

Preliminary Results: Deer Antler Point Restriction (APR) Research

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May 11, 2023



NATURAL RESOURCES COMMISSION RESOLUTION

Resolution #2 of 2018:

1. The NRC in cooperation with the Department shall appropriately establish a CWD assessment area, within the five county CWD core area, for experimentally evaluating the effectiveness of regulations, such as antler point restrictions, on the prevalence and spread of CWD, increasing antlerless harvest, and decreasing deer populations, to be in place for the 2019 hunting season.
2. Utilize Montcalm County, or any other appropriate county within the CWD management zone, as an experimental area for purposes of achieving the objectives in paragraph one.
3. Work with stakeholders to establish objectives of research and studies to be conducted in this area.



Research Project Development

- ❖ Funded by Michigan DNR and MSU Joint Wildlife Disease Initiative
- ❖ DNR and Michigan State University researchers designed project.
- ❖ Evaluate change in relative deer abundance and sex/age composition after implementation of APR.
- ❖ This study cannot estimate change in CWD prevalence relative to APR.



Harvest Hypotheses

❖ APRs will:

- Decrease Yearling buck harvest (assumed bucks with <4 pts on 1 antler)
- Increase Adult buck harvest (assumed bucks with >4 pts on 1 antler)
- Increase antlerless deer harvest

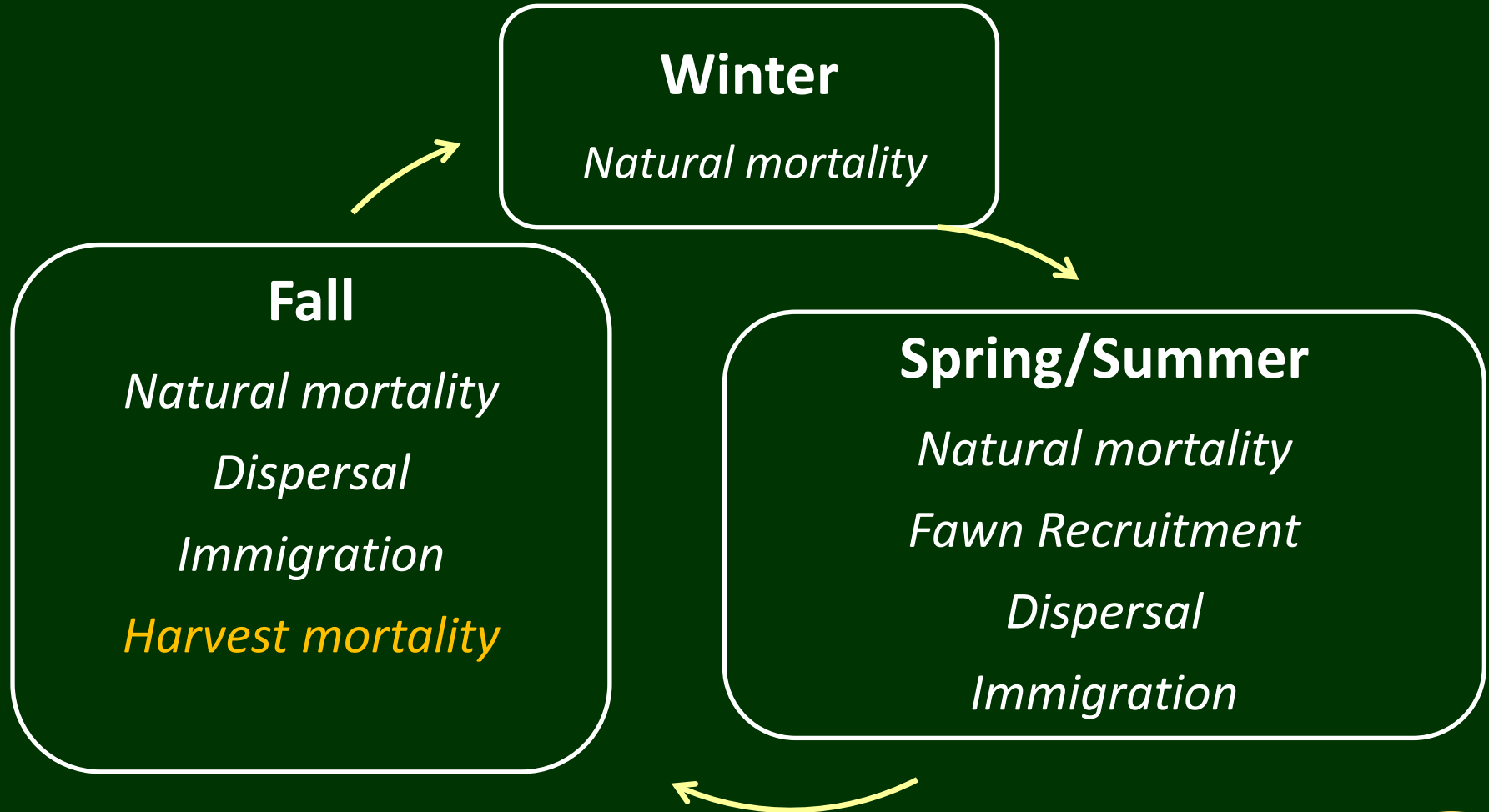


Abundance Hypotheses

- ❖ If APR harvest hypotheses are true, population level impacts could be:
 - Decrease overall deer abundance
 - Increase adult buck abundance
 - Decrease yearling buck abundance

