

# Opportunities and Challenges in Supporting Invasive Plant Activities

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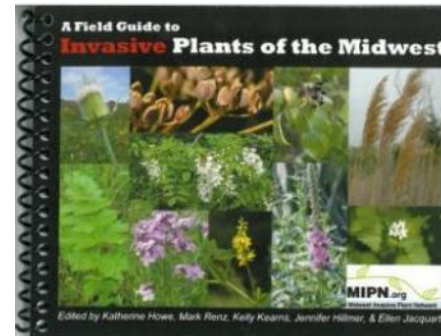
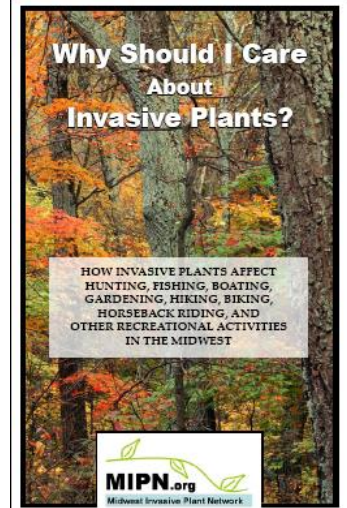
President Midwest Invasive Plant Network



# MIPN's Mission

[www.mipn.org](http://www.mipn.org)

- Reduce the impacts of invasive plants in the Midwest
  - Create resources/tools



**INVASIVE PLANT CONTROL DATABASE**

**MIPN.org**  
Midwest Invasive Plant Network

WELCOME TO THE INVASIVE PLANT CONTROL DATABASE  
Please select a plant by common or scientific name.

**Step 1: Select Plant**

☐ Free Form Search ☐ Common Name List ☐ Scientific Name List

[Reset Search](#)

**Step 2: Select Search Parameters**

<b>User Type:</b> <input type="radio"/> Professional <input type="radio"/> Volunteer	<b>Location:</b> <input type="checkbox"/> Forest <input type="checkbox"/> Prairie <input type="checkbox"/> Riparian <input type="checkbox"/> Roadside	<b>Infestation (size):</b> <input type="checkbox"/> Scattered individual plants <input type="checkbox"/> Widespread infestation	<b>Seasons:</b> <input type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer <input type="checkbox"/> Winter	<b>Rating (in season):</b> ☆☆☆☆ <b>Rating (year after treatment):</b> ☆☆☆☆
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For more information, contact MIPN via e-mail: [info@mipn.org](mailto:info@mipn.org)



# Conferences



**UMISC**  
Upper Midwest Invasive Species Conference

**NAISMA**  
North American Invasive  
Species Management Association

**2018** JOINT CONFERENCE

JOIN US FOR THE  
LARGEST INVASIVE SPECIES  
CONFERENCE IN NORTH AMERICA!

**October 15–18, 2018**

Mayo Civic Center | Rochester, MN

[www.umisc.net](http://www.umisc.net)

**SAVE THE DATES**

Photo © Thomas H. Artz



# Invasive Plants are a Problem in ROW

- Regulated
  - A few federal, most state
- Impact services of ROW
  - Runoff/erosion
  - Visibility
  - Safety
  - Structure longevity
  - Plant diversity



