Interactions of Crows and Raptors

**Methods & Materials**

- Natural observations of crows responding/not responding to wild raptors in Seattle and other locations around the US (OR, MN)
- Field experiments, replacing each of two mounts (taxidermy Osprey and Red-Tailed Hawk) in locations where crows regularly or rarely encounter Osprey
  - Trials conducted in the Seattle area
  - In order to make sure the observations were independent, the order of birds was determined randomly
  - Once a reaction was shown, tests lasted 5 minutes
  - Number of birds present and dives were recorded, with at least 1 hour between tests and tests were at random times of day
  - Statistical analyses: we tested effects (main, interaction, pairwise comparisons) using repeated measure generalized linear models in SPSS (2009); significance for all tests was evaluated at an α-level = 0.05

**Results**

1. Observations of Crows & Wild Raptors
   - Osprey, despite having the largest sampling (n = 11) had by far the lowest percentage of scolding/mobbing events

2. Field Experiment: Do Crows Choose to Dive Equally?
   - When Crows dove at the mounts, more dives were recorded at shorelines relative to the uplands, but not significantly (x² = 1.00, df = 1, p = 0.32).

3. Field Experiment: When Crows Dive, How Intensely?
   - In Osprey habitat, the response to Osprey was significantly less than to Red-tailed Hawk (mean diff. = 0.32, SE = 0.15, 1 df, p = 0.04)
   - The response to Red-tailed Hawk did NOT differ with respect to Osprey habitat (mean diff. between habitat = -0.23, SE = 0.145, 1 df, p = 0.12)

**Discussion**

- We expected a mount effect and a difference in diving intensity at Osprey depending on location, but because this effect was so striking it obscures the mount effect and makes the results statistically insignificant
- In order for the four-way comparison to be statistically significant, Osprey dives would have to go up inland (which they did) but Red-tailed Hawk dives would have to go down. This doesn’t follow common sense.

**Future Directions**

- Figure out experience effect – is there a difference because crows in uplands aren’t used to Osprey fishing?
- Look at relative experience of birds diving (scolding): Osprey -- more young would suggests they are inexperienced and haven’t learned NOT to scold
- Better definitions for: “within” typical osprey habitat or “outside” – map actual Osprey territories

**Literature Cited**