FAUNA AND IDENTITY:

RITUAL, FEAST AND DIET AT GOAT SPRING PUEBLO, NEW MEXICO

An Undergraduate Research Scholars Thesis

By

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ABSTRACT

Fauna and Identity: Ritual, Feast and Diet at Goat Spring Pueblo, New Mexico. (May 2014)

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Limited research has been conducted in the Rio Abajo region of New Mexico regarding the social dynamics of its people. In this project, I hope to further our archaeological understanding of this region using data from Goat Spring Pueblo (LA 285), a site consisting of approximately 250 rooms near Magdalena, New Mexico. This pueblo, located on a historic trail connecting Zuni and Rio Abajo villages, was occupied at least two times over the late Pueblo period (A.D. 1300 - 1680). This project examines the mammalian remains found within the architectural structures of Goat Spring Pueblo during the 2013 excavations. My goal is to help understand the identity, economy, and ritual practices of the inhabitants of the village, including response to Spanish occupation within the region. I will address questions regarding changes in diet and activity involving the use of faunal remains by identifying species and using faunal attribute and taphonomic analyses.

DEDICATION

I wish to dedicate my thesis to the memory of my best friend and former love of my life, Jimmy. The crazy times we spent together in Zimbabwe, Malaysia, Sri Lanka, and gallivanting Europe and the rest of the world will never be forgotten. His impression on my life has been a significant influence.

ACKOWNLEDGMENTS

This research project would not have been possible without the support and effort of all involved in the excavations at Goat Spring Pueblo. I wish to express my gratitude to my supervisor, Dr. Suzanne Eckert who has been profusely helpful and readily offers invaluable assistance, support and guidance. Special thanks to all my friends, especially Megan Greenfelder and Jessica Dangott for always listening to ideas and editing my never ending drafts. Not to forget to mention my friend, Jude Magaro, who is always there for me. I would also like to convey my gratitude to the Texas A&M Department of Anthropology for providing substantial funding and laboratory facilities.

CHAPTER I

INTRODUCTION

The understanding of social dynamics, such as ritual and daily behaviour, through archaeofuanal analysis is integral in addressing questions of identity. This project explores possible ritualistic behaviour relating to feasting and other aspects of Puebloan culture as reflected in the faunal remains found at Goat Spring Pueblo (LA 285, also known as Bear Mountain Pueblo). The basic goal of the project is to understand the utilization and exploitation of fauna by the residents of the site during the late Pueblo period (1300-1680 A.D.). In addition, I aim to provide a better understanding of the identity of the indigenous people who resided at Puebloan village sites in the Rio Abajo Region in New Mexico (Marshall and Walt 1984), as little is known about the Pueblo village of Goat Spring Pueblo, the region, or its residents from the late Pueblo period. Using analysis of the faunal remains from recent excavations in architectural contexts at Goat Spring Pueblo, this study will look at feasting and diet, ritual and other possible uses of animals and their bones.

Faunal remains found at Goat Spring Pueblo represent a wide range of vertebrate taxa—avian, artiodactyl, rodents and lagomorphs. I will be focusing on the presence bird remains from the site, if any, as birds were integral part of Pueblo ritual culture (Eckert and Clark 2009), in addition to discussion of other fauna. Birds and other fauna were and are utilized for a multitude of purposes in prehistoric and modern Pueblo cultures (Lang and Harris 1984). Historic Pueblo art (Brody and Baldinger 1997) depicts ceremonial dancers integrating animal parts into their attire (Fig. 1). Eckert and Clark (2009) discuss the depiction of several species of birds in the kiva murals from Pottery Mound and on the pottery from Hummingbird Pueblo, both prehistoric Ancestral Pueblo sites.

