Bird Feeder Placement: Does Height Really Matter?

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Research Question

- How do varying bird feeder heights affect the number and diversity of birds that are sighted at feeders?

- Hypothesis
  - If we use varying bird feeder heights, then the birds will favor the highest feeder at 2.25 meters.

Introduction

- Preferred feeder height: 6 ft (1.86 m).
- Higher feeder heights offer protection from ground predators (Bollinger et al 2005).
- Sporadic feeding times during the winter (Bates et al 2012).
- Forage outside comfort zones (Boliner et al 2005).
- More birds in urban areas (Biadun et al 2015).

Tufted

Time & Location

- Environmental Education Center at Lancer Park, Farmville, VA
- February 13- Set-up of Bird Feeders
- February 22- Data Collection Day 1
- March 1- Data Collection Day 2
- March 15- Data Collection Day 3

Environmental Education Center

What to consider...

- Type of food
- Type of feeder
- Distance from buildings and shrub lines
- Distance between feeders

Methods: Set-up

- 4 bird feeders were placed behind the EEC at Lancer Park.
- Bird feeders were placed on posts at 2.25 m, 1.5 m, 0.75 m and 0m.
- All feeders were placed 1 m away from the shrubbery edge.
- Feeders were placed 2.5 m away from one another.

Methods: Data Collection

- Barometer, thermometer, anemometer, and light meter were used to collect environmental data.
- Seven 15-minute trials.
- Trial was started when a bird landed at a feeder.
- Each group member watched a feeder with the assistance of Dr. Lehman.
- Recorded species identity and number of visits.

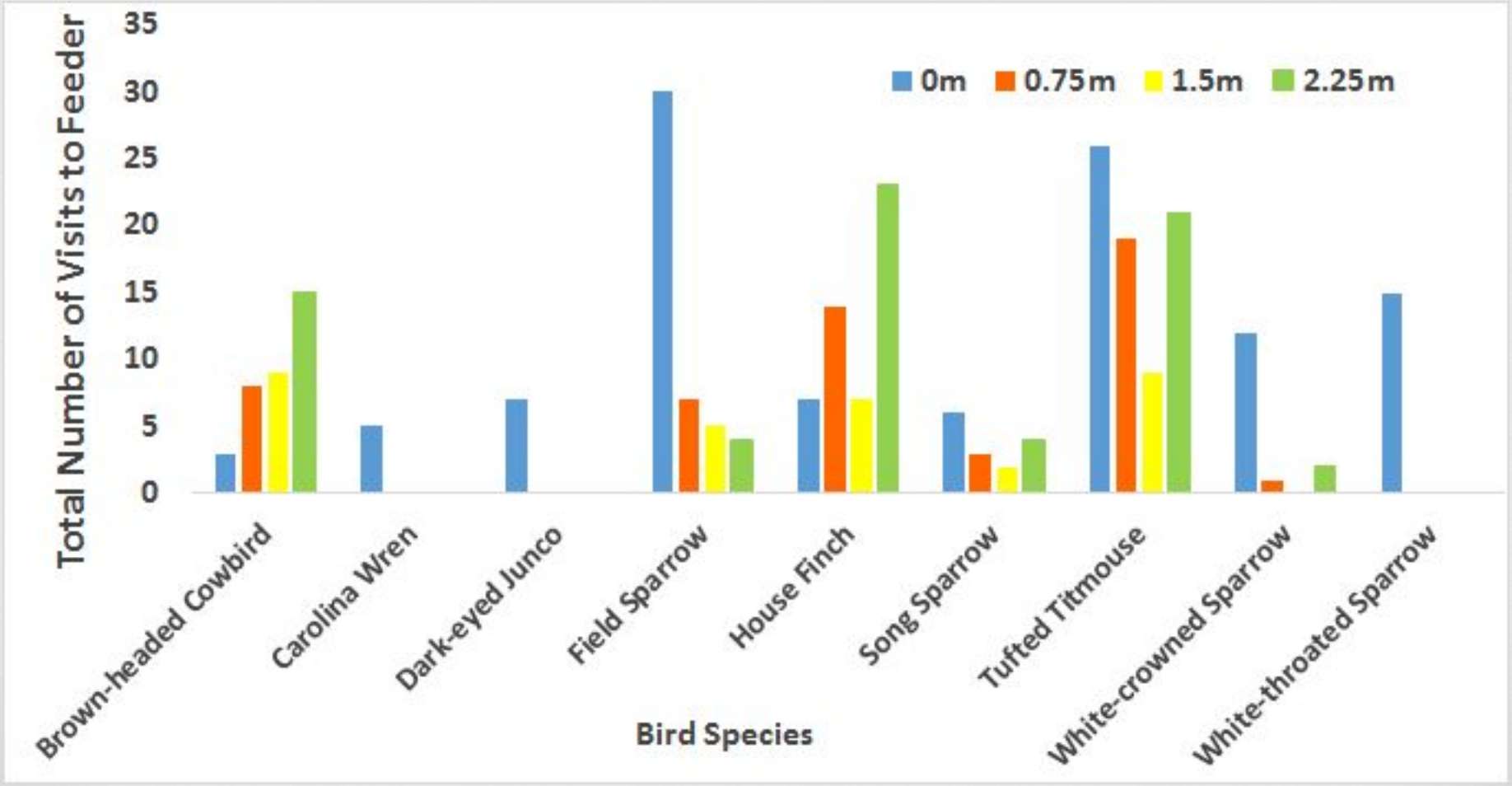
Methods: Statistical Analysis

- Ran statistical ANOVA tests using JMP program.
- Further statistical tests were run using Chi-square.
- During these tests, the species richness and number of visits made to each feeder were compared.

