

# Invasive Look-a-Likes

*Who's having an identity crisis?*

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# Species Covered

## Trees

- ✓ Norway and Sugar Maple
- ✓ Amur Cork Tree and Green Ash
- ✓ Siberian Elm and Red Elm
- ✓ White Mulberry and Red Mulberry

## Shrubs

- ✓ Asian Bush Honeysuckle, Native honeysuckles & Coralberry
- ✓ Burning Bush and Strawberry Bush
- ✓ Eastern Wahoo & European Spindle Tree
- ✓ Multiflora Rose and Native Roses
- ✓ European Cranberry Bush and American Cranberry Bush

## Vines

- ✓ Oriental Bittersweet and American Bittersweet
- ✓ Sweet Autumn Clematis and Virgin's Bower

- ✓ Black and Pale Swallow-wort and Honeyvine
- ✓ Chinese Yam (Air Potato) and Wild Yam
- ✓ Purple Wintercreeper and Running Strawberry Bush
- ✓ Japanese Hops and Common Hops
- ✓ Chinese Wisteria and American Wisteria

## Grasses

- ✓ Phragmites and native Phragmites
- ✓ Japanese Stiltgrass and Whitegrass
- ✓ Small Carpetgrass and Deer-tongue grass

## Forbs

- ✓ Chinese Bush Clover and Slender Bush Clover
- ✓ Thistles





# Trees

- ✓ Norway and Sugar Maple
- ✓ Amur Cork Tree and Green Ash
- ✓ Siberian Elm and Red Elm
- ✓ White Mulberry and Red Mulberry

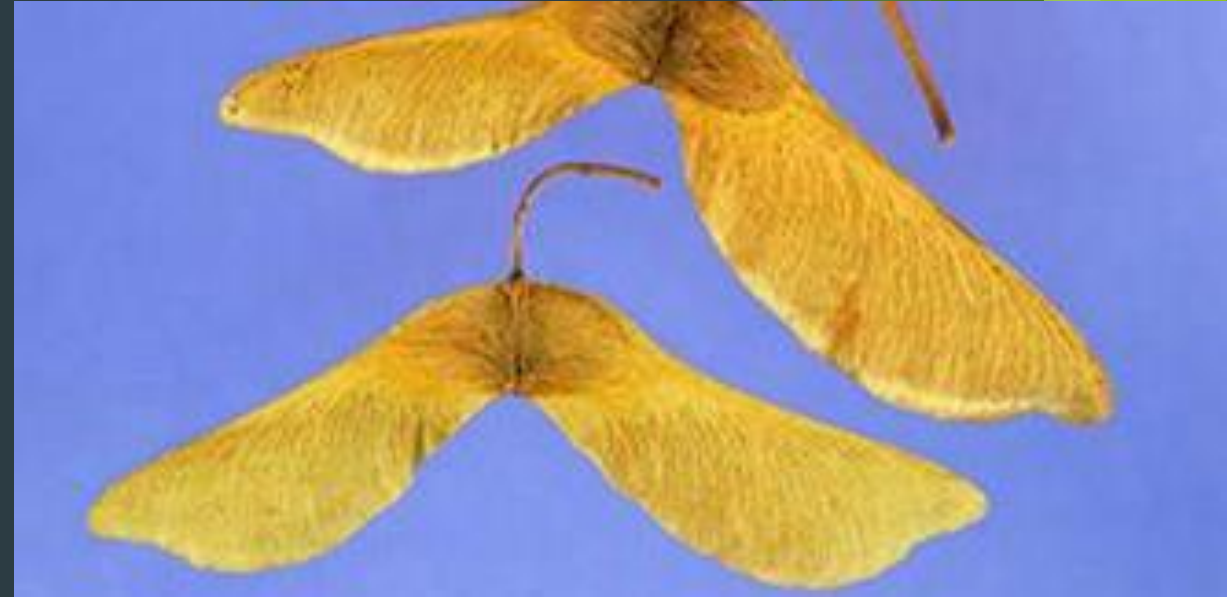


# Norway Maple (*Acer platanoides*)

- Leaf petioles contain milky sap during growing season
- All 5 -7 lobes are sharply pointed
- Two basal lobes have a single sharp point
- Lower surface of leaves are paler and smooth except for stiff hairs on vein axils
- Mature bark is grayish to brown and moderately textured with furrows and ridges
- Buds are more rounded than sugar maple
- Samaras (winged seeds) are very wide angled (resembles coat hanger) - matures Sept - Oct

## Ecological Impacts

- Creates thickets
- Outcompetes native vegetation



# Sugar Maple (*Acer saccharum*)

- No milky sap within leaf petioles during growing season
- U shaped margins between tips of each lobe
- Buds are sharply pointed
- Samaras are horseshoe shaped - 60° to 90° angle between the samaras



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# Differences Between Norway & Sugar Maples

