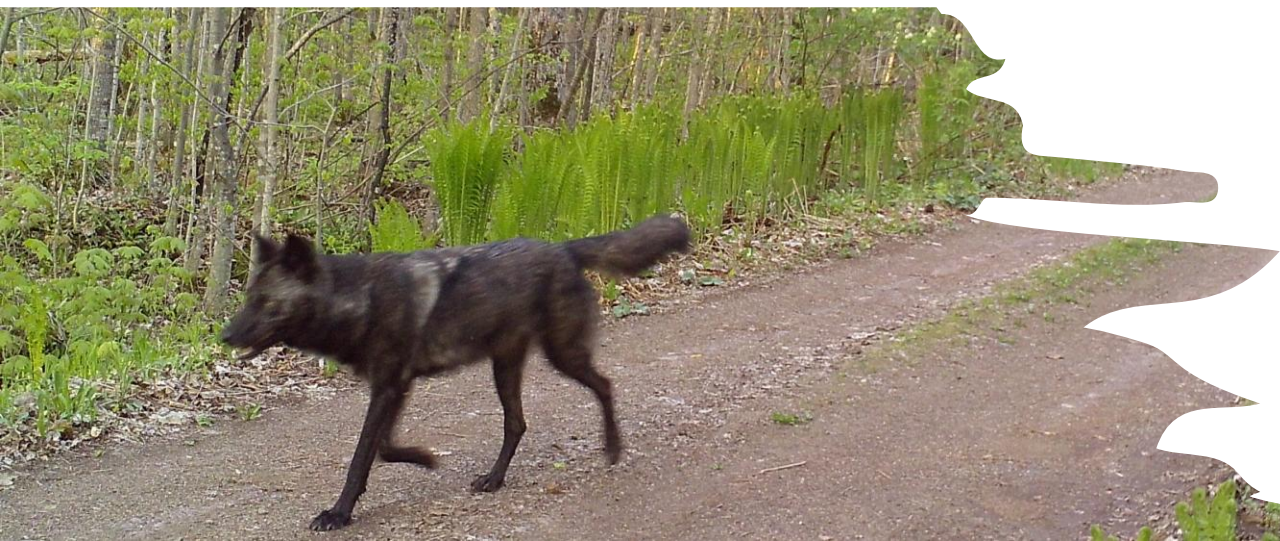




 17 C 28.55 inHg MSU1024

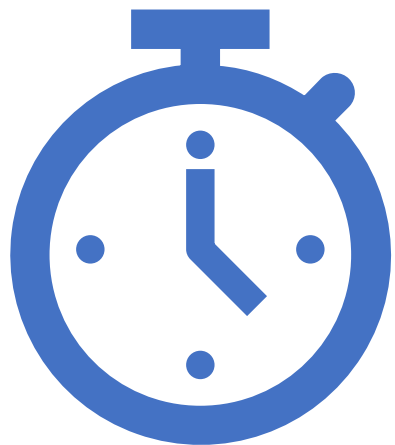


U.P. Wildlife Research Updates

Tyler Petroelje, PhD, Northern Michigan Wildlife Research Specialist,
Michigan Department of Natural Resources, Wildlife Division

