

# **CS053**

## **Landscape Weed Management**

**Lecture Outlines and Old Tests @  
NCSU.edu – Horticulture – Faculty – Neal**

**[http://cals.ncsu.edu/hort\\_sci/people/faculty/pages/neal.php](http://cals.ncsu.edu/hort_sci/people/faculty/pages/neal.php)**

**<http://www4.ncsu.edu/~jcneal/CS053%20Landscape%20web%20site/index.htm>**

**Lectures 1 and 2. Landscape Weed Management  
Goals and Principles**

**Required reading: *Plan Before You Plant*  
See Lecture 1 Outline for the link**

# Landscape Weed Management Goals

- Goals:
  - Primarily aesthetic: improving the visual appearance of the landscape



# **Landscape Weed Management Goals**

- **Goals:**
  - Primarily aesthetic: improving the visual appearance of the landscape
  - Functional: safety, allergies, insect and disease control

# What Else Do Weeds Do?

- Cause allergies
- Harm people
- Harbor insects and plant pathogens





# Principles of Landscape Weed Management – a 5-step planning process

1. Site Assessment
2. Define the Planting:
  - ❖ 5 Types of Landscape Plantings
3. Selection of ornamental species and compatible weed management options
4. Site Preparation
5. Implementation

# Step 1. Site assessment

- Key weeds – perennial broadleaves and sedges
- Grass weeds can be controlled POST with selective herbicides

# Perennial Broadleaves and Sedges are most difficult to control after planting





# Grasses are easier to control



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# Step 1. Site assessment

- Key weeds – perennial broadleaves and sedges
- Grass weeds can be controlled POST with selective herbicides
- Ask yourself the question:

**“Can I control these weeds after Planting?”**

## Step 2. Define the Planting:

- **5 Types of Landscape Plantings**

- The type of planting will define the post-plant weed management options and the importance of pre-plant weed control.

- ❖ Woody Tree and Shrub beds

- ❖ Woody groundcover beds

- ❖ Annual beds

- ❖ Perennial beds

- ❖ Mixed Plantings

**Most post plant weed  
control options**



**Fewest post plant  
weed control options**

# Woody Tree and Shrubbery Beds





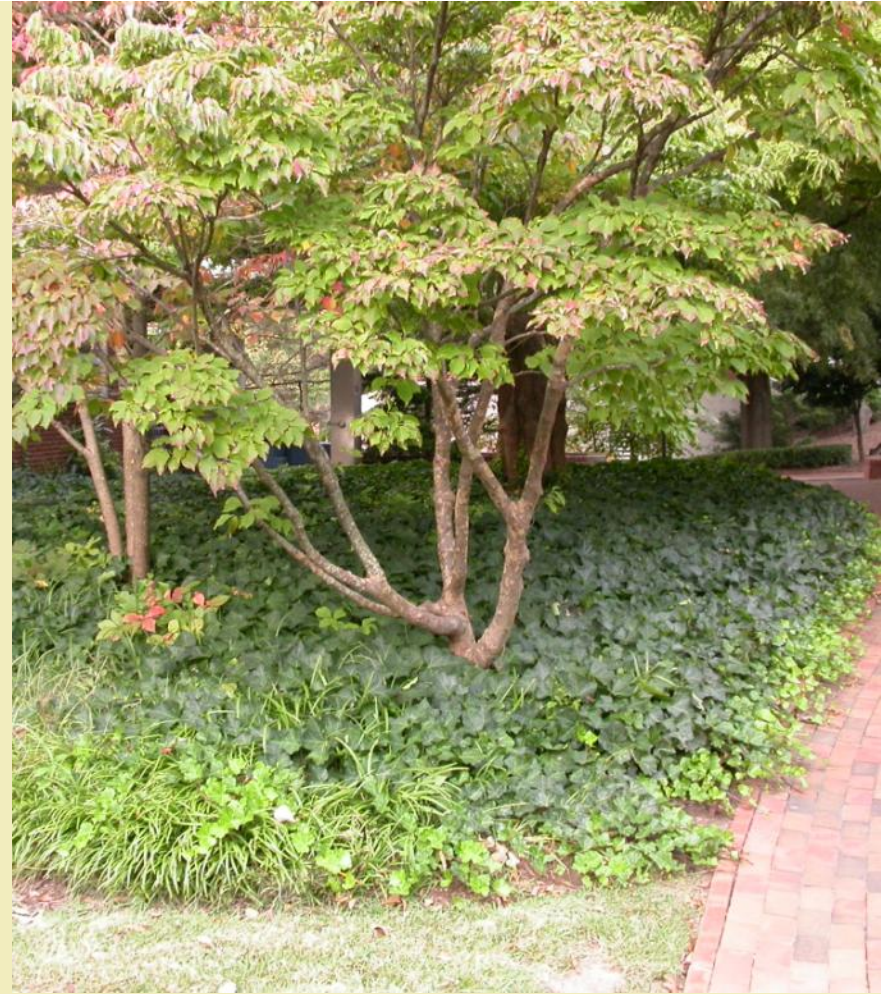
## **Table 1. Weed management options and limitations for the 5 types of landscape plantings.**

