehistoric ice patch use (Lee, 2010, 2012), but have delved only peripherally into the larger questions concerning high elevation habitation, subsistence and landscape use in the Beartooths.

The initial archaeological reconnaissance and site recordation of the Beartooths alpine region, not as-

Figure 4. Stone circle discovered in the Beartooths in 2019. Photo taken by S. Dersam.

Figure 5. Burin found during the 2019 field season.

sociated with the ice patch phenomenon began in earnest under Scott Dersam in 2018 (Dersam, 2019). The 2018 field season yielded a record of overwhelming prehistoric behavioral complexity. The artifact and material breadth of these discoveries and their implications to the regions prehistoric past cannot be understated, producing the highest recorded stone features and ceramics in Montana, as well as a seemingly unique pattern of prehistoric alpine landscape use in the GYE.

Methods

The project's 2019 UW-NPS Research Station funded fieldwork took place during two 14-day sessions. Both sessions were located within the ecotones between 3,000 and 3,400 masl, in the central and peripheral areas around the High Lakes region of Montana's Beartooth Wilderness. A team of 3 to 4 archaeologists surveyed all locations at 12-meter intervals. Archaeological sites (once located) were surveyed at 2-meter intervals. All archaeological activity areas (sites, features, and isolated artifact areas) were recorded using 7mm-20cm accuracy Emlid Reach RS GNSS receivers. All archaeological materials, artifacts, and features (hearths, stone circles etc.) were GNSS provenienced, photographed, and measured (length, width, thickness); for formal tools a 10-point measuring system using millimeter accurate calipers was used.

This research project and methodological process was supported and approved by the USFS Custer Gallatin National Forest Region One, in the state of Montana. All recorded activity areas were appropriately assessed by state regulations, and the appropriate site and isolate forms were filled out and filed with the applicable state agencies. All archaeological material will be held and curated in the Billings Curation Center.

Results

During the two 14-day field sessions, 35 archaeological sites and over 40 combined archaeological isolates and features were recorded in alpine of Montana's Beartooth Wilderness's. Diagnostic tools encompassed nearly the entire cultural history of the GYE, spanning the Late-Paleoindian through the Late Prehistoric-Historic transition (MacDonald et al., 2012; Todd, 2015). Additionally, our team recorded some of Montana's highest archaeological sites, as well as its highest stone circles (18), ceramics, hunting blinds, and Paleoindian tools.

Over the first 14-day field session, ~280 acres of the alpine landscape was systematically surveyed. Within the areas surveyed, 16 new prehistoric archaeological sites were discovered; in addition, eight new isolated cultural resources (that have the potential to become sites) were located. These sites and

Figure 6. Late Paleoindian projectile point found during the 2019 field season.

Figure 7. Late Paleoindian projectile point found during the 2019 field season.

isolates ranged in context. Displaying varying landscape use goals, these varied from basic lithic tool manufacture and maintenance locations, to fallen-in stacked stone eagle traps, and quartz vein quarries.

Several broad-spectrum activity habitation sites displaying hearths, stone circles (Figure 4), and curated formal tools (Figure 5), as well as a varying chronology of projectile points (Figures 6, 7 and 8) were located within the first session. In total 18 new stone circles were discovered, all with chip stone in context, with several displaying end scrapers, bifaces, and in one case a well-curated burin made of heat-treated material (Figure 5).

Over the second 14-day period, ~220 acres of the alpine landscape was systematically surveyed. Within the areas surveyed, 19 new prehistoric archaeological sites were discovered; in addition, seven new isolated cultural resources (that have the potential to become sites) were located. These sites and isolates ranged in context.

The sites discovered during the second session displayed varying landscape use goals, these varied from basic lithic tool manufacture and maintenance locations, to hunting blind sites (Figure 8) displaying hinged fractured Paleoindian Alberta points (Figure 7). Of note, a Late Paleoindian cache (Figure 6) was discovered containing a complete-unused Angostura (Foothill Mountain) point. This is the only known cache site associated with the technology in North America. Additionally within the area our team discovered two additional sites hosting ceramics at altitudes exceeding 10,000 feet (Figure 9).

