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Large Mammal Subsistence at Archaeological Site 1BA21

by

Lindsay LaGrange

A SENIOR THESIS

Submitted to the Faculty of the
Department of Anthropology
In partial fulfillment of the
requirements for the Anthropology
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Approved:

Date:


Chair of Thesis Committee: Dr. Greg Waselkov

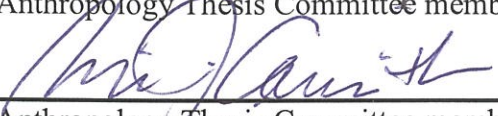
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Lindsay LaGrange

Undergraduate Senior Thesis

Introduction

For thousands of years American Indians lived and survived in the southeastern part of North America. They used traditional hunting technologies to capture and kill many different species of animals which furnished protein in their diet and raw material for manufacture of clothing and tools. These animals include hundreds of different species of fish, birds, reptiles, amphibians and mammals. While these diets were varied depending on geographic location and social affiliation, archaeologists have found patterns in the diets of the Southeastern Indians. They have found and continue to find that many American Indians in the Southeast were eating copious amounts of white-tailed deer and fish (where available) because of the large population size in these areas.

It is custom for the American Indians to make use of whatever nature made available for them to eat or make trading goods with. However, there is one species that seemed to have been largely bypassed by the American Indians despite its availability in all of these areas. The black bear, *Ursus americanus*, seems to have been avoided during hunting trips almost entirely in most areas of the Southeast. These remains are almost always scarce or missing entirely from faunal assemblages in archaeological sites (Hallowell 1926: 149.) One other possible explanation for the lack of bones in the archaeological record could be that they are simply not being preserved as well as the other mammal bones. This could be due to a different type of treatment of the bones resulting in them being discarded in a separate location from the other bones. This

pattern has given rise to many questions among the archaeologists who excavate the sites where these native people lived.

The archaeological sites on which my thesis focuses are located in the midwestern and southeastern U.S., including the states of Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Kentucky, Tennessee, Arkansas, Missouri, Illinois and Indiana. These sites encompass different climates and were the homes to many different cultural groups before the Europeans arrived. There was a vast range of cultural traditions practiced at these sites. However, they all have one thing in common. The faunal assemblages from nearly all of these sites contain copious amounts of white-tailed deer bones and an insignificant number of black bear bones. While few archaeologists have studied this strange pattern in depth, many have noticed it and throughout the years a number of possible hypotheses have arisen as to why this trend might occur.

As faunal remains have been analyzed from archaeological sites located all around the region, a trend has emerged concerning the quantity of large mammal bones excavated. For some reason, the remains of black bear, *Ursus americanus*, are not found as frequently as other large mammal species, especially the white-tailed deer (*Odocoileus virginianus*), at most archaeological sites. These sites are from many different time periods but all of them are tied together by the fact that they are all that is left of the American Indians who once occupied these lands. The archaeology being done at these sites is used to better understand the Natives who lived in the Southeast before, during, and after colonization of the 'new world.' As this colonization occurred, the cultural practices of the Natives changed dramatically, as is expected. There were new

technologies available to these people that made many of their ancient customs seem obsolete.

Arrival of Europeans

Upon arrival of the Europeans to North America, the American Indian's lives changed dramatically. The Europeans arrived in North America, took the lands from the Native people, and brought with them guns and many diseases that the Americans had no immunity to. According to Calvin Martin's book, Keepers of the Game, the American Indian's blamed much of their misfortune on nature. They saw this outbreak of diseases like smallpox and measles as nature unleashing its weaponry upon humankind. In the eyes of the Indians, nature was frustrated with humans because of the arrival of the Europeans and when nature seemingly stopped communicating with the Natives the way it had for so many years, they assumed that the Earth was incredibly upset with humans and was therefore declaring war upon their people. "It was a conspiracy of animals against man" (Martin 1978: 45). This caused a complete change in the attitudes of the Americans towards nature and, according to Martin they largely abandoned their previously conservative ways for an improved hunting technology that allowed them to hunt more while expending much less energy. Whether or not Martin's thesis is correct, there is no doubt that Indians attitude toward bears changed dramatically with the arrival of Europeans. The evidence is presented later in this thesis. As you move down the time periods in history, from the prehistoric to historic period, you will find that the number of bear remains present at southeastern sites increases. Presumably this is a reflection of the introduction of more advanced weaponry to the American Indians and also their new attitudes regarding nature and animals.

Explanations

When black bear remains are found at archaeological sites in the Southeast, they are usually discovered in almost insignificant numbers, with the exception of the Protohistoric and Historic periods. This trend has been found consistently throughout most of the northern hemisphere of the Earth (Hallowell 1947). While little research has been done on this strange pattern, there are a number of theories as to why this tendency might occur. The main focus of this thesis is to discuss the significantly small numbers of black bear remains found in prehistoric archaeological sites and offer some possible explanations of this pattern.

The first and most biological of these possible explanations for low numbers of bear remains in American Indian's refuse lies in the reproduction rates of the black bear. According to many population studies conducted by biologists (Hostetler et al. 2009 2460), *Ursus americanus* does not reproduce at the same fast rate as *Odocoileus virginianus*. The low reproductive rate of the black bear might lead to the smaller numbers of black bear being hunted. The American Indians were extremely environmentally conscious before European contact. They maintained a delicate relationship with the balance of nature and therefore would have tried not to exterminate the bear population in their area. This would keep the numbers of bear bones found in archaeological sites rather low compared to mammals with faster reproduction rates.

