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### Class Outline

- Weed Impacts
- Identifying Weeds
- Controlling Weeds
- MN Noxious Weeds

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### Plant Life Cycle

- Annual Plants
  - Complete the life cycle (produce seed) in ONE season
- Biennial Plants
  - Complete the life cycle in TWO seasons
- Perennial Plants
  - Complete the life cycle annually
  - Grows back each year

- Seed
- Mature plant
- Flower
- Fruit
- Seed ...

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### Plant Origins & Terminology

- Native plants
  - Plants from the local area
- Non-native plants
  - Plants from other parts of the world
- Invasive
- Exotic



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11

### A word about common names...

*Use with caution*

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### Problem Plants

What is a weed?



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14

### Weedy Plants

- Characteristics
  - Aggressively competitive
  - Lack predators/diseases
  - Grow earlier and/or later
  - Reproduce prolifically
  - Thrive under diverse conditions



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### Reduce Biodiversity

- Form monocultures
- Exclude native plants
- Don't provide important habitat benefits



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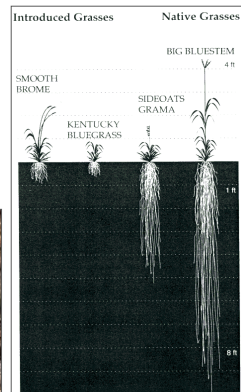
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### Alter Landforms

- Encourage erosion



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17

### Disrupt Fire & Water Cycles

- Alter fire timing
- Prolong flooding
- Lower water table



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### Change Soil Quality

- Release allelopathic compounds
- Alter soil chemistry
- Affect microbial communities



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### The Dandelion Problem



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Case Study: Dandelions (*Taraxacum officinale*)

- Characteristics
  - Rosette forming tap-rooted perennial
  - Lance shaped lobed leaves
  - Yellow ray flowers
  - Very commonplace



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21

Case Study: Dandelions (*Taraxacum officinale*)

- Weedy look alikes
  - Prickly lettuce (*Lactuca serriola*)
  - Goat's beard / Salsify (*Tragopogon dubius*)
  - Sow thistle (*Sonchus arvensis*)



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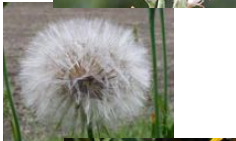
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Case Study: Dandelions (*Taraxacum officinale*)

- Look-alike life cycles
  - Prickly lettuce = annual
  - Goat's beard = biennial
  - Sow thistle = perennial
- Identifying the plant matters; helps determine best ways to control it



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23

### Be aware of other look-alikes

- Purple Coneflower & Common plantain
  - Early growth may appear similar
  - Mature plants are very different



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### Be aware of other look-alikes

- Blazing Star & Horseweed
  - Early & mid-season growth looks similar
  - Flowering plants are very different



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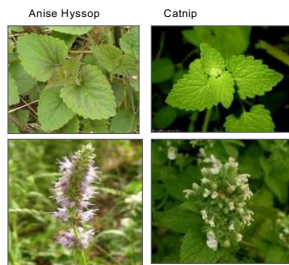
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### Be aware of other look-alikes

- Anise Hyssop & Catnip
  - Early & mid-season growth looks similar
  - Flowers are similar
  - Aroma is distinctive



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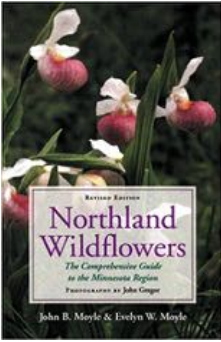
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**Identifying Weeds: Using Plant Guides**

- By image (apps)
- By bloom color
- By family
- By characteristics such as plant type, growth form, leaves, flowers, stems



The book cover for "Northland Wildflowers" features a vibrant image of pink and white flowers. The title "Northland Wildflowers" is in a purple serif font. Below the title, it says "The Comprehensive Guide to the Minnesota Region" and "Foreword by John Carter". The authors "John B. Moyle & Evelyn W. Moyle" are listed at the bottom. The University of Minnesota Extension logo is at the bottom right.

