

# MAMMALS



*It would be correct to say that mammals are a group of animals with backbones, whose bodies are insulated by hair, which nurse their infants with milk, and which share a unique jaw articulation. This, however, fails to convey how these few shared characteristics underpin the evolution of a group with astonishingly intricate adaptations, thrilling behavior, and highly complex societies.*

— David Macdonald, 1984,  
*The Encyclopedia of Mammals*





## MAMMALS

**T**axonomy in the mammal checklist follows that in the *Revised Checklist of North American Mammals North of Mexico, 1997* published by the Museum of Texas Tech University (Jones, *et al.* 1997), *The Smithsonian Book of North American Mammals* (Wilson and Ruff 1999), and *Mammals of North America: Temperate and Arctic Regions* (Forsyth 1999). Species are listed alphabetically under each family. Common names follow Jones, *et al.* (1997) and Wilson and Cole (2000). Where Jones, *et al.* (1997) provide more than one common name, we select the one in most frequent use in Wisconsin. We deviate from Jones, *et al.* (1997) and Wilson and Cole (2000) in providing what we feel are more descriptive or appropriate common names for some families and orders (e.g., Mephitidae).

The final revision of the mammal checklist contains 72 species in 19 families. Sixty-nine mammal species are native to the state and 3 are introduced non-native species. The Indiana Bat (*Myotis sodalis*) and Gray Wolf (*Canis lupus*) are currently listed as endangered species at the federal level. The Canada Lynx (*Lynx canadensis*) is listed as a threatened species at the federal level. The American Martin (*Martes americana*) is listed as endangered, and the Gray Wolf as threatened, at the state level. Four mammal species are considered extirpated.

### Excluded Mammal Species

We exclude three mammal species from our checklist. Two specimens of what are believed to be Northern Bog Lemmings (*Synaptomys borealis*) were recently caught by a biologist working for the Bad River Tribe (R. Bautz, pers. comm.). These have yet to be evaluated by a qualified mammalogist. Until a species determination is made, we are compelled to leave this species off the list. We also exclude the Evening Bat (*Nycticeius humeralis*). Jones and Birney (1988) depict the range of this species as reaching extreme southern Wisconsin. This appears to be an artifact of their mapping technique, as no specimens of Evening Bat have been obtained in Wisconsin. Future survey work may show these two species to be a part of the Wisconsin fauna. In addition, there is a single record of a Black-tailed Prairie Dog (*Cynomys ludovicianus*) living for several years in a farm field near Ferryville in Crawford County (Craven 1995). This individual was probably accidentally transported to the state in a load of hay brought from the Dakotas. The Prairie Dog is native to the Great Plains and its natural range extends no further west than western Nebraska, South Dakota and North Dakota (Jones, *et al.* 1985). It is unlikely that this species will become established as part of the state's fauna.

### The Wisconsin Mammal Literature

The literature on Wisconsin mammals is extensive. Papers and notes have been published in a wide variety of mammalogy, ecology, zoology, and wildlife management periodicals, as well as in numerous government reports. Most significant works dealing with life history, ecology,





distribution and status published prior to 1960 are included in the bibliography in Jackson's (1961) *Mammals of Wisconsin*. No comprehensive bibliography of works dealing with Wisconsin mammals has been compiled since, although an attempt was made to catalog works dealing with Wisconsin Mustelidae and Mephitidae (Watermolen 1990).

## Mammal Survey and Atlas Efforts


Staff members in the DNR's Bureaus of Endangered Resources, Integrated Science Services, and Wildlife Management conduct a number of recurrent *Wildlife Surveys*. These surveys focus primarily on population status information, harvest summaries, population analyses, hunter/trapper surveys, and winter track counts, as well as analysis of wildlife damage claims and nuisance complaints. Semi-annual *Wildlife Survey Reports* are prepared for each survey effort and are distributed to managers, researchers, administrators, and other DNR employees. These reports provide current survey information for management decisions and allow the DNR to manage mammals using the most current information, including establishing harvest limits and seasons that are scientifically defensible. The DNR has obtained considerable information on furbearers, small game species, large game species, and a variety of non-game species through these surveys.

The DNR also tracks regularly *Rare Mammal Observations*. Observations of American Marten (*Martes americana*), Gray Wolf (*Canis lupus*), Canada Lynx (*Lynx canadensis*), Mountain Lion (*Puma concolor*), and Moose (*Alces alces*) come from DNR field personnel, personnel in other resource agencies, and members of the general public. Observations are reported on "Rare Mammal Observation Cards," classified as "probable," "possible," or "not likely," and tabulated and summarized on an annual basis (e.g., Wydeven and Megown 1996, Wydeven and Cervantes 1997, Wydeven and Boles 1998). The status of each of these species is briefly discussed below.

