Center for Advanced Land Management Information Technologies
CALMIT
University of Nebraska

# Species Models of Nebraska Mammals

Nebraska Gap Analysis Project

2005

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University of Nebraska
Lincoln

**Modeled Nebraska Mammals**


| Common Name | Scientific Name | Order | Family | Page |
|---|---|---|---|---|
| Pronghorn | *Antilocapra americana* | Artiodactyla | Cervidae | 1 |
| Wapiti (Elk) | *Cervus elaphus* | Artiodactyla | Cervidae | 2 |
| Mule deer | *Odocoileus hemionus* | Artiodactyla | Cervidae | 3 |
| White-tailed deer | *Odocoileus virginianus* | Artiodactyla | Cervidae | 4 |
| Coyote | *Canis latrans* | Carnivora | Canidae | 5 |
| Gray fox | *Urocyon cinereoargenteus* | Carnivora | Canidae | 6 |
| Swift fox | *Vulpes velox* | Carnivora | Canidae | 7 |
| Red fox | *Vulpes vulpes* | Carnivora | Canidae | 8 |
| Bobcat | *Lynx rufus* | Carnivora | Felidae | 9 |
| Mountain lion | *Puma concolor* | Carnivora | Felidae | 10 |
| River otter | *Lontra canadensis* | Carnivora | Mustelidae | 11 |
| Striped skunk | *Mephitis mephitis* | Carnivora | Mustelidae | 12 |
| Long-tailed weasel | *Mustela frenata* | Carnivora | Mustelidae | 13 |
| Least weasel | *Mustela nivalis* | Carnivora | Mustelidae | 14 |
| Mink | *Mustela vison* | Carnivora | Mustelidae | 15 |
| Eastern Spotted skunk | *Spilogale putorius* | Carnivora | Mustelidae | 16 |
| Badger | *Taxidea taxus* | Carnivora | Mustelidae | 17 |
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| Big Brown bat | *Eptesicus fuscus* | Chiroptera | Vespertilionidae | 20 |
| Silver-haired bat | *Lasionycteris noctivagans* | Chiroptera | Vespertilionidae | 21 |
| Red bat | *Lasiurus borealis* | Chiroptera | Vespertilionidae | 22 |
| Hoary bat | *Lasiurus cinereus* | Chiroptera | Vespertilionidae | 23 |
| Western Small-footed myotis | *Myotis ciliolabrum* | Chiroptera | Vespertilionidae | 24 |
| Little Brown bat | *Myotis lucifugus* | Chiroptera | Vespertilionidae | 25 |
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| Fringe-tailed myotis | *Myotis thysanodes* | Chiroptera | Vespertilionidae | 27 |
| Long-legged myotis | *Myotis volans* | Chiroptera | Vespertilionidae | 28 |
| Evening bat | *Nycticeius humeralis* | Chiroptera | Vespertilionidae | 29 |
| Eastern pipistrelle | *Pipistrellus subflavus* | Chiroptera | Vespertilionidae | 30 |
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| Merriam's shrew | *Sorex merriami* | Insectivora | Soricidae | 35 |
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| White-tailed jackrabbit | *Lepus townsendii* | Lagomorpha | Leporidae | 38 |
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| Eastern cottontail | *Sylvilagus floridanus* | Lagomorpha | Leporidae | 40 |
| Virginia opossum | *Didelphis virginiana* | Marsupialia | Didelphidae | 41 |
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| Common Name | Scientific Name | Order | Family | Page |
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| Porcupine | *Erethizon dorsatum* | Rodentia | Erethizontidae | 44 |
| Plains Pocket gopher | *Geomys bursarius* | Rodentia | Geomyidae | 45 |
| Northern Pocket gopher | *Thomomys talpoides* | Rodentia | Geomyidae | 46 |
| Hispid Pocket mouse | *Chaetodipus hispidus* | Rodentia | Heteromyidae | 47 |
| Ord's Kangaroo rat | *Dipodomys ordii* | Rodentia | Heteromyidae | 48 |
| Olive-backed Pocket mouse | *Perognathus fasciatus* | Rodentia | Heteromyidae | 49 |
| Plains Pocket mouse | *Perognathus flavescens* | Rodentia | Heteromyidae | 50 |
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| Meadow vole | *Microtus pennsylvanicus* | Rodentia | Muridae | 53 |
| Pine vole/Woodland vole | *Microtus pinetorum* | Rodentia | Muridae | 54 |
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| Eastern woodrat | *Neotoma floridana* | Rodentia | Muridae | 57 |
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| White-footed mouse | *Peromyscus leucopus* | Rodentia | Muridae | 60 |
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| Plains Harvest mouse | *Reithrodontomys montanus* | Rodentia | Muridae | 64 |
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| Thirteen-lined Ground squirrel | *Spermophilus tridecemlineatus* | Rodentia | Sciuridae | 75 |
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| Eastern chipmunk | *Tamias striatus* | Rodentia | Sciuridae | 77 |
| Nine-banded armadillo | *Dasypus novemcinctus* | Xenarthra | Dasypodidae | 78 |

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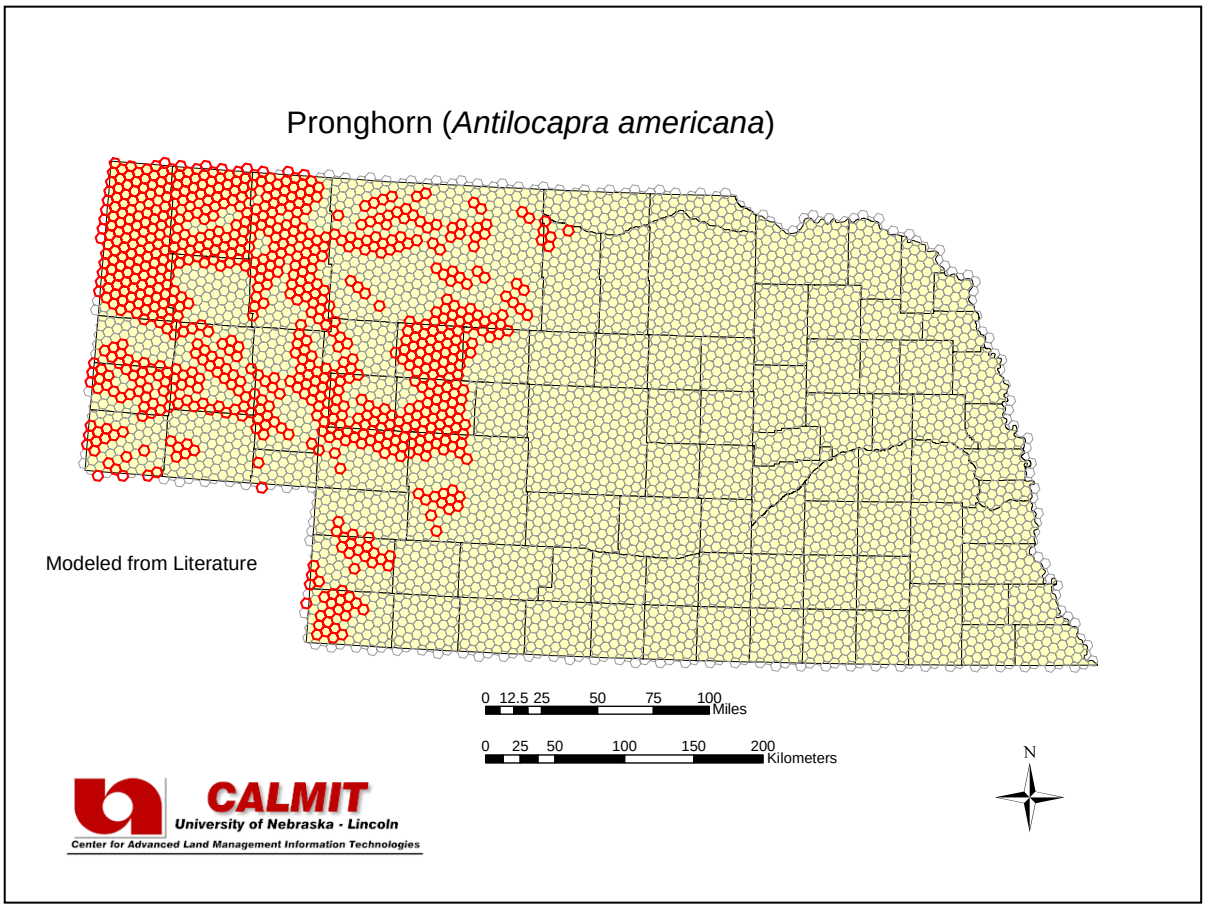
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Pronghorn** | TNC Global Status: | G5 |
| Scientific Name: | ***Antilocapra americana*** | Federal Status: | - |
| TNC Element Code: | AMALD01010 | State (NE) Status: | S3 |

**Habitat Description:**
Nebraska is on the fringe of the pronghorn's range and there are large areas within the range boundary where pronghorns do not occur (NGPC 2002). The highest densities are in the northern and southern Panhandle. Small herds are scattered throughout the Sandhills. The northwestern corner of the state -- the short-grass gumbo prairies and badlands -- is the state's prime pronghorn range. The Pierre Hills rangeland of northwest Nebraska, characterized by rolling plains developed on soft clay shales, contains the state's best antelope range and carries the highest number of pronghorn.

**Total Area of Modeled Habitat (ha):** 3,284,248

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Shortgrass Prairie > 50%' OR 'Land Cover class Sandsage Shrubland > 20%' OR 'Percentage of Coarse-textured Soil >95%' AND '30-year Average Precipitation for July < 85 mm'.



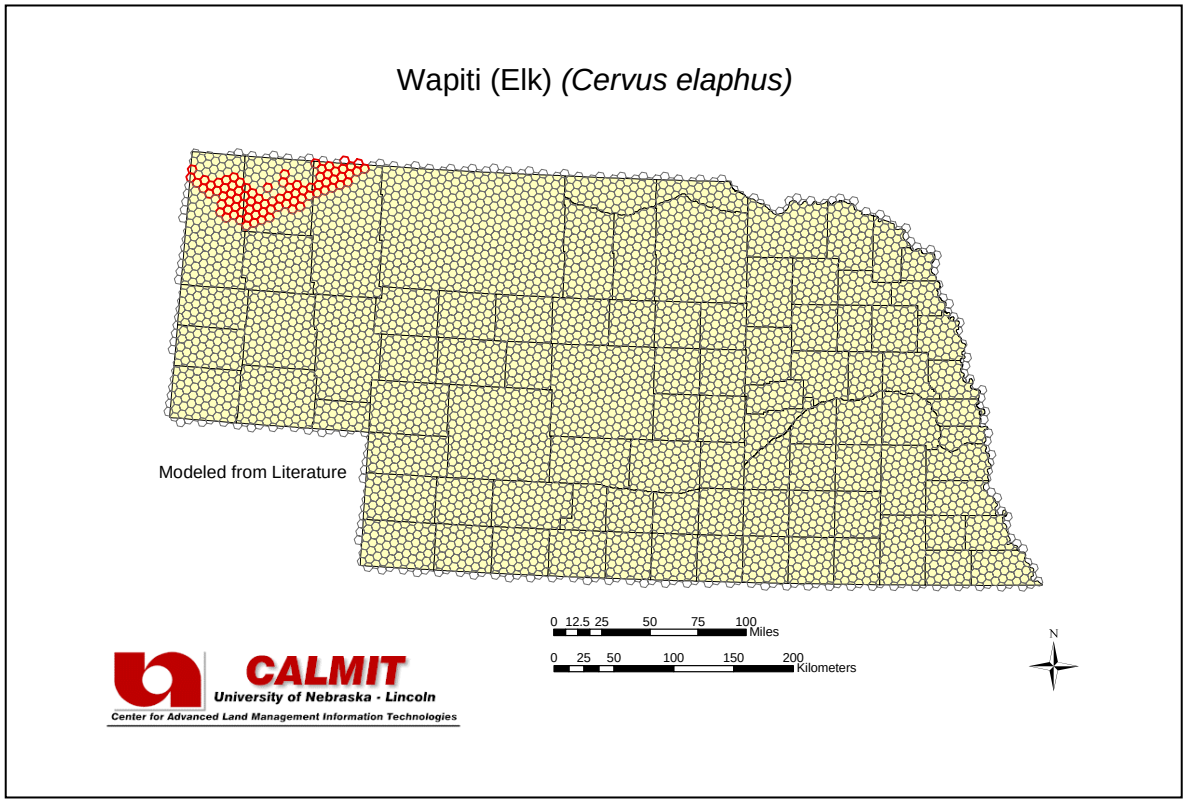
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Wapiti (Elk)** | TNC Global Status: | G5 |
| Scientific Name: | ***Cervus elaphus*** | Federal Status: | - |
| TNC Element Code: | AMALC01010 | State (NE) Status: | S2 |

**Habitat Description:**
Wapiti showed a preference for grassland, shrubland and recent burns (Rounds 1981). Wapiti strongly selected upland grassland at all seasons (Cairns and Telfer 1980). In summer, chiefly high, open mountain pastures; in winter, lower wooded slopes, often dense woods (Whitaker 1997). Wapiti showed a rejection of mixed forest of quaking aspen-white spruce, white spruce, jack pine, and bog communities (Rounds 1981). Wapiti avoid snow at high elevations during winter by migrating to sagebrush grassland communities in mountain valleys, communities that are used by cattle in the spring and early summer (Hobbs et al 1996). Elk breed in late September or early October. The gestation period is approxiamtely 240 days with parturition around the first of June (Wilson and Ruff, 1999). The Wapiti are herbivores, consuming grasses (83-92% of the diet), forbs and browse. They regularly drink water and in winter they consume snow to meet the need for water (Jones et al 1983).

**Total Area of Habitat (ha):** 340,594

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Shortgrass Prairie > 1%' and 'Average Frost Free Days < 179 days'.



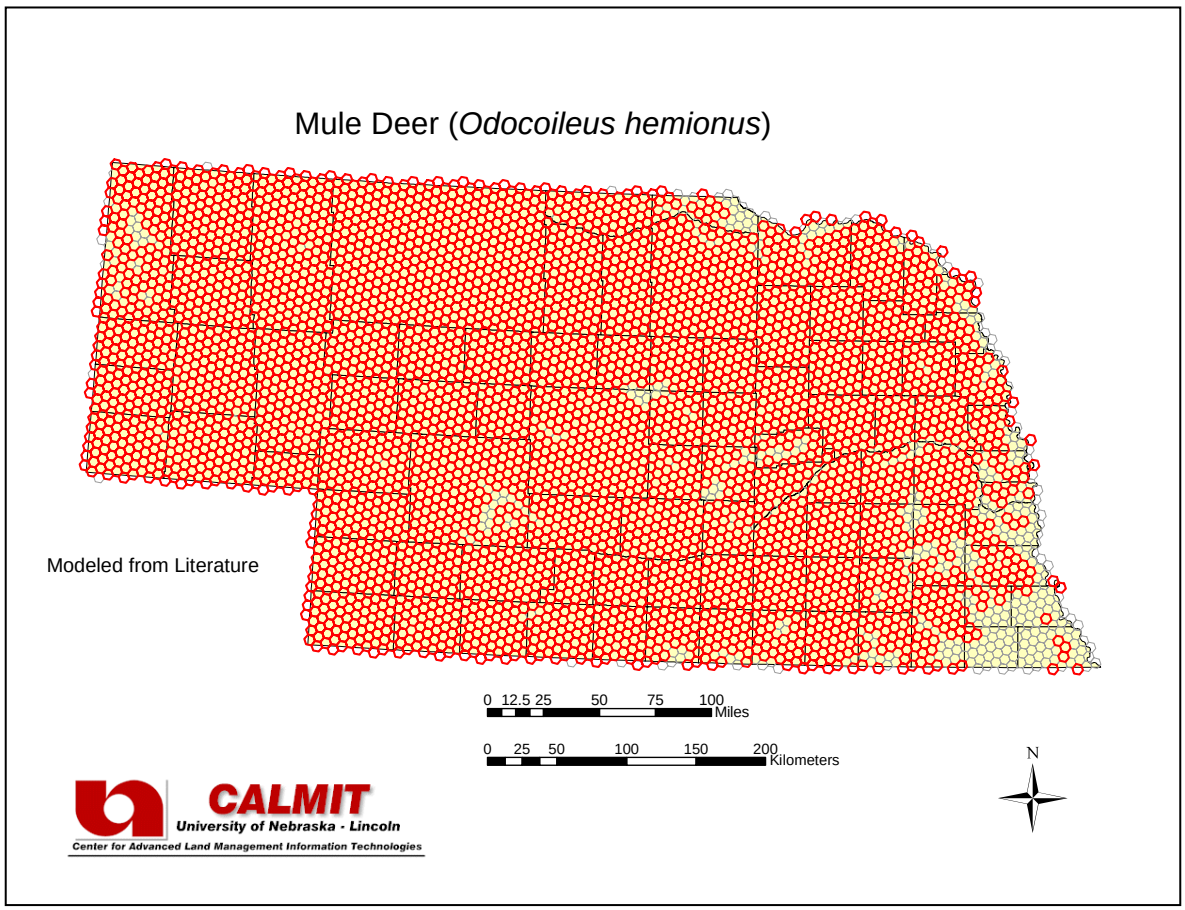
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Mule deer** | TNC Global Status: | G5 |
| Scientific Name: | ***Odocoileus hemionus*** | Federal Status: | - |
| TNC Element Code: | AMALC02010 | State (NE) Status: | S5 |

**Habitat Description:**
Large populations occur in prairie habitats, especially along the eastern range of their distribution. Ideal habitat on the plains is draws dominated by hardwoods and shrubs and floodplains dominated by cottonwood (*Populus deltoides*), both associated with rough terrain. (Mackie et al. 1982; McCullough 1999; Kerr 1979; Rue 1978; Wallmo 1981). Mule deer are less likely than whitetail deer to use mature timber (NGPC 2002). Mule deer can be found throughout Nebraska, but are mainly located in the western portion of the state (NGPC 2002). Concentrations occur in and near the Pine Ridge of Northwestern Nebraska, the Wildcat Hills and Cheyenne Escarpment in Banner, Morrill and Scottsbluff counties, the Niobrara River Valley and breaks east to Rock county, and over a relatively large area of southwestern Nebraska.

**Total Area of Modeled Habitat (ha):** $1.84 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Lowland Tallgrass Prairie is present' OR 'Land Cover Class Upland Tallgrass Prairie is present' OR 'Land Cover class Little Bluestem-Gramma Mixedgrass Prairie is present' AND NOT 'Land Cover Class Deciduous Forests and Woodlands > 5%'.



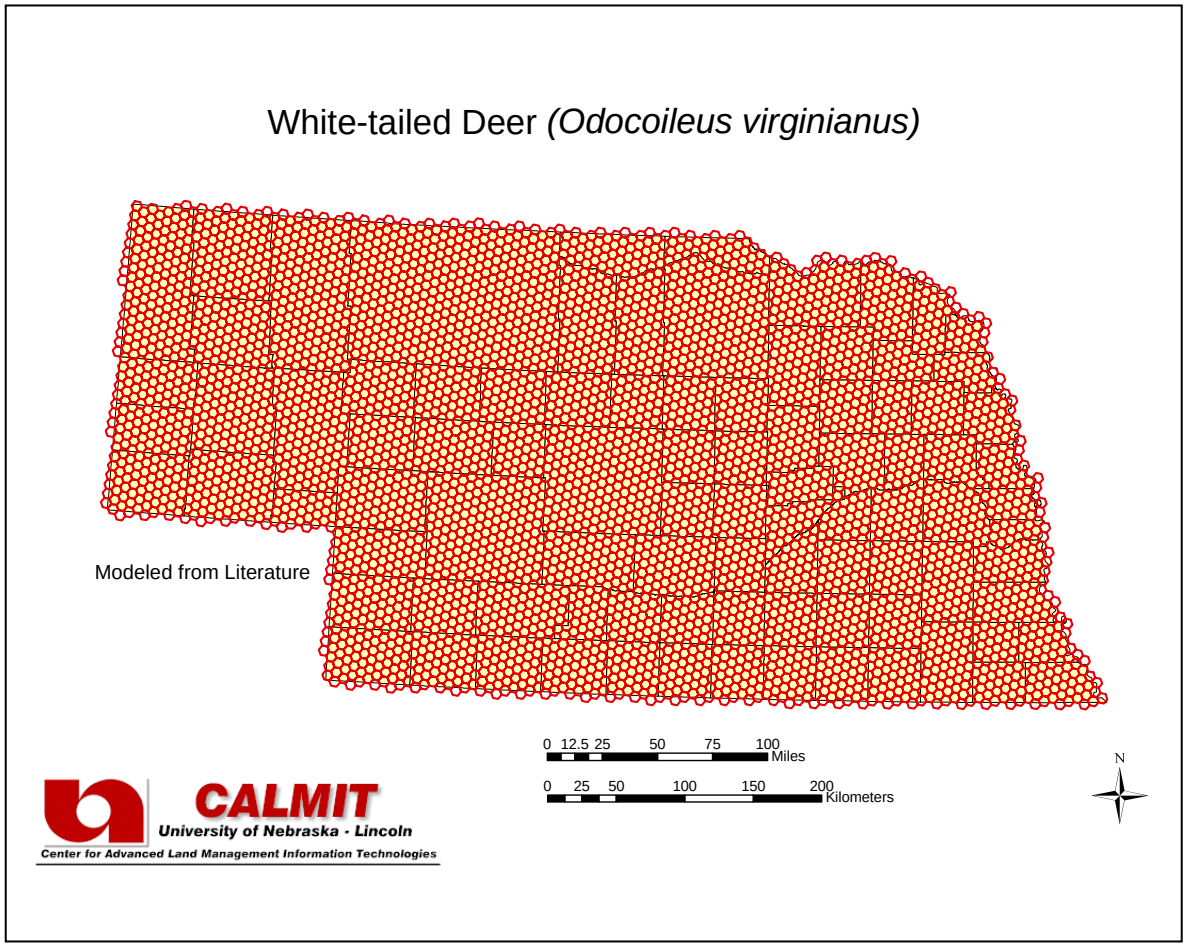
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| | **White-tailed deer** | TNC Global Status: | G5 |
| Scientific Name: | ***Odocoileus virginianus*** | Federal Status: | - |
| TNC Element Code: | AMALC02020 | State (NE) Status: | S5 |

**Habitat Description:**
Occur in a variety of habitats from north temperate to subtropical/tropical and semi-arid environments. Preferred habitats in Nebraska include woodlands, forest edges, riparian vegetation and vegetation adjacent to croplands (Jones et al. 1983). Neither dense forest nor expanses of open country are favored. Also may be found in swamps, river bottoms and forest edges of high country. Does best in sub-climax or temporary habitat (Baker 1983; Hesselton 1982; Jones 1985; Rue 1978; Schwartz 1981; Smith 1991; Wilson and Ruff 1999). Densities depend on pattern and distribution of wooded areas and quality of habitat (Schwartz 1981 Wilson and Ruff 1999).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



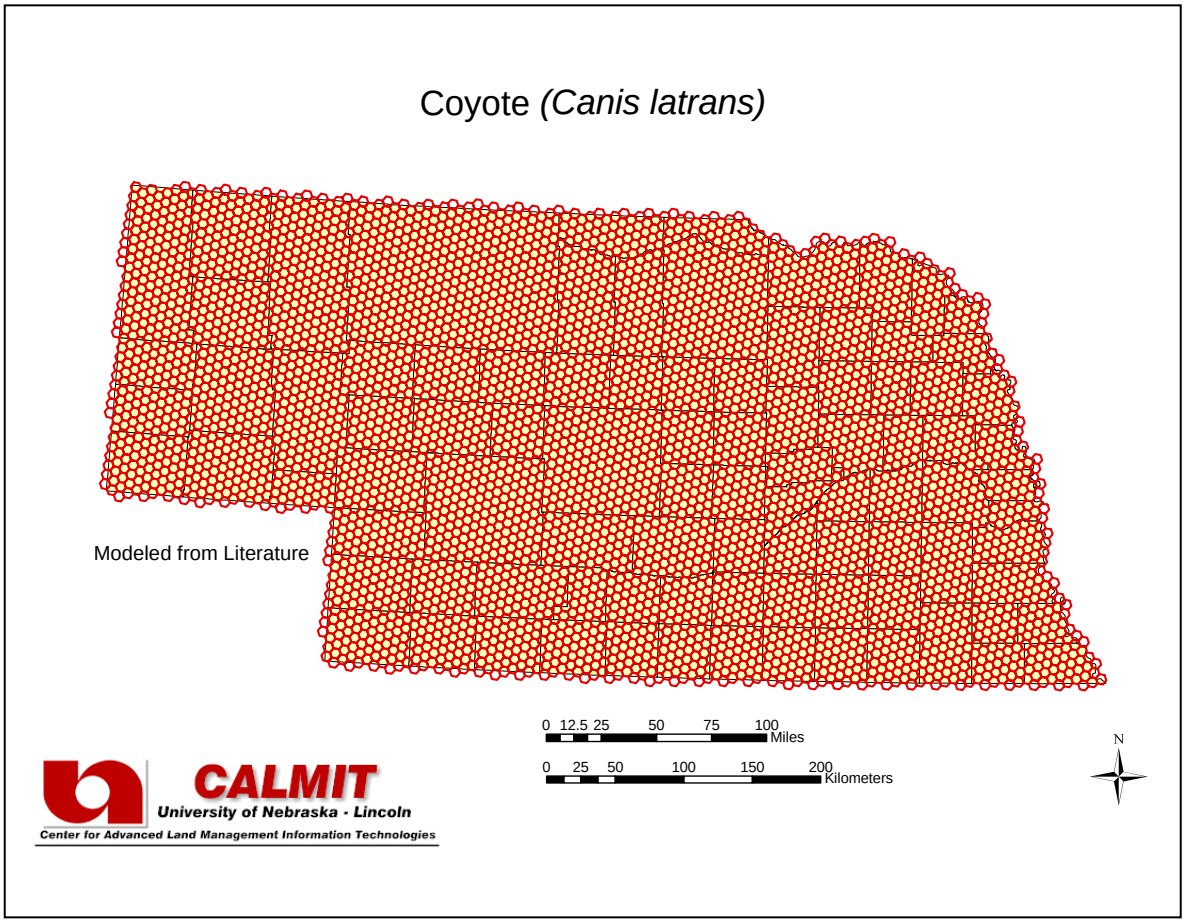
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Coyote** | TNC Global Status: | G5 |
| Scientific Name: | ***Canis latrans*** | Federal Status: | - |
| TNC Element Code: | AMAJA01010 | State (NE) Status: | S5 |

**Habitat Description:**
Found on the open plains (Whitaker 1997). The coyote succeeds in open grasslands, brushy areas, badlands, and woodlands (Jones et al. 1983, Forsyth 1999). In Nebraska, coyotes are more abundant in western Nebraska and the Sandhills regions where ranching predominates over crop farming (Nebraska Game and Parks 2002). Tend to not be found in thickly settled areas but can survive there (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



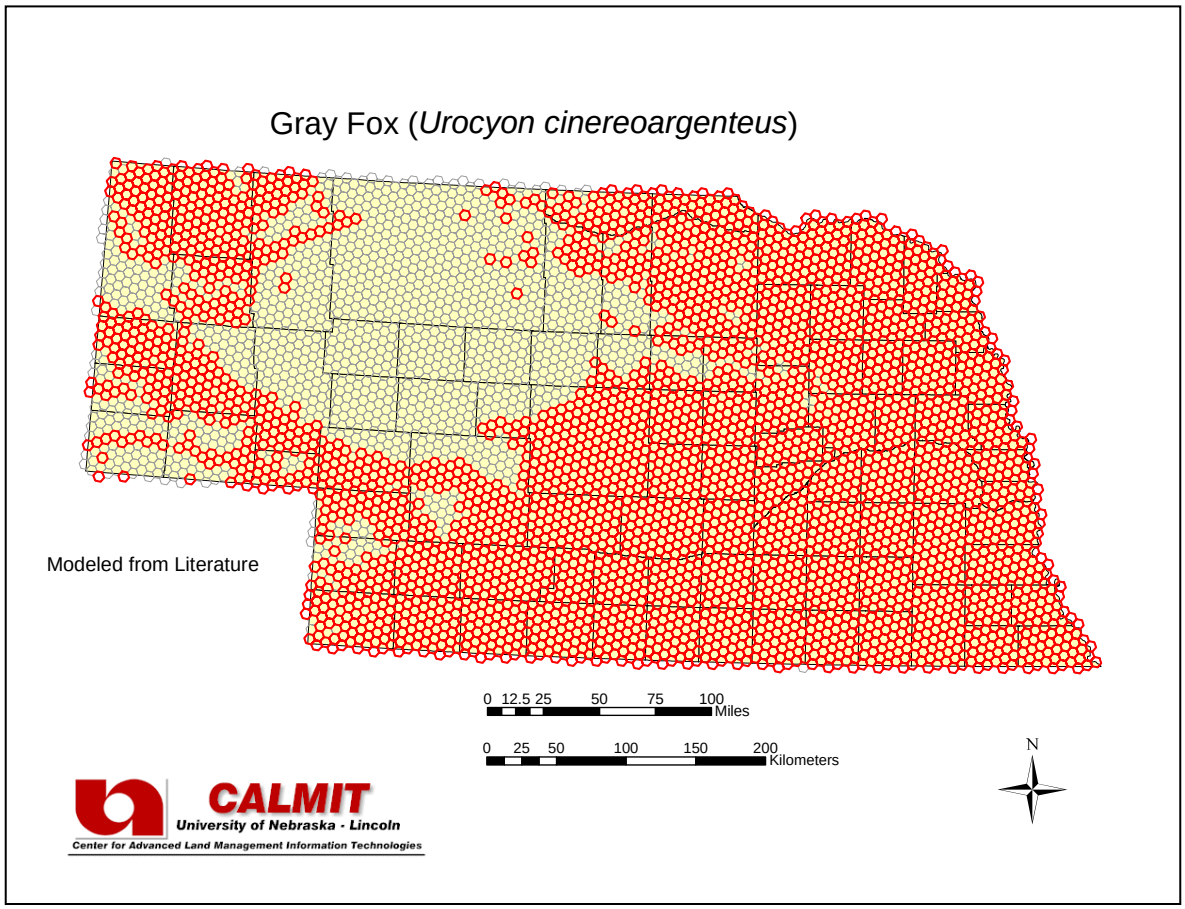
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Gray fox** | TNC Global Status: | G5 |
| Scientific Name: | ***Urocyon cinereoargenteus*** | Federal Status: | - |
| TNC Element Code: | AMAJA04010 | State (NE) Status: | S4 |

**Habitat Description:**
Varied habitat (Whitaker 1997). Gray foxes are animals of forest, woodland, or rocky and brush-covered country (Jones et al. 1983, Wilson and Ruff 1999). They are more associated with trees and wooded areas than the red fox (Jones et al. 1985). Occur primarily in wooded and brushy country in rocky or broken terrain; also marshes (Forsyth 1999). Avoid the drier, more open parts of the Great Plains (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** $1.44 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands is present' OR 'Land Cover class Deciduous Forests and Woodlands is present' AND NOT 'Land Cover class Sandhills Upland Prairie > 50%'.



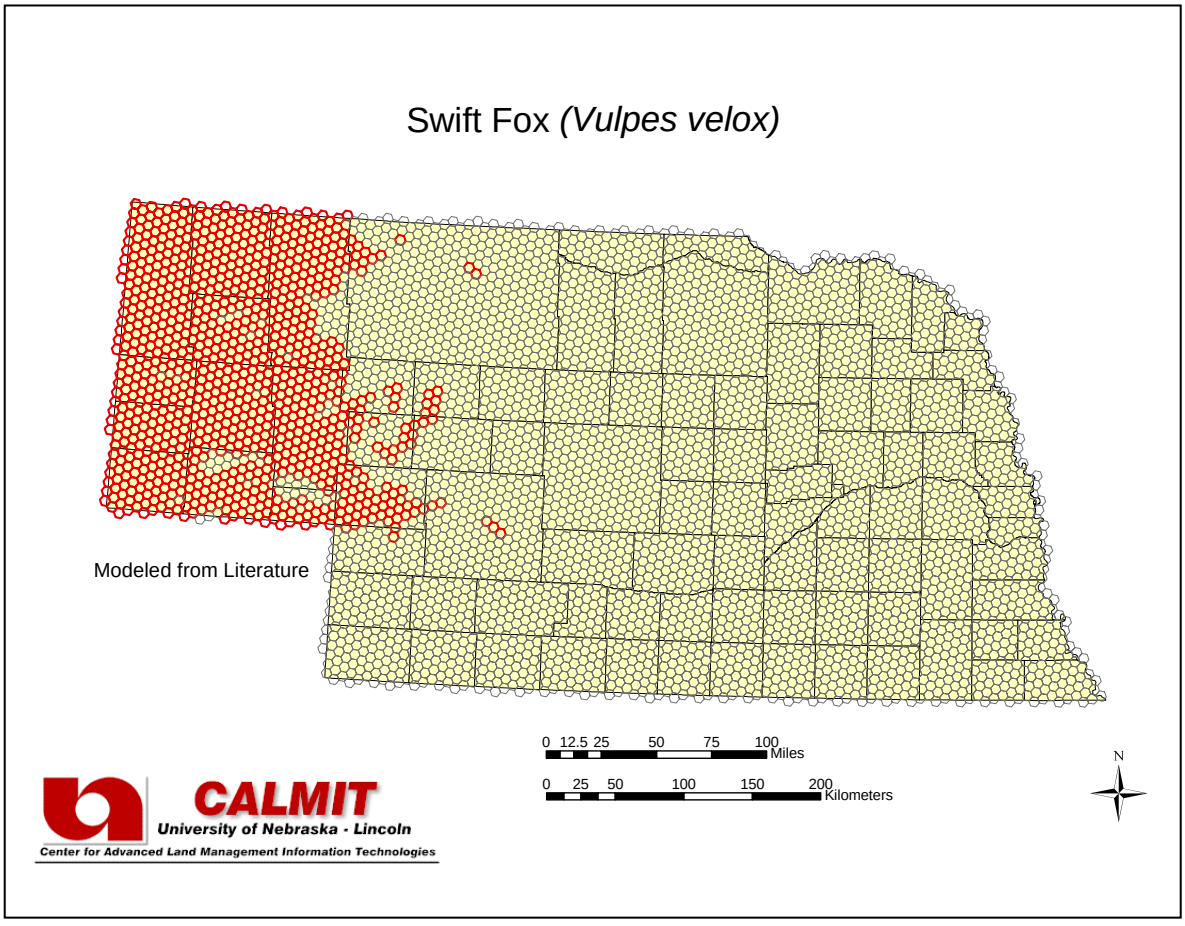
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Swift fox** | TNC Global Status: | G3 |
| Scientific Name: | ***Vulpes velox*** | Federal Status: | - |
| TNC Element Code: | AMAJA03030 | State (NE) Status: | S2 |

**Habitat Description:**
Species is listed as endangered in Nebraska (NGPC 2002). Arid short-grass/mixed-grass prairie, sand hills prairie, and shrubby deserts (Banfield 1974; Egoscue 1979; Lechleitner 1969; Snow 1973; Uresk 1986). Have been found in cultivated cropland and in pastures under moderate to heavy grazing. Open prairie and arid plains, including areas intermixed with winter wheat fields (NatureServe 2002). In Nebraska, Swift foxes live primarily in shortgrass prairies and deserts (Freeman 1998). They often form their dens in sandy soils on open prairies, along fences or in ploughed fields.

**Total Area of Modeled Habitat (ha):** 3,928,892

**Model Description:**
Modeled from literature using the variable 'Land Cover class Western Shortgrass Prairie > 7%'.



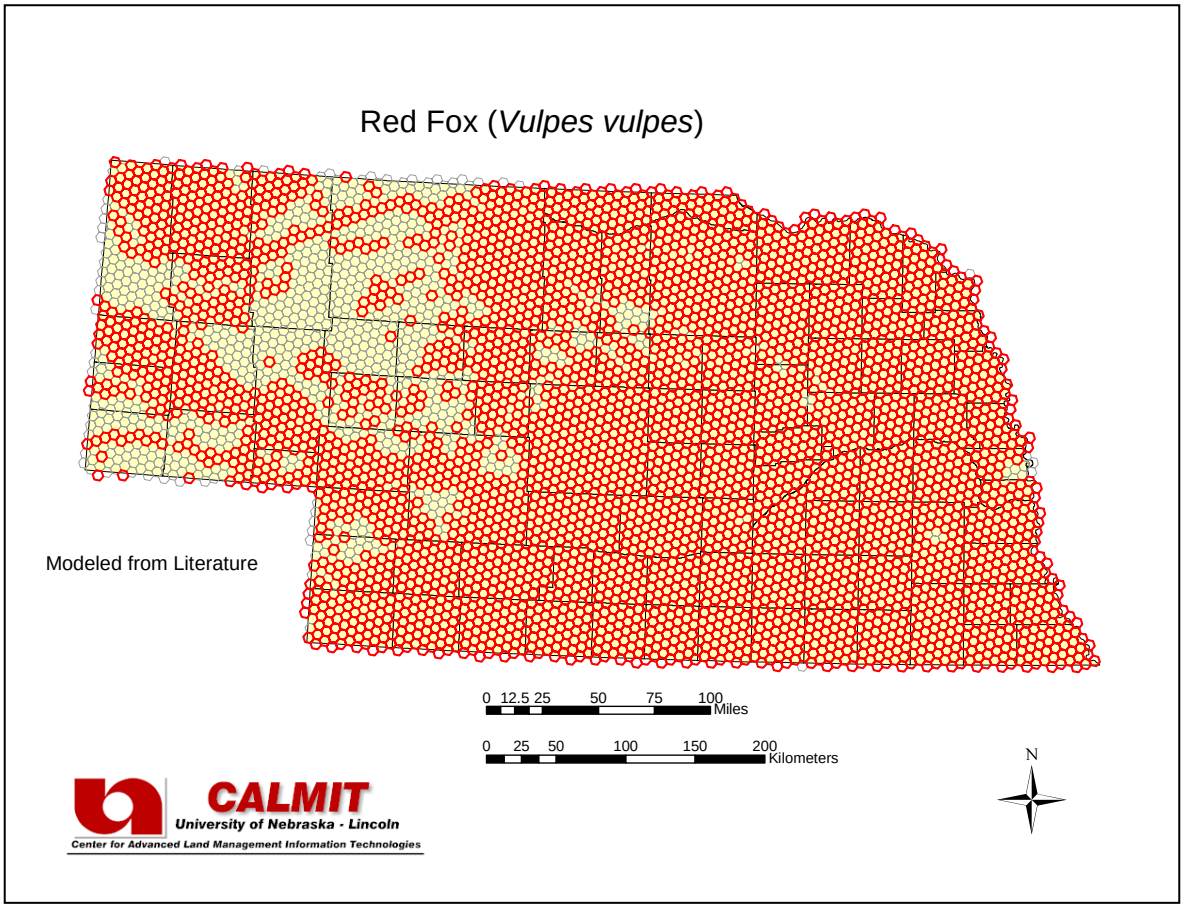
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Red fox** | TNC Global Status: | G5 |
| Scientific Name: | ***Vulpes vulpes*** | Federal Status: | - |
| TNC Element Code: | AMAJA03010 | State (NE) Status: | S5 |

**Habitat Description:**
Statewide distribution in Nebraska, although most common in the moist areas of the eastern part of the state (Freeman 1998). Mixed cultivated and wooded areas, and brushlands (Whitaker 1997). Common in wooded areas but does not require forest habitat, rather uses brushy cover at the forest edge for shelter and forages in brushy areas and thickets (Jones et al. 1985). Extensive distribution in riparian habitats in otherwise essentially treeless areas of the Great Plains (Jones et al. 1985). These foxes prosper in areas altered by man, although they seldom den close to settlements where domestic dogs run loose (Jones et al. 1983). Seldom found far from permanent water, either streams or ponds (Jones et al. 1983). Will not use dense, extensive forests. Prefer habitats with great diversity and use edges heavily (Wilson and Ruff 1999).

**Total Area of Modeled Habitat (ha):** $1.64 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands is present' OR 'Land Cover class Deciduous Forests and Woodlands is present' OR Land Cover class Riparian Shrubland is present' OR 'Land Cover class Riparian Woodland is present' AND NOT 'Land Cover class High Intensity Residential/Commercial/Industrial/ Transportation > 10%'.



