FINAL REPORT:

ANALYSIS OF THE
1994 BELAIR MANSION (18PR135)
FAUNAL COLLECTION

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Table of Contents

INTRODUCTION ........................................................................................................... 1

FAUNAL ANALYSIS ....................................................................................................... 1

ZOOARCHAEOLOGY ...................................................................................................... 1
  Taxonomic Identification ......................................................................................... 2
  Element Identification ............................................................................................ 2
  Age & Sex Determination ....................................................................................... 2
TAPHONOMY .................................................................................................................. 2
  Weathering & Root Etching .................................................................................... 3
  Carnivore & Rodent Tooth Marks ........................................................................ 3
  Burned & Calcined Bones ....................................................................................... 3
  Butchery Analysis ................................................................................................... 3
  Other Taphonomic Indicators ............................................................................... 3

RESEARCH DESIGN & METHODOLOGY ....................................................................... 4

DATA COLLECTION ....................................................................................................... 4
  Faunal Catalog Number (FC) ................................................................................ 4
  Taxonomic and Species Identification ................................................................... 4
  Element and Side Identification .......................................................................... 5
  Age and Sex Determination .................................................................................. 5
  Articulation and Completeness Description ......................................................... 5
  Butchery Marks ..................................................................................................... 5
  Comments and Counts .......................................................................................... 5

DATA ANALYSIS .......................................................................................................... 5
  Database Queries ................................................................................................... 6
  Zooarchaeological Quantification ........................................................................ 6
  Taphonomic Analysis ............................................................................................. 6

RESULTS ........................................................................................................................... 6

ZOOARCHAEOLOGICAL ANALYSIS ............................................................................ 6
  Domestic Animals .................................................................................................. 9
  Wild and Game Animals ....................................................................................... 12
TAPHONOMIC ANALYSIS ............................................................................................. 16
  Distribution Analysis ............................................................................................ 16
  Feature Analysis .................................................................................................... 18

SUMMARY AND CONCLUSIONS ................................................................................... 19

REFERENCES .................................................................................................................. 20

List of Tables
Table 1. Cataloged Species....................................................................................... 7
Table 2. Total Number of Fragments (TNF) Distribution............................................. 8
Table 3. Minimum Number of Individuals for Identified Species ................................ 9
Table 4. Minimum Number of Individuals for Feature TT and the Entire Excavation Area ................................................................................................. 18

List of Figures
Figure 1. Bos taurus skeletal part profile................................................................. 10
Appendices

Appendix A: Faunal Catalog of Excavation Units
Appendix B: Faunal Catalog of Shovel Test Pits
Appendix C: Credentials
Appendix D: Reference Diagrams
Appendix E: Electronic Copy of Faunal Catalog on 3.5" Disk
Introduction

In January 2001, April M. Beiwsaw, RPA, undertook the analysis of the 1994 Belair Mansion (18PR135) faunal collection. The Belair Mansion site, an 18th-century plantation, is located in the present-day town of Bowie in central Maryland. Situated near the Patuxent River and approximately equidistant between the Potomac River to the west and the Chesapeake Bay to the east, the inhabitants of Belair Mansion had local access to a variety of ecosystems and associated fauna.

Along with a rich variety of wild game, inhabitants of the Belair Mansion site would have had access to the many domestic animals that could be raised on site or obtained commercially. Domestic pig (Sus scrofa), goat (Capra hirca), sheep (Ovis aries), cattle (Bos taurus), and chicken (Gallus gallus or Gallus domesticus), were common food items in the 18th and 19th centuries as they are today. Wild birds such as turkey (Meleagris gallopavo), a variety of species of migratory waterfowl such as goose and duck, and various fresh, smoked, and salted fish were also available. Domestic dog (Canis familiaris) and horse (Equs caballus) are likely to have been kept as work animals or pets, the several of the families who owned Belair over the past 250 years were prominent in raising and racing horses.

Faunal Analysis

The analysis of animal bones from archaeological sites, at its empirical core, provides information regarding the diet of a site's occupants and the immediate habitat. Using standard zooarchaeological techniques such as species and element identification, quantification of animal remains produces a list of common food items that can be rank ordered for analysis of preference. Similar quantification can demonstrate exploitation of neighboring ecosystems or climatic shifts.

Recent research has demonstrated the susceptibility of standard zooarchaeological data to biasing factors. These factors can be cultural, such as differential methods of food preparation and disposal, or environmental, such as the differential destruction of bone through decomposition.