	Petiole	Fruit	Leaves	Bud
<b>INVASIVE</b> Norway Maple	Milky sap at petiole attachment to twig during growing season	Samaras are wide angled-coat hanger shaped	Spines at all lobe ends	Rounded
<b>NATIVE</b> Sugar Maple	No milky sap	Samaras are horseshoe shaped	Spines only on lobe ends, the rest are pointed but not spine tipped, u-shaped between tips on lobes	Sharply pointed

# Amur Cork Tree (*Phellodendron amurense*)



- Dioecious tree - medium sized
- Ridged, corky bark
- Yellow inner bark
- Leaves smell of lemon or turpentine when crushed
- Pea-sized drupe - dark blue / black when ripe
- Opposite compound leaf w/ 9-11 leaflets, no petiole

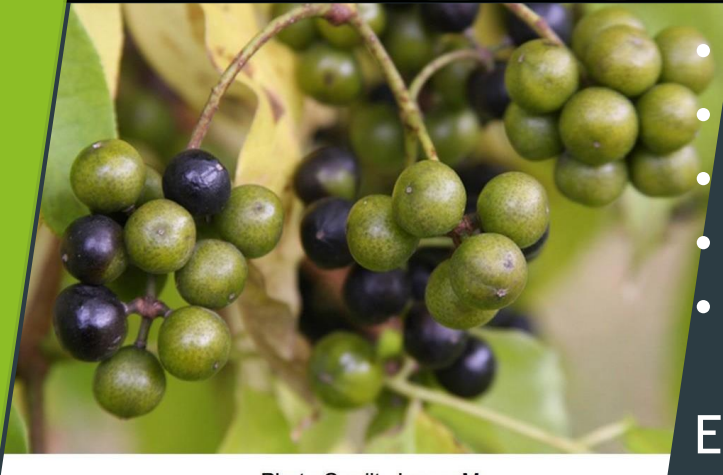


Photo Credit: James M.

## Ecological Impacts

- Suppresses regeneration of native trees / displaces native shrub & herbaceous layers
- Research shows decreases in acorn and hickory nut production
- Reproduces by both seed and resprouting from stumps / produce 1000's of seeds
- Allelopathic; chemical exudates alters soil microorganisms and surrounding vegetation





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# Green Ash (*Fraxinus pennsylvanica*)



# Differences Between Cork Tree and Green Ash

	Leaves	Bark	Fruit	Buds
<b>INVASIVE</b> Cork Tree	Leaves opposite and pinnately compound with 5-13 leaflets. Smell of citrus when crushed	Thick, corky, spongy outer bark and bright yellow inner bark	Dioecious, only female produces fruit (drupe). Fruits green, turning black in fall. Remain on tree in winter	
<b>NATIVE</b> Green Ash	Leaves opposite, compound with 5-9 leaflets with a slightly winged, short petiole	Gray, smooth on young trees, furrowed in mature trees	Dioecious, female produces winged, narrow samaras	Prominent bud in crotch between twig and leaf

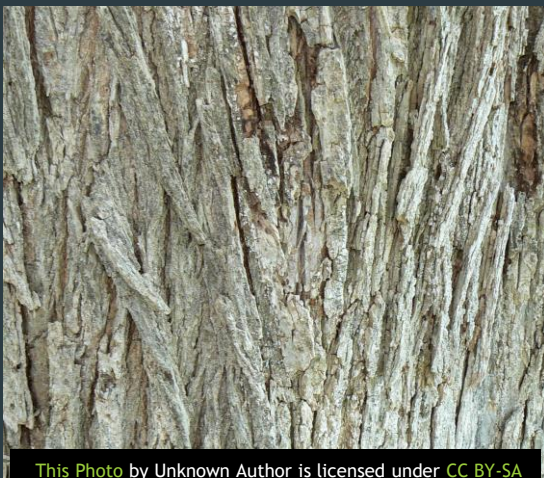
# Siberian Elm (*Ulmus pumila*)

Deciduous tree 30-60 ft tall - fast growing!

- Simple, alternate leaves 1-3 in long - serrated margins, bases are almost symmetrical, very short petiole (stalk), mostly hairless
- Buds are round, dark brown w/ purplish scales and hairs on edge of scales
- Bark is grey and furrowed - other elms are brown

Ecological Threat:

- Invades / dominates disturbed areas & prairies in just a few years
- Seed germination rate is high and seedlings establish quickly in sparsely vegetated areas
- It grows readily in disturbed areas with poor soils and low moisture



# Red Elm (*Ulmus rubra*)

- Leaves to 6 in long, sandpapery feel on both sides
- Dark reddish-brown inner bark, mucilaginous
- Buds are longer than wide, rufous-pubescent



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# Differences Between Siberian and Red Elms

