

The Most Deer Resistant Plants for Central NC



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<http://go.ncsu.edu/managingdeer>

Review these slides and explore online resources to learn more about:

- **Repellents**
- **Deer biology**
- **Fencing**
- **More plants!**



Vinca

Deer resistant summer annual

Minimizing Deer Damage

- Understanding Deer Behavior
- Repellents and Fencing
- **Deer Resistant Plants**
- Deer Favorites



Understanding Deer Behavior

■ Browsers, not grazers

- Prefer woody and broadleaf plants, not grasses
- Reach up to 6'

■ Creatures of habit

- Previous damage often indicates future damage potential
- Follow established trails



Browse line on *Thuja*

Deer Behavior

- **Prefer woodland edges (edge habitat)**
 - Thrive in urbanizing areas
 - No predators
 - Home range ~ 1 square mile
 - Want cover (woods) close by when feeding
- **Acute sense of smell**



Landscape damage more common in wooded communities

Deer Behavior

No sharp upper teeth

- Jerk stems – ragged, torn edges
- May strip leaves from stems
- May pull up newly planted annuals, perennials



Deer Behavior

Picky Eaters

- Prefer to eat some plant species over others
- Favor irrigated and fertilized plants and crops!
- Love flower buds and tender new growth

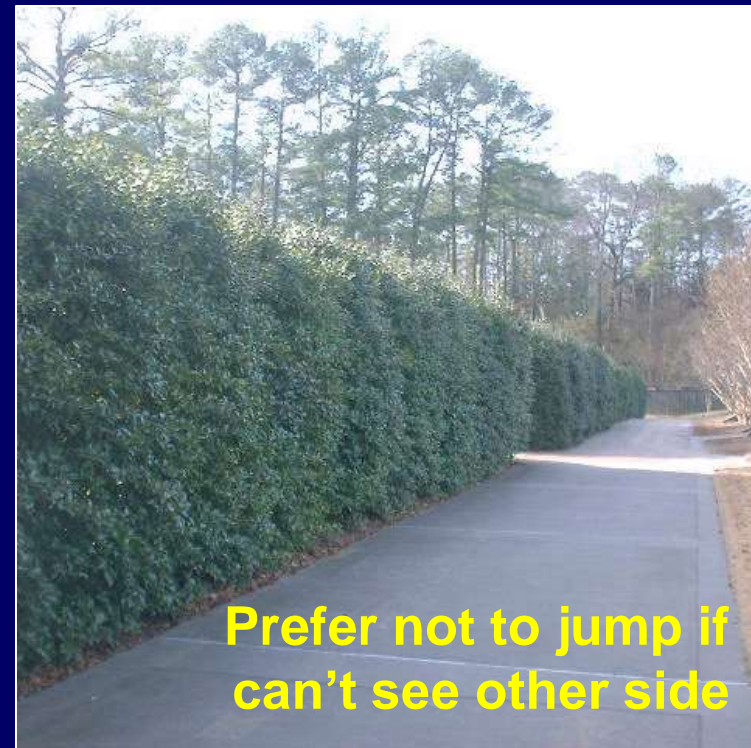


Deer will happily pick around plants to find their favorites!

Deer Behavior

Deer Can Jump!

- Especially when chased
- At least 9' high, 20' span
- Don't like to if they cannot see landing area – poor depth perception
- Prefer to go around or under rather than over



Deer Behavior

Use knowledge of behavior to minimize damage

- Fencing
- Repellents
- Landscape Design
- Plant Selection



Deer Paradise:

