



# Take Control: Identifying and Controlling Invasive Plants

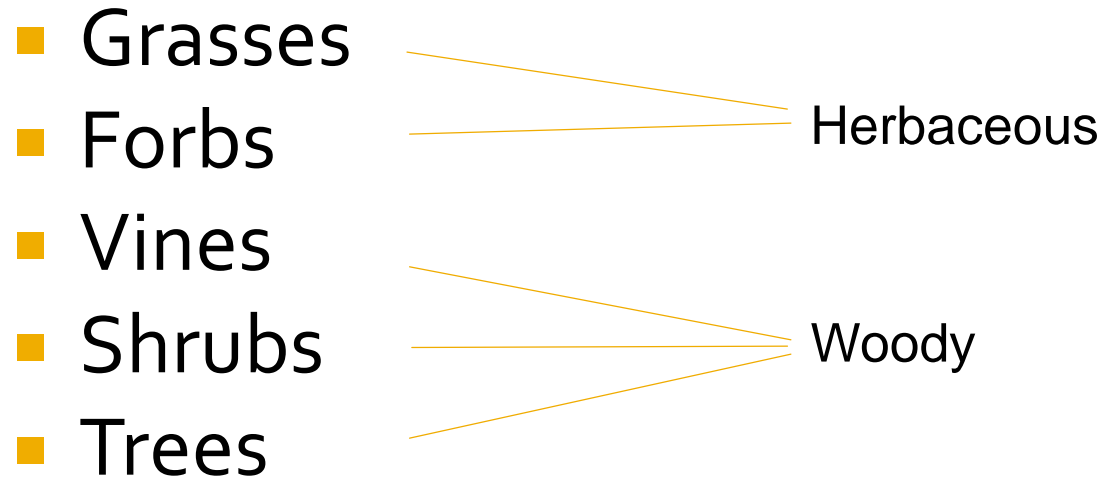


MC-IRIS.org

# Identifying and Controlling Invasive Plants

- I'll cover fourteen invasive plants common in Monroe County and how to identify them, with a little information on the impacts they are having.
- Then I'll cover the control options for these, and other, invasive plant species.
- After a break, we'll go outside and I'll demonstrate the control techniques on invasive plants around the building.
- Then you can try the techniques!

# Organized by Plant Habit:



# Grasses (1)

Forbs

Vines

Shrubs

Trees

# Japanese Stilt Grass

(*Microstegium vimineum*)

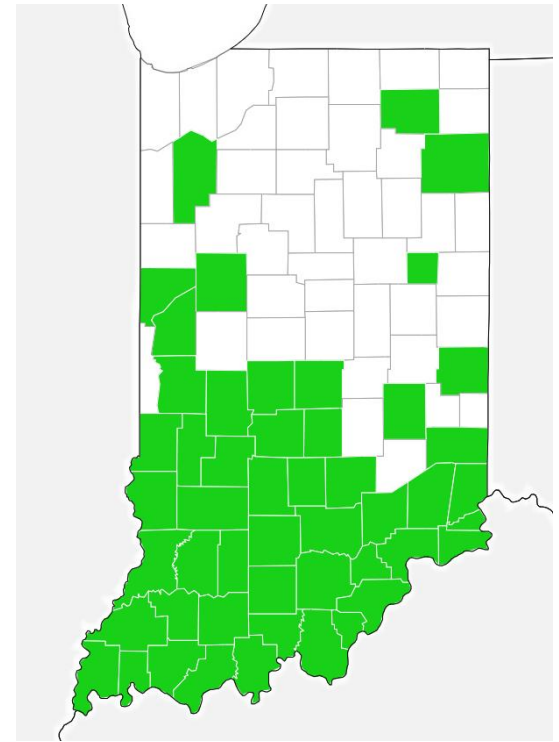
- Annual grass, grows from 0.5 to 4' tall, in a branching, sprawling manner
- Stems resemble a delicate bamboo
- Leaves alternate, narrow, lance-shaped, up to 3" long. They have a silvery stripe down the middle of the upper surface
- Tiny flowers on slender stalks 1-3" long



# Japanese Stilt Grass



8020



Grasses

# Forbs (3)

Vines

Shrubs

Trees

# Garlic mustard

*(Alliaria petiolata)*

- Herbaceous biennial with stems 2-4' tall.
- Basal rosette in 1st year with dark green, heart-shaped leaves with large teeth.
- Flowering stalk with alternate, triangular leaves with large teeth in 2nd year
- Flowers small, white, four-petaled; fruits long cylindrical pods



1<sup>st</sup> year rosette



2<sup>nd</sup> year flowering



2<sup>nd</sup> year fruiting



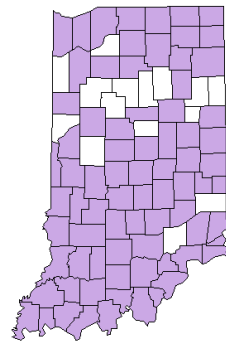
# Garlic mustard

- Displaces native wildflowers
- Eliminates mycorrhizal fungi, thus greatly impairing the establishment and growth of native tree species
- Deer rarely eat it, giving it a strong advantage over natives