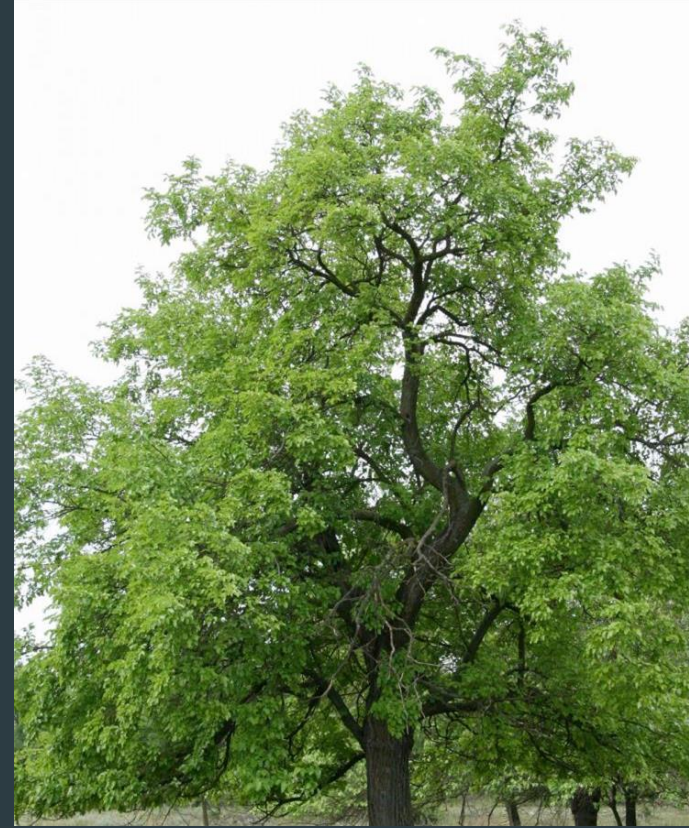
	Leaves	Bark	Buds
<b>INVASIVE</b> Siberian Elm	1-3" long & almost equal at base; single-toothed; mostly hairless below	Grey, ridged and furrowed	Round buds with fringe of hairs on bud scales
<b>NATIVE</b> Red Elm	To 6" long, asymmetrical leaf bases; long acuminate tip, double-toothed; sandpapery feel on both sides	Dark reddish-brown, inner bark mucilaginous	Longer than wide, rufous-pubescent

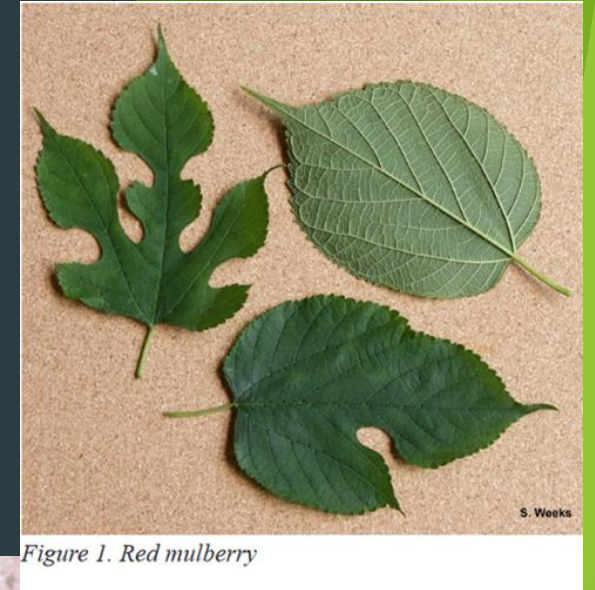
# White Mulberry (*Morus alba*)

- Tree, w/ short trunk, broad round crown and thin, tan twigs
- Leaves - alternate, simple with rounded teeth and pointed tip
- Leaves shiny, smooth underside, milky sap
- Bark is thin, brown w/ shallow grooves, long narrow ridges, inner bark yellowish
- Flowers catkins appear April-May
- Fruit is blackberry-like, white to pink to purple (immature)

## Ecological impacts

- Hybridizes with native red mulberry
- Creates monocultures
- Transmits root disease to native red mulberry





# Red Mulberry (*Morus rubra*)

White

Red

# Differences Between White, Red & Paper Mulberries

	Leaves	Bark	Twigs & Buds	Fruit
<b>INVASIVE</b> White Mulberry	3-4". Normally smooth on top, glossy appearance. Sometimes leaf underside will have hairs on main vein. Leaf margin serrations are rounded	Mature bark is smooth and gray, braiding bands and yellowish inner bark - almost always visible	Twigs are smooth, pinkish brown. Buds are more rounded overall, but have needle sharp tips	Immature white turning purple (sometimes white)
<b>NATIVE</b> Red Mulberry	4-10". rough on upper surface, hairy underneath. Leaf margins are sharply serrate	Grayish and more flattened, scaly ridges with tannish inner bark	Twigs are pale tan. Buds have distinct tip and edge of each scale has black band	Immature red turning purple
<b>INVASIVE</b> Paper Mulberry ( <i>Broussonetia papyrifera</i> )	Highly variable shape on each plant - alternate, opposite or whorled. Fuzzy on top and velvety underneath. Long petioles.		Twigs are pubescent	Round and red or orange

