



## *White-Tailed Deer in Rhode Island*

Deer are a common sight in Rhode Island, with large populations all over the state, including many of the Bay islands. Some people enjoy watching deer from their backyard, while others are frustrated with constant damage to their gardens. Still others value deer as a game species and source of food. With deer so abundant, few realize that until recently, they were quite rare in Rhode Island. Abundant at the time of European settlement, hunting pressure and extensive clearing of land for agriculture reduced the deer population so greatly that deer hunting was made illegal. A Rhode Island game survey from 1941 lists the state deer population as 662, but with diminished agriculture, land returned to the mixed woodlands that deer favor and the population rose. In 1957, a limited deer hunting season was reinstated. The population continued to increase, and today, deer are more abundant than ever. In 2004, there were an estimated 15,800 white-tailed deer in Rhode Island, and the population is still rising.

**Description:** As the only species of deer in Rhode Island, the white-tailed deer (*Odocoileus virginianus*) is unmistakable. In western regions it may co-occur with the mule deer (*Odocoileus hemionus*), but the white-tailed deer can be distinguished by its smaller ears and larger, white-tipped tail. The mule deer has a black or black-tipped tail.

Across their range, white-tailed deer females weigh 90-210 lbs. and males can range between 150-310 lbs. Individuals tend to be larger the further north they occur. The coat is reddish brown to bright tan in the summer and turns grayer and dull in the winter. Fawns are reddish brown with characteristic white spots. Males have antlers with smaller vertical points branching off the main beam. Antlers are first grown after a male's first year. In the spring, the new antlers are covered with "velvet", a soft skin that is filled with blood vessels. The velvet nourishes and protects the growing bones. In late summer, when the antlers are mature, the velvet dries up and is rubbed off. Antlers are then shed in the winter and re-grown over the summer.



### **Life History:**

*Distribution and Habitat:* The white-tailed deer ranges from southern Canada to South America. In the United States, it is found in all but California and much of the Southwest. In the Northeast and the Midwest the deer was nearly extirpated due to hunting and habitat clearing, but is now thriving. The population is actually much larger now than at the time of European settlement, due to the elimination of natural

predators such as wolves and mountain lions. White-tailed deer may use a variety of habitats, including swamps, thickets, woods and fields. Its preferred habitat is mixed successional stages. Suburban development, with its mix of trees, shrubs and lawns, is opportunistically utilized and harbors few if any predators.

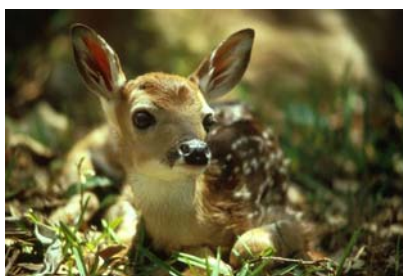
Deer typically have home ranges of 40 to 330 acres. They may range even farther in winter, up to 1285 acres. Bucks usually travel farther than does. Densities of 80 to 90 deer per square mile may occur, but not without resulting problems. Populations of about 20 per square mile can coexist in balance with their habitat.

*Behavior:* As a prey species, white-tailed deer are stealthy, agile, fast movers. They can run up to 36 miles per hour, jump 8 feet into the air, and leap up to 28 feet. They are also excellent swimmers. White-tailed deer may be active at any time, but are most active at dawn and dusk. When they are not feeding, they spend their time bedded down in brush or other cover. Deer often spend time in social groupings. Fawns will stay with the mother for a year, and occasionally multiple does will group together with their offspring. Bucks also form groups, which disband before the mating season. Dominance is established by size.



*Food Habits:* Deer spend most of their active hours feeding. They feed on grasses, herbs, and the leaves, buds and twigs of woody plants. Fruit and acorns are also consumed. Deer can eat 5-9 pounds of food a day. Because the plant matter deer consume is difficult to digest, they have internal microbial symbionts in their four-chambered stomachs to help them break it down. These microbes not only aid in digestion, but also synthesize nutrients for the deer.

