UNIVERSITY OF ILLINOIS EXTENSION

Technical Forestry Bulletin • NRES-1602

Invasive Plant Phenology Report
April 2018

Christopher W. Evans, Extension Forestry and Research Specialist
Kevin Rohling, Forestry Technician
Department of Natural Resources and Environmental Sciences

This University of Illinois Extension Technical Forestry Bulletin series provides monthly reports on the development of invasive plant species in Illinois. Reports are summarized by region and produced from field observations collected between the 8th and 14th of each month.

Phenology is the study of seasonal natural phenomena. This observational project tracks the phenology of invasive plant species in Illinois throughout the growing season, noting when plants initiate growth, start flowering, ripen seeds, become dormant, etc. Data on the phenology of invasive plants is critical information for the development of effective management programs.

April 2018 General Summary

April moves us into the period of rapid change in terms of invasive plant phenology. Every week new species are breaking bud, coming into bloom, starting to bolt, or setting fruit. Large differences occur between the regions and even from site to site within a region. Small differences in aspect, temperature and rainfall can significantly alter phenology at this time of year.

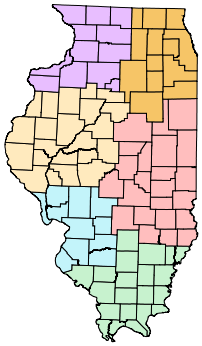
Regional Reports

South

- Garlic mustard (*Alliaria petiolata*) – Most 2nd year plants bolting, some already in flower. New germinates present
- Poison hemlock (*Conium maculatum*) – Rosettes full and actively growing. No signs of bolting yet
- Autumn olive (*Elaeagnus umbellata*) – in flower, leaves expanding
- Wintercreeper (*Euonymus fortunei*) - Actively growing with newly grown light green leaves
- Japanese honeysuckle (*Lonicera japonica*) – Most individuals fully leafed out
- Amur honeysuckle (*Lonicera maackii*) – flower buds present, leaves 1/2 way expanded
- Japanese stiltgrass (*Microstegium vimineum*) – new germinates present
- Callery (Bradford) pear (*Pyrus calleryana*) - Past peak flowering, some trees with a few flowers remaining. Leaves expanding
- Multiflora rose (*Rosa multiflora*) – Leaves expanding

Southwest

- Tree of Heaven (*Ailanthus altissima*) - Bud scales beginning to separate; no seed pods remain
- Mimosa (*Albizia julibrissin*) - Dormant with very few seed pods persisting
- Japanese barberry (*Berberis thunbergii*) - Leaves beginning to break bud and leafing out
- Oriental bittersweet (*Celastrus orbiculatus*) - Dormant
- Poison hemlock (*Conium maculatum*) – Dead stalks mostly gone and rosettes actively growing. Larger specimens up to 15" wide. First year plants ~1-2"
- Teasel (*Dipsacus* spp) - Seedlings and rosettes actively growing
- Autumn olive (*Elaeagnus umbellata*) – Variable, with leaf buds swelling/breaking on some plants, leaves expanding and flower buds visible on others
- Burning bush (*Euonymus alatus*) - Buds just beginning to break dormancy
- Wintercreeper (*Euonymus fortunei*) - Plants actively growing stem shoots, buds expanding, old leaves drooping on branches, and new leaves present on ground vegetation



Reporting Regions

Interested in becoming an invasive plant phenology observer?

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- English ivy (*Hedera helix*) - Leaves green and turgid; no berries remaining
- Japanese hops (*Humulus japonicus*) - Dormant
- Japanese honeysuckle (*Lonicera japonica*) – Leaves nearing full expansion; branches elongating in some areas; stems red
- Amur honeysuckle (*Lonicera maackii*) – Leafing out
- White mulberry (*Morus alba*) - Bud swelling
- Beefsteak plant (*Perilla frutescens*) - Seedlings present ~1/2" tall
- Phragmites (*Phragmites australis*) - Dormant; seed heads about half dispersed and half remaining
- Multiflora rose (*Rosa multiflora*) – Entire plants leafing out; hips still present (~60% turned brown) on few individuals
- Crownvetch (*Securigera varia*) - Leaflets ~1-2" long with two seed leaves up to full rosettes with many leaflets
- Johnsongrass (*Sorghum halepense*) - Dormant
- Periwinkle (*Vinca minor*) - Full bloom

