
Dean Birch

Rhode Island Department of
Environmental Management

Division of Fish & Wildlife

Reducing Deer Damage in Your Garden

RIDEM

Introduction

In the early 1900's, the white-tailed deer population totaled less then 500,000 in the entire country. Today, the number of deer is growing, and there are close to 15 million deer in the United States. While it has been a great success story for white-tailed deer, this increased population has resulted in increased human interactions with deer. For many homeowners, gardeners, landscapers, and farmers, these conflicts often result in unsightly and costly damage to crops and decorative plants. This damage has become especially problematic in northeastern states, where prime deer habitat continues to grow with the development of suburban landscapes.

Feeding Habits

The best way to protect your plants is to first become familiar with the feeding habits of deer in your area. Deer may eat more than 500 different species of plants, but tend to be more selective. Deer will expand their foraging area when their preferred food becomes scarce. They may also develop a preferred taste for your ornamentals. This usually occurs in late winter and early spring, when snow cover reduces the availability of their natural foods and their fat reserves are depleted. Under these circumstances, deer will browse even the most resistant plants rather than starve. Since deer have small home ranges, they may become habituated and develop a preference for the fertilized gardens, flowers, shrubs, or trees on your property, rather than natural vegetation in the woods. Deer may also change their habits over time and may suddenly begin eating a plant that they avoided in the past.

What are my options to manage deer damage?

There are many different deer damage management options, which may be used individually or in any combination to control deer damage on your property. It will often require constant effort on your part and a variety of methods to achieve best results.

Learning to coexist with deer (and other wildlife) is part of life when choosing to live in rural and suburban Rhode Island. Remember, wild animals are just trying to survive in our human-dominated landscape. Gardens look like a welcome free buffet to a hungry critter!

You can minimize deer damage by using these methods:

- Avoid planting preferred food items of deer in landscaping
- Planting native plants
- Using Repellents
- Constructing Physical barriers (netting and fencing)
- Allowing hunting on your property

What's Right for You?

When considering the deer management strategy that is best for you, ask yourself the following questions:

- How much damage are you experiencing?
- How much damage can you tolerate?
- Are you protecting established plants or purchasing new ones?
- What will the replacement cost be for established plants?
- Keeping in mind that unmanaged deer populations can double in 3-5 years, how much are you willing to spend on deer control?
- What other problems are you concerned about relating to deer, such as tick-borne diseases and auto strikes?

As you read about different deer deterrent methods, keep in mind what types of plants you are trying to protect. Planting least-preferred plants and native plants, and using repellents work best to prevent deer from using new plants as a food source. However, it may take physical barriers, fencing, and hunting pressure to prevent deer from revisiting well-established food sources such as hedges and trees.

General Tips for Avoiding Deer Damage

Protect young plants and new plantings from deer: If you are growing young plants or new plantings, take extra steps to protect them with repellents, netting, or fencing. All young and new plants are at risk from deer damage. Tender young shoots are irresistible to deer and are less likely to grow back than shoots on mature plants. Even if the plant species is generally deer resistant, it may still be attractive to deer in its early stages or as new shoots appear.

Fertilizer makes plants attractive to deer: Heavy applications of nitrogen based fertilizers are known to make plants more palatable to deer. Try to limit fertilizer application to only what is necessary for plant health. Protect newly purchased plants with repellents, netting, and fencing.

Avoid planting "preferred" deer food items: These are species of trees and shrubs often eaten and damaged by deer. If you plant these species, be prepared to fence and protect them from deer damage.

When possible, use plants less preferred by deer: Deer can be deterred from gardens and landscaping by plants deer find unpalatable. This may be an inexpensive way to prevent significant damage to the beauty of your flowers and garden. Many native plants are naturally deer-resistant, and are an excellent choice for not only aesthetics, but also for their value to birds, pollinators, and other wildlife! In winter, woody plants may still be susceptible to damage and require protection.

