



Mesopredator's Activity Levels in Different Biomes



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Introduction

- **Mesopredators** are mid-sized, mid-trophic level predators
- Mesopredators such as **raccoons, opossums, coyotes and skunks** consume arthropods, small mammals, amphibians, reptiles, and bird eggs and nestlings.
- They are considered **ecologically important** in that by **suppressing prey** populations, they enhance **prey diversity**
- We examined the activity of these predators in three types of **habitats** - early succession immature forests, mature forest, and riparian at Burning Star, Desoto, IL
- **Early successional forest** contains mostly tree canopies that do not "shade out" the forest floor, it is characterized by high productivity of plant species (**herbs and shrubs**), complex food webs, large nutrient fluxes.
- Mature forest contains mainly **deciduous trees**, generally more than 60 years of age, low nutrient fluxes, low food webs.
- Riparian contain land close to bank of water characterized by **swamps and marshes**, diverse species and complex food webs.
- A better understanding of the factors that influence mesopredator abundance and distribution is needed to direct **management actions** when mesopredators are negatively influencing prey species of conservation concern.

Research Questions

1. What type of mesopredators will be observed in different habitats in Burning Star?
2. Does mesopredators activity differ between early successional forest (ESF), mature forest (MF), and riparian (WATERWAY) habitat?

Results

Images collected from Mature Forest

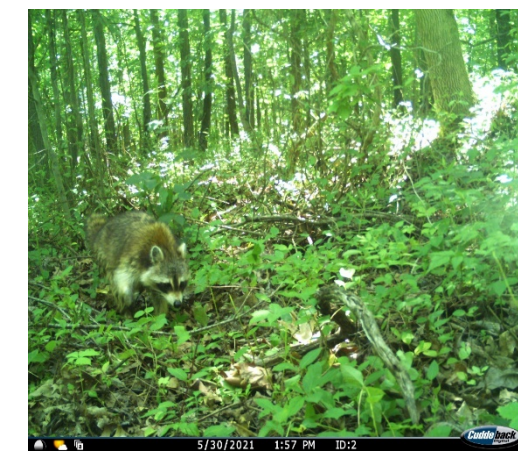


Figure 1, shows a raccoon eating in MF 3, point 1.



Figure 2, shows a bobcat walking past a opossum in MF 3, point 1.

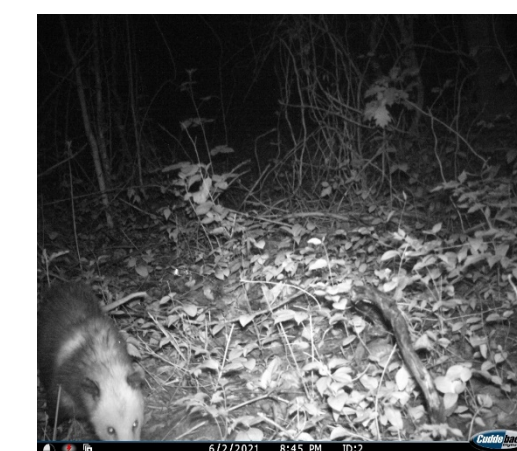


Figure 3, shows a opossum eating in MF 3, point 2.



Figure 4, shows a raccoon sitting in MF 3, point 5.

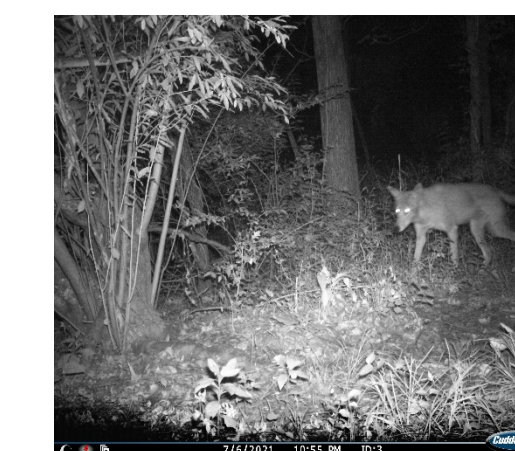


Figure 5, shows a coyote walking in MF 3, point 8.