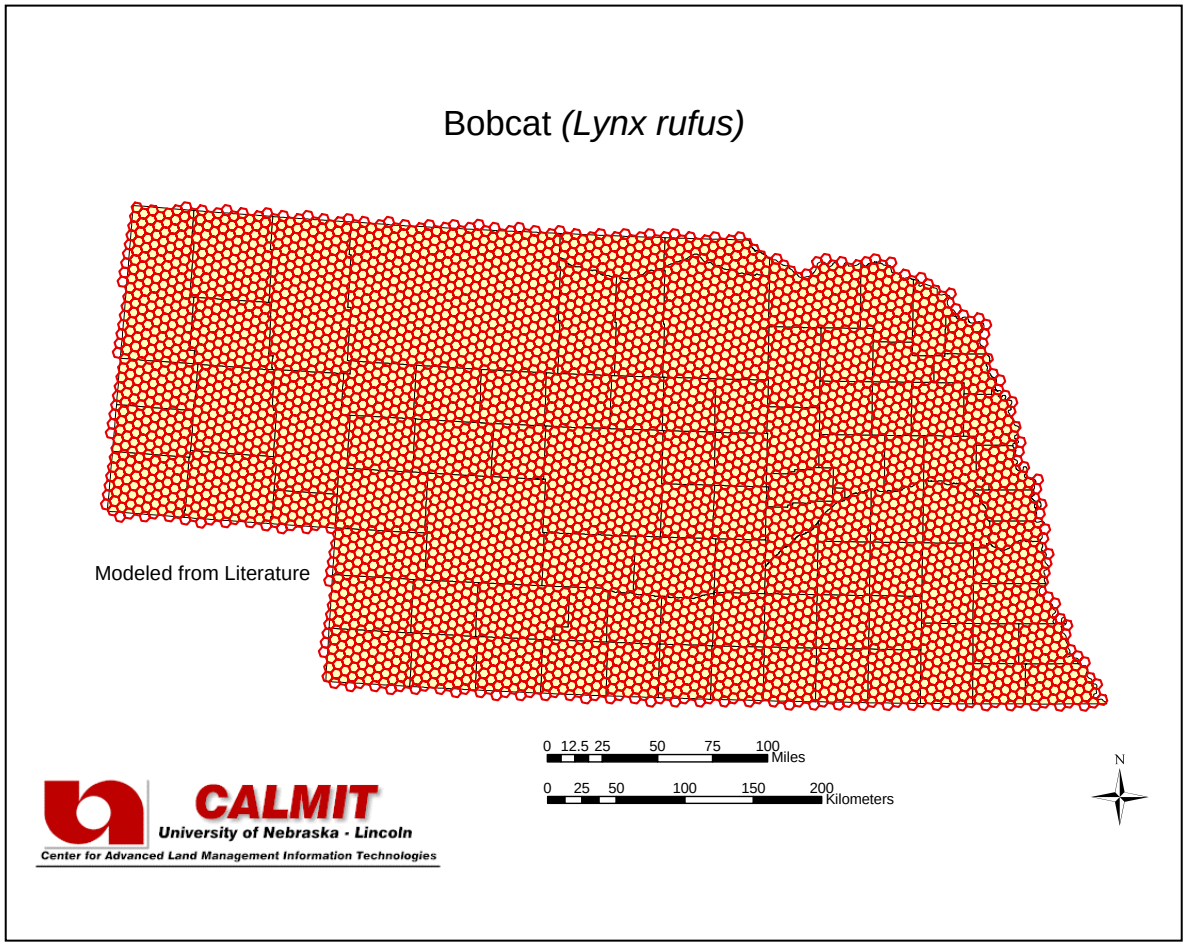
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Bobcat** | TNC Global Status: | G5 |
| Scientific Name: | ***Lynx rufus*** | Federal Status: | - |
| TNC Element Code: | AMAJH03020 | State (NE) Status: | S5 |

**Habitat Description:**
Habitat generalist, occurring in almost every terrestrial habitat type from deserts to swamps to mountains (Layne 1999). Broken country with dense cover and rocky cliffs are considered to be preferred habitat. May also be found in deciduous-coniferous woodlands and forest edge, hardwood forests, swamps, forested river bottomlands, brushlands, deserts, mountains, and other areas with thick undergrowth (Epperson 1978; Schwartz 1981; Rolley and Warde 1985; Boyle and Fendley 1987). Bobcats occur almost everywhere except on featureless plains (Jones et al. 1983). Species is statewide in distribution in Nebraska (Benedict et al. 2000), although uncommon in the Sand Hills (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



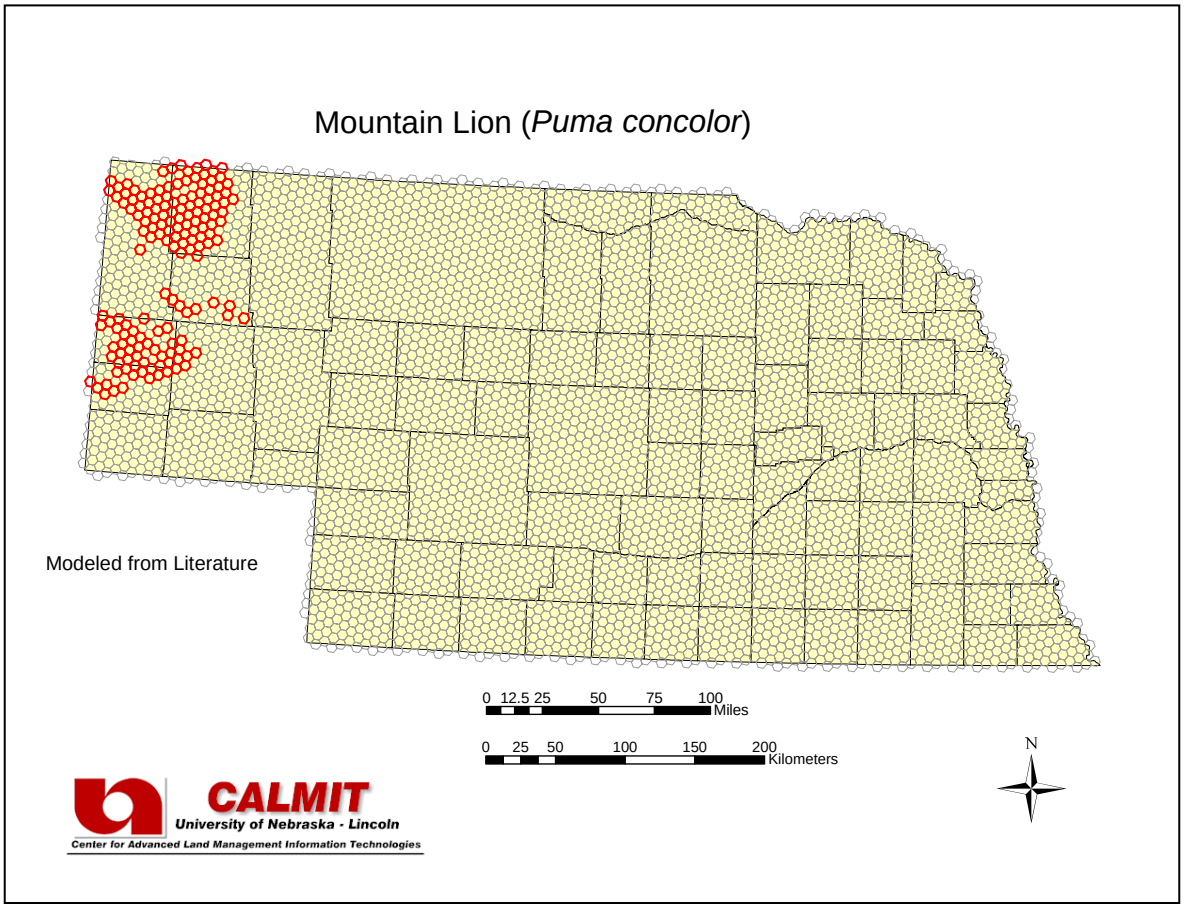
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Mountain lion** | TNC Global Status: | G5 |
| Scientific Name: | ***Puma concolor*** | Federal Status: | - |
| TNC Element Code: | AMAJH04010 | State (NE) Status: | S1 |

**Habitat Description:**
Mostly associated with mountainous terrain, the mountain lion can occur in a wide variety of habitats ranging from swamps, deserts, and wooded river valleys to dense coniferous forests; typically not found in grassland, although it will pass through in search of better hunting habitat (Armstrong 1978; Banfield 1974; Currier 1983; Fitzgerald 1994; Wilson and Ruff 1999). Avoids agricultural areas, flat shrubless deserts and other habitats that lack topographic or vegetative cover (Beier 1999). Free water is required. (Currier 1983). Recent reports suggest that the mountain lion is reclaiming some of its former geographic range in Nebraska (Benedict et al. 2000). Confirmed reports have been from Sioux, Box Butte and Scotts Bluff Counties in the Panhandle area in close proximity to Colorado, Wyoming, or South Dakota (NGPC 2002).

**Total Area of Habitat (ha):** 624,412

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands is present' AND '30-year Average precipitation for July < 60 mm'.



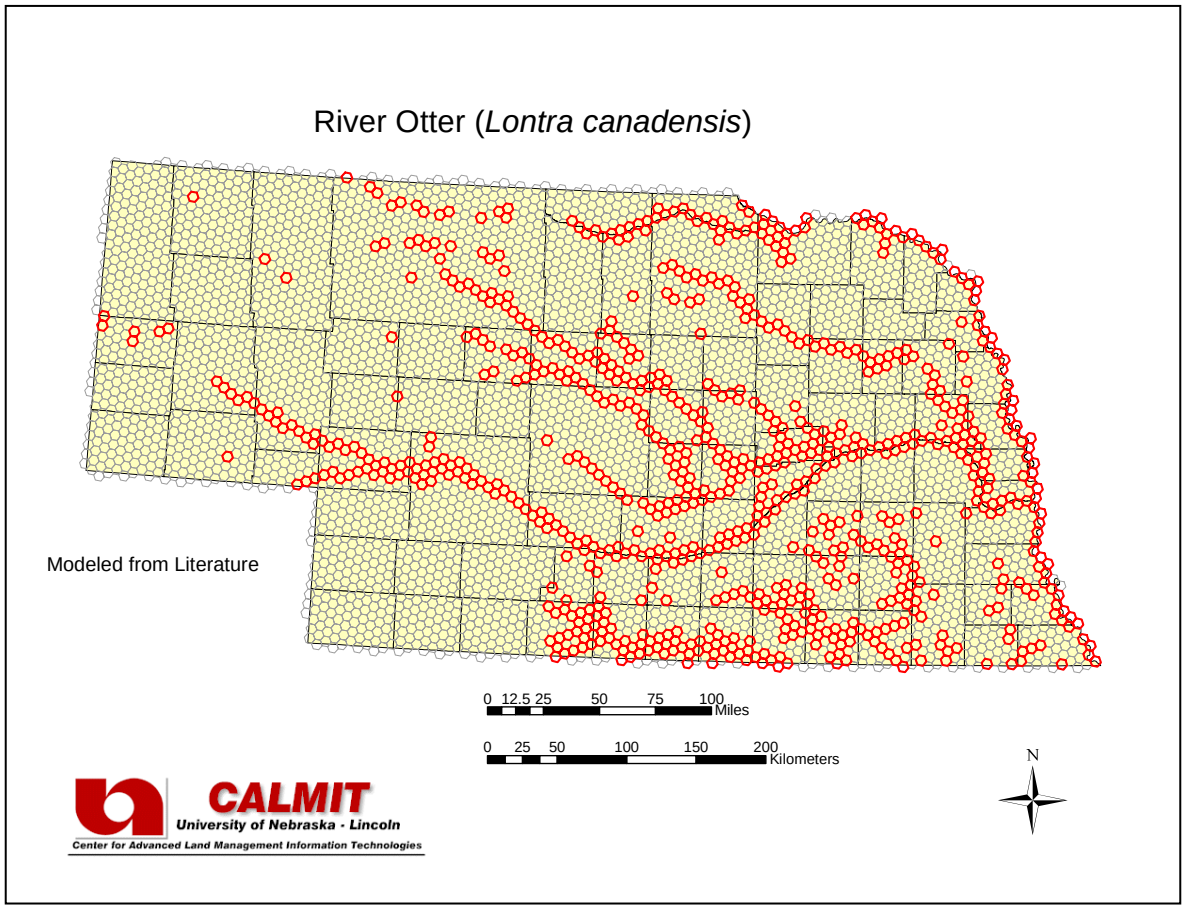
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **River otter** | TNC Global Status: | G5 |
| Scientific Name: | ***Lontra canadensis*** | Federal Status: | - |
| TNC Element Code: | AMAJF10010 | State (NE) Status: | S2 |

**Habitat Description:**
Had been extirpated from the state but are becoming re-established (Freeman 1998, Jones et al. 1983). The current distribution is unknown (Freeman, personal communication 2003). Listed as endangered in Nebraska (NGPC 2002). River otters are quite adaptable, utilizing a variety of habitat types. Although they frequent lakes and ponds, they typically live in marshes and along wooded rivers and streams with sloughs and backwater areas. Occurs mostly in wooded habitat but will live in open areas; yearly home range is between 50 and 100 miles of shoreline (Schwartz 1981; Knox 1988; Cahalane 1961; Jones et al. 1985; Hazard 1982). Requires permanent supply of water (Fitzgerald et al. 1994).

**Total Area of Modeled Habitat (ha):** 3,259,912

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Open Water is present' AND 'Land Cover class Riparian Woodland is present' OR 'Land Cover class Riparian Shrubland is present'.



**Nebraska GAP Analysis 2004**
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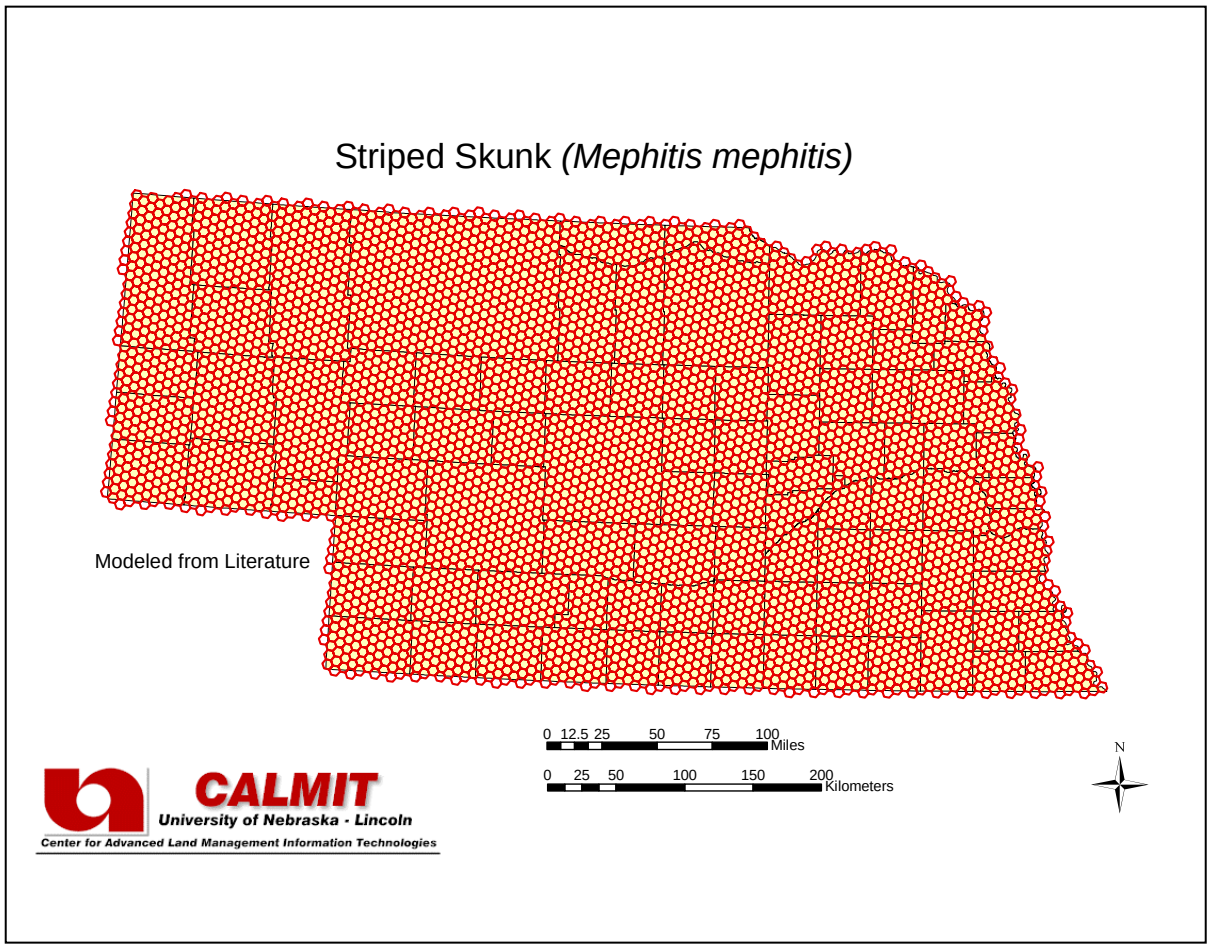
| | | | |
|---|---|---|---|
| Common Name: | **Striped skunk** | TNC Global Status: | G5 |
| Scientific Name: | ***Mephitis mephitis*** | Federal Status: | - |
| TNC Element Code: | AMAJF06010 | State (NE) Status: | S5 |

**Habitat Description:**
Desert, woodlands, grassy plains, and suburbs (Whitaker 1997). Prefers areas of mixed woods, grasslands and open prairie, usually close to water; also found in mixed agricultural land tree-cleared land; thrives in suburban areas (Forsyth 1999). Will live almost anywhere they can gain adequate shelter (Jones et al. 1985). Statewide distribution in Nebraska, although it avoids dense forests and marshy areas where dry den sites are unavailable (Jones el al. 1983; 1985). *Mephitis mephitis* prefers somewhat open areas with a mixture of habitats such as woods, grasslands, and agricultural clearings. They are usually never found further than two miles from a water source.

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



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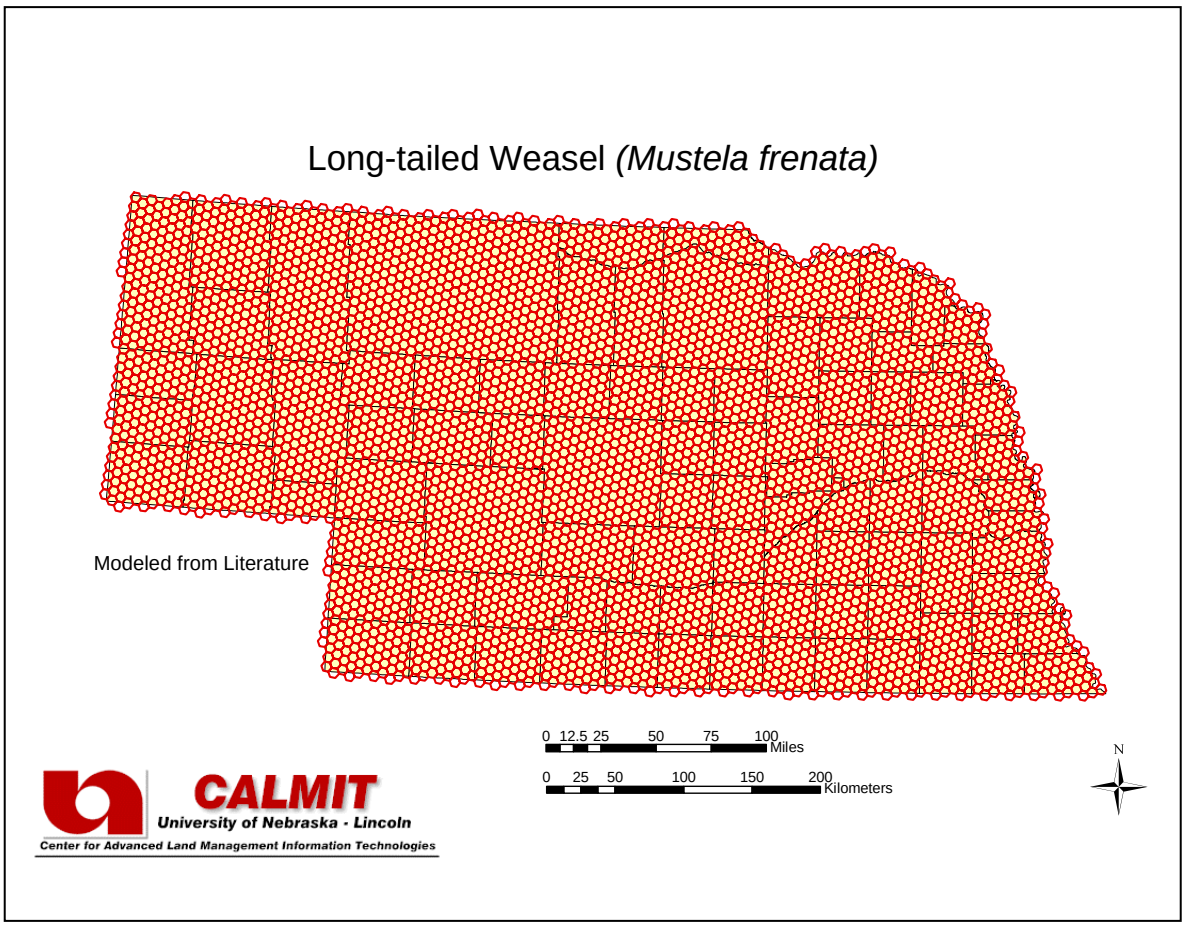
| | | | |
|---|---|---|---|
| Common Name: | **Long-tailed weasel** | TNC Global Status: | G5 |
| Scientific Name: | ***Mustela frenata*** | Federal Status: | - |
| TNC Element Code: | AMAJF02030 | State (NE) Status: | - |

**Habitat Description:**
Varied habitat; forested, brushy, and open areas, including farmland, preferably near water (Whitaker 1997). On the Plains, it typically is most abundant around marshes but can be found almost anywhere, often near a source of water (Jones et al. 1985). It has been reported to favor brushy and rocky areas and often is found near watercourses and lakes. They are not found in deserts or thick, dense forests (Natureserve 2002). Widespread in the Sand Hills of Nebraska (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



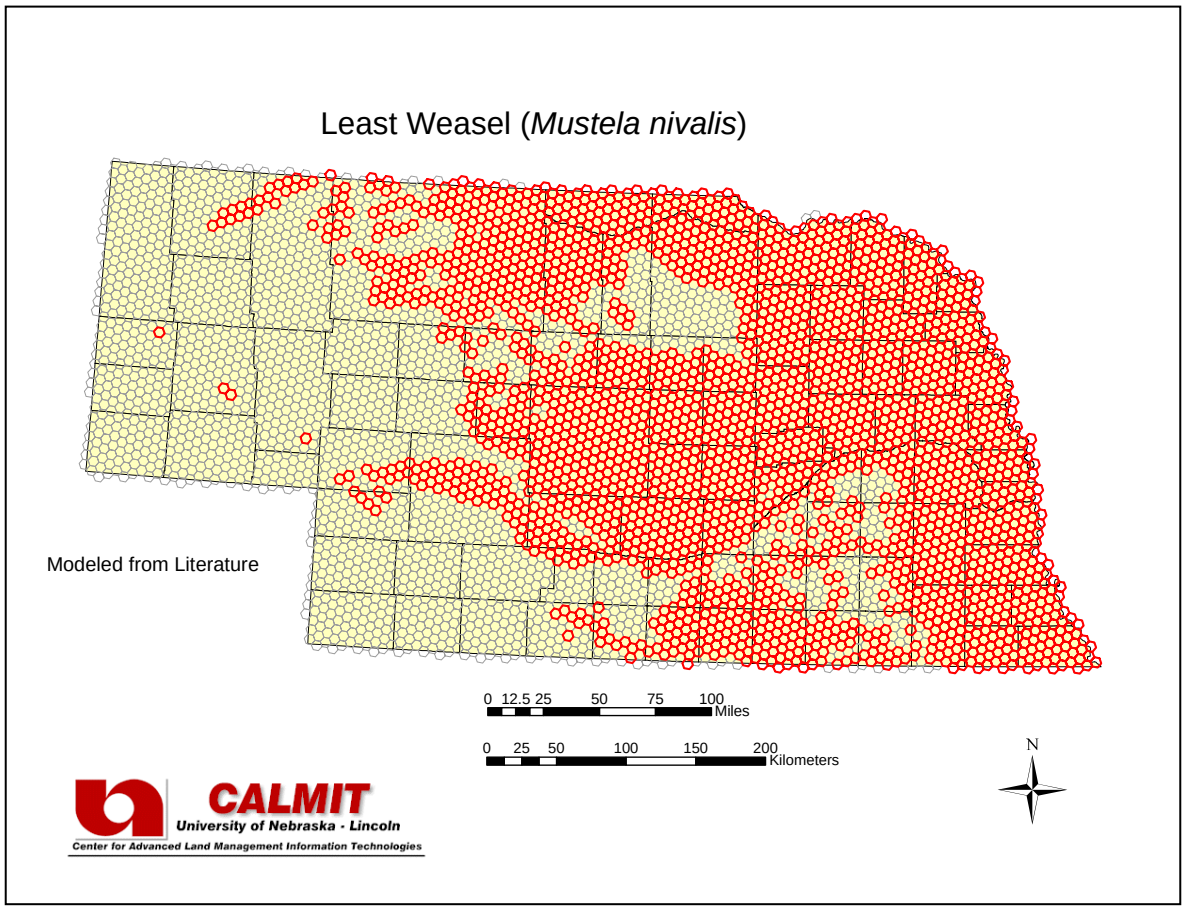
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Least weasel** | TNC Global Status: | G5 |
| Scientific Name: | ***Mustela nivalis*** | Federal Status: | - |
| TNC Element Code: | AMAJF02020 | State (NE) Status: | S5 |

**Habitat Description:**
Prefers low sparse ground cover such as pastures, stubble fields, and marshy areas (Schwartz 1981), open forests, farmlands, riparian woodlands, grassy fields, alpine meadows and forests, scrub, steppe and semi-deserts, and prairies. Avoids, deep, dense forests (Sheffield 1994). Habitat selection is determined by the distribution of small rodents. Local dissappearance is common with low rodent populations (Sheffield 1994). Range on the Northern Great Plains includes the eastern three fourths of Nebraska (Jones et al. 1983).Found most commonly in meadows and grasslands and reaches its greatest abundance in marshy areas.

**Total Area of Modeled Habitat (ha):** $1.09 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Little Bluestem-Gramma Mixedgrass Prairie > 5%' AND 'Land Cover class Lowland Tallgrass Prairie is present' OR 'Land Cover class Riparian Woodland > 0.5%' OR 'Land Cover class Upland Tallgrass Prairie is present'.



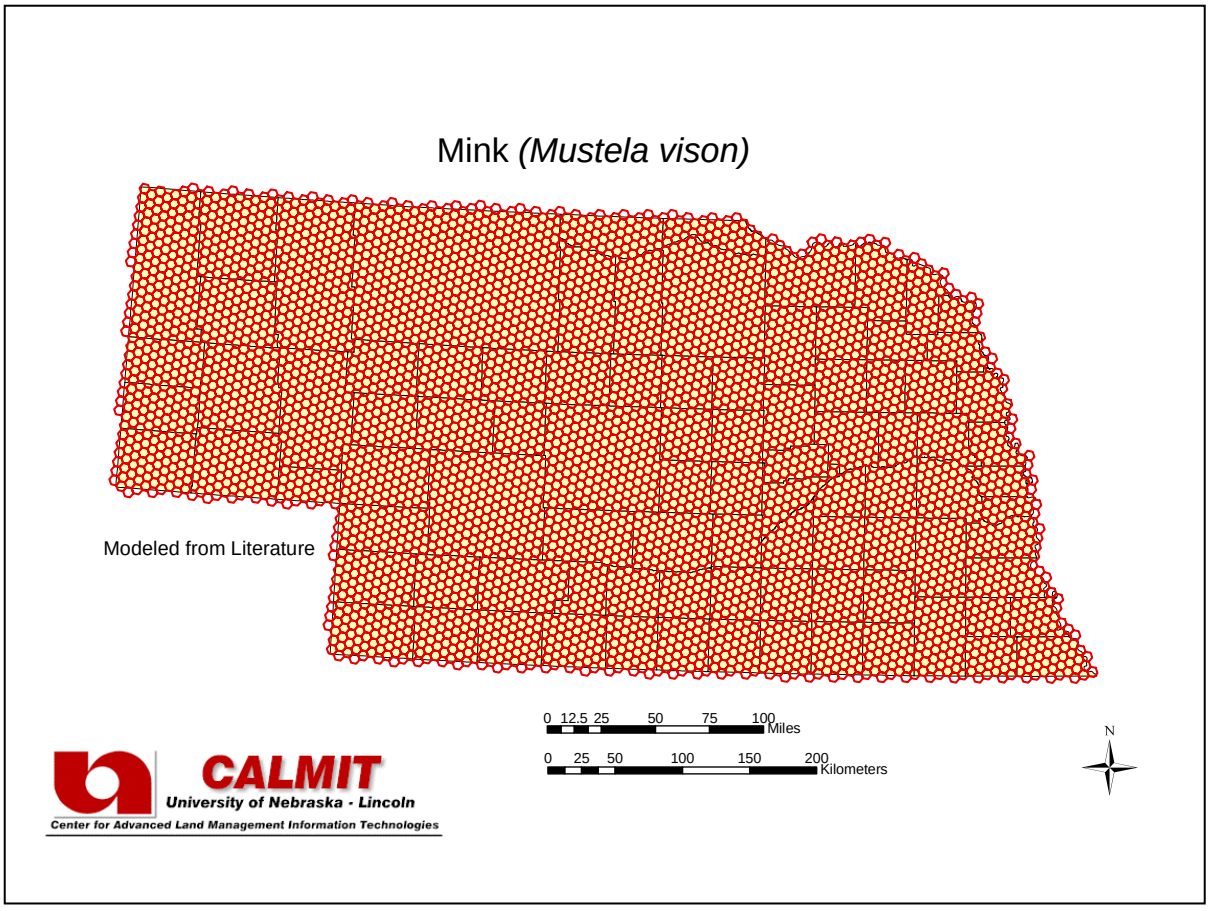
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Mink** | TNC Global Status: | G5 |
| Scientific Name: | ***Mustela vison*** | Federal Status: | - |
| TNC Element Code: | AMAJF02050 | State (NE) Status: | S5 |

**Habitat Description:**
Found along rivers, creeks, lakes, ponds, and marshes (Whitaker 1997). In the Plains region it is common near lakes, watercourses, and marshes, especially where stumps, driftwood, or muskrat lodges break the surface (Jones et al. 1985). Along streams and lakes in swamps and marshes; if it occurs away from water, it prefers second-growth cover of mixed shrubs, weeds and grasses and the edges of cultivated fields and pastures (Forsyth 1999).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



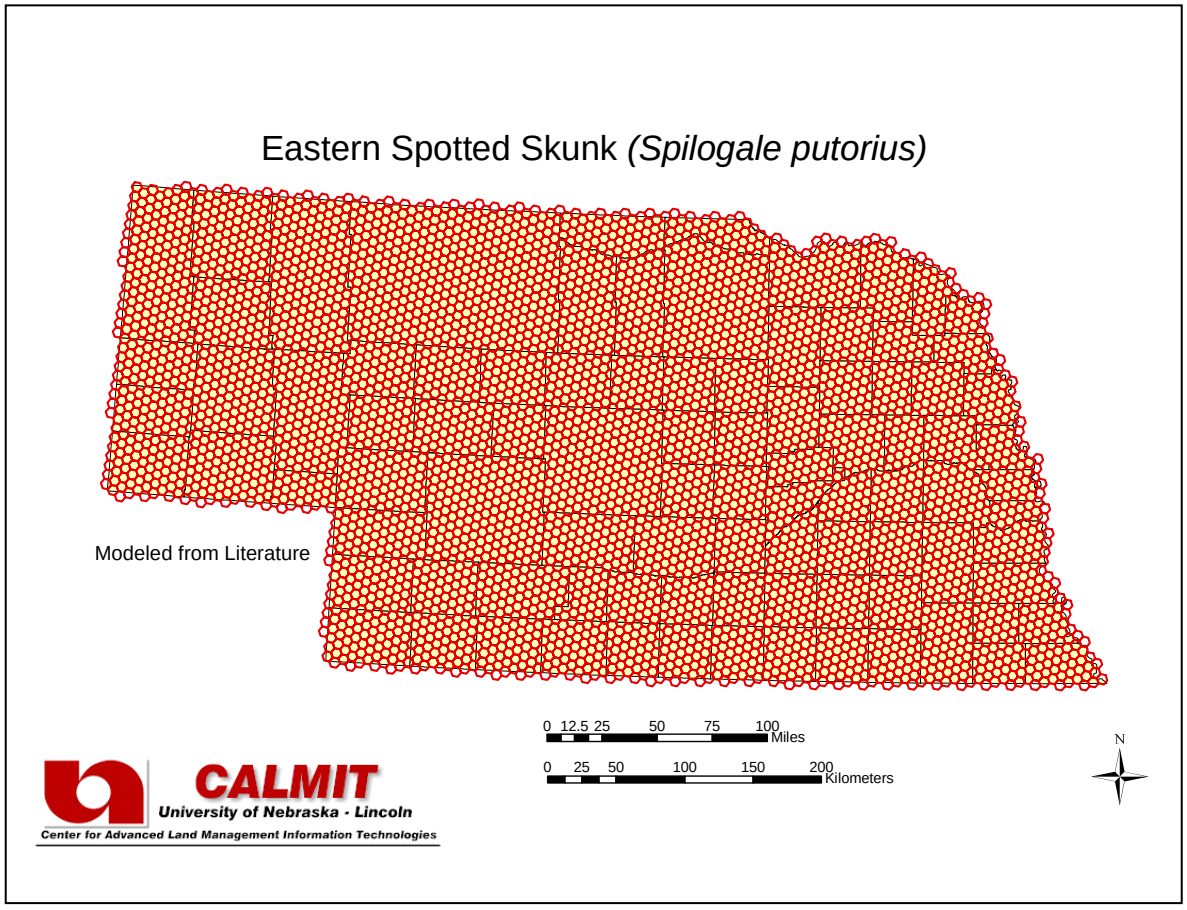
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern spotted skunk** | TNC Global Status: | G5 |
| Scientific Name: | ***Spilogale putorius*** | Federal Status: | - |
| TNC Element Code: | AMAJF05010 | State (NE) Status: | S3 |

**Habitat Description:**
Mixed woodlands and open areas, scrub, and farmland (Whitaker 1997). In Plains States, it frequents riparian woodland, fencerows, and shelterbelts and is commensal with man around farms (Jones et al. 1985). Brushy, rocky and wooded habitats, scrubland, farmland, along streams and among boulders; avoids heavy forests and wetlands (Forsyth 1999). Seldom found in dense forests or marshy areas (Jones et al. 1985).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



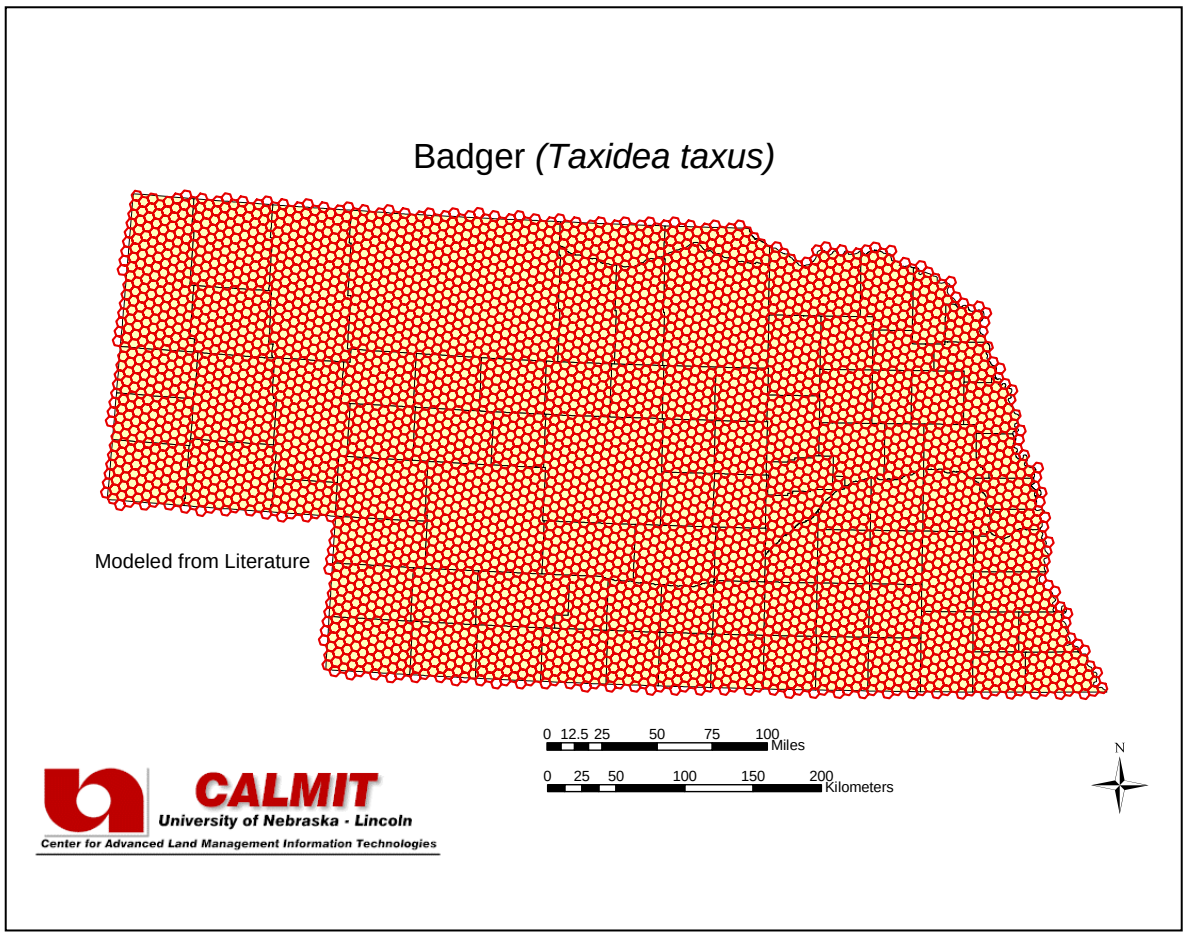
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Badger** | TNC Global Status: | G5 |
| Scientific Name: | ***Taxidea taxus*** | Federal Status: | - |
| TNC Element Code: | AMAJF04010 | State (NE) Status: | S5 |

**Habitat Description:**
Open plains and prairies, farmland, and sometimes edges of woods (Whitaker 1997). Typically inhabit grassland but also inhabit the edges of forests. They are most common where deep soil facilitates burrowing (Jones et al. 1985). Dry, open prairies, grasslands, farmlands and parklands; clay and sandy soils are suitable for its burrow (Forsyth 1999). Widespread in the Sandhills (Freeman 1998). Widespread distribution in Nebraska (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution



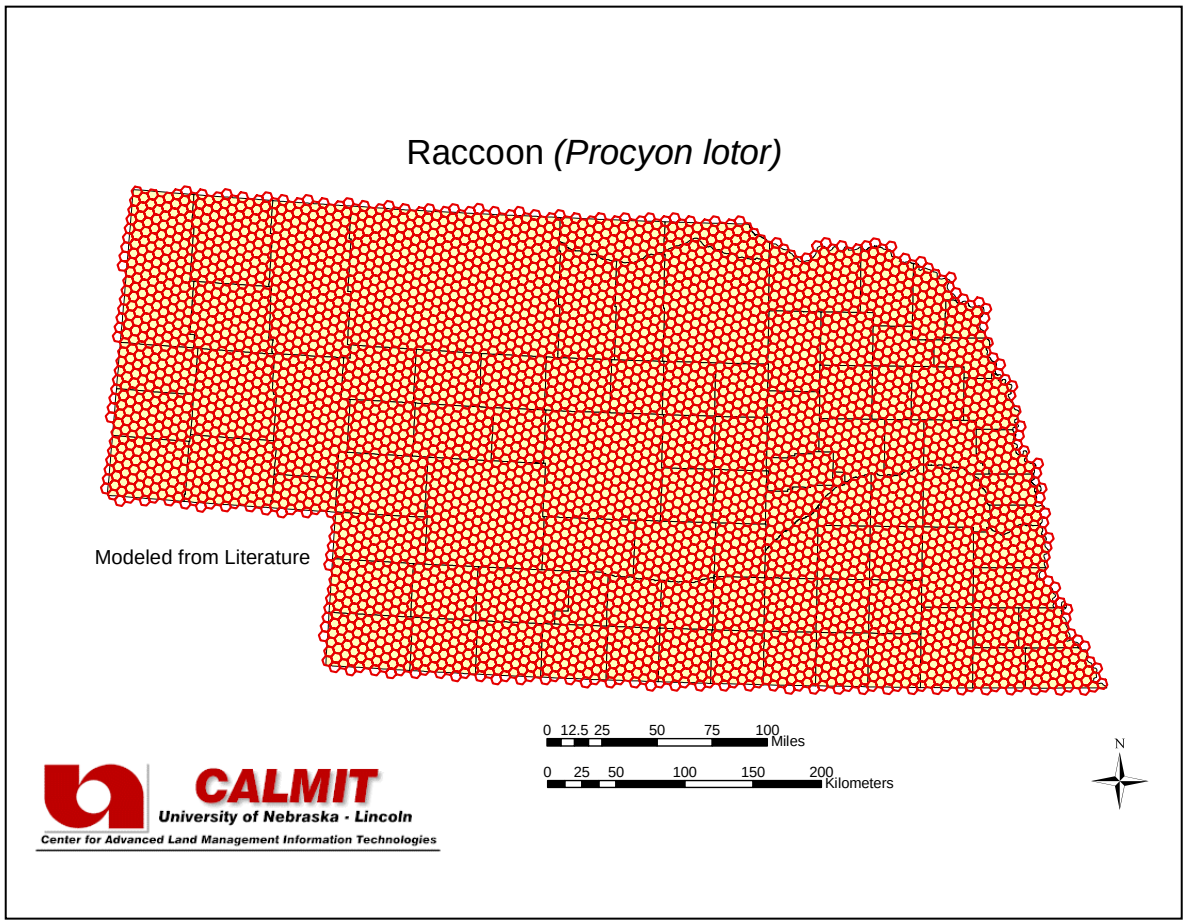
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Raccoon** | TNC Global Status: | G5 |
| Scientific Name: | ***Procyon lotor*** | Federal Status: | - |
| TNC Element Code: | AMAJE02010 | State (NE) Status: | S5 |

**Habitat Description:**
Currently, raccoons are common statewide although they remain more abundant in eastern Nebraska (NGPC 2002). In western and central Nebraska, raccoons are most abundant along major rivers and streams. Raccoons are primarily forest inhabitants and most trees in Nebraska grow near water, so raccoons here are usually associated with rivers and streams (riparian areas). Ideal raccoon habitat is a well-timbered area containing several large, mature trees and including a combination of grain crops and water. Often found in cities and suburbs as well as in rural areas (Whitaker 1997). Raccoons prefer timbered habitats, where they occupy dens in hollow trees and old squirrel nests (Jones et al. 1985). They also can live in treeless areas in ground dens (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



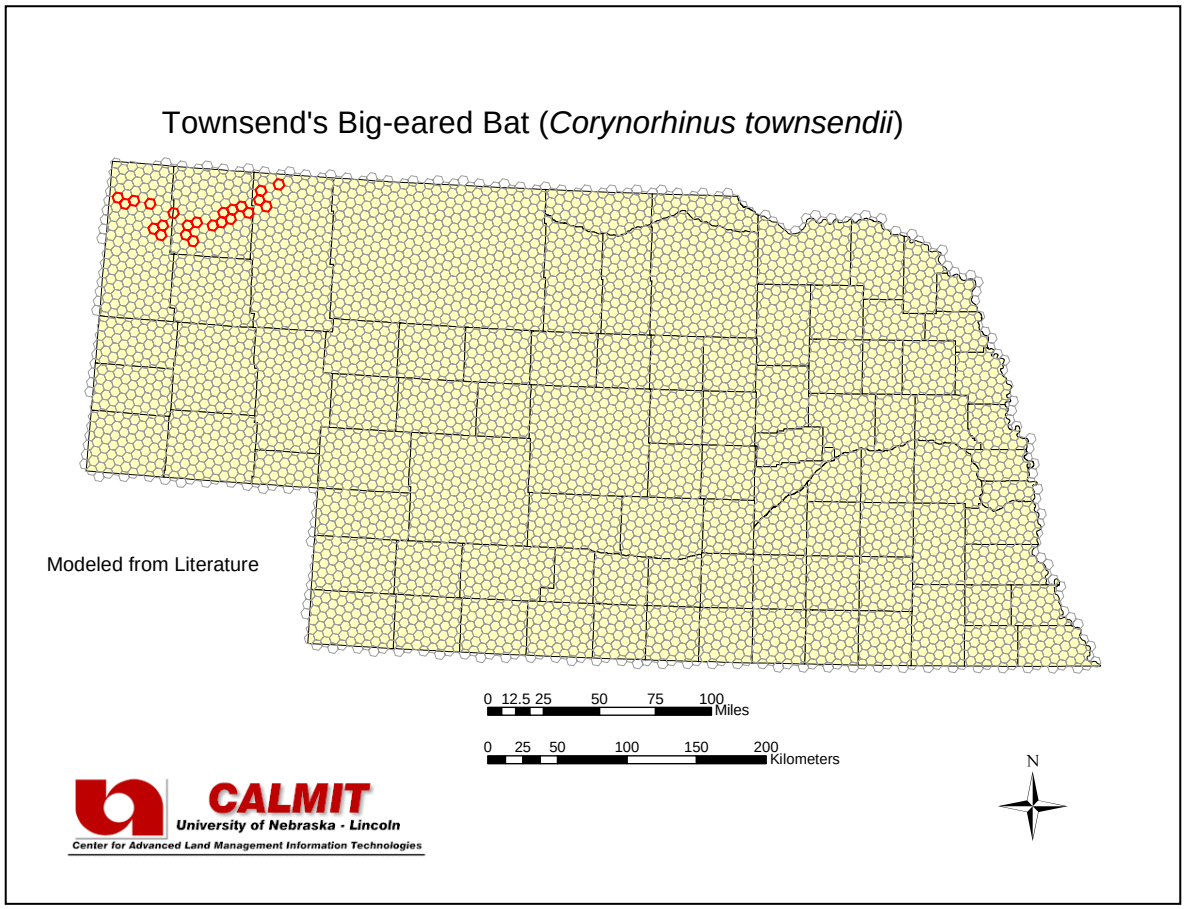
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Townsend's big-eared bat** | TNC Global Status: | G4 |
| Scientific Name: | ***Corynorhinus townsendii*** | Federal Status: | - |
| TNC Element Code: | AMACC08010 | State (NE) Status: | S1 |

**Habitat Description:**
Their most typical habitat is arid western desert scrub and pine forest regions (Bat Conservation International 2002). Known from only one location on the Pine Ridge in northwestern Nebraska (Jones et al. 1983). In the west, scrub deserts and pine and pinon-juniper forests. Usually roosts in caves, sometimes in buildings (Whitaker 1997). Cultivated valleys bordered by deciduous forests, brush, junipers or pine forest (Forsyth 1999).

