

Why did the Chicken Cross the Ocean: An Analysis of Faunal Remains from the Emanuel Point Shipwrecks

Zackariah D. Pagels
Department of Anthropology, College of Arts, Social Sciences and Humanities
University of West Florida

Office of Undergraduate Research

INTRODUCTION

In 1559, Don Tristán de Luna y Arellano attempted to create the first permanent settlement in Florida. Under the command of Luna were a total of eleven ships, carrying close to fifteen hundred individuals (Milanich 1999, Worth 2009). Among the people chosen for the expedition were Spanish colonists and soldiers along with clergymen and Native Americans brought from Mexico as servants (Milanich, 1999, Worth 2009). Food, or the lack thereof, was one aspect which served detrimental to the success of the expeditions which came before Luna (Worth 2009). Previous expeditions led by the Spanish which attempted to colonize *La Florida* relied far too heavily on local resources for food (Hudson 1989, Worth 2009). This ultimately led the Spanish to barter with the Native Americans and in many cases forced them to supply the Spanish with food and other supplies (Hudson 1989, Worth 2009). Because of this, the Luna expedition was intentionally designed to include enough food to last the Spaniards about a year, giving the colonists enough resources to survive until crops could be both sown and harvested (Worth 2009). Not long after the Spanish arrived, Pensacola was struck by a powerful hurricane, sinking seven of Luna's ships (Arnade 1959, Milanich 1995, Worth 2009). Since a permanent storehouse had not yet been constructed, practically all of the Spanish's supplies remained onboard the ships and were lost (Arnade 1959, Milanich 1995, Worth 2009).



Left: Chicken (*Gallus gallus*) radius under a digital microscope

Right: Tooth Marks on a Chicken radius

Photographs take by Zackariah D. Pagels

Since the time of their sinking, 459 years ago, three of the seven ships that were lost have been discovered. In total, 8,848 individual organic fragments have been recovered from Emanuel Point I alone; these include the remains of fish, shark, reptile, bird and mammal bones.



Jaw of a Drumfish (*Pogonias cromis*) with cut marks.

Photographs taken by Zackariah D. Pagels



Pig Vertebra (*Sus*) with cut marks.

Photographs taken by Zackariah D. Pagels

AIM

The purpose of this research project is to determine, through analysis, what species of animals were being utilized onboard the Spanish ships during the Tristán de Luna expedition of 1559. To accomplish this goal, I have analyzed faunal remains recovered from the Emanuel Point Shipwrecks. This research is important because, other than what can be discerned through limited documentary references about the diet of Spaniards, not much is known specifically about what the Spanish brought with them on the Luna expedition. Therefore, a thorough and extensive study of the faunal remains from the Emanuel Point Shipwrecks will give archaeologists a glimpse into the lives of the Spaniards on that fateful expedition and an overall better understanding of the early Spanish explorers during the 16th Century through their diet.



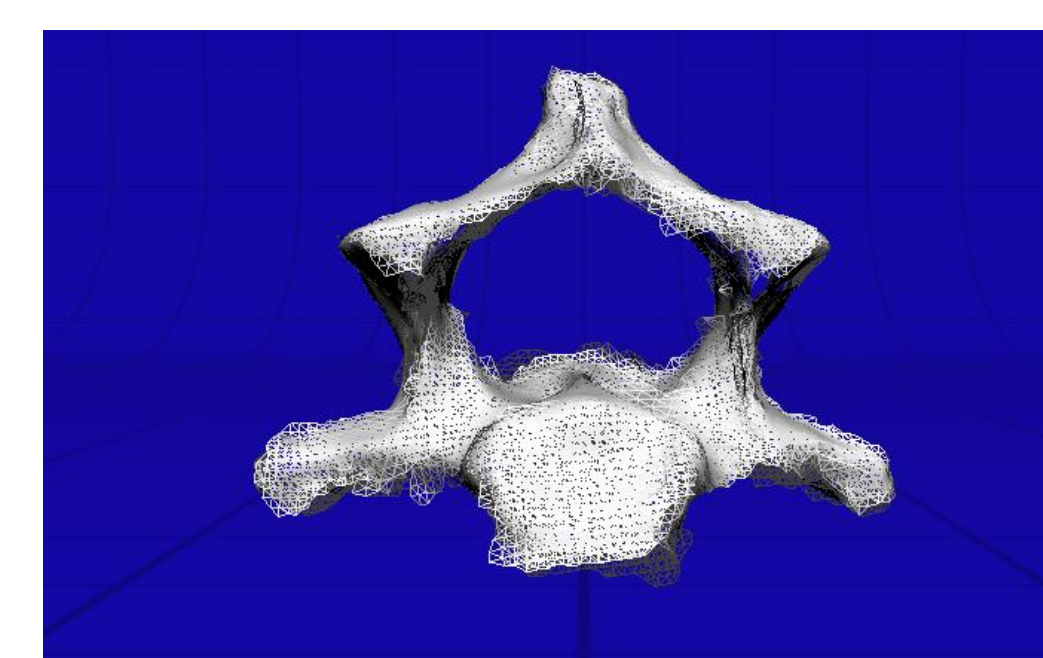
Various shark vertebra (*Selachimorpha*) with cut marks.