A second possible explanation for this trend would be the mere strength and agility that the black bear possesses. This species has proven to be incredibly strong and hunting the species is no easy feat.

The bear has stood for all that is dangerous and horrible for ages. No doubt, our ancestral experiences with the cave bears of Europe stamped the dread of these mighty beasts indelibly in our hearts. The American

Indians in times gone past killed them with their primitive weapons, but even they have not done it lately, so it can be considered a lost art (Pope 2006:132).

Bow and arrow hunting has nearly ceased to exist. While there is still a small minority of hunters practicing bow and arrow hunting today, it has certainly ceased to be the main form of hunting in the modern world. If there were a number of white-tailed deer available for hunting, it would make sense that the American Indians would choose to hunt them more frequently than the dangerous bear. However, it must have been done, even if only on occasion, because bear bones are found in small numbers throughout the archaeological record.

The third and final possible explanation that I will offer is the different uses of bear remains and the overall view of the bear in southeastern religious practices. Many creation myths of different American Indian tribes describe bears as having more spiritual power, or greater supernatural abilities than the Indian himself (Skinner 1911:73, 76). This caused the Natives to treat the bears with the utmost respect and possibly only killed them when absolutely necessary. Many Indians may have participated in a hunting taboo concerning bears to avoid bad luck. In some tribes, the belief was held that humans were once very similar to bears and they were an early ancestor to human kind. Reasons for this thought come from the paw bones of the American black bear, which have a striking resemblance to the bones of the human hand. The two are almost identical when compared side by side (see Figure 1). If for whatever reason the southeastern Indians believed bears to be different and more prestigious than the other animals in their respective climates, perhaps the bones were simply being treated and discarded differently than the other animals in the diets of the Natives. This might explain why they

are so seldom found alongside the thousands of fragments of deer, bird and fish bone in archaeological sites.

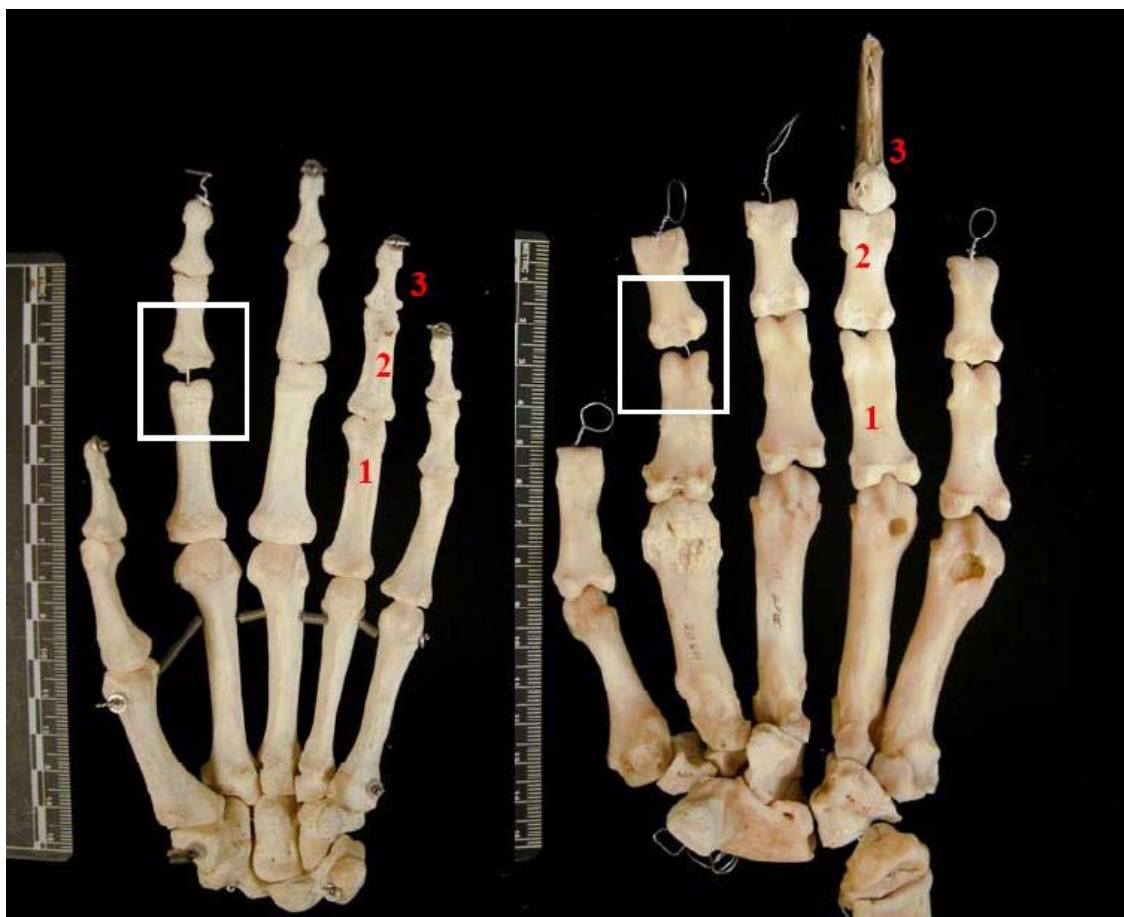


Figure 1. Human right hand (L) and black bear right fore paw (R) (M.E. Sims 2007).

