FAUNAL ANALYSIS OF A NINETEENTH CENTURY ASSEMBLAGE JACKSONPORT STATE PARK (3JA53) JACKSON COUNTY, ARKANSAS

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Faunal Analysis of a Nineteenth Century Assemblage
Jacksonport State Park (3JA53)
Jackson County, Arkansas

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Introduction

This report presents the results of a faunal analysis performed on an assemblage recovered from the nineteenth-century town site of Jacksonport (3JA53), located in Jacksonport State Park, Jackson County, Arkansas. All analyzed specimens came from five 1-x-2 m pits in an area interpreted as a waste disposal location associated with a nineteenth-century residence. This analysis included an examination of all faunal remains to gain an understanding of the diversity of animals consumed, butchery techniques, and taphonomic factors that possibly skewed these results. Appendix A contains all figures referenced in this report, and Appendix B contains a detailed catalog of all analyzed faunal remains.

Methods

The analyst identified faunal remains to the lowest taxonomic order possible by using standard osteological references and a type collection in the zooarchaeology laboratory at the office of Richard Grubb & Associates, Cranbury, New Jersey. References for mammal identification included Brown and Gustafson (1979), Gilbert (1990), Schmid (1972), Hillson (1992), and Olsen (1996). This analysis included an examination of all bone for the presence of rodent or carnivore gnawing, burning or calcination, root etching, extent of weathering, and butchery marks. The four calcined specimens were not included when calculating the weathering rates, as exposure to fire caused the bone to take on a white color and chalky texture, making it difficult to identify surface modifications. The results of experimental bone burning demonstrate that bone color varies as it passes through temperature thresholds (Lore 2002; Shipman et al. 1984). The white color and chalky texture of the four calcined specimens is indicative of bone exposed to temperatures in excess of 500° Celsius.

The analyst classified all bone as non-weathered (NW), moderately weathered (MW), and weathered (W). Bone classified as NW did not exhibit extensive pitting or exfoliation, MW specimens exhibited limited pitting and discoloration, and W specimens showed signs of exfoliation.

The final component of this analysis consisted of quantifying all bone for the presence of butchery marks. Identified butchery marks consisted of cut, chop, and saw. Researchers frequently record these marks on bone from historic period assemblages, as they provide pertinent information on butchery techniques and consumption practices (Gall et al. 2006; Landon 1996; Reitz and Scarry 1985). Butchery marks include:

1) Cut, a straight narrow incised line

2) Chop, where a small wedge of bone has been chopped through
3) Saw, a series of parallel striations left by a toothed cutting tool

The assemblage contains numerous bone fragments only identified to the level of class (i.e. mammal and bird). As a result, a size gradient from small to large was used to categorize these specimens (Table 1). While the subjective nature of a size gradient places some interpretive limitations, it does enable an analyst to categorize these elements, and provide a basis for comparative analysis.

Table 1: Size Gradient for Unidentified Mammals.

Classification	**Possible taxa**
Large Mammal	Cattle, adult pig
Medium Mammal	Sheep, goat
Small Mammal	Squirrel, rabbit, raccoon

After identification, all faunal remains were calculated by using the number of identifiable specimens (NISP) attributed to a particular animal, and the minimum number of individuals (MNI) represented by the bone. Faunal analysts use the NISP to quantify the total number of identifiable bone fragments and provide the frequency of different elements attributed to a particular species. The MNI represents the minimum number of animals required to account for the NISP. The MNI is typically determined by using paired elements with the highest frequency (White 1953). For instance, the presence of three right, and two left femora from a pig, would indicate a MNI of three individuals. The NISP attributed to this element is equal to five. Although both of these calculations have their analytical shortcomings, they are some of the most common measurements used by faunal analysts, and enable at least a qualitative comparison with other sites (see Grayson 1984 for a critique of these approaches). The final measurement used in this analysis is a rough estimate of useable meat weight based on live weights of modern samples for wild taxa, and colonial through modern estimates for domestic species (Miller 1984).

Results

The combined faunal assemblage contains 309 bones and bone fragments. In addition, the assemblage also contains 23 shell fragments identified as clam and oyster. Mammal elements account for 97.4% (n=301) of the vertebrate remains, followed by bird (1.6%; n=5), and unidentified vertebrate (1.0%; n=13). The assemblage contains cattle and pigs, animals typically recovered from nineteenth century sites (see Table 2). In addition, the recovery of elements attributed to squirrel and white-tailed deer suggests occasional procurement of wild taxa.

Table 2: MNI and NISP Values from Jacksonport State Park (3JA53)

Common Name	Scientific Name	MNI	NISP
Cattle	*Bos taurus*	1 individual	12
Pig	*Sus scrofa*	1 individual	32
White-tailed deer	*Odocoileus virginianus*	1 individual	2
Gray Squirrel	*Sciurus carolinensis*	1 individual	2
Mammal (L)	Mammalia	NA	7
Mammal (M)	Mammalia	NA	57
Mammal (M-L)	Mammalia	NA	24
Mammal (S)	Mammalia	NA	1
Mammal (S-M)	Mammalia	NA	5
Mammal (Unid.)	Mammalia	NA	159
Bird	Aves	NA	5
Clam/Oyster/Unid.	Mollusk	NA	23
Vertebrate	Chordata	NA	3
Total			**332**

The distal end of a humerus and an innominate fragment were the only elements attributed to white-tailed deer (Figure 1). These elements are associated with higher meat yielding areas and probably represent food remains, rather than elements discarded during the initial butchering. The assemblage did not contain white-tailed deer elements identified as butchery waste, such as teeth and phalanges. The two elements attributed to squirrel provide tentative evidence that the inhabitants occasionally procured these animals. Despite the absence of butchery marks on these elements, several of the town's inhabitants probably hunted squirrels for sport and as a food source.

