

The goal of this chapter is to interpret and to a lesser degree contextualize a site known as the Alcova Redoubt (hereafter the Redoubt). The architectural remains and cultural materials found on this site are highly suggestive of a planned fortification. Currently, the designations of fortifications as a site type have been only lightly considered in the Wyoming literature (Hoxie and Rzeczkowski n.d.; Keyser and Poetschat 2005; Keyser 2007b; Loendorf and Good 1977) and arbitrarily assigned to sites better described as defensive locations (Adams 1994; Frison 1988; Loendorf and Good 1977). This chapter therefore establishes a solid definition of a fortification and its relationship to other hunter-gatherer archaeology sites of the Wyoming region. Fortifications sites found in the Wyoming region do not directly correlate with the complexity of fortifications described throughout this book. However, several key features appear throughout all fortifications sites globally and are considered in a broader discussion of defense-related sites focusing on the social and temporal conditions that may have led to the development of planned fortification in a region synonymous with hunter-gatherer peoples.

The prehistory of the northwestern Great Plains is typified by egalitarian hunting-gathering groups (Frison 1991). The groups are broadly defined as “societies in which there is a short time between the acquisition and the consumption of food, where individuals have equal access to resource and methods of resource

The Alcova Redoubt

A Refuge Fortification in Central Wyoming

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DOI: 10.5876/9781607326700.0009

extraction, and use mobility as a method of dispute resolution” (Kelly 1995:295). “Dispute resolution” is of prime importance because egalitarian hunter-gatherers generally move to avoid outer group violence, a factor (among many) that keeps their personal possessions low (Kelly 1995:296). Mobility as a form of conflict mediation seems to preclude fortification use and leaves open the question: when do hunter-gatherers build defensive structures?

HUNTER-GATHERER VIOLENCE

The presence or absence of violence in egalitarian hunting and gathering groups spans a theoretical range between two extremes: at one end, egalitarian groups are more violent than modern western civilizations’ deadliest wars (Keeley 1996), and at the other extreme the rarity of interpersonal violence makes hunter-gatherers among the greatest peace negotiators the world has known (Fry 2006). I would like to circumnavigate the theoretical allegiances latent in these two extremes and focus instead on the violence prevalent in hunter-gatherer populations (Keeley 1996; Fry 2006). There are both peaceful and aggressive foragers (Kelly 1995). So the question becomes not whether egalitarian groups are violent, but what form does their violence take? Interpersonal group violence should have a different archaeological signature than organized warfare.

“Warfare” here is defined as “potentially lethal fighting among separate communities that is viewed as a legitimate, even desirable, means of advancing a group’s position relative to that of its neighbors. *“Warfare involves collective rather than individual parts”* (emphasis added, Milner 2007:182–183). This differs from violence defined as “a severe form of physical aggression, violence entails forceful attacks, usually with weapons that can result in serious injuries or death” (Fry 2006:11). Warfare has to be organized at a group level, whereas violence involves the physical aggression of any person who does harm with no specific benefit to a group. Violence, such as feuding and revenge killings, does not have to lead to warfare. Many egalitarian band-level groups often do have episodes of intergroup or interpersonal violence (Fry 2006; Kelly 2000; Otterbein 2004). However, there are often accepted limits to which levels of violence can reach within groups (Kelly 2000:11–38). This is because the violence is typically “specific and not generalized and does not escalate beyond a sequence of events that encompass homicide followed by the execution of the killer” (Kelly 2000:42–43). The cross-cultural ethnographic evidence from band-level societies reinforces the lack of war (Fry 2006; Keeley 1996; Kelly 2000; Otterbein 2004).

The incidence of violence among the Semai, for example, shows they have a “homicide rate of 30.3 per 100,000 population per annum” or about two

homicides every 22 years for a group of 300 (Knauff et al. 1987:458). A similar figure is suggested for the !Kung, the Hadza of Northern Tanzania, the Mbuti, and the Gebusi (Knauff et al. 1987:458–459). Studies of these groups suggest egalitarian groups fluctuate between periods of low violence and periods of frequent violence with relatively high violence rates per capita (Knauff et al. 1987; Keeley 1996). However, when hunter-gatherer groups are viewed at long intervals, low aggression marks the ethnographic record more than do high levels of violence (see Fry 2006:box 5.1 and 5.2; 63–64; 66–67). This has led to the conclusion that “no peaceful society is expected to be absolutely devoid of all forms of aggression at all times” (Fry 2006:63). Hunter-gatherers seem to fluctuate between violent periods but as a whole have low incidences of violence with no systematic warfare as defined in this chapter (Fry 2006).

Drawing upon ethnographic cross-cultural studies of conflict, Keeley maintains some “90 to 95 percent” of all human societies engage in warfare (Keeley 1996:29). Examining frequency of war, Keeley (1996:32) suggests greater political complexity increases the frequency of war. A similar conclusion is reached by Fry (2006:100–113, 2007:69–80). However, Keeley (1996:32) also suggests “70 to 90 percent” of prestate societies engaged in warfare at least once every five years and the archaeological evidence of “well-studied regions” (Keeley 1996:39) reflects this pattern—stretching warfare back some 10,000 years. For some researchers, the ethnographic signature of war informs and reinforces the archaeological signature of war (Keeley 1996). However, the coarse resolution of the archaeological record makes it difficult to elucidate differences between war and violence, although iconographic studies may suggest otherwise (see Keyser, chapter 3, this volume).

There is no doubt violence is indicated in the archaeological record (Martindale and Gill 1983; Scheiber 2008; see discussion of Roper 1969 in Fry 2006:134–135), but warfare is less clear. Cases like the 12,000–14,000-year-old cemetery known as Jebel Sahaba in Sudanese Nubia are often used to argue for both the antiquity and existence of early warfare (Keeley 1996; Otterbein 2004:74). Excavations at Jebel Sahaba uncovered the remains of 59 skeletons, with 24 showing direct evidence of violent trauma (Thorpe 2003; Wendorf 1968). The contemporaneity of the burials has never been established, leading to a justifiable critique of the site as only containing reoccurring acts of homicide, execution, or a burial for the murder victims (Fry 2006; Thorpe 2003:152–153). The often-cited human bone bed at the Crow Creek site in south-central South Dakota with some 500 individuals, an associated palisade, and burned lodges is a much clearer indicator of warfare (Willey 1990; Zimmerman and Bradley 1993). This suggests archaeologists cannot interpret warfare from any

one line of data (Solometo 2010). We know violence exists in the record of egalitarian groups, but what both Keeley (1996) and Fry (2006) have demonstrated is that warfare seems to hinge on political complexity.

THE WYOMING REGION

The ephemeral architecture and small size of archaeological sites found in the Wyoming region argue for more, small, highly mobile groups (Frison 1991; Kelly 1995:124). As aforementioned, mobile groups tend to move if neighboring groups become hostile (Kelly 1995:294; Fry 2006). In an area where low group sizes and high mobility were prevalent, low incidences of violence and fortifications should be the norm. The latter is simply because non-residential defensive structures (i.e., fortifications) are a costly endeavor that hunter-gatherer groups cannot easily offset without sustainable resource patches or food storage. It is unjustifiable for a mobile group to invest labor into an elaborate structure that does not have an immediate economic benefit (Kelly 1995). Fortifications are more typically built and maintained by large groups of people (see Mitchell, chapter 11, this volume). To argue fortification use is to argue for either a decrease in mobility or an increase in group size, or both. This very signature is evident in the archaeological record during the transition from the Late Prehistoric to the Protohistoric period (1500 BP to ~200 BP) of the Wyoming region (Sutton 2004).