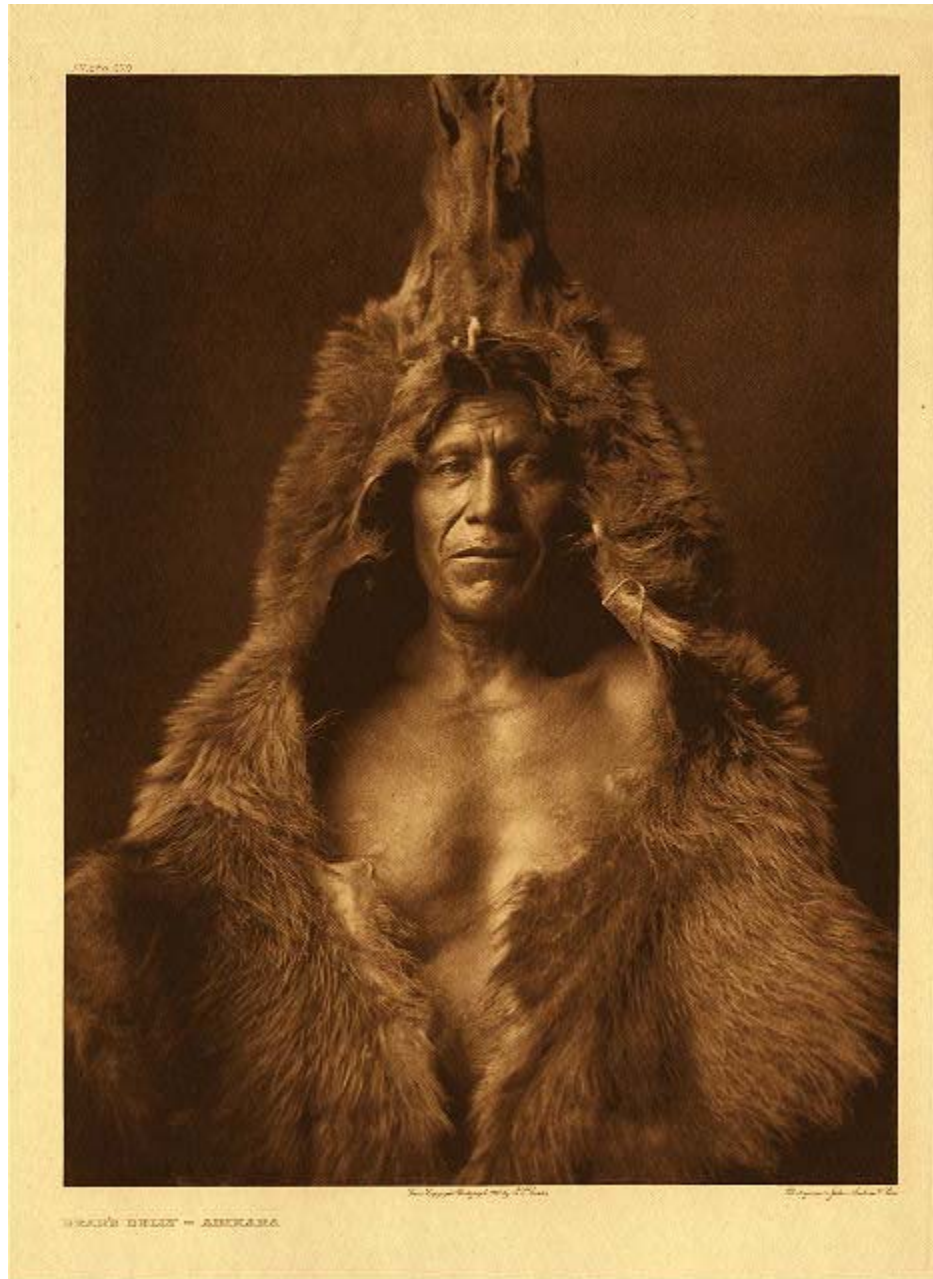


Figure 2. Edward S. Curtis (1908) photograph of ‘Bear’s Belly’ a Native Arikara man wrapped in his sacred bear skin

Bear Ceremonialism in the Northern Hemisphere

In the winter of 1926 Irving Hallowell published his dissertation as an article, “Bear Ceremonialism in the Northern Hemisphere.” in *American Anthropologist*. The article was the first of its kind. No one had yet touched on the subject of human and bear

relations, and even today the article stands as the principal reference on the subject. Hallowell took the evidence supporting the trend I have pointed out and found confirmation in other ethnographic societies across the entire northern hemisphere. He found that many southeastern culture groups practiced a number of rituals and taboos involving bears that had been hunted. These taboos include a list of practices such as women being forbidden to look at a dead bear and, upon bringing the hunted bear into a dwelling, it must be brought in through a sacred opening other than the main entrance (Hallowell 1926: 148). “We may advance the conclusion that no other animal was found to attain such universal prominence as the bear, nor to have associated with it, over such a wide geographical area, such a large series of customs” (Hallowell 1926: 149). Upon viewing this evidence, it is apparent that Hallowell’s work supports the claim that is made in this thesis and his article creates a great starting point for anyone wishing to research the topic of bear and human relations in the northern hemisphere.

