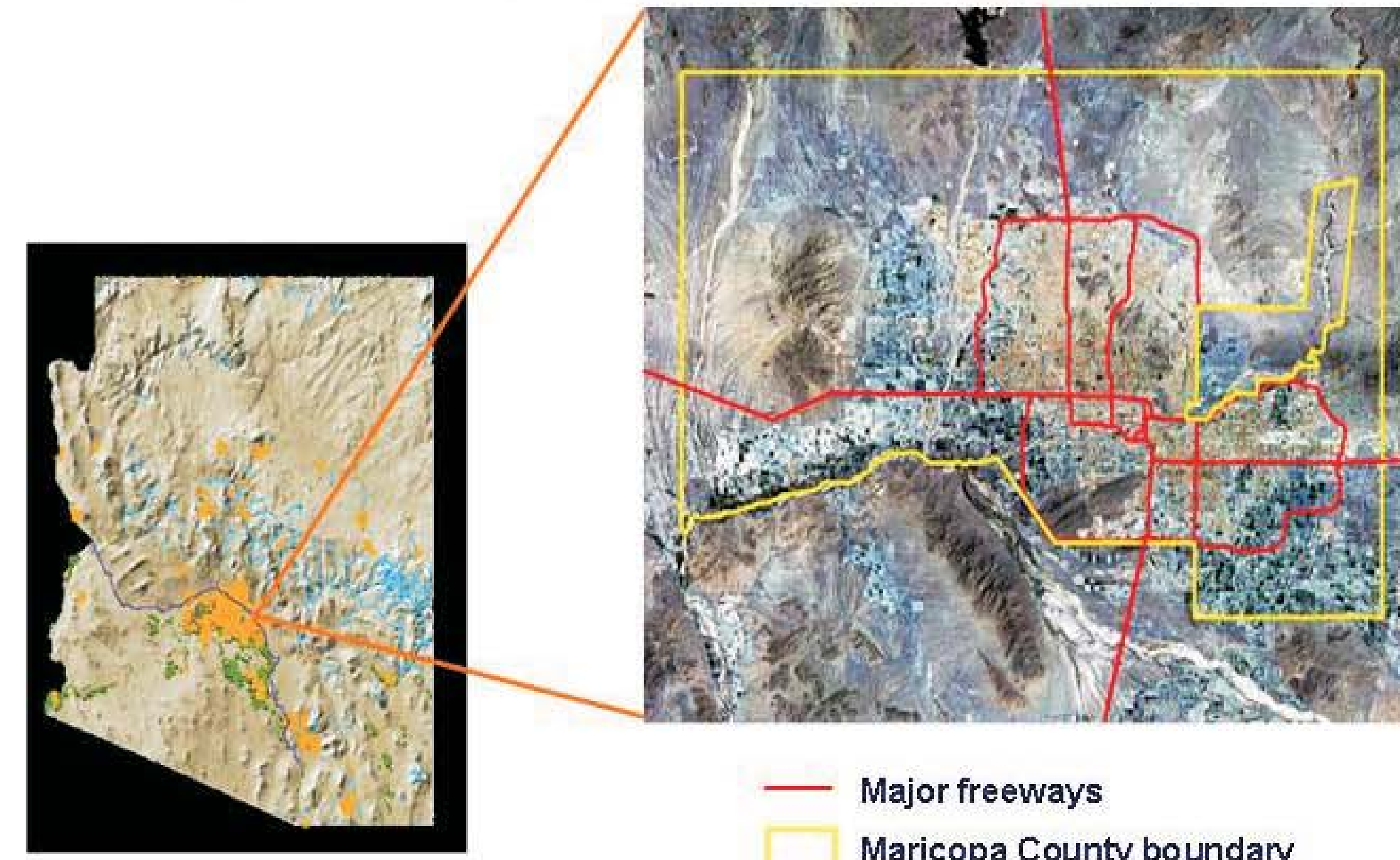


The Role of Transportation Corridors in Plant Migration In and Around an Arid Urban Area: Phoenix, Arizona

