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Preliminary Analysis of Landscape Associations for Virginia Opossum Roadkills

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Preliminary Analysis of Landscape Associations for Virginia Opossum Roadkills

Lucy Beck
Dr. Al Mead

Background

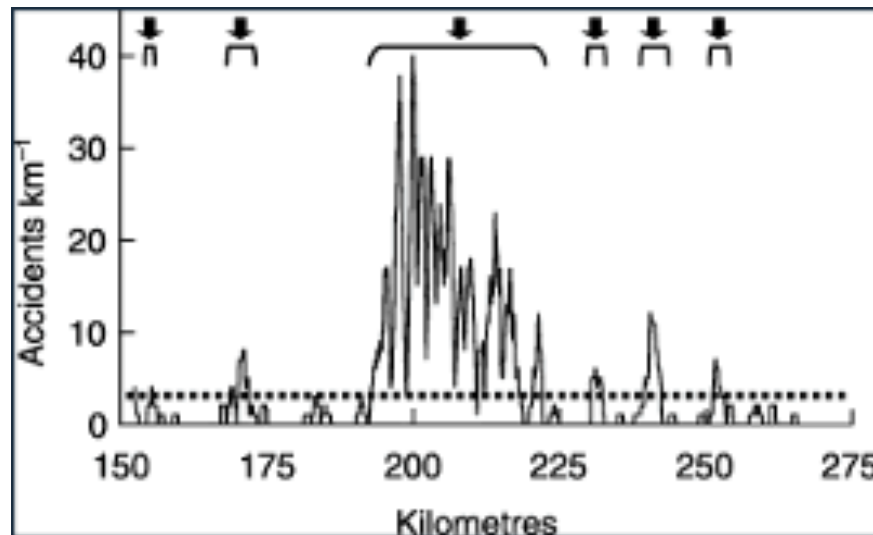
- Spatiotemporal analysis of vertebrate roadkills on SR 212
- 10 years of data (January 2012- December 2021)
- 2,263 vertebrate roadkills
- 620 Virginia opossum roadkills —————> 837 Virginia opossum roadkills
- ~35% mammal roadkills undetected during driving survey (Kori et al. 2019)



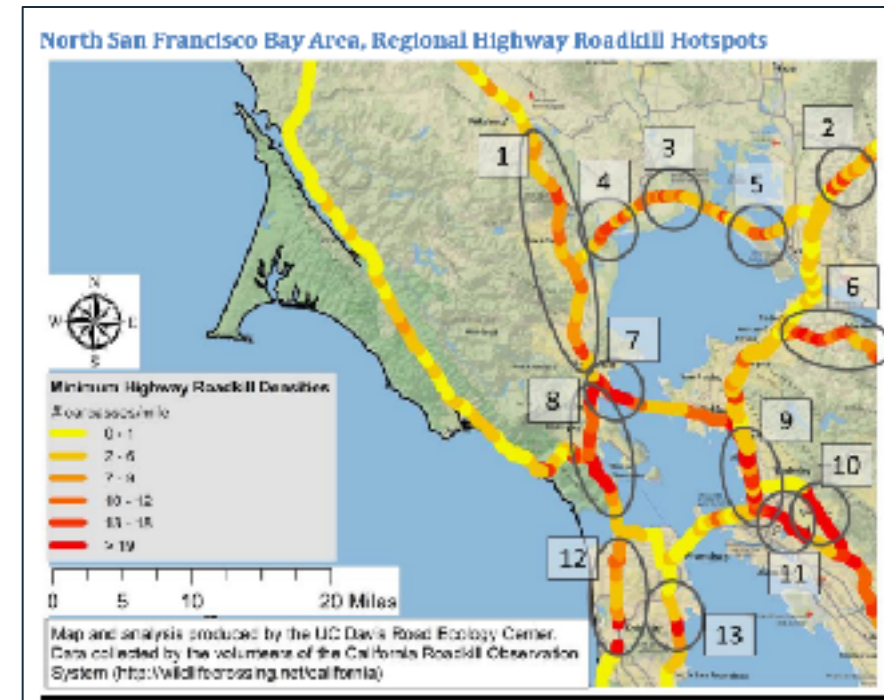
(Smith 2018)