Methods for Reducing Deer Damage

Homemade Repellants

Homemade repellents can be effective and affordable. Repellents should be applied before deer become habituated to plants and reapplied regularly. Repellents work best when damage is low. Success with homemade repellents is variable and may be of little help during late winter and early spring, when deer fat reserves are depleted. Repellents can be applied by hand with a low pressure garden sprayer available at most garden centers. Note that deer can get used to repellants. Try switching up your repellants and combining methods detailed in this packet!

Garlic Spray – Makes 1 quart

- 4 eggs
- 2 oz. red pepper sauce
- 2 oz. chopped garlic
- Add just under 1 quart of water

Stir thoroughly and strain. 1 quart is enough for 16 bushes for one week.

Sour Milk Repellent – Makes 1 gallon

- 1 egg
- ½ cup milk
- Mix with 1 tsp. cooking oil
- 1 tbp. dish detergent
- 1 gallon of water

Spray on plants, repeat after rain.

Hot Pepper Spray – Makes 1 gallon

- 2 tsp. hot pepper
- 1 tsp. liquid dish soap
- 1 tsp. garlic powder
- 1 gallon of water

Spray on plants, repeat after rain.

Soap Sachet

Place a bar of soap made with tallow fatty acid in a nylon sock or cheesecloth and hang from targeted bushes and shrubs.

Hair Sachet

Place unwashed cut hair (from a local barber) in a nylon sock or cheesecloth and hang from bushes, trees, etc.

Dryer Sheet

Dryer sheets can be sprayed with repellent and attached to stakes surrounding targeted plants.

Methods for Reducing Deer Damage

Commercial Repellants

When you are selecting a commercial repellent, you may choose an odor or taste-based repellent. Choose an agent with a surfactant to ensure that the repellent sticks to your plants. Organic repellents with an active ingredient of urine, putrescent egg solids, dried blood or fish oil are effective. Other deer repellents have active ingredients such as milorganite.

Repellents may also be professionally applied. Professionals may apply organic, inorganic, or a variety of different types of repellents to your garden. Several pest management companies in Rhode Island offer this service, some with written guarantees. Repellents are generally used for plants which are not intended for human consumption. Fences may be more practical for protection of vegetable gardens or other food crops.

NOTE: If deer are faced with starvation, particularly in late winter, they will eat a plant with repellent applied rather than starve to death.

Physical Barriers

Fences may be wire, plastic, or electric. Fences must be at least 8 feet high to keep deer out completely. The bottom of the fence must be close to or in contact with the ground, as deer prefer to crawl under fences rather than jump over them.

Other types of physical barriers include netting to cover individual plants. This method is inexpensive, but may be somewhat unsightly. Netting is most practical for ripening berry bushes and fruit-bearing trees and can be removed at other periods or time. The netting must be pulled taut and should not be touching the leaves of the plant. It should reach to 8 feet and encircle the plant. This method is relatively inexpensive and effective for protecting plants.

NOTE: Netting can pose a hazard to songbirds and other backyard wildlife if installed incorrectly. Mesh should be taut and be secured to the ground. Do not leave excess mesh gathered at the bottom of your plant enclosure. This poses an entanglement risk. Be sure that there are no gaps where smaller animals can enter.

Plastic 2” x 2” fencing is another popular option. It is virtually impact resistant, unobtrusive, and relatively inexpensive. These fences must be at least 8 feet tall and be in contact with the ground. They must be erected so that the fence is very taut – otherwise, deer will push through. This is a preferred option in vegetable gardens.

Another option for high value crops or ornamental plants is electric fencing. These fences are very good at repelling deer, although they are expensive. Few suburban homeowners decide to utilize electric fencing for their property.

Fencing may be the only guaranteed solution to nuisance deer problems and is more often used for large areas where specific attention to individual plants is not a possibility.

Methods for Reducing Deer Damage

Scare Tactics

Scare tactics frighten the deer away in order to prevent them from damaging plants. Outdoor pets, such as dogs, may also frighten deer away from the garden.

- Scarecrows
- Yard lights
- Playing the radio
- Shiny objects, such as pie plates and pinwheels
- Motion-activated water sprinklers

These strategies work for a very short amount of time. Deer may become habituated to these signals and may lose their fear over time, or change their habits to only be active at night. It is best to vary and use scare tactics for short durations, such as when protecting ripening plants. The deer learn that there is no physical harm and become familiar with the stimuli. By varying stimuli, you may be able to keep deer wary of these disturbances.

