Understanding Mallard Behaviors in Relation to Habitat

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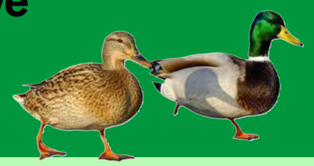
ABS 473 Applied Ornithology

CISA Student Showcase



Introduction and Objectives

Mallards (*Anas platyrhynchos*) are among the most widely distributed waterfowl species, known for their social behaviors and adaptability to various habitats (Baratti et al. 2009). Mallards have been found to change their behaviors based off habitat type, such cold weather, or time of day (Jorde et al. 1984). Understanding their behavioral patterns in different environments is crucial for effective habitat management and conservation efforts. This study aims to investigate the relationship between the abundance of mallards in groups and their activity levels in different habitat types.

Null Hypothesis 1: Duck abundance is the same on land, near the edge of ponds, and in open waters

Alt Hypothesis 1: Duck abundance differ from on land, near the edge of ponds, and in open waters

Null Hypothesis 2: Frequency of duck behaviors are the same on land, near the edge of ponds, and in open waters.

Alt Hypothesis 2: Frequency of duck behaviors are different on land, near the edge of ponds and in open waters.

Methods

- Go to Gilbert Riparian Reserve at Water Ranch at the same time over a span of numerous days
- Record 10 mallard group populations each at 3 various habitats (open waters, close to shore, on land)
- Use audio recording app to record my behavior observations
- Use time stamps from recording to calculate behavior frequencies
- Use frequencies to create data graphs
- Find trends and draw conclusions on the influence of habitat on mallard behavior

Results

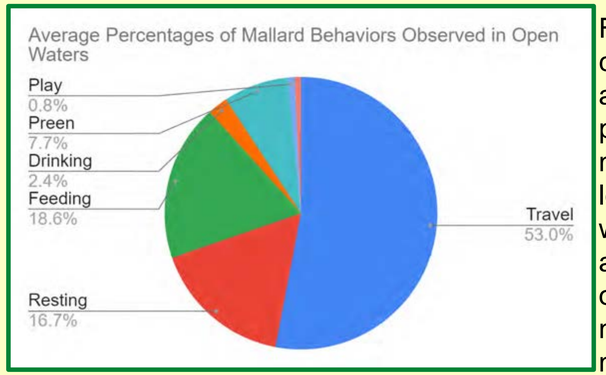


Figure 1 (left): Pie chart showing the average percentages of mallard behaviors located in open waters. The average time of observing each mallard was 8.9 minutes

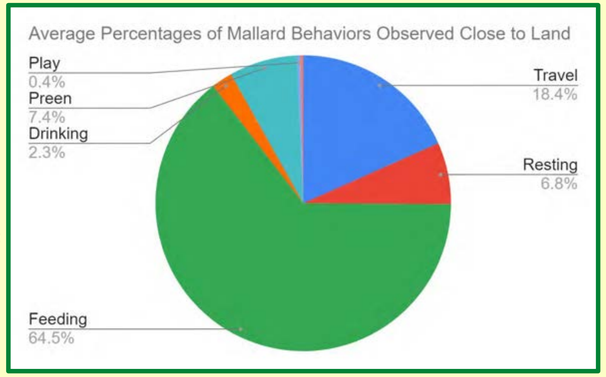


Figure 2 (right): Pie chart showing the average percentages of mallard behaviors located close to land. The average time of observing each mallard was 9.23 minutes

