

WICKED WEEDS

VERNAL VULNERABLES

Homeowner Invasive
Species Identification and
Management Workshop

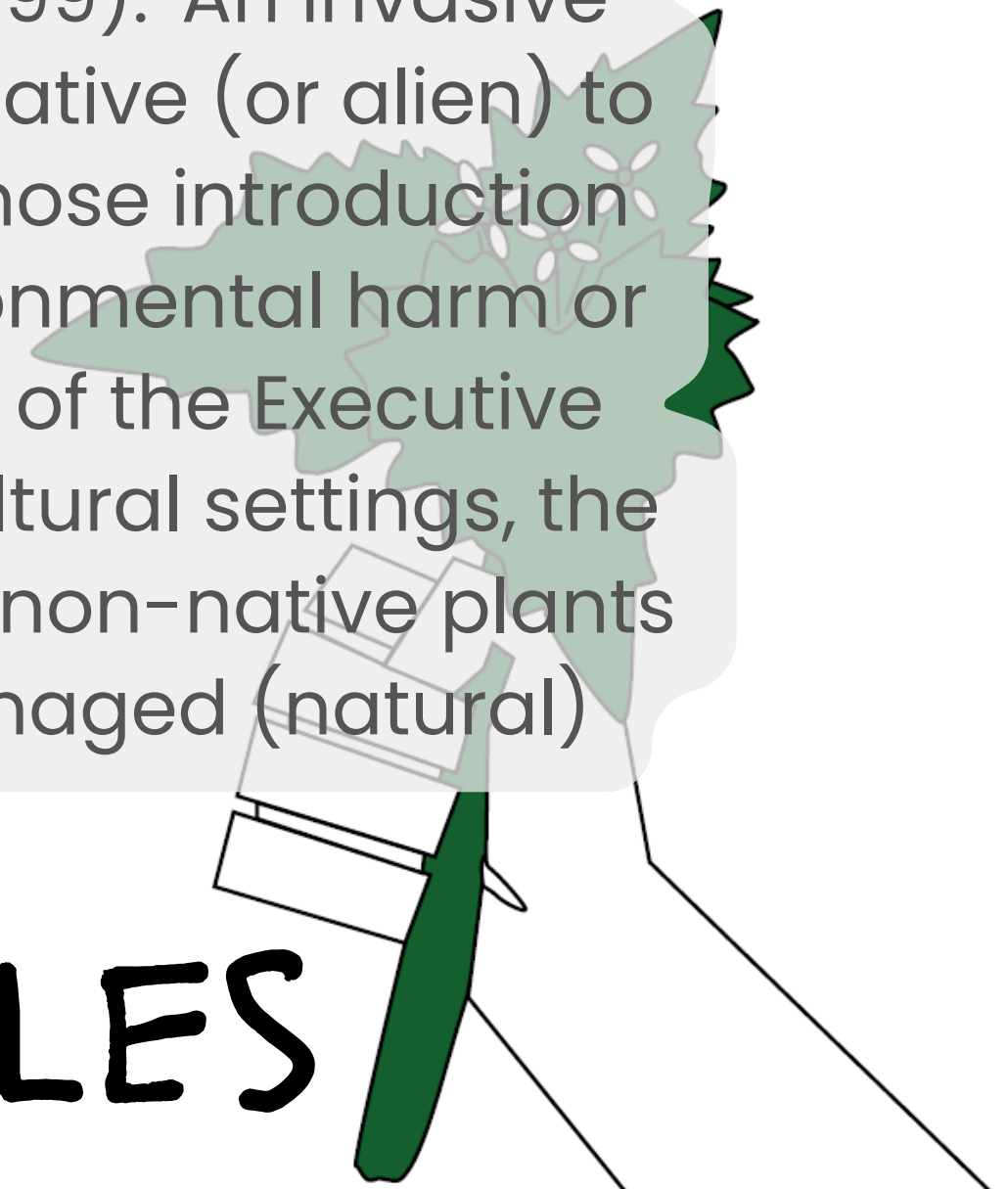


INVASIVE PLANTS 101

Invasive Plant – 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. Note: From the Presidential Executive Order 13112 (February 1999): 'An invasive species is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.' In contrast to item 2) of the Executive Order, which includes plants invasive in agricultural settings, the Connecticut Invasive Plant Working Group lists non-native plants as invasive only if they invade minimally managed (natural) areas.



