

New Invasive Species and the NR 40 Rule

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Dealing with Invasive Plants by the Book

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We'll cover:

- What are invasive species?
 - Why are they a problem?
 - How do they impact agriculture
 - What are some of the species of concern?
- NR 40 – New Invasive Species Rule
 - What does it mean for farmers and the ag community?
- What you can do to minimize spread and stay in compliance – *Mark Renz*

What is an “Invasive Species”?

- **Nonnative species whose introduction causes or is likely to cause economic or environmental harm or harm to human health** (Wisconsin Statutes 23.22)
 - Plants (terrestrial and aquatic)
 - Animals (vertebrates and invertebrates)
 - Disease-causing organisms

A few examples:



- **Emerald ash borer** – has the potential to kill ALL ash trees in the state
- **Viral Hemorrhagic Septicemia (VHS)** – kills large numbers of fish in any infected water body
- **Zebra mussel** – clogs intake pipes, motors, equipment, kills native mussels
- **Kudzu** – one of many non-native vines poised to blanket our forests and shorelines

Weeds vs. Invasive Plants

- “Weeds” are plants growing where they are not wanted/cause economic or social harm. Generally refers to weeds in ag or disturbed areas. Can be native or non-native.
- “Invasive Plants” typically refers to non-natives that cause environmental damage in more natural areas. Many invasive plants are also weeds.

Invasive Species Impacts

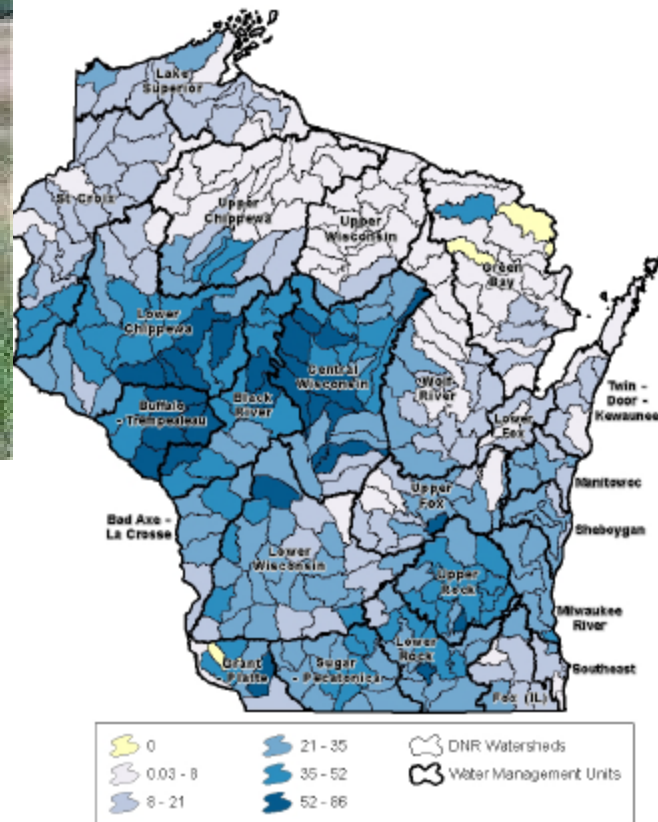
- Spread in natural areas (wetlands, forests, grasslands, lakes)
- Displace, harm or kill native species
- Prevent forest regeneration
- Alter ecosystems
- Degrade wildlife habitat
- Can cause economic damage
- Impact recreation and other social impacts
- Can be toxic

Reed Canary Grass

(*Phalaris arundinacea*)



Map 7: Percent of Open Canopy Wetlands Dominated by Reed Canary Grass, per Watershed



Wild Parsnip

Causes photophytodermatitis!

- *Wild Parsnip* can cause painful blistering rashes when skin contacts the plant or its juices, and then is exposed to sunlight.



Giant Hogweed (*Heracleum mantegazzianum*)

Causes photophyto dermatitis!