Purpose

- Identify approximate hotspots of Virginia opossum roadkills
- Identify major landscape features associated with Virginia opossum roadkills



(Malo 2004)

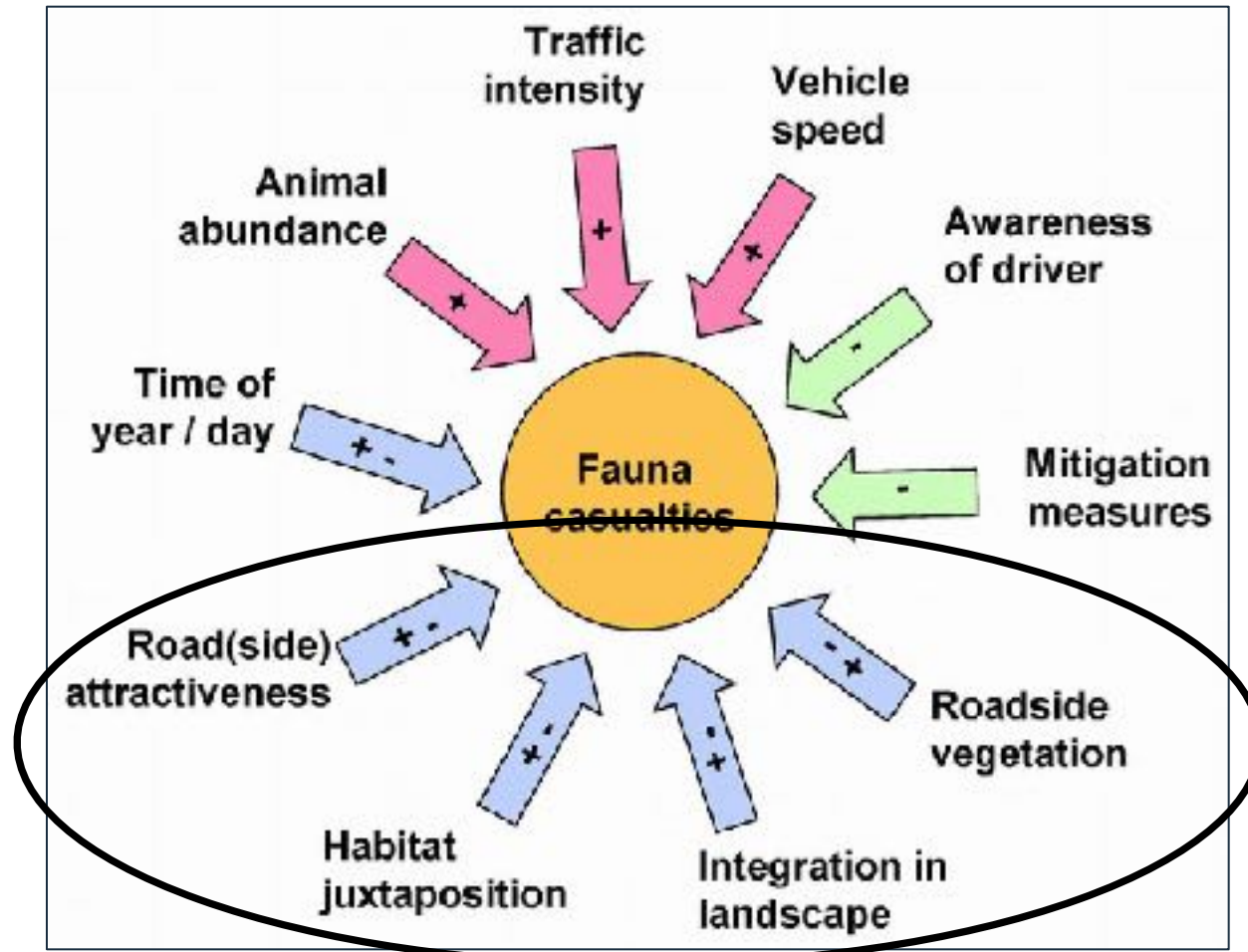


(Shilling 2015)

Importance

- Local landscape associations aids in understanding factors that affect regional species' range (Kanda et al. 2006)
- Identifying landscape features that concentrate wildlife crossings is the first step to identify mitigation strategies (Forman 2000)
- ~365 million vertebrates per year (Forman et al. 2003)
- ~5.4 million mammals per year in GA (Boitet and Mead 2014)
- Identifying landscape features that concentrate wildlife crossings is essential for informed wildlife management plans and future construction of roads.