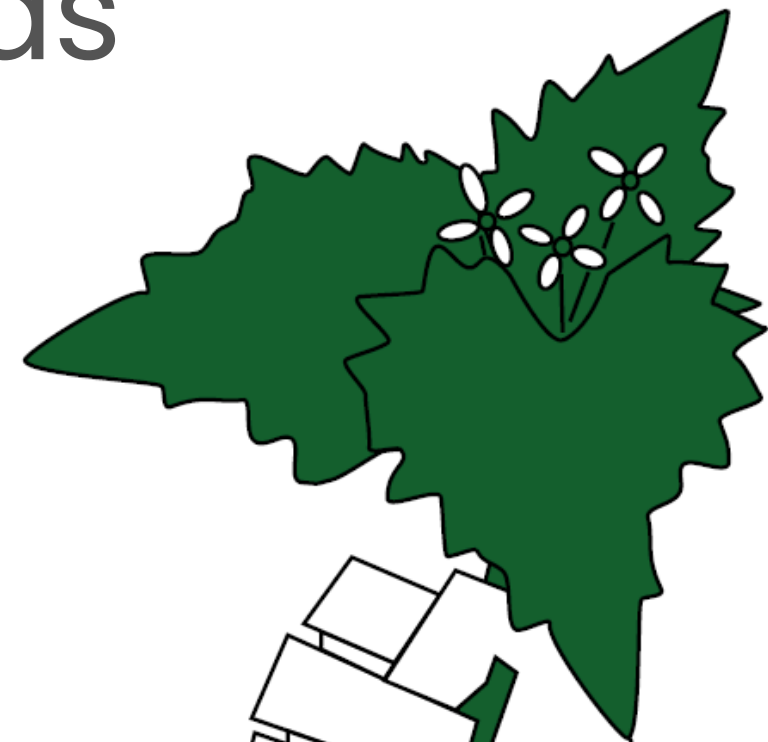
VERNAL VULNERABLES



INVASIVE PLANTS 101

Out of Place – not from here

Out of Control – spreads rapidly, unchecked by native ecosystem



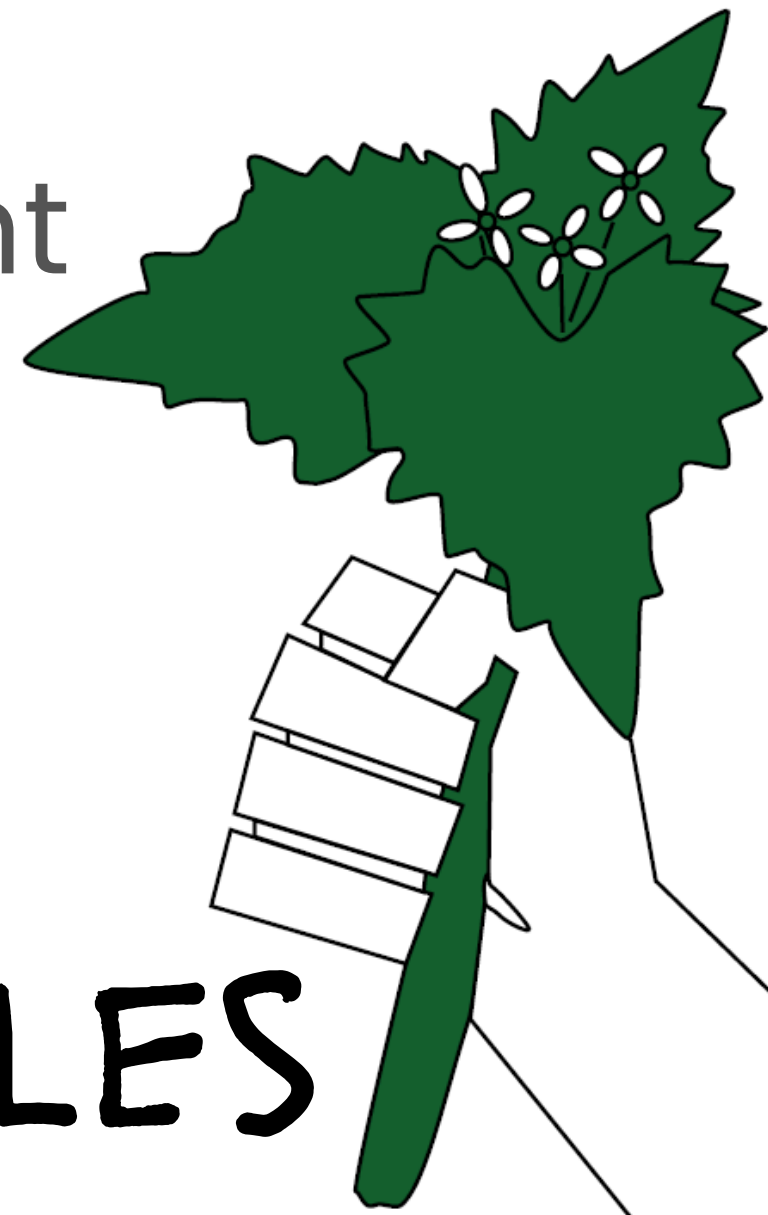
VERNAL VULNERABLES

INVASIVE PLANTS 101

Q: Can native plants be invasive?

A: Not according to NRCS, but it is nuanced.

- Opportunistic Native Plant
- Weed
- Noxious Weed



VERNAL VULNERABLES

INVASIVE PLANTS 101



Poison Ivy



Grape



VERNAL VULNERABLES

LIST OF INVASIVE PLANTS

The following plants are considered invasive in the State of Ohio effective

January 7, 2018 except as otherwise noted:

<i>Ailanthus altissima</i> , tree-of-heaven	<i>Lythrum salicaria</i> , purple loosestrife
<i>Alliaria petiolata</i> , garlic mustard	<i>Microstegium vimineum</i> , Japanese stiltgrass
<i>Berberis vulgaris</i> , common barberry	<i>Myriophyllum aquaticum</i> , parrotfeather
<i>Butomus umbellatus</i> , flowering rush	<i>Myriophyllum spicatum</i> , Eurasian water-milfoil
<i>Celastrus orbiculatus</i> , Oriental bittersweet	<i>Nymphoides peltata</i> , yellow floating heart
<i>Centaurea stoebe</i> ssp. <i>Micranthos</i> , spotted knapweed	<i>Phragmites australis</i> , common reed
<i>Dipsacus fullonum</i> , common teasel	<i>Potamogeton crispus</i> , curly-leaved pondweed
<i>Dipsacus laciniatus</i> , cutleaf teasel	<i>Pueraria montana</i> var. <i>lobata</i> , kudzu
<i>Egeria densa</i> , Brazilian elodea	<i>Ranunculus ficaria</i> , fig buttercup, lesser celandine
<i>Elaeagnus angustifolia</i> , Russian olive	<i>Rhamnus cathartica</i> , European buckthorn
<i>Elaeagnus umbellata</i> , autumn olive	<i>Rosa multiflora</i> , multiflora rose
<i>Epilobium birsutum</i> , hairy willow herb	<i>Trapa natans</i> , water chestnut
<i>Frangula alnus</i> , glossy buckthorn	<i>Typha angustifolia</i> , narrow-leaved cattail
<i>Heracleum mantegazzianum</i> , giant hogweed	<i>Typha x glauca</i> , hybrid cattail
<i>Hesperis matronalis</i> , dame's rocket	<i>Vincetoxicum nigrum</i> , black dog-strangling vine, black swallowwort
<i>Hydrilla verticillata</i> , hydrilla	<i>Lythrum virgatum</i> , European wand loosestrife (effective January 7, 2019)
<i>Hydrocharis morsus-ranae</i> , European frog-bit	<i>Pyrus calleryana</i> , callery pear (effective January 7, 2023)
<i>Lonicera japonica</i> , Japanese honeysuckle	
<i>Lonicera maackii</i> , amur honeysuckle	
<i>Lonicera morrowii</i> , Morrow's honeysuckle	
<i>Lonicera tatarica</i> , tatarian honeysuckle	

Division of Plant Health | Plant Pest Control

8995 East Main Street, Reynoldsburg, OH 43068

Phone 614-728-6400 | Fax 614-728-6453 | www.agri.ohio.gov | plantpest@agri.ohio.gov



VERNAL VULNERABLES

INVASIVE PLANTS

101 ?'S



VERNAL VULNERABLES



INVASIVE PLANT MANAGEMENT TOOLS



VERNAL VULNERABLES



TOOLS FOR SPRING MANAGEMENT

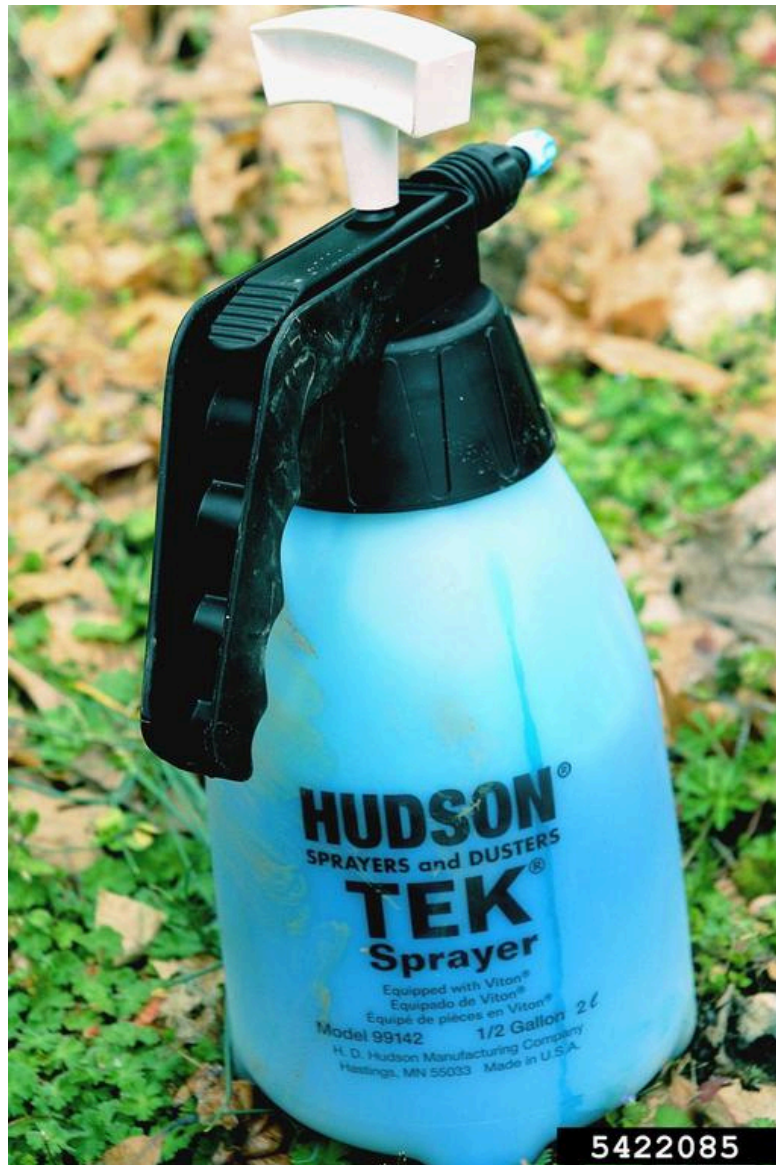
MECHANICAL

- **Work Gloves**
- **Weed Wrench**
 - **Pullerbear, Root Talon, Uprooter**
- **Saw, Loppers, Pruners, Chainsaw**
- **Contractor-grade Garbage Bags**
- **Shovel, Trowel**
- **Weed Torch**