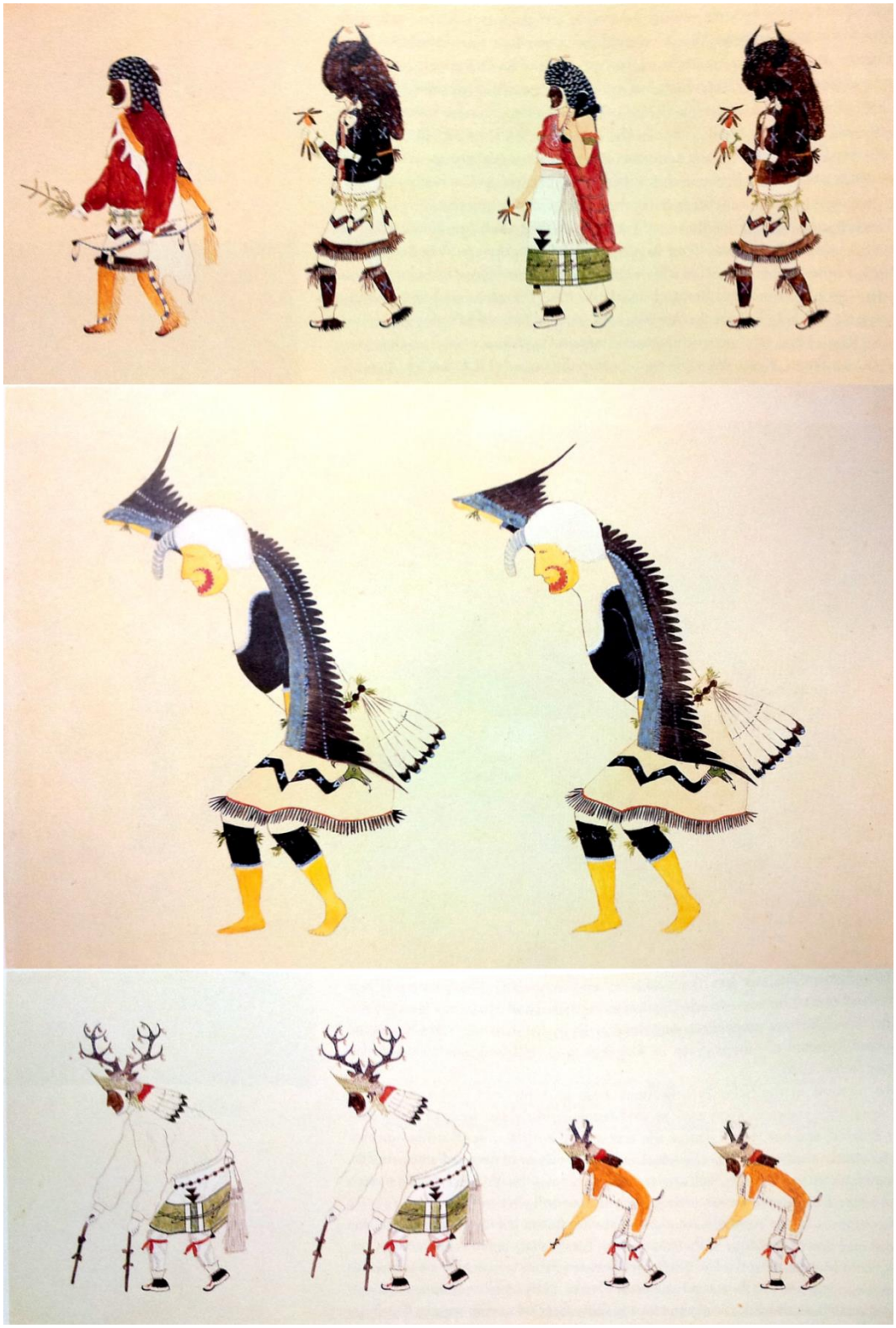

Figure 1: Buffalo Dance (top), Eagle Dancer (middle), and Deer and Antelope Dancer (bottom)(Brody and Baldinger 1997).

Mammals: Diet, Feasting and Ritual

Interpreting use of fauna in the past is based on the manner in which remains are discovered (Emslie 1981). The context potentially changes the interpretation based on whether the remains were in trash middens, architecture, or purposeful ritual deposits, such as ceremonial trash (Walker 1995).

Feasting has been the focus of many archaeological studies in the American Southwest (Hill 2000; Hill 1996; Potter 1997; Spielmann 2002). Feasting events occurred frequently, and varied based on the cause of celebration. This ritualistic behaviour was practiced at weddings, kiva parties for spinning or weaving, initiation ceremonies, and ritual dances. The purpose of frequent feasting has been explored in several studies. Ford (1972) suggested that feasting functioned as a system of food reallocation in times of shortages. Hayden (1995) argued that feasting was a method to accrue debt and gain esteem in the community. Feasting has also been suggested as a mechanism of exchange and reciprocity (Parsons 1939). In any case, it is clear that communal feasting events of the Southwest were events meant to bring about social unity (Potter 2000). The recognition of ceremonial feasting is based on large scale consumption within small societies (Spielmann 2002), which can be detected through the use of zooarchaeological methods in conjunction with paleodemographic analyses.

Feasting is common throughout historic and modern Pueblo tribes of the American Southwest. Potter (2000) discusses the feast surrounding week-long Hopi weddings, which are extensive, and the combined responsibility of both the bride's and groom's families. The groom's family is responsible for supplying meat involved in the feasts. Potter also mentions that at Zuni, feasts revolve around Shalako dances, which are related to newcomers joining the community. The feasts consist of a spread of mutton stew and bread for each new

resident. Other pueblo villages hold feasts in relation to ceremonial dances (Potter 2000). Food in all these occasions serves as a source of cohesion and unity of the community organised intensification of subsistence processes and creates a bond between different social strata (Spielmann 2002). Strangely though, social inequality has been suggested for being a force pushing for the organisation of large scale feasts in small societies, which would provide a pathway to gain esteem and power in the community (Hayden 1995). At Zuni, the hosts are chosen by the community and obligated to comply with this decision (Potter 2000). These individuals usually hold political and financial prowess in the society; it has been argued that this system serves to redistribute food sources (Ford 1972; Kroeber 1917). In regard to prehistoric Puebloan feasting, the lack of ethnographies and historic knowledge has led to a great deal of focus on archaeological methods of observing feasting (Potter 2000).

Addressing the content of feasts is important; specifically, for the purposes of this study, the animals involved. Modern pueblo recipes incorporate ingredients such as duck, prairie dog, deer and rabbit meat (Edaakie 1999). We know from ethnographic sources that rabbits are particularly found to be significant in relation to communal feasting ceremonies (Parsons 1939). Ritual laden rabbit hunts preceded communal feasting ceremonies, some of which lasted up to three days (Potter 1997). These hunts may be represented archaeologically by high numbers of lagomorph remains that are in context of Pueblo sites in the Southwest. Rabbit hunts are not found to be consistent from site to site and may vary based on the group being studied (Potter 2000). Regardless, this behaviour provided the periodic intensification of food procurement needed to supply feasting events (Spielmann 2002). The reason that lagomorphs, such as rabbits and hares, serve as “ideal ritual food” are that their availability is not hindered by to the seasonal limitations of an area, and lagomorph populations have a tendency to renew rapidly (Potter 2000).

Other small mammals that have been part of the Pueblo diet includ rodents, such as gophers and prairie dogs. Gophers are often solely considered to be n-transform disturbances in archaeological contexts, meaning that the presence of such rodent disruptive species alter the number of specimen that is found in the archaeological record. It is known from ethnographic accounts that rodents were a part of dietary consumption. Because of this, it is important to differentiate between the gopher disturbances and human exploitation to form a clear reconstruction of prehistoric dietary plans (Shaffer 1992).