American Marten occurred in most forested areas of Wisconsin until the mid-1800s (Endangered Species Committee 1973), but unregulated trapping for the fur trade and habitat changes led to their extirpation in the 1920s (Kohn and Eckstein 1987). American Marten were first protected in 1921 and have been listed as a state endangered species since 1972. Martens were reintroduced into the Nicolet National Forest in northeastern Wisconsin between 1975 and 1982, and into the Chequamegon National Forest in northwestern Wisconsin between 1987 and 1990. Recent surveys suggest American Marten are doing well in the Nicolet National Forest and possibly expanding their range. American Marten do not, however, seem to be occurring abundantly in areas away from the reintroduction sites (Wydeven and Ashbrenner 1994, Wydeven and Megown 1996, Wydeven and Boles 1998).

The Gray Wolf is the only Wisconsin mammal listed as endangered by the federal government. It is listed as a threatened species by the state.





The Wisconsin population consists of about 250 wolves occurring in about 66 groups (Wydeven and Wiedenhoeft 2000a). Both the state and federal Gray Wolf recovery plan goals include establishing a sustainable population of 80 wolves in Wisconsin by the year 2000. In addition, the federal goals include establishing a viable population of 100 wolves outside of Minnesota and Isle Royale. In 1999, wolves were reclassified by the DNR from state endangered to threatened, and a state delisting goal of 250 was set for areas outside of Native American reservations (Wisconsin DNR 1999). If the populations of wolves remain stable or increase, federal reclassification to threatened or delisting could occur in the near future.

The Canada Lynx was previously listed as endangered by the state. It was down-listed to “special concern” in 1997, and placed on the list of protected animals (NR 10, Wis. Admin. Code). This species only occasionally occurs in Wisconsin in invasion years in the winter and there is no evidence of breeding. It is unclear if the Canada Lynx did once breed in the state and is now extirpated, or was always an occasional visitor (Thiel 1987). The DNR received three reports of Canada Lynx in 2001 (Wydeven and Wiedenhoeft 2002). The U.S. Fish and Wildlife Service listed the Canada Lynx as federally threatened in 2000, based on its range-wide status and potential threats.

The last known Mountain Lion in the state was killed in 1908 (Lewis and Craven 1987), although the species once included all of Wisconsin in its range. Mountain Lions are considered extirpated from the state, but a handful of sightings is reported annually. Fifty-eight sightings were reported between 1975 and 1987 (Lewis and Craven 1987), and many additional reports have been made since. The DNR received a total of 42 probable and possible observations of Mountain Lions in 2001 from 22 counties (Wydeven and Wiedenhoeft 2002). A large percentage of Mountain Lion reports are questionable. For example, only 6 of 39 Mountain Lion reports made in 1996 were classified as “probable,” and only 4 of 41 reports in 1997 were classified as “probable” (Wydeven and Cervantes 1997, Wydeven and Boles 1998). It is extremely unlikely that Mountain Lions will be found naturally reproducing in the state.

Moose once ranged throughout northern Wisconsin as far south as northern Green Lake and Sauk Counties, but were extirpated from the state in the early part of the twentieth century (Schorger 1957, Jackson 1961). In recent years, Moose have been reported in Florence, Marinette, and Oconto counties in the Northeast, Ashland, Iron, Oneida and Price counties in the northcentral part of the state, and Rusk County in western Wisconsin. These represent stray individuals from Michigan and Minnesota populations. The appearance of calves in 1995, 1996, and 1999 suggests that some limited reproduction may be occurring in the state (Wydeven and Megown 1996, Wydeven and Cervantes 1997, Wydeven and Wiedenhoeft 2000b).

## Recent Reintroductions of Rare Mammals

In addition to the active reintroduction of American Marten and Fisher (*Martes pennanti*) and the natural recolonization of the Gray Wolf, efforts have been made to establish breeding populations of two other native mammals.

A herd of 41 Elk (*Cervus elaphus*) was introduced from Yellowstone National Park to an enclosure in the Trout Lake area in 1917 (Scott 1939), but many died from pneumonia and the population did not persist. In 1932, the remaining 15 elk in this pen were released into the wild, but most died due to poaching (Jackson 1961). Elk restockings from 1930-1950 were also unsuccessful (Endangered Species Committee 1973), primarily due to poaching. An experimental Elk herd was released into the Chequamegon National Forest in May 1995. A 4-year study conducted by the University of Wisconsin-Stevens Point will help determine the feasibility of reintroducing elk into northern Wisconsin. Readers interested in learning more about the elk reintroduction effort can find information on the Wisconsin Elk Reintroduction Study's web page (<http://www.uwsp.edu/wildlife/research/wers/elkpage.htm>).