West Central

- Tree of heaven (*Ailanthus altissima*) - Dormant
- Garlic mustard (*Alliaria petiolata*) – Second year plants are 3-4" tall in some places, bright green color
- Poison hemlock (*Conium maculatum*) – Rosettes robust up to 10" tall
- Teasel (*Dipsacus* spp) - Rosettes well-developed, some 4-6" diameter
- Autumn olive (*Elaeagnus umbellata*) - Most plants exhibiting leaf emergence and some just breaking bud
- Amur honeysuckle (*Lonicera maackii*) – Some plants buds dormant, others with buds swelling and breaking, and more plants with leaf emergence between 1/2-1"
- Wild parsnip (*Pastinaca sativa*) - Rosettes up to 5" tall
- Reed canary grass (Phalaris arundinacea) - Dormant, brown
- Callery (Bradford) pear (*Pyrus calleryana*) - Partial to full bloom in all escaped populations
- Multiflora rose (*Rosa multiflora*) – Leaves emerging on most plants, and bud swelling/breaking on others; other locations remaining dormant
- Crownvetch (*Securigera varia*) - Leaves emerging with stems ~3" long

East Central

No observations submitted for this region

Northwest

- Garlic mustard (*Alliaria petiolata*) – Rosettes growing wider and taller
- Bush honeysuckle (*Lonicera sp.*) – Leaf buds beginning to break
- Common buckthorn (*Rhamnus cathartica*) - Buds beginning to swell; some shriveled black berries persist
- Multiflora rose (*Rosa multiflora*) - Small closed buds present

Northeast

- Oriental bittersweet (*Celastrus orbiculatus*) - Dormant
- Bull thistle (*Cirsium vulgare*) - Rosettes showing signs of expansion/new growth
- Poison hemlock (Conium maculatum) – Rosettes actively growing. with some specimen up to 10" diameter
- Teasel (*Dipsacus* spp) - Rosettes showing expansion and new growth, some up to 10" in diameter
- Autumn olive (*Elaeagnus umbellate*) - Buds beginning to swell
- Creeping Charlie (Glechoma hederacea) - New runners forming
- Tawny day lily (*Hemerocallis fulva*) - Leaf tips browned/ damaged by frost
- Bush honeysuckle spp. (Lonicera spp.) - All of the varieties of bush honeysuckle have had bud break with several of the varieties showing modest leaf expansion.
- Amur honeysuckle (*Lonicera maackii*) - Buds swelling and nearing bud break
- Miscanthus sp. (Miscanthus sp.) - Dormant
- White mulberry (*Morus alba*) - Buds swelling and some breaking, but not leafing out yet
- Phragmites (*Phragmites australis*) - Dormant
- Callery (Bradford) pear (*Pyrus calleryana*) - Buds swelling but not breaking
- Multiflora rose (*Rosa multiflora*) - Buds are starting to swell and expand
- White (hybrid) cattail (Typha ×glauca) - Dormant with seed spikes continuing to release achenes attached to fluffy hair

Using phenology data to inform invasive plant management

- Chemical treatments to annual or biennial plants should be applied before the plants start flowering
- Once annual or biennial plants have fruit forming, the most effective control measure is mechanically removing the plant, making sure to remove the fruits/seeds from the area. When the fruit start to mature and fall off of the plant, mechanical treatments should be halted
- When fruit mature on some invasive plants, such as garlic mustard Japanese stiltgrass, and Japanese chaff flower, care should be taken to avoid accidentally spreading the seeds of these plants.
- Chemical treatments on woody invasive plants should not be applied after bud swell/bud break until the plants have reached full leaf expansion
- Foliar chemical treatments should be applied to healthy, green, actively-growing foliage. When the foliage starts to turn its fall color, then foliar treatments are not effective

Common and scientific names adhere to:

ITIS (Integrated Taxonomic Information System). 2016. Online Database (http://www.itis.gov, 1 January 2016). Smithsonian Institution, Washington, DC.