Invasive Species Impacts on Agriculture

- Forage plants displaced in pastures and hay fields (eg, spotted knapweed, leafy spurge)
- Some invasive plants are toxic or harmful to livestock (eg, poison hemlock, multiflora rose)
- Invasives spread along roads/corridors can invade crop fields (eg, Canada thistle, Japanese hops)
- Hosts for crop pests (soybean aphids, wheat rust)



Norman E. Rees, USDA ARS

UGA0025061

Leafy spurge (*Euphorbia esula*)

Official
“Noxious Weed”



Leslie J. Mehrhoff

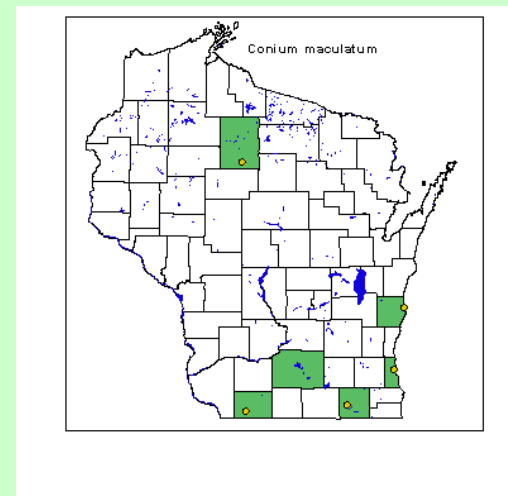
Spotted knapweed (*Centaurea maculosa*)



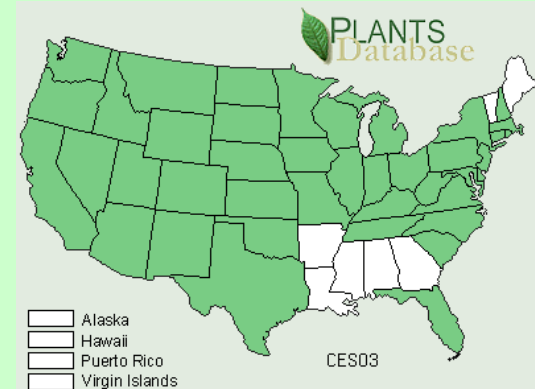
Poison hemlock (*Conium maculatum*)



Jed and Bonie McClellan



Yellow Starthistle (*Centaurea solstitialis*)



Common Buckthorn – Overwinter Host for Soybean Aphid



Common buckthorn is very abundant in woodlots and fencerows near crop fields

How Agriculture Impacts Invasives

- Moving seeds, plants, fragments and eggs on equipment
- Seeds in hay, feed and seed
- Planting of species that become invasive
- Disturbance and compaction predisposes land to invasives and causes decline of natives
- Edge effect – many invasives enter on edges of natural areas, then spread to interior

Some invasive plants sometimes planted for forage, erosion control, etc.



Elizabeth J. Czarapata

Sweet clover



Elizabeth J. Czarapata

Multiflora
rose



Bird's foot trefoil



Elizabeth J. Czarapata

Crown vetch

Current Noxious Weed Law

- Lists 3 weeds state-wide
- Allows local units of government to list others
- Landowners/managers must control
- 10 day notice. Officials can enter land and do control and charge landowner on taxes
- Enforcement at county/municipal level
- Act 55 gave DNR authority to list state-wide noxious weeds ... in the future

No change to this law with NR 40

Why an invasive species rule?

- Increased awareness, locally to globally, of threat
- Broad agreement that invasive species are a concern, and Wisconsin needs to minimize spread
- Mandate from Legislature (s. 23.22, Stats.)
- Efforts on invasives need to be prioritized
 - New and potentially harmful species
 - New populations in relatively uninfested areas
 - Keeping high quality areas uninfested

Hill Mustard

Newly emerging
roadside,
grassland and
pasture invader
in Green County



Only a few scattered plants

2009 – a few years later





NR 40 Invasive Species Identification, Classification and Control Rule

- Prior to NR 40, invasives regulations were piecemeal and almost non-existent for some groups of species
- 2001 State legislature authorized DNR to write rules
- 2004 – 2009 – Rule developed and passed, with assistance from WI Council on Invasive Species and extensive input from experts, stakeholders and the public





Species Groups in the Rule

- Algae & cyanobacteria
- **Aquatic and terrestrial plants**
- Fish and crayfish
- Aquatic invertebrates
- **Terrestrial invertebrates & plant disease-causing microorganisms**
- Terrestrial & aquatic vertebrates