The use of artiodactyls -- such as deer, pronghorn, bison and sheep -- varied from Pueblo village to village. Consumption of artiodactyls in feasting is questioned by researchers even though deer has been identified as having ritual significance (Potter 1997). At Grasshopper Pueblo, it has been suggested that deer meat was a major source of calories in the overall diet but not necessarily the main protein at feasting events (Ezzo 1992). Zuni Shalako dance rituals were preceded by deer hunts, similar to rabbit hunts: however, whether the deer were used in feasting ceremonies is not known. The use of deer by Dolores Anasazi appears to be seasonal (Potter 1997). So, although deer were eaten and are an important part of Pueblo ritual and diet, they may not have been incorporated as part of actual feasting events.

Other Pueblo uses of mammalian fauna included tool making. Antlers were used as tools in flint knapping (Whittaker and Kaldahl 2001). Awls were commonly made from the long bones of deer and ungulates, specifically leg bones such as the metapodials. Ethnographic data refers to awls used for piercing leather and other thick materials, and for basket making (Mathews 1995). Animal hides were widely used in items such as clothing, specifically robes and moccasins (Hough 1918). At Arroyo Hondo Pueblo, animal hides were found to have

been used as wrappings for burials; bone pendants and fur textiles were also recovered from this site (Lang and Harris 1984).

Birds: Food and Ritual

Pueblo culture also incorporated birds in many aspects of ritual behaviour. Birds were often times hunted and kept for their feathers (Hill 2000). Bird feathers were and are incorporated in a variety of ritual material in both prehistoric and modern Pueblo groups, including prayer sticks, blankets, clothing (especially garb associated with dances), hair ornaments, fetishes, and altars (Cushing 1981; Eckert and Clark 2009; Judd and Allen 1954; Parsons 1939). Bird bones were also used for a number of purposes, including jewellery (Parks-Barrett 2001), flutes, and whistles (Payne 1991). One ethnographic mention of one of the many ways colourful plumage was utilized comes from the writings of Frank Hamilton Cushing. He mentions a painted stick with plumage suspended from the roof, signifying the guarding of the resident (Cushing 1981). Ortiz (1972) discussed the use of prayer feathers in several ceremonial situations amongst the Tewa as well.

Turkeys (*Meleagris gallpavo*) were an important part of both ethnographic and prehistoric Pueblo culture. Turkeys were already domesticated by the Pueblo peoples when the Spanish arrived (Eckert and Clark 2009; Hough 1918; Lange 1950) and may have been domesticated as early as the Pueblo I period (700-900 A.D.) (Schorger 1961).Turkey skeletons have been recovered from a number of Ancestral Pueblo sites and are known to be part of the early Pueblo diet (Emslie 1981). Along with being a source of meat, turkeys were also important for their feathers (Lange 1950).

Birds other than turkeys were a fundamental component of Pueblo rituals (Eckert and Clark 2009), but if they were consumed in the everyday diet is unknown. Eckert and Clark mention that, historically, the Tewa hunted grouse, quail, and dove for food but, overall, little is known about the dietary involvement of other birds.

Hill (2000) suggests that sacrificing birds may have held a significant role in ritual activities. Moreover, Hill notes a pattern in the avian assemblages that appear in the archaeological record in the Southwest: quite often the skulls of these birds are removed. The different parts of these creatures may hold varying levels of ritual importance. At Pueblo Alto in Chaco Canyon, researchers discovered a cache of bird wings and phalanges, including remains of gold eagles, red-tailed hawk, mountain bluebird, and raven (Akins 1987). There is a consensus that eagles and hawks were not consumed as food (Akins 1987; Judd and Allen 1954), but rather they were collected for their feathers. Possibly purposefully removed wings were found at another site in Chaco Canyon that are attributed to a quail (Gillespie 1991). James (1994) reports the finding of golden eagle and raven wings at a Hohokam Classic site in central Arizona. McKusick identified the remains of sparrow hawks, blue-feathered birds, and black-feathered birds in the area surrounding the great kiva at Grasshopper Pueblo (Hill 2000; McKusick 1982; Olsen, et al. 1990).

These are just a few examples of the abundance of research focused on birds, but there is a great deal of avifauna that has not been analysed to its full potential and discussed in the literature. Much of the time in the literature, there is mention of avian remains discovered, but there is not an interpretation of or detailed analysis of the bones. How the remains are interred or deposited is essential to understanding their social implications (Hill 2000). For example, the location of the bones may contribute to understanding spatial function if the

remains are recovered from an architectural structure (Clark 1998). In this project, I attempt to do exactly this – interpret bird remains not simply by the presence or absence of specific species, but also through the context in which they were recovered.

The Site: Goat Spring Pueblo

Goat Spring Pueblo is a site consisting of 250 rooms, dating to the Late Pueblo period (1300-1680 A.D.) in the Rio Abajo region, New Mexico. The pueblo consists of three roomblocks (North, South and West) and a centralized kiva. The site is considered to be an Ancestral Piro Indian site (Marshall and Walt 1984). Little is known about Ancestral Piro Pueblos dating to Late Pueblo period. During the Pueblo Revolt of AD 1680, many Piro left their villages and retreated with the Spanish colonists, however some may have remained. It is not clear if late period occupants of Goat Spring Pueblo had contact with the Spanish or whether they represent resistance to Spanish colonization. This is one of questions relating to identity that this study attempts to decipher.

The site was first recorded by Mera in the 1930's (Mera 1940). The site was initially excavated by UCLA students in the 1960s, including two room units and 6 extramural units (Eckert and Huntley 2012). The site revisited by Marshall and Walt in the 1980's (Marshall and Walt 1984). More recent excavations were carried out as a joint project by Texas A&M University and Archaeology Southwest in 2011 and 2013. The excavations of 2011 focused on trash midden deposits and the excavations of 2013 focused on architectural components. The project has excavated 11 midden deposits units (as shown in Figure 2) and 9 architectural units located (8 in roomblocks and 1 in a kiva).The West roomblock has yet to be excavated. It is believed that there were multiple occupations at the site during the late Pueblo period.