Lush, irrigated, fertilized landscape full of their favorite flowers and shrubs

Relatively open but with cover nearby

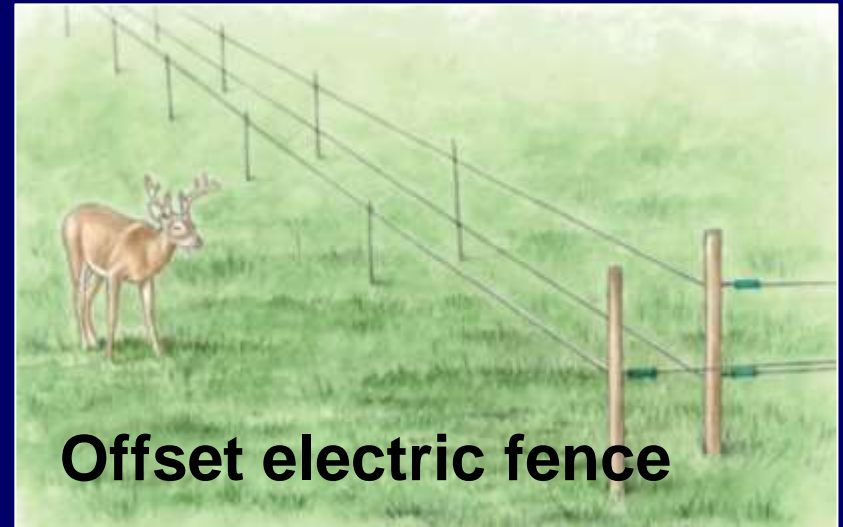
Deer Fencing

- **Most effective method but most expensive**
 - **Best in high pressure areas**
 - Vegetables and fruit
 - Must provide complete enclosure – will search for openings!
- **At least 8' tall if not electric**
 - Well anchored at bottom!
- **Lower fences** – plant shrubs on inside so deer can't see landing area
- **Less likely to jump solid fence?**



Fencing

- **Electric most effective** – deer prefer to climb under rather than jump over
- **Offset and slanted designs** take advantage of poor depth perception
- **Design diagrams:**
 - Controlling Deer Damage
 - Wildlife Damage Mgmt



Deer Repellents

- Repel by smell or taste
- Spray on plants, ground level to 6'
- **Must reapply often** (every few weeks to months)
- Work best when **applied before deer** problems become serious!
- **Alternate products for best results**
- See webpage links for details



Table 1. Popular Deer Repellents.

ActiveIngredient	Mode of Action	Use on Edibles	Longevity	Trade Names
Salts/fatty acids of ammonia	Odor	Yes	Up to 4 weeks depending on the amount of rainfall	-Hinder -Deerbusters Deer and Rabbit Repellent
Garlic oil	Odor	Yes	Reapply after a heavy rain	-GD Deer and Insect Repellent -Garlic Barrier
Capsaicin Castor Oil	Taste	Yes	Up to 30 days depending on the amount of rainfall	-Miller's Hot Sauce -Scoot Deer
Predator Urines	Odor	Not Directly	± 30 days	-Coyote, wolf urine—many products available
Fish and/or beef by-products	Odor/taste	Not within 8 weeks of consumption	± 30 days during dormant season, every 10 to 14 days during the growing season	-Bobbex -Deerbusters Plant Growth Stimulant
Putrescent egg-based products	Odor	No	1 to 3 months or more	-Deer Away BGR -Rejex -It Deer Chaser
Thiram fungicide-based products	Taste/odor	No	1 to 3 months or more	-Bonide Chew-Nott -Deerbusters Deer Repellent and Turf Fungicide -Shotgun Deer & Rabbit Repellent
Blood-based products	Taste/odor	No	1-3 months or more	-Plantskydd -Repellex
Denatonium benzoate or bitrex	Taste	No	1-3 months or more	-Tree Guard -Ropel, Repel
Egg, garlic, fish oil, hot pepper, bitrex or some combination	Taste/odor	No No No No No No Yes Yes	1-3 months or more	-Deerbusters Deer I -Deer Stopper II -Deer Off -Bobbex -Liquid Fence -MGD Deer Repellent -Not Tonight Deer -Deer Blocker