Elements attributed to domestic species provide more information about carcass utilization and individual meat cuts. Pig elements have the greatest diversity and abundance of any species identified at the site. These elements include bones identified as butchery byproducts, as well as high meat yielding cuts (Figure 2). The element diversity suggests that the inhabitants had access to whole carcasses after the initial butchering of the carcass into manageable segments. It is uncertain whether the inhabitants used the entire carcass as a source of meat; however, many elements currently identified as butchery byproducts were in fact highly desirable portions to a nineteenth century American (Child 1883, Rumble 2006). Cattle elements are less abundant but show a pattern oriented towards meat yielding elements and butchery byproducts (Figure 3). Comparable to pig, the inhabitants likely had access to whole carcasses soon after the initial butchering.

The assemblage also contains numerous bones and bone fragments classified as unidentified mammal and mammals identified on the size gradient as small to large mammal. Bones identified as

medium mammal account for the most abundant group within the size gradient, and it is possible that several of these specimens are from pigs. Similarly, the bones identified as large mammal probably represent cattle elements. The absence of sheep and goat elements is particularly surprising, as most historic period faunal assemblages contain elements attributed to these species, although not with the same frequency as cattle and pigs. It is unlikely that the residents of Jacksonport did not utilize these animals, and several of the unidentified mammalian remains could belong to this group.

The assemblage contains five bird elements identified to the level of class. These elements consist of longbone fragments that compare favorably to chicken. Although not positively identified, these birds are ubiquitous in eighteenth through nineteenth century faunal assemblages, as they require limited care and provide a reliable and year round source of fresh meat and eggs. The assemblage also contains a limited number of clam and oyster shells, confirming that the inhabitants had access to coastal resources. The limited number of shellfish recovered from the excavation units precludes quantifying the extent of exploitation, and only provides qualitative evidence for the inhabitant's use of this resource.

Taphonomic modifications recoded on the bone are relatively limited. The assemblage contains four small calcined bones and a single rib with carnivore gnawing. The calcined specimens have the whiteness and chalky texture of bone exposed to temperatures in excess of 300 degrees Celsius (Lore 2002; Shipman et al. 1984). The advanced stage of calcination on these specimens indicates disposal directly into a hearth, as this extent of modification does not occur during meal preparation, when the meat insulates the majority of the bone (Roberts et al. 2002). These elements are probably fragments of meal refuse that were disposed of directly into a hearth. Typically, at least portions of the bone will survive incineration, which enables their introduction into a secondary disposal area when the inhabitants clean out their hearth. The single mark identified as carnivore gnawing probably resulted from a dog obtaining meal scraps. In general, the presence of carnivore gnawing on a single bone, and the absence of rodent gnawing, indicates limited surface exposure for the assemblage, providing evidence that this area served as a refuse pit that was periodically covered with fill. The longer bone remains exposed on the surface the likelihood of animal gnawing increases, and often results in bone with advanced signs of weathering, such as exfoliation.

The extent of weathering recorded on non-calcined vertebrate specimens (n=305) consisted of those identified as moderately weathered (n=297; 97.4%), not weathered (n=4; 1.3%), and weathered (n=4; 1.3%). None of the elements exhibit evidence of extensive root etching or exfoliation.

Butchery marks are the most informative modification identified on the bones. These marks consist of cut (n=9), chop (n=2), and saw (n=11). Commonly recorded on bone from nineteenth century

faunal assemblages, these marks reflect the general trend throughout the United States of producing smaller individualized cuts. Although the faunal assemblage contains elements often identified as butchery waste, such as phalanges and teeth, all of the cut marks are oriented towards preparation and consumption of individual cuts.

Discussion

The faunal assemblage from site 3JA53 provides important information about nineteenth century foodways in the town of Jacksonport. The results of the faunal analysis confirm that the inhabitants relied primarily on domestic animals, including pigs and cattle. Faunal remains attributed to deer and squirrel suggests that the inhabitants occasionally procured wild taxa. Due to the limited element diversity associated with these species, we hypothesize that the inhabitants opportunistically hunted these animals for sport and as a food source. Despite the low MNI counts, elements attributed to domestic stock suggest that the inhabitants had access to all portions of the carcass. Presumably, a butcher or an individual skilled in the trade processed the carcass into manageable sections for additional processing at a secondary location. The elements attributed to cattle and pigs appear to be the byproduct of meal preparation rather than the initial butchering of the animals (see Figures 1-2). The two deer elements also come from meat yielding portions of the carcass (see Figure 3).

Butchery marks identified on several elements provide information about secondary disarticulation and meat cuts. Several researchers note the importance of examining marks to determine the techniques used for the initial butchering, and the subsequent processes used to prepare smaller, or individual meat cuts (Gust 1983; Crader 1990; Lyman 1979; Landon 1996). Bones that primarily have cut and chop marks are typical for sites from the eighteenth to the early nineteenth century, as saws used for butchering did not gain in popularity until circa 1800 (Bowen and Manning 1993, Gust 1983; Hanson and Hsu 1975). In general, eighteenth-century butchering involved the primary sectioning of the animal into large pieces, followed by a secondary reduction into smaller pieces for consumption and curing. Ultimately, these methods culminated in the standardized and individual cuts of the nineteenth century. Deetz (1977: 124-125) identified this pattern in early Colonial America and interpreted it as the increasing importance of individual identity within the community. This pattern is the norm in modern meat processing plants and most nineteenth century assemblages have evidence of discrete segmentation of the animal's carcass.

