Maryland Department of Natural Resources
Wildlife and Heritage Service
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Deer Management Options: Rockville

White-tailed Deer

- Survival
  - Adaptive - evolved as prey species
    - Adept at avoiding predators
      - Eyesight, hearing, sense of smell
  - Improved survival in suburbs
    - Predation reduced / absent
    - Human induced mortality reduced / absent
    - Suburban vehicle mortality

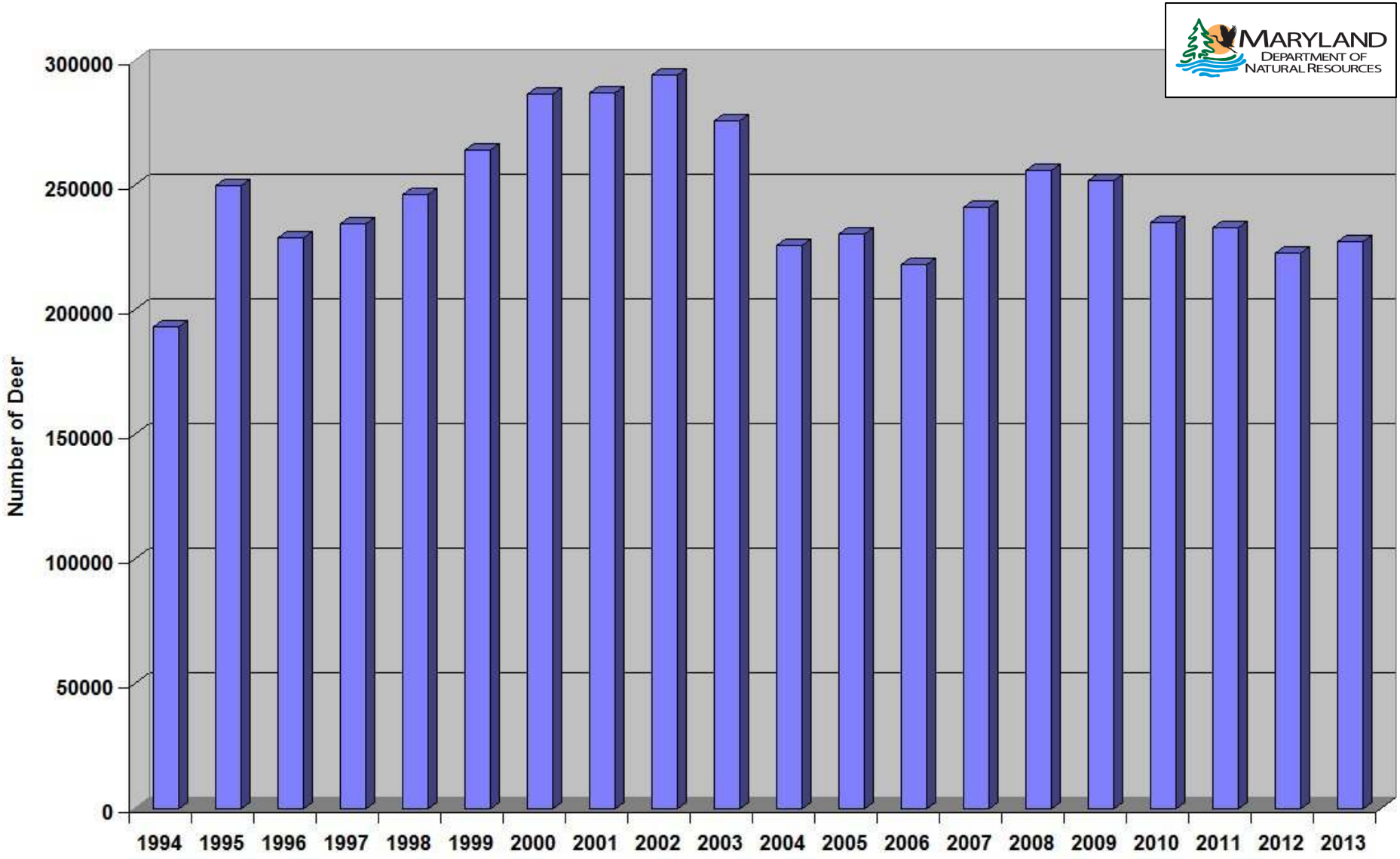
White-tailed Deer

- Reproduction
  - Breeding - Fall
  - Births - Spring
  - Productive - high reproductive success
    - Long gestation period
    - Single litter per year
    - Many adult does have twins
    - Some mature does have triplets
    - Some yearling does conceive their first autumn, bear single fawn the following spring