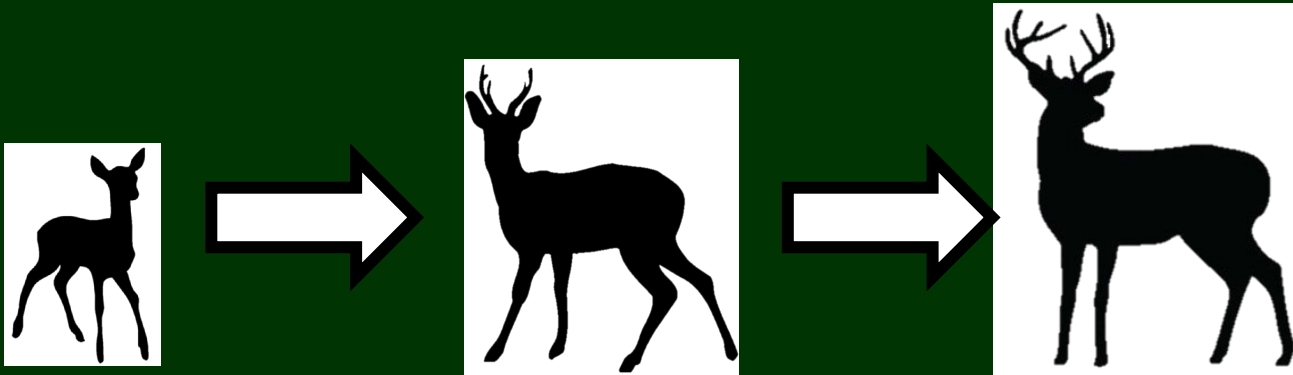


Annual Deer Life-cycle



Timeframe to Evaluate APRs

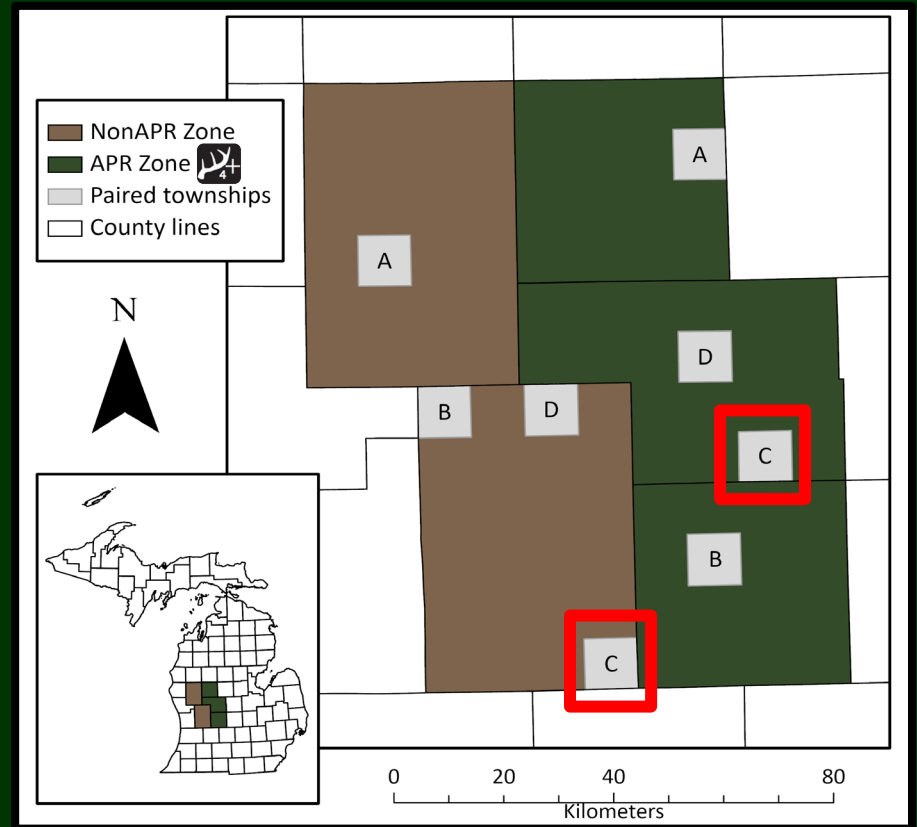
Need 3 years of data post-regulation change