The residential-site size and the radiocarbon data serve as a proxy for a population size that peaked between AD 1000 and AD 1500 in the Wyoming region (Surovell et al. 2009; Sutton 2004). During this increase in settlement size there was a presumed change in social structure to account for larger group cohesion (Sutton 2004). Both the iconographic and skeletal evidence are suggestive of violence prior to the horse (see Keyser, chapter 3, this volume). But a shift in the intensity and incidence of violence to full-blown warfare seems to coincide with the influx of European goods into indigenous communities (Sutton 2004; Wolf 1997). Three independent lines of evidence support this position. First is an increased use of stone structures for defense (i.e., in fortifications) in the Protohistoric period (Conner et al. 1977; Hoxie and Rzechkowski n.d.). Second is an increase in violent rock art depictions with European trade goods (Keyser and Poetschat 2005). Finally, the skeletal record indicates higher levels of violence in the Protohistoric than in any of the preceding periods.

In a sample of 93 individuals dating to the Late Prehistoric period (AD 1500–1700) one-third show some evidence of violence (Scheiber 2008). This

is demonstrated by injuries on skeletal remains that include “projectile points embedded in bone, parrying fractures, and the presence or absence of projectile points found in the graves” (Scheiber 2008:35). The Scheiber (2008) skeletal overview does not parse out violent death in the Protohistoric period but does show a decrease in the average age of death.

The average age of death for 257 individuals dating to the Protohistoric-period assemblage is 25 years. According to Scheiber (2008:37), “many more people were dying at a young age, and very few older adults are found” in the Protohistoric period. In fact, Scheiber notes the mean age of death reaches an all-time high in the Protohistoric period, with 63 percent of the sample labeled as “young-adults” from 20 to 39 years old (Scheiber 2008:39). This is an increase of young adult deaths of nearly 41 percent over the preceding Late Prehistoric and Archaic periods (a timespan covering at least three millennia). It is important to note the violence and young ages of death recorded in these samples may not necessarily be representative for the escalation of warfare. The violence could be seen as a simple increase in interpersonal conflict as a result of expanding group size in the Protohistoric period (Scheiber 2008:39; Sutton 2004), but the presence of a site like the Redoubt makes it appealing to argue for the presence of warfare during this period.

According to Keeley (1996:55), fortifications are the “costliest and largest pieces of preindustrial military technology that prehistoric peoples utilized to defend against assailants.” As such, the construction of defensive structure required organized labor focused on a planned design. Therefore, the construction of fortifications is a practice egalitarian societies seldom if ever embarked upon (Keeley 1996). Otterbein (2004:189) states, “hunters and gatherers did not build walls around their camps.” Jones (2004:161) also echoes Otterbein’s position by stating that “nomadic hunting bands did not build complex fortifications.” It may then be argued that if a fortification is present in the Wyoming region, there were also levels of social differentiation (O’Brien 2013; Vanpool and O’Brien 2013). The importance of this, however, is not to argue for the increasing social change of the inhabitants that built the Alcova Redoubt; more work is needed to test the link between social differentiation and fortification construction. The remainder of this chapter is dedicated to justifying how this site qualifies as a planned fortified structure.

FORTIFICATIONS

The use of architecture to defend a location is a practice that stretches back possibly over 10,000 years with the site of Jericho (Bar-Yosef 1986; Fry 2006;

Keegan 1994). Certainly by 7000 BP defensive architectural elements were in use in the Old World (Keeley 1996). The characterization of architecture as defensive in the archaeological record is dependent on agreeable definitions. In a recent review of fortifications Schaepe (2006:674) determined the National Park Service's (2005) definition of "works erected to defend a place" best characterized defensive architecture (Schaepe 2006:674). To qualify as defensive, the erected architecture must refer to features including walls, bastions, and locations on the landscape that have a purely military function (Kelly 2000; Keeley et al. 2007; Schaepe 2006). Several examples of such locations can be found in the Missouri Trench area and are reviewed in this book (Bamforth 1994,; chapter 1, this volume; Clark, chapter 12, this volume; Jones 2004; Keeley 1996; Kvamme and Ahler 2007; Kvamme 2008; Mitchell, chapter 11, this volume; Zimmerman and Bradley 1993).

By definition, a fortification must have architecture and this architecture must include a wall system. A "wall system" is defined as the "surrounding barriers or enclosures that prevent access to and, almost always, obscure vision of a particular location" (Keeley et al. 2007:57). Individual components together comprise an "enceinte," or wall. These include the wall (sometimes referred to as a "curtain"), any gates, bastions, and associated ditches (Keeley et al. 2007). Sites not meeting these criteria are considered "defensive sites" (Schaepe 2006:674). Defensive sites contain little or no architecture and are defensible "through means of position in a landscape that restricts access to a place, thereby serving to protect it from attack" (Schaepe 2006:674). Defensive sites are primarily located in a "naturally defensive or strategic location" (Keeley et al. 2007:56). A butte-top occupation with short wall segments or no walls is a defensive site. Fortifications, on the other hand, have architecture, incorporate the use of weapons into wall construction, and concentrate those weapon systems on specific locations (e.g., entry points). Fortifications are major undertakings, whereas defensive locations are not. But not all fortifications are built the same.

Fortifications can be seen on a continuum with refuge fortifications at the more ephemeral end of the scale, and strongholds at the permanent end. Strongholds can best be considered castle-like. "A stronghold is a place not merely of safety from attack but also of active defense, and also a base from which they [the occupants] may sally forth to hold predators at bay and to impose military control over the area in which their interests lie" (Keegan 1994:139). A refuge fortification, on the other hand, "is a place of short-term safety, of value only against an enemy who lacks the means to linger in the vicinity or who operates a crude strategy of raiding" (Keegan 1994:139). Generally, nomadic groups protect themselves from spontaneous

attacks via refuge building (Jones 2004:162). The Grapevine Creek account is one such account of refuge fortification use (Hoxie and Rzewzkowski n.d.). Secoy (1992:54) and McGinnis (1990:33) both talk of a Blackfoot attack on a Flathead village: "Instantly down went the tents and the tent poles, which, with the baggage formed a rude rampart . . . a steady charge of cavalry . . . but the horses did not break through the rampart of pointed poles (Keyser and Poetschat 2005:130; Secoy 1992:54).

The two types of fortifications—refuges and strongholds—would have had similarities and differences in terms of architecture and location on the landscape (Jones 2004; Keegan 1994; Keyser 2005:127–130). A refuge fortification is constructed in a very quick fashion and will usually contain no more than a simplistic wall, or one of the additional characteristics: "location at high elevations and on steep landforms characterized by elevation differences in altitude, such as hilltops or mountains; concealment of site interiors from outsiders; presence of large viewsheds, prominent lookout points, and/or settlement surveillance" (Sakaguchi et al. 2010:1172). A refuge-style fortification site will include both landscape and (at least) hastily built architecture.

