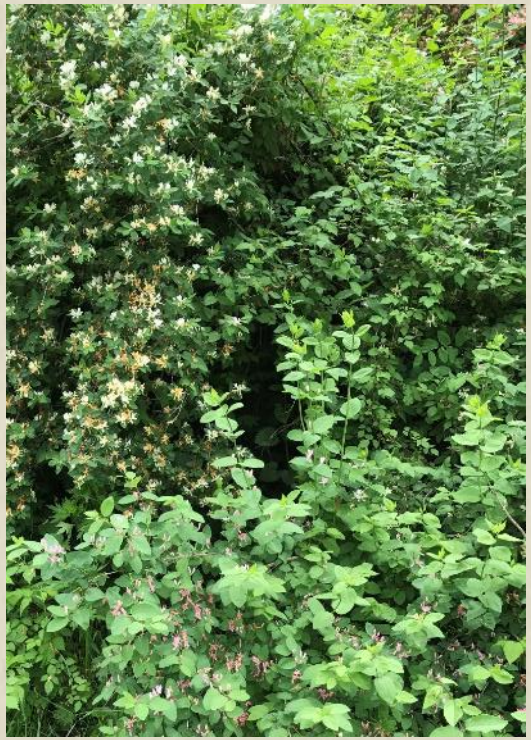
SPRING MANAGEMENT TIPS



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EXTENSION WEED SPECIALIST

APPROACH TO MANAGING INVASIVE PLANTS

Step 1: Plant identification

Step 2:Distribution of population

Step 3: Select appropriate control tactic(s)

Step 4: Apply control method(s)

Step 5: Monitor and adapt management

MANY CONTROL TACTIC

- Manipulation of the environment
- Physical/mechanical management
- Prescribed fire
- Biological control
- Herbicide

FACTSHEETS ON

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Brandon Panke and Mark Renz

A3924-11

Japanese knotweed

(Polygonum cuspidatum)

Invasive plants can thrive and aggressively spread beyond their natural range, disrupting ecosystems. The *Management of Invasive Plants in Wisconsin* series explains how to identify invasive plants and provides common management options. Management methods recommend specific timings for treatment, as well as expected effectiveness. For more information, go to: fyi.uwex.edu/weedsci/category/invasive-plants-of-wisconsin.

Japanese knotweed is an herbaceous perennial, growing up to 10' tall. Hollow, reddish, arching, bamboo-like stems are smooth and stout, and they can persist after plant dies back each year. The base of the stem above each joint is swollen and surrounded by a membranous sheath (ocrea).

Legal classification in Wisconsin: Restricted

Leaves: Alternate, egg-shaped to almost triangular, 4–6" long, 3–4" wide. Dark green on upper surface and pale green on lower surface.

Flowers: Bloom in late summer. Flowers are numerous, highly branched, tiny, creamy white or greenish, and found where the leaf attaches to the stem (axils), near the tips of stems.

Fruits and seeds: Small, winged, triangular fruits carry very small, shiny seeds.

Roots: Plants arising from seed have a taproot up to 6' deep. Stout rhizomes can reach 45' or more from parent plants and give rise to new stalks. Plants arising from seed and rhizome also have fibrous roots.

Similar species: Giant knotweed (*P. sachalinense*) is also invasive, but grows up to 13' tall with larger leaves. The two species are known to hybridize.

Ecological threat:

- Invades upland and lowland sites that are disturbed and undisturbed.
- Poses a significant threat to riparian areas, where it can rapidly spread.
- It tolerates shade, high temperatures, high salinity, and drought.
- It can be transported to new sites as a contaminant in fill dirt or on equipment. During floods, it spreads downstream by shoot fragments, rhizomes, or occasionally by seeds. Escapes from neglected gardens and discarded cuttings are common routes of dispersal from urban areas.
- Although reported to not produce viable seed, several studies have shown that populations of knotweed in the United States can produce viable seed that readily germinate and survive in field conditions.