TOOLS FOR SPRING MANAGEMENT

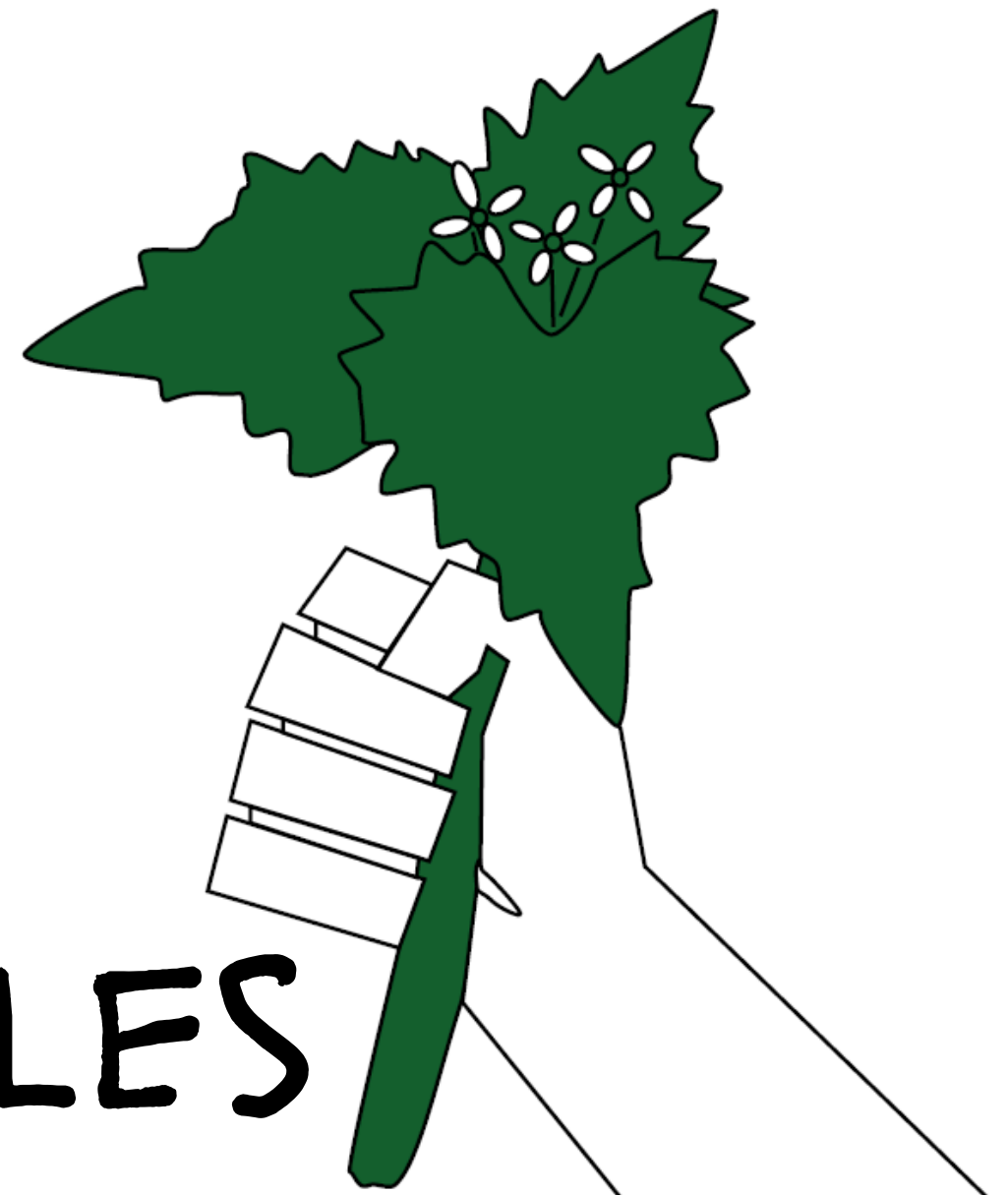
CHEMICAL



Steve Manning, Invasive
Plant Control, Bugwood.org

- Flagging or Spray Paint
- PVC applicator or Buckthorn Blaster
- Spray Bottle or Sprayer (backback or hand held)
- Personal Protective Equipment and Clothing
- Herbicide
 - Glyphosate, aquatic formula if using near water
 - Others: Triclopyr, Glypro, 2,4-D, Clopyralid
- Surfactant
- Dye (Lazer, Mark-It Blue)
- Surfactant (ex: Cide-kick)

5 INVASIVE PLANTS TO MANAGE THIS SPRING



VERNAL VULNERABLES

GARLIC MUSTARD

ALLIARIA PETIOLATA

First Year



Second Year

GARLIC MUSTARD

ALLIARIA PETIOLATA



Connie Gray, GA-EPPC, Bugwood.org



Steven Katovich, Bugwood.org

GARLIC MUSTARD MANAGEMENT

MECHANICAL

Best for smaller infestations

Pull plants.
Pull 2nd year plants first
dispose of bagged in trash

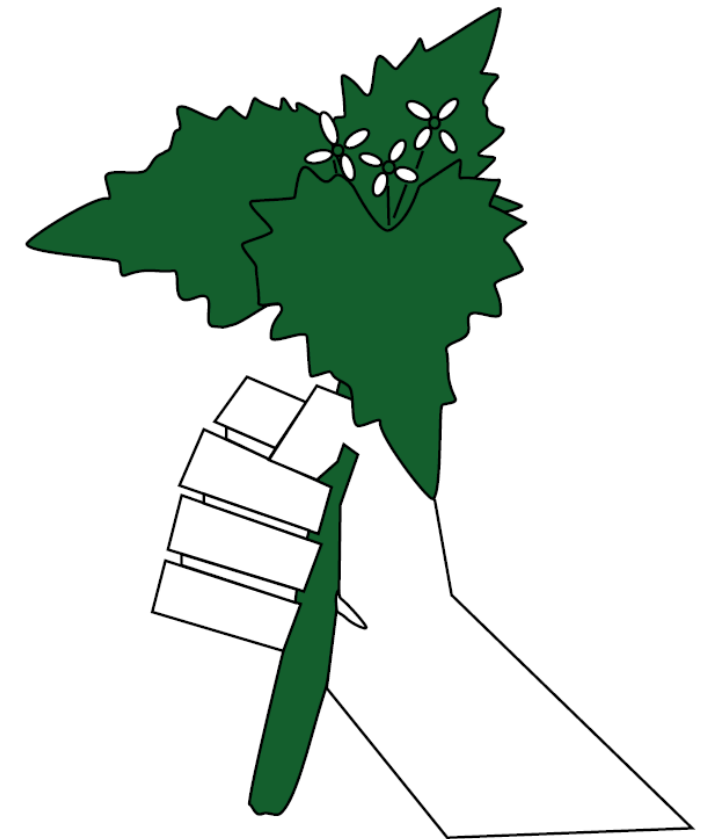
CHEMICAL

Best for large, dense infestations

Apply herbicide in spring, or on
rosettes in Fall.