The adoption of taphonomy, originally a paleontological field, into faunal analysis has provided analysts with a means of recovering information lost due to biasing factors. Additionally taphonomic analysis provides a framework for data analysis and interpretation that has moved faunal analysis well past the standard dietary and habitat assessments.

Zooarchaeology

Zooarchaeological analysis, at its simplest, consists of a tabulation of the taxons present in an assemblage. The presence/absence of mammal, fish, bird, reptile, or amphibian remains in a faunal assemblage is determined by the study of the morphology of each bone. Before species identification can be undertaken, the skeletal element that a bone represents must be determined. Element identification also allows estimation of age at death and, in some cases, determination of sex to proceed.
**Taxonomic Identification**

Zoological classification follows the basic hierarchy: Kingdom, Phylum, Class, Order, Family, Genus, and Species. Zooarchaeology deals exclusively with the Kingdom of Animalia. Some zooarchaeology, including the study of crustaceans, deals with Phylum other than Chordata but for the purposes of this project, only the Chordata Phylum, animals with a spinal cord or vertebral column, will be analyzed.

Class identification includes the sorting of a faunal assemblage into mammal, fish, bird, reptile and amphibian remains and usually is undertaken as the initial sort of an assemblage. The simplest method for determining the Order of faunal remains is through analysis of teeth, which preserve well in archaeological contexts. Common Orders encountered in zooarchaeology include carnivores and primates. If teeth are unavailable for this determination the functional morphology of each skeletal element is used for the identification of Order, Family, Genus, and Species.

**Element Identification**

Within each taxonomic class, such as mammal, fish, or bird, the basic shape and number of the elements of the skeleton are fairly constant. Determining the Class of a bone therefore narrows the range of possibilities of the element that it represents. Complete elements are, of course, the easiest to identify but in many cases even small fragments of a bone contain enough diagnostic morphology to allow for identification. It is therefore important to document the completeness of an element to assess the certainty of identification and to establish the number of each element that is actually represented in an assemblage. For example, four femur fragments do not necessarily equate to four femurs.

**Age & Sex Determination**

Many mammalian bones are made up of a central shaft, or diaphysis, which is capped on each end by an epiphysis. The region between the diaphysis and the epiphysis, the metaphysis, represents the region where bone growth occurs. In juvenile mammals, the epiphysis is not fused to the shaft to allow for this growth. The timing of the fusion of the epiphysis and shaft occurs at different ages for each element. For example, the last element to completely fuse in a human is the collarbone or clavicle, which usually occurs around the age of 40 years, well after the complete fusion of the humerus, which occurs at approximately 21 years of age. The patterns of wear of teeth can also be used to estimate an animal's age. Malnutrition can cause both of these methods to produce a high degree of error.

The ability to determine an animal's sex from skeletal elements varies greatly with species and element. Some animal species demonstrate sexual dimorphism, or size variation between the sexes, which assists in this analysis. Antlers, dental variations, and pelvic apertures are other useful means for identifying the sex of a skeleton or isolated skeletal element.

**Taphonomy**

Taphonomy is, in general terms; a study of the postmortem, pre-burial, and post-burial histories of faunal remains (Lyman 1994). Taphonomic analysis attempts to reconstruct the chronology of a variety of postmortem processes that have produced a faunal assemblage or a subset of the assemblage. Many of these processes leave signatures on the surface of bone, which, if properly
identified, are a powerful method of assessing everything from natural and cultural formation processes to complex cultural rituals.

**Weathering & Root Etching**

The slow decomposition of bone results in a somewhat predictable alteration of the bone surface. Cracking of the surface, parallel to fiber structure, results in surface exfoliation. The loss of the outermost surface causes the bone to have a fibrous appearance, which increases in coarseness with increased exposure until the bone loses integrity (Behrensmeyer 1978). In areas of root activity, chemicals secreted by roots etch the bone surface and accelerate this weathering process. Bone that remains unburied for extended periods of time can also become bleached white by the sun. This bleaching also accelerates the weathering of a bone.

**Carnivore & Rodent Tooth Marks**

Unburied and near surface bone is often subject to alteration by scavenging carnivores. In their attempts to remove meat from the bone, and even transport the bone itself, carnivore teeth leave characteristic markings on the bone surface which can often be identified with the naked eye or minor magnification. While carnivores tend to prefer fresh bone for flesh and marrow procurement, rodents tend to gnaw at dry bone to obtain minerals and to sharpen and shorten their ever-growing incisors. Rodent gnawing leaves a predictable pattern of markings on a bone surface, which are easily identified by the naked eye. Documentation of carnivore and rodent modification of bone reveals important information regarding disposal practices as well as environmental conditions.