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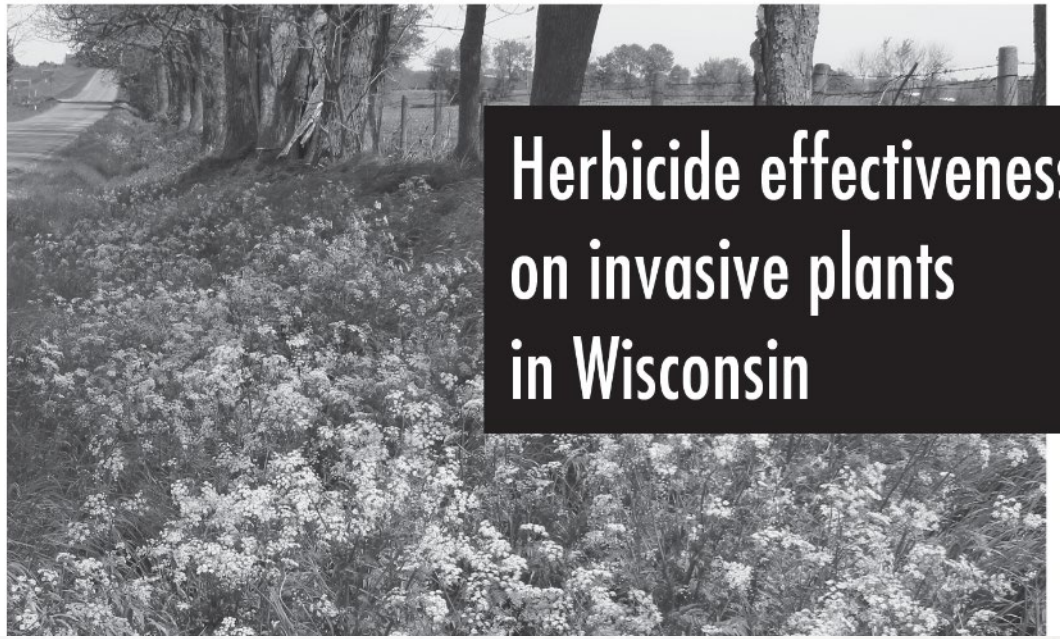
NPM



Herbicide effectiveness on invasive plants in Wisconsin

Herbicide effectiveness on invasive plants in Wisconsin (A3893)

Commercial name	Common name (active ingredient)	Burdock	Canada goldenrod	Chinese lespedeza	Common tansy	Crown vetch	Curly dock	Dames rocket	Field bindweed	Garlic mustard	Giant hogweed	Giant ragweed	Hawkweeds	Hill mustard	Japanese hedge parsley	Japanese knotweed	Knapweed spp.
Banvel	dicamba	G	F/G	P	G	G	F/G	G	F/G	F	P/F	F/G	F/G	—	—	F/G	F/G
Butyrac	2,4-DB	—	F/G	—	—	—	F	N	N	—	—	—	—	—	—	—	—
Chaparral	aminopyralid + metsulfuron	G/E	G/E	F/G	G/E	G/E	G/E	G	—	G/E	G	G	G/E	G	G	G/E	E
Cimarron Max	metsulfuron + 2,4-D + dicamba	G/E	G/E	G	G	G	G/E	—	F/G	—	—	F	—	G/E	—	—	F/G
Cimarron Plus	metsulfuron + chlorsulfuron	G/E	G/E	—	E	G	—	—	—	—	—	—	—	—	—	—	—
Crossbow	2,4-D + triclopyr	G/E	F/G	G	F/G	G	G/E	—	F/G	—	—	G/E	—	G	—	—	F/G
Curtail	2,4-D + clopyralid	G	F	—	G	G	F	—	—	—	—	G	F/G	—	—	—	G
Escort	metsulfuron	G/E	G/E	F/G	G	G	G/E	G	P/F	G/E	G	P	—	E	E	—	F
Forefront	2,4-D + aminopyralid	G/E	F/G	P	F/G	E	G/E	—	—	—	—	E	E	—	—	—	E
Fusilade	fluazifop	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Garlon	triclopyr	G/E	F/G	G/E	P	G/E	F/G	G	F	G	G	G/E	—	G	G	F/G	P/F

