

RODENTS FACTS

Deer Mouse
House Mouse
*Northern Short-Tailed Shrew
Norway Rat
Roof Rat
Vole



Deer Mouse



Scientific Name: *Peromyscus maniculatus*

Color: Dark to light brown back with a white underbelly and feet, and a bi-colored tail (brown top and white bottom)

Tail: 2-3 inches long, bicolored, brown on top, white on bottom

Size: 3 - 5 inch body (Sizes vary depending on variety)

Characteristics: Large eyes, rounded ears, long hind feet

Region: North America

Food Sources: Seeds, fruits, nuts, insects. Omnivorous

Threats:

- Can be aggressive when raising young
- Damage to structures, furniture, clothing, bedding etc.
- Agricultural crop damage including seed crops, almonds, avocados, citrus, pomegranates and sugar beets
- Hantavirus Pulmonary Syndrome (HPS)

Habits:

- Highly sociable
- Often gather in groups with a single male, multiple females and their offspring
- Known to "huddle" in groups of 10 or more in cold months
- Undergo daily torpor in winter
- Primarily a ground-dwelling rodent but is also an established climber
- Build nests by burrowing into the ground. Also build in stumps, logs, tree cavities, brush piles, bird nests and human dwellings, or other structures
- Typically nocturnal
- Spend most of their time near nests or food caches
- Important disperser of seeds and spores within their native range

Reproduction and Lifecycle:

The deer mouse is often polygynous (males mate with multiple females), but can also be polygynandrous (both sexes having multiple mates). Breeding can occur at any time during the year; however, during warmer months, breeding is at its peak. Once the female has given birth, she may be bred again while her off-

spring (kits or pups) are still suckling. Gestation periods generally last 22-25 days when the female is not acting but can last 24-30 days when lactating. Litter sizes vary from 3 - 11 and average 4 - 6. The offspring are born altricial but develop quickly. Their eyes open at around 15 days, they will be weaned by 25 - 35 days, and reach sexual maturity at 35 days for females (does) and 49 days for males (bucks).

Nests and Colonies:

Deer mice are said to be typically solitary except during mating season and in winter. The mating season stretches from March to October, and the remaining months are considered winter months. It may then be said that deer mice are social. Depending on what scientific study you read, you may get either of those answers. We simply chose to narrow it down to the facts; deer mice may be social or solitary, according to scientific studies.

Often, deer mice nest in groups, especially in winter. Nests are often found in elevated locations, are messy, and cup-shaped. They may be crafted from a variety of locally sourced materials from fur, feathers, hair, plant fibers, paper, thin plastics, and other readily available items. Different species of deer mice prefer different nesting locations based on their environment.

Their populations are quite common in their native range and typically prosper well. However, cold winter seasons can lead to starvation with a relatively high rate of mortality. Their population numbers have not been measured and remain unknown, but remain stable and are classified as (LC) Least Concern, meaning they are not endangered.

There are roughly 60 different species of deer mouse ranging from Canada to Central America. These may live within forests, grasslands, shrublands, deserts, islands, and mountains. Their primary predators are hawks, owls, foxes, snakes, coyotes, weasels, cats, and more.

Snakes will feed where deer mice are prominent. Homes and businesses near areas where deer mice are found may be at risk for infestations of deer mice and predacious snakes. When deer mice infest structures, nesting may occur. Due to their nesting habits, several mice may be found nesting together, potentially causing serious damage to homes, businesses, personal property, and other items. Additionally, when larger infestations occur, the potential for Hantavirus Pulmonary Syndrome is present.

