"The Coffee house (where I occasionally sometimes go):" Examining diversity in the urban meat diet of Williamsburg in the mid-eighteenth century

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APPROVAL PAGE

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ABSTRACT PAGE

Foundations of the building once used as the Williamsburg Coffeehouse reside on Colonial Lot 58, also formerly known as the Cary Peyton Armistead Site, which is located on the north side of Duke of Gloucester Street adjacent to the location of the former capitol. The faunal remains from the particular assemblage that is the focus herein are representative of the foods consumed at the Coffeehouse circa 1755 to 1767. Documentary evidence and the close proximity of the Coffeehouse to the Capitol suggest relatively elite patronage.

The unexpected wild species found in the food remains at the Coffeehouse also suggest a high level of diversity in the diet consumed during this occupation. The assemblage from the Coffeehouse draws attention to an urban-rural dichotomy within foodways of the period. Comparisons with temporally and regionally similar assemblages have been made in order to better recognize patterns of consumption. Many factors, including provisioning methods of the period, socioeconomic status, and ritual display have a direct effect on the diversity of the diet in each of the settings examined. This study includes elite and common assemblages, as well as public and private assemblages, but suggests that the urban or rural location of a site has the greatest influence on the meats consumed there, with urban sites representing the greatest diversity.

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INTRODUCTION

From the second-floor window in the front hall of the Capitol building in Colonial Williamsburg one can see down the length of Duke of Gloucester Street, once the main crux of business and society in the area. Today from this view, one will likely see a multitude of tourists as they stroll up and down the street experiencing the reconstructed landscape of the town. Possibly one would even notice the small space on the north side of the street near the Capitol, now somewhat plain in appearance, where a sign announces the efforts of the Colonial Williamsburg Foundation in excavating the site known as the Coffeehouse. A roof has been constructed over the area where the foundations of a mid-eighteenth century structure lie, and with the Victorian era structure that recently resided on top these foundations having been moved away, one can see the topography of the open site quite clearly. With no remains of a structure present above ground today, it is hard to imagine the existence there of a bustling, two-room, one and a half story building. If one were able to envision such a place, it would then be easier to imagine an establishment that would have appealed to the upper-class lawmakers and elite landowners who would have likely stepped over to the Coffeehouse after conducting governmental business, as the Capitol sat right next door. Because the tiny size of the property led to a lack of outbuildings and outdoor workspace and the fact that the porch itself literally sat on the street, there would have been a somewhat cramped and close feeling to the operations going on inside. As the men who visited this establishment met to discuss business, catch up on news and confer on politics,

the trash they created was dumped onto the neighboring property. While this may have been somewhat annoying and inconvenient for the tenants of the other properties around Lot 58, it created a veritable goldmine of information for today's archaeologists.

The Coffeehouse was a unique place regarding public foodways in eighteenth century Virginia. Preliminary analysis of the faunal and other archaeological remains from this site suggested that the elite gathered there to celebrate their status in the community and region by consuming a diet that was modeled on the elite foods served on rural plantations. However, after comparing the diversity of the Coffeehouse assemblage with several other sites, it became apparent that diversity is not necessarily linked to status, nor the public or private aspect of dining. Therefore, it can be assumed that the urban setting of the site is what allows for, or creates, the diversity of the meats consumed there.

The site of the Williamsburg Coffeehouse, also formerly the Cary Peyton Armistead Site, has a long and well-documented history due to the fact that it was located in the prominent commercial part of town known as "The Exchange" (Gibbs 1996). The particular phase during which the Coffeehouse occupied the space next to the Capitol in Williamsburg was only one of many in a line of diverse and rapidly changing occupations for the site throughout the history of the town. The faunal remains from the particular assemblage that is the focus herein are representative of the meats consumed at the Coffeehouse in Williamsburg in the third quarter of the

18th century. Previous historical research on this site has produced a story that has "sketchy" details, to say the least (Gibbs1996:6).

A concrete date for the opening of the Coffeehouse has not yet been confirmed by documents. The eastern half of what was originally known as Lot 58 was first the location of a two-room "storehouse" or store. It was owned by Nathanial Walthoe, and may have first been the home of the Coffeehouse as early as 1755 (Garden et al. 2001:2). Other analysis (Poole 2008, personal communication) suggests the beginning of the Coffeehouse occupation was in 1760, as inferred by the archaeological materials recovered, but no direct documentary references to this site as the location of the Coffeehouse occur until 1765, in the form of a letter written by then Governor, Francis Fauquier. Documentary records tell us that Richard Charlton applied for a tavern license for the establishment run here in the year 1767, thus determining the end point of the Coffeehouse's existence, and also turning our attention to yet another change in activities conducted on the site. After 1767 we know that the establishment was operated as a tavern until 1771, at which point it again became a store and home, this time owned and operated by Charlotte Dickinson (Garden et al. 2001:10). Admittedly, the approximate occupation of the Coffeehouse in the historical record is quite abbreviated – approximately 1760 to 1767; really just a blink in the colonial history of Williamsburg.

Because we see the unusual circumstance on this site of more archaeological data than historical data being in existence, and because an unusual pattern in the assemblage seems evident from such a short period of time, the Coffeehouse faunal data presents a very unique opportunity for study. Working with this assemblage is

more similar to pre-European-contact archaeology in that we are relying on what we find in the ground to tell us about the history of the site rather than using the archaeology to confirm or dispute what we are told by documentary sources.

While coffeehouses and taverns both existed as different types of public foodways, the general differences in the services they offered may or may not have produced different archaeological signatures. In practice, the Coffeehouse of the third quarter of the 18th century in Williamsburg would not have been very similar to the coffeehouses of 17th century London. Archaeological analysis of ceramics from the Coffeehouse demonstrates an assemblage similar to those found in most public houses, but slightly more specialized (Sawyers in Garden et al. 2001:74). While coffeehouses generally did not offer a full menu, it seems as though quite a bit of meal service was offered at the Williamsburg Coffeehouse – the artifacts and faunal remains recovered from the sire would indicate that just as much food was being consumed here as at other public houses in the area. Most likely, a coffeehouse here in Virginia would have hearkened back to the cultural tradition of these establishments as gathering places for the exchange of information and news on current business, but not actually have the limited function of an earlier English coffeehouse. It was a way to differentiate one's tavern from others by implying an elevated status with the use of the term, and also a way to avoid paying the licensing fee associated with operating a tavern. There is no doubt that the close proximity of the Coffeehouse to the Capitol would mean that news and business, as well as politics, would be discussed here by the movers and shakers of the Virginia Colony.

The assemblage from the Coffeehouse represents a dichotomy: the difference between urban and rural foodways. When considering the Coffeehouse as an example of an urban foodway, the consumption of wild meats would not necessarily be expected. Based on the statistical analysis of this study, the importance of the elite, public status of this site is minimized when the sites are viewed in the urban-rural dichotomy, as the location of the site seems to be the determining factor in the diversity of faunal remains at this site.

In this study, the primary concerns are (1) whether or not there was a significant amount of wildlife being consumed at the Coffeehouse based on the NISP, MNI and biomass values of the assemblage as well as secondary data produced from these values; (2) how the faunal remains from the occupation of the Coffeehouse compare to the later Charlton's Tavern occupation on the site as well as those from Shields Tavern, the Peyton Randolph house, South Grove plantation at Mount Vernon and Curles Neck plantation; and (3) what cultural process would be implied by a significant amount of wildlife or high diversity in the Coffeehouse assemblage.

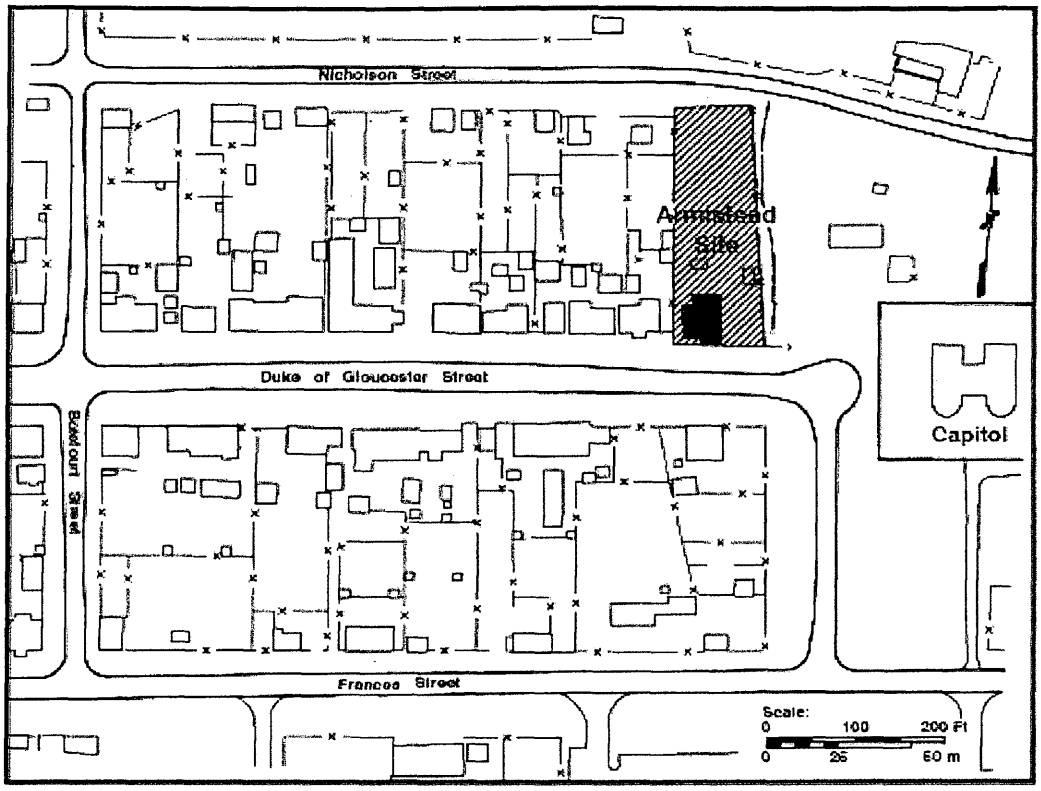
There are many factors affecting the intricacies of this historical period – large scale changes in the local, regional and international political systems of the time, provisioning and agricultural practices, and shifting cultural identities all worked to form a broad range of living conditions in Tidewater Virginia. The Coffeehouse was a busy place, the site itself changing owners and tenants every few years, and the establishment itself producing a large midden of food refuse and other

trash indicative of a bustling public house. It also sat on the edge of the property belonging to the Capitol of Virginia; a place where significant historical events were taking place that would push the colonies forward into the Revolution. By piecing together bits of archaeological research and documents from the period, we can slowly reach a better idea of where this establishment may have fit into the community of Williamsburg at the time, as well as the larger English colonial world.

COLONIAL LOT 58 AND THE SETTING OF THE COFFEEHOUSE

Previously, it has been suggested that there is a marked difference between the foods consumed at private sites and public sites in this region regarding the types and amounts, or richness and diversity, of foods eaten (Sawyers in Garden et al. 2001:80, Walsh et al. 1997). However, the results of this study demonstrate that the largest difference in richness and diversity is between *rural and urban sites*, regardless of whether they are private homes or public houses. This study was meant to focus on the elite sites in the region, and thus more statistical comparisons including non-elite sites would be needed to determine whether status also greatly influenced the pattern of foods consumed. In order to appreciate the complexity of the archaeology on Lot 58, documentary research has been compiled and explained herein. Although the records show that many different people occupied the site and immediate property for many different purposes in a short amount of time, there is a definable midden feature that can be associated with the Coffeehouse. Because of the nature of this site, the use of archaeological materials to determine the temporality and association of archaeological features with a particular structure is essential. By better understanding the context, we can of course have a better understanding of the meaning of this faunal material.

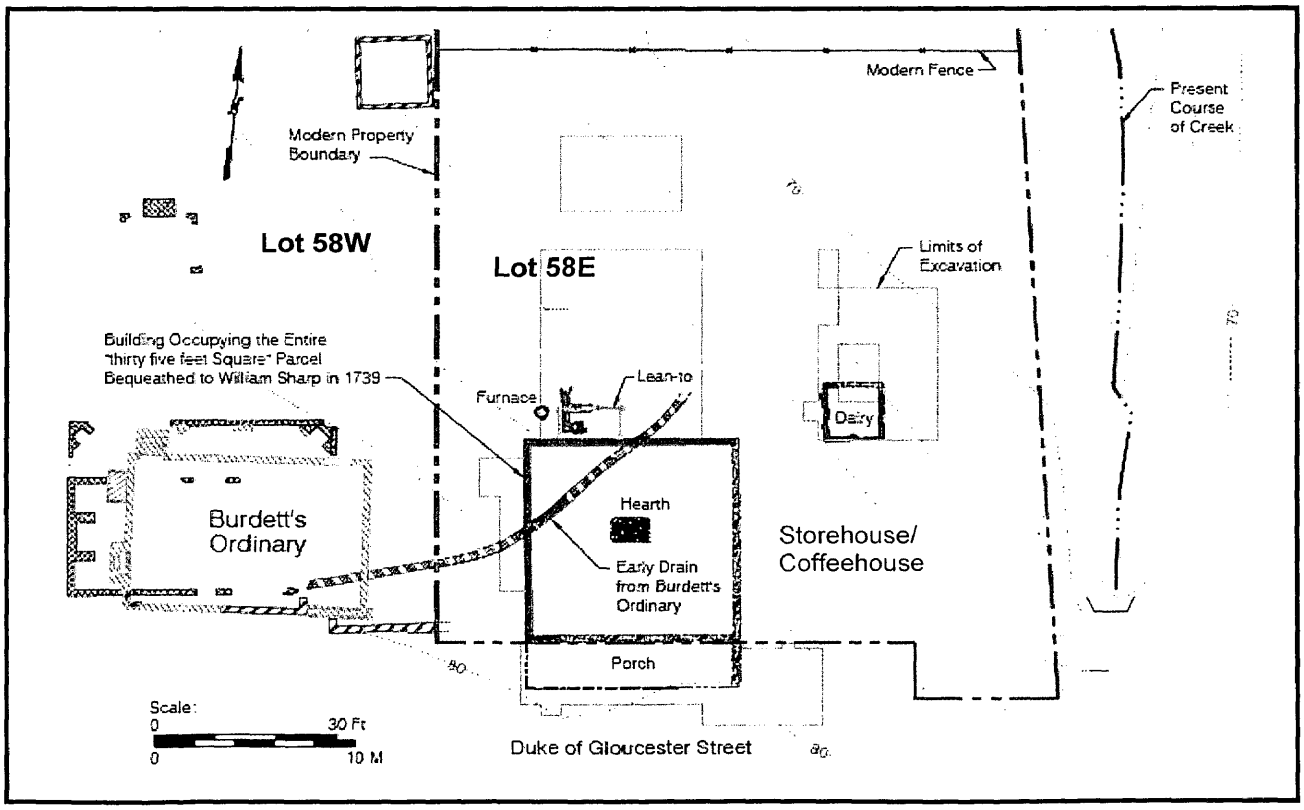
FIGURE 1
THE LOCATION OF COLONIAL LOT 58 (CARY PEYTON ARMISTEAD SITE) WITHIN COLONIAL WILLIAMSBURG *(From Garden et al. 2001:1)*



The site of Colonial Lot 58, as mentioned above, has been the location of many different types of activities over its nearly three hundred-year existence. Along with Lot 57, it was purchased for the first time in 1713 by a man named Francis Sharp. He later had to re-purchase the lots in 1717 since he did not erect any structure on the properties within 24 months of their original purchase as required by law during this period (Garden et al. 2001:8). The properties were returned to the ownership of the city for two years during this interim, and after the second purchase Sharp built a house and "Ordinary," where he and his family

would have lived. The structure most likely was located on the western end of Lot 58 and may possibly have also sat on a part of Lot 57. The two lots were considered to be one property by Sharp since he purchased them at the same time, and so it is highly likely that after the sale of these two lots the mapped boundary lines were never really observed. After Sharp's death, the two lots were divided between his three sons, with Lot 58 was divided into a western portion and an eastern portion – the eastern portion being only 35 feet square and mostly made up of the ravine that crosses through the site (Gibbs 1996:12-15). Because of this division, and the tendency for all three of these parcels of land to be referred to as "the property" in documents relating to the lots, I have designated the two halves of Lot 58 as 58W and 58E to avoid further confusion.