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SPECIES WITH FACTSHEETS

- Amur honeysuckle
- Asian bittersweet
- Bell's honeysuckle
- bird's-foot trefoil
- black locust
- black swallowwort
- border privet
- bull thistle
- Canada thistle
- common buckthorn
- common privet
- common tansy
- common teasel
- creeping bellflower
- crown vetch
- cut-leaved teasel
- dame's rocket
- European marsh thistle
- field bindweed
- garlic mustard
- glossy buckthorn
- hill mustard
- hybrid cattail
- Japanese barberry
- Japanese hedge parsley
- Japanese honeysuckle
- Japanese hop
- Japanese knotweed
- Japanese stiltgrass
- leafy spurge
- Morrow's honeysuckle
- multiflora rose
- musk thistle
- narrow-leaved cattail
- plumeless thistle
- poison hemlock
- purple loosestrife
- quackgrass
- sericea lespedeza
- spotted knapweed
- spreading hedge parsley
- Tatarian honeysuckle
- tree-of-heaven
- white sweetclover
- wild chervil
- wild parsnip
- yellow sweetclover

MIPN.org
Midwest Invasive Plant Network

TIPS FOR SPRING INVASIVE PLANT MANAGEMENT

1. Control annual/biennials when small (before June)
   - Annuals 4-6 inches tall, Biennials when rosettes (before bolts)
2. Revegetate area during/after control
   - Do you expect “good plants” to fill open void?
   - What species should you plant to help?
3. Determine where source of population is
4. Reduce seed production…….

CONTROL ANNUAL/BIENNIALS WHEN SMALL (BEFORE JUNE)

- More effectively controlled
- Less time/herbicide
- Safer to handle/dispose of
- More time for “good plants” to fill in