Maryland White-tailed Deer

- Common statewide
  - Mountains - Maritime - **Metropolitan**
  - Peak population estimate - 295,000 (2003)
  - Declining statewide estimate - 223,000 (2013)
  - Suburban areas biggest challenge
    - Deer Management Tools are limited
      - Local Ordinances
      - Public Perceptions
      - Limited Land Access
    - Deer numbers likely increasing in developed areas
      - Reduced Mortality
      - Increased Longevity
      - High Reproductive Success

Maryland Statewide Estimated White-tailed Deer Population



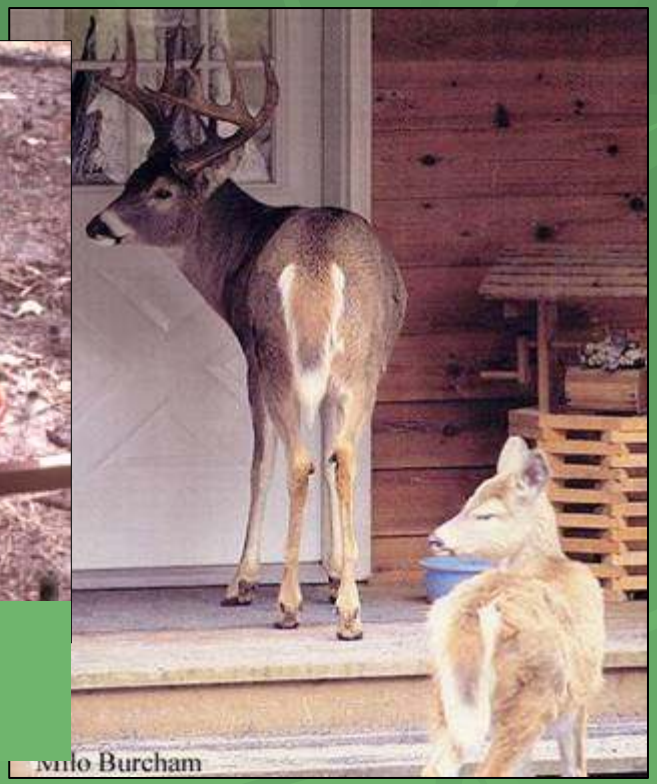
Improved Habitat

Decreased Mortality

Increased Conflicts

Deer Behavior

Deer Are Resilient, Adaptable



Deer Adapt!

- Deer Motivations - Fear / Food / Reproduction
- Deer Have Adapted - To Humans, Our Impacts, Are Thriving
- Deer Learn From Experiences - Very Persistent
- Economic Impacts - Affect Everyone
- Nothing Is Deer-Proof

If only the browsing of deer could be harnessed for good

Photo by Rob Gibbs

Deer-Human Conflicts

- Personal Property Damage
- Deer-Vehicle Collisions
- Human Disease Concerns
- Ecological Damage
  - Loss of biodiversity
  - Exotics
- Forestry Losses
- Aggressive Deer

Ten Year Deer Management Plan

Manage deer for balance between cultural and biological carrying capacities.

<u>Primary Management Options</u>

- Hunter Harvest
- Deer Management Permits (Crop Damage)
- Deer Cooperator Permits/Sharpshooting
- Letters of Authority (airports)
- Fencing
- Repellents
- Deer resistant plants
- Fertility Control
  - Contraceptives
  - Sterilization

Suburban Deer Management Options

- No Action
- Non-lethal Options
  - Deer Resistant Plants
  - Repellents
  - Exclusion
  - Fertility Control (via Deer Cooperators)
    (approved methods only)
- Lethal Options
  - Archery Hunting
  - Managed Hunting
  - Sharpshooting (via Deer Cooperators)

Other Deer Management Options?

