A Report on the Analysis of Faunal Remains from Addison Plantation (18PR175)

Report Submitted to:

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Introduction

This report presents the analysis and interpretation of faunal remains recovered from the Addison Plantation site (18PR175) in Prince George's County, Maryland during the excavations conducted from 1986-1988 by John Milner & Associates (MAC Lab 2002; McCarthy 2010:6-7). The site was occupied starting around 1685 into the 20th century. However, the majority of the features can be placed in two phases from ca. 1685-ca. 1730 and ca. 1730-ca. 1800. During the first period of occupation the site was owned and occupied by Col. John Addison (1687-1705) and Col. Thomas Addison (1705-1727). The second phase owners/occupants were also members of the Addison family, who finally sold the property around 1810. During the entire occupation the site appears to have functioned as a domestic complex for the wealthy plantation owners. However, it may have also served as a "store" during the first phase of occupation. This assemblage provides an opportunity to examine material culture change through faunal remains over more than a century of occupation by the same family. Additionally, it supplies important data on diet and economy along the late-17th-century Potomac frontier.

Methods

The assemblage was identified using the comparative zooarchaeological collection at the University of Tennessee, Knoxville. Fragments were identified to the lowest taxonomic level possible. Element, portion, and side of the bone was also recorded and all bone was weighed. Fragments that could not be identified to class were counted and weighed as unidentified. Bone modifications such as butchering marks, rodent and carnivore gnawing, burning, and root etching were also noted in order to better understand taphonomy on the site. Additionally, epiphyseal fusion was recorded for specimens in order to better understand age structure of the assemblage.

The assemblage was then quantified using three standard zooarchaeological measures: number of identified specimens present (NISP), minimum number of individuals (MNI), and biomass.

NISP, number of identified specimens present, is simply a count of fragments. This measure, like all methods for quantifying faunal assemblages has both positive and negative aspects (Grayson 1984). Specifically, NISP has a tendency to be affected by numerous factors, including the ability to identify elements in different animals, laboratory techniques, cultural and natural site formation processes, and recovery methods (Reitz and Wing 1999:192). Despite the biases that come along with these data they are included in the analysis because of their ease of replication and standard use and presentation in zooarchaeological analyses.

MNI, minimum number of individuals, was calculated using the method outlined by White (1953) and taking age of the specimens into consideration, which results in a slightly more accurate estimate. Like NISP, however, this method also has biases that are affected by the same factors (Reitz and Wing 1999:195). In addition, the way in which the data is aggregated in the calculation of MNI can affect the result (Grayson 1984:90-92; Horton 1984:269). First, the entire assemblage, including plow zone and feature contexts, was combined in order to present the entirety of the faunal collection. However, the occupation span of the site is relatively long, and there are distinct areas of the site that have pre-1730 and post-1730 associations, in addition to clearly differentiated architecture. Therefore, the assemblage was separated into four groups: feature 6 (a large cellar dating between ca. 1685 and 1730), other pre-1730 features, post-1730 features, and plow zone.

This was done because it provided temporal control over the assemblage by allowing the John and Thomas Addison occupations to be analyzed separately, and because it allowed for the comparison of assemblages from two different time periods in order to determine if, and how,

the diet of the people at the site changed over time with the increasing settlement that happened after 1730. These five separate groupings of the overall assemblage, the feature 6 assemblage, the other pre-1730 feature assemblage, the post-1730 feature assemblage, and the plowzone assemblage were also used in the calculation of all of the other measures of relative taxonomic abundance, but skeletal portion analyses and age distributions were only calculated for the feature 6 assemblage, other pre-1730 feature assemblage, and the post-1730 feature assemblage since these three groups captured most of the temporally distinct faunal data and were determined to be the most interpretively significant for these specific analyses.

The final method used for the quantification of the faunal remains from 18PR175 is the biomass measure obtained by using the allometric regression formulae described by Reitz and Wing (1999:72; see also Reitz and Cordier 1983; Reitz et al. 1987). This method relies upon the biological principle that bone weight and meat weight are correlated. In addition, this relationship is the same throughout time; therefore this method of meat weight estimation from bone weight has less potential room for error than other methods (Reitz and Wing 1999:227). However, like MNI, the way in which the units of excavation are grouped can affect the biomass, therefore five biomass calculations were completed, one for the entire assemblage and one for each of the sub-assemblages. Additionally, other concerns with the use of biomass have been raised (Jackson 1989), however it is necessary to employ some form of dietary contribution calculation for species in order to conduct intrasite and intersite comparisons of the relative contribution of species to diet. Biomass appears to be the least biased of the methods available and it has the advantage of being comparable to the useable meat calculations employed in previous large-scale faunal analyses in the Chesapeake (Bowen 1980, 1994, 1996, 1999; Miller 1984, 1988).

In addition to the measures of taxonomic abundance discussed above, a skeletal part frequency analysis was performed on the collection in order to address questions of taphonomy and preference for certain cuts of meat (Binford 1978; Reitz and Wing 1999:202-221; Klippel 2001). An analysis of skeletal part frequency, based on NISP, was performed where elements were assigned to five categories: head, axial, foot, front quarter, and hind quarter. The archaeological assemblage was then compared to a standard specimen of the same species using percentages. Four taxa (*Bos taurus* (cow), *Sus scrofa* (pig), *Ovis/Capra* (sheep/goat), and *Odocoileus virginianus* (deer)) were analyzed using this method.

Elements were assigned to the skeletal categories as follows. The head category counted the entire skull as one element, the mandible as two, hyoid bones and the teeth. The axial category included the pelvis and all ribs and vertebrae, with the exception of caudal vertebrae. The foot category consisted of all elements including and below the metacarpals and metatarsals. The hind quarter category was represented by the femur, tibia, and patella. Finally, the front quarter category consisted of the scapula, humerus, radius, and ulna.

Determining the age at death for specimens in faunal collections can be used to address a variety of questions including herd management, specific harvest strategies, seasonality, and production (Reitz and Wing 1999:178-179). In general, determining the age for most mammals is done through the examination of tooth eruption, tooth wear, and epiphyseal fusion. For the purposes of this report, only epiphyseal fusion of individual elements was examined for the four large mammals present on the site, *Bos taurus*, *Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus*. These elements included proximal and distal ends of long bones as well as vertebra, pelvis, and calcaneus fragments. The fusion of elements is not as specific as tooth eruption and wear, and often occurs within a time range of a few months and can be affected by various

factors (Reitz and Wing 1999:75). For this analysis I relied upon the fusion data generated by Silver (1970), Schmid (1972:75), and Purdue (1983) to age individual specimens. Additionally, fusion ages for sheep were used for the sheep/goat category. Elements were then placed into one of three distinct age classes: early fusing (generally less than 12 months), middle fusing (about 12-30 months), and late fusing (about 35-42 months) after Chaplin (1971: Table 10). The age ranges for these groups in months are only estimates, and as a result of the nature of epiphyseal fusion, it should be realized that the ages are relative and the actual age for a specimen may be slightly older or younger than indicated. However, the three groups do allow specimens to be assigned to a juvenile, subadult, or adult category, which can be useful in understanding harvest strategies and the multiple uses of livestock.

Taphonomy and Recovery

Prior to the analysis and interpretation of the faunal remains from Addison the processes effecting the preservation of organic remains at the site must be addressed. Needless to say, these taphonomic processes can significantly bias the data, and affect what research questions can be asked and how to address them best. In general, bone preservation for this assemblage appears to be relatively good, which is probably due to the fact that a large proportion of the faunal remains were recovered from features. The presence of small and delicate fish, bird, and mammal bones indicates that burial conditions were at least somewhat favorable for the preservation of bone. It is likely that the soil at the site was slightly acidic, which tends to be common in Chesapeake plow zones, specifically plow zone in southern Maryland tends to have a pH around 5.3 (Miller 1984:203-205). Based upon the condition of the faunal remains, preservation bias does not appear to be a major factor affecting this assemblage (see discussion of plow zone assemblage

below). However, without data on the actual soil pH at the site its effect on the preservation of bone is only speculative.