Hunting

Hunting is an effective method of deer population control, which results in fewer deer as a long term solution. Hunting is highly regulated in the state of Rhode Island by DEM's Division of Fish and Wildlife. Archery, shotgun, or muzzleloader hunting may be allowed on your property. In Rhode Island, hunting is allowed on private land in deer season with the appropriate licensing and written permission. The Division of Fish and Wildlife can suggest ways to encourage properly licensed hunters to hunt your property during the deer season. Current RIDEM hunting regulations are available in the Hunting and Trapping Abstract (available at DEM offices, sporting goods stores, and online).

In Rhode Island, discharge of a firearm within 500 feet of an occupied dwelling is prohibited (unless permission is granted); and archery deer hunting, and discharge of a bow within 200 feet of an occupied dwelling is prohibited (unless permission is granted). Individual town ordinances may be more restrictive. Landowners who allow hunters to hunt on their property, without charging the hunter, cannot be held liable (*RIGL 32-6-3*).

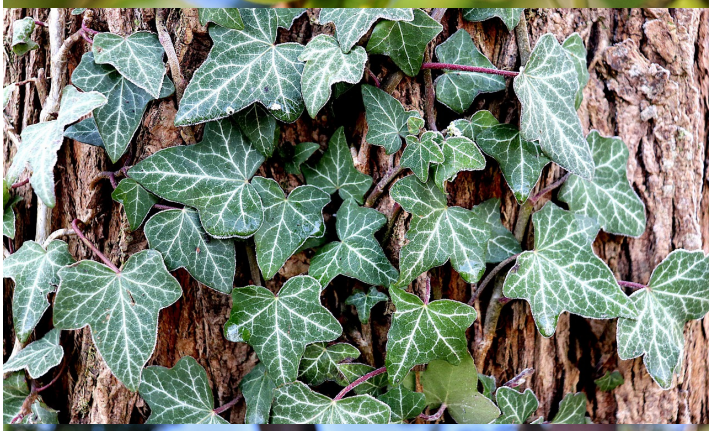
Deer Damage Permit

A deer damage permit is another form of management in which landowners may lethally remove a specified number of deer. A deer damage permit may be obtained for your property if deer are causing significant damage to crops and trees, and the landowner can demonstrate they have attempted deterrence and that there is no practical alternative to shooting the deer. An application is required to RIDEM's Division of Agriculture and Forest Environment. Most deer damage permits are approved for commercial farms. It may not be possible for private gardeners to obtain deer damage permits on small lots, due to firearm discharge regulations of the state of Rhode Island. Permits are issued on a case-by-case basis. For more information, call (401) 222-2781, extension 2774502.

List of Plants Often Damaged By Deer

Common Name	Scientific Name
American aborvitae	*Thuja occidentalis*
Apples	*Malus spp.*
Atlantic white cedar	*Chamaechyparis thyoides*
Balsam fir	*Abies balsamea*
Cherries	*Prunus spp.*
Crocus	*Crocus spp.*
Daylily	*Hemerocallis spp.*
Eastern redbud	*Cercis canadensis*
English ivy	*Hedera helix*
European mountain ash	*Sorbus aucuparia*
Evergreen azaleas	*Rhododendron spp.*
Fraser fir	*Abies fraseri*
Hardy geranium	*Geranium endressi*
Hollyhocks	*Alcea spp.*
Hosta	*Hosta spp.*
Hybrid tea rose	*Rosa x hybrid*
Impatiens	*Impatiens spp.*
Norway maple	*Acer platanoides*
Plums	*Prunus spp.*
Rhododendrons	*Rhododendron spp.*
Strawberries	*Fragaria spp.*
Tulips	*Tulipa spp.*
Wintercreeper	*Rhododendron spp.*
Yews	*Euonymus fortunei*

Source: *Resistance of Woody Ornamental Plants to Deer Damage,* Cornell University



Deer Resistant Plants

Although there is no such thing as a 'deer proof' plant, the following lists consist of trees, shrubs, and flowers which are commonly considered less likely to be eaten by deer. Certain plants listed may be considered deer deterrent in one area, but may be consumed in other places. Established plants are often the most frequently damaged. If your garden is heavily planted with arborvitae, yew, or rhododendron, you will need to protect them with repellents, netting, or fencing. Otherwise, you may face expensive replacement costs. Remember that sub-species is very important – consult your local garden center before making any purchases, as they should be familiar with sub-species in your area.