2019 Pre-APR (control); 2020 – 2022 Post-APR (treatment)

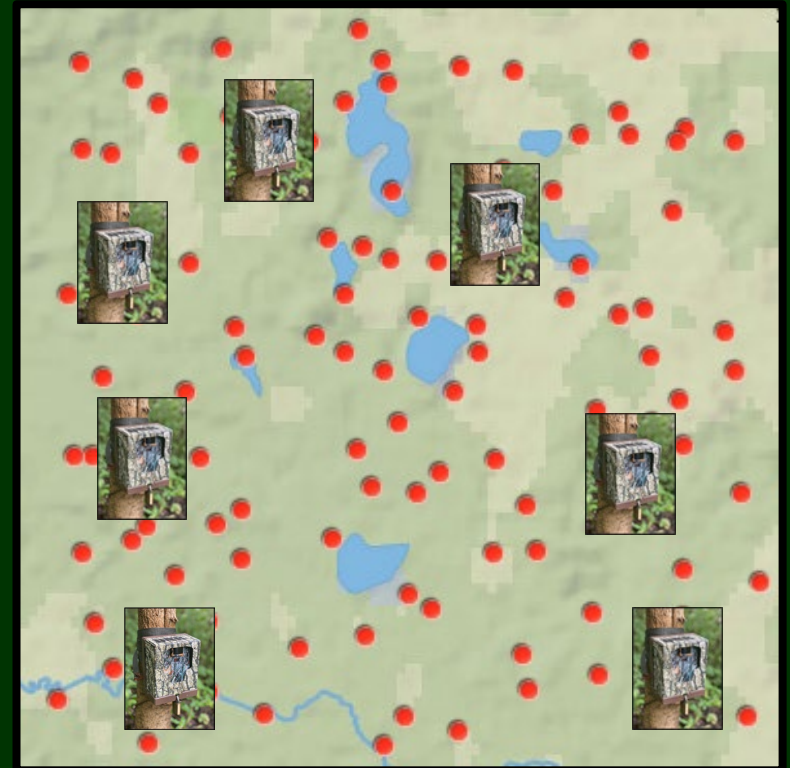
Study Design

- ❖ Paired comparison
- ❖ Pre-post APR study
- ❖ APR Zone (treatment)
- ❖ NonAPR Zone (control)
- ❖ Township-level sampling
- ❖ Township pairing criteria
 - Geographic
 - Landcover
 - Public hunting land
- ❖ 68% of surveyed hunters from the 5-county area supported the study design.



Camera Site Selection

- ❖ Random, computer generated
 - Minimize bias
- ❖ Public & private land
 - All landowners signed an agreement with MSU



Trail Cameras

- ❖ 144 total cameras
 - 18/township
- ❖ Unbaited sites
- ❖ 3-shot burst, 5-sec delay
- ❖ 9-week surveys
 - July 15th – Sept 15th
 - Population closure
 - 2019 – 2022
 - Due to restraints related to COVID, only half of paired TWPs were surveyed in 2020.



Data Processing

- ❖ A.I. removes blank images
- ❖ Employees review deer photos
 - Count # individuals
 - Determine sex and age class
- ❖ Dual observers
 - Expert referee decided when dual observers disagreed.



Camera Survey Effort

This is a HUGE effort!

- 160 private landowners
- Collected 2,600,000 photos
- Over 30 employees
- Over 20,000 person hours