American Bison (*Bos bison*) once roamed the prairies throughout southern and western Wisconsin, but by 1830 were rare (Endangered Species Committee 1973) and by 1833 were extirpated from Wisconsin (Schorger 1937, Jackson 1961). Small groups of American Bison are maintained in large enclosures at the Sandhill State Wildlife Area near Babcock in Wood County and at the McKenzie Environmental Center near Poynette in Columbia County. No other "wild" populations of American Bison occur in the state.

## Class Mammalia: Mammals

### Order Didelphimorphia: American Opossums

Family Didelphidae: Opossums

*Didelphis virginiana* ..... Virginia Opossum

### Order Insectivora: Insectivores

Family Soricidae: Shrews

*Blarina brevicauda* ..... Northern Short-tailed Shrew

*Cryptotis parva* ..... Least Shrew

*Sorex arcticus* ..... Arctic Shrew

*Sorex cinereus* ..... Masked Shrew

*Sorex hoyi* ..... Pygmy Shrew

*Sorex palustris* ..... Water Shrew

Family Talpidae: Moles

*Condylura cristata* ..... Star-nosed Mole

*Scalopus aquaticus* ..... Eastern Mole

### Order Chiroptera: Bats

Family Vespertilionidae: Plain-nosed or Vesper Bats

*Eptesicus fuscus* ..... Big Brown Bat

*Lasionycteris noctivagans* ..... Silver-haired Bat

*Lasiurus borealis* ..... Red Bat







Family Vespertilionidae: Plain-nosed or Vesper Bats (*continued*)

- Lasiurus cinereus* ..... Hoary Bat
- Myotis lucifugus* ..... Little Brown Bat
- Myotis septentrionalis* ..... Northern Myotis
- FE** *Myotis sodalis* ..... Indiana Bat<sup>13</sup>
- Pipistrellus subflavus* ..... Eastern Pipistrelle

**Order Carnivora: Carnivores**

Family Canidae: Dogs

- Canis latrans* ..... Coyote
- ST** **FE** *Canis lupus* ..... Gray Wolf<sup>14</sup>
- Urocyon cinereoargenteus* ..... Gray Fox
- Vulpes vulpes* ..... Red Fox

Family Ursidae: Bears

- Ursus americanus* ..... Black Bear

Family Procyonidae: Procyonids

- Procyon lotor* ..... Common Raccoon

Family Mustelidae: Weasels and Other Mustelids

- EXT** *Gulo gulo* ..... Wolverine
- Lontra canadensis*<sup>15</sup> ..... Northern River Otter
- SE** *Martes americana* ..... American Marten
- INT** *Martes foina* ..... Beech Marten<sup>16</sup>
- Martes pennanti* ..... Fisher
- Mustela erminea* ..... Ermine
- Mustela frenata* ..... Long-tailed Weasel
- Mustela nivalis* ..... Least Weasel
- Mustela vison* ..... American Mink
- Taxidea taxus* ..... American Badger

American Badger  
Wisconsin State Animal



Family Mephitidae: Skunks<sup>17</sup>

- Mephitis mephitis* ..... Striped Skunk
- Spilogale putorius* ..... Eastern Spotted Skunk<sup>18</sup>

<sup>13</sup> There is only a single record of the federally endangered Indiana Bat (*Myotis sodalis*) from Wisconsin (Jackson 1961). Its occurrence as a breeding species is doubtful, but some biologists have suggested that the lack of modern records may be due to a lack of bat survey work in the state rather than to the absence of the species.

<sup>14</sup> This species is also commonly referred to as the Timber Wolf, especially in areas of the state where it has re-established populations.

<sup>15</sup> The genus name *Lutra* is still used by some writers. We feel that Koepfli and Wayne (1998) clearly demonstrated that otters of the *Lutra* and *Lontra* groups do not share an exclusive common ancestor and therefore follow Jones, *et al.* (1997) in using *Lontra*.

<sup>16</sup> An unknown number of the non-native Beech Marten (*Martes foina*; also referred to as the Stone Marten) were released from a fur farm and are now established in and around the southern unit of the Kettle Moraine State Forest (Jefferson, Racine, Waukesha, and Walworth counties) (R. Bautz, pers. comm.; Long 1995). The size of the population and whether or not it is reproducing is unknown. Documentation of the species is limited. A single specimen, a tanned skin, is available in the University of Wisconsin Zoology Museum (R. Bautz, pers. comm.), and a mounted specimen is displayed at the Kettle Moraine State Forest headquarters (Long 1995).



