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Module 13: Birds in the Urban Landscape

Urban EcoLab

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Sample Research Questions and Hypotheses

Center for Urban Resilience

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Sample Research Questions with Hypotheses

Notes:

- *Share these with students if they need ideas or examples of what makes a good research question and hypothesis.*
- *These are just a small sample of possible research questions involving hummingbird feeders.*
- *The assumption is that students will be making comparisons between at least two feeders (F1 & F2).*

Q1: How does the species composition of hummingbirds at F1 compare to F2?
H1: We think the species composition at both feeders will be the same because they are both in the same general area.

Q2: What is the impact (if any) by human disturbance on hummingbird visitation at each hummingbird feeder?
H2: We think F1 will have less hummingbirds than F2 because more people walk by F1.

Q3: Which feeder will the hummingbirds prefer if we change the sugar-water in F1 to a sugar substitute?
H3: We think the hummingbirds will increasingly prefer F2, with the granulated sugar-water solution, because it most resembles natural nectar.

Q4: How will the hummingbird visitation rates at the feeders be throughout the day?
H4: We think the visitation rates will be higher first thing in the morning (dawn) and just before night (dusk) because hummingbirds need food when they are first waking up (coming out of torpor) and just before going into torpor for the night. Flowers aren't open first thing in the morning or at night.

Q5: How will the duration (length) of each hummingbird feeding be at different points in the day, such as early morning, mid-day, and at dusk?
H5: We think the duration of each feeding will be longer at dawn and dusk because hummingbirds need food when they are first coming out of torpor at the beginning of the day, and then when they are about to go into torpor at dusk. During the middle of the day they are feeding more on flower nectar and insects.