

Damage to ornamental plants by white-tailed deer (*Odocoileus virginianus*) has increased during the past decade. This increase is attributed to: 1) rising deer populations; 2) human populations shifting to rural and suburban homesites; 3) loss of deer habitat to development; and 4) landowner decisions to prevent deer hunting.

The best approach to control deer damage is an integrated pest management (IPM) plan, which includes careful monitoring of any one, or a combination of the following strategies: population management, fencing, repellents, or vegetation management. An in-depth description of all options is found in Extension bulletin 354, "Controlling Deer Damage in Maryland," available at your local Maryland Cooperative Extension office. This fact sheet will deal with aspects of vegetation management in residential applications.

In the short run, damage to ornamental plants is largely irreversible. Damage, particularly in suburban areas with good-quality deer habitat, probably will increase. However, by

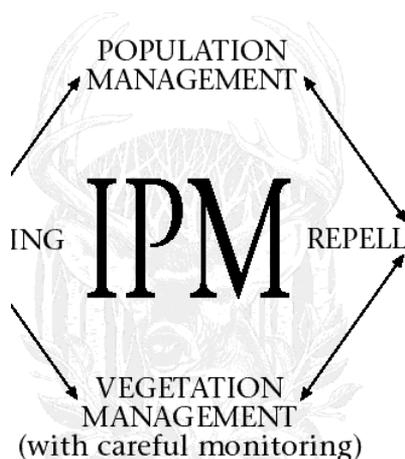
planting ornamentals not favored by deer, landscapers and homeowners can attempt to preserve vulnerable landscapes.

Deer Feeding Habits

Deer feed selectively on fertilized and unfertilized landscape plantings and managed croplands. Costly browsing damage may be reduced or eliminated by planting less-preferred species or by establishing susceptible plants only in protected areas. A few strategies to consider include planting susceptible plants close to the house or in a fenced yard, or planting preferred species inside a protective ring of less-preferred species. Under most circumstances, landscaping based on a knowledge of deer feeding preferences provides an alternative to expensive chemical repellents and unsightly physical barriers.

Whether deer will target a particular plant species or variety depends on their previous habits and nutritional needs, plant palatability, seasonal factors, weather conditions, geographic area, and availability of alternative foods. Deer are creatures of habit, and previous movement patterns or foraging experiences can determine where damage will occur. Also, one plant species may be rarely damaged in one region of the country, but highly preferred in another due to differences in deer pressure and other factors. Examples of species with noted regional differences include holly, white pine, and deciduous magnolias. Therefore, caution must be taken when using plant preference lists from areas outside your own.

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In general, damage from browsing is most severe when snow cover or extreme cold has reduced food availability. Another problem time is early spring when young succulent growth of ornamentals provides attractive browse before other spring growth is available. When food is in short supply, deer will browse even the most undesirable plants. Under such conditions, landscapers should combine other damage control measures with careful plant selection. Information on repellents, physical barriers (fencing), and deer population control are available from the Maryland Cooperative Extension Service and the Maryland Department of Natural Resources Wildlife Division. Ultimately, reducing the deer herd size is the most effective solution.

Plant Damage List

The following list contains many ornamental plants adaptable to Maryland landscapes and notes their susceptibility to deer damage. This information is useful both to select plants that are unlikely to be damaged by deer and to identify those ornamentals that frequently require protection. Four categories were created: *Rarely Damaged*, *Seldom Damaged*, *Occasionally Damaged*, and *Frequently Damaged*. The place-

ment of plants in these categories is based on the experiences of nursery operators, landscape contractors and designers, Maryland Cooperative Extension Service personnel, research staff, and professional horticulturists. The information derives from personal communications, published articles, and unpublished reports. Please note that deer-browsing resistance of a plant species changes according to fluctuations in deer populations, alternative food availability, and environmental factors. No plant is safe under all conditions.

This is an evolving list and any suggestion for additions and changes can be sent to the following address: Fact Sheet 655, Maryland Cooperative Extension Service, 18330 Keedysville Road, Keedysville, MD 21756-1104.