# Japanese knotweed

(*Fallopia japonica*)

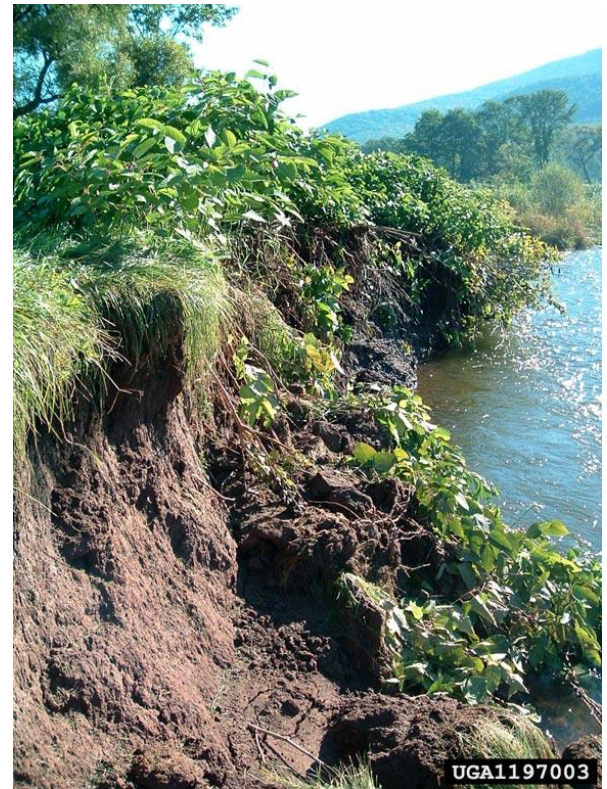


- Arching herbaceous perennial, up to 10' tall; this specimen is the upper 1' length of a 5' tall stem
- Hollow, reddish, bamboo-like stems are smooth and stout, often persisting after plant dies back to the ground each year
- Leaves alternate, egg-shaped to almost triangular, 4-6" long, 3-4" wide
- Branched inflorescences of tiny, creamy white or greenish flowers emerge from leaf axils near the ends of stems in late summer



# Japanese knotweed

- Loss of wildlife habitat
- Damage to infrastructure
- Stream bank destabilization, sedimentation



# Poison hemlock

(*Conium maculatum*)

- In bloom all over Monroe County in late May/early June— 5-9' tall, ferny leaves, white flower clusters, purple-spotted stems.
- **Highly toxic** – do not touch with bare skin



Grasses

Forbs

# Vines (4)

Shrubs

Trees

# Wintercreeper

(*Euonymus fortunei*)

- Evergreen, clinging vine
- Can form a dense groundcover or shrub to 3 feet in height, or climb vertical surfaces with the aid of aerial roots, making trees more vulnerable to wind throw
- Leaves are opposite, dark green, shiny, and egg-shaped, from 1-2 ½ inches long, with toothed margins and silvery veins
- Small green-white flowers are produced only when vine is allowed to climb



# Periwinkle

(*Vinca minor*)

- Evergreen vine, does **not** climb
- Opposite, **entire** leaves
- Purple flowers in mid-April
- Blankets the ground, displacing native plants
- Shade tolerant, so able to dominate in forested stands
- Does not produce fruits



# Japanese honeysuckle

(*Lonicera japonica*)

- Perennial, semi-evergreen, woody vine.
- Leaves simple, opposite, oblong to oval, 1.5-3" long, sometimes lobed, and may be covered with fine, soft hairs.
- Flowers tubular and very fragrant, white to pink, turning yellow with age, and occurring in pairs at leaf axils.
- Grows over native plants and smothers them
- Very competitive root system for water and nutrients
- This above and below ground competition allow it to outcompete regenerating tree stands





# Asian Bittersweet (*Celastrus orbiculatus*)

- Alternate leaves, orange berries with yellow husk, fruits all along stem.
- Forms dense stands on forest edges; smothers canopy and makes vulnerable to windthrow
- Hybridizes with native bittersweet



Grasses

Forbs

Vines

**Shrubs (4)**

Trees

# Asian bush honeysuckles

(*Lonicera* species)

- Includes Amur (*Lonicera maackii*), Morrow's (*Lonicera morrowii*), Tatarian (*Lonicera tatarica*), and Bell's (*Lonicera x bella*)
- Dense, multi-stemmed shrubs, 6-12' tall
- Leaves opposite, oval or oblong, and entire.
- Flowers fragrant, tubular, and arranged in pairs at leaf axils;
- Fruits red, orange, or yellow, in pairs at axils



# Asian bush honeysuckle



Asian bush honeysuckle in forest understory will decrease:

- Understory plant species richness
- Native plant cover
- Tree seedling species richness
- Tree seedling density
- Tree growth rates



And increase tick-related illnesses



# Privet

*(Ligustrum obtusifolium and L. vulgare)*

- Woody shrub to 8' tall.
- Leaves opposite, nearly stalkless, elliptic to oblong with a tapering base and blunt tip
- Flowers small, white and tubular with four petals, black fruit.