A stronghold fortification, on the other hand will contain almost all of the following: "a curtain which shields defenders from the attackers by blocking the vision (of what's happening behind the curtain), provides a raised position to both fire and view attackers from, and slows down the advancement of attackers into the defended position" (Keeley et al. 2007:57. Stronghold fortifications are much larger in scale than refuge fortifications.

COMPONENTS OF A WALL SYSTEM

A fortification must have a wall "curtain or surrounding wall deterring passage over or through a defended perimeter . . . which provides a screen of maneuver for defenders" (Keeley et al. 2007:57–58). Examples of curtains in an archaeological context can be found in the North American Great Plains in sites like Huff (Bamforth 1994), Jiggs-Thompson (Jones 2004) and Crow Creek (Zimmerman and Bradley 1993). These curtains or walls were constructed by placing large timbers on end at regular intervals (Jones 2004). Obviously, the curtain is one of the major, if not the major, component of a fortification. The remaining features of wall systems can be seen as building off of or reinforcing the defensibility of a curtain.

In some cases, the entry points of curtains are designed to expose, trap, or hinder attackers (Keeley et al. 2007). These locations are "defended gates" working in conjunction with the curtain to expose the attackers to the defenders.

The simplest form of a defended gate is a baffled gate. This type of gate overlaps the wall segments so an attacker moving through the gate is exposed to many persons on the inside of a fortification wall (Keeley et al. 2007). Gate construction can be quite complex (Keeley et al. 2007:63–65). The purpose, however, is to lure in attackers into the curtain (Keeley et al. 2007).

Ditches are commonly placed in front of curtains. The purpose of a ditch is rather straightforward and is (excluding the manual labor) relatively easy to construct before a wall (curtain) is erected. It works effectively to slow down or prevent attackers from reaching or scaling the walls (see Keeley et al. 2007:59). The material removed from the ditch can aid in reinforcing the wall thus strengthening the fortification. Many examples of North American ditched archaeological sites backed by a wall or palisade can be found in the Middle Missouri–tradition sites of the northern Great Plains of North America (Clark, chapter 12, this volume; Zimmerman and Bradley 1993). Well-placed ditches can keep attackers from gaining entry to the wall but are considerably more useful when bastions are incorporated into the wall.

“Bastions are external projections of a barrier [that is, they are protrusions from the curtain] large enough to hold several defenders and their firing weapons” (see Keeley et al. 2007:69 for a diagram). Bastions “inflict flanking fire on any attackers closely approaching the enceinte and adjacent bastions” (Keeley et al. 2007:67). All bastions have in common an intended weapon system using some type of projectiles. By using projectile weapons, there is an overlapping line of fire for any individuals stationed in the bastions that approximates a 180-degree arc. Bastions are evenly spaced, taking into account the weapon system to be used by people stationed in the bastions (Keeley et al. 2007). Commonly this spacing is between “one half and one third the effective range of the principal defensive projectile weapons” (Keeley et al. 2007:70), allowing the adjacent bastions to lend mutual support in defending the wall between them. However, immediately in front of any rectangular bastion, for example, is an area of “dead ground,” where attackers are protected from missiles from the curtain and the other bastions (Keeley et al. 2007: 69). When all of the features are combined, whether a group builds a fortification with a wall system incorporating some or all of the features listed above, it is an incredible undertaking (illustrations in Keeley et al. 2007:69).

A defensive site does not require the labor, planning, or resources a fortification does. Groups can easily move on top of or into an area with a commanding viewshed with practically no investment. A fortification, however, requires something much different, as Mitchell (2010:3) states:

fortifications effectively measure social perceptions of war. That is, they are sensitive barometers of a community's expectation or anticipation of collective violence. This is so because they are costly: building them requires the coordinated labor of a significant fraction of the community and they consume large amounts of [material] . . . They create a need for community-level leadership, to settle on an appropriate and cost-effective design and to manage construction. And because any fortification is only as effective as its weakest section, they require sustained and coordinated maintenance . . . In short, fortifications can be seen as a form of monumental architecture, which only were built when the community collectively deemed them necessary. And because they took time to build and had to be designed and put up prior to the onset of active hostilities, they indicate trends in community sentiment over a period of time.

The "community sentiment" then has to be one of self-preservation to build a fortification. A group has to know it can offset the cost of construction required for a fortification. Moreover, a group has to know who is attacking, where the likeliest places of attack would be concentrated, and the size(s) of the group(s) attacking. A miscalculation in any of these variables and the likelihood of death increases. Self-preservation is an incredible motivator.

Otterbein (2004) argues the use of fortifications is limited to chiefdoms or state-level societies, as these are the only groups able to offset building costs (Otterbein 2004). Gat (2006:168) argues fortification use was a product of sedentary agriculturalist societies. Because of their fixed resources, these groups had to have a heightened sense of security. Agriculture does not make groups build fortifications but sedentism may result in fortification (Gat 2006:172), especially in situations like the Great Plains, where nomadic tribes co-occurred with sedentary groups (Keeley 1996). These are typically stronghold fortifications, which besides helping protect crops, also secure specific industries or areas of specialized crafts (Gat 2006:169).

Fortifications can also mark the edge of frontiers or territorial boundaries. Keeley (1996:132) has suggested that the "vulnerability and volatility of frontiers explain why they have been buffered by . . . fortifications." Fortifications on frontiers are often placed between different social organizations such as "civilized/tribal; pastoral nomad/village farmer; and farmer/forager" (Keeley 1996:132). Typically, frontier fortifications are refuge style because groups with large territories defend their territory and not specific locations (Jones 2004:162). Fortifications located on territorial boundaries should be simpler than ones designed to protect specific economies or trade.

Fortifications are costly and require a specific set of social and economic conditions for construction. These conditions vary widely as demonstrated



FIGURE 9.1. *Overview of the Alcova Redoubt, looking northwest. The bracket frames the site boundary.*

here but the constant variable has to be one of perceived attack. The fortifications of the Coastal Salish are argued to be a response to a widespread prestige economy based on “the acquisition and exchange of goods and people as slaves” (Schaepe 2006:677). The variable of constant threat in this example is obvious. The Salish, faced with such a threat, built wooden palisades, cantilevered platforms, and ladders to deter attack (Schaepe 2006). They built a wall system: a fortification. The existence of a fortification in the Wyoming region suggests that at least in one case the community sentiment toward the perception of attack justified the construction of a fortification.

THE ALCOVA REDOUBT

The Redoubt is located on an isolated sandstone butte in central Wyoming. More specifically, the site is situated on the northeast edge on the tallest, most isolated, sandstone-capped feature in the local drainage basin (figure 9.1).

It is a small site, measuring 53 m north–south by 120 m east–west. The most striking features on the site are three juniper and sandstone walls (known individually as the East Wall, West Wall and Inner Wall), two of which define the eastern and western boundaries (East Wall and West Wall). The third

wall (Inner Wall) runs north–south through the interior of the site. A small bench west of the Inner wall measuring 53 m north–south by 22.5 m east–west contains almost all of the occupational debris (figure 9.2). Small amounts of residential material (i.e., lithic debitage and burned rock) are located near the West Wall but do not approach the frequency recorded around the Inner Wall (figure 9.3).