- Non Options
  - Predator Introduction
  - Trap and Relocation
  - Toxicants / Poisons
  - ‘Non-Approved’ deer fertility control drugs

Non-lethal Deer Management

- Reduce deer damage
- Do not injure or kill deer
- Widely available
- Widely accepted by public
- Increase public tolerance of deer
- Effectiveness is reduced in areas with high deer numbers (deer compete for limited resources)
- Do not directly reduce deer numbers
- Fertility control reduces deer productivity, can lead to attrition and slow reduction in deer numbers over time
  - Absent immigration from surrounding areas
  - Only if the majority of females are treated
  - Only if mortality outpaces reproduction or immigration

Non-Lethal Options

- “Deer Resistant” Plants
- Deterrents
- Repellents
- Exclusion

- Deer Fertility Control

Favorite Deer Foods (Trees)

- Japanese maple
- pear
- Leyland cypress
- white pine
- apple
- crabapple
- balsam fir
- Norway maple
- cherry
- plum
- hemlock

Resistance of Ornamentals to Deer Damage

(MCE fact sheet 655)

Rarely Damaged Trees

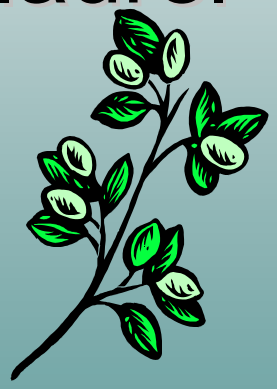
- Allegheny serviceberry
- Heritage birch
- Japanese falsecypress
- Japanese cedar
- Scotch pine
- Douglas fir
- San Jose / American holly
- Colorado blue spruce
- flowering / Korean dogwood
- Honey locust

Resistance of Ornamental to Deer Damage

(MCE fact sheet 655)

Favorite Deer Food (shrubs)

- cherry dogwood
- euonymus
- mountain laurel
- arborvitae



- **roses**
- **hydrangea**
- **Chinese holly**
- **azalea**
- **yew**
- **rhododenron**

Resistance of Ornamental to Deer Damage

(MCE fact sheet 655)

Rarely Damaged Shrubs

- boxwood
- Pieris japonica
- sarcoccoca
- forsythia
- ribes

- mahonia
- viburnum
- nandina
- spirea
- witch hazel

Resistance of Ornamental to Deer Damage

(MCE fact sheet 655)

Frequently Damaged Annuals, Perennials & Bulbs

- English ivy
- sunflower
- hosta
- daylily
- geranium
- buttercup
- vinca
- pansy
- viola

