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Is it Human? Engaging in the Academic and Forensic Applications of Zooarchaeology

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What is Zooarchaeology?
- The study and identification of animal skeletal remains and their relationship with human interaction.
- An important consideration in every geographic region around the world

Goal: To identify bone fragments to the most specific species level and element possible using the size, shape, and density of the remains

Applications:
- Archaeology - Help reconstruct past environments
- Forensics - Determine Forensic Significance of remains

Methods & Training
- Morphological (Size & Shape of bone)
- DNA Analysis
- Histological Analysis (Examining cell structure)
- Comparative Collection
- Having as many complete skeletons from as many different animals as possible
- Direct comparisons with available fragments

Forensic Case
- Commingled Human & Non-Human skeletal remains in 22 evidence bags
- The Non-Human Inventory:
  - Bovid (Cow), Lepus (Rabbit), Cervid (Deer), Avian (Bird), Lupus (Wolf/Dog), Rodentia, Crustacean
- The Human Biological Profile:
  - Sex: Female
  - Age: 19-29 years old
  - Ancestry: Probable Native American
  - Stature: 4’11” - 5’3”
- Conclusion: Likely archaeological; Not of forensic significance
- Recommendation: Follow NAGPRA protocols and contact regional tribe for consultation

Broader Impacts
- Philip L. Wright Zoological Museum (UMZM)- one of the largest comparative collections of North American animals in the collection
- University of Montana Forensic Collection (UMFC)- Human osteological collection
- The ability to teach & provide lab training for UM students
- Marketable, interdisciplinary (biology, zoology, anatomy, anthropology) lab skills
- Engagement in both the law enforcement & archaeological communities

48PA551: Sunlight Basin, WY
- 3800 - 4400 radiocarbon years BP
- Analysis & Database Development
  - Archaeological Research Questions
- 10, 843 Total faunal fragments
- Variables Recorded:
  - Species, Element, Side, Age, Fracture type, Burning, Cut & Tooth Marks, etc.
- Species Represented:
  - Deer, Rabbit, Sheep, Rodent, Bird
- Conclusions:
  - Combination of site formation processes consistent with intensive field processing of large game and some small, local animals
- Why does it matter?
  - Site Conservation, Academic Research, Public Outreach

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