Images collected from Early Successional Forest

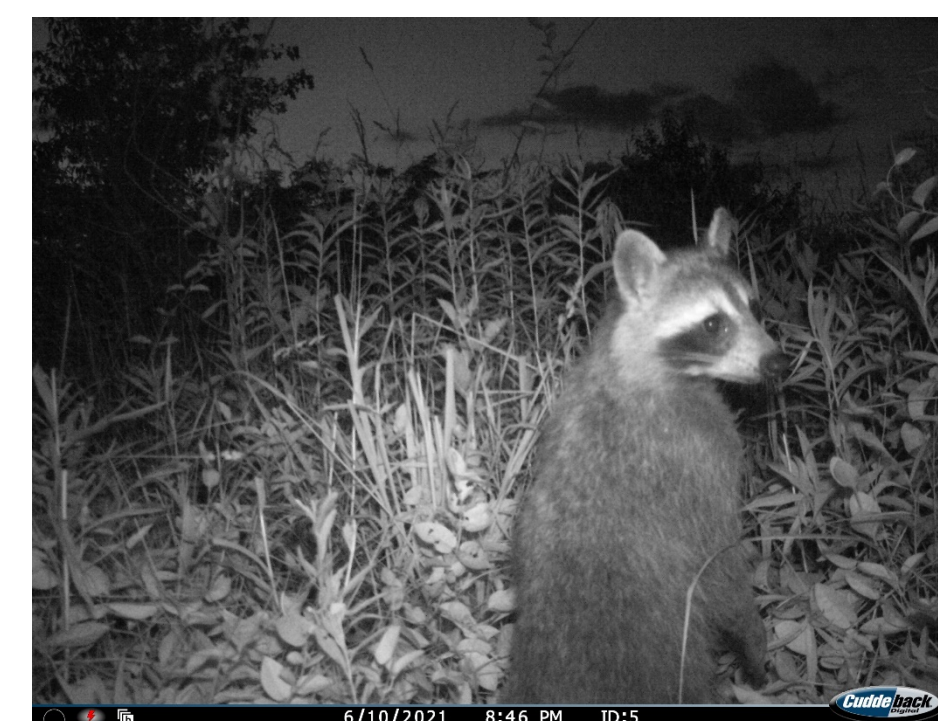


Figure 6, shows a raccoon looking off camera in ESF 1 point 3.

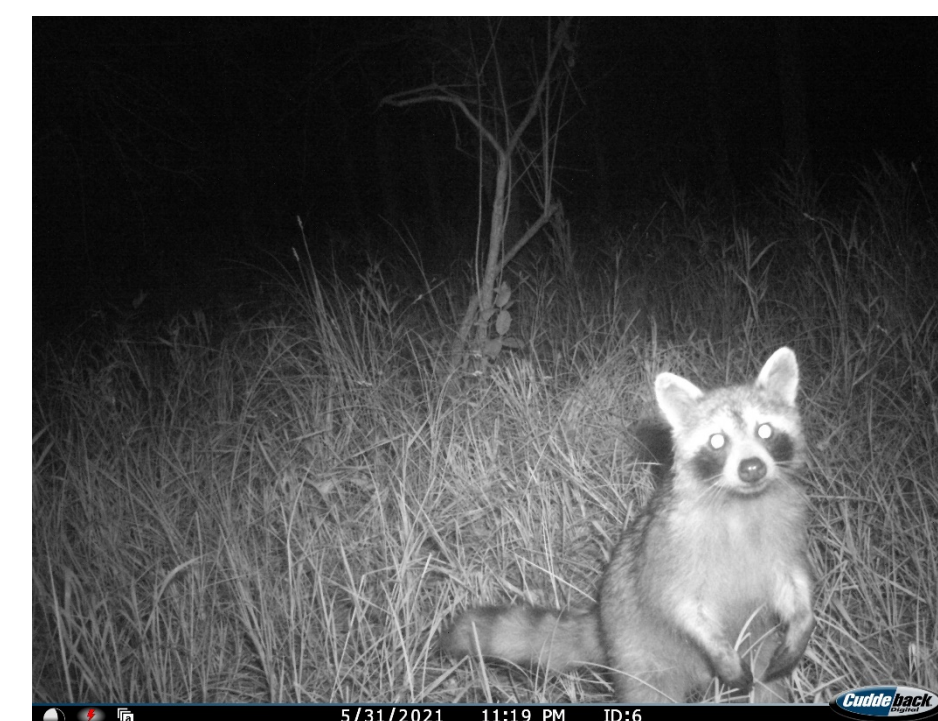


Figure 7, shows a raccoon looking at the camera in ESF 1 point 0.



Figure 8, shows a coyote walking across an open field in ESF 1 point 6.



Figure 9, shows a white tailed deer in ESF 3 point 1.



Figure 10, shows a raccoon eating in ESF 3 point 4.



Figure 11, shows a opossum looking off camera in ESF 1 point 3.

Images collected from Riparian



Figure 12, shows a raccoon walking by the camera in WATERWAY 1 point 0.



Figure 13, shows a deer walking across a field in WATERWAY 3 point 0.

Methods

- Three scent disk baited cameras were placed in Mature Forest, five were placed in Early Successional Forest, and two were placed in Riparian habitat
- We placed cameras on metal stakes and zip tied the camera to the stake.
- We changed the locations of the cameras within their respective biomes every two weeks.
- We selected our locations based on random points generated on ArcMap 10.5 within each biome.
- We then scanned all images for the presence of mesopredators.