THE EAST, INNER, AND WEST WALLS

A location of the wall system around the site is dictated by a sandstone caprock that varies from 5 m in the western, south-central, and north-central portions of the site to nonexistent in the eastern portion. The vertical height of the caprock cliff fortifies close to 75 m of the northern portion of the site and 60 m of the southern portion. Any cracks or easily scalable areas in the caprock are blocked with short juniper-and-sandstone wall segments. The remaining portions of the butte with no caprock have long lengths of interwoven juniper and sandstone wall.

These three distinct wall segments measure 223 m long. The East Wall is the largest of the three wall segments, being 100 m long. It has several distinct construction methods, including vertical juniper poles with woven rock and wood, coursed sandstone slabs (dry-masonry), horizontal wooden beams reinforcing vertical sandstone slabs, and stacked wood. This wall terminates in the northeast and southern area of the site where it intersects the caprock cliffs.

The East Wall is the tallest and most representative of the three wall segments, measuring 1.5 m at its tallest point; it also has the most material left of the three wall segments (figure 9.4). The amount of juniper and sandstone in the East Wall suggests it was the tallest of the three wall segments. The Inner Wall bisects the East Wall in the south-central portion of the site. The Inner Wall measures 63 m long. This wall segment is not as continuous as the East or West Walls. The tallest portion at present measures half a meter high. There are two different construction methods apparent in the Inner Wall, including angled sandstone slabs and stacked wood. This Inner Wall may have been the original East Wall. For some reason, the walls were expanded east, and materials from the Inner Wall were robbed for this proposed expansion (figure 9.5). Almost all of the occupational debris on the site is located behind (i.e., west of) the Inner Wall. It is also possible the Inner Wall served as a secondary defense in case the East Wall was breached.

The West Wall, measuring 60 m north–south, is the shortest of the three wall segments. This wall segment has the same construction method as the

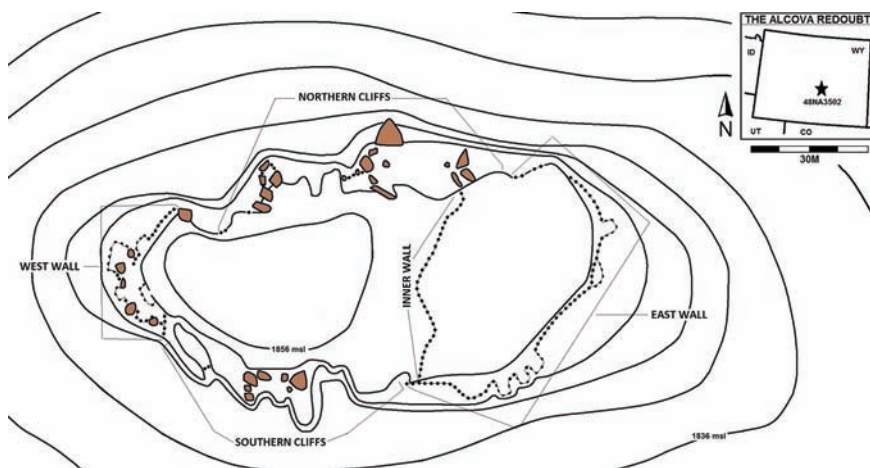


FIGURE 9.2. Overview of the Alcova Redoubt. Labels correspond to the wall and cliff segments described in text. Each number corresponds to the bastions described in the text. The shaded shapes are large pieces of the detached butte caprock.

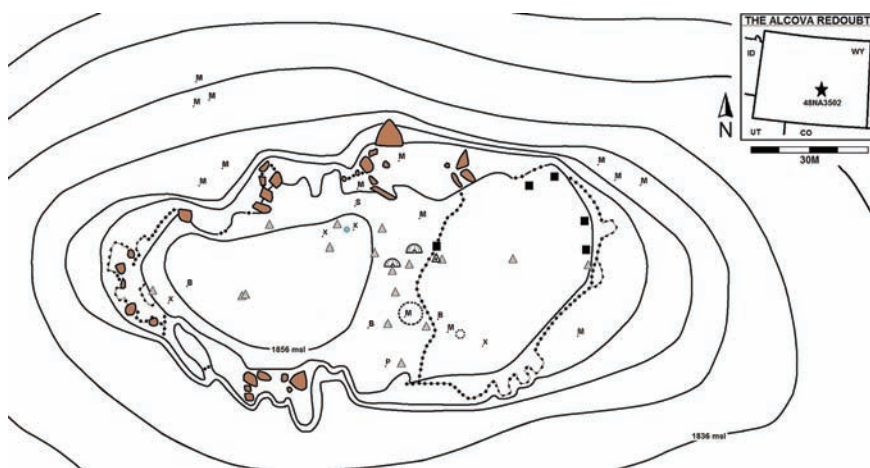


FIGURE 9.3. The Alcova Redoubt artifact-distribution map. Dashed lines are ceramic scatters. Triangles are projectile points. Ringed circle is a glass bead, and shaded areas represent large pieces of detached butte caprock. Half-circles are wickiups. Squares are manuport piles. M, individual manuports; X, obsidian flakes; P, steatite pipe; B, bifaces; S, scraper.



FIGURE 9.4. *Overview of the East Wall, looking north.*

East Wall, including vertical juniper poles with woven rock and wood, coursed sandstone slabs (dry-masonry), horizontal wooden beams reinforcing vertical sandstone slabs, and stacked wood. This wall segment is not a continuous wall. Instead wall segments were constructed around large slump blocks, producing a terraced wall system. The result is a wall with six vertical meters of difference between its upper and lower portions (figure 9.6).

Small wall remnants are present in both the northern and the southern cliff areas (figure 9.7). These small wall portions block vertical cracks in the sandstone caprock. The method of construction of these small wall segments differs from the main wall. Vertical juniper posts were placed in the ground and large horizontally placed logs were woven around the post to form a short wall. There are nine of these short wall segments on the site. All building material incorporated into the walls is readily available around the site. The sandstone outcrops in the west portion of the site are probably where most of the rock was gathered (John Albanese, personal communication, 2006). There are no axe or cut marks on any of the juniper poles. Deadfall juniper is abundant throughout the immediate area and was the likely source of the material for the walls.



FIGURE 9.5. *Overview of the Inner Wall, looking north. Arrows designate large sandstone slabs incorporated into the wall.*

THE DATE OF THE REDOUBT

The Redoubt has only been surface inventoried and mapped with no recovery of datable materials; therefore no absolute date can presently be assigned to the site. However, certain components of the current surface artifact assemblage are highly suggestive of a Protohistoric date for the site. These artifacts include a single blue glass bead, or “seed bead,” a highly carved steatite pipe fragment, two separate ceramic scatters, and the high amount of wood found in the wall system (figure 9.8).