# Shrubs

- ✓ Asian Bush Honeysuckle, Native honeysuckles & Coralberry
- ✓ Burning Bush and Strawberry Bush
- ✓ Eastern Wahoo & European Spindle Tree
- ✓ Multiflora Rose and Native Roses
- ✓ European Cranberry Bush and American Cranberry Bush



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# Asian Bush Honeysuckles

- Perennial shrubs
- Opposite leaf arrangement
- Hollow stems
- Axillary fruit

## Ecological Impacts:

- Limits forest regeneration
- Decrease herbaceous species
- First to leaf out, last to drop leaves
- Berries lack nutrition for birds
- Increase in nest predation





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Botany blog – Plants of NE US

# Native bush honeysuckles, & coralberry



# Difference Between Asian Bush Honeysuckles and Native Bush Honeysuckles and Coralberry (*Symphoricarpos orbiculatus*)

	Stem	Leaf Margins	Fruits	Flowers	Habit
<b>INVASIVE</b> Asian bush honeysuckles ( <i>Lonicera mackii</i> , <i>L. x bella</i> , <i>L. tartarica</i> )	Hollow pith	Entire	Red to yellowish round berry in pairs in leaf axils	White to yellow (white to pink in <i>L. tartarica</i> )	Upright shrub to 15'
<b>NATIVE</b> bush honeysuckles ( <i>L. canadensis</i> & <i>Diervilla lonicera</i> )	Solid pith	Toothed ( <i>D. lonicera</i> ), entire & ciliate ( <i>L. canadensis</i> )	Elongate berry in <i>D. lonicera</i> and red berry in <i>L. canadensis</i>	yellow	<i>L. canadensis</i> to 6' tall & very rare; only in few N counties, <i>D. lonicera</i> to 3' tall & 4' wide, rare, found in scattered N counties
<b>NATIVE</b> Coralberry	Solid pith	Entire - small, ovate 2-4 cm, hairy beneath	Coral to purple berries in leaf axils	Pinkish-green bells,	Small shrub to 5' tall and 6' wide, spreads through suckers

# Burning bush (*Euonymus alatus*)

## Identification:

- Upright shrub
- Winged stems
- Fruit: purplish capsule w/orange aril

## Ecological Impacts:

- Forms dense shrubby infestations in forests
- Alters forest community and health
- Limits forest regeneration capacity



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



# Strawberry Bush (*E. americanus*)

## Identification:

- Upright shrubs w/ green stems
- Stems lack corky wings
- Flower: axillary on long petioles w/ greenish-white to pink 5-parted flowers
- Fruit: pink, bumpy capsule w/orange aril



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# Spindle Tree (*Euonymus europaeus*)

## Identification:

- Upright shrubs w/ green stems turning brownish -purple
- Stems lack corky wings
- Flower: greenish-white, 4-parted flowers
- Fruit: pink, smooth capsule  
w/orange aril



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# Wahoo (*E. atropurpureus*)

## Identification:

- Upright shrubs w/ green stems
- Stems lack corky wings
- Flower: 4-parted, purple flowers on long stems
- Fruit: pink, smooth capsule w/red aril



# Differences Between Burning bush, Strawberry bush, Wahoo, and Spindle Tree

	Fruit	Stems	Leaves	Flowers	Habit
<b>INVASIVE</b> Burning Bush ( <i>Euonymus alatus</i> )	Purplish smooth capsule and orange aril	Winged stems-sometimes corky, square-stem appearance	Petiole very short	Yellow-green, four-parted, blooms in May	Multi-stemmed dense shrub to 20 ft
<b>NATIVE</b> Strawberry Bush ( <i>Euonymus Americana</i> )	Pink fruit with bumpy surface and orange arils	Four-angled wingless green stems,	Petiole extremely short	Greenish-pink, five-parted, blooms in May	Few-stemmed open shrub to 6 ft
<b>NATIVE</b> Wahoo ( <i>Euonymus atropurpureus</i> )	Smooth pink capsule with red arils	Wingless stems	Petiole to 0.75", lower leaves w/ hairs on midrib	Purplish, four-parted, blooms in June	Single-stemmed shrub to 15 ft
<b>INVASIVE</b> Spindle Tree ( <i>Euonymus europeus</i> )	Smooth w/ orange aril	Wingless stems	Petiole to 0.5", No hairs on lower leaf midrib	Greenish-white, four-parted, blooms in May	Single-stemmed shrub to 30 ft



# Multiflora rose (*Rosa multiflora*)



- Perennial shrub
- Canes have curved thorns, sometimes paired
- Leaves are alternate and compound (5-11 leaflets) with fringed stipules
- White flowers, rarely pink
- ¼ inch round, red hips persist into winter
- Produces 500,000 seeds per cane per yr; & lives 10-20 yrs.
- Capable of self-fertilization and viable seeds
- Vegetative reproduction (layering and sprouting)