Archaeological Evidence

The Bayou St. John site, or 1BA21, is a Late Woodland site located in Orange Beach, Alabama. It has been heavily excavated over the past few years by the University of South Alabama’s Center for Archaeological Studies and the faunal remains prove to be extremely relevant to the topic of large mammal subsistence in the southeastern United States. Kelly Orr’s analysis of animal bones from this site documented the presence of millions of fish bones present, indicating that fish were the Bayou St. John inhabitants’ main source of protein. My own analysis of large mammal remains documented 2,089 white-tailed deer bone fragments compared to only 46 black bear bone fragments, conforming to the pattern found in most other southeastern archaeological sites. While

Orr conducted her research using a number of contexts including features and layer samples from the site, I studied the large mammal bones from the entire site including all features, layers and Field Specimens (F.S.).

Methods

While analyzing the faunal remains from 1BA21, I first identified and pulled out the white-tailed deer bones from the remaining mammal bone with the help of Dr. Waselkov. I then identified all of the *Odocoileus virginianus* bones by element and took appropriate measurements. After all weight and measurements had been taken of the *Odocoileus virginianus* bone fragments, I proceeded to pick out the *Ursus americanus* bone from the other mammal species. After this task was completed and all *Ursus americanus* bones were also identified by element, weighed, and measured, I then calculated two metrics for each species.

The MNI, or minimum number of individuals, refers to the fewest possible number of animals from a particular species based on a certain skeletal assemblage. MNI estimates the number of animals represented by the faunal remains from that site. The process of calculating MNI can best be described with a simplified example. If there are 10 left deer femurs and 12 right deer femurs, the minimum number of individuals for that sample would be 12. Counts of other skeletal elements from animals of different ages and sizes can help refine the MNI estimate. However, fragmentation and means of determining appropriate samples or contexts often causes the count to be much more complex than this simple example and, except in rare cases, many bone fragments cannot be identified to species, which skews the actual MNI of a given sample.

The NISP, or Number of Identified Specimens, refers to the actual number of faunal remains in the site being analyzed. This is a basic count of the bone fragments however, the NISP of a particular species almost always gives a misleading indication of its importance, since a single bone will contribute multiple pieces to the count, and bigger or less dense bones will contribute more pieces than smaller or denser ones. While NISP is usually an overestimate of the actual number of individuals being represented, MNI is almost always an underestimate of the individuals represented. In the case of no fragmentation of the bones, these estimates should be proportionally the same.

For 1BA21 both of these estimates were calculated. In the example of the Bayou St. John site, the NISP for white-tailed deer recovered at the site is 2,089 and the NISP for black bear bones is 46. These numbers give an idea of the disparity between bear and other mammal bones seen at most archeological sites. Compared to the thousands of deer bones found, the minute number of bear bones that were excavated seems almost insignificant. This may be why little to no research has been done on the subject as of yet.

Marine Mammals at 1BA21

Along with the fish, deer, and bear bones were a number of unidentified marine mammals found during the 1BA21 excavation and analysis. These bone fragments were extremely porous making them lighter in weight and much less dense than the terrestrial and fish species found at the site. These marine mammals have not yet been identified to species, but are thought to belong to a number of unidentified porpoise or dolphin species. Their unidentified status is largely due to the lack of reference skeletons of marine mammals at the Center for Archaeological Studies. However, these bones are considered quite rare at most coastal sites and yet a considerable amount of them have

been recovered at the Bayou St. John site, including five interesting temporal fragments (ear bones). The bones have some similarities, but are obviously of different species (Figure 3).

The large numbers of marine mammal bones present in the faunal assemblage suggests that the mammals were being intentionally hunted and were not washing up onto shore naturally or being beached. While hunting of these creatures was apparently not a major cultural tradition among coastal American Indians, it was definitely practiced at Bayou St. John. The relationship between Indians and sea mammals is depicted in a number of images from the prehistoric time period. The image below depicts a number of different marine mammal species as drawn by south Florida Indians (Figure 4).



Figure 3. Temporal fragments (ear bones) of unidentified marine mammal species excavated at the Bayou St. John site.

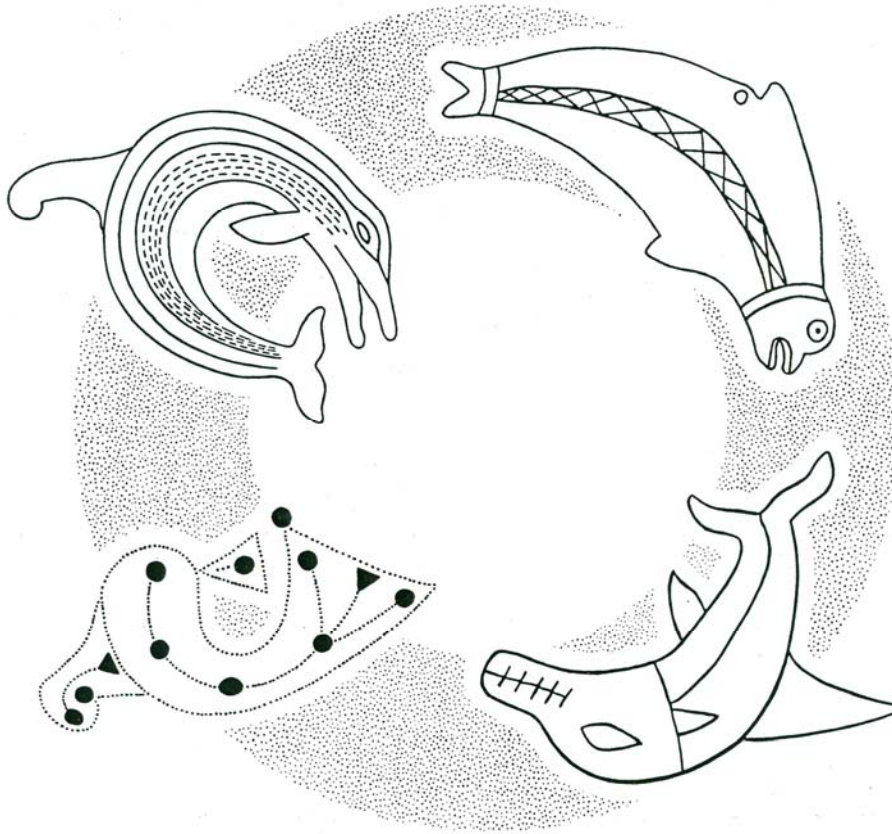


Figure 4. *Swimming Sea Mammals* is a contemporary composite of images originally created by Florida Indians during the Late Woodland (George Luer 1999).

