

ZOOGEOGRAPHICAL RELATIONSHIPS OF THE MAMMALS OF ILLINOIS

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Fifty-four species of native mammals are found at the present time in Illinois. Some of these species are principally southern mammals whose range barely extends into Illinois. Still other species are western, eastern, or northern. However, most of the species of mammals in Illinois are wide-ranging or cosmopolitan species, occurring in all or most of the states surrounding Illinois, and do not reach their limits of distribution within Illinois.

The distribution patterns of the mammals found in Illinois indicate that 65 percent or 35 species are wide-ranging or cosmopolitan (fig. 1). Of these 35 species, four are predominantly southern in distribution, two predominantly northern, and one western. None are eastern. The remaining 19 species show the following relationships:

Principal Area	No. of species	Per-cent
Western and northwestern	7	37
Southern and southeastern	8	42
Northern	4	21

Western species of mammals entering Illinois

- Western big-eared bat (*Corynorhinus rafinesquii*) (S)¹
- Badger (*Taxidea taxus*) (N)
- Coyote (*Canis latrans*) (E)
- 13-lined ground squirrel (*Citellus tridecemlineatus*) (N, E)
- Plains pocket gopher (*Geomys bursarius*)

White-tailed jackrabbit (*Lepus townsendii*) (N)

Northwestern species of mammals entering Illinois

Franklin ground squirrel (*Citellus franklinii*)

Southern species of mammals entering Illinois

Gray myotis (*Myotis grisescens*)

Golden mouse (*Peromyscus nuttalli*)

Cotton mouse (*Peromyscus gossypinus*)

Eastern woodrat (*Neotoma floridana*) (W, E)

Swamp rabbit (*Sylvilagus aquaticus*)

Southeastern species of mammals entering Illinois

Southeastern shrew (*Sorex longirostris*)

Indiana myotis (*Myotis sodalis*) (E)

Rice rat (*Oryzomys palustris*)

Northern species of mammals entering Illinois

Masked shrew (*Sorex cinereus*)

Pigmy shrew (*Microsorex hoyi*)

Least weasel (*Mustela rixosa*)

Meadow vole (*Microtus pennsylvanicus*) (W, E)

Analysis of these facts indicates that the state of Illinois does not represent the distributional limit for most species occurring therein. Only about 35 percent of the species are essentially not mid-United States in

¹ "S" indicates that the species occurs also to the south; "N," north; "E," east; "W," west.