**Total Area of Modeled Habitat (ha):** 93,258

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands > 12.5%' AND 'Land Cover class Barren/Sand/Outcrop is present' AND 'Elevation > 900 m'.



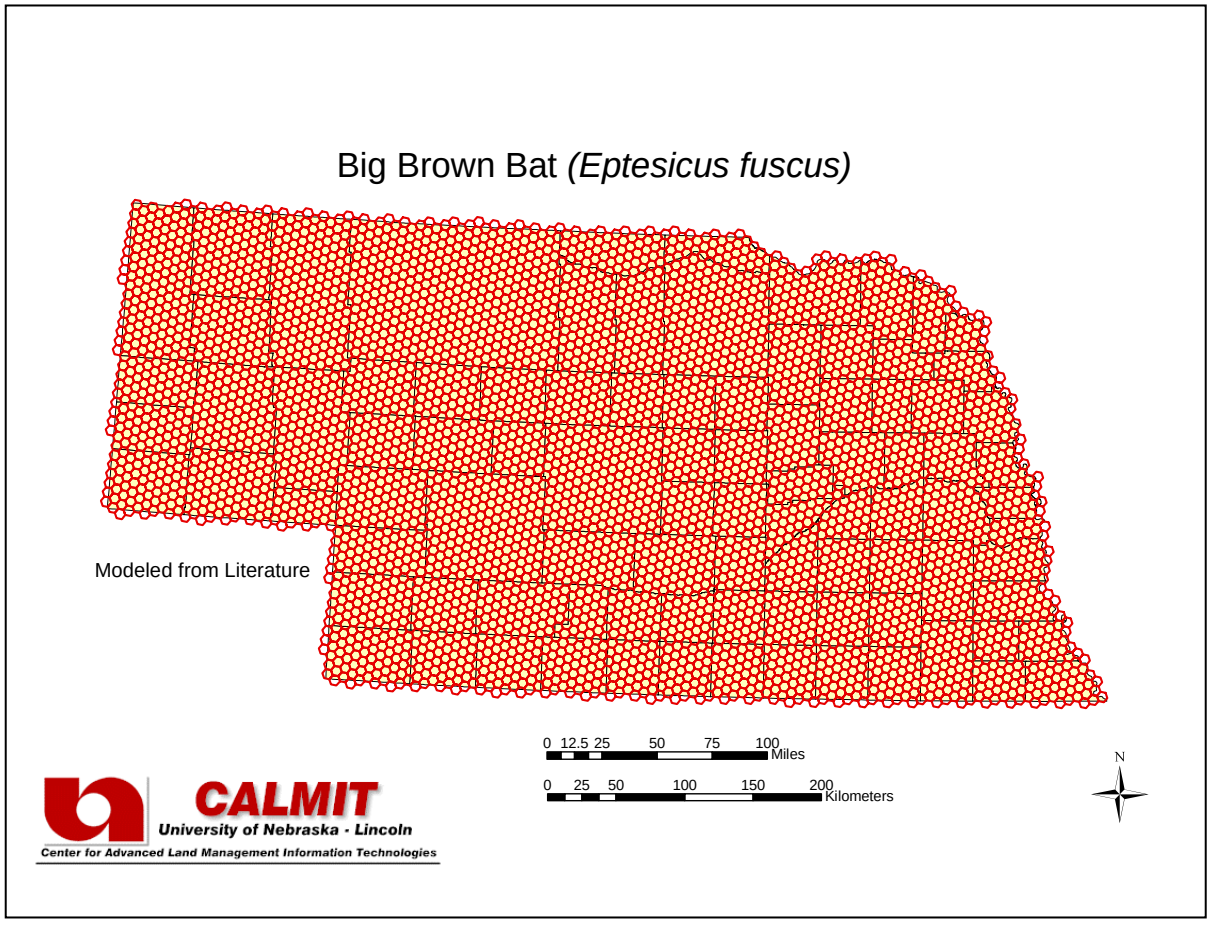
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Big brown bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Eptesicus fuscus*** | Federal Status: | - |
| TNC Element Code: | AMACC04010 | State (NE) Status: | S5 |

**Habitat Description:**
Occurs primarily in woodlands; hibernates in caves, mines, or crevices, with summer colonies in buildings or hollow trees (Whitaker 1997). The big brown bat is found in virtually every American habitat ranging from timberline meadows to lowland deserts, though it is most abundant in deciduous forest areas. It is often abundant in suburban areas of mixed agricultural use (Bat Conservation International 2002), in urbanized areas, around farm buildings, pastures, meadows, creeks, ponds and wooded areas (Forsyth 1999). The big brown bat inhabits cities, towns, and rural areas, but is least commonly found in heavily forested regions (Kurta 1995). It is widespread in the Sand Hills (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



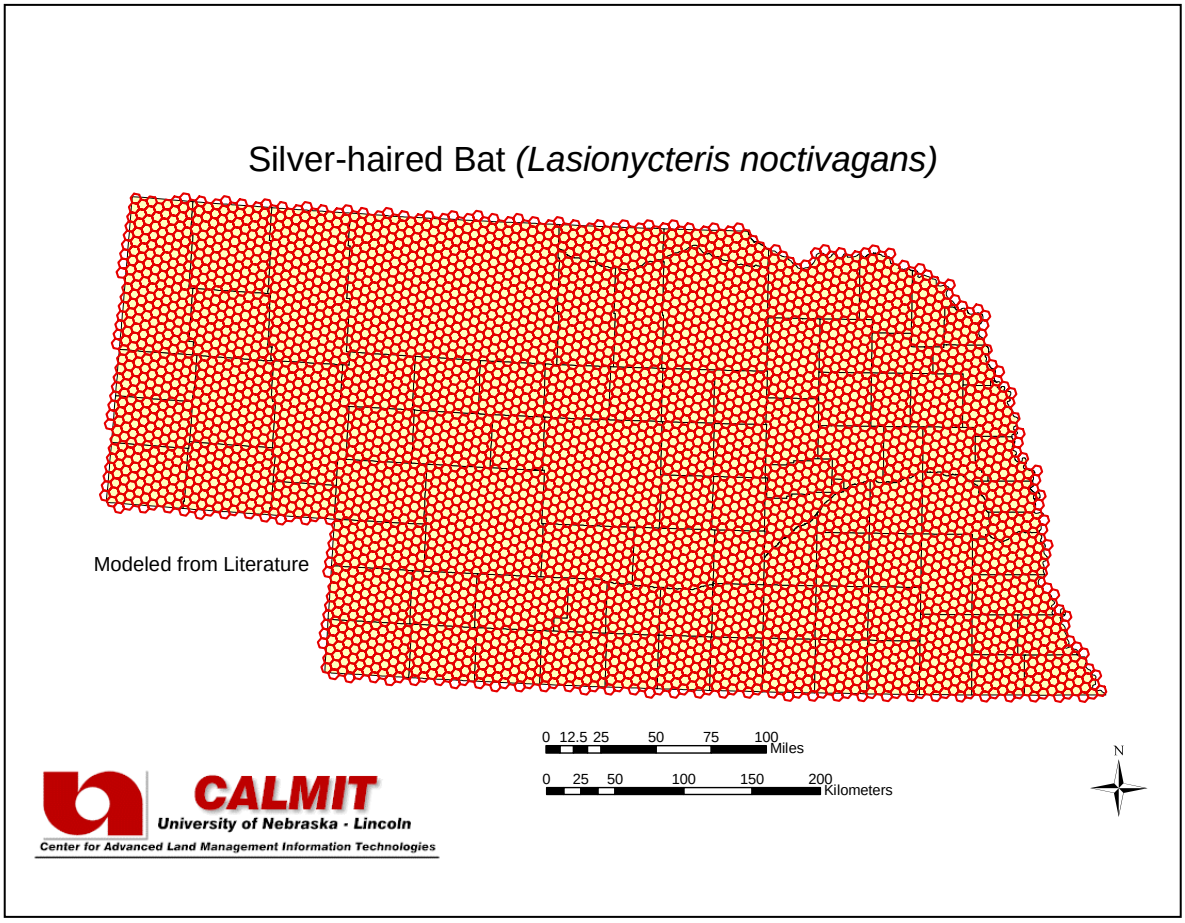
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Silver-haired bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Lasionycteris noctivagans*** | Federal Status: | - |
| TNC Element Code: | AMACC02010 | State (NE) Status: | S5 |

**Habitat Description:**
Primarily a tree-inhabiting species, prefers forested areas adjacent to lakes, ponds, and streams (NatureServe 2002). Usually found flying over rivers and lakes in forests and along wooded watercourses. Among the most common bats in forested areas of North America, most closely associated with coniferous or mixed coniferous and deciduous forest types (BCI 2002). Usually roosts in dense foliage of trees but will also roost under bark or in hollow trees, caves, crevices of rocks, and buildings. Also associated with grassland habitats. (Banfield 1974; Jones and Birney 1988; Kunz 1982, 1999; Mattson et al. 1996; Schwartz 1981). Widespread in the Sand Hills (Freeman 1998). The silver-haired bat may be present in Nebraska only during their migrations north in the late spring and south in the late summer and early autumn (Jones 1964).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



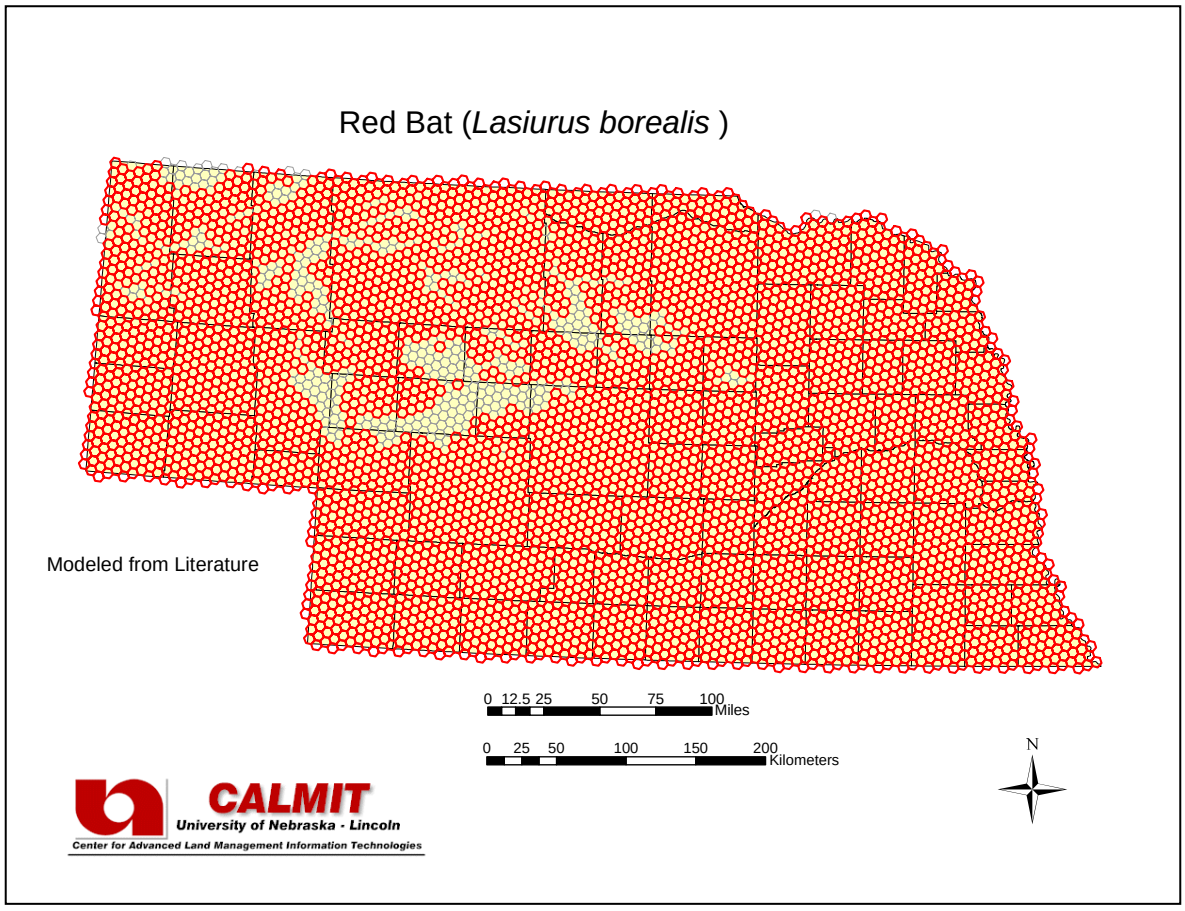
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Red bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Lasiurus borealis*** | Federal Status: | - |
| TNC Element Code: | AMACC05010 | State (NE) Status: | S5 |

**Habitat Description:**
Forests, forest edges, hedgerows and other wooded areas; also adapted to villages and towns (Forsyth 1999). Open deciduous and coniferous forests provide suitable habitat (Benedict et al. 2000). Red bats roost in trees and occasionally in other vegetation and are among the most conspicuous bats in the eastern part of the Dakotas and Nebraska, where their preferred wooded habitat prevails. They are relatively rare in the western part of Nebraska (Jones et al. 1983), although more recent records indicate a westward expansion (Benedict et al. 2000). In the Sand Hills, red bats have been found only in the central Niobrara River valley (Freeman 1998).

**Total Area of Modeled Habitat (ha):** $1.87 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands < 2.5 %' OR 'Land Cover class Juniper Woodlands > 2.5%'.



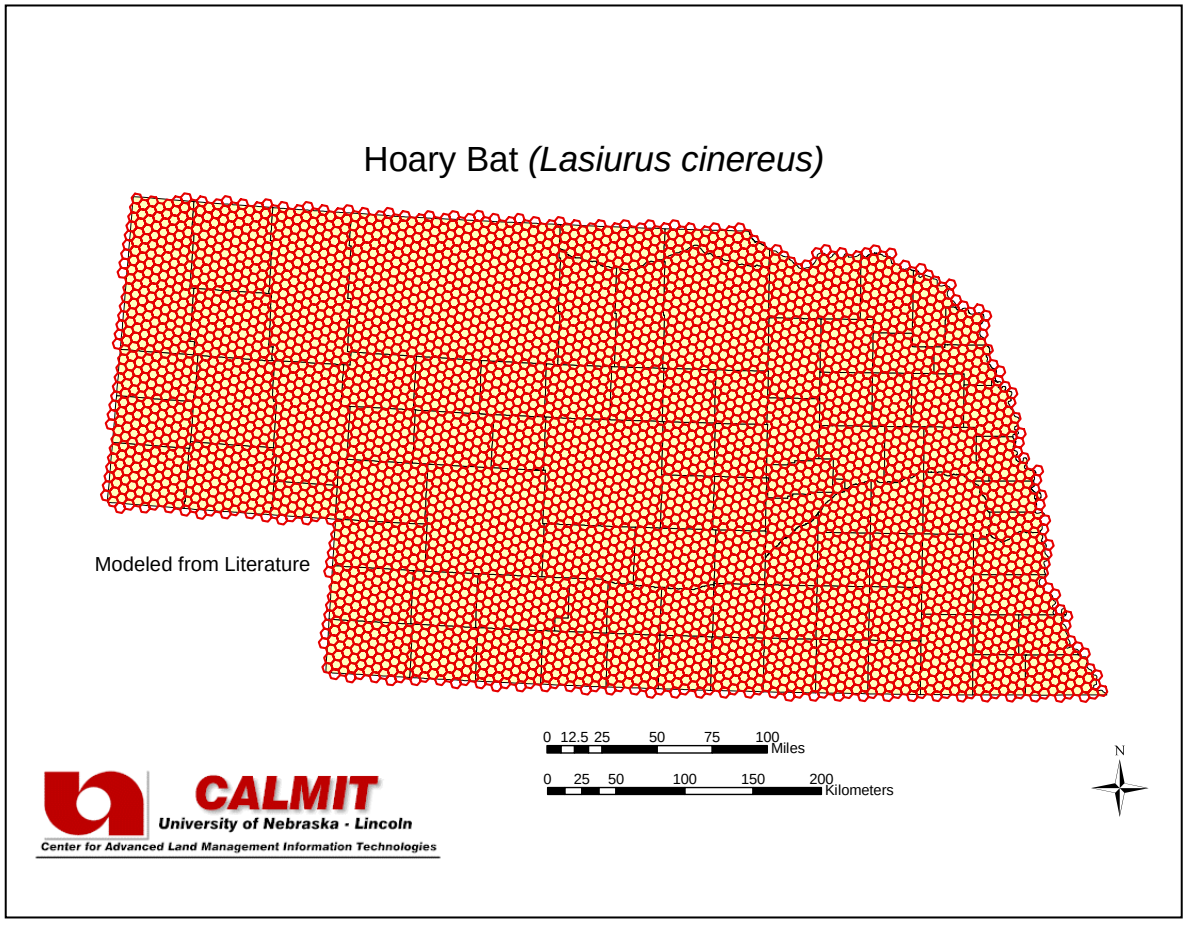
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Hoary bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Lasiurus cinereus*** | Federal Status: | - |
| TNC Element Code: | AMACC05030 | State (NE) Status: | S5 |

**Habitat Description:**
Both deciduous and coniferous forests, as well as desert canyons. Roosts in foliage (Whitaker 1997). The usual roost is well covered above with vegetation, open below, and situation 10-15 feet above the ground (Jones et al. 1983). Wooded areas, especially coniferous regions (Forsyth 1999). Widespread in the Sand Hills (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



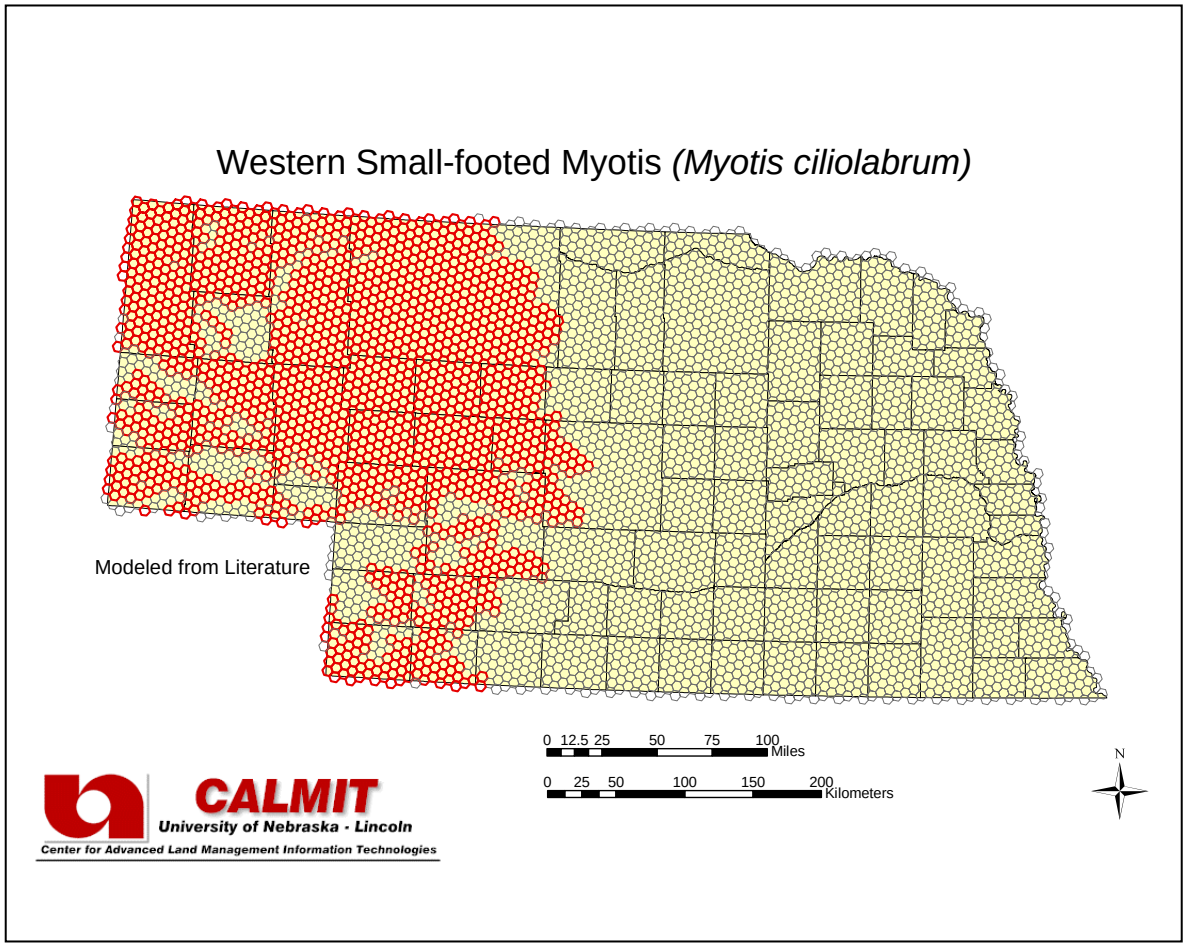
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Western small-footed myotis** | TNC Global Status: | G5 |
| Scientific Name: | ***Myotis ciliolabrum*** | Federal Status: | - |
| TNC Element Code: | AMACC01140 | State (NE) Status: | S4 |

**Habitat Description:**
Arid and shortgrass prairie regions; cliffs, talus, or clay buttes or riverbanks in prairie areas (Whitaker 1997). Its distribution is closely associated with rocky habitats and is discontinuous over much of the plains region. It is found on the Pine Ridge in Nebraska (Jones et al. 1985). Widespread in the Sand Hills (Freeman 2002). The small-footed myotis is closely associated with rocky habitats throughout much of its distribution. On the Northern Plains it occurs most frequently in areas with dissected breaks and badlands, ridges, cliffs, or major outcroppings prevalent in western North Dakota, South Dakota and Nebraska.

**Total Area of Modeled Habitat (ha):** 6,783,375

**Model Description:**
Modeled from literature using the set of variables 'Average Elevation > 850 m' AND 'Slope class 2-5 percent > 15%'.



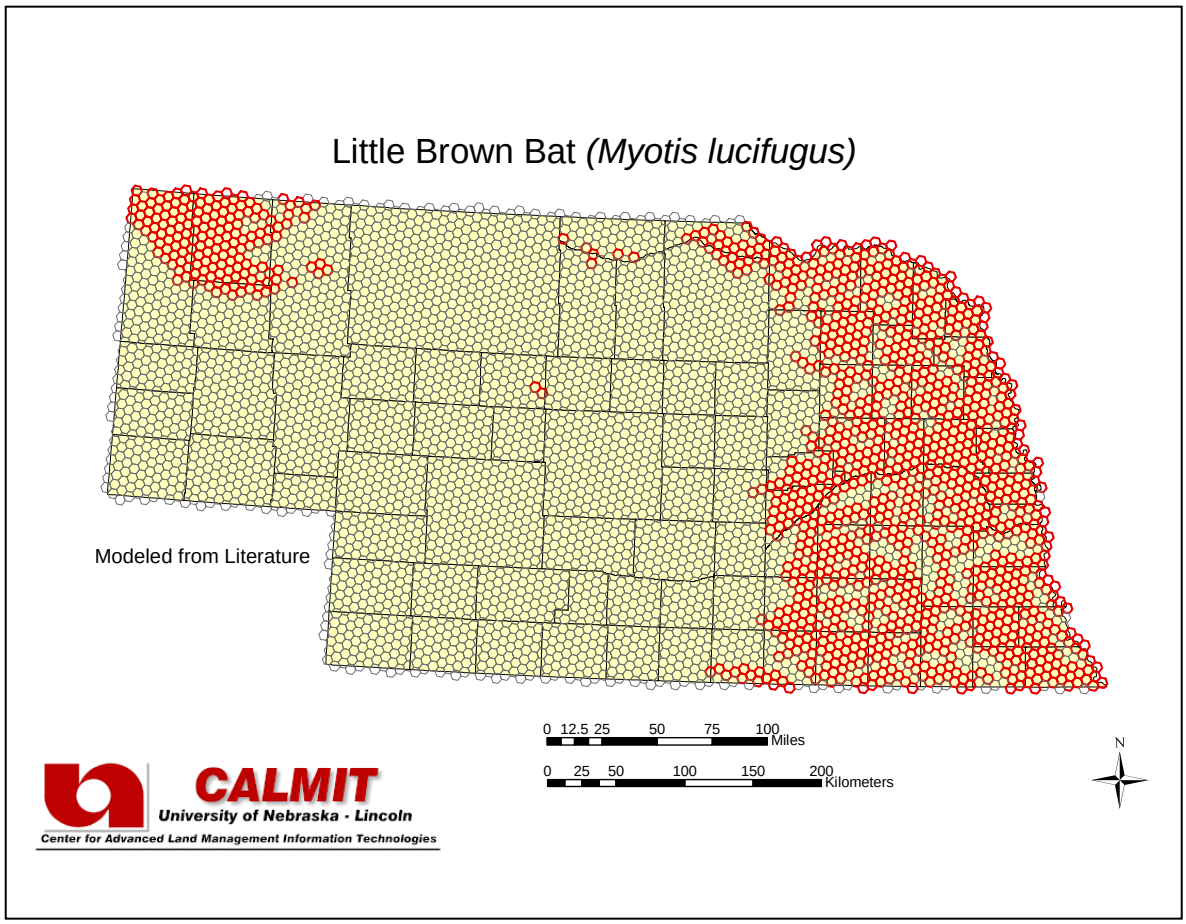
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Little brown bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Myotis lucifugus*** | Federal Status: | - |
| TNC Element Code: | AMACC01010 | State (NE) Status: | S4 |

**Habitat Description:**
Areas along streams and lakes; in summer, forms nursery colonies, usually in buildings or other structures. In winter, hibernates in caves and mines in the East (Whitaker 1997). This bat is widespread and frequently inhabits man-made structures (Jones et al. 1985). Caves, mine tunnels, hollow trees; has adapted to urban life during summer months and uses buildings as roosting sites (Forsyth 1999). In Nebraska two subspecies have been tentatively identified as occurring in the northwestern corner (*M.l. carissima*) and eastern third (*M.l. lucifugus*) of the state (Jones et al. 1983). Colonies are usually found near a body of water, such as a lake, pond, or stream.

**Total Area of Modeled Habitat (ha):** 5,043,935

**Model Description:**
Modeled from literature using the set of variables ('Elevation < 550 m' AND Stream Class is present') OR ('Land Cover class Ponderosa Pine Forests and Woodlands > 20%' OR 'Land Cover class Western Wheatgrass Mixedgrass Prairie is present').



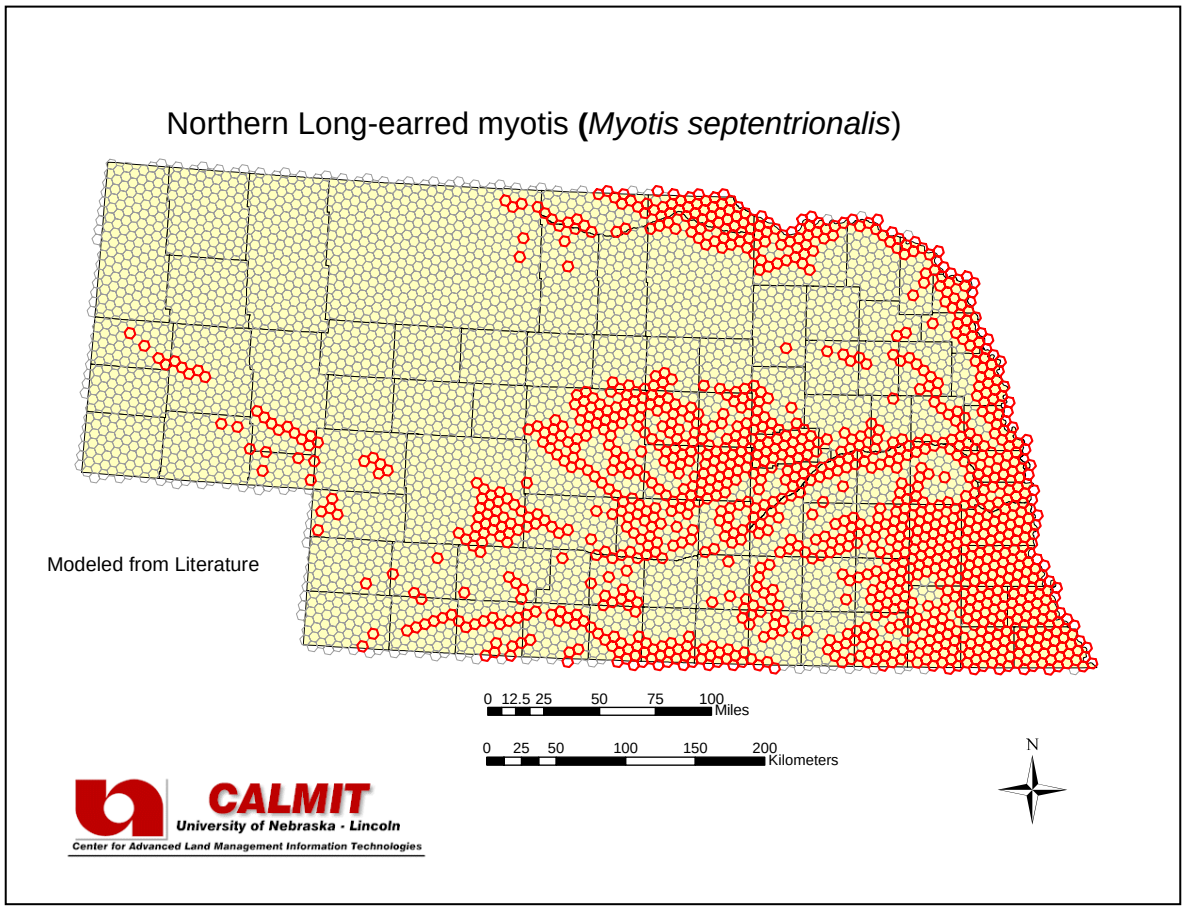
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Northern long-earred myotis** | TNC Global Status: | G4 |
| Scientific Name: | ***Myotis septentrionalis*** | Federal Status: | - |
| TNC Element Code: | AMACC01150 | State (NE) Status: | S3 |

**Habitat Description:**
Formerly *Myotis keenii* (BCI 2002). Woods and wooded streams. Hibernates in caves and mines in winter; usually roosts under loose bark, shutters, and shingles, but sometimes in buildings in summer (Whitaker 1997). Dry forests, coniferous boreal forests (Forsyth 1999). In winter they are often found roosting in caves and mines throughout their range (Wilson and Ruff 1999). Small, highly fragmented, or young forests that provide limited areas of subcanopy foraging habitat may not be suitable. Young forests may also lack appropriate nursery sites. A lack of suitable hibernacula may prevent occupancy of areas that otherwise have adequate habitat (Kurta 1982).

**Total Area of Modeled Habitat (ha):** 5,084,495

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands > 2.5%' OR 'Land Cover class Juniper Woodlands > 2.5%' OR 'Land Cover class Emergent wetland > 0.5%' OR 'Land Cover class Riparian Woodland > 1%'.



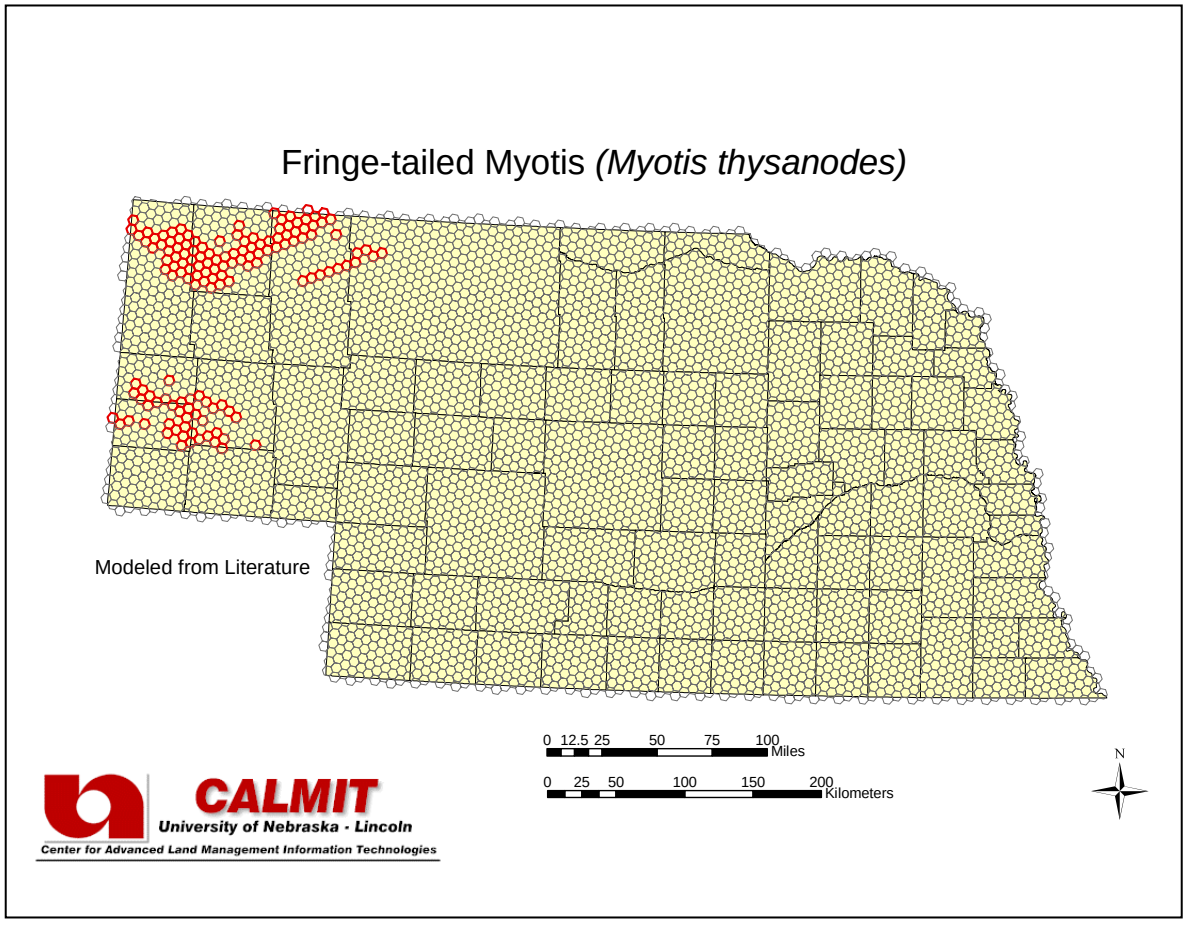
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Fringe-tailed myotis** | TNC Global Status: | G4G5 |
| Scientific Name: | ***Myotis thysanodes*** | Federal Status: | - |
| TNC Element Code: | AMACC01090 | State (NE) Status: | S1 |

**Habitat Description:**
Oak, pinyon, and juniper forests; desert scrub. Roosts in caves, mines, buildings, and other protected locations (Whitaker 1997). Found on the Pine Ridge and Wildcat Hills of the Nebraska Panhandle (Jones et al. 1985). Seems to prefer montane and upland forests (Jones el al. 1983).

**Total Area of Modeled Habitat (ha):** 571,704

**Model Description:**
Modeled from literature using the variables 'Land Cover class Ponderosa Pine Forests and Woodlands > 1%' AND 'Elevation > 995 m'.



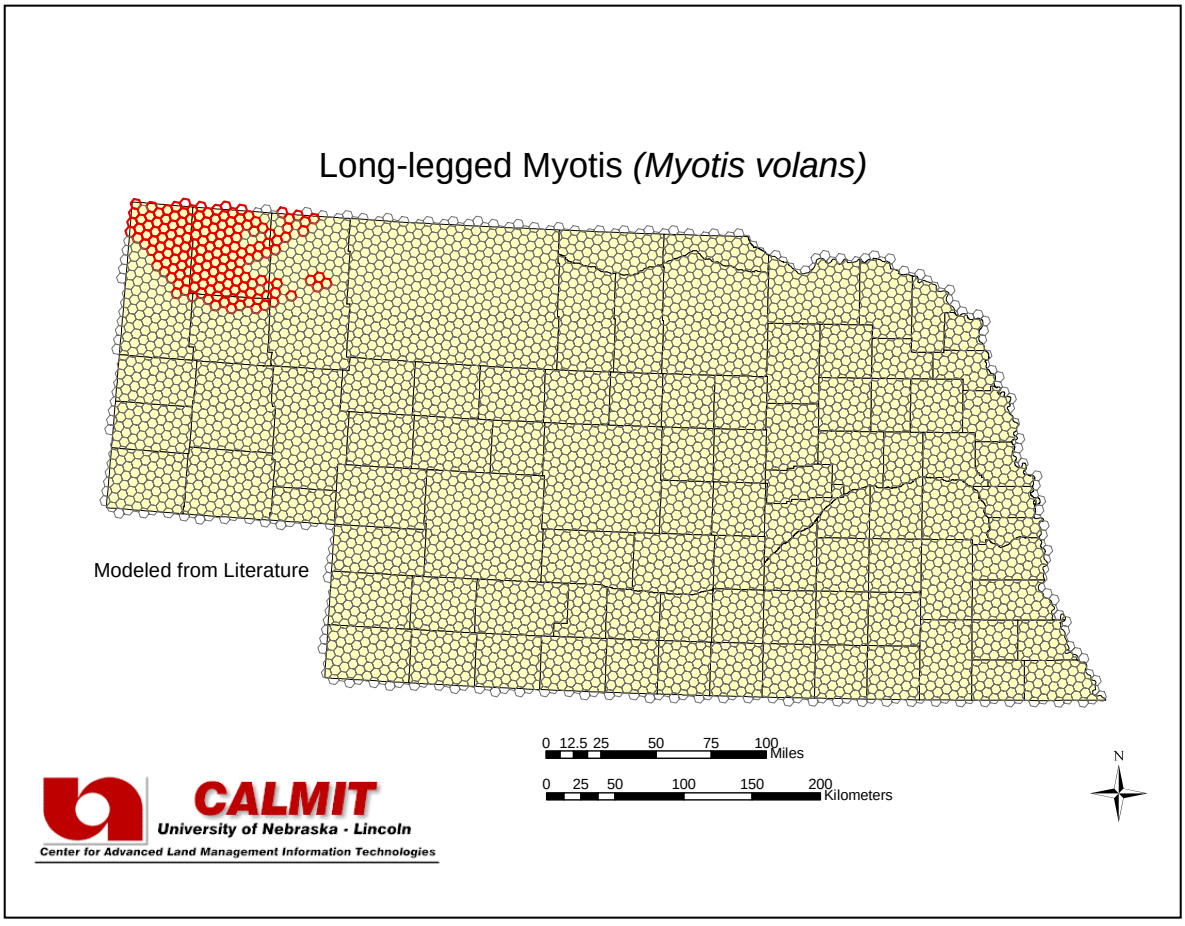
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Long-legged myotis** | TNC Global Status: | G5 |
| Scientific Name: | ***Myotis volans*** | Federal Status: | - |
| TNC Element Code: | AMACC01110 | State (NE) Status: | S2 |

**Habitat Description:**
Mainly coniferous forests; in summer, roosts in trees, crevices or buildings (Whitaker 1997). It principally inhabits open forest lands and appears to be the most common member of the genus on the Black Hills and on the pine-clad buttes of northwestern Nebraska (Jones et al. 1983). It seems to prefer open montane forests and often is common in coniferous habitats but is occasionally found in evergreen-deciduous forests and evidently tolerates the essentially treeless, barren badlands of northwestern Nebraska.

**Total Area of Modeled Habitat (ha):** 664,966

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Wheatgrass Mixedgrass Prairie is present' OR 'Land Cover class Ponderosa Pine Forests and Woodlands > 20%' AND 'Elevation > 1100 m'.



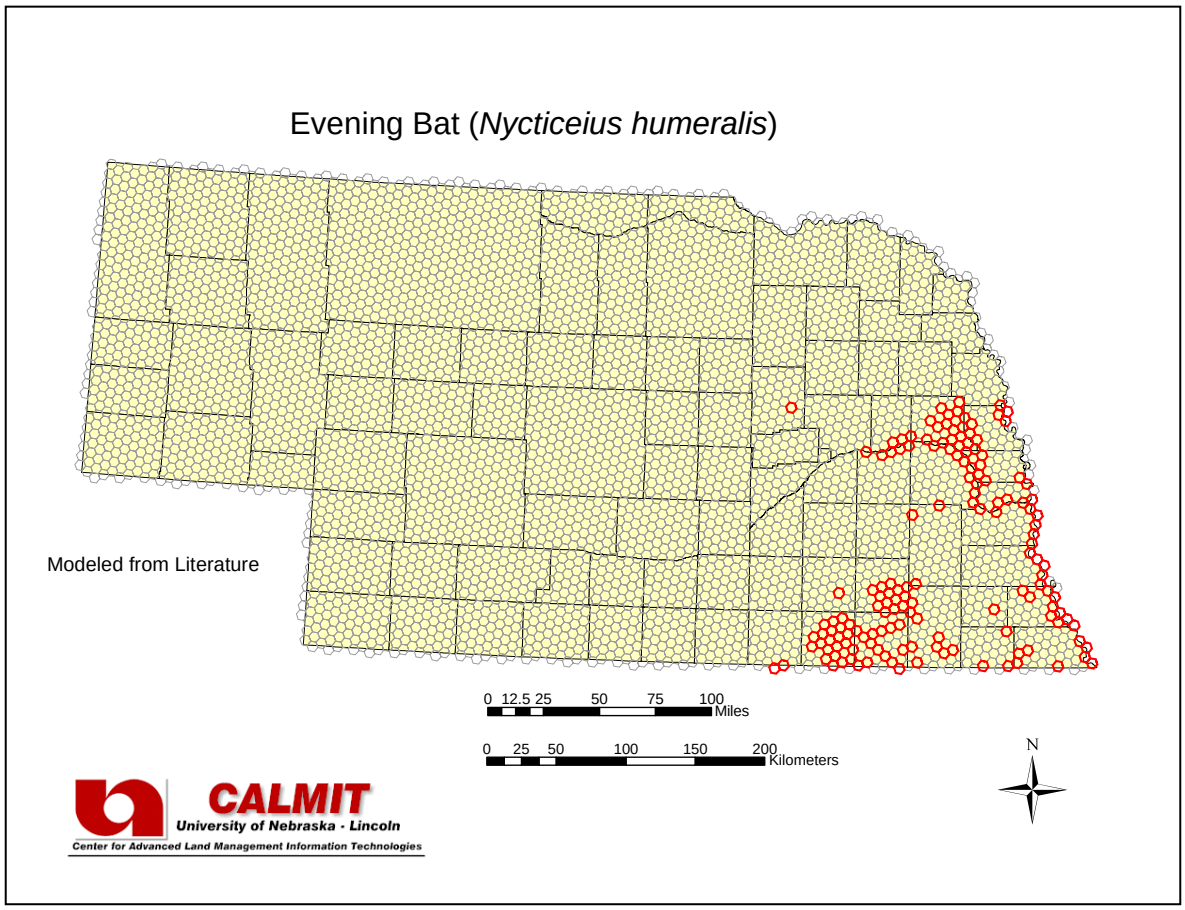
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Evening bat** | TNC Global Status: | G5 |
| Scientific Name: | ***Nycticeius humeralis*** | Federal Status: | - |
| TNC Element Code: | AMACC06010 | State (NE) Status: | S3 |

**Habitat Description:**
In Nebraska this bat is more or less restricted to riparian situations (Jones et al. 1985). The population of this bat is mostly found in the southeastern part of the state (Jones et al. 1983) but is expanding westward, probably in response to increasing woodlands along river systems (Benedict et al. 2000). Woodland or mixed woodland and open areas. In summer, roosts in buildings and hollow trees; winter residences not known (Whitaker 1997).