# Invasive Plant Management Approaches in ROW

1. Prevention
2. Early Detection and Rapid Response
3. Revegetation and Restoration

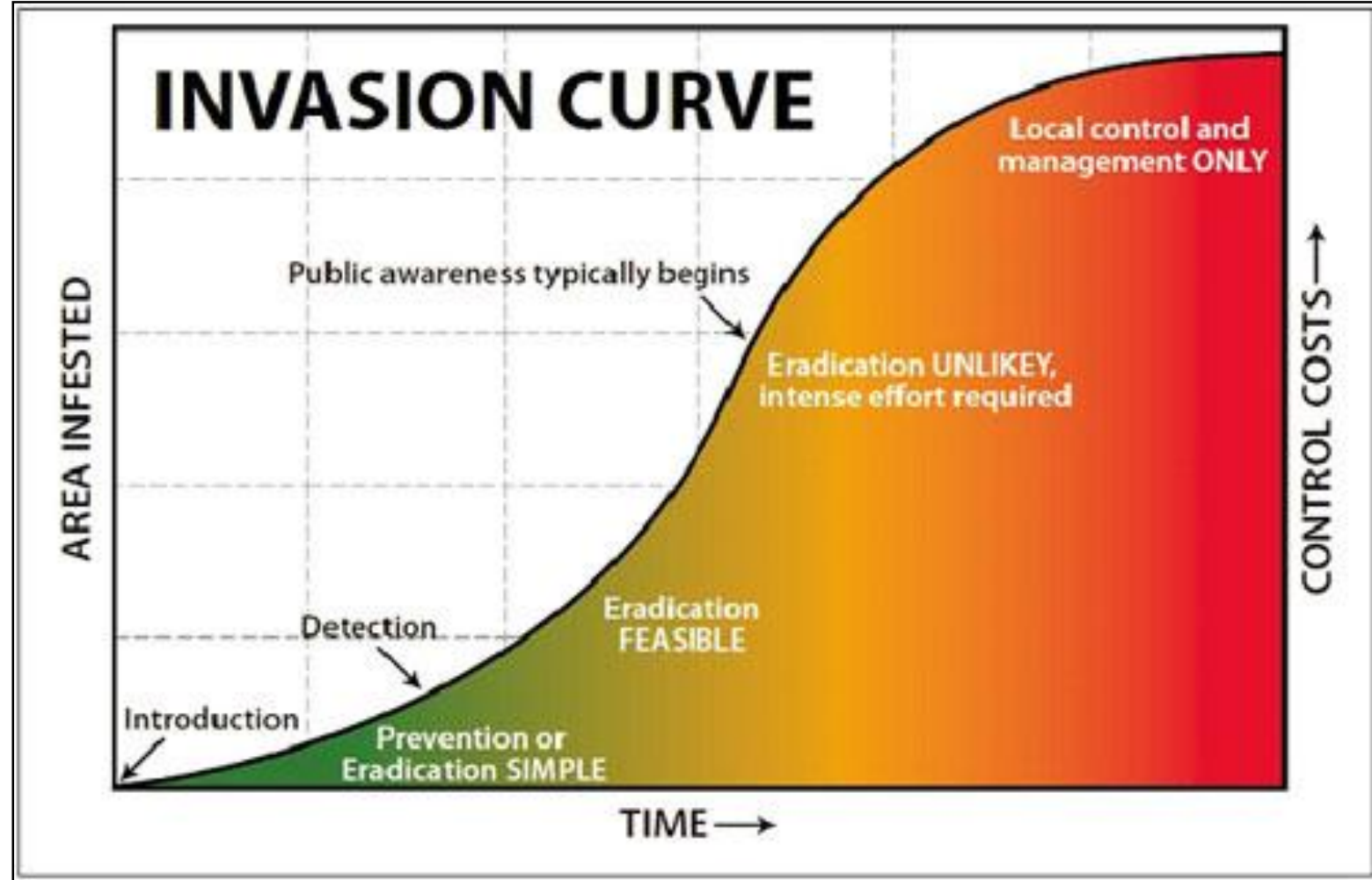


Image courtesy of Clemson.edu



# 1. Diverse Mixtures Prevent Establishment of Invasive Plants

- Many studies have shown increasing diversity in seeding reduces weed/invasive plant establishment and resulting cover





# Will results be the same in ROW areas?

- Most studies done in natural areas under controlled conditions
  - How similar will responses be in a ROW area?
- Species specific response
  - invasive plant(s)
  - Diverse mixture