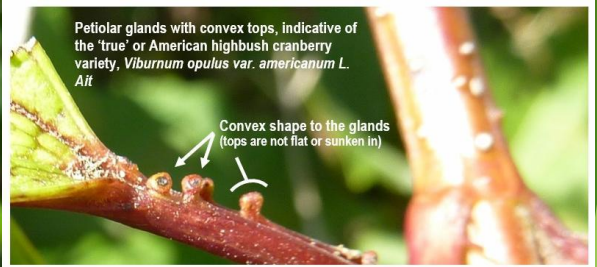
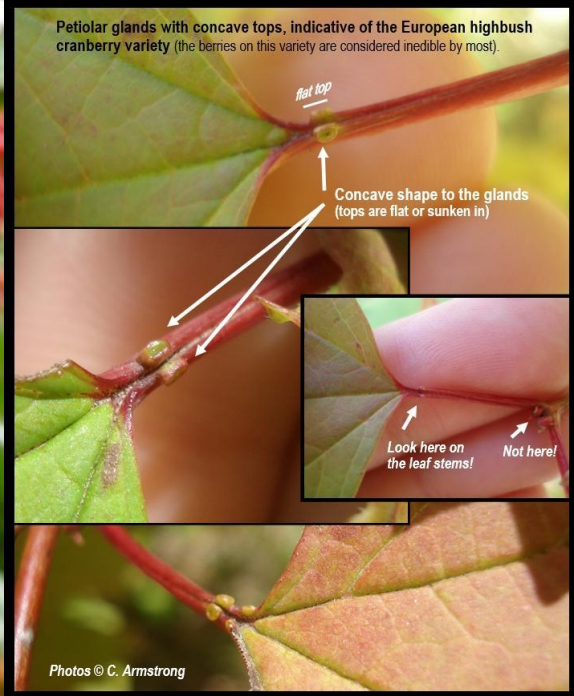
# Native Roses....



# Differences Between Multiflora Rose and Native Roses (*R. blanda*, *R. palustris*, *R. setigera*)

	Stipules	Flower and fruit	Leaf	Climbing habitat	Thorns/ prickles
<b>INVASIVE</b> <b>Multiflora rose</b>	Fringed with long, thin projections	Clusters of many 1.5" white flowers at end of branches (rarely pink), fruit ¼" wide	5-11 leaflets, serrated margins	Tends to form larger, taller and extensive infestations than native roses	Stout, curved often in pairs
<b>NATIVE</b> <b>Rosa blanda</b>	Stipule with two projections	Clusters of few 2-3" pink flowers, fruit ½" - ¾" wide	5-9 leaflets, serrated margins		Few or absent
<b>NATIVE</b> <b>Rosa palustris</b>	Narrow with acute tips, 1" long, revolute margins	Clusters of few 1.5-3" pink flowers; fruit 1/3 " wide, glandular hairy	5-9 leaflets, serrated margins	3-8' tall erect stems, often crooked.	Curved and enlarged at base, widely spaced
<b>NATIVE</b> <b>Rosa setigera</b>	Stipule with two projections	Terminal clusters of few 2.5-3" pink flowers; fruit 1/3" wide	3-5 leaflets per leaf, deep veins, serrated margins	Climbs over neighboring vegetation, stems 4-12' long	Short, stout, slightly curved, not numerous

Petiolar Glands	
<b>INVASIVE European Cranberry Bush (<i>Viburnum opulus</i>)</b>	Has a narrow groove and large, concave (sunken inward) glands
<b>NATIVE American Cranberry Bush (<i>V. opulus</i> var. <i>americanum</i>)</b>	Has a shallow, broader groove with small, convex (bulging outward) glands



# European vs. American Cranberry Bush



# Vines

- ✓ Oriental Bittersweet and American Bittersweet
- ✓ Sweet Autumn Clematis and Virgin's Bower
- ✓ Black and Pale Swallow-wort and Honeyvine
- ✓ Chinese Yam (Air Potato) and Wild Yam
- ✓ Purple Wintercreeper and Running Strawberry Bush
- ✓ Japanese Hops and Common Hops
- ✓ Chinese Wisteria and American Wisteria

# Oriental Bittersweet (*Celastrus orbiculatus*)

- Perennial woody vine - “kudzu of the north”
- Dark green, glossy leaves are alternate & simple
- Fruit & flowers are produced in leaf axils
- Fruit is approx. ¼ in. diameter and has yellow orange husk with orange aril



## Ecological Impacts

- Form pure stands in forest
- Strangle shrubs and trees
- Weaken trees by girdling the trunk and weighting the crown
- Hybridization with American bittersweet