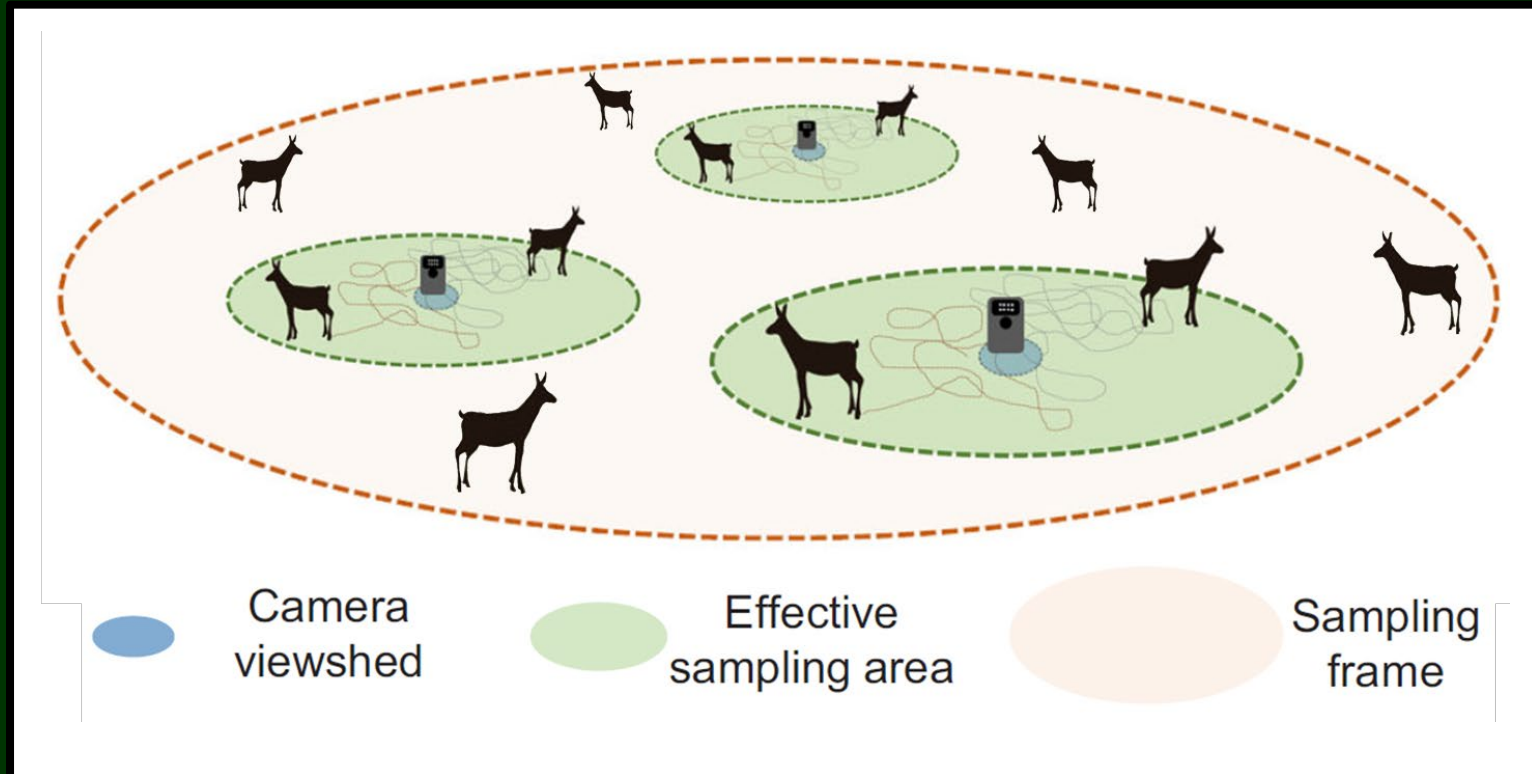


Deer Photos

Deer sex/age class	Number of photos
Does	510,486
Fawns	346,600
Yearling (sub-legal) bucks	132,825
Adult (legal) bucks	83,407
Total deer	1,073,318