Another taphonomic process affecting the assemblage is plowing, which is particularly germane to the plow zone assemblage for obvious reasons. The major effect that plowing has on bone preservation is related to fragmentation. In general, assemblages from plow zone tend to be highly fragmented and tend to have an extremely high proportion of unidentifiable bones (Lyman and O'Brien 1987:495-497). However, this problem does not manifest in the plow zone assemblage when examining bone size. Bone weight was used as a proxy for size and the results indicate that bones from the plowzone assemblage, while they are the smallest on average compared to all the other sub-assemblages in the collection, are not significantly different in terms of size from the bones in the pre-1730 and post-1730 feature assemblages (Table 1). The average weight for a bone fragment in the plow zone assemblage was 5.23g, while the average weight per fragment in the feature 6, pre-1730 feature, and post-1730 feature assemblages were 7.07g, 5.39g, and 5.87g, respectively (Table 1). It is likely that the larger average fragment size in the feature 6 assemblage stems from the fact that the cellar acted as a refuse disposal area after it fell out of use, allowing larger artifacts to accumulate and remain relatively undisturbed.

	Overall	**Feature 6**	**Other Pre-1730 Features**	**Post-1730 Features**	**Plow Zone**
Avg. Frag. Weight (g)	5.97	7.07	5.39	5.87	5.23
Avg. ID to at least family frag. Weight (g)	9.88	23.85	20.45	16.53	17.24
Avg. UID frag. Weight (g)	0.63	0.5	0.66	0.58	0.7

Table 1: Table Comparing Bone Fragment Size in Different Contexts.

While the larger bone fragment size in the feature 6 assemblage indicates slightly better preservation than the other sub-assemblages, the smallest average size of unidentified fragments further supports this by indicating that smaller elements were able to be identified better, likely due to a lack of fragmentation and decomposition stemming from favorable burial conditions. This is further supported by the richness of the feature 6 assemblage, which contains more and

smaller species, particularly fish, birds, and small mammals, than any of the other sub-assemblages, indicating favorable preservation. While some of this difference may be due to differential excavation methods between feature and plow zone contexts, comparing the pre- and post-1730 feature assemblages to the feature 6 assemblage yields the same result, suggesting that the taphonomic processes acting upon the cellar faunal assemblage were slightly more favorable to bone preservation.

Heat alteration also has the potential to significantly impact the preservation and analysis of faunal remains on a site. Burning usually occurs at temperatures up to 500°C and alters bone by removing the organic material; it generally changes the color of the bone to brown or black. Calcining of bone occurs at temperatures over 500°C and can shrink the bone and make it more brittle and prone to fragmentation; it usually changes the color of the bone to white or blue-gray (Lyman 1994:384-392; Reitz and Wing 1999:133). Of the 7,787 bone fragments recovered from entire site 470, or roughly 6%, showed evidence of heat alteration. One hundred and seventy-one fragments were burned and 299 fragments were calcined (Table 2). With the exception of the feature 6 assemblage, the other sub-assemblages showed a similar pattern with between 1% and 4% of the assemblages heat-altered.

	Overall (n=7,787)	**Feature 6 (n=1,241)**	**Other Pre-1730 Features (n=385)**	**Post-1730 Features (n=1,140)**	**Plow Zone (n=2,109)**
Natural	94%	74%	96%	96%	99%
Burned	2%	10%	1%	0%	1%
Calcined	4%	16%	3%	4%	0%

Table 2: Table Showing Percentage of Heat Alteration in Assemblages.

The proportion of heat-altered bone in the feature 6 assemblage is significantly higher than any of the other sub-assemblages. The high amount of burned and calcined bone in the cellar likely stems from the fact that the overlying building burned sometime around 1730, as indicated by other artifacts and archaeological evidence (McCarthy 2010:5). Therefore, the heat-altered fragments in this assemblage may represent portions that were burned during cooking

activities or, more likely, altered during the destruction of the house by fire. Despite the higher occurrence of heat-altered bone in the cellar assemblage, it appears that the ability to identify specimens was not significantly affected since the identification rate and fragment size is comparable between all of the sub-assemblages.

Recovery strategy is exceedingly important in the analysis of any faunal collection, particularly in terms of the richness of the assemblage and the number of identifiable fragments. Most soils on this site were at least dry-screened through ¼" mesh (MAC Lab 2003). While ¼" dry-screening does not capture the smallest bone fragments, such as small fish, bird, and mammal bones, it does serve to recover the majority of the larger species. As such, the recovery methods used during the excavations at Addison should allow for a relatively unbiased representation of larger animal species such as *Bos taurus*, *Gallus gallus* (chicken), or *Acipenser sp.* (sturgeon). However, smaller species, which tend to be composed primarily of fish and birds, will likely be underrepresented in this assemblage. Despite this, the Addison assemblage does contain some specimens from smaller species such as *Peromyscus* (mouse), *Aix sponsa* (wood duck), and *Morone americana* (white perch), though they are few in number. Without doubt, quarter-inch screening is preferable to no screening at all and will generally better represent the richness of a faunal assemblage than hand-picking artifacts.

Overall Results

The faunal assemblage from Addison consisted of 7,787 fragments, of this total 1,241 (16%) were recovered from feature 6, 385 (5%) were recovered from other pre-1730 features, 1,140 (15%) were recovered from post-1730 features, and 2,109 (27%) were recovered from plow zone, the remaining 2,912 fragments could not be easily placed within one of the sub-assemblages. For the purposes of this section of the report all of the faunal remains will be

combined regardless of their context and association and the results of their analysis will be presented (Table 3). The next sections of the report will focus on the sub-assemblages in order to determine if and how they differ from one another. This section only addresses measures of taxonomic abundance as a way of presenting general impressions about the entire assemblage. The following sections on feature 6, other pre-1730 features, and post-1730 features will address the more detailed analyses of skeletal parts and age distributions.

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Mammalia								
Bos taurus	1044	13.41%	13	24.07%	28562.8	61.44%	269.29	57.15%
Cf. *Bos taurus*	12	0.15%			179.6	0.39%	2.81	0.60%
Sus scrofa	637	8.18%	15	27.78%	5824.7	12.53%	64.38	13.66%
Cf. *Sus scrofa*	5	0.06%			47.8	0.10%	0.85	0.18%
Ovis aries	1	0.01%	1	1.85%	29.8	0.06%	0.56	0.12%
Ovis/Capra	53	0.68%	3	5.56%	372.4	0.80%	5.42	1.15%
Cf. *Ovis/Capra*	6	0.08%			68.4	0.15%	1.18	0.25%
Bovidae	1	0.01%			0.6	0.00%	0.02	0.00%
Odocoileus virginianus	29	0.37%	3	5.56%	434.8	0.94%	6.23	1.32%
Cf. *Odocoileus virginianus*	1	0.01%			12.8	0.03%	0.26	0.06%
Vulpes fulva	1	0.01%	1	1.85%	3.2	0.01%	0.08	0.02%
Didelphis marsupialis	11	0.14%	2	3.70%	17	0.04%	0.34	0.07%
Marmota monax	3	0.04%	1	1.85%	2.1	0.00%	0.05	0.01%
Cf. Sciurus niger	3	0.04%	1	1.85%	1.8	0.00%	0.04	0.01%
Peromyscus	1	0.01%	1	1.85%	0.05	0.00%	0.001	0.00%
Artiodactyla	2649	34.02%			8828.2	18.99%	93.6	19.87%
UID *Mammalia*	3220	41.35%			2039.35	4.39%	25.04	5.31%
Aves								
Gallus gallus	11	0.14%	2	3.70%	18.3	0.04%	0.29	0.06%
Cf. *Gallus gallus*	1	0.01%			1.4	0.00%	0.03	0.01%
Meleagris gallopavo	3	0.04%	1	1.85%	10.5	0.02%	0.17	0.04%
Branta canadensis	1	0.01%	1	1.85%	1.2	0.00%	0.02	0.00%
Charadriiformes	1	0.01%	1	1.85%	0.5	0.00%	0.01	0.00%
Anas platyrhynchos	1	0.01%	1	1.85%	0.7	0.00%	0.02	0.00%
Cf. Aix sponsa	1	0.01%	1	1.85%	0.7	0.00%	0.02	0.00%
Anatidae	1	0.01%			0.05	0.00%	0.001	0.00%
UID *Aves*	49	0.63%			19.7	0.04%	0.31	0.07%
Osteichthyes								
Archosargus probatocephalus	1	0.01%	1	1.85%	0.8	0.00%	0.01	0.00%

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Lepisosteus osseus	1	0.01%	1	1.85%	0.05	0.00%	0.003	0.00%
Morone americana	6	0.08%	2	3.70%	0.5	0.00%	0.02	0.00%
Ameiurus sp.	4	0.05%	1	1.85%	0.85	0.00%	0.02	0.00%
UID *Osteichthyes*	23	0.30%			2.1	0.00%	0.05	0.01%
Reptilia								
Testudines	6	0.08%	1	1.85%	3.2	0.01%	0.04	0.01%
Total	7787		54		46485.95		471.165	

Table 3: Table Showing Taxonomic Abundance Measures for the Overall Assemblage at 18PR175.

