

CS053

Landscape Weed Management

Lecture Outlines and Old Tests @
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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

Most post plant weed control options

- ❖ Woody groundcover beds

- ❖ Annual beds

- ❖ Perennial beds

- ❖ Mixed Plantings

Fewest post plant weed control options



Woody Tree and Shrubbery Beds



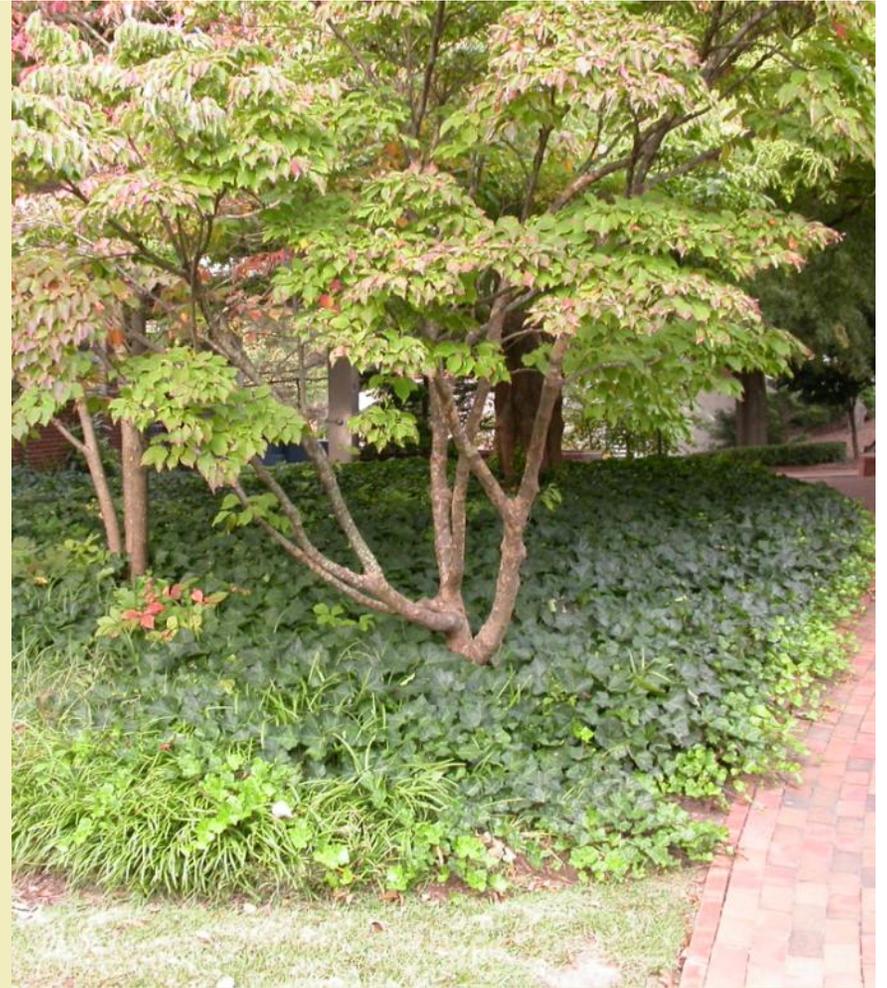
Table 1. Weed management options and limitations for the 5 types of landscape plantings.

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?