Resistance of Ornamental to Deer Damage

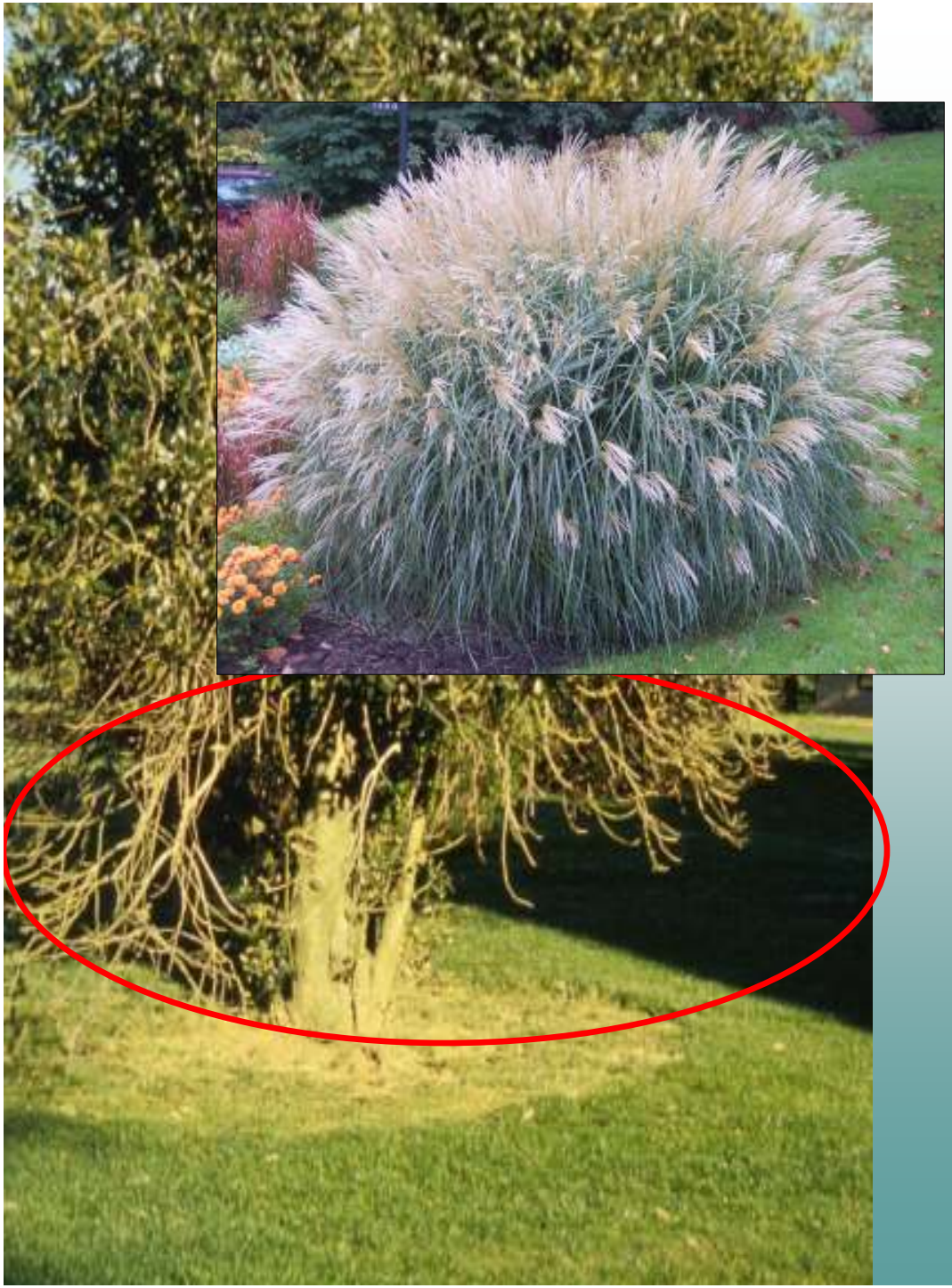
(MCE fact sheet 655)

Rarely Damaged Annuals, Perennials & Bulbs

- Yarrow
- Ageratum
- Anemone
- Snapdragon
- Marigold
- Foxglove
- Aster
- Begonia
- Chryanthenum
- Iris

Resistance of Ornamental to Deer Damage

(MCE fact sheet 655)

