

White-tailed deer

Wildlife management series for Midwestern farmers



White-tailed deer.

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Common and Latin name: White-tailed deer (*Odocoileus virginianus*)

Commonly impacted crops: White-tailed deer can cause damage by feeding, rubbing and bedding in field crops such as corn, soybeans and wheat, tree fruit and other tree crops and various vegetables.

Relevant regulatory agency: State Department of Natural Resources.

Species overview

Physical description of animal: White-tailed deer are a medium-sized, hooved mammal with reddish-brown hair in summer and gray-brown hair in winter. They are easy to identify by their broad tails that are entirely white underneath. Male deer grow new antlers each year beginning in late spring and shed their antlers in mid-winter after breeding season ends. Fawns are born with white spots that fade as they age.



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Left, deer often remove corn kernels by using their lower incisors to scrape an ear along its length. Right, evidence of deer feeding on soybean.

Habitat and range description: White-tailed deer are found throughout the Midwest and North America east of the Rocky Mountains. The only other species of wild deer in the Midwest are mule deer found exclusively in the far western portions of North Dakota, South Dakota and Nebraska. White-tailed deer are very adaptable and live in a variety of landscapes from rural to suburban. Deer flourish in agricultural landscapes that intersect with forests, shrublands, swamps or riparian corridors, providing easy access to food, cover and water.

Behavior including food habits: White-tailed deer are generally active at night but will adapt to daytime activity in suburban environments. They can become very tolerant of humans where they are not hunted. Deer are ruminants, consuming an entirely plant-based diet. Their preferred foods include a wide range of wild and cultivated legumes, forbs, fruits and seeds, but deer will also adapt their diet according to the seasonal availability of food plants and browse the current annual growth of tree and shrub leaves, buds, twigs and grass.

Identification of damage: Damage caused by deer is usually easy to identify. Deer tracks are the familiar cloven-hoof type. Because deer do not have upper incisors, they partially tear plants or twigs when they browse them, unlike the clean cut of a woodchuck or rabbit. Deer also tend to feed at the edge of fields and orchards near cover provided by shrubs or forest, or behind hillsides out of view.

Early-season deer damage to corn often consists of pulling the succulent whorl from young plants. Deer target the newest trifoliolate leaves of soybean, leaving bare petioles (leaf stems) behind. The leaves of forage and small grains are also prime foods for deer. Late in the season, deer may also feed on the developing seed of corn, soybean or small grains.



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is the most effective long-term solution to deer damage. The basic guidelines for fencing apply to both electric and non-electric fencing. Deer prefer to go under or through a fence than to jump it if at all possible, but are also capable of jumping fences as high as 10 feet. Fence maintenance is critical in all applications.

For small fields of a few acres or less, temporary fences of plastic or wire mesh will provide some relief from deer, even without electrification. Poly-tape and poly-twine fences are temporary, portable electric fences effective for plots up to about 40 acres with moderate deer pressure. When baited with peanut butter, these fences lure deer into contact with their nose or mouth, and the shock teaches deer to avoid fenced areas.

Deploying two separate lines of fencing running parallel to one another creates a 3-D effect that deters deer from jumping even short fences by exploiting their poor depth perception. Poly-tape and poly-twine fences have a life expectancy of about 20 years, and should be removed at the end of each growing season and stored indoors during winter. High tensile or woven wire fences a minimum of 6 feet tall are required to exclude deer from large fields or orchard blocks.

Putting trunk guards on young trees will help prevent future damage from deer and other species like rabbits. You can also protect young trees from buck rubs by wrapping trunks with plastic or paper tree wraps. Be sure to occasionally loosen wraps to avoid girdling and replace wraps to avoid moisture build up or insect infestation. Young trees can also be protected with wire cages that are supported by stakes.

Repellents: There are a number of deer repellent sprays that can be reasonably effective, including active ingredients like putrescent egg solids, blood meal and capsaicin. Repellents should be applied prior to or at the first sign of deer damage. They eventually wash off with rain, thus require frequent re-application. Repellents are generally more practical when protecting small areas such

A "buck rub" caused by bucks rubbing their antlers against the trunks of trees potentially, causing damage..

Deer damage fruit trees when bucks rub their antlers against the trunks of trees, especially young trees in early fall, or strip buds and break terminal branch tips when browsing. Deer can also cause direct crop damage by consuming tree fruits or small fruit.