The analysis of the faunal remains from all contexts on the site revealed that the top five most abundant species, based upon NISP, were *Bos taurus, Sus scrofa, Ovis/Capra, Odocoileus virginianus,* and *Gallus gallus*. The MNI calculation revealed a total of at least 54 individuals represented in the assemblage. The most abundant species, based upon MNI were *Sus scrofa, Bos taurus, Ovis/Capra, Odocoileus virginianus, Gallus gallus,* and *Didelphis marsupialis* (opossum). The biomass calculation showed *Bos taurus, Sus scrofa, Odocoileus virginianus, Ovis/Capra,* and *Didelphis marsupialis* to be the top species contributing to diet on the site. Clearly, these three different measures of taxonomic abundance show some variation in terms of the most important dietary contributors in the assemblage. However, it should be noted that, in general *Bos taurus, Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus,* appear to be the primary sources of meat based upon all of the taxonomic abundance measures. As discussed above, all three of these measures have advantages and disadvantages stemming from aggregation, post-depositional processes, and variation in calculation. Therefore, while all of these data are presented, the following discussions will rely mainly on biomass when addressing dietary contribution as it is one of the least biased measures of the three.

At least 20 distinct species were identified in the faunal assemblage from Addison. However, as many as two of these species are commensal meaning that inhabitants of the site would likely have not eaten them and that their presence in the assemblage probably results from natural or non-food-related processes. From the overall analysis of the faunal assemblage it appears that residents of the site relied primarily upon beef and pork for their meat diet. Indeed, beef and pork account for almost 96% of the total biomass if unidentified and commensal species are removed. It should be noted that domestic species account for more than 98% of the total biomass, while wild species account for almost 2%. Most of the wild biomass is derived from

deer in the collection, but at least three small mammal species, five bird species, four fish species, and turtle also contribute to non-domestic biomass. The composition of the wild assemblage indicates that the occupants of the site took advantage of available local resources, including fish and waterfowl in the nearby Potomac River. However, based upon taxonomic abundance measures, it appears that the presence of wild game at the table was still somewhat rare. Rather than stemming from actual cultural processes at the site the low representation of wild species is probably due to the lack of fine screening. Indeed, the majority of the wild species present in this assemblage are small birds, fish, or mammals whose bones would have been easily lost in quarter-inch screen, leading to an underrepresentation in the assemblage.

Plow Zone Results

The faunal assemblage from the plow zone contexts at Addison consisted of 2,109 fragments. These remains likely represent over a century of deposition at the site, and, as a result, provide little information about the diet of the individual households on Addison Plantation. Therefore, this section of the report will only summarize the taxonomic abundance measures for these contexts in order to present the raw data for future research and for the sake of completely reporting the faunal remains from the site (Table 4). The following sections will address the faunal remains from sealed features that can be more securely associated with individual households or household groups at the Addison Plantation site.

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Mammalia								
Bos taurus	272	12.90%	5	38.46%	6516.5	59.09%	71.22	55.30%
Cf. *Bos taurus*	2	0.09%			14.5	0.13%	0.29	0.23%
Sus scrofa	151	7.16%	5	38.46%	1020.1	9.25%	13.39	10.40%
Cf. *Sus scrofa*	1	0.05%			10.5	0.10%	0.22	0.17%
Ovis/Capra	12	0.57%	1	7.69%	76.3	0.69%	1.3	1.01%
Cf. *Ovis/Capra*	1	0.05%			2.7	0.02%	0.06	0.05%
Odocoileus virginianus	8	0.38%	1	7.69%	85.8	0.78%	1.45	1.13%
Cf. *Odocoileus virginianus*	1	0.05%			12.8	0.12%	0.26	0.20%
Artiodactyla	665	31.53%			2592.3	23.51%	31.07	24.12%
UID *Mammalia*	986	46.75%			693.5	6.29%	9.48	7.36%
Aves								
UID *Aves*	7	0.33%			1.9	0.02%	0.04	0.03%
Osteichthyes								
Ameiurus sp.	1	0.05%	1	7.69%	0.4	0.00%	0.008	0.01%
UID *Osteichthyes*	2	0.09%			0.3	0.00%	0.01	0.01%
Total	2109		13		11027.6		128.798	

Table 4: Table Showing Taxonomic Abundance Measures for the Plow Zone Assemblage at 18PR175.

The analysis of the faunal remains from plow zone contexts on the site revealed that the top five most abundant species, based upon NISP, were *Bos taurus, Sus scrofa, Ovis/Capra, Odocoileus virginianus,* and *Ameirus sp*. (bullhead catfish). The MNI calculation revealed a total of at least 13 individuals represented in the assemblage. The most abundant species, based upon MNI were *Bos taurus, Sus scrofa, Ovis/Capra, Odocoileus virginianus,* and *Ameirus sp*. The biomass calculation showed *Bos taurus, Sus scrofa, Odocoileus virginianus, Ovis/Capra,* and *Ameirus sp*. to be the top species contributing to diet on the site. In general, *Bos taurus, Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus* appear to be the primary sources of meat based upon all of the taxonomic abundance measures. However, it should be noted that the five species listed above were the only mammal species identified from plow zone contexts. The fact that these larger species are better represented in the plow zone is not unexpected since plowing tends to fragment bone, favoring the identification of larger taxa, and because plow zone soils in the Chesapeake tend to be acidic, which accelerates the deterioration of smaller more delicate bone, generally from smaller taxa.

Only 5 distinct species were identified in the plow zone assemblage from Addison. None were commensal species, again indicating that smaller more delicate specimens have not survived well in the plow zone. Domestic species account for around 98% of the total biomass, while wild species account for 2%. All of the wild biomass is derived from deer and fish in the assemblage. Overall, the plow zone assemblage is difficult to interpret with regard to diet on the site because it is a mixed context that likely contains remains from over 100 years of occupation. Preservation, identification, and, possibly, sampling also bias this assemblage as indicated by the almost complete lack of small species. The underrepresentation of small taxa likely stems from taphonomic processes including acidic soil, plowing, and lack of fine screening. While analyses

and comparison of bone size and preservation performed for the sub-assemblages above did not indicate any strong preservation biases, the actual analysis of the plow zone assemblage does seem to indicate that taphonomic processes have significantly affected this particular assemblage, making any interpretation drawn from it suspect.

Post-1730 Feature Results

The faunal assemblage from the post-1730 feature contexts at Addison consisted of 1,140 fragments. Only the faunal remains from the post-1730 features will be examined and the results of their analysis will be presented in this section (Table 5). The majority of these contexts date between ca. 1730 and ca. 1800, which provides information on the diet at the site from around the period of ownership of Capt. John Addison, starting in 1727, to the end of the Addison family tenure in 1810. It is important to note that some of the contexts in this assemblage have dates that extend beyond the Addison family ownership, but these contexts are a minority and likely will not affect the interpretation of the assemblage.