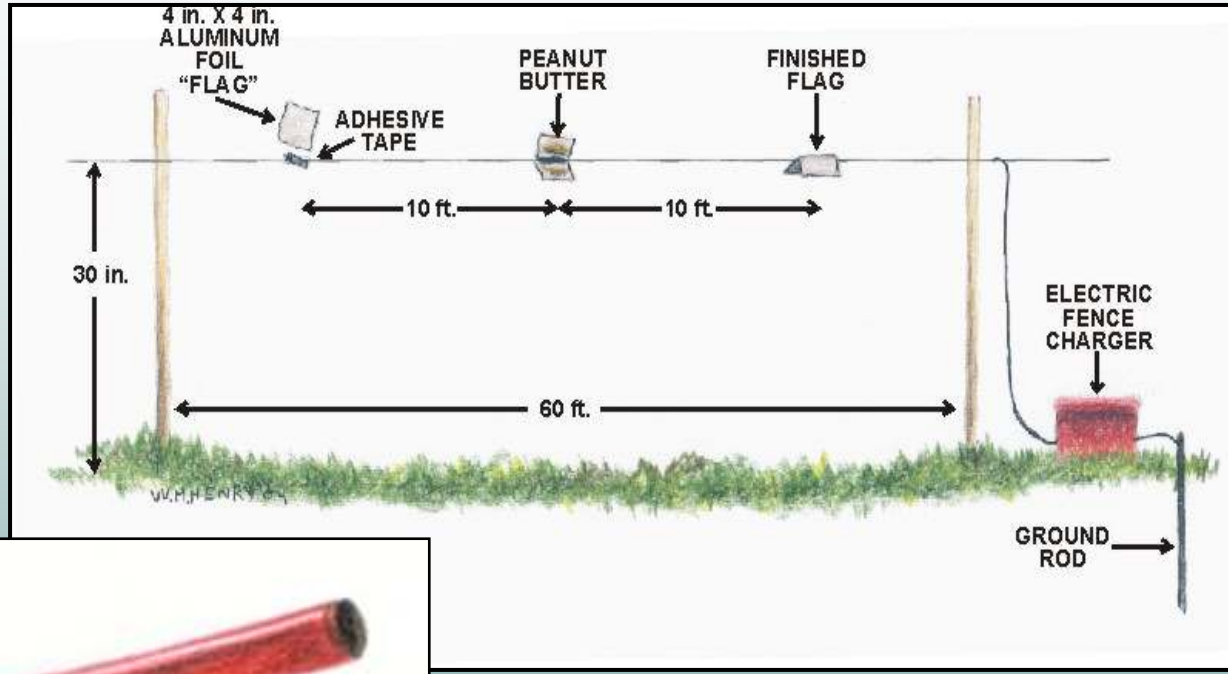


Even species that may be less preferred will be browsed if deer pressure is high enough

For example, this holly tree.

Deterrents

Deer Shock, P-Nut Butter Fence attracts deer, administers a mild electric shock.
Propane Exploders make noise



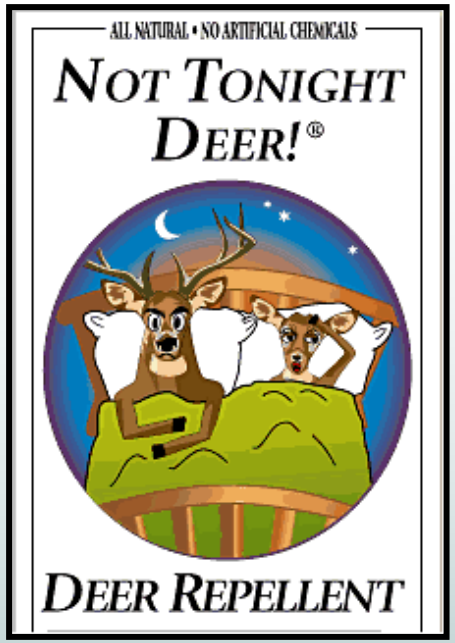
Buyer Beware!

Deer will get used to deterrents

Wireless Dog Fence System

- Dogs contained by a shock collar
- Chase deer away
- Requires buried cable around perimeter of area
- Very effective at deterring deer

Repellents



<u>Area Repellents:</u> placed near the plants, discourage herbivory through unpleasant odor.

<u>Contact Repellents</u>: placed directly on the plants, discourage herbivory through unpleasant taste.

<u>Systemics</u>: absorbed by plant roots, imparts noxious taste.

Do Repellents Really Work?