Plants marked with a + are native to Rhode Island. Plants marked with a * are native to North America.
Species in red text are not native to North America.

Planting a variety of flowers in your home garden can help support pollinators and other beneficial insects. Supporting insects helps feed a wide variety of wildlife, from birds to salamanders! Native plants are always the best option for our local wildlife.

Be aware that some non-native landscaping plants can spread aggressively into natural areas, competing for space with native plants. When possible, we highly encourage planting native plants to preserve our state's diverse plant populations and improve habitat across our highly fragmented and developed landscape.


Bearberry, Anne Burgess


Trumpet honeysuckle, Krzysztof Ziarnek


Virginia creeper, Bill Barber

Ground Cover & Vines	
Common Name	**Scientific Name**
+ Bearberry	*Arctostaphylos uva-ursi*
+ Christmas fern	*Polystichum acrostichoides*
+ Hay-scented fern	*Dennstaedtia punctilobula*
Lamb's ear	*Stachys byzantina*
Lily of the valley	*Convallaria majalis*
Thyme	*Thymus serpyllum*
* Trumpet honeysuckle ***NOT trumpet vine, which is invasive!**	*Lonicera sempervirens*
+ Virgin's bower	*Clematis viriniana*
+ Virginia creeper	*Parthenocissus quinquefolia*

Deer Resistant Plants

Shrubs	
Common Name	**Scientific Name**
* American andromeda	*Pieris floribunda*
+ American holly tree	*Ilex opaca*
+ Northern bayberry	*Morella pennsylvanica*
Rose of Sharon	*Hibiscus syriacus*
+ Sweet gale	*Myrica gale*
+ Meadowsweet	*Spiraea alba*
+ Steeplebush	*Spiraea tomentosa*
+ Swamp fetterbush	*Eubotrys racemosa*
+ Sweet pepperbush	*Clethra alnifolia*

Trees	
Common Name	**Scientific Name**
+ Box elder	*Acer negundo*
* Colorado blue spruce	*Picea pungens*
+ Eastern red cedar	*Juniperus virginiana*
+ Flowering dogwood	*Cornus florida*
Magnolia	*Magnolia spp.*
+ Sassafras	*Sassafras albidum*
+ Serviceberry	*Amelanchier canadensis*
+ Sweetgum	*Liquidambar styraciflua*
* Washington hawthorn	*Crataegus phaenopyrum*
* White spruce	*Picea glauca*

Sweet pepperbush, Katja Schulz

Swamp fetterbush, Doug McGrady

Sassafras, Katja Schulz

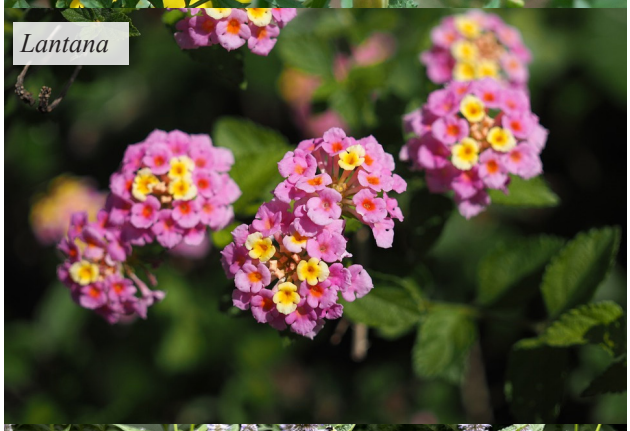
Serviceberry, National Park Service

Deer Resistant Plants

Annual Flowers	
Common Name	**Scientific Name**
Africa daisy	*Dimorphotheca aurentiaca Osteospermum spp.*
Flowering tobacco	*Nicotiana x hybrida*
+ Forget-me-not	*Mysotis laxa*
Hollyhock	*Alcea rosea*
Lantana	*Lantana spp.*
Marigold	*Tagetes spp.*
* Mexican lily	*Beschorneria yuccoides*
Persian shield	*Strobilanthes spp.*
Spider flower	*Cleome spp.*
Strawflower	*Helichrysum spp.*