28

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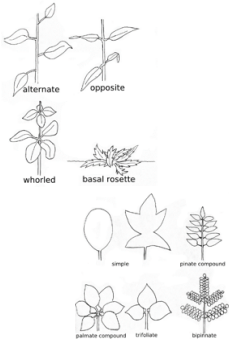
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**Identifying Weeds: Leaf Questions**

- Leaf arrangement
  - Opposite, alternate, whorled, basal
- Leaf type
  - Simple – entire, lobed
  - Compound – pinnate, palmate
- Leaf shape



A collection of line drawings illustrating various leaf characteristics. The top row shows "alternate" and "opposite" arrangements. The middle row shows "whorled" and "basal rosette" growth forms. The bottom two rows show different leaf shapes: "simple" (entire and lobed) and "compound" (pinnate and palmate). The University of Minnesota Extension logo is at the bottom.

29

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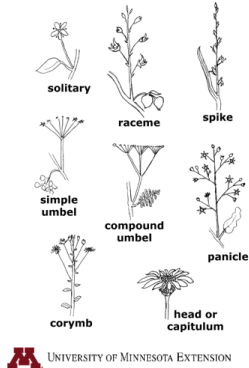
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### Identifying Weeds: Flower Questions

- Flower Color
- Flower Shape
  - Regular – Number of petals
  - Irregular, bell, tube
- Flower Cluster Type
  - Flat, umbel, raceme, spike




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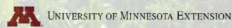
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### Controlling Problem Plants




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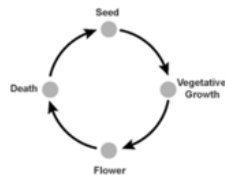
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31

### Annual Weeds

- Completes life cycle in ONE season
  - Winter Annual = Seed in spring/early summer
  - Summer Annual = Seed in late summer/fall




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32



### Common Winter Annual Weeds

**Shepherd's Purse**  
*Capsella bursa-pastoris*  
 Basal rosette  
 Toothed leaves  
 Small white flowers  
 Heart-shaped seed pods

**Pennycress**  
*Thlaspi arvense*  
 Basal rosette  
 Toothed to ovate leaves  
 Small white flowers  
 Coin-shaped seeds




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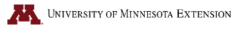
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33

### Common Summer Annual Weeds

**Lambsquarters**  
*Chenopodium album*  
 Triangular leaves with irregular teeth & grey coating  
 Inconspicuous greenish-white flowers

**Common Ragweed**  
*Ambrosia artemisiifolia*  
 Weedy native annual up to 3' Highly dissected leaves  
 Inconspicuous green to yellow green flowers  
 "Hayfever" culprit




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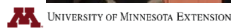
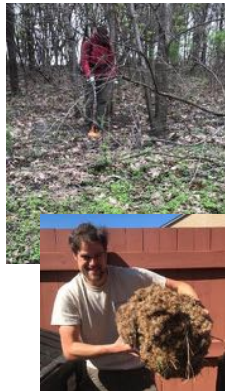
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34

### Annual Weed Control

- Prevention always best!
- Hand pull
- Mow or string trim frequently
- Cut & remove seed heads
- Flame-weeding can be effective




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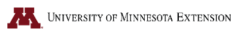
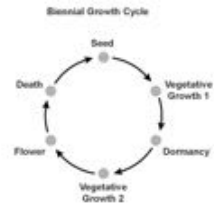
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35

### Biennial Weeds

- Completes life cycle in TWO seasons\*
- First year develop large root
- Bolt & flower in second year




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36

### Common Biennial Weeds

#### Mullein

*Verbascum thapsus*  
 Basal rosette  
 Extremely fuzzy leaves  
 Tall stalk with spike of yellow flowers



#### Burdock

*Arctium minus*  
 Basal leaves appear similar to rhubarb  
 2nd year bolt produces pink flowers and annoying hooked burs




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37

### Common Biennial Weeds

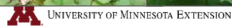
#### Spotted Knapweed

*Centaurea stoebe*  
 Basal rosette  
 Deeply lobed gray-green leaves  
 Light purple bloom



#### Garlic Mustard

*Alliaria petiolata*  
 1st year leaves rounded, with small teeth  
 2nd year leaves triangular  
 Small white flowers  
 Garlic odor




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38

### Biennial Weed Control

- For small infestations/first year plants, hand pull;
- Second year bolting plants are more likely to require tools to remove
- Consider herbicide control for large infestations



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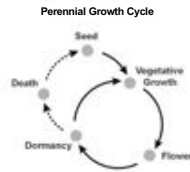
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39

### Perennial Weeds

- Completes life cycle annually for 2+ years
- May reproduce more than one way
  - Seed
  - Vegetatively (roots, runners, rhizomes)
  - Both