Preventative Measures:

- Ensure other pest populations and dead insects are not accumulated within the structure.
- Reduce or remove items from your property that meet their diet (such as seeds, nuts, etc.)
- Eliminate or reduce entry points to the structure
- Remove nesting materials inside and outside the home when possible
- Store foods that meet their diet criteria in airtight containers.
- Don't leave foods open, especially pet foods
- Eliminate moisture and standing water from around the structure.
- Keep all shrubs, plants, and trees at least 16" from touching any structure surface.
- Maintain a well-kept lawn, including weed trimming
- Keep up with continued home and property maintenance
- Utilize habitat modification on your property to reduce conducive conditions
- Employ regularly scheduled rodent control by your pest control company of choice

House Mouse



Scientific Name: *Mus musculus*

Color: Gray to light brown and black in the wild. Domestic, champagne to black and multi-colored. Agouti colored. Some sub-species sport a light colored underbelly.

Tail: 2-4 inches long and nearly hairless

Size: 3-4 inch body

Characteristics: Pointed snout, large rounded ears. Have sharp notch in upper front teeth. Short hind feet. Short hair.

Region: Throughout the U.S, parts of Canada, Mexico and many other parts of the world

Food Sources: Seeds, insects, carrion and various plant matter. Omnivorous.

Threats:

- Consume and contaminate foods meant for humans, pets and livestock
- Create significant economic losses globally
- Destructive to structures and personal belongings
- Pose the threat of structure fire by chewing wires
- Carry and/or transmit a variety of illnesses and diseases

Habits:

- Social behaviors are adaptable to their environment
- Depend heavily upon humans and generally do not survive well outside of human settlements
- Mostly nocturnal but sometimes diurnal
- Are good jumpers, swimmers and climbers
- Rely on pheromones for communication. Both sexes produce pheromones from the preputial glands. Males additionally produce pheromones in their urine and tear fluid. Pheromones are detected by both sexes through the use of the Jacobson's organ (vomeronasal organ)
- Primarily polygamous but can also be monogamous
- Highly territorial, especially in the wild
- Rarely move more than 30 feet from their nesting site unless food is scarce
- Prefer seeds, grains, and foods high in fat and protein such as nuts, bacon, butter and sweets
- House mice are considered "nibblers" and will make several trips in a single night to find food from various available sources

Reproduction and Lifecycle:

Reproduction can occur at any time of the year and usually begins with the male "courting" the female. This "courtship" may last several days and will include the male calling to the female, following her, and sniffing her. Once mating has occurred, the gestation lasts roughly 19-21 days at which time a litter of 3-12 young may be born (typically 4 - 8). The female may produce 5 to 10 litters per year, allowing reproduction to occur rapidly.

The pups are born blind, hairless, and without ears. By the fourth day, the ears are formed and visible. By the sixth day, fur begins to appear. At 13 days old, the eyes will open, and by 21 days, the pups will be weaned. Females will then reach sexual maturity at around 6 weeks old and males at around 8 weeks. However, both males and females may begin breeding as early as 5 weeks old.

Nests and Colonies:

Inside human settlements, the house mouse nest will consist of a variety of available materials. Candy

wrappers, insulation, paper, clothing, string, stuffing material, and just about any other soft material will do. Nests will be messy and seemingly accidental, unlike neatly prepared bird nests. However, while the nest may seem messy, there is strategy to their nests. Furthermore, the nesting sites can help determine whether the mice are thriving well or barely surviving. Well prepared nests with multiple materials spread nicely to form a soft bedding for the offspring indicate a successful mouse. When very little material exists, only one kind of material, or no material at all, the mice are not surviving well.

Typically the house mouse will nest individually. Among human dwellings where populations are heavy, several may seemingly nest together. A good place to find a nest is behind an appliance, close to a heat source, inside the walls or cabinets, in the attic, in furniture and other similar areas. Damages from nesting mice can range from chewed electric wires to plant damage and includes the potential for insulation damage, drywall damage, food contamination and more.

Preventative Measures:

- Seal foods in secure packaging
- Keep kitchen and food areas clean
- Keep garage doors functioning properly and avoid allowing gaps and cracks to form in the seals
- Maintain a decluttered and clean garage
- Avoid stored or stacked items outside
- Discard garbage daily at least, including cardboard boxes
- SEE PREVENTATIVE MEASURES under DEER MOUSE

*Northern Short-Tailed Shrew



Scientific Name: *Blarina brevicauda*

Color: Black, brownish black, or silvery gray. Ventral fur is lighter and more gray.