Invasive plant observations used to produce this report were provided by the following individuals:

Bob Arevalo, Debbie Bruce, Karen DePoister, Sharon Geil, Molly Lovelock, Mona Maas, Pamela Moriearty, Phyllis Schulte

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May 2018 General Summary

May marks the beginning of the summer season for many invasive species. Teasels, poison hemlock, wild parsnip, musk thistle, crown vetch, and others are blooming (or nearly so) along roadsides in Illinois. Most of the woody invasive species have finished their spring flush of growth and are now vulnerable to herbicide treatments. Garlic mustard, while still in flower in northern Illinois, has moved beyond the point where herbicides are effective, necessitating hand pulling for control in the southern region.

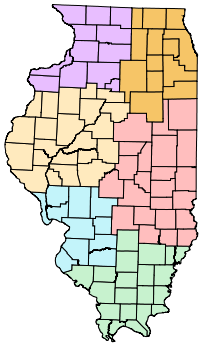
Regional Reports

South

- Garlic mustard (*Alliaria petiolata*) – 2nd year plants flowering and forming siliques; 1st year plants actively growing
- Poison hemlock (*Conium maculatum*) – Plants beginning to bolt and flower
- Autumn olive (*Elaeagnus umbellata*) – Most plants past flowering; leaves fully expanded
- Wintercreeper (*Euonymus fortunei*) - Actively growing
- Japanese honeysuckle (*Lonicera japonica*) – Fully leafed out and actively growing
- Amur honeysuckle (*Lonicera maackii*) – Most plants in full bloom and fully leafed out
- Japanese stiltgrass (*Microstegium vimineum*) – Actively growing
- Callery (Bradford) pear (*Pyrus calleryana*) - Fully leafed out and beginning to form fruits
- Multiflora rose (*Rosa multiflora*) – Leafed out and nearing flowering stage

Southwest

- Tree of Heaven (*Ailanthus altissima*) - Fully leafed out; new branch growth up to 2'; flower panicles expanding especially on longer branch tips
- Mimosa (*Albizia julibrissin*) - Leaves expanding at branch tips; no seed pods remain
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out; no flowers seen yet
- Oriental bittersweet (*Celastrus orbiculatus*) - Fully leafed out; flower buds present on lower branches and blooming in upper branches
- Poison hemlock (*Conium maculatum*) – Stems bolted up to 6' tall in some places and beginning to flower
- Teasel (*Dipsacus* spp) - Rosettes 4-14" tall
- Autumn olive (*Elaeagnus umbellata*) – Fully leafed out; some plants in full bloom and others still with flower buds
- Burning bush (*Euonymus alatus*) - Fully leafed out; some in full bloom
- Wintercreeper (*Euonymus fortunei*) - New growth on ground 1-1.5" long and turgid; new growth on branches flaccid and ~3" long



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- English ivy (*Hedera helix*) - New growth at tips both on ground and on branches; no flower buds seen yet
- Japanese honeysuckle (*Lonicera japonica*) – Rapidly growing stems; no flowers or buds seen
- Amur honeysuckle (*Lonicera maackii*) – Fully leafed out and most in full bloom
- White mulberry (*Morus alba*) - Fully leafed out with some flowers still present and fruits forming
- Beefsteak plant (*Perilla frutescens*) - Stems 1-2' tall, red at base; some stems from last year still standing
- Reed canary grass (*Phalaris arundinacea*) - Stems up to 3' tall; flower heads forming on tallest plants
- Phragmites (*Phragmites australis*) - Plants 4-5' tall
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruits developing ~1/4" ; stems of unfertilized flowers present
- Multiflora rose (*Rosa multiflora*) – Fully leafed out; flower buds at branch tips, largest shows slight separation between sepals
- Sericea lespedeza (*Lespedeza cuneata*) - Stems 1-2' tall
- Crownvetch (*Securigera varia*) - Stems 12-15" tall
- Johnsongrass (*Sorghum halepense*) - Up to 15" tall; a few plants from previous year with seed still falling
- Periwinkle (*Vinca minor*) - A few flowers remain; active growth of leaves and stems