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Mammalia								
Bos taurus	165	14.47%	3	17.65%	3916.9	58.54%	45.05	54.43%
Cf. *Bos taurus*	1	0.09%			13.1	0.20%	0.27	0.33%
Sus scrofa	112	9.82%	3	17.65%	938.5	14.03%	12.45	15.04%
Cf. *Sus scrofa*	1	0.09%			6.9	0.10%	0.15	0.18%
Ovis/Capra	5	0.44%	1	5.88%	40.2	0.60%	0.73	0.88%
Cf. *Ovis/Capra*	3	0.26%			32.4	0.48%	0.6	0.72%
Odocoileus virginianus	6	0.53%	1	5.88%	119.2	1.78%	1.94	2.34%
Didelphis marsupialis	4	0.35%	1	5.88%	12.4	0.19%	0.25	0.30%
Marmota monax	1	0.09%	1	5.88%	0.9	0.01%	0.02	0.02%
Cf. Sciurus niger	3	0.26%	2	11.76%	1.8	0.03%	0.04	0.05%
Artiodactyla	386	33.86%			1345.7	20.11%	17.22	20.81%
UID *Mammalia*	429	37.63%			245.8	3.67%	3.73	4.51%
Aves								
Gallus gallus	2	0.18%	1	5.88%	1.7	0.03%	0.03	0.04%
Meleagris gallopavo	1	0.09%	1	5.88%	6.1	0.09%	0.11	0.13%
Charadriiformes	1	0.09%			0.5	0.01%	0.01	0.01%
Anas platyrhynchos	1	0.09%	1	5.88%	0.7	0.01%	0.01	0.01%
UID *Aves*	14	1.23%			6.8	0.10%	0.12	0.14%
Osteichthyes								
Ameiurus sp.	1	0.09%	1	5.88%	0.3	0.00%	0.006	0.01%
UID *Osteichthyes*	3	0.26%			0.35	0.01%	0.01	0.01%
Reptilia								
Testudines	1	0.09%	1	5.88%	0.5	0.01%	0.02	0.02%
Total	1140		17		6690.75		82.766	

Table 5: Table Showing Taxonomic Abundance Measures for the Post-1730 Feature Assemblage at 18PR175.

The analysis of the faunal remains from post-1730 contexts on the site revealed that the top five most abundant species, based upon NISP, were *Bos taurus, Sus scrofa, Ovis/Capra, Odocoileus virginianus,* and *Didelphis marsupialis*. The MNI calculation revealed a total of at least 17 individuals represented in the assemblage. The most abundant species, based upon MNI were *Bos taurus, Sus scrofa,* and *Sciurus niger.* The biomass calculation showed *Bos taurus, Sus scrofa, Odocoileus virginianus, Ovis/Capra,* and *Didelphis marsupialis* to be the top species contributing to diet on the site. Based upon all three measures of taxonomic abundance *Bos taurus, Sus scrofa, Ovis/Carpa,* and *Odocoileus virginianus* appear to be the primary sources of meat in the post-1730 feature assemblage. Like the overall analysis, the following discussions will rely mainly on biomass when addressing dietary contribution as it is one of the least biased measures of the three.

At least 13 distinct species were identified in the post-1730 feature faunal assemblage from Addison. In general, the assemblage is not very rich for its time period, and only one of these species would be considered commensal and likely ended up in the assemblage through natural processes, such as burrowing and dying. Nevertheless, previously-analyzed sites in the Chesapeake dating from 1740-1790 tend to have between 19 and 39 species per assemblage, averaging 27, which places the post- 1730 Addison assemblage well below that range (Bowen 1996:122). The low richness for this assemblage when compared to other sites from the same time period in the Chesapeake likely stems from a combination of context types and recovery (as discussed below). From the analysis of this assemblage it appears that residents of the site relied primarily upon beef, pork, mutton, and venison for their meat diet. Indeed, beef, pork, and mutton account for more than 96% of the total biomass if unidentified and commensal species are removed. Wild species account for the remaining 4%. Most of the wild biomass stems from

deer, though fish, wild mammals, and bird species are also present in much smaller numbers. The reliance on wildlife is generally low in this assemblage, which is common for high status sites dating from 1740-1790, like Addison (Bowen 1996:122).

A skeletal part frequency analysis for the post-1730 feature assemblage was performed for identified fragments from *Bos taurus*, *Sus scrofa*, *Ovis/Capra,* and *Odocoileus virginianus*. As explained above, this analysis quantified fragments from different portions of the skeleton and compared their occurrence on the site with what should be expected from a typical specimen. The skeletal part frequency analysis for *Bos taurus* showed that all portions were present in roughly expected proportions (Table 6). This pattern suggests that cows were slaughtered and consumed on site rather than being imported or exported. Additionally, it indicates that preservation bias does not significantly affect the assemblage of cow bones since both dense and less dense elements are present in expected quantities.

Bos taurus	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	50	41	53	8	7
Observed %	31%	26%	33%	5%	4%
Expected %	21%	37%	36%	4%	3%

Table 6: Table Showing Skeletal Part Frequency for *Bos taurus* in the Post-1730 Feature Assemblage.

The analysis for *Sus scrofa* revealed that head portions were much higher than expected while foot and axial portions were significantly lower than expected (Table 7). The high proportion of head parts is likely related to the ease of identification and general robust nature of pig teeth, which account for 59 of the identified head portions. Lack of feet and axial portions may indicate that pork was being barreled and traded away from the plantation, or the lack of axial portions may result from the fragmentation of elements in that category, specifically ribs. The analysis of skeletal parts from *Ovis/Capra* has a small sample of five fragments. Clearly, this sample is too small to say anything meaningful about, but does help to underscore the scarcity of caprine remains in the post-1730 feature assemblage (Table 8). Finally, the skeletal

parts from *Odocoileus virginianus* also had a small sample of 6 fragments, which is again too small to meaningfully interpret (Table 9)

Sus scrofa	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	93	11	1	4	3
Observed %	83%	10%	1%	4%	3%
Expected %	21%	50%	24%	3%	2%

Table 7: Table Showing Skeletal Part Frequency for *Sus scrofa* in the Post-1730 Feature Assemblage.

Ovis/Capra	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	2	1	0	1	1
Observed %	40%	20%	0%	20%	20%
Expected %	21%	37%	36%	4%	3%

Table 8: Table Showing Skeletal Part Frequency for *Ovis/Capra* in the Post-1730 Feature Assemblage.

Odocoileus virginianus	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	0	2	1	2	1
Observed %	0%	33%	17%	33%	17%
Expected %	19%	44%	31%	3%	3%

Table 9: Table Showing Skeletal Part Frequency for *Odocoileus virginianus* in the Post-1730 Feature Assemblage.

An age distribution analysis for the post-1730 feature assemblage was also performed for identified fragments from *Bos taurus*, *Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus*. The age distribution analysis for *Bos taurus* showed that there were no juvenile specimens present in the assemblage and that while there was some evidence of sub-adult specimens, the majority were fully mature (Table 10 and Table 11). The analysis for *Sus scrofa* contained far fewer bones, 13, and is likely not significant (Table 12 and Table 13). Nevertheless, the age distribution showed that all of the pigs in the post-1730 feature assemblage were likely fully mature specimens. The analyses for *Ovis/Capra* and *Odocoileus virginianus* were comprised of far too few bones to be significant, one and three fragments, respectively. The results are presented below, but they do not provide any definitive information on age classes for these two taxa (Table 14-Table 17).

Bos taurus n=40	**Early**	**Middle**	**Late**
%Fused	43%	20%	25%
%Unfused	0%	5%	8%

Table 10: Table Showing Age Distribution for *Bos taurus* in the Post-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Phalanx	11		18-24
Proximal Metapodium	3		Fused Before Birth
Acetabulum	1		6-10
Proximal Radius	2		12-18
Vertebral Centrum	8	3	84-104
Distal Femur	1		42-48
Proximal Ulna	1		42-48
Calcaneus	2	1	36-42
Distal Metapodium	3	1	24-36
Distal Tibia	3		24-30

Table 11: Table Showing Elements Used in the Age Distribution Analysis for *Bos taurus* in the Post-1730 Feature Assemblage.