# Many ROW areas are already heavily invaded

results from a survey of 36 WI roadsides

	Plant Species	Cover When Present (%)
IPAW Plants	Smooth Brome ( <i>Bromus inermis</i> ) ★	22
	Reed Canary Grass ( <i>Phalaris arundinaceae</i> ) ★	17
	Quack Grass ( <i>Elymus repens</i> ) ★	15
	Wild Carrot ( <i>Daucus carota</i> )	9
NR 40 Plants	Wild Parsnip ( <i>Pastinaca sativa</i> )	16
	Multiflora Rose ( <i>Rosa multiflora</i> ) ★	16
	Leafy Spurge ( <i>Euphorbia esula</i> ) ★	14
	Spotted Knapweed ( <i>Centaurea maculosa</i> ) ★	13
	Canada Thistle ( <i>Cirsium arvense</i> ) ★	11



## 2. Diverse Mixture Establishment & Maintenance will Improve Invasive Plant Management

- Best chance at eradication is when infestations are found early
- Increased chance in detection if actively managing the area to promote establishment





# Examples of effectiveness of EDRR

## Brush Management with herbicides (spot trt)

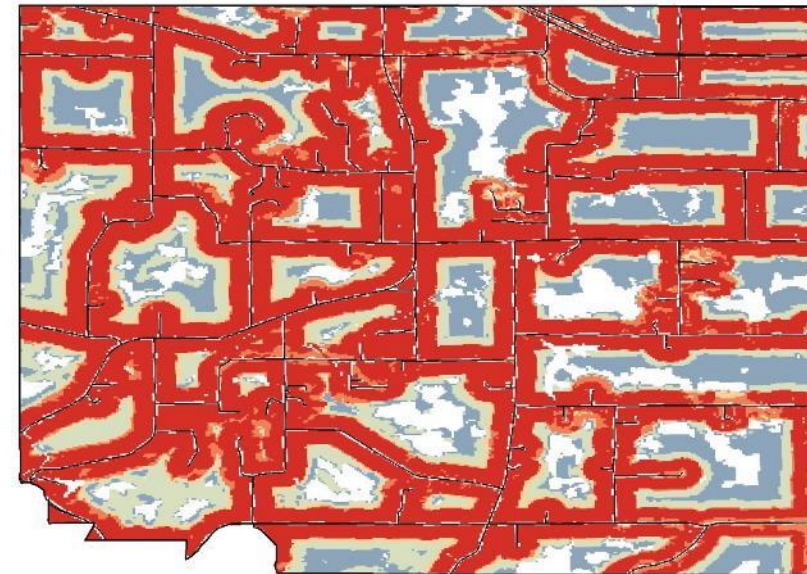
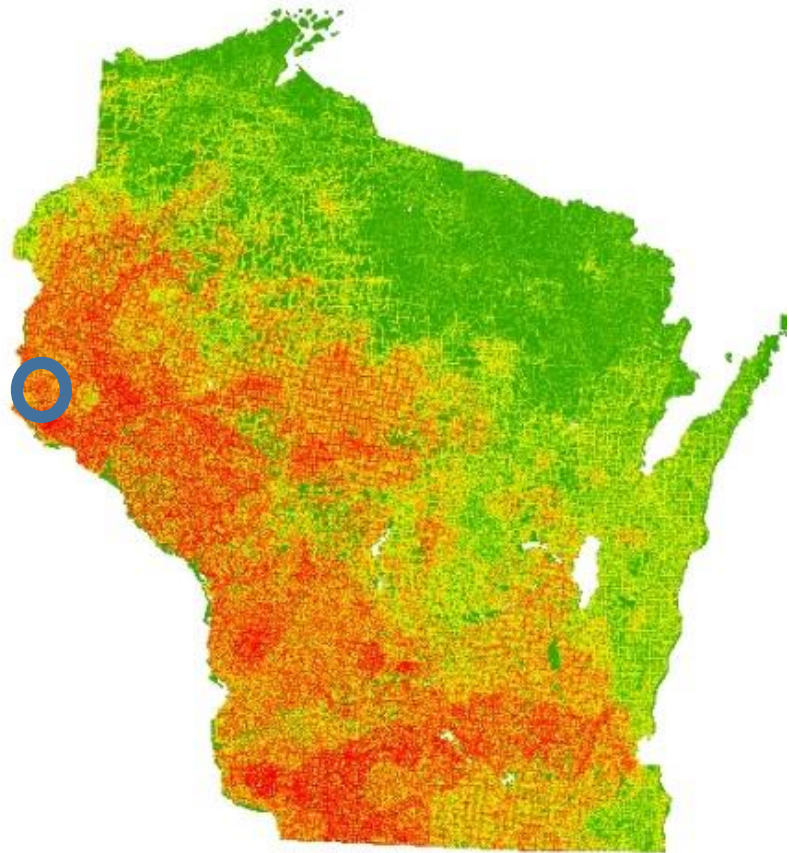
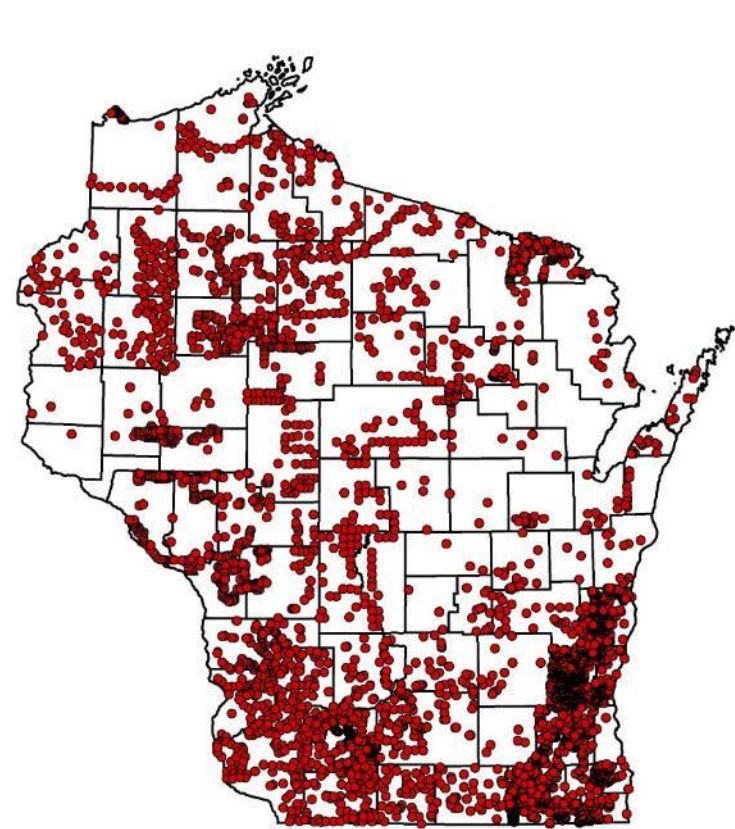
- At low densities (5-20%) vs high densities (20-50%)
  - Used less herbicide
    - 50-300% less
  - Less time to treat
    - 75-150% less
  - Worked better
    - Up to 30% more control 1 YAT