The faunal remains from site 3JA53 show a pattern typical of the mid-to late nineteenth century. A cattle scapula has saw marks present at the distal end near the point of articulation with the humerus (Figure 4). This element contains false start saw marks, indicating that the butcher used a hand saw to process the carcass. The marks identified on this specimen clearly indicate that butcher was intent

on preparing the cut into a manageable size. Saw marks identified on the innominate of a medium size mammal provide additional evidence that the butcher segmented portions of the carcass into smaller servings (Figure 5). These elements have saw marks on both sides and are typical of meat cuts already established by the mid-nineteenth century.

Saw marks present on the three cattle ribs probably resulted from the production of small roasts or short rib cuts. Despite the frequency of pig elements, none of the bones with butchery marks were positively identified to this species. Nevertheless, several specimens compared favorably to pig, and the absence of positive identification is because smaller cuts are difficult to identify to the species. The cut marks identified on numerous longbone fragments minimally gouge the bone's surface, suggesting that they resulted from cutting pieces off a roast or ham when serving individual portions. Butchery marks identified on wild taxa consisted of three cut marks on the distal end of a deer humerus (Figure 6). The limited number of deer elements makes it impractical to determine if different butchery methods existed for wild taxa. These marks possibly occurred when the animal was skinned and the upper portion of the forequarter removed from the carcass.

When examining the individual elements attributed to each taxon, it is difficult to quantify what meat made the most significant dietary contributions, due to the increasing practice of preparing individual cuts. For example, the presence of a pig femur indicates consumption of the meat from that bone, not the entire animal. Nevertheless, observations on the dressed weights of animals, and their meat return rates, provides a basis for understanding the popularity of raising or hunting particular animals.

When looking at the meat weight available for white-tailed deer there is considerable data collected from hunters that show their weight range. Biological data collected by the Arkansas Game & Fish Commission during the 2000-2005 seasons indicate that the average weight for a dressed buck was approximately 108-133 pounds, while a doe's average was 75-92 pounds (Arkansas Game & Fish 2009). In a study of meat weight returns from white-tailed deer, Madrigal and Holt (2002) recorded the dressed weight and the available meat return after deboning. An animal weighing 54.3kg (119.5 lbs) returned 19.9kg (43.8 lbs) of meat, an 18.6kg (41 lbs) animal returned 4.43kg (9.7 lbs), and a 37.2kg (82 lbs) animal returned 10.04kg (22.1lbs) of meat. The average return rate relative to each dressed carcass is 36.6%, 23.8%, and 26.9%, respectively. The two elements recovered from site 3JA53 appear to be from a small animal less than 100 pounds, which possibly provided between 20 to 25 pounds of meat. Due to the limited element diversity attributed to these animals, we speculate that they made limited dietary contributions.

The meat weights associated with the domestic animals show considerably higher return rates than their domestic counterparts. For example, a mature cow in the eighteenth century returned 50-60% of its body weight, or approximately 400 pounds of meat (Miller 1984). A modern steer weighing 1200 pounds returns 500 pounds of meat, or approximately 42% of its body weight. Naturally, these animals have a high return rate due to their size, but the town's inhabitants undoubtedly raised cows as a source of fresh milk and other dairy products. It is likely that neighbors or families shared or sold portions of these animals at slaughtering time, as they provide too much meat at a time for a single family to consume, and beef does not preserve as well as pork (Tomhave 1925).

The element diversity associated with pigs provides the best evidence that these animals made frequent dietary contributions. Pigs were a particularly reliable food source as they are easy to raise, suitable for curing and smoking, and provide 65-80% of their dressed weight after slaughter (Reitz et al. 1985). Unfortunately, the assemblage was too small to create an age profile for slaughter, although an unfused femur indicates that the inhabitants slaughtered some animals under the age of 36 months (Silver 1963). Figure 2 depicts portions of pig elements identified in the assemblage, which confirms the inhabitants had access to all portions of this carcass. Due to the element diversity, popularity of pork, and the relative ease in raising these animals, we hypothesize that pork consumption made up a substantial portion of the inhabitant's diet.

Conclusions

The faunal assemblage analyzed from the nineteenth-century town site of Jacksonport (3JA53) provided new information about nineteenth century foodways. In particular, faunal remains indicate that while the inhabitants occasionally supplemented their diet with wild taxa, the majority came from traditional domestic animals. The type of meat cuts support the observation that this area probably functioned as a disposal area associated with one of the residences. This analysis consisted of an examination of bone recovered from a small portion of the site, and it is likely that future investigations will provide important comparative data. The current study serves as a basis for future comparative analysis with nineteenth century assemblages from the Town of Jacksonport and outlying rural areas.