The North roomblock was probably a later occupation compared to the South roomblock, based on the architectural style and ceramics evidence (Eckert 2013).

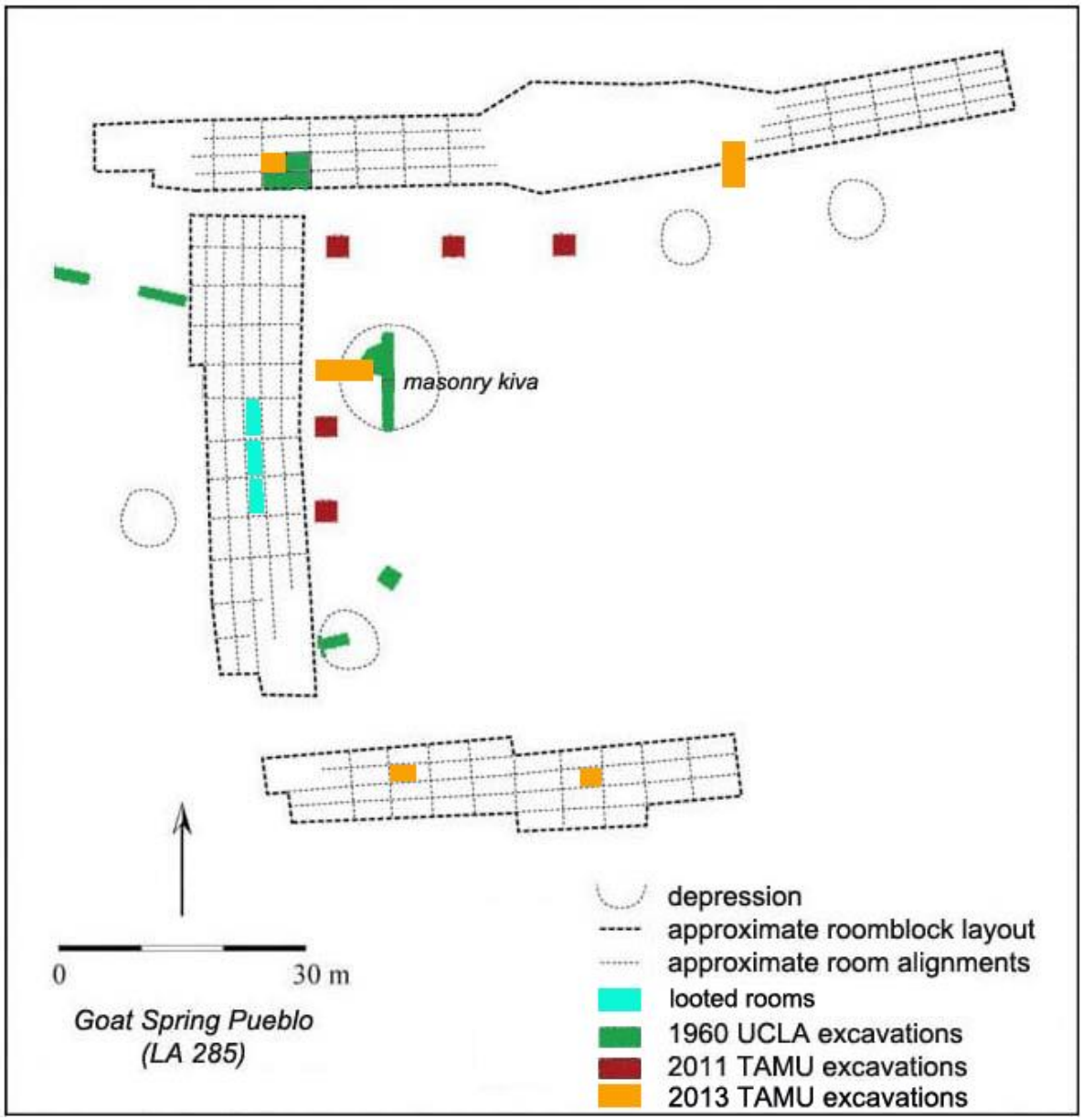

Figure 2: Goat Springs Pueblo

Faunal remains found at the site during the 2011 and 2013 excavations were recovered from both trash middens and architectural deposits. Trash midden contents can be significant in understanding past diet, while architectural deposits may be associated with specific ritual or residential activities. The remainder of this thesis focuses on the faunal remains from these

two contexts in an attempt to reconstruct diet as well as more specialized activities associated with ritual and feasting.

CHAPTER II

METHODS AND MATERIALS

Due to time constraints, this project focused on the faunal collection recovered from Goat Spring Pueblo during the 2013 field season. These excavations consisted of three different behavioural contexts— kiva (subterranean ceremonial room), roomblock, and trash middens. There were four roomblock units, nine midden units and one kiva unit excavated.