Results

- Total of 9 species observed.
- Most species visited infrequently or to all feeder heights.
- All visits were compared to feeder height
  - Total number of visits per trial - p = 0.2350
  - Percent of visits per trial - p = 0.3187
  - Species richness - p = 0.5049

Total Visits by Different Bird Species



Results

- House Finch visits- p=0.3385
- White-crowned Sparrow- p=0.1675
- Field Sparrow visits- p=0.0011
- Brown-headed Cowbird- p=0.04

Environmental Data

Temperature: $p = 0.0013$

Humidity: $p < 0.001$

Wind: $p = 0.0539$

Air Pressure: $p = 0.0029$

Light: $p = 0.0259$

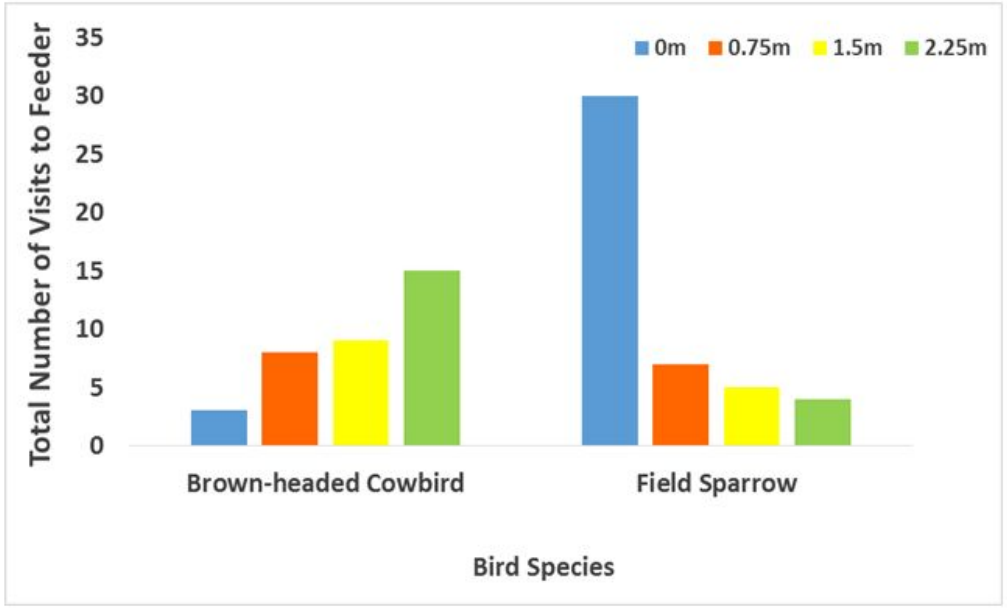
Frequency of Visits:

Brown-headed Cowbird & Field Sparrow

A

B

C



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	Brown-headed Cowbird	Field Sparrow
P-Value	P<0.04	P<0.001

Field Sparrow

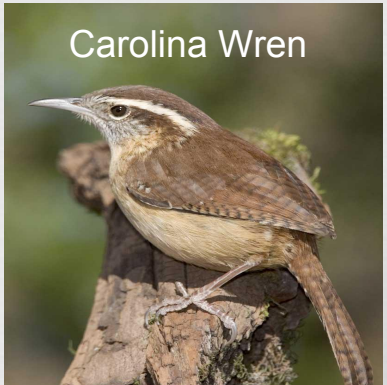
- Typically ground foragers.
- Field Sparrows are subject to brood parasitism by the Brown-headed Cowbird, which means the Brown-headed Cowbird lay their eggs in the Sparrow's nest and the host raises its young (Burhans 2001).
- Tend to nest in low areas such as low shrubs, in grasses, or on the ground.

Brown-headed Cowbird

- Typically forage in open areas
- Historically inhabited short-grass prairies, but with development, forest fragmentation, etc. they now prefer human-modified habitats
- Breeding and feeding can occur in separate areas (Thompson 1994)

Discussion/Conclusions

- Some birds showed preference, while others did not.
- Field Sparrow findings were consistent with research in that they prefered the ground (Hebrard 1978). This could possibly be because they nest in low places.
- Brown-headed Cowbirds feed in large packs to reduce predation. (Thompson 1994).
- Known as being very aggressive (Yokel 1989).
- This may be why they preferred the higher feeder.
- It appears that feeder height does not matter to many species, but research suggests that there are some species that show preference if given a choice.



Future Research

- For future research, we would include more days to hold trials.
- Hold the research across different months or seasons.
- Collect data at different times of day.
- Isolated area away from noise in the building.

Citations

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