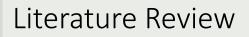
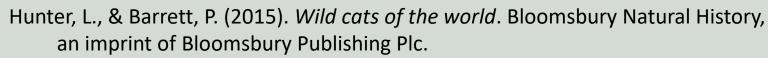
Introduction & Literature Review

The IUCN Red List

• The International Union For Conservation of Nature's (IUCN) Red List of Threatened Species is globally recognized as "the world's most comprehensive information source on the global conservation status of animal, fungi and plant species" (IUCN Red List).

Study subject: Bobcat (*Lynx rufus*)





- Distribution ranges from southern Canada to central Mexico
- Wide habitat tolerance
- Hunts wide range of prey species depending on region (though lagomorphs are preferred)

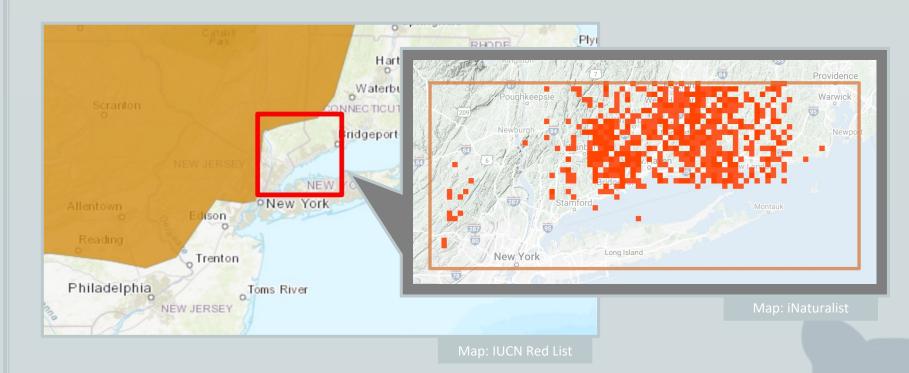
Ruell, E. W., Riley, S. P. D., Douglas, M. R., Pollinger, J. P., & Crooks, K. R. (2009). Estimating Bobcat Population Sizes and Densities in a Fragmented Urban Landscape Using Noninvasive Capture–Recapture Sampling. Journal of Mammalogy, 90(1), 129-125. https://doi.org/10.1644/07-MAMM-A-249.1

• Sensitive to habitat fragmentation despite being a generalist species

• Interconnectedness of suitable habitat factors in to the ability of the bobcat to survive in an area

Problem & Significance of Research —

Despite recorded verified bobcat sightings by citizen scientists in Problem Westchester (NY) and Fairfield (CT) counties, the 2016 IUCN Red List currently does not include these regions as bobcat habitat.



Significance of Research

- Bobcats play an important role as an indicator of habitat connectivity.
- Obtaining definitive evidence of bobcat occupation in the areas of uncertainty will be useful for local officials.
- Keeping the IUCN Red List up-to-date is vital to informing future studies, policy changes, and wildlife conservation efforts.

Goal & Hypothesis

Goal Non-invasively clarifying if bobcat territory has extended beyond its currently defined range on the IUCN Red List into Westchester (NY) and Fairfield (CT) counties.

Hypothesis Bobcats have established a resident population within the borders of Westchester (NY) and Fairfield (CT) counties.