Sus scrofa n=13	**Early**	**Middle**	**Late**
%Fused	46%	38%	15%
%Unfused	0%	0%	0%

Table 12: Table Showing Age Distribution for *Sus scrofa* in the Post-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Humerus	2		12-18
Proximal Metapodium	1		Fused Before Birth
Phalanx	3		24
Distal Radius	2		42
Calcaneus	2		24-30
Distal Metapodium	1		24-27
Distal Tibia	2		24

Table 13: Table Showing Elements Used in the Age Distribution Analysis for *Sus scrofa* in the Post-1730 Feature Assemblage.

Ovis/Capra n=1	**Early**	**Middle**	**Late**
%Fused	100%	0%	0%
%Unfused	0%	0%	0%

Table 14: Table Showing Age Distribution for *Ovis/Capra* in the Post-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Humerus	1		3-10

Table 15: Table Showing Elements Used in the Age Distribution Analysis for *Ovis/Capra* in the Post-1730 Feature Assemblage.

Odocoileus virginianus n=3	**Early**	**Middle**	**Late**
%Fused	67%	33%	0%
%Unfused	0%	0%	0%

Table 16: Table Showing Age Distribution for *Odocoileus virginianus* in the Post-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Humerus	1		12-20
Acetabulum	1		8-11
Calcaneus	1		26-29

Table 17: Table Showing Elements Used in the Age Distribution Analysis of *Odocoilues virginianus* in the Post-1730 Feature Assemblage.

Pre-1730 Feature Assemblage Results

The faunal assemblage from the pre-1730 feature contexts at Addison consisted of 385 fragments. While feature 6, the cellar, is technically a pre-1730 feature, it is excluded from this grouping and analyzed separately below. Therefore, this section of the report only deals with the faunal remains recovered from other pre-1730 features (Table 18). The examination of the pre-1730 feature contexts, excluding feature 6, provides the advantage of separating out the cellar, which has a different taphonomic history than the other features from that time period, specifically related to the burning of the house and the higher proportion of heat-altered bone and other artifacts. The assemblage from these pre-1730 feature contexts, which are comprised mostly of post holes and post molds, generally represents the faunal remains accumulated during the occupation of the Addison plantation by Col. John Addison and Col. Thomas Addison from ca. 1685-ca. 1730.

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Mammalia								
Bos taurus	49	12.73%	2	33.33%	1323.9	63.83%	16.97	60.33%
Sus scrofa	19	4.94%	1	16.67%	123.6	5.96%	2.01	7.15%
Ovis/Capra	1	0.26%	1	16.67%	1.4	0.07%	0.04	0.14%
Artiodactyla	144	37.40%			509.8	24.58%	7.2	25.60%
UID *Mammalia*	170	44.16%			112.25	5.41%	1.85	6.58%
Aves								
Gallus gallus	1	0.26%	1	16.67%	0.5	0.02%	0.01	0.04%
Meleagris gallopavo	1	0.26%	1	16.67%	2.8	0.13%	0.05	0.18%
Total	385		6		2074.25		28.13	

Table 18: Table Showing Taxonomic Abundance Measures for the Pre-1730 Feature Assemblage at 18PR175.

The analysis of the faunal remains from the pre-1730 feature contexts on the site revealed that the top five most abundant species, based upon NISP, were *Bos taurus, Sus scrofa*, *Ovis/Capras, Gallus gallus*, and *Meleagris gallopavo* (turkey). The MNI calculation revealed a total of at least 6 individuals represented in the assemblage. The most abundant species, based upon MNI was *Bos taurus*, with the remaining species represented by one individual. The biomass calculation showed *Bos taurus, Sus scrofa, Ovis/Capra, Meleagris gallopavo,* and *Gallus gallus* to be the top species contributing to diet on the site. Based upon all three measures of taxonomic abundance *Bos taurus* and *Sus scrofa* appear to be the primary sources of meat in the assemblage. However, it should be noted that the size of this assemblage is quite small and the features that it is drawn from are not typically feature types that produce large amounts of faunal remains. As such, this assemblage is likely somewhat biased in terms of its representation of species and proportions of species consumed by the pre-1730 households at Addison. With this in mind, the assemblage is still able to provide some data about the history of the site. Again, like the previous analyses the following discussions will rely mainly on biomass when addressing dietary contribution as it is one of the least biased measures of the three.

At least 5 distinct species were identified in the pre-1730 feature faunal assemblage from Addison. In general, the assemblage is not very rich, which is probably related to the fact that most of these faunal remains come from post hole and post mold contexts, which would not have been used as refuse pits, therefore limiting the amount and type of artifacts deposited within them. Previously-analyzed sites in the Chesapeake dating from 1660-1740 tend to have between 9 and 29 species per assemblage, averaging around 15, which places the pre-1730 feature assemblage well below the typical range (Bowen 1996:121-122). From the analysis of this assemblage it appears that residents of the site relied primarily upon beef and pork for their meat

diet. Indeed, beef and pork account for more than 99% of the total biomass if unidentified species are removed. It should be noted that domestic species account for more than 99% of the total biomass, while wild species account for around 0.26%. The wild biomass stems solely from turkey, but is clearly insignificant compared to the domestic species. The reliance on wildlife is very low in this assemblage, considering its time period and its rural setting near the Potomac River (Miller 1984; Bowen 1996:121-122). These patterns, however, are likely a function of the feature types from which the assemblage is drawn and likely do not accurately reflect diet at the site (as discussed below in relation to feature 6).

A skeletal part frequency analysis for the pre-1730 feature assemblage was performed for identified fragments from *Bos taurus* and *Sus scrofa*. *Ovis/Capra* was excluded from this analysis because it was represented by a single tooth. As explained above, this analysis quantified fragments from different portions of the skeleton and compared their occurrence on the site with what should be expected from a typical specimen. The skeletal part frequency analysis for *Bos taurus* showed that all portions of this species were present in the pre-1730 feature contexts and that head portions were much higher than expected while axial portions were much lower than expected (Table 19). In general, it appears that more dense bones, such as the teeth (n=14), were better represented in this assemblage over the more fragile elements, such as ribs. This is likely due to the types of features from which the assemblage was drawn and the depositional processes that acted upon these bones (discussed below).

Bos taurus	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	17	17	3	4	1
Observed %	40%	40%	7%	10%	2%
Expected %	21%	37%	36%	4%	3%

Table 19: Table Showing Skeletal Part Frequency for *Bos taurus* in the Pre-1730 Feature Assemblage.

The analysis for *Sus scrofa* revealed that all portions of the skeleton were present, but that head portions were vastly over represented, while quarters were moderately higher than expected

and axial and foot portions were much lower than expected (Table 20). Again, this pattern is probably due to the types of features from which the assemblage was collected and not dietary practices at the site. Additionally, the sample size for this taxon is relatively small, 19 fragments, of which 10 are teeth. Therefore, the skeletal part frequency is more useful for understanding deposition within these features at Addison rather than diet of the pre-1730 occupants of the site.

Sus scrofa	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	13	1	2	2	1
Observed %	68%	5%	11%	11%	5%
Expected %	21%	50%	24%	3%	2%

Table 20: Table Showing Skeletal Part Frequency for *Sus scrofa* in the Pre-1730 Feature Assemblage.

An age distribution analysis for the pre-1730 feature assemblage was also performed for identified fragments from *Bos taurus* and *Sus scrofa*. The age distribution for *Bos taurus* showed that the majority of cows fell into the sub-adult or adult range, but that most were likely fully mature (Table 21 and Table 22). There were no juvenile cows present in the assemblage. The high proportion of fully mature cows in the assemblage may indicate that the cows in the assemblage were being raised for other purposes, such as dairying, and slaughtered when they were no longer useful, or they were left to roam in the woods and took longer to reach an appropriate size. Only one bone was able to be used in the age distribution for *Sus scrofa* (Table 23 and Table 24). However, it did indicate that the specimen was either a juvenile or sub-adult, which is consistent with the typical slaughter age for swine.