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APPENDIX A: FIGURES

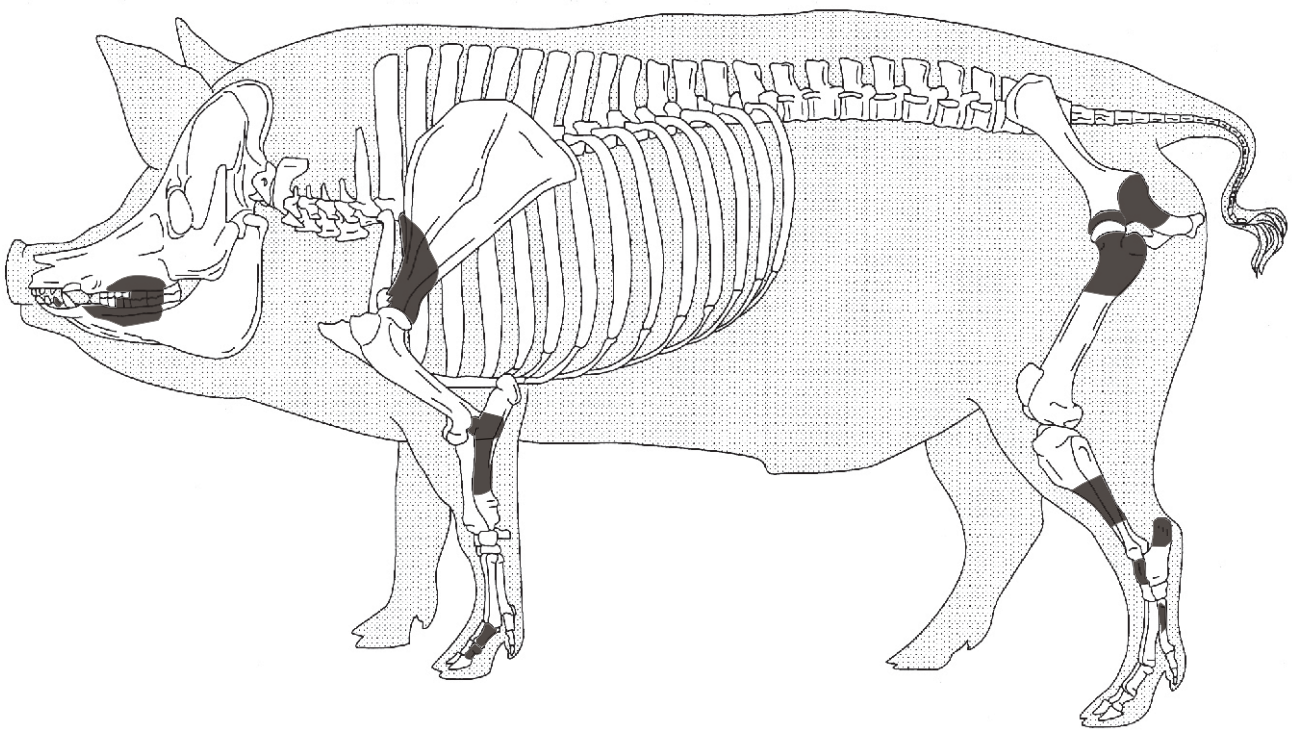

Figure 1:

Portions of pig elements identified at 3JA53 depicted by shaded areas.

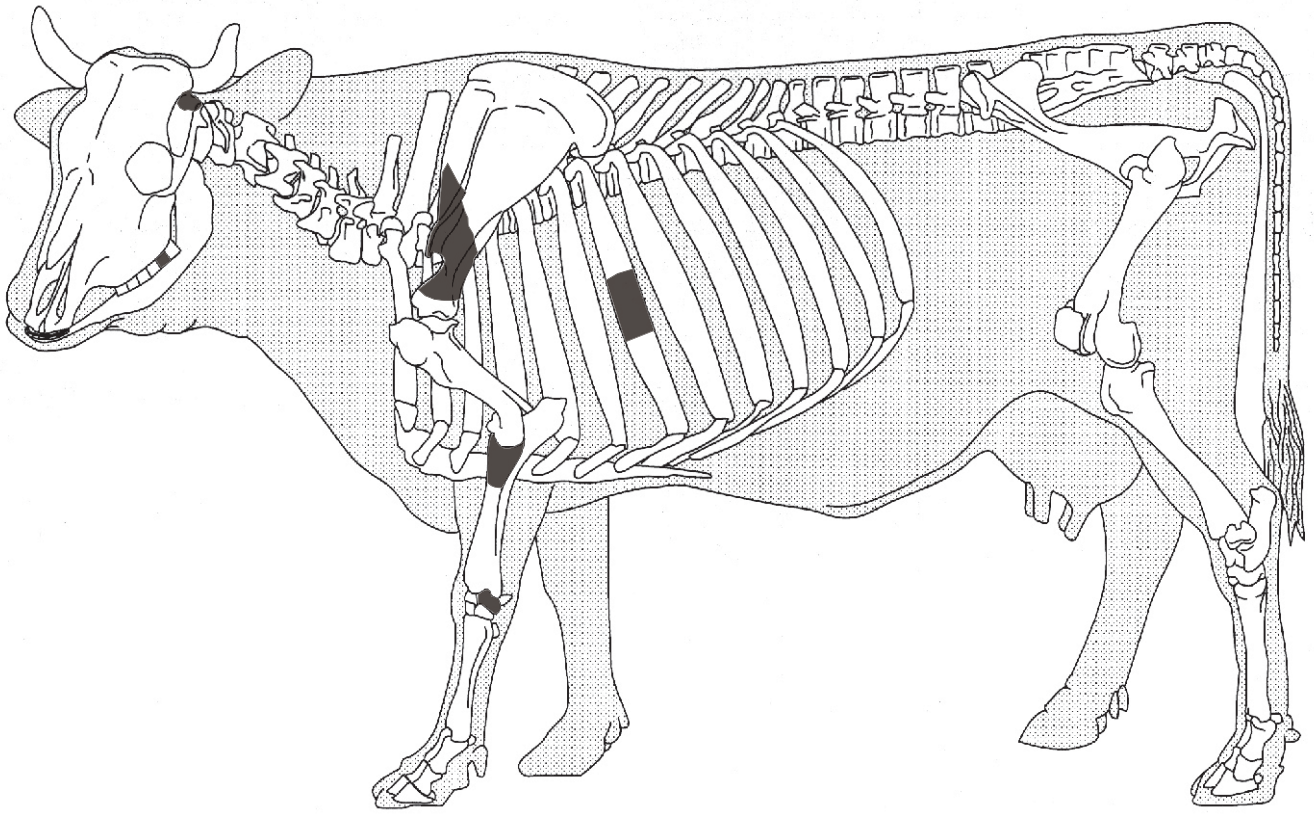

Figure 2:

Portions of cattle elements identified at 3JA53 depicted by shaded areas.