Kristin J. Gade, School of Life Sciences, Arizona State University

Phoenix, Freeways, and the Sonoran Desert



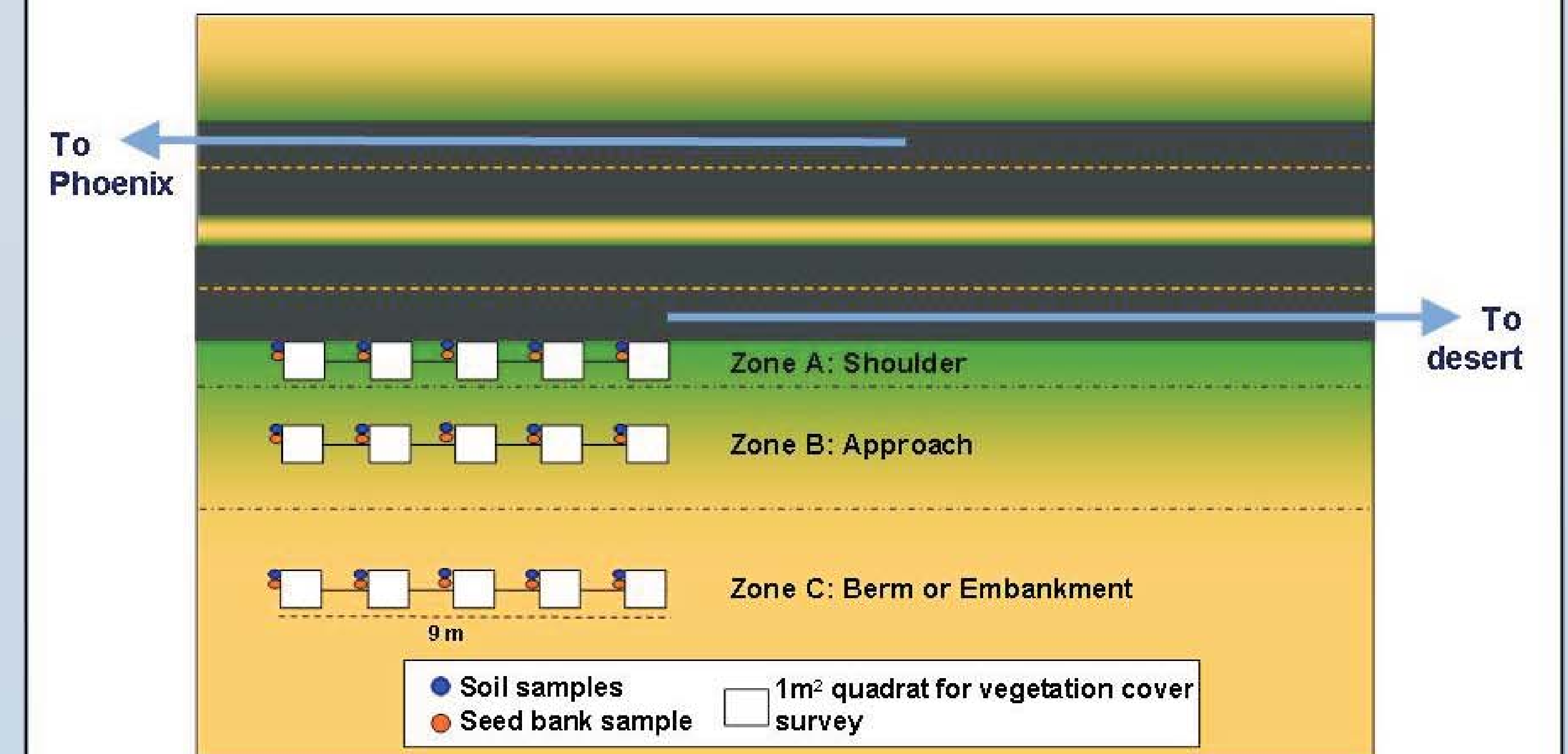
Freeways and other transportation corridors connect urban and undeveloped areas.

The conditions along these corridors promote the movement of animals and plants, which may then move out from the corridors into new areas.