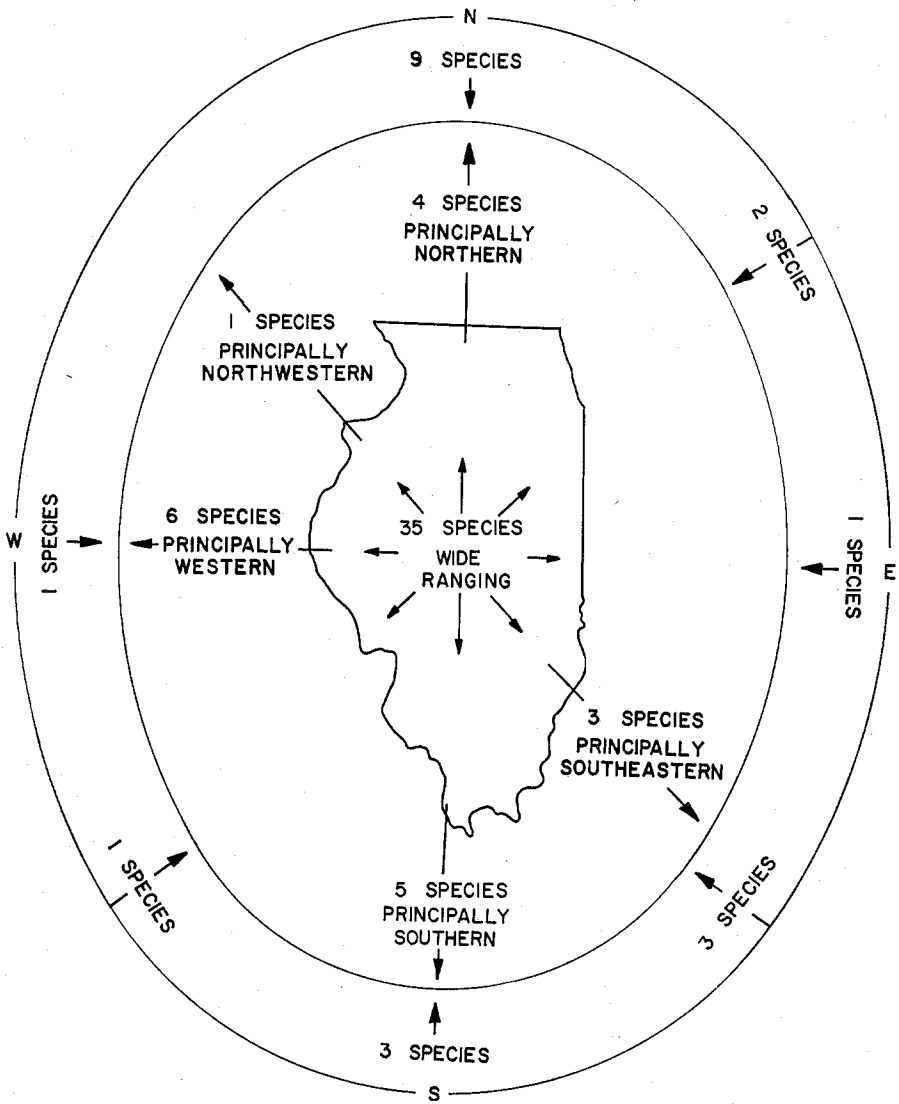


FIG. 1.—The geographical relationships of the 54 species of Illinois mammals are shown within the inner circle: 35 species are wide-ranging; the 19 other species are characteristic of some region outside Illinois. The outer circle indicates that 20 species are found in states adjacent to but not in Illinois.

distribution. Of these, nearly all are western (and northwestern) and southern (and southeastern). None is considered an eastern species that reaches its western limit in Illinois, and only four are northern species.

The abundance of western species is correlated with the invasion of western prairie conditions into parts of Illinois. The abundance of southern species is correlated with the presence in southernmost Illinois of swamps and thickets of a southern type (cypress, gum, etc.). The Ozark Hills of southern Illinois do not provide habitat for any mammals characteristic of the Ozarks to the southwest, but if red wolves occurred in the Ozark Hills in former times, this species would be one such example. The Ozark Hills probably present a barrier to the northward spread of some southern species.

Many species of mammals occur in adjacent states but do not enter Illinois (fig. 1). Half of these are northern species that reach their southern limit in Wisconsin. Nearly all southern species that come close to Illinois actually enter the state. One important exception is the hispid cotton rat (*Sigmodon hispidus*), and there is a good possibility that within many years it may succeed in moving northward from Reelfoot Lake, western Tennessee, into southern Illinois. Another exception is the eastern harvest mouse (*Reithrodontomys humulis*), which has been taken on the south side of the Ohio River in Kentucky. Most western species that occur near Illinois actually enter it. Two notable exceptions are the spotted skunk (*Spilogale putorius*) and western harvest mouse (*Reithrodontomys megalotis*). The Mississippi River

may serve as the effective barrier to their entrance into Illinois.

Northern species of mammals approaching, but not entering, Illinois

Northern water shrew (*Sorex palustris*) Wis.²

Arctic shrew (*Sorex arcticus*) Wis.

Short-tailed weasel (*Mustela erminea*) Wis.

Least chipmunk (*Eutamias minimus*) Wis.

Red squirrel (*Tamiasciurus hudsonicus*) Wis.

Northern flying squirrel (*Glaucomys sabrinus*) Wis.

Boreal redback vole (*Clethrionomys gapperi*) (E, W) Wis.

Poreupine (*Erethizon dorsatum*) (W) Wis.

Snowshoe hare (*Lepus americanus*) (E, W) Wis.

Eastern or northeastern species approaching, but not entering, Illinois

Star-nosed mole (*Condylura cristata*) Wis., Ind.

Smoky shrew (*Sorex fumeus*) (N) Ind.

Woodland jumping mouse (*Napaeozapus insignis*) Wis.

Southern or southeastern species approaching, but not entering, Illinois

Mississippi myotis (*Myotis austroriparius*) (E) Ind.

Eastern big-eared bat (*Corynorhinus macrotis*) Tenn.

Eastern harvest mouse (*Reithrodontomys humulis*) Ky.

Hispid cotton rat (*Sigmodon hispidus*) Tenn.

Western species approaching, but not entering, Illinois

Spotted skunk (*Spilogale putorius*) (S) Iowa, Mo.

Western harvest mouse (*Reithrodontomys megalotis*) Mo., Iowa, Wis.

SUMMARY

The majority (65 percent) of the species of mammals in Illinois are

²The state listed after the name indicates that the species has been recorded from there.

wide-ranging and are to be found to the north, south, east, and west of the state. The remaining species are predominantly southern and western, and this is correlated with the invasion of southern swamplands and western prairies into Illinois. Many northern or boreal species are found just to the north of Illinois, in Wisconsin, but do not enter Illinois.