Using Commercial Deer Repellents . . .
Maryland Extension

An Overview and Cost Analysis of Deer Repellents . . . Alabama Extension

Table 7. Cost Analysis of Common Commercial Deer Repellents

Repellent Name	Cost/100 sq. ft. area	Cost/100 sq. ft. area/year
Bobbex	\$3.27/ 100 sq. ft.	\$19.62/ 100 sq. ft.
Buck Off	\$1.09/ 100 sq. ft.	\$13.08/ 100 sq. ft.
Deer Off Squirrel, Rabbit, & Deer Repellent	\$0.91/ 100 sq. ft.	\$5.46/ 100 sq. ft.
Deer Out	\$0.25/ 100 sq. ft.	\$1.00/ 100 sq. ft.
Deer Pharm	\$0.09/ 100 sq. ft.	\$2.16/ 100 sq. ft. **
Deer Scram Deer & Rabbit Repellent	\$1.18/ 100 sq. ft.	\$14.16/ 100 sq. ft.
Deer Stopper Plotsaver Deer Barrier System Kit	\$1.00/ 100 sq. ft.	\$4.00 / 100 sq. ft.
Deer Stopper Repellent	\$0.31/ 100 sq. ft.	\$3.72/ 100 sq. ft.
Deerbusters Brand Deer Repellent	\$0.55/ 100 sq. ft.	\$2.20/ 100 sq. ft.
Hinder	\$0.86/ 100 sq. ft.	\$10.32/ 100 sq. ft.
Liquid Fence Deer & Rabbit Repellent	\$0.39/ 100 sq. ft.	\$5.07/ 100 sq. ft.
Miller Hot Sauce	\$19.93/ 100 sq. ft.	\$518.18/ 100 sq. ft.
No Deer Zone*	\$5.99/ 100 sq. ft.	\$23.96/ 100 sq. ft.
Plant Pro-Tec Repellents	\$17.55/ 100 sq. ft.	\$35.10/ 100 sq. ft.
Plantskydd	\$0.35/ 100 sq. ft.	\$1.40/ 100 sq. ft.
Shake-Away Deer Repellent Granules	\$2.49/ linear ft.	\$59.76/ linear ft.
Spotrete F	\$0.09/ 100 sq. ft.	\$1.07/ 100 sq. ft.
Tree Guard*	\$4.80/ 100 sq. ft.	\$14.40/ 100 sq. ft.

*Indicates ready-to-use products

**Calculated for reapplication every 2 weeks

Based on 2010 Pricing

Zoning the Landscape

Divide landscape into zones based on management intensity

High Management Zone

- Typically area closest to home
- Grow plants deer most likely to damage
- Enclose with fencing or protect with frequent applications of repellents



Zoning the Landscape

Low Management Zone

- Little actively done to reduce feeding
- Plant only deer resistant species
- Plant diverse range of species
- Essential next to woods



Deer Resistant Plants

- **Factors that increase feeding pressure**
 - Population density
 - Season
 - Greatest pressure fall and early spring
 - New growth in spring prone to damage
 - Weather
 - Food availability elsewhere within range



Deer Resistant Plants

- **Deer Resistant ≠ Deer Proof!**
- Deer resistant plants are those deer prefer not to eat
 - May nibble but usually will not demolish
- Will eat most anything rather than starve!
- Feeding preferences vary from season to season and regionally



Juvenile deer more likely to taste a wide range of plants than adults

Deer Resistant Plants

Some Common Characteristics

- Thorny stems
- Prickly or hairy leaves
- Tough, fibrous leaves
- Bitter taste
- Strong aromatic scent, herbs
- Ornamental grasses



Panicum 'Northwind'

Deer rarely bother
ornamental grasses

Deer Resistant Plants

Recommendations based upon:

- Personal observation
- Gardener/landscaper feedback
- Published lists – deer don't read these!

Focus:

- Evergreen shrubs
- Perennials
- Adapted to central NC



Diversity is key to a healthy landscape!

Trees

- Most likely to damage when young
 - Protect with cages, repellents
- Deer cannot reach once lowest foliage is over 6' high
- Trees with upright branching grow out of range faster



Ginkgo trees have upright branching

Rubbing

- Very damaging, especially to young trees
- Most common in fall-winter
- No way to repair damage – Permanent, sometimes fatal



Prevention: Protect Trunks



Remember to remove as trees grow!