West Central

- Tree of heaven (*Ailanthus altissima*) - Leafing out of ends of branches/trunks; lower-level branches and buds just beginning to break bud and leaf out
- Garlic mustard (*Alliaria petiolata*) – Second-year plants flowering and 10-12" high; first year plants 4-6" tall
- Poison hemlock (*Conium maculatum*) – Bolting to 30 - 36" ta;;, stems 1" diameter at base
- Teasel (*Dipsacus* spp) - Rosette leaves ~10" long
- Amur honeysuckle (*Lonicera maackii*) – Full flowering in some locations; still leafing out in some locations
- Wild parsnip (*Pastinaca sativa*) - Bolting to 30 inches tall
- Reed canary grass (*Phalaris arundinacea*) - Actively growing
- Callery (Bradford) pear (*Pyrus calleryana*) - Full flowering and leafing out
- Multiflora rose (*Rosa multiflora*) – Flowering completed and about half with rose hips forming; fully leafed out
- Crownvetch (*Securigera varia*) - Leaves emerging with stems ~5-6" long

East Central

- Garlic mustard (*Alliaria petiolata*) – Blooming; seed pods forming to fully formed in some locations
- Poison hemlock (*Conium maculatum*) – Second year rosettes with full leaves but not yet bolting
- Amur honeysuckle (*Lonicera maackii*) - Plants in full bloom in many locations and some flowers fading; other locations flower buds not yet breaking
- Star-of-Bethlehem (*Ornithogalum umbellatum*) - Flower buds not yet opening
- Wild parsnip (*Pastinaca sativa*) - Second year rosettes with full leaves but not yet bolting
- Multiflora rose (*Rosa multiflora*) - Buds forming; no flowers seen yet
- Crownvetch (*Securigera varia*)- Fully leafed out

Northwest

- Tree of heaven (*Ailanthus altissima*) - Appears dormant
- Garlic mustard (*Alliaria petiolata*) – Second year plants reached full height and in full flower; some locations forming fruit
- Japanese barberry (*Berberis thunbergii*) - Leaves fully leafed out
- Spotted knapweed (*Centaurea stoebe*) - Rosettes leafed out but not yet bolting
- Poison hemlock (*Conium maculatum*) – Second-year plants approx 1 1/2 - 2" tall and beginning to bolt
- Teasel (*Dipsacus* spp) - Some plants with mature basal leaves; not quite bolting yet
- Autumn olive (*Elaeagnus umbellate*) - Fully flowering in most locations with some plants' flowers not yet opening; other locations not fully leafed out
- Burning bush (*Euonymus alatus*) - Beginning to flower
- Japanese knotweed (*Fallopia japonica*) - Leafing out with rapid growth
- Dame's rocket (*Hesperis matronalis*) - Bolting
- Japanese hops (*Humulus japonica*) - Leaves emerging
- Bush honeysuckle (*Lonicera sp.*) – Leaves fully leafed out; over half flowering in some locations
- White mulberry (*Morus alba*) - Fully leafed out
- Wild parsnip (*Pastinaca sativa*) - Second year plants leafed out but not bolting; first year plants with ~8" leaves
- Reed canary grass (*Phalaris arundinacea*) - Leaves emerging, ~18" tall
- Common buckthorn (*Rhamnus cathartica*) - Leafing out with some plants near full leaf out
- Multiflora rose (*Rosa multiflora*) - Leaves nearing full leaf-out; no flower buds seen

- Crownvetch (*Securigera varia*)- Fully leafed out; plants 6-12" tall

Northeast

- Garlic mustard (*Alliaria petiolata*) – In full bloom
- Yellow rocket (*Barbarea vulgaris*) - In full bloom
- Canada thistle (*Cirsium arvense*) - Leaves ~4-6" long; expanding
- Poison hemlock (*Conium maculatum*) – Rosettes actively growing
- Teasel (*Dipsacus* spp) - Rosettes still expanding
- Autumn olive (*Elaeagnus umbellate*) - Leafed out and flowering
- Bush honeysuckle spp. (Lonicera spp.) - Leaves emerging/expanding; fire-damaged plants resprouting at base
- Morrow's honeysuckle (*Lonicera morrowii*) - Leaves continuing to expand and flower buds are present
- Tatarian honeysuckle (*Lonicera tatarica*) - Leaves still expanding and flower buds are present
- Bird's-foot trefoil (*Lotus corniculatus*) - All plants leafed out; some plants developing flower buds
- Sweet clover spp. (Melilotus spp.) - Actively growing, plants up to 10" tall
- White mulberry (*Morus alba*) - Leafing out and leaves expanding
- Wild parsnip (*Pastinaca sativa*) - Actively growing up to 18" tall
- Reed canary grass (*Phalaris arundinacea*) - Plants 10-12" tall
- Phragmites (*Phragmites australis*) - Most specimens are between 12" and 18" tall; some up to 3' tall
- Callery (Bradford) pear (*Pyrus calleryana*) - Full bloom
- Glossy buckthorn (*Rhamnus frangula*) - Flower buds formed but not open, about 50% leaf expansion
- Multiflora rose (*Rosa multiflora*) - Leaves expanding