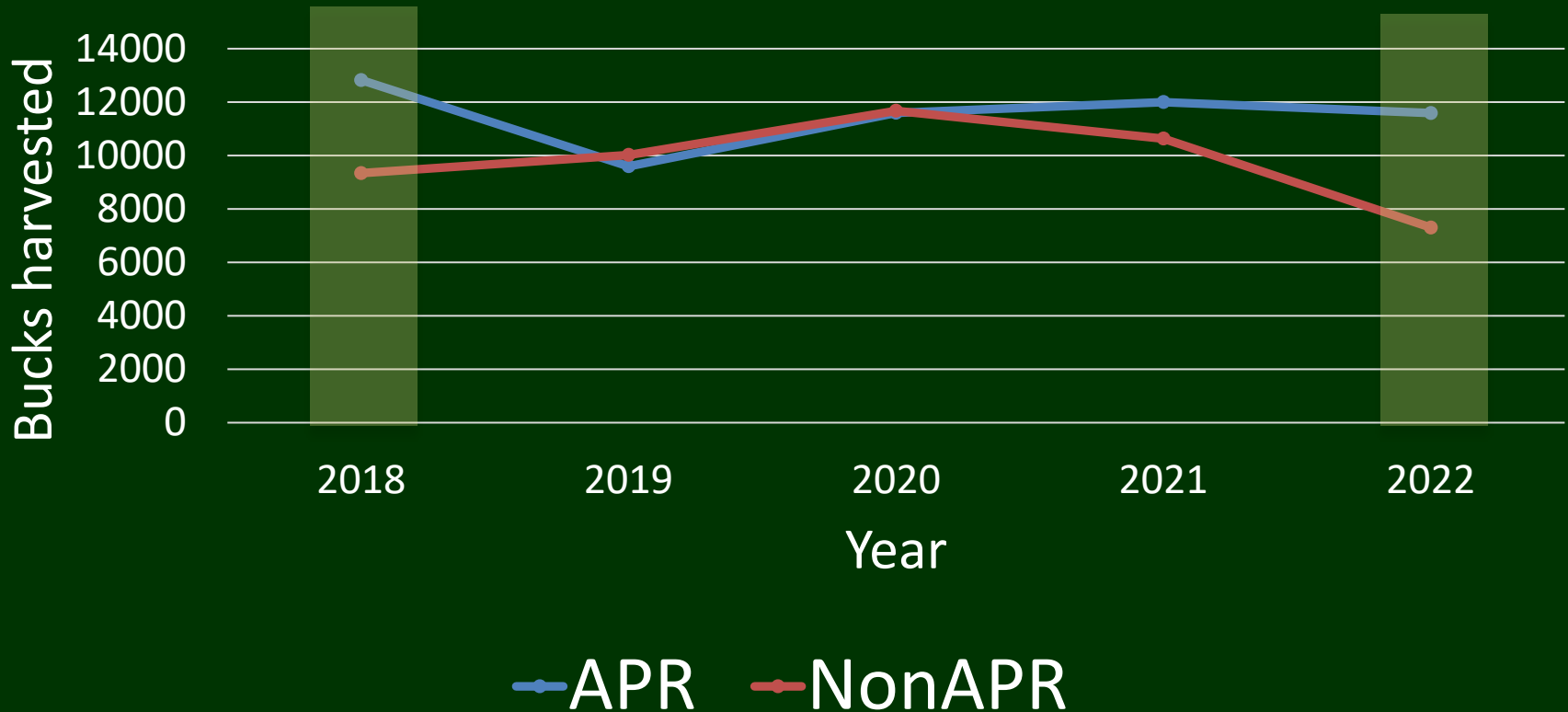
Relative Deer Abundance



PRELIMINARY HARVEST RESULTS



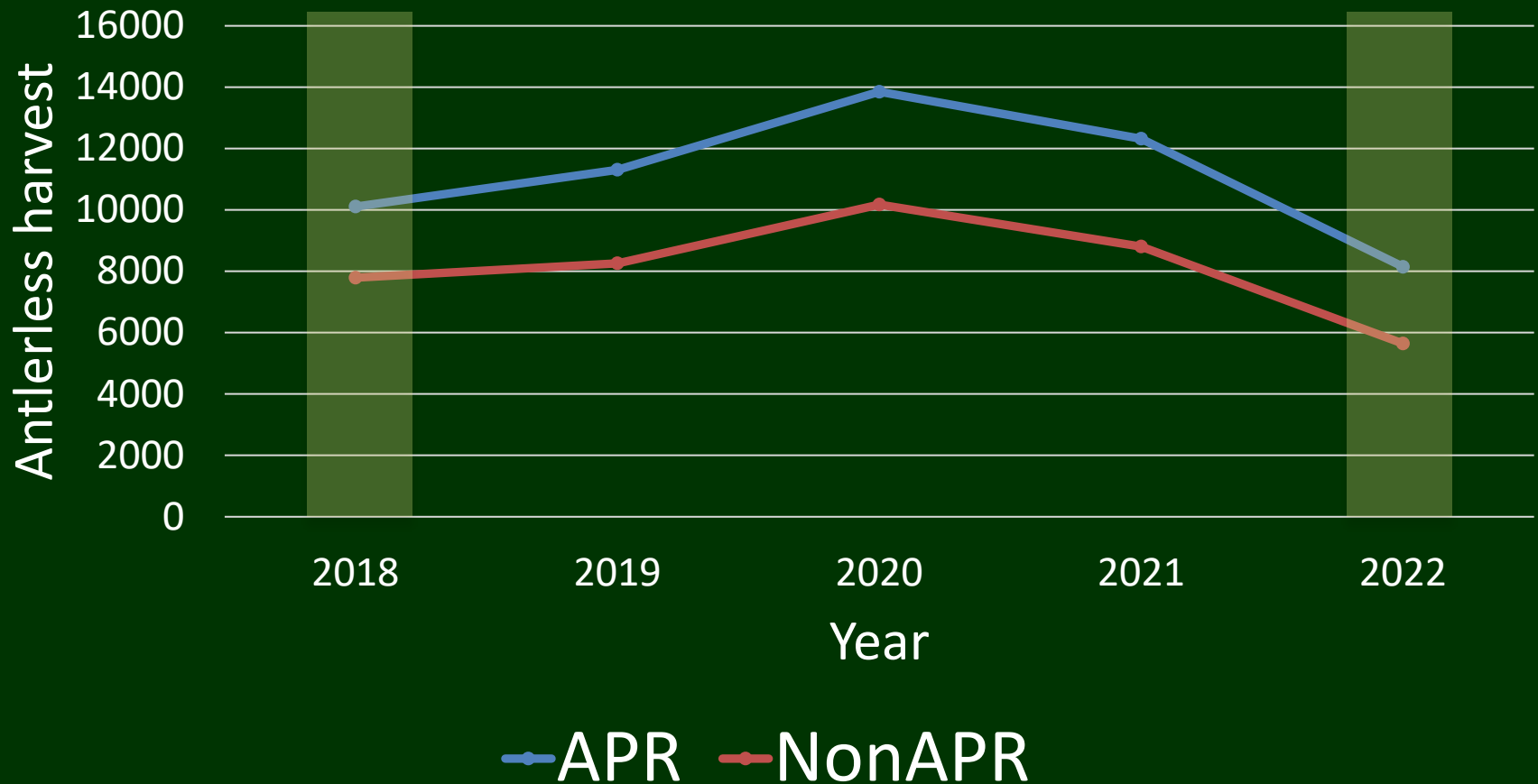
Antlered Deer Harvest



*APRs not in place in 2018 and 2022



Antlerless Deer Harvest