- NOTE PERENNIAL MANAGEMENT TIMING IS OFTEN DIFFERENT

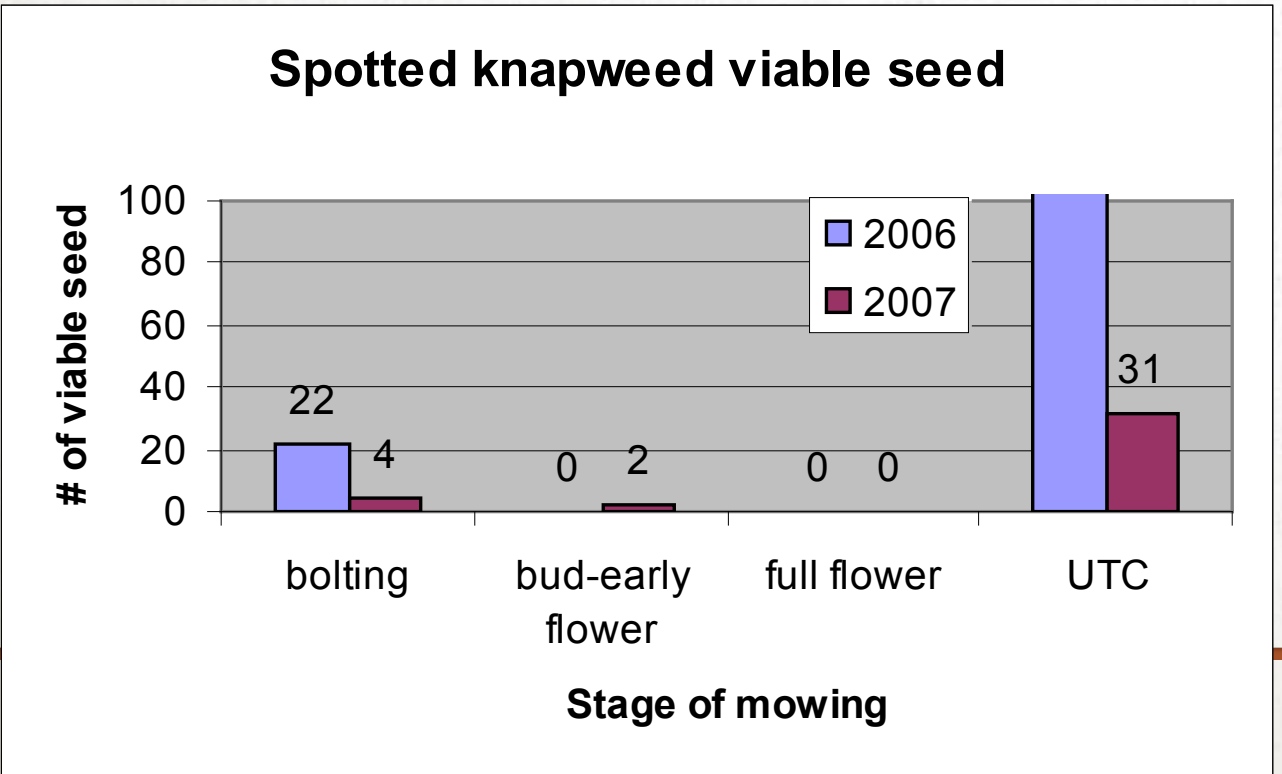
REVEGETATE AREA DURING/AFTER CONTROL

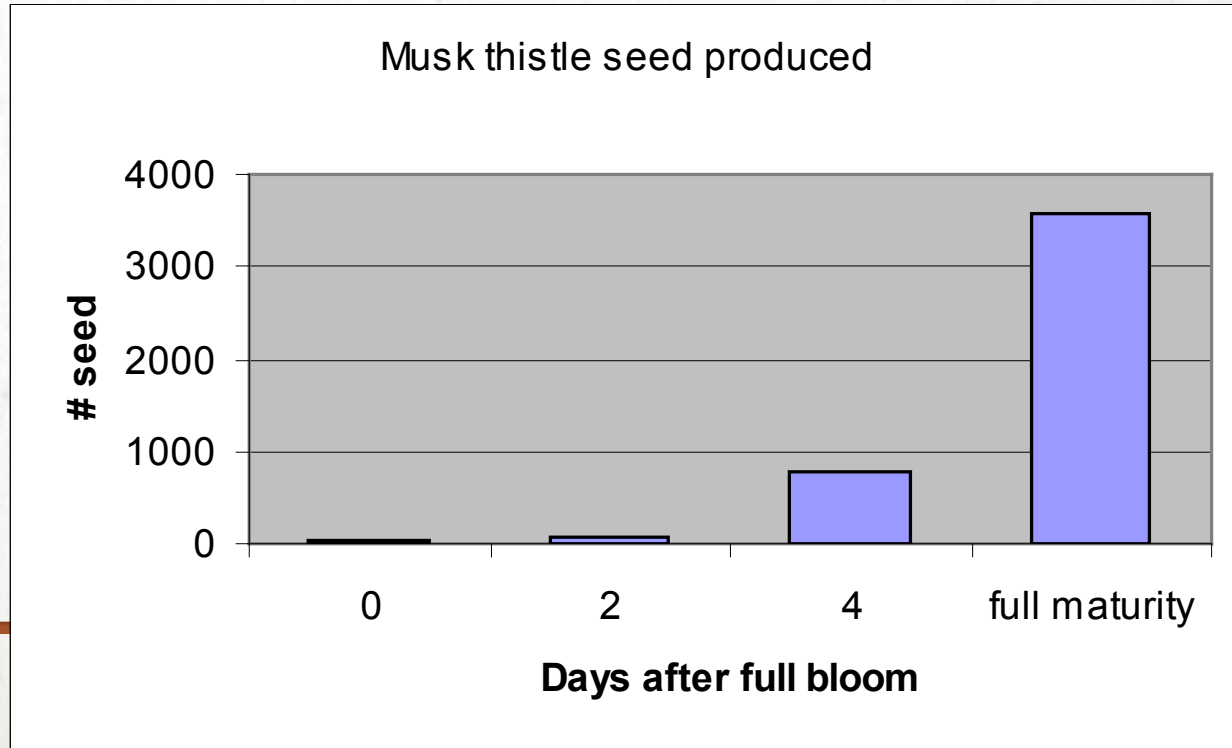
- How much bareground will be present after control
  - disturbance?
- Some plant will regrow, what do you want to fill in that open space?
- What are some easy options that pose little long-term risk
  - Oats, Annual ryegrass/Italian ryegrass
  - Straw mulch
- Native plantings can work, but need to have a plan in place to ensure success