**Total Area of Modeled Habitat (ha):** 616,298

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands is present' AND 'Land Cover class Riparian Woodland is present' AND '30-year Average Precipitation for August > 86 mm'.



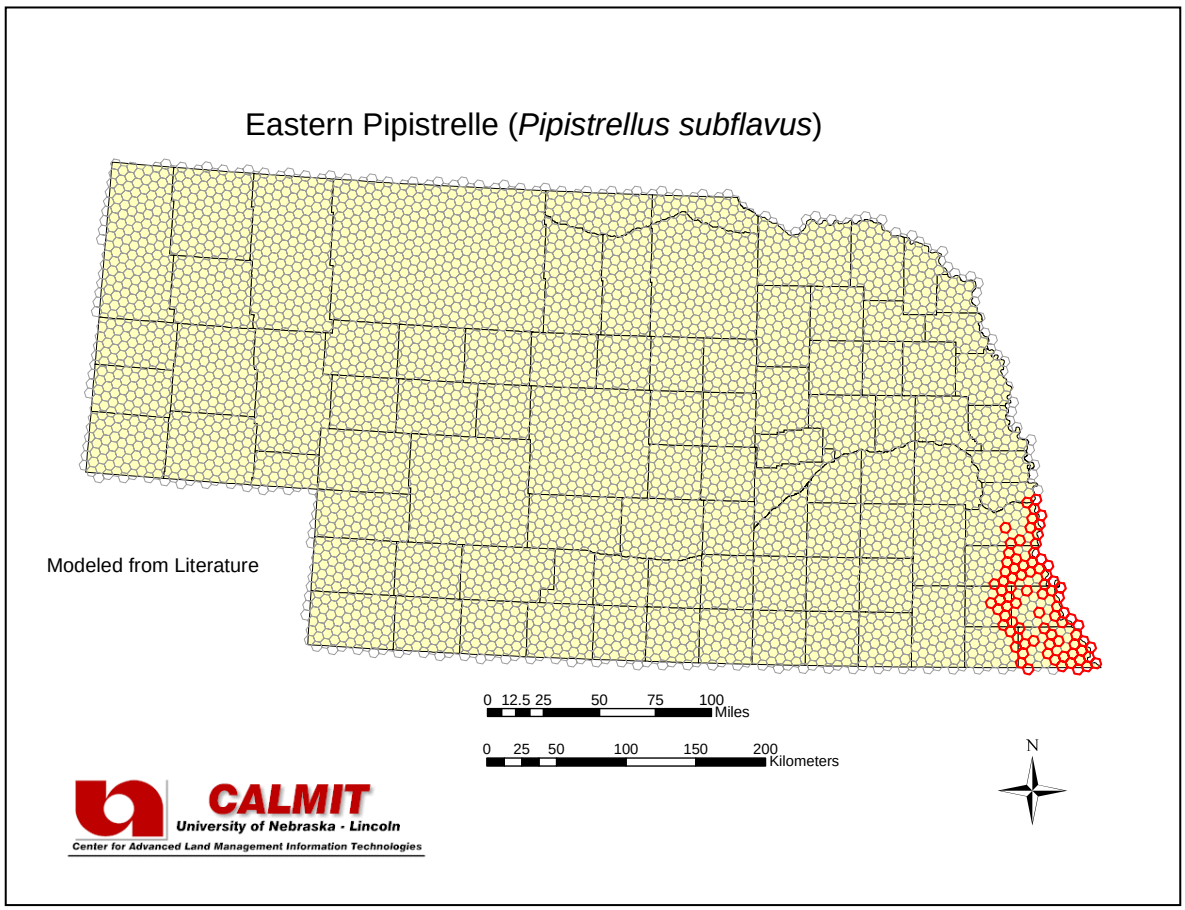
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern pipistrelle** | TNC Global Status: | G5 |
| Scientific Name: | ***Pipistrellus subflavus*** | Federal Status: | - |
| TNC Element Code: | AMACC03020 | State (NE) Status: | S1 |

**Habitat Description:**
Little is known of its habitat in summer but individuals are thought to forage primarily in open wooded areas and along the borders of woodlands, frequently near or over water; rarely do these pipistrelles forage in deep woods or over open fields (Jones et al. 1983). Wooded areas along slow-moving streams or rivers; near water (Forsyth 1999). Distribution in Nebraska shown to be only southeastern corner of state (Bat Conservation International 2002).

**Total Area of Modeled Habitat (ha):** 336,536

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Riparian Woodland is present' AND '30-year Average Precipitation for July > 97 mm'.



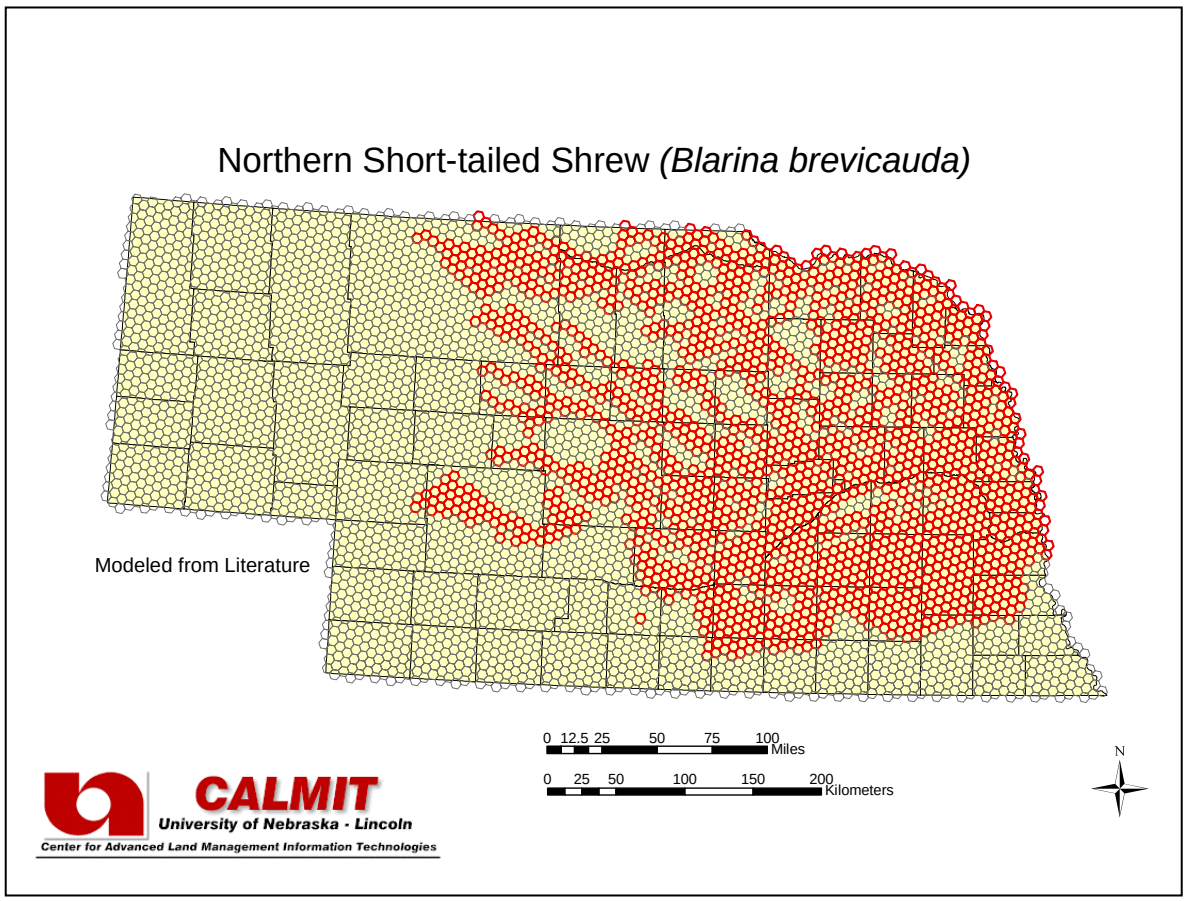
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Northern short-tailed Shrew** | TNC Global Status: | G5 |
| Scientific Name: | ***Blarina brevicauda*** | Federal Status: | - |
| TNC Element Code: | AMABA03010 | State (NE) Status: | S3 |

**Habitat Description:**
Short-tailed shrews are most common in areas with greater than 50% herbaceous cover (Getz 1989; Hazard 1982; Hamilton 1979; Jones et al.1988). They avoid areas with little cover and temperature extremes. Have high moisture requirements and are usually associated with wet habitats but can occur in a variety of habitats including grasslands, deciduous forests, marshy areas, bogs, and coniferous forests. Power line corridors seem to be a dispersal barrier for shrews. Within wooded habitats, food is the limiting factor (George et al.1986).

**Total Area of Modeled Habitat (ha):** 7,290,198

**Model Description:**
Modeled from literature using the set of variables ('30-year Average Maximum Temperature Coefficient of Variation for April > 6.5%' AND 'Stream class is present' AND 'Elevation < 950 m') OR ('30-year Average Maximum Temperature Coefficient of Variation for April <= 6.5%' AND '30-year Average Precipitation for March > 47.5 mm' AND '30-year Average Maximum Temperature Coefficient of Variation for March > 11.9%').



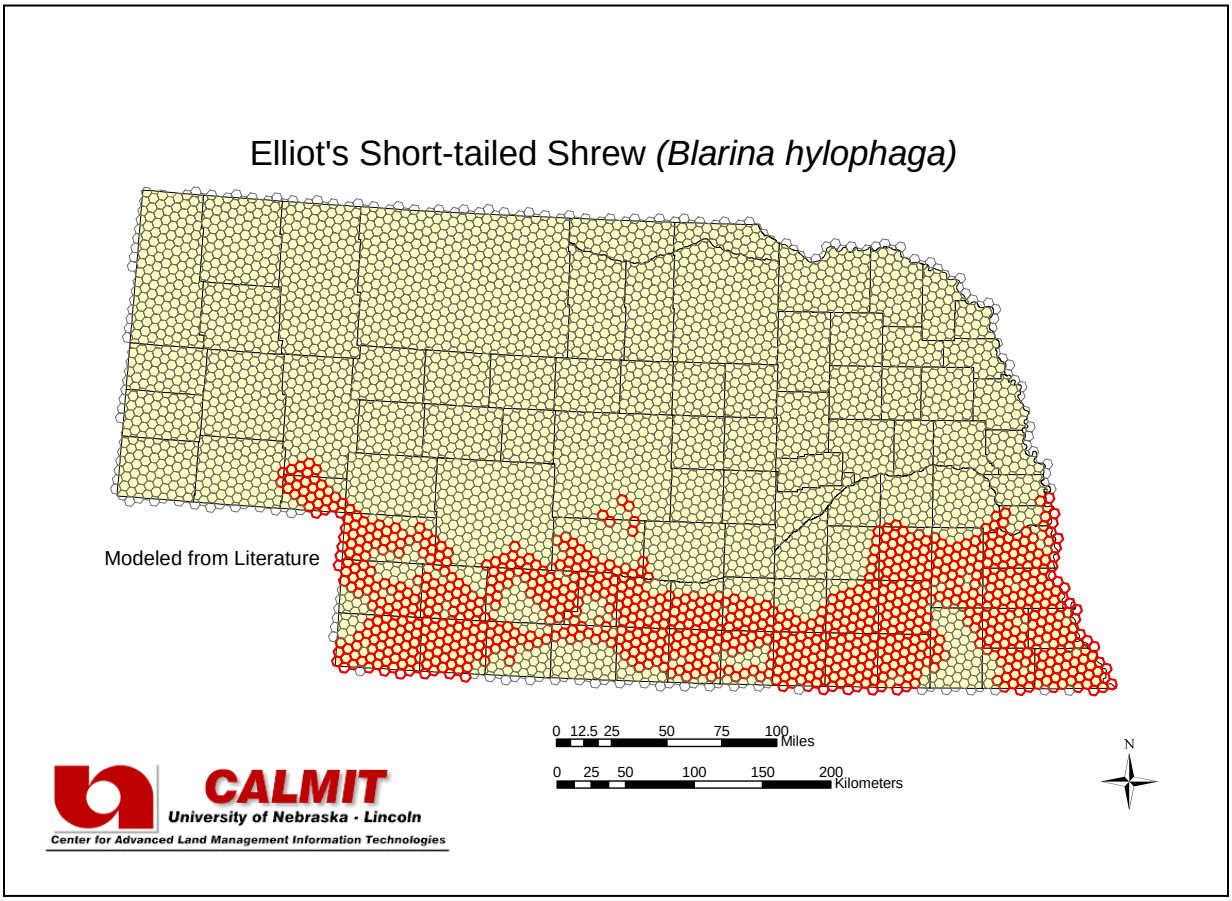
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Elliot's Short-tailed shrew** | TNC Global Status: | G5 |
| Scientific Name: | ***Blarina hylophaga*** | Federal Status: | - |
| TNC Element Code: | AMABA03030 | State (NE) Status: | S3 |

**Habitat Description:**
Oak-elm floodplain forest, wooded ravines, and grassy or weedy fields, sometimes in marshy areas or wet woods (Whitaker 1997). Positive association to habitats with well-developed plant litter layers (Kaufman et al. 2000). It is found in moist areas with good cover, most commonly tall, dense grass in ditches, riparian habitats, and along roadsides (Wilson and Ruff 1999). Found only in southern Nebraska (NatureServe 2002).

**Total Area of Modeled Habitat (ha):** 4,046,537

**Model Description:**
Modeled from literature using the set of variables '30-year Average Maximum Temperature for April <= 6.5ºC' AND '30-year Average Maximum Temperature for March < 13ºC' AND 'Hydric Soils are present'.

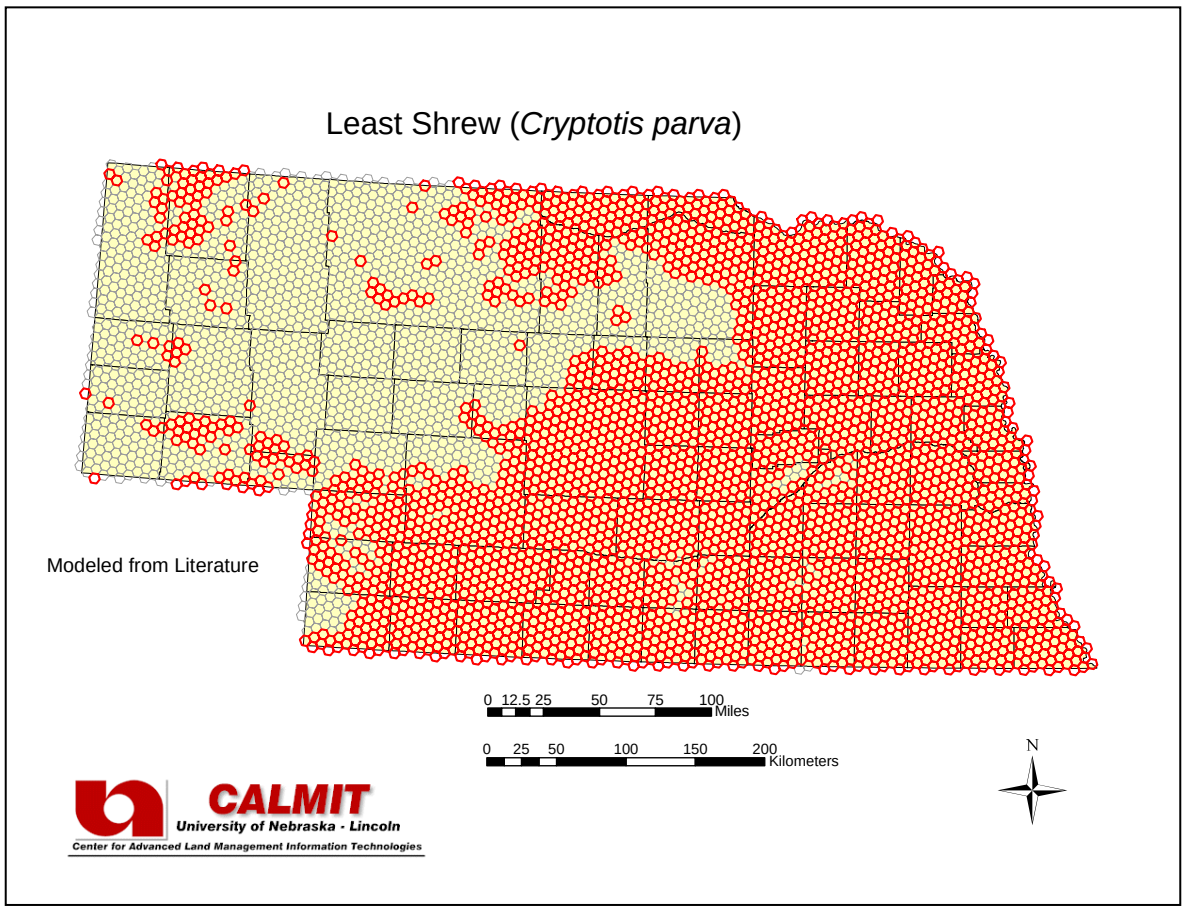


**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Least shrew** | TNC Global Status: | G5 |
| Scientific Name: | ***Cryptotis parva*** | Federal Status: | - |
| TNC Element Code: | AMABA04010 | State (NE) Status: | S4 |

**Habitat Description:**
The distribution is more extensive in the southern portion of the state (Jones 1964). Generally prefers upland prairies, weedy fencerows and fields, meadows, and grassy roadsides. Occasionally trapped in riparian, woodland, and marshy areas. Occurs from sea level to about 2950 m (George et al. 1994; Hamilton 1979; Hazard 1982; Jones 1988; Whitaker 1999). Needs dense herbaceous ground cover, especially grasses (Whitaker 1999).
**Total Area of Modeled Habitat (ha):** $1.32 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Upland Tallgrass Prairie is present' OR 'Land Cover class Little Bluestem-Gramma Mixedgrass Prairie < 1.5%'.



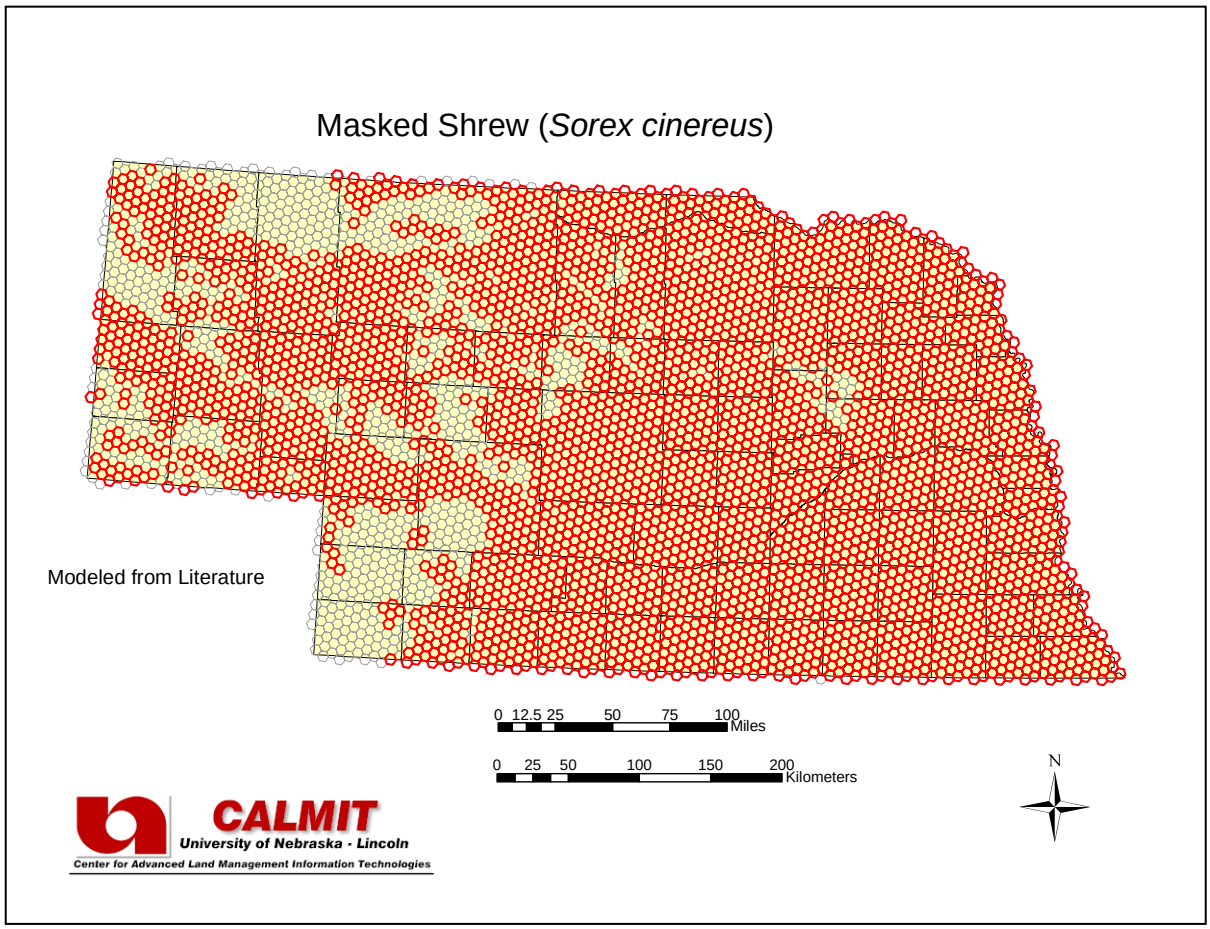
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Masked shrew** | TNC Global Status: | G5 |
| Scientific Name: | ***Sorex cinereus*** | Federal Status: | - |
| TNC Element Code: | AMABA01010 | State (NE) Status: | S4 |

**Habitat Description:**
Wet areas of the Sand Hills (Freeman 1998). Widely distributed and common in the coniferous and northern deciduous forest biomes up to timberline. It is found in a variety of habitats ranging from wet to quite dry, including forests, shrub thickets, and grassy and herbaceous areas (Wilson and Ruff 1999). Numerous habitats; most common in moist fields, bogs, marshes, and moist woods (Whitaker 1997). Moist or dry woods, willow-alder thickets and brushland (Forsyth 1999). No records of occurrence for southwestern Nebraska (Benedict et al. 2000).

**Total Area of Modeled Habitat (ha):** $1.62 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Emergent Wetland > 0.5%' OR 'Land Cover class Deciduous Forests and Woodlands > 0.1%' OR 'Land Cover class Juniper Woodlands > 0.1%' AND NOT 'Land Cover class Sandsage Shrubland is present'.



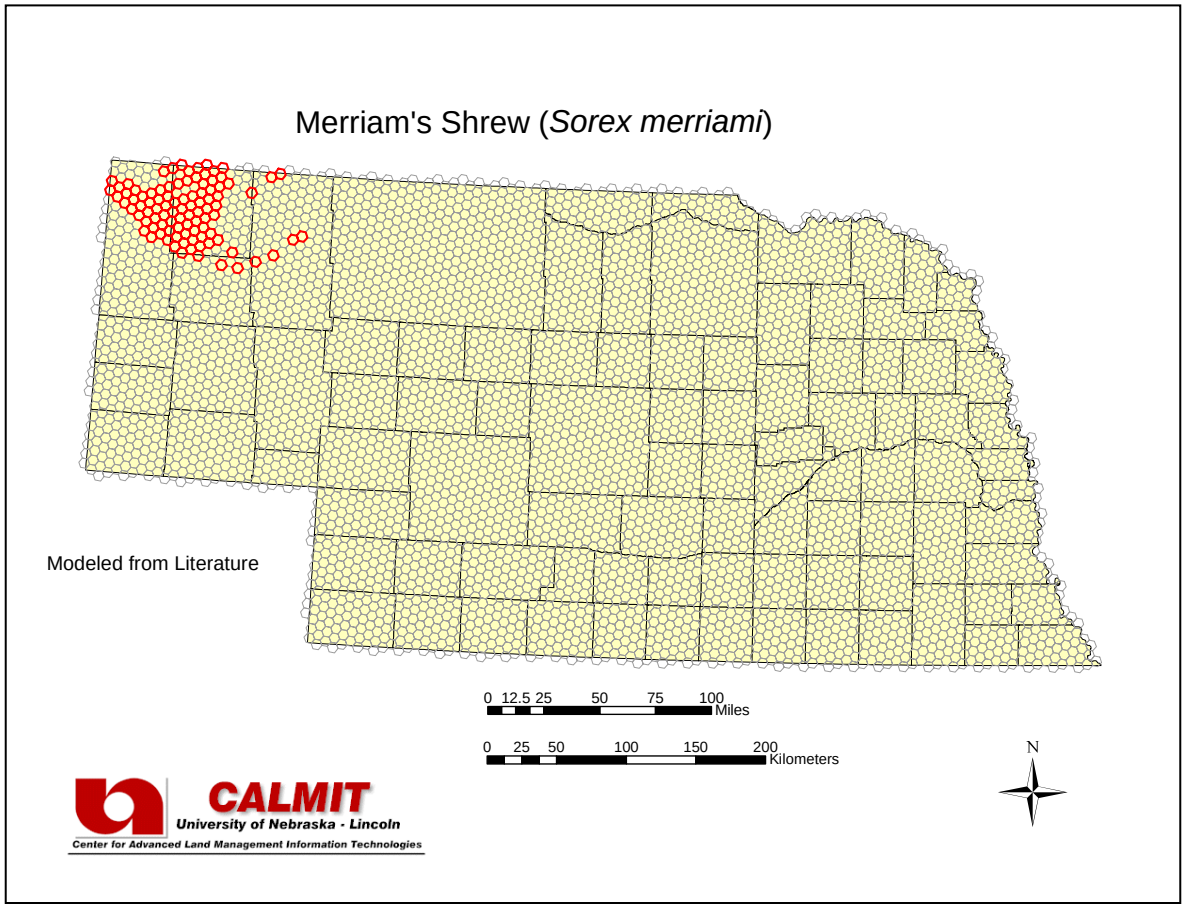
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Merriam's shrew** | TNC Global Status: | G5 |
| Scientific Name: | ***Sorex merriami*** | Federal Status: | - |
| TNC Element Code: | AMABA01230 | State (NE) Status: | S1 |

**Habitat Description:**
Prefers a much drier habitat than most shrews: sagebrush, grasslands, and woodlands (Whitaker 1997). Relatively dry habitats with sagebrush steppe being most common habitat but have also been found in semiarid grasslands, pinyon-juniper woodland, montane brushlands, and even mesic mixed woodlands of ponderosa pine, Douglas fir, and cottonwood (Wilson and Ruff 1999). In several western states it appears to be most common in areas of sagebrush and bunchgrasses (Jones et al. 1985). Most recent specimens have been from the northwestern corner of the state, in areas of grassland surrounded by open stands of Ponderosa Pine (Benedict et al. 1999).

**Total Area of Modeled Habitat (ha):** 389,249

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Wheatgrass Mixedgrass Prairie is present' AND 'Land Cover class Ponderosa Pine Forests and Woodlands is present'.



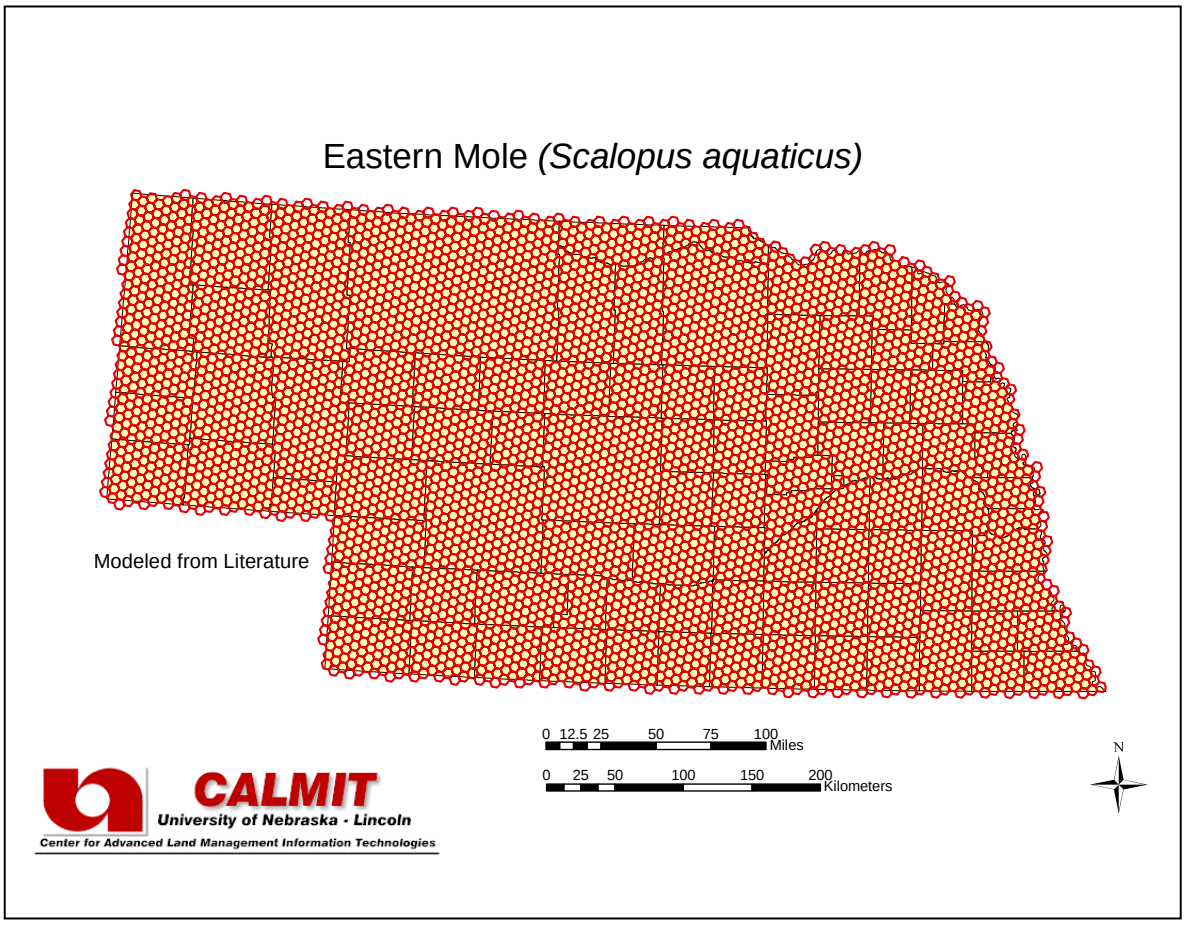
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern mole** | TNC Global Status: | G5 |
| Scientific Name: | ***Scalopus aquaticus*** | Federal Status: | - |
| TNC Element Code: | AMABB04010 | State (NE) Status: | S5 |

**Habitat Description:**
In the western part of the state, these animals area found mostly along rivers and streams and around permanent ponds and lakes; they also colonize irrigated fields and such well-watered areas such as gardens, lawns, cemeteries and golf courses (Jones et al. 1983). Prefers moist loamy or sandy soils (Wilson and Ruff 1999). Usually trapped in riparian habitats (Freeman 1998). Open fields, waste areas, lawns, gardens and sometimes woods, in well-drained loose soil (Whitaker 1997). Is scarce or absent in heavy clay, stony, or gravelly soils, and avoids otherwise suitable soils that are too wet or too dry (Wilson and Ruff 1999).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



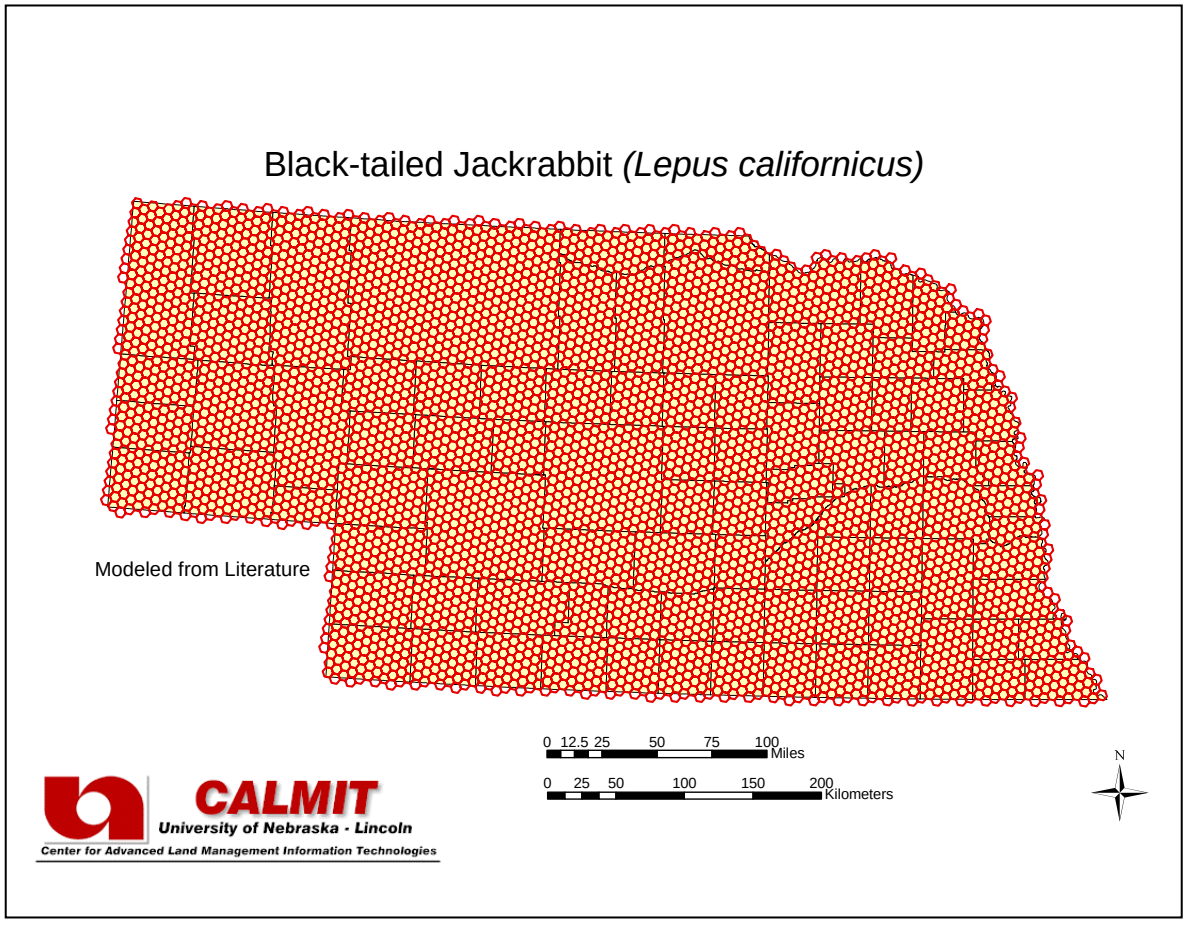
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Black-tailed jackrabbit** | TNC Global Status: | G5 |
| Scientific Name: | ***Lepus californicus*** | Federal Status: | - |
| TNC Element Code: | AMAEB03050 | State (NE) Status: | S5 |

**Habitat Description:**
Found all over Nebraska but more common in the southern part of the state (Jones 1964). Found in the Sand Hills (Freeman 1998), barren areas and prairies, meadows, and cultivated fields (Whitaker 1997). They do not move into areas of tall grass or forest where visibililty is obscured (Jones et al. 1983). Inhabits open plains, fields and deserts; open country with scattered thickets or patches of shrubs (Caire et al. 1989).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.

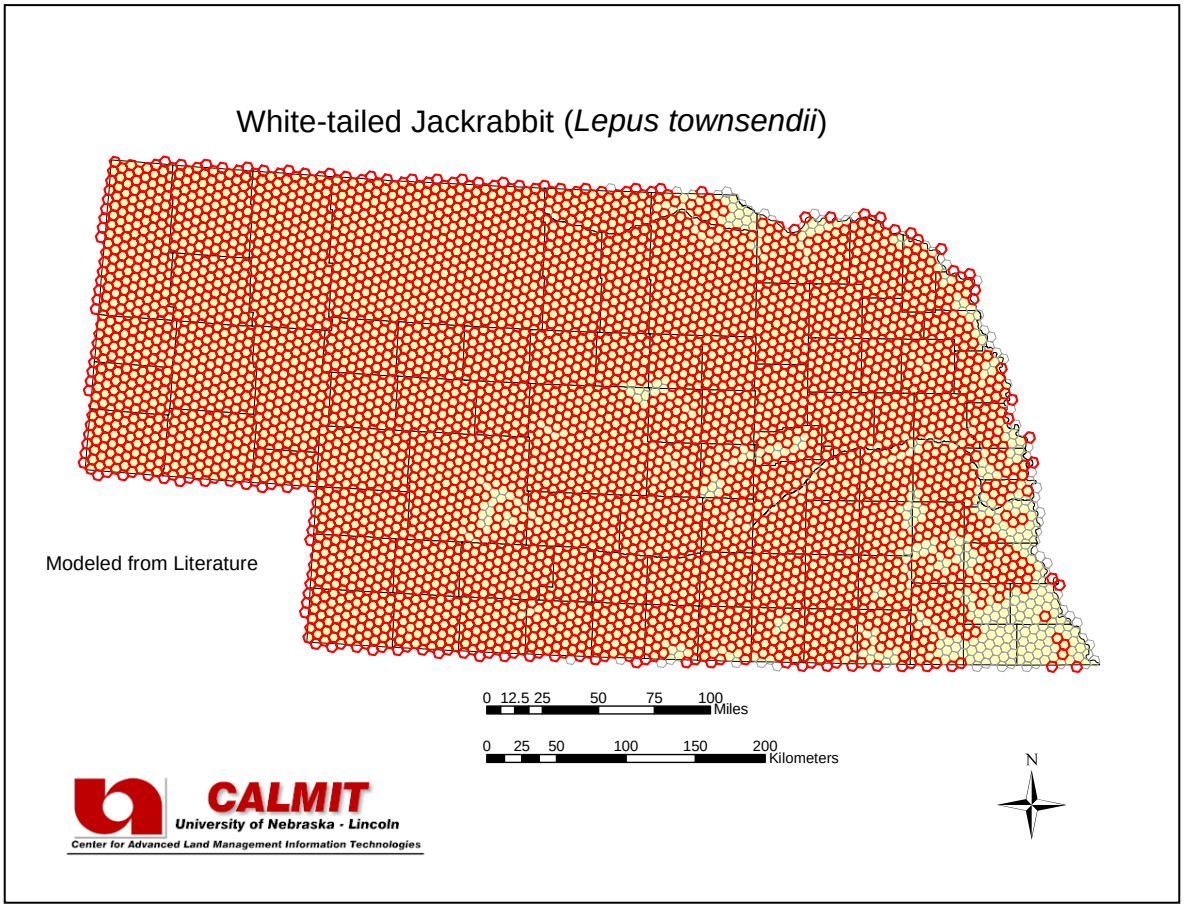


**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **White-tailed jackrabbit** | TNC Global Status: | G5 |
| Scientific Name: | ***Lepus townsendii*** | Federal Status: | - |
| TNC Element Code: | AMAEB03040 | State (NE) Status: | S4 |

**Habitat Description:**
Formerly found all over Nebraska excep in the extreme southeastern part (Jones 1964). Today it is more common in the northern part of the state, mostly north of the Platte River (Jones 1964) and is also found in the Sand Hills (Freeman 1998). Barren, grazed, or cultivated lands; grasslands (Whitaker 1997). Occur in open grasslands and sagebrush (Jones et al. 1985). Avoid forests and woodland (Jones et al. 1985). White-tailed jackrabbits prefer open grasslands but also thrive in pastures and fields.
**Total Area of Modeled Habitat (ha):** $1.86 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Agricultural Fields is present' OR 'Land Cover class Sandhills Upland Prairie is present' AND NOT 'Land Cover class Deciduous Forests and Woodlands > 5%'.



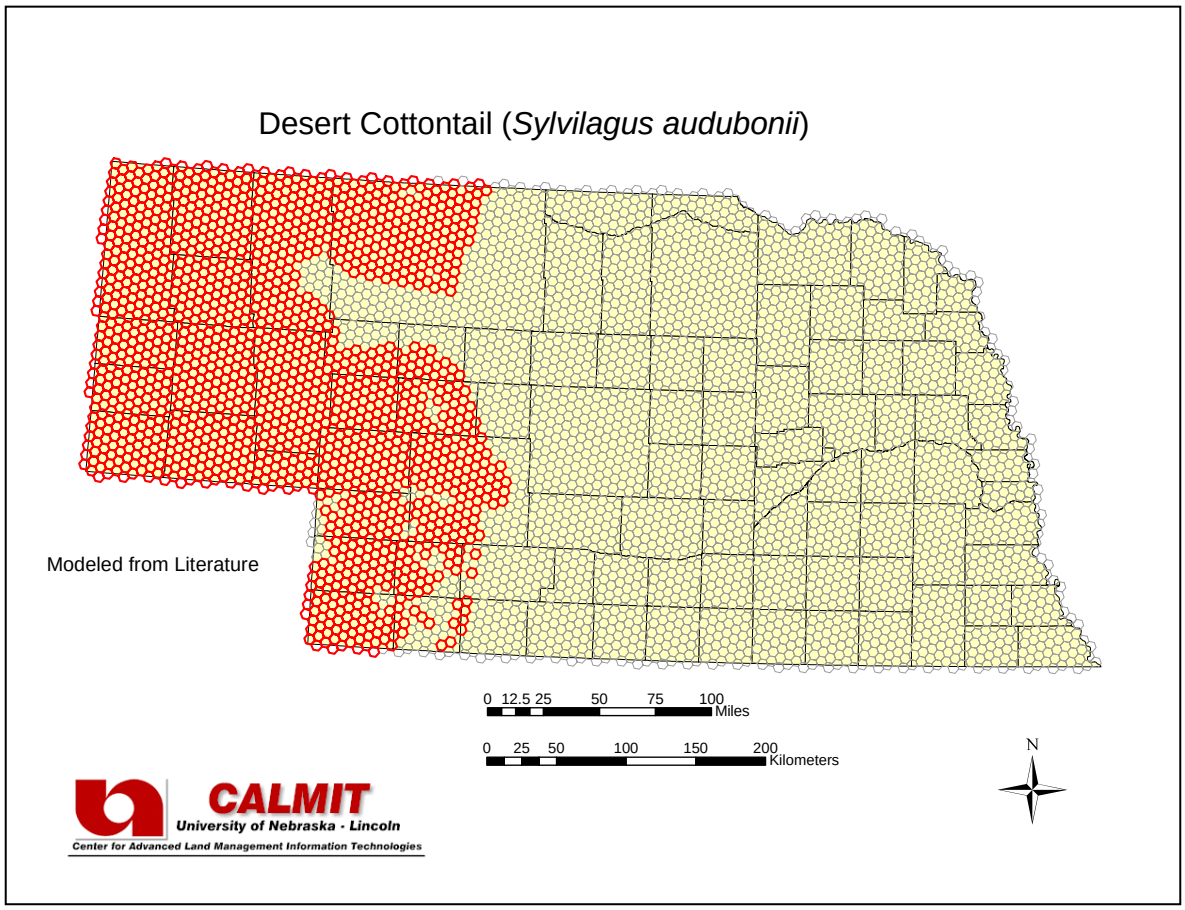
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Desert cottontail** | TNC Global Status: | G5 |
| Scientific Name: | ***Sylvilagus audubonii*** | Federal Status: | - |
| TNC Element Code: | AMAEB01070 | State (NE) Status: | S4 |

**Habitat Description:**
Found in grasslands to creosote brush and deserts (Whitaker 1997), weedy margins of upland fields and pastures, brushy country, and thickets in dry ravines (Jones et al. 1985). Along rivers it is associated with riparian brush-like willows, in uplands with pinyon-juniper stands, and in desert areas with sagebrush, rabbitbrush, and a variety of cacti (Wilson and Ruff 1999). Although desert cottontails occurred in a wider range of habitats, they were found consistently in only upland breaks and upland grasslands (Bergeron and Seabloom 1981). Not found in the dry upland habitat (microclimate) of the Sand Hills (Freeman 1998). In Nebraska, the desert cottontail occupies dry uplands in the western part of the state (Jones 1964; Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 6,523,850

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Mixedgrass Prairie is present' OR 'Land Cover class Sandsage Shrubland is present'.