Bos taurus, n=18	**Early**	**Middle**	**Late**
%Fused	61%	22%	6%
%Unfused	0%	6%	6%

Table 21: Table Showing Age Distribution for *Bos taurus* in the Pre-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Phalanx	5		18-24
Proximal Metapodium	5		Fused Before Birth
Acetabulum	1		6-10
Proximal Ulna	1		42-48
Proximal Tibia		1	42-48
Distal Metapodium	3	1	24-36
Calcaneus	1		36-42

Table 22: Table Showing Elements Used in Age Distribution of *Bos taurus* in the Pre-1730 Feature Assemblage.

Sus scrofa, n=1	Early	Middle	Late
%Fused	0%	0%	0%
%Unfused	0%	100%	0%

Table 23: Table Showing Age Distribution for *Sus scrofa* in the Pre-1730 Feature Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Metapodium		1	24-27

Table 24: Table Showing Elements Used in Age Distribution of *Sus scrofa* in the Pre-1730 Feature Assemblage.

Feature 6 Results

The faunal assemblage from feature 6, the cellar, at Addison Plantation consisted of 1,241 fragments. For the purposes of this section of the report only the faunal remains recovered from feature 6 will be examined and the results of their analysis will be presented (Table 25). The individual examination of feature 6 provides the advantage of temporal resolution, since it represents refuse deposited from ca. 1685-ca. 1730, during the occupations of Col. John Addison and Col. Thomas Addison. It also provides an opportunity to examine a context that was likely created, in part, through the deposition of refuse, which means that the faunal assemblage is probably more representative of actual dietary practices at the site rather than depositional or taphonomic processes. The assemblage drawn from this large cellar feature is more comparable in terms of size and deposition to other assemblages in the Chesapeake faunal database than any of the other sub-assemblages at the Addison site.

Taxa	NISP	%	MNI	%	Weight (g)	%	Biomass (kg)	%
Mammalia								
Bos taurus	159	12.81%	3	16.67%	6149.8	70.13%	67.6	65.13%
Cf. *Bos taurus*	6	0.48%			63.2	0.72%	1.1	1.06%
Sus scrofa	100	8.06%	2	11.11%	1082.3	12.34%	14.2	13.68%
Cf. *Sus scrofa*	1	0.08%			9.4	0.11%	0.2	0.19%
Ovis/Capra	12	0.97%	1	5.56%	72.2	0.82%	1.24	1.19%
Bovidae	1	0.08%			0.6	0.01%	0.02	0.02%
Odocoileus virginianus	5	0.40%	2	11.11%	111.7	1.27%	1.83	1.76%
Didelphis marsupialis	7	0.56%	1	5.56%	4.6	0.05%	0.1	0.10%
Marmota monax	1	0.08%	1	5.56%	0.9	0.01%	0.02	0.02%
Peromyscus	1	0.08%	1	5.56%	0.05	0.00%	0.002	0.00%
Artiodactyla	369	29.73%			975.9	11.13%	12.9	12.43%
UID *Mammalia*	517	41.66%			270.35	3.08%	4.06	3.91%
Aves								
Gallus gallus	6	0.48%	2	11.11%	11.7	0.13%	0.19	0.18%
Cf. *Gallus gallus*	1	0.08%			1.4	0.02%	0.03	0.03%
Meleagris gallopavo	1	0.08%	1	5.56%	1.6	0.02%	0.03	0.03%
Cf. Aix sponsa	1	0.08%			0.7	0.01%	0.01	0.01%
UID *Aves*	22	1.77%			7.8	0.09%	0.13	0.13%
Osteichthyes								
Morone americana	6	0.48%	2	11.11%	0.5	0.01%	0.02	0.02%
Ameiurus sp.	2	0.16%	1	5.56%	0.15	0.00%	0.003	0.00%
UID *Osteichthyes*	18	1.45%			1.45	0.02%	0.04	0.04%
Reptilia								
Testudines	5	0.40%	1	5.56%	2.7	0.03%	0.06	0.06%
Total	1241		18		8769		103.785	

Table 25: Table Showing Taxonomic Abundance Measures for the Feature 6 Assemblage at 18PR175.

The analysis of the faunal remains from feature 6 revealed that the top six most abundant species, based upon NISP, were *Bos taurus, Sus scrofa, Ovis/Capra, Didelphis marsupialis, Gallus gallus,* and *Morone americana* (White perch). The MNI calculation revealed a total of at least 18 individuals represented in the assemblage. The most abundant species, based upon MNI were *Bos taurus, Sus scrofa, Odocoileus virginianus, Gallus gallus,* and *Morone americana*. The biomass calculation showed *Bos taurus, Sus scrofa, Odocoileus virginianus, Ovis/Capra,* and *Gallus gallus* to be the top species contributing to diet on the site. Based upon all three measures of taxonomic abundance *Bos taurus, Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus* appear to be the primary sources of meat in the feature 6 assemblage. The following discussions will rely mainly on biomass when addressing dietary contribution as it is one of the least biased measures of the three.

At least 13 distinct species were identified in the feature 6 faunal assemblage from Addison Plantation. In general, the cellar assemblage has a low richness for its time period, particularly since at least two of these species would be considered commensal species or those that ended up in the assemblage through natural processes, such as burrowing and dying. Previously-analyzed sites in the Chesapeake dating from 1660-1740 tend to have between 9 and 29 species per assemblage, with an average of 15, which places the feature 6 assemblage in the lower end of the range, but still within it (Bowen 1996:121-122). From the analysis of this assemblage it appears that residents of the site relied primarily upon beef and pork for their meat diet with some mutton and venison. Indeed, beef and pork account for almost 96% of the total biomass if unidentified and commensal species are removed. It should be noted that domestic species account for almost 98% of the total biomass, while wild species account for slightly more than 2%. The wild biomass stems primarily from deer, but also includes some small mammals,

birds, and fish. The reliance on wildlife is low in this assemblage, considering its time period and its rural setting near the Potomac River (Miller 1984; Bowen 1996:121-122).

A skeletal part frequency analysis for the feature 6 assemblage was performed for identified fragments from *Bos taurus, Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus*. As explained above, this analysis quantified fragments from different portions of the skeleton and compared their occurrence on the site with what should be expected from a typical specimen. The skeletal part frequency analysis for *Bos taurus* showed that all portions of this species were present in roughly expected proportions (Table 26). In general, the sample size for this species is robust so the patterns seen in this analysis do have some interpretive power. The relatively even distribution of portions in relation to their expected values indicates that cows were being slaughtered and consumed on site with little preference for specific cuts evident in the faunal assemblage.

Bos taurus	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	48	39	53	9	9
Observed %	30%	25%	34%	6%	6%
Expected %	21%	37%	36%	4%	3%

Table 26: Table Showing Skeletal Part Frequency for *Bos taurus* in the Feature 6 Assemblage.

The analysis for *Sus scrofa* revealed that all portions were present for this species with a significantly higher proportion of head parts and a significantly lower proportion of foot and axial parts (Table 27). The high occurrence of head portions likely stems from the better preservation and ease of identification of teeth, of which there are 34, rather than a dietary preference for head portions. The low occurrence of axial portions may be due to the fact that ribs and vertebrae fragment easily and are often grouped in the general *Artiodactyla* category due to their lack of diagnostic features when fragmented and their similarity to caprine and deer elements. Therefore, it is possible that axial portions for this species are present in the collection to a higher degree, but are simply unidentifiable.

Sus scrofa	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	67	15	10	4	4
Observed %	67%	15%	10%	4%	4%
Expected %	21%	50%	24%	3%	2%

Table 27: Table Showing Skeletal Part Frequency for *Sus scrofa* in the Feature 6 Assemblage.

The analysis of skeletal parts from *Ovis/Capra* also has a relatively small sample but shows that all portions are present in the assemblage. In general, there is an overrepresentation of head fragments with an underrepresentation of foot and axial fragments. The high proportion of head parts stems from teeth (n=5) making up the majority of that category. The sample is too small to say anything meaningful about, but does indicate that all major portions of caprines were used and discarded on the site (Table 28). Finally, the skeletal portion analysis for *Odocoileus virginianus* was made up of a very small sample of only five fragments. Due to such a small sample size, little can be interpreted about preference or use of deer at the site based upon the feature 6 assemblage (Table 29).

