

2025 LANCASTER COUNTY JUNIOR ENVIROTHON STUDY MATERIALS: MAMMALS – FIELDS & MEADOWS

RED FOX: A common *carnivore* in Pennsylvania, the red fox measures 36 to 40” in length, weighs between 8 to 10 lbs., and is easily identified by its red fur, with a bushy tail tipped in white. Red fox are *opportunists* & feed primarily on rodents, other small mammals, carrion, poultry, & occasionally fruit & berries. Most biologists believe the red fox is a native species though fox was introduced into the South for fox hunting.



Prior to the arrival of European settlers, the deep woods habitat wasn't suitable for red fox but with the clearing of the land for farming the habitat became suitable for this member of the canine family. In winter, the red fox is a solitary *predator* but by January & February they begin to seek a mate. A red fox can live as long as 10 years. There are few predators of fox, beside man. Bald eagles, coyotes, bobcats, & dogs take their share but man is the primary predator. The only areas of the United States that do not have red fox are southern California, parts of Nevada, & most of Arizona.

GROUNDHOG: A member of the *rodent* & squirrel family, the ground hog, is also known as the woodchuck, or whistle pig. Strictly an *herbivore*, the groundhog has adapted to small winter food supplies by hibernating. It is rare for a groundhog to emerge from its den in early February contrary to popular belief. The woodchuck measures approximately 2 feet long & weighs between 6 to 14 lbs. The groundhog is an exception within the rodent



family since their teeth are white as opposed to orange or red. Like all rodents their teeth never finish growing & are worn down by gnawing. When the teeth aren't worn they can suffer from a malocclusion that's when their teeth don't meet properly & the front incisors cannot be worn down. Breeding occurs in February with the young (normally a litter has 3 to 4 chucks) being born in April or May. At birth the young weigh about an ounce, are blind & naked, & utterly defenseless. It is estimated a groundhog will live 8 to 9 yrs.

There are various predators of groundhogs including fox, coyotes, dogs, and man. Owls & hawks aren't strong enough to prey upon groundhogs except for the young.

MEADOW VOLE: Most common & prolific of the *rodents*. One female in captivity had 17 litters in one year. Litters range from 3 to 10 young. Young voles can care for themselves in 12 days & can reproduce within a month.



They are one of the most important steps in the food chain of field habitats. The meadow vole resembles a shaggy, brown mouse, about 6" long with tiny black eyes & short ears almost hidden by fur. The tail is about 1 ¾" long or twice the length of the rear foot. Most mice species have long tails but the bog lemming & pine vole, feature tails about the same length as their rear foot. An *herbivore*, meadow voles feed on grasses, roots, grains & the inner bark of shrubs or trees. They don't hibernate, spending the winter under the snow or in nests they construct which are softball-sized. Numerous predators depend on the meadow vole including weasels, crows, hawks, owls, skunks, opossums, bears, & snakes. A meadow vole may live for 3 years in captivity but in the wild, most are lucky to reach 3 months.

COTTONTAIL RABBIT: True rabbits found nearly anywhere within Pennsylvania including neighborhood yards & fields. Measuring 11 to 17" & weighing 2 to 4 lbs this rabbit features a white tail hence its name.

Litters average 4 or 5 naked, blind, babies that are big enough to leave the nest in 2 weeks & leave their mother in less than 2 months.



Several litters a year are common. Due to predation very few survive for more than a year but a lifespan of up to 3 years is possible.

Young normally make up 80% of the rabbit population. Rabbits are also prolific breeders due to the high amount of predation that occurs. Hawks, owls, fox, coyotes, weasels,

and humans prey upon cottontail rabbits. In early spring many people find rabbit nests & not seeing the mother around bring the nest of bunnies inside. This should never be done since the mother is usually hiding within the area.

DEER MOUSE:

A small mouse with a huge range (the Northeast, Midwest, and the West from Alaska to Mexico), the deer mouse occurs statewide in Pennsylvania. It is six and a half to eight inches long, including the tail, which is three to four inches. A deer mouse weighs 0.4 to 1 ounce. For the first month of its life, an individual is colored gray; then it molts into its brownish gray adult pelt. In both juveniles and adults, the undersurfaces are white. The deer mouse has large dark eyes well adapted to night vision. Deer mice inhabit nearly every type of land habitat in Pennsylvania: farm fields, fencerows, grassy berms of roads, brushland, and deep woods, both dry and damp.



Deer mice have sharp hearing and good eyesight. They locate most of their food by smell. They can swim if necessary and even run at nearly five miles per hour for short distances. The tail, covered with fur, acts as a tactile organ and a balancing aid; when climbing, a deer mouse wraps its tail around twigs or branches to gain steadiness. The species weaves ball-shaped nests, six to eight inches in diameter, out of leaves, grasses, and other plants, lined with fur, feathers, and shredded plant matter. Deer mice nest in hollow logs, stumps, fenceposts, beneath rocks, in root channels underground, and rather frequently in abandoned squirrels' and birds' nests in trees up to 50 feet above ground.

Deer mice breed from March to October. Females raise three or four litters per year, each with three to seven young. In one year, a single female can produce nearly 30 young, although few survive long enough to do so. Young mice, called pups, utter high-pitched squeaking sounds. Males do not help females raise the litters. Deer mice are preyed on by foxes, cats, short-tailed shrews, mink, weasels, hawks, owls, and snakes.

