

White-tailed deer (*Odocoileus virginianus*)

Size:

Bucks (males) typically stand 3–3½ ft. tall at the shoulder and weigh 125–200 lbs. Males grow antlers each spring and summer and shed them in the winter. Does (females) are smaller and lighter and lack antlers.

Signs of their presence:

- Deer are commonly seen.
- Tracks: Looks like a pair of bottom-heavy crescent moons.
- Scat: Jellybean-shaped pellets, usually seen in piles.
- Evidence of their feeding: browsed branches have a ragged, broken end. Rabbits or rodents clip off branches neatly. Also, deer can browse to a height of 6 ft. off the ground. Unless there's deep snow, a rabbit or rodent would need a ladder to do that.
- Trails. Narrow, well-worn paths.
- Beds. An oval depression in grass, where the deer slept or rested. In snow, this may be a deep indentation.
- Scrapes: Bucks will tear up soil and plants using their hooves and antlers. May see a scrape that's 1–5 ft. wide, often with nearby rubs.
- Buck rubs. When the antlers first grow, they're covered with "velvet," a layer of hair and blood vessels. This dries and is shed or rubbed off; bucks usually rub against saplings, shrubs, or rocks, probably to mark their territories.
- Shed antlers may be found in the woods, although this is rare because they're usually quickly eaten by mice, squirrels, and porcupines. Antlers are rich in minerals such as calcium.

Diet:

Herbivores. They eat mostly grasses, herbs, crops, fruits, leaves, twigs, and buds in the spring and summer. Their fall diet includes beechnuts, acorns, and wild cherry seeds. By winter, they're surviving on twigs and buds. Deer prefer to dine on these ornamentals and crops: white cedar, yew, sumac, sassafras, basswood, various maples and dogwoods, corn, alfalfa, buckwheat, clover, apples, lettuce, celery, potatoes, turnips, sugar beets, and strawberries. When they're starving, deer will eat spruces, balsam fir, alder, tamarack, most pines, junipers, hawthorn, rhododendrons, and sweet fern. Deer eat about 3% of their body weight each day. For an average buck, that's about 4–10 lbs. of plants.

Typical activity patterns:

Social style: Males keep to themselves for much of the year, but during the spring and summer, they'll form

groups of bachelor deer. Females care for their fawns by themselves. Groups of does and their young often feed together. During the coldest part of the winter, deer may gather for a few months in a sheltered part of the woods which protects them from deep snow and wind, called a "deer yard." Typical deer yards include swampy areas with spruce, balsam, cedar, and pines with some hardwood trees for food.

Daily activity: Most active at dawn and dusk, but may feed throughout the night or day.

Hibernator? No.

Migrates? No.

Where found:

Distribution in NY and the Northeast: Widespread and abundant.

Habitat: Deer are more likely to be found in the forest "edge," not in the deep woods (except for a few months in the winter when they retreat to their sheltered yard). Ideal deer habitat is a mix of woods and agricultural fields with brushy undergrowth, but they are highly adaptable and can live in suburban areas with a mix of lawns, gardens, and patches of forest.

Territory and home range: During the breeding season, or "rut," males are territorial. Some will defend large areas, while others will be shut out. Males range over a larger area than females; in urban areas, that could be 200 a., while in rural areas, as much as 600 a. The home range of females is usually about 25 acres.

Breeding habits:

Pair bonding style: Polygamous.

Breeding dates: Mid-September through late February, with peak in mid-November.

Number of young: 1–2 fawns.

Birth period: Late May to mid-June.

Weaning dates: 3–4 months old.

Amount of time young remain with parents beyond weaning date: Up to a year.

Common nuisance situations:

Time of year: Any time of year. Damage to landscape plants and ornamentals is usually most severe in the late winter–early spring, when other foods are scarce.

What are they doing?

- In the Northeast, deer have essentially become our forest and wildlife managers. Many people are unhappy with the results. Deer populations in the northeast are so high that they are over-browsing many areas, severely reducing or eliminating certain

plant species. Where once there was a thick understory composed of many different plants, the deer may leave behind an open, virtually park-like forest floor that's dominated by grasses and ferns. Trees such as oak and sugar maple, which deer love to eat, are being replaced by beech, which they don't prefer. Wildflowers, such as several species of *Trillium* and Canada mayflower, have been eaten out of existence in some places. This dramatic change in our forests will hurt some wildlife, such as ground-nesting birds, which need the cover of the understory, and help others.