Using phenology data to inform invasive plant management

- Chemical treatments to annual or biennial plants should be applied before the plants start flowering
- Once annual or biennial plants have fruit forming, the most effective control measure is mechanically removing the plant, making sure to remove the fruits/ seeds from the area. When the fruit start to mature and fall off of the plant, mechanical treatments should be halted
- When fruit mature on some invasive plants, such as garlic mustard Japanese stiltgrass, and Japanese chaff flower, care should be taken to avoid accidentally spreading the seeds of these plants.
- Chemical treatments on woody invasive plants should not be applied after bud swell/bud break until the plants have reached full leaf expansion
- Foliar chemical treatments should be applied to healthy, green, actively-growing foliage. When the foliage starts to turn its fall color, then foliar treatments are not effective

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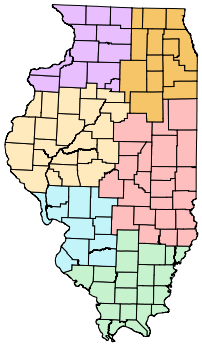
June 2018 General Summary

June transitions us from late spring into early summer, when some spring flowering species are setting seed or developing fruits, others are beginning to bloom, and still others are developing resources to use at a later time. As was the case last year, poison hemlock and wild parsnip are either in bloom or just past in all regions. Several grass species are either flowering or nearing flowering stage. Teasel in the south are nearing flowering stage, but are not as far along as they were in June 2017.

Regional Reports

South

- Japanese chaff flower (*Achyranthes japonica*) – Vegetative growth 12”-18” high
- Mimosa (*Albizia julibrissin*) – Full bloom
- Garlic mustard (*Alliaria petiolata*) – Setting seed
- Poison hemlock (*Conium maculatum*) – Flowering but past peak; fruit developing
- Common teasel (*Dipsacus fullonum*) - Flower buds developing but no flowers yet
- Cut-leaf teasel (*Dipsacus laciniatus*) - bolting but no flower buds observed
- Autumn olive (*Elaeagnus umbellata*) – Immature fruit developing, full leaf expansion
- Japanese honeysuckle (*Lonicera japonica*) – Still blooming
- Amur honeysuckle (*Lonicera maackii*) – Full leaf expansion, past flowering, immature fruit developing
- Sweet clover spp. (Melilotus spp.) - Blooming
- Japanese stiltgrass (*Microstegium vimineum*) – Vegetative growth ~ 12” high
- Wild parsnip (*Pastinaca sativa*) - Flowering
- Princess tree (*Paulownia tomentosa*) - Past bloom, leaves expanding, immature fruit present
- Reed canary grass (*Phalaris arundinacea*) - Blooming
- Phragmites (*Phragmites australis*) - Vegetative growth, no flower development observed
- Callery (Bradford) pear (*Pyrus calleryana*) - Full leaf out; fruits forming
- Multiflora rose (*Rosa multiflora*) - Past bloom, immature fruit developing
- Johnson grass (*Sorghum halepense*) - Flower heads starting to developing but not yet open



Reporting Regions

Southwest

- Tree of Heaven (*Ailanthus altissima*) - Fully leafed out with fruits to ~1" long
- Mimosa (*Albizia julibrissin*) - Starting to bloom (~5%); fully leafed out
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out; no flower buds present
- Cheatgrass (*Bromus tectorum*) - Brown with seeds still firmly attached

