Noxious Weeds

"A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise."

Aldo Leopold

Introduction

What We Will Cover Tonight

Impacts

Noxious Weed Law and Rules

Introductory Weed ID and Control

Noxious Weeds

What We Do

Noxious Weeds

Pests

Outreach and Education

Enforcement

Noxious Weeds

What is the Difference Between a Weed and a Noxious Weed?

Noxious Weeds

A Weed Is

A plant growing where we don’t want it

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Noxious Weeds Are

Non-native invasive plants
Designated by the state
Harmful to agricultural and/or natural lands

Noxious Weeds

Why care?

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Noxious Weeds

Why care?

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Noxious Weed Impacts

Recreation

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Noxious Weed Impacts

Agriculture

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Noxious Weed Impacts

Native Plants

Insects

Wildlife

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Noxious Weed Impacts

Fire

Water

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Economic Impacts

125 million infested acres

$1.4 trillion per year

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Non-native

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Invasive

- Some have advantages
  - More seed
  - Waxy leaves
  - Chemicals
  - Deeper roots

Noxious Weeds

Invasive

Some have advantages

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Yellow starthistle

20 million acres in US

<150 acres in CO

0 acres in Jeffco

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Knotweed

Structural damage

Sold as an ornamental

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Why more now?

Why more now?

We want to live close to nature

Why more now?

Why more now?

Nature isn’t natural

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The Heart of the Continent

- Ecological Crossroads
  - Plains
  - Foothills

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Why More Now?

360% increase since 1954

More people using the land

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Colorado Noxious Weed Act

- Duty to control weeds
  - Weed List
  - Eradication

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Weed List

List A - required to be eradicated

List B – Control or eradication required. Vary throughout the state. Eradication zones in areas where the weed is uncommon

List C - common throughout the state. Property owners are encouraged to control

Watch List - new to the state and have been shown to be invasive elsewhere. Control recommended

Noxious Weeds

Integrated Pest Management

Education

Prevention

Good Stewardship

Control

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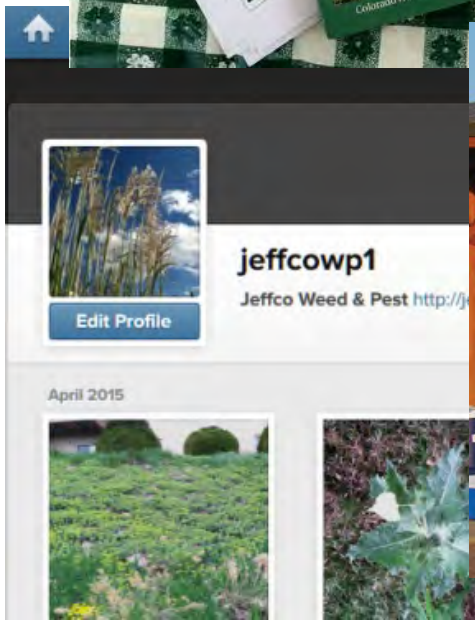
Education

- Events
- Media
- Social Media
- Site Visits
- Mailings



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Prevention

Weed-free hay, feed, seed

Clean fill and gravel

Clean your gear

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Good Stewardship

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Control

Biological

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Control

Chemical

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Control

Cultural

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Control

Mechanical

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Must be

- Appropriate
- Practical
- Economical
- Effective

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Challenges

- Number of properties
  - 95,000 private parcels
  - 3,600 miles of R-O-W
  - 53,000 acres JCOS land

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Challenges

- Regulations
  - Public land requirements
  - Eradication zones
  - Number of weeds

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Challenges

1990 - 5 weeds

2015 -100 weeds

- Eradicate
- Contain
- Watch

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Challenges

- Federal funding
- Engagement
- Ability to detect weeds

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Challenges

Enforcement

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Hope

Public awareness

Public support

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Hope

New technology

New control options

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Break – 10 minutes

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Planning
ID
Control

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Developing Your Weed Management Plan

What weeds do you have?

Where are they?

How much of each do you have?

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Developing Your Weed Management Plan

What type of habitat/environment are they found in?

Do you need to eradicate or contain?

When do you need to 'treat'?