- Deer just happen to prefer to eat some economically valuable trees. The species they leave behind are less marketable. This is already hurting the forest industry, to the tune of \$750 million/year, according to government estimates.
- Eat garden crops, field crops, fruits, and ornamental plants. The losses are estimated at \$100 million/year for agricultural crop damage throughout the U.S., and more than \$250 million for damage to landscape plants.
- Their browsing has caused long-term damage that reduces the yield of fruit trees or permanently disfigures ornamental trees and shrubs.
- Collide with cars, causing accidents (estimated cost of \$1 billion/year, nationally).
- The combined losses amount to about \$2 billion/year, nationwide.
- Disease risks: Lyme disease, leptospirosis, and chronic wasting disease (not confirmed in New York as of 2003, but the disease has been found in Colorado, Wyoming, Montana, South Dakota, Wisconsin, Minnesota, Nebraska, Kansas, Oklahoma, Illinois, New Mexico, Saskatchewan, and Alberta). Deer are host to a variety of parasites, such as botflies, liver flukes, ticks, lice, and worms.

Legal status in New York:

Game species with set season. Any control technique that involves the handling of deer requires a state permit. The DEC responds to nuisance deer situations in several ways. Under ECL 11-0521, they may issue a permit allowing landowners to kill deer that have become a nuisance (talk to the regional office about securing this permit). The DEC also runs the Deer Management Assistance Program (DMAP), which permits an increased harvest of antlerless deer on enrolled lands during the hunting season. Growers, municipalities, and people with large forested areas may be able to join this program. Its intent is to reduce

crop damage, reduce urban and suburban deer populations, protect rare plants, allow forests to regrow, and to improve the quality of a deer herd. For information about DMAP, see: www.dec.state.ny.us/website/dfwmr/wildlife/deer/dmap.htm.

Best practices

- Deer populations can double in size every 2–3 years, if unchecked. Solutions that address a community-wide problem will probably include a combination of options, such as harvesting female deer, fencing, replanting with less palatable species, and repellents. (“Buck-only” harvests will not reduce or stabilize the population.)
- Site-specific problems can often be solved with fencing, replanting, enrollment in the DMAP, and the application of repellents. There are some very effective deer repellents. They work best in small areas. For NWCOs with a commercial pesticide applicator license, see the Cornell fact sheet, *White-tailed deer*, (part of the Wildlife Damage Management Fact Sheet Series) for detailed information about repellents.

Reduce food sources:

- If people are feeding the deer, persuade them to stop. Even off-site feeding to try to lure the deer away from the vulnerable area is a bad idea that may only increase problems. Feeding deer is currently illegal; this ban was enacted in 2003 as part of the strategy for controlling the spread of chronic wasting disease.
- Switch to plants that deer find less tasty. There's no plant that's completely deer-proof—if they're hungry enough, they'll even eat plants with little nutritional value—but under normal conditions, they'll avoid certain plants. For a list of shrubs that deer tend to avoid, see the Cornell publications, *Resistance of Woody Ornamental Plants to Deer Damage* or *Reducing Deer Damage to Home Gardens and Landscape Plantings* (full citation in resource section).

Protect vulnerable gardens, crops, and landscapes:

- Fences work well to protect a specific site, such as a home garden, agricultural field, airport, or schoolyard. There are many choices for the material and design of the fence. Several factors influence the choice, including the size of the vulnerable area, the intensity of deer feeding, the amount of damage that can be tolerated, and local laws, which may restrict the use of fences, for example.