**Burned & Calcined Bones**

When in contact with heat or fire for a relatively short duration of time, bone becomes charred or blackened. Bone that is in contact with heat for long periods of time or is repeatedly heated and cooled attains the white appearance of calcined bone. The effect of burning on the resiliency of bone varies with animal class, skeletal element, and intensity of the burning (Beisaw 2000b). Documentation of burned & calcined bone signatures allows for analysis of cooking and disposal practices.

**Butchery Analysis**

In addition to the size and shape of faunal remains allowing for identification of those cuts of meat obtained from a carcass, taphonomic analysis provides information regarding the types of tools used to obtain these cuts. Sawed, chopped, and fractured bones retain signatures of skinning, evisceration, disarticulation, and marrow extraction. For a complete butchery analysis, the location and description of each cut mark should be documented. The results of butchery analysis allow for a variety of cultural and economic analyses to proceed.

**Other Taphonomic Indicators**

A variety of additional taphonomic indicators can be used to obtain a more complete understanding of a faunal assemblage and its creation. For example, small animals are particularly sensitive to climatic variation and therefore their presence absence can be used to assess seasonality, temporal shifts, and changes in hunting ranges to name a few. Another important
taphonomic indicator is the association of skeletal elements and animal classes, which can reveal redeposition events. Related artifact and ecofact analysis as well as a study of the changes in soil microstratigraphy within a feature can reveal the sequence of depositional events that have occurred.

As archaeological excavation is part of the taphonomic history of an assemblage, the effects of excavation and recovery are an integral part of taphonomic analysis. Surface marks and breaks that occur during and after excavation are easily identified. Together with an assessment of the recovery techniques used, (screen aperture size, excavation tools used, etc.) an analysis of the excavations impact on the representativeness of the assemblage can proceed. For example, an excavation that utilizes 3/8″ aperture to screen soil should not expect to recover the remains of small animals.

**Research Design & Methodology**

Upon receiving a faunal collection, an initial bag check served to inventory the collection and to evaluate the variation that is evident is undertaken. As requested, a Microsoft Access database was constructed to serve as the catalog for this faunal collection. A hardcopy of the catalog of the faunal assemblage recovered through excavation units accompanies this report as Appendix A. A hardcopy of the shovel test pit (STP) faunal assemblage is presented as Appendix B. An electronic copy of both catalogs is also provided on 3.5″ diskette along with this report (Appendix E). The database contains many pre-programmed queries and reports to allow for reconstruction of the analyses presented here and for new analysis to be easily preformed.

**Data Collection**

Data collection proceeded, in order, by lot number. This number was assigned by the excavators and represents the context from which a subset of material was obtained. The lot number is therefore retained in the faunal catalog.

**Faunal Catalog Number (FC)**

As each lot number can contain any number of individual faunal remains, a Faunal Catalog (FC) number was assigned by the analyst to identify smaller groups of material or individual fragments. In general, all bone fragments from one lot whose FC entry would be identical are inventoried under one FC number with an appropriately augmented count.

**Taxonomic and Species Identification**

Minimally, each FC entry is identified to the class level. As this level of distinction is possible on virtually every bone fragment, regardless of size, it is the first level of taxonomic analysis undertaken. Species level identification, unless resulting from a complete or near complete adult skeletal element, are always tentative. Levels of certainty are ascribed by the inclusion of a question mark after the ID or by the information provided in the comment field. For certain elements, such as ribs, species level identification is highly problematic and therefore the use of size groups usually represents the level of analysis that is possible. Size groups are also used for bone fragments that are not otherwise identifiable to the less specific family or genus levels.
**Element and Side Identification**

In most cases, determining the skeletal element is necessary before taxonomic identification, beyond the class level, is possible. Once the element has been identified, a determination of the side it represents, left or right, aides in the assessment of the relative completeness of an individual and in counts of the minimum numbers of individuals (MNI) present in the assemblage. Several reference diagrams have been provided in Appendix D to illustrate the elements of those animal classes that have been identified in the Belair Mansion faunal collection.