*Reproduction:* In the late summer or early fall, when the antlers of the bucks are fully-grown, the rutting season begins. Bucks rub their antlers on saplings, removing the bark. They deposit their scent on these rubs. They also create scrapes, by thrashing vegetation with their antlers and scraping the adjacent ground with their front hooves. Other deer, as well as trackers and hunters, can recognize these signposts. Bucks begin to spar with others in their groups to establish dominance. Sparring begins when one buck lowers his antlers at another. The other may back away or accept the challenge. The bucks clash antlers, and each tries to push the other back. After 4-6 weeks of this behavior, the buck groups break apart. At this time the males begin to pursue the females. The doe keeps her distance as the males follow her around, but when she comes into heat, she allows the males to approach. During the 24-36 hour period when she is receptive, she may mate several times. The dominant males have first access; males may not be able to mate at all until their fourth year. Dominant bucks sometimes attempt to monopolize a number of does, and defend them against other males.



Once the mating season is completed, deer may again form buck and doe groups. In northern climates, they sometimes form large mixed winter herds in sheltered evergreens around food sources. These areas are called deeryards. The does separate from their groups in late May or early June, when they

give birth to their fawns. Young does typically have one fawn, while older females have twins. The newborn is already covered in fur and stands up within an hour of being born. The fawn begins to nurse, and at three weeks, begins to graze. The fawn is weaned at four to ten weeks. Although the fawns do not stay close by the mother's side—they choose separate bedding sites—they remain as a family group at least until the fall and more commonly until spring. When the doe is ready to give birth again in the spring, she usually drives the previous year's offspring away by chasing them and striking at them with her hooves. Males are always driven off; however, females sometimes remain with the mother for two years. Deer typically live to be about 4-5 years old in the wild.

*Predators:* Historically, wolves and mountain lions preyed upon deer, but these large predators are no longer abundant. Now smaller predators such as coyotes, dogs and bobcats are the main wild predators. They mostly prey on fawns or old deer, and not at levels to impact the population. Humans are another cause of deer mortality, through hunting and auto strikes. In the Rhode Island 2004-2005 hunting season, 2,698 deer were harvested and 1,032 deer were killed by cars. Nevertheless, the white-tailed deer's reproductive capacity exceeds mortality.



**Problems With Deer:** Deer are overabundant in much of the United States due to a lack of natural predators, an increase in human altered, fragmented landscapes, and changing social values about hunting. In suburban areas, where landscaping provides excellent forage for deer and hunting is not allowed, growth of the herd is unimpeded. Damage to farms and gardens can be severe. However, the larger issue is the overall effect of deer on the forests. Overgrazing by deer degrades habitats,

impacts wildlife sharing the same forest layer, reduces forest diversity, and contributes to proliferation of invasive species.

Automobile collisions with deer are an additional problem. The Insurance Institute for Highway Safety estimates that deer-related vehicle crashes cause \$1.1 billion in damage annually in the United States. These events increase when deer are overcrowded and travel in search of mates, food and territory.

Regulated hunting is the most practical and effective method of keeping deer populations in check. Hunting female deer is encouraged, because hunting bucks does little to control births. For the homeowner or farmer struggling with deer damage, there are several options for control. Sturdy, high fences are the most effective method. Plastic fencing, which is versatile and less expensive, may be the most desirable option. Electric fences may also be used. Vulnerable plants—such as newly planted saplings or a blueberry bush with ripening berries—may be protected by constructing a mesh cage around the plant. There are a number of chemical repellants available for purchase, as well as homemade recipes. Planting tree and shrub species that are deer-resistant can also help. A landowner with sufficient property may be able to apply for a damage permit to kill nuisance deer if their local town ordinances allow it. Contact Rhode Island DEM Division of Fish and Wildlife, Field Headquarters at 401-789-0281 for rules, regulations, and an application.

Another problem that occurs is when well-meaning people purposely feed wild deer. *This is illegal in Rhode Island.* Feeding deer exacerbates the population problems discussed above and encourages deer to become dependant upon humans. Feeding deer may also cause harm when they cannot adjust to the change of diet.

### **Deer and Disease:**

*Threats to Humans:* High deer populations may lead to high tick populations. This causes a human health risk, because the ticks that feed on deer can transmit diseases to humans. By far the most common tick-borne illness in Rhode Island is **Lyme disease**. It is transmitted by the tick *Ixodes scapularis*, also known as the deer tick or black-legged tick. Initial symptoms vary, and can include a red circular rash around the tick bite, and flu-like symptoms. Early treatment with antibiotics is critical. If untreated, symptoms may progress to include arthritis and neurological problems. If you suspect you have Lyme disease, contact your physician. Other diseases transmitted by ticks to humans in Rhode Island include babesiosis, a malaria-like disease, and ehrlichiosis, a feverish illness caused by a number of different bacteria in the genus *Ehrlichia*. More information on tick-borne diseases can be found at the Rhode Island Department of Health website: <http://health.ri.gov/disease/communicable/diseaselist.php>.