FIGURE 2
ARCHAEOLOGY AND LAYOUT OF LOT 58 (*Adapted from Garden et al. 2001:6)*



The son, William Sharp, who inherited the eastern portion of the lot (58E), sold it to a Robert Crichton sometime before 1750. Crichton built what was referred to as a "storehouse" by a document in 1750 and the occupation of the structure (if any) was likely fairly brief. The term "storehouse" could have referred to two different types of buildings in the mid-eighteenth century: either what would be thought of today as a storage space, or an actual store (Garden et al. 2001:8). The architectural research on the remains of the structure suggest a floor plan that is more likely to have been a store than a warehouse, with two rooms that were originally separate and had separate entrances from the outside (Garden et al. 2001:8). There would not have been a tenant in the storehouse when Crichton wrote to Nathaniel Walthoe in 1755 to offer him (or any other good gentleman he knew) the use of the storehouse on Lot 58E. This is the possible beginning date of the Coffeehouse's existence, but we cannot know for certain since it is not known exactly why or how Walthoe might have wanted to use the structure. We do have definitive documentary evidence that the Coffeehouse was in existence by 1765 in this location, as Governor Fauquier describes it in a recollection of the riot that took place because of the Stamp Act.

> *" . . . the Coffee house (where I occasionally sometimes go) which is situated in that part of the Town which is call'd the Exchange tho' an open street, where all money business is transacted . . ."*

Col. George Mercer, distributor of the revenue stamps that the English Parliament ordered American colonists to buy and affix to legal and commercial documents, was followed to this place by a large mob of angry protestors. Fauquier recalls the event saying:

> *"To the Coffee house, in the porch of which I had seated my self with many of the Council and the Speaker who had posted himself between the Crowd and my self. We all received him with the greatest Marks of welcome . . . After some little time, a Cry was heard 'let us rush in' upon this we, that were at the Top of Steps knowing the advantage of our Situation gave us to repel those who should attempt to mount them . . ." – From Lt. Gov. Francis Fauquier's November 3, 1765 letter to the Board of Trade (Gibbs 1996:15-16)*

After this short period as the Coffeehouse, Richard Charlton reopens the business on the site as a tavern in 1767, but the tavern is then taken over by Christina Campbell for a short period beginning in 1771. A table listing the more complete history of the sites on Lots 57 and 58 (Table 1) can be found below.

TABLE 1
TIMELINE FOR LOTS 57 & 58, 1713 TO 1777, ACCORDING TO PRIMARY DOCUMENTS

Date	Event	Lot 57	Lot 58W	Lot 58E
1713	May 16: Francis sharp purchases Lots 57 & 58, fails to comply with building regulation and loses ownership			
1717	May 2: Sharp purchases lots again and builds house(s), possibly on western end of 58 where he and his family would have lived and operated an Ordinary ("adjoining the capitol square"), later he built another residential structure (tenement) on Lot 57	home	home/Ordinary	
1739 or earlier	John Burdett lives on western half of Lot 58 (Lot 58W), operating the Ordinary		home/Ordinary	
1739	Francis Sharp's will divides Lots 57 & 58 between his three sons, each of the two lots containing a tenement; Lot 58 was split into (W) the portion with the structure and (E) 35 feet out of the east end of the lot. His son John received Lot 57, his son Jacob received Lot 58W an son William received Lot 58E	home	home/Ordinary	
1742	October 1: son John Sharp sells Lot 57 to Wetherburn, tavernkeeper Thomas Pattison is mentioned as owner of Lot 58W (sold to him by executor son Jacob Sharp); in Pattison's will he names his wife Anne as the owner/operator "during her natural life"	home	home/Ordinary tavern	
1743	May: Thomas Penman (leasing Lot 57 from Wetherburn) sues John Burdett (leasing from Thomas Pattison's estate) for trespass because part of the house on Lot 58W is trespassing on Lot 57	home	home/Ordinary tavern	
1746	John Burdett advertises for sale a billiard table with its accoutrements from his tavern on Lot 58		home/tavern	

Date	Event	Lot 57	Lot 58W	Lot 58E
1746	September 19: daughter Christiana Burdett advertises sale of father's estate, Anne Pattison possibly moves her husband's tavern to Lot 58 after Burdett's death		tavern	
1750 or earlier	Robert Crichton purchases Lot 58E and constructs a "storehouse," floor plan indicates a store layout rather than a warehouse layout		store	
	(Ambiguity about how Lot 58 was used after Burdett's death until 1754)			
1754 or earlier	Thomas Pattison, Jr. (of the UK) acquires Lot 58			
1754	Benjamin Waller purchases Lot 58W from Thomas Pattison, Jr.		home/Ordinary	
1755	Nathaniel Walthoe offers the use of his storehouse to Daniel Fisher		store	
1755	Operation of a Coffeehouse begins on Lot 58E, date inferred by archaeology and documents, owner unknown			Coffeehouse
1755	Anne Pattison dies by being burnt to death; the tavern (at the sign of the Edinburgh Castle) she operated could have been located on Lot 57 or Lot 58	tavern (?)	home tavern (?)	
1757	Benjamin & Martha Waller sell Lot 58W to John Pearson Webb, deed refers to Burdett's residency as though current		home	
1757	Nathaniel Walthoe, esq. listed as owner of Lot 58E			(?)
1764 or earlier	John Pearson Webb dies and his property (Lot 58W) is acquired by an older female relative, Frances Webb		home	

Date	Event	Lot 57	Lot 58W	Lot 58E
1764	August 5: Frances Webb leases the property to merchant James Hunter for seven years to cover debt of John Pearson Webb from purchase of property		home	
1765	October: Stamp Act protesters meet Gov. Fauquier at Coffeehouse on porch led by Col. George Mercer, local tax collector			Coffeehouse
1767	Richard Charlton places ad in VA Gazette to inform that the former Coffeehouse will now be operated by himself as a tavern			tavern
1771	May-October: Christiana Campbell runs tavern on Lot 58E			tavern
1771/1772	Charlotte Dickinson and her son Beverly move into the building on Lot 58W and convert it into a store and residence		home/store	
1771	Charlotte Dickinson purchases the structure (Coffeehouse) on Lot 58E			tavern
1772	end of original term of lease for merchant James Hunter for Lot 58W			
1772	January: ad in VA Gazette announcing the availability of private lodgings for seven or eight gentlemen "at the Coffee-house, near the Capitol"			Coffeehouse (?)
1772	April: milliner Mary Dickinson announces in ad that she "removed to the Store [west of] the Coffeehouse, near the Capitol" (on Lot 57)		home/store	Coffeehouse (?)

Date	Event	Lot 57	Lot 58W	Lot 58E
1774	John Webb of Halifax, NC advertises for sale "valuable and well situated lot . . . where the Coffeehouse is now kept" on Lot 58W; inferred new location from word "now" - coffeehouse thought to be previously located on Lot 58E			Coffeehouse
1777	Webb again advertises house and Lot 58W for sale "at present the COFFEE HOUSE"			Coffeehouse

Table based on information from Gibbs 1996 and Garden et al. 2001

It is important to note the various uses of these three properties throughout their history because there were fairly distinct periods of public and private consumption of food. When the site is used as a coffeehouse and tavern, one could expect to find much different cultural materials (ceramics and other tablewares) than would be found from the earlier and later family occupation periods, based on previous findings of studies of public and private foodways. As mentioned above, it would be expected that the faunal materials from Lot 58E, site of the Coffeehouse, would support the hypothesis that assemblages from public occupations are significantly different from private occupation assemblages (Bowen 1998:3) and significantly similar to each other regarding richness and diversity. This is not the case however, as materials from the urban setting examined in this study are all more similar to each other than the rural assemblages, regardless of being public or private. By determining the type of occupation each assemblage comes from, we are able to fill in some of the blanks about occupants and proprietors left by our "sketchy" documentary record, and also solidly identify the materials temporally.

Since the late 17th century, everyone in the Chesapeake, from the elite to the poorest lower class, consumed beef and pork on a regular basis with beef often making up as much as 60% of the total meat diet (Bowen 1998: 4). Mutton became a more important part of the diet for the elites during the end of the 17th century and the beginning of the 18th century, but wildlife was also often consumed on the elite plantations as part of everyday meals (Walsh et al. 1997). As such, with the

Coffeehouse assumed to be an elite establishment (based on material culture found at the site and documentary references that the elite were gathering there) we would expect to see slightly different proportions of meats than what would be found at a public house for a more generalized client base. At the Coffeehouse smaller proportions of the big three domestic animals (cow, pig and sheep) occur than what was expected and there is a greater proportion of fish, non-domestic birds, small mammals and deer. Rather than being attributed to the influence of the rural elite planters' diet, these proportions likely exist because of the variety of meats available commercially in the urban setting.

Interestingly, preliminary analysis suggested that there is a significant difference between the assemblages from the Coffeehouse period and the Charlton's Tavern period concerning diversity and evenness of the taxa consumed. As such, a comparison between the Coffeehouse period (pre-1767) and the Charlton's Tavern period immediately following is helpful in providing a comparative basis and confirms the perceived change in the types of animals that were being eaten. While there is a noticeable difference between the assemblages from the Coffeehouse and Charlton's Tavern, a comparison of the faunal remains from other well-documented elite sites of the period provides evidence that over a broader range, the Coffeehouse and Tavern are actually fairly similar.

> *"The evidence suggests the Coffeehouse acted as an extension of the Exchange, the open area east of the Capitol where merchants met and collectively determined the prices of agricultural products. It appears to*

have served a similar function for the men who worked in government, as witnessed by, among other things, the presence of the Governor and several council members gathered at the Coffeehouse during the Stamp Act protest. The Coffeehouse also provided entertainment and edification to some of Williamsburg's most prominent citizens as the setting for lectures, curiosities, and social clubs (Garden et al. 2001:3)."

The Colonial Williamsburg Foundation's Department of Archaeological Research has already done a great deal of historical research on the Coffeehouse and the archaeological assemblages from Lot 58. As yet, only a few clear documentary references have been turned up, and it is not likely that any other documents relating to the site will be found to help clarify the history of the sites' uses. And so, we are left with the archaeological work that has been done to define what part the Coffeehouse played in mid-eighteenth century Williamsburg. Because of the limited documentation regarding ownership of structures on Lots 57 and 58, a decision has been made to define the features temporally based on the material culture identified rather than by their association with a particular structure. The Coffeehouse assemblage consists of the materials established to date from circa 1755 to 1767, and the Charlton's Tavern assemblage consists of the materials dated 1767 through 1780.

In Europe these types of public houses were visited by the elite for a variety of reasons, only one of which was food service. A coffeehouse was not only a place

but also an experience - an environment to step into when one had important business to take care of (or business to make themselves seem important). The particulars of the Coffeehouse as an establishment are fairly discernable through the material record; while the Coffeehouse most likely did not board travelers as a rule due to the lack of adequate space, it evidently did provide "a full complement of food and beverages (Bowen 1998:1)."

This may have been slightly unusual for a coffeehouse to provide a complete bill of fare, but as the area of Williamsburg was more rural than those of the coffeehouses in Europe, some adjustments to the role of the coffeehouse within the community would have to be made in order to maintain good business. Generally a coffeehouse was known in England to be a business hub – a place where service providers and clients could meet, or where one could read the newspaper and catch up on political happenings (Schivelbush 1992:57). Comparisons between the material culture assemblages found on tavern sites in the area with that of the assemblage found on Lot 58 would indicate a similar number of vessels and wares associated with the consumption of food on the scale that would be seen in taverns (Bowen 1998:1). Interestingly, while evidence exists that that the Coffeehouse was more specialized in beverage service than a regular tavern (Sawyers in Garden et al. 2001:74), coffee was not really the focus of the beverages served there.

> *"Coffee was not the beverage of choice at the Coffeehouse. A stoneware coffeepot and [coffee or chocolate] cup, along with a copper spout for a kettle, are the only vessels related to its consumption found in excavations.*

Coffee did not rise in popularity until the time of the Revolution, because prior to that time, fashion meant emulating British fashion (Sawyers in Garden et al. 2001:74, brackets added)."

Comparison of the archaeology at the Coffeehouse, Charlton's Tavern and the Shields Tavern would suggest that the offering of specialized tea service was the main difference between the Coffeehouse and other public houses.

Adjacent to *The Exchange*, lot 58E was a prime location for this type of business and social goings-on to occur (Coffeehouse Background, p. 4), if in fact a business of this type were to be profitable in Williamsburg. Because Charlton applied for a tavern license after possibly as many as 12 years of the Coffeehouse being in business in this location, we are left to wonder why this change would occur. As yet, we cannot confirm who owned or operated the Coffeehouse, but an answer to the question of whom it was would probably yield some insight as to the provisioning system of the Coffeehouse and the reasons behind its change in operation.

ASSEMBLAGES ANALYZED, METHODS USED AND FINDINGS

The particular assemblage that is the focus of this study is composed of materials recovered from two midden features associated with the Coffeehouse. For comparative purposes, faunal remains from the Peyton Randolph house, Curles Neck Plantation, Shields Tavern and Mount Vernon were also analyzed statistically. The purpose of this analysis was to determine whether or not the Coffeehouse truly represents a unique faunal assemblage and whether the Coffeehouse foods may have been modeled on a rural elite plantation diet. The sites analyzed all date to the mid-eighteenth century and are geographically very close to one another. This presents a good comparative basis, as the data is from several sites that were all formed during the same time and in the same place, meaning that they are more likely to be subject to the same cultural processes. In addition, faunal data from all of the sites was produced by the same researchers using the same process each time, thereby eliminating problems connected with differential preliminary analyses. This lends great strength not only to the faunal data for the assemblages themselves, but also the integrity of study.

I. EXCAVATION AND IDENTIFICATION: THE PRODUCTION OF PRIMARY DATA

The archaeological materials from the site on Lot 58 were excavated in one meter squares by shovel and hand-troweling and then screened through one quarter inch mesh (Poole 2006:11). After the materials had been excavated they were washed and sorted, and the faunal materials were all removed to the Colonial

Williamsburg Foundation's Department of Archaeology (DAR) faunal lab for analysis.

Upon arriving in the lab for analysis, the characteristics of each bone fragment are observed, recorded and entered into the DAR's database to compile all of the raw analytical data. It is from these primary data measures that the secondary data and other contribution measures are calculated. The availability of a comprehensive comparative collection, like the one available at the DAR, is indispensable within this process. This collection facilitates the study of identified wild and domestic mammals, fish, birds and reptiles that can be found archaeologically in the Tidewater region. The faunal remains within the assemblage were identified to the lowest biological taxon possible (ideally to species level) by comparing each bone fragment with the comparative collection of animal skeletons. The diverse types of animal remains recovered from Lot 58 require careful analysis and a good deal of time is needed to make accurate, precise identifications.

The **NISP** is the ***Number of Individual Specimens***, or individual bone fragments, from each taxonomic group. A list of all taxa used in analysis is located in Table 3 on page 31. The NISP value is *the primary faunal data.*

At the Coffeehouse there are 68 distinct taxonomic groups that are incorporated into the diversity calculations based on NISP counts. Because of the different levels of biological taxonomy that are used in the identification process, not all taxonomic groups identified are on the same scale. Therefore, the larger and more inclusive class groups and the orders of medium-sized food mammals offer

less information that is useful to cultural interpretation regarding the consumption of wild foods. In examining the contribution of wild species for example, the data for Order Artiodactyla lumps deer in with the domestic species of sheep, goats and pigs. On that same note, the juvenile *Bos taurus*, or domestic cow, is placed in its own category because it is considered to be a separate category of meat from regular beef even though they are from the same species. This separation is a decision made by the research staff of the CWF DAR, and juvenile *Bos taurus* is automatically recorded as a separate taxon in the data entry stage. In order to account for the added diversity of juvenile animals being offered as a unique type of meat from the adult version of the same animal, it would be interesting to separate out the identified juvenile animals of all domestic species as separate taxonomic categories during the initial identification and data collection processes.