- Individual plants, or small clumps of flowers, can be protected with plastic netting or wire cages. Wrap the plastic netting around the plants, or place the wire cage over them. The deer will be able to eat any part of the plant that sticks out of the net, but this usually reduces damage a great deal.
- Vegetable and flower gardens can also be protected with a temporary electric fence used during the growing season. Install the fence before there's damage to prevent a problem from developing, or at the very first sign of damage. Never directly connect a fence to household current—it should run through a fence charger, to convert the current from AC to DC. Adding an attractant, such as peanut butter, to an electric fence, will entice the deer to touch the fence with their noses, so they'll get shocked. (Wrap a large clump of peanut butter in aluminum foil, then attach it to the fence.) This may teach them to avoid the area.
- Small groups of trees or shrubs (within a circle of about 20 yards) can be enclosed with snow fencing during the winter and early spring. This will provide decent but not perfect protection.
- For year-round protection, the best barrier is a permanent woven-wire fence that's at least 8 ft. high. In some cases, a high tensile fence with a 7-wire design works well, too (best if the spacing between the wires is no more than 9"). Entrances must be protected with gates or cattle guard.
- Combination fences work well. To reduce the overall cost, you can use woven wire on the bottom, and then switch to high-tensile electric wire for the top 4 ft. of the fence. This is cheaper than a fence constructed of only woven wire.
- Dogs may be able to keep deer out of fenced areas. Some growers have enclosed their orchards with an "invisible fence," allowing dogs to freely patrol the area. One study showed that two dogs could patrol about 60 acres in the summer, 10 acres in the winter. This technique is most effective with large dogs that patrol aggressively and are kept outdoors all the time.

NWCOs with a commercial pesticide applicator license:

- There are several effective commercial repellents registered for deer in New York. Most of them contain an active ingredient that either tastes or smells bad to deer, such as rotting eggs, soap, and hot pepper (active ingredient is capsaicin). Refer to Cornell's annual *Pest management guide for the control of wildlife* or *Managing White-tailed Deer in Suburban Environments: A Technical Guide* for details

about repellents.

- For a small vegetable garden or flower bed, string a rope fence 30" above the ground, with the posts set 3–4 feet apart, and spray the rope with an odor-based repellent. Or you can spray the repellent onto cotton strips and attach them to the rope every 3–4 feet.
- Adding repellents to an electric fence may also teach the deer to avoid the area. Repellents seem to be more effective than attractants, but you must have the pesticide applicator license to use them.

If you're asked for advice about how communities can prevent or reduce the number of traffic accidents caused by collisions with deer, here's what you can say:

- Contact the Department of Transportation and the DEC for information.
- Reducing the size of the local deer herd may reduce the number of collisions (although that seems like common sense, there's only limited research on this point.)
- Keep roadside areas well-mowed and keep shrubs well-groomed, so drivers have a better view of deer approaching from the edges.
- Encourage drivers to slow down during dawn and dusk, especially from April through June and again from October through December.
- Deer tend to travel in family groups, so if you see one, look for more. Slow down.
- More people have been hurt when a driver tried to avoid hitting a deer and swerved into the oncoming lane or an object than have been hurt in collisions with deer. There's really no way to predict the direction the deer will choose to run.
- If the problem is concentrated along a short section of road, fencing may be the best option.

Preferred killing methods:

- Follow the conditions of your permit
- Shooting (using a shotgun with 20-gauge or larger slugs, a centerfire rifle, or other implement specified in the permit)
- Lethal injection of barbiturate, if possible
- Stunning using a penetrating captive bolt pistol, followed by exsanguination

Control strategies that don't work particularly well, or aren't legal in New York:

- No scare devices are recommended because they don't work well and many of them can annoy the

neighbors. Deer generally get used to scare devices within a few days. So don't waste your time with lights, loud noises, scarecrows, fireworks, gunshot, crackers, bangers, propane cannons, deer whistles, ultrasonic devices, strobes, water sprays, or sirens. Deer can hear ultrasonic sound but it doesn't frighten them. It doesn't remind them of a predator or any other dangerous situation.

- Human hair doesn't do much, either.
- Bars of tallow-based soaps hung in trees may reduce damage, if the deer aren't feeding intensively in the area, but if the soap melts and runs down the tree it may attract voles.
- Roadside reflectors have been used with varying success to reduce the number of collisions between deer and cars. Deer may get used to them. It may work better in rural areas because deer in suburbs are more used to human activity and lights.
- Deer whistles and ultrasonic devices will not help prevent car collisions with deer.

For more information:

DEC publications (updated and published each year):

- *Big game hunting guide*
- *Hunting and trapping regulations guide*

Cornell publications:

- *White-tailed deer* (part of the Wildlife Damage Management Fact Sheet Series)
- *Resistance of woody ornamental plants to deer damage*
- *Reducing deer damage to home gardens and landscape plantings*
- *Managing White-tailed deer in suburban environments: A technical guide*
- *Pest management guide for control of wildlife* (updated yearly)

Videos:

- *Suburban deer management: Voices, views, visions*
- *Whitetails at the crossroads*