*APRs not in place in 2018 and 2022



PRELIMINARY ABUNDANCE RESULTS



Interpretation

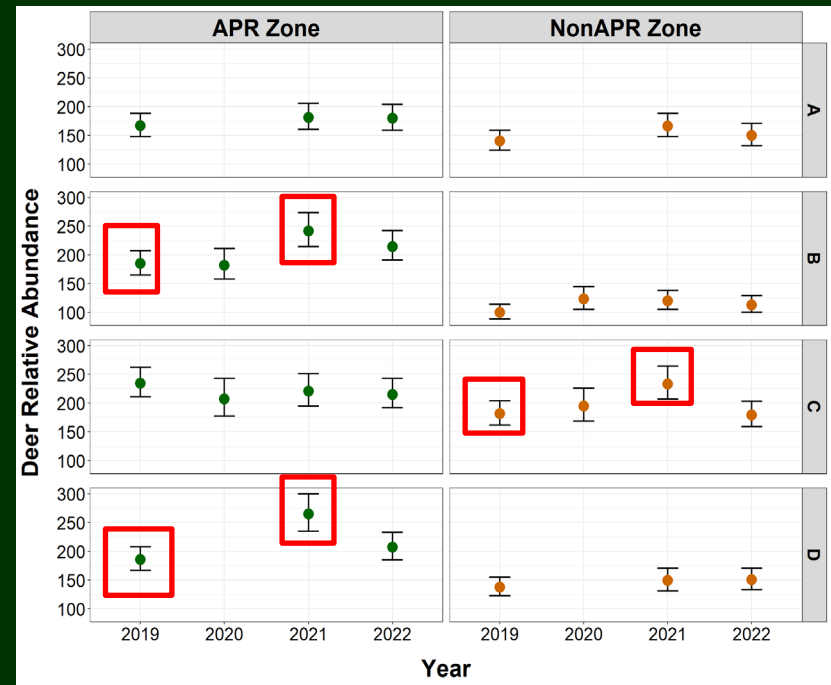
❖ Non-overlapping CIs significant

- Comparison to baseline (2019)

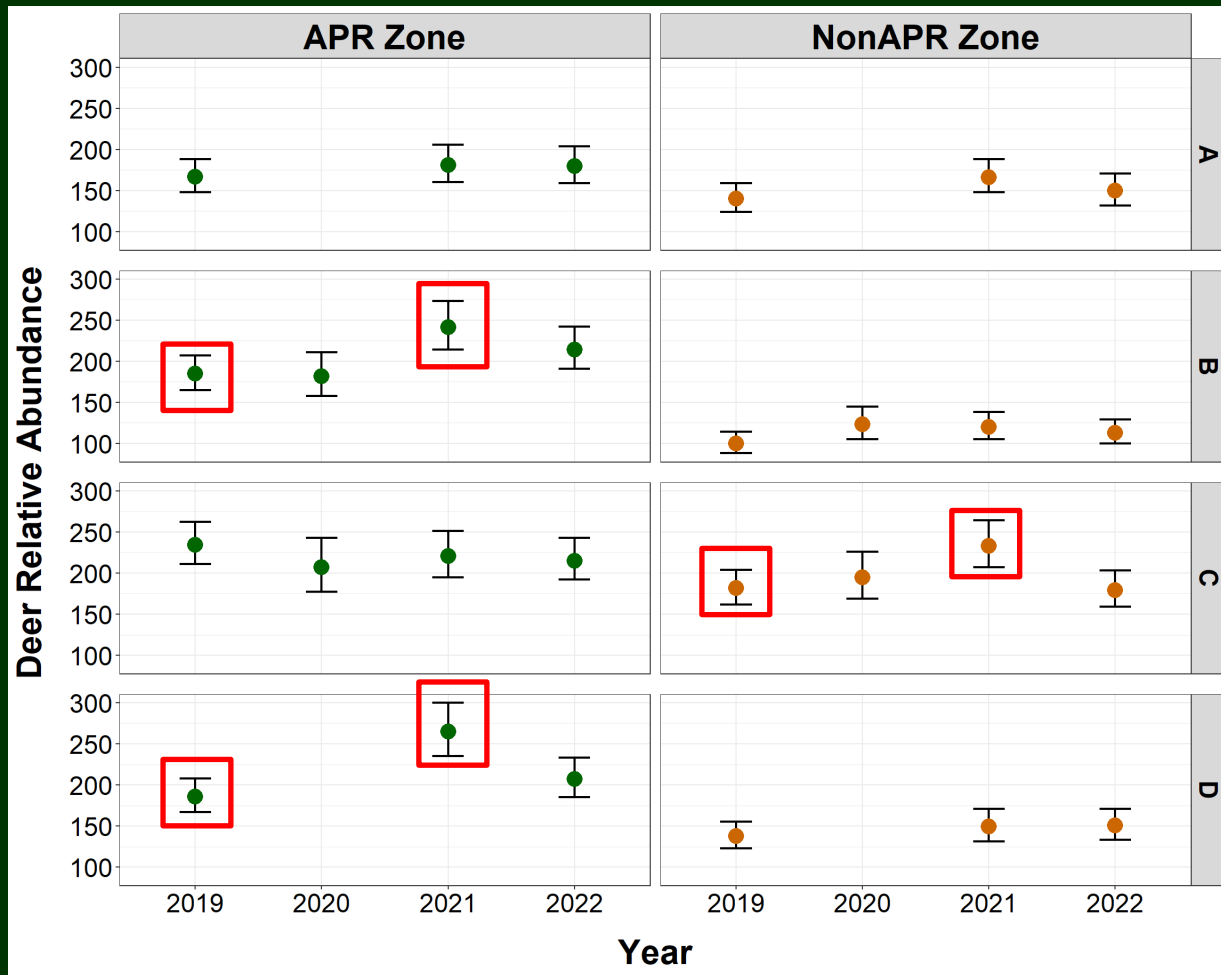
❖ Paired TWP (APR vs NonAPR)