What Influences Roadkill?



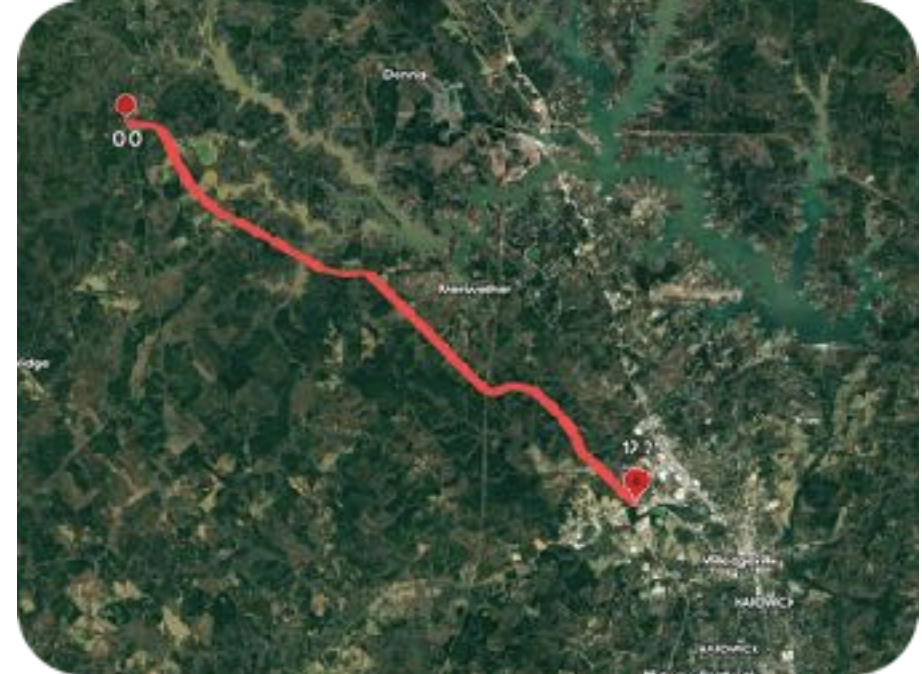
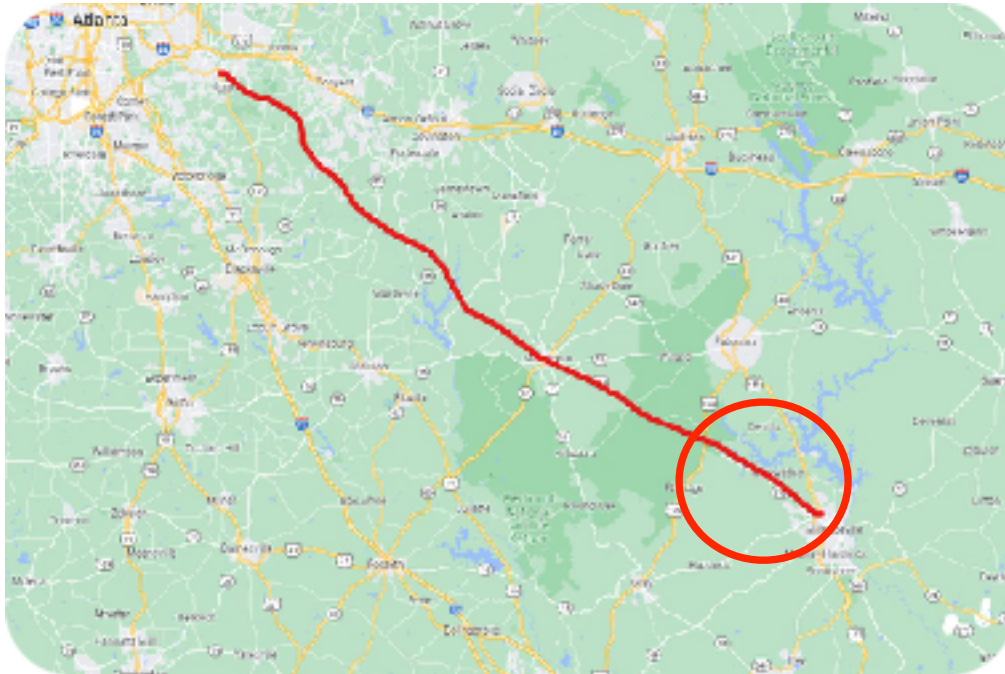
(Seiler 2003)