Developing a cost-effective technique to estimate wolf abundance in Michigan

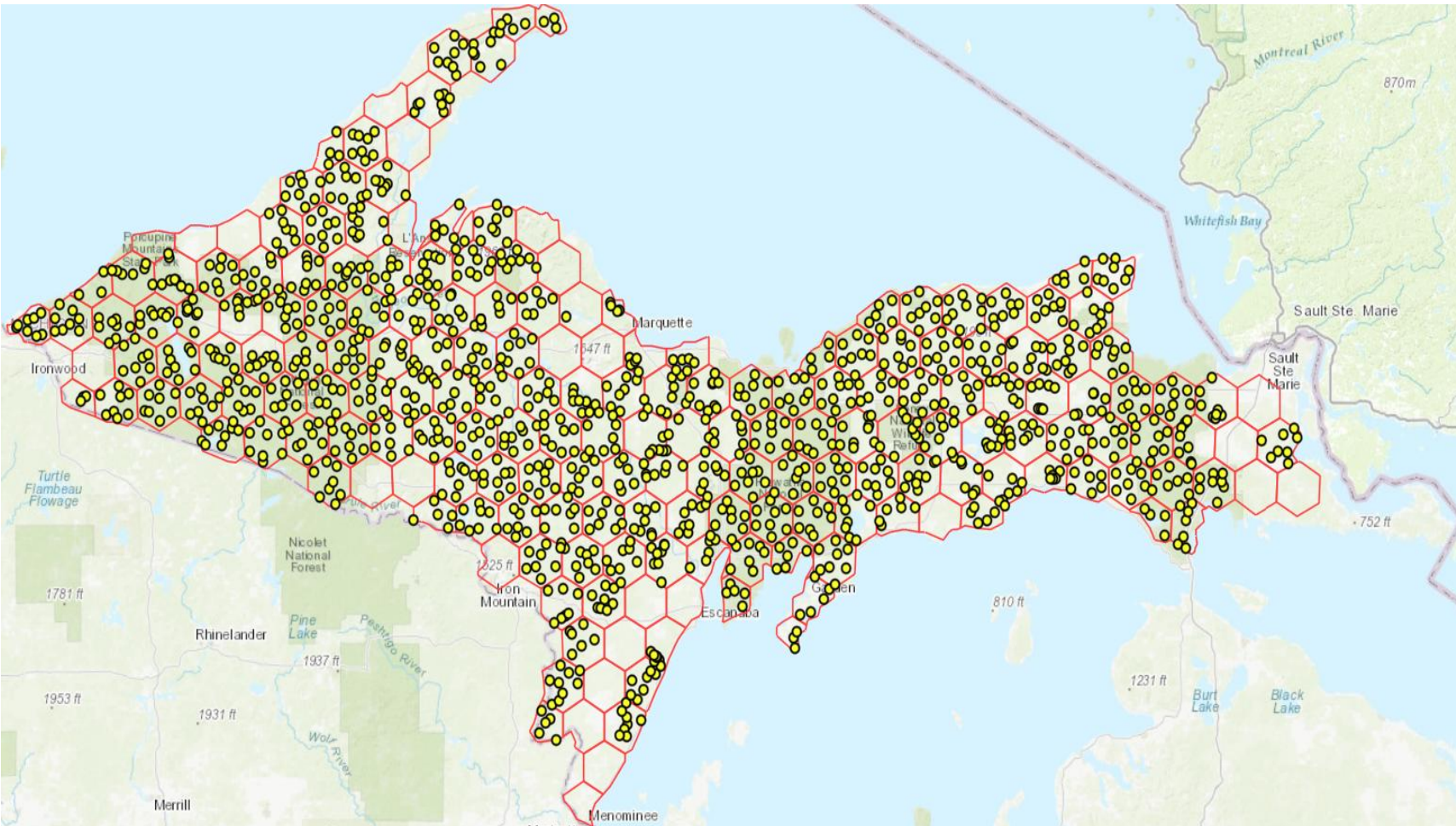




Background/Need for Wolf Abundance Project

- Current minimum count requires significant effort to provide index of abundance
 - As wolf density has increased more time is needed to discern adjacent packs
 - Does not account for imperfect detection
 - Does not provide an abundance estimate with confidence intervals
- Proposed wolf abundance project to research alternatives to estimate wolf abundance (2022-2027)
 1. Increase precision, provide uncertainty
 2. Decrease cost
 3. Compare to minimum count survey