# Increased reporting can facilitate EDRR

## Wild parsnip example





### 3. Invasive Plant Control during Revegetation

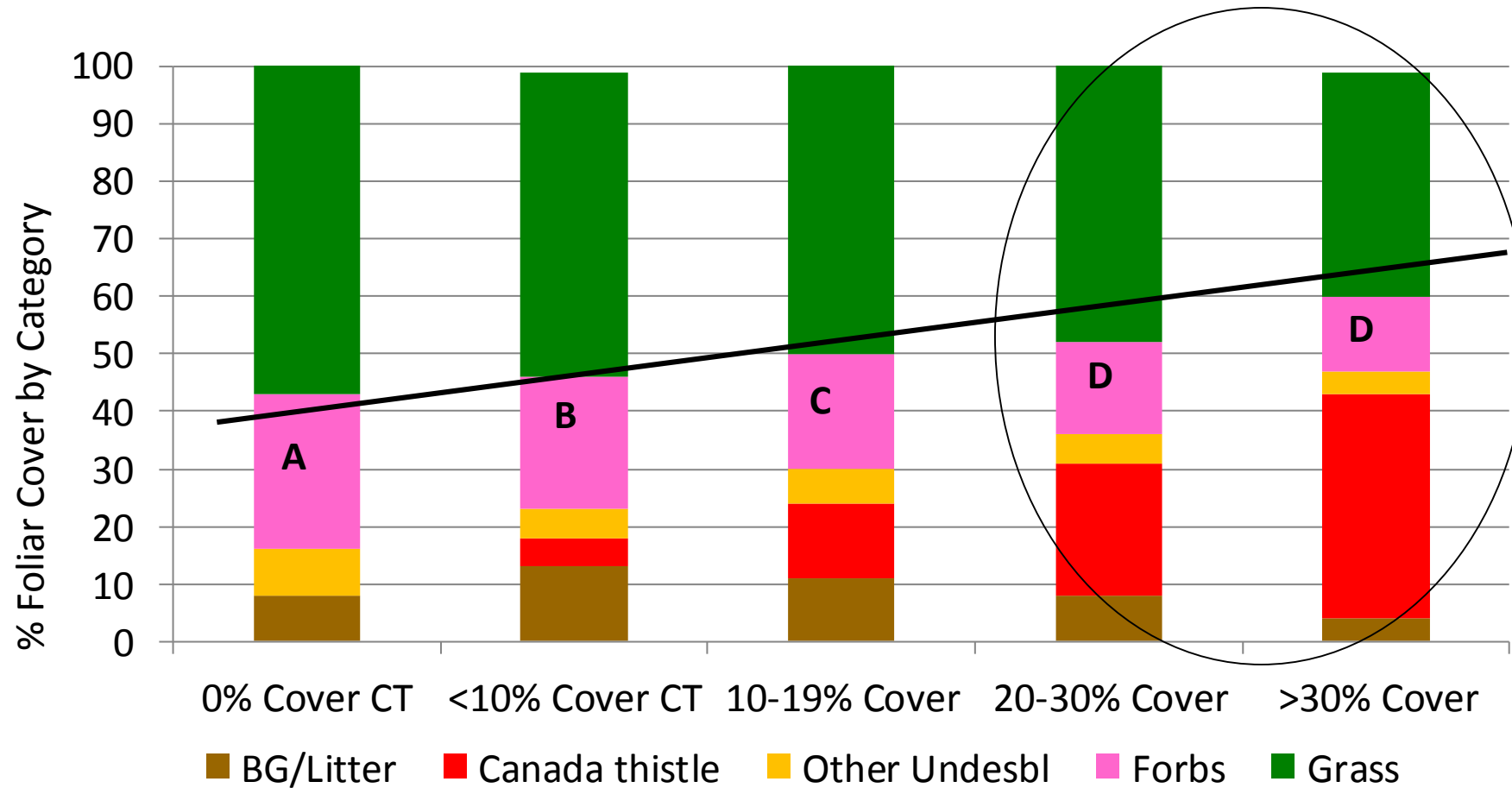
- Invasive plants will establish in diverse plantings in many cases
  - Response will likely be species specific
  - Will they
    - Impact establishment?
    - Persist?

- If yes, what do we do?