Plants listed in the *Rarely Damaged* category are eaten infrequently by deer and are the best candidates for damage-prone landscapes. Deer sometimes feed on ornamentals listed as *Seldom Damaged*, but the browsing is usually minor and generally does not detract from the shape or attractiveness of the plant. The category *Occasionally Damaged* includes plants that can be severely damaged by deer. Finally, deer prefer ornamentals in the category *Frequently Damaged*. These plants often require physical or chemical protection. Before planting any of the species listed, check to ensure that they suit local climatic and soil conditions.

Rarely Damaged

Botanical Name

Common Name

Trees

<i>Aesculus parviflora</i>	Bottlebrush Buckeye
<i>Amelanchier arborea</i>	Downy Serviceberry
<i>Amelanchier canadensis</i>	Shadbush
<i>Amelanchier laevis</i>	Allegheny Serviceberry
<i>Betula albo-sinensis</i>	Chinese Paper Birch
<i>Betula nigra</i> 'Heritage'	Heritage Birch
<i>Betula papyrifera</i>	Paper Birch
<i>Chamaecyparis pisifera</i>	Japanese Falsecypress
<i>Cryptomeria japonica</i>	Japanese Cedar
<i>Ilex x aquipernyi</i> 'Dragon Lady'	Dragon Lady Holly
<i>Ilex x aquipernyi</i> 'San Jose'	San Jose Holly
<i>Picea pungens glauca</i>	Colorado Blue Spruce
<i>Pinus sylvestris</i>	Scotch Pine
<i>Pseudotsuga menziesii</i>	Douglas Fir

Shrubs and Climbers

<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Asimina triloba</i>	Pawpaw
<i>Berberis</i> spp.	Barberry
<i>Buxus</i> spp.	Boxwood
<i>Caryopteris x clandonensis</i>	Caryopteris
<i>Calastrus scandens</i>	American Bittersweet
<i>Cornus sericea</i>	Red Osier Dogwood
<i>Cephalotaxus harringtonia</i> var. <i>koreana</i>	Japanese Plum-Yew
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Gaultheria procumbens</i>	Creeping Wintergreen
<i>Gaultheria shallon</i>	Shallon
<i>Hibiscus syriacus</i>	Rose of Sharon
<i>Ilex</i> x ' <i>John T. Morris</i> '	John T. Morris Holly
<i>Ilex</i> x ' <i>Lydia Morris</i> '	Lydia Morris Hollies
<i>Leucothoe</i> spp.	Leucothoe
<i>Ligustrum vulgare</i>	European Privet
<i>Pieris japonica</i>	Japanese Andromeda
<i>Rhamnus cathartica</i>	Common Buckthorn
<i>Sambucus canadensis</i>	Blueberry Elder
<i>Sarcococca hookeriana</i> var. <i>humilis</i>	Dwarf Sweet Christmas Box

Annuals, Perennials, and Bulbs

<i>Achillea</i> spp.	Yarrow
<i>Aconitum</i> spp.	Monkshood
<i>Ageratum houstonianum</i>	Ageratum
<i>Allium christophii</i>	Star of Persia
<i>Allium neapolitanum</i>	Daffodil Garlic
<i>Allium ostrowskianum</i>	Lily Leek
<i>Anemone x hybrida</i>	Japanese Anemone
<i>Anemonella thalictroides</i>	Rue Anemone
<i>Anethum graveolens</i>	Common Dill
<i>Aquilegia</i> spp.	Columbine
<i>Aurinia saxatilis</i>	Basket-of-Gold
<i>Antirrhinum majus</i>	Snapdragon
<i>Arabis</i> spp.	Rock-cress
<i>Arisaema triphylum</i>	Jack-in-the-Pulpit
<i>Aubrietia deltoidea</i>	Rock Cress
<i>Bergenia</i> spp.	Bergenia
<i>Ceratostigma plumbaginoides</i>	Plumbago
<i>Cimicifuga racemosa</i>	Snakeroot
<i>Colchicum autumnale</i>	Colchicum
<i>Colchicum speciosum</i>	Colchicum
<i>Consolida ambigua</i>	Larkspur
<i>Convallaria majalis</i>	Lily-of-the-valley
<i>Coreopsis verticillata</i> 'Moonbeam'	Threadleaf Coreopsis
<i>Cyclamen hederifolium</i>	Neopolitan Cyclamen
<i>Dicentra spectabilis</i>	Bleeding Heart
<i>Digitalis</i> spp.	Foxglove
<i>Dryopteris marginalis</i>	Wood Fern
<i>Ecinnacea purpurea</i>	Purple Coneflower
<i>Epimedium</i> spp.	Barrenwort
<i>Euphorbia</i> spp.	Euphorbia
<i>Fritillaria</i> spp.	Fritillary
<i>Galium odoratum</i>	Sweet Woodruff
<i>Gloriosa superba</i>	Glory Lily
<i>Hemmerocallis</i> 'Stella de Oro'	Stella de Oro Daylily