# Autumn olive

(*Eleagnus umbellata*)



- Leaves simple and alternate, silver-gray on the underside, lance-shaped or elliptic, with entire, wavy margins
- Flowers cream colored and tube-shaped in leaf axils in mid-April
- Reddish purple berries form September - October

# Multiflora rose

*(Rosa multiflora)*

- Thorny, thicket-forming shrub with wide, arching or climbing canes and stiff, curved thorns
- Leaves are alternate, pinnately compound with 5-11 small sharply-toothed oval leaflets; **pair of fringed stipules at the base of each leaf**
- Flowers are abundant, showy, fragrant, and white to slightly pink; they are 0.5-1.5" across and form a loose, branching inflorescence



Grasses

Forbs

Vines

Shrubs

**Trees (2)**



# Tree of Heaven

(*Ailanthus altissima*)

- Pinnately compound leaves, 10-41 leaflets
- Leaflet margin mostly *smooth*, with one tooth at the base of the leaf
- Peanut butter smell from crushed leaves
- Grows up to 3 feet/year
- Prolific seeder starting at 3 years old



# Callery Pear (aka Bradford pear)

*(Pyrus calleryana)*



- Lollipop trees planted **everywhere**
- White flowers in April, round brown fruits in fall
- Leaflet margin wavy, leaves alternate and shiny; red fall color
- Invading forests, ROWs, fields



# Controlling Invasive Plants - 4 Rules

1. Know what and how much you have – map it!
2. Know what you are managing **for**
3. Find a balance between control and protecting/restoring good vegetation
4. Persistence is key in all methods

# Herbaceous Control Options (Grasses and Forbs)

## Mulching

- 6-12” of mulch needs to stay in place for months or years;
- not useful in floodplains;
- not selective

## Soil Solarization

- Lots of site prep needed to lay plastic flat on ground;
- needs to stay in place for months;
- not selective

## Pulling/Mowing/Weed Whacking

- Works on annuals (Japanese stiltgrass) and biennials (garlic mustard)  
– generally not perennials
- If mowing, must cut plants close to soil surface before they set seed.  
This can be difficult on rough ground.
- This can result in a lot of ground disturbance.

# Herbaceous Control Options (Grasses and Forbs)

## Chemical

- Most often, **foliar spray** is used against herbaceous species.
- Sometimes the **cut and paint treatment** is possible, if the stem is large enough.
- We'll discuss these application methods in detail when we talk about the woody species.

# Woody Species Control Options – Non-chemical

## Weed Wrenches and Other Mechanical Tools

- A good technique for species with shallow roots – like Asian bush honeysuckle
- Works best in soft soil (after rain)
- Labor intensive, can result in lots of soil disturbance



# All Species – Chemical Application Methods

- Foliar spray



- Cut and paint



- Basal bark (with oil carrier)



# Chemical Controls

- Glyphosate - sold as Roundup, Razor, Rodeo, Aquaneat. Broad spectrum, for foliar and stem treatments
- Triclopyr – sold as Garlon 3A, Garlon 4, Pathfinder, Fertilome Brush Killer, Vine-X. Broadleaf specific, for foliar, stem and basal bark treatments



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# Foliar Applications

- Used when target species are less than 6-7 feet tall
- High potential for worker exposure, non-target damage
- Backpack sprayers and spray bottles used to apply
- High volume, low concentration
- Timed during active growth of plant June-Oct



# Cut and Paint Application

- Minimal nontarget damage, worker exposure
- May be applied to any size tree
- May be applied any time of year except spring; most effective in late winter and summertime
- Herbicide should be applied to the cambium area as soon as possible after cutting
- Stem should be cut <6" from ground
- Application may be with backpack sprayer, squeeze bottle, or spray bottle
- Low volume, high concentration



# Basal Bark Application

- Uses a backpack sprayer to wet the basal part of the stem with triclopyr herbicide in an oil carrier (e.g. Garlon 4 with Ax-it carrier, Pathfinder II)
- More of a chance for nontarget damage
- Effective on stems up to 4 inches diameter at ground line
- Winter is easiest time for treatment (no leaves) but can be done all year long
- Particularly good for species that are strong resprouters – tree of heaven, black locust.
- Medium volume, medium concentration



# Putting It All Together

- Now take all this information and consult the Calendar of Control (in Landowner Resources on the MC-IRIS.org website) to find the best control method, chemical, application method, and timing for your situation.
- Thanks for taking action!