

# IDENTIFYING AND TREATING INVASIVE PLANTS IN GRASSLAND SYSTEMS



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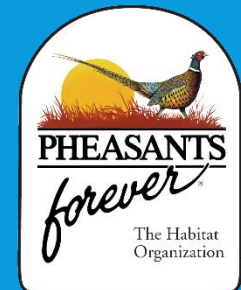
Scenic Rivers Invasive Species Partnership

Quail Forever



**SCENIC RIVERS  
INVASIVE SPECIES**

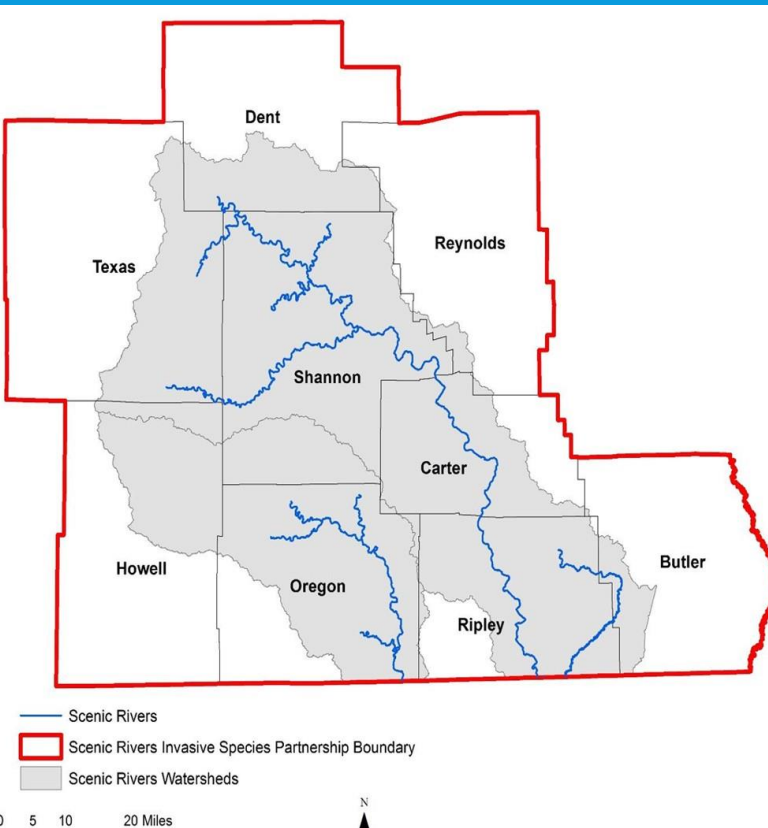
— PARTNERSHIP —



# TODAY'S ROADMAP

- Quick blurb about our organization
- Definitions
- IPM
- Species Identification and Treatments
- Resources

# ABOUT WHAT I DO:



- The Scenic Rivers Invasive Species Partnership is a strong, cross-boundary public-private partnership that inventories, monitors, controls, and prevents the spread of invasive species within the Current, Jack's Fork, & Eleven Point Rivers in Southern MO. First CISMA established in Missouri.
- Provide coordination between more than 20 partners to plan and execute invasive plant work, organize volunteer and outreach events, and seek and apply for grant opportunities.
- Provide in the field expertise about invasive plants to both public and private landowners.

# CLARIFYING DEFINITIONS

## Non-native:

A plant introduced with human help (intentionally or accidentally) to a new place or new type of habitat where it was not previously found. Note: Not all non-native plants are invasive.



Forsythia

## Invasive:

A plant that is both non-native and able to establish on many sites, grow quickly, and spread to the point of disrupting plant communities or ecosystems.



Spotted  
Knapweed

## Weed:

A plant (native or non-native) that is not valued in the place where it is growing.



Queen Anne's  
Lace

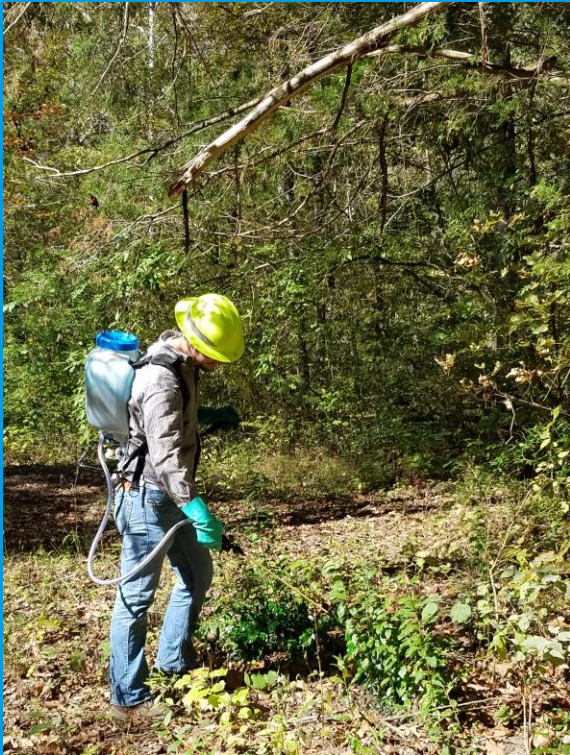
# THE PROBLEM WITH INVASIVES...

