Richness of Terrestrial Vertebrate Species in Kentucky

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Purpose

To improve our understanding of the distribution of vertebrate species in Kentucky.

Objectives

- To produce up-to-date maps of species richness within and among classes of terrestrial vertebrates in Kentucky.
- To describe quantitatively the variation in species richness that occurs in different geographic areas of Kentucky.

Species List

Reptiles - 51

Amphibians - 52

Mammals - 63

Breeding Birds - 153

Mapping of Species Richness

Published Ranges

Wilson (1995) Hamel (1992) Whitaker and Hamilton (1998)





Geographic Classifications



Ecoregions (Bailey, 1988)



Provinces (Keys et al., 1995)

Mean Richness in Ecoregions by Taxonomic Group



Mean Richness in Provinces by Taxonomic Group













Breeding Birds



Reptiles

Mississippi Alluvial Basin
Mississippi Embayment
Shawnee Hills
Mississippian Plateaus
Knobs Region
Bluegrass Region
Appalachian Plateaus
Cumberland Region

Species Richness by Taxonomic Group



Richness of Terrestrial Vertebrates in Kentucky



Richness by Order - Reptiles



All Reptiles





Testudines

Richness by Order - Amphibians



All Amphibians







Caudata

Richness by Order - Mammals



All Mammals







Rodentia



Richness by Order - Breeding Birds



All Breeding Birds



Passeriformes



Ciconiiformes



Falconiformes

Conclusions

- Mean richness of terrestrial vertebrate species is not distributed evenly across Kentucky.
- The unevenness in distribution is especially marked in the reptiles, specifically the squamates.
- Among ecoregions, species richness is highest in the Purchase Area due to relatively high numbers of reptiles (i.e., squamates) and breeding bird species.
- Management plans that protect areas of high species diversity will be essential to the conservation of Kentucky's vertebrate biodiversity.

Future Objectives

- Make new species richness map with updated ranges.
- Determine the relative contributions of ancillary data (e.g., proximity to water, elevation) to explaining variation in species richness within and among vertebrate taxa in Kentucky.

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