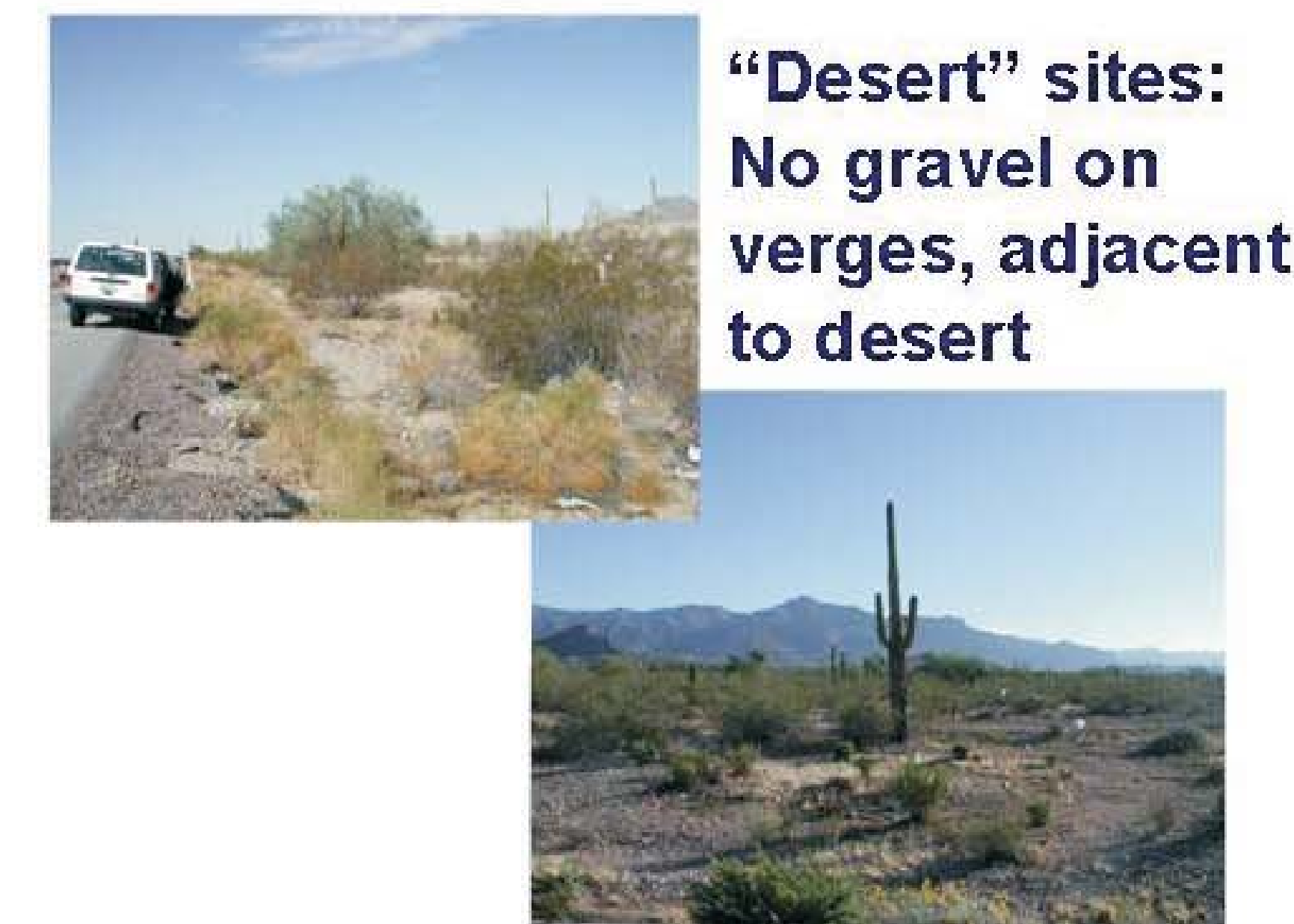