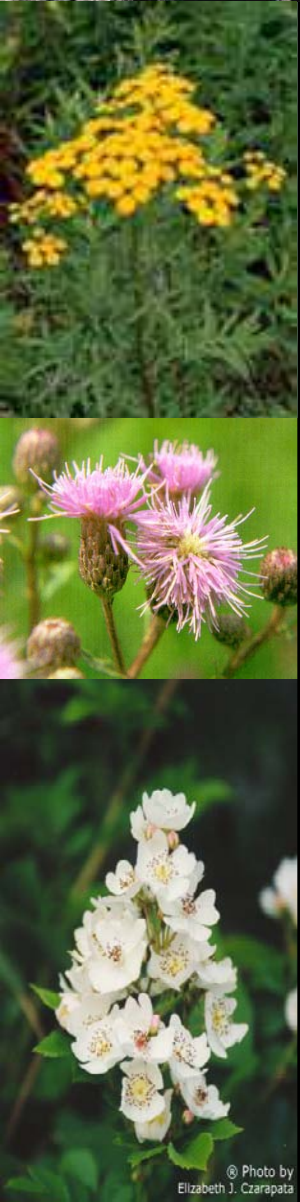




Regulatory Categories

Prohibited – Not yet in the state or established in pioneer stands only; still have potential to eradicate and prevent statewide; high potential for environmental damage if widely established.

Restricted – Already established in the state; high environmental impacts.



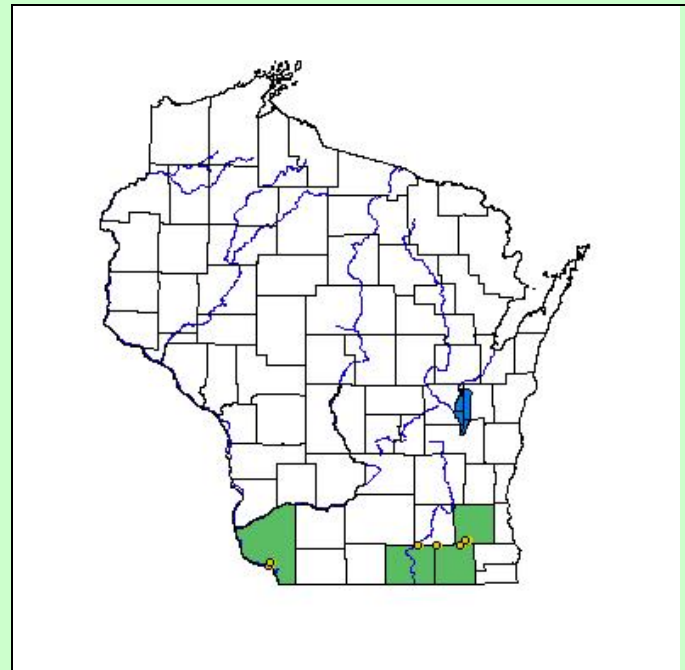
Prohibited Terrestrial Plants

- Porcelain berry - *Ampelopsis brevipedunculata*
- Wild chervil - *Anthriscus sylvestris*
- Hill mustard - *Bunias orientalis*
- Yellow star thistle - *Centaurea solstitialis*
- Poison hemlock - *Conium maculatum*
- Scotch broom - *Cytisus scoparius*
- Chinese yam - *Dioscorea oppositifolia*
- Hairy willow herb - *Epilobium hirsutum*
- Giant hogweed - *Heracleum mantegazzianum*
- Perennial pepperweed - *Lepidium latifolium*
- Sericea lespedeza - *Lespedeza cuneata* / *Lespedeza sericea*
- Japanese honeysuckle - *Lonicera japonica*
- Japanese stilt grass - *Microstegium vimineum*
- Princess tree - *Paulownia tomentosa*
- Mile-a-minute vine - *Polygonum perfoliatum*
- Giant knotweed - *Polygonum sacchalinense* / *Fallopia sacchalinense*
- Kudzu - *Pueraria montana* / *Pueraria lobata*
- Sawtooth oak - *Quercus acutissima*
- Wineberry - *Rubus phoenicolasius*
- Spreading hedge parsley - *Torilis arvensis*
- Pale swallowwort - *Vincetoxicum rossicum* / *Cynanchum rossicum*