*Threats to Deer:* A new risk to deer populations themselves is **chronic wasting disease (CWD)**. This disease was first found in the late 1960s in Colorado, and has recently been found as close as New York. CWD is caused by prions, or abnormal proteins. These prions produce lesions in the brain and nervous system of infected deer and other members of the family *Cervidae*. Infected animals become emaciated, lose bodily functions and display abnormal behavior. CWD is transmissible among deer, but there is as yet no evidence that humans or livestock can be affected. Nevertheless, it is not advisable to eat the meat of animals known to be infected. CWD has not been found in Rhode Island; to keep our deer populations CWD-free, regulations have been enacted regarding the feeding, transport and importation of deer and deer parts. Please contact the Division of Fish & Wildlife at 401-789-0281 or consult the DEM website at [www.dem.ri.gov](http://www.dem.ri.gov) for information.

### **Deer Hunting in Rhode Island:**

The white-tailed deer is the most important game species in the United States and Rhode Island. Deer provide food and sport for hunters, and permit sales generate funds for state wildlife management. In addition, revenue from federal excise taxes on sporting arms and ammunition is distributed back to the states in the form of grants. The grants are used for land acquisition, land maintenance, and wildlife management.

Hunting is a vital tool for managing deer. It has proven to be the most cost-effective, efficient, and successful method of controlling deer populations. Deer are currently overabundant in many parts of Rhode Island, and have been for many years. Wildlife managers can influence population growth by encouraging the taking of female deer. Thirty-five to forty percent of does must be taken every year just for the population to remain stable. Predators such as coyotes do not take sufficient deer as they consume a wide variety of prey. In the absence of hunting, overabundant deer die of starvation and disease. Hunting is highly regulated, has a high safety rating, and can be tailored to meet the needs of individual communities. In densely settled areas



where firearm use is not appropriate, archery has been used to control deer safely and successfully.

Most Rhode Island state management areas are open to deer hunting in season. Many private landowners welcome hunting on their land as well. Some management areas and towns have Sunday hunting restrictions and firearm restrictions, so local regulations should be consulted prior to hunting. Please refer to the current Rhode Island Hunting and Trapping Abstract, or contact RI Fish & Wildlife, for more information.

**Additional Information:**

The following pamphlets provide in-depth information on specific issues related to deer. To request a copy, contact Rhode Island DEM Division of Fish and Wildlife, Field Headquarters at 401-789-0281. Titles in italics are available at the Department of Environmental Management website: [www.dem.ri.gov/topics/wltopics/htm](http://www.dem.ri.gov/topics/wltopics/htm)

- Rhode Island Hunting and Trapping Abstract*
- Rhode Island Deer Harvest Information*
- Reducing Deer Damage to Your Garden and Yard*
- Chronic Wasting Disease Information*
- Controlled Deer Hunting on Private Land
- Case Studies in Controlled Deer Hunting
- An Evaluation of Deer Management Options
- Lyme Disease Information from the CDC

This publication is also available on the Department of Environmental Management website at [www.dem.ri.gov/topics/wltopics/htm](http://www.dem.ri.gov/topics/wltopics/htm)

It is the policy of the Department of Environmental Management to offer its services and accommodations to all orderly persons, and, as required, to all properly licensed persons, without regard to race, religion, color, national origin, ancestry, sex, age, or disability. If you believe you have been discriminated against in any program, activity, facility, or if you desire further information, please write to the Office for Equal Opportunity, US Department of the Interior, Office of the Secretary, Washington, DC 20240.



### Selected References

Chapman, J.A., Feldhammer, G.A. 1982. Wild Mammals of North America: Biology, Management, and Economics. John Hopkins University Press, Baltimore and London. 1147 pp.

Cronan, J.M., Brooks, A. 1968 revised. The Mammals of Rhode Island. Wildlife Pamphlet no. 6, Rhode Island Department of Natural Resources, Division of Conservation. 133 pp.

Davidson, W.R., Nettles, V.F. 1988. Field Manual of Wildlife Diseases in the Southeastern United States. University of Georgia, Athens. 309 pp.

Whitaker, J.O., Jr. 1998. Mammals of the Eastern United States. Cornell University Press, Ithaca and London. 583 pp.

*Images courtesy of the US Fish and Wildlife Service*