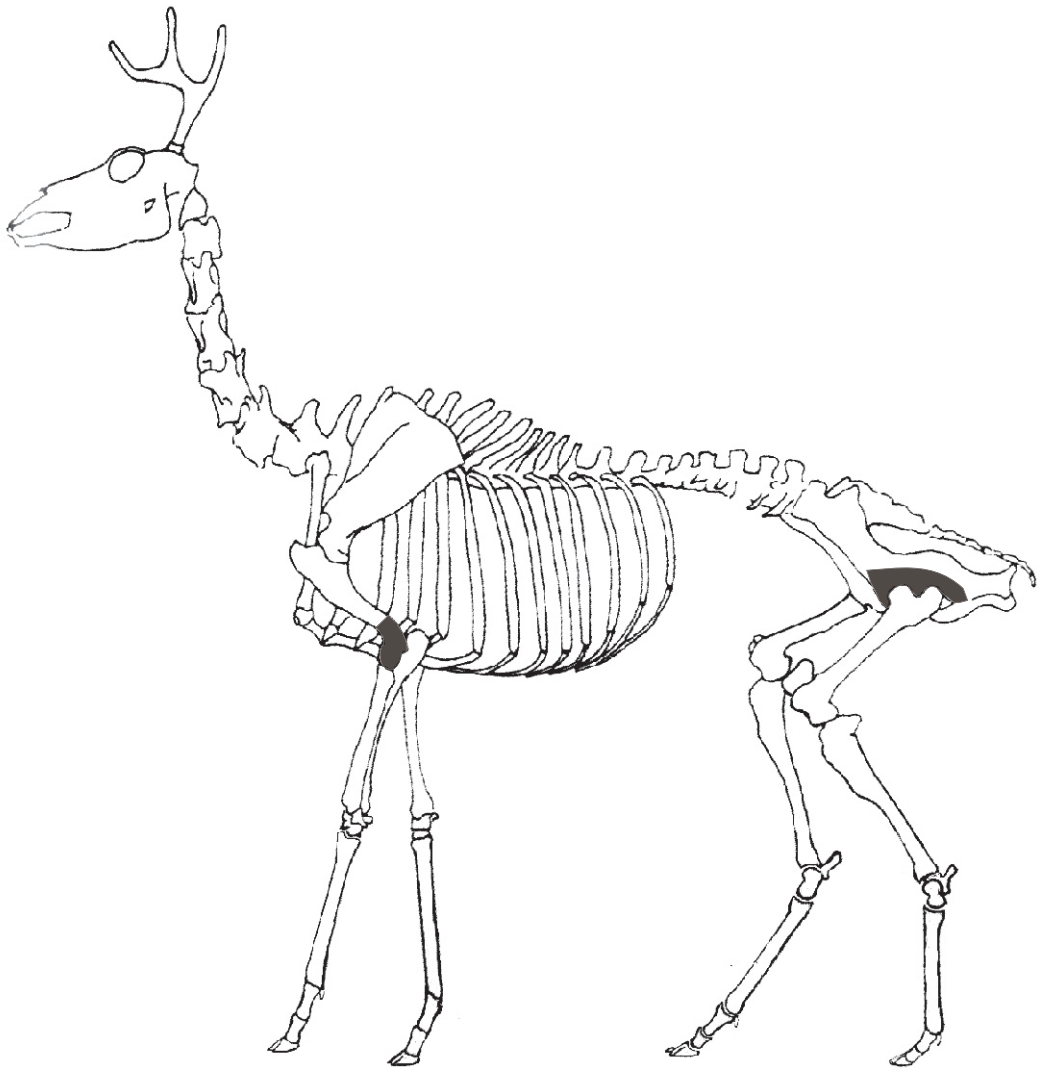

Figure 3:

Portions of deer elements identified at 3JA53 depicted by shaded area.

Figure 4:

Cattle scapula with saw marks.
Note arrow pointing to false starts indicating use of a handsaw.

Figure 5:

Saw marks on bone from the innominate (pelvis).

Figure 6:

Distal end of a deer humerus with cut marks.