FOLLOW UP

Monitor every spring for new plants, and for at
least three or four years after no more plants
have been found to ensure the population has
been eradicated

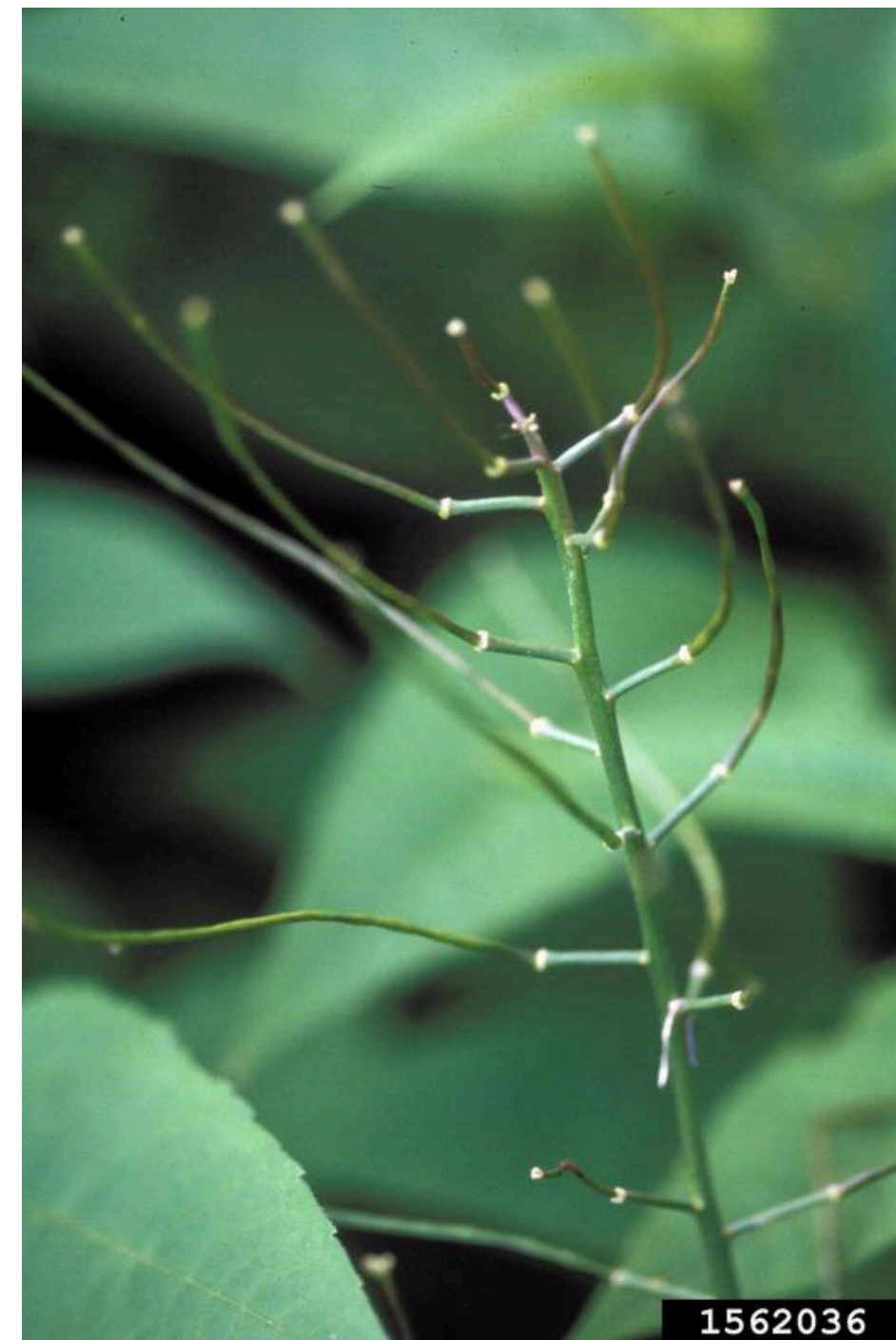


DAME'S ROCKET

HESPERIS MATRONALIS



Tom Heutte, USDA Forest Service,
Bugwood.org



1562036

DAME'S ROCKET

HESPERIS MATRONALIS



DAME'S ROCKET MANAGEMENT

MECHANICAL

Best for smaller infestations

Pull plants in spring before seed set

CHEMICAL

Best for large, dense infestations

Apply herbicide in spring, or on rosettes in Fall.

FOLLOW UP

Monitor every spring for new plants, and for at least three or four years after no more plants have been found to ensure the population has been eradicated

LESSER CELANDINE

FICARIA VERNA



John M. Randall, The Nature Conservancy, Bugwood.org



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

LESSER CELANDINE

FICARIA VERNA



Leslie J. Mehrhoff, University of Connecticut,
Bugwood.org

LESSER CELANDINE MANAGEMENT

MECHANICAL

Best for very small infestations

Dig up plants, taking care to get all bulbets and tubers from the soil
dispose of bagged in trash

FOLLOW UP

Monitor every spring for new plants

CHEMICAL

Best for medium to large infestations

Foliar Spray with 2% Glyphosate
approved for aquatic areas and 1/2%
surfactant:

- in late winter or early spring, March–May
- when leaves are visible, but prior to full flowering
- when temperatures are above 40°F.

If infestation is throughout a lawn some recommend using a mix of at least 2 of the following broadleaf herbicides:
MCPA, triclopyr, and dicamba

CANADA THISTLE

CIRSIIUM ARVENSE



Antonio DiTommaso, Cornell University, SARE.org



Scott Morris, Cornell University, SARE.org



Antonio DiTommaso, Cornell University, SARE.org

CANADA THISTLE

CIRSIIUM ARVENSE



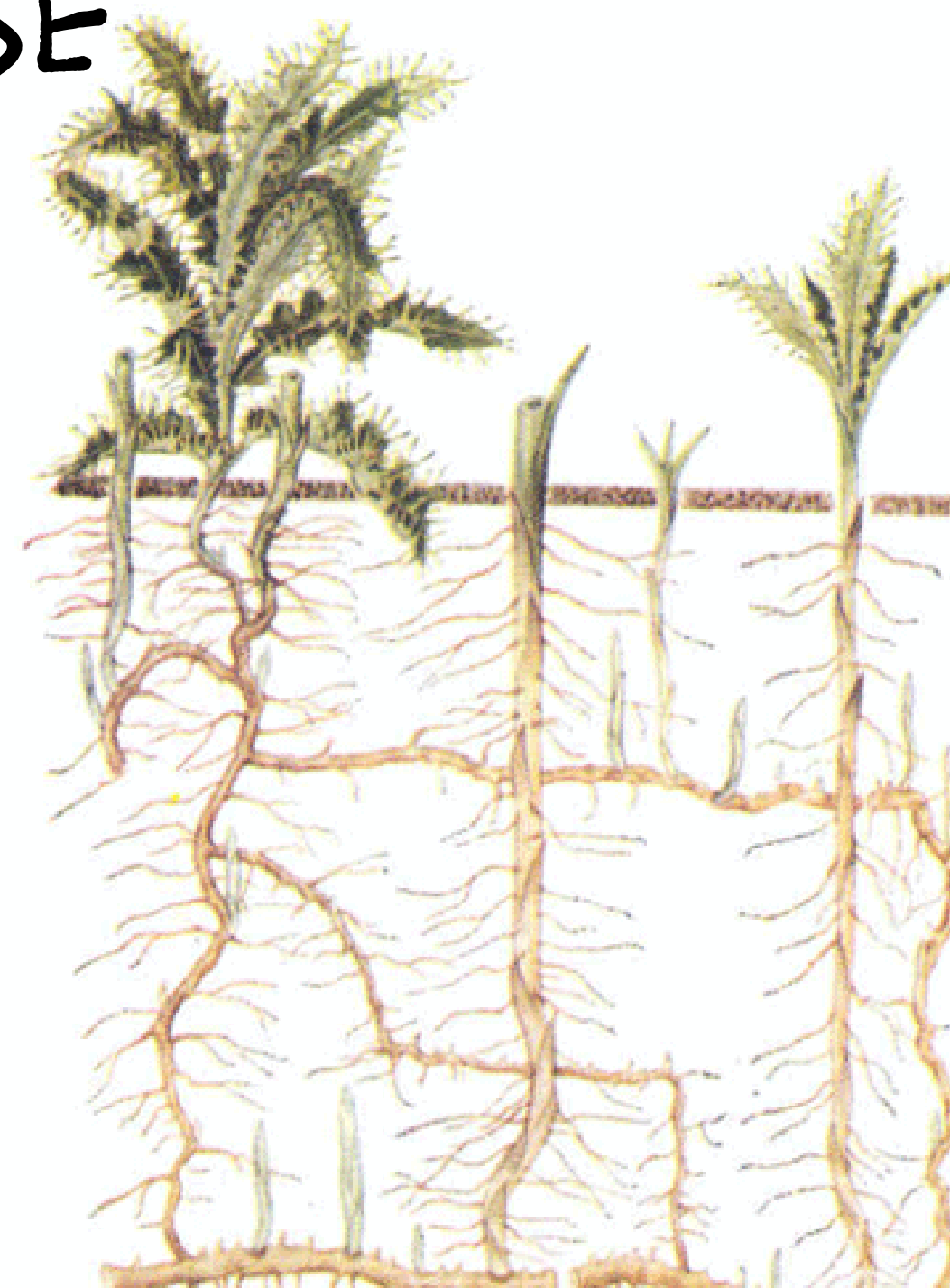
Jan Samanek, Phytosanitary Administration, Bugwood.org