Hesperis matronalis
Hyacinthus orientalis
Lamium maculatum
Lavandula spp.
Linaria vulgaris
Lobularia maritima
Lychnis coronaria
Matteuccia struthiopteris
Narcissus spp.
Nicotiana spp.
Onoclea sensibilis
Osmunda regalis var. *spectabilis*
Pachysandra procumbens
Pachysandra terminalis
Papaver orientale
Pelargonium spp.
Pervoskia atriplicifolia
Ranunculus spp.
Rheum rhabarbarum
Rudbeckia spp.
Salvia spp.
Santolina chamaecyparissus
Scilla spp.
Stachys byzantina
Tagetes spp.
Tanacetum vulgare
Thymus spp.
Tiarella cordifolia
Tropaeolum majus
Yucca spp.

Dame's Rocket
 Hyacinth
 Deadnettle
 Lavender
 Toadflax
 Sweet Alyssum
 Rose Champion
 Ostrich Fern
 Daffodil
 Flowering Tobacco
 Sensitive Fern
 Royal Fern
 Allegheny Spurge
 Japanese Spurge
 Oriental Poppy
 Scented Geranium
 Russian Sage
 Buttercup
 Rhubarb
 Coneflower
 Sage
 Lavender Cotton
 Squill
 Lamb's Ears
 Marigold
 Common Tansy
 Thyme
 Foam Flower
 Nasturtium
 Yucca

Seldom Damaged

Botanical Name

Common Name

Trees

Ammelanchier canadensis
Betula pendula
Cornus florida
Cornus kousa
Crataegus laevigata
Fagus sylvatica
Gleditsia triacanthos
Ilex opaca
Lindera benzoin
Picea abies
Picea glauca
Pinus nigra
Pinus mugo
Pinus resinosa
Pinus rigida
Prunus serrulata
Salix matsudana 'Tortuosa'
Sassafras albidum

Shadbush
 European White Birch
 Flowering Dogwood
 Korean Dogwood
 English Hawthorn
 European Birch
 Honey Locust
 American Holly
 Spicebush
 Norway Spruce
 White Spruce
 Austrian Pine
 Mugo Pine
 Red Pine
 Pitch Pine
 Japanese Flowering Cherry
 Corkscrew Willow
 Common Sassafras

Shrubs and Climbers

<i>Buddleia</i> spp.	Butterfly Bush
<i>Calycanthus occidentalis</i>	California Sweetshrub
<i>Ceanothus</i> spp.	Cheonothus
<i>Choisya ternata</i>	Mexican Orange
<i>Cistus</i> spp.	Rock Rose
<i>Cornus sanguinea</i>	Bloodtwig Dogwood
<i>Daphne</i> spp.	Daphne
<i>Enkianthus campanulatus</i>	Redvein Enkianthus
<i>Forsythia</i> spp.	Forsythia
<i>Hippophae rhamnoides</i>	Sea Buckthorn
<i>Ilex glabra</i>	Inkberry
<i>Jasminum nudiflorum</i>	Winter Jasmine
<i>Juniperus chinensis</i>	Chinese Juniper
<i>Kerria japonica</i>	Japanese Kerria
<i>Kolwitzia amabilis</i>	Beauty Bush
<i>Laurus nobilis</i>	Laurel
<i>Lonicera</i> spp.	Honeysuckle
<i>Mahonia</i> spp.	Grape Holly
<i>Myrica pensylvanica</i>	Bayberry
<i>Nandina</i> spp.	Heavenly bamboo
<i>Osmanthus heterophyllus</i>	Holly Osmanthus
<i>Philadelphus</i> spp.	Mock Orange
<i>Prunus laurocerasus</i>	Cherry Laurel
<i>Ribes</i> spp.	Currant
<i>Spirea</i> spp.	Spirea
<i>Syringa villosa</i>	Late Lilac
<i>Syringa vulgaris</i>	Common Lilac
<i>Viburnum juddii</i>	Judd Viburnum
<i>Viburnum rhytidophyllum</i>	Leatherleaf Viburnum
<i>Viburnum carlesii</i>	Koreanspice Viburnum
<i>Viburnum plicatum</i>	Doublefile Viburnum
<i>Weigela florida</i>	Old Fashion Weigela