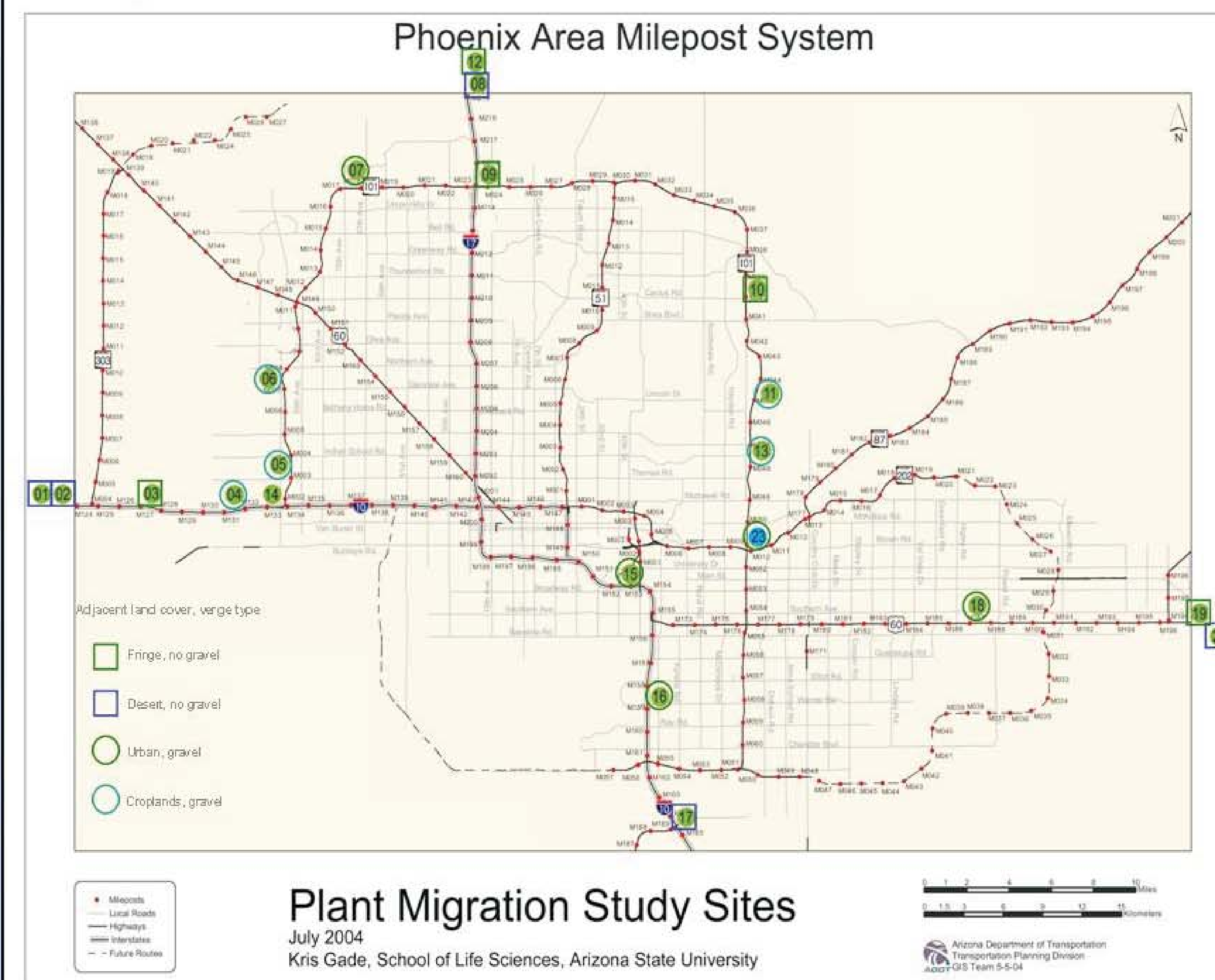
How do plants migrate along highways?