CANADA THISTLE

CIRSIUM ARVENSE



Phil Westra, Colorado State University, Bugwood.org



Montana State University Extension

CANADA THISTLE MANAGEMENT

MECHANICAL

- Pulling is only recommended for plants < 3 weeks old
- Diligent repeated mowing for multiple growing seasons
- DO NOT LET FLOWER OR GO TO SEED
- A weed torch may be used on seed heads

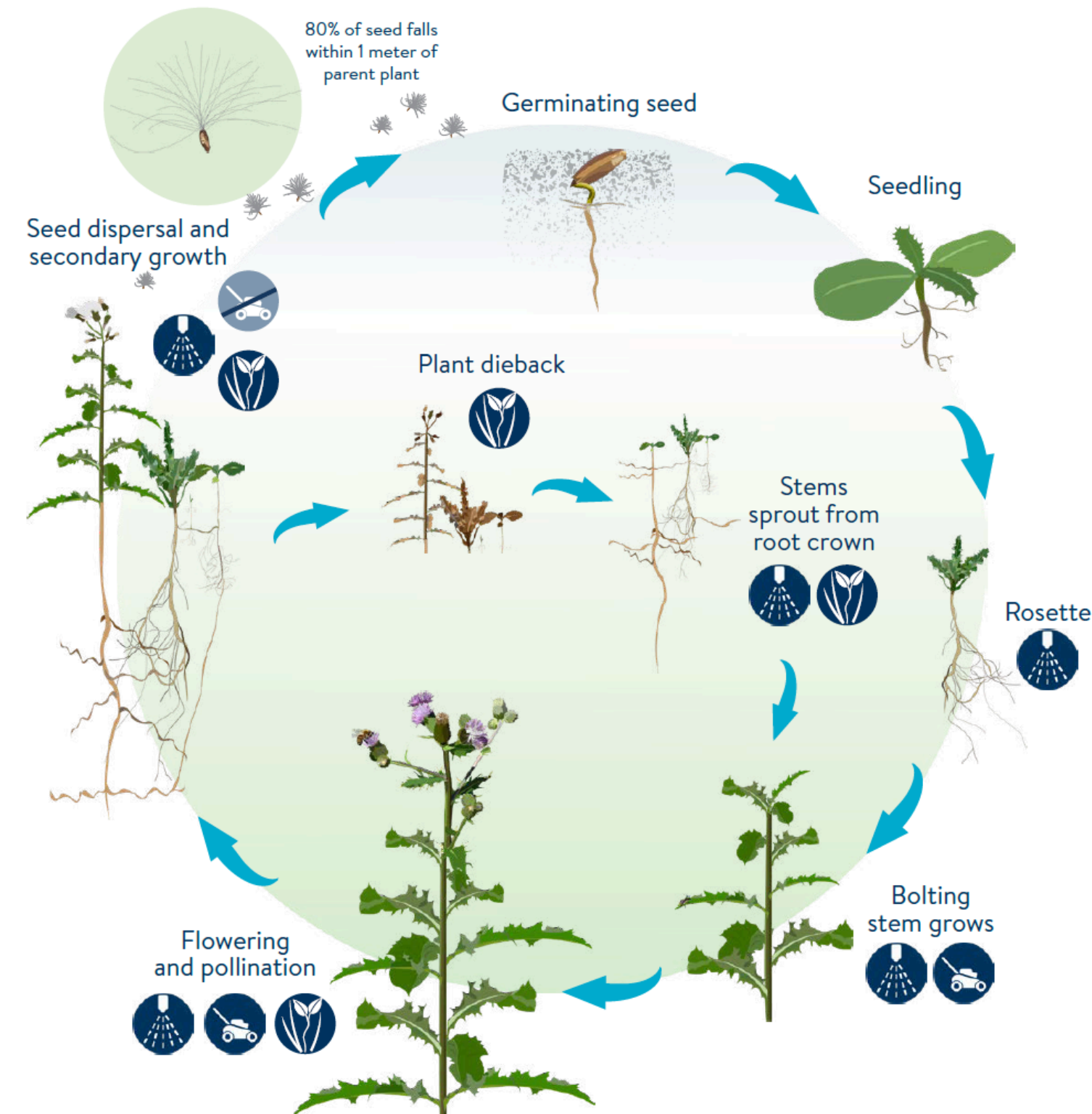
CHEMICAL

- Herbicides provide the most effective management
- Apply herbicide to spring rosettes
 - Near water use 1.0% Aquatic Glyphosate
 - 0.15% Clopyralid (Transline/Thistledown)

FOLLOW UP

Infestations need to be monitored for several years after initial treatments and follow-up applications should be administered for surviving plants and new seedlings.

CANADA THISTLE MANAGEMENT



CANADA THISTLE

Cirsium arvense

PERENNIAL LIFECYCLE & TREATMENT TIMING

mda.state.mn.us/weedcontrol



MOW

Mow before seed set to prevent seed dispersal.



PLANT COMPETITION

Add native grasses to increase competition.



FOLIAR SPRAY

Spray leaves.



Monitoring and repeated management is necessary for long term control of established infestations.



UNIVERSITY OF MINNESOTA EXTENSION
Driven to Discover™

JAPANESE STILTGRASS

MICROSTEGIUM VIMINEUM



Richard Gardner, Bugwood.org



Leslie J. Mehrhoff, University of Connecticut,
Bugwood.org

JAPANESE STILTGRASS

MICROSTEGIUM VIMINEUM



JAPANESE STILTGRASS MANAGEMENT

MECHANICAL

Pull small to medium infestations while plants are small and soil moist.

CHEMICAL

Heavy infestations not close to sources or water can be treated with a pre-emergent herbicide (pendimethalin) in early spring 2-3 weeks before germination.

FOLLOW UP

Monitor and repeat treatment if needed for at least 5 years.

CFAES

COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

F-70

Controlling Non-Native Invasive Plants in Ohio Forests: Japanese Stiltgrass

Table 2. Herbicide recommended for pre-emergent treatment of Japanese stiltgrass.

