When females compete and males care: Phenotypic differences in the spotted sandpiper

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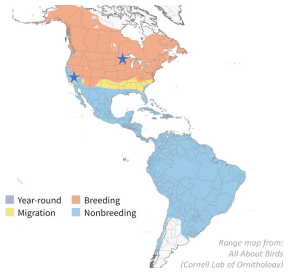
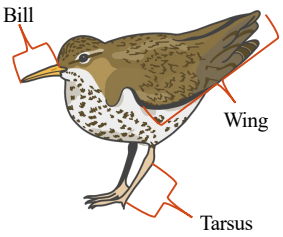
INTRODUCTION

- Spotted sandpipers (*Actitis macularius*) are migratory shorebirds that exhibit sexual dimorphism and are sequentially polyandrous[2]
  - Females compete for multiple mates
  - Males care for offspring
- Midwestern population: females have larger body mass and feather spots[1]
  - Does our California population follow this pattern?
- **Hypothesis**: Sexual dimorphism will be expressed in morphological traits



METHODS

- Collected blood samples of 41 birds
- Measured morphological structures such as tarsus length, wing chord, bill length, and body mass
- Conducted DNA extraction, PCR and Gel electrophoresis to determine genetic sex
  - 25 males and 16 females
- Used R Studio to evaluate sexual dimorphism of morphological traits
  - Shapiro-Wilk normality test
  - Welch Two Sample t-test



RESULTS: Female-Biased Sexual Dimorphism

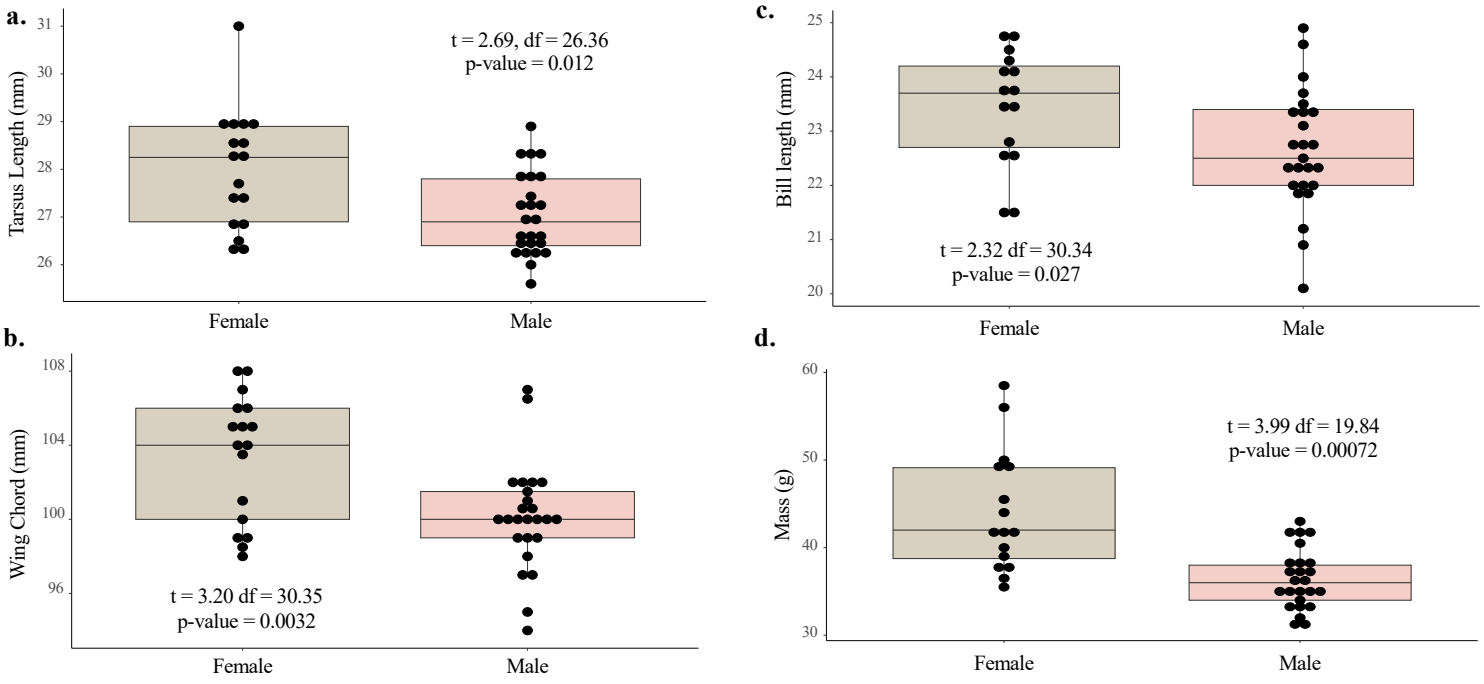


Figure 1. Morphological trait measurements between adult female and male spotted sandpipers. **a.b.c** demonstrate that females have significantly longer tarsi, wing chord, and bill than males. **d.** shows that females significantly weigh more than males.

CONCLUSION

- There are significant differences between the male and female spotted sandpipers for these certain morphological traits – sexual dimorphism is expressed!
- The Midwestern and California populations have evolved similarly – females are larger overall
- For the future, a project comparing the degree of sexual dimorphism between the Midwestern and Californian population should be done to learn more about the morphologic evolution of this species and how does different habitat ecology possibly accounts for it

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REFERENCES

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