- How does nitrogen fertilization affect roadside plant community composition?
- Do plants enter the highway corridor from adjacent land?
- How do highway landscaping and maintenance affect plant migration?

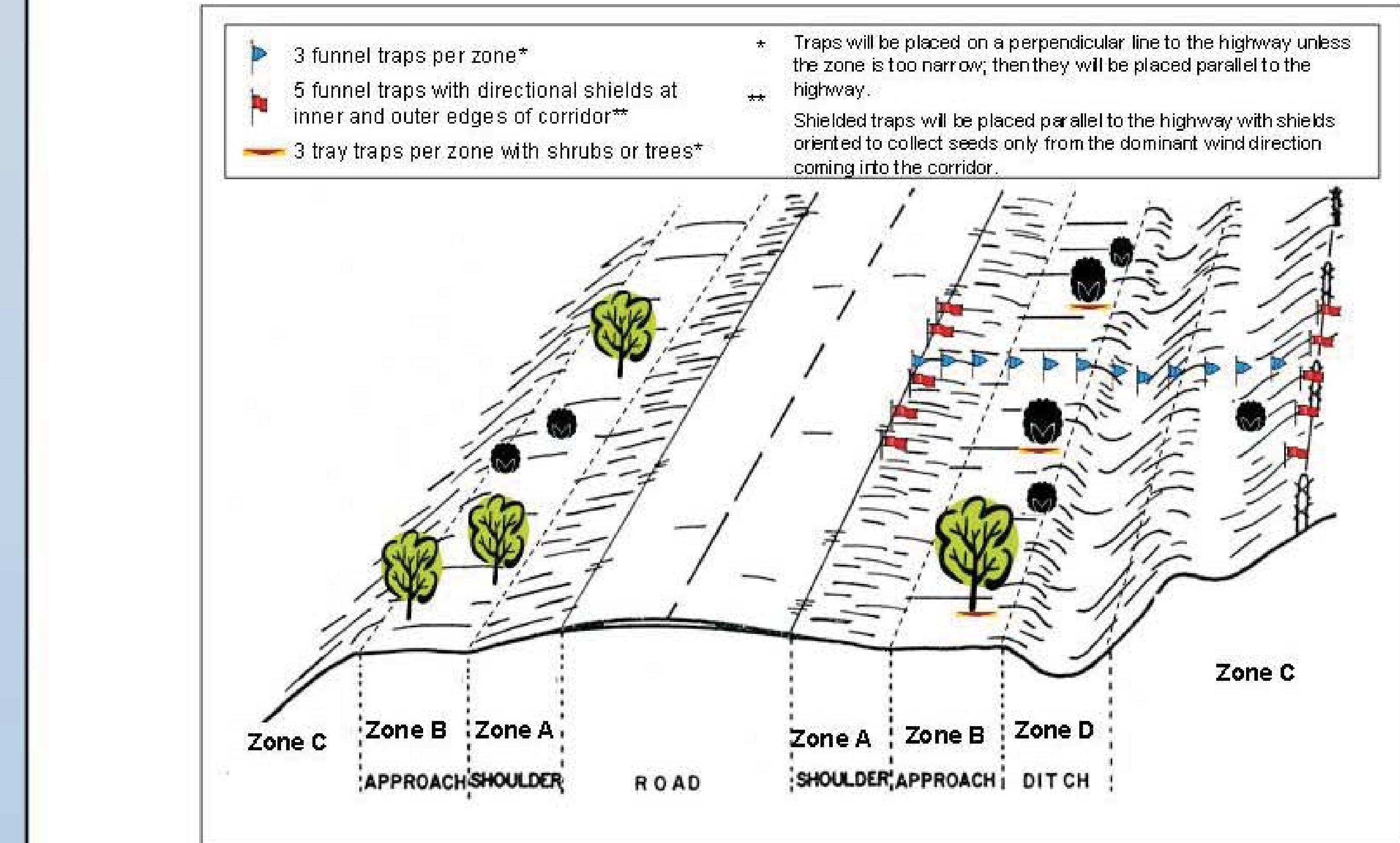
Sampling Design - Soil, seed bank, and seed trapping



Study Sites



Land adjacent to “urban” sites generally has higher density development than land adjacent to “fringe” sites.