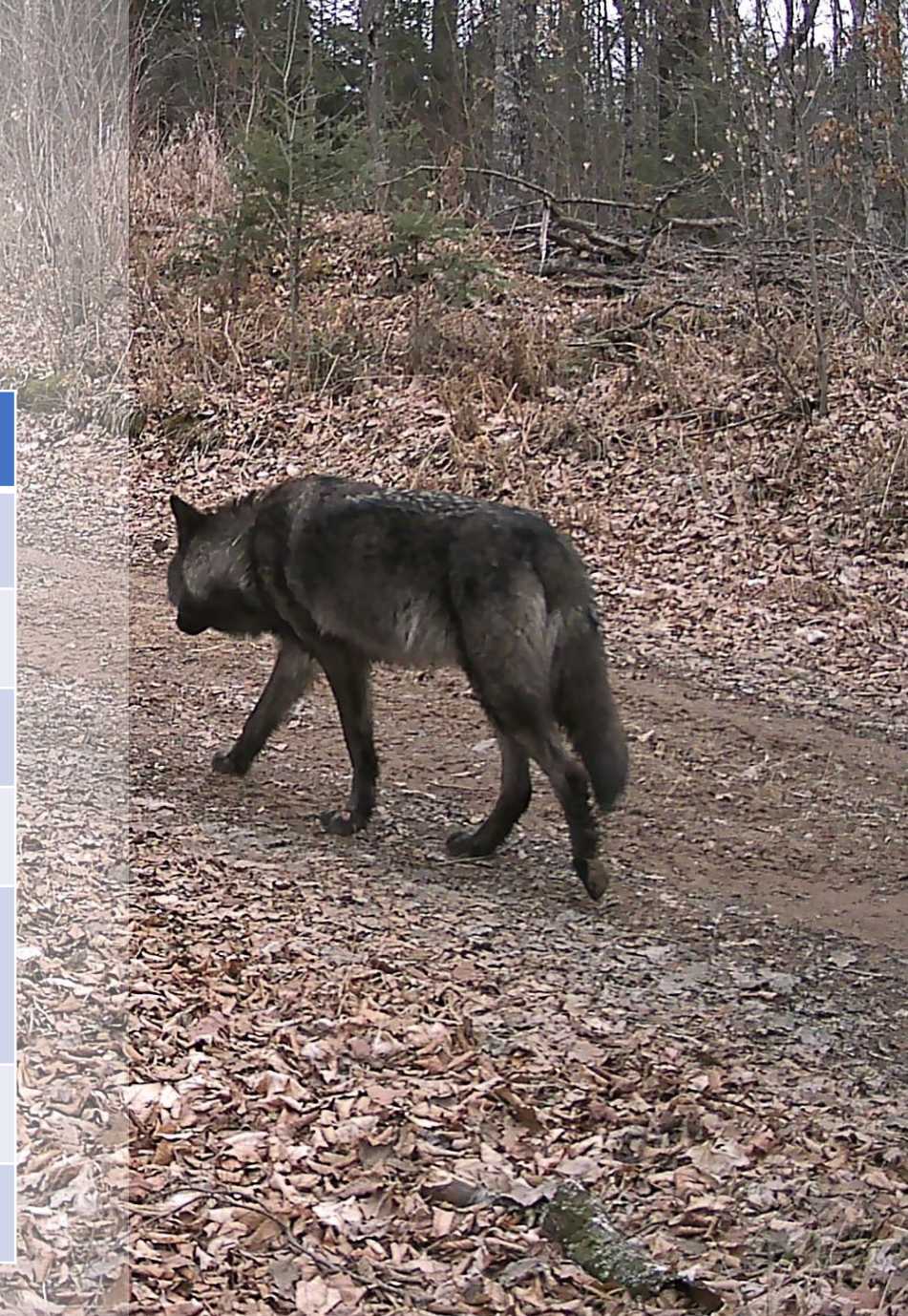
Peninsula-wide deployments



- July-October 2023 to 2024
 - 159 cells with cameras
 - 1,230 cameras deployed
- July-October 2024 to 2025
 - 177 cells with cameras
 - 1,306 cameras deployed
- Report coming out June 2026 from Michigan State University comparing first 2 years of camera survey to the minimum track count

Camera status

Camera Status	2025 Check	2024 Check
Functioning	78%	75%
Batteries Depleted	11%	7%
Misdirected	2%	3%
Stolen	4%	5%
Intentionally Misdirected	5%	5%
Malfunction	1%	4%
Damaged	1%	1%



Detections of gray wolves and white-tailed deer

21,094 wolf detections (104,995 images)
109,935 deer detections (990,629 images)