Excavation Strategy and Field Recovery

The Goat Spring Pueblo Archaeology Project (GSAP) is a collaboration between Archaeology Southwest (a preservation archaeology non-profit) and Texas A&M University. The project is specifically designed around preservation archaeology ethic. As archaeological excavation is destructive in nature, the excavation units were limited in number and size to maintain the integrity of the site, and to preserve it for possible future excavations. In addition, the project raised awareness regarding the preservation of historical sites and promoted the use of ethically responsible methods of research and excavation (Eckert and Huntley 2012) through an open house event, site tours and talking to the local community members about the goal of the project. The practice of preservation archaeology limited the faunal assemblage that was recovered from the deposited assemblage at the site. Furthermore, it is important to understand the effects of excavation strategies and decision on the faunal assemblage. Faunal assemblage is only a portion of the fauna that may have been utilized by the occupants of the site. Lyman (1994) explains that archaeological studies are limited to interpreting the fauna that is recovered from the excavation process. The faunal assemblage is only a portion of animals that may have been exploited as part of human behaviour at a site. Many components of fauna that are utilized, such as hides and other

perishable materials, rarely survive in the archaeological record (Lang and Harris 1984). Also, it is important to differentiate between the fauna in the assemblage that may have been exploited and that which was unexploited (O'Connor 2008). The exploited fauna are animals that were deposited as a result of human behaviour and unexploited fauna are animals that were as a result of their presence in the environment and not due to human utilization (Reitz and Wing 1999). Scavengers are often attracted to human trash deposits, can become trapped, die and are deposited alongside the exploited fauna. Further discussion of the degree of intrusive fauna is discussed in the interpretation of the results.

The excavation strategy, detailed by Eckert and Huntley (2012), of Goat Spring Pueblo aimed to test for an array of residential features, ritual features and trash middens. Previous test excavations, mapping projects, and geophysical results were used to guide excavation strategy. The excavation used a variant of the locus-unit-level systems. This information was referenced in a master plan of the site. The system allowed labels assigned to the excavated volumes and artefacts in a manner that is most meaningful. The locus-unit-level system was determined to be most appropriate to analyse surface visibility of artefact concentrations, room outlines, and other features.

The excavations were carried out using a variety of tools, including paint brushes, sweeping brushes, dental tools, trowels, hand picks, railroad picks and shovels. Most excavations were carried out using trowels. The initial levels were brought to a flat plane below the designated datum, determined by the excavation crew and Project Director, and excavated by using 10 cm arbitrary levels. There were exceptions to this such as roomblock floors and features which are detailed in field notes. All excavated material was placed in a five gallon bucket and then screened. During excavation, we used a combination of $^{1}/_{4}$ inch (0.635 cm) and $^{1}/_{8}$

inch (0.3175 cm) screens. Every bucket was screened, however only every tenth bucket was screened using the ⅛ inch screen. The remainder of the excavated material was screened using ¼ inch screen, unless instructed otherwise by the Project Director. The decision to screen 90 percent of the excavated material using ¼ inch screens has an effect on fauna recovered from site. The use of a larger screen size is known to result in recovery of vertebrates such as mammals and birds, and reduces the representation of fish, reptile, and amphibian skeletal material in the faunal assemblage (Reitz and Wing 1999). The fauna was bagged, and provenience information indicated on the outside of the bag and on a card in the bag. At the end of the day, bags were assigned a Field Number (FN), specific to each unit, locus, level, and artefact category.

Laboratory and Zooarchaeological Methods

The main focus of my study is to identify taxon of the remains from Goat Spring Pueblo, and to analyse for evidence of butchering, gnawing, burning and other modification. All of this was coded and entered into a data spreadsheet. The coding system can be found in the appendix. The complete data set is available from the author. Identifications were made using a combination of skeletal identification manuals and osteology literature (France 2008; Gilbert 1973; Gilbert, et al. 1981; Olsen 1964) and comparative collections. The comparative collections used for this study were the Biodiversity Research and Teaching Collection and Faunal Collection of the Department of Anthropology, both at Texas A&M University. First, the comparative samples were checked. If there was no comparative specimen, then I referred manuals to make taxonomic identification. The identification included taxonomic classification, element represented, portion represented (proximal, distal, midshaft), and side of the body (left, right, axial). It is important to be as specific as possible to allow for the (a) calculation of Minimum Number of Individuals (MNI), if possible, and Number of Identified

Specimen, (b) to aid in observing patterns and skeletal frequencies in the assemblage, and (c) precise identification and recording of these components is helpful for future investigators interested in the Goat Spring Pueblo archaeofuana.

The identification process began with the removal of bones from a unit/level bag. Each bone or bone fragment, bones believed to belong to same specimen, or refit bones (regardless if broken before or after excavation) were assigned a unique Identified Field Specimen Number (IFS). Identification, provenience and other zooarchaeological data were recorded on a IFS card and place in a separate bag. Once all the bones from a particular level bag were assigned a Field Specimen Number, they were re-bagged into a level bag by FN and marked with provenience information.

Identification of taxon was made as specific as possible. I preferred to identify genus and species, however, due to the fragmentary nature of the Goat Spring Pueblo faunal assemblage that was not always possible. In some cases, specimens were identified by class and size (i.e. "Large Mammal"). Using this, I calculated the Number of Identified Specimen.

The specimens were also analysed and scored and/or note for burning (Stiner, et al. 1995), gnawing, modification, and pathology using standard zooarchaeological methods (Lyman 1994). The purpose of this coding system is to recognise the cultural utilization of fauna at the site such cooking, tool use and ritualistic practise. Age and sex of specimen were also determined, if possible based upon published literature (Gilbert 1973). This allows zooarchaeological studies to shed light on whether there is discrimination in use of adult versus juvenile individuals or male and female, understand the implication of the cultural behaviour, and why this choice might of being humans in the past.

CHAPTER III

RESULTS

The results are presented by unit to aid in understanding temporal and spatial patterning at Goat Spring Pueblo (Table 1). There were probably multiple occupations at Goat Spring Pueblo, and different architectural structures may not be contemporaneous (Eckert 2013). MNI was not calculated for fauna whose identification could not be made past taxonomic class.

