**SEX DETERMINATION IN THE BARN OWL (TYTO ALBA) USING SKELETAL MEASUREMENTS**

Christina K. Smith
Brigham Young University – Hawaii

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**ABSTRACT**

Sexual size dimorphism was investigated in the Barn Owl (Tyto alba) using skeletal measurements of ten females and four males. In all measurements females averaged larger than males, but the variance was not significant.

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**INTRODUCTION**

Reversed sexual dimorphism is the idea that females are larger than males. Marti (1990) proposed three hypotheses as to why this occurs: reproduction, sexual selection, and food distribution. Females increase in weight during the breeding period (Wheeler and Greenwood 1983), also males provide females with food during this time. Females may prefer smaller males because of their lighter frame increases flight performance and hunting success.

Barn Owls (Tyto alba) are sexually dichromatic (Roulin et al. 2013) and exhibit reversed sexual dimorphism in body mass (Marti 1990). The purpose of this study was to determine if a series of Tyto alba skeletal measurements could be used to determine the gender of unsexed specimens.

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**MATERIALS/METHODS**

- 20 specimen from the Brigham Young University – Hawaii Museum of Natural History
- 10 female, 4 male, 6 unknown
- 11 skeletal measurements (Figures 1-5)
- Digital caliper (± 0.01 mm)
- Means were recorded for each measurement according to gender
- Two-tailed T-tests
- P < 0.05

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**RESULTS**

While all average mean measurements were greater in females, t-test analysis found no significant difference between gender using these skeletal measurements.

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**DISCUSSION**

The eleven skeletal measurements in this study were unable to distinguish sex in the Barn Owl. The absence of significant differences supports Earhart and Johnson’s (1970) statement that the Barn Owl exhibits less sexual dimorphism than most owls. The smaller sample size of this study may also be a factor in the results of this study. Adding foot measurements could aid in determining gender of unknown specimen (Marti 1990). Variation in age and specimens from a broader array of populations may also yield different results (Marti 1990).

Owls are known to exist at lower population densities which allows for less competition for mates and resources (Marti 1990). These same selection pressures occurred within a monomorphic population of raptors (Sergio et al. 2007) showing that while significant sexual dimorphism is common, it is not essential in all species.

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**ACKNOWLEDGEMENTS**

I would like to thank Phillip Bruner for mentoring my research, the Brigham Young University-Hawaii Museum of Natural History for providing the specimens, and the Biology Faculty and Staff at Brigham Young University-Hawaii for their support.

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**REFERENCES**


