

Odocoileus virginianus

White-tailed Deer

Description

Odocoileus virginianus is a member of the deer family. *O. virginianus* is the smallest and best-known member of the deer family in the Great Lakes region (Burt 1957). The average weight of a male buck is 68 kilograms (150 pounds). The average weight of a female doe is 45 kilograms (100 pounds). These weights can vary between 45 and 136 kilograms (99 to 300 pounds) depending on habitat, season, food availability and competition. Females will hit their peak weight at age four while males hit their peak weight around age five or six. The total body length ranges between 152 to 213 centimeters (5 to 7 feet). From the ground to the belly, adults are 51 centimeters (20 inches), while fawns are 38 centimeters (15 inches). Average tail length is between 8 to 12 centimeters (3.1-4.7 inches). The hind foot length is between 73 to 84 centimeters (29 to 33 inches). The ear height is between 26 to 27 centimeters (10 inches) (Halls 1984, Kurta 1995).

Bucks also have antlers that they grow during the year starting in April and May. The antlers are composed of true bone that grows from pedicels on the frontal bones (Halls 1984). They lose their velvet in August or September. These antlers are then shed in January to March (Animal Diversity Web 2003). Bucks in good physical condition retain their antlers longer than do those in poor vigor (Ozoga and Verme 1982).

O. virginianus have two different coats that they exhibit during the year. The coat colors can vary among subspecies. During the summer months, they have a thin, reddish brown coat. The hairs on this coat range in size from 1 to 3.5 millimeters (0.04 to 0.18 inch) deep on the animal's trunk (Jacobsen 1973). This coat helps keep the animal from overheating and is shed during August and September. In the winter months, they have a grayish color coat. The hairs on this coat range in size from 5 to 27 millimeters (0.2 to 1.1 inches) deep. This coat will help keep the deer warm through the winter months and is shed during April, May and June. Fawns have a red and brown coat with white spots. This coat helps them blend in with the sunlight and the shade. The average number of spots on a fawn coat ranges from 272 to 342, with the size of each spot ranging from 0.6 to 1.3 centimeters (0.24 to 0.51 inch) in diameter (Severinghaus and Cheatum 1956). Fawns will lose this coat in August and September when the molt begins.

O. virginianus have a white belly and white underside of their tail. They also have a white throat patch and a white eye ring. There can also be a white band behind their black nostrils.

Distribution in Wisconsin

O. virginianus first came to North America about 15 million years ago across the isthmus between Siberia and Alaska during the Miocene period (Bauer 1983). Prior to European settlement, Wisconsin was composed of coniferous habitat, giving poor habitat to the deer. Before 1880, estimated densities in northern Wisconsin were 4 whitetails per

square kilometer (10 per square mile) as opposed to densities of 8 to 19 deer per square kilometer (20-50 per square mile) in the southern part of the state (Dahlber and Guettinger 1956). After the logging period of the late nineteenth century, the forests in Wisconsin were opened up, creating better habitat for the deer. This resulted in the whitetail population expanding throughout the state. Currently, *O. virginianus* is found in all of the counties in Wisconsin, and is a common species throughout the state (Kurta 1995).

On February 28, 2002, three whitetail deer tested positive for Chronic Wasting Disease. The deer had been shot in Deer Management Unit 70A and registered in Mount Horeb, Wisconsin. This was the first time that CWD had been detected in Wisconsin. CWD has been present in Colorado for 16 years. Since CWD has been detected in Wisconsin, many counties have banned deer baiting (WDNR 2003). CWD still remains an issue in Wisconsin.

Ontogeny and Reproduction

Reproduction for *O. virginianus* starts with the rut, which occurs in October through December. The peak of the rut occurs in November. During this time, males will go around and look for females that are in heat. First year males most often do not mate. Males will sometimes follow females around for days waiting for a female to be in estrous. Once a male has mated with a female, he moves on looking for other females in estrous. Competition is high, with males fighting each other in order to mate with a female. The estrous cycle lasts for a 24 hour period. If a female does not mate when she is in estrous, she will go into estrous a second time 28 days later. Some females may have more than two cycles of estrous (Halls 1984, Kurta 1995).

