

# 6th – 8th November 2015, York

## Presentation submission

Abstracts must be received by the conference committee no later than 30th April 2015. Completed abstracts should be emailed as a word file to [envarch2015@gmail.com](mailto:envarch2015@gmail.com)**.**

PRESENTATION TYPE (please delete as appropriate):

1. ORAL PRESENTATION

**Herd demographics in zooarchaeology: a critical, simulation-based assessment of the viability of the standard mandibular approach**

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Zooarchaeological age-at-death analyses are used to address a wide range of issues, from domestication through to trade and urban provisioning. In particular, however, they have been widely applied to understanding prehistoric herd management, typically by comparison to a range of published models representing idealised kill-off strategies.

Amongst numerous theoretical and technical problems with this approach, one of the most pervasive and yet poorly examined issues is that of sample size. Put simply, we have very little idea how large a sample is required in order consistently to discriminate between even idealised theoretical herding strategies.

Here, we test the effect of sample size on the ability to distinguish consistently between four popular mortality models under ideal conditions. We simulate death assemblages of varying sample size from several models developed by Payne, Redding, and Vigne & Helmer that have been widely used in the context of analysing prehistoric herding. By increasing sample size incrementally and repeating each simulation 2000 times at each increment, we visualise confidence intervals around each curve and demonstrate the extent of overlap at different sample sizes. Applying formal significance tests to each simulation run, we then plot the relationship between sample size and the rate of false negatives (type 2 errors).

The results demonstrate that many of the assemblages upon which interpretations have been based, and around which arguments have revolved, are not in fact sufficient to distinguish these models even under the most optimistic of assumptions.

Abstract (maximum 300 words).