Annuals, Perennials, and Bulbs

<i>Agapanthus</i> spp.	Lily-of-the-Nile
<i>Alcea</i> spp.	Hollyhock
<i>Artemisia</i> spp.	Wormwood
<i>Aruncus dioicus</i>	Goat's Beard
<i>Asarum</i> spp.	Ginger
<i>Aster</i> spp.	Aster
<i>Astilbe</i> spp.	Astilbe
<i>Begonia</i> spp.	Begonia
<i>Chrysanthemum</i> spp.	Chrysanthemum
<i>Coreopsis</i> spp.	Tickweed
<i>Crocsmia</i> hybrids	Montbretia
<i>Delphinium</i> spp.	Delphinium
<i>Helleborus niger</i>	Christmas Rose
<i>Helleborus orientalis</i>	Lenten Rose
<i>Hypericum</i> spp.	St. John's-wort
<i>Iris</i> spp.	Iris
<i>Kniphofia</i> spp.	Red Hot Poker
<i>Lantana</i> spp.	Lantana
<i>Lilium tigrinum</i>	Tiger Lily
<i>Lobelia</i> spp.	Lobelia
<i>Lupinus</i> spp.	Lupine
<i>Mentha</i> spp.	Mint

<i>Nepeta</i> spp.	Catmint
<i>Ophiopogon japonicus</i>	Dwarf Mondo Grass
<i>Oxalis</i> spp.	Sorrel
<i>Potentilla</i> spp.	Potentilla
<i>Romneya coulteri</i>	California Tree Poppy
<i>Tiarella</i> spp.	Foamflower
<i>Umbellularia californica</i>	California Laurel
<i>Veronica</i> spp.	Veronica
<i>Zinnia</i> spp.	Zinnia

Occasionally Damaged

Botanical Name	Common Name
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Trees

<i>Abies concolor</i>	White Fir
<i>Abies fraseri</i>	Fraser Fir
<i>Acer griseum</i>	Paperbark Maple
<i>Acer palmatum</i> /green-leaved only	Japanese Maple
<i>Acer rubrum</i>	Red Maple
<i>Acer saccharinum</i>	Silver Maple
<i>Acer saccharum</i>	Sugar Maple
<i>Aesculus hippocastanum</i>	Horse Chestnut
<i>Chamaecyparis thyoides</i>	Atlantic White Cedar
<i>Juniperus virginiana</i>	Eastern Red Cedar
<i>Larix decidua</i>	Larch
<i>Liquidambar styraciflua</i>	Sweet Gum
<i>Michelia figo</i>	Banana Shrub
<i>Metasequoia glyptostroboides</i>	Dawn Redwood
<i>Pseudolarix kaempferi</i>	Golden Larch
<i>Pyrus calleryana</i>	Callery Pear
<i>Quercus alba</i>	White Oak
<i>Quercus prinus</i>	Chestnut Oak
<i>Quercus rubra</i>	Red Oak
<i>Rhus typhina</i>	Staghorn sumac
<i>Robinia</i> spp.	Locust
<i>Salix</i> spp.	Willow
<i>Syringa reticulata</i>	Japanese Tree Lilac
<i>Tilia americana</i>	American Linden
<i>Tilia cordata</i>	Littleleaf Linden

Shrubs and Climbers

<i>Bambusa</i> spp.	Bamboo
<i>Campsis radicans</i>	Trumpet Vine
<i>Chaenomeles speciosa</i>	Japanese Flowering Quince
<i>Comus racemosa</i>	Panicked Dogwood
<i>Cotinus coggygria</i> /not purple-leaved	Smoke Bush
<i>Cottoneaster</i> spp.	Cottoneaster
<i>Hamamelis</i> spp.	Witch Hazel
<i>Hydrangea arborescens</i>	Smooth Hydrangea
<i>Hydrangea anomala petiolaris</i>	Climbing Hydrangea
<i>Hydrangea paniculata</i>	Panicle Hydrangea
<i>Ilex crenata</i>	Japanese Holly
<i>Lonicera x heckrottii</i>	Goldflame Honeysuckle
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Pyracantha coccinea</i>	Firethorn