The 17 surface projectile points alone suggest the site typologically dates to the Late Prehistoric period. Fifty-three percent of the projectile-point assemblage are tri-notched projectile points; 18 percent are side-notched; 12 percent are corner-notched; and another 12 percent are unnotched Cottonwood Triangular points. A single point fragment with notch remnants completes the current assemblage. The points strongly resemble specimens found at the

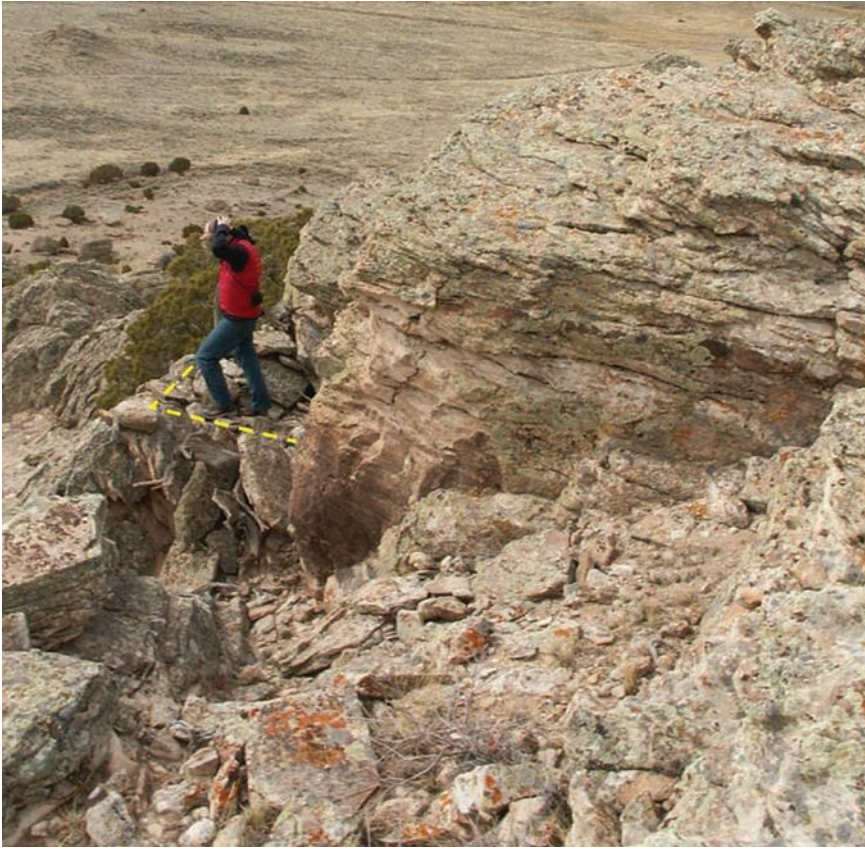


FIGURE 9.6. *Portion of the West Wall. The dashed line (beneath the feet of the person in the photo) denotes the wall portion.*

Mummy Cave layer 38 (Husted and Edgar 2002:plate 60), the River Bend site (Buff 1983:figure 6; McKee 1988), and the High Rise Village, all of which suggest a very late occupation for the site (Koenig 2010).

The ceramics on the site come from two separate concentrations and represent two vessels. Both vessels do not resemble Intermountain Ware often associated with Shoshonean groups (Frison 1991:116–117; Larson and Kornfeld 1994; Mulloy 1954). Both vessels have fingernail impressions on the exterior surfaces. This style of decoration is described throughout northern Colorado and eastern Utah (Cassells 1997:246, figure 10–10; Janetski 1994:164–165; Loendorf 2002:79; Middleton et al. 2007).



FIGURE 9.7. *Example of a blocked portion of a vertical crack in the caprock of the northern and southern cliffs.*

There are two Protohistoric diagnostic artifacts on the Redoubt. The first is a blue glass seed bead. The second is a steatite pipe fragment manufactured with the use of metal tools (Richard Adams, personal communication, 2007). Unfortunately neither artifact provides a calendar age. Torus beads are relatively time transgressive and such a small sample makes it difficult to assign dates (von Wedell 2011). The steatite pipe was carved with trade goods but metal detector surveys on site failed to locate any associated metal.

The wall portions complicate any assigned date. The 223 m (over a tenth of a mile) of continuous wall include at least 45 (US) tons (90,000 pounds) of stacked juniper and sandstone material. There is no one preferred construction method evident in the design of any wall that could be interpreted as multiple building episodes. This is most evident in the Inner Wall, which was likely dismantled completely to serve as a secondary wall or originally stood as the outer wall. The likelihood of multiple occupations during a technologically similar period then is very real for this site and needs to be dealt with in a different study that has the expressed goal of dating the site.

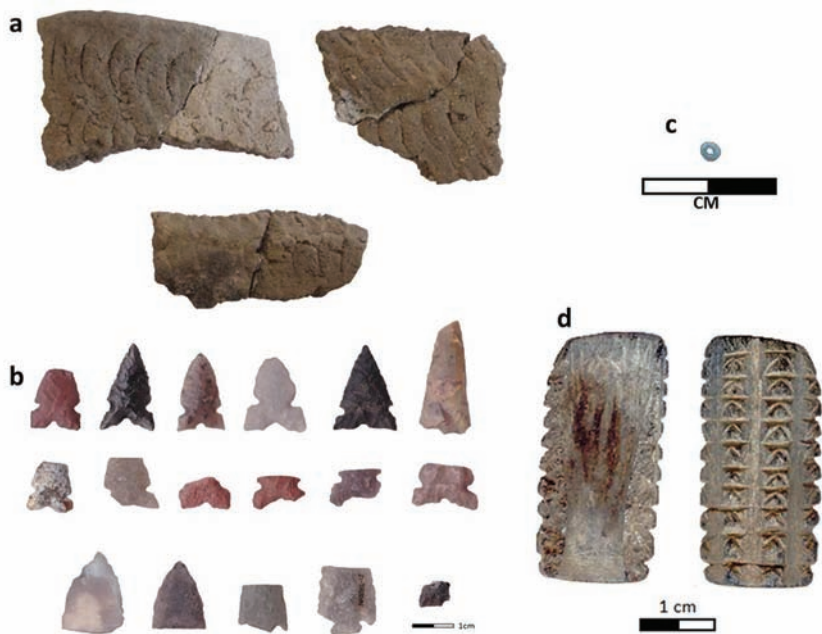


FIGURE 9.8. Overview of artifacts discovered on the Alcova Redoubt: (a) example of the Uncompahgre pottery vessel, (b) all projectile points discovered on site, (c) blue glass bead, (d) steatite pipe fragment.

Diagnostic surface artifacts discovered on the Redoubt date to both the Late Prehistoric and Protohistoric periods. The amount of stone debitage, stone projectile points, wooden features, ceramics, and a solitary glass bead all coupled with a lack of metal artifacts is highly suggestive of a late Late Prehistoric or an early Protohistoric date hovering around AD 1600 to AD 1700. Assignment to this age bracket is bolstered by the lack of military trade paraphernalia and other metal artifacts, the incidence of which would be expected to be higher if the site were closer to the nineteenth century.

The description of the individual artifacts, as well as the architectural features on site now, make it possible to illustrate how they come together as evidence of a well-planned fortification site.

THE ALCOVA REDOUBT AS A FORTIFICATION

Several lines of evidence can be used to demonstrate the Redoubt is a planned fortification. The first is the location and design of the three wall

segments. The second focuses on the bastion features incorporated into the wall design. The final line of evidence comes from the location and types of weapon systems discovered on site that integrate with the wall system.