July 2023 – July 2024



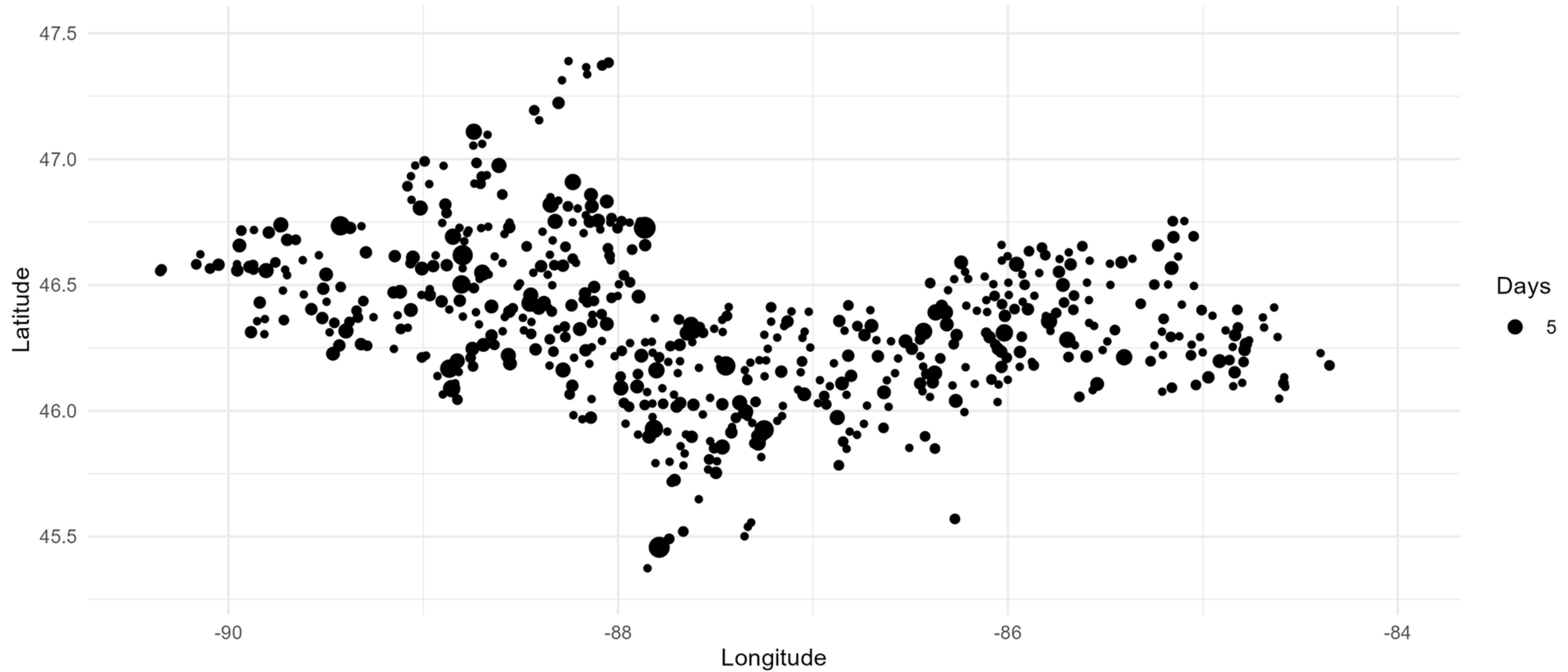
July 2024 – July 2025

15,177 wolf detections (86,537 images)
114,334 deer detections (972,105 images)



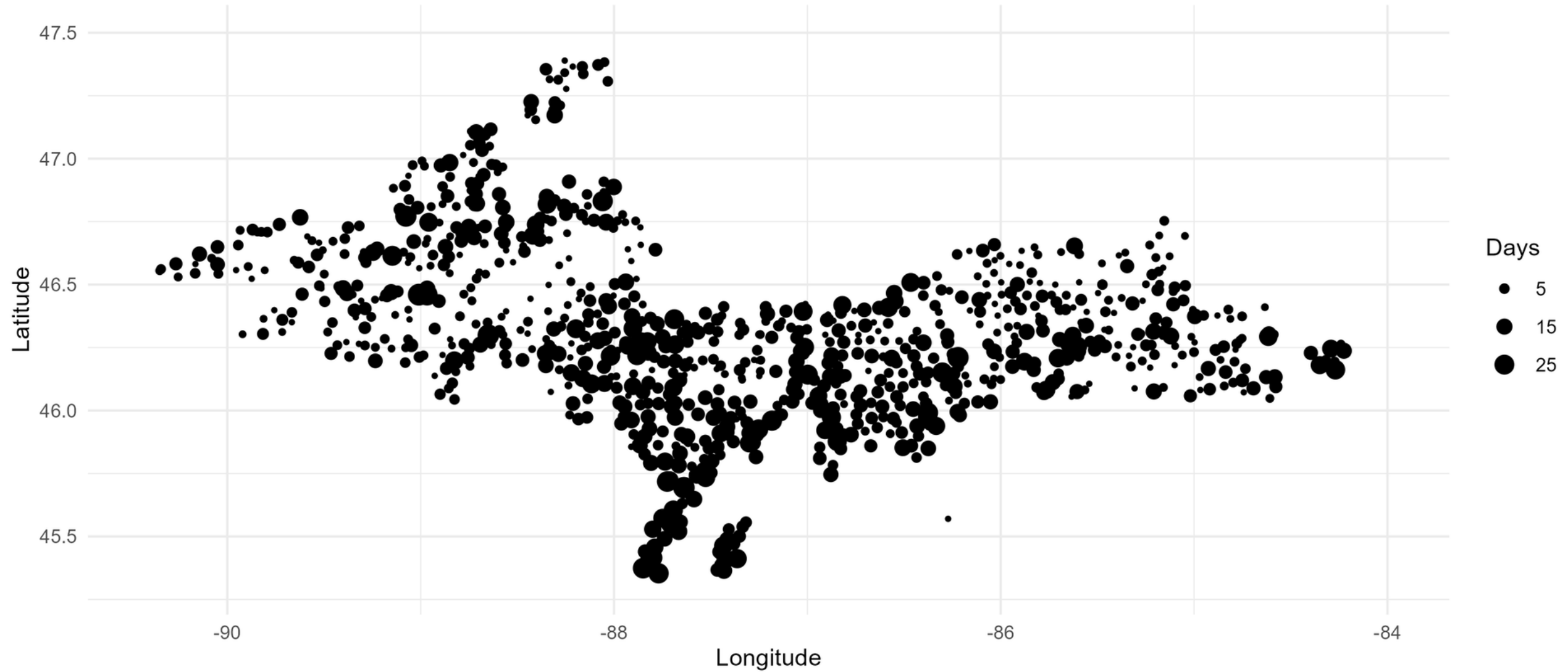
Days with detections of Grey Wolf at camera sites: November (50% of total sites)