What do you want to do with the land?

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Developing Your Weed Management Plan

What 'tools' do you have available to you?

Why do you have the problem?

What will you do to prevent reinfestation?

What will success look like?

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How to Chose a Control

Annual, Biennial, Perennial?

How does the weed spread?

When does it flower?

Where is it growing?

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IPM Control Options

Biological

Use organism to suppress

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IPM Control Options

- Cultural
  - Favor the growth of desirable plants
    - Fertilization
    - Re-seeding

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IPM Control Options

- Mechanical
  - Mowing
  - Burning
  - Hand-pulling
  - Grazing

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IPM Control Options

- Chemical
  - Non-selective
  - Selective

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Noxious Weed Examples

Biennial Thistles and Knapweeds

Perennials

Other Weeds

Biennial Thistles & Knapweeds

Musk thistle

Bull thistle

Scotch thistle

Diffuse knapweed

Spotted knapweed

Common Features

- Biennial
- Reproduce by seed
- Flower in spring – early summer
- Rosettes in fall and spring
- Taproot

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Musk thistle

List B

Control required

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Musk thistle

Flower – 1.5-2.5 in wide

Bracts – downward turning

Rosette – dark green with white edges and mid-rib

Stem – to 6 ft tall

Treat – pre to early bolt

Rosette

Musk thistle

Canada thistle

Common mullein

Pre to early bolt

Teasel

Musk thistle

Diffuse knapweed

Scotch thistle

List B

Control required

Weed & Pest
Jefferson County

Scotch thistle

Flower – 1.5 in wide

Bracts – spiny

Rosette – grey-green, hairy, 6 ft wide

Stem – to 10 ft tall, winged

Treat – pre to early bolt

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Bull thistle

List B

Eradication required

Weed & Pest
Jefferson County

Bull thistle

Flower – 1.5 in wide

Bracts – spiny

Rosette – dark green, spines, cottony below, 3 ft wide

Stem – to 6 ft tall, winged

Treat – pre to early bolt

Plumeless thistle

List B

Eradication required

Weed & Pest
Jefferson County

Plumeless thistle

Flower – 1-2 in wide, single

Bracts – spiny

Rosette –green, 1-2 ft wide

Stem – to 6 ft tall, spiny, winged

Treat – pre to early bolt

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Diffuse knapweed

List B

Control required

Weed & Pest
Jefferson County

Diffuse knapweed

Flower – ¼ in wide and ¾ in long

Bracts – fringed with terminal spine

Rosette – silver-green, hairy, finely divided, 1-2 ft wide

Stem – single, 2-3ft tall

Treat – pre to early bolt

Weed & Pest
Jefferson County

Spotted knapweed

List B

Eradication required

Weed & Pest
Jefferson County

Spotted knapweed

Flower – 3/8 in wide and ¾ in long

Bracts – blunt, dark spot

Rosette – silver-green, finely divided, 1-2 ft wide

Stem – single, branched to 2-3 ft tall

Treat – pre to early bolt

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Fall or Spring

Remove rosettes

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Spring-Summer

- Remove plants
  - Flowers need to be removed and bagged

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Biennial Thistles & Knapweeds

Chemical - Rosette to early bud stage

- 2,4-D plus Dicamba
- Curtail/Transline
- Milestone
- Telar or Escort

Weed & Pest
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Chamomile & Oxeye daisy