Unit	***Species***	***MNI***	***NISP***
DP01			
	Artyodactyla	*2*	*18*
	Lagamorpha	*3*	*9*
	Rodentia	*3*	*23*
	Small Mammal	*n/a*	*6*
	Small-Medium Mammal	*n/a*	*5*
EX02			
	Small-Medium Mammal	*n/a*	*2*
NR01			
	Rodentia	*2*	*15*
	Small Mammal	*n/a*	*8*
	Small-Medium Mammal	*n/a*	*63*
SR01			
	Lagamorpha	*2*	*14*
	Rodentia	*1*	*4*
Total			*167*

Table 1. Number of Identified Species by Unit excavated in 2013

North Roomblock 1 (NR01)

This excavation unit represents half of a room in the north roomblock; recovered artifacts and architectural features suggest it was a residential room within one of the latest roomblocks at the site, although a specific date range has yet to be determined. The area had been previously excavated, but not backfilled, by UCLA excavations done in the 1960's. There were no faunal remains recovered from this unit in the 2013 excavation. We do not have a clear understanding of what was recovered in the 1960's excavations. It is possible that faunal remains were recovered, but it cannot be said for sure, as historically faunal material was thought to be useless in understanding past cultures and people, and was very often not recorded and/or thrown out (Lyman 1994). The lack of faunal remains could be a result of previous archaeological disturbance, or a reflection of the fact that rooms at Goat Spring Pueblo appear to have been cleaned out by their original occupants suggesting an orderly abandonment.

North Roomblock 2 (NR02)

This excavation unit also represents half of a room in the north roomblock; recovered artifacts and architectural features suggest it was also a late residential room, probably post dating AD 1450 based on ceramic types recovered. This unit was situated in the centre of a room and had two features within it: a hearth and a subfloor fire pit (*Figure 3*). There were no fauna found in relation to the hearth. Some rodent and other small mammal bones were recovered from the overlying fill of the unit. These were a result of animal disturbance.

The subfloor fire pit was filled with a combination of charcoal and Small-Medium Sized Mammal bones. Although there was a high density of bones in this feature, due to the damage as a result of burning, identification of the animal could only be made at the class

level. The bones found however are the size of a larger mustelid, such as a badger. The burning on these bones is inconsistent, suggesting variation in the temperature of the fire in which they were burned. Notably, this feature was located at the centre of the room, but beneath a prepared floor surface. The pit was built prior to the floor, not through the floor, suggesting it was placed at the center of the room prior to the room construction being finished. It is not possible to speculate further as to the specific activities associated with the bones due to their burnt condition. This pit may have been part of an pre-construction feasting or ritual, where the pit of made and remnants of the feast were throw into the fire such as the pottery, lithics, corn and animal bones found in the charcoal filled pit. This interpretation is discussed further in the next chapter.

Figure 3. Subfloor Fire pit

South Roomblock 1 (SR01) and South Roomblock 2 (SR02)

These excavations unit represent portions of two rooms excavated in the south roomblock; recovered artifacts and architectural features suggest this roomblock was the earliest occupation at the site, probably pre-dating AD 1450 based on ceramic types recovered. Very few faunal remains were found in SR01. The remains recovered consisted entirely of rodent and lagomorph bones, and are most likely due to post-abandonment faunal disturbance. The majority of the bones recovered in this unit were from an animal burrow in level 7. The second unit, SR02, had a single tubular bone bead and no other faunal remains.

The lack of material is the south roomblock may also reflect a cleaning out prior to abandonment. Alternatively, activities by later occupants of the site may have impacted the presence of material culture in this roomblock. For example, the south roomblock may have been stone-robbed for construction materials by later occupants to build later roomblocks; such stone robbing would have potentially disturbed faunal and other remains. The south roomblock is also nearest an active road and may have been impacted by pothunters.

Depression 1 (DP01)

This is was unit placed in the kiva, a subterranean ceremonial structure. Within this unit, there was a wider range of faunal remains when compared to other architectural features. Based on similar masonry styles, it is currently believed that this kiva dates to the same period as the south roomblock (pre-AD 1450). There were many long bone fragments from Artiodactyls and Small-Medium Mammals. Several of these show green breaks, suggesting that these fragment were a result of human use instead of depositional factors (Lyman 1994; Reitz and Wing 1999). The fragments are probably from artiodactyls such a deer which know to be hunted by Pueblo Indians (Potter 2004). There were also rodent bones found, which are

probably present due to post-abandonment rodent disturbance. Other finds, which are significant, included two artiodactyl scapulae on the kiva bench (*Figure 4*), and one vertebra and 2 other artiodactyl bone fragments on the kiva floor (*Figure 5)*. The scapulae were both of the same species of Artiodactyl, but are from two individuals of differing age and size. One of the scapulae has a cut mark on the dorsal aspect on the scapula neck. This was the only evidence of cutting noted in the 2013 faunal assemblage. The vertebra found on the kiva floor is from an artiodactyl. There were other artiodactyl long bone fragments and carpals near the kiva bench. The ritual significance of these findings are discussed in the next chapter.

Figure 5. Kiva Bench

Figure 6. Kiva Floor

Extramural 2 (EX02)

This excavation unit was placed on the exterior south wall of the north roomblock to explore the relationship between the trash midden and the roomblock. The fauna recovered from this unit consisted of 2 elements from Small-Medium Mammals. These were probably present due to animal disturbance. It is interesting to note that normally a great deal of faunal remains are recovered from trash midden and reflect the diet of the occupants. The lack of faunal remains in this portion of the identified trash midden may suggest specialized deposits that need to be explored further through analysis of other artefact classes.

CHAPTER IV

DISCUSSION AND CONCLUSION

The faunal material recovered from the 2013 excavations was surprisingly limited and hence zooarchaeological interpretations ended up being limited. One of the factors affecting the amount of faunal material recovered from the excavations was the use of preservation archaeology methods. This limited the size of most of the units to ~1x2 m^2. If there were further horizontal excavations, we might have been able to recover a greater amount of fauna, which would allow for further interpretation. In addition, most of the remains recovered were deposited post-abandonment as a result of faunal disturbance at the site. The archaeologically irrelevant remains skew the NISP and MNI. By removing the bones suspected to be from disturbance, I was left with a limited amount of fauna for analysis and interpretation that were found in context of the architectural structures.