Evergreen Shrubs

- Frequently damaged in winter
- Palms are very deer resistant. Hardy shrub palms:
 - **Dwarf palmetto**
 - native
 - **Needle palm**
 - Both grow 4'-5' tall and wide; prefer part shade and moist soil



Needle Palm



Dwarf Palmetto

Low Growing Evergreens

- Dwarf Yaupon →
 - Very small leaves
- 'Carissa' Holly →
 - Larger leaves, single spine on tip
- Both 3'-4' tall, 4'-5' wide, sun – part shade, drought tolerant



Japanese Plum Yew

Cephalotaxus harringtonia

- Shade or sun
- Well drained soil
- 'Duke Gardens' grows 3'-4' x 4'-5'
- 'Fastigiata' is an upright, columnar variety, 10' x 4'



'William Penn' Barberry

- *Berberis x 'William Penn'*
- 4' x 4'
- Sun, well drained soil
- Drought tolerant
- Very thorny!
- Bronze-purple in winter
- Yellow flowers, spring
- New growth flushed burgundy
- **Wintergreen barberry**, *Berberis julianea* similar but larger



'William Penn' Barberry



Rosemary

Rosmarinus officinalis

- Blue flowers Feb-April
- Full sun, well drained soil
- Very drought tolerant
- Ornamental and culinary
- Upright and weeping cultivars available
- **Upright types** grow 4'-6' tall and wide!
- **Weeping types** grow 2'-3' tall and 4'-6' wide



Gardenia

- Sun – part shade
- Well drained soil
- Most varieties 5' x 5' or larger
- Extremely fragrant
- New Variety:
 - **'Crown Jewel'**
 - 3' x 4'
 - Developed at Oakmont Nursery, Chatham County





'Frostproof'



Gardenia hips



**'August Beauty',
'Veichii', 'Mystery'**



'Daisy', 'Kleim's Hardy'

Loropetalum

Loropetalum chinense var. *rubrum*

- Evergreen, purple leaved shrubs
- Fringy pink spring flowers
- Best in part shade, moist, acid soil
- Many varieties – range from 3' to 15' tall depending on cultivar
- Prettiest when not over-pruned!



Cleyera

- *Ternstroemia gymnanthera*
- Sun to full shade
- 8'+ tall x 6'+ wide
- Well drained soil
- Drought tolerant
- Tolerates heavy pruning but more attractive when grown natural



False Holly, Holly Osmanthus

- *Osmanthus heterophyllus*
- Large – 8'-10' or more depending on cultivar
- Very prickly leaves!
- Sun - part shade, moist but well drained soil
- Flowers in fall – extremely fragrant



Deer Resistant Perennials

- Flowers are deer favorites!
- Deer usually avoid plants with silver leaves, hairy leaves, and/or aromatic/herbal fragrances



Catmint, *Nepeta x faassenii*

This deer resistant, drought tolerant, summer flowering perennial has silver, aromatic leaves

Helleborus, Lenten Rose

- *Helleborus* hybrids
- White, pink or maroon nodding flowers in late winter
- 1' x 2'
- Evergreen foliage
- Shade
- Well drained soil



Artemisia

'Powis Castle'

- 2'-3' x 3'-4'
- Mounds of silver, finely cut foliage
- Sun
- Drought tolerant
- Evergreen but cut back in early spring to prevent legginess



Yucca, Adam's Needle

- *Yucca filamentosa*
- Evergreen
- Sun – part shade
- 2' x 2', summer flower spikes to 5'
- Broken roots regenerate new plants
- Very drought tolerant



**Yucca
'Bright Edge'**



**Yucca
'Color Guard'**



Arkansas Blue Star

- *Amsonia hubrichtii*
- 3' x 3'
- Sun
- Long lived
- Flowers in spring
- Yellow autumn color
- Attractive, ferny foliage all season
- Long lasting cutflower



False Indigo

- *Baptisia* - hybrids and species
- Many cultivars – blue, purple, yellow, white flowers
- 3' - 4' x 2' - 3'
- Sun to light shade
- Bloom late April - May
- Very long lived



Gaura

- *Gaura lindheimeri*
- Sun – light shade
- Drought tolerant!
- Many varieties – white or pink flowers
- 1' – 4' tall depending on cultivar
- Blooms from late spring through late summer – if trim back each time finishes blooming



Coreopsis, Tickseed

- Several species
- Sun lovers
- Threadleaf Coreopsis
 - *C. verticillata*
 - Long live
 - Summer blooming
 - Drought tolerant
 - 'Zagreb' – 2' x 2'



Salvias

- Sun to light shade
- Drought tolerant

- **Texas Sage** →

- *Salvia greggii*
- Blooms spring and fall, trim after blooming
- 2' – 3' tall and wide

- **Mexican Bush Sage** →

- *Salvia leucantha*
- Blooms fall
- 4' - 5' tall and wide!