Ovis/Capra	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	6	2	2	1	1
Observed %	50%	17%	17%	8%	8%
Expected %	21%	37%	36%	4%	3%

Table 28: Table Showing Skeletal Part Frequency for *Ovis/Capra* in the Feature 6 Assemblage.

Odocoileus virginianus	**Head**	**Foot**	**Axial**	**Front Quarter**	**Hind Quarter**
Observed Count	0	1	2	0	2
Observed %	0%	20%	40%	0%	40%
Expected %	19%	44%	31%	3%	3%

Table 29: Table Showing Skeletal Part Frequency for *Odocoileus virginianus* in the Feature 6 Assemblage.

An age distribution analysis for the feature 6 assemblage was also performed for identified fragments from *Bos taurus, Sus scrofa, Ovis/Capra,* and *Odocoileus virginianus*. The age distribution analysis for *Bos taurus* indicated that all specimens were likely either fully mature or sub-adults (Table 30 and Table 31). This may indicate that some cows on the site were raised strictly for meat, the sub-adults, while some may have been dairying or draft animals prior to their slaughter or were left to roam in the woods and took longer to grow to an appropriate size, the fully mature specimens. The analysis for *Sus scrofa* indicated that all specimens were

likely fully mature (Table 32 and Table 33). This may indicate that these hogs were not penned and would have taken longer to reach an appropriate size for slaughter. Finally, the sample sizes for *Ovis/Capra* and *Odocoileus virginianus* were too small to reliably interpret age structures for these taxa on the site, but the data is still presented below (Table 34-Table 37).

Bos taurus, n=50	**Early**	**Middle**	**Late**
%Fused	42%	22%	24%
%Unfused	0%	0%	12%

Table 30: Table Showing Age Distribution for *Bos taurus* in the Feature 6 Assemblage.

Element	**Fused**	**Unfused**	**Age at Fusion**
Phalanx	14		18-24
Distal Humerus	1		12-18
Proximal Metapodium	5		Fused Before Birth
Proximal Radius	1		12-18
Vertebral Centrum	8	5	84-108
Distal Femur	1		42-48
Proximal Femur	1		42
Proximal Humerus	1		42-48
Proximal Ulna	1		42-48
Distal Radius		1	42-48
Calcaneus	2		36-42
Distal Metapodium	4		24-36
Distal Tibia	5		24-30

Table 31: Table Showing Elements Used in the Age Distribution Analysis of *Bos taurus* in the Feature 6 Assemblage.

Sus scrofa, n=17	**Early**	**Middle**	**Late**
%Fused	47%	41%	12%
%Unfused	0%	0%	0%

Table 32: Table Showing Age Distribution for *Sus scrofa* in the Feature 6 Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Humerus	1		12-18
Proximal Metapodium	2		Fused Before Birth
Acetabulum	2		12
Phalanx	1		24
Distal Scapula	2		12
Proximal Ulna	1		36-42
Vertebral Centrum	1		48-84
Distal Metapodium	6		24-27
Distal Tibia	1		24

Table 33: Table Showing Elements Used in the Age Distribution Analysis of *Sus scrofa* in the Feature 6 Assemblage.

Ovis/Capra, n=3	**Early**	**Middle**	**Late**
%Fused	33%	33%	33%
%Unfused	0%	0%	0%

Table 34: Table Showing Age Distribution for *Ovis/Capra* in the Feature 6 Assemblage.

Element	Fused	Unfused	Age at Fusion
Proximal Metapodium	1		Fused Before Birth
Distal Metapodium	1		18-28
Distal Radius	1		36-42

Table 35: Table Showing Elements Used in the Age Distribution Analysis of Ovis/Capra in the Feature 6 Assemblage.

Odocoileus virginianus, n=2	**Early**	**Middle**	**Late**
%Fused	100%	0%	0%
%Unfused	0%	0%	0%

Table 36: Table Showing Age Distribution for *Odocoileus virginianus* in the Feature 6 Assemblage.

Element	Fused	Unfused	Age at Fusion
Distal Metapodium	1		26-29
Acetabulum	1		8-11

Table 37: Table Showing Elements Used in the Age Distribution Analysis of *Odocoileus virginianus* in the Feature 6 Assemblage.

Discussion

The composition of the Addison faunal assemblage, as a whole, appears fairly typical for an assemblage from the Chesapeake dating from the late-17th into the 18th century. The faunal remains show a strong reliance on beef and pork, with a very low proportion of wild game, trends that became more common as the 18th century progressed (Bowen 1996). However, there is a distinctly low richness for the overall assemblage and the sub-assemblages, particularly in terms of fish species, which is odd considering the close proximity of the site to the Potomac

River. The low richness and lack of fish remains in all of the sub-assemblages likely stems from the recovery methods used at the site and the types of fish that the inhabitants would have been exploiting. While it appears that all feature contexts were screened through quarter-inch mesh, it is likely that most of the fish bones at the site would not have been recovered using this method because of the generally smaller fish species present in the upper tidal reaches of the Potomac. Two of the fish species present in the Addison assemblage underscore the small size of fish in the area, white perch and bullhead catfish, both of which average in the one to two pound range. Although larger species, such as the sheepshead, are present in the assemblage their large bones could have easily been captured in quarter-inch screen and the presence of only one bone indicates their rarity.

As an illustration of how recovery methods have affected the richness of the Addison assemblage in regards to fish it is useful to compare this assemblage to another from a similar geographic location and time period. Much like Addison Plantation, the Maurice Clark site is located along the upper reaches of a tidal river, the Rappahannock, and was occupied ca. 1700-ca. 1730 (Muraca, Nasca, and Levy 2006). While the inhabitants of the Maurice Clark site were lower to middling planters, unlike the wealthy Addisons, their similar geography and time period should reflect the type and amount of fish that might be expected in similar settings. Importantly, all of the feature contexts at the Maurice Clark site were water-screened through sixteenth-inch mesh. As a result, the phased feature assemblage at the Maurice Clark site contained 424 fish bones from at least eight different species, totaling more than 9% of the faunal assemblage (Hatch 2012). The fact that Addison contains only 35 fish bones from four species, totaling less than 0.5% of the faunal assemblage, indicates that much of the data of fish consumed at the site was likely lost due to recovery methods. It is important to understand these biases in the Addison

assemblage before discussing diet at the site lest patterns resulting from recovery be interpreted as culturally-significant.

For the purposes of this report only feature assemblages will be discussed hereafter since they provide temporal control over the faunal remains and are best equipped to address questions regarding diet and other cultural practices for specific household groups and occupations at the Addison Plantation site. Additionally, the pre-1730 feature assemblage will only be used to supplement interpretations drawn from the feature 6 assemblage rather than being discussed on its own. It is clear from the analysis of the pre-1730 feature assemblage that the feature types from which it was drawn have biased the data, particularly in regard to richness and assemblage size. In general, post holes and post molds, which account for almost all of the pre-1730 feature assemblage contexts, contain few faunal remains compared to other feature types that generally serve as areas of refuse disposal and are able to collect large amounts of refuse, including bone. While the post-1730 feature assemblage is drawn, in part, from post hole and post mold contexts, it also contains more common refuse disposal areas, such as living surfaces, landscaping layers, and fill layers. Therefore, the majority of the discussion will focus on comparing the feature 6 cellar assemblage to the post-1730 feature assemblage at Addison.

The composition of the feature 6 assemblage is heavily weighted toward the large domestic species on the site, particularly cattle. In a general sense, the proportions for this species are noticeably higher than what has been observed on other sites dating from 1660-1740 in the Chesapeake, which tend to be composed of around 65% beef (Miller 1984:294; Bowen 1996:101-105). Some of this variation may be due to recovery methods that favored larger specimens. However, most previously-analyzed faunal assemblages from the Chesapeake were collected using similar methods, which included a lack of fine screening. In addition to the

higher proportion of beef in the cellar assemblage, the proportion of pork is lower than expected and wild meat is significantly lower than expected. During the same time period, sites in the Chesapeake tend to average around 25% pork and around 10% wild meat. The lower proportion of wild meat in the assemblage may be best explained through recovery methods because of the small fish bones that were likely not collected, but the lower proportions of pork, like the high proportion of beef, require a different explanation.