Survey

Table 1 presents survey information I have compiled of the respective NISP and MNI for both *Odocoileus virginianus* and *Ursus americanus* from a number of southeastern archaeological sites. The sites are listed in order of time period beginning with the Archaic and ending with the Historic. Also listed in this survey table is the ‘Bear/Deer Ratio’ which accurately depicts the percentage associated with the ratio of bear NISP to the deer NISP. NISP is used instead of MNI because the latter is reported inconsistently in the archaeological literature. I want to use this compilation survey as evidence for the lack of black bear remains found in the southeastern United States but

also as a clear and organized way to articulate the data that I have collected from over 35 sites.

The inspiration for this survey came from H. Edwin Jackson's 2005 article, "Darkening the Sun in Their Flight: A Zooarchaeological Accounting of Passenger Pigeons in the Prehistoric Southeast," published in *Engaged Anthropology: Essays in Honor of Richard I. Ford*. Jackson used his survey to compare the NISP and MNI of passenger pigeons, which were the main focus of his article, to the omnipresent turkey. One aspect of Jackson's survey that I excluded from my survey is the biomass estimate. While this was an integral part of Jackson's research, it proved to be irrelevant to the point being made in this survey.

Table 1. Survey of Deer and Bear Remains from Southeastern Archaeological Sites

| Site Name | State | Time Period | Deer NISP | Bear NISP | Deer MNI | Bear MNI | Bear/Deer Ratio | Reference |
|------------------|-------|--------------------------------|-----------|-----------|----------|----------|-----------------|----------------------------------|
| Modoc | IL | Archaic | 2884 | 1 | - | - | 0.00% | Parmalee 1959 |
| Kolomoki | GA | Archaic | 1327 | 9 | - | - | .68% | Sears 1956 |
| Russell Cave | AL | Archaic | 529 | 46 | - | - | 8.69% | Weigel, Holman, & Paloumpis 1974 |
| Mitchell River | FL | Archaic | 178 | 1 | - | - | .56% | Mikell & Sanders 2007 |
| Dust Cave | AL | Late Paleo.- Middle Archaic | 145 | - | 6 | - | 0% | Walker 2000 |
| Watson Brake | LA | Middle Archaic | 306 | - | 4 | - | 0% | Jackson & Scott 2001 |
| Conly | LA | Middle Archaic | 246 | - | 16 | - | 0% | n.d. |
| Stanfield-Worley | AL | Woodland | 422 | - | - | - | 0% | Parmalee 1966b |
| Jungerman | FL | Woodland | - | - | 44 | 4 | 0% | Wing 1963 |
| Tchefuncte | LA | Early Woodland | 3567 | 15 | 15 | 3 | 0.42% | Lewis 1997 |
| 38JA61 | SC | Early Woodland | 208 | 1 | 5 | 1 | 0.48% | Reitz, Marrinan, & Scott 1987 |
| Fredericks | LA | Middle Woodland | 403 | 20 | - | - | 4.96% | Shaffer 2000 |

| | | | | | | | | |
|---------------------|----|----------------------|------|-----|-----|---|--------|---|
| Bear Mound | IA | Middle Woodland | - | 161 | - | - | 0% | Mallam 1976 |
| Hartford | GA | Middle Woodland | 2267 | 21 | 46 | 1 | .93% | Carder, Reitz, & Compton 2004 |
| Apple Creek | IL | Middle Woodland | 7 | - | - | - | 0% | Parmalee, Paloumpis, & Wilson 1972 |
| 1Pi61 | AL | Middle-Late Woodland | 776 | 1 | 19 | 1 | 0.13% | Woodrick 1981 |
| 1Gr1X1 | AL | Middle-Late Woodland | 688 | - | 11 | - | 0% | Woodrick 1981 |
| 1Gr2 | AL | Middle-Late Woodland | 514 | 1 | 7 | 1 | 0.19% | Woodrick 1981 |
| 1Pi33 | AL | Middle-Late Woodland | 232 | 4 | 6 | 1 | 1.72% | Woodrick 1981 |
| Paw Paw | AR | Late Woodland | 862 | 4 | 11 | 1 | 0.46% | Kelley 1992 |
| Dameron Rockshelter | KY | Late Woodland | 292 | 0 | 33 | 0 | 0% | Vento, Adorasio, & Donahue 1980 |
| Bowen | IN | Late Woodland | - | - | 382 | 6 | 0% | Dorwin 1971 |
| Carter Creek | IL | Late Woodland | 133 | - | 22 | - | 0% | Holt 2005 |
| Haag | IN | Late Woodland | 3303 | 29 | - | - | .87% | Reidhead 1981 |
| Bayou St. John | AL | Late Woodland | 2089 | 46 | - | - | 2.20% | (this study) |
| Wickliffe | KY | Mississippian | 6677 | 20 | 185 | 1 | 0.30% | Wesler 2001 |
| Etowah | GA | Mississippian | 4500 | 46 | - | - | 1.02% | Van Der Schalie & Parmalee 1959 |
| Chucalissa | TN | Mississippian | 3320 | 13 | 128 | 2 | 0.39% | Smith 1975 |
| Banks | TN | Mississippian | 3226 | 3 | - | - | 0.09% | Parmalee 1966a |
| Town Creek | NC | Mississippian | 2394 | - | 88 | - | 0% | Wilson and Hogue 1995 |
| Parkin | AR | Mississippian | 1424 | 1 | 32 | 1 | 0.07% | Keck 1997 |
| Croley-Evans | KY | Mississippian | 963 | 28 | 10 | 1 | 2.91% | Jefferies, Bretburg, Flood, Scarry 1996 |
| Fatherland | MS | Mississippian | 223 | 5 | - | - | 2.24% | Cleland 1965 |
| Callahan-Thompson | MO | Mississippian | 37 | 1 | 10 | 1 | 2.70% | Neuman 1985 |
| Nodena | AR | Late Mississippian | 214 | 5 | 5 | 1 | 2.33% | Cande 1973 |
| Crab Orchard | VA | Protohistoric | 1906 | 276 | - | - | 14.48% | Lapham 2005 |