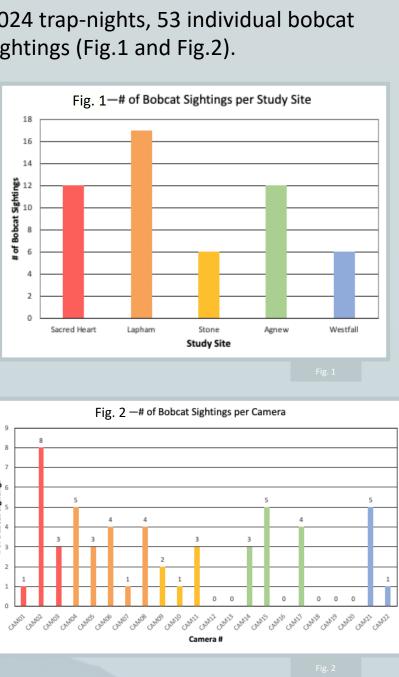
Materials & Methods

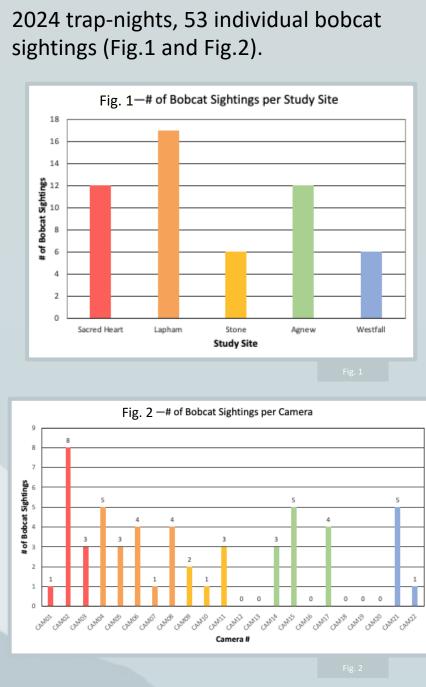
Methods

- spreadsheet

Analysis & Public Outreach

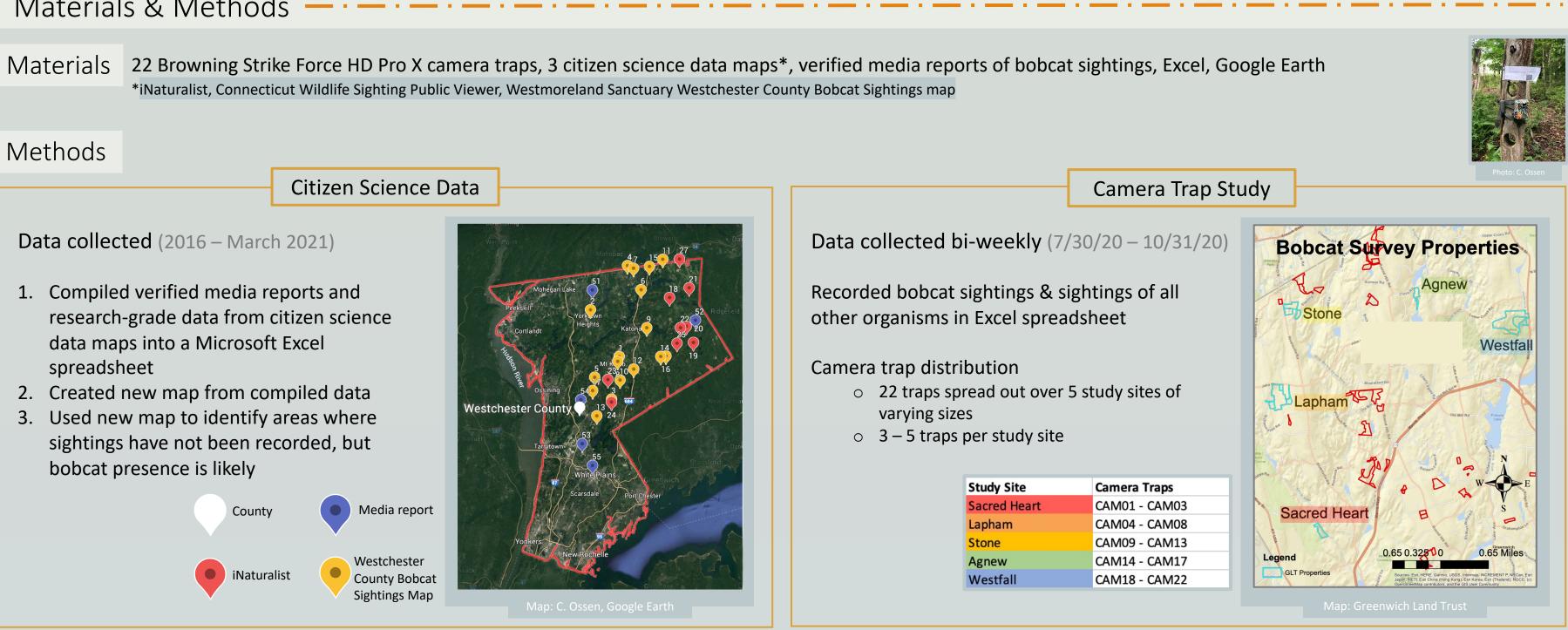
Results





Clarifying bobcat (*Lynx rufus*) Distribution in Westchester (NY) and Fairfield (CT) Counties: A Comprehensive Compilation of Existing Data and a Targeted Non-Invasive Camera-Trap Search in a Distribution Void