Family Felidae: Cats

- EXT** *Puma concolor* ..... Mountain Lion  
**FT** *Lynx canadensis* ..... Canada Lynx  
*Lynx rufus* ..... Bobcat

**Order Rodentia: Rodents**

Family Squirridae: Squirrels

- Glaucomys sabrinus* ..... Northern Flying Squirrel  
*Glaucomys volans* ..... Southern Flying Squirrel  
*Marmota monax* ..... Woodchuck  
*Sciurus carolinensis* ..... Eastern Gray Squirrel  
*Sciurus niger* ..... Eastern Fox Squirrel  
*Spermophilus franklinii* ..... Franklin's Ground Squirrel  
*Spermophilus tridecemlineatus* ..... Thirteen-lined Ground Squirrel  
*Tamias minimus* ..... Least Chipmunk  
*Tamias striatus* ..... Eastern Chipmunk  
*Tamiasciurus hudsonicus* ..... Red Squirrel

Family Geomyidae: Pocket Gophers

- Geomys bursarius* ..... Plains Pocket Gopher

Family Castoridae: Beavers

- Castor canadensis* ..... American Beaver

Family Muridae: Mice, Rats, and Voles<sup>19</sup>

- Clethrionomys gapperi* ..... Southern Red-backed Vole  
*Microtus ochrogaster* ..... Prairie Vole  
*Microtus pennsylvanicus* ..... Meadow Vole  
*Microtus pinetorum* ..... Woodland Vole  
**INT** *Mus musculus* ..... House Mouse  
*Ondatra zibethicus* ..... Muskrat  
*Peromyscus leucopus* ..... White-footed Mouse  
*Peromyscus maniculatus* ..... Deer Mouse  
**INT** *Rattus norvegicus* ..... Norway Rat  
*Reithrodontomys megalotis* ..... Western Harvest Mouse  
*Synaptomys cooperi* ..... Southern Bog Lemming

Family Zapodidae: Jumping Mice

- Napaeozapus insignis* ..... Woodland Jumping Mouse  
*Zapus hudsonius* ..... Meadow Jumping Mouse

Family Erethizontidae: New World Porcupines

- Erethizon dorsatum* ..... Common Porcupine

<sup>17</sup> Skunks were previously included with weasels in the family Mustelidae, but recent phylogenetic work using analyses of mitochondrial-DNA sequence data and morphological data (Dragoo and Honeycutt 1997) resulted in skunks being grouped together in the new family Mephitidae.

<sup>18</sup> There are only a few historical records of Spotted Skunks (*Spilogale putorius*) from Wisconsin. Its occurrence as a breeding species is doubtful, but some biologists suggest the lack of modern records may be due to a lack of recent field survey work rather than the absence of the species.

<sup>19</sup> Older works divide these rodents into a New World family (Cricetidae) and an Old World family (Muridae). Morphological differences between the two groups are minor. Most mammalogists currently emphasize the similarities by grouping them together as we have.



## Order Artiodactyla: Even-toed Ungulates

Family Cervidae: Deer

<i>Alces alces</i> .....	Moose
<i>Cervus elaphus</i> .....	Elk
<i>Odocoileus virginianus</i> .....	White-tailed Deer

White-tailed Deer  
Wisconsin State Wildlife Animal



**EXT** *Rangifer tarandus* .....

Caribou

Family Bovidae: Cattle

**EXT** *Bos bison*<sup>20</sup> .....

American Bison

## Order Lagomorpha: Hares and Rabbits

Family Leporidae: Hares and Rabbits

<i>Lepus americanus</i> .....	Snowshoe Hare
<i>Lepus townsendii</i> .....	White-tailed Jackrabbit
<i>Sylvilagus floridanus</i> .....	Eastern Cottontail

<sup>20</sup> Placement of American Bison into the genus *Bos* has been somewhat controversial. Several authors (Groves 1981, Miyamoto, *et al.* 1989, Wall, *et al.* 1992) provide data to support the placement of *Bison* in synonymy with *Bos*, yet relatively few references have embraced this change (e.g., Nowak [1999] and Wilson and Ruff [1999] retain *Bison*). We feel that the evidence is so compelling that we follow Jones, *et al.* (1997) and Forsyth (1999) and use *Bos*.



**Primary Mammal References:** Wydeven, *et al.* 1999, Jones, *et al.* 1997, Kurta 1995, Long 1995, Lewis and Rongstad 1992, Long 1990, Jones and Birney 1988, Buehler and Keith 1982, Long 1976, Peterson, *et al.* 1976, Long 1974, Dumke 1973, Jackson 1961, Scott 1939 (as well as references cited in Watermolen 1990).