Tail: Short

Size: 4 - 5.5 inches long (Northern short-tailed is the largest in North America)

Characteristics: Pointed snout, hidden ears, tiny eyes, short and slender legs, cylindrical body

Region: Northeastern to central U.S. and parts of southeastern Canada

Food Sources: Insects, earthworms, snails, voles and other shrews. Carnivorous

***NOTE:** The shrew is not actually a rodent. Instead, it is a member of the insectivore family along with moles. However, because many people consider them a rodent, we have thus included them.

Threats:

- Saliva contains venomous neurotoxin and a bite can be painful
- Emit unpleasant odors, especially noticeable indoors
- Potential food contamination indoors

Habits:

- Shrews are the only venomous mammals in North America
- Spend most of their time underground
- Solitary
- Territorial
- Nocturnal, sometimes diurnal
- Prefer rich, moist leaf litter or thick plant cover
- Active year-round

Reproduction and Lifecycle:

There is limited available information on the reproduction and lifecycle of the Northern Short-Tailed Shrew. Typically, mating begins in March and ends in September but may continue year-round. Females are known to have at least two litters of shrewlets per year with a gestation period of approximately 21 to 24 days. Typically, 6 to 8 shrewlets are born to each female and will suckle for as many as 25 days before being weaned. At 2-3 months, the weaned shrewlets become sexually mature and are able to successfully reproduce in the same year they were born.

Nests and Colonies:

Shrews are solitary and territorial mammals, able to burrow as fast as 2.5 centimeters per minute to form their nests, latrine, food storage and other tunneling. The nest of a shrew may be as large as 8 inches in diameter. These will often be lined with leaves or fur from the meadow vole. Nests are kept tidy and clean.

Preventative Measures:

- Reduce or remove leaf litter
- Maintain a well-kept lawn
- Seal all entry areas into structures
- Reduce heavy foliage around a structure

Norway Rat



Scientific Name: *Rattus norvegicus*

Color: Brown with scattered black hairs, gray to white underbelly

Tail: Shorter than head and body

Size: 7 to 10 inches long

Characteristics: Long with blunt muzzle and thick waist. Small eyes and ears. Bristly fur

Region: Throughout the U.S.

Food Sources: Seeds, plant matter, insects, human food. Omnivorous

Threats:

- Will gnaw on virtually anything
 - Can cause significant property and structural damage
 - Known to cause structure fires by chewing wires
 - Carriers of serious diseases: Rat bite fever, Cowpox virus, Salmonellosis, and more.
 - Can introduce plague-infected fleas to an environment
- Cause significant economic damage to food and foodstuffs

Habits:

- Social
- Nest tightly together
- Prefer lower levels of a structure
- Nocturnal and sometimes diurnal
- Enjoy sewers
- Forage primarily at dusk and dawn
- Known to gnaw through lead pipes

- Usually require a water source nearby
- Very habitual creatures
- Will travel 25-100 feet from burrows in urban areas and up to 150 or more if necessary
- Love dog food, vegetables, fruit, meat, grains and many human foods
- Hoard food

Reproduction and Lifecycle:

Norway rats can produce up to 6 - 12 litters each year. If conditions are favorable, reproduction can continue all year long. Once bred, the gestation lasts approximately 21- 25 days and litters can contain as many as 14 pups. At 3-4 weeks old, pups are weaned and ready to begin life on their own. Both the male and female can begin successfully mating at only 3 months old. It has been estimated that a single pair of breeding Norway rats could be responsible for more than half a billion offspring in just 3 short years.