**Age and Sex Determination**

If a skeletal element is identified to the species level, assessing the age at death and sex of an individual animal can proceed. A variety of charts and tables, which are based on known populations of specific species, are consulted (e.g. Silver 1970). As a variety or environmental and cultural factors can skew these results, age determinations are to be considered estimation, within a range.

**Articulation and Completeness Description**

To aid in quantification of an assemblage, it is important to maintain a record of the completeness of cataloged specimens. Similarly, retaining data regarding which, if any, articulation is present allows for assessment of the certainty of age and side determinations as well as butchery patterns.

**Butchery Marks**

Due to the variety of data that needs to be collected for a thorough analysis of butchery marks, the standard faunal catalog contains only a general presence/absence field for butchery marks. Some additional comments, such as number of surfaces cut and notes on the presence of other cut marks, are stored in the comments field.

**Comments and Counts**

As mentioned in the sections above, a comment field is included in the faunal database for three reasons: 1. to further describe the specimen(s) of a specific FC, 2. to aid in the assessment of the certainty and value of the description(s), 3. to guide secondary analyses. It should be noted that a count field for each FC is also included in the database, which, in general, should equal one. In cases where multiple mend-able fragments were cataloged, the count equals one. When multiple similar fragments whose FC entry would not have differed from each other where encountered in a given lot, one FC was assigned to the bone group and the count field was used to quantify the number of bone fragments represented by the group.

**Data Analysis**

Data analysis for the Belair collection proceeded along three lines: 1. the zooarchaeological quantification of the assemblage, 2. the utilization of database queries to assess patterns, 3. taphonomic analysis of the assemblage.
Database Queries
In general, due to the ease with which queries can be developed and executed in MS Access, only those queries which the analyst believes assists in the faunal analysis of the collection will be pre-programmed.

Zooarchaeological Quantification

Number of Identifiable Specimens (NISP)
Also termed Total Number of Fragments (TNF), TNF or NISP calculations have been used to estimate relative abundance of species. Recent research has shown that NISP calculations are taphonomically erroneous and generally misleading. However, given NISP’s past popularity, some calculations using this method have been provided solely for the basis of comparison with previously analyzed assemblages. A degree of mending of bone fragments with recent breaks has been undertaken to strengthen the usefulness of the TNF data for this assemblage.

Minimum Number of Individuals (MNI)
The most common method of illustrating the constituents of an assemblage is through a calculation of the minimum number of individuals (MNI) that would have to have existed to create a given sample. There are numerous means of calculating this number and the method selected is usually based on the type of assemblage. Empirically, MNI is determined by the most frequent element in an assemblage. For example, an assemblage with 13 tibias suggests that minimally 7 individuals are represented by the assemblage. Using element siding, 13 left tibias would suggest that minimally 13 individuals are represented.

Other Calculations
There are many other calculations for describing faunal assemblages, such as Minimal Animal Unit (MAU), Minimum Number of Elements (MNE), and Weighted Abundance of Elements (WAE). These will be applied where applicable or upon request.

Taphonomic Analysis

Feature Interpretations and Depositional Patterns
Review of the contexts for certain subsets of the faunal assemblage will be undertaken to assess the site formation processes of the Belair Mansion archaeological site. In particular, evidence of natural and/or cultural redeposition will be evaluated. Where applicable, suggestions for secondary artifact or ecofact analysis, which would aid in this assessment, will be made.

Results

Zooarchaeological Analysis
Sixty-four taxonomic categories were used to describe the excavation unit faunal assemblage (Table 1). The distribution of the Total Number of Fragments (TNF) for each of these categories is presented in Table 2. Minimum Number of Individuals (MNI) for the assemblage is presented in Table 3. Medium mammals such as sheep, cow, and pig, dominate the assemblage. Fragments of medium/large mammals, such as deer, and large mammals, such as cow, are also
Table 1. Cataloged Species
Table 2. Total Number of Fragments (TNF) Distribution
present in large numbers. Many of these fragments are attributable to long bones, displaying spiral fractures, and rib fragments, some with butchery marks. Identified domestic mammal species include cow, sheep, goat, and pig. Wild mammal species identified include deer, squirrel, and fox. For the assemblage as a whole, skeletal part diagrams illustrate the occurrence of each skeletal element for selected species. In general, fragmentary vertebrae and ribs cannot be positively identified to a species and therefore are not indicated on the skeletal part diagrams unless a positive identification was made.