BIG BROWN BAT: A large bat 4.5" long with a 12" wingspan, the common big brown bat is often seen around houses. Young are born in late spring. They grow rapidly, & in 2 months reach adult size. An *insectivore*, the big brown bat normally feeds at dusk & dawn. They locate their food by *echolocation*. In Pennsylvania, the big brown bat *hibernates* with bats arriving in caves as early as October & into late



December. It elects to *hibernate* close to the mouth of the cave. Long-lived, a big, brown bat may reach the age of 9. Born weighing only 2.5 grams, hairless & wrinkled, but in 6 weeks time will look the same as the adult. Big brown bat populations are suffering due to White-nose Syndrome (WNS) but are doing much better than the little brown bat. Named for the white fungus that appears on the muzzle and other body parts of hibernating bats, WNS is associated with the death of large numbers of bats. First found in New York state in 2006-2007, WNS has spread rapidly across Pennsylvania and the eastern United States and Canada, and the fungus has been detected as far west as Oklahoma.

LEAST SHREW: Shrews have long, pointed noses, beady eyes, & slender skulls. Their small ears are almost completely covered by short, velvety fur. Shrews are different than mice in that they have 5 toes on each foot; mice usually have only 4 toes on their front foot. Shrews are primarily *insectivores*



& mice are *herbivores*. Possessing sharp, pointed teeth they are often darkly stained. Shrews also have beadier eyes & their nose is more pointed than mice. Active year-round, shrews eat almost continually. They are quick & aggressive & may attack animals much larger than themselves. Favoring old meadows & areas along the edge of forests least shrews are found throughout Pennsylvania. Measuring about 3" long & weighing under an ounce least shrews may nest in groups of a dozen or more, especially in winter. Mainly active at night least shrews eat insects, earthworms, centipedes, millipedes, snails, frogs, and carrion. Shrews may raise several litters of young each year & they only live less than 2 years.

FOX SQUIRREL: This *rodent* is found mainly in western & northern counties. Their preferred habitat includes pastured woodlots, with a few big trees or the forest edge with open fields beyond. Much larger than its gray cousin, fox squirrels are 21" long (with a 10" tale) & weigh nearly 2 pounds. Fox squirrels have gray to reddish-gray upper parts & buff to pale-orange brown undersides. As an *herbivore*, fox squirrels feed on the nuts & seeds of black cherry, hickory, oak, walnut, beech, elm, maple, ash, & conifers. Occasionally, fox squirrels will feed on meat including songbirds & their eggs. Like other tree squirrels, fox squirrels do not



hibernate in winter but will hole up & sleep through days of heavy snow or extreme cold. Like the gray squirrel, this squirrel is classified as small game.

LONG-TAILED WEASEL: Another member of the *mustelid* family, weasels are the quickest mammals & prey upon mice, rats, shrew, moles, & even animals larger than them including rabbits & squirrels. Weasels use the burrows of other animals to nest, lining it with fur & feathers. In the spring 4 to 8 young are born. In 5 to 7 weeks they can care for themselves. Pennsylvania's largest weasel (15 to 20" in length & weighs 2.5 to 9 ounces), it is fairly common statewide. Within the Commonwealth, 5 of 6 weasels stay brown in winter & in the south all remain brown. A long-tailed weasel is an efficient *predator*, chasing prey, pouncing on it, hugging it with its front legs, & biting its prey at the base of the skull. In the past, the Pa. Game Commission paid a bounty for weasels; 8 of 10 were long-tailed weasels. Today, weasels are classified as furbearers.



EASTERN MOLE: This mole makes the mounds one finds in their yard. Moles dig 2 types of tunnels: deep tunnels (up to 2') where they nest & spend the winter & shallow tunnels along which they find insects & earthworms. They are classified as *insectivores*. Small, plump, underground creatures, moles feature velvety fur, no visible ears, & small eyes. They have powerful shoulders, a short neck, muscular front legs with shovel-like feet, & heavy claws-all features useful in digging. Measuring around 7" in length & weighing 1.5 ounces, the eastern mole is found throughout the United States except in mountainous areas. Weasels & snakes are potential *predators*, but within their tunnels moles have little to fear except floods & drought. Born pink & helpless they reach adult size & begin rooting for their own worms in only one month's time.



MEADOW JUMPING MOUSE: A *rodent* that prefers moist, grassy meadows where, if disturbed, they can leap to safety, using their long hind legs & balancing tails. The meadow-jumping mouse is unique in the mouse family in that it *hibernates*. Their diet consists of grass seeds & small plants. Length is 8-9" & they weigh about ½ an ounce.



Found throughout Pennsylvania, the fur is yellowish brown, with a dark stripe on the back & orangish sides; the belly & feet are white. Usually produces 2 litters a year consisting of 3 to 6 young. During hibernation, its breathing slows, its temperature falls to just a few degrees above freezing, & its heart rate slows to a few beats per minute. After 6 months, the meadow-jumping mouse emerges in late April or May.

BISON: Before European settlers arrived, the American bison population included 40-60 million throughout North America including the central and western areas of Pennsylvania. Journals and other accounts from missionaries and immigrants to Pennsylvania state sightings of bison near the Allegheny Mountains. Bison were extirpated from the state by the end of the 1700's.



Bison are part of the bovid family, like cattle, goats, and sheep. This family group is important to humans as a source of meat, clothing, and milk. Bovid family members are mammals recognized by hooved feet. Often misnamed a buffalo, bison is not a true



buffalo because they lack a distinctive shoulder hump. Bison enjoy grasses and sedges found in meadows, they are herbivores. They will often use the dirt of a field to roll over and scratch their back. Male and female bison both have horns that grow up to 2 feet long. Horns are made of bone that attach to the front of the skull. A bison may

choose to clash with other bison by crashing their heads or horns together. Due to their feeding preference, bison help to encourage meadows and fields. Today the main population of bison in the United States is found in Yellowstone National Park. Even though they are quite large, they do have predators. They could be preyed on by wolves or a grizzly bear. Bison move more than they stand still, and will walk while they eat.