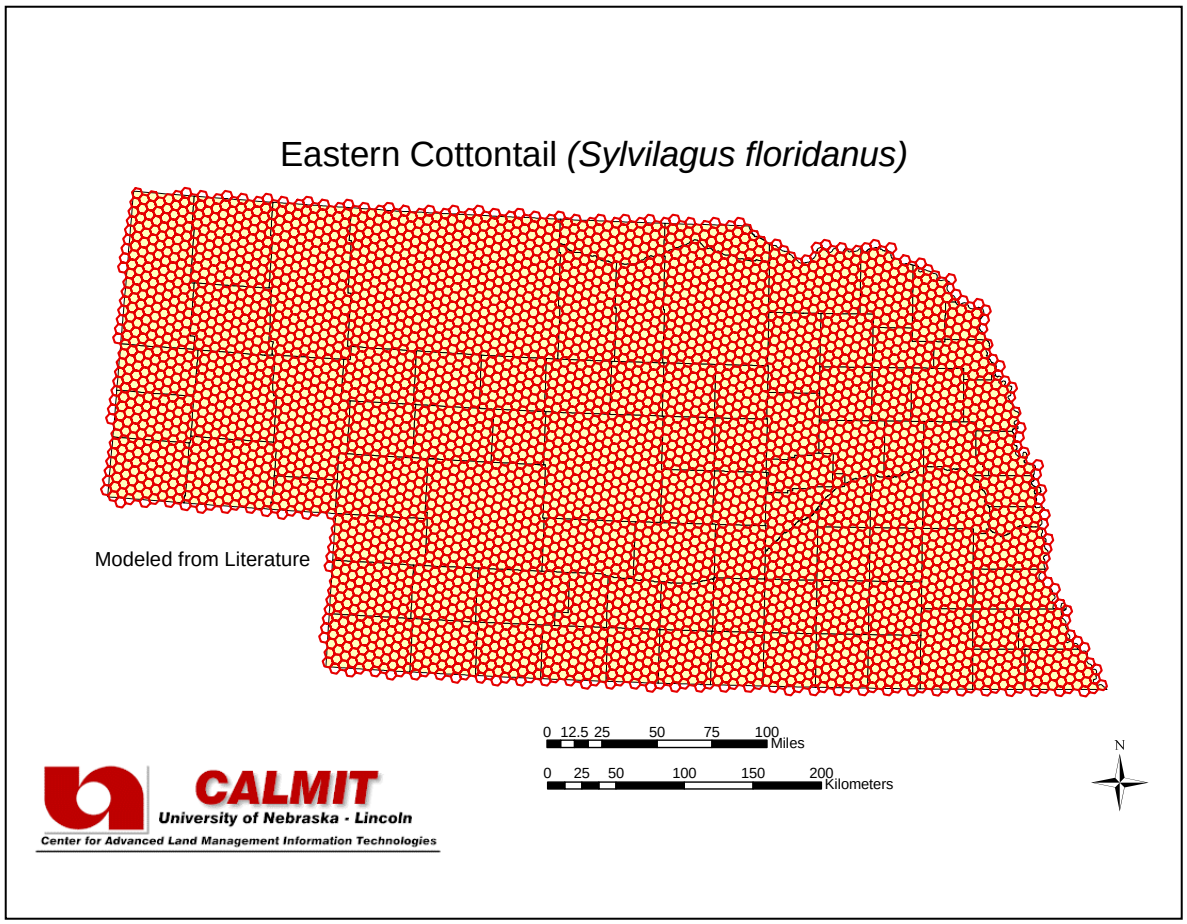
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern cottontail** | TNC Global Status: | G5 |
| Scientific Name: | ***Sylvilagus floridanus*** | Federal Status: | - |
| TNC Element Code: | AMACB01040 | State (NE) Status: | S5 |

**Habitat Description:**
Suitable habitat in the Plains states is increasingly restricted westward to riparian ecosystems (Jones 1964; Jones et al. 1985). Locally restricted to mesic situations in riparian communities or adjacent agricultural situations with dense plant growth (Jones et al. 1983). Brushy areas, old fields, woods, and cultivated areas, especially around thickets and brush piles (Whitaker 1997). Occurred in brushy areas of river bottoms, terraces and hardwood draws (Bergeron and Seabloom 1981). Common in the Sand Hills but found primarily in the area's riparian or agricultural communities (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



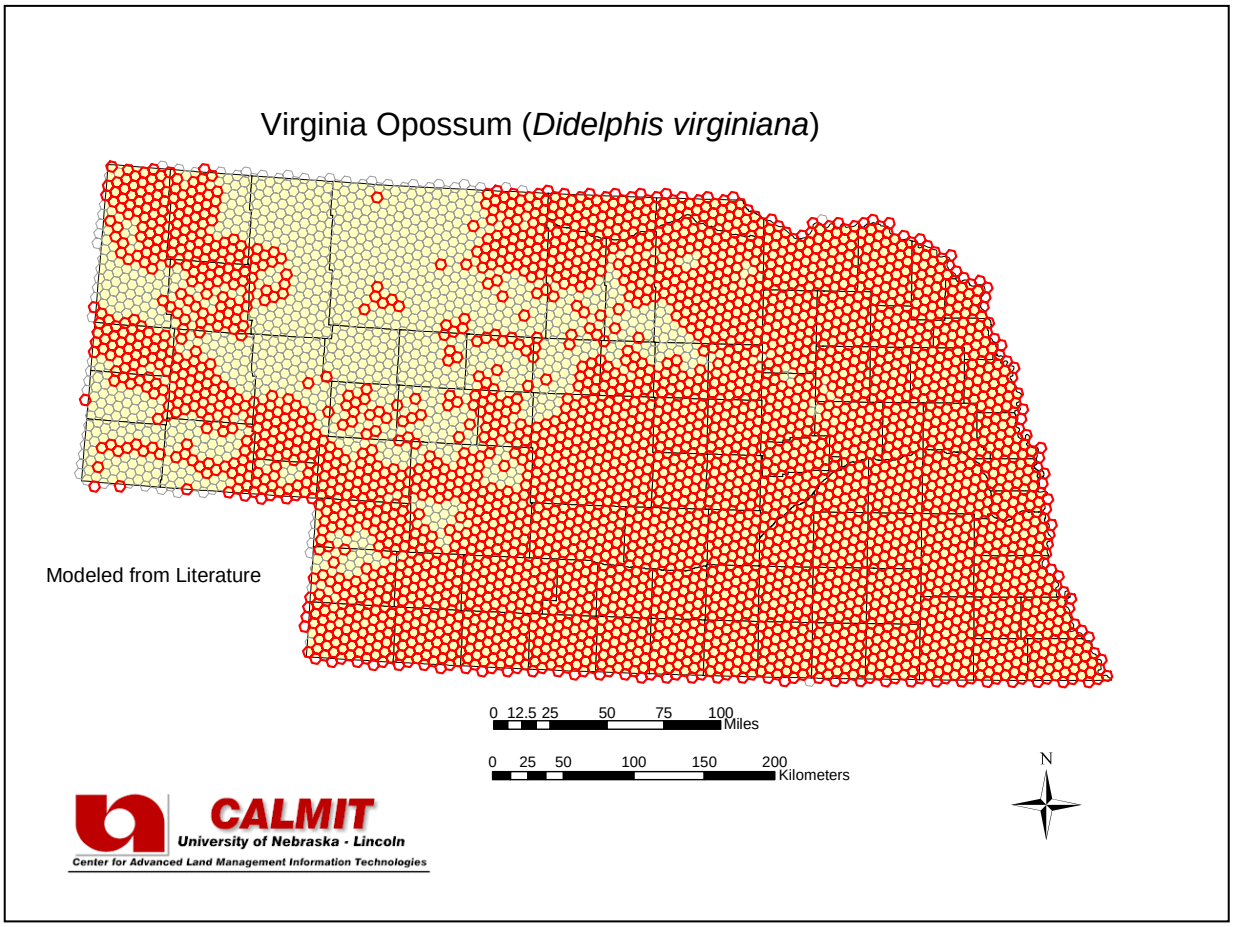
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Virginia opossum** | TNC Global Status: | G5 |
| Scientific Name: | ***Didelphis virginiana*** | Federal Status: | - |
| TNC Element Code: | AMAAA01010 | State (NE) Status: | S5 |

**Habitat Description:**
Prefers deciduous woodlands in association with streams and lakes, but all habitats within their range of ecological tolerances are used. Opossum have been found in forested, grassland, agricultural, and suburban habitats. Lowest densities are found within residential, agricultural, and grassland habitats, respectively (Gardner 1982; Llewellyn and Dale 1964; McManus 1974). Extreme southeastern Nebraska was part of the opossum's presettlement range and it is now common in southern and eastern Nebraska. In the Sandhills and Panhandle, opossums are restricted to major drainages such as the Loup, Niobrara and North Platte rivers (NGPC 2002). Good habitat includes a combination of large trees and shrub thickets, abundant water and crop fields. Few records from the Sand Hills (Freeman 1998). Northern and elevational limits appear to be controlled by climate, the availability of den sites and winter food. Approximate limit of range is slightly north of the –7°C January isotherm (Gardner 1982; Hossler 1994; Harder 1994; McManus 1974).

**Total Area of Modeled Habitat (ha):** $1.50 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables ‘Land Cover class Deciduous Forests and Woodlands is present’ AND ‘Land Cover class Agricultural Fields is present’.



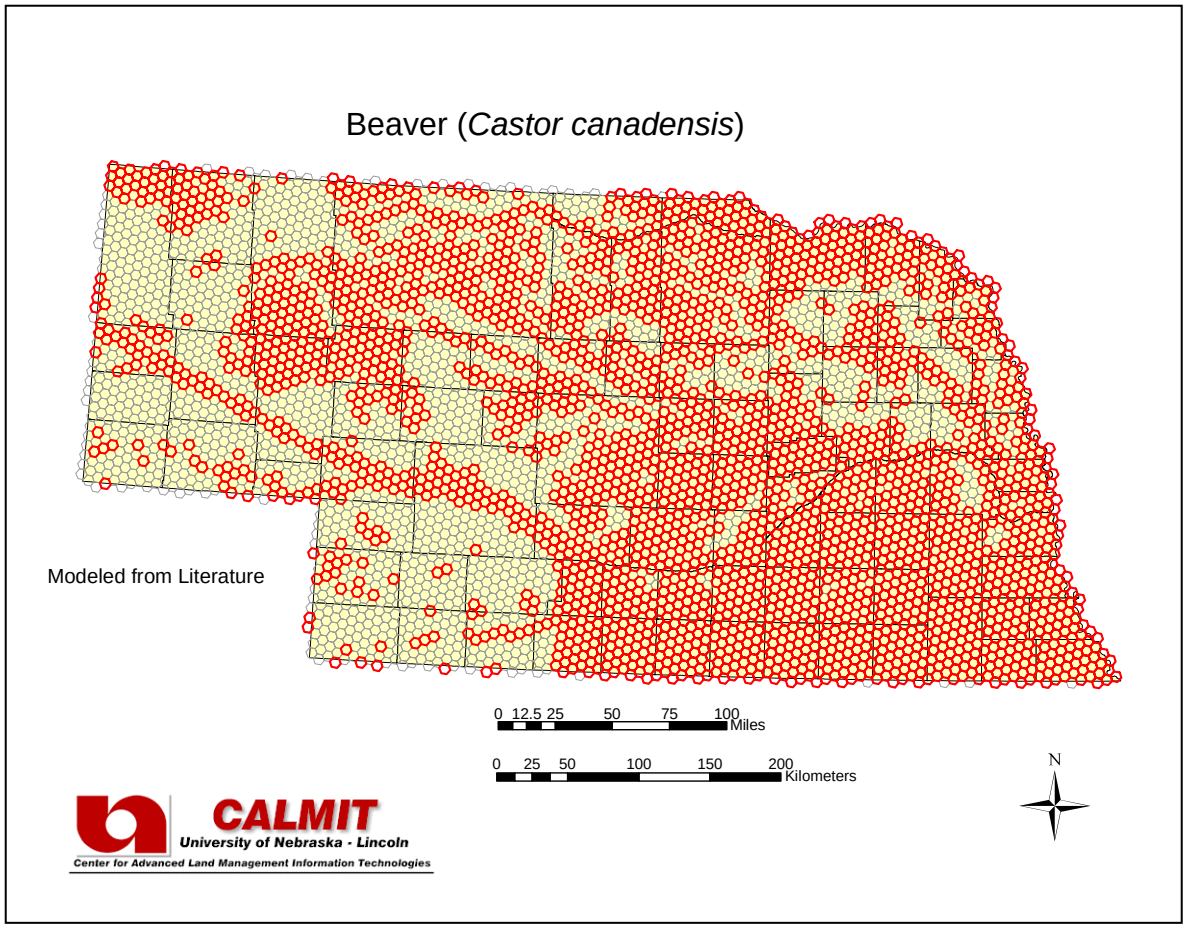
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Beaver** | TNC Global Status: | G5 |
| Scientific Name: | ***Castor canadensis*** | Federal Status: | - |
| TNC Element Code: | AMAFE01010 | State (NE) Status: | S5 |

**Habitat Description:**
Beaver are found in the vicinity of aquatic habitats such as steams, marshes, ponds, and the margins of large lakes throughout North America (Allen 1982; Suzuki and McComb 1998; Smith 1999) and in Nebraska they occur in every county of the state (Jones 1964). Valleys wider than the stream channel are preferred -widths of 46m (150ft) or more are considered the most suitable. (Allen 1982). Found on the major waterways in the Sand Hills (Freeman 1998). Require a permanent supply of water and prefer a seasonably stable water level (Slough and Sadleir 1976).

**Total Area of Modeled Habitat (ha):** $1.16 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Open Water is present' OR 'Land Cover class Aquatic Bed Wetland is present'.



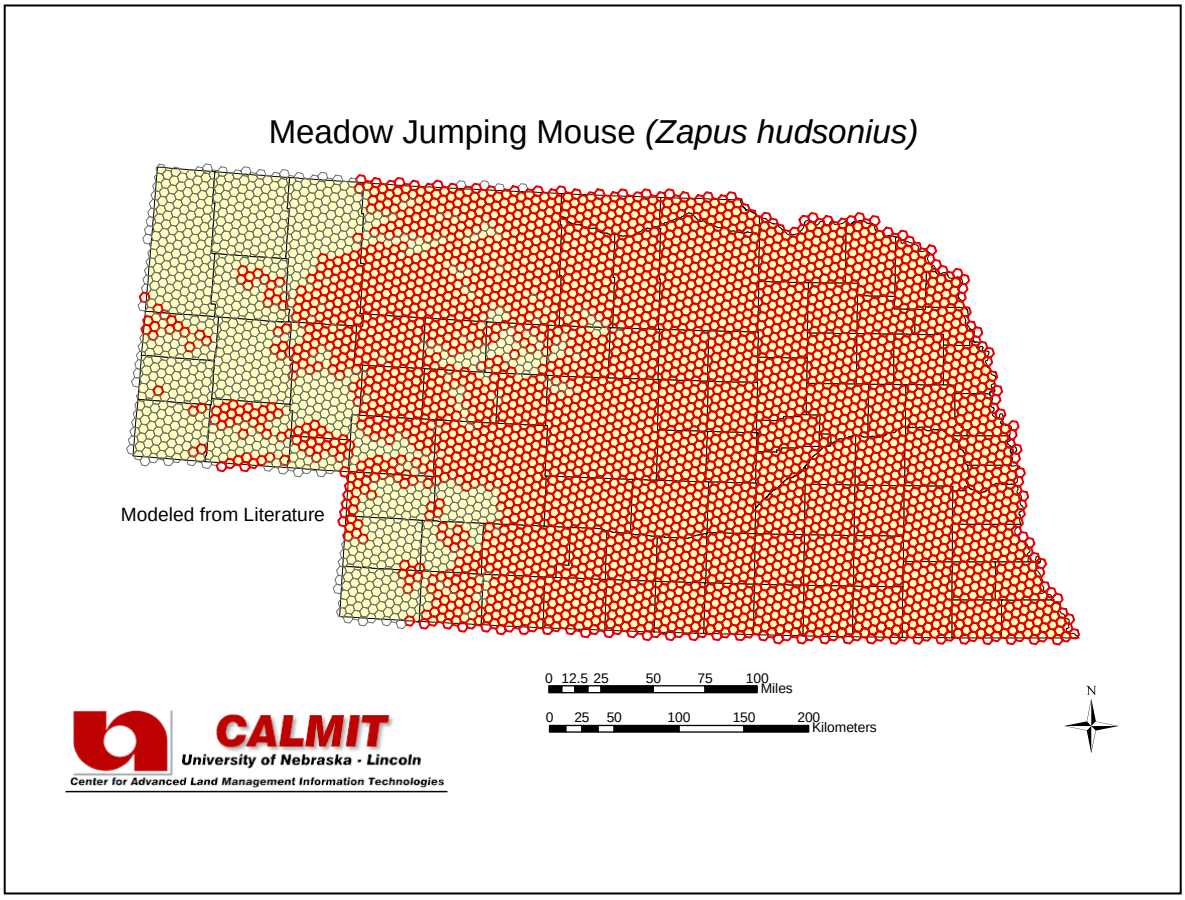
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Meadow jumping mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Zapus hudsonius*** | Federal Status: | - |
| TNC Element Code: | AMAFH01010 | State (NE) Status: | S5 |

**Habitat Description:**
Occurs in a variety of habitats ranging from grassy fields, meadows, fencerows, thick vegetation along streams, edges of ponds and marshes, and herbaceous cover bordering woodlands. May also occur in woods. Especially abundant in stands of *Impatiens.* Frequents moist areas more than dry areas (Banfield 1974; Hamilton and Whitaker 1995; Jones 1988; Schwartz 1981; Whitaker 1972). In the western part of its range in Nebraska it is found only in the riparian communitieis that border rivers and lakes (Jones 1964). Occurs in wet areas of the Sand Hills, but not in upland Sand Hill areas (Freeman 1998). Adequate herbaceous ground cover necessary for maintenance of populations (Whitaker 1972). On the Northern Plains, usually restricted primarily to riparian habitats (Jones et al. 1998). Has not been found to occur in the northwestern or southwestern corners of the state.

**Total Area of Modeled Habitat (ha):** 16,007,646

**Model Description:**
Modeled from literature using the set of variables ('Land Cover class Agricultural Fields is present' OR 'Land Cover class Emergent Wetlands is present') AND NOT ('Land Cover class Western Shortgrass Prairie > 15%' OR 'Land Cover class Sandsage Shrubland is present').



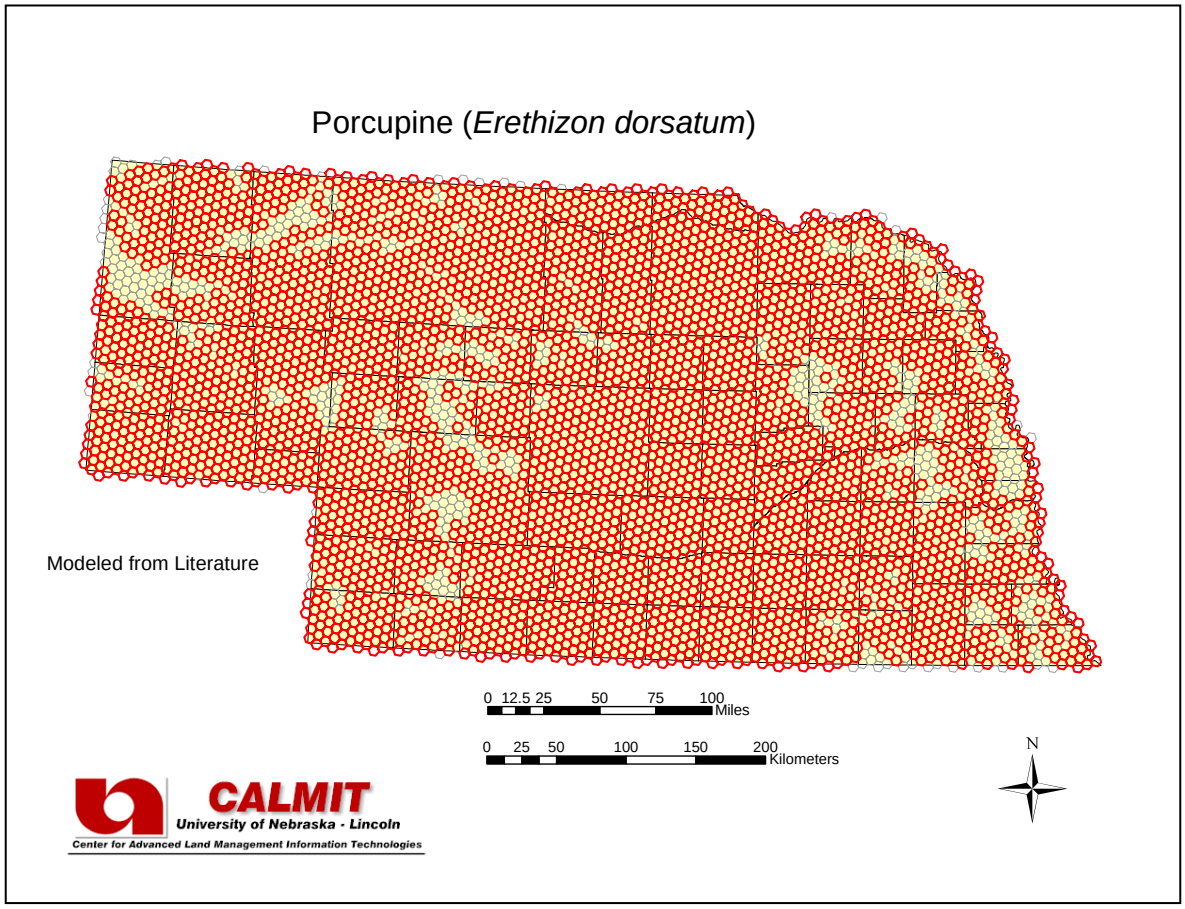
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Porcupine** | TNC Global Status: | G5 |
| Scientific Name: | ***Erethizon dorsatum*** | Federal Status: | - |
| TNC Element Code: | AMAFJ01010 | State (NE) Status: | S4 |

**Habitat Description:**
Boreal and coniferous forests are the preferred habitat. Range includes habitats varying from northern forests to open tundra, grasslands and deserts. Because of food demands, porcupines are limited to vegetated riparian habitats where they occupy areas away from forests (Hazard 1982; Knox 1988; Tyler 1997; Wood 1973). In Nebraska, it is most common in the coniferous western forest of the Pine Ridge and along waterways that extend eastward into the Sand Hills (Freeman 1998). Species is present statewide, although not common (Benedict 2000), especially in eastern Nebraska (Jones 1964).

**Total Area of Modeled Habitat (ha):** $1.71 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Juniper Woodlands is present' OR 'Land Cover class Ponderosa Pine Forests and Woodlands is present' OR 'Land Cover class Riparian Woodland is present'.



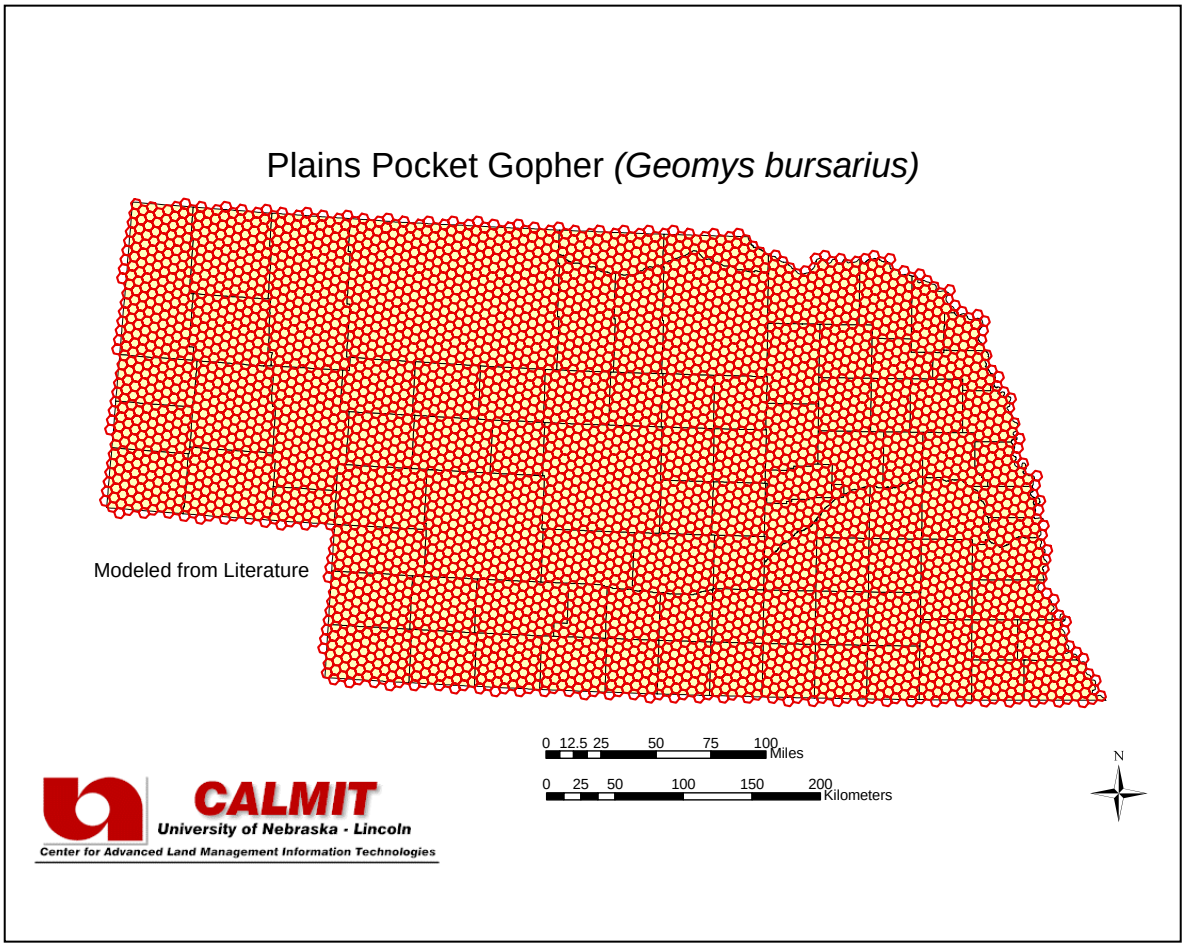
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Plains pocket gopher** | TNC Global Status: | G5 |
| Scientific Name: | ***Geomys bursarius*** | Federal Status: | - |
| TNC Element Code: | AMAFC02010 | State (NE) Status: | S5 |

**Habitat Description:**
A grassland species, abundant in the drier upland Sand Hills (Freeman 1998). Prairie areas with sandy loam or loam soils; pastures; sometimes-plowed ground (Whitaker 1997). Occupies hayfields, roadside ditches, pastures, and bottomlands (Jones et al. 1985). A soil suitable for the species occur mainly in meadows, at forest edges, along rivers and streams, and on the higher terraces on floodplains, also occurs in sandy soils in some areas (Jones et al. 1983). Prefers moist, deep, sandy loam and avoids continuously cultivated fields (Jones et al. 1983, 1985). In the eastern, intensely cultivated part of the state the species now occurs mostly in pastures and other fallow lands, and in alfalfa fields (Jones 1964).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



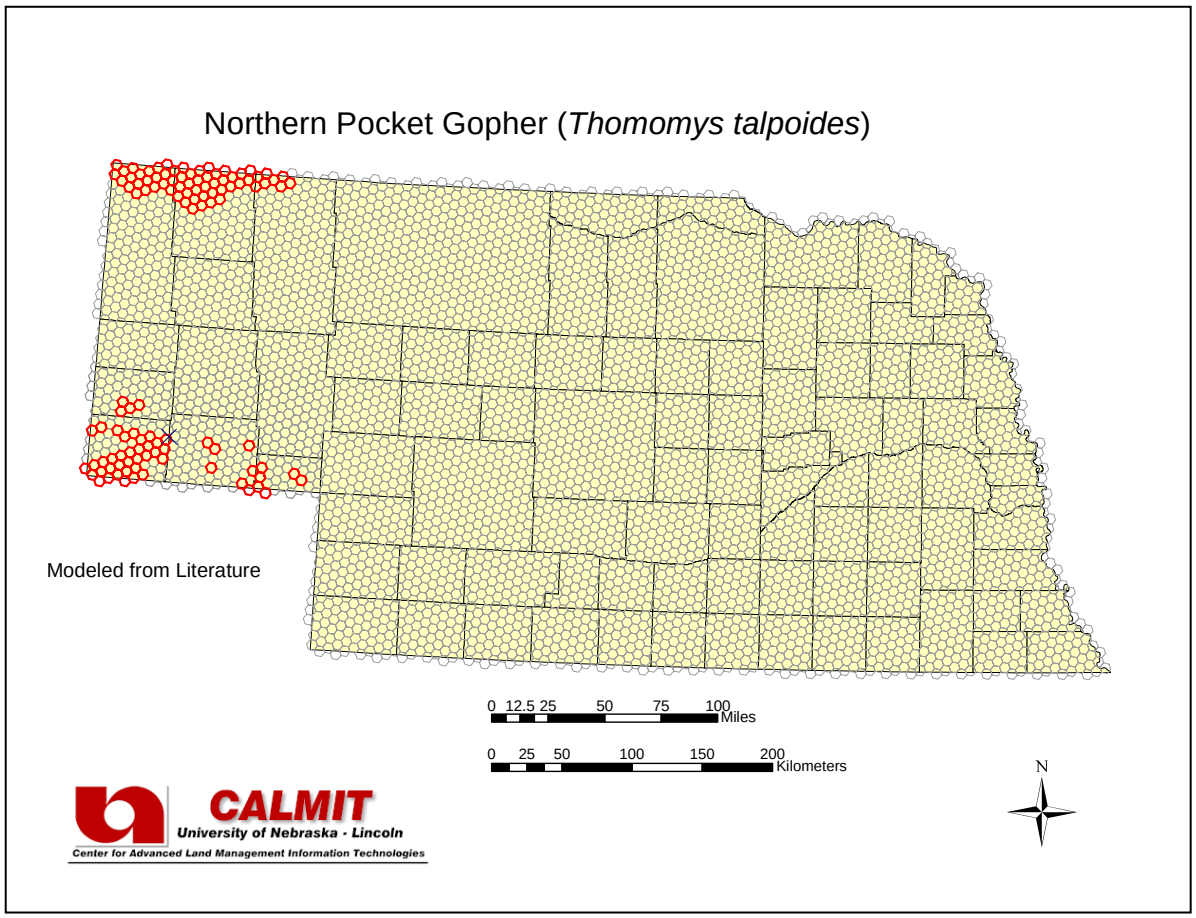
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Northern pocket gopher** | TNC Global Status: | G5 |
| Scientific Name: | ***Thomomys talpoides*** | Federal Status: | - |
| TNC Element Code: | AMAFC01040 | State (NE) Status: | S4 |

**Habitat Description:**
Usually, good soils in meadows or along streams; most often in mountains but also in lowlands (Whitaker 1997). Soil type is more important that vegetation for the distribution of pocket gophers. It occurs on rocky soils and heavy clay in western Nebraska (Jones et al. 1985). Restricted to relatively thin and rocky upland soils. Grassy prairies, fields, brushy areas, riverbanks and open pine forests; broad range of soil tolerance, prefers moist soils (Forsyth 1999). In Nebraska limited to extreme northwestern corner of the state and southwestern corner of the Panhandle (Jones 1964; Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 462,227

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Shortgrass Prairie is present' AND 'Percentage of Fine Textured Soils is present' OR 'Percentage of Medium-textured Soils > 80%' AND 'Land Cover class Western Shortgrass Prairie > 25%', clipped to limit distribution to area of verified reports in northwestern and southwestern Nebraska (Jones et al. 1983).



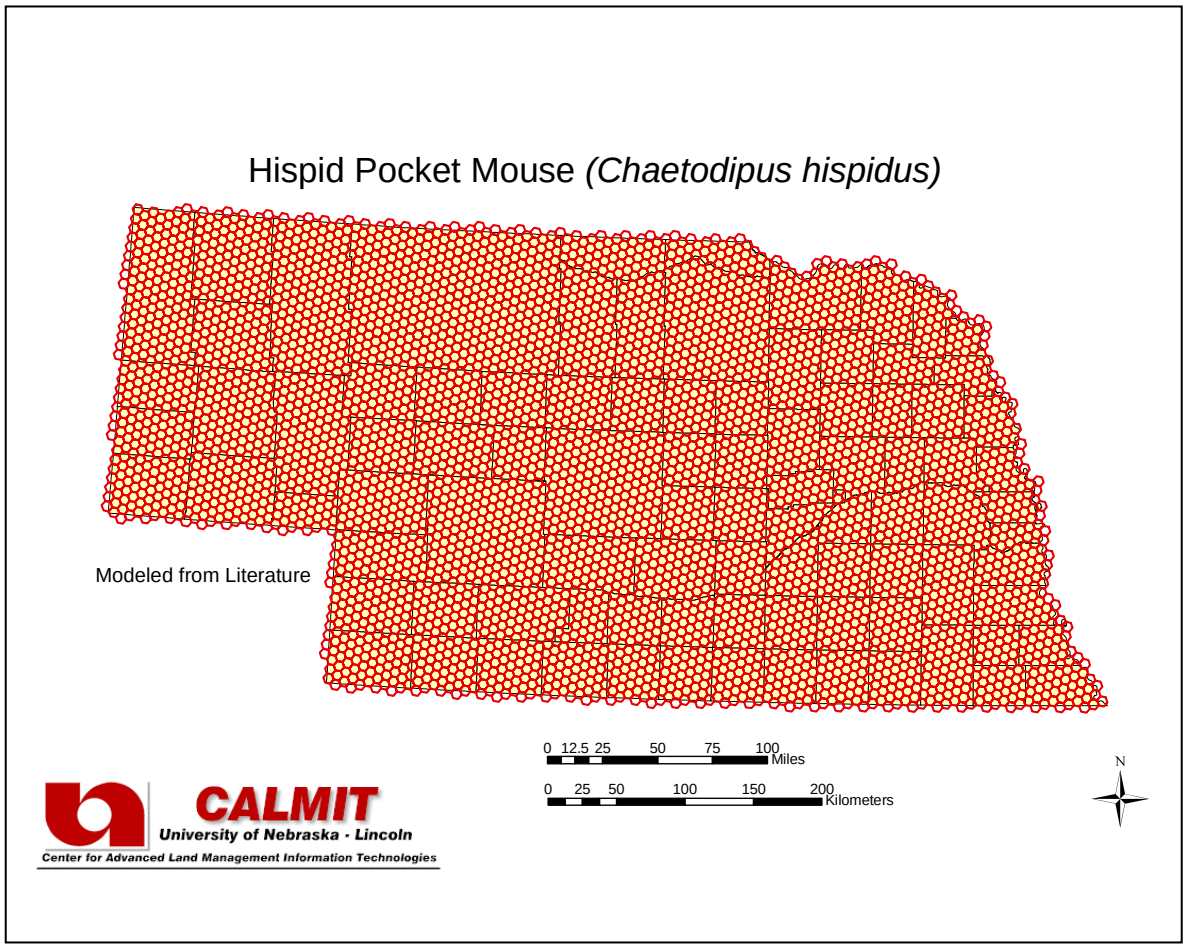
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Hispid Pocket Mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Chaetodipus hispidus*** | Federal Status: | - |
| TNC Element Code: | AMAFD05050 | State (NE) Status: | S5 |

**Habitat Description:**
Has been reported to occur in rocky and loamy soils, but is most abundant where soil is sandy and scattered open areas permit dusting. It inhabits various upland habitats, including those characterized by tall or short grasses, forbs, shrubs, cacti, or yucca, but seemingly avoids dune sands and riparian habitats (Jones et al. 1985). Prefers sandy soils but will live in soils with higher clay content (Wilson and Ruff 1999). Within the Sand Hills, it is more restricted to dense grass-forb areas (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.

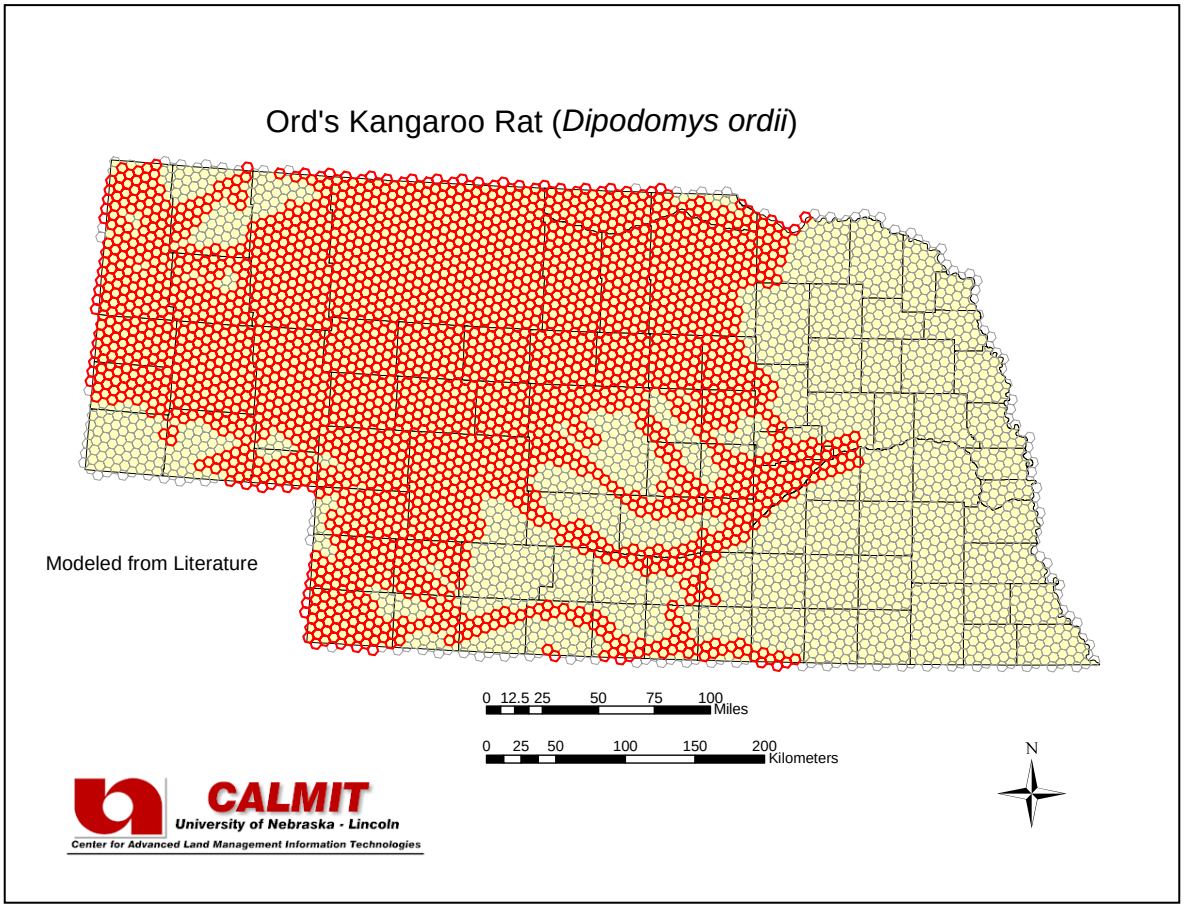


**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Ord's kangaroo rat** | TNC Global Status: | G5 |
| Scientific Name: | ***Dipodomys ordii*** | Federal Status: | - |
| TNC Element Code: | AMAFD03010 | State (NE) Status: | S5 |

**Habitat Description:**
Abundant in the drier upland Sand Hills with the open areas, such as ridge tops and blowouts being the most favored microhabitat (Freeman 1998). Varied habitat includes sandy waste areas, sand dunes, and sometimes hard-packed soil (Whitaker 1997). Closely associated with sandy soil, is abundant on the Nebraska Sand Hills and in other areas where bare sand permits dusting (Jones et al. 1983, 1985). Occupies the western two-thirds of Nebraska (Jones et al. 1983), the eastern distribution nearly coincides with the 98$^{th}$ meridian (Jones 1964). Sandy soils in open areas with sparse brush or grass (Lemen and Freeman 1986; Forsyth 1999).
**Total Area of Modeled Habitat (ha):** 1.11 x $10^7$

**Model Description:**
Modeled from literature using the set of variables 'Percentage Coarse-textured Soils is present' AND NOT 'Land Cover class Upland Tallgrass Prairie is present'.



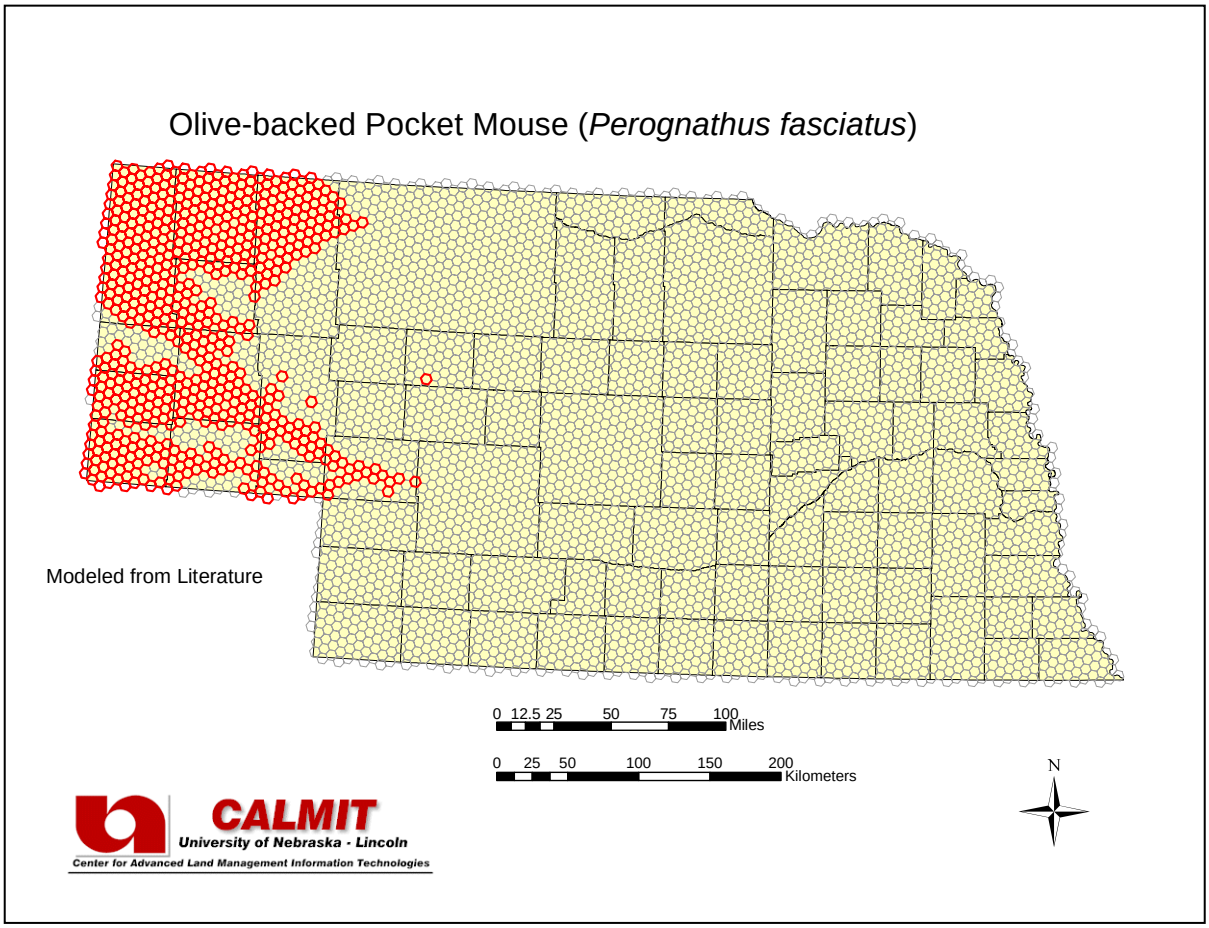
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Olive-backed pocket mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Perognathus fasciatus*** | Federal Status: | - |
| TNC Element Code: | AMAFD01010 | State (NE) Status: | S3 |

**Habitat Description:**
Principle habitat is short-grass rangeland (Jones et al. 1985). Occur in open grasslands with sandy loam; also found on the edge of aspen parklands (Forsyth 1999). Prefer dry sandy grasslands with little vegetation (Whitaker 1997). Grassland, riparian, and sagebrush communities showed the greatest rodent abundance and species diversity (MacCracken 1985). Found north of the Niobrara River in Cherry County and in the Panhandle, but evidently do not inhabit the Sand Hills (Jones 1964; Freeman 1998).