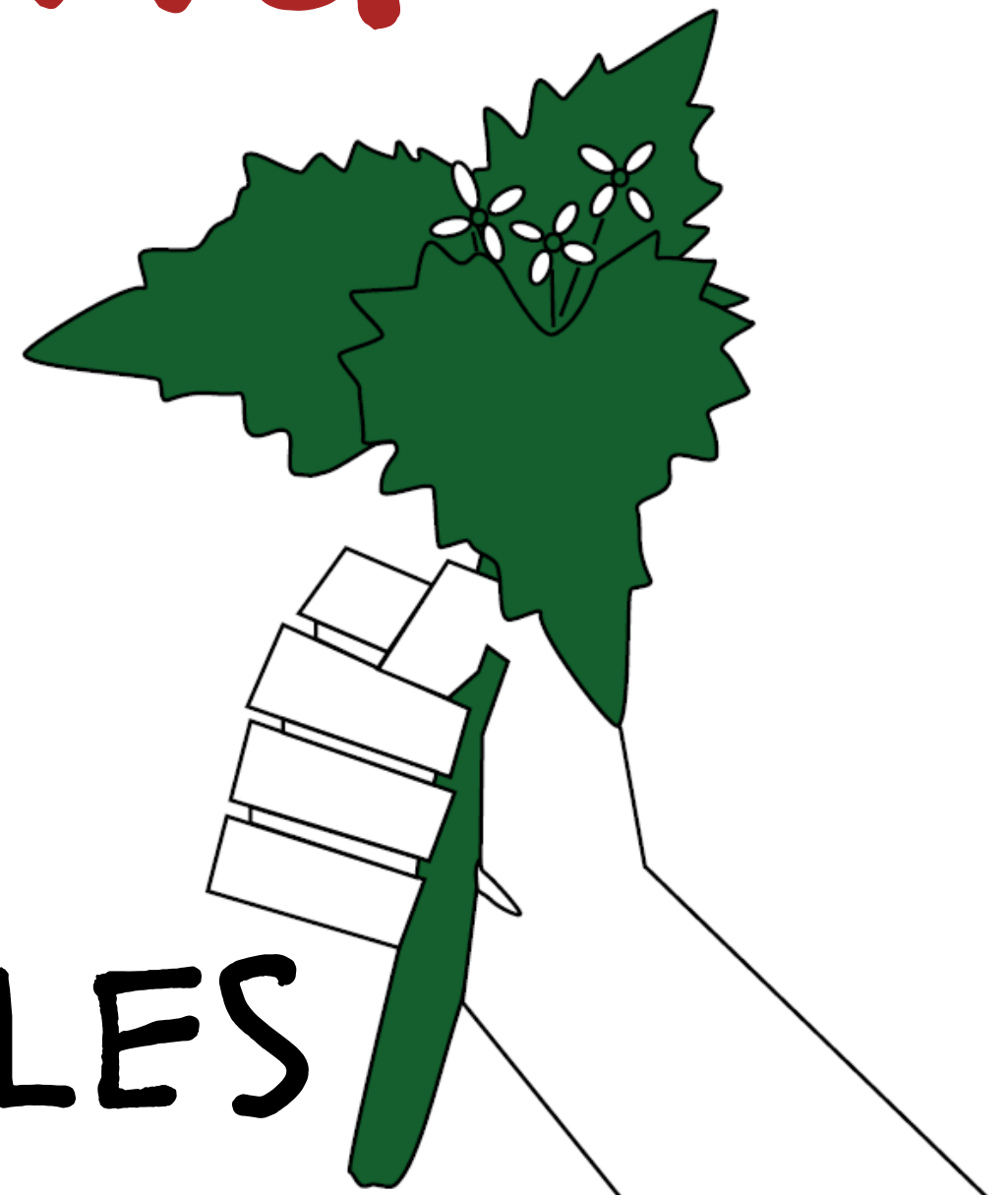
Herbicide common name	Example brand names	Comments
pendimethalin	Pendulum AquaCap*	4.2 quarts per acre. Apply 2-3 weeks prior to germination. Will not affect plants that have germinated.
prodiamine	ProClipse*	16 ounces per acre. Apply 2-3 weeks prior to germination. Will not affect plants that have germinated.
imazapic	Plateau*	4-6 ounces per acre. Treat when plants are less than 4-inches tall. Provides pre- and post-emergence control.
sulfometuran methyl	Oust XP, Spyder	1 1/3-3 ounces per acre. Provides pre- and post-emergence control.
*Not labeled for use on woodland sites.		

PLANTS TO MANAGE
THIS SPRING

?'s



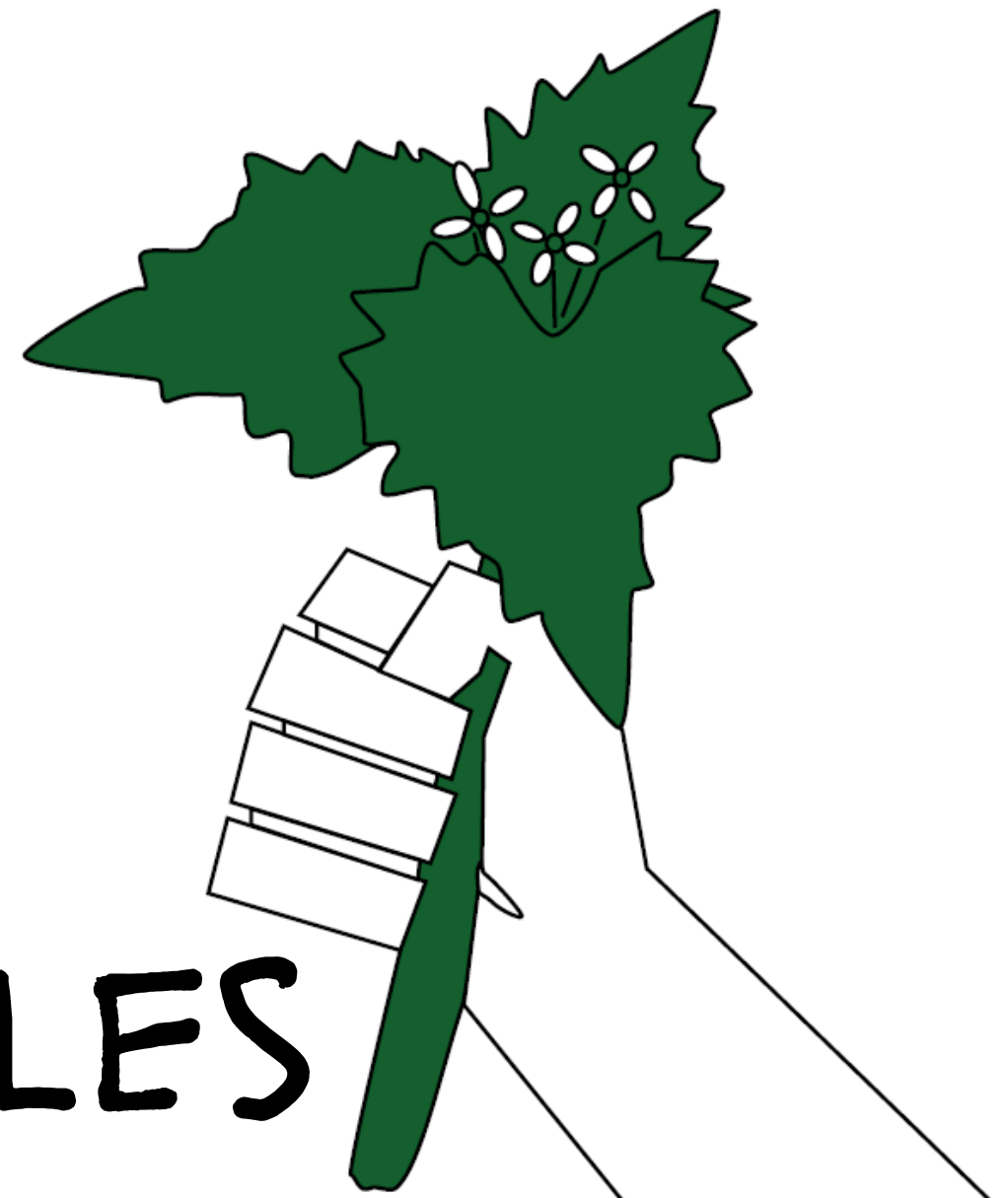
VERNAL VULNERABLES



9th INVASIVE
PLANTS TO ID THIS
SPRING

FOR FUTURE
MANAGEMENT

VERNAL VULNERABLES



JAPANESE BARBERRY

BERBERIS THUNBERGII



BUSH HONEYSUCKLES

LONICERA SPP.



Mixed Bush Honeysuckle Infestation Spring
Richard Gardner, Bugwood.org



Amur Honeysuckle Infestation Spring
Richard Gardner, Bugwood.org

BUSH HONEYSUCKLES

LONICERA SPP.