Preliminary data from Wildlife Insights AI predictions, not human verified



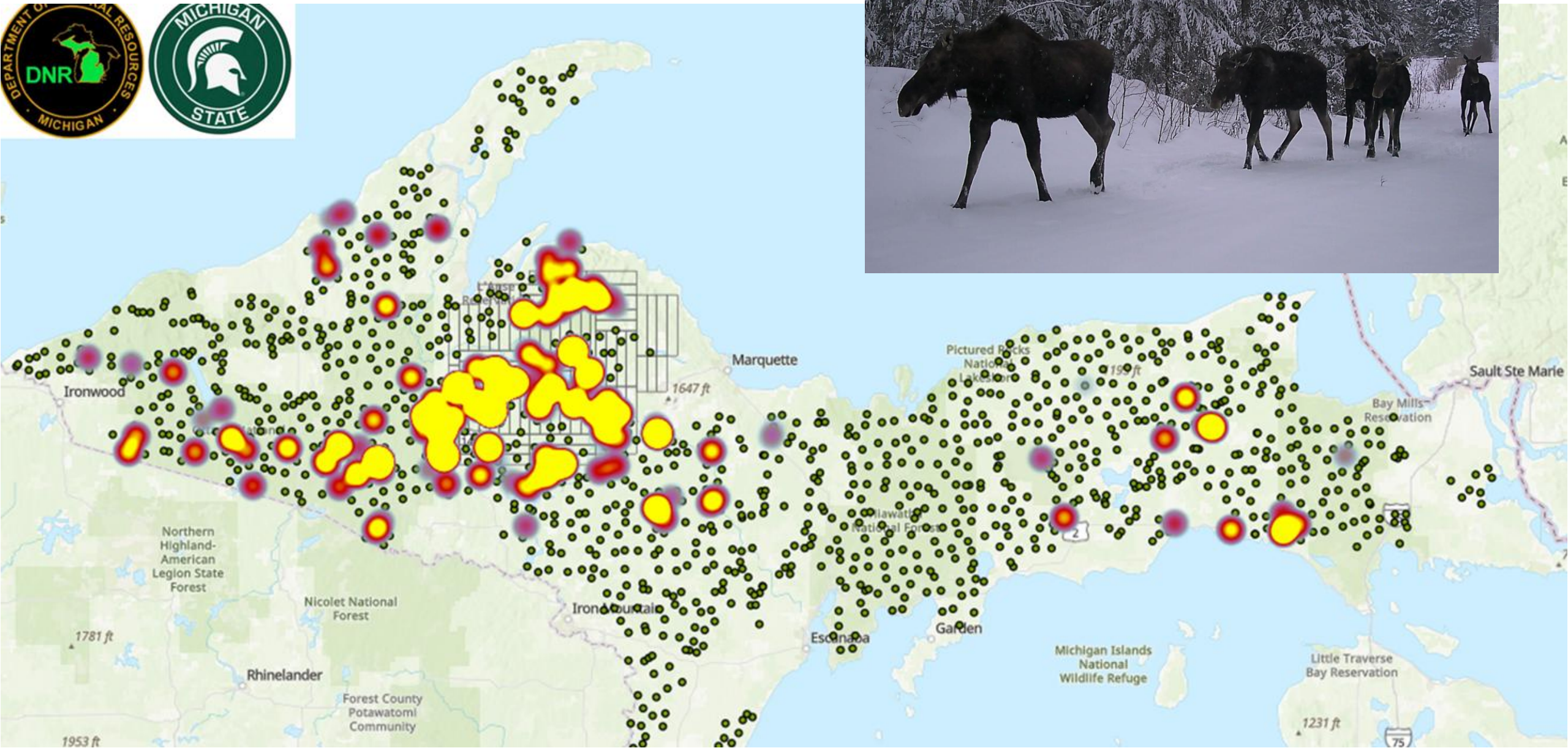
Days with detections of White-tailed Deer at camera sites: November (80% of total sites)