Nonetheless, two ritual uses of fauna were observed. The first was the placement of artiodactyl scapulae on the kiva bench. There are additional artiodactyl bones on the floor of the Goat Spring Pueblo kiva. Formal abandonment of kivas with associated closing rituals is known to occur in Pueblo IV sites, including purposeful burning of the structures. The type and placement of the faunal remains recovered from the Goat Spring Pueblo kiva are consistent with the distribution of bone in other Pueblo IV kivas, however the Goat Spring kiva was not burnt like many others. For example, at Homol'ovi Pueblo in north-central Arizona, there are kivas that are considered to have been purposefully abandoned by burning (Walker, et al. 2000). Walker and peers (2000) say that the burning ritual of the kiva arrives after the introduction of the Katsina ritual to the area, post-1330 A.D. In addition to the burning, ritually deposited disarticulated and articulated human skeletal material was found in the abandoned kiva (Walker, et al. 2000). There is a earlier kiva (post 1330 A.D) at

Homol'ovi that doesn't show evidence of burning, which is suggested to have been in the process of repair when it was abandoned (Walker 1996).

The kiva at Goat Spring Pueblo was neither burnt nor had associated human remains. This leads me to speculate that the Katsina cult had not been practiced at the village at the time of this kiva's abandonment. The fact that the kiva is associated with the earlier roomblock might suggest that the kiva was abandoned before the use of Katsina ritual at the pueblo, as the abandonment of the kiva is more informal, like the earlier kiva a Homol'ovi. The Goat Spring kiva, however, does contain disarticulated artiodactyls. The scapulae found on the kiva bench appear to have been purposefully placed there, and may have ritualistic or sacred meaning. This might also be true for the artiodactyl bones found lined up on the floor of the kiva. Though it is known that artiodactyls such as deer played a significant role in the culture of the Pueblo Indians of the Southwest (Ezzo 1992; Potter 1997), both in diet and ritual, I found no other such example in my review of the archaeological literature in the Southwest.

The second ritual use of fauna found in this study is the subfloor charcoal pit. This is an unprepared pit filled with charcoal, corn, pottery sherds, lithics and burned bone. The fact that this pit was plastered over with a floor suggests that this was not made for repeated use. Rather, this pit was a probably associated with a single event, possibly a feast, at the end of which remnants of it were deposited into the pit, covered and built over. The event may be associated with a pre-construction ceremony.

A similar subfloor pit is found at another Ancestral Piro pueblo, containing lithic, ceramic, corn and mammalian remains (Marshall and Elyea 1987). Marshall and Eylea (1987) suggest this to be a roasting pit that would have been used repeatedly. I disagree with this

interpretation as applied to the Goat Spring Pueblo feature. I believe that the subfloor pit was used to deposit the remains from a single feasting event. The pit from Goat Spring Pueblo, did not show evidence multiple burning events and was not lined. Also, the level of burning on the bones recovered was not extensive.

Conclusion

The 2013 faunal collection from Goat Springs Pueblo is limited in size, and the majority of the faunal elements recovered were introduced due to rodent and lagomorph disturbance, in addition to deposition of sediment by wind and water. As such, some of the research questions outlined at the beginning of this research can not be addressed. Specifically, there is very little fauna data to provide information on the daily diet through time of residents at the site. As to addressing the question of whether the site had encountered any Spanish influence, based on the current archaeofaunal analysis, there is no evidence of Spanish contact at the site.

Despite the rather small sample size, detailed analysis done on the 2013 faunal assemblage allows me to interpret that some ritualistic behaviour can be observed using the archaeological record at Goat Spring Pueblo. The subfloor fire pit found in the Northern Roomblock is interpreted as a one-time ritual event, possibly a feasting event related to construction of the building. Also, the intentional placement of faunal remains during the abandonment of the kiva may represent ceremonial and ritualistic behaviour. I would suggest that kiva abandonment might be a precursor to the use of Katsina ritual due to the lack of burning and humans remains.

The use of preservation archaeology methods may have had an effect on the sample size of the faunal assemblage and the ability to interpret further information concerning diet and ritual practice. To better understand the identity of the occupants of the site, as well as diet, it will be important to analyse the material recovered from the 2011 text excavations in the trash middens as well as from any future excavations.

REFERENCES

Akins, N. J.

1987 Faunal remains from Pueblo Alto. Investigations at the Pueblo Alto Complex, Chaco Canyon 3(Part 2):445-650

Brody, Jerry J and Jo Ann Baldinger

1997 Pueblo Indian Painting: Tradition and Modernism in New Mexico, 1900-1930. School of American Research Press

Clark, Tiffany C.

1998 Assessing Room Function Using Unmodified Faunal Bone: A Case Study from East-Central Arizona. Kiva 64(1):27-51

Cushing, Frank H

1981 Zuni: Selected Writings of Frank Hamilton Cushing 779. U of Nebraska Press

Eckert, Suzanne L.

2013 Personal communication regarding Goat Springs Pueblo, edited by M. A. A. Mendha

Eckert, Suzanne L. and Tiffany Clark

2009 The ritual importance of birds in 14th-century central New Mexico. Journal of Ethnobiology 29(1):8-27

Eckert, Suzanne L. and Deborah Huntley

2012 Title. Proposal submitted to the National Science Foundation. Unpublished Manuscript in the possession of the authors.

Edaakie, Rita

1999 Idonapshe Let's Eat: Traditional Zuni Foods: Stories and Recipes. Zuni A: shiwi Publisher

Emslie, Steven D

1981 Birds and prehistoric agriculture: the New Mexican pueblos. Human Ecology 9(3):305-329

Ezzo, Joseph A.