The site is located on an isolated sandstone butte top. This is the first feature making it a good defensive location. However, to move the site out of a “defensive location” categorization and into that of a “fortification” requires more. The Redoubt has only six entry points due to the steep talus slopes surrounding the conical butte. The builders of the site focused the wall segments on these six entry points. The easiest access points have the tallest and longest wall segments (e.g., the entire 80-m length of the East Wall). The Inner Wall further serves to thwart an attack from the east as it acts as a secondary defense against a breach of the East Wall (in addition to being the possible original East Wall). The West Wall is terraced, on and around, large slump blocks of caprock acting as a lure for attackers. The natural terracing provides 6 m of fall from the highest to lowest wall segments in the West Wall, making it ideal for the use of projectile weaponry against climbing attackers. This and the presence of bastions in the remaining wall segments lead to the interpretation that all the walls were manufactured with projectile weaponry in mind.

THE BASTIONS

Incorporated into the design of both the East and West Walls are at least eight (and possibly as many as 12) bastions; all what Keeley et al. (2007:69) identify as rectangular bastions. Two of these are incorporated into the main wall, which is used as a rear wall to the protrusion, while six others are simply U-shaped protrusions with no ‘backing’ wall. All of the bastions on site are large enough to hold two full-size adults and their weaponry (figure 9.9). The eight features can also be defined as rectangular bastions, the most common in prehistory, as this style is easy to build and holds multiple individuals (Keeley et al. 2007:68–69). Bastions typically have heavier foundations due to the extra height and weight constraints these features place on walls (Keeley et al. 2007). This situation does not directly correlate to the Redoubt because the bastions were built on sandstone bedrock rather than on a wall. However, there are more sandstone slabs incorporated into bastion construction than in the main wall segments. Presumably this was to protect defenders stationed in the bastions from incoming projectiles, as they would have been the most susceptible to an attack.

Bastions are only effective when accompanied with a projectile weapon system. The distance between each bastion should concentrate the weaponry on the areas of perceived attack, but also allow for overlapping areas of fire. This



FIGURE 9.9. *Overview of Bastion 1. The East Wall boundaries are emphasized with dashed lines.*

is evident in the design of the site. The East Wall contains five of the eight bastions (B1–B5), all of which have a line of sight on the approximate 80 m of easily accessible terrain barricaded by the wall. These five bastions also provide an overlapping field of fire covering this entire wall segment. The West Wall is created by the remaining three bastions (B6–B8), all of which provide an overlapping field of fire on the western apex (see figure 9.2).

Without the incorporation of the bastions into the wall, the site would be relatively easy to breach. The bastions made it possible for defenders to use projectile weaponry while protecting the wall. However, defense of the wall was only possible with the aid of this projectile weaponry. Currently there are two projectile weapons systems evident on the site, both associated with the bastions.

WEAPONS SYSTEMS

The most prevalent weapons on site are softball-sized river cobbles. These were carried from base of the butte (approximately one mile southeast) and



FIGURE 9.10. *Example of stones in a manuport pile near the East Wall, presumably to have been used as projectile weaponry.*

placed around the Inner and East Wall segments. There are five distinct manuport piles, containing 133 stones, at an average of 26 stones per pile (figure 9.10). The mean stone size is 11 cm by 5 cm, with an average weight of 0.920 kg (2 lbs). All five piles are found in direct association with wall segments. Survey around the Redoubt has found manuports in three of the six entry points. Currently the best interpretation of the five manuport piles is as cached rocks to be used as potentially lethal throwing stones.

Keeley and colleagues suggest that thrown rocks could kill at 30 m, but they do not mention the rock's size (Keeley et al. 2007:73). Therefore, the Redoubt manuports were likely for a close-combat scenario, or used as the primary weapon, during periods of high wind (common at this site). One of the manuport piles is located inside Bastion 1, and with manuports discovered in three of the six entry points, it is easy to suggest they were to be used in a battle scenario.

The second weapons system present on the Redoubt is the bow and arrow, which has an effective killing range varying from 70 to 90 m (Keeley 1996:53).

Historic accounts of bow use from the Pawnee suggest accuracy at 80 paces (Mead 1986:210–211), and a demonstration of bow use by Sioux men suggest surprising accuracy at 60 feet (19 m) (Ambrose 2000:209–210). Using 70 m as an absolute maximum, overlapping fire from all of the bastions would easily be possible with a bow and arrow. Six of the 17 projectile points found during this study were near wall segments. However, no projectile points have been found embedded in the wooden walls or on the steep slopes surrounding the butte. Despite this, the bow was likely the primary weapon used by defenders.

SUMMARY

The Redoubt is located on an isolated landform. It has 223 m (over a tenth of a mile) of continuous wall. This wall overlooks or blocks all entry points to interior and occupied portions of the site. Spaced throughout the wall are bastions providing overlapping fields of fire to protect breachable segments of the wall. Though there are two weapon systems on the site, only one, the bow, provides this overlapping fire. When combined, these individual elements create an “erected work” that incorporated both a weapon and a wall system, making this site a fortification (Schaepe 2006).

An estimate of the defensive force required to use this fortification can be extracted through several sources. Beginning with the defensive features, bastions provide protection for “one or more defenders and their gear,” making two people the maximum number posited for each bastion on site, for a maximum of 16 stationed in bastions alone (Keeley et al. 2007:68). Because the East Wall bisects the easiest area to breach, 10 additional defenders are estimated to be stationed along it to reinforce those in the bastions. Single defenders stationed at the nine short wall segments in the caprock of the North and South Cliff would add an additional nine defenders and round out the defensive force. The total protecting force is estimated at around 35 individuals for the site. This number assumes a siege scenario for the site and requires a group to be on (a reasonable assumption given the amount of domestic debris) or near the site.

Ethnohistoric and historic accounts help to further corroborate this number. The Grapevine Creek site has 23 individual U-shaped structures erected by the Piegan. These structures are essentially bastions, which means as few as 23 and as many as 46 Piegan defenders were present at this battle (Hoxie and Rzeckowski n.d.:39). Peter Koch recorded a breastwork built on an isolated butte during a failed horse raid by 32 River Crow near the Dry Fork of the Missouri River (Koch 1896:300–301). The Pierre’s Hole battle described by Zenas Leonard suggests an indigenous fortification “large enough to contain

500 warriors" (Leonard 2001:53). Although no fortifications were recorded, a similar number of Piegan and Shoshone warriors were described by the Cree Saukamapee (Sahkomaupée) during a single battle (Tyrell 1916:328–330 in Bamforth 1994:99). Rock art representations suggest smaller groups ranging from 10 to 20 individuals were likely associated with individual feuding or raiding events (Keyser, chapter 3, this volume). The Redoubt then is seen as the collaboration of individual raiding or family groups, at least some of which had militaristic experience, and who occupied the site possibly while building it.