Discussion

The variety of evidence found in the NABW alludes to a longer than previously anticipated duration of occupation and increased residency in the Beartooths alpine regions. The breadth and large number of formal tools, lithic materials, and chronologically diagnostic projectile points found associated with cultural stone circle and other landscape features indicate this increased alpine occupation and residence.

Additional aspects of material culture that indicate possible broad-spectrum subsistence and land use

Figure 8. Hunting Blind associated with Late Paleoindian point. Photo taken by S. Dersam.

Figure 9. Ceramics discovered during the 2019 field season.

patterns in the alpine, are observable in the multiple sites hosting ceramics, hunting blinds, hearths, and multiple stages of site reoccupation, as seen by varying levels and stages of stone circle deflation and burial (Figure 4).

As the 2019 field seasons collected AMS carbon samples and obsidian samples are returned from laboratory analysis, our understanding of both the chronology and duration of alpine occupations in the Beartooths will begin to be clarified.

Areas of potential insight gained form the 2019 field season's collected data are many and varying, revealing more about prehistoric behavior driven location choice, technology use, and chronologies of alpine occupation in Montana Beartooth wilderness.

Future work

"Throughout the alpine regions of North America, archaeologists are attempting to figure out the stories that surface collections tell. Reflections of varying subsistence or economic needs coming from the same region under different climatic eras and resource densities (Janine. et al. 2012) can be seen spread far and wide across North America's alpine regions (Adams 2010; Bettinger 1991; Benedict 1996; Eakin 2005, 2011; Lee 2010b, Thomas 1982; Todd 2015b)" (Dersam, 2019, 46). As research within the GYE alpine regions is further demystified and researched these trends have the potential to reveal many unique culture and landscape oriented aspects of past cultural groups, environmental states, or other possible correlations. "What we continue to consider is that there are observable trends and anomalies spread across the alpine expanses of North America" (Dersam, 2019), and only through continued labors in these remote areas will a true understanding of the region's past become accessible.

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References

Adams, R. 2010. Archaeology with Altitude: Late Prehistoric Settlement and Subsistence in the Northern Wind River Range, Wyoming, Anthropology. Unpublished Ph. D. disser-

tation, Department of Anthropology, University of Wyoming, Laramie.

Amick, D. S. 2013. Way out west: Cody complex occupations from the northwestern Great Basin. Paleoindian Lifeways of the Cody Complex pages 215–245.

Benedict, J. B. 1974. Early occupation of the Caribou Lake Site, Colorado Front Range. Plains Anthropologist **19**:1–4.

Benedict, J. B., and B. L. Olson. 1978. The Mount Albion Complex: A study of Prehistoric Man and the Altithermal. Center for Mountain Archaeology.

Bettinger, R. L., B. Winterhalder, and R. McElreath. 2006. A simple model of technological intensification. Journal of Archaeological Science **33**:538–545.

Binford, L. R. 1980. Willow smoke and dogs' tails: hunter-gatherer settlement systems and archaeological site formation. American Antiquity **45**:4–20.

Burnett, P., and L. C. Todd, 2014. Archaeological probability model for the Northern Shoshone National Forest, Wyoming. Technical report.

Charnov, E. L. 1976. Optimal foraging, the marginal value theorem. Theoretical Population Biology **9**:129–136.

Chittenden, H. M. 1920. The Yellowstone National Park, Historical and Descriptive. Stewart & Kidd, Cincinnati.

Dais, L. B., 1989. Burton Gulch site. Pages 51–52 *in* G. Gibbon, editor. Archaeology of the Prehistoric Native America: An Encyclopedia. Garland Publishing, Inc., New York & London.

Dersam, S. W., 2019. Alpine landscape complexities: archaeological investigations and model testing. *in* The Northern Absaroka Beartooth Wilderness of Montana (Unpublished MA). University of Wyoming, Department of Anthropology, May 2019, Laramie, Wyoming.

Frison, G. 1991. Prehistoric Hunters of the High Plains, 2nd ed. Academic Press, New York.

Frison, G. C. 1968. A functional analysis of certain chipped stone tools. American Antiquity **33**:149–155.