**Tree and Shrub Beds:** Densely shaded plantings exclude weeds.

- But, such beds are often open allowing weeds to grow
- Geotextiles and mulches are useful.
- Many PRE & POST herbicides
- Spot or directed applications of non-selective herbicides
- Therefore: species selection is flexible and pre-plant weed control is not as critical.



What weed control can  
you do here,



That you cannot  
do here?



# Woody Ground Cover Beds





## **Table 1. Weed management options and limitations for the 5 types of landscape plantings.**

**Woody Ground Cover Beds:**      The ground cover should ultimately exclude most weeds

- Limited uses for non-selective herbicides;
- Control perennial weeds before planting
- Do not use geotextiles where ground covers are expected to root and spread.
- Control annual weeds with mulching, hand weeding, and/or PRE herbicides.
- Several PRE herbicides are available.
- Few uses for POST herbicides
- POST control of annual and perennial grasses is possible.

# Annual Flower Beds = Bedding Plants



## **Table 1. Weed management options and limitations for the 5 types of landscape plantings.**

**Annual Flower Beds:** A closed canopy will shade-out many weeds.

- Periodic cultivation (annually or between display rotations) will suppress many weeds.
- Very limited use of non-selective herbicides; control perennial weeds before planting.
- Geotextiles generally are not useful (due to the short-term nature of the planting)
- Few PRE herbicides are safe; careful species and product selection are required.
- Mulches will suppress many annual weeds – but too much mulch is a problem to manage.



# Herbaceous Perennial Beds



## **Table 1. Weed management options and limitations for the 5 types of landscape plantings.**

**Herbaceous Perennial Beds:** Similar to Annual Flower Beds except:

- Lack of periodic cultivation will encourage perennial weed encroachment.
- Fewer herbicides are labeled; check the labels carefully.
- Geotextiles may be useful in clump-type plantings or to restrict growth of spreading-types.
- Very limited use of non-selective or postemergence herbicides.

**Table 1. Weed management options and limitations for the 5 types of landscape plantings.**

- **Mixed Plantings (of woody and herbaceous plants):**
- More complex due to the diversity of species.
- Different areas of the bed could receive different treatments.
- Site preparation is usually critical.
- Few herbicides are registered for a wide spectrum of ornamental plant types.
- Geotextiles may or may not be useful.



## Step 3. Selection of ornamental species and compatible weed management options.

- At the design phase: selecting ornamental plants with weed control in mind.
- Example 1: Florida betony cannot be selectively controlled in beds planted to herbaceous ornamentals.

*Therefore, opting for a woody planting instead will make maintenance easier by allowing the use of effective herbicides.*

# Step 3. Selection of ornamental species and compatible weed management options.

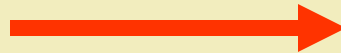
- Example 2: Yellow nutsedge can be controlled with preemergence applications of Pennant Magnum in Ageratum or Petunia beds but not in Begonia or Coleus

*If yellow nutsedge has been a problem in the past – plant petunias instead of coleus.*



## Step 3. Selection of ornamental species and compatible weed management options.

- Example 3: Dodder cannot be controlled in petunia or snapdragons but scaevola and sweet potato are resistant.





# Step 4: Site Preparation

- Goal: eliminate weeds that cannot be controlled after planting
- Options:
  - Cultivation
  - Non-selective herbicides
  - Fumigation (option of last resort)
  - Solarization

# Step 5: Installation and Implementation

- Site preparation
- Sanitation
- Mulches
- Preemergence Herbicides
- Postemergence Herbicides

# Study Questions Lecture 1

1. What are the 5 types of landscape plantings?  
List in order from the most to fewest post-plant weed control options.
2. Give an example of how landscape plant selection can influence your weed management choices.
3. What are the key weed management option differences between the 5 landscape bed types?
4. Following a site assessment -- What is the key question you ask yourself (and answer) concerning the weeds present in a proposed landscape planting?