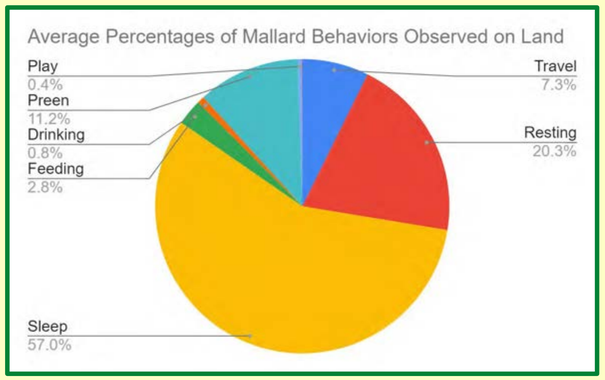


Figure 3 (left): Pie chart showing the average percentages of mallard behaviors located on land. The average time of observing each mallard was 9.29 minutes

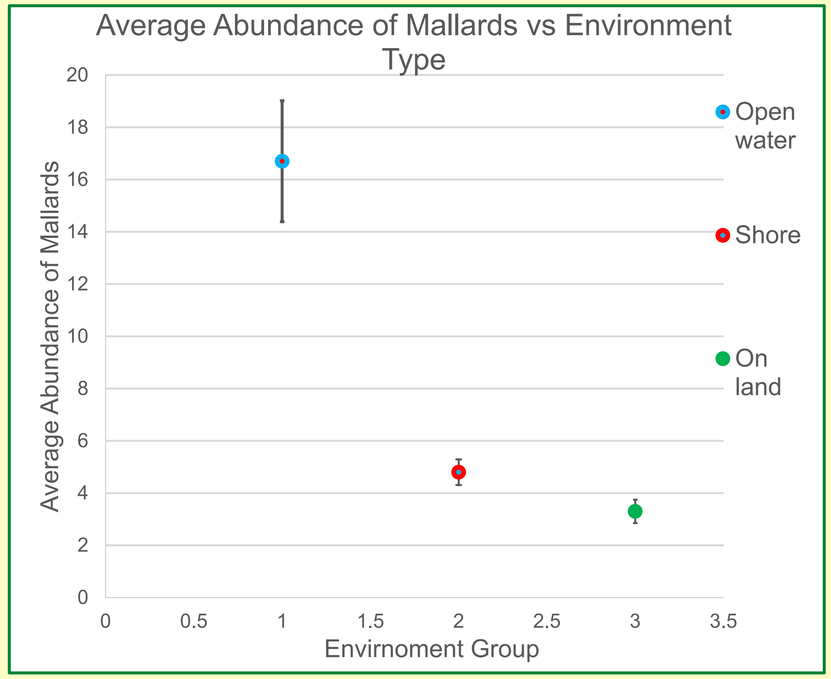
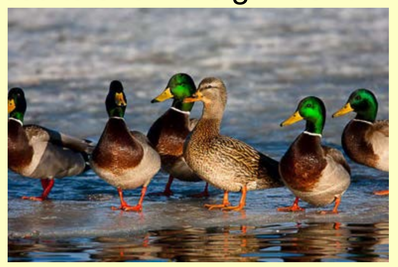


Figure 4 (above): Graph showing mallard grouping behaviors based off average group populations in relation to habitat

Conclusions

The results show that null hypothesis 1 must be rejected, as the standard error bars show between the three environment groups. Therefore, we must accept our alternative hypothesis 1, as abundance numbers differ enough between environments. Null hypothesis 2 is also rejected, and alternative hypothesis 2 is accepted. This is because results show a significant difference in frequency of mallard behaviors based off environment. Notably, mallards travel more in open waters, feed closer to shore, and sleep while on land.



Literature Cited & Acknowledgements

Baratti, M., Cordaro, M., Dessì-Fulgheri, F., Vannini, M., & Fratini, S. (2009). Molecular and ecological characterization of urban populations of the mallard (*anas platyrhynchos*L.) in Italy. *Italian Journal of Zoology*, *76*(3), 330–339. https://doi.org/10.1080/11250000802566624

Jorde, D. G., Krapu, G. L., Crawford, R. D., & Hay, M. A. (1984). Effects of weather on habitat selection and behavior of mallards wintering in Nebraska. *The Condor*, *86*(3), 258. https://doi.org/10.2307/1366993