Frison, G. C., 1976. The chronology of Paleoindian and Altithermal cultures in the Bighorn Basin, Wyoming. Pages 147–174 *in* Cultural Change and Continuity: Essays in Honor of James Bennett Griffin. Academic Press, New York.

Frison, G. C. 1978. Prehistoric Hunters of the High Plains. Academic Press.

Frison, G. C. 1983. The Lookingbill Site, Wyoming 48FR308. Tebiwa **20**:1–16.

Frison, G. C., 1998. The northwestern and northern Plains Archaic. Pages 140–172 *in* W. R. Wood, editor. Archaeology on the Great Plains. University Press of Kansas, Lawrence Kansas.

Frison, G. C., and D. N. Walker. 1984. The Dead Indian Creek site: an archaic occupation in the Absaroka Mountains of northeastern Wyoming. Wyoming Archaeologist **27**:11–122.

Greiser, S. T., 1994. Late prehistoric cultures on the Montana plains. Pages 34–55 *in* K. H. Schleiser, editor. Plains Indians, AD 500–1500: The Archaeological Past of Historic Groups. University of Oklahoma Press, Norman, Oklahoma.

Husted, W. M. 1965. Early occupation of the Colorado front range. American Antiquity **30**:494–498.

Husted, W. M., and R. Edgar. 2002. The archeology of Mummy Cave, Wyoming: an introduction to Shoshonean prehistory. MIdwest archaeological center special report no. 4. .

Ideker, C. J., J. B. Finley, T. M. Rittenour, and M. S. Nelson. 2017. Single-grain optically stimulated luminescence dating of quartz temper from prehistoric Intermountain Ware ceramics, northwestern Wyoming, USA. Quaternary Geochronology **42**:42–55.

Johnson, A. M., and B. O. Reeves. 2013. Summer on Yellowstone Lake 9,300 years ago: the osprey beach site. Plains Anthropologist **41**:1–192.

Jordan, P., 2015. Technology as human social tradition: cultural transmission among hunter-gatherers.

Kelly, R. L. 2013. The Lifeways of Hunter-Gatherers: The Foraging Spectrum. Cambridge University Press.

Kelly, R. L., T. A. Surovell, B. N. Shuman, and G. M. Smith. 2013. A continuous climatic impact on Holocene human population in the Rocky Mountains. Proceedings of the National Academy of Sciences **110**:443–447.

Kelly, R. L., and L. C. Todd. 1988. Coming into the country: early Paleoindian hunting and mobility. American Antiquity **53**:231–244.

Knight, D. H., G. P. Jones, W. A. Reiners, and W. H. Romme. 2014. Mountains and Plains: The Ecology of Wyoming Landscapes. Yale University Press.

Kornfeld, M., M. L. Larson, D. J. Rapson, and G. C. Frison. 2001. 10,000 Years in the Rocky Mountains: the Helen Lookingbill site. Journal of Field Archaeology **28**:307–324.

Lahren, L., and R. Bonnichsen, 1971. The Anzick or Wilsall site: a Clovis Complex burial in the Shields River Valley of southwestern Montana. *in* Paper presentation at the 36th annual meeting of the Society for American Archaeology, Norman, OK.

Lahren, L., and R. Bonnichsen. 1974. Bone foreshafts from a Clovis burial in southwestern Montana. Science **186**:147–150.

Lee, C. M. 2010. Ice on the edge: Methods and recommendations for conducting ice patch surveys in Rocky Mountain National Park. Estes Park, Colorado: Unpublished report prepared for National Park Service .

Lee, C. M. 2012. Withering snow and ice in the mid-latitudes: A new archaeological and paleobiological record for the Rocky Mountain region. Arctic pages 165–177.

Loendorf, L. L., and N. M. Stone. 2006. Mountain Spirit: The Sheep Eater Indians of Yellowstone. University of Utah Press.

Loendorf, L. L., and N. Stroupe. 2003. Ethnographic resources on the Mammoth Hot Springs to Norris Junction Road. Report prepared for Cultural Resources, Yellowstone National Park, Wyoming .

Love, J., and A. Christiansen. 1985. Geologic map of Wyoming: USGS .