| | | | | | | | | |
|-------------|----|---------------|------|-----|---|---|--------|----------------------|
| Hoge | VA | Protohistoric | 2114 | 161 | - | - | 7.62% | Lapham 2005 |
| Trigg | VA | Protohistoric | 3895 | 69 | - | - | 1.77% | Lapham 2005 |
| Fusihatchee | AL | Historic | 4125 | 213 | - | - | 5.16% | Pavao-Zuckerman 2007 |
| MLE18 | MS | Historic | 895 | 53 | - | - | 5.92% | Johnson et al., n.d. |
| Windrose | IL | Historic | 296 | 2 | 6 | 2 | .67% | Wagner 2001 |
| MLE14 | MS | Historic | 646 | 161 | - | - | 24.92% | Johnson et al., n.d. |
| MLE112 | MS | Historic | 192 | 14 | - | - | 7.29% | Johnson et al., n.d. |
| MLE90 | MS | Historic | 169 | 36 | - | - | 21.30% | Johnson et al., n.d. |
| Old Mobile | AL | Historic | 82 | 2 | 7 | 2 | 2.44% | Clute, Waselkov 2002 |
| Zimmerman | IL | Historic | 78 | 8 | - | - | 10.26% | Brown 1961 |

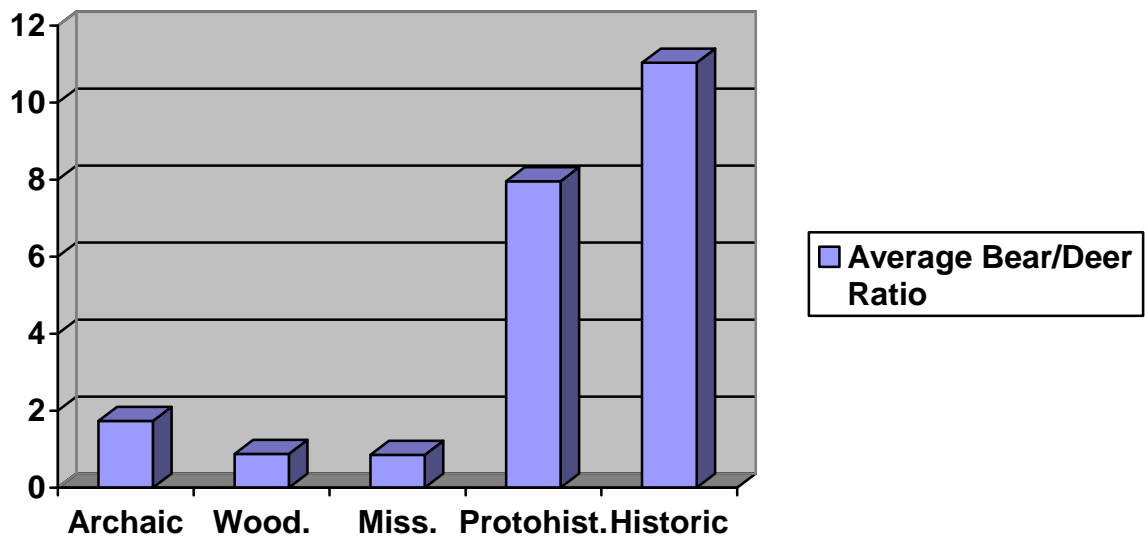


Figure 5. Graph showing Deer/Bear ratios from survey according to period



Figure 6. Map of Surveyed Sites used in Table 1

Survey Analysis

As seen in Table 1, the numbers of white-tailed deer bone fragments excavated at sites in the southeast are extremely high when compared to the numbers of American black bear bone fragments. The MNI and NISP for the Early Woodland Tchefuncte site in Louisiana, shown in the survey above, exemplify the numerical gap between the two species. While archaeologists excavated 3,567 bone fragments belonging to white-tailed deer, only 15 black bear fragments were recovered. The MNI listed for the Tchefuncte site in the survey confirms the disparity. While the minimum number of white-tailed deer present at the site is estimated at 15, the minimum number of possible black bear at Tchefuncte is only three. This pattern in the data stays consistent throughout the rest of

the Woodland period and on into the Mississippian period with generally less than 2% black bears in the faunal collections. Not until the Protohistoric period does a considerable difference in the pattern appear.