Chamomile

Oxeye daisy

Oxeye daisy and Chamomile stems

Common Features

Reproduce by seed

Flower in spring

Rosettes fall and spring

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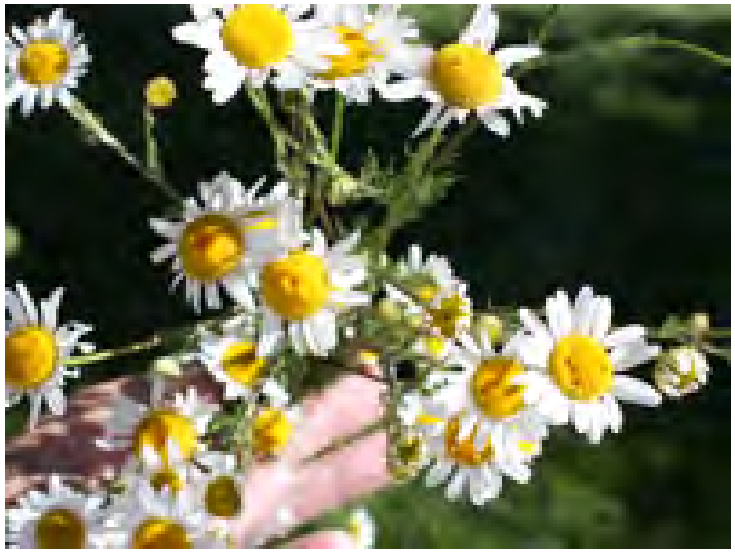
Chamomile

Annual

List B

Control required



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Chamomile

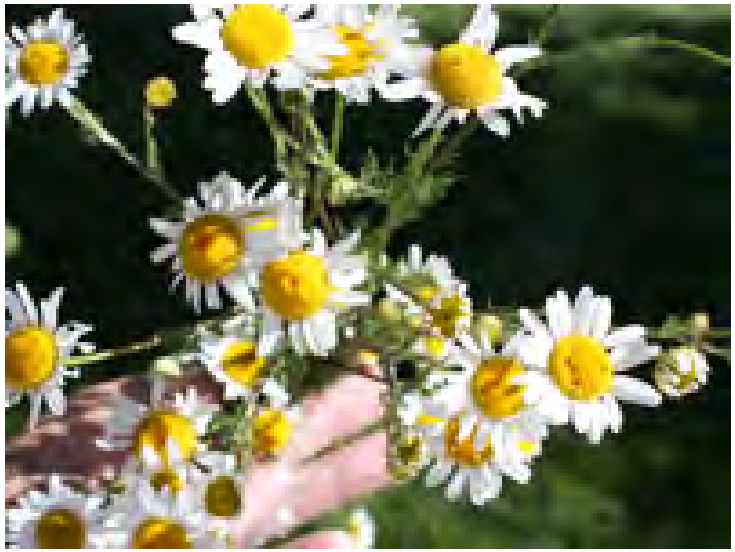
Flower – to 1¼ in wide

Leaves – finely divided

Stem – multiple, branched, to 2-3 ft tall

Roots - fibrous

Treat – pre to early bolt



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Oxeye daisy

Perennial

List B

Control required

Weed & Pest
Jefferson County

Oxeye daisy

Flower – to 2 in wide

Leaves – spoon-shaped

Stem – hairless, 1-2 ft tall

Roots – Rhizomes

Treat – pre to early bolt

Weed & Pest
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Chamomile & Oxeye daisy

Removal

Bag and dispose of flowers

Chamomile

Oxeye daisy

Oxeye daisy and Chamomile stems

Chamomile & Oxeye daisy

Chemical - to early bud stage

- Escort
- Milestone
- Telar

Chamomile

Oxeye daisy

Oxeye daisy and Chamomile stems

Perennial Weeds

Canada thistle

Dalmatian Toadflax

Hoary cress

Leafy spurge

Myrtle spurge

Orange hawkweed

Canada thistle

Dalmatian toadflax

Hoary cress

Leafy spurge

Orange hawkweed

Common Features

- Perennial
- Spreading roots
  - Pulling or cultivation not usually recommended
  - Breaks roots and forms new plants

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Common Features

- Cutting
  - May help reduce seed
  - Needs to be done before flowers develop
  - Needs to be repeated throughout the season
  - Works best followed by herbicide treatment

Canada thistle

Perennial

Reproduces by root spread

List B – Control required

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Canada thistle

Flower – to ¾ in wide and 1 in long

Leaves – lance-shaped, spines

Stem – erect, multiple, branched, to 4 ft tall

Roots – extensive, spreading

Treat – pre to early bolt and fall

Weed & Pest
Jefferson County

Canada thistle

Chemical - Spring and Fall

Milestone

2,4-D plus Dicamba

Curtail/Transline

Weed & Pest
Jefferson County

Dalmatian toadflax

Perennial

Reproduces by seed and root

List B – Control required

Weed & Pest
Jefferson County

Dalmatian toadflax

Flower – to ¾ in wide and 1 in long

Leaves – egg-shaped, waxy

Stem – erect, multiple, branched, to 3 ft tall

Roots – extensive, spreading

Treat – pre to early bolt and fall

Weed & Pest
Jefferson County

Dalmatian toadflax

Chemical

2,4-D plus Dicamba

Escort

Plateau

Weed & Pest
Jefferson County

Hoary cress (Whitetop)