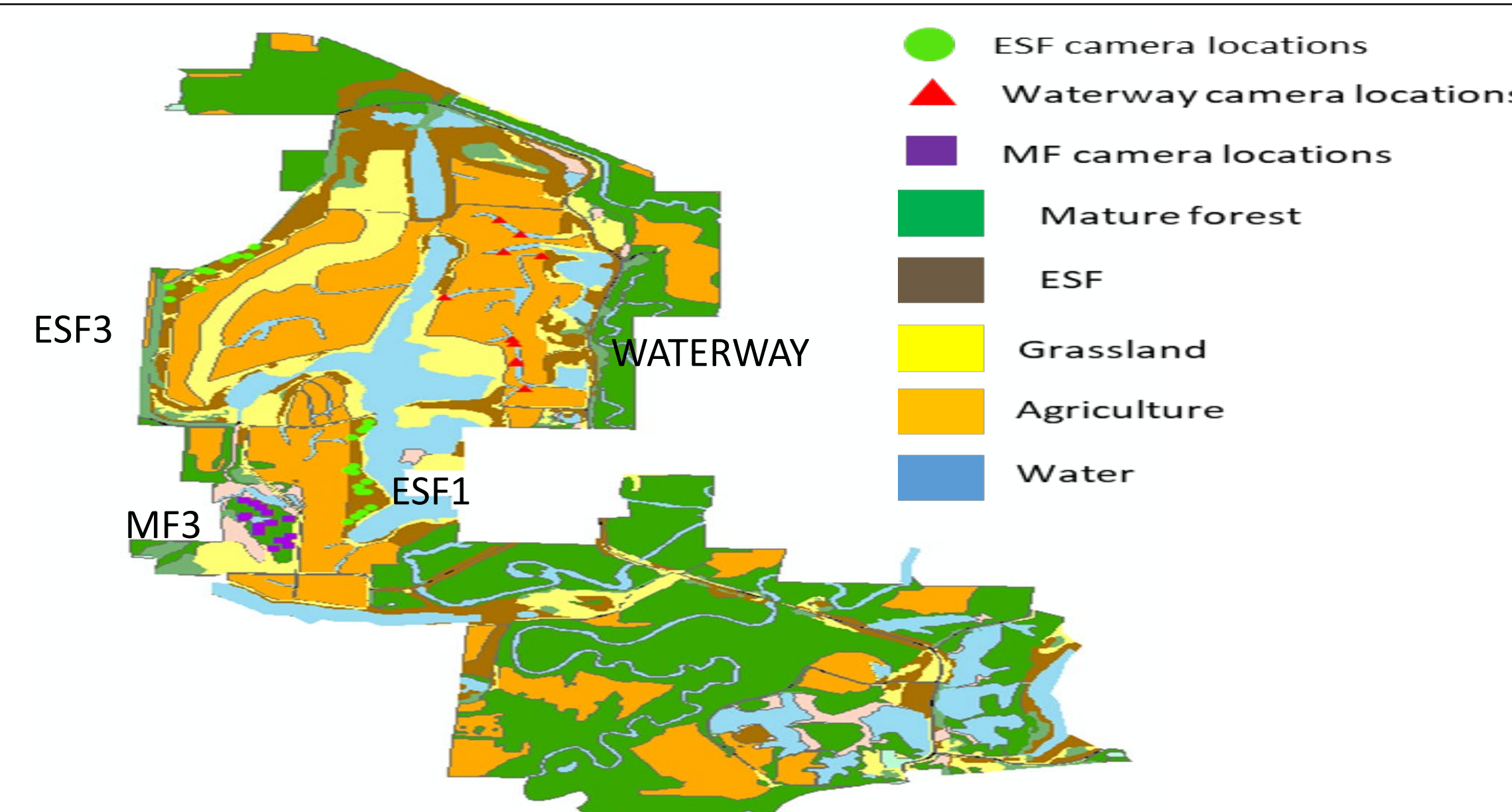
Conclusions

- We observed raccoons, opossums, coyote and bobcats in Mature Forest 3 (**Figs. 1, 2, 3, 4, 5**).
- We observed an abundance of raccoons, opossums, coyote, and deers in ESF 1 and 3 (**Figs. 6, 7, 8, 9, 10, 11**).
- We observed raccoons and an abundance of deer in WATERWAY 1 and 3 mostly during nights (**Figs. 12 and 13**).
- Mature Forest 3 had the most activity and the Waterway had the least activity.
- Mesopredators live in Mature Forest habitats and hunt in Early Successional Forest habitats based on the collected data.
- We observed **40 mesopredators** in Mature Forest 3, **7 mesopredators** in Early Successional Forest and **only 5** in Riparian.

References

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Study Area



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