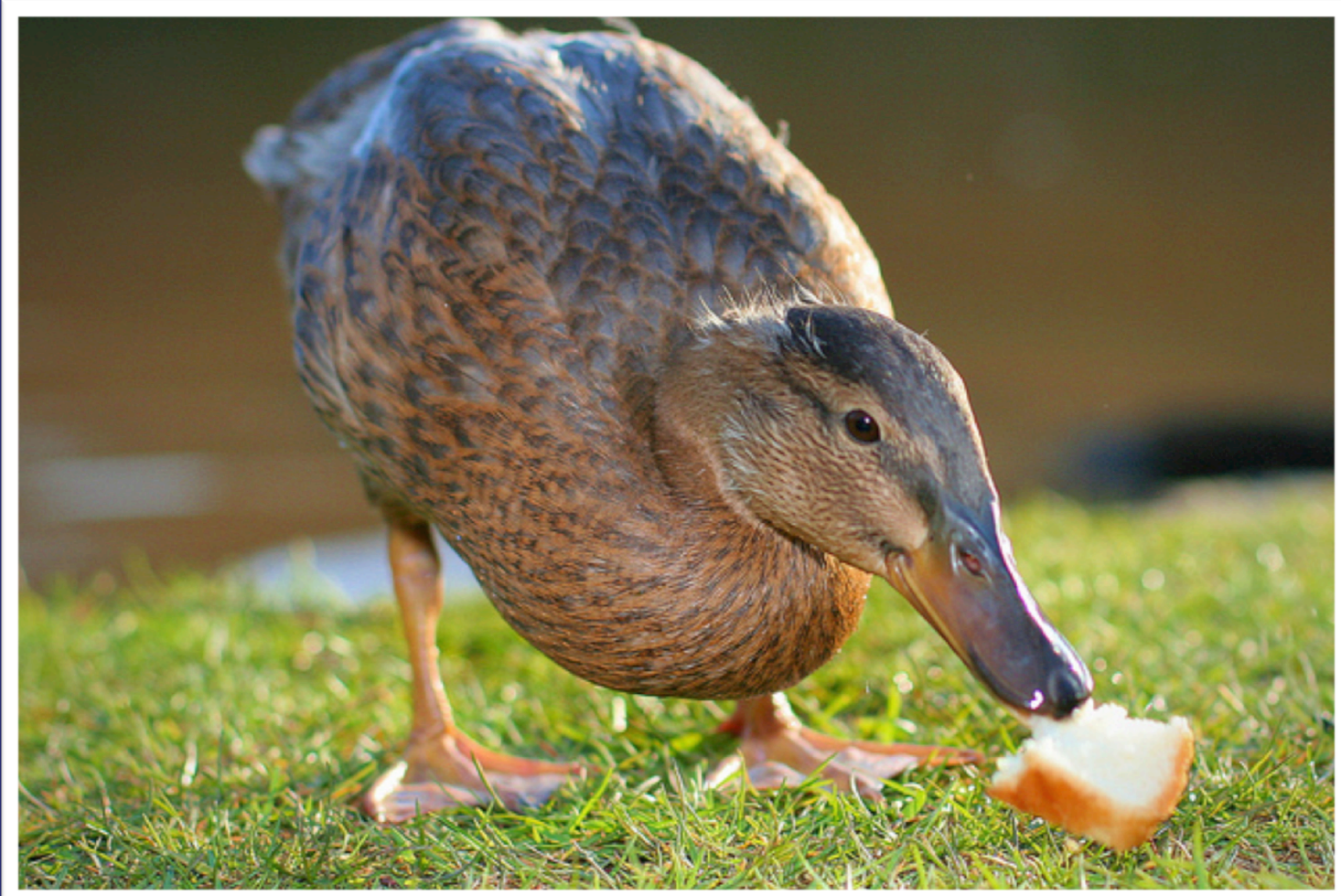


Friend or Foe?

Examining Human Influence on Threat Perception and Flight Distance in Urban-Area Ducks

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Guiding Question: Since feeding at ponds is a potentially lucrative food source for ducks, have they evolved the ability to predict whether an approaching human intends to feed or harm them?

In urban areas, feeding ducks at local duck ponds is a popular and common pastime. However, throughout most of evolutionary history, living in such close proximity to potential predators such as humans likely posed more of a threat to ducks than is now the case.

So, has duck behavior changed to accommodate this new human presence at their duck ponds?

Methods:



Does flight distance (distance at which the birds would flee when approached) change under our two conditions?

Food: Being approached by human holding visible piece of bread

Threat: Being approached by human holding outstretched towel



Flight distance (in meters) was measured in 8 ducks per condition at 4 different locations: The Crystal Springs Rhododendron Garden, Laurelhurst Park, Westmoreland Park, and Scott Park.