Morrow's Honeysuckle flower
Chris Evans, University of Illinois,
Bugwood.org



Tatarian Honeysuckle flower
Leslie J. Mehrhoff, University of
Connecticut, Bugwood.org



Amur Honeysuckle flower
Richard Gardner, Bugwood.org

AUTUMN OLIVE

ELEGANUS UMBELLATA



James H. Miller, USDA Forest Service, Bugwood.org



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Chris Evans, University of Illinois, Bugwood.org

BURNING BUSH

EUONYMUS ALATUS



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

BURNING BUSH

EVONYMUS ALATUS



Leslie J. Mehrhoff, University of
Connecticut, Bugwood.org

5457463

GLOSSY BUCKTHORN

FRANGULA ALNUS



Zelimir Borzan,
University of Zagreb,
Bugwood.org



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

GLOSSY BUCKTHORN

FRANGULA ALNUS



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

COMMON BUCKTHORN

RHAMNUS CATHARTICA



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

PRIVET

LIGUSTRUM SPP.



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

MULTIFLORA ROSE

ROSA MULTIFLORA



5473566

Multiflora rose in bloom
Rob Routledge, Sault College, Bugwood.org



UGA1380239

Thorns and hairy Stipules Chris Evans, University of Illinois, Bugwood.org

MULTIFLORA ROSE

ROSA MULTIFLORA



CALLERY PEAR

PYRUS CALLERYANA



Nancy Loewenstein, Auburn University, Bugwood.org

CALLERY PEAR

PYRUS CALLERYANA



Rebekah D. Wallace, University of Georgia, Bugwood.org



Ryan Armbrust, Kansas Forest Service, Bugwood.org



John Ruter, University of Georgia, Bugwood.org

SPRING WOODY INVASIVE MANAGEMENT

MECHANICAL

Hand pull small plants.
Use weed wrench to remove plants up to 2".



CHEMICAL

Mark target plants with flagging, paint and/or drop a pin.
Make a plan for summer or fall treatment with herbicide

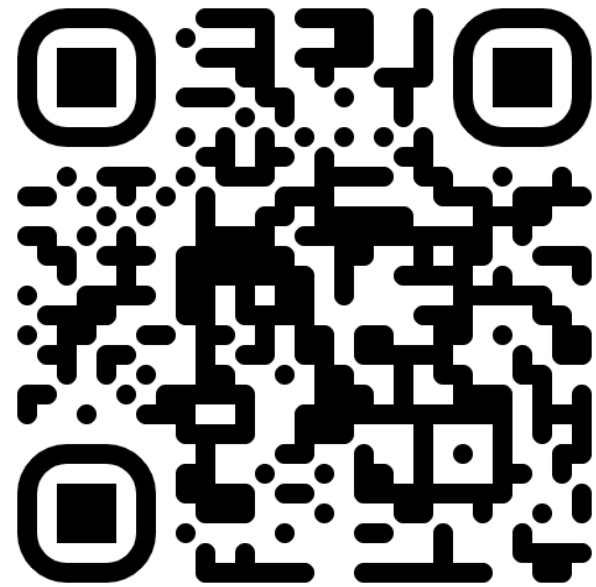


FOLLOW UP

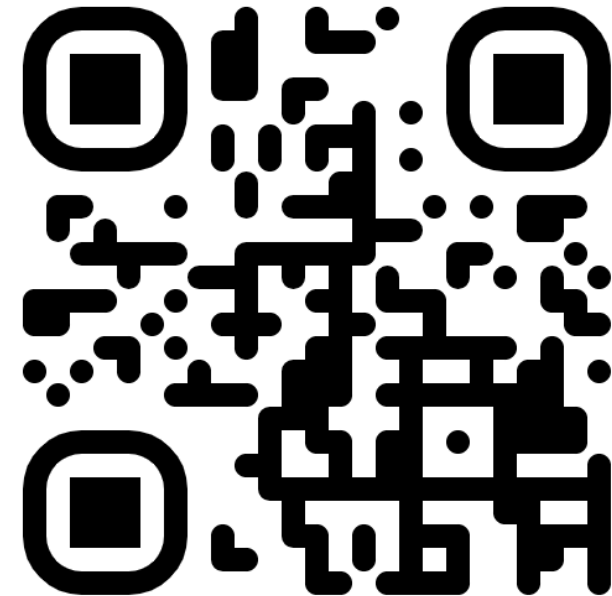
Cut stump application of 41% - 53.8% glyphosate.
Infestations need to be monitored for several years after initial treatments and follow-up applications should be administered for surviving plants and new seedlings.