Photographs taken by Zackariah D. Pagels

METHOD

In order for the remains to be analyzed, they must first be preserved through two processes, one called desalination, the second, consolidation. Desalination, which is conducted in the laboratory incorporates the use of tap water and eventually deionized water to remove most, if not all, salts from the bones. After the bones are desalinated, they go through a process called consolidation. Consolidation allows the bones to be safely exposed to the atmosphere without deteriorating, warping, or excessively cracking; this is accomplished by soaking the bones in a solution of Elmer's glue and water, usually a 50/50 solution, after which they can be left to air dry. Once the bones are desalinated, consolidated and dried, they are stable and can then be analyzed.

After conservation, faunal remains were analyzed for taphonomic characteristics linking them to being butchering practices, including: breaks, splits, knife marks and teeth marks. Analysis was completed with the assistance of UWF's Cathy Parker, the anthropology departments faunal specialist, as well as her comparative type collections.



3D Scan of Cat (*Felis catus*) Thoracic vertebra

Courtesy of Dr. Ramie Gougeon

RESULTS

This analysis of faunal remains from Emanuel Point II has revealed important information about the diets of Spaniards during the tragic Luna expedition of 1559, allowing for some of the different types of fauna, brought onboard the ship by the Spaniards, to be identified.

During the course of this project, a total of 118 individual bones were consolidated and analyzed; 66.94% of which by count, contain very clear taphonomy signs of butchering, thus linking them to their use by Spaniards onboard Emanuel Point II.

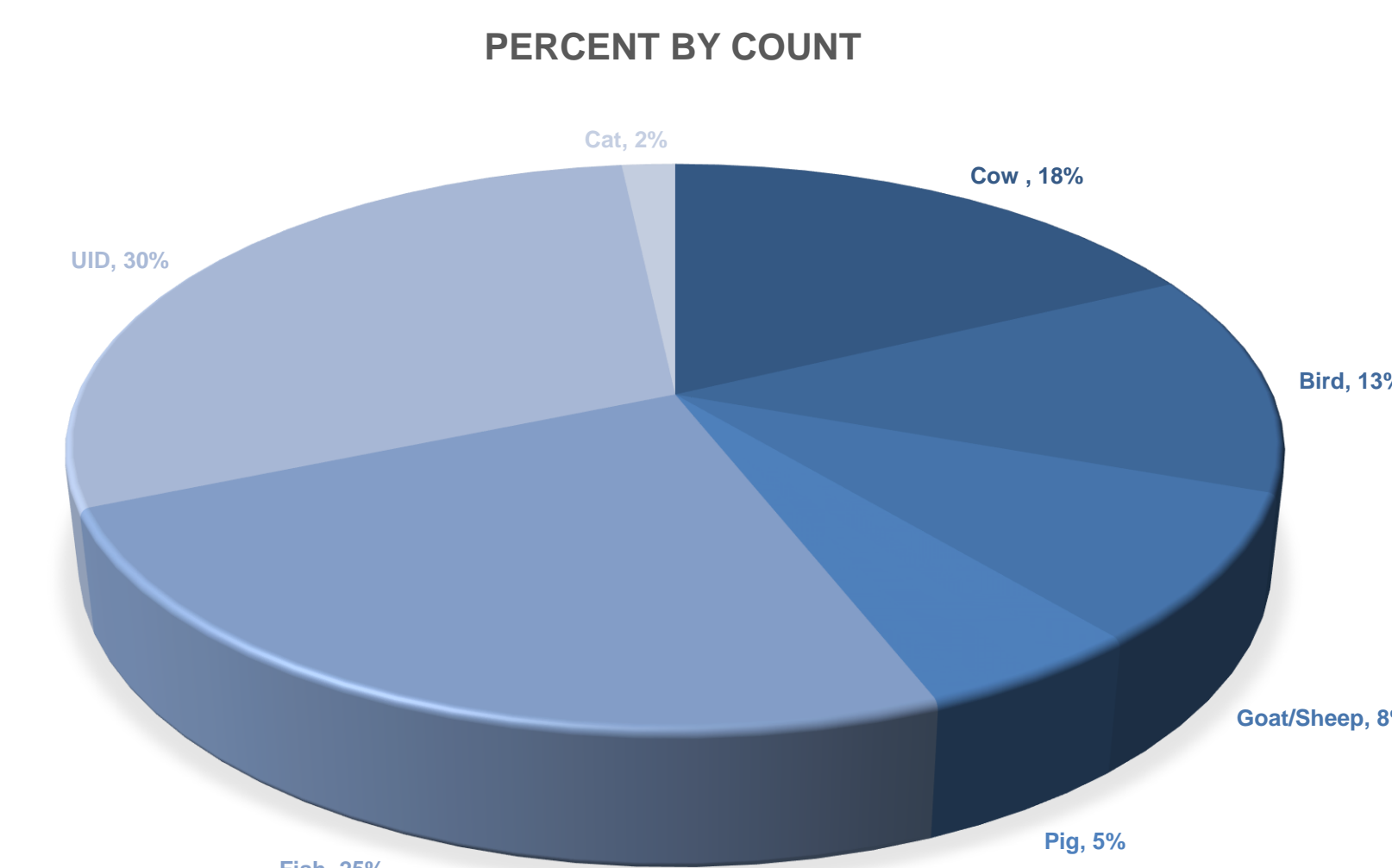
A total of 10 Fragments of cow (*Bos taurus*) ribs recovered from Emanuel Point II included in this analysis make up 8.47% of the faunal materials by count. These bones most likely represent salted meat that the Spanish had on board the ship (Personal Communication, Cathy Parker).