Preliminary data from Wildlife Insights AI predictions, not human verified



Benefits of monitoring other wildlife





Next Steps for the Wolf Abundance Project



Michigan State University report to DNR presented to leadership; press release to follow

Wolf abundance estimate comparing 2023-2025 camera survey data to 2024 wolf track survey



Camera effort assessment for monitoring moving forward

Maintain precision, how much can we reduce effort?



Camera revisits begin in July for the 2025-2026 season to compare to 2026 track survey



One more year of sampling with the full grid design (2026-2027)

Factors limiting moose population growth in the western Upper Peninsula of Michigan



Collaborative Research Objectives



1. Moose capture and GPS collaring
 - Capture adult (bull, cow) and calf moose in January/February 2025, 2026, 2027, 2028
2. Estimate moose vital rates
 - Survival and cause-specific mortality
 - Pregnancy rates and calf production of adult female moose
 - Emigration and dispersal rates
3. Calf survival monitoring
 - Monthly drone flights
 - Detection dogs at birth and calf mortality sites



MOOSE CAPTURE & COLLARING

February 2025

- 5 Adult Bulls
- 5 Short-yearlings
- 10 Adult Cows

February 2026

- 10 Adult Bulls
- 11 Short-yearlings
- 20 Adult Cows

Current Status of Collared Moose

- As of 15 June 2026:
 - 52 active collars “on-air”
- 2 short-yearlings recollared with adult collars
- 1 collar drop (short-yearling collars drop-off after 14-months if not recaptured)