## Comparison of % Cover of Each Botanical Group at Different Canada Thistle Infestation Levels

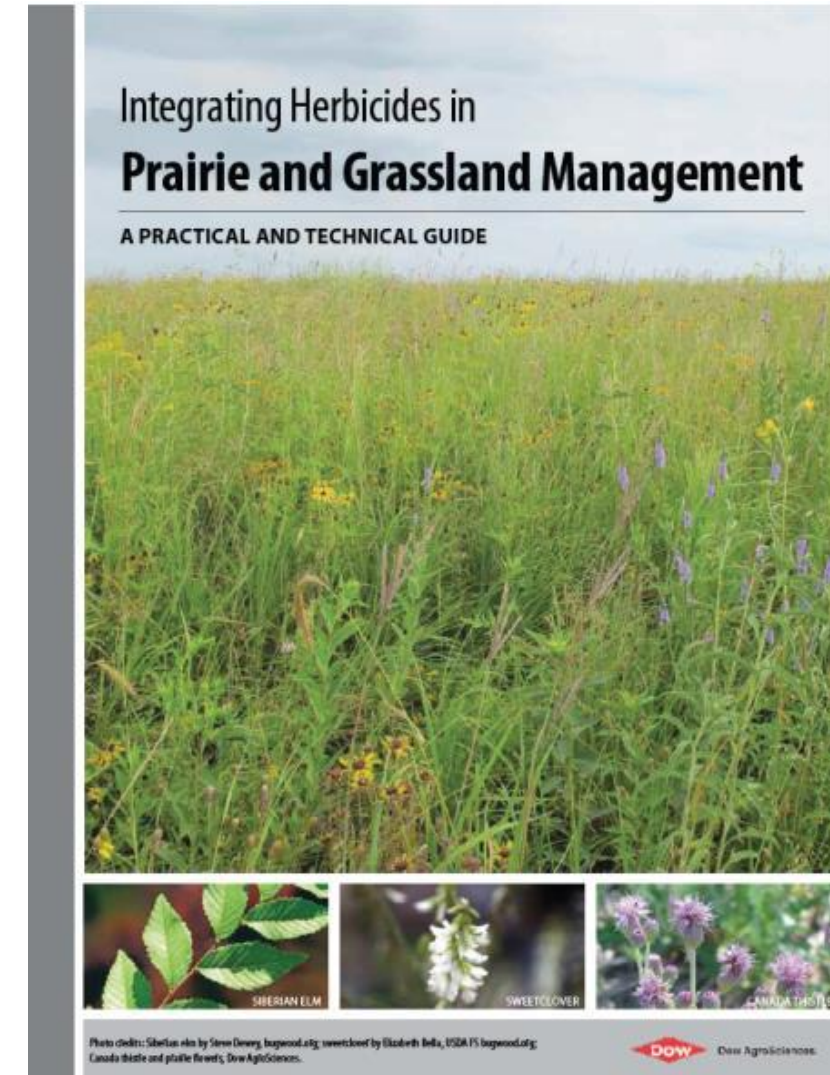


Rath Trac All Data (925 Quadrats)

P=0.05

# Best Management Practices will be Needed

- Resources will need to be
  - Invasive plant specific
  - Mix specific
  - Allow for management throughout life of ROW
    - prior to, during or after establishment
- Some tools have been developed
  - Herbicide tolerance/use/restrictions
- more needed





# Summary

1. Diverse mixtures will aid in suppressing invasive plant establishment
  - Unclear how effective it will be across invasive plant species, native mixture used, site specific factors
2. If diverse mixtures are actively managed, additional activities will help improve EDRR
  - EDRR is more efficient and the cheapest in eradication
  - Could help with reporting and aid in models that predict suitable habitat
3. BMPS will need to be developed to allow for management when actively Revegetating/Restoring sites
  - Will need to be specific to invasive plants, diverse mixtures, site specific factors

# Concerns about diverse plantings on ROW

- Many ROW are already invaded
  - Need to control prior to planting
- Most ROW have increased levels of disturbance
  - Facilitate invasion
- Diverse plantings may have reduced seed #s
  - Susceptible to invasion as they develop
- Control after establishment could be costly if invasives are widespread
  - Few tools that limit damage to desirable plants





# Hope for diverse plantings on ROW

- Success has been observed on ROW with diverse plantings
  - Iowa
- Interest has been building
- Many research projects already published to inform next steps
- Many stakeholders are on board
  - Federal
  - State
  - Industry (herbicide companies)
  - Academia/research