Females who successfully mate give birth in late May or June. The gestation time for *O. virginianus* is 205 to 210 days (Burt 1957). Mature does will usually give birth to twins, while yearlings will give birth to a single fawn. In some cases, does may give birth to triplets, however, the survival is not good. Fawns will weigh between 1.8 to 3 kilograms at birth. Does who are well fed will give birth to fawns weighing closer to 3 kilograms. Immediately after birth, does will nurse fawns immediately. The milk of a doe is rich in fat, protein, dry solids and energy, helping the fawn grow. Fawns of multiple fawn litters will grow slower than fawns of single litters. Fawns usually double their birth weight in roughly two weeks and triple it within a month (Verme 1963). On average, fawns gain 0.2 kilograms (.44 pounds) per day during this time. Does are under a lot of stress during this time in order to feed the fawns. Within a few weeks, fawns will be able to graze (Halls 1984).

Ecology and Behavior

O. virginianus are not highly social. Bucks tend to be more social than does. Usually, there is little or no contact between adult does and adult bucks except during the autumn breeding season. Females will form small groups of related females, consisting of a matriarch with her fawns and some yearlings. Males will live solitary or form small

groups of unrelated males. Yearling males will tend to disperse from females (Halls 1984).

O. virginianus prefer open forest environment consisting of meadows, woodland clearings and farm land.

O. virginianus spend more time feeding than any other activity (Michael 1970). It feeds while slowly walking, never staying in one place for long (Kurta 1995). Deer prefer low light to forage, mainly at sunrise and sunset. When the moon is bright, deer may feed all night. The times of peak activity for individual animals differ, sometimes in response to environmental variables or human activities, at other times inexplicably (Halls 1984). Deer will often use trail systems when foraging for food. When traveling to and from feeding areas, whitetails often move in single file at a fairly steady walk (Halls 1984). During the summer months, deer will feed on grasses, herbs, leaves, acorns and mushrooms. If a deer is close to a farm, they will feed on corn and apples. During the winter months, deer will feed on buds and twigs from maples, dogwood, aspen, willow and sumac.

O. virginianus tend to use the same home range year after year (McBeath 1941). Home range, as used here, is the area traversed on an annual basis by an individual in its normal activities of food gathering, mating and caring for young (Burt 1943). The white-tailed deer's home range must be large enough to provide all the essentials for life and reproduction, yet small enough to permit the animal to gain survival advantage through its familiarity with the area. It is apparent, however, that ranges differ in size according to various environmental factors and individual characteristics (Halls 1984). The whitetail's home range probably is smaller than that of other North American deer species (Seton 1929); seasonally, its radius usually does not greatly exceed 1.6 kilometers (1.0 mile) (Severinghaus and Cheatum 1956).

O. virginianus will travel more in warmer months than in colder months. In the spring, deer will travel on average 0.78 to 3.07 kilometers (0.49 to 1.9 miles) per day. In the winter, deer will travel 0.19 to 1.64 kilometers (0.12 to 1.02 miles) per day. Movement decreases as weather severity increases because of the physical difficulty of moving in deep snow and the need to conserve energy (Gill 1957). As a result, deer will spend time in deer yards during the winter months. Whitetails may travel considerable distances to reach suitable yarding areas. In northern parts of Michigan (Verme 1973), Minnesota (Rongstad and Tester 1969) and Wisconsin (Dahlberg and Guettinger 1956), the average distance from summer range to winter yards is 10 to 16 kilometers (6 to 10 miles) and may be as great as 32 to 48 kilometers (20-30 miles). These yards may consist of up to 50 deer. Deer will form these yards when the temperature is low and when snow depths are high. These yards are a way for deer to conserve energy and feed on the food supply (Kurta 1995).

O. virginianus are also known to be good swimmers. Deer will swim across streams in their home range to escape predation or to avoid biting insects. Bodies of water often are used to escape predators or to throw hounds off the deer's trail (Sweeney et al. 1971).

The major predators of *O. virginianus* include wolves (*Canis lupus*), coyotes (*Canis latrines*), black bears (*Ursus americanus*) and humans. Mature deer in good condition are less often preyed upon. Fawns and injured adults fall victim to prey most often. The lifespan of a deer in the wild is 15 years and 20 years in captivity (Kurta 1995).

Sources

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