Because of differences in morphology between animals and differences in archaeological process between sites, NISP can sometimes skew the importance of particular species during the analytical process. NISP will give more importance to animals that have more elements or remains with higher fragmentation, and should (if possible) not be the only measure used for comparing assemblages.

> *"Summaries of NISP, MNI, weight and sample biomass are all related to site formation processes, sample size, and analytical decisions. However, NISP probably does not adequately characterize the relationship among the taxonomic groups identified because of the uneven number of elements in organisms as diverse as deer, gopher tortoises, slippersnails[, etc.] . . . MNI*

places these diverse organisms on a more uniform basis. (Reitz and Wing 1999: 237)

II. TYPES OF SECONDARY DATA

Out of the materials recovered from the aggregate midden assemblage from the Coffeehouse, also known as 17KD-060, approximately 12,747 bone fragments were analyzed and are being used for this study. These fragments represent more than an estimated 7,500 pounds of meat, and provide a more than adequate sample size for analysis. In order to describe and quantify the meat diet that was consumed at this or any site, analysis beyond the identification process must be undertaken.

Below is an explanation of the various types of secondary data used for this study, along with their applications and limitations. In archaeological literature, it is always important to explicitly define the terms being used in order to avoid confusion, since few topics or terms are standardized within the field. All of the available data created for these assemblages, including NISP, MNI and biomass values, are being utilized in order to strengthen the comparative basis of this study so it is important to understand how the numbers originate. There are many different types of secondary data used in faunal analysis and often several ways of creating different types data that have the same name.

Once the bone fragments have been identified and recorded, the **MNI** values, or count of the ***Minimum Number of Individuals*** for each species are

determined by visual inspection by a faunal analyst. MNI is a type of secondary data. Shotwell, in Reitz & Wing 1999, gives the definition of MNI as, "the smallest number of individuals which is necessary to account for all of the skeletal elements (specimens) of a particular species found in the site (p. 194)." In this instance, the MNI is based on the assessment of the individual conducting the analysis regarding size, fusion and other characteristics of the bone fragments present. Rather than using the count of the most frequently occurring element(s) within a species group to give an MNI estimate as some may do, the faunal analyst will visually compare each bone fragment within the species group to determine by size and other physical characteristics the number of individuals represented. Known as *matching*, this process takes into account, "age, sex and size in addition to symmetry" to demonstrate how many animals would be required to accommodate the existence of all the parts present in an assemblage (Reitz & Wing 1999:195). This takes more time, but provides a more accurate estimate of the number of individuals present. This is the procedure always used to determine MNI at the Colonial Williamsburg Foundation's DAR faunal lab.

While many methods of calculating MNI exist, I feel that because this method is based on an enumeration of the actual remains present, it is very reliable. However, as with any data, there are inherent limitations to its reliability and the information it can provide because of "[its relation] to the number and identifiability of elements (Reitz & Wing 1999:195)." For example, MNI estimates may be affected by provisioning methods (i.e., whether a whole animal is consumed at a site or if it has been butchered and sold in parts); site formation and taphonomy may

eliminate fragments that would change the number of individuals observed; or the observed number of individuals recorded may differ from one analyst to another due to opinion. Because I am interested in the instances of consumption of wild species (not the actual meals, but the occasions on which an animal was acquired for food), I believe that the MNI helps to shed some light on the amount of hunting and fishing that may have been done to provision public houses. So, rather than viewing the overall contribution to the diet by each taxa, I feel that MNI is particularly good for estimating the amount of wildlife that may have come in to the Coffeehouse and other establishments used for this study.

Since MNI values were not calculated for all the assemblages used herein however, the NISP alone will have to suffice in some cases. In the cases where MNI is available, it helps to be able to compare the diversity by MNI and NISP. If there is a large difference between the two, fragmentation may be the most likely the cause for the dissimilarity. MNI values are only produced for taxa for which the analyst is able to positively identify individual animals. This is again, a decision made by the CWF DAR staff and analysts as to which elements can reliably be used to account for the presence of an individual, and which taxa can have an MNI calculated. All groups from every site that had an MNI listed in the original primary data have been included in the MNI calculations.

Biomass is calculated from the weight of the archaeological bone recovered and average weights for live animals to give a relative estimate of dietary contribution (Reitz and Wing 1999:222-225). A good reason why biomass should be

used as a value for determining a species' contribution to the diet is that the estimated value is directly related to the amount or weight of bone found on the site. It also corrects some of the misrepresentation made by NISP, since it uses the weight of the bone present as well as the estimated weight of the animal from which it came. The amount of unidentifiable fragments in this assemblage, which falls within the range expected, reminds us that the data being used is a *sample* of what was eaten. (Unidentifiable fragments are those that are too fragmented to be identified to any particular element or beyond the class - fish, bird, mammal, etc. - of animal that it is from.) Unfortunately, this ends up being the category into which roughly 40% of the remains fall by NISP. Because these unidentifiable bone fragments are generally small, they appear to make up more of the assemblage when looking at the count or NISP only than is physically true in terms of the actual percentage of meat represented by those fragments.

These unidentifiable fragments are able to give more useful data when used to calculate biomass. For this particular time and place, we know that any bird remains other than chicken (*Gallus gallus*) could possibly be wild species, and that fish and crustaceans of any sort are wild species. There are no domesticated reptiles for the time and place in history in question. The majority of domesticated animals (in terms of individual species and contributors to the diet) are mammals. Simply by looking at biomass we can see if there is more weight to the domestic or wild animals in an assemblage – a large percentage of the biomass in the mammal category will show us that there were more domesticated animals being consumed.

Also used in this study are measure of richness and evenness, employed to determine the composition of a faunal population within the archaeological record. These are necessary to demonstrate the similarities and differences between faunal assemblages, allowing us to reveal patterns of consumption. Since this study is a comparative one, it is essential that equitability and diversity are also used in order to "level the playing field" between assemblages statistically. The processes by which the values for richness, evenness, equitability and diversity were reached for this study are all explained in Section III, "Calculating Richness, Evenness, Equitability and Diversity" below.

Richness is determined by, the number of taxa in a community [i.e. assemblage] or region. Richness demonstrates the variety of animals consumed, or simply, is a count of the number of taxa present. Because not all bone fragments from these assemblages can be identified to species-level, it is sometimes difficult to determine the exact richness of a population. That is to say, one species-level group (for example, *Gallus gallus*, the domestic chicken) should not count for the same amount of biological diversity as a larger, more inclusive group such as a class (Aves) or family (Phasianidae) group. A bone fragment that can only be identified to one of these larger groups could be one of several species, and many different species may actually be represented but unidentifiable within a larger taxonomic

group, so to count them as having the same level of contribution to the diversity as a species-only group might be misrepresentative.

As the sampling of any community is increased, the probability of adding rare species increases (Reitz and Wing 1999:102), but this does not necessarily mean that the rare species will subsequently make up a significant part of the community. In the event of finding that one has a very rich assemblage, it is also necessary to determine how often each taxa was consumed in order to determine how large of a part it played in the diet. Was the consumption of each species part of the daily routine or a special event? ***Evenness,*** or ***relative abundance,*** shows the distribution of the total assemblage across the various taxonomic groups identified. If the amounts represented by each taxonomic group in an assemblage are uneven, it will mean that different taxa had different levels of importance in the diet. This also helps to reveal which fragments represent statistical outliers and extremes that are not part of the general pattern of the diet in question and which are statistically representative of the assemblage.

This statistical analysis largely focuses on production of ***diversity*** values for each assemblage. It is necessary to look at diversity in this study because it allows for an abstract, derived numeric index value to be used to summarize the entire assemblages for comparison with one another. It is a measure of the heterogeneity of an assemblage, and is derived from several categories of data from the assemblage. Diversity takes into account the richness, relative abundance, and

sample size. Thus, it is the most comprehensive measure being used since it incorporates several measures together into one value.

Equitability is "the degree to which species are equally abundant," and is "calculated by scaling the heterogeneity measure to the theoretical maximum (Reitz & Wing 1999:105)." Equitability allows the distribution of species within an assemblage to be viewed independently of richness. This allows for yet another comprehensive measure of the composition of the assemblages to be viewed for comparative analysis.

The complete faunal data with NISP, MNI and biomass values for each taxonomic group are listed in the Appendix.

III. Calculating Richness, Evenness, Equitability and Diversity

Shown below in Table 2 is a listing of the richness of each site, and Figure 3 is a graphic representation of the same values. Table 3 lists the full range of taxonomic groups utilized in the Coffeehouse calculations.

Table 2
Species richness values of assemblages
(number of groups for each category of analysis)

SITE	N for NISP	N for MNI	N for Biomass
Coffeehouse	68	38	57
Charlton Tavern	27	19	28
Shields Tavern	29	24	*NA*
Peyton Randolph	42	29	39
Mount Vernon	45	*NA*	43
Curles Neck	33	21	33

FIGURE 3

SPECIES RICHNESS VALUES OF ASSEMBLAGES USING NISP, MNI AND BIOMASS

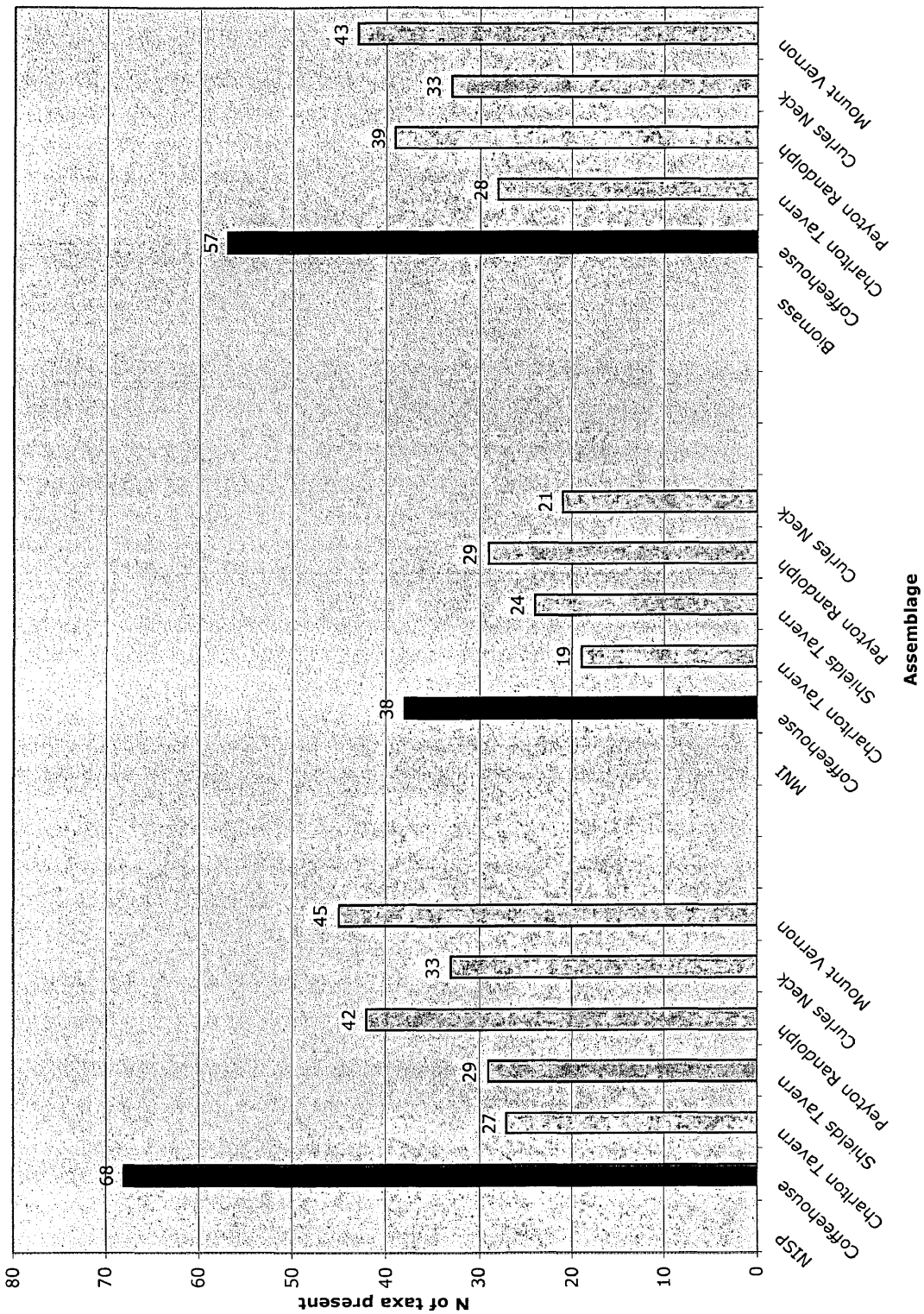


TABLE 3

RICHNESS: TAXA INCLUDED IN THE ANALYSIS OF THE COFFEEHOUSE ASSEMBLAGE

FISH (INCLUDING CRUSTACEA)

1. *Callinectes sapidus (Blue Crab)*
2. *Class Osteichthyes (Bony Fish)*
3. *Acipenser spp. (Sturgeon)*
4. *Family Ictaluridae (Freshwater Catfish)*
5. *Lepisosteus spp. (Gar)*
6. *Family Catostomidae (Sucker)*
7. *Order Perciformes (Perch-like Fish)*
8. *Lepomis spp. (Sunfish)*
9. *Family Percicthyidae/Morone spp. (Temperate Bass)*
10. *Morone americana (White Perch)*
11. *Morone saxatillis (Striped Bass)*
12. *Family Serranidae (Sea Bass)*
13. *Family Sparidae (Porgy)*
14. *Archosargus probatocephalus (Sheepshead)*
15. *Stenotomus chrysops (Scup)*
16. *Family Sciaenidae (Croaker or Drum)*
17. *Pogonias cromis (Black Drum)*
18. *Sciaenops ocellatus (Red Drum)*
19. *Micropogon undulatus (Atlantic Croaker)*
20. *Cynoscion spp. (Weakfish)*

REPTILES & AMPHIBIANS

21. *Order Anura (Toad or Frog)*
22. *Order Testudines (Turtle)*
23. *Chelydra serpentina (Snapping Turtle)*
24. *Chrysemys spp. (Slider or Cooter)*

BIRDS

25. *Class Aves (bird)*
26. *Class Aves (wild bird)*
27. *Duck spp.*
28. *Family Anatidae (Swan, Goose, Duck)*
29. *Goose spp.*
30. *Anser spp. (Goose)*
31. *Anser anser (Domestic Goose)*
32. *Branta spp. (Canada Goose or Brant)*
33. *Branta canadensis (Canada goose)*
34. *Anas spp. (Dabbling Duck)*
35. *Anas platyrhyncos (Domestic Duck or Mallard)*
36. *Anas rubripes (Black Duck)*
37. *Anas americana (American Widgeon)*
38. *Aix sponsa (Wood Duck)*
39. *Aythya spp. (Pochard)*
40. *Aythya valisineria (Canavasback)*
41. *Aythya americana (Redhead)*
42. *Aythya marila (Greater Scaup)*
43. *Lophodytes cucullatus (Hooded Merganser)*
44. *Larus spp. (Gull)*
45. *Order Galliformes (Fowl-like Bird)*
46. *Family Phasianidae (Grouse, Partridge)*
47. *Meleagris gallopavo (Turkey)*
48. *Gallus gallus (Chicken)*
49. *Colinus virginianus (Bobwhite)*
50. *Columbiformes/Columbidae (Pigeon or Dove)*
51. *Order Passeriformes (Perching Bird)*
52. *Turdus migratoriurs (Robin)*
53. *Cardinalis cardinalis (Cardinal)*

MAMMALS

54. *Class Mammalia I (Large Mammal)*
55. *Class Mammalia II (Medium Mammal)*
56. *Class Mammalia III (Small Mammal)*
57. *Sciuridae/Scurius spp./Scurius carolinensis (Squirrel,Eastern Gray Squirrel)*
58. *Didelphis virginiana (Opossum)*
59. *Rabbit spp. (Rabbit)*
60. *Sylvilagus floridanus (Eastern Cottontail)*
61. *Oryctolagus cuniculus (Domestic Rabbit)*
62. *Order Rodentia (Rodent)*
63. *Order Artiodactlya II (Sheep, Goat or Deer)*
64. *Sus scrofa (Domestic Pig)*
65. *Odocoileus virginianus (White-tailed deer)*
66. *Bos taurus (Domestic Cow)*
67. *Bos taurus, calf (juvenile Domestic Cow)*
68. *Ovis aries/Capra hircus (Domestic Sheep/Goat)*

To determine the richness of an assemblage, it is simply necessary to count the number of the taxonomic groups used for calculations. As the illustrations show, the Coffeehouse assemblage is much richer in the number of taxa present than any other site by any method of quantification. This is what sparked the initial interest in the assemblage from the Coffeehouse - its uniquely high number of taxa present. This means that more *types* of animals were eaten at the Coffeehouse than any other site, or that it has the richest population.