Treated

Untreated

Food Availability & Competition

Deer adapt

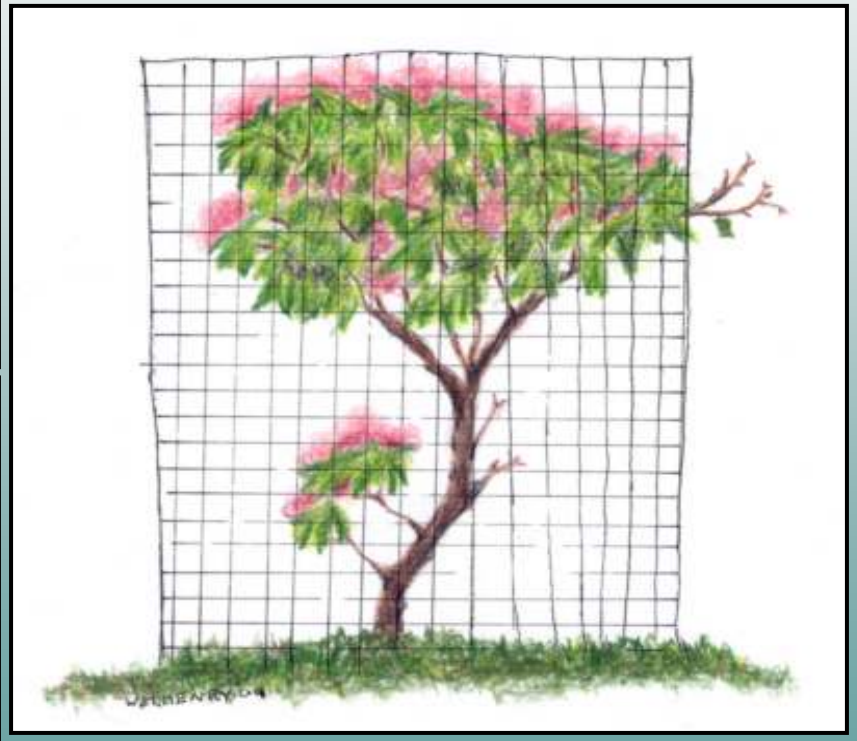
Repellents can be very effective . . .
some are more effective than others, but
. . . there are limitations . . .

Exclusion

Physical protection may be necessary in some cases.

Exclusion
the most effective non-lethal method.

Non-electric fencing
Netting
Tree shelters
Plastic mesh



Netting protects individual plants.

Appears nearly invisible!

Mesh is difficult to see / may need to be flagged to prevent “run-ins”.

Plastic Fencing

- light
- low cost
- easy to install
- easy to repair
- blends in with wooded backdrop – bylaws may prohibit!

Fencing is only as good as its weakest point.

Deer prefer to go under or through fences, unless they are being chased.

Approved Fertility Control Methods

- **GonaCon**
  - The only approved deer fertility control drug
  - Multi-year efficacy
  - EPA approved
  - MD-DNR approved (*1st state to approve*)
  - MDA Restricted-Use Pesticide
  - Deer must be marked
- **Surgical Sterilization**
  - Permanent
  - MD-DNR approved
  - Deer Cooperator Permit required
  - Veterinarian must perform surgeries
  - Deer must be marked

Summary: MD-DNR Recommends Using A Combination Of Options To Manage Deer Where Appropriate

No Action

Non-lethal Options

- Deer Resistant Plants
- Deterrents
- Repellents
- Exclusion
- Fertility Control

Lethal Options

- Deer Population Management
  - Deer Management Permits (Agriculture)
  - Traditional Hunting
  - Non-Traditional Hunting
  - Deer Cooperators

No Silver Bullet

No Magic Potion

Conclusions

- Local deer populations can be managed with effort.
- A combination of tools & methods works best.
- Diverse tools developed for challenging situations.
- Communication & cooperation provide best results.

What Can You Do?

- Become educated on available options.
- Share that information with others.
- Apply non-lethal deer management techniques.
- Consider lethal deer management where appropriate.
- Support efforts to educate public on need to manage deer.
- Support local deer management programs.

White-tailed Deer Management

- MD-DNR provides information and deer management tools
- Deer management is challenging, with limited tools for developed areas
- Land access is a large obstacle to deer management
- Deer management is a divisive topic, complicated by varying perceptions on how deer should be managed
- Communities must collectively decide how deer should be managed

Questions?

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