## American Bittersweet (*Celastrus scandens*)

- Perennial woody vine
- Green leaves are alternate & simple
- Flowers and fruit produced at end of stem (terminal)
- Fruit is approx. ½” diameter, husk in orange with orange-red arils



	Flower / seed position	Leaves	Capsule/aryl color	Habit
<b>INVASIVE</b> Oriental bittersweet	Axillary clusters of 6 or more flowers/fruit per cluster	Less than 2x as long as wide and young leaves are folded in half along mid-vein	Yellow-orange/orange, 0.2-0.33 inches	Forms dense monocultures in open habitats
<b>NATIVE</b> American bittersweet	Terminal clusters of 2 or 3 flowers/fruit per cluster	Mostly 2x as long as wide, leaves are revolute towards mid-vein, elongated leaf tips	Orange/red-orange, 0.3 - 0.5 inches	Generally vines do not form monocultures, less vigorous

## Differences Between Oriental and American Bittersweet





# Sweet autumn clematis (*Clematis ternifolia*)

- Semi-evergreen vine
- Flowers late summer/early fall
- White four petaled flowers
- 3-5 leaflets (3 terminal and two lateral)
- Leaf margins smooth (may be lobed)
- Fragrant

## Ecological Impacts

- Climbs over and smothers native vegetation





## Virgin's Bower - (*Clematis virginiana*)

- Herbaceous vine
- Leaflets of three
- Leaf margins serrated and/or lobed
- White four-petaled flowers



# Differences Between Sweet Autumn Clematis and Virgin's Bower

	Leaf shape	Fruit	Leaf Arrangement	Flower Odor
<b>INVASIVE</b> Sweet Autumn Clematis	Margins entire (usually- may have lobes)	> .12" wide	Leaves usually in clusters of 5 with three terminal plus 2 lateral leaflets	Fragrant
<b>NATIVE</b> Virgin's bower	Margins toothed, may have lobes	0.04-0.08" wide	Leaves with 3 leaflets in terminal clusters	Unscented



# Swallow-worts (Black and Pale) (*Cynanchum louiseae*) & (*Cynanchum rossicum*)

Vines that grow 2-6.5 ft in length (daily? Annually?)

- Opposite leaf arrangement
- Clusters of small fleshy flowers in May to mid-July
- Pods open in late summer
- 2,000 plus seeds per pod

## Ecological Impacts

- Toxic to cattle, monarch butterflies and deer
- Grows over native vegetation, dominates area

# Black / pale Swallow-worts and Honeyvine (*Cynanchum laeve*)

	Leaves	Flowers	Fruit	Flower Odor
<b>INVASIVE</b> Black & Pale Swallow-worts	Ovate, oppositely arranged	Fleshy pink to maroon flowers	Thin, narrow pod, 2-3" long	Fragrant
<b>NATIVE</b> Honeyvine	Heart-shaped, oppositely arranged	White flowers	4" long and 1" wide	Unscented



# Chinese yam (*Dioscorea polystachya*)



- Deciduous vine
- Leaves opposite or alternate, simple, halberd-shaped with pointed tip
- Slender vines that spiral counter-clockwise
- Bulbils or air tubers June to September, resemble very small potatoes
- Small white or greenish-yellow spikes of flowers that smell similar to cinnamon

## Ecological Impact

- Grows over and smothers native vegetation
- Creates monoculture

# Wild Yam, (*D. villosa*)

- Perennial twining vine w/ thick rhizome
- Simple leaves, cordate -ovate w/ parallel veins
- Leaves alternate along stem, often opposite or whorled near base
- (can be 3 or more per node)
- Fruit 3-winged capsule
- ▶ No tubers in leaf axils



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# Differences Between Chinese Yam and Wild Yam

	Leaves	Fruit	Tubers
<b>INVASIVE</b> Chinese Yam	Halberd	3 winged	Yes
<b>NATIVE</b> Wild Yam	Cordate-ovate	3 winged	No



UGA5330

UGA507809



# Purple Winter Creeper (*Euonymus fortunei*)



UGA2307144



- Woody vine - can have shrub habitat in direct sun
- Leaves, opposite w/ white colored veins
- Berries white

## Ecological impacts:

- Forms thick carpet, completely displacing native vegetation
- Climbs 40-70 ft, severe damage to trees
- Reproduces vegetatively from rootlets or by seed



# Running Strawberry (*E. obovatus*)

- Deciduous dwarf shrub or vine - 1-1.5 ft tall
- Green, grooved twigs
- Greenish-pink flowers w/ purple stamen
- Bumpy pink capsule
- Bright red-orange aril



# Difference Between Purple Wintercreeper & Running Strawberry Bush

	Leaves	Flowers	Fruit	Stems
<b>INVASIVE</b> Purple Winter Creeper	Evergreen, ovate w/ finely serrate margins	4-petaled greenish-white flowers	Red fruit capsules that split to display fleshy orange seed cover, fruit smooth	Young stems green, mature stems large, stout, covered in aerial rootlets
<b>NATIVE</b> Running Strawberry Bush	Deciduous, obovate w/ finely serrate-crenate margins	5-petaled pale green to greenish yellow petals on 1" long pedicels	Bumpy, red capsules 3-5 lobed	Spreading branches, becomes more erect as it matures