Lowie, R. 1935. The Crow Indians. New York: Hold, Rinhart, and Winston.

Lowie, R. H. 1909. The Northern Shoshone. Anthropological papers of the American Museum of Natural History Vol. 2, Part 2. American Museum of Natural History, New York.

Lowie, R. H., et al. 1924. Notes on Shoshonean Ethnography. Anthropological papers of the American Museum of Natural History Vol. 20, Part 3. American Museum of Natural History, New York.

Lukowski, P. D. 1988. Archaeological Investigations at 41BX1, Bexar County, Texas. Center for Archaeological Research, University of Texas at San Antonio, Archaeological Survey Report 135.

MacDonald, D. H., W. Andrefsky, and P.-L. Yu, ???? Deciphering point-of-origin for prehistoric hunter-gatherers at Yellowstone Lake, Wyoming: a case study in lithic technology and settlement pattern studies. *in* D. H. MacDonald, W. Andrefsky Jr., and P.-L. Yu, editors. Lithics in the West: Using Lithic Analysis to Solve Archaeological Problems in Western North America.

MacDonald, D. H., R. E. Hughes, and J. W. Gish. 2011. Late-Paleoindian versus Early-Archaic occupation of Yellowstone Lake, Wyoming. Current Research in the Pleistocene **28**:110.

MacDonald, D. H., J. C. McIntyre, and M. C. Livers. 2012. Understanding the role of Yellowstone Lake in the prehistory of interior Northwestern North America. North American Archaeologist **33**:251–289.

MacDonald, D. H., and M. R. Nelson. 2018. Paleoindians of Yellowstone Lake: interpreting Late Pleistocene-Early Holocene hunter-gatherer land-use in the greater Yellowstone ecosystem. Plains Anthropologist pages 1–28.

McCracken, H. 1978. The Mummy Cave Project in Northwestern Wyoming. Buffalo Bill Historical Center, Cody, Wyoming.

Mulloy, W. T., 1958. A preliminary historical outline for the northwestern plains. Ph.D. dissertation, University of Wyoming, Laramie.

Nabokov, P., and L. L. Loendorf. 2004. Restoring a Presence: American Indians and Yellowstone National Park. University of Oklahoma Press, Norman, Oklahoma.

O'Brien, M. J., R. L. Lyman, A. Mesoudi, and T. L. VanPool. 2010. Cultural traits as units of analysis. Philosophical Transactions of the Royal Society B: Biological Sciences **365**:3797–3806.

Old Horn, D. D., and T. P. McCleary. 1995. Apsáalooke Social and Family Structure. Unpublished Article, Little Big Horn College, Crow Agency, MT .

Owsley, D. W., and D. R. Hunt. 2001. Clovis and early Archaic crania from the Anzick site (24PA506), Park County, Montana. Plains Anthropologist **46**:115–124.

Pitblado, B. L., 1999. Late Paleoindian occupation of the southern Rocky Mountains: projectile points and land use in the high country. Ph.D. dissertation.

Pitblado, B. L. 2011. A tale of two migrations: reconciling recent biological and archaeological evidence for the Pleistocene peopling of the Americas. Journal of Archaeological Research **19**:327–375.

Pitblado, B. L. 2017. The role of the Rocky Mountains in the peopling of North America. Quaternary International **461**:54–79.

Prentiss, A. M. 2011. Introduction to this special issue on the evolution of material culture. Outreach **4**:374–378.

Prentiss, A. M., J. C. Chatters, R. R. Skelton, and M. Walsh, 2015*a*. The evolution of Old Cordilleran core technology. Pages 178–196 *in* M. Shott, editor. Contemporary Perspectives on Lithic Technology. University of Utah Press, Salt Lake City.

Prentiss, A. M., J. C. Chatters, M. J. Walsh, and R. R. Skelton. 2014. Cultural macroevolution in the Pacific Northwest: a phylogenetic test of the diversification and decimation model. Journal of Archaeological Science **41**:29–43.

Prentiss, A. M., and D. S. Clarke, 2008. Lithic technological organization in an evolutionary framework: examples from North America's Pacific Northwest region. Pages 257–285 *in* W. Andrefsky, editor. Lithic Technology: Measures of Production, Use and Curation.