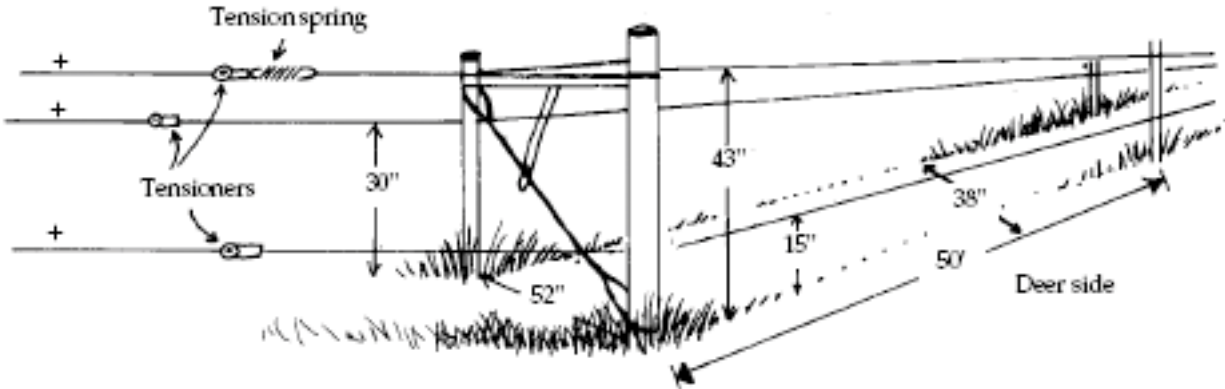
Simply observing the signs that a deer is present in a field does not mean deer were the primary cause of damage. This is especially true of raccoon or turkey damage to corn. Deer often will visit sites damaged by raccoons or turkeys, and damage caused by raccoons can be incorrectly attributed to deer since the physical signs left by raccoons can be overlooked whereas deer sign is usually conspicuous.

Management strategies

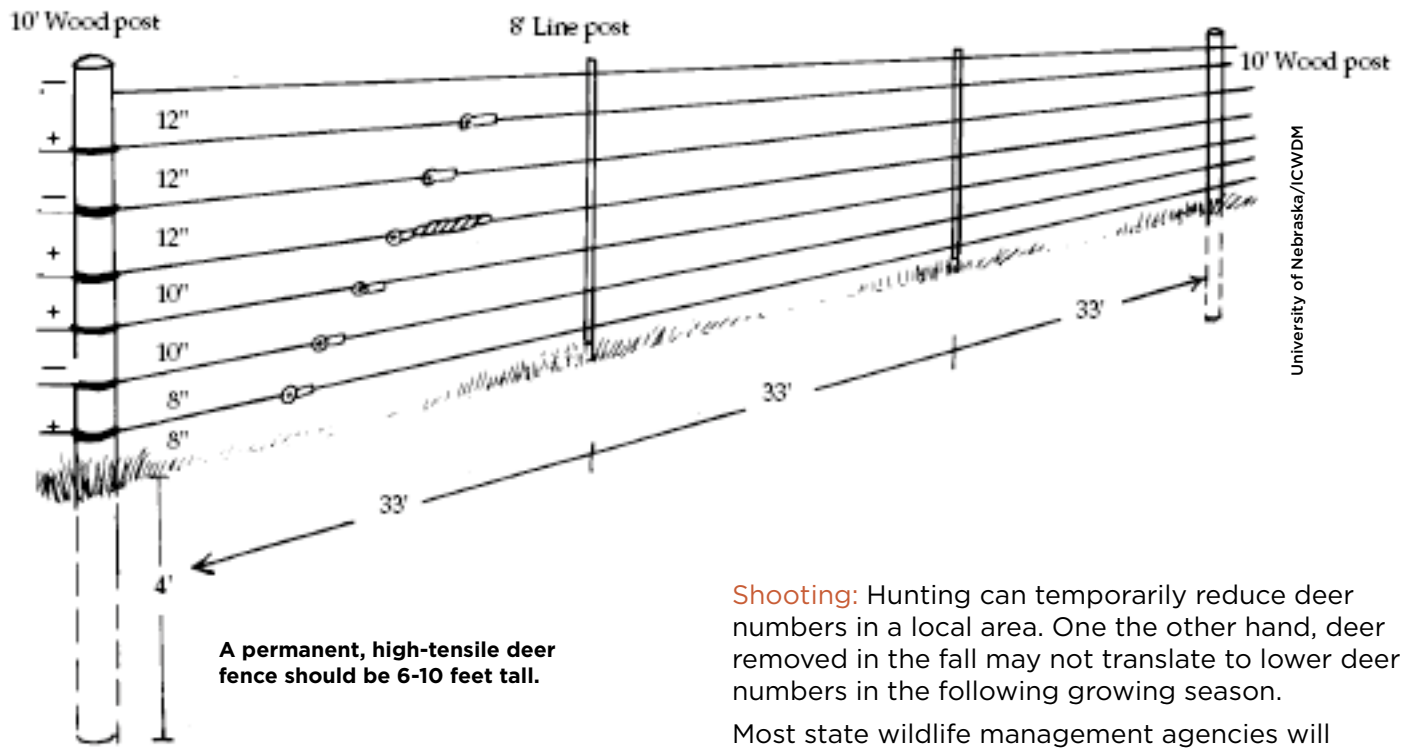
Legal status: State-protected game animal.

No single management method to prevent deer damage works all the time or in all settings. Generally, multiple management methods should be combined so that one method enhances the effects of another.