Methods

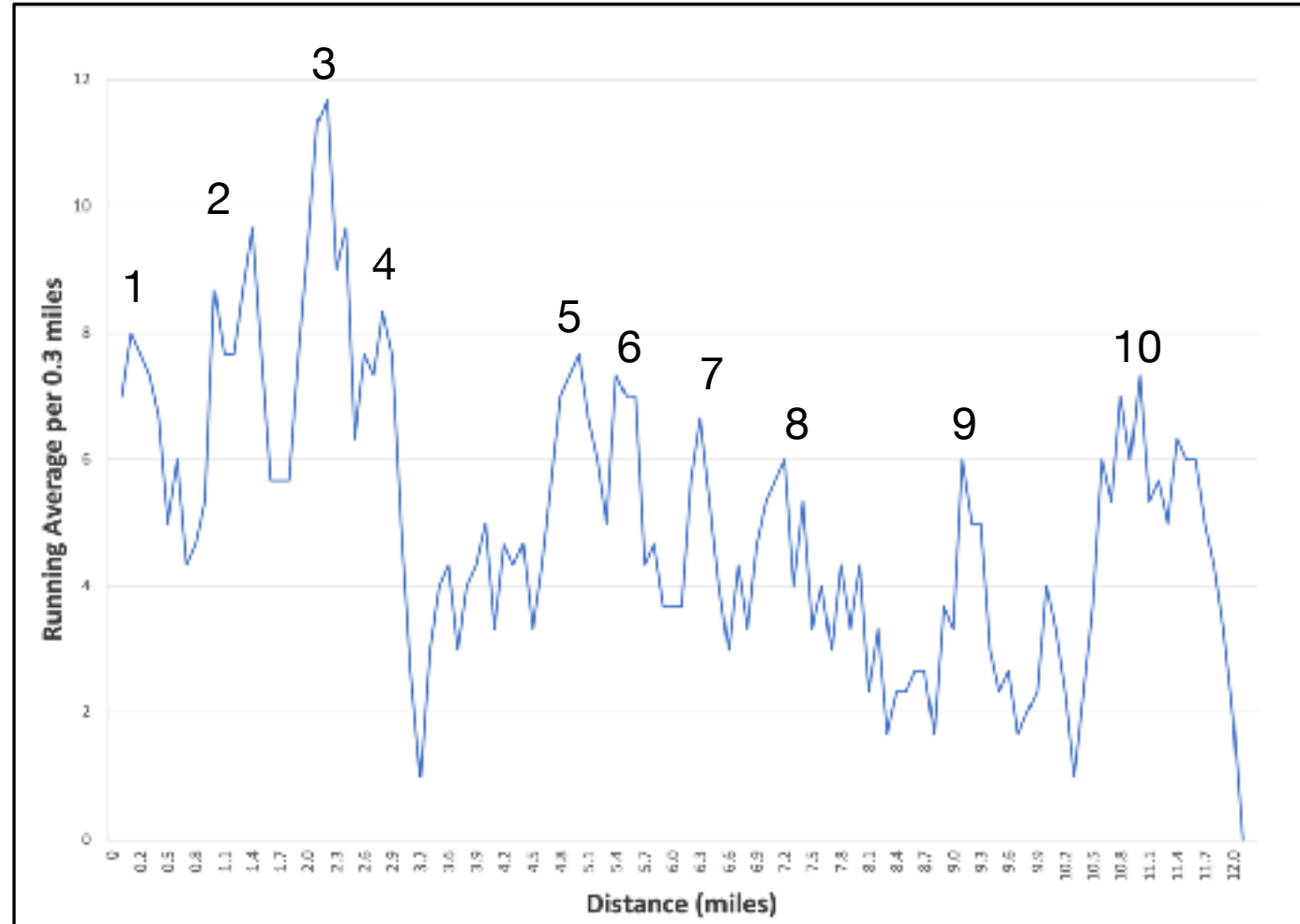
- R Studio was used to calculate a continuous running average incorporating 0.3 miles (Kori et al. 2019)
- Microsoft Excel was used to graph the running average and identify approximate hotspot locations
- A driving survey was conducted to compare identified hotspots to landscape and road features
- Google Earth was used to visualize the approximated hotspots and landscape features opossum roadkill data using 0.3 mile