Prentiss, A. M., and p. p. et al., editor=Prentiss, A. M. ???? Handbook of evolutionary research in archaeology.

Prentiss, A. M., and M. Lenert, 2009. Cultural stasis and change in northern North America: a macroevolutionary perspective. Pages 235–252 *in* A. M. Prentiss, et al., editor. Macroevolution in Human Prehistory: Evolutionary Theory and Processual Archaeology. Springer, New York.

Prentiss, A. M., M. J. Walsh, and T. A. Foor. 2018. Evolution of early Thule material culture: cultural transmission and terrestrial ecology. Human Ecology **46**:633–650.

Prentiss, A. M., M. J. Walsh, T. A. Foor, and K. D. Barnett. 2015*b*. Cultural macroevolution among high latitude hunter–gatherers: a phylogenetic study of the Arctic Small Tool tradition. Journal of Archaeological Science **59**:64–79.

Rapson, D. J., 1990. Ph.D. dissertation, University of New Mexico, Albuquerque.

Rapson, D. J., and L. C. Todd, 1992. Conjoins, contemporaneity, and site structure: distributional analysis of the Bugas-Holding site. Pages 238–263 *in* J. L. Hofman and J. G. Enloe, editors. Piecing together the past: applications of refitting studies to archaeology. BAR International Series 578, Oxford.

Rapson, D. J., and L. C. Todd, 1999. Linking trajectories of intra-site faunal use with food management strategies at the Bugas-Holding site: attribute-based spatial analysis of a high altitude winter habitation, Wyoming, USA. Pages 455–478 *in* J.-P. Brugal, F. David, J. G. Enloe, and J. Jaubert, editors. Le Bison: Gibier et Moyen de Subsistance des Hommes du Paleolithique des Grandes Plaines.

Reckin, R. J., 2018. Mountains as crossroads: temporal and spatial patterns of high elevation activity in the Greater Yellowstone Ecosystem, USA. Ph.D. dissertation, Department of Anthropology, St. Johns College, University of Cambridge, UK.

Shortt, M. W. 2003. Record of early people on Yellowstone Lake: Cody Complex occupation at Osprey Beach. Yellowstone Science **11**:2–9.

Smith, E. 1991. Inujjuamiut foraging strategies. Hawthorne, NY: Aldine de Gruyter.

Surovell, T. 2009. Toward a behavioral ecology of lithic technology: cases from Paleoindian Archaeology. The University of Arizona Press, Tuscon, AZ.

Surovell, T. A., J. B. Finley, G. M. Smith, P. J. Brantingham, and R. Kelly. 2009. Correcting temporal frequency distributions for taphonomic bias. Journal of Archaeological Science **36**:1715–1724.

Taylor, J. 2006. Projectile points of the High Plains: new perspectives on typology based on examinations of original type site specimens. Sheridan Books, Chelsea, Michigan.

Todd, L. 2015. A record of overwhelming complexity: high elevation archaeology in Northwestern Wyoming. Plains Anthropologist **60**:67–86.

Todd, L. C. 2009. Assessment of direct impacts of grazing by domestic cattle after the Little Venus Fire, Greybull Allotment, Shoshone National Forest, Park County Wyoming. Unpublished report on file, Shoshone National Forest, FS Agreement No. 05-CS-11021400-008. Colorado State University, Fort Collins.

Todd, L. C., 2016. Hunter Point Post-Fire Section 110 Inventory, North Absaroka Wilderness, Shoshone National Forest, Park County Wyoming: Report PCHPC17-2. Technical report.

Vivian, B. C., B. O. Reeves, and A. Johnson. 2008. Historical resources mitigative excavations at site 24YE353, Malin Creek site final report. Report submitted by Lifeways of Canada, Inc. to and on file at Yellowstone National Park, Mammoth, Wyoming .

Waguespack, N. M., and T. A. Surovell. 2003. Clovis hunting strategies, or how to make out on plentiful resources. American Antiquity **68**:333–352.

Wood, W. R., and A. S. Downer. 1977. Notes on the Crow-Hidatsa schism. Plains Anthropologist **22**:83–100.