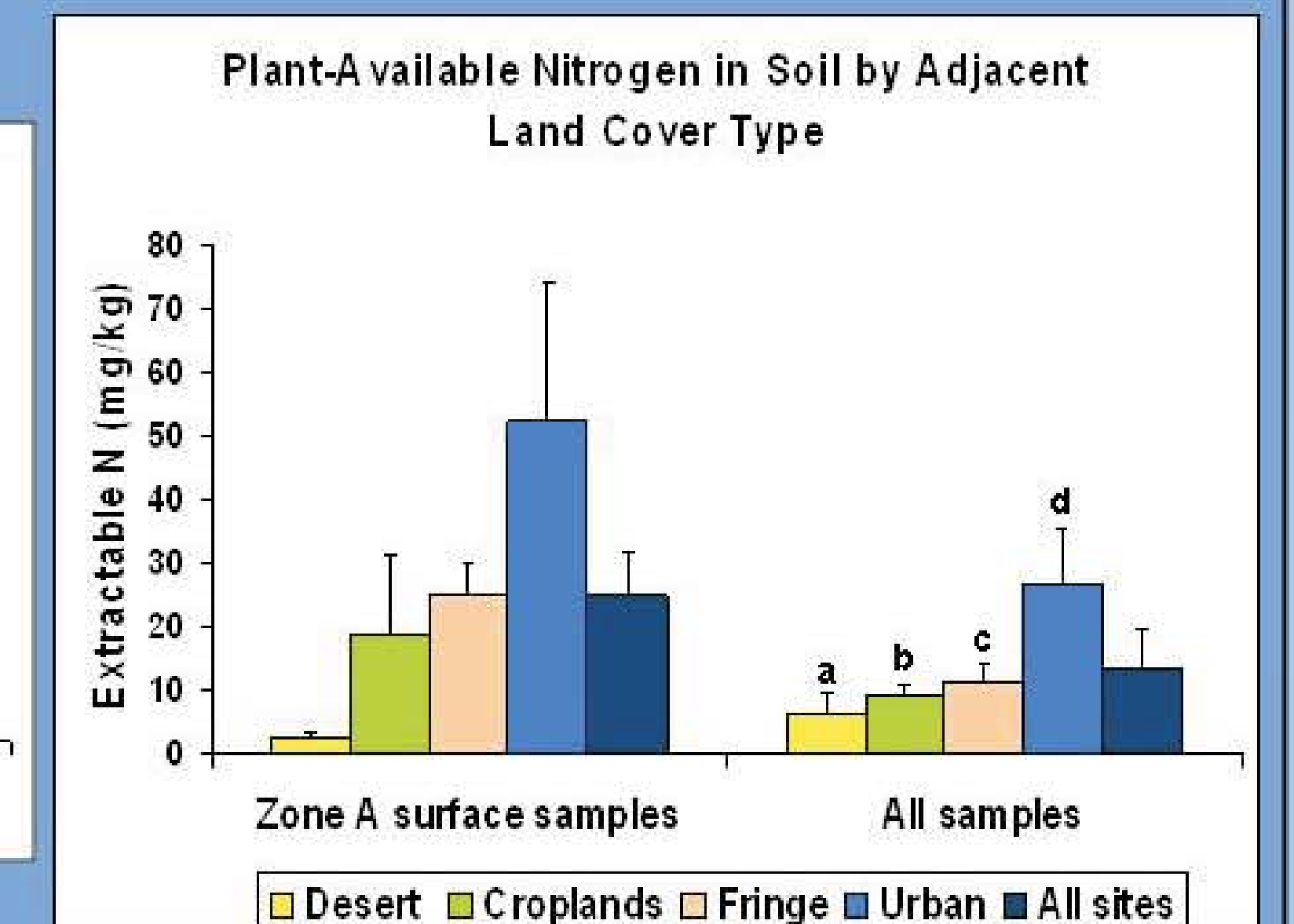
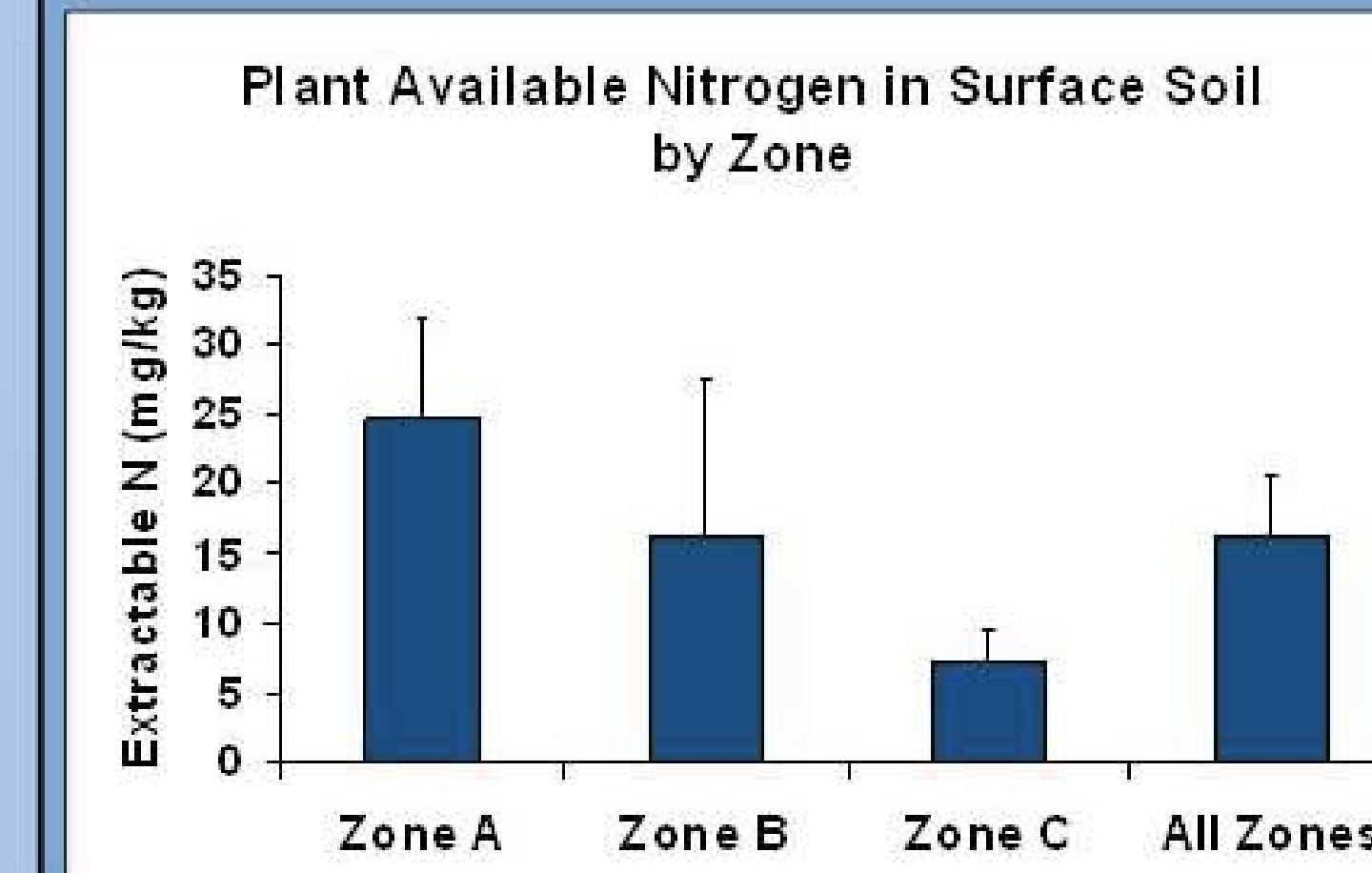
Soil Analyses - Results

1. Plant-available N highest closest to the asphalt
Zone A > Zone B and C

(ANOVA using log [surface soil]; F=5.556, P=0.005; Fisher's multiple comparison P=0.003)

2. Plant-available N varied with adjacent landcover
Urban > Crop > Fringe > Desert

(ANOVA using log [surface soil]; F=123.67, P<0.001; Fisher's multiple comparison all combos P<0.001)



Acknowledgments

My advisor:
Ann P. Kinzig

Funding:
ASU's IGERT in Urban Ecology
Central Arizona-Phoenix Long Term Ecological Research
ASU Graduate and Professional Student Association

Field site access and support:
Arizona Department of Transportation

Field and Lab Assistance:
Erin Adley, Monica Brennan, Bethany Cutts, Tamara Harms, Libby Larson, Steve Swanson, Sandy Van Horne, Jason Walker, Joshua Watts

Landscape Plants on the Move