APPENDIX B: FAUNAL CATALOG

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Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
2	7	2	0-20	Mammal (M)	Longbone	Fragment	1					W	6.88	
5	7	3	20-30	Pig	Innominate	Fragment	1	R				MW	21.24	Acetabulum
5	7	3	20-30	White-tailed deer	Humerus	Distal	1	L		Cut		NW	24.13	Cut distally from skinnig; two mend as one
5	7	3	20-30	Mammal (M)	Humerus	Diaphysis	1					NW	25.71	
5	7	3	20-30	Mammal (M)	Vertebrae	Fragment	2					MW	17.36	Centrum
5	7	3	20-30	Mammal (M)	Rib	Midshaft	1				Gnaw©	MW	9.82	
5	7	3	20-30	Mammal	Longbone	Fragment	1			Cut		MW	3.19	
5	7	3	20-30	Mammal (M)	Longbone	Fragment	1					MW	7.79	
5	7	3	20-30	Mammal	Unid.	Fragment	7					MW	12.34	
5	7	3	20-30	Mammal	Longbone	Fragment	5					MW	15.24	
5	7	3	20-30	Mammal (M)	Femur	Diaphysis	1			Cut		MW	15.24	Three cut marks
5	7	3	20-30	Mollusk	Shell	Fragment	2					W	1.96	Probable oyster
6	7	4	30-40	Cattle	Rib	Midshaft	1			Saw		MW	17.5	Two mend as one
6	7	4	30-40	Mammal	Longbone	Fragment	1			Cut		MW	2.25	
6	7	4	30-40	Mammal	Rib	Fragment	1			Saw		MW	10.85	
6	7	4	30-40	Mammal	Longbone	Fragment	3					MW	14.6	
6	7	4	30-40	Mammal	Longbone	Fragment	1				Calcined		0.38	
6	7	4	30-40	Mammal (L)	Innominate	Fragment	1					MW	28.55	Near acetabulum; probaby cattle
3	8	1	0-10	Vertebrate	Unid.	Fragment	1				Calcined		0.22	
4	8	2	10-20	Mammal (M)	Tibia	Diaphysis	1	L				MW	40.08	
4	8	2	10-20	Cattle	Astragalus	Fragment	1					MW	26.74	
4	8	2	10-20	Mammal (M-L)	Longbone	Fragment	1			Cut		MW	6.25	
4	8	2	10-20	Mammal	Unid.	Fragment	1				Calcined		0.22	
4	8	2	10-20	Mammal (M)	Longbone	Fragment	2					MW	3.83	
4	8	2	10-20	Mammal	Unid.	Fragment	9					MW	15.21	
4	8	2	10-20	Mammal (M-L)	Longbone	Fragment	2					MW	16.9	
8	8	3	20-30	Cattle	Radius	Fragment	1	R		Saw		MW	72.88	Proximal fragment
8	8	3	20-30	Mammal (M)	Rib	Midshaft	1			Cut		MW	3.85	
8	8	3	20-30	Mammal (M)	Rib	Proximal	1					MW	1.66	
8	8	3	20-30	Pig	Innominate	Fragment	1					MW	17.81	Acetabulum and ischium

Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
8	8	3	20-30	Mammal (M-L)	Longbone	Fragment	1					MW	9.91	
8	8	3	20-30	Mammal (M-L)	Longbone	Fragment	1					MW	15.1	
8	8	3	20-30	Mammal (M-L)	Cranial	Fragment	1					MW	19.46	
8	8	3	20-30	Mammal (M)	Mandible	Fragment	1					MW	5.92	Ascending ramus
8	8	3	20-30	Mammal	Rib	Fragment	3					MW	6.67	
8	8	3	20-30	Mammal (M)	Femur	Diaphysis	1					MW	27.57	
8	8	3	20-30	Cattle	Metacarpal/tarsal	Fragment	1					MW	2.55	
8	8	3	20-30	Pig	Phalange	Complete	1					MW	2.61	Second phalange
8	8	3	20-30	Mammal	Cranial	Fragment	2					MW	5.15	
8	8	3	20-30	Mammal	Vertebrae	Fragment	1					MW	1.64	
8	8	3	20-30	Mammal	Unid.	Fragment	22					MW	33.67	
8	8	3	20-30	Mammal	Cranial	Fragment	1					MW	5.01	
8	8	3	20-30	Pig	Metatarsus	Proximal	1					MW	6.54	Metatarsus III
8	8	3	20-30	Pig	Teeth	Complete	1	R				MW	5.33	M^2
8	8	3	20-30	Pig	Teeth	Complete	1	R				MW	3.23	M^1
8	8	3	20-30	Pig	Teeth	Complete	1	L				MW	2.65	P^4
8	8	3	20-30	Pig	Teeth	Fragment	1					MW	1.4	
8	8	3	20-30	Mammal (M)	Radius	Distal	1					MW	4.58	
8	8	3	20-30	Mammal (M)	Longbone	Fragment	1					MW	4.18	
8	8	3	20-30	Mammal (M-L)	Vertebrae	Fragment	1					MW	8.48	
8	8	3	20-30	Mammal	Rib	Midshaft	1					MW	0.8	
8	8	3	20-30	Bird	Longbone	Diaphysis	1					MW	1.48	
8	8	3	20-30	Mammal	Unid.	Fragment	2					MW	9.77	
8	8	3	20-30	Mammal	Unid.	Fragment	1					MW	15.03	
8	8	3	20-30	Mammal (M)	Innominate	Fragment	1			Saw		MW	37.73	Sawn both ends; ilium; proable pig
8	8	3	20-30	Mammal (M-L)	Innominate	Fragment	1			Saw		MW	25.94	Sawn both ends
8	8	3	20-30	Clam	Shell	Fragment	2					W	2.88	
8	8	3	20-30	Clam	Shell	Complete	1					W	35.73	
9	8	4	30-40	Cattle	Scapula	Fragment	1	R		Saw		MW	157	False starts with saw cuts; Sawed distally
9	8	4	30-40	Mammal (L)	Scapula	Fragment	2					MW	35	Possible mends with above specimen

Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
9	8	4	30-40	Cattle	Rib	Midshaft	1			Saw		MW	28	Rib roast cut
9	8	4	30-40	Cattle	Rib	Midshaft	1			Saw		MW	21	Rib roast cut
9	8	4	30-40	Cattle	Rib	Midshaft	1					MW	20	
9	8	4	30-40	Mammal (M)	Rib	Midshaft	1			Saw		MW	10.5	
9	8	4	30-40	Mammal (M-L)	Scapula	Fragment	1					W	8	
9	8	4	30-40	Pig	Ulna	Diaphysis	1	L	<1 yr.			MW	16.5	
9	8	4	30-40	Pig	Ulna	Diaphysis	1	R	<1 yr.			MW	9	Proximal section
9	8	4	30-40	Pig	Femur	Proximal	1	R	<1 yr.			MW	52	
9	8	4	30-40	Pig	Tibia	Diaphysis	1	R				MW	34	
9	8	4	30-40	Pig	Scapula	Fragment	1	R				MW	20.5	
9	8	4	30-40	Pig	Calcaneous	Proximal	1	L	<1 yr.			MW	16.47	
9	8	4	30-40	Pig	Innominate	Fragment	1	L				MW	38.75	Acetabulum
9	8	4	30-40	White-tailed deer	Innominate	Fragment	1	R				MW	40.75	Fragment acetabulum, ischium, and pubis; two mend as one
9	8	4	30-40	Mammal (M-L)	Innominate	Fragment	1					MW	38.04	
9	8	4	30-40	Gray squirrel	Femur	Complete	1	L	SA			MW	0.88	
9	8	4	30-40	Gray squirrel	Humerus	Complete	1	L	SA			MW	0.76	
9	8	4	30-40	Pig	Mandible	Fragment	1	L				MW	17.06	M_2-M_1
9	8	4	30-40	Mammal (M)	Tibia	Fragment	1					MW	14.9	
9	8	4	30-40	Pig	Metacarpal/tarsal	Proximal	1					MW	6.97	
9	8	4	30-40	Mammal (M)	Humerus	Diaphysis	1	R				MW	10.85	
9	8	4	30-40	Mammal (M)	Tibia	Diaphysis	1					MW	13.52	
9	8	4	30-40	Mammal (M)	Femur	Diaphysis	1			Cut		MW	39.26	
9	8	4	30-40	Mammal (M)	Longbone	Diaphysis	1					MW	18.6	
9	8	4	30-40	Mammal (M)	Tibia	Diaphysis	1	L				MW	13.22	
9	8	4	30-40	Mammal (M-L)	Vertebrae	Fragment	1					MW	17.91	Neural spine
9	8	4	30-40	Mammal (M)	Rib	Proximal	1					MW	11.51	
9	8	4	30-40	Mammal (M)	Rib	Midshaft	6					MW	34.44	
9	8	4	30-40	Mammal (M-L)	Rib	Midshaft	4					MW	31.41	
9	8	4	30-40	Mammal (M)	Longbone	Fragment	1			Cut		MW	8.12	
9	8	4	30-40	Cattle	Mandible	Fragment	1	R				MW	28.96	Mandibular condyle
9	8	4	30-40	Pig	Phalange	Complete	1					MW	4.64	First phalange
9	8	4	30-40	Mammal (M)	Longbone	Fragment	1					MW	3.21	Condyle from humerus or femur

Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
9	8	4	30-40	Mammal (M)	Innominate	Fragment	1					MW	2.36	Acetabulum
9	8	4	30-40	Mammal (M)	Longbone	Fragment	1					MW	3.5	Condyle from humerus or femur
9	8	4	30-40	Pig	Teeth	Fragment	1					MW	0.74	Inscisor
9	8	4	30-40	Pig	Teeth	Complete	1					MW	1	Inscisor
9	8	4	30-40	Mammal	Rib	Fragment	10					MW	22.61	
9	8	4	30-40	Mammal	Unid.	Fragment	33					MW	5.57	Small fragments
9	8	4	30-40	Bird	Longbone	Fragment	1					MW	0.83	
9	8	4	30-40	Mammal (S-M)	Longbone	Fragment	3					MW	6.29	
9	8	4	30-40	Mammal (M-L)	Cranial	Fragment	1					W	8.38	Two mend as one
9	8	4	30-40	Mammal (M)	Mandible	Fragment	1					MW	5.12	Ascending ramus
9	8	4	30-40	Mammal	Longbone	Fragment	1					MW	1.02	
9	8	4	30-40	Mammal	Unid.	Fragment	10					MW	16.07	
9	8	4	30-40	Mammal	Cranial	Fragment	3					MW	11.34	
9	8	4	30-40	Mammal (S-M)	Rib	Midshaft	2					MW	1.56	
9	8	4	30-40	Bird	Longbone	Diaphysis	3					MW	2.58	
9	8	4	30-40	Mammal (M)	Fibula	Diaphysis	3					MW	4.74	Possible pig
9	8	4	30-40	Clam	Shell	Complete	1					W	27.98	
9	8	4	30-40	Clam	Shell	Complete	1					W	49.29	
9	8	4	30-40	Clam	Shell	Fragment	1					W	7.76	
11	8	5	40-50	Cattle	Teeth	Complete	1					MW	21.13	Maxillary molar
11	8	5	40-50	Mammal (L)	Rib	Midshaft	1					MW	11.42	
11	8	5	40-50	Mammal (M)	Tibia	Diaphysis	1					MW	15.71	
11	8	5	40-50	Mammal (L)	Rib	Fragment	1					MW	7.91	
11	8	5	40-50	Mammal (M)	Longbone	Fragment	1					MW	6.65	
11	8	5	40-50	Mammal	Unid.	Fragment	3					MW	4.59	
11	8	5	40-50	Mammal (M-L)	Scapula	Fragment	1					MW	15.43	
11	8	5	40-50	Mammal	Vertebrae	Fragment	1					MW	15.92	
11	8	5	40-50	Mammal (M-L)	Vertebrae	Fragment	1					MW	15.9	
7	9	1	0-10	Mammal	Unid	Fragment	1					MW	5.4	
7	9	1	0-10	Mammal (M)	Tibia	Fragment	1			Chop		MW	7.76	Probable pig
10	9	2	10-20	Cattle	Carpal	Fragment	1					MW	9.42	Cuneiform
10	9	2	10-20	Mammal (M-L)	Longbone	Fragment	1					MW	19.79	
10	9	2	10-20	Mammal	Rib	Fragment	1					MW	2.64	Two mend as one

Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
10	9	2	10-20	Vertebrate	Ulna	Fragment	1					MW	0.39	
12	9	3	20-30	Pig	Maxillary	Fragment	1	R				MW	9.08	M^1 and M^2 present
12	9	3	20-30	Mammal	Mandible/Maxilla	Fragment	1					MW	1.46	
12	9	3	20-30	Mammal (L)	Rib	Fragment	1					MW	8.13	
12	9	3	20-30	Mammal (M)	Tibia	Fragment	1					MW	7.16	Two mend as one
12	9	3	20-30	Mammal (M)	Fibula	Diaphysis	1					MW	0.92	
12	9	3	20-30	Mammal (M-L)	Rib	Fragment	4					MW	6.03	
12	9	3	20-30	Mammal (L)	Longbone	Fragment	1					MW	10.95	
12	9	3	20-30	Mammal	Unid.	Fragment	3					MW	3.9	
12	9	3	20-30	Mammal (S)	Longbone	Fragment	1					MW	0.3	
12	9	3	20-30	Pig	Phalange	Complete	1					MW	8.24	1st phalange
12	9	3	20-30	Pig	Metacarpal	Fragment	1					MW	2.07	
12	9	3	20-30	Mammal	Unid.	Fragment	1					MW	2.59	
12	9	3	20-30	Oyster	Shell	Complete	1					NW	75.85	
13	9	4	30-40	Pig	Mandible	Fragment	1	R				MW	21	P_3-M_2
13	9	4	30-40	Mammal (M)	Femur	Diaphysis	1			Cut/chop		MW	31.29	
13	9	4	30-40	Mammal (M)	Mandible	Fragment	1					MW	9.78	No dentition present
13	9	4	30-40	Pig	Teeth	Fragment	1					MW	1.11	Inscisor
13	9	4	30-40	Mammal (M)	Tibia	Diaphysis	1	R				MW	11.62	
13	9	4	30-40	Mammal (M)	Longbone	Fragment	4					MW	15.16	
13	9	4	30-40	Mammal	Unid.	Fragment	1				Calcined		0.88	
13	9	4	30-40	Mammal	Mandible	Fragment	1					MW	0.66	Small fragment, no dentition present
13	9	4	30-40	Mammal	Unid.	Fragment	10					MW	4.91	
13	9	4	30-40	Mammal	Vertebrae	Fragment	1					MW	10.95	
13	9	4	30-40	Mammal (M-L)	Rib	Midshaft	1					MW	5.75	
13	9	4	30-40	Cattle	Carpal	Complete	1					MW	13.2 6	Cuneiform
13	9	4	30-40	Mammal (M)	Innominate	Fragment	1	R				MW	6.45	Pubis near acetabulum
13	9	4	30-40	Mammal	Unid.	Fragment	1					MW	5.79	
13	9	4	30-40	Pig	Teeth	Fragment	1					MW	0.51	Premolar; two mend as one
13	9	4	30-40	Pig	Teeth	Fragment	1					MW	2.21	Canine, two mend as one
13	9	4	30-40	Oyster	Shell	Fragment	12					W	13.11	
13	9	4	30-40	Clam	Shell	Complete	1					MW	11.97	

Bag #	Unit	Level	Depth*	Taxa	Element	Portion	Count	Symmetry	Age	Butchery Marks	Taphonomy	Weatehring	Wt. gms.	Comments
14	9	5	50-60	Mammal (M)	Femur	Fragment	1					MW	17.79	
14	9	5	50-60	Pig	Teeth	Complete	1					MW	4.04	
14	9	5	50-60	Mammal	Unid.	Fragment	1					MW	8.58	
15	10	1	0-10	Pig	Astragalus	Complete	1	R				MW	9.85	
15	10	1	0-10	Pig	Astragalus	Complete	1	L				MW	12.04	
15	10	1	0-10	Mammal	Unid.	Fragment	3					MW	5.26	
16	10	2	10-20	Mammal (M)	Fibula	Diaphysis	1					MW	5.2	
16	10	2	10-20	Mammal	Unid.	Fragment	1					MW	8.32	
16	10	2	10-20	Mammal	Unid.	Fragment	4					MW	6.88	
16	10	2	10-20	Pig	Teeth	Complete	1					NW	1.16	Maxillary premolar
16	10	2	10-20	Pig	Teeth	Fragment	1					NW	1.61	Two mend as one
17	10	3	20-30	Mammal (M)	Longbone	Fragment	1					MW	5.5	
17	10	3	20-30	Mammal (M)	Scapula	Fragment	1			Saw		MW	12.46	Sawn both ends, shoulder steak
17	10	3	20-30	Vertebrate	Unid.	Fragment	1					MW	0.44	
17	10	3	20-30	Mammal	Unid.	Fragment	2					MW	3.2	
18	11	1	0-10	Mammal (M)	Longbone	Fragment	1					W	2.9	
18	11	1	0-10	Mammal	Unid.	Fragment	3					MW	1.61	
18	11	1	0-10	Mammal	Teeth	Fragment	1					MW	0.32	Bovidae
18	11	1	0-10	Oyster	Shell	Fragment	1					W	0.3	