<table>
<thead>
<tr>
<th>Species</th>
<th>Age</th>
<th>MNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos taurus</td>
<td>Adult</td>
<td>2</td>
</tr>
<tr>
<td>Bos taurus</td>
<td>Juvenile</td>
<td>1</td>
</tr>
<tr>
<td>Odocoileus virginianus</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Sus scrofa</td>
<td>Adult</td>
<td>2</td>
</tr>
<tr>
<td>Sus scrofa</td>
<td>Juvenile</td>
<td>1</td>
</tr>
<tr>
<td>Capra hirca</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Ovis aries</td>
<td>Adult</td>
<td>2</td>
</tr>
<tr>
<td>Ovis aries</td>
<td>Juvenile</td>
<td>1</td>
</tr>
<tr>
<td>Ovis/Capra</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Urocyon cinereoargentus</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Squirrus carolina</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Anas</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Anser</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Gallus</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Phasianus</td>
<td>Adult</td>
<td>2</td>
</tr>
<tr>
<td>Columba liva</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Buteo swainsoni</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Picidae</td>
<td>Adult</td>
<td>1</td>
</tr>
<tr>
<td>Terrapene carolina</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Salmonidae</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Sebastes marinus</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Gadus morhua</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Decapoda</td>
<td>N/A</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3. Minimum Number of Individuals for Identified Species.

**Domestic Animals**

Cow (Bos taurus) remains in the Belair assemblage include metapodials, front and hind foot bones, scapulae, and long bones. Additionally, many of the fragments cataloged as large mammal ribs and vertebrae are likely to also be cow remains as beef was one of the most common foods in the 18th and 19th century, served fresh or salted. This variety of elements suggests that cows were either raised on-site or obtained as complete carcasses, not as pre-butchered and sold as individual cuts of meat.
Pigs, Sus scrofa, of 18th and 19th century America were long snouted and large tusked animals. The presence of pig remains in the Belair assemblage is dominated by metapodials, front and hind foot bones, a large number of isolated teeth, including several large tusks. A smaller number of pig long bone and scapula fragments, as well as an immature ilium are also present (See Figure 2.). Additionally, a certain number of medium mammal ribs identified in the assemblage may be attributable to Sus scrofa. The proportionally large number of pig metapodials may represent a preferential consumption of preserved pig's feet over pork, in general, or differential disposal of butchery waste. Due to the increased fat content, pork does not preserve as long as beef therefore a low occurrence of pork is often the result of refrigeration issues rather than culinary preference.

Sheep, Ovis aries, was not as common a domestic animal as cow and pig were in the 18th century, Mutton, like pork, must be consumed or preserved immediately after slaughter unless proper refrigeration is available. Based on Minimum Number of Individual calculations, Sheep and/or
Goat are the most numerous animals in the Belair assemblage. In general, most sheep and goat remains are difficult to differentiate, resulting in the use of the Ovis/capra taxonomic group utilized in this analysis. Utilizing Boesseneck's (1970) "Osteological Differences Between Sheep (Ovis aries Linne) and Goats (Capra hircus Linne)", a significant amount of differentiation between these species was possible resulting in both sheep and goat remains being positively identified in the assemblage. The remains from these animals include a variety of elements suggesting that the animals were raised on-site or obtained as complete carcasses, not pre-butchered meat cuts.

Domestic animals in 17th and 18th century America were generally smaller than their contemporary counterparts. Using estimated meat yields for domestic mammal species of this time period (Miller 1985) and MNI's calculated for the assemblage, the amount of meat represented by this faunal collection can be estimated (Table 4).

Chicken, Gallus gallus, rivaled the cow and pig as the most common fare in the 18th and 19th centuries and were either kept as a domestic animal, in a hen house, or allowed to roam free as a wild bird. Despite the popularity of chicken, it is not as well represented as other domestic species or wild game birds in this assemblage.

<table>
<thead>
<tr>
<th>Species</th>
<th>Meat Yield (lbs.)</th>
<th>Belair MNI</th>
<th>Total Meat Yield (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow</td>
<td>400</td>
<td>3</td>
<td>1200</td>
</tr>
<tr>
<td>Pig</td>
<td>100</td>
<td>3</td>
<td>300</td>
</tr>
<tr>
<td>Sheep</td>
<td>35</td>
<td>5</td>
<td>175</td>
</tr>
</tbody>
</table>

Table 4. Estimated Meat Yield from Domestic Mammal Species.
Wild and Game Animals

White-tailed Deer, Odocoileus virginianus, inhabit sparsely wooded areas within forests and can often be found grazing in grassy areas. This game animal was, and still is today, commonly hunted for its meat and is well represented, archaeologically, at sites of this type and period. Within the Belair assemblage, a segment of deer antler along with several long bones and a pelvis, suggest an adult male deer was hunted and subsequently butchered on-site.