Perennial Flowers	
Common Name	**Scientific Name**
+ Anise hyssop	*Agastache foeniculum*
Artichoke thistle	*Cynara cardunclus*
+ Bee-balm/Oswego tea	*Monarda fistulosa*
* Black-eyed Susan	*Rudbeckia hirta*
Bleeding heart (Asian)	*Dicentra spectabilis*
* Bleeding heart (wild)	*Dicentra eximia*
+ Blue flag iris	*Iris versicolor*
* Blazing star	*Liatris spp.*


Marigold


Lantana

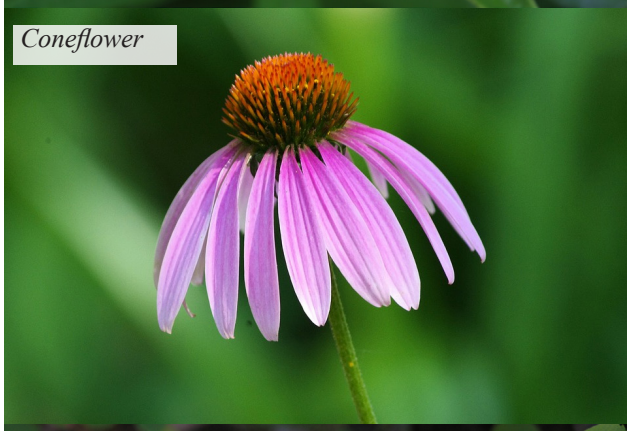

Anise hyssop, Ron Frazier


Bee-balm, Joshua Mayer

Deer Resistant Plants

Perennial Flowers (continued)	
Common Name	**Scientific Name**
+ Butterfly weed	*Asclepias tuberosa*
* Coneflower	*Echinacea purpurea*
Carnation/Pinks	*Dianthus spp.*
Clara Curtis daisy	*Chrysanthemum rubellum*
+ Columbine	*Aquilegia canadensis*
+ Cranesbill	*Geranium carolinianum*
Daffodil	*Narcissus spp.*
Dame's rocket	*Hesperis matronalis*
Dwarf lilac	*Syringa patula*
+ Evening primrose	*Oenothera biennis*
Feverfew	*Tanacetum parthenium*
Golden sedum	*Sedum kamtschaticum*
+ Goldenrod	*Solidago spp.*
Horned violet	*Viola cornuta*
+ Joe-Pye weed	*Eutrochium spp.*
Lavender	*Lavandula spica*
+ Marsh bellflower	*Campanula aparinoides*
+ New England aster	*Symphyotrichum novae-angliae*
Oriental poppy	*Papaver orientale*
Two-row stonecrop	*Sedum spurium*


Butterfly weed, Mary Gannon


Coneflower


Serviceberry, National Park Service


Joe-Pye weed, Liz West

Deer Resistant Plants

Perennial Flowers (continued)	
Common Name	**Scientific Name**
Rose campion	*Lychnis coronaria*
Russian sage	*Salvia yangii*
Scabiosa, pink mist	*Scabiosa columbaria*
Snowmound	*Iberis sempervirens*
+ Trillium	*Trillium erectum*
+ Wild geranium	*Geranium maculatum*

Trillium, Ramin Nakisa

Questions?

Please reach out to our staff with any questions or comments!

Rhode Island Department of Environmental Management
Division of Fish and Wildlife
277 Great Neck Road
West Kingston, RI 02891

For general questions, call our main desk: (401) 789-0281

For questions on deer conservation, management, and hunting, contact:
Dylan Ferreira, Deer Biologist
dylan.ferreira@dem.ri.gov