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- Oriental bittersweet (*Celastrus orbiculatus*) - Green berries present; up to 1/4"
- Poison hemlock (*Conium maculatum*) – Plants up to 7', full bloom with some forming seed
- Teasel (*Dipsacus* spp) - Second-year plants ~2' tall with some plants not yet bolting; myriads of tiny first-year plants under most of the rosettes
- Autumn olive (*Elaeagnus umbellata*) – Small fruits to ~1/4" long, green with brown speckles
- Burning bush (*Euonymus alatus*) - Fully leafed out with fruits forming, 1-3 parts up to 1/3" long
- Wintercreeper (*Euonymus fortunei*) - Flower buds present, very tight (only on branches in trees); leaves on branches drooping, 3-4" and somewhat olive green; actively growing
- English ivy (*Hedera helix*) - Vines actively growing both on ground and on branches in trees; flower buds forming
- Japanese hops (*Humulus japonicus*) - No sign of flowers yet; leaves not yet full-sized but sprawling over other plants
- Sericea lespedeza (*Lespedeza cuneata*) - Stems to 4' tall with flower buds in stem axils where leaves are fully grown
- Japanese honeysuckle (*Lonicera japonica*) – Actively growing with scattered populations in bloom
- Amur honeysuckle (*Lonicera maackii*) – No longer flowering; tiny berries present, ~2mm
- White mulberry (*Morus alba*) - Fruits gone
- Beefsteak plant (*Perilla frutescens*) - From 1-12" depending on light; not yet flowering
- Phragmites (*Phragmites australis*) - Plants 6-12' tall; not yet flowering; no seed remaining in last year's plants
- Reed canary grass (*Phalaris arundinacea*) - In full bloom with stalks up to 7' tall in moist areas, most ~4' tall
- Callery (Bradford) pear (*Pyrus calleryana*) - Hard green fruits about 1/3" wide with brown speckles
- Multiflora rose (*Rosa multiflora*) – Bountiful green hips, still ovary-sized with sepals present
- Crownvetch (*Securigera varia*) - In full bloom and growing overtop other vegetation
- Johnsongrass (*Sorghum halepense*) - Stalks to 2.5'; a few plants beginning to flower
- Periwinkle (*Vinca minor*) - No longer flowering; vines growing slowly

West Central

- Garlic mustard (*Alliaria petiolata*) – Seed pods developing in some areas, fully developed and beginning to dry in other areas; occasional flowers on lower stems in some areas
- Musk thistle (*Carduus nutans*) - Full flower
- Poison hemlock (*Conium maculatum*) – Multiple white umbels, with most flowers open; stems up to 6' tall
- Teasel (*Dipsacus* spp) - Bolting with 5 or more pairs of serrated leaves
- Yellow sweet clover spp. (*Melilotus officinalis*) - Full flower
- Wild parsnip (*Pastinaca sativa*) - Plants with multiple umbels, some flowers open in some areas; other areas in full flower
- Reed canary grass (*Phalaris arundinacea*) - Flowering in some areas; likely with seed developed in some areas

East Central

- Garlic mustard (*Alliaria petiolata*) – Seeds are beginning to turn black and hard on most plants
- Spotted knapweed (*Centaurea stoebe*) - Beginning to flower
- Canada thistle (*Cirsium arvense*) - In full flower, and some seeds are starting to mature
- Poison hemlock (*Conium maculatum*) – Going out of flower and seeds are beginning to develop
- Cut-leaf teasel (*Dipsacus laciniatus*) - Fully bolting, but not yet flowering
- Bird's-foot trefoil (*Lotus corniculatus*) - Flowering, with some development of seeds
- Yellow sweet clover spp. (*Melilotus officinalis*) - Forming seeds
- White sweet clover spp. (*Melilotus alba*) - Beginning to flower
- Wild parsnip (*Pastinaca sativa*) - In full flower, and some seeds are starting to mature
- Reed canary grass (*Phalaris arundinacea*) - Seedheads are half full of hardened, developed seeds

Northwest

- Garlic mustard (*Alliaria petiolata*) – Done flowering and seeds set in some areas; some plants beginning to bolt in other areas
- Poison hemlock (*Conium maculatum*) – In full flower
- Cut-leaf teasel (*Dipsacus laciniatus*) - Rosettes growing vigorously, with some adding a second leaf ring; bolting in other areas, 1-3' tall
- Autumn olive (*Elaeagnus umbellate*) - Flower buds have mostly dried and dropped off; some immature fruit present
- Bush honeysuckle (*Lonicera sp.*) – Mature red fruit observed on most specimens (likely *L. tartarica*)
- Amur honeysuckle (*Lonicera maackii*) – Most plants between flowering and developing fruits
- Phragmites (*Phragmites australis*) - Bolting with plants 3 - 5' tall; no sign of seedheads