- Invasive nonnative plants consume wildlife habitat and compete with crops.
- Due to their prolific reproduction and spread, they can outcompete natives.
- Invasives can be introduced through many pathways:
  - Forage for animals
  - Gravel
  - Hiking, biking, or riding through areas with invasives and not cleaning gear
  - Disturbance

## Did you know?

- The annual U.S. cost from invasive species is \$120 billion, with a minimum of 100 million acres being affected (i.e. the size of California).
- In FY 2020, the Department of Interior estimated it spent \$143 million to manage invasive species for 400+ million acres of public lands. That's roughly 35 cents per acre for all invasive species research, prevention, EDRR, management and restoration.

# INTEGRATED PEST MANAGEMENT (IPM)



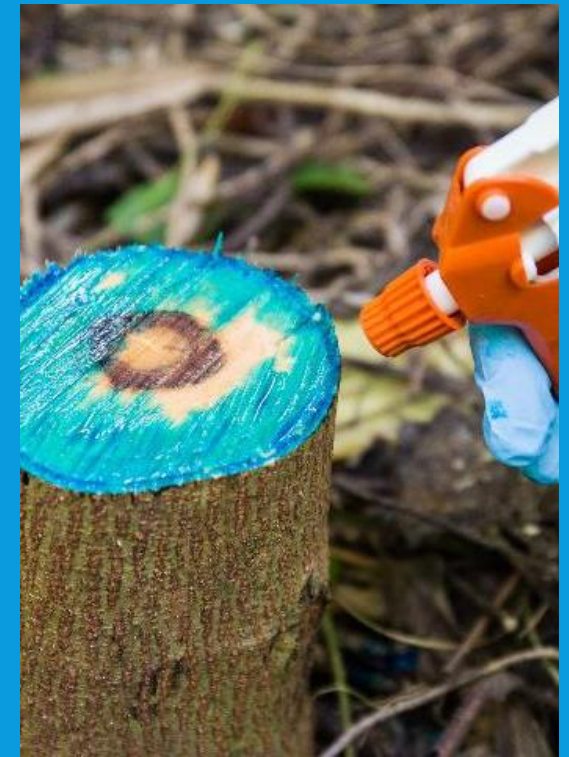
- IPM is a balanced, tactical approach to pest control
- Uses a wide array of control methods (cultural, biological, mechanical, chemical)
- Keeps a balanced ecosystem
- Pesticides can be ineffective
- Can save money
- Promotes a healthy environment

# IPM CONTINUED

- Cultural - practices that reduce pest establishment, reproduction, dispersal, and survival
  - Planting native landscaping plants instead of invasives
    - Wintercreeper -> Wild Ginger
  - Using certified weed free products
- Biological - the use of *natural enemies*—predators, parasites, pathogens, and competitors—to control pests and their damage
  - Weevils for spotted knapweed
- Mechanical/Physical - kill a pest directly, block pests out, or make the environment unsuitable for it. Physical controls include mulches for weed management, steam sterilization of the soil for disease management, or barriers such as screens to keep birds or insects out.
  - Hand pulling invasive plants
- Chemical - the use of pesticides. In IPM, pesticides are used only when needed and in combination with other approaches for more effective, long-term control.

# IPM CONTINUED

- Herbicides should be used as a "last resort" or in conjunction with other methods
- Follow the label - "THE LABEL IS THE LAW"
- Most selective herbicide for the job
  - Herbicides can be broad spectrum (kills most plants – think glyphosate), to plant specific (treats woody plants, forbs, grasses – think triclopyr, sethoxydim)
- Minimalize spray area if able
  - Spot spray instead of broadcast, treat stumps
- Many application methods
  - Obtain Mo Pesticide License – ran through MO Department of Ag
  - <https://agriculture.mo.gov/plants/pesticides/licensing.php>





# INVASIVE PLANT ID

Covering common invasives found in grasslands



# SERICEA LESPEDEZA *LESPEDEZA CUNEATA*

- Perennial
- Found in fields, thickets, gravel bars, pond edges, roadsides, prairies
- Small, pea-like flowers bloom July-October
- Unpalatable to cattle
- Produces chemicals to stunt growth of surrounding plants
- IPM strategies
  - September burns in conjunction with spring pre-emergent herbicide application
  - Herbicides:
    - Combination of triclopyr and fluroxypyr (PastureGard) during growing season
    - Pre-emergent: Imazapic (Plateau, Panoramic) or Aminocyclopyrachlor (Perspective, Streamline)