<i>Rhododendron</i> spp./deciduous tree forms	Rhododendron
<i>Rosa multiflora</i>	Multiflora Rose
<i>Rosa rugosa</i>	Rugosa Rose
<i>Spirea x bulmada</i> 'Anthony Waterer'	Bumald Spirea
<i>Spirea prunifolia</i>	Bridalwreath Spirea
<i>Syringa x persica</i>	Persian Lilac
<i>Wisteria floribunda</i>	Japanese Wisteria
<i>Viburnum opulus</i>	European Cranberry Bush

Frequently Damaged

Botanical Name

Common Name

Trees

<i>Abies balsamea</i>	Balsam Fir
<i>Acer palmatum</i> /red-leaved varieties	Japanese Maple
<i>Acer platanoides</i>	Norway Maple
<i>Cedrus atlantica</i>	Atlas Cedar
<i>Cercis canadensis</i>	Redbud
<i>Chionanthus virginicus</i>	Fringe Tree
<i>x Cupressocyparis leylandii</i>	Leyland Cypress
<i>Fraxinus excelsior</i>	European Ash
<i>Ilex</i> 'Nellie Stevens'	Nellie Stevens Holly
<i>Kuelreutaria paniculata</i>	Goldenrain Tree
<i>Magnolia soulangeana</i>	Saucer Magnolia
<i>Malus</i> spp.	Apple and Crabapple
<i>Prunus</i> spp.	Cherry and Plum
<i>Pinus strobus</i>	White Pine
<i>Pyrus</i> spp.	Pear
<i>Thuja occidentalis</i>	Arborvitae
<i>Tsuga</i> spp.	Hemlock

Shrubs and Climbers

<i>Chaenomeles japonica</i>	Quince
<i>Clematis</i> spp.	Clematis
<i>Cornus mas</i>	Cornellian Cherry Dogwood
<i>Euonymus alatus</i>	Winged Euonymus
<i>Euonymus fortunei</i>	Wintercreeper
<i>Hydrangea macrophylla</i>	Bigleaf Hydrangea
<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea
<i>Ilex cornuta</i>	Chinese Holly
<i>Ilex x merserveae</i>	Merserve Holly
<i>Ilex verticillata</i>	Common Winterberry
<i>Kalmia latifolia</i>	Mountain Laurel
<i>Rhododendron austrinum</i>	Florida Azalea
<i>Rhododendron nudiflorum</i> (<i>periclymenoides</i>)	Pinksterbloom Azalea
<i>Rhododendron vaseyi</i>	Pink Shell Azalea
<i>Rhododendron</i> hybrids	Evergreen Azaleas & Rhododendron
<i>Rosa</i> hybrids	Hybrid Roses
<i>Rubus</i> spp.	Blackberry & Raspberry
<i>Sorbus aucupatia</i>	European Mountain Ash
<i>Syringa patula</i>	Manchurian Lilac
<i>Taxus</i> spp.	Yew
<i>Vaccinium corymbosum</i>	Highbush Blueberry

Annuals, Perennials, and Bulbs

<i>Aegopodium podagaria</i>	Bishop's Weed
<i>Aquilegia</i> spp.	Columbine
<i>Athyrium niponicum</i> var. <i>pictum</i>	Japanese Painted Fern
<i>Cherianthus</i> spp.	Wallflower
<i>Hedera helix</i>	English Ivy
<i>Helianthus</i> spp.	Sunflower
<i>Hosta</i> spp.	Hosta
<i>Hemerocallis</i> spp. & hybrids	Daylily
<i>Iberis sempervirens</i>	Candytuft
<i>Lilium</i> spp.	Lily
<i>Matthiola incarna</i>	Stock
<i>Pelargonium</i> spp.	Geranium
<i>Polygonatum biflorum</i>	Solomon's Seal
<i>Ranunculus asiaticus</i>	Buttercup
<i>Trillium</i> spp.	Trillium
<i>Vinca minor</i>	Periwinkle
<i>Viola</i> spp.	Pansies & Violas

References

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