1992 Dietary change and variability at Grasshopper Pueblo, Arizona. Journal of Anthropological Archaeology 11(3):219-289

Ford, Richard I.

1972 An ecological perspective on the Eastern Pueblos. New perspectives on the Pueblos:1-17

France, Diane L

2008 Human and nonhuman bone identification: a color atlas. CRC Press

Gilbert, B Miles

1973 Mammalian Osteo-archaeology: North America. Missouri Archaeological Society, Columbia

Gilbert, B Miles, Larry D Martin and Howard G Savage

1981 Avian osteology. BM Gilbert

Gillespie, William

1991 Faunal Remains from 29SJ 633. In In Excavations at 29SJ 633: The Eleventh Hour Site, Chaco Canyon, New Mexico, edited by F. J. Mathien, pp. 246-315. U.S. Department of the Interior, National Park Service, Santa Fe

Hayden, Brian

1995 Pathways to power. In Foundations of social inequality, pp. 15-86. Springer

Hill, Erica

2000 The contextual analysis of animal interments and ritual practice in southwestern North America. The Kiva:361-398

Hill, J. D.

1996 The identification of ritual deposits of animals: A general perspective from a specific study of ‘special animal deposits’ from the southern English Iron Age. Ritual Treatment of Human and Animal Remains, Oxbow Books, Oxford:17-32

Hough, Walter

1918 Hopi Indian Collection in the United Sta. Kessinger Publishing, LLC

James, Steven R

1994 Hohokam hunting and fishing patterns at Pueblo Grande: Results of the archaeofaunal analysis. The Pueblo Grande Project 5:249-318

Judd, Neil Merton and Glover Morrill Allen

1954 The material culture of Pueblo Bonito 4172. J & L Reprint Co.

Kroeber, AL

1917 Zuni Kin and Clan. Anthrop. Papers. Amer. Mus. Nat. Hist 18

Lang, Richard W and Arthur H Harris

1984 The Faunal Remains from Arroyo Hondo Pueblo, New Mexico: A Study in Short-term Subsistence Change. School of American Research Press

Lange, Charles H.

1950 Notes on the use of turkeys by Pueblo Indians. El Palacio 57(7):204-209

Lyman, R Lee

1994 Vertebrate taphonomy. Cambridge University Press

Marshall, Michel P and Janette Elyea

1987 *Archeological Investigations in a 16th-early 17th Century Piro Pueblo in the Village of San Antonio, New Mexico*. Office of Contract Archeology, University of New Mexico

Marshall, Michael P and Henry J Walt

1984 Rio Abajo: prehistory and history of a Rio Grande province. Museum of New Mexico Press

Mathews, Janet; Morlock, Leslie

1995 Making Puebloan Bone Awls. Bulletin of Primitive Technology 44(10):18-19

McKusick, Charmion R.

1982 Avifauna from Grasshopper Pueblo. Multidisciplinary Research at Grasshopper Pueblo, Arizona, edited by William A.Longacre, Sally J.Holbrook, and Michael W.Graves:87-96

Mera, Harry Percival

1940 Population changes in the Rio Grande glaze-paint area. University of New Mexico

O'Connor, Terry

2008 The archaeology of animal bones. Texas A&M University Press

Olsen, John W, John D Speth and John W Olsen

1990 Vertebrate faunal remains from grasshopper Pueblo, Arizona. Museum of Anthropology, University of Michigan

Olsen, Stanley John

1964 Mammal remains from archaeological sites 56. 1 vols. Peabody Museum

Ortiz, Alfonso

1972 The Tewa world: Space, time, being, and becoming in a Pueblo society. Chicago: University of Chicago Press

Parks-Barrett, Maria Shannon

2001 Prehistoric Jewelry of the NAN Ranch Ruin (LAISO49), Grant County, New Mexico, Texas A&M University

Parsons, Elsie Worthington Clews

1939 Pueblo indian religion 1. U of Nebraska Press

Payne, Richard W

1991 Bone Flutes of the Anasazi. The Kiva:165-177.

Potter, James M

2000 Pots, parties, and politics: Communal feasting in the American Southwest. American Antiquity 65(3):471-492

Potter, James M.

1997 Communal ritual and faunal remains: an example from the Dolores Anasazi. Journal of Field Archaeology 24(3):353-364

Potter, James M

2004 The creation of person, the creation of place: hunting landscapes in the American Southwest. *American Antiquity*:322-338

Reitz, Elizabeth Jean and Elizabeth S Wing

1999 Zooarchaeology. Cambridge University Press

Schorger, Arlie W

1961 An ancient Pueblo turkey. The Auk 78(2):138-144

Shaffer, Brian S

1992 Interpretation of gopher remains from southwestern archaeological assemblages. American Antiquity:683-691

Spielmann, Katherine A

2002 Feasting, Craft Specialization, and the Ritual Mode of Production in Small-Scale Societies. American Anthropologist 104(1):195-207

Stiner, Mary C, Steven L Kuhn, Stephen Weiner and Ofer Bar-Yosef

1995 Differential burning, recrystallization, and fragmentation of archaeological bone. *Journal of Archaeological Science* 22(2):223-237

Walker, William H.

1995 Ceremonial trash. Expanding archaeology:67-79

Walker, William H.

1996 Ritual deposits: another perspective. *River of Change: Prehistory of the Middle Little Colorado River Valley, Arizona, edited by E.Charles Adams*:75-91

Walker, William H, Vincent M LaMotta and E Charles Adams

2000 Katsinas and kiva abandonment at Homol'ovi: A deposit-oriented perspective on religion in Southwest prehistory. *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange Across the American Southwest and Beyond, University Press of Colorado, Boulder*:341-360

Whittaker, John C and Eric Kaldahl

2001 Where the waste went: a knapper's dump at Grasshopper Pueblo. Lithic Debitage: Context, Form, Meaning:32-60