Split-listed Plants

(Prohibited where unknown, Restricted where already known)

- Celandine - *Chelidonium majus*
- European marsh thistle - *Cirsium palustre*
- Tall manna grass - *Glyceria maxima*
- Japanese hops - *Humulus japonicus*
- Lyme grass - *Leymus arenarius* / *Elymus arenarius*
- Amur honeysuckle - *Lonicera maackii*
- Japanese hedge parsley - *Torilis japonicus*
- Black swallowwort - *Vincetoxicum nigrum* / *Cynanchum louiseae*



Black swallowwort distribution

Restricted Terrestrial Plants

- **Tree of heaven** - *Ailanthus altissima*
- **Garlic mustard** - *Alliaria petiolata*
- **Creeping bellflower** - *Campanula rapunculoides*
- **Plumeless thistle** - *Carduus acanthoides*
- **Musk thistle** - *Carduus nutans*
- **Oriental bittersweet** - *Celastrus orbiculatus*
- **Spotted knapweed** - *Centaurea biebersteinii*
- **Canada thistle** - *Cirsium arvense*
- **Hound's tongue** - *Cynoglossum officinal*
- **Cut-leaved teasel** - *Dipsacus laciniatus*
- **Common teasel** - *Dipsacus sylvestris*
- **Russian olive** - *Elaeagnus angustifolia*
- **Autumn olive** - *Elaeagnus umbellata*
- **Helliborine orchid** - *Epipactis helleborine*
- **Cypress spurge** - *Euphorbia cyparrissias*
- **Leafy spurge** - *Euphorbia esula*
- **Hemp nettle** - *Galeopsis tetrahit*
- **Glossy buckthorn** - *Frangula alnus* / *Rhamnus frangula* (exempts cultivars *asplenifolia* and *Ron Williams*)
- **Dame's Rocket** - *Hesperis matronalis*
- **European bush honeysuckles** - *Lonicera tatarica*, *L. morrowii*, *L. bella*
- **Purple loosestrife** - *Lythrum salicaria*
- **Wild parsnip** - *Pastinaca sativa* (exempts vegetable)
- **Common reed** - *Phragmites australis* (exempts native ecotype)
- **Japanese knotweed** - *Polygonum cuspidatum*
- **Common buckthorn** - *Rhamnus cathartica*
- **Multiflora rose** - *Rosa multiflora*
- **Tansy** - *Tanacetum vulgare* (Exempts cultivars *Crispum* and *Aureum*)
- **Narrow-leaf cattail** - *Typha angustifolia*
- **Hybrid cattail** - *Typha x glauca*

TERRESTRIAL INVERTEBRATES AND PLANT DISEASE CAUSING ORGANISMS

Proposed Prohibited:

- Hemlock woolly adelgid - *Adelges tsugae*
- Emerald Ash Borer - *Agrilus planipennis*
- Crazy worms - *Amyntas spp.* / *Amyntus spp.*
- Asian Longhorned Beetle - *Anaplophora glabripennis*
- Scale associated with Beech Bark Disease - *Cryptococcus fagisuga*
- Asian Gypsy Moth - *Lymantria dispar* (Asian race)
- Sudden Oak Death Pathogen - *Phytophthora ramorum*

Proposed Restricted:

- European Gypsy Moth - *Lymantria dispar* (European race)

Many species not yet assessed or regulated



Reed canary grass



Crown vetch – used for erosion control



Velvetleaf – ag weed



Regulations by category

Prohibited – No person may transport (import/move), possess, transfer (buy/sell) or introduce a prohibited species without a permit. The department **may** order or conduct the control effort.

Restricted – No person may transport (import/move), transfer (buy/sell) or introduce a restricted species without a permit. Control encouraged but not required.