Lantana

Miss
Huff

- Sun
- Drought tolerant
- Many varieties – some are annuals
- Perennials:
 - ‘Miss Huff’, 4’-5’ x 4’-6’
 - ‘Chapel Hill Yellow’, 2’x 3’
- Excellent nectar source
- Bloom mid-summer till frost



Butterfly Weed

Asclepias tuberosa

- Native
- Orange flowers summer – attract many pollinators
- Sun to part shade
- Well drained soil
- Very drought tolerant
- Late to emerge in spring





**Support Monarchs –
Plant Asclepias!**



Turk's Cap, Wax Mallow

- *Malvaviscus drummondii*
- Sun – light shade
- 4'-5' tall and wide
- Red blossoms summer – fall
- Great for hummingbirds, butterflies
- Drought tolerant



Joe Pye Weed

Eupatorium dubium

- Native
- Sun to light shade, wet to moist soil
- 4'-5' tall x 3'-4' wide
- Great butterfly nectar source!
- *E. fistulosum* much taller



Ornamental Grasses

- As a group, ornamental grasses are highly deer resistant
- Low maintenance – cut back in Jan/Feb
- Most need full sun
- Most are drought tolerant



Pink Muhly Grass, *Muhlenbergia capillaris*

Hardy Ferns

- Deer rarely browse ferns
- Most prefer moist, shady areas

Evergreen ferns:

- Holly Fern
 - *Cyrtomium falcatum*
- Autumn Fern
 - *Dryopteris erythrosora*
- Christmas Fern
 - *Polystichum acrostichoides*



Plants to Avoid in Low Management Zone

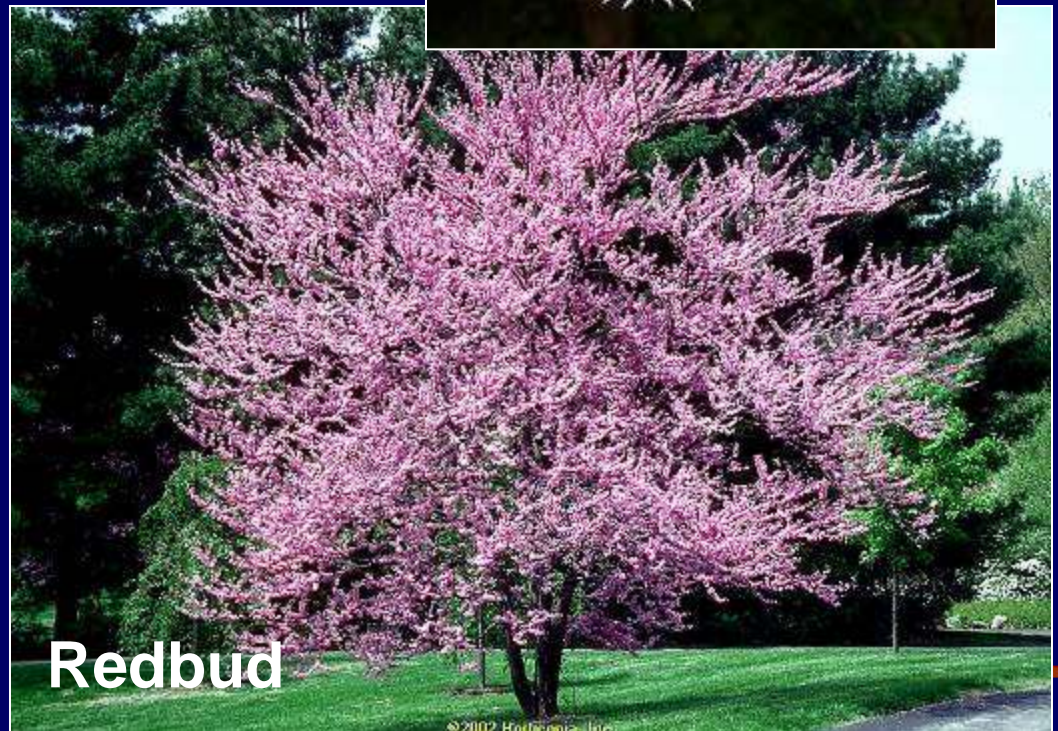
Deer Favorites



Deer Favorites: Trees

- Maples
- Serviceberry
- Crabapple
- Dogwood
- Redbud
- Fringe Tree
- Foster Holly
- Fruit Trees