Study Route: SR 212

- SR 212 is ~72 miles
- The study route is a 12.2 mile segment through Baldwin County



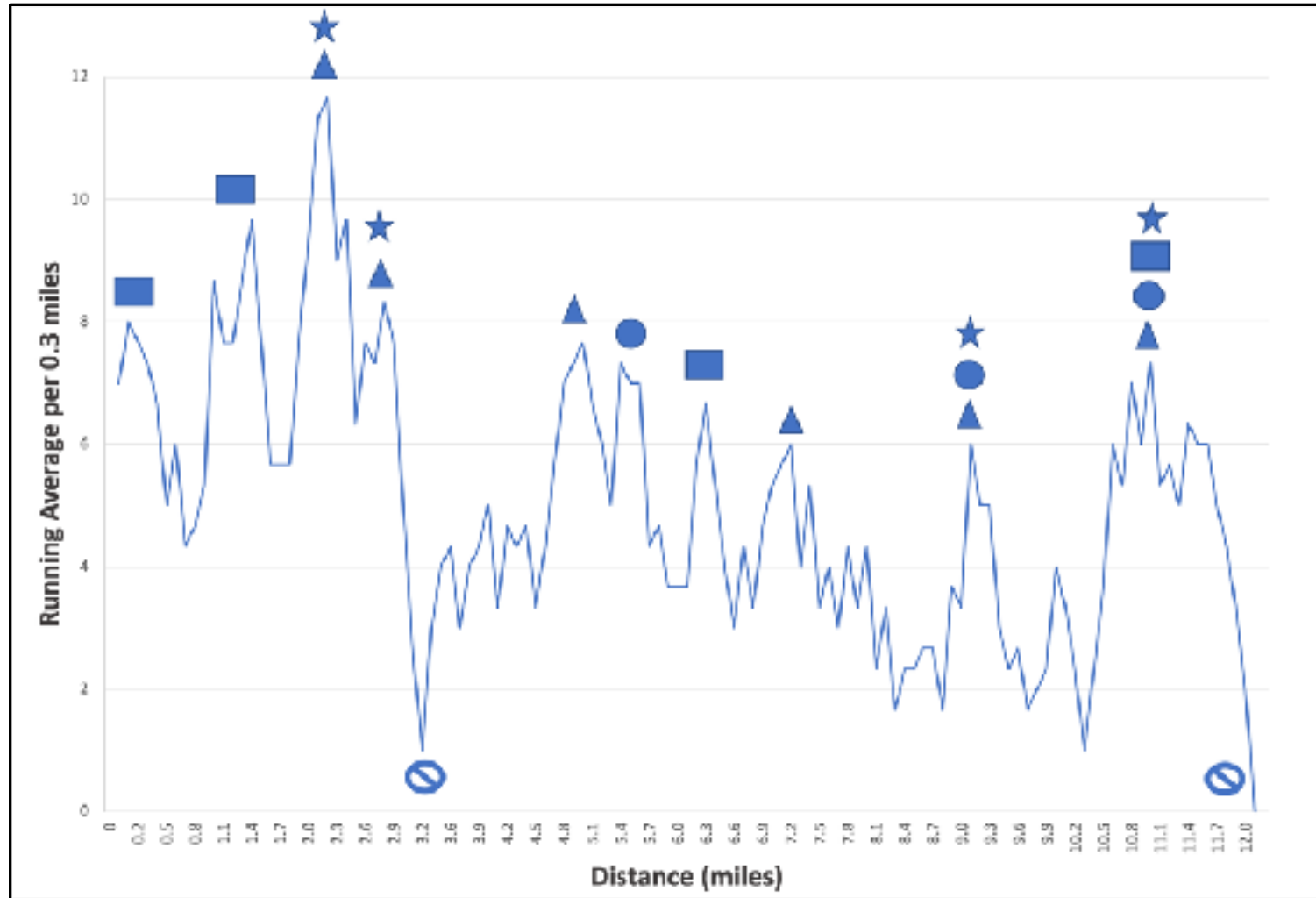
Running Average Results



Opossum Roadkill Hotspots

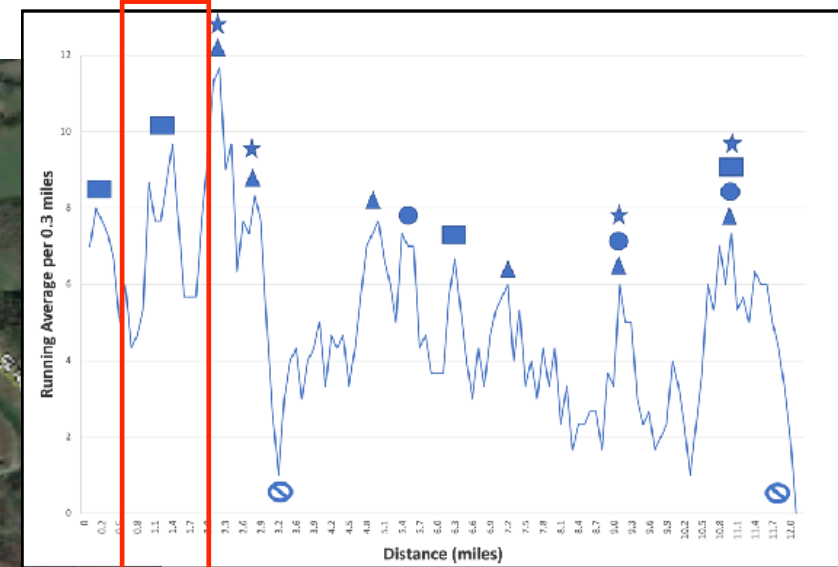


Landscape Associations

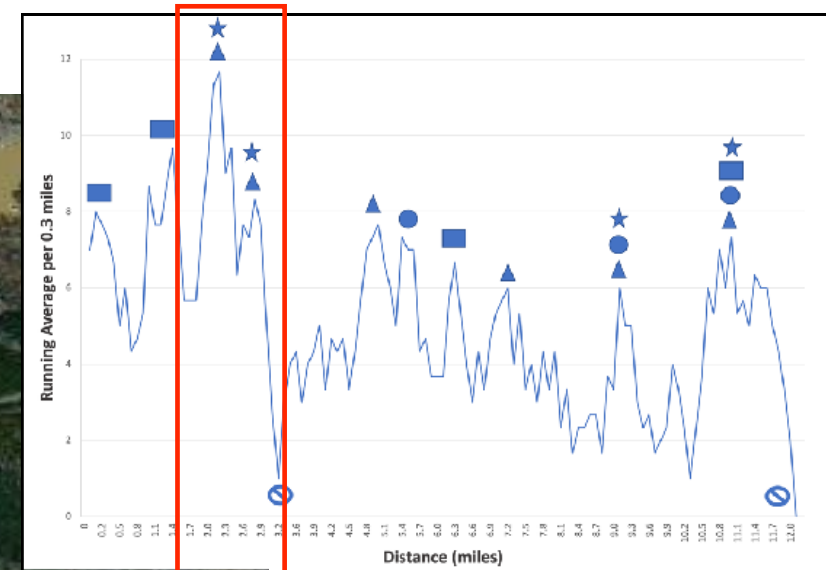
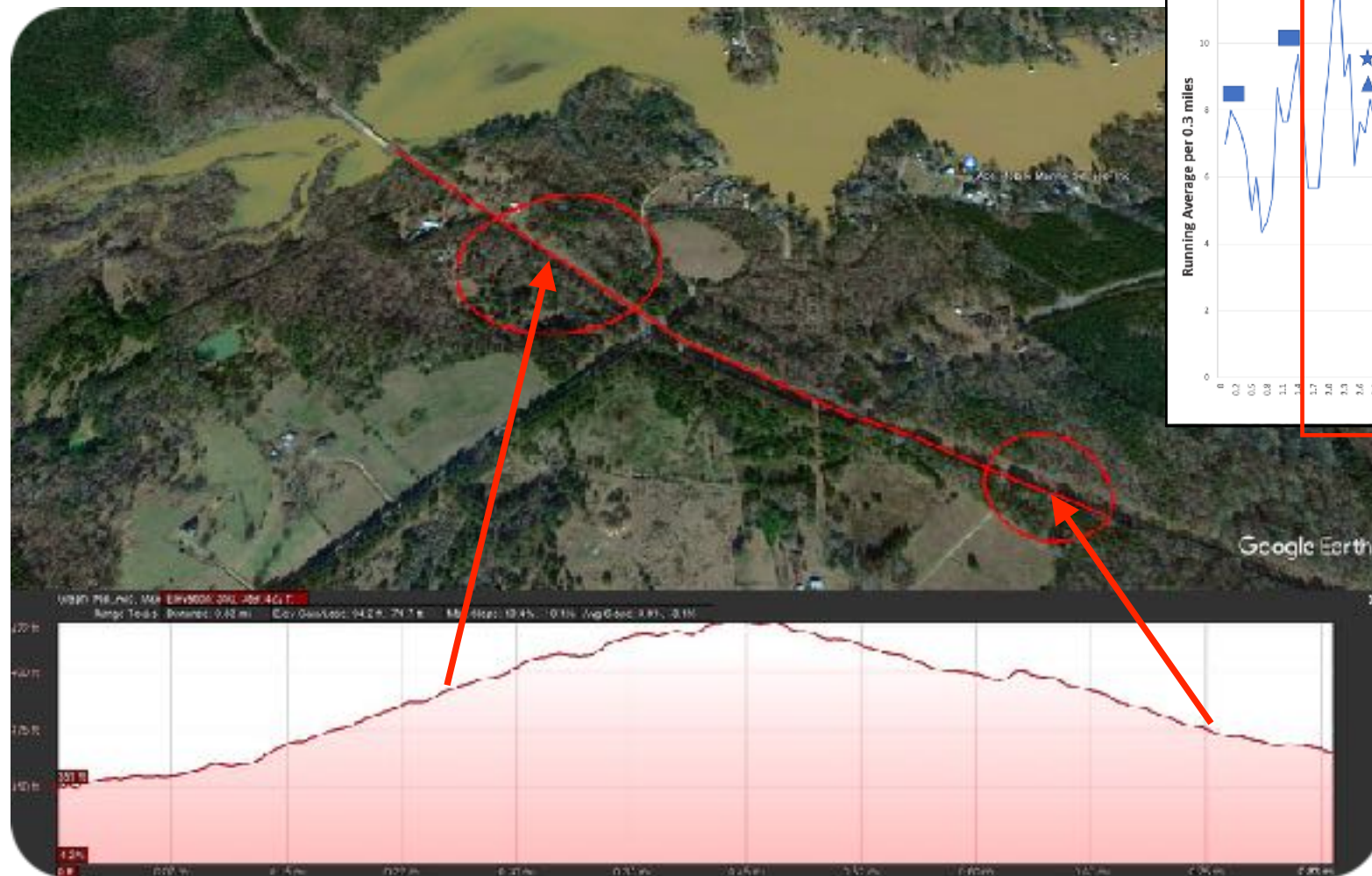


★	Water
▲	Hill
●	Curve
■	Land cover
⊘	Intersection

Peak 2



Peaks 3 & 4



Conclusions & Next Steps

■ Conclusion:

- Virginia Opossum roadkills were associated with hills, curves, water, and riparian bottomlands along the 12.2 mile segment of SR 212
 - Mixed rural landscape is conducive for generalist species (Main and Allen 2002)

■ Next Steps:

- Preliminary analysis of landscape associations for remaining roadkill taxa
 - Raccoons, white-tailed deer, armadillos
- Statistical analysis of roadkill hotspots
 - Malo's method (Malo 2004)

The background is a dark blue-grey color. It features a repeating pattern of large, light blue question marks. Overlaid on this pattern are two large, white L-shaped brackets. One bracket is in the top-left corner, and the other is in the bottom-right corner, framing the central text.

QUESTIONS?

Literature Cited

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