Nests and Colonies:

Norways typically construct underground burrows or ground level burrows under hard surfaces. They may line the nesting area with a variety of available resources from soft papers to plastics, string and other fibrous materials. Although Norway rats share burrows and raise their young together, each female will have her own nesting chamber.

Often, nests may be found under concrete slabs, under wooden floors close to the ground, in crawlspace, under plants and shrubs and other similar areas.

Preventative Measures:

- Reduce food sources
- Clean up unused birdseed
- Keep pet food in sealed containers and do not offer free choice feeding
- Remove all pet feces from lawn
- Reduce sources of water
- Eliminate wood piles
- Maintain dry basements and crawlspaces
- Eliminate accessible garbage
- Monitor livestock feeds and barn lots
- Reduce ground cover and foliage adjacent to structures

Roof Rat



Scientific Name: *Rattus rattus*

Color: Brown with intermixed black

Tail: Longer than head and body at 7-10 inches. Scaly

Size: 6-8 inches

Characteristics: Soft and smooth fur, Thin waist, large eyes, large ears. Pointier nose than the Norway. Underbelly is black

Region: Worldwide

Food Sources: Omnivorous. Seeds, nuts, fruits, berries, snails, slugs

Threats:

- Can show aggression when threatened

- Transmitters of rat-bite fever through a bite or scratch also transmit leptospirosis, salmonellosis, murine typhus, plague, and others
- Carry ectoparasites such as fleas, mites, lice and ticks
- Cause millions of dollars annually in food contamination and loss
- May gnaw through many building materials to cause significant damage to a structure, including potential fire
- Eat and contaminate stored foods

Habits:

- Nocturnal
- Prefer heights in buildings and tree tops
- Commonly travel utility lines, tops of trees, and vines
- The most common rat found in attics

Reproduction and Lifecycle:

Roof rats can produce litters of 6 to 20 (6-8 most common) pups and have a gestation period of only 20-24 days. For the first 17-23 days, roof rat pups remain in the nest. Nests are typically in high areas such as attics. Pups open their eyes at about 2 weeks and are weaned at 4 weeks. By the 12th week, the pups are on their own and ready to reproduce. Offspring usually stay close to their birthplace and rarely venture out to find new territory.

Breeding season varies in different areas but can take place year-round. Females may produce multiple litters per year and as many as 40 or more offspring.

Nests and Colonies:

Information is limited.

Prevention:

- Seal holes, gaps, and cracks in structures
 - Trim shrubs, trees, and vines away from structures
 - Screen all vents and windows
 - Eliminate food sources
 - Remove unused fruits and nuts that fall from nearby trees
 - Keep garbage in containers that prevent rat access
 - Store pet and animal foods in airtight containers
 - Reduce unnecessary sources of water
 - Install door sweeps on exterior doors
 - Keep firewood or other stacked items away from structure
- Keep attics, crawlspaces and similar spaces dry and well-ventilated

Vole



Scientific Name: *4 species found in KY*

Color: Brown to brown and red

Tail: short

Size: 4 - 6 inches

Characteristics: Thick cylindrical shaped body, small, sometimes hidden ears, dense fur

Region: Throughout KY (many vole species exist throughout the world)

Food Sources: Grasses, forbs, seeds, tuber roots, insects, bulbs, legumes

Threats:

- Can carry tularemia
- Can cause significant damage to lawns, turf, landscaping, fruit trees, and grain crops

Habits:

- Active day and night
- Semi-fossorial
- Establish underground tunnel networks and above-ground runways

Reproduction and Lifecycle:

Gestation is roughly 21 days. Females mature within 35-40 days and can birth multiple litters per year. Most litters contain 3 - 6 pups.

Nests and Colonies:

Nests will be constructed in their burrows in chambers,

Preventative Measures:

- Reduce lawn litter, including grass clippings, leaves, etc.
- Keep lawn clean and free of debris and clutter
- It is said that a house cat may reduce voles in a lawn
- Regular reseeding of grass
- Tree guards
- Contact a professional pest control company for the best control

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