Perennial

Reproduces by seed and root

List B – Control required

Weed & Pest
Jefferson County

Hoary cress (Whitetop)

Flower – to 1/8in wide

Leaves – lance-shaped, slightly hairy

Stem – erect, to 2 ft tall

Roots – extensive, spreading

Treat – pre to early bolt

Weed & Pest
Jefferson County

Hoary cress (Whitetop)

Chemical – Spring

2,4-D plus Dicamba

Escort

Telar

Weed & Pest
Jefferson County

Leafy spurge

Perennial

Reproduces by seed and vegetatively

List B – Control Required

Weed & Pest
Jefferson County

Leafy spurge

Flower – to 1 in wide

Leaves – lance-shaped

Stem – erect, multiple from crown, to 3 ft tall

Roots – extensive, spreading

Treat – spring and fall

Weed & Pest
Jefferson County

Leafy spurge

Chemical - Spring or Fall

2,4-D plus Dicamba

Plateau

Weed & Pest
Jefferson County

Myrtle spurge

Perennial

Reproduces by seed and vegetatively

List A – Eradication required

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Myrtle spurge

Flower – to 1 in wide

Leaves – egg-shaped

Stem – trailing, multiple from crown, to 8 in tall

Roots – deep taproot

Treat – spring and fall

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Myrtle spurge

Removal

- Bag and put into trash
- Wear protective gear

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Myrtle spurge

Chemical – Spring and Fall

- 2,4-D plus Dicamba
- Glyphosate

Weed & Pest
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Orange hawkweed

Perennial

Reproduces by seed and rhizomes

List A – Eradication required

Weed & Pest
Jefferson County

Orange hawkweed

Flower – to ¾ in wide

Leaves – basal, lance-shaped, hairy

Stem – erect, leafless, to 2 ft tall

Roots – Rhizomes, stolons, fibrous

Treat – spring and fall

Weed & Pest
Jefferson County

Orange hawkweed

Chemical - Spring and Fall

Milestone

2,4-D plus Dicamba

Curtail/Transline

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Other Weeds

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Common mullein

Biennial

List C – Control recommended

Reproduce by seed

Flower in spring

Rosettes fall and spring

Weed & Pest
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Common mullein

Flower – to 1 in wide

Leaves – lance-shaped, wooly

Rosette – to 5 ft wide

Stem – single, erect, to 6 ft tall

Roots – taproot

Treat – spring and fall

Weed & Pest
Jefferson County

Common Mullein

Removal – rosette to early bud stage

Weed & Pest
Jefferson County

Common Mullein

Chemical - bolt to early bud stage

Escort

Milestone

Telar

Weed & Pest
Jefferson County

Downy brome (Cheatgrass)

Annual

Early season

Reproduces by seed

List C – Control recommended

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Downy brome (Cheatgrass)

Flower – to ¾ in long, panicles to 6 in long

Leaves – lance-shaped

Stem – erect, multiple from crown, to 2.5 ft tall

Roots – fibrous

Treat – spring and fall

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Downy brome (Cheatgrass)

Mechanical

- Graze or mow before seed formation
- Repeat as needed

Removal

Weed & Pest
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Downy brome (Cheatgrass)

Chemical – Spring or Fall

Glyphosate (when all other plants are dormant)
Plateau (may impact native grasses)

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Noxious Weeds

What next?

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What you can do

If you find something new - report it

Monitor your land

Address problems early

Encourage your neighbors

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Noxious Weeds

What you can do

Consider ways to include prevention in your projects

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Noxious Weeds

More Information

CSU Extension

Colorado Weed Management Association

CO Dept Agriculture

Noxious Weeds

Contact

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