A long bone of a gray squirrel (Scirurus carolinus) and several rodent and micro mammal bones, which are likely to be from this same individual, are present in the faunal assemblage. Squirrels were a common game item in 19th century America in addition to being an indigenous pest, attracted by food waste. No butchery marks were identified on the identified squirrel humerus however common squirrel butchery would limit cut marks to areas along the distal ulna, radius, and tibia, for removal of the feet, and at the cervical vertebrae for removal of the head (Price 1985).

More likely to have been hunted for its fur than for its meat, several skeletal elements of a Gray Fox, Urocyon cinereoargenteus, were identified within the assemblage. Gray Foxes are inhabitants of heavily forested areas including swamps and may have been seen as a threat to Belair Mansion's livestock, especially its sheep.
Figure 5. Odoicoileus virginianus skeletal part profile.

Figure 6. Urocyon cinereoargenteus skeletal part profile.
A variety of wild bird species are also present in the Belair assemblage. These include mallard (Anas), goose (Anser), turkey (Meleagris), pheasant (Phasianus), pigeon (Columba), woodpecker (Picidae), and hawk (Buteo) species. Medium/small birds, ranging in size from pigeons to chickens, dominate the identified bird remains. Of those remains identifiable to the genus level, Pheasant, of the ring-necked variety (Phasianus colchicus), dominate. Ring-necked Pheasants were introduced to North America as a game bird in the 19th century. These colorful birds are considered a challenge to hunt and a prized food item (Decker 1997).
Mallard inhabits ponds in grassy areas such as prairies while the Black Duck inhabits woodland ponds and wetlands. Eastern Wild Turkeys, Meleagris gallopavo, also identified in the assemblage, generally inhabit forested areas adjacent to open fields.

![Figure 9. Columba liva skeletal part profile.](image)

Several skeletal remains, identified as pigeon, are present in the Belair assemblage. The species represented was confirmed to be of the domestic or Rock Dove (Columba liva); no skeletal elements of the now extinct Passenger Pigeon (Ectopistes migratorius) were identified in this assemblage. Rock Doves were first introduced to North America by French settlers in the early 17th century and subsequently became a common game bird.

Fish remains are notoriously difficult to identify to the genus and/or species level, however, several of the Belair fish remains were identifiable past general size categories utilizing cranial elements. Rockfish (Sebastes marinus), Atlantic Cod (Gadus morhua), and an undetermined species of the salmon family (Salmonidae). Rockfish are indigenous to the Chesapeake Bay and its associated waterways. Salmon species were commonly available in the 19th century marketplace, although they were often among the most expensive fish available (Singer 1985) Fish vertebrae, the most commonly encountered fish remains in archaeological assemblages were noticeably absent. This predominance of cranial elements may be the result of differential discard or decomposition (Beisaw 2000) or, as fish heads were often obtained in markets for use in stews and chowders, may represent a dietary or socioeconomic preference (Singer 1985). Given the presence of the expensive salmon remains and the general context of the site, differential discard is the most likely explanation for this pattern.

Other wild species identified include Woodpecker (Picidae), Sawinson's Hawk (Buteo swainsoni), Box Turtle (Terrapene carolina), and Crab (Decapoda). The small number of fragments or elements represented by these species hinder further analysis of their utilization at Belair Mansion.
**Taphonomic Analysis**

**Distribution Analysis**

Site-wide distribution of mammal species shows no significant patterning (see Figure 10). Domestic species of cow, sheep, goat, and pig are distributed throughout the site while deer is restricted to the northern portions of the site. Due to the relatively small number of bone fragments attributable to deer compared to the high numbers of domestic mammal species is the likely cause for this variation in distribution. The high degree of fragmentation of this faunal material and the dominance of spiral fractures over butchery cuts suggest that much of the faunal assemblage is either redeposited material or the remains of a large midden area.