However, statistical outliers and exceptions to the pattern of what was consumed will almost always occur in any assemblage. There may have been many more *types* of animals consumed at the Coffeehouse than at other sites, but the question is: were they consumed regularly on a consistent basis? If the gentlemen who patronized the Coffeehouse ate a possum or deer on the rare occasion, but ate mutton and beef most of the time, they would not have a truly diverse diet. The goal in this case is to determine whether the unusual variety of animals that were consumed at the Coffeehouse are exceptions or if they are part of the larger pattern for elite foodways in this region in general. Evenness, or *relative abundance* is calculated simply by dividing the number of units present for each taxon by the number of units for the total assemblage (whether it be for NISP, MNI, or biomass). This shows the distribution of the remains across the taxonomic categories identified and allows the variety of meats within the assemblage to be visible.

Diversity is then needed to show the combined value of the richness and relative abundance of each taxon, which is needed for comparison between sites. This measure will be examined last, however, since it is the focus of the statistical work done for this analysis. Before examining the diversity values too closely, it is important to consider the *equitability* of these assemblages.

Equitability formula

$$\mathbf{V' = H'/\log_e S}$$

Where *H'* is the Shannon-Weaver function for diversity (discussed below) and *S* is the number of taxa for which MNI was determined (the richness value) (Reitz and Wing 1999:235).

Equitability takes into account both sample size and the relative abundance of species in the assemblage. As secondary data, it has been adjusted to create a value that can be easily compared with other sites that have slightly different characteristics, creating a "level playing field" and a legitimate basis on which to compare sites. All of the sites compared for this study were relatively the same in terms of evenness with only slight differences, as seen in Table 4 and Figure 4.

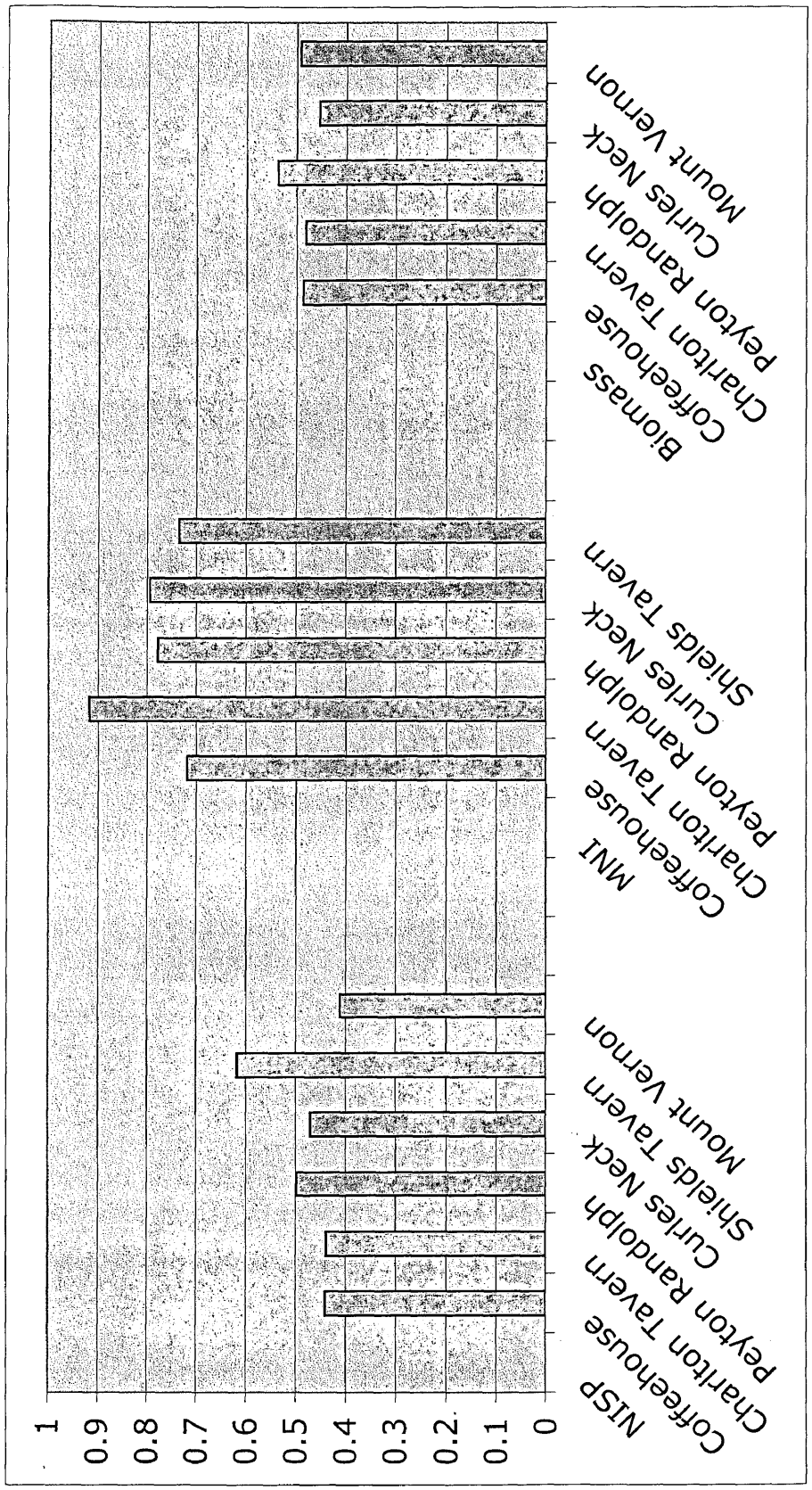
TABLE 4
EVENNESS OF TAXA OR EQUITABILITY

NISP	Equitability
Coffeehouse	0.441651621
Charlton Tavern	0.43994896
Peyton Randolph	0.497636279
Curles Neck	0.471899451
Shields Tavern	0.617706345
Mount Vernon	0.412434778

MNI	Equitability
Coffeehouse	0.720257854
Charlton Tavern	0.916982834
Peyton Randolph	0.778072415
Curles Neck	0.794870148
Shields Tavern	0.736299674
Mount Vernon	*NA*

Biomass	Equitability
Coffeehouse	0.487255755
Charlton Tavern	0.480162606
Peyton Randolph	0.537728088
Curles Neck	0.454739471
Shields Tavern	*NA*
Mount Vernon	0.491864283

FIGURE 4
EQUITABILITY OF ASSEMBLAGES USING NISP, MNI AND BIOMASS



Diversity was also calculated to determine how much the assemblages resemble each other statistically. Diversity is a measure based on the calculation of the relative abundance of each taxonomic group within the assemblage. This is the measure that demonstrates how unique the assemblage from the Coffeehouse is among all of the sites compared. The relative abundance values for each taxonomic group are compiled to show how many taxa are present and also how evenly they were utilized in the diet. While diversity was briefly mentioned above as being part of the equation to determine equitability, diversity is a measure that can also stand on its own as a comparative value. It is calculated using the Shannon-Weaver formula discussed by Reitz and Wing (1999:235).

Diversity formula

$$H' = -\sum_{i=1}^{s} (p_i)(\log_e p_i)$$

Where H' is the information content of the sample (diversity value) and p_i is the relative abundance of individuals from each taxon in the collection (Reitz and Wing 1999:235).

The diversity measures for each assemblage can be viewed below in Table 5 and Figures 5, 6 and 7. The more diverse sites have a higher value, are closer to the top of the graph. This graphic representation provides a quick-glance view of the ranking of each assemblage in terms of its diversity. As Reitz and Wing point out (1999:237), the values for each category – NISP, MNI and biomass – have inverse relationships from one category to the next. While the diversity of a particular

assemblage may be higher than the other assemblages when calculated using sample biomass, calculating diversity from MNI would show it to be lower. This is most likely because diversity is a derived value, and the original values used to calculate it are very different measures. The exact reason for this reversal in the relationships between values is not known (Reitz and Wing 1999:237), but the matter does demonstrate the complexity of the methods used for zooarchaeological analysis of the composition of diet.

TABLE 5
DIVERSITY VALUES FOR EACH ASSEMBLAGE USING ALL TAXA

SITE	H' NISP	H' MNI	H' Biomass
Coffeehouse	1.87	2.62	1.97
Charlton Tavern	1.45	2.7	1.6
Shields Tavern	2.08	2.34	-
Peyton Randolph	1.87	2.62	1.97
Curles Neck	1.65	2.42	1.59
Mount Vernon	1.57	-	1.85

FIGURE 5
DIVERSITY VALUES USING NISP OF ALL TAXA

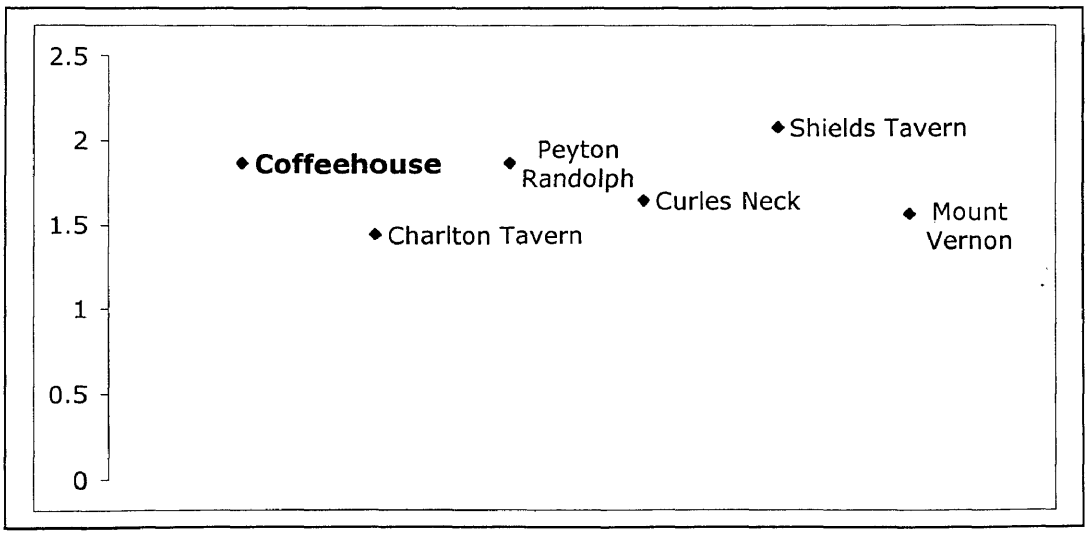


FIGURE 6
DIVERSITY VALUES USING MNI OF ALL TAXA

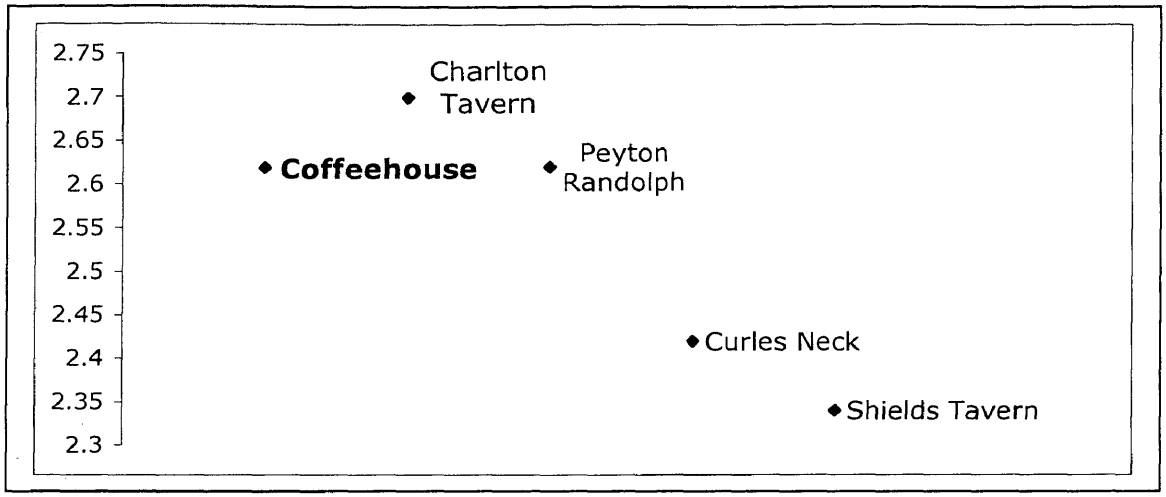
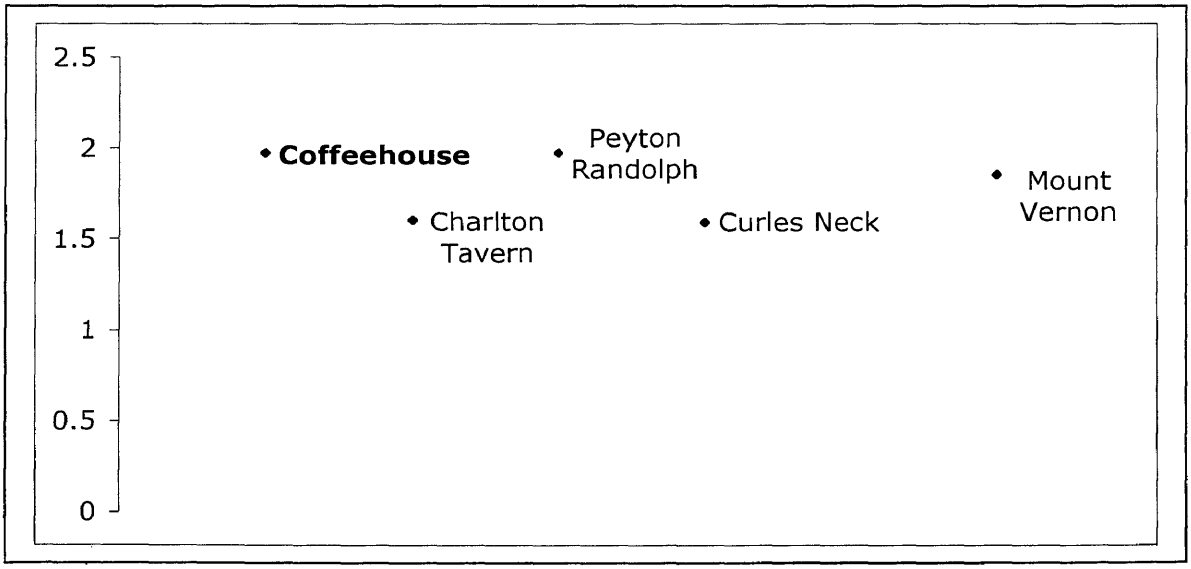


FIGURE 7
DIVERSITY VALUES USING BIOMASS OF ALL TAXA



Because of the aforementioned inverse effect, in examining the diversity values for NISP, or number of individual bone fragments represented by each taxonomic group, it would seem that the Coffeehouse assemblage is as equally diverse as the assemblage from Peyton Randolph, a private urban elite site. We also see that Shields Tavern is *more* diverse than the Coffeehouse and Peyton Randolph. This does not fit the original expected model of what the assemblage at the Coffeehouse would show. However, remember that NISP will give more importance to animals that have more elements or remains with higher fragmentation.