Several bones of goat/sheep (*Capra aegagrus hircus* and *Ovis aries*) were able to be used to estimate the age of the individual(s) when the animal(s) died. The goat/sheep femur was able to be aged due to the unfused epiphyses; the goat or sheep was determined to be somewhere between 1.5 and 3.5 years old at the time of its death. Due to the presence of unfused epiphyses, this is most likely from a live individual brought onboard the ship, as this is not indicative of a cut of meat. Additionally, two Goat/Sheep (*Capra aegagrus hircus* and *Ovis aries*) ribs which may be from the same individual, were able to be dated at less than 18 months old based on the epiphyseal fusion of the femoral heads. These too may represent a live individual, or individuals brought onboard the ship (Personal Communication, Cathy Parker, February 13, 2019)

Cut Marks present on the jaw of a Drum fish (*Pogonias cromis*) recovered from Emanuel Point II may indicate that the Spanish were also utilizing native species of fish during the expedition.

Bird bones recovered from Emanuel Point II make up 13.6% by count, of the total materials used for this analysis. Half of the bird bones have been identified as definite chicken (*Gallus gallus*), with several possessing cut marks characteristic of processing. Marks on the chicken radii are not indicative of human tooth marks, but do represent scavenging by some animal, possibly a cat. However, scavenging by a marine animal cannot be ruled out. Additionally, three of the bones were unfused, which is a characteristic of very young birds (Personal Communications, Dr. Alysha Windburn, April 1, 2019).

Lastly, two thoracic vertebra recovered from Emanuel Point II, were identified as being from a Feline and may represent the ships cat (*Felis catus*).



CONCLUSIONS

Through this analysis I was able to determine the types of animals that were being utilized by the Spanish and were onboard the ships during their sinking. This study will allow a new glimpse into the life of the Spanish sailors during Tristán de Luna's fateful 1559 expedition to establish the first permanent settlement along Florida's Gulf Coast.



Clockwise from top left: Various chicken bones (*Gallus gallus*), cow rib (*Bos taurus*), drum jaw (*Pogonias cromis*), goat/sheep femur (*Capra aegagrus hircus* and *Ovis aries*), pig/goat tarsal (*Sus* and *Capra aegagrus hircus*).

Photographs taken by Zackariah D. Pagels

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WORKS CITED

- Arnade, Charles
1959 Tristan de Luna and Ochuse (Pensacola Bay) 1559. *The Florida Historical Quarterly* 37(3/4): 201-222.
- Hudson, Charles et al.
1989 The Tristán De Luna Expedition, 1559-1561. *Southeastern Archaeology* 8(1): 31-45
- Milanich, Jerald
1995 *Florida Indians and the Invasion from Europe*. University Press of Florida, Gainesville, Florida
- Milanich, Jerald
1999 *Laboring in the Fields of the Lord: Spanish Missions and Southeastern Indians*. Smithsonian Institution Press, Washington, DC.
- Parker, Cathy
2019 Personal Communications, February 13, 2019.
- Shirak, Andrey et al.
2012 DNA Barcoding Analysis of Fish Bones from a Shipwreck found at Dor, Israel. *The Israeli Journal of Aquaculture*, 2012.
- Windburn, Alysha
2019 Personal Communications, April 1, 2019
- Worth, John E.
2009 Documenting Tristán De Lunas Fleet, and the Storm that Destroyed It. *The Florida Anthropologist* 62(3/4): 83-92