- Significant change in one but not the other implies that different harvest regulation may influence abundance.

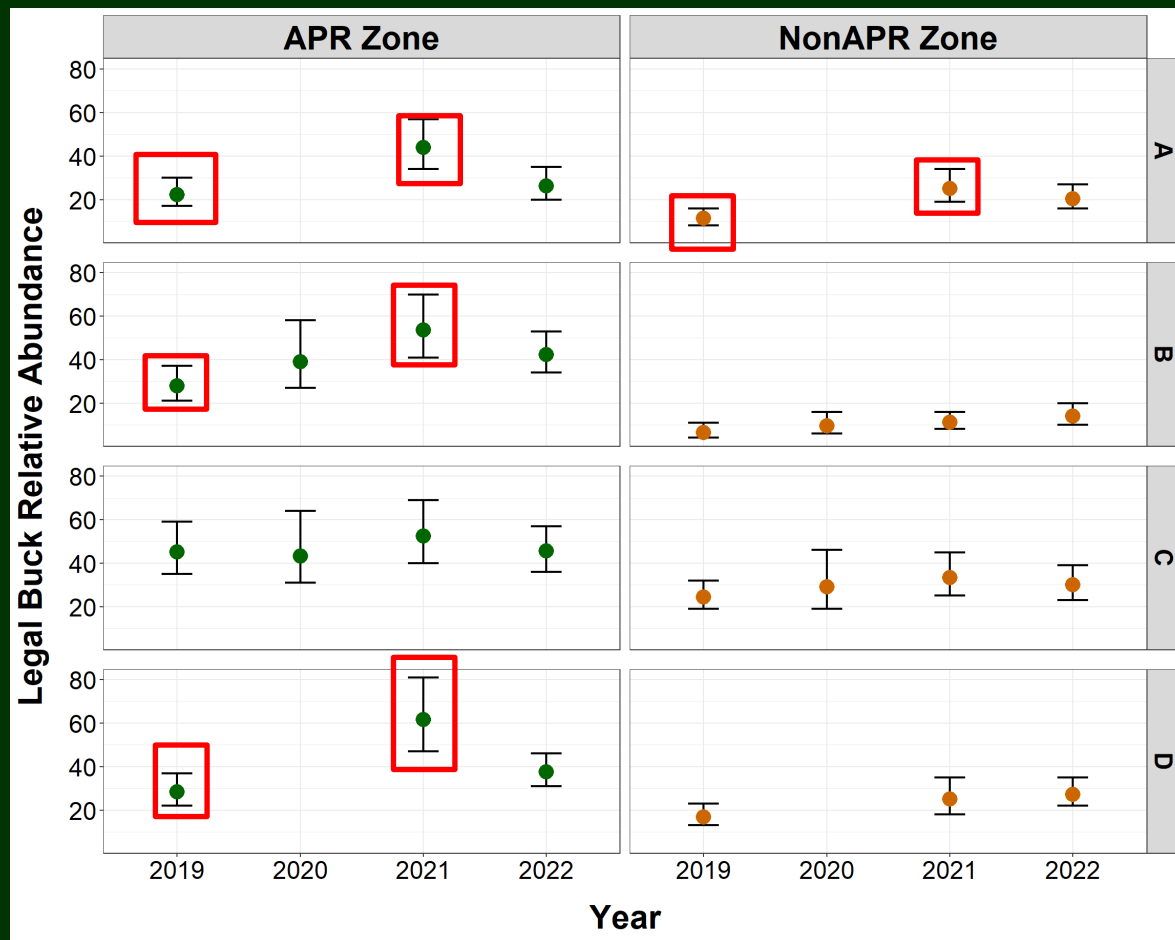
❖ Number significant APR and NonAPR TWPs.