DISCUSSION

The use of fortifications like the Redoubt in the Wyoming region is particularly interesting when the specific demographic and economic conditions are considered (Sutton 2004). Focusing on a population-based explanation for the escalation of conflict, it is evident violence intensifies and increases from the Late Prehistoric to the Protohistoric period for the Wyoming region. New archaeological cultures such as Avonlea and Rose Spring do appear in the Late Prehistoric of the Wyoming region, and are found in association with violent deaths and possible simple defensive locations (Davis et al. 1994; Delacorte 1994; Dyck and Morlan 2001; Francis and Loendorf 2002; Frison 1988; Garfinkel 2007; Husted and Edgar 2002; Martindale and Gill 1983; Scheiber 2008). The dating of topographically isolated (i.e., defensive) sites suffers from a lack of absolute dates, but relative surface dates suggest an increasing use of defensive architecture culminating with fortifications use for the region. The construction of fortifications in the region may then be the result of a complex and protracted demographic shift that incorporated new technologies and changed social structures by the Protohistoric period (O'Brien 2013; Sutton 2004).

THE LATE PREHISTORIC PERIOD (AD 150–1600)

The Late Prehistoric period in the Wyoming region is marked by a shift in projectile-point technology, presumably coinciding with a shift in technology from the atlatl dart system to the bow and arrow (Mulloy 1958; Frison 1991). Distinct projectile-point styles denote this shift, such as Avonlea, found from Wyoming north to the Canadian Plains of Alberta, and Rose Springs (Rosegate), found in Wyoming west to California and northwest to Oregon (Deis 2004; Garfinkel 2007; Husted and Edgar 2002; Thomas 1981), as well as the Desert Side-Notch (DSN) series and Cottonwood triangular projectile point (Pignoli 2004; Thomas 1981). Avonlea projectile points were once thought to

represent Athabaskan-speaking groups migrating south from Canadian grasslands into the Wyoming region (Dyck and Morlan 2001), but this position now seems untenable (Matson and Magne 2007:143–145). Projectile points morphologically defined as Rosegate, of the DSN series, or as Cottonwood Triangular, suggest influence from human groups in the larger Great Basin culture area. The latter two in particular may represent the expansion of Numic speaking groups out of the Great Basin into the Wyoming region (Garfinkel 2007). The origins of the both DSN and Cottonwood Triangular projectile points in the Wyoming region are split into two camps. One side suggests linguistic patterns and material culture place the homeland of the Numic-speaking peoples somewhere in the Great Basin, migrating east around 1300 BP (AD 650; see Sutton and Rhode 1994 for a discussion of the problem). The other suggests the point styles were the youngest styles associated with an indigenous Shoshonean population in the Wyoming region for as long as 5,000 years, (Francis and Loendorf 2002; Husted 1995a, 1995b, 2002; Husted and Edgar 2002; Husted and Mallory 1967; Morgan 2010). This problem is unresolved but the later migration narrative is preferred for this discussion.

Radiocarbon dates collected from the Avonlea type-site in Saskatchewan place the date of Avonlea in Canada around 1500 BP (AD 450), while dated Avonlea sites south of Saskatchewan cluster around 1300 BP (AD 650; Klimko and Hanna 1988). Dyck and Morlan (2001:126) suggest an Avonlea homeland in the Saskatchewan–Montana area. Stylistic similarities in projectile points predating Avonlea that were found in Saskatchewan–Montana suggest cultural continuity (Dyck and Morlan 2001). These point types have been found in association with butte-top occupations (Frison 1988), leading some to speculate they may have clashed with groups in the region still using the atlatl (Francis and Loendorf 2002).

The Rose Springs or Rosegate archaeological culture, first identified in Owens Valley, California, has a distribution over much of the Great Basin culture area and its periphery (Husted and Edgar 2002; Thomas 1981). The Rosegate complex dates from 1400 BP to 700 BP (AD 550 to AD 1250), with a more intensive occupation beginning around 1300 BP (AD 650) in the Great Basin (Dies 2004). These point styles are found in the Wyoming region and date to 1260 BP (AD 690) (Husted and Edgar 2002). They have also been found embedded in human skeletal remains in what is now southwest Wyoming (Martindale and Gill 1983; Scheiber 2008).

The entry of new archaeological cultures into the Wyoming region, during the Late Prehistoric, is further indicated by different ceramic traditions. In southeastern Wyoming sites belonging to the Upper Republican and Loup

River/Itskari ceramic phases of the Central Plains tradition are indicative of a westerly expansion of maize horticulturalists around AD 1000–1400 (Michael Page, personal communication, 2010; Charles Reher, personal communication, 2005; Scheiber and Reher 2007; Steinacher and Carlson 1998). Ceramics from these traditions have been found on butte-top occupations in southeastern Wyoming (Charles Reher, personal communication, 2005).

Ceramics found at the Medicine Lodge Creek, Piney Creek, and Big Goose Creek sites in northeastern Wyoming bracket a nearly identical date of AD 1200–1450 (Frison 1967a, 1967b; Page 2007). These ceramics may indicate a proto-Crow presence (a relative of Mandan/Hidatsa horticulturalists from the Great Plains) and have also been found in association with butte-top occupations (Frison 1967a; Page 2007).

Material from these archaeological material cultures are found on probable defensive locations with very simple or no architecture (Adams 1994; Frison 1988). Currently it appears that defensive sites in the Wyoming region are older than fortifications with extensive architecture. This could be directly correlated to both limited violence and the smaller size of groups in the Late Prehistoric (Keeley 1996; Miller 1999, 2008; Scheiber 2008; Scheiber and Gill 1997). Certainly, violence levels were high in the Late Prehistoric but they do not seem high enough to justify the construction of a fortification such as the Redoubt; that is to say, the community sentiment was not tilted toward such a large community effort (Mitchell 2010). The groups occupying the region must not have been large enough or deemed it important enough to build fortifications. However, by the Protohistoric period it seems both group size and sentiment toward fortification construction changed (Sutton 2004).

THE PROTOHISTORIC PERIOD (AD 1600–1800)

A short list of the indigenous groups occupying the Wyoming region during the Protohistoric period include the Blackfeet, Crow, Comanche, Cheyenne, Nez Perce, Apache, Kiowa, Arapaho, and Shoshone (Frison 1991; Sutton 2004). Many of these groups either directly or indirectly contacted Euroamerican groups for the first time in the Protohistoric period. Contact with Euroamericans caused rapid social reorganization, resulting in larger tribal configurations (Sutton 2004: 39–47; Wolf 1997:176–181). This reorganization was partly from the introduction of new technologies like the horse and (later) the gun (Wolf 1997). The introduction of the horse had a dramatic effect in the Wyoming region (Secoy 1992), as “it endowed owners with enhanced military capabilities, transportation, hunting capacity, and mobility” (Wolf 1997:176). An example of

this includes the Comanche (a division of Shoshone hunter-gatherers), who became “the Spartans of the prairies” after the acquisition of the horse (Hoebel 2006:129). The Shoshone illustrate what happened to many of these groups and are of interest here as their historically recorded territories and probable items of material culture best explain the Redoubt:

By circa 1825, the Eastern or Wind River Shoshone occupied a region stretching . . . from the northern slope of the Uintah Mountains to the Red Desert and the Green Mountains, thence across the Sweetwater divide to the southern tip of the Big Horn Mountains. Then having cut diagonally to Thermopolis, it went down the Big Horn River as far north as the Shoshone River. It followed this stream over the Absaroka Range, then went to Yellowstone Lake and the Tetons. From here it ran almost due south to its starting point. (Shimkin 1947:247)

This group was “one big group, a ‘tribe’ with a central chief, an advisory council, and a warrior sodality” (Hultkrantz 1961:38). As a large group they occasionally hunted “among the buffalo grounds at the Sweetwater and North Platte” (Hultkrantz 1961:38). Local Shoshone place names (e.g., [*kī yatiwener*] or [*tu’ iwičanti’wēnēr*]) reinforce this described boundary (Shimkin 1947:252). They had a later expansion northward to the Bighorn Valley and eastward to the Laramie Range as bison herds diminished (Hultkrantz 1961). The Shoshone base, however, “was still the land around the Green River” (Hultkrantz 1961:37). The Redoubt is situated on the east edge of this territorial boundary and has material objects consistent with other sites suggested to be of Shoshone origin (Adams 2010; Buff 1983; Frison 1991; Zeimens 1975). While mindful of the pitfalls inherent in arguing for Shoshone ethnicity from material objects (Larson and Kornfeld 1994; Jones 1997), there are a number of sites with similar artifact classes found inside the aforementioned Shoshone territory.