# Japanese Hops, (*Humulus japonicus*)

- Annual climbing or trailing herb
- Simple - 5-lobed leaves, oppositely arranged, rough to touch
- Leaf stalks longer than the blade
- Stiff leaf hairs and stipules and flora bracts with fringe of hairs
- Stems with small, downward facing prickles
- Bracts visible at leaf petioles
- Inconspicuous green flowers that do not have petals

## Ecological Impacts:

- Can grow up to 35 ft. per growing season
- Infests large areas, outcompeting native vegetation

# Common Hops (*H. lupulus*)

- Dioecious, perennial vine
- Stems light green, smooth to prickly-bristly
- Opposite leaves up to 6 in. long and 4 in. across
- Leaves are palmate with 3 lobes (rarely 5)
- Base of each petiole is pair of lanceolate stipules
- Pubescence of stems and leaves is variable, if present at all



# Differences Between Japanese Hops and Common Hops

	Leaf Shape & leaf stalks	Leaf Stipules	Prickles	Pubescence	Annual vs. Perennial
<b>INVASIVE</b> Japanese Hops	Opposite, mostly 5 - 9 lobed, leaf stalks longer than blade	Narrowly triangular, fringed with hairs	Downward pointing prickles on stem and bracts at base of petioles	Hairy stems, stiff leaf hairs, stipules and floral bracts w/ fringe of hairs	Annual
<b>NATIVE</b> Common Hops	Opposite, mostly 3-lobed, leaf stalks are usually shorter than the blade	Pair of leafy, triangular appendages not fringed with hairs		Lower leaf surface softly hairy along veins (sometimes on surface)	Perennial

# Differences Between Chinese Wisteria and American Wisteria



	Seed Pod	Bloom Phenology	Flowers
<b>INVASIVE</b> Chinese wisteria	Fuzzy	Prior to leaf out	Open all at once
<b>NATIVE</b> American wisteria	Smooth	Same time as leaves develop	Open in rings from back to front



# Grasses

- ✓ Phragmites and native Phragmites
- ✓ Japanese Stiltgrass and Whitegrass
- ✓ Small Carpetgrass and Deer-tongue grass



*Phragmites  
austalis ssp.  
australis*



*Phragmites*  
*australis* spp.  
*americana*



	Stem Color	Ligule Height	Habit	inflorescence	Leaf Sheaths
<b>INVASIVE</b> Phragmites	Typically green during growing season w/ yellowish nodes. Color is dull and stem is slightly rough	0.004-0.02”	Dense monotypic stands, Begins growing early in the season and continues later in the fall.	Very large, bushy and purple or golden in color	Leaf sheath stays attached all year, bluish-grey green
<b>NATIVE</b> Phragmites	Green to maroon in color w/ maroon color at nodes, stem is shiny and smooth	0.2-0.04”; ligule is more likely to shed and fray by midsummer	Occurs with other vegetation, typically reaching 6.5’, grows in scattered stems. Stems break down quickly	Sparse	Leaf sheaths are deciduous, yellow-green

# Japanese stiltgrass, (*Microstegium vimineum*)



- Leaf blade relatively short (3-8 cm long) with smooth margins
- Pale shiny midrib
- Nodes of stem not hairy
- Fruit w/ awn

## Ecological impacts:

- Can replace native ground cover completely in 3-5 yrs - negatively impacting ground nesting birds (bobwhite quail) and herps
- Forms monotypic stands - Loss of food web



USDA Database

# Whitegrass, (*Leersia virginica*)

- Leaf blade 5-10 cm long and scabrous margins
- Nodes of stem with hairy ring
- Fruit w/out awn



2018, Donald Cameron



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# Asian smartweed (*Persicaria longisetata*)



- Leaves are the same size and shape as stiltgrass growing in the shade.
- Crawling smartweed with erect flowering stems.
- Invading huge areas in Midwest
- Identified by long bristles at ochrae and ochreolae



	Leaves	Stem	Flower / Seed Head	Habit
<b>INVASIVE</b> Japanese stiltgrass	Leaves have pale, shiny midrib on upper surface and relatively short	Without hairy ring at node	1-3 flowering spikes; blooms late summer-fall	Annual plants reroot along joints - creating stilted appearance
<b>NATIVE</b> White grass	No shiny midrib, leaves are longer	With hairy ring at node	Open, spreading panicle; blooms mid-summer	Perennial plants are erect and not bent at joints
<b>INVASIVE</b> Asian smartweed	Leaves fleshy	Swollen nodes with bristles	Terminal raceme of pink flowers/fruit w/ bristles	Sprawling mat with erect flowering stems