Fringe Tree



Redbud

Deer Favorites: Shrubs

- Roses
- Indian Hawthorn
- Pittosporum
- Euonymous
- Aucuba
- Azaleas
- Itea
- Viburnum
- Hydrangea

Indian Hawthorn



Itea

Deer Favorites: Annuals and Perennials

- Sweet Potato Vine
- Impatiens
- Pansies
- Daylilies
- Hosta
- Phlox
- Hibiscus
- Sedum
- Rudbeckia 'Goldsturm'
- Ivy
- Clematis



Ornamental Sweet Potato

Extension Plants Database:

Learn more about recommended plants

<http://plants.ces.ncsu.edu/>


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Annuals	Poisonous Plants
Carnivorous Plants	Roses
Edible Plants	Shrubs
Ferns	Spring Bulbs
Groundcover	Summer Bulbs
Herbs	Trees
Native Plants	Vines
Ornamental Grass	Water Garden
Perennial Bulbs	Wildflowers
Perennials	All Plants



Plant

Profiles:

- Height
- Hardiness
- Soil
- Exposure
- Description
- Images
- More!

Plants > [Native Plants](#) > *Hydrangea quercifolia*

Hydrangea quercifolia

This plant has poison characteristics. See below.

Common Name(s):

Oakleaf hydrangea

Cultivar(s):

Snow Queen , Snowflake , Harmony , Pee Wee, Sykes Dwarf, Alice, Little Honey (golden foliage), Munchkin (semi-dwarf), Ruby Slippers (semi-dwarf)

Categories:

[Native Plants](#), [Poisonous Plants](#), [Shrubs](#)

Comment:

Bold leathery leaves; spread of 8 ft.; seeds eaten by birds; mulch to keep root system cool; exfoliating bark on mature plants; wine, orange, and mahogany fall foliage; coarse texture; drought tolerant; native to southeastern US; rapid growth rate.

Description:

Deciduous shrubs; leaves opposite, simple, stalked, toothed and sometimes lobed; flowers in terminal, round or umbrella-shaped clusters, white, pink, or blue, 4-5-parted, the sterile flowers (around the margin or the entire cluster) are much enlarged.

Height:

4-8 ft.

Foliage:

Opposite, simple, bold leathery leaves; 3-8 in. long; wine, orange, mahogany fall color.

Flower:

4-12 in. erect panicles of creamy white flowers in summer; fades to pink, then tan; fragrant; good for drying.

Zones:

5 to 9

Habit:

Deciduous

Site:

Sun to partial shade; prefers moist, well-drained soil but tolerates damp soil

Texture:

Coarse

Form:

Upright, irregular, rounded, multi-stemmed shrub with limited branching; stoloniferous; forms colonies

Exposure:

Sun to partial shade; moist, well drained soil

Fruit:



H. quercifolia 'Snowflake'

Photo by Kingsize Garden, [CC BY-NC-SA - 2.0](#)



H. quercifolia 'Snow Queen'

Photo by Henry10, [CC BY-NC-ND - 2.0](#)

Learn More: Going Native Website

<http://www.ncsu.edu/goingnative/>

Searchable database of NC natives allows you to select for deer resistant plants

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WHY GO NATIVE

Going Native: Urban Landscaping for Wildlife with Native Plants

You can go native!...with native plants in your landscape.

- See why landscaping with native plants is better for wildlife and for the environment.
- Find out about the problems caused by invasive, exotic plants. Odds are you have invasive exotics in your

Learn More:

<http://go.ncsu.edu/managingdeer>



Visit <http://ces.ncsu.edu>
to find your local Extension center