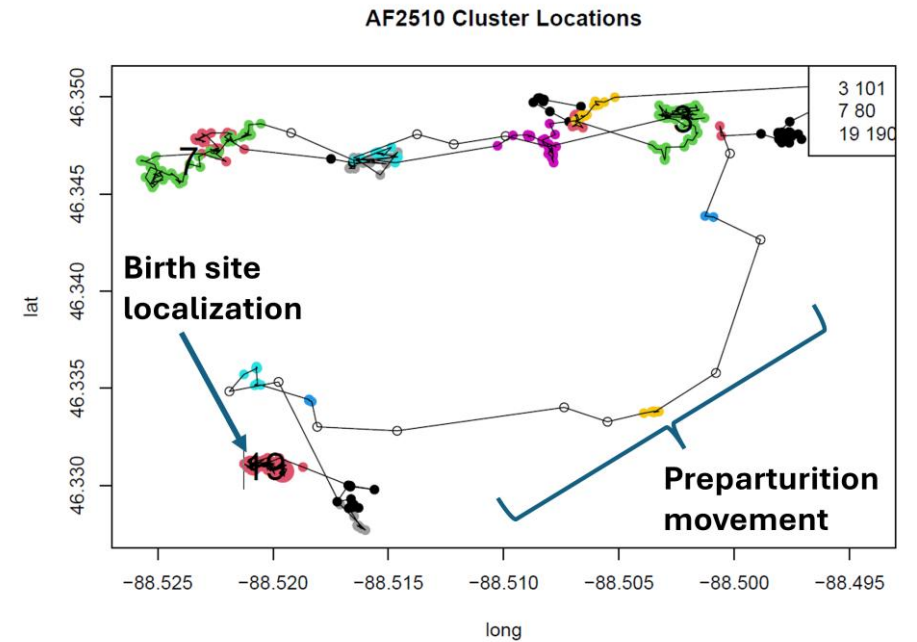
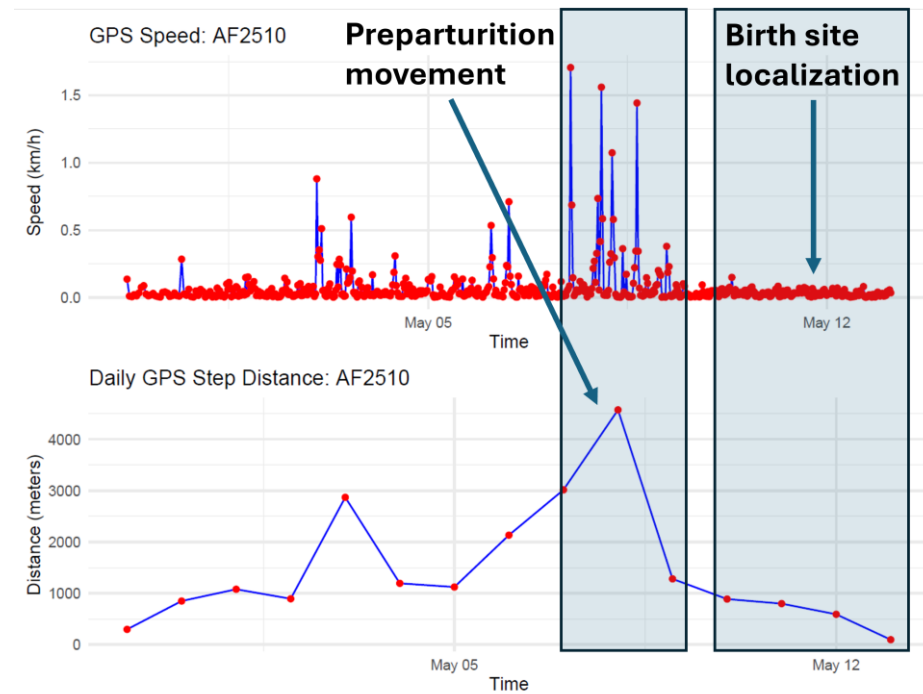
- Mortality 2025
 - 1 vehicle collision (adult cow w/ twins)
 - 1 unknown trauma (short-yearling female)
 - 2 wolf predations (1 short-yearling bull, 1 adult cow)
- Mortality 2026
 - 2 wolf predations (1 two-year old bull, 1 short-yearling bull)

- 93% adult survival (first year)
- 60% yearling survival (first year)



Reproduction

- 2025 pregnancy rate
 - Of 10 collared cows – 80% pregnancy rate
- 2026 pregnancy rate
 - Of 25 with results available – 72% pregnancy rate



Reproduction

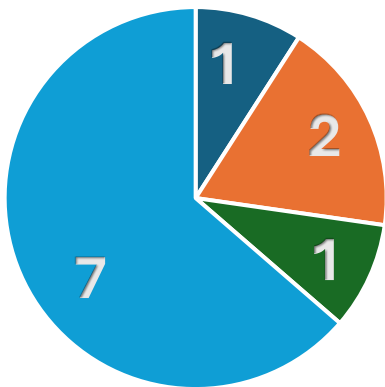
- 2025
 - 11 calves born to 8 cows
- 2026 (in progress)
 - 23 calves born to 17 cows
 - 1 stillbirth to a cow
- Twinning Rate
 - 2025-2026 (pending remaining births)
 - 37% average twinning rate (n = 22; 38-36%)
 - 1985-1989
 - 37% average twinning rate (n = 76; 24-69%)
 - 1999-2001
 - 20% average twinning rate (n = 56; 6-36%)



Calf Survival

- Monthly drone flights for newborn calves
 - 7 of 11 newborn calves alive after first year (11-months)

Calves



■ Bear predation ■ Lost adult female
■ Unknown ■ Alive



Next steps for Moose Survival Study

- Continue monitoring adult females for birth sites
- Monthly survival flights for calves of the year
- Student starting this fall to focus on habitat selection particularly around birth sites and conditions that increase calf survival
- Begin first year analysis of habitat selection to inform desired conditions and prescriptions for forest management



Quarterly Research Updates

<https://www.michigan.gov/dnr/education/michigan-species/mammals/moose/research-updates>





Thank you



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09/20/2024

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