Exclusion: Where deer are abundant or crops are especially valuable, electric or non-electric fencing



A 3-D deer fence can be constructed using temporary or more permanent materials. 3-D fences should be baited to improve effectiveness.



as landscaping, and less practical for production agriculture.

There are two kinds of deer repellents—contact and area. Apply contact repellent directly to the plants; deer are repelled by the taste. Caution: Contact repellents can make the taste of forage unpleasant and should not be used on vegetation that will be consumed by humans. Area repellents act on deer by odor and are applied on or near the plants you want to protect. Area repellents can be used to protect crops for human consumption because the repellent does not need to be sprayed directly on the plant.

Harassment: Deer can be dispersed from an area with noise-making devices such as pyrotechnics and propane cannons. Deer become used to noise relatively quickly, and therefore the benefits of harassment are likely brief. One of the keys to success with frightening devices is to take action at the first sign of a problem. It is difficult to break the behavioral patterns of deer once established.

Recent studies indicate high rates of success using dogs to help keep deer from entering crop areas. In the trials, specific measures were taken to keep the dogs contained. An electronic containment system, or invisible fence, was also used to confine the dogs to the field. The study recommends using dogs specifically bred for herding, such as Australian shepherds, blue heelers and border collies. To better ensure the dogs would be in the vicinity of deer, researchers provided the dogs with houses, shade structures, self-feeders and water. There are food safety implications of having dogs in production fields that should be carefully considered.

Shooting: Hunting can temporarily reduce deer numbers in a local area. On the other hand, deer removed in the fall may not translate to lower deer numbers in the following growing season.

Most state wildlife management agencies will issue permits to allow deer to be shot and killed outside the hunting season when damage exceeds a certain threshold. Shooting a few deer will reinforce harassment efforts in addition to reducing the local deer population. It is uncommon for states to issue these permits during regular hunting seasons when deer can legally be harvested with a hunting license. It is very important to consult with the appropriate state agency for details, and regulations vary within and between states.

Considerations

White-tailed deer are an iconic species in this country and a highly-prized game species. Deer hunting is important socially and for state economies. State wildlife agencies are structured to conserve and promote hunting of deer. Harvesting of deer to protect property will be authorized in many cases by the state wildlife agencies, but is often also scrutinized by the public.

The conflicts between a highly valued public resource like deer and agriculture can be complicated. Deer cannot be simply eliminated when deer conflict with a landowner's use. On the other hand, a landowner cannot be expected to bear the entire burden of providing for deer without an avenue for damage relief. A combination of herd control through hunting and a reasonable effort to control damage through non-lethal means can serve the needs of all. Wildlife damage to crops and livestock does not always result in a significant economic loss, and producers should consider damage thresholds or tolerance when implementing control measures.

Directory of Midwest Wildlife Management Agencies

Information from February 2019.

Illinois

Department of Natural Resources: (618) 435-8138
www.dnr.illinois.gov
USDA APHIS Wildlife Services: (217) 241-6700

Indiana

Department of Natural Resources: (317) 232-4102
www.in.gov/dnr
USDA APHIS Wildlife Services: (765) 494-6229

Iowa

Department of Natural Resources: (515) 725-8200
www.iowadnr.gov
USDA APHIS Wildlife Services: (573) 449-3033

Kansas

Department of Wildlife, Parks and Tourism:
(620) 672-5911 www.ksoutdoors.com
USDA APHIS Wildlife Services: (785) 537-6855

Michigan

Department of Natural Resources: (517) 284-6057
www.michigan.gov/dnr
USDA APHIS Wildlife Services: (517) 336-1928

Minnesota

Department of Natural Resources: (651) 296-6157
www.dnr.state.mn.us
USDA APHIS Wildlife Services: (651) 224-6027

Missouri

Department of Natural Resources: (800) 361-4827
www.dnr.mo.gov
USDA APHIS Wildlife Services: (573) 449-3033

Nebraska

Department of Natural Resources: (402) 471-2363
www.dnr.nebraska.gov
USDA APHIS Wildlife Services: (402) 434-2340

North Dakota

Game and Fish Department: (701) 328-6300
www.gf.nd.gov
USDA APHIS Wildlife Services: (701) 355-3300

Ohio

Department of Natural Resources: (800) 945-3543
www.ohiodnr.gov
USDA APHIS Wildlife Services: (614) 993-3444

South Dakota

Game Fish and Parks: (605) 223-7660 www.gfp.sd.gov
USDA APHIS Wildlife Services: (701) 355-3300

Wisconsin

Department of Natural Resources: (888) 936-7463
www.dnr.wi.gov
USDA APHIS Wildlife Services: (608) 837-2727

Acknowledgments and additional resources

Visit our Wildlife Management website for additional fact sheets on managing other wildlife

and for more resources: bit.ly/wildlife-mge

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U.S. Fish and Wildlife Service <https://www.fws.gov/offices/>

Your state's department of natural resources or similar agency.



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

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