By using the MNI, or minimum number of individuals from each taxon, to calculate diversity, we see that the Coffeehouse and Peyton Randolph are still equal in terms of diversity, but the Charlton's Tavern assemblage from Lot 58 is more diverse than any other site and Shields Tavern is less diverse than any other assemblage. While it is not possible to know how similar the details of this analysis are with those of the sample analysis used by Reitz and Wing (1999:237), one factor that could partially be causing an inverse relationship is the elimination of several categories at the MNI stage, due to MNI values not being able to be created for some of the larger groups.

When the diversity based on biomass is viewed, the ranking of the sites is much the same as the ranking using NISP. Again, biomass is based on NISP, so it would be expected that the two measures would be fairly similar. The only difference is that an estimate of the contribution to the diet is provided rather than just a value based on the number of bones present, correcting for differences in the size of animals and the number of bones they contain.

Overall, when all measures are compared, the Coffeehouse assemblage is generally the most diverse. It would seem logical that the Peyton Randolph house and the Coffeehouse would have similar profiles because they are both subject to the limitations of urban provisioning. After arranging and viewing the data in several different ways, it is possible to see that the Coffeehouse is not the most diverse, not matter how you slice up the data.

The data discussed herein does seem to negate the idea that the elite who may have dined at the Coffeehouse were imitating the same variety of meals they may have eaten at estates in the countryside, but does confirm that a diverse group of meats were consumed on the site of Lot 58 in the 1755-1767 period, as well as other urban sites like the Peyton Randolph and Shields Tavern.

DISCUSSION

I. TAXA AND CATEGORIZATION

After examining the faunal data from these assemblages, an interesting cultural question remains: were the animals consumed at the Coffeehouse seen to be exotic or unusual by the patrons of the establishment? It is known that hunting was an important part of upper-class life in the colonies, and that is was not unusual to see wild game on the tables of any public or private house. The faunal data used for this study illustrates the extent to which non-domestic species were a part of the diet in and around mid-eighteenth century Williamsburg. Perhaps in a cultural system that did not have a very complex centralized system of meat production there was not such a difference between domestic and wild meats. Or, perhaps the distinction was not solely between wild and domestic; perhaps a series of distinctions existed to define their exact meaning. By thinking outside of the biological taxonomic construct used in the identification process we can obtain a better insight into the minds of the Coffeehouse patrons.

There is a concept discussed by O'Brien and Lyman in *Cladistics and Archaeology* (2003) that parallels biological and cultural development; a suggestion that artifacts can be viewed in terms of evolution just as biological traits can be. While artifacts themselves are not directly involved in a biological process, they are produced by humans who are subject to biological processes, like evolutionary change. I feel that this parallel is a useful idea, and even if we cannot comfortably say that artifacts are a biologically controlled cultural adaptation, we can liken their

development to that of a biological trait. Material culture is a part of the changing relations of humans to their environments, and can be viewed in terms of relativity over time. The major difference that we may note is one that was visualized by Kroeber (1948) and cited by O'Brien and Lyman - unlike biological evolution, cultural evolution is reticulate (O'Brien and Lyman 2003:105). Visualize a tree, with branches that develop upwards from the trunk, representing splits in biological categories, with each branch continuing to split again and again as it moves outwards. Now visualize a second tree with branches that split away from the trunk as culture subdivides, but instead of continuing to split as they move outwards, some of the branches recombine and split again and recombine again with others – the branches appear to be interwoven as they grow in and out of each other. This is how culture changes through time; and even better than imagining this evolutionary tree as a static image on a piece of paper, it would be better to remember that this is a living tree that continues to grow its branches outward, splitting and recombining indefinitely.

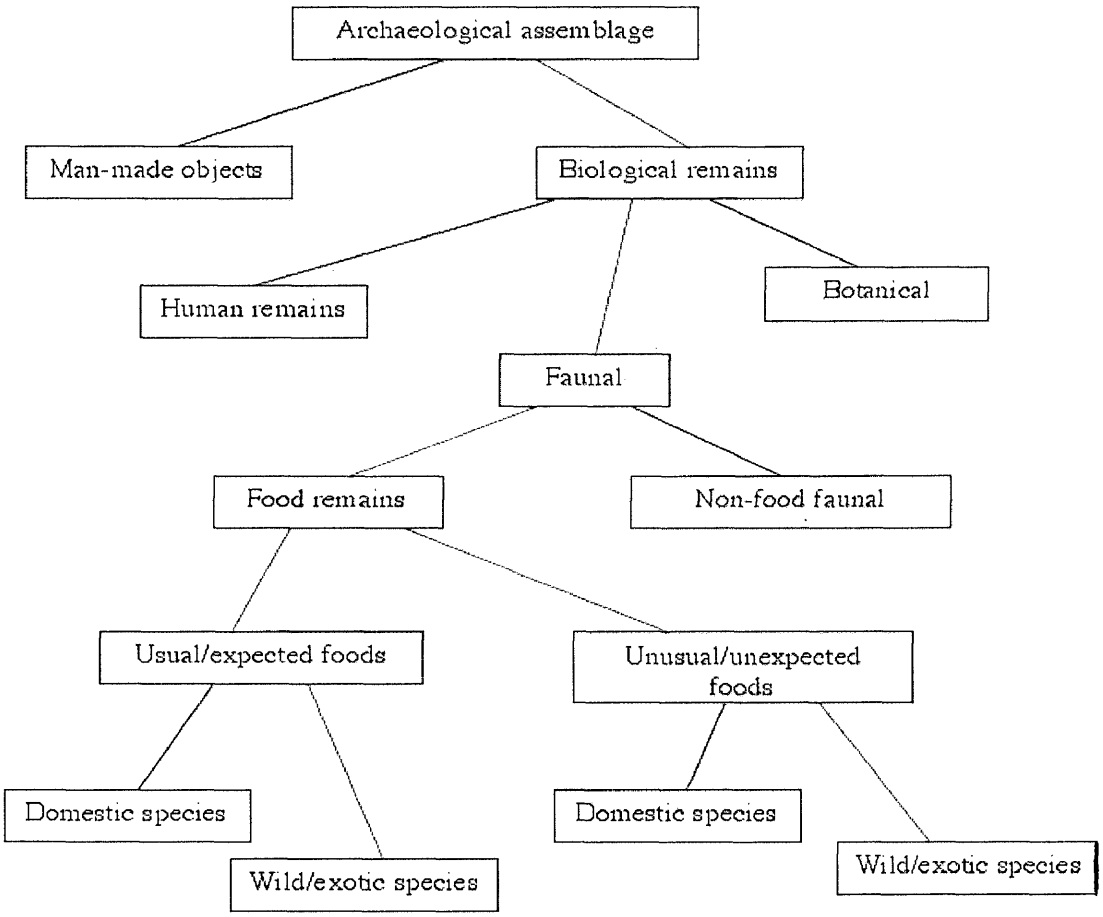
What we are utilizing in this instance is a history of the changing classifications of animals, a cultural evolution of what we deem as appropriate for food in particular circumstances. These classification groups are mental constructs that tell people what should be eaten and what eating certain foods means. We cannot know what the exact meanings of foods were to people who might have consumed them, but we can infer what sorts of general meanings specific meats would have had based on their association with particular types of sites or foodways from the period.

Because the taxonomic model in faunal analysis is inherently biologically based, it is difficult to escape the biologically based mental structure of the food groups that are being assessed. It is necessary to take the organisms that are being studied out of a biological taxonomy and place them into a culturally based taxonomy. Then the organization of food groups can be studied based on change in the groupings of these animals over time as to the status they confer and whether it is acceptable or unacceptable to eat them. It is important to remember that these are not groups that are fixed, and that the categories of what is "good to eat" and "not good to eat" do experience change over time and can differ between socioeconomic groups within same time and place.

It is somewhat difficult to retain the true focus when analyzing faunal remains. Bone fragments from food remains are not objects that are *formed* by human efforts, but objects that are *modified* by human efforts. Not necessarily are any physical changes being made to the animal bones in order to turn them into useful objects, like tools. They are only modified secondarily by the cultural process that makes them part of a group of food trash. An analytical grouping of the groups that were made historically is approximately what is needed for this type of research; the inference of their individual meanings must be ascertained through documentary research and socioeconomic associations through other archaeology classes (ceramics, architecture, etc.). We are not focusing on the physical characteristics of these bone fragments, but rather their history as they progressed from being a living organism to being part of trash deposits that were later excavated and turned into an archaeological assemblage. The morphology and

species name are not the most important pieces of information we can glean from these bone fragments, it is the information we obtain from their participation in the larger cultural processes that were conducted at the site that is the goal.

FIGURE 8
EXAMPLE OF A CULTURAL TAXONOMOY FOR FAUNAL REMAINS



By applying these organizational concepts we can see how the ideas about what was good to eat might vary between different groups of people, or even the same group of people when they are in different places or situations. In the third quarter of the 18th C. it was not unusual for a person to eat a wild (i.e. non-domestic) animal for food – but if an elite person were going to be eating in a public house, would eating a wild animal, or a particular type of wild animal, be unusual then? For the most part, it might be expected that the men who were doing governmental work at the capital would be stopping over at the Coffeehouse next door specifically to have a meal of possum or deer, but this may have been the case. Again, it is important to remember the dichotomies that were mentioned above – public versus private foodways, elite versus "common" foodways, and urban versus rural foodways.

We know that in Williamsburg in the mid-18th century eating was not merely a utilitarian activity. For the elite in Williamsburg, the experience of dining, whether in a public house or a private home, was a tool for reinforcing socioeconomic status, "an elegant affair (Sawyers in Poole 2006:71). The concept of feasting is applicable to the dining experiences that created these assemblages. The idea of a cultural taxonomy influencing what was served at the Coffeehouse is a part of what Brian Hayden refers to as *symbolical content* within feasting activities (2001:25). The content of a feast is the, "specific symbolical meaning emically attributed to a specific behavior or to the creation of a particular object (2001:25)." The specifics of a feasting event are also reliant on *form*, which refers to the, "overall nature of the

behavior . . . whether large-scale feasts, the construction of massive architecture, or the manufacture of costly items that are meant to create spectator reactions of awe (2001:25)." Hayden suggests that the first issue to be addressed when examining feasting behavior is the reason for the presence of a behavioral *form.* In the instance of the Coffeehouse, we already know the reason for the existence of coffeehouses. Referring to the work of Schivelbush (1992) as discussed above, coffeehouses were generally meant to fulfill the role of business hub and meeting place for businessmen and the elite in England. It would seem that the role of coffeehouses in Virginia is somewhat modified, but still refers back to the original cultural traditions that coffeehouses grew out of.

There is not much discussion yet of *content* within the small circle of anthropologists who study feasting because many studies of feasting have not progressed beyond explaining the emergence of form (Hayden 2001:25-26). Because there is some foundation on which to base further discussion of *form* and *content*, the Coffeehouse would be a good selection for the study of elite feasting activities. Hayden describes a feast as, "any sharing between two or more people of special foods (i.e., foods not generally served at daily meals) in a meal for a special purpose or occasion (2001:28)." Because the meats eaten at the elite establishments used for this study are probably not the same in type and quantity as those that would have been eaten by the majority of people in the Tidewater during the same time period, it would be plausible that the meats consumed at the Coffeehouse could fall within the Hayden's definition for feasting. This would require extensive statistical analysis of many types of foodways in the area, and would likely present

an interesting topic. I would propose, although it cannot be tested at this time, that some amount of the elite dining that included wild foods could have had a ceremonial role rather than just a practice that arose from necessity or practicality.

III. Hunting as elite provisioning

Some of the factors affecting the provisioning of wild species for consumption include the restricted hunting opportunities and market regulations that were being created during the mid-to-late 18th century. In the end, a food cannot be consumed if it is not available, regardless of the socioeconomic status or cultural regulations of an individual or population. The changes caused by any organism within an environment are referred to as "biotic factors" (Silver 2001:154) in ecological archaeology. By the period that the Coffeehouse was in operation, the colonists – the originators of the majority of biotic factors during the period – had created and were aware of the effects of the extensive agriculture and commercial hunting that had taken place in earlier decades (Silver 1990). Virginia was the first place where a closed hunting season for deer was created; in 1699 restrictions were placed on hunting seasonally, but a hundred years later in the 1790's Virginia (along with Maryland) had banned commercial deer hunting altogether (Silver 2001:162). Fortunately for the patrons of the Coffeehouse, deer hunting was still legal during certain times of the year in the mid-century period. The creation of such legislation lends support to the idea that there was a commercial system in place for procuring wild species of Virginia animals that not only was profitable, but thriving. Other

work has been done on the trade in skins from wild species, such as the white-tailed deer (Lapham 2006), but not much research has been done concerning the hunting of animals for food purposes during the mid-18th century. The analysis of primary documents concerning the process of hunting, selling and consumption would be very helpful to this research, but will have to be undertaken in the future. A particular primary document type that may be extremely useful would be a daybook or account book, as it would give us not only a record or proof of the transaction of wild species for money or trade items, but would also allow us to place the value of an individual animal within a greater economic context for comparison with prices of domestic meats.

This type of information could then be viewed within a larger market system, which as mentioned above, was really beginning to develop during the time of the Coffeehouse. In 1705 an act had been created to provide for a market to occur in the center of Williamsburg twice per week, but a market house was never completed to provide space for commercial activity until 1757 (Walsh et. al 1997:85). At the time the Coffeehouse was in use, commercial hunting was still allowed on a large scale and a good place for selling the animals procured had finally been created. If there were ever a time in which to hunt for wild species with the intent of selling them as food for public consumption, the period of the Coffeehouse would have been it.

One of the many questions with which I am concerned is the question of *who* exactly was doing the hunting to produce the wild species for consumption. It is possible that enslaved persons working for particular elite families could have been

doing the hunting and that the elite were then selling the game to tavern or coffeehouse keepers. Would it be a possibility that the elite themselves were doing the hunting to provide their own food within a public foodway? I do not necessarily think that the elite were consuming food at the Coffeehouse that they had hunted themselves – commercially and logistically it does not make sense. The idea that natives were trading wild species as food items seems the most logical, as the natives were still the most familiar with the particular ecosystem and most likely inhabited areas where game was more abundant. In 1759, Andrew Burnaby, an itinerant minister, wrote that the Pamunkey Indians killed large amounts of wildfowl for the purpose of providing wild game for the tables of most of the planters in the region: "[The Pamunkeys] employment is chiefly hunting or fishing for the neighboring gentry . . . (Virginia Historical Register, Vol. 5:144-145)." (Silver 1990:101). This account, being from the same time and geographic region as the Coffeehouse lends direct support to the idea that the Natives in the area were the ones providing wild species to feed the elite need for exotic Virginia animals on the table.

Hunting was an important elite activity in England, and continued to be a means for acquiring or maintaining social status in the new world of Virginia. We know this because the archaeological and documentary records both give us evidence of the widespread interest in and practice of hunting for wild foods in the Tidewater. There are two important concepts to address with this point however; one being that the "elite" here in Virginia would not have been the same people who would have been considered "elite" in England (the same fish who were big in the

small pond of Williamsburg would not have been big fish in the bigger pond of London or other English cities), and also that when the elite went on a hunt, they were often only providing the capital for the hunt to occur and allowed dogs and servants to do most of the work.

While the elite members of society did not usually have a part in hunting the wild game brought to their tables, they would on occasion participate in hunting for themselves. One example of a detailed communication on the topic of hunting exists in the 1739 letter written by botanist and author John Clayton of Gloucester. Clayton responds to a letter he has received from the manager of an estate he had inherited in Kent, England. The letter from the manager was apparently expressing interest on behalf of another man as to the hunting opportunities in the region, to which Clayton responds with a lengthy and detailed explanation of the hunting opportunities available in the area.