Upon a review of previously-analyzed faunal assemblages in the Chesapeake only a single assemblage with a similar composition could be located, Drummond II. The site, situated along the James River was occupied from ca. 1680-1710 and was home to a middling to upper class planter and his family. The analysis of faunal remains from the site revealed that beef accounted for around 72% of the meat in the assemblage, pork accounted for 19%, and wild meat made up around 6% (Miller 1984:403). While this example shows that the proportions of meat encountered in the Addison assemblage are not entirely unique, it does emphasize its rarity. Though it might be tempting to associate high proportions of beef with high status due to the comparable economic standing of the Addisons and the occupants of Drummond II, other faunal assemblages do not bear out this hypothesis (Miller 1988:189).

One explanation for the highly increased proportion of beef in the cellar assemblage may be related to economic diversification and investment in the face of a slumping tobacco economy of the late-17th and early-18th century (Menard 1975:279). The lowered price of tobacco beginning in the last quarter of the 17th century may have prompted Col. John, and later Col. Thomas, Addison to spread their wealth out in order to lessen the impact of economic fluctuations. One investment that had been lucrative in the Chesapeake since the middle of the 17th century was livestock, particularly cattle (Carr, Menard, and Walsh 1991:50). A large cattle

herd would have been a way to invest wealth that could increase naturally and be passed to future generations, perhaps leading to an increase in the consumption of beef on the site as well.

Age distribution analysis for cattle in the cellar assemblage does not indicate that the cattle on site were strictly managed for beef, however. Instead, the assemblage suggests that all of the individuals were over three years old and most were over four, which both tend to be quite old for consumption if the cattle are penned and closely managed. There may be multiple explanations for the older age of cattle encountered in Chesapeake assemblages, including the use of cows for dairying and as beasts of burden (Bowen 1994:162). A more likely explanation may be related to the management practices of cattle herds, at least in less-settled areas. If cows were allowed to roam the forests unpenned then it would have taken longer for them to become large enough to slaughter, much like pigs in the same situation (Walsh 2010:611). This certainly may have been the case at the Addison Plantation prior to 1730 since the site was located along the edge of English settlement far up the Potomac River and the cattle were likely left to roam the forests and graze.

The increased reliance on beef as an economic investment during the early phase at the Addison site may help to explain why pork is present in lower proportions in the feature 6 assemblage. If there were a larger number of cows at or near the site it may have been easier to harvest and consume them rather than larger numbers of pigs. Indeed, a single cow supplies much more meat than a pig and can be preserved when not fully consumed. The low proportion of wild meat in the assemblage, however, is more difficult to understand. Such a low percentage is more comparable to high status urban sites of the late-18th century (Bowen 1996:110-116). While it is possible that the lack of fine-screening contributed to the lack of wild faunal remains recovered from this assemblage, the recovery methods used at Addison were not significantly

different from other sites with larger proportions of wild species. Perhaps the low percentage of wild meat in the assemblage stems from the possible use of feature 6 as part of the "store" on the site (McCarthy 2010:5). The fact that there is very little wild meat in the assemblage is puzzling considering the geographic location of the site next to the Potomac River and along the frontier. While recovery methods have likely contributed to this difference they are likely not the only source of difference. Preservation also does not appear to be a major issue for this assemblage. Therefore, there is likely a cultural reason for the lack of wild meat in the assemblage, but, unfortunately, it is not readily apparent.

The post-1730 feature assemblage shows few major changes in terms of its composition when compared to the feature 6 assemblage. Beef continues to make up almost 75% of the total meat in the assemblage, but pork shows an increase to around 20% of the total meat in the assemblage. Additionally, wild species contribute almost 4% to the meat assemblage. These numbers, while similar to the earlier cellar assemblage, are more comparable to faunal assemblages of previously analyzed wealthy rural households in the Chesapeake dating from 1740-1790 (Bowen 1996:106-122). Beef tends to be the primary contributor to diet with some pork and a very small amount of wild game. Bowen argues for this period that although the composition of the diet for wealthy planters, such as the Addison family, was relatively monotonous in terms of meats served, the way in which the food was prepared would have been in keeping with the high cuisine of the day in the form of fancy preparations (Bowen 1996:116). While there is no real evidence of these types of preparations in the faunal assemblage, a detailed analysis of butchery patterns or a comparison with ceramic vessel fragments may offer support to this hypothesis at the Addison site.

The composition of the assemblage of wild species from the post-1730 features tends to focus primarily on deer. Like the feature 6 assemblage, this is most likely due to the recovery methods used at the site that favored larger species. Again, this is especially noticeable for fish, which are only represented by four bones. Cattle husbandry practices on the site in the post-1730 period appear to have changed little based on age distributions. The majority of cows were slaughtered over the age of four years with a few in the three year age range. Interestingly, there is evidence of some slightly younger specimens in the two year age range, which may indicate that herd management practices were beginning to shift. Walsh and others have argued that cattle husbandry in the Chesapeake continued to rely on the woodland pasture model, where cattle were left free to graze, well into the 18th century (Walsh, Martin, and Bowen 1997:47-54). However, by the mid-18th century, rural plantations began to produce cattle for markets in Chesapeake towns. In general, these cattle tended to be over 4 years of age, but there is some evidence that younger specimens were on the increase and being sent to market (Walsh, Martin, and Bowen 1997:54). Perhaps the younger specimens seen in the post-1730 assemblage at Addison is indicative of this pattern. Indeed, it would seem quite likely that the Addison's may have produced and sold livestock and other plantation products to local markets in the late-18th century, particularly in Alexandria, Virginia, which was just across the Potomac. The assemblage of pig remains, unfortunately, is not able to support this shift in husbandry since their sample size is so small. However, a detailed examination of documentary records for this period could prove useful in establishing connections between the plantation and local markets.

Conclusions

The faunal assemblage from Addison Plantation is able to provide important data on diet, livestock husbandry, economy, and market activities along the upper reaches of the Tidal

Potomac River from the late-17th century to the late-18th century. While the comparison of the pre-1730 cellar assemblage to the post-1730 assemblage showed a general pattern of continuity in terms of diet, it also indicated possible shifts in husbandry techniques that started to take root in the mid-18th century, namely the production of livestock for urban markets. The high proportion of beef in the pre-1730 cellar may be indicative of diversification at the Addison Plantation as a way of guarding against the economic fluctuations triggered by the slump in tobacco prices at the end of the 17th century. Additionally, this greater investment in livestock, particularly cattle, was a common strategy for providing an inheritance to future generations that was being practiced as early as the mid-17th century (Carr, Menard, and Walsh 1991:50).

While the faunal remains from Addison are able to help us better understand life along the Potomac River, their biases limit what can be said. This is especially true in terms of recovery methods and the types of feature contexts from which they were collected. While quarter-inch screening is infinitely preferable to hand picking for a faunal assemblage, it still biases the data in favor of larger species and leads to the underrepresentation of smaller taxa. This is likely the primary reason that wild taxa are present in all of the sub-assemblages in such small proportions. Indeed, many wild taxa tend to be smaller and more easily lost through quarter-inch screens. The extremely small number of fish underscores this problem of recovery. It is likely that the inhabitants of the Addison Plantation consumed and discarded much more fish than what the faunal assemblage suggests, but the lack of fine-screening has made this impossible to know through the faunal remains. Additionally, the feature types used in the analysis had to be carefully selected lest they provide a biased view of the fauna used at the site. As a result, only sub-assemblages that contained features with similar uses and depositional histories were compared, the cellar and post-1730 features.

Despite its biases, the faunal assemblage from Addison Plantation has much to contribute to the understanding of life on the site, particularly prior to 1730. With a more detailed examination and comparison of historic records pertaining to the site occupants and other artifacts recovered from the site, the faunal assemblage should prove valuable in understanding the material aspects of life in the late-17th-century upper Potomac River Valley. It also provides an opportunity to track the change in material culture and economic activities on the site across more than a century of occupation by the same family. With the completion of the artifact and documentary analysis for the Addison Plantation collection and the reporting of the results, the context of the faunal remains should become clearer allowing them to contribute significantly to the interpretation of life at the site.

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