Material culture associated with Shoshone groups has long been interpreted in the Wyoming archaeological record, and perpetuating this trait list is rife with pitfalls (Barth; 1998[1969]; Hodder 1982; Jones 1997). However, new work on high-altitude villages in the Greater Yellowstone Ecosystem (GYE) has discovered materials consistent with known Shoshone occupations (Adams 2010; Koenig 2010; Hultkrantz 1974; Scheiber and Finley 2011; Scheiber and Finley 2010; Shimkin 1947). Sites located along the east edge of known Shoshone territory have a similar suite of artifacts, including subsistence practices and lithic materials (Zeimens 1975; Schroeder 2010a, 2010b). This includes the presence of lithic materials from the Green River Basin, Yellowstone, and Absaroka Mountains, similar chipped-stone tools, and the use of steatite, wickiups, and pottery (Adams 2006, 2010; Schroeder 2010a,

2010b; Zeimens 1975). The Redoubt has most of the materials matching several proposed Shoshonean sites (Adams 2010; Husted 1995a, 1995b, 2002; Husted and Edgar 2002; Husted and Mallory 1967; Newton 2011; Scheiber and Finley 2010). The exceptions are the lack of bifacial Shoshone knives (Frison 1991:134) and the presence of a possible Uncompahgre Brown Ware vessel. There are several bifacial tools outside of projectile points and preforms found at the Redoubt, but these are too fragmentary to be classified. The Uncompahgre Brown Ware is associated with Ute groups linguistically linked to Shoshone, suggesting at the very least a linguistic affiliation (Loendorf 2002). Seasonality might account for the difference in artifact assemblages as well. Regardless, the similarities between items of material across sites suggest some links, and when historic territories (applicable in the case of the Redoubt) are considered, a Shoshone affiliation for the Redoubt is worth considering.

If the site was built by a Shoshone group on their eastern territorial boundary, the following scenario may apply: the site served as a frontier fortification used by the Eastern Shoshone and established the eastern edge of their territory. It would have allowed them to move into hostile territory like the North Platte River area or further north into the Powder River Basin to hunt large herds of bison and to retreat to a protected point if encountered by hostile groups. It would have provided peace of mind for expeditions but also asserted ownership in the territory. This speculative scenario draws from the site's location and construction, which indicate that whoever was involved with it had a sense of ownership of the land, or at the very least a sense of a static territorially boundary consistent with that described for the Shoshone.

SUMMARY

The transition from the Late Prehistoric to the Protohistoric was a time of tremendous change in the Wyoming region. New technologies began to emerge, and with the technology, butte-top occupations and violence rise (Davis et al. 1994; Delacorte 1994; Dyck and Morlan 2001; Francis and Loendorf 2002; Frison 1988; Garfinkel 2007; Husted and Edgar 2002; Martindale and Gill 1983; Scheiber 1993). Future studies need to elucidate whether these technologies represent actual population increases or diffusion. Scheiber (2008:39) has suggested that the violence levels recorded in the Late Prehistoric were an "outgrowth of population increase, territory circumspection, and resource depletion." Initial studies focused on understanding demographic sizes suggest this same pattern for the Late Prehistoric (Surovell et al. 2009). The conditions leading to an intensification of conflict then have roots

in the Late Prehistoric period. The cumulative effect of this violence, coupled with an introduction of new groups and technologies, only increased this warfare to include fortification use (as defined here) by the Protohistoric period.

CONCLUSIONS AND FUTURE RESEARCH

Warfare and violence by themselves are not something to be romanticized. They are destructive processes that ruin lives on multiple levels. However, we need to be aware of the shaping force these events would have in the lives of prehistoric peoples (Keeley 1996, 2001). If our goal as archaeologists is to reconstruct the lives of past peoples, then we must reconstruct all parts of their lives (Keeley 2001). In the archaeology dealing with nomadic groups, this can become virtually impossible. These groups' mortuary practices did not involve cemeteries or other interment methods that preserve bone, and they built few or no defensive sites (Bamforth, chapter 1, this volume).

The argument here is that the construction and use of a single fortification in the Wyoming region marks a shift toward more elaborate defensive architecture that also marks a shift in the frequency of warfare. I do not approximate these frequencies or argue the conditions leading to an increase of warfare. However, I do suggest the construction of the fortification is a late phenomenon associated within a period of demographic and technological transformation (Sutton 2004). This idea is suggested in the ethnographic literature from all hunter-gatherers wherein groups defined as complex hunter-gatherer groups are more likely to go to war than small egalitarian groups (Keeley 1996: 38; Fry 2006:100-113; 2007). This social shift is also reinforced in the construction of a fortification, which would require coordination and planning on a large-group level. Certainly the suggested numbers for defenders on the Redoubt signal a larger group.

Currently the pattern of warfare in the Wyoming region does not seem endemic or even persistent. The archaeological record simply does not reinforce a trend consistent with this view. If warfare were a constant, why is the Redoubt the first-described large-scale fortification? There should be more fortifications in a period of warfare. I do not think we can say more than that *violence* levels rose in the Late Prehistoric and possibly escalated to war very late in the prehistory of the region. I do not want the Late Prehistoric/Protohistoric transition to be viewed as an extension of the historic Indian wars. Warfare is not an inherent part of humanity; it is a choice. Considering the record of the region at length, it appears Native groups chose not to go to war for almost all of the prehistoric record.

Warfare studies in the Wyoming region are still in their infancy. Finer resolution of the dated sites could reaffirm that hunter-gatherers did in fact respond in ever-increasing ways to save lives and protect their land. The usage of fortifications could be checked with tribal boundaries to see if the two coincide. Bioarchaeological studies could separate violence from warfare if the intensity and scope of fortification use was better understood. Currently we do not know much. We know that the Redoubt is a Protohistoric fortification, that there are probably defensive sites throughout the region (a major undertaking is for someone to find just how many there are), and that there is violence in the skeletal record. Wherever warfare studies in the Wyoming region lead researchers, I hope they will not forget warfare is a hellish topic and affects lives in profound ways. Most important, the people who occupied these defensive sites and fortification (especially in the Protohistoric period) are related to groups still occupying the region today. We need to be aware of this when interpreting the evidence of war.