- Common buckthorn (*Rhamnus cathartica*) - Fully leafed out and small green berries present
- Multiflora rose (*Rosa multiflora*) - White flowers just emerging in some areas; flowers beginning to fade and fruit forming in other areas
- Crownvetch (*Securigera varia*) - Most plants in full bloom

Northeast

- Garlic mustard (*Alliaria petiolata*) – Seeds setting
- Canada thistle (*Cirsium arvense*) - Nearing full bloom in some areas; 1-3' tall; not quite flowering yet in other areas
- Bull thistle (*Cirsium vulgare*) - In full bloom
- Poison hemlock (*Conium maculatum*) – In full bloom
- Teasel (*Dipsacus* spp) - Some plants bolting and other plants with rosettes 2-8" in diameter; flower heads beginning to appear
- Autumn olive (*Elaeagnus umbellate*) - Fruit appears to have begun to set but aborted in at least one location
- Amur honeysuckle (*Lonicera maackii*) - Some plants are still blooming; others beginning to form fruits
- Morrow's honeysuckle (*Lonicera morrowii*) - Fruit is forming
- Tatarian honeysuckle (*Lonicera tatarica*) - Fruiting
- Bird's-foot trefoil (*Lotus corniculatus*) - Full bloom
- Yellow sweet clover spp. (*Melilotus officinalis*) - Most plants in full bloom; some plants in bolting stage
- Wild parsnip (*Pastinaca sativa*) - In full bloom
- Reed canary grass (*Phalaris arundinacea*) - Flowers fading, but no seed present yet
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruit is setting and expanding
- Multiflora rose (*Rosa multiflora*) - Flowering with some flowers starting to fade but no fruit as yet.
- Crownvetch (*Securigera varia*) - In full bloom

Using phenology data to inform invasive plant management

- Chemical treatments to annual or biennial plants should be applied before the plants start flowering
- Once annual or biennial plants have fruit forming, the most effective control measure is mechanically removing the plant, making sure to remove the fruits/seeds from the area. When the fruit start to mature and fall off of the plant, mechanical treatments should be halted
- When fruit mature on some invasive plants, such as garlic mustard Japanese stiltgrass, and Japanese chaff flower, care should be taken to avoid accidentally spreading the seeds of these plants.
- Chemical treatments on woody invasive plants should not be applied after bud swell/bud break until the plants have reached full leaf expansion
- Foliar chemical treatments should be applied to healthy, green, actively-growing foliage. When the foliage starts to turn its fall color, then foliar treatments are not effective

Common and scientific names adhere to:

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Invasive plant observations used to produce this report were provided by the following individuals:

Bob Arevalo, Tom Caldwell, Michael Daab, Karen DePoister, Chris Evans, Sharon Geil, Douglas Kaufman-Dickson, Molly Lovelock, Pamela Moriearty, Phyllis Schulte, Ann Whitney

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UNIVERSITY OF ILLINOIS EXTENSION

Technical Forestry Bulletin • NRES-1602

Invasive Plant Phenology Report
July 2018

Christopher W. Evans, Extension Forestry and Research Specialist
Kevin Rohling, Forestry Technician
Department of Natural Resources and Environmental Sciences

This University of Illinois Extension Technical Forestry Bulletin series provides monthly reports on the development of invasive plant species in Illinois. Reports are summarized by region and produced from field observations collected between the 8th and 14th of each month.

Phenology is the study of seasonal natural phenomena. This observational project tracks the phenology of invasive plant species in Illinois throughout the growing season, noting when plants initiate growth, start flowering, ripen seeds, become dormant, etc. Data on the phenology of invasive plants is critical information for the development of effective management programs.

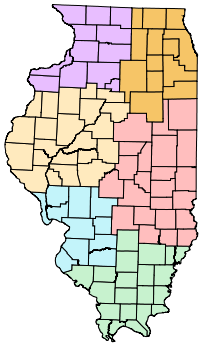
July 2018 General Summary

July brings intense summer heat to Illinois and a shift in invasive plant development. Most of the spring-flowering species are forming seeds or even senescing while the summer plants start to bloom. Most of the woody invasive species have immature fruit.

