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Do bears know when trash pickup day is?



By: Amber Elving
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Introduction

- Animals' ability to sense time is a key factor to their life history traits¹.
- Bears have an extraordinary sense of smell, better than primates².
- Olfaction in bears plays a large role in their foraging behavior, mate selection, and predator avoidance³.
- Through the introduction of year-round anthropogenic food availability, female black bears are known to den later, reproduce faster, and die younger.
- This leads to the question: do bears know when trash pickup day is?



Hypothesis

Black bear behavior on the urban-wildlife boundary is influenced by availability of anthropogenic food.

Prediction

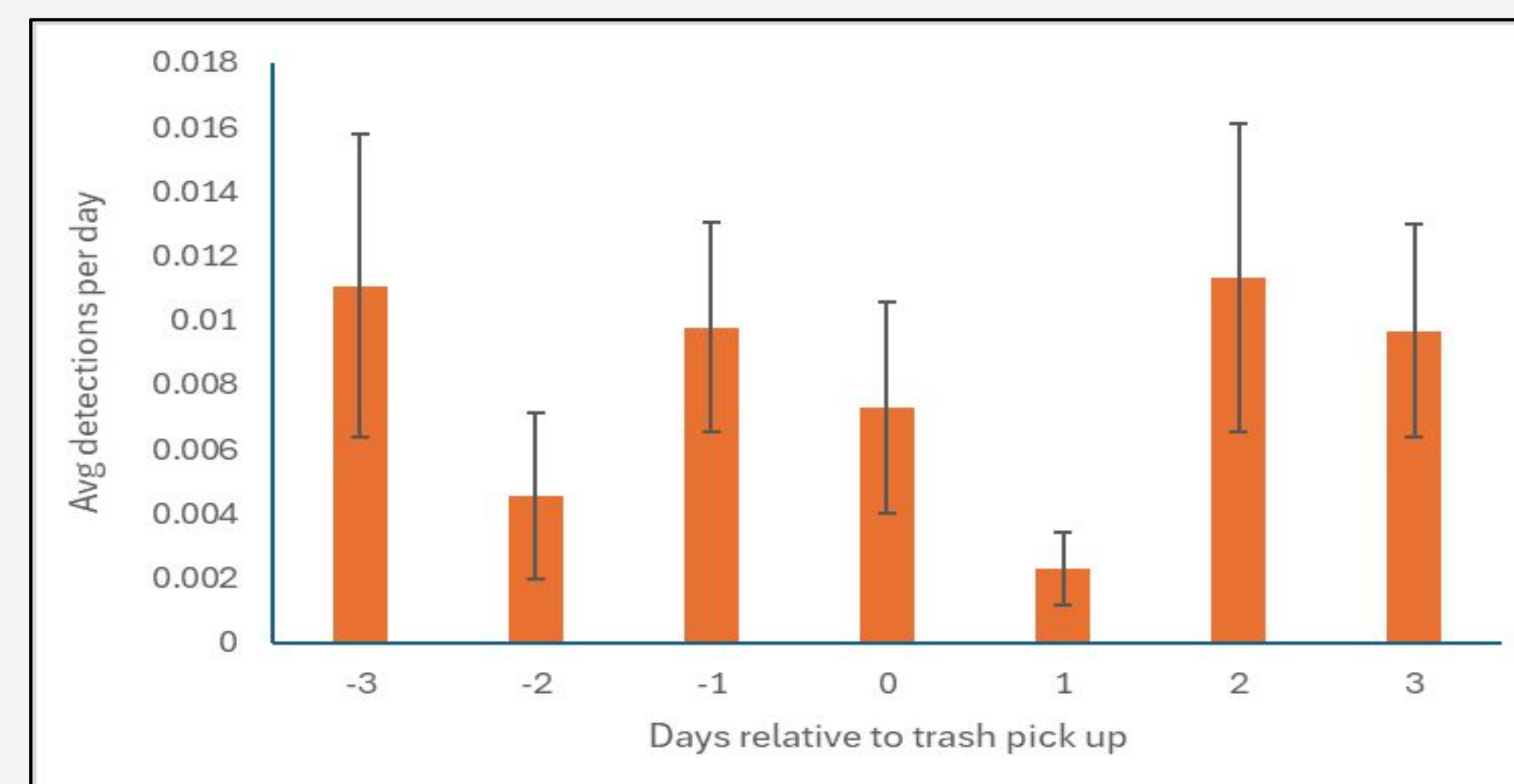
Bears will be detected close to human habitations (and their refuse bins) more often around the day that trash is being picked up.

Methods

- Study was conducted using 20 wildlife cameras at 16 sites in Humboldt County on private property from 30 Sept 2023 to 1 Mar 2024.
- Sites were selected based on three criteria:
 - Bear activity already established
 - Home must be next to a greenbelt
 - Weekly trash pick up is established at the home
- Every 2 weeks cameras were checked and photos evaluated for bear sightings relative to trash pickup day.

Results

- I collected 70 photos of bears, of which 42 were independent sightings (events greater than 30 min apart). 20 (48%) of these events had bears actively foraging on trash.
- Average daily detection rates of bears did not vary relative to trash pickup day ($F=0.98$, $P=0.4$), suggesting that bears did not respond directly to trash presence at residential homes.
→ Bears did not come by more frequently on trash day.



Acknowledgements

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3. Zhou, C., Y. Liu, G. Zhao, Z. Liu, Q. Chen, B. Yue, C. Du, and X. Zhang. 2023. Comparative analysis of olfactory receptor repertoires sheds light on the diet adaptation of the bamboo-eating giant panda based on the chromosome-level genome. *Animals* 13:979.

Discussion

- Bears did not frequent homes more on trash pickup day, suggesting they are not tuning in to patterns in anthropogenic food provisioning.
- However, bears are still visiting residences to obtain anthropogenic waste. This type of food conditioning leads to human-bear conflict.
- Wildlife managers need to address the ongoing problem of bear management in urban settings.
- Managers and the public need to use a multi-faceted approach to manage bears by using both proactive and reactive management.
 - Proactive:
 - Preventing bears from accessing trash
 - Reactive:
 - Detering a food-conditioned bear from returning
- As we encroach on black bear territory, humans have to adapt alongside bears. By switching from an anthropocentric view of conservation, including animals in the conversation will benefit bears and humans.

Scan the QR code to watch a video of this bear eating trash