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40

### Common Perennial Weeds

#### Canada Thistle

*Cirsium arvense*

Deeply lobed leaves with prickly edges

Forms colonies of connected plants

Small pink flowers bloom June-Aug



#### Crown Vetch

*Securigera varia*

Leaves of many divided leaflets

Sprawling low groundcover

Dense clusters of pink flowers



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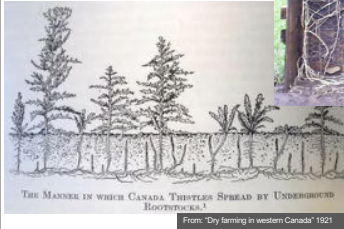
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41

### Perennial weed control

Pulling is often not effective to eliminate the infestation



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42

### Perennial Weed Control

- Pulling may take years to be effective
- Slow spread by pulling or cutting flowers
- Smothering is an organic option
- Mowing, grazing, burning may reduce vigor
- Consider herbicide applications



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43

### Common Weeds Trees

- Buckthorn – common & glossy *Rhamnus cathartica* & *Frangula alnus*
- Honeysuckle-several *Lonicera* species
- Siberian Elm/Chinese Elm *Ulmus pumila*



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44

### Weed Tree Control

- Remove fruiting trees first
- Cut & treat or cover stump
- Girdle and leave standing



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45

### Herbicides

- Recommendations
  - Identify the exact species
  - Use the right chemical and application methods
  - Apply herbicide according to the label
- Other considerations
  - Protect yourself – use AT LEAST the personal protective equipment called for by the label
  - Time application for when plants are most susceptible AND off-target impacts unlikely



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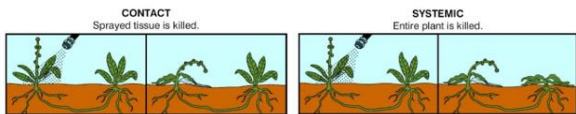
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46

### Types of Herbicides

- |  |   |   |
|--|---|---|
| <p><b>Contact vs Systemic</b></p> <ul style="list-style-type: none"> <li>• Contact herbicide kills tissue it touches</li> <li>• Systemic herbicide moves through entire plant</li> </ul> | <p><b>Selective vs Non-Selective</b></p> <ul style="list-style-type: none"> <li>• Selective kills only certain types of plant – eg broadleaf</li> <li>• Non –selective can kill all green plants</li> </ul> | <p><b>Pre-emergent vs Post-emergent</b></p> <ul style="list-style-type: none"> <li>• Pre-emergent prevents seed germination</li> <li>• Post emergent kills actively growing plants</li> </ul> |
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47

### Disposal

- Add to home compost UNLESS BLOOMING
- Blooming or seeding weeds can be taken to Ramsey County compost sites
- Desiccate or burn



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48

### Minnesota's Noxious Weeds

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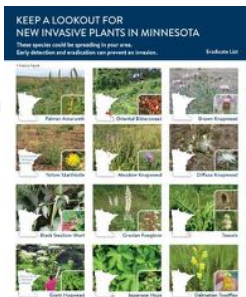
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52

### Weed Regulation Categories

- **Eradicate**  
All plant material must be removed  
16 species
- **Control**  
All propagating material must be destroyed  
13 species
- **Restricted**  
Cannot be sold, transported illegally or intentionally planted  
15 species
- **Specially Regulated**  
Plant-specific rules apply  
4 species



There are also County Noxious Weeds

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53

### MN Eradicate Noxious Weeds

- Poison hemlock, *Conium maculatum*
- Grecian foxglove, *Digitalis lanata*



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54

### MN Eradicate Noxious Weeds

- Giant hogweed *Heracleum mantegazzianum\**




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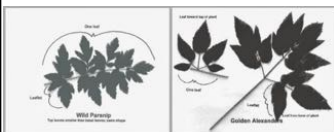
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### MN Control Noxious Weeds

- Wild Parsnip, *Pastinaca sativa*
- Easily confused with Golden Alexanders



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56

### MN Specially Regulated Plants

- Poison Ivy  
*Toxicodendron radicans* &  
*T. rydbergii*
- Native species, but must be controlled in public access areas



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57

MASTER GARDENER VOLUNTEER PROGRAM



# Thank You!

University of Minnesota Extension  
 Ramsey County Master Gardeners Program  
[ramseymastergardeners.org](http://ramseymastergardeners.org)

The Master Gardener Volunteer Program is growing with the Minnesota Landscape Arboretum.

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51