DETERMINE WHERE SOURCE OF POPULATION IS

REDUCE SEED PRODUCTION

- Try to manage at correct timing
- If you miss, viable seed will develop
- # of seeds will still be greatly reduced





GARLIC MUSTARD BIO-CONTROL UPDATE

- Researched for > 10 years. Difficult to get approval
  - Researchers suggest garlic mustard is in decline….

- CURRENT CANDIDATE: The root-crown weevil *C. scrobicollis*
  - Passed TAG February 2017, awaiting other approvals from USFS.
  - A petition for release in Canada was submitted in December 2017.

- NEW CANDIDATE: The seed-feeding weevil *C. constrictus*
  - seems the most specific agent
  - demonstrated that 79% of garlic mustard seeds were destroyed.
  - Unknown when submission will occur

Lesser Celandine (Ranunculus ficaria)

Prohibited plant

LESSER CELANDINE

- Early spring perennial
- Flowers in May,
  - Yellow flowers petals 1 inch wide
- Creates a carpet that outcompetes early season natives
  - Dies back by mid summer

HOW TO CONTROL?

- Hand Removal
  - Need to dig to remove perennial tubers
- Herbicides
  - Only herbicides I am aware of is glyphosate
  - Must apply early to avoid impact to other plants
  - Make sure to use aquatic formulations if applying near stream…

WHAT ABOUT GREATER CELANDINE?
RESTRICTED PLANT

- Herbaceous biennial, sometimes perennial, up to 2’ tall with 4 petaled yellow flowers
- Branches/stems covered with soft hairs.
- Stems, when broken reveals an orange-yellow sap.

I HAVE HEARD THIS PLANT IS EASY TO CONTROL…

- They key is to prevent large populations from getting established…..

- Hand pull
  - Use gloves to avoid exposure to sap
- Herbicides: APPLY BEFORE SEED IS PRODUCED
  - Triclopyr
  - glyphosate

LEAFY SPURGE IS OFTEN NOT RECOGNIZED UNTIL TOO LATE

ver in

IT EVENTUALLY DOMINATES THE LANDSCAPE

HOW DOES IT SPREAD?

- Seed is believed to be primary mechanism!
  - Flowers and seeds before areas are typically mowed
  - Mowers spread populations
- Contaminated soil/material being brought on site
- Animals??????

FOR ESTABLISHING INFESTATIONS

- Extreme measures to prevent further spread:
  1. Remove plants and as much root (perennial) as possible
  2. Spot treatment with herbicide (flowering-fall)
     - Products that contains aminocyclopyrachlor (Method) works best
       - Be careful around trees
     - Plateau, Tordon* can provide suppression

FOR DENSE POPULATIONS BIO-CONTROL

NEED PERMIT FROM DATCP

Biological control

Effectiveness in season: < 50%

Season after treatment: < 50%

The three commonly recommended agents for biological control of leafy spurge are *Aphthona nigriscutis*, *A*

YOU CAN (AND LIKELY SHOULD) INTEGRATE BOTH BIOCONTROL AND HERBICIDES

- Herbicides are

1. Expensive
2. Difficult to treat all plants present every year

- Bio-control

1. Takes many years to establish and impact plants
2. Will not work in all areas/habitats (roads)