Upon entering the Protohistoric, the proportion of bear to deer jumps dramatically as seen in Figure 5. For instance, at the Crab Orchard site in Virginia, a sizable increase to the NISP of the black bear is shown. While the NISP of the white-tailed deer is 1906, the NISP for the black bear is 276, an extraordinary high number for a ratio of 14.48%. This site is a great demonstration for the transition between the Mississippian and the Protohistoric periods in terms of black bear remains in the subsistence patterns of the American Indians of the Southeast. These high numbers stay somewhat consistent throughout the Protohistoric period and into the Historic period as well.

In the survey there are a few significant exceptions to the trend mentioned above. The Middle Woodland Fredericks site in Louisiana is one of these. With 403 white-tailed deer bone fragments and 20 black bear bone fragments, the ratio of bear to deer is 4.96% which is much higher than most of the sites dating before the Protohistoric period. However, it can be seen that 20 bear fragments is not unusually high in comparison to the other prehistoric sites but instead, the low amount of deer fragments at the Fredericks site give it a higher ratio than most other sites. As to why there are so few deer being consumed at this site, this could be caused by different biological factors such as an absence of the species in the area over a period of time.

One other exception among the prehistoric surveyed sites is the Archaic Russell Cave site located in Alabama which has 529 deer bone fragments compared to 46 bear bone fragments giving it a bear to deer ratio of 8.69%, the highest ratio of the prehistoric

sites on the survey. Since both of the Fredericks and Russell Cave excavators employed at least ¼-inch screens, recovery bias is not a likely explanation. Perhaps these assemblages represent locally high bear populations, or perhaps environmental or cultural differences in these locations led to deviations from the otherwise consistent southeastern pattern of low bear to deer ratios.

Reproductive Capacity

As mentioned above, one of the main theories surrounding this trend is the reproductive capacity of *Ursus americanus*. The creature has a very slow reproductive rate, which makes it hard for bears to reproduce as rapidly as the white-tailed deer. This fact could definitely be a part of the reason why we do not find large numbers of black bear bones in the archaeological record. However, the bear reproductive capacity can not be the only reason for this because the species is still around today. Since the reproductive capacity of the bear is so low, it would not have taken much effort for the American Indians living in the Southeast to exterminate the species by hunting them heavily. While there was an abundance of alternative sources of protein in the form of deer, the idea of hunting such a strong and resilient creature like the bear may seem impractical. However, bear hunting can be looked at as a type of sport or rite of passage for young Indians to prove their worth (Hallowell 1926: 148) Because the black bear species is still thriving in the Southeast today, this shows us that the Native people had to have been practicing some type of restraint when hunting the animal.

Evidence for this can be found in multiple sources of literature. According to Saxton Pope, black bear populations were quite stable even in the early 20th century. ‘The American black bear at one time ranged all over the United States and Canada. He

has recently become a rare inhabitant of the eastern and more thickly populated districts; yet it is astonishing to hear that even in the year of 1920 some four hundred and sixty-five bears were taken in the State of Pennsylvania” (Pope 2006: 133). While the introduction of guns and other forms of advanced weaponry may have increased the number of bears being slaughtered for consumption in American Indian cultures, the reproductive capacity of the bears was clearly still functioning well enough to maintain the species in healthy numbers. Therefore the American Indians must have had some other reasoning for omitting the black bear from their regular diet and hunting practices. However, it must be noted that bear reproductive capacity and population in general have been found to drop significantly when in close proximity to large human populations (see Figure 7). Researchers in the Ocala National Forest found that the reproductive capacity of black bear in the National Forest was greater than adjacent to a nearby town with a dense human population (Hostetler et al 2009: 2460).

In contrast to the black bear, the reproductive capacity of the white-tailed deer is very high and creates very large deer populations that have been known throughout history to spiral out of control. This would have created an easier and more available source of meat for the American Indians living in the Southeast and an alternative to hunting the great bear.

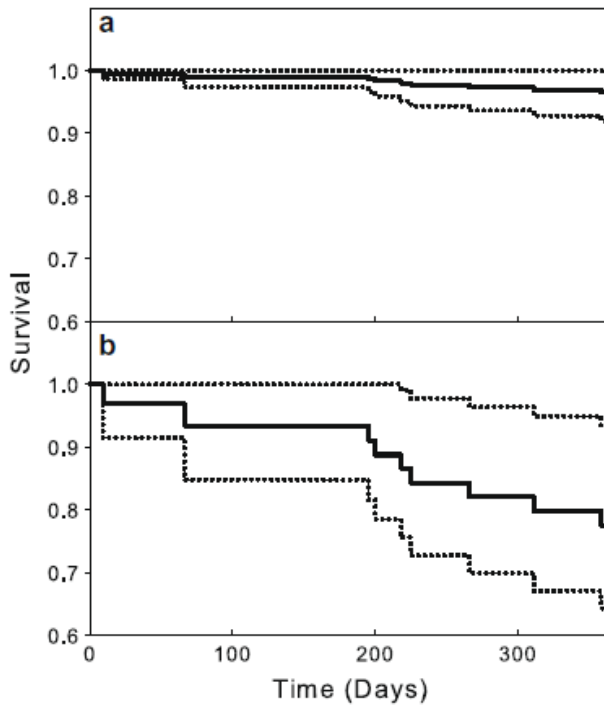


Figure 7. Cox-proportional hazard survival curves for adult female bear in (a) Ocala National Forest, an area relatively unpopulated by humans and (b) Lynne, a densely human populated living community. Time is given in day of the year, beginning on March 31. The dotted lines represent the 95% confidence intervals showing the significant drop in bear populations when living within close proximity to a human occupation. (Hostetler 2009: 2460).