> *"To satisfie the Gentlemen you mention who is so desirous of Knowing the diversion of hunting and shooting here and the several sorts of game pray give my service to him and tell him, that we have all the tame domestick beasts and fowls that you have in England, and great variety of wild ones as Deer in great plenty, Bears, Buffaloes, Wolves, Foxes, Panthers, wild Cats, Elks, Hares (smaller than any of y's which run in holes in the earth and hollow trees when pressed by the dogs, and are much like w't you call in England bush Rabbits), Squirrels 3 or 4 sorts, Raccoons, Oppossums, Beavers, Otters, musk rats, Pole cats, minks and there has been two*

Porcupines killed here, but they are very scarce. Then for fowls, wild Turkey's very numerous, Partridges (the size and colour like y'r Quails), wild Geese, Swans, Brants, Cormorants, Teal, Duck, and Mallard, Black ducks and another sort we call Summer Ducks, Plover 2 or 3 sorts, Soris (a delicious eating bird in Shape and way of living like y'r Water Rails), Heath Fowls (called here improperly Pheasants) 2 sorts, wild Pigeons, in prodigions great flocks, Fieldfares, Woodcocks (but what is very strange they come here only in summer) Snipes, Herons, Bitterns, Eagles, Larks 2 sorts one of w'ch are here all the year round and are much like your lark. Now the Gentlemen here that follow the sport place most of their diversion in Shooting Deer: w'ch they perform in this manner they go out early in the morning and being pritty certain of the places where the Deer frequent they send their servants w'th dogs to drive 'em out and so shoot 'em running . . . (Virginia Historical Magazine 7:173)."

Clayton refers to at least 39 different species of mammals and birds, including porcupines and eagles, that are available as game in the area as well as describing the likenesses and differences between the Virginian and English variations of each animal type. We cannot say that Clayton necessarily uses the same taxonomic groups that are used in analysis of zooarchaeological materials today, but the view he presents at least gives us some idea of the educated view of fauna in mid-eighteenth century Virginia. As such, Clayton's letter is useful in two ways: we are able to see 1) what sorts of animals were considered game for hunting here in

Virginia at the time and 2) how these North American animals may have fit into the pre-existing ideas about animal species and hunting carried over from England. It seems as though any elite hunting excursion would require that dogs and servants be brought along to do the majority of the legwork. By referring to "the Common Sort of People who live in among the Mountains" and the way in which they hunt, he provides a contrast between what Clayton sees as the regular (to himself) mode of hunting and the process used by the lower classes or people on the frontier.

The privileges of wealth during the mid-eighteenth century in Tidewater Virginia included the ability for men to own large pieces of land in the countryside, which would also allow them to control ecological resources and be eligible to have a role in governmental proceedings.

CONCLUSION

While the historical information available on Lots 57 and 58 in Colonial Williamsburg provides somewhat "sketchy" details, we can determine through archaeology the type of activities that took place within its walls. The materials that have been identified tell us that large amounts of food were being served in the establishment, and that the general activities going on inside the building were similar to the activities that would be seen in other taverns or public houses (Garden et al. 2000:31). Ceramics and other tableware found in the midden on Lot 58 support dates for the Coffeehouse's existence that are inferred from the documentary record. Because questions about the elite status of the establishment and the actual diversity of the foods eaten there exited, a comparative basis between similar sites was established.

Several sites from the same time period and geographic region that have better documentation than the Coffeehouse were used for comparison. The assemblage relating to the Charlton's Tavern that operated in the same structure on Lot 58E was used along with the assemblage from Shield's Tavern to show how similar the Coffeehouse was to a common public house. Assemblages from the Curles Neck and South Grove plantations were used to compare the Coffeehouse with elite rural private foodways, and the assemblage from the Peyton Randolph house was used to make comparisons with an elite urban private foodway.

Several types of comparisons using different values, comprised of both primary and secondary data, were made. The richness, or number of taxa, of each assemblage was determined for NISP, MNI and biomass and compared. This

demonstrated the variety of animals that were consumed at each site. While it was expected that the variety of wild species consumed at the Coffeehouse would be either unique among the assemblages or most similar to the assemblages from elite rural private foodways, this was not the case. Rather than being an attempt to celebrate status in a public setting near the Capitol, associating the patrons not only with economic power but also governmental power, the combination of meats consumed at the Coffeehouse was likely more a reflection of urban elite foods. Overall, less variety was seen in the rural settings than the urban ones, and in nearly every measure of comparison made, the Coffeehouse and Peyton Randolph house assemblages had the same values.

While the Coffeehouse was similar in diversity with the Peyton Randolph house, the Coffeehouse had the richest assemblage of any site. Because some of the species identified may have been anomalous in the diet, rarely occurring or possibly not being from the actual food served at the Coffeehouse, diversity must be used to really see how unique the assemblage is. Depending on the value used - NISP, MNI or biomass – the ranking of each site changed. Originally, I intended to rely on the MNI values for each species, with the purpose of focusing on the number of instances of consumption. Focusing on the MNI values was not possible however, as the MNI values were not available for every assemblage that was compared. Biomass was also not calculated for every assemblage, and therefore NISP was the only measure that was available for all assemblages.

Biomass, being calculated from the NISP value for each species, can be estimated in the instances where it is missing. Even with the data that is available, it

is apparent that the Coffeehouse is most like the Peyton Randolph house, and different from both of the other taverns included in this comparative study. Interestingly enough, the taverns that were examined were usually on opposite ends of the ranked list of assemblages, demonstrating that the diversity of tavern assemblages may vary significantly. These results are likely not affected by differing provisioning methods or fragmentation levels as much are the results of the calculations using NISP data.

Where does this leave us? It is apparent that the assemblage from the Coffeehouse does not represent the most diverse group of meats among the assemblages used for this comparison. It is also apparent that the Coffeehouse assemblage is not the most similar to the rural private elite assemblages. While the wildlife that was part of the regular rural diet for elite planters in the region may have been an influence on the meats offered at the Coffeehouse, it is more likely that wild foods were commonly provided in town at market, and while they may have been more expensive than domestic meats, they would have been relatively easy to obtain. Since the Coffeehouse is not the most diverse, and it is generally as diverse same as the Peyton Randolph house assemblage, it would seem that the Coffeehouse was not such a unique place in terms of the dining options available. It would seem to reflect an urban diet, but not necessarily an elite one due to the fact that the Shields Tavern was more diverse by MNI, and Shield's was a public house for a more generalized clientele.

These comparisons would suggest that diversity may be related to the size of an establishment and it's location (rural or urban) rather than its socio-economic status. The least diverse assemblages by the measures used are the rural private elite sites. This is somewhat logical since it would be the most difficult to access a wide variety of meat types in the country where plantation owners were raising their own livestock or engaging in limited hunting activities for themselves. The marketplace in Williamsburg would have provided a venue for the sale of wild foods as well as domestic meats, but the venue for the market was not in use until approximately the end of the Shields Tavern period. Although several answers about the meats that were consumed at the Coffeehouse have been answered, a larger mystery about the diversity of meats served in public houses throughout the eighteenth century in Williamsburg has come to light. As always, further comparisons, statistical analyses and documentary research could be done in the future. A broader study of public foodways in Williamsburg concerning diversity and provisioning would provide further insight into the topics pertaining to economics and elite consumption that have been addressed herein, and would make for an interesting and valuable addition to the Colonial Williamsburg Foundation's base of knowledge on these establishments.

APPENDIX A

DESCRIPTIONS OF OTHER SITES USED FOR THIS STUDY

SHIELDS TAVERN, 1738-1751

This establishment was located on the south side of Duke of Gloucester only a few hundred feet from the Capitol and the Coffeehouse site, and represents a more common, non-specialized, type of public house. The owner for a large portion of this period also owned two plantations in the surrounding countryside. The sample size of this assemblage totals 677 bone fragments.

THE PEYTON RANDOLPH HOUSE, 1745-1775

The house associated with this assemblage is located on the northeastern corner of Nicholson and North England Streets within Colonial Williamsburg – only a few blocks from the location of the Coffeehouse on Lot 58. The occupant, Peyton Randolph had attended the College of William & Mary and also studied law in England. He was elected Speaker of the House in 1766, and President of the First Continental Congress in 1774. The sample size of this assemblage totals 7,028 bone fragments.

CURLES NECK, 1750-1775

This assemblage comes from a site located in Henrico County that was owned by Richard Randoplh II, a wealthy planter. Faunal remains were recovered from what have been identified as a well and a possible ice house or meat house. The sample size of this assemblage totals 2,244 bone fragments.

MOUNT VERNON, 1752-1765

The Mount Vernon, Virginia assemblage comes from midden materials related to the main house on the site known as South Grove; "an incredibly rich collection of refuse relating to the households of both Lawrence and George Washington was retrieved, which has provided rare insight into the domestic world of the Washington brothers and their families (Pogue, White, and Breen 2005)." The sample size totals 4,256 bone fragments.

APPENDIX B

COMPLETE FAUNAL DATA FOR THE COFFEEHOUSE ASSEMBLAGE

TAXON	NISP	MNI	BIOMASS KG
Callinectes sapidus (Blue Crab)	55	1	0
Class Osteichthyes (Bony Fish)	1565	0	3.04
Acipenser spp. (Sturgeon)	263	1	2.816
Family Ictaluridae (Freshwater Catfish)	11	3	0.079
Lepisosteus spp. (Gar)	1	1	0.007
Family Catostomidae (Sucker)	4	1	0.047
Order Perciformes (Perch-like Fish)	3	0	0.007
Lepomis spp. (Sunfish)	3	1	0.008
Family Percicthyidae/Morone spp. (Temperate Bass)	13	0	0.028
Morone americana (White Perch)	22	3	0.059
Morone saxatillis (Striped Bass)	7	2	0.027
Family Serranidae (Sea Bass)	2	0	0.016
Family Sparidae (Porgy)	21	0	0.199
Archosargus probatocephalus (Sheepshead)	49	8	0.736
Stenotomus chrysops (Scup)	7	2	0.103
Family Sciaenidae (Croaker or Drum)	23	0	0.425
Pogonias cromis (Black Drum)	52	3	1.994
Sciaenops ocellatus (Red Drum)	43	3	0.802
Micropogon undulatus (Atlantic Croaker)	15	2	0.113
Cynoscion spp. (Weakfish)	10	1	0.096
Order Anura (Toad or Frog)	1	0	0
Order Testudines (Turtle)	12	0	0.141
Chelydra serpentina (Snapping Turtle)	15	1	0.405
Chrysemys spp. (Slider or Cooter)	4	1	0.081
Class Aves (Bird)	979	0	3.192

Class Aves (Wild Bird)	13	0	0.051
Duck spp.	97	0	0.498
Family Anatidae (Swan, Goose, Duck)	2	0	0.03
Anser spp. (Goose)	3	0	0.111
Anser anser (Domestic Goose)	8	3	0.289
juvenile Anser anser (Domestic Goose)		1	
Branta spp. (Canada Goose or Brant)	1	0	0.019
Branta canadensis (Canada goose)	19	3	0.459
Anas spp. (Dabbling Duck)	24	0	0.227
Anas platyrhyncos (Domestic Duck or Mallard)	22	3	0.388
Anas rubripes (Black Duck)	29	4	0.3
Anas americana (American Widgeon)	4	2	0.04
Aix sponsa (Wood Duck)	1	1	0.033
Aythya spp. (Pochard)	9	0	0.061
Aythya valisineria (Canavasback)	3	1	0.028
Aythya americana (Redhead)	1	1	0.005
Aythya marila (Greater Scaup)	1	1	0.005
Lophodytes cucullatus (Hooded Merganser)	8	3	0.075
Duck spp.	99	0	0.675
Goose spp.	82	0	1.262
Larus spp. (Gull)	1	1	0.005
Order Galliformes (Fowl-like Bird)	8	0	0.074
Family Phasianidae (Grouse, Partridge)	115	0	0.849
Meleagris gallopavo (Turkey)	109	6	2.712
juvenile Meleagris gallopavo (Turkey)		2	
Gallus gallus (Chicken)	405	29	3.653
juvenile Gallus gallus (chicken)		11	
Columbiformes/Columbidae (Pigeon or Dove)	5	1	0.024
Order Passeriformes (Perching Bird)	4	0	0.009
Turdus migratoriurs (Robin)	2	1	0.003
Cardinalis cardinalis (Cardinal)	2	1	0.005

TAXON	NISP	MNI	BIOMASS KG	
Class Mammalia		1191	0	4.863
Class Mammalia I (Large Mammal)		1041	0	49.158
Class Mammalia II (Medium Mammal)		4043	0	39.093
Class Mammalia III (Small Mammal)		144	0	1.118
Sciuridae/Scurius spp./Scurius carolinensis (Squirrel,Eastern Gray Squirrel)		52	5	0.426
Didelphis virginiana (Opossum)		8	2	0.13
Rabbit spp. (Rabbit)		36	3	0.376
Sylvilagus floridanus (Eastern Cottontail)		12	2	0.144
Oryctolagus cuniculus (Domestic Rabbit)		1	1	0.029
Order Rodentia (Rodent)		1	0	0
Family Cricetidae (Mouse, Rat, Lemming, Vole)		1	0	0.031
Rat spp.		1	0	0.003
Felis domesticus (Domestic Cat)		3	-0	0.038
Order Artiodactyla I (Sheep, Goat, Deer, Pig)		65	0	2.387
Order Artiodctlya II (Sheep, Goat or Deer)		39	0	2.524
Sus scrofa (Domestic Pig)		788	20	53.326
juvenile Sus scrofa (Domestic Pig)			5	
Odocoileus virginianus (White-tailed deer)		19	2	3.594
Bos taurus (Domestic Cow)		299	9	72.613
Bos taurus, calf (juvenile Domestic Cow)		176	8	13.905
Ovis aries/Capra hircus (Domestic Sheep/Goat)		489	22	28.543
juvenile Ovis aries/Capra hircus (Domestic Sheep/Goat)			3	
Ovis aries (Domestic Sheep)		47	9	7.996
Bos taurus/Eqqus sp. (Domestic Cow, Horse, Ass)		2	0	0.098
Equus spp. (Horse or Ass)		2	0	0.622

TAXON	NISP	MNI	BIOMASS KG
Homo sapiens (Human)	4	0	0
Totals for table	12723	201	299.339

*taxa representing .235 of the total biomass are not included in this table

TOTALS FOR ASSEMBLAGE	12747	171	307.57

Appendix C

Complete faunal data for the Charlton Tavern assemblage

TAXON	NISP	TOTAL MNI	PERCENTAGE	MEAT WT LBS	BIOMASS KG
Class Osteichthyes (bony fish)	68	0	0	0	0.298
Acipenser spp. (sturgeon)	4	1	2.4	100	0.261
Family Ictaluridae (Freshwater Catfish)	1	1	2.4	2	0.023
Order Perciformes	5	0	0	0	0.066
Family Serranidae (Sea Bass)					
Family Sparidae (Porgy)					
Archosargus probatocephalus (Sheepshead)	8	2	4.8	15	0.134
Family Sciaenidae (Croaker or Drum)	2	1	2.4	21.5	0.028
Pogonias cromis (Black Drum)	0	0	0	0	0
Order Testudines (Turtle)	1	1	2.4	1	0.115
Class Aves (bird)	55	0	0	0	0.288
Duck spp.	5	3	7.3	6	0.057
Goose spp.	8	1	2.4	7	0.68
Family Phasianidae (Grouse, Partridge)	14	0	0	0	0.139
Meleagris gallopavo (Turkey)	8	2	4.8	15	0.379
Gallus gallus (Chicken)	18	5	12	8	0.214
Colinus virginianus (Bobwhite)	2	1	2.4	0.5	0.005
Ectopistes migratorius (Passenger pigeon)	1	1	2.4	0.5	0.003
Class Mammalia	611	0	0	0	4.585
Class Mammalia I (Large Mammal)	562	0	0	0	22.879
Class Mammalia II (Medium Mammal)	1468	0	0	0	12.916
Class Mammalia III (Small Mammal)	13	0	0	0	0.335