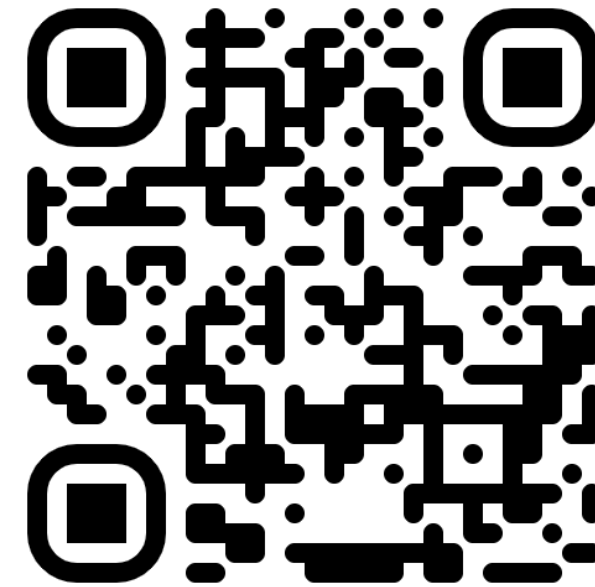
RESOURCES - WEBSITES AND ORGANIZATIONS



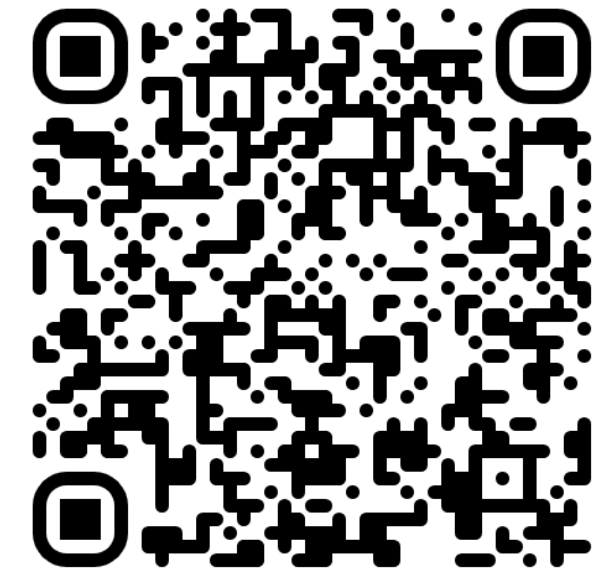
Invasive.org



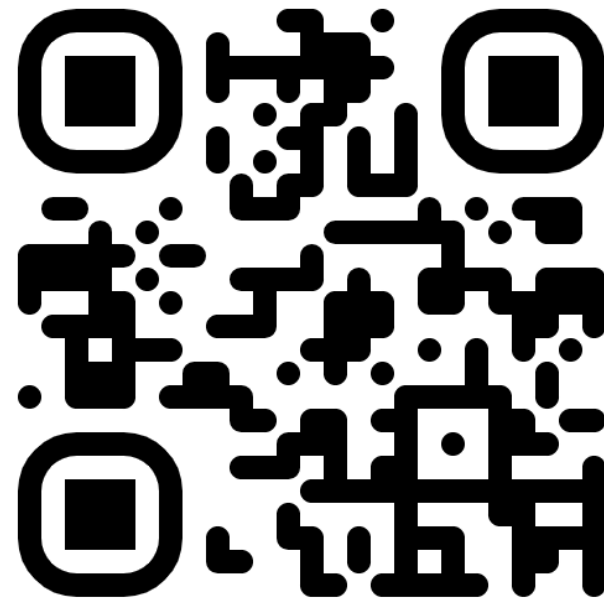
Midwest Invasive
Plant Network



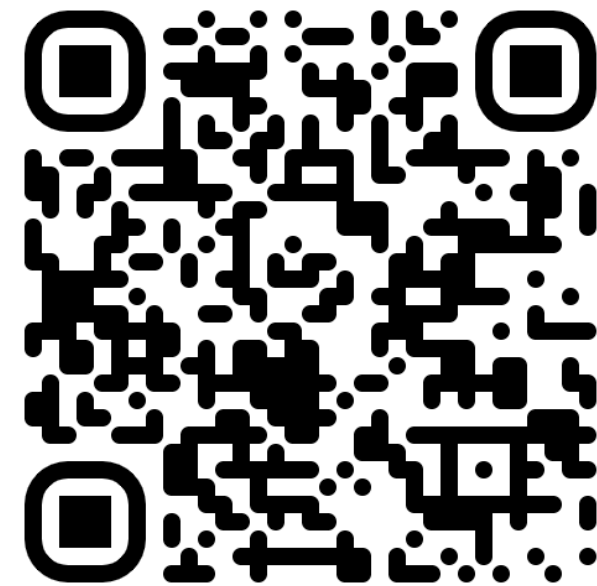
Ohio Invasive Plant
Council



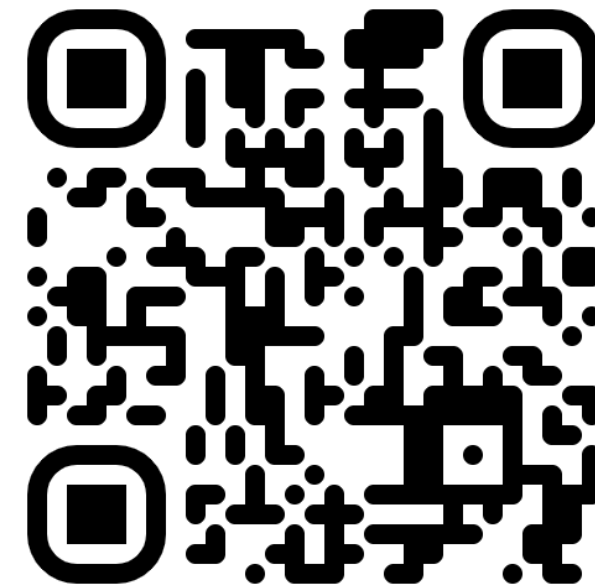
ODNR Invasive
Plants



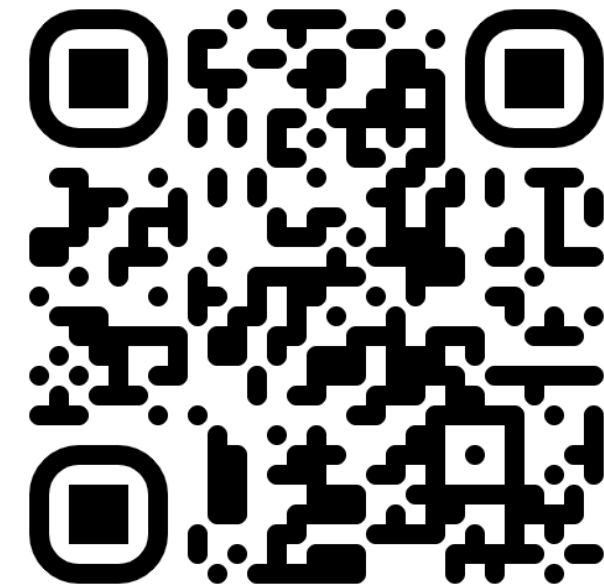
Crooked River
Cooperative Weed
Management Area



State of Indiana
Cooperative
Invasives
Management



Woody Invasives of
the Great Lakes
Collaborative

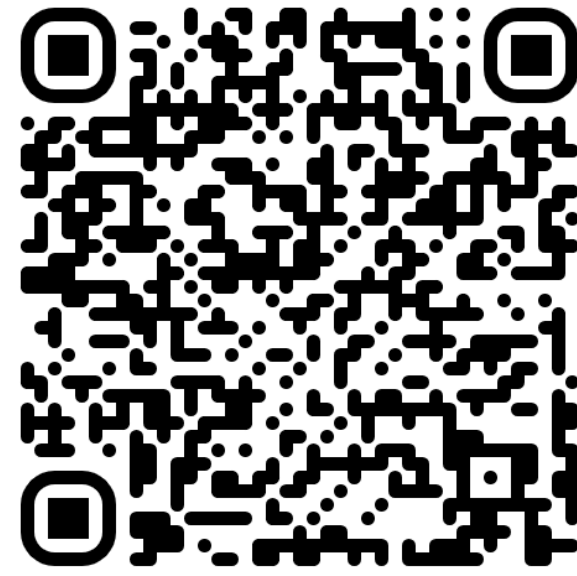


Clean Play Go

RESOURCES - PUBLICATIONS



SICIM Calendar of
Control



TNC Weed Control
Handbook



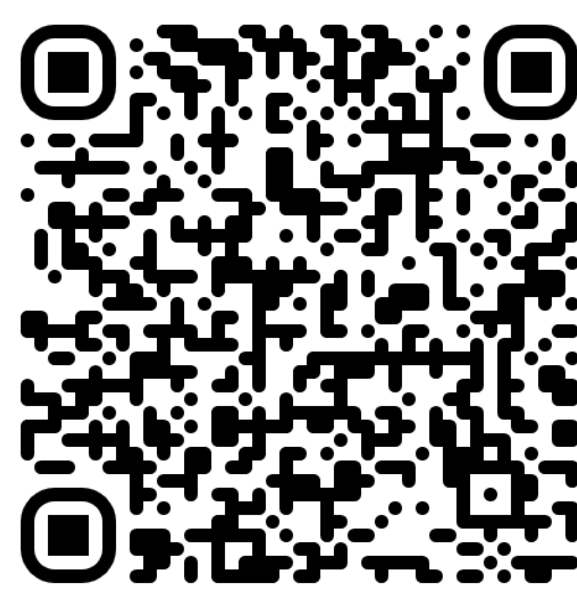
New Invaders of
the Northeast and
North Central



TNC Herbicide Use
in Natural Areas



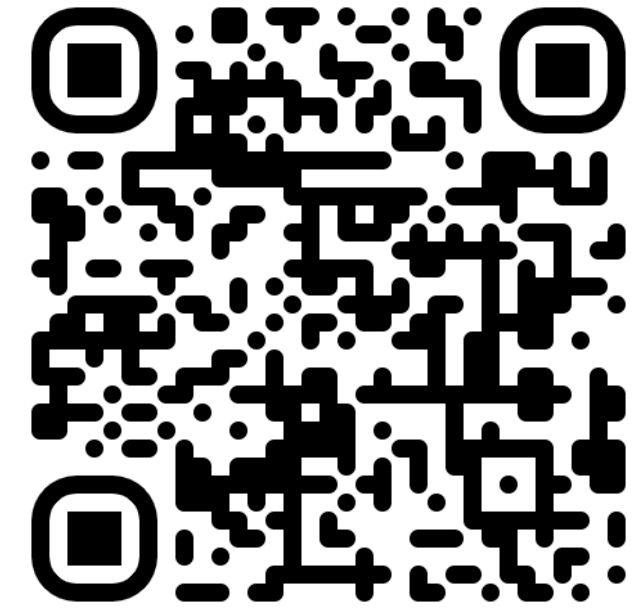
Canada Thistle
Perennial Lifecycle
and Treatment
Timing



Mistaken Identity
Invasive Plants and
their Native Look-
alikes



Buckthorn Blaster



NPIC Glyphosate
General Fact Sheet



Natalie Gertz-Young

Conservation Educator

ngertz-young@lakecountyohio.gov



Lake Soil & Water
Conservation District

www.lakeconservation.org