**Total Area of Modeled Habitat (ha):** 2,615,213

**Model Description:**
Modeled from literature using the variable 'Land Cover class Western Shortgrass Prairie > 25%'.

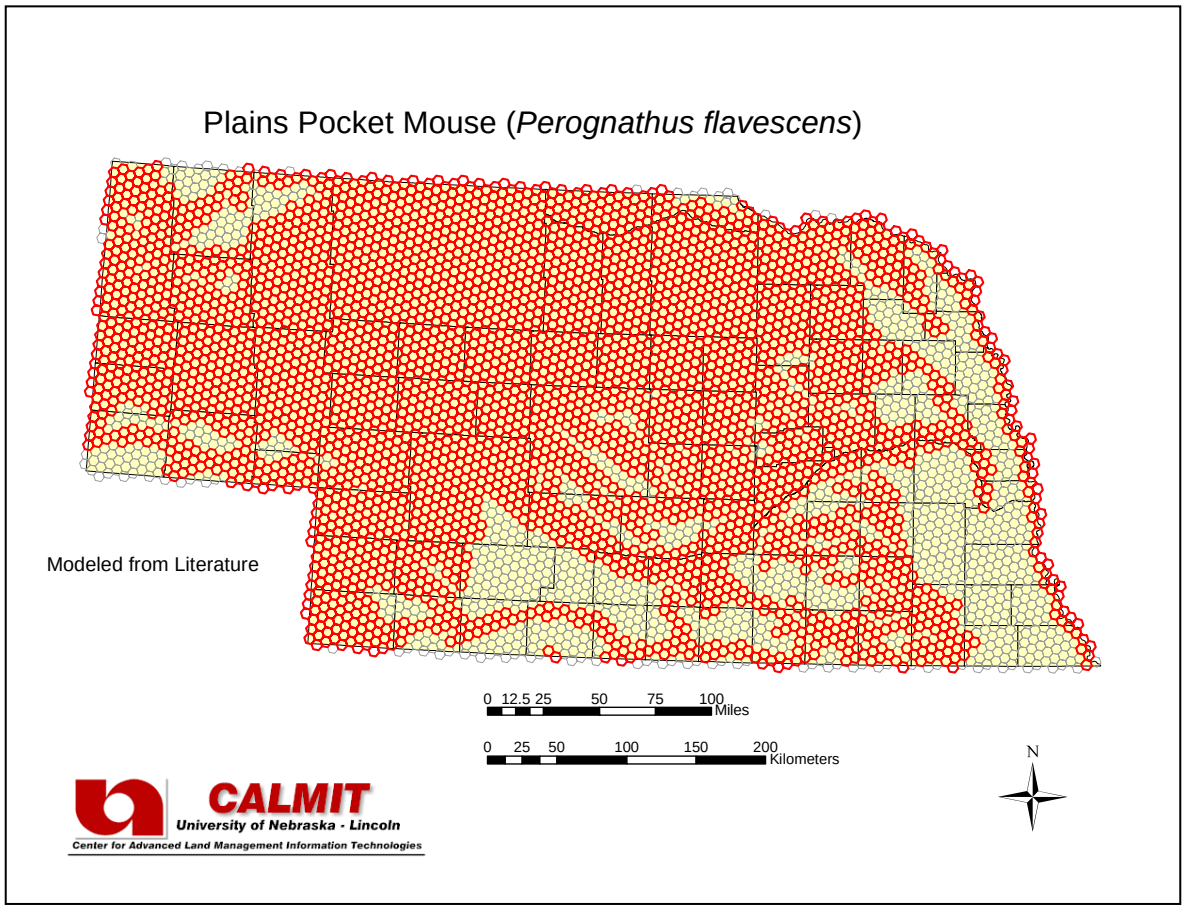


**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Plains pocket mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Perognathus flavescens*** | Federal Status: | - |
| TNC Element Code: | AMAFD01020 | State (NE) Status: | S5 |

**Habitat Description:**
Sand dunes and stabilized sand soils (Wilson and Ruff 1999). In areas of sandy soils, with cover of grasses or grasses mixed with sagebrush or yucca. Often found in grain fields. The grazing lands of the Nebraska Sand Hills seem to be the center of abundance (Jones et al. 1983). Sandy plains with sparse vegetation, sand dunes, and shifting sands (Whitaker 1997). Abundant in the drier upland Sand Hills (Freeman 1998). Absent only in the Pine Ridge area and the extreme southeastern part of the state (Jones 1964).
**Total Area of Modeled Habitat (ha):** $1.49 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Percentage of Coarse-textured Soils is present' OR 'Percentage of Moderately Coarse-textured Soils is present'.



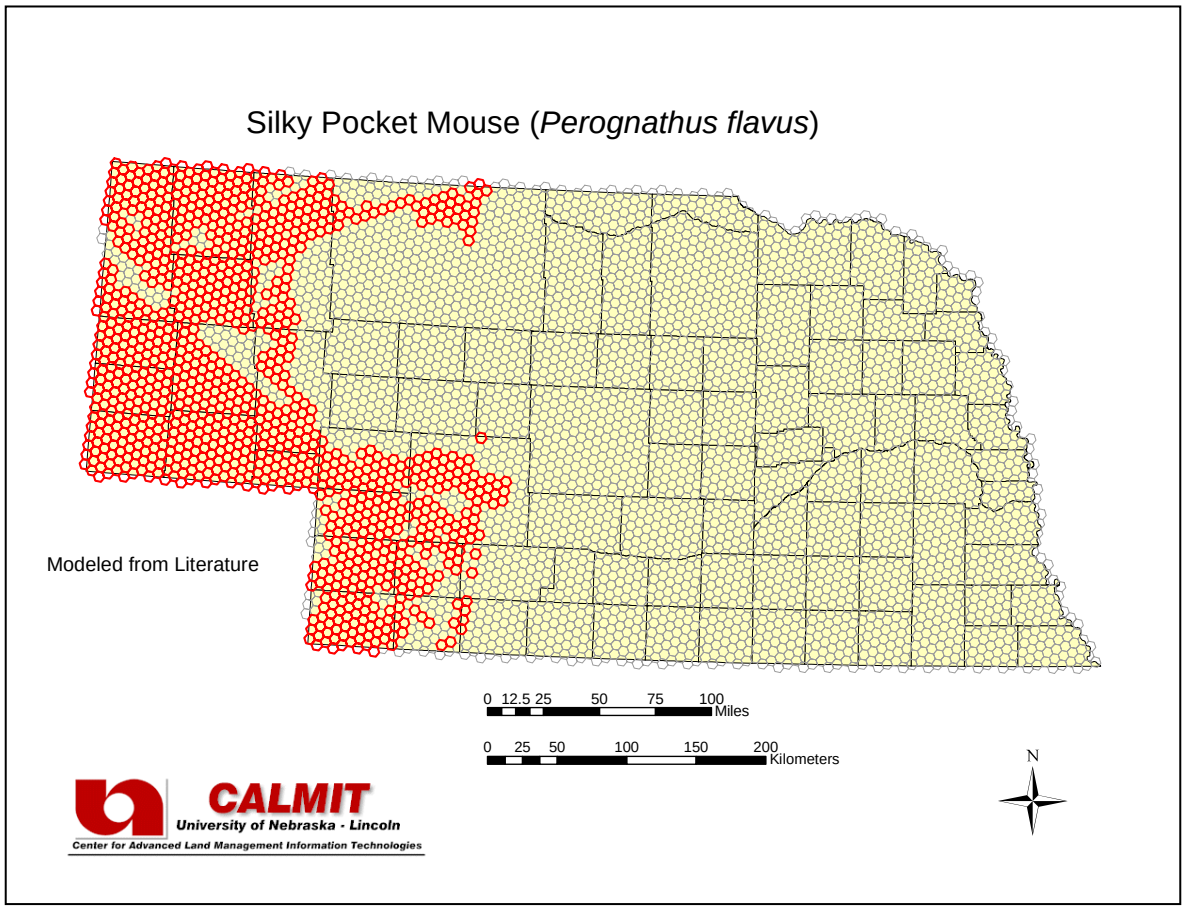
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Silky pocket mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Perognathus flavus*** | Federal Status: | - |
| TNC Element Code: | AMAFD01030 | State (NE) Status: | S4 |

**Habitat Description:**
A species of the semidesert grasslands of the Central and Southern Great Plains (Jones et al. 1983. It reaches its northern limits in western Nebraska and is most abundant on loamy soils with a cover of grasses and a minimum of bare soil. Found in areas with thin, low grasses and a minimum of bare soil (Wilson and Ruff 1999). Occurs in prairies in sandy, gravelly, or rocky areas with sparse vegetation of various grasses and forbs (Whitaker 1997). Rare in Nebraska overall (Jones 1964) and has only been caught in the western part of the state (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 4,431,668

**Model Description:**
Modeled from literature using the set of variables 'Percentage of Medium-textured Soils is present' AND ('Land Cover class Western Shortgrass Prairie is present' OR 'Land Cover class Sandsage Shrubland is present').



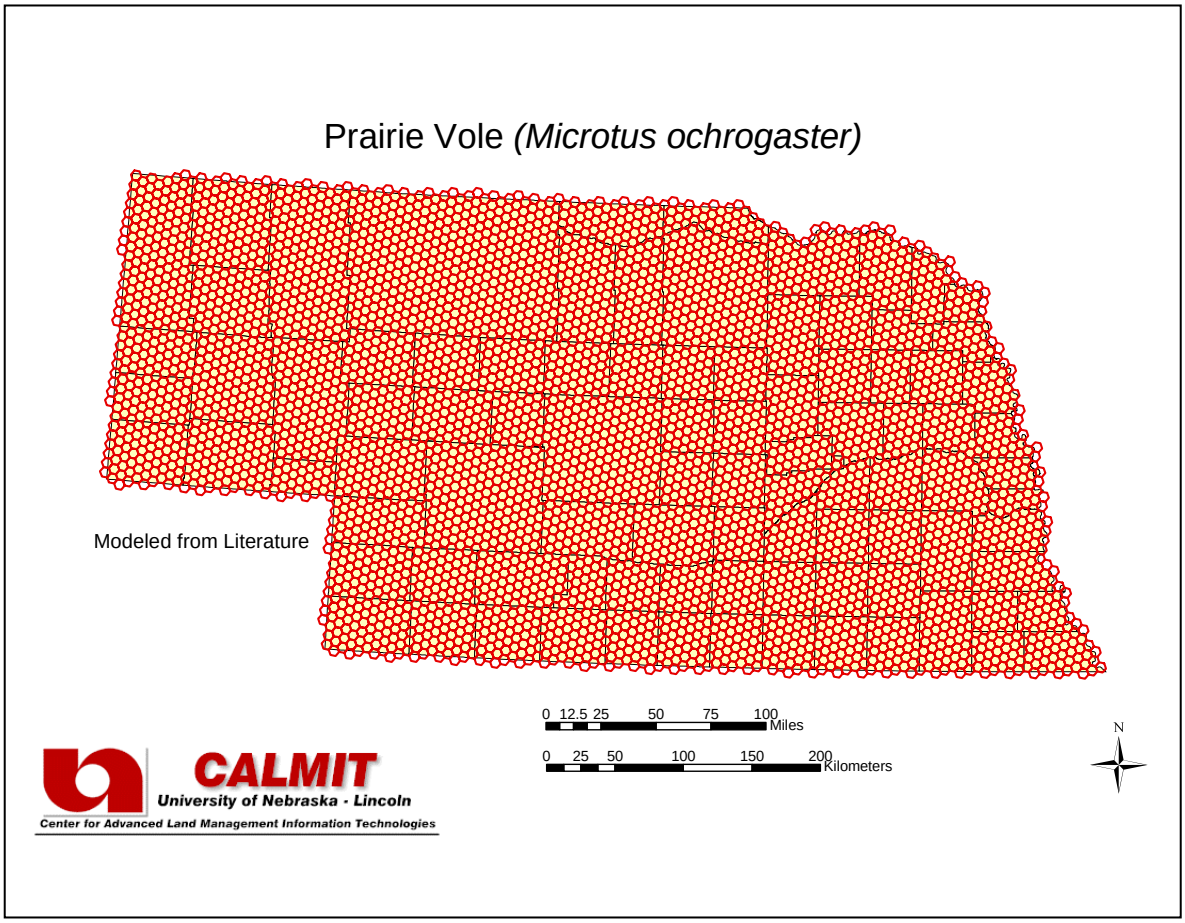
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Prairie vole** | TNC Global Status: | G5 |
| Scientific Name: | ***Microtus ochrogaster*** | Federal Status: | - |
| TNC Element Code: | AMAFF11140 | State (NE) Status: | S5 |

**Habitat Description:**
Typically inhabits upland prairies and is widely distributed in the eastern part of the state (Jones 1964), although it also may occur in swales and riparian grassland (Jones et al. 1983), especially in the western part of the state (Jones 1964). Occupies dry grassy areas and areas around lakes; abundant in the drier upland Sand Hills (Freeman 1998). Dry grass prairie or mixed grass-weedy situations (Whitaker 1997). Open habitats with lots of vegetation for cover; not usually found in wooded or damp areas but does occur in hayfields and along field borders (Forsyth 1999). Inhabits primarily tall-grass communities. On the northern plains, they often are restricted to upland habitats by another vole, *M. pennsylvanicus*, which occupies lush lowland and swales (Jones et al. 1985). Occupies the dense grass areas of the Sand Hills (Lemen and Freeman 1986). Lives in upland herbaceous fields; grasslands, old agricultural lands and thickets; places where there is suitable cover for runways (NatureServe 2002).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



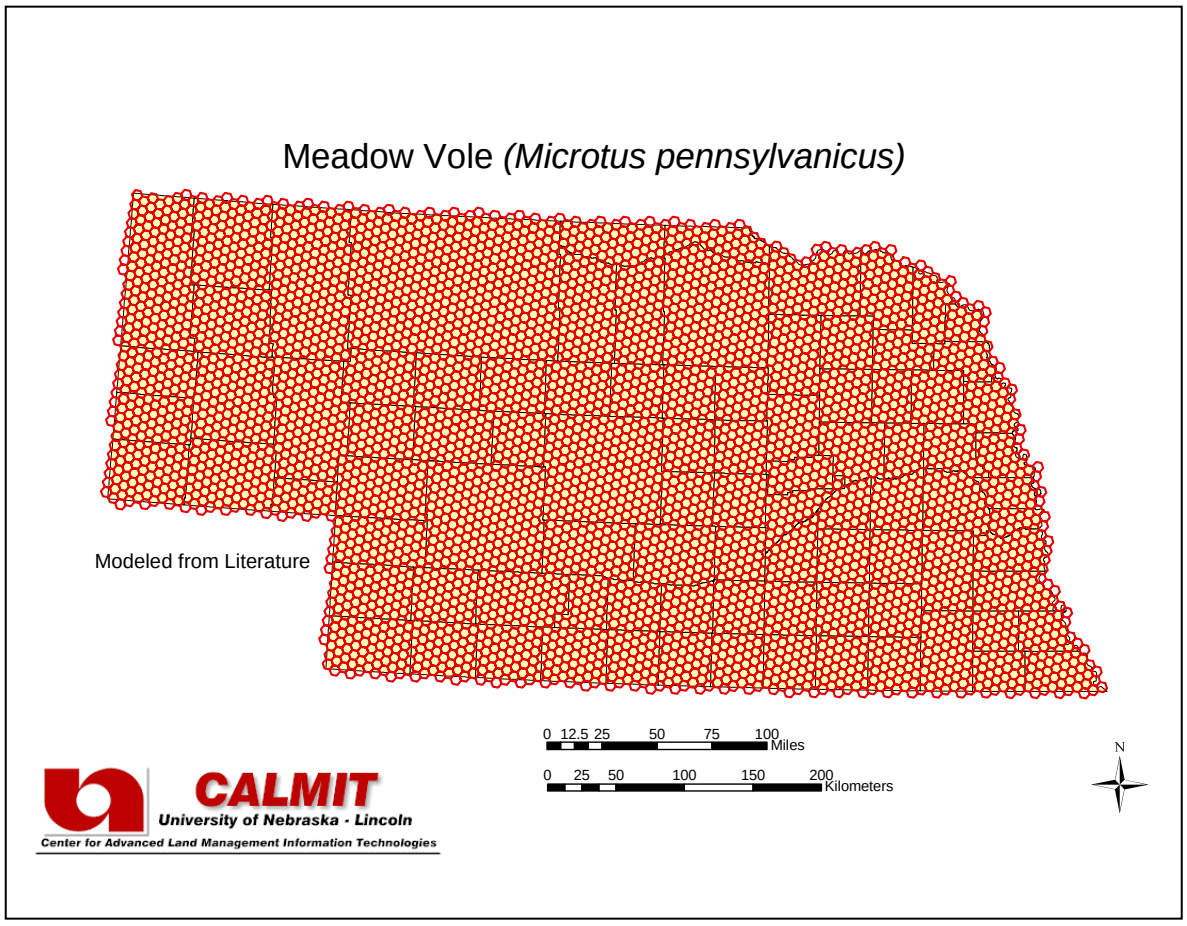
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Meadow vole** | TNC Global Status: | G5 |
| Scientific Name: | ***Microtus pennsylvanicus*** | Federal Status: | - |
| TNC Element Code: | AMAFF11010 | State (NE) Status: | S5 |

**Habitat Description:**
Has the widest distribution in North America of any *Microtus* (Jones et al. 1983). It is associated with wet meadows scattered in a patchy fashion throughout its distribution. On the Northern Plains meadow voles occur throughout the region, except for most of southwestern Nebraska.. An isolated population may be found in Dundy County, in the central and western part of the county (Benedict et al. 2000). Found in wet areas of the Sand Hills (Freeman 1998). Requires water, therefore typically inhabits moist meadows, marshes, and other communities characterized by lush grasses, sedges, and rushes (Jones et al. 1985).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



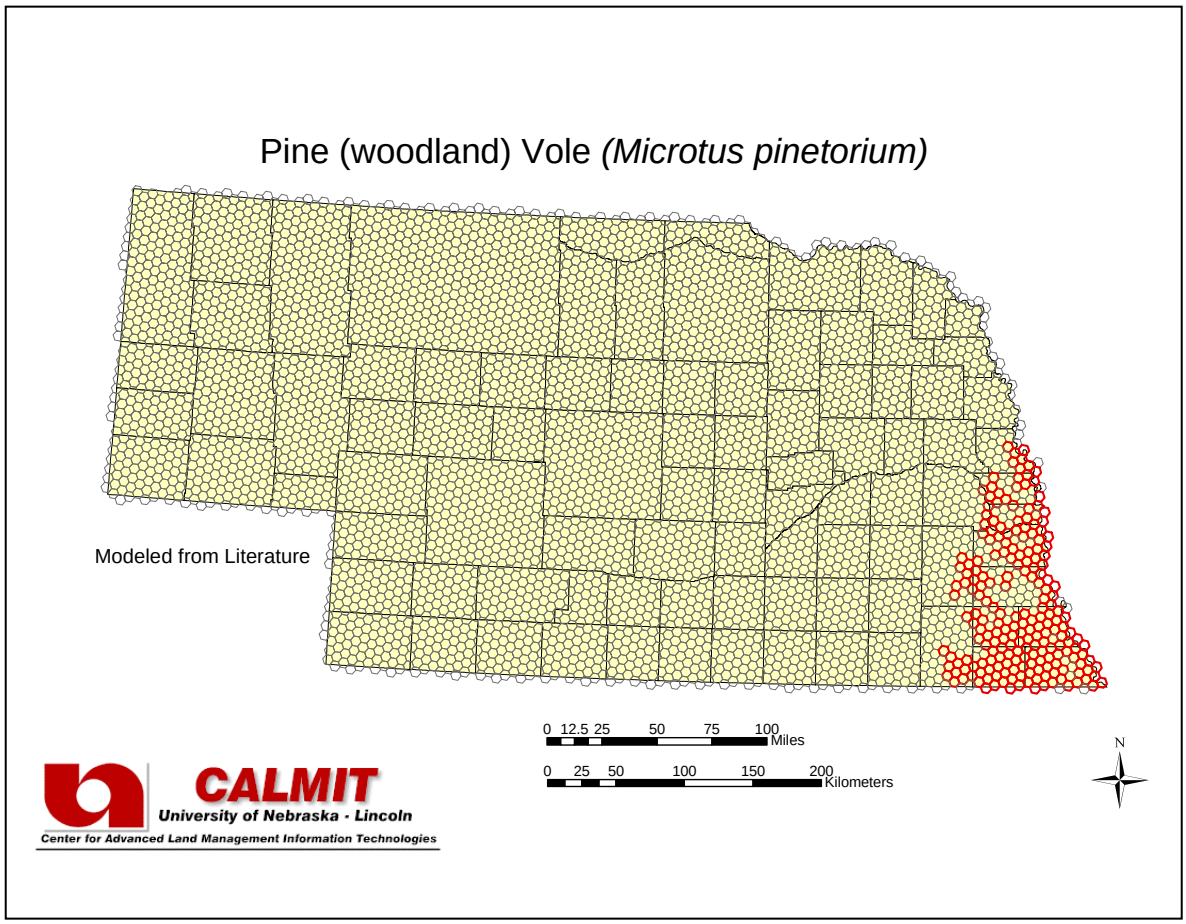
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Pine (woodland) vole** | TNC Global Status: | G5 |
| Scientific Name: | ***Microtus pinetorum*** | Federal Status: | - |
| TNC Element Code: | AMAFF11150 | State (NE) Status: | S4 |

**Habitat Description:**
Dwells primarily in wooded areas and burrows beneath leaf litter and among the roots of trees. Well-drained wooded slopes seem to be the favored natural habitat, but woodland voles also become established in old fields or pastures containing successional woody vegetation (Jones et al. 1985). In southeastern Nebraska it is found in oak-hickory forest along the Missouri River and its tributary streams. Well-drained slopes with dense ground cover appear to be favored (Jones et al. 1983). Primarily inhabits upland deciduous forests and is restricted to the extreme southeastern corner of the state (Benedict et al. 2000).

**Total Area of Modeled Habitat (ha):** 823,089

**Model Description:**
Modeled from literature using the variable 'Land Cover class Deciduous Forests and Woodlands > 5%', trimmed to the southeastern corner of the state and north along the Missouri River, the area of reported distribution (Benedict et al. 2000).



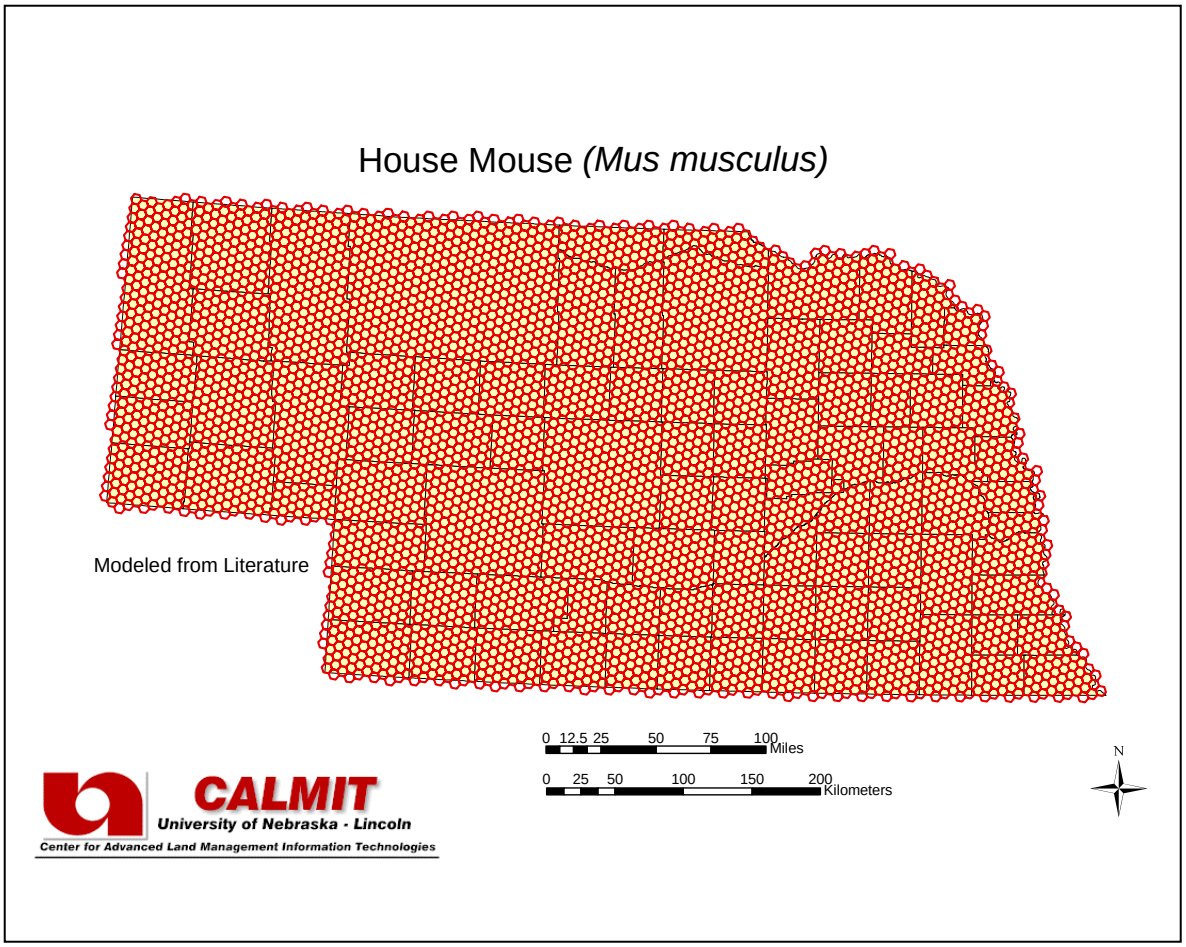
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **House mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Mus musculus*** | Federal Status: | -- |
| TNC Element Code: | AMAFF22010 | State (NE) Status: | SE |

**Habitat Description:**
Not native to North America. Occupies buildings/other structures, as well as natural habitats such as fields, cropland, beaches, and sometimes high elevation forest and scrub (Natureserve 2002). A common, often abundant resident in and near habitations of people throughout the Northern Plains (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



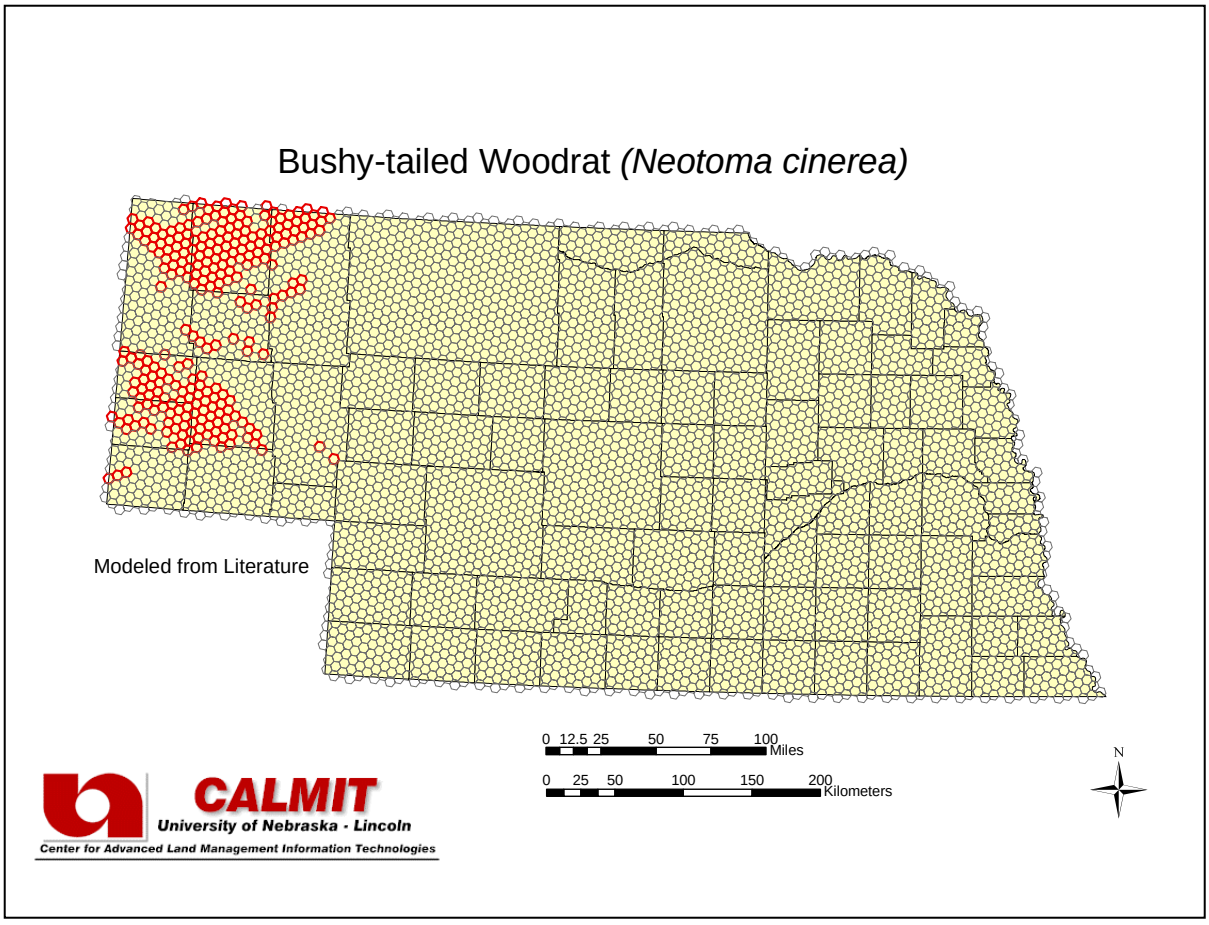
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Bushy-tailed woodrat** | TNC Global Status: | G5 |
| Scientific Name: | ***Neotoma cinerea*** | Federal Status: | - |
| TNC Element Code: | AMAFF08090 | State (NE) Status: | S3 |

**Habitat Description:**
Rocky situations, coniferous forests (Whitaker 1997). Inhabits rocky slopes and crevices (Jones et al. 1983, 1985). Found on cliffs, rockslides, caves, river canyons and rock outcrops in pine forests (Forsyth 1999). Found only in the extreme western counties of Nebraska (Benedict et al. 2000).

**Total Area of Modeled Habitat (ha):** 1,033,925

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands is present' AND '30-year Average Precipitation for July < 73.5 mm'.



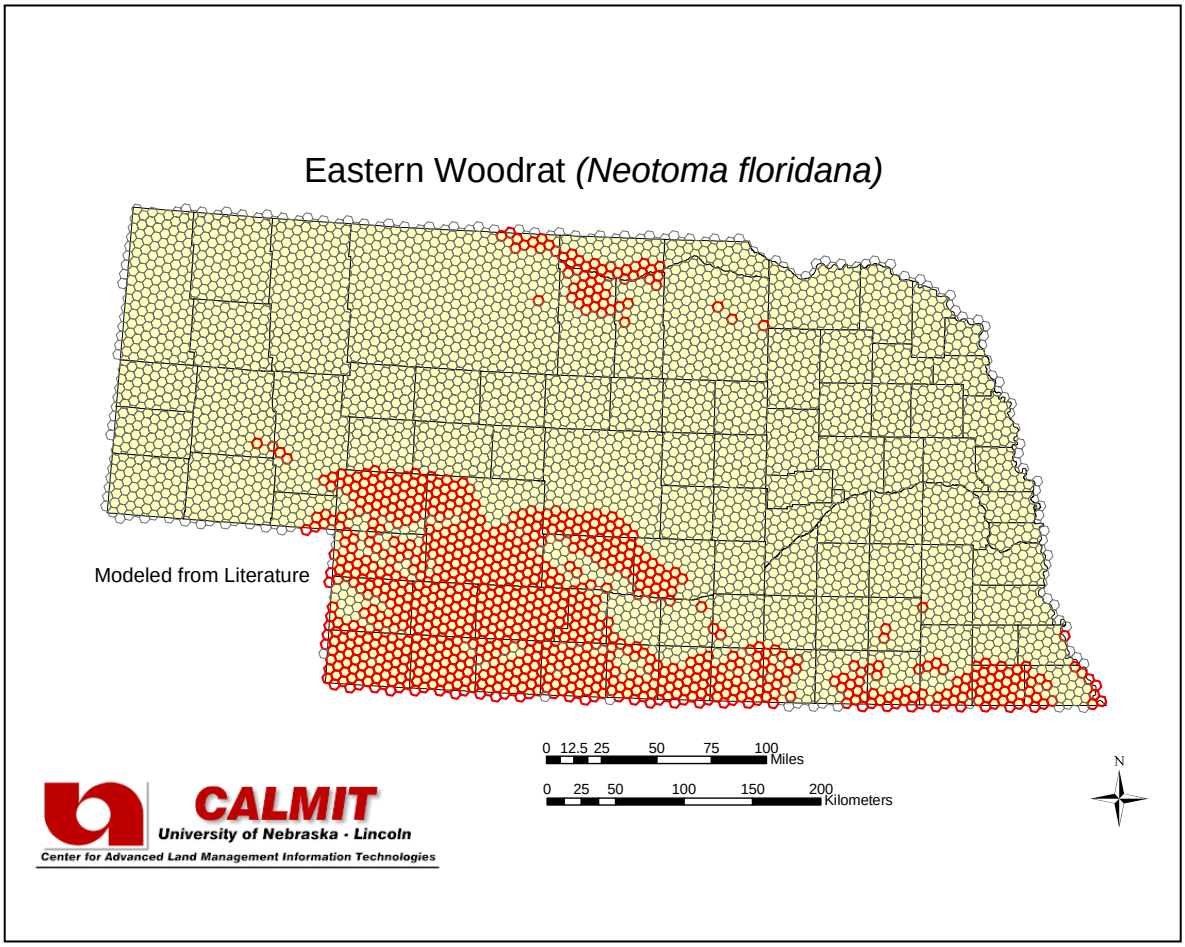
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern woodrat** | TNC Global Status: | G5 |
| Scientific Name: | ***Neotoma floridana*** | Federal Status: | - |
| TNC Element Code: | AMAFF08010 | State (NE) Status: | - |

**Habitat Description:**
Species is known to inhabit wooded areas, buildings or rocky outcrops. In Nebraska, an isolated population occurs along the Niobrara River in north-central Nebraska (Jones 1964; Freeman 1998), while a larger number may be found in southwestern Nebraska along the Platte and Republican Rivers and their tributaries (Jones 1964). Recently, it has also been found in southeastern Nebraska along the Big and Little Blue River drainages (Benedict 2000).

**Total Area of Modeled Habitat (ha):** 3,831,636

**Model Description:**
Modeled from literature using the set of variables ('30-Year Average Precipitation for March > 27 mm' AND 'Average Growing Degree Days Coefficient of Variation for June < 18.5%' AND Elevation < 1100 m' AND 'Land Cover Class Agricultural Fields < 60%') OR ('30-Year Average Precipitation for March > 27 mm' AND 'Land Cover Class Ponderosa Pine is present' AND 'Land Cover Class Little Bluestem-Gramma Mixedgrass Prairie > 25%').



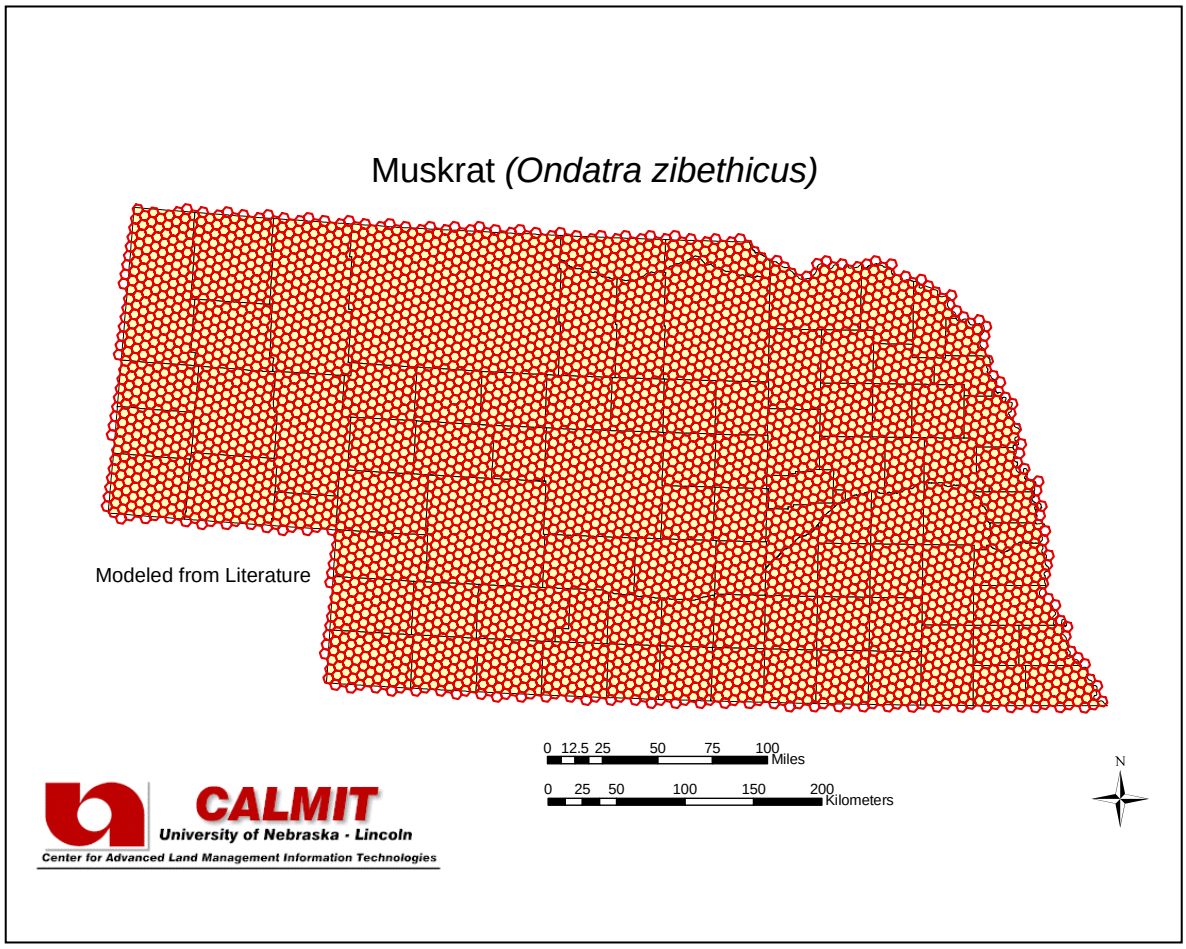
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Muskrat** | TNC Global Status: | G5 |
| Scientific Name: | ***Ondatra zibethicus*** | Federal Status: | - |
| TNC Element Code: | AMAFF15010 | State (NE) Status: | S5 |

**Habitat Description:**
Found in lakes, rivers, ponds, sloughs, and marshes; prefers slow moving or standing water about 1.5 to 2.0 m deep throughout the year and avoids water over 4 m in depth due to lack of aquatic vegetation (Allen and Hoffman 1984; Banfield 1974; Choate et al. 1994; Hamilton and Whitaker 1979; Feldhamer 1999; Kurta 1995). Inhabits the waterways and wet areas of the Sand Hills (Freeman 1998). Muskrats are found throughout Nebraska wherever suitable aquatic habitat exists (Jones 1964; NGPC 2002).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



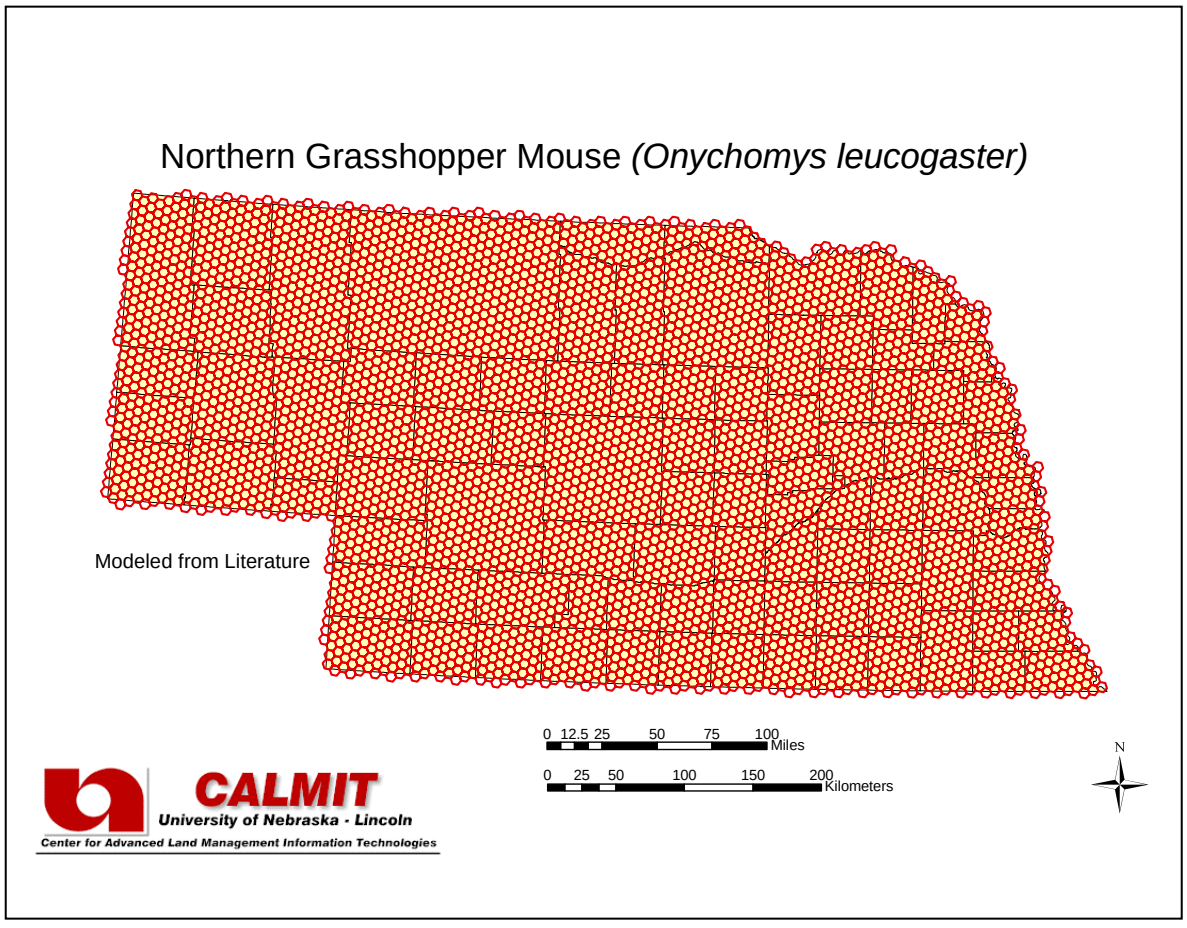
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Northern grasshopper mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Onychomys leucogaster*** | Federal Status: | - |
| TNC Element Code: | AMAFF06010 | State (NE) Status: | S5 |