Dangers of Hunting and Religious Taboo

A second possible explanation and definitely a more understandable one is the danger that comes with hunting such a powerful and dangerous animal. While bears may have been seen as an early ancestor to humans, they proved to be much more dangerous than any human could ever be.

Hunting black bears is as much of a religious cultural tradition as any. According to Martin, the bear was seen as a relative of humans by many historic Indian groups and the utmost respect was given to any slain bear, including a small speech given by the hunter apologizing for having to kill the bear (Martin 1978:36; Hallowell 1926:44). Some American Indians' creation stories informed them that all animals that are caught and

slain do so because they allow this to happen (Martin 1978:118). The animals “offer” themselves to the hunters as they are all a part of the great circle of life. Bears especially were believed to have very high intelligence and strength, so in order for a bear to be taken by a mere man, the bear must have allowed this to happen.

The Indians believed that all animals are speaking and thinking beings, in many ways not one whit less intelligent than human beings. The reason that they are less successful in life is that they are unfortunate; their medicine [Power] is not as strong. The reason that the Indian is able to prey upon them is that he is more fortunate, not more intelligent. In some cases, however, some animals have a greater supernatural ability than the Indian. This is particularly true of the bear who is considered more intelligent and to have greater medicine powers in many ways than mankind. He walks upon his hind legs like a man, and displays manlike characteristics. Infact some tribes regard the bear as an unfortunate man (Skinner1911:73, 76).

The strong relationship between humans and bear can be seen in the many effigies and ritual masks that archaeologists have recovered (see Figure 8). These effigies are evidence that native people encountered and interacted with bears on a regular basis. It can be assumed that these effigies were used in a number of traditional ceremonies and evidence for this can be found in various American Indian creation myths.



Figure 8. Effigy of a black bear head from 1BA21 in Orange Beach, Alabama.

It is interesting when comparing the paw bones of a black bear to those of the human hand and foot. The resemblance is quite startling. In Figure 1, we saw that the hand bones of both species are amazingly similar, with the exception of the massive claws at the tips of each bear digit. These bones might have been part of the evidence that the Natives used to explain the presence of the bear in their creation myths. So the resemblance of the bones may have suggested to the southeastern Indians that bears and humans were closely related, and bears were therefore not suitable as a food source. Or, if they could be eaten, then they were only eaten under strictly controlled situations, as a sacred food source, and not to be treated as an everyday food.

In comparison, one could look at this pattern and consider the Hindu taboo against eating the sacred cow. While there are thousands of people in India who are said to be starving, the majority of India's population avoids eating beef which has caused much

debate. However, anthropologists such as Marvin Harris have found that the sacred cow is more profitable to India when used as a non food source. In other words, India's sacred cow represents an expenditure of energy and resources that would be better spent in another activity. Other examples of this can be found in different cultures such as the Jewish and Moslem populations in the Middle East. Their taboo against eating pork has been found to be incompatible with agriculture in that area. Because of this, the people of this culture group declared the pig unsanitary and unfit for eating so that hunters would pursue more profitable sources of animal protein.

Conclusions

It is important to realize when analyzing the possible explanations for the lack of black bear remains in the archaeological record that the answer is not one of the three theories offered here that must be chosen as the 'best fit.' While all of these theories have evidence to support them scientifically, no one of them corresponds perfectly with the question being asked. The 'answer' to the pattern of the southeastern archaeological sites, if there is one, comes from all three of the theories I have set forth. The reproductive capacity of the American black bear keeps the numbers of bear low making them an undependable source of meat while the mere strength and agility of the bear made it difficult for American Indians to take them with just a bow and arrow. On top of that, the religious taboos that surround all bear species turned it into a sacred animal that should be respected and rarely eaten. In other words, all three of these theories are outstanding explanations for the lack of bear representation in the archaeological record but only when they are combined with each other.

When Irving Hallowell set out to find answers to this question in the 1920's, he approached it from multiple perspectives and considered every aspect and facet of bear life in order to research the topic and make his claim. This type of approach is necessary for any anthropological research and yet gaining this perspective takes a large amount of time and dedication, which took Hallowell years to compile. It is very interesting that when focusing on one small area of the northern hemisphere, as I did with the Southeast in this thesis, there are pages of archaeological evidence to support Hallowell's claim. It would be interesting to see more of this kind of research done in other areas of the northern hemisphere, as little to none has been done so far. However, I believe that the evidence would be present and consistent with Hallowell and my findings.

In the survey it is clear that bears are a minority in terms of American Indian subsistence patterns, and yet there are those rare exceptions that defy the pattern set forth by Hallowell. These exceptions may represent a relaxation of old taboos or perhaps an alternative religious belief within that culture group. Regardless, the majority of culture groups participated in this taboo until the beginning of the Protohistoric period when bear remains appear in higher numbers. I find it fascinating that so many different groups of people living in such a wide range of climates practiced the same taboo concerning bears. While southeastern American Indians practiced a wide variety of cultural norms and traditions, it is apparent that the black bear hunting taboo was one of the few norms that transcended over cultural boundaries.

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