# Statewide Small Mammal Surveys and Genetic Analyses Highlight Regionally Distinct Faunas Across Kansas

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### Intraspecific diversity of Kansas mammals

- Collect genetic samples throughout the state
- Test prior subspecies designations with genetic data

Subspecies boundaries based on morphology (Hall & Kelson, 1959)



## Kansas Sampling Sites

#### 8 sites:

- 1. Cimarron Grassland
- 2. Lake Scott State Park
- 3. Clark Lake
- 4. Cheyenne Bottoms
- 5. Lovewell State Park
- 6. Konza Prairie
- 7. Elk City State Park
- 8. Mined Land WA



### Sampling Methods





#### Genetic Methods



























Subspecies boundaries based on morphology (Hall & Kelson, 1959)







## **Dominant Species**

#### hispid cotton rat



#### deer mouse



white-footed mouse



#### prairie vole



#### **SINC** Species

spotted ground squirrel



southern flying squirrel



southern bog-lemming



fulvous harvest mouse



yellow-faced pocket gopher



### **Dominant Species**

#### hispid cotton rat



#### deer mouse



# white-footed mouse



#### prairie vole



**Dominant Species** 



### hispid cotton rat

Morphological boundaries **Genetic boundaries** (Hall & Kelson, 1959)



### white-footed mouse



Morphological boundaries















### prairie vole



Morphological boundaries





#### SINC Species

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### spotted ground squirrel

Morphological boundaries



Genetic boundaries







### southern flying squirrel



#### Morphological boundaries









### southern bog-lemming

#### Morphological boundaries



Genetic boundaries





### fulvous harvest mouse

#### Morphological boundaries









### yellow-faced pocket gopher

#### Morphological boundaries





## Implications for Wildlife Management

• Managing distinct populations

- Assessing community turnover
  - Parasite Transfer
  - Disease Transmission
  - Distribution Shifts















deer mouse





#### white-footed mouse



#### Unexplored biodiversity in Kansas

yellow-faced pocket gopher





plains pocket gopher





#### Unexplored biodiversity in Kansas



plains pocket gopher





#### Unexplored biodiversity in Kansas



plains pocket gopher





### Discovery of undescribed species



#### plains pocket gopher



Lake Scott pocket gopher





#### Conclusions

- Genetic data shows where subspecies designations are accurate and inaccurate
- Biodiversity of Kansas mammals remains unexplored from an genetic perspective







### Acknowledgements