# Differences Between Japanese Stiltgrass, Whitegrass & Asian Smartweed

# Forbs

- ✓ Chinese Bush Clover and Slender Bush Clover
- ✓ Thistles





# Chinese lespedeza (*Lespedeza cuneata*)



# Slender bush clover (*Lespedeza virginica*)



Photo credits: [http://www.illinoiswildflowers.info/savanna/plants/sl\\_bushclover.htm](http://www.illinoiswildflowers.info/savanna/plants/sl_bushclover.htm)

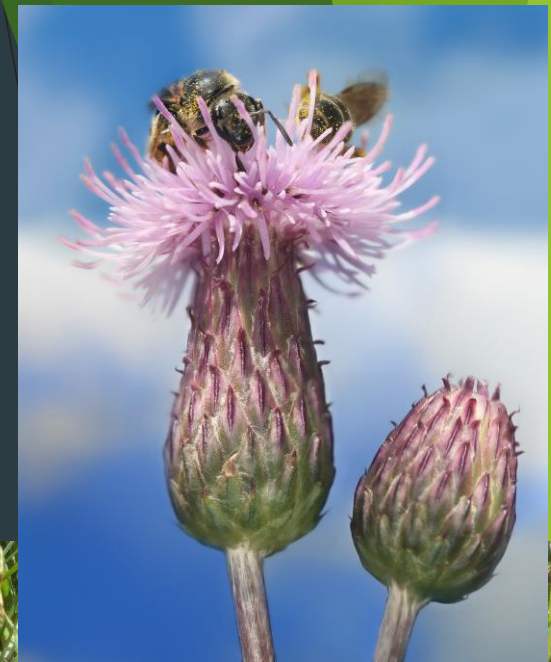
# Chinese lespedeza (*Lespedeza cuneata*) vs. Slender bush clover (*L. virginica*)

Photo by Southeastern Flora



	Corolla color	Appearance	Stems	Leaves
<b>INVASIVE</b> Chinese lespedeza	White / cream and purple	Vase-shaped appearance. Stems emerge from each other at ~45°	Herbaceous, but lower stems become brown and woody with age, lines of white hairs	Dense whitish hairs beneath; bristle extends from tip of each leaflet
<b>NATIVE</b> Slender bush clover	Violet or purple	Mostly simple, but laterally branching at anthesis	Herbaceous, stems have antrorse appressed pubescent apically,	Entirely antrorse appressed pubescent above and below.

# Canada thistle (*Cirsium arvense*)



# Spiny plumeless thistle (*Carduus acanthoides*)

Highly branched biennial, with one flower at the end of each branch

Each flower up to 1" in diameter

Looks like bull thistle, but:

- ▶ Even spinier than bull thistle
- ▶ Leaves paler
- ▶ Flowers 2 weeks earlier (early July, versus bull thistle blooming in late July)



# Bull Thistle (*Cirsium vulgare*)



# Musk thistle (*Carduus nutans*)



# Field thistle (*Cirsium discolor*)



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# Differences Between Thistles

	Number of flower heads and habit of head	Stems	Phyllaries	Habit and bloom time	Leaves
<b>INVASIVE Canada thistle</b>	Heads small and several per stem, Erect; lavender	Unwinged	Lack spiny tips	Colonial, spreads by rhizomes; forms large infestations - Blooms June-Oct	variable
<b>INVASIVE Spiny plumeless Thistle</b>	Heads small (to 2.5 cm wide), Erect. 1 in wide flower heads are reddish-purple	Branched w/ spiny wings extending to flower heads		Blooms May to August	Stem leaves alternate and sparsely hairy-
<b>INVASIVE Bull Thistle</b>	Heads large (2.5-4 cm), Erect	Winged by spiny, decurrent leaf bases	All spine-tipped, spines are thick and coarse	Blooms June-Sept	Leaves green below
<b>INVASIVE Musk Thistle</b>	Large heads (> 4 cm wide) Nodding			Blooms June-July	Not hairy and same color on both sides
<b>NATIVE Field Thistle</b>	Heads large (~2in wide). Light pink, pale purple	Unwinged	Spiny tipped, but tips are golden brown in color	Late summer/fall flowering, Tall & robust	Leaves deeply pinnatifid, white tomentose below

# Small Carpetgrass (*Arthraxon hispidus*) vs. Deertongue grass (*Dicanthelium clandestinum*)

	Leaf margins & stems	Annual vs. perennial	Leaf
<b>INVASIVE</b> Small carpetgrass	Leaf margins and stems are visibly hairy. Stems root at nodes.	Annual	1-2" long, egg to lance-shaped, cordate base, clasps stem
<b>NATIVE</b> Deer-tongue grass	Leaves lack marginal hairs. Stems do not root at nodes	Perennial	Basal leaves ovate-lanceolate, cauline leaves are 2-10" long



Photos: Illinoiswildflower.info



Questions?

