



 Structured Inquiry Search

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Sciurus niger

eastern fox squirrel

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By *Bridget Fahey*

Geographic Range

Fox squirrels are found throughout the eastern and central United States, south into northern Mexico, and north into Canada. They have been introduced into urban areas in western North America as well.

Biogeographic Regions:

nearctic 🇺🇸 (native 🇺🇸).

Habitat

Fox squirrels, like other tree squirrels, use trees for escaping from predators. They are fast and agile in the trees. They can readily escape predators on the ground and large birds of prey if they can seek refuge in the trees.

Fox squirrels are found in a diverse array of deciduous and mixed forest. Areas with a good variety of tree species are preferred due to variability in mast production.

Kingdom: Animalia
Phylum: Chordata
Subphylum: Vertebrata
Class: Mammalia
Order: Rodentia
Suborder: Sciuromorpha
Family: Sciuridae
Subfamily: Sciurinae
Genus: Sciurus
Species: Sciurus niger

These animals are found in the following types of habitat:
temperate 🐿; terrestrial 🐿.

Terrestrial Biomes:
forest 🐿.

Other:
urban 🐿; suburban 🐿; riparian 🐿.

Physical Description

Mass

696 to 1233 g; avg.
800 g
(24.5 to 43.4 oz; avg.
28.16 oz)

Length

454 to 698 mm; avg.
595 mm
(17.87 to 27.48 in; avg.
23.43 in)

Fox squirrels are a medium-sized tree squirrel with no sexual dimorphism. The dorsal pelage is buff to orange and the venter is rufous. Some varieties in the southeastern United States are black. These squirrels have 8 mammae. Tail is well furred. Ear tufts often develop in winter.

Adaptations for climbing include sharp recurved claws, well developed extensors of digits and flexors of forearms, and abdominal musculature.

Some key physical features:
endothermic 🐿; bilateral symmetry 🐿.

Sexual dimorphism: 🐿sexes alike.

Reproduction

Breeding season

Breeding occurs from
December to February
and May to June.

Number of offspring

1 to 6; avg. 3

Gestation period

44 days (average)

Birth Mass

15 g (average) [Ref]
(0.53 oz)

Time to independence

3 months (average)

Age at sexual or

reproductive maturity (female)
1 years (average)

Age at sexual or reproductive maturity (male)
1 years (average)

Females can mate with several males, but the males will compete with each other to determine who gets to mate first.

Mating systems:

polygynandrous (promiscuous) ♀.

Fox squirrels can mate any time of year; this behavior peaks in December and June. Males follow females prior to estrus, smelling the perineal region. Males aggregate in the home range of a female when she begins estrus. Dominance hierarchies form among the males to determine mating privilege. Copulation lasts less than thirty seconds, and females can mate with several males. A copulatory plug forms after mating. Gestation lasts 44-45 days. Average litter size is 2-3, but litters range between 1 and 7. Young are born naked, weighing between 13-18 g. Eyes open at week 5, and young are weaned at week 8. Sexual maturity is attained at 8 months for females, 10-11 months for males. Females can produce 2 litters in a year, although 1 is the norm.

Key reproductive features:

iteroparous ♀; year-round breeding ♀; gonochoric/gonochoristic/dioecious (sexes separate); sexual ♀; fertilization ♀; viviparous ♀.

Female fox squirrels care for their young in the nest for 6 weeks. When the mother leaves her young in the nest she covers them with nesting material. Young fox squirrels disperse away from their mothers range in the fall of their first year. Male fox squirrels disperse farther and may die more as a result.

Parental investment:

altricial ♀.

Lifespan/Longevity

Extreme lifespan (captivity)
18 years (high)

Average lifespan (wild)
7 months

Fox squirrels have been known to live to 18 years old in captivity. Under natural conditions the average lifespan is 8 to 18 years old, though most squirrels die before they reach adulthood.

Behavior

Primarily arboreal and diurnal. Generally, fox squirrels are not gregarious, although they

come together during the breeding season when females are in estrus. Males have larger home ranges than females. Squirrels threaten one another by an upright stance with their tail over their back, followed by a quick flick of the tail. Scent-marking is another form of intra-specific communication used by fox squirrels. Vocalizations in the form of barks and chatters, distress screams, and high-pitched whines during mating are common. Fox squirrels are serially polygynous. Mating chases involve one female and a number of males, with the successful male guarding the female to prevent others from mating with her; males do not help in the raising of young.

Key behaviors:

arboreal ☞; diurnal ☞; motile ☞; sedentary ☞.

Communication and Perception

Fox squirrels have excellent vision, even in dim light. They have well-developed senses of hearing and smell. Scent marking is used to communicate among fox squirrels. They use a variety of sounds to communicate, including barks, chatters, distress screams, and high-pitched whines during mating. Fox squirrels will threaten one another by standing upright with their tail over their back and flicking it. Fox squirrels also have several sets of vibrissae, thick hairs or whiskers that are used as touch receptors to sense the environment. These are found above and below their eyes, on their chin and nose, and on each forearm.

Perception channels:

tactile ☞; chemical ☞.

Food Habits

A wide variety of foods are taken, ranging from vegetative matter to gall insects, moths, beetles, bird, eggs, and dead fish. Acorn, hickory, walnut, mulberry, and hawthorne seeds are preferred. Food can often become limiting in the winter, so squirrels commonly cache seeds in a scattered fashion for the colder months. Nuts are opened by a levering technique of the lowering incisors, a skill at which squirrels become proficient quickly.

Primary Diet:

omnivore ☞.

Animal Foods:

birds; mammals; eggs; carrion ☞; insects; terrestrial non-insect arthropods.

Plant Foods:

leaves; seeds, grains, and nuts; fruit.

Other Foods:

fungus.

Predation**Known predators**

- hawks (Accipitridae)
- owls (Strigiformes)
- snakes (Serpentes)

Fox squirrels are preyed on mainly by large hawks and owls. Young squirrels may also be taken by snakes. Fox squirrels take advantage of their agility and maneuverability in the

trees to escape most predators. They emit alarm calls that alert other squirrels when they see a predator.

Ecosystem Roles

Because squirrels prey so heavily on the seeds of trees they play a significant role in shaping the composition of forests. They may eat (along with other seed-eating animals) almost all of the tree seeds that trees produce in some years. When squirrels bury seeds and forget them, these seeds are likely to sprout where they were placed. Squirrels, therefore, act to promote the growth of certain kinds of trees. Fox squirrels are also important prey items for small predators because of their abundance in the environment.

Key ways these animals impact their ecosystem:

disperses seeds.

Economic Importance for Humans: Negative

Squirrels are often considered a nuisance species due to their raiding of bird feeders and gardens. They are also responsible for some damage to corn crops. They often use electrical lines as routes of travel, and this can cause power outages.

Ways that these animals might be a problem for humans:

crop pest.

Economic Importance for Humans: Positive

Squirrels are be hunted as a food source and for their fur, although the fur is not very valuable. In addition, fox squirrels are important agents of seed dispersal and can aid in succession by burying forest nuts. May play some role in the dispersal of mycorrhizal fungi.

Ways that people benefit from these animals:

body parts are source of valuable material.

Conservation Status

IUCN Red List: [link]:

Lower Risk - Least Concern.

US Federal List:

[link]:

Endangered; No special status.

CITES: [link]:

No special status.

State of Michigan

List: [link]:

No special status.

Many subspecies of fox squirrels are endangered due to overhunting and destruction of mature forests.

Contributors

Bridget Fahey (author), University of Michigan.

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