![Figure 10. Distribution of Identifiable Mammal Species.](image)

Fish and bird faunal material shows some degree of distributional patterning. Bird remains appear to cluster along the central portion of the site (see Figure 11). Fish remains are clustered in the southeastern corner of the excavation area (see Figure 12). Due to the small size and increased fragility of bird and fish remains over mammal remains, this patterning may be the result of post-depositional or taphonomic factors. Minor topography changes can cause smaller bones to cluster as a result of transportation due to water and/or wind erosion. Areas of intense usage such as pathways often result in increased breakage of bone and may eliminate small and fragile mammal, fish, and bird bone from that area. Additionally most excavations include some variation in
recovery techniques, often in the form of more intensive collection in feature areas, leads to a greater range of small animals recovered from features than from standard excavation units.

Figure 11. Distribution of Identifiable Bird Species.
Figure 12. Distribution of All Fish Remains.

**Feature Analysis**

Several of the smaller features excavated contained few or no faunal material. These include several possible post-holes and post-molds such as Feature HH, Feature LL, Feature V, Feature W, Feature Y, and Feature Z, an indeterminate feature, Feature MM, a mortar and shell feature, Feature QQ, and a poured mortar bed, Feature VV.

Feature TT, located near the center of the excavation area, contains the greatest variation of faunal material of all the excavated features (see Table 4). Five of the eight identified bird species are present in Feature TT. Of the 222 fragments cataloged for Feature TT, 77 (35%) are burned and 1 is calcined. This feature was noted to contain large amounts of charcoal in addition to brick and mortar, during excavation. The dark brown (10YR3/3) silt loam, charcoal, and burned bones suggest that Feature TT was partially filled from a hearth cleaning or similar cooking related activity. None of the remaining features displayed any significant patterning or species variation.

<table>
<thead>
<tr>
<th>MNI</th>
<th>Feature TT</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anas</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Anser</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Columba liva</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Picidae</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Phasianus</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Bos taurus</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Cervid</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ovis/Capra</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Sus scrofa</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Table 4. Minimum Number of Individuals for Feature TT and the Entire Excavation Area.
Summary and Conclusions

The faunal analysis of the 1994 Belair Mansion collection has identified the remains of several species of mammals, birds, and fish. A significant portion of the collection displays spiral fractures, which suggests that this material was redeposited from its original areas of disposal. The high degree of fragmentation, low occurrence of butchery cut marks, and lack of spatial patterning support this hypothesis.

The primary source of meat, represented by the butchered bone, appears to be domestic species represented by both juvenile and adult cattle, pig, sheep, and goat. Sheep appears to be the dominant domestic species based on Minimum Number of Individuals calculations, however estimated Meat Yields suggest that beef was utilized four times as much as mutton. Wild animals and game are represented by deer, fox, squirrel, and several species of fish and birds. The ring-necked pheasant is the dominant game species present in the excavation unit assemblage.

In addition to the excavation unit assemblage discussed above, the faunal assemblage from 23 shovel test pits (STPs) was also analyzed. Two species not present in the excavation unit data were identified in the STPs; Canadian Goose (Branta canadensis) and Raccoon (Procyon lotor). The lack of identifiable butchery marks and the natural abundance of these species in the wild together with the absence of these species in the excavation unit data suggest that these remains are ecofacts or natural inclusions in the site.
References

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Silver, I. A.
Appendix A:
Faunal Catalog
Excavation Units and Features

Appendix B:
Faunal Catalog
Shovel Test Pits
Appendix C: Credentials
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Education
1998 MA in Anthropology, Binghamton University
1996 BA in Chemistry/Anthropology, Rutgers University

Continuing Education
2000  Introduction to Section 106 Review, University of Nevada, Reno.

Experience
Six years of field and laboratory archaeology experience with prehistoric and historic sites in New York, New Jersey, Maryland, California, Colorado, and Wisconsin. Specializations include zooarchaeology, taphonomy, microstratigraphy, and lithic use wear analysis.

Selected Publications and Presentations
2001  Turtle Ecology and Feature Taphonomy in the Chesapeake Region. Presented at the Annual Meeting of the Society for American Archaeology, New Orleans, LA.


2000  Phase II Archaeological Site Examination of The Dunn Site (18AP84), 44 West Street, Annapolis, Maryland. Prepared for Hermann Dunn Real Estate, Annapolis, Maryland.


2000  Eating Like a Pig in a Colonial Tavern: The Taphonomy of Tavern Assemblages. Presented at the annual meeting of the Society for Historical Archaeology, Quebec, Canada (with Kate Levendosky).

Appendix D:
Reference Diagrams