Results:

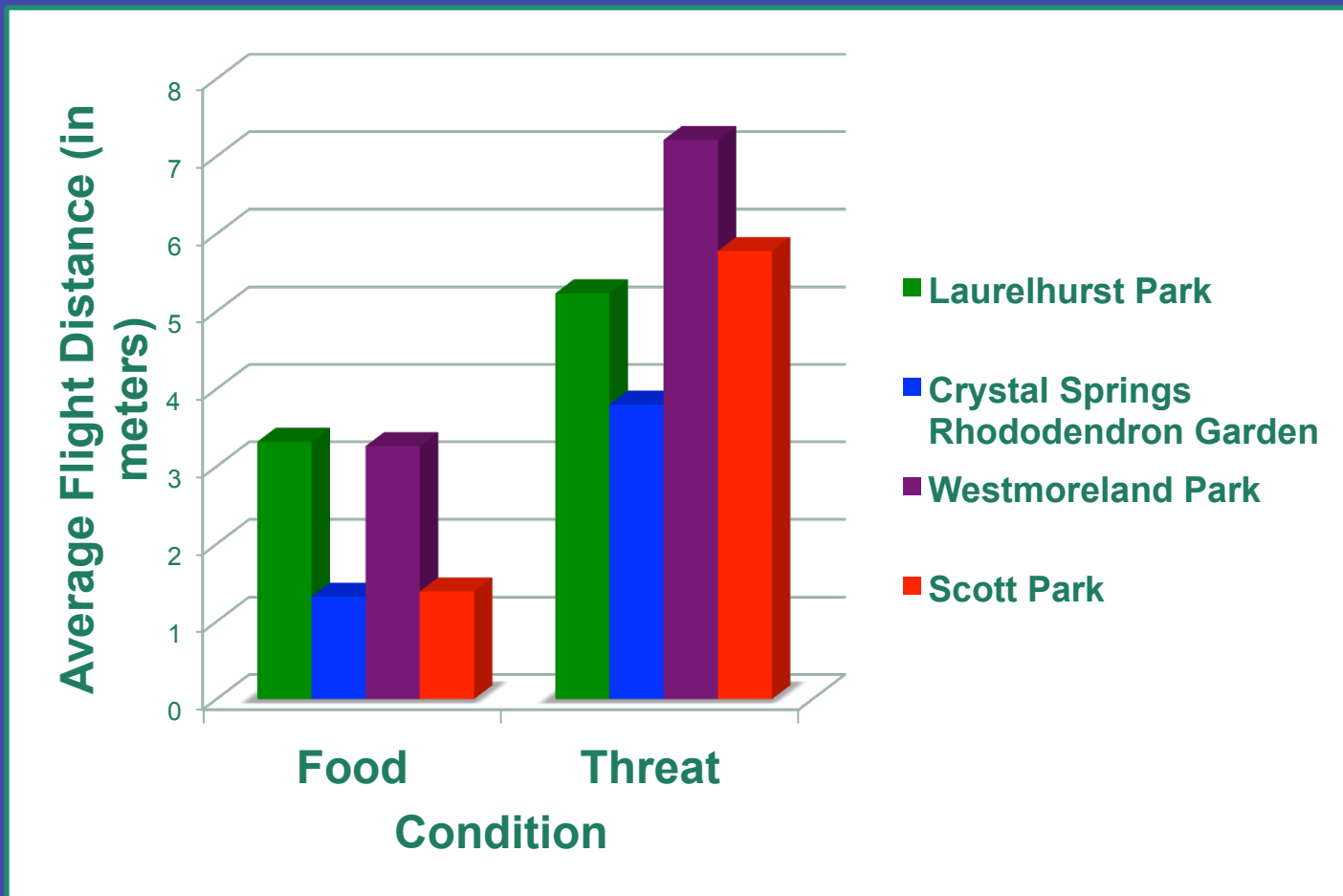


Figure 1: Average flight distances in ducks (in meters) under both conditions (being approached with a piece of bread or an outstretched towel) in four different Portland locations.

2-way ANOVA analysis revealed that flight distance varied significantly between Food and Threat conditions ($p = <0.0001$), as well as between location ($p = <0.0001$) and condition*location ($p = 0.0044$).

Although we cannot conclude that this is a recently evolved ability, our data suggests that ducks **can** detect differences in the intentions of an approaching human.

However, further research might focus more on comparing urban versus rural populations.

References:

- Moiler, Anders Pape. "Flight Distance of Urban Birds, Predation, and Selection for Urban Life." *Behavioral Ecology and Sociobiology* 63.1 (2008): 63-75. JSTOR. Web. 02 Nov. 2014.
- Orr, Howard D. "Flight Distance in the Great Blue Heron." *The Wilson Bulletin* 72.2 (1960): 198-99. JSTOR. Web. 02 Nov. 2014.
- <http://www.emlii.com/images/article/2014/03/531a007447a98.jpeg>
- http://fc00.deviantart.net/fs70/i/2012/159/1/8/ducklings_eating_bread_i_by_dansam-d52qggv.jpg