Didelphis virginiana (Opossum)	1	1	2.4	8	0.033
Rabbit spp. (Rabbit)	1	1	2.4	2	0.017
Procyon lotor (Raccoon)	1	1	2.4	15	0.006
Order Artiodactyla I (Sheep, Goat, Deer, Pig)	7	0	0	0	0.274
Order Artiodctlya II (Sheep, Goat or Deer)	7	0	0	0	0.533
Sus scrofa (Domestic Pig)	169	6	14.6	550	10.581
juvenile Sus scrofa (Domestic Pig)		1			
Bos taurus (Domestic Cow)	275	5	12.2	2000	54.479
Bos taurus, calf (juvenile Domestic Cow)	52	3	7.3	150	5.072
Ovis aries/Capra hircus (Domestic Sheep/Goat)	40	4	9.7	140	3.313
Bos taurus/Eqqus sp. (Domestic Cow, Horse, Ass)	4	0	0	0	0.362
Totals for table	3411	41	96.7	3041.5	118.075
TOTALS FOR ASSEMBLAE	3507	41	100	3041.5	119.965

Appendix D

Complete faunal data for the Shields Tavern assemblage

TAXON	NISP	MNI	NISP rel. abundance	MNI rel. abundance
Callinectes sapidus (Blue Crab)	1	1	0.0014771	0.01315789
Acipenser spp. (Sturgeon)	4	2	0.00590842	0.02631579
Morone americana (White Perch)	3	1	0.00443131	0.01315789
Morone saxatillis (Striped Bass)	4	1	0.00590842	0.01315789
Family Sparidae (Porgy)	8	2	0.01181684	0.02631579
Archosargus probatocephalus (Sheepshead)	2	1	0.00295421	0.01315789
Family Sciaenidae (Croaker or Drum)	2	1	0.00295421	0.01315789
Pogonias cromis (Black Drum)	8	2	0.01181684	0.02631579
Sciaenops ocellatus (Red Drum)	5	2	0.00738552	0.02631579
Cynoscion spp. (Weakfish)	3	2	0.00443131	0.02631579
Prionotus spp. (Sea Robin)	2	1	0.00295421	0.01315789
				0
Rana catesbeiana (Bullfrog)	2	1	0.00295421	0.01315789
				0
Anser spp. (Goose)	1	0	0.0014771	0
Anser anser (Domestic Goose)	5	2	0.00738552	0.02631579
Anas spp. (Dabbling Duck)	8	0	0.01181684	0
Anas platyrhyncos (Domestic Duck or Mallard)	8	6	0.01181684	0.07894737
Family Phasianidae (Grouse, Partridge)	36	0	0.05317578	0
Meleagris gallopavo (Turkey)	7	2	0.01033973	0.02631579
Gallus gallus (Chicken)	39	11	0.05760709	0.14473684
Colinus virginianus (Bobwhite)	1	1	0.0014771	0.01315789
Columbiformes/Columbidae (Pigeon or Dove)	1	1	0.0014771	0.01315789
Ardea herodias (Great Blue Heron)	3	1	0.00443131	0.01315789
				0

TAXON	NISP	MNI	NISP rel. abundance	MNI rel. abundance
Sylvilagus floridanus (Eastern cottontail)	3	1	0.00443131	0.01315789
Procyon lotor (Raccoon)	1	0	0.0014771	0
				0
Order Artiodctlya II (Sheep, Goat or Deer)	20	0	0.0295421	0
				0
Sus scrofa (Domestic Pig)	177	10	0.26144756	0.13157895
Odocoileus virginianus (White-tailed deer)	7	2	0.01033973	0.02631579
Bos taurus (Domestic Cow)	171	6	0.25258493	0.07894737
Ovis aries/Capra hircus (Domestic Sheep/Goat)	124	11	0.183161	0.14473684
Totals for sheet	612	54		
TOTALS FOR ASSEMBLAGE	677	76		

APPENDIX E

Complete faunal data used for the Peyton Randolph assemblage

TAXON	NISP	MNI	BIOM KG
Callinectes sapidus (Blue Crab)	8	2	0
Class Osteichthyes (Bony Fish)	473	0	0.404
Acipenser spp. (Sturgeon)	108	1	2.081
Family Ictaluridae (Freshwater Catfish)	4	2	0.033
Lepisosteus spp. (Gar)	4	1	0.1
Alosa sapidissimia (American Shad)	2	1	0.023
Family Catostomidae (Sucker)	2	1	0.02
Family Gadidae/Gadus morhua (Codfish/Atlantic Codfish)	5	1	0.159
Morone spp. (Temperate Bass)	4	0	0.005
Morone americana (White Perch)	3	1	0.005
Morone saxatillis (Striped Bass)	3	1	0.08
Family Sparidae (Porgy)	2	0	0.012
Archosargus probatocephalus (Sheepshead)	2	1	0.048
Stenotomus chrysops (Scup)	1	1	0.02
Family Sciaenidae (Croaker or Drum, Red/Black Drum, Atlantic Croaker)	17	1	0.376
Rana spp. (Frog)	1	1	0
Order Testudines (Turtle)	9	0	0.095
Chelydra serpentina (Snapping Turtle)	75	1	0.594
Chrysemys spp. (Slider or Cooter)	6	1	0.131
Family Cheloniidae (Marine Turtle)	5	1	0.089
Class Aves (Bird)	226	0	0.689
Family Anatidae (Swan, Goose, Duck)	2	0	0.017
Duck spp.	26	4	0.195

Goose spp.	34	3	0.639
Family Phasianidae (Grouse, Partridge)	42	0	0.233
Meleagris gallopavo (Turkey)	35	4	1.259
Gallus gallus (Chicken)	165	25	1.589
juvenile Gallus gallus (chicken)		17	
Colinus virginianus (Bobwhite)	3	1	0.007
Order Passeriformes (Perching Bird)	2	1	0.005
Class Mammalia	848	0	6.729
Class Mammalia I (Large Mammal)	1088	0	38.646
Class Mammalia II (Medium Mammal)	2510	0	21.175
Class Mammalia III (Small Mammal)	37	0	0.167
Didelphis virginiana (Opossum)	4	1	0.146
Rat spp.	8	3	0.049
Canis familiaris (Domestic Dog)	2	1	0.76
Felis domesticus (Domestic Cat)	64	5	1.367
juvenile Felis domesticus (Domestic Cat)		2	
Order Artiodactyla I (Sheep, Goat, Deer, Pig)	59	0	1.936
Order Artiodctlya II (Sheep, Goat or Deer)	10	0	0.563
Sus scrofa (Domestic Pig)	507	17	36.043
juvenile Sus scrofa (Domestic Pig)		5	
Odocoileus virginianus (White-tailed deer)	10	2	2.189
Bos taurus (Domestic Cow)	281	6	71.87
Bos taurus, calf (juvenile Domestic Cow)	77	4	7.841
Ovis aries/Capra hircus (Domestic Sheep/Goat)	167	11	12.011
juvenile Ovis aries/Capra hircus (Domestic Sheep/Goat)		2	

Ovis aries (Domestic Sheep)	21	6	4.25
juvenile Ovis aries (Domestic Sheep)		1	
Bos taurus/Eqqus sp. (Domestic Cow, Horse, Ass)	3	0	0.499
Equus spp. (Horse or Ass)	2	0	1.27
TOTALS	7028	107	215.976

APPENDIX F

Complete faunal data used for the Mount Vernon assemblage

TAXON	NISP	BIOM KG
Callinectes sapidus (Blue Crab)	2	0
Class Chondrichtyhyes (Cartilaginous Fish)	1	0
Class Osteichthyes (Bony Fish)	714	0.789
Acipenser spp. (Sturgeon)	8	0.081
Family Ictaluridae (Freshwater Catfish)	102	0.453
Ictalurus catus (White Catfish)	6	0.074
Lepisosteus spp. (Gar)	12	0.122
Family Catostomidae (Sucker)	18	0.104
Family Clupeidae (Herring)	9	0.027
Alosa pseudoharengus (Alewife)	10	0.027
Alosa sapidissima (American Shad)	2	0.014
Family Esocidae (Pike, Pickerel, or Muskellunge)	2	0.023
Esox niger (Channel Pickerel)	1	0.016
Perca flavescens (Yellow Perch)	16	0.031
Lepomis spp. (Sunfish)	16	0.025
Lepomis microlophus (Redear Sunfish)	20	0.071
Morone americana (White Perch)	40	0.068
Morone saxatillis (Striped Bass)	1	0.005
Morone app. (Temperate Bass)	3	0.005
Family Ranidae (True Frog)	2	0
Order Testudines (Turtle)	5	0.066
Chrysemys spp. (Slider or Cooter)	14	0.214
Terrapene carolina (Box Turtle)	1	0.066
TAXON	NISP	BIOM KG

Class Aves (Bird)	119	0.243
Anas platyrhyncos (Domestic Duck or Mallard)	1	0.013
Aythya spp. (Pochard)	1	0.009
Duck spp.	2	0.033
Goose spp.	1	0.022
Order Charadiiformes (Shorebird, Gull, or Auk)	1	0.011
Family Phasianidae (Grouse, Partridge)	3	0.009
Gallus gallus (Chicken)	20	0.135
Ectopistes migratorius (Passenger Pigeon)	1	0.007
Class Mammalia I (Large Mammal)	190	6.493
Class Mammalia II (Medium Mammal)	1464	10.528
Class Mammalia III (Small Mammal)	2	0.024
Sciuridae/Scurius spp./Scurius carolinensis (Squirrel,Eastern Gray Squirrel)	3	0.033
Procyon lotor (Raccoon)	1	0.019
Sylvilagus floridanus (Eastern Cottontail)	1	0.006
Order Artiodctlya II (Sheep, Goat or Deer)	2	0.173
Sus scrofa (Domestic Pig)	162	10.434
Odocoileus virginianus (White-tailed deer)	7	0.771
Bos taurus (Domestic Cow)	59	19.355
Bos taurus, calf (juvenile Domestic Cow)	3	0.521
Ovis aries/Capra hircus (Domestic Sheep/Goat)	51	4.917
Ovis aries (Domestic Sheep)	4	0.663
TOTALS	3103	56.7

APPENDIX G

Complete faunal data used for the Curles Neck assemblage

TAXON	NISP	MNI	BIOM KG
Class Osteichthyes (Bony Fish)	3	0	0.085
Acipenser spp. (Sturgeon)	35	1	0.935
Family Ictaluridae (Freshwater Catfish)	4	1	0.039
Lepisosteus spp. (Gar)	19	1	0.819
Rana catesbeiana (Bullfrog)	1	1	0
Order Testudines (Turtle)	1	0	0.058
Chelydra serpentina (Snapping Turtle)	4	1	0.27
Chrysemys spp. (Slider or Cooter)	2	0	0.227
Chysemys rubiventris (Red-bellied Turtle)	1	0	0.08
Terrapene carolina (Box Turtle)	1	1	0.287
Class Aves (Bird)	9	0	0.117
Anser spp. (Goose)	1	0	0.075
Anser anser (Domestic Goose)	1	1	0.022
Anas platyrhyncos (Domestic Duck or Mallard)	1	2	0.019
Bucephala calangula (Common Goldeye)	1	1	0.011
Mergus merganser (Common Merganser)	1	0	0.017
Haliaeetus leucocephalus (Bald Eagle)	1	0	0.028
Duck spp.	2	2	0.033
Family Phasianidae (Grouse, Partridge)	1	1	0.013
Meleagris gallopavo (Turkey)	11	4	0.419
Gallus gallus (Chicken)	7	2	0.1
Class Mammalia	377	0	10.347
Class Mammalia I (Large Mammal)	273	0	29.284

Class Mammalia II (Medium Mammal)	650	0	17.832
Class Mammalia III (Small Mammal)	6	0	0.09
Sylvilagus floridanus (Eastern Cottontail)	7	1	0.161
Canis Familiaris (Domestic Dog)	2	1	0.031
Ursus americanus (Black Bear)	1	1	1.356
Procyon lotor (Raccoon)	4	1	0.19
Felis domesticus (Domestic Cat)	1	1	0.04
Order Artiodactyla I (Sheep, Goat, Deer, Pig)	3	0	0.276
Order Artiodactlya II (Sheep, Goat or Deer)	9	0	1.267
Sus scrofa (Domestic Pig)	398	12	36.211
juvenile Sus scrofa (Domestic Pig)		3	
Odocoileus virginianus (White-tailed deer)	14	1	4.952
Bos taurus (Domestic Cow)	321	9	132.743
Bos taurus, calf (juvenile Domestic Cow)	9	1	2.859
Ovis aries/Capra hircus (Domestic Sheep/Goat)	46	6	7.54
juvenile Ovis aries/Capra hircus (Domestic Sheep/Goat)		1	
Equus spp. (Horse or Ass)	1	1	0.222
TOTALS	2244	56	249.74

Appendix H

REARRANGING THE DATA

Because the calculation of the diversity of these assemblages uses the counts NISP, MNI and biomass for different types of groups (those that include one species, a whole family, a whole class, etc.), it is necessary to do some rearranging of the data to view comparisons on different levels. Firstly, it is useful to calculate the diversity of each assemblage when the non-species specific taxa are removed for NISP and biomass. By removing groups from the diversity calculation that include more than one specific species, we are then only comparing the same types of groups. The problem with calculating diversity from a mixture of species-only groups and larger family or class groups is that the values of remains from more inclusive groups hold less weight than those in species-only groups and therefore part of their contribution to the data is lost. It is not, however, that remains classified in larger groups are less important, they are just too fragmented to be able to determine what species they belong to. While "zooming in" on species-only groups in the assemblages creates a level playing field for each taxon, it does throw out a lot of the data available. In that case it is also necessary to "zoom out" to a larger scale view of the assemblages, incorporating all of the data into a few groups specific to class. Viewing diversity by class, as discussed below, can actually tell us a lot about provisioning methods. The diversity values calculated using species-only taxa are shown below, in Table 7 and Figures 8, 9 and 10.