Many more details, including exemptions:

- Possession and transport allowed if doing control or disposal, or for identification
- Boats and trailers must be drained and cleared of vegetation and aquatic animals
- Permits can be obtained as needed

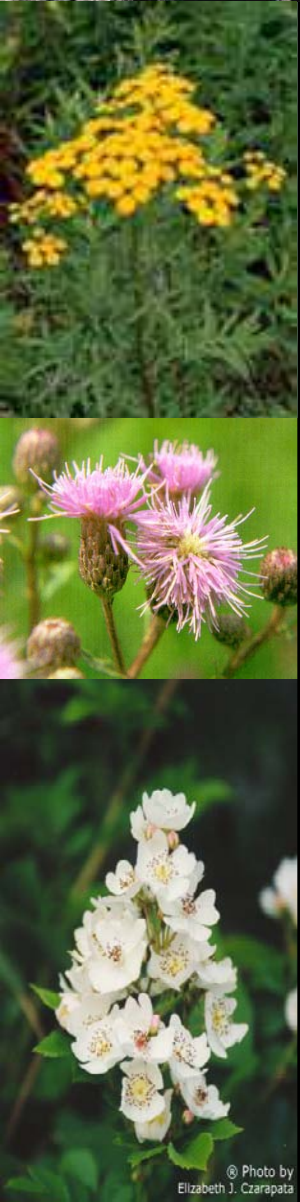




Transport, possession, transfer or introduction not a violation if:

- the Department determines it was incidental or unknowing, and
- was not due to the person's failure to take reasonable precautions

“Reasonable precautions” includes approved Best Management Practices



Best Management Practices for Invasives

Purpose: Avoid introduction of new species and to slow the spread of existing infestations

- Developed for:
 - Forestry
 - Outdoor Recreation
 - Urban Forests
 - Right-of-ways (roads, utilities, RR)



“Reasonable Precautions” may include:

- Abide by DATCP quarantine rules
- Avoid selling or using known invasive plants
- Mow weeds before seeds develop
- Avoid going into weedy areas when in seed
- Use erosion control practices
- Use certified weed-free mulch
- Clean equipment before leaving an infested area

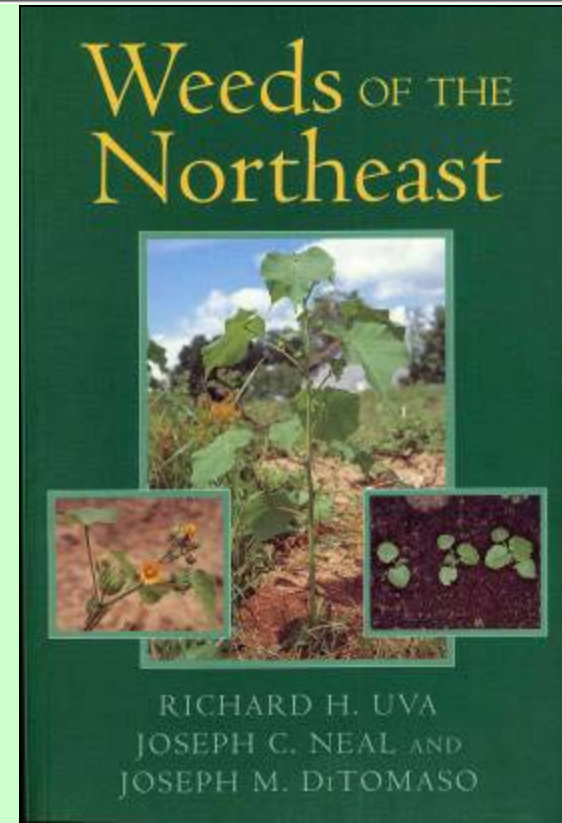


Gear Cleaning

- Clean all equipment before going to the field
 - Steam clean
 - Pressure wash
 - Spray
 - Sweep/Scrape off soil and seeds
 - Brush/knock off soil
- Clean boots and shoes
- Clean clothing – dispose carefully of seeds

Lots of resources to aid in identification

- Books
- Field guides
- Factsheets
- Websites
- Ask an expert
- Interactive tools
 - CDs
 - Websites



For more information:

- Best Management Practices:
<http://council.wisconsinforestry.org/invasives/>
- NR 40 – Invasive Species Rule:
<http://www.dnr.state.wi.us/invasives/classification/>

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