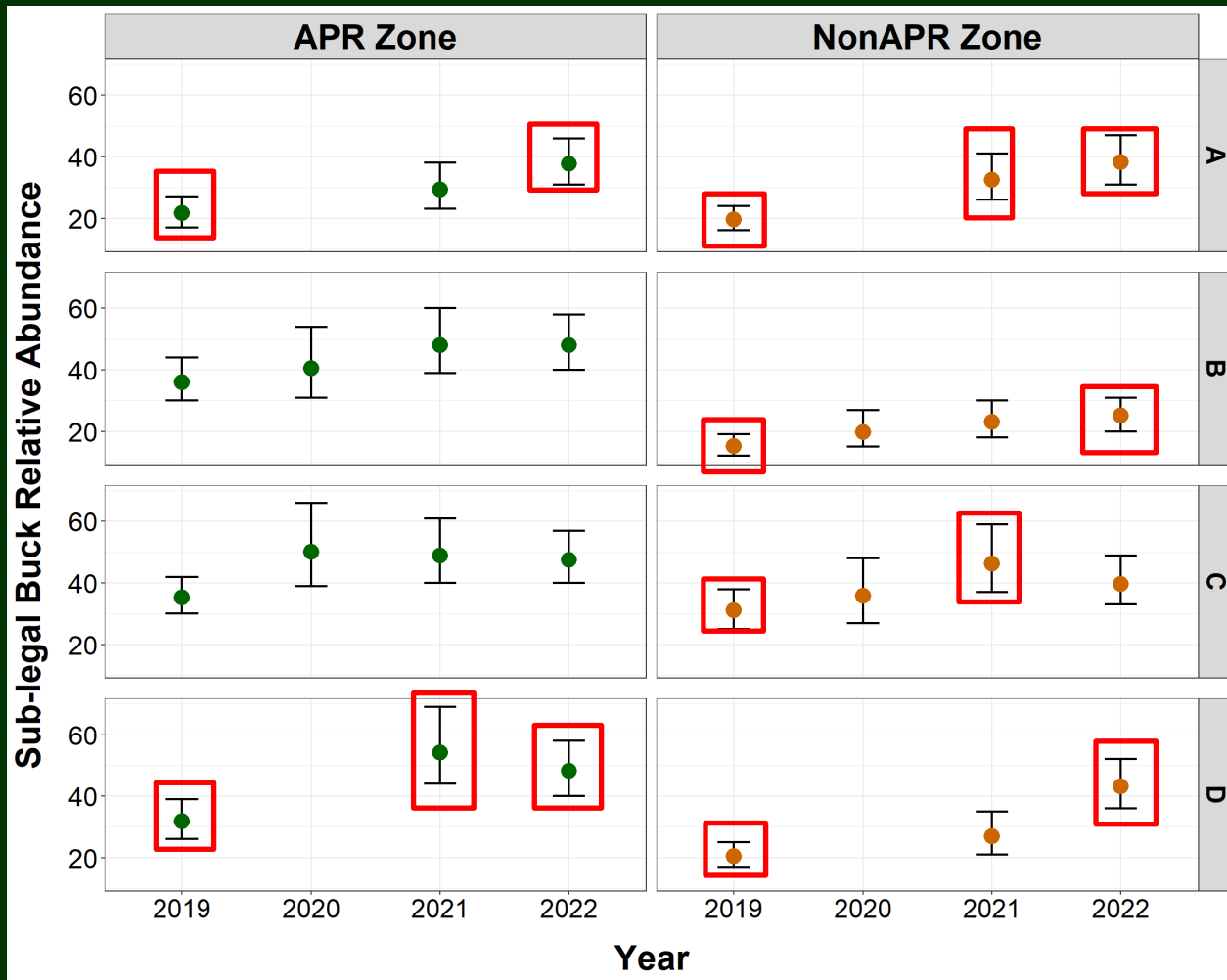
Overall Deer Abundance



Adult Buck Abundance



Yearling Buck Abundance



Preliminary Results Summary

- ~~Decrease overall deer abundance?~~
 - Deer relative abundance **increased** in 2021 in 2 APR and 1 NonAPR TWP
- Increase adult buck abundance? ✓
 - Adult buck relative abundance increased in 2021 in 3 APR and 1 NonAPR TWP
- ~~Decrease in yearling buck abundance?~~
 - Yearling buck relative abundance **increased** in 2021 & 2022 in 2 APR and all 4 NonAPR TWP



Questions?