TABLE 6
DIVERSITY VALUES FOR EACH ASSEMBLAGE USING SPECIES-ONLY TAXA

SITE	H' NISP	H' MNI	H' Biomass
Coffeehouse	0.935	3.007	1.339
Charlton Tavern	0.598	2.703	1.259
Peyton Randolph	0.883	2.91	1.375
Curles Neck	0.96	2.559	0.965
Shields Tavern	1.762	2.62	-
Mount Vernon	0.604	-	1.189

FIGURE 9
DIVERSITY VALUES USING NISP OF SPECIES-ONLY TAXA

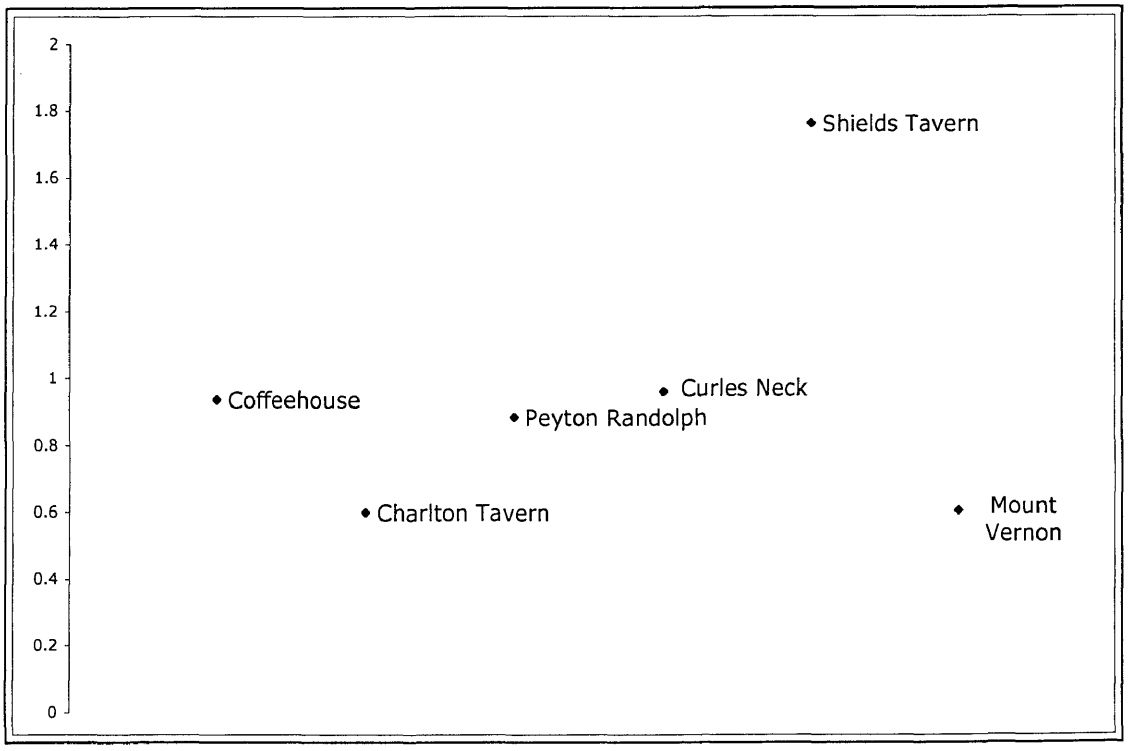


FIGURE 10
DIVERSITY VALUES USING MNI OF SPECIES-ONLY TAXA

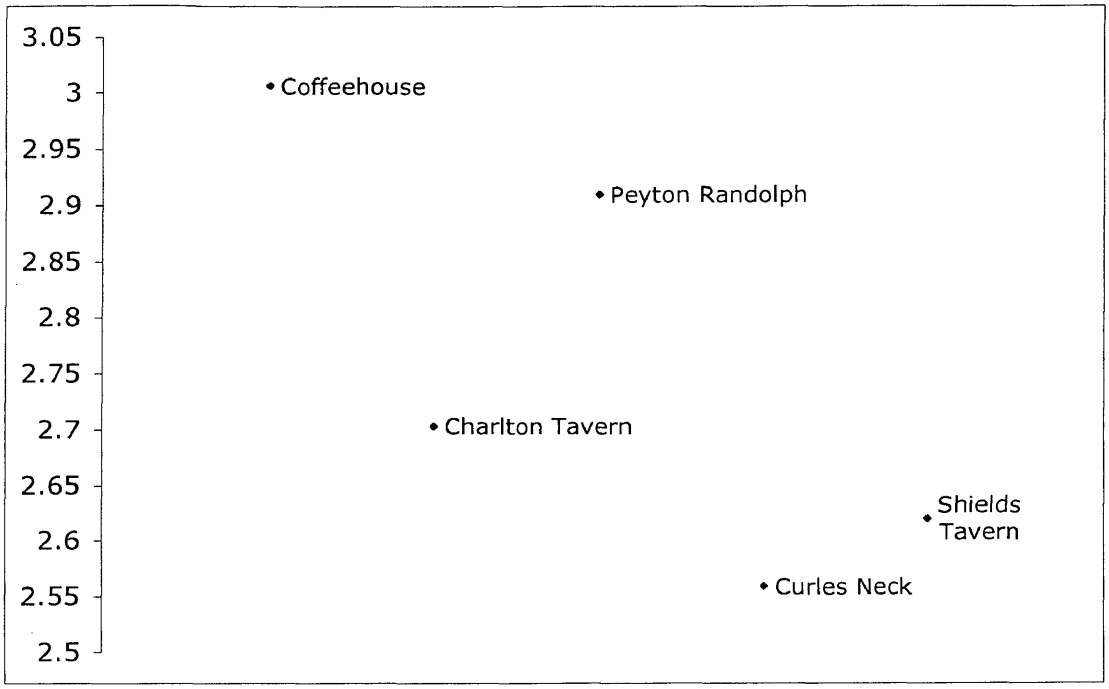
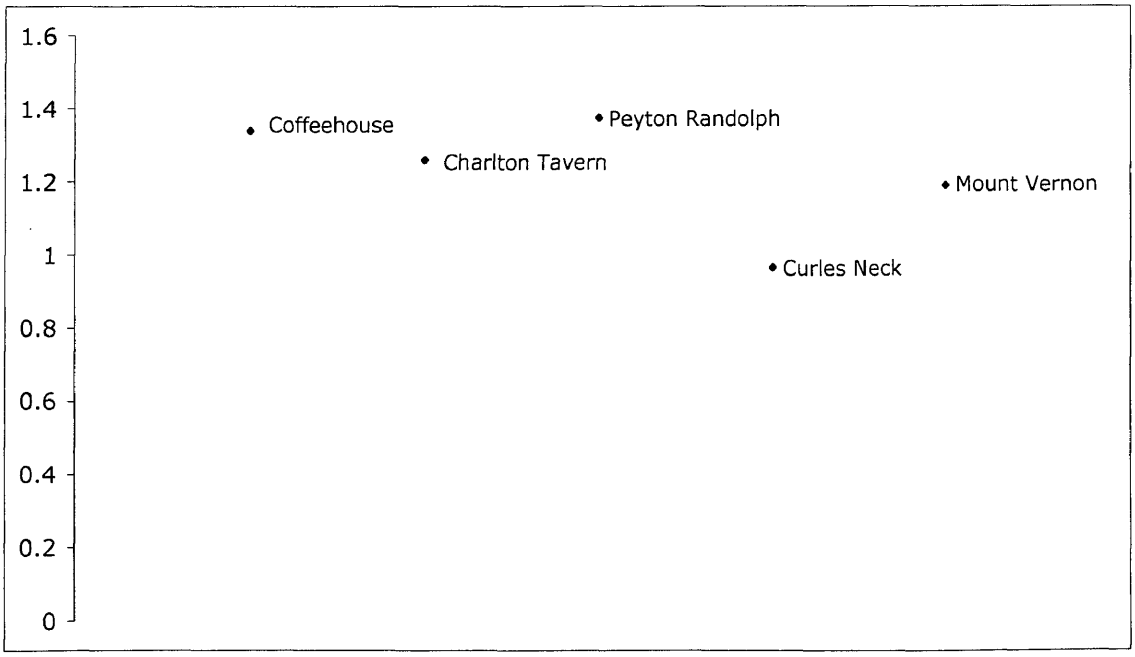


FIGURE 11
DIVERSITY VALUES USING BIOMASS OF SPECIES-ONLY TAXA



What do these values mean compared to the values that were calculated using all of the taxa? Firstly, we notice that the ranking of sites is somewhat different, with Shields Tavern being the most diverse by NISP, but the Coffeehouse and Peyton Randolph still being the most diverse by MNI and biomass. (There are no biomass values for Shields Tavern, but being that it is the most diverse by NISP and biomass is based on NISP, it would probably be the most diverse by biomass also, were the values to exist.) The MNI diversity values for each assemblage are somewhat different than those that were calculated using all taxa. This shows us what would happen if the data from all of the non-species groups were removed, which can give us an estimate of the diversity of specific species. It is the larger view of taxonomic groups by class that is the most useful. The values for these larger groups can be seen in Table 8 and Figures 11, 12 and 13, and were created by taking all of the data for each assemblage and compiling it into categories of fish, bird, other (reptiles), and mammal. This is the most comprehensive of the views in terms of its inclusion of all taxa; it is also the most basic view of the assemblages, but the strongest and most informative.

TABLE 7
DIVERSITY VALUES FOR EACH ASSEMBLAGE BY CLASS

SITE	H' NISP	H' MNI	H' Biomass
Coffeehouse	0.885	1.096	0.382
Charlton Tavern	0.394	1.001	0.113
Peyton Randolph	0.643	0.339	0.214
Curles Neck	0.242	0.956	0.094
Shields Tavern	0.704	1.116	-
Mount Vernon	0.841	-	0.275

FIGURE 12
DIVERSITY VALUES USING NISP BY CLASS

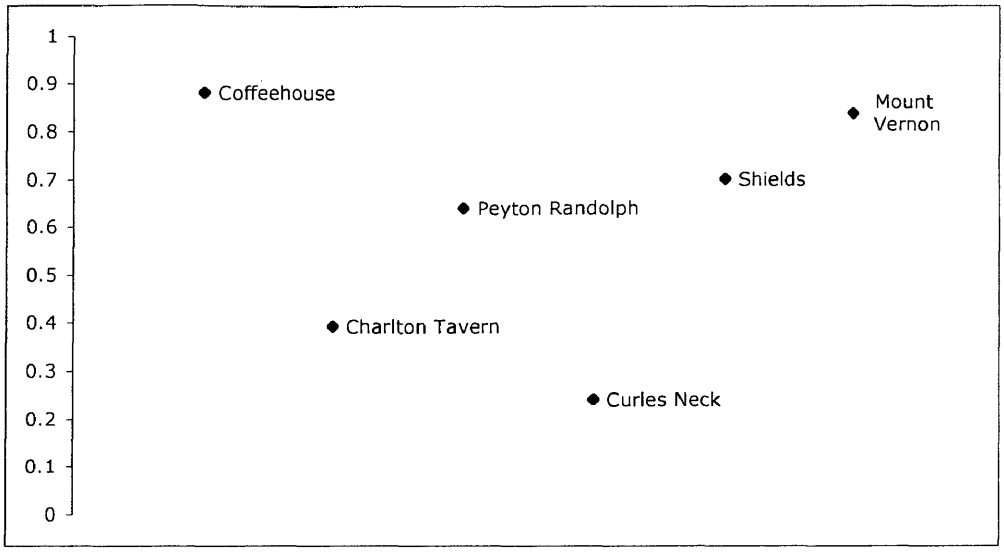


FIGURE 13
DIVERSITY VALUES USING MNI BY CLASS

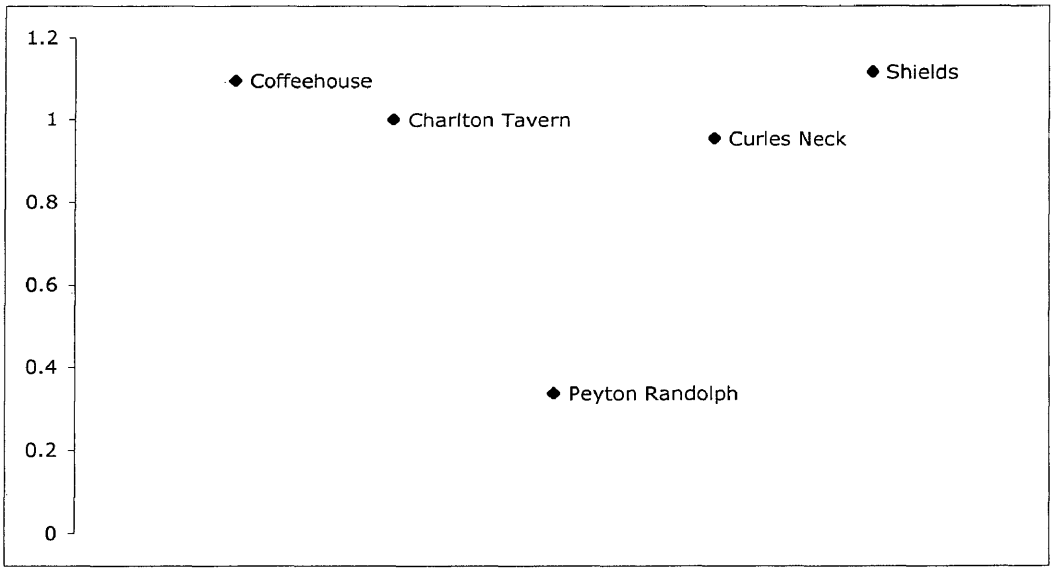
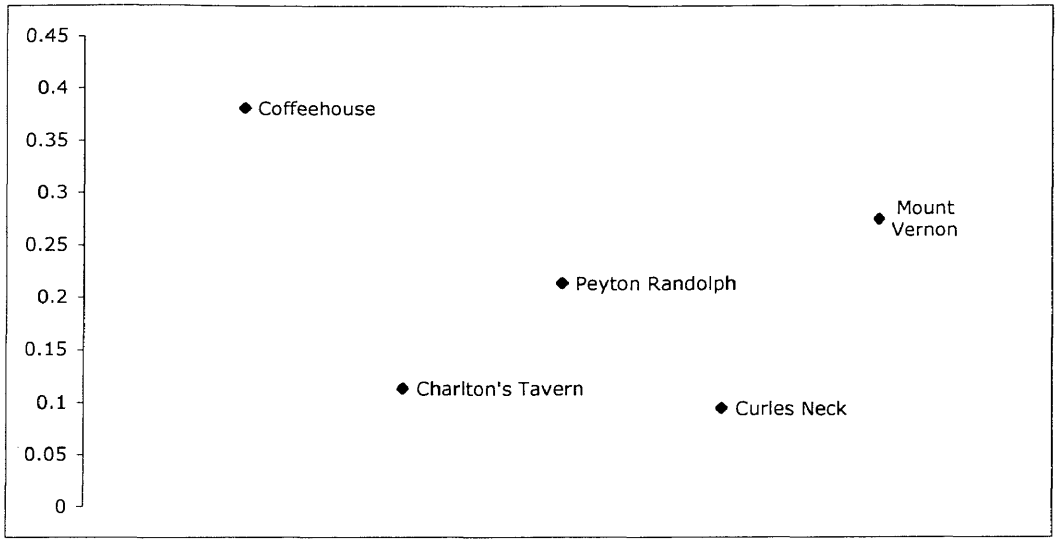


FIGURE 14
DIVERSITY VALUES USING BIOMASS BY CLASS



To generalize all of the animal species available in Tidewater Virginia: only the large mammals (cow, horse, ass) are known to be exclusively domestic and medium mammals (pig, sheep, goat) except for the white-tailed deer are known to be domestic. Birds fall into three categories: exclusively domestic (chicken), indeterminately wild or domestic (duck, goose, turkey, pigeon), and wild (all other birds). Fish are necessarily all wild species as they require hunting activities to acquire them, and reptiles too are collected from the wild. Therefore, an increased usage of any of the categories other than mammals would demonstrate a greater utilization of wild species. The biomass-based values of diversity using the taxa grouped by class (Figure 11, above) shows the Coffeehouse to be the most diverse. While the Shields Tavern again does not have biomass data calculated it would likely be the most diverse by biomass because it is based on NISP for the assemblage.

When the diversity values by species-only groups and class groups are compared, it is apparent that the Peyton Randolph house had similar diversity to the Coffeehouse by most measures. The use of different types of groups for each analysis allows us to answer different questions with the data produced in each case. By rearranging the data and the taxonomy of our data, we are able to test specific hypotheses. Using the same method of data analyses to answer every question will hinder attempts to find an answer. Because we know that most domesticates (by biomass) belong to the mammal group, more diversity by class demonstrates that more wild species were utilized.

Because this value only shows the number of different types of animals that were consumed and not how extensively each type of animal was used, the diversity of each assemblage also had to be calculated. This made visible the distinctions between sites regarding the utilization of meat sources.

Because not all of the taxonomic groups created in the identification process were not of the same type (some were specific to species while others were as inclusive as a family or class group), three separate series of comparisons were made. Some of the faunal remains were identifiable to species, but others could only be identified to biological family or class. The assemblages' diversity scores were first calculated using each taxonomic group identified, regardless of how inclusive or exclusive it was. Next all taxa that were not species-specific were eliminated, and the diversity of identifiable species in each assemblage was calculated. Last, all of

the taxa for each assemblage were lumped into categories by class (fish, reptile, bird and mammal) and the diversity was calculated again.

The biomass-based values of diversity using the taxa grouped by class shows the Coffeehouse to be the most diverse. However, while the Shields Tavern does not have biomass data calculated it would likely be the most diverse by biomass because it is based on NISP for the assemblage.

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