**Habitat Description:**
Probably restricted by tall-grass prairie. Can be found in the upland Sand Hills community but its distribution extends beyond the Sand Hills. It is more common in the western part of the state than the eastern part (Freeman 1998). Historically occupied all but extreme eastern counties of Nebraska (Jones 1964 in Benedict et al. 2000), but recently have been found in Cass county and southward (Benedict 2000). Grasshopper mice live in semiarid grasslands and shrublands, generally on sandy to silty soils and are commonly found on overgrazed rangelands and in abandoned fields (Jones et al. 1985).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



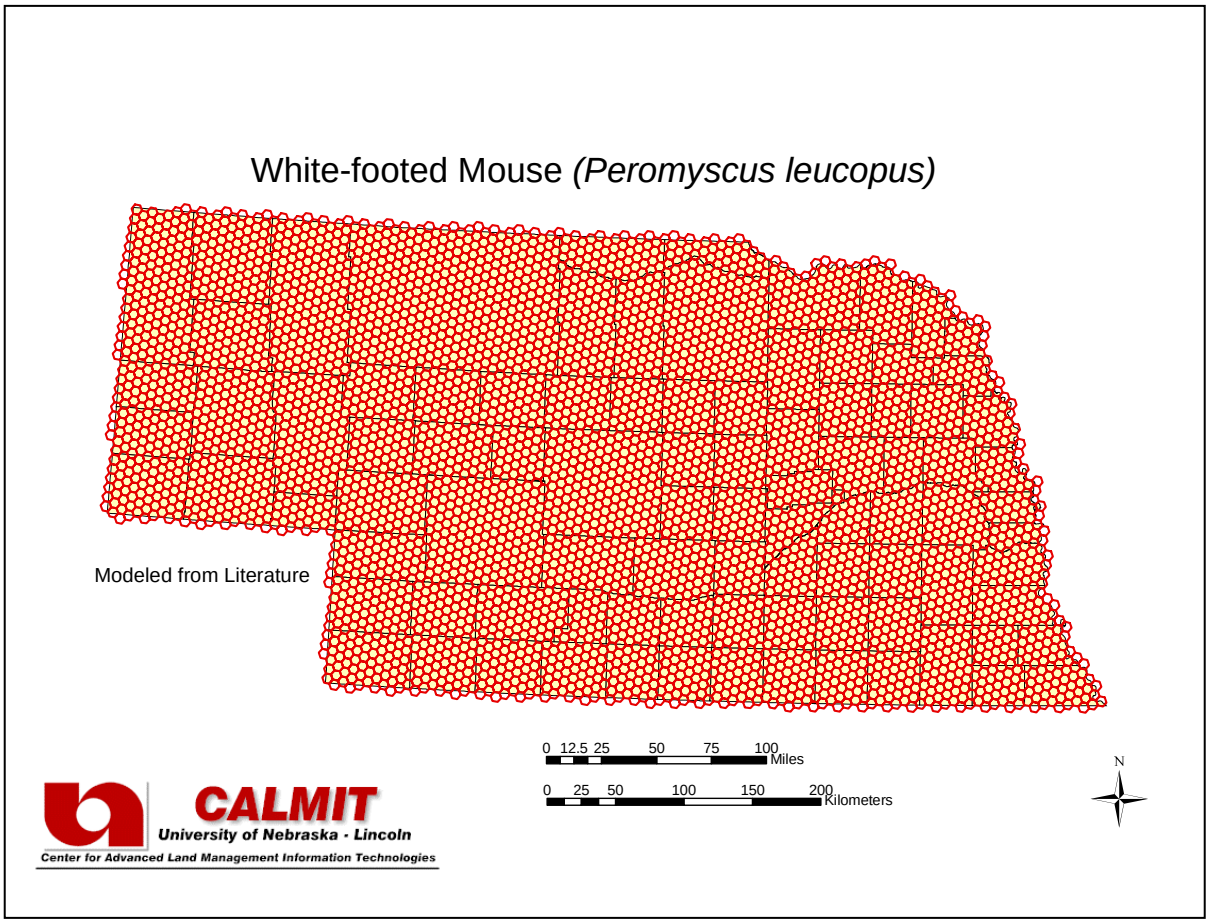
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **White-footed mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Peromyscus leucopus*** | Federal Status: | - |
| TNC Element Code: | AMAFF03070 | State (NE) Status: | S5 |

**Habitat Description:**
Typically inhabits warm, dry, eastern deciduous forests. Prefers to take cover in fallen logs, rocks and brush. Western parts of its distribution are limited to woody river bottoms, valleys and ravines. Also common in hedgerows bordering agricultural areas, foraging at night in brushy fields and croplands. Will also habituate man made structures. (Banfield 1974; Choate et al. 1994; Hamilton and Whitaker 1979; Lackey 1999). More restricted to wooded areas and in the Sand Hills is restricted to waterways, especially where there are trees and tall cover (Freeman 1998). Adults avoid open areas (Kurta 1995). Requires some type of cover ranging from shrubs and tree canopy to fallen logs or cropland (Lackey 1999). Subadults may disperse into grassy areas or cultivated areas. (Kurta 1995)

**Total Area of Modeled Habitat (ha):** 20,542,058

**Model Description:**
Modeled from literature using the variable 'Land Cover class Deciduous Forests and Woodlands > 0.5%' OR 'Land Cover class Ponderosa Pine Forests and Woodlands > 1%'.

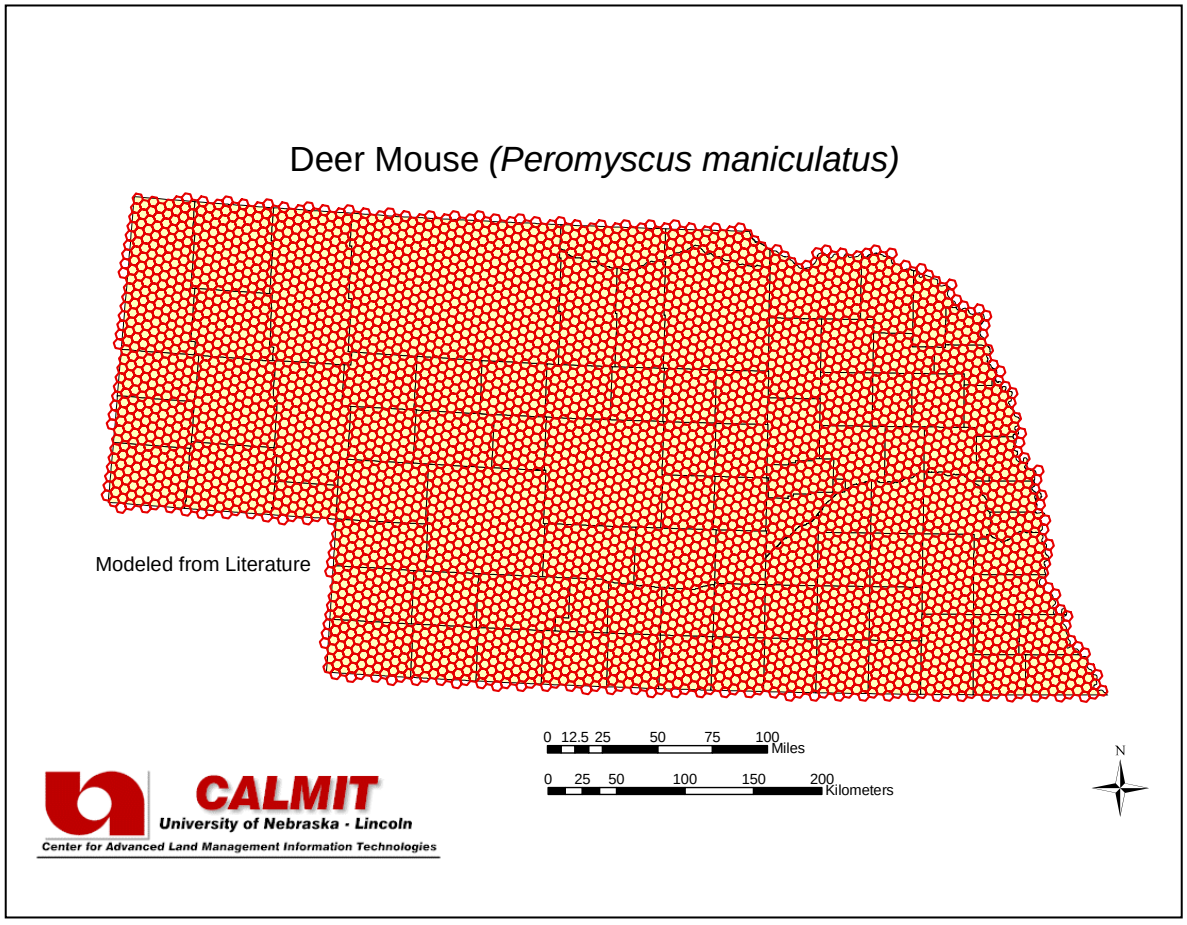


**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Deer mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Peromyscus maniculatus*** | Federal Status: | - |
| TNC Element Code: | AMAFF03040 | State (NE) Status: | S5 |

**Habitat Description:**
Occur from arid grasslands to floodplains, and in cultivated fields (Jones et al. 1985). Abundant in the drier upland Sand Hills and also the more moist grassy areas of the Sand Hills (Freeman 1998). Not found in deep woods or marshy areas (Freeman 1998). Deer mice are usually not seen in wetlands and may be absent from woodlands, and riparian situations (Jones 1964; Jones et al. 1985).

**Total Area of Modeled Habitat (ha):** 20,642,058
**Model Description:**
Statewide distribution.



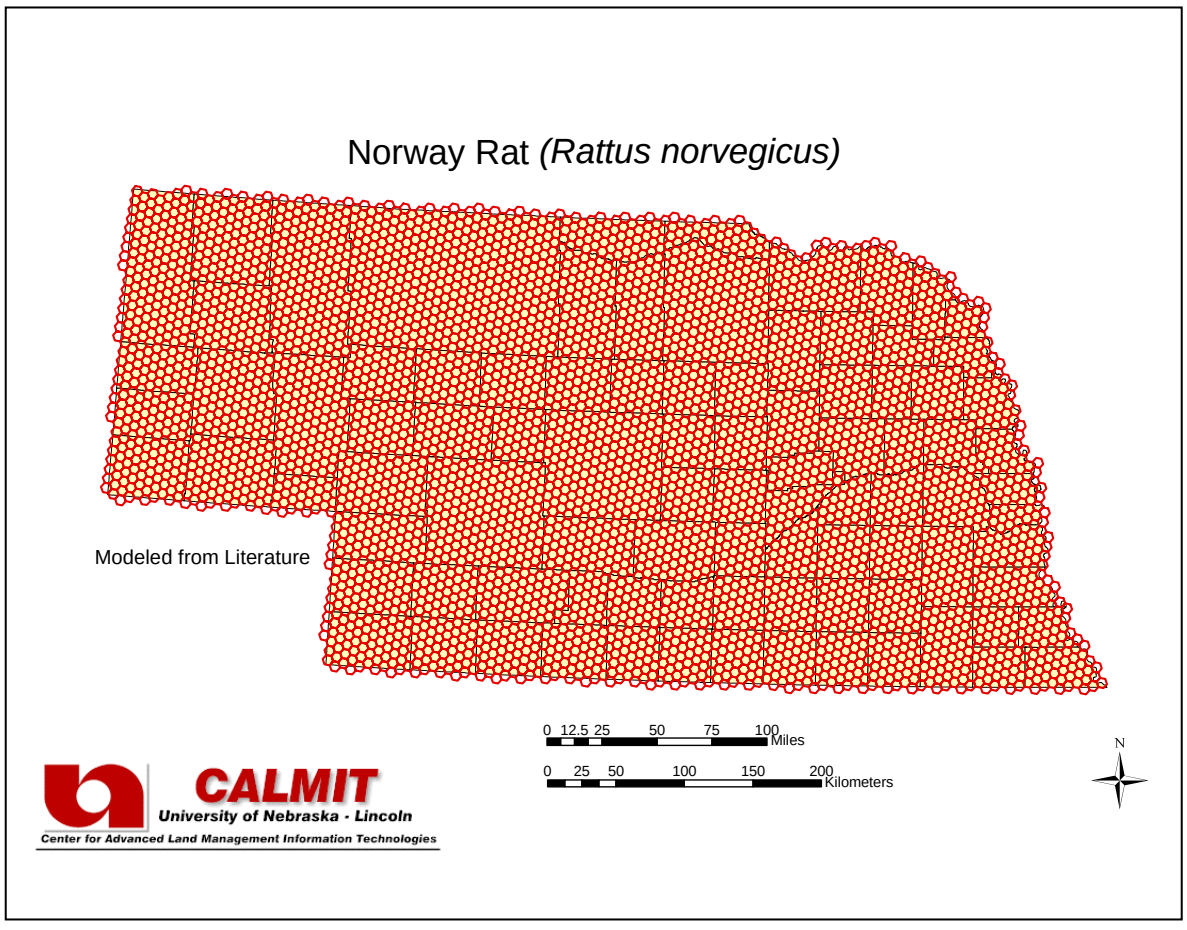
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Norway rat** | TNC Global Status: | G5 |
| Scientific Name: | ***Rattus norvegicus*** | Federal Status: | -- |
| TNC Element Code: | AMAFF21020 | State (NE) Status: | SE |

**Habitat Description:**
Introduced species. Occurs widely in the Plains states, but is mostly limited to urban areas or other human habitations such as farm buildings (Jones et al. 1983, 1985). Occurs on farms, in cities, and among many types of human dwellings; in summer, it often inhabits cultivated fields (Whitaker 1997).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



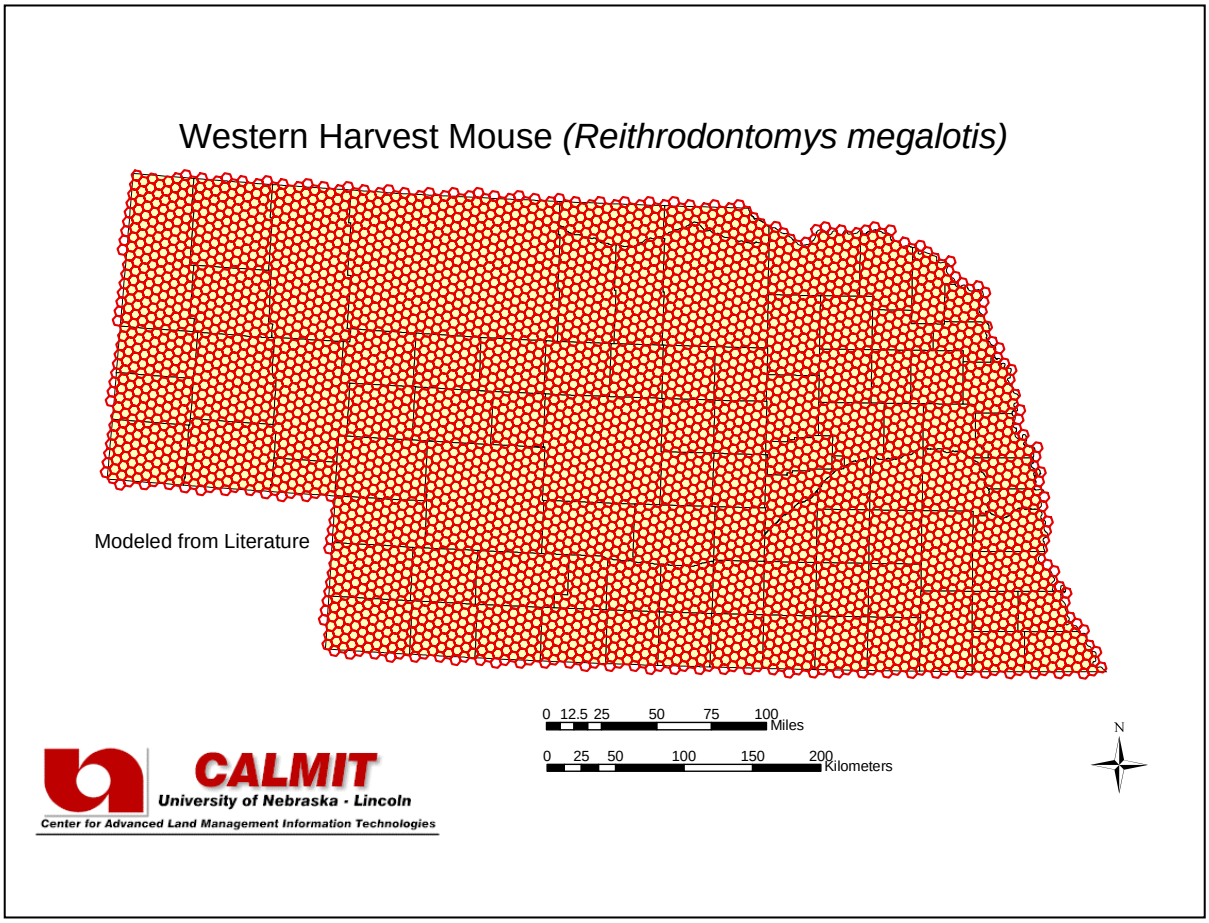
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Western harvest mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Reithrodontomys megalotis*** | Federal Status: | - |
| TNC Element Code: | AMAFF02030 | State (NE) Status: | S5 |

**Habitat Description:**
Statewide distribution. A common inhabitant of grassy areas throughout Nebraska, this species is widely distributed in the eastern part of the state, but frequently is restricted to riparian communities in the western part (Jones 1964). Lush, lowland swales seem to provide the optimum habitat for this mouse but it lives also in weedy fencerows, thickets, fallow fields, and on dry uplands where ground cover is abundant. Typical habitats include dense patches of tall grass, shrublands (including sagebrush), yucca-grass associations, brushy riparian habitats, cattails, alfalfa fields, and borrow pits with weedy vegetation (Jones et al. 1983). Avoids only dense forest and xeric uplands. Occupies abandoned fields to well-developed mid- and tall-grass prairie, weedy field margins, and highway rights-of-way (Jones et al. 1985). Old fields, meadows, weedy roadsides, agricultural areas, grassy situations within pine-oak forest, and riparian borders (NatureServe 2002). Prefers dense vegetative cover. Also may be found in shrubby arid regions.

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



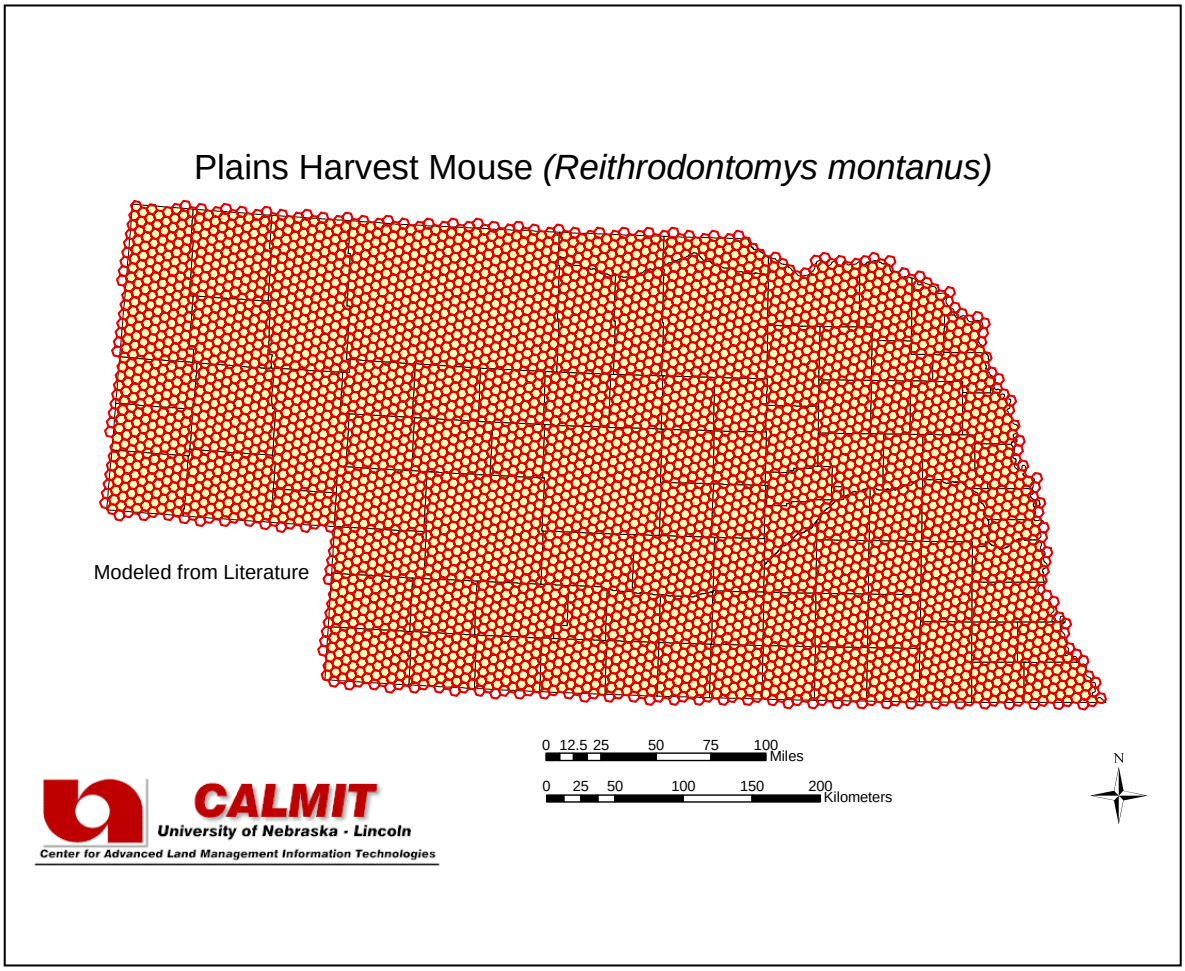
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Plains harvest mouse** | TNC Global Status: | G5 |
| Scientific Name: | ***Reithrodontomys montanus*** | Federal Status: | - |
| TNC Element Code: | AMAFF02010 | State (NE) Status: | S4 |

**Habitat Description:**
Found in drier, upland habitat of the Sand Hills and throughout the state (Jones 1964; Freeman 1998). Found in open grassy areas, including prairies and other types of grasslands (Whitaker 1997). This is a species of well-developed upland grasslands. It responds well to grazed rangelands, with exposed rocks and prickly pear, but the cover of grasses must be greater than about 50 percent (Jones et al. 1985). Two subspecies found in Nebraska (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



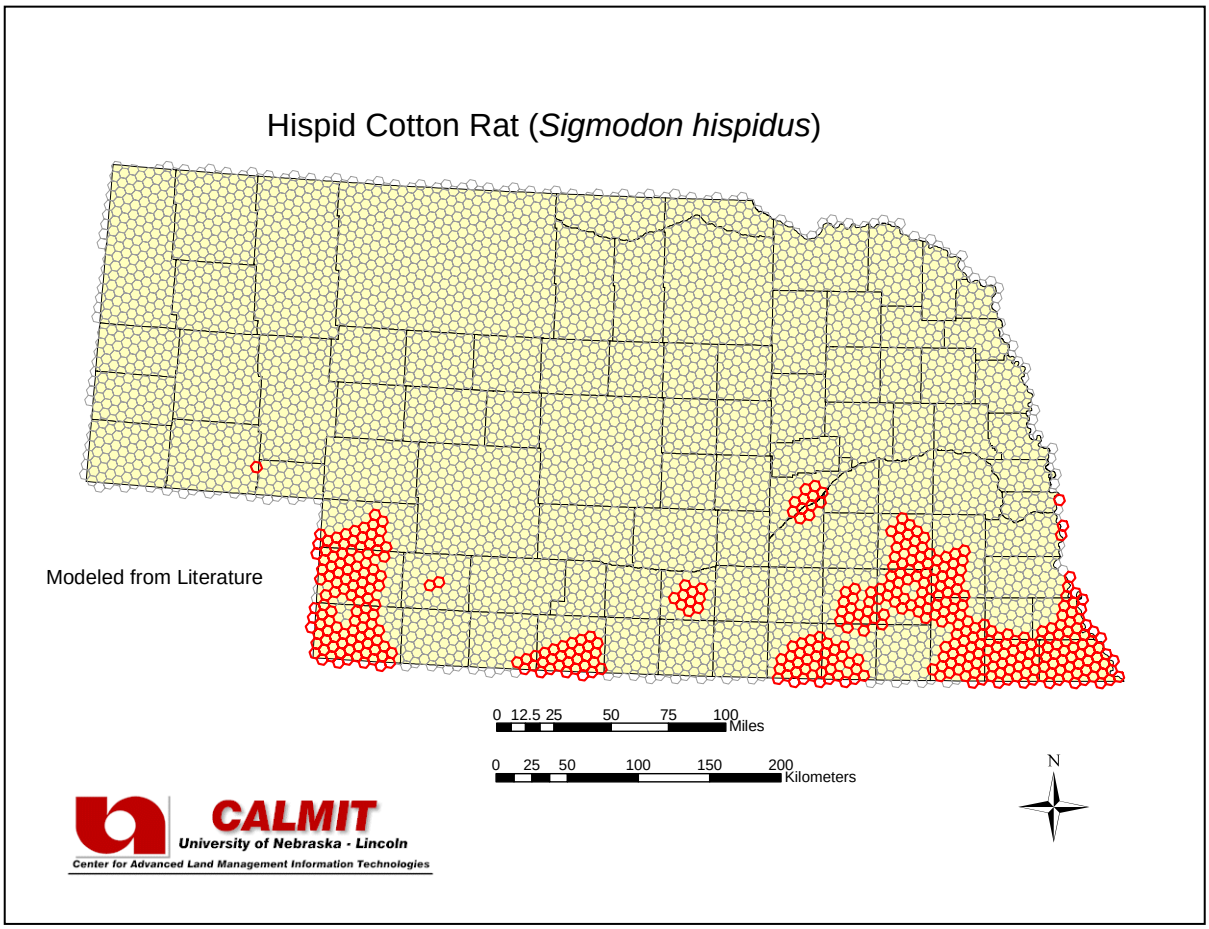
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Hispid cotton rat** | TNC Global Status: | G5 |
| Scientific Name: | ***Sigmodon hispidus*** | Federal Status: | - |
| TNC Element Code: | AMAFF07010 | State (NE) Status: | S3 |

**Habitat Description:**
Grassy and weedy fields (Whitaker 1997). Occupies a wide variety of relatively mesic habitats: thickets, woodland borders, riparian ecosystems such as slough grass and cattails, as well as weedy margins of fields and moist pastures – especially stands of sunflowers and summer cypress – and tall-grass stands in roadside ditches. A common denominator of suitable habitat is nearly complete ground cover (Jones et al. 1983). Grassland sites (McMillan and Kaufman 1994). In Nebraska, its distribution is limited by winter temperatures to the southern portion of the state (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 1,743,504

**Model Description:**
Modeled from literature using the variable '30-year Average Minimum Temperature for February > -8.4ºC' AND 'Land Cover class Upland Tallgrass Prairie is present' OR 'Land Cover class Emergent Wetland is present'.



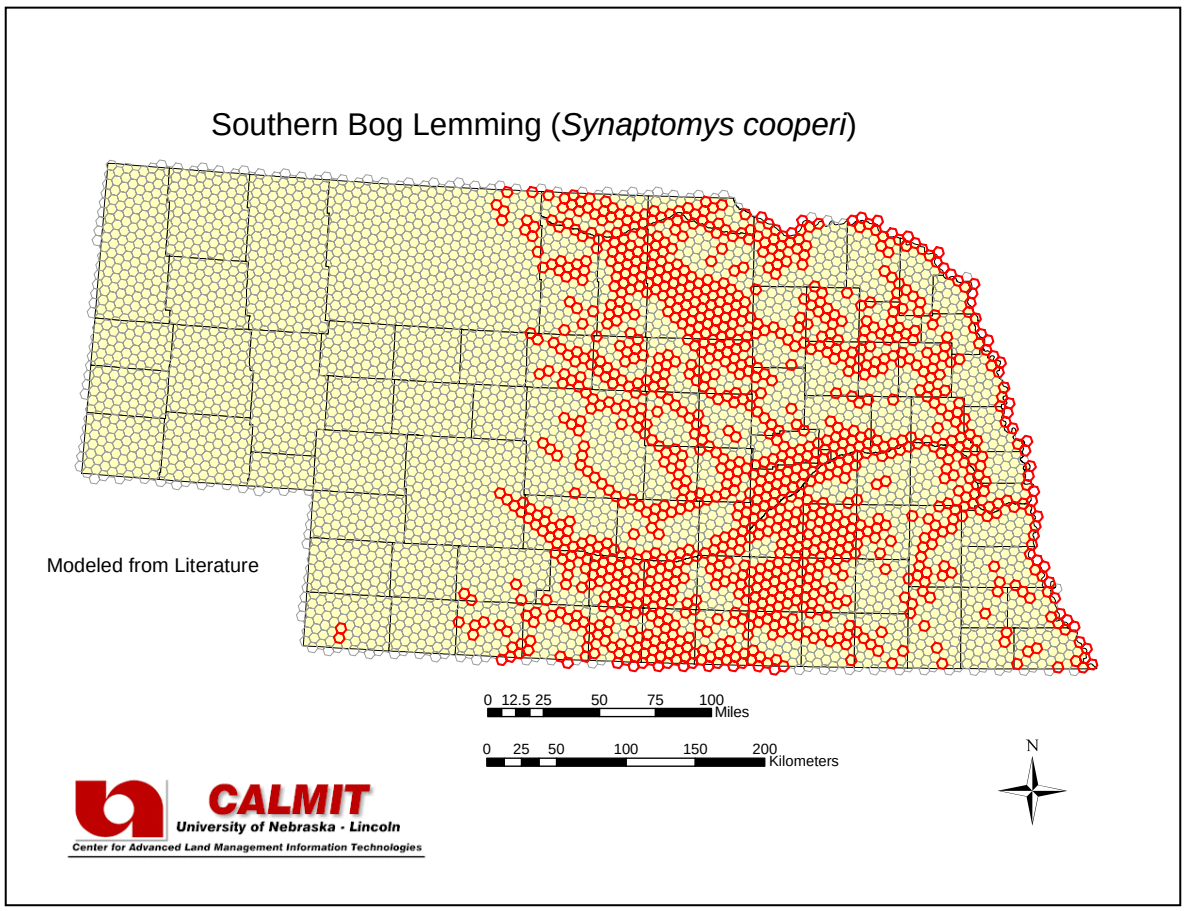
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Southern bog lemming** | TNC Global Status: | G5 |
| Scientific Name: | ***Synaptomys cooperi*** | Federal Status: | - |
| TNC Element Code: | AMAFF17010 | State (NE) Status: | S1 |

**Habitat Description:**
Favored habitat includes vegetation surrounding streams and creeks, damp to wet grasslands and marshes (Sheffield 1998). Much of their natural habitat has been converted to farmland and they are now restricted to fencerows, damp corners of cultivated fields, swales, grassy riparian communities and bogs (Jones et al. 1983). An isolated population is known only from the vicinity of cold-water springs draining into Rock Creek, Dundy County, in southwestern Nebraska.

**Total Area of Modeled Habitat (ha):** 4,764,185

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Riparian Shrubland is present' OR 'Land Cover class Emergent Wetland > 0.5%' AND 'Land Cover class Agricultural Fields is present' AND 'Elevation < 825 m'. The location of the isolated population in the southwestern corner of the state could not be modeled using the available variables and was identified using only location information from literature.



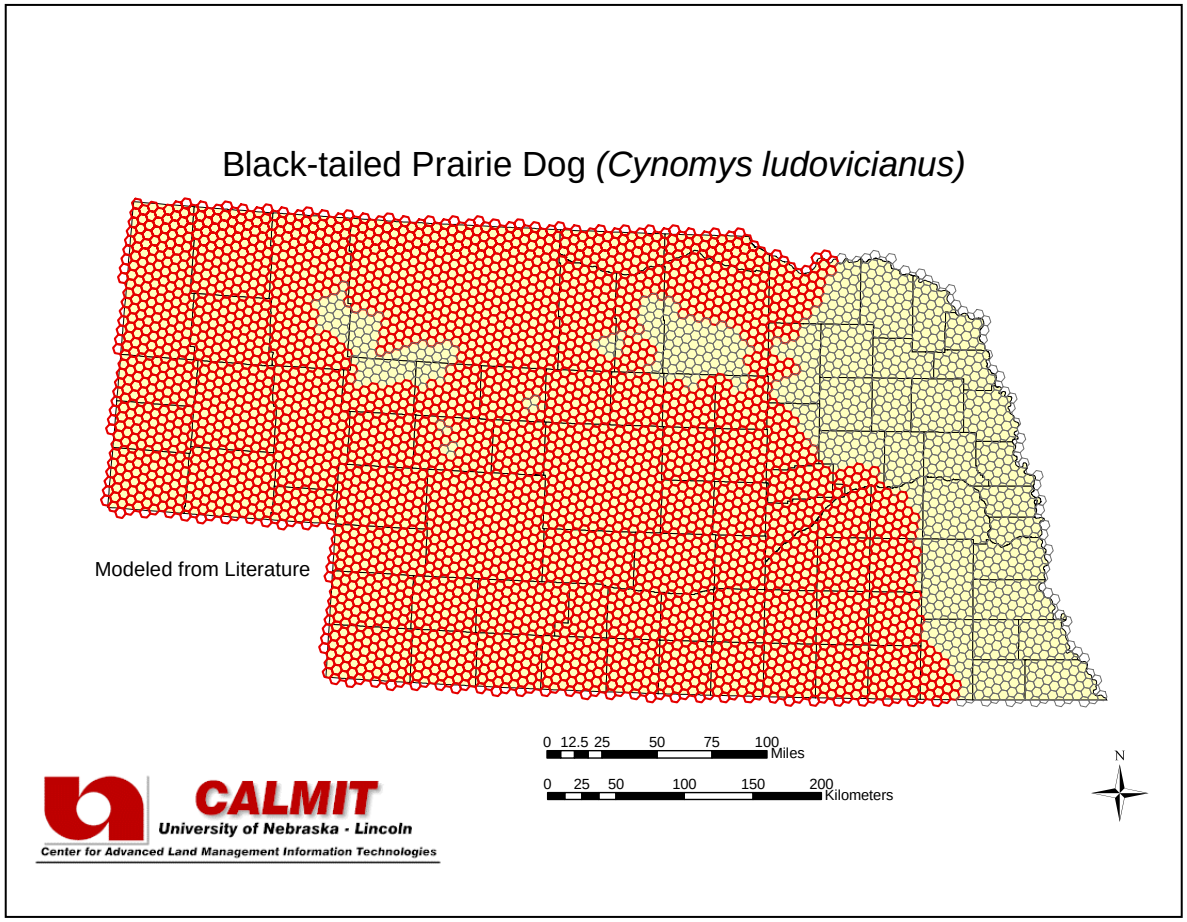
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Black-tailed prairie dog** | TNC Global Status: | G4 |
| Scientific Name: | ***Cynomys ludovicianus*** | Federal Status: | - |
| TNC Element Code: | AMAFB06010 | State (NE) Status: | S4 |

**Habitat Description:**
Typically an inhabitant of the short-grass prairie (Whitaker 1997) and considered a grassland or steppe species by Hoffman and Jones (1970) (Freeman 1998). It thrives on overgrazed rangeland and avoids stands of tall grass (Jones et al. 1985). Likes river flats and coulee bottomlands (Forsyth 1999). Inhabits dry upland pastures (Jones et al. 1983). Diet consists of forbs and grasses; some animal matter; opportunistic but does select for certain plants according to nutritional requirements (Forsyth 1999). Most abundant and an important community member in the Mixed Grass Prairie and Short Grass Plains associations (Carpenter 1940 in Osborn 1942).

**Total Area of Modeled Habitat (ha):** $1.60 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Little Bluestem-Gramma Mixedgrass Prairie is present' OR 'Land Cover class Western Wheatgrass Mixedgrass Prairie is present' OR 'Land Cover class Western Shortgrass Prairie is present'.



**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

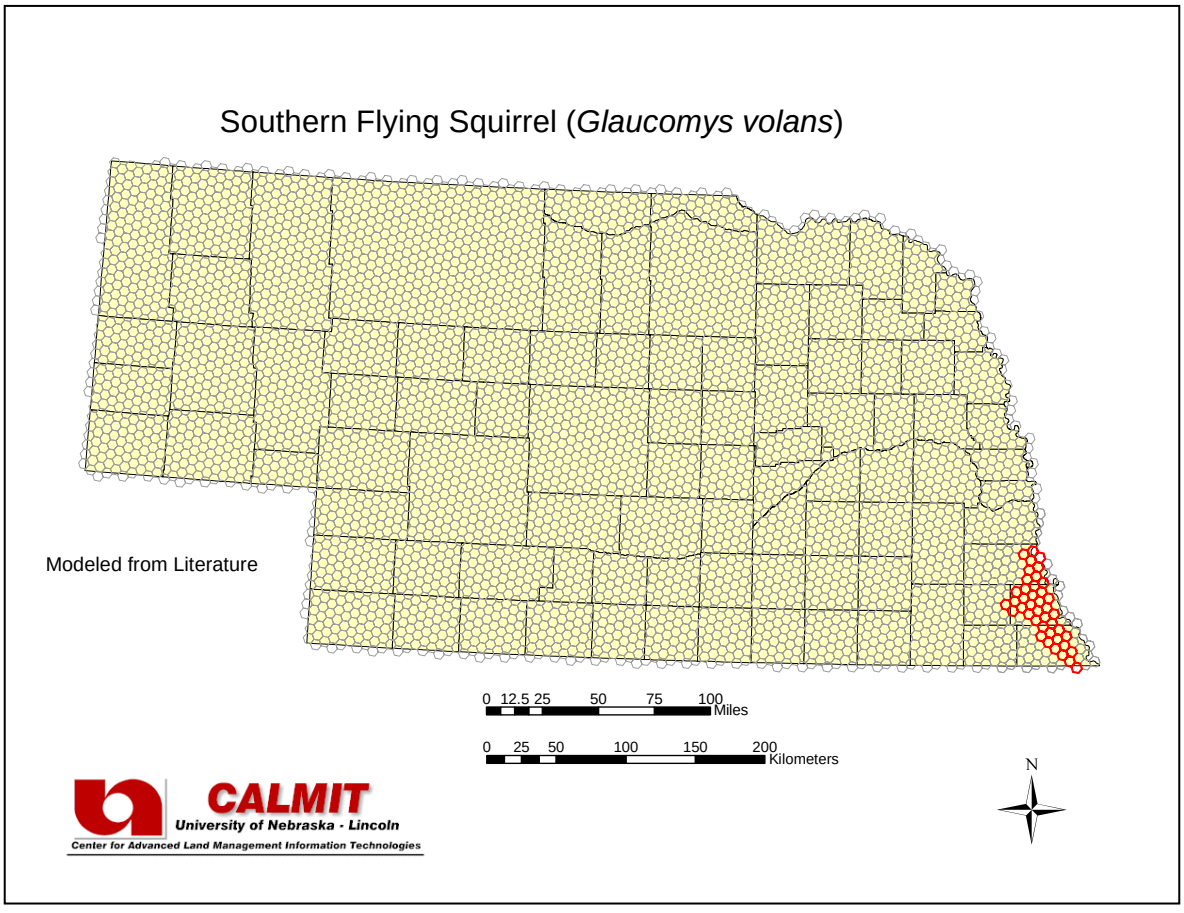
| | | | |
|---|---|---|---|
| Common Name: | **Southern flying squirrel** | TNC Global Status: | G5 |
| Scientific Name: | ***Glaucomys volans*** | Federal Status: | - |
| TNC Element Code: | AMAFB09010 | State (NE) Status: | S1 |

**Habitat Description:**

Only the southern flying squirrel is found in Nebraska, and it is found only in remnant tracts of eastern deciduous forest in the southeastern corner of the state alone the Missouri River (Jones 1964); it is known to occur in the forested bluffs along the Missouri River from the far southeastern corner of the state north to about Nebraska City (NGPC 2002). Considered a threatened species in Nebraska. Habitat is best characterized by mature, oak-hickory deciduous forest, usually not far from water. Also occupies timbered areas within or around human habitations, particularly if oak-hickory trees predominate (Dolan and Carter 1977; Jones and Birney 1988; Layne 1999; Schwartz 1981; Whittaker and Hamilton 1979). Prefers deciduous and mixed forests, particularly beech- maple, oak-hickory and poplar. Also occurs in old orchards (NatureServe 2002).

**Total Area of Modeled Habitat (ha):** 170,296

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands is present' AND '30-year Average Precipitation Coefficient of Variation for August > 70.5%', clipped to include only the area of extreme southeastern Nebraska described in the literature (NGPC 2002).