Cayla Ossen-Gutnick



Analyzed both camera trap and citizen science data as evidence for the existence of resident bobcat populations

Public outreach using TikTok account and flyers to raise awareness of project and bobcat presence in Westchester (NY) and Fairfield (CT) counties

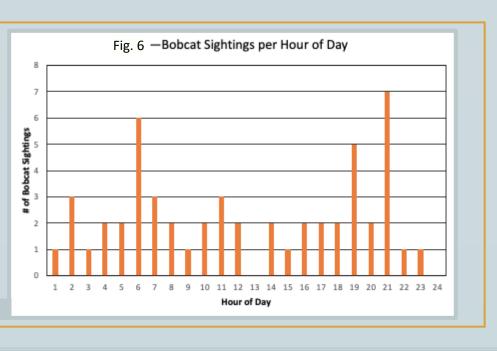
Mentor Role: Recommendation of literature and modules, help in securing project study sites, provided insight and guidance throughout duration of study My Role: Background research, collection of camera trap data from the field, securing funding, compilation, analyzation, and organization of all data into Excel and Google Earth

> • At least 4 individual animals have already been identified: 1 male bobcat, and 1 female bobcat with her 2 kittens (unknown sex). • The male bobcat was seen at least once at the Sacred Heart site (Fig. 3), and the female and her 2 kittens were seen on 2 separate occasions (17 days apart) at 2 different study sites (Sacred Heart and Stone) (Fig. 4 and Fig. 5).





Bobcats were seen at all times throughout the day, but were most active at dawn and dusk between the times of 06:00 - 08:00 and 19:00 - 21:00 (Fig. 6).



Discussion

Bobcat Presence

The existence of the mother bobcat and her kittens, paired with consistent sightings throughout the duration of the study provided ample evidence that at least a percentage of the bobcats seen on my camera traps were not transient or juveniles simply moving through the area, and that they were instead part of a resident population.

- Sightings of the female and her 2 kittens (Fig. 4 and Fig. 5) indicated that the mother bobcat had established a territory and proved that there is a resident and reproducing bobcat population within the counties of interest
- The 53 sightings captured on camera traps were consistently spread out throughout the duration the traps were deployed; there were no noticeable major gaps between dates where bobcats were seen.
- Bobcats were able to move between the forest patches I sampled; the interconnectedness of suitable habitat is an important factor in determining whether a carnivore such as the bobcat is able to prosper (Ruell et al 2009).

Bobcat Behavior

By showing that the bobcats in the area studied were crepuscular, it can be inferred that this particular bobcat population exhibits normal behavior for the species despite residing in a habitat with a heavy anthropogenic influence

• Bobcats are crepuscular and most active during dawn and dusk. The bobcats on my camera traps were captured at all times throughout the day, but my data demonstrates there were 2 major spikes in sightings at times around sunrise and sunset.

Limitations

Budget, inaccessible data & data loss, camera trap malfunctions, obstructions, & adjustments made by public

Conclusion

- I was able to reach my goals for my study and clarify that bobcats do indeed have a resident population in Westchester (NY) and Fairfield (CT) counties.
- My data demonstrates that bobcats in the study site are apparently little affected by living in a matrix of forest patches and suburbia with high human population density.
- Notably, my data only allowed me to assess this question based on activity patterns which are consistent with less disturbed populations.

Future Research

- Determining if proximity to humans impacts population density, kitten survival, and/or dispersal
- Does human-induced mortality limit the population?

Submission of study to IUCN Red List

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Next Steps

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