## TEASELS

### *DIPSACUS FULLONUM* & *D. LACINIATUS*

- Thistle-like with large, deep taproot
- Blooms June-October
- Forms colonies
- Common teasel has purple flowers, oblong leaves
- Cut-leaf teasel has white flowers, lobed leaves, leaves attach to stem to form cup
- IPM strategies
  - Digging young rosettes
  - Cutting flowering heads, then mowing close to the ground
  - Burning in conjunction with herbicides:
    - Glyphosate (Roundup)
    - Triclopyr (Garlon 3A)

# BEEFSTEAK *PERILLA* *FRUTESCENS*

- Perilla Mint, Rattlesnake plant, Shiso
- Annual, spreads by seeds
  - Flowers July-October
- Strong smell
- Toxic to cattle
- IPM strategies
  - Hand pull
  - Herbicides (most effective right at bolting):
    - Aminopyrlid (Milestone, Grazon Next)
    - Triclopyr/Fluroxypyr combination (PastureGard HL)
    - Glyphosate (Roundup)



# SPOTTED KNAPWEED *CENTAUREA STOEBE*



- Perennial, sometimes large taproot
- Forms basal rosette in winter months before bolting in the spring
- One to 20 stems, blooming in June/July
- Can produce up to 1,000 seeds viable up to 8 years
- Produces chemical that inhibits growth to surrounding vegetation
- IPM Strategies:
  - Hand pulling rosettes or small plants in spring
  - Repeated grazing by sheep or goats
  - Bio-control: knapweed weevils
  - Herbicide:
    - Aminopyralid (Milestone, TerraVue, Grazon Next) in spring before flowering
    - 2,4-D to rosettes in fall or winter

# THISTLES

Not all thistles are bad...

- Invasive thistles include:

- *Cirsium vulgare* - Bull Thistle
- *Cirsium arvense* - Canada Thistle
- *Carduus nutans* - Musk Thistle

- Leaves will have green undersides

- Native thistles include:

- *Cirsium altissimum* – Tall Thistle
- *Cirsium carolinianum* – Carolina Thistle
- *Cirsium discolor* – Field Thistle

- Leaves will have white and felty undersides



# INVASIVE THISTLES

- Tend to establish on overgrazed pastures or places with low native diversity
- Canada and Musk thistles are listed as noxious weeds
- Produces prolific seeds, root crowns can be deep and hard to penetrate by cutting or with fire
- IPM:
  - Mowing right after flowering for several years can help in control – must pick up flowering heads to prevent seeding
  - Hand pulling may be feasible when young and small
  - Biological control: flower-head weevil and rosette weevil
  - Herbicides:
    - 2,4-D Ester formulation applied right before bolting in the spring
    - Glyphosate (Roundup) in early spring before bolting



# MULTIFLORA ROSE

## *ROSA MULTIFLORA*

- Forms dense thickets in prairies, fields, roadsides, open forest areas
- Flowers May-June
- Have a similar looking native – *Rosa setigera*
- IPM strategies
  - 3-6 cuttings or mowings per growing season for more than one year can, may need to be repeated for 2-4 years
  - Routine prescribed burn program will hinder invasion and establishment
  - Herbicides:
    - Glyphosate (roundup) foliar during flowering
    - Cut stump herbicide application – triclopyr (Garlon 3A) during fall/dormant season







# CALLERY (BRADFORD) PEAR *PYRUS CALLERYANA*

- Tree created for cultivation in the 1950's
- Flowers early spring and will leaf out before native vegetation (flowers STINK)
- Leaves are some of the last ones to turn red for fall
- Can form extremely dense thickets in just a few years
- IPM strategies
  - Hand pull (small trees)
  - Herbicides:
    - Small trees: foliar spray of 2-5% mix of glyphosate (roundup) or triclopyr
    - Medium/large trees:
      - Cut stump treatment of 25-50% mix of glyphosate or triclopyr
      - Basal bark in early spring/summer with 1:5 ratio of the ester formulation of triclopyr and basal oil



# RESOURCES

Missouri Invasive Plant  
Council (MoIP) -  
<https://moinvasives.org/>

Grow Native -  
<https://grownative.org/>


MDC Invasive Species  
Pages -  
<https://mdc.mo.gov/trees-plants/invasive-plants>

Midwest Invasive Plan  
Network (MIPN) -  
<https://www.mipn.org/>

EDDMaps -  
<https://www.eddmaps.org/>

Cost Share Programs  
through: NRCS, MDC

Quail Forever Farm  
Bill Biologists  
MDC Private Lands  
Conservationists





QUESTIONS?