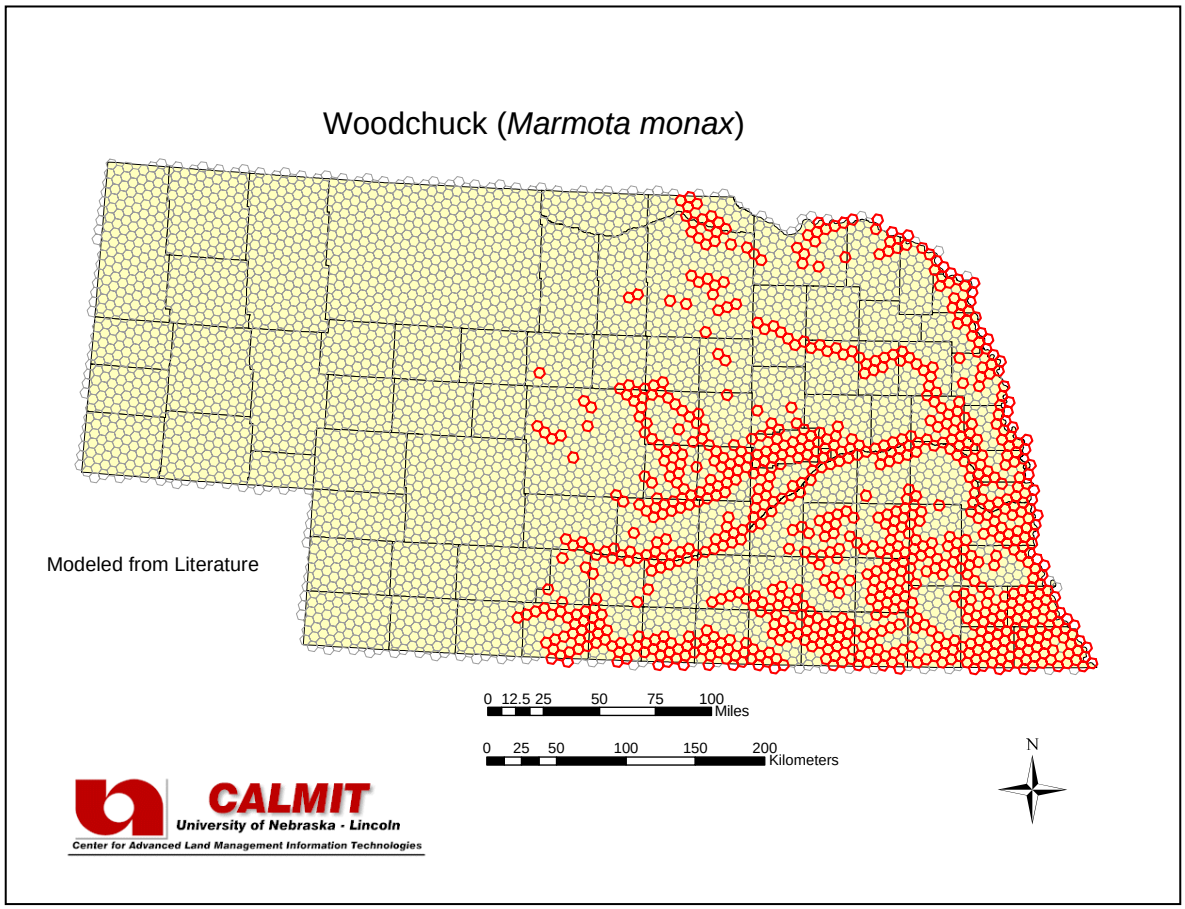
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Woodchuck** | TNC Global Status: | G5 |
| Scientific Name: | ***Marmota monax*** | Federal Status: | - |
| TNC Element Code: | AMAFB03010 | State (NE) Status: | S4 |

**Habitat Description:**
Typically inhabits forest edges and strips of trees extending along creeks and fence-lines where there are refuges for dens and areas of grass, alfalfa or similar vegetation for grazing (Jones 1964; Jones et al. 1983 in Benedict et al. 2000). Found primarily in the eastern half of the state. Burrows are constructed beneath rocks, stumps, building foundations or other supportive structures (Banfield 1974; Jones and Birney 1988; Schultz 1981; Svendsen 1999).

**Total Area of Modeled Habitat (ha):** 3,491,034

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands < 5%' OR 'Land Cover class Riparian Woodland is present' AND '30-year Average Precipitation for August > 65 mm'.



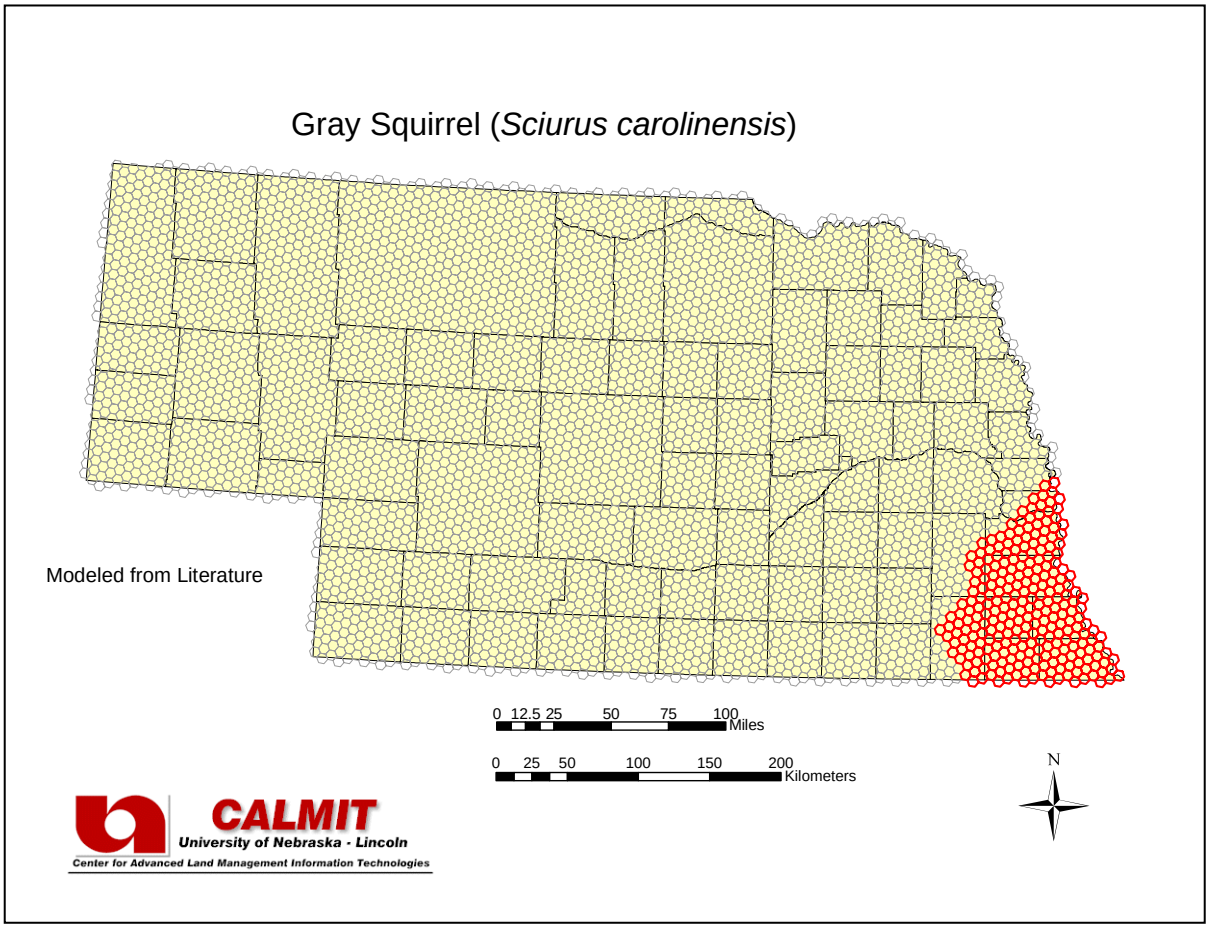
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Gray squirrel** | TNC Global Status: | G5 |
| Scientific Name: | ***Sciurus carolinensis*** | Federal Status: | - |
| TNC Element Code: | AMAFB07010 | State (NE) Status: | S4 |

**Habitat Description:**
Hardwood or mixed forests with nut trees, especially oak-hickory forests (Whitaker 1997). Natural habitat is forests of hardwoods or mixed hardwoods and evergreens. The larger the trees, the better the habitat. (Wilson and Ruff 1999). Forest stands of eastern hardwoods or mixed forests; beech/maple, hemlock hardwoods, red and white pine; along streams (especially where there is a wide river-bottom habitat) and in suburban areas. (Forsyth 1999). In Nebraska, limited to the southeastern corner of the state (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 1,050,150

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests and Woodlands is present' AND 'Land Cover class Upland Tallgrass Prairie is present' AND '30-year Average Precipitation for July > 89.5 mm'.



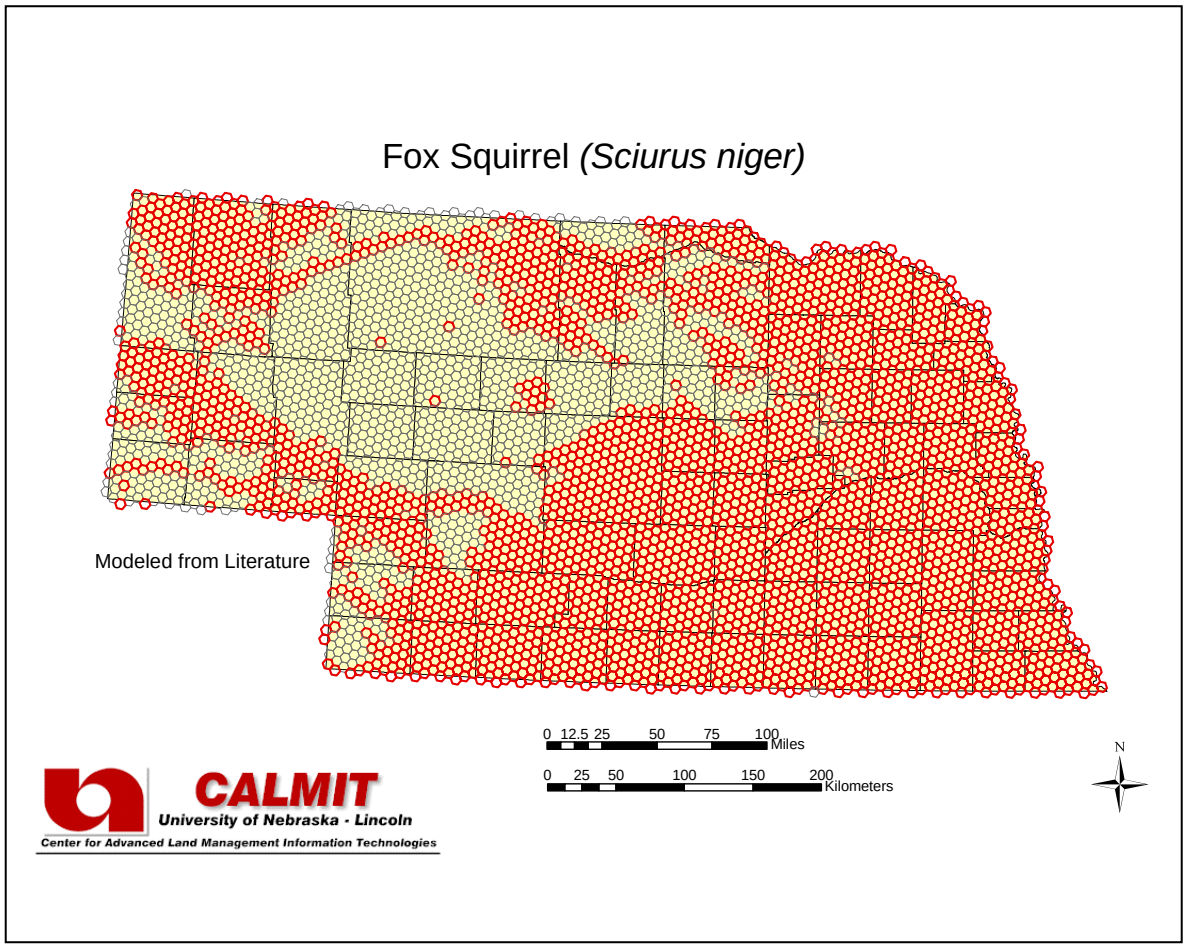
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Fox squirrel** | TNC Global Status: | G5 |
| Scientific Name: | ***Sciurus niger*** | Federal Status: | - |
| TNC Element Code: | AMAFB07040 | State (NE) Status: | S5 |

**Habitat Description:**
Restricted to deciduous forest and riparian and urban woodland (Jones 1964; Jones et al. 1985). They are savannah animals, preferring open, park-like habitats where trees are scattered and the understory is open, rather than dense forests (Wilson and Ruff 1999). Live in suburbs, open hardwood woodlots with clearings interspersed, and along shrubby fencerows (Forsyth 1999). A common inhabitant of the eastern forest and non-grassland areas. It extends into the Sand Hills along major river systems (Freeman 1998).

**Total Area of Modeled Habitat (ha):** 14,179,004

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Deciduous Forests Woodlands is present' AND 'Land Cover class Sandhills Upland Prairie < 20%' OR 'Land Cover class Ponderosa Pine Forests and Woodlands is present'.



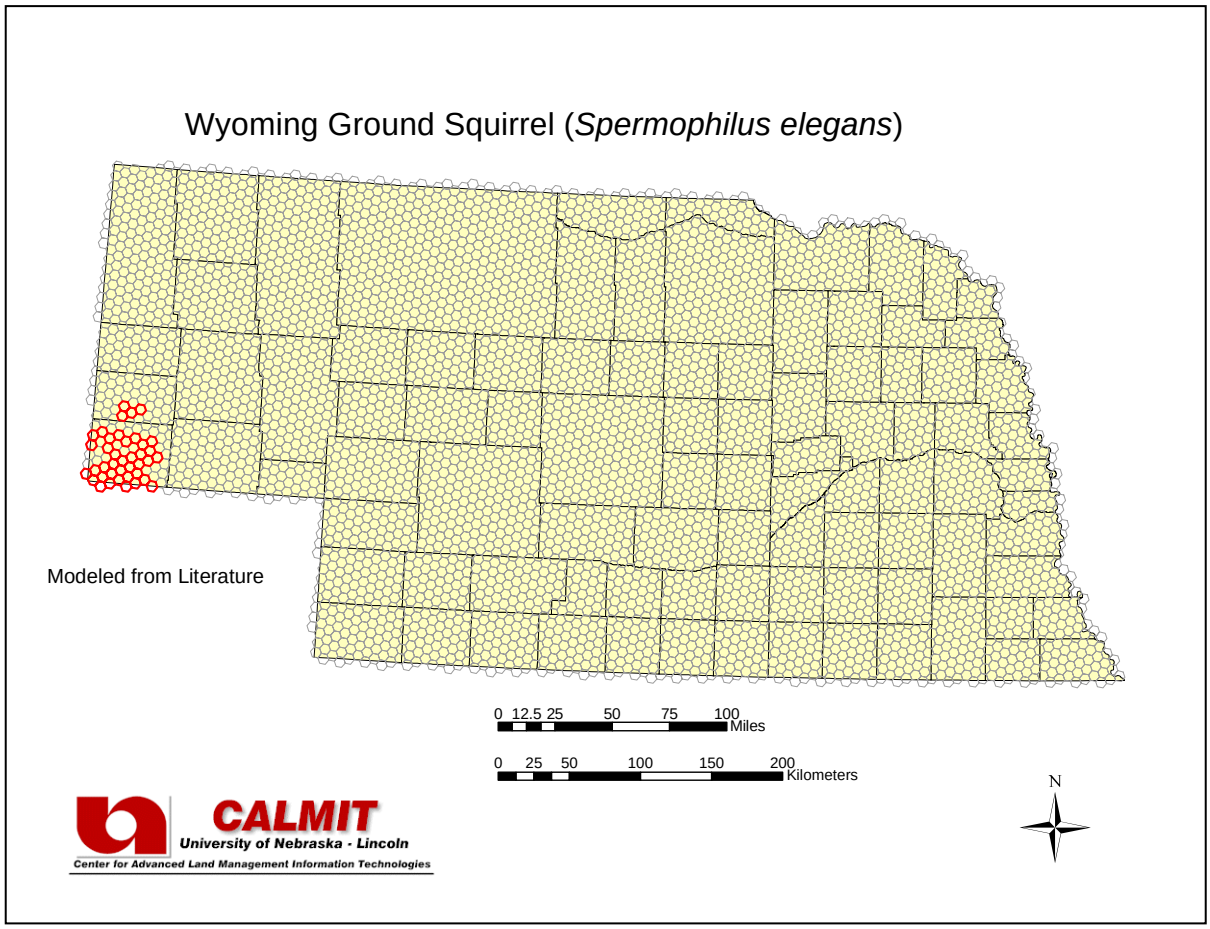
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Wyoming ground squirrel** | TNC Global Status: | G5 |
| Scientific Name: | ***Spermophilus elegans*** | Federal Status: | - |
| TNC Element Code: | AMAFB05190 | State (NE) Status: | SH |

**Habitat Description:**
May be extirpated in Nebraska, but had been reported from the southern Panhandle (Jones et al. 1983). Favored habitat is well-drained upland slopes covered by dry grassland or shrub-steppe, especially sagebrush. Heavy clay or shale-derived "gumbo" soils are avoided. Waterlogged soils or loose sand are also unsuitable. Well-drained upland slopes covered by dry grassland or shrub steppe, especially sagebrush; mainly on slopes with loose sandy soils, suitable for digging burrows; mountain meadows, talus slopes (Smith, in Wilson and Ruff 1999).

**Total Area of Modeled Habitat (ha):** 162,183

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Western Shortgrass Prairie > 25%' AND 'Percentage of Medium-textured Soils > 75%' AND 'Elevation > 1420 m'.



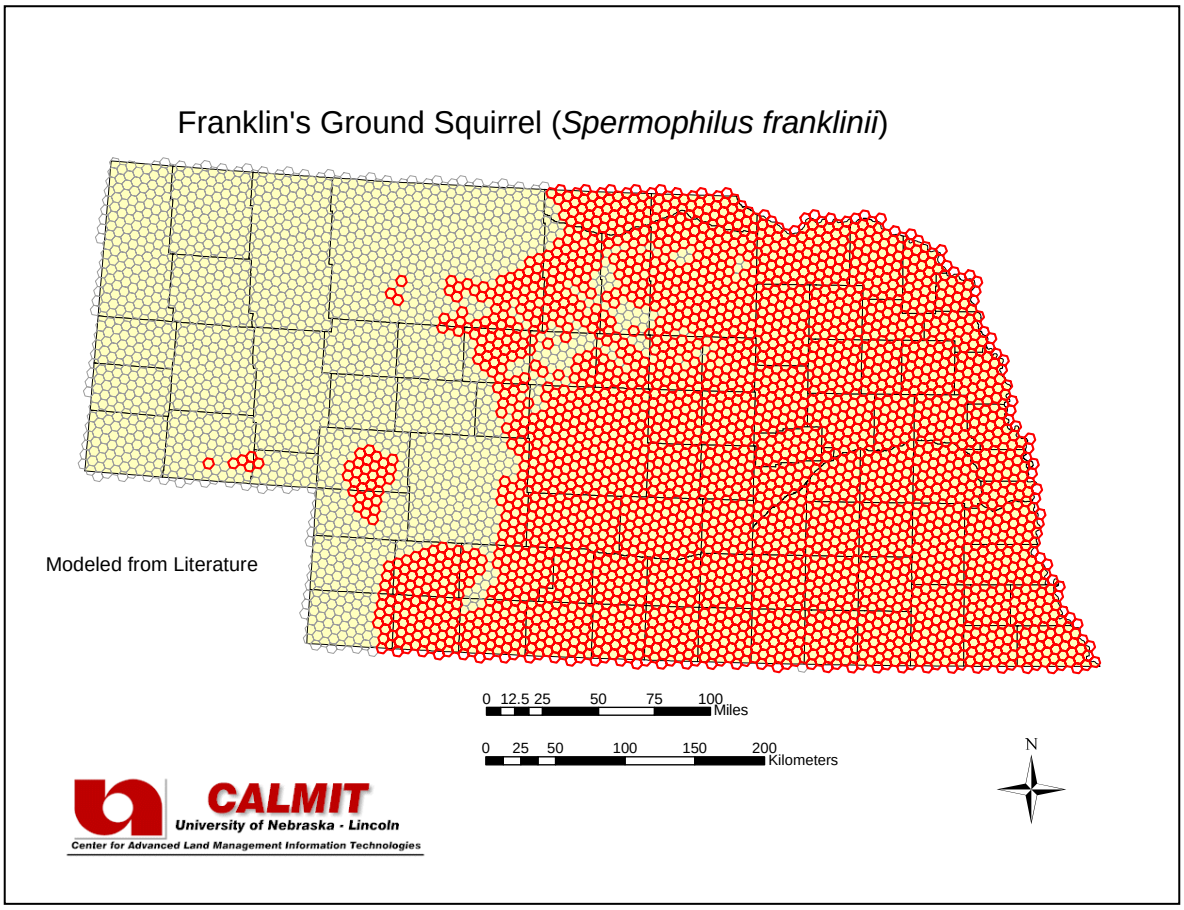
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Franklin's ground squirrel** | TNC Global Status: | G5 |
| Scientific Name: | ***Spermophilus franklinii*** | Federal Status: | - |
| TNC Element Code: | AMAFB05120 | State (NE) Status: | S5 |

**Habitat Description:**
Dense grassy areas, hedges, and brush borders (Whitaker 1997). Inhabit a variety of closed habitats, including tall grass in disturbed areas, shrub land, and woodland edges (Wilson and Ruff 1999). The transition zone between high coniferous forests and grassy areas; areas with low trees but dense ground cover (Forsyth 1999). Burrow in well-drained soils (Jones et al. 1985). Typical inhabitant of the tall-grass prairie in the eastern part of the state (Jones 1964) but extends into the Sand Hills along natural and constructed waterways (Freeman 1998). Franklin's ground squirrel can be found in the tallgrass prairie of the northcentral U.S. and adjacent parts of Canada. They live at the border between grassy areas and woody vegetation because of the diverse food sources available (Baker, 1983). This squirrel is not often seen because of its preference for densely vegetated areas.

**Total Area of Modeled Habitat (ha):** $1.25 \times 10^7$

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Upland Tallgrass Prairie is present' OR 'Land Cover class Deciduous Forests and Woodlands is present' AND NOT '30-year Average Precipitation for March < 32.5 mm'.



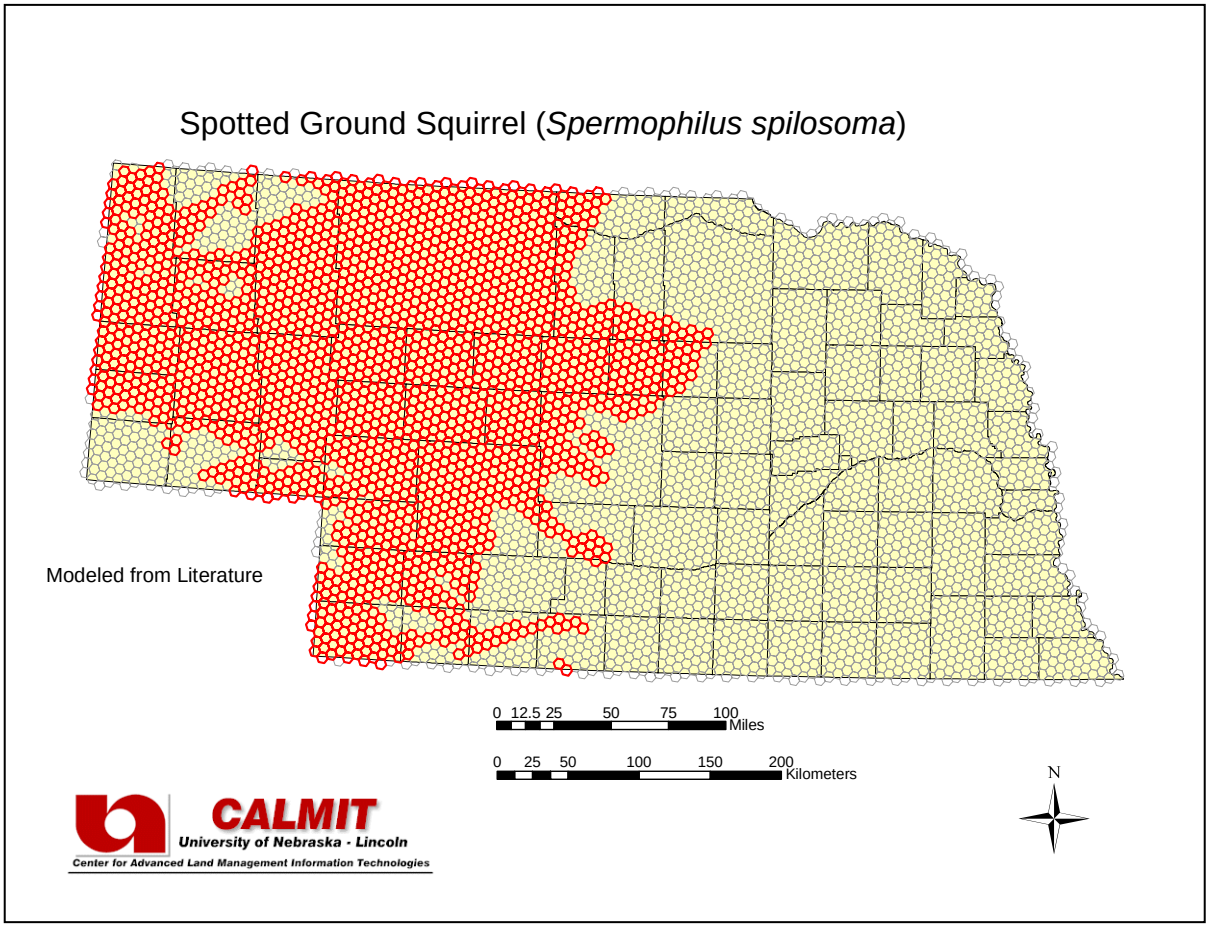
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Spotted ground squirrel** | TNC Global Status: | G5 |
| Scientific Name: | **Spermophilus spilosoma** | Federal Status: | - |
| TNC Element Code: | AMAFB05110 | State (NE) Status: | S4 |

**Habitat Description:**
Prefers dry, deep, and sandy soils with sparse vegetation (Wilson and Ruff 1999). Predominately dry, sandy areas, grassy areas and pinewoods (Whitaker 1997). Sandy soils in semiarid grasslands or grassland-shrub ecotones, often where there are sagebrush, prickly pear, and yucca. Limited to approximately the western two-thirds of Nebraska; its preferred habitat is dry, sandy soils, such as the Sand Hills of Nebraska (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 8,466,028

**Model Description:**
Modeled from literature using the set of variables 'Coarse-textured Soil is present' AND '30-year Average Precipitation for September < 55 mm'.



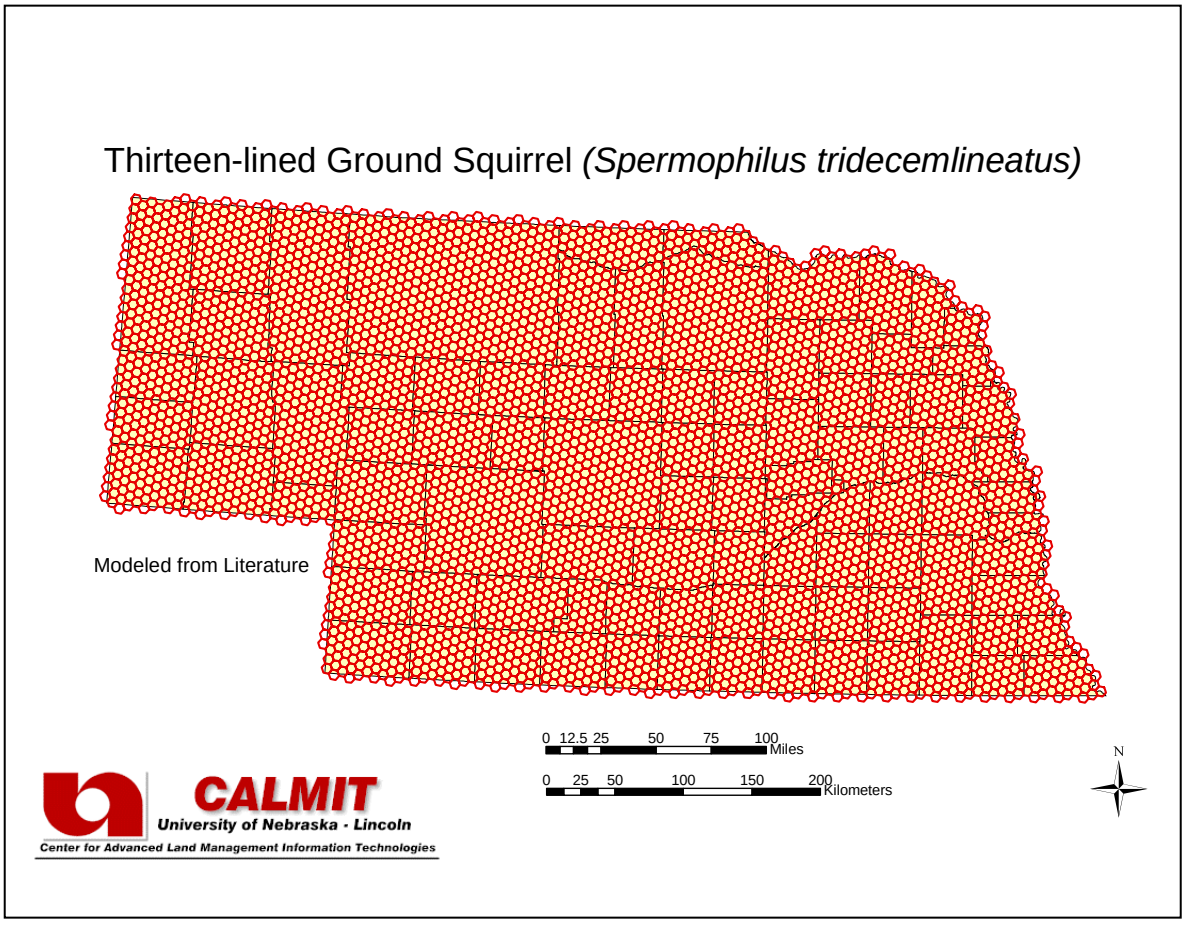
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Thirteen-lined ground squirrel** | TNC Global Status: | G5 |
| Scientific Name: | **Spermophilus tridecemlineatus** | Federal Status: | - |
| TNC Element Code: | AMAFB05090 | State (NE) Status: | S5 |

**Habitat Description:**
Statewide distribution. Inhabits transitional zone between grassland and forest with low grass, weeds or shrubby vegetation; also golf courses, abandoned overgrown fields, meadows and along fence lines between cultivated fields (Forsyth 1999) and where the soil is well-drained (Jones et al. 1983). Tall grass areas inhibit their view of the surroundings, and they are not found in such areas (Jones et al. 1983). Restricted to dry and sandy (and "tighter") soils of open areas, such as grasslands, cultivated fields, meadows, roadsides, airfields, shrublands, and suburb lawns (NatureServe 2002). *Spermophilus tridecemlineatus* prefers open areas with short grass and well-drained sandy or loamy soils for burrows. It avoids wooded areas. Mowed lawns, golf courses, cemeteries, well-grazed pastures, parks and roadsides are common habitats for it now that it is no longer limited to prairie regions. (Jones 1988; Kurta 1995).

**Total Area of Modeled Habitat (ha):** 20,642,058

**Model Description:**
Statewide distribution.



**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

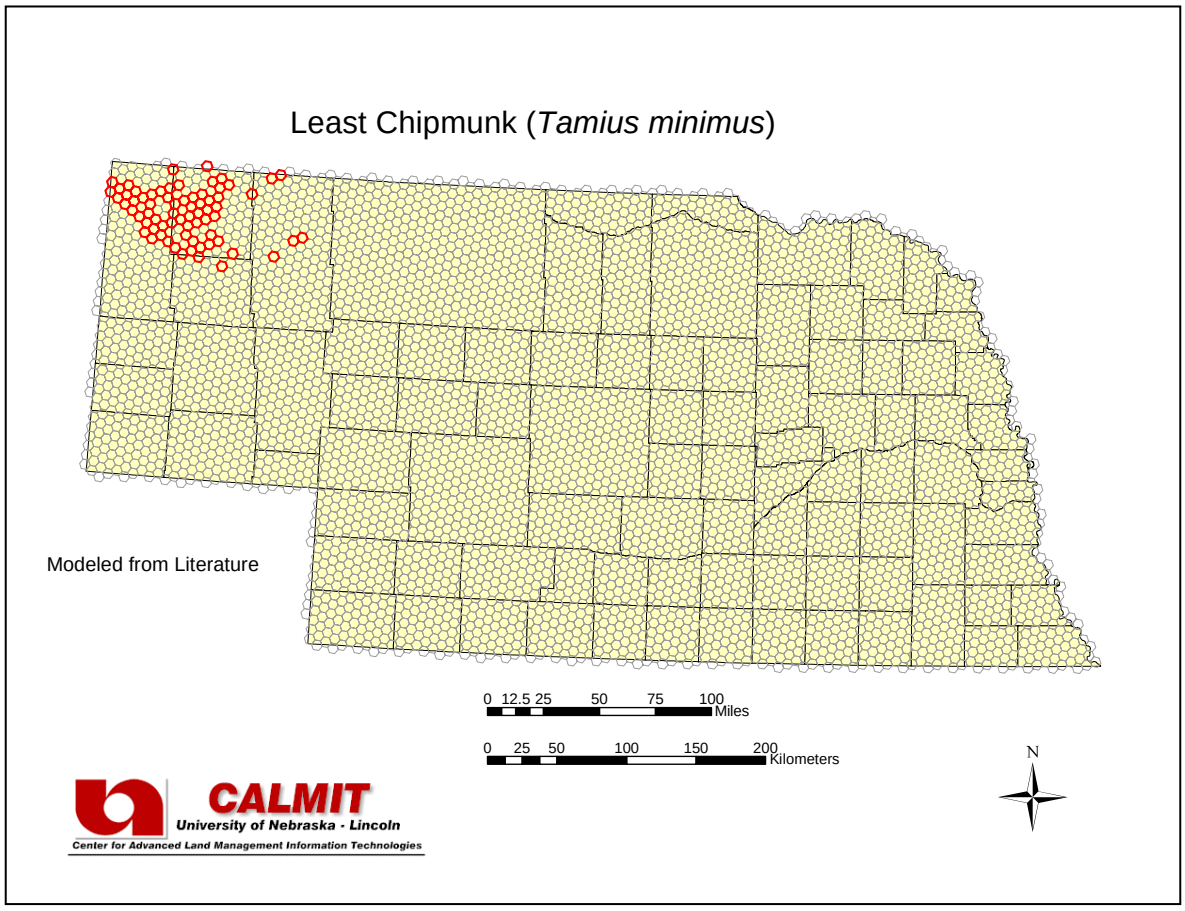
| | | | |
|---|---|---|---|
| Common Name: | **Least chipmunk** | TNC Global Status: | G5 |
| Scientific Name: | **Tamias minimus** | Federal Status: | - |
| TNC Element Code: | AMAFB02020 | State (NE) Status: | S3 |

**Habitat Description:**

Habitat includes mixed hardwood and coniferous forests, shrubby growth around watercourses, rocky ravines, brushlands and arid badlands (Jones et al. 1983; Forsyth 1999). Found in most ecosystems except unbroken forest and open grassland (Jones et al. 1985). In Nebraska, its distribution appears to be limited to the northwestern corner of the state (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 283,827

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Ponderosa Pine Forests and Woodlands is present' AND 'Land Cover class Western Wheatgrass Mixedgrass Prairie is present' AND 'Land Cover class Barren/Sand/Outcrop is present'.



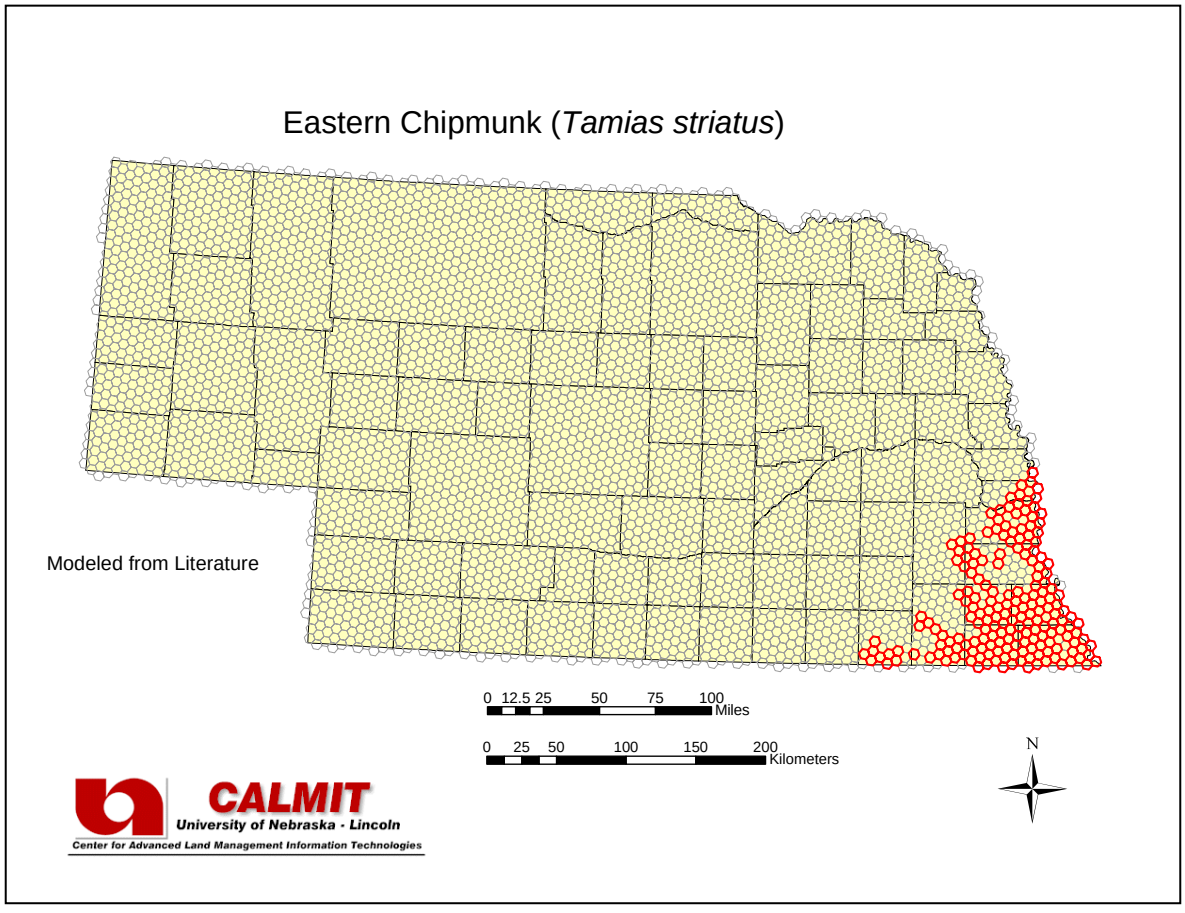
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Eastern chipmunk** | TNC Global Status: | G5 |
| Scientific Name: | **Tamias striatus** | Federal Status: | - |
| TNC Element Code: | AMAFB02230 | State (NE) Status: | G1 |

**Habitat Description:**
Favored habitats are wooded hillsides, rocky ravines, and dry, upland timber (Jones et al. 1979). Most commonly found in mature deciduous forests such as those along the wooded bluffs of the Missouri River (Jones 1964; Forsyth 1999; Svendsen and Yahner 1979, King et al. 1998); however, due to its varied diet, it can be found in all stages of forest growth including mixed coniferous-deciduous stands (Forsyth 1999). Rarely seen any distance from wooded or brushy areas (Jones et al. 1979). Sectors uninhabited by chipmunks are typified by dense growth of young trees and shrubs or sandy soil (Svendsen and Yahner 1979). Rare in the western portion of its range, probably due to forest thinning and the clearing of brush for pastureage or agriculture (Jones et al. 1983).

**Total Area of Modeled Habitat (ha):** 774,435

**Model Description:**
Modeled from literature using the set of variables ‘Land Cover class Deciduous Forests and Woodlands > 5%’ AND ‘30-year Average Precipitation for July > 90 mm’.



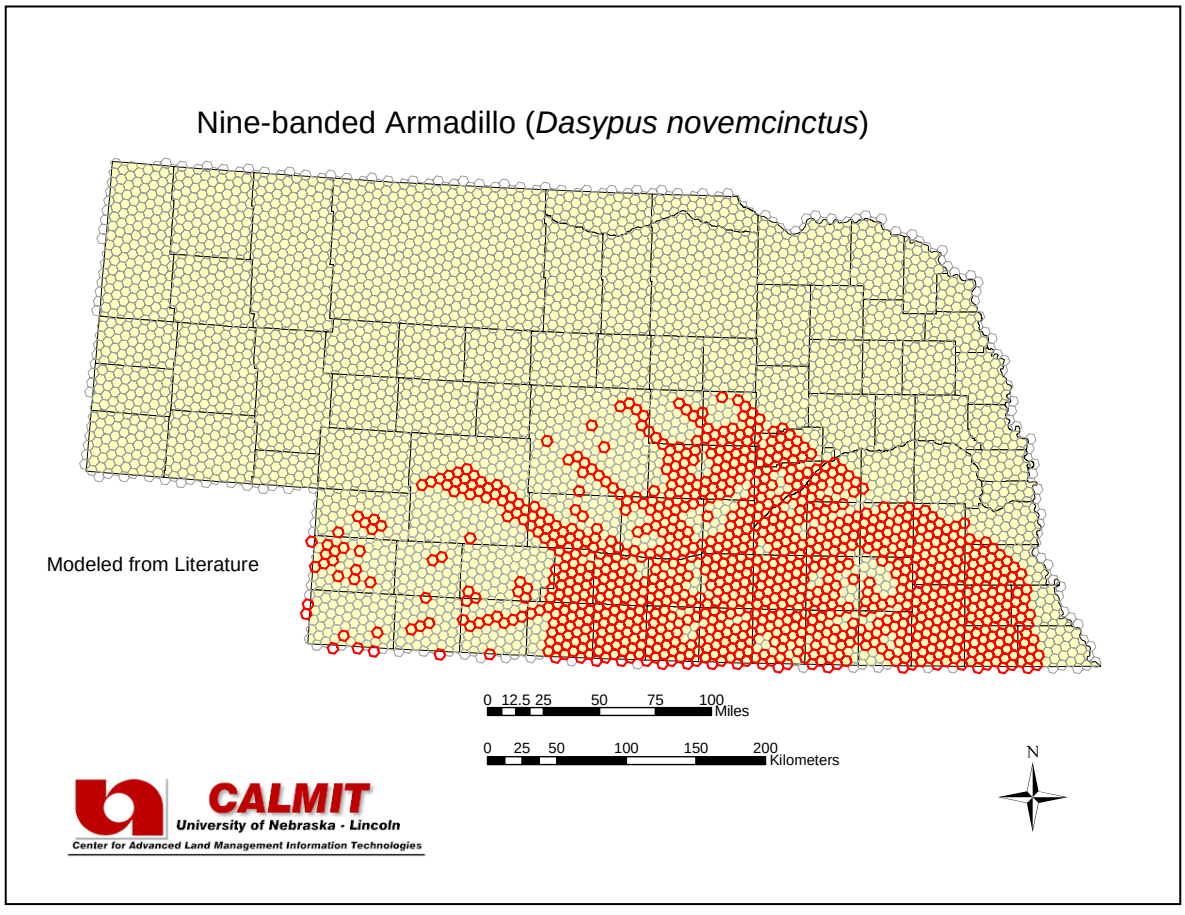
**Nebraska GAP Analysis 2004**
**Mammal Species Atlas**

| | | | |
|---|---|---|---|
| Common Name: | **Nine-banded armadillo** | TNC Global Status: | G5 |
| Scientific Name: | **Dasypus novemcinctus** | Federal Status: | - |
| TNC Element Code: | AMADA01010 | State (NE) Status: | - |

**Habitat Description:**
Habitat often determined by quality of soil for burrowing: favors areas with soft soil and rotting wood, and abundant in sandy soils; less common in clay (Whitaker 1997). Occurs principally from woodlands to open savanna and scrub; those few records from Nebraska and northern Kansas generally are associated with river valleys (Jones et al. 1983, 1985). The armadillo has been documented as expanding its range into Nebraska (Benedict et al. 2000). Examination of recent records indicates that the species may be entering the state along the Republican River and its tributaries in the southwest and from Kansas in the central and eastern part of Nebraska (Freeman and Genoways 1998).

**Total Area of Modeled Habitat (ha):** 4,107,363

**Model Description:**
Modeled from literature using the set of variables 'Land Cover class Open Water is present' AND 'Land Cover class Little Bluestem-Gramma Mixedgrass Prairie is present' OR 'Land Cover Class Upland Tallgrass Prairie is present', clipped to the area of verified observations (Freeman and Genoways 1998).



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