Regional Reports

South

- Japanese chaff flower (*Achyranthes japonica*) - Nearing full height in some areas; flower spikes beginning to form
- Tree of Heaven (*Ailanthus altissima*) - Samaras developed but seed not cured yet
- Mimosa (*Albizia julibrissin*) - Most plants nearly done flowering
- Garlic mustard (*Alliaria petiolata*) - Second-year plants senesced and readily dropping seed; first-year rosettes present
- Poison hemlock (*Conium maculatum*) - Fully senesced and dropping seed
- Chinese yam (*Dioscorea polystachya*) - Bulbils near fully formed
- Cut-leaf teasel (*Dipsacus laciniatus*) - Full bloom
- Common teasel (*Dipsacus fullonum*) - Just past bloom
- Autumn olive (*Elaeagnus umbellata*) - Immature fruits present
- Burning bush (*Euonymus alatus*) - Fruits beginning to form
- Wintercreeper (*Euonymus fortunei*) - Berries beginning to form on vines in trees
- Rose of Sharon (*Hibiscus syriacus*) - Flowering
- Japanese hops (*Humulus japonicus*) - Rapidly growing; not flowering yet
- Sericea lespedeza (*Lespedeza cuneate*) - Near full height; no flowers yet
- Japanese honeysuckle (*Lonicera japonica*) - Some plants still flowering
- Amur honeysuckle (*Lonicera maackii*) - Immature fruits
- Chinese privet (*Ligustrum sinense*) - Immature fruits present
- Japanese stiltgrass (*Microstegium vimineum*) – Plants ~3' in some locations; not flowering yet
- Chinese silvergrass (*Miscanthus sinensis*) - Not flowering yet
- Princess tree (*Paulownia tomentosa*) - Done flowering and fruits forming
- Common reed (*Phragmites australis*) - Nearing full height but not flowering
- Reed canary grass (*Phalaris arundinacea*) - Seed mostly fallen out
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruits nearly fully formed, but not yet mature
- Multiflora rose (*Rosa multiflora*) - Rose hips present ~1/4" wide
- Crownvetch (*Securigera varia*) - Flowering and forming seed
- Johnsongrass (*Sorghum halepense*) - Flowering



Reporting Regions

Southwest

- Tree of Heaven (*Ailanthus altissima*) - Samaras fully grown and changing color; reddest color at furthest branch ends
- Mimosa (*Albizia julibrissin*) - Seed pods up to 6" long; full bloom in some areas

Interested in becoming an invasive plant phenology observer?

The University of Illinois Extension Forestry Program relies on observations from volunteers to produce the monthly invasive plant phenology report. Anyone interested in becoming a volunteer observer should contact Chris Evans, Extension Forester at (618) 695-3383 or cwevans@illinois.edu. Volunteers are asked to make monthly observations on three to four invasive species in their area.

- Japanese barberry (*Berberis thunbergii*) - Fully leafed out
- Oriental bittersweet (*Celastrus orbiculatus*) - Fruits to 1/3", green and nearly round
- Poison hemlock (*Conium maculatum*) - Variable with some plants fully senesced and others still blooming where impacted by mowing and stormwater; seeds green or brown but still firmly attached
- Cut-leaf teasel (*Dipsacus laciniatus*) - Flower buds developed, but not flowering yet
- Autumn olive (*Elaeagnus umbellata*) - Immature fruits forming; a few leaves turning yellow
- Burning bush (*Euonymus alatus*) - Fruits present; fully leafed out
- Wintercreeper (*Euonymus fortunei*) - Flower buds present on branches in trees; leaves on branches drooping; actively growing on ground especially where cut
- English ivy (*Hedera helix*) - Actively growing on the ground, but not appearing to lengthen in trees; flower clusters expanded at end of branches but flower buds still closed
- Japanese hops (*Humulus japonicus*) - Rapidly growing; not flowering yet
- Sericea lespedeza (*Lespedeza cuneate*) - Stems to 5' tall with flower buds at branchlet ends, but not blooming yet
- Amur honeysuckle (*Lonicera maackii*) - Immature berries forming
- Japanese honeysuckle (*Lonicera japonica*) - Actively growing with occasional flowering and many flower buds present
- White mulberry (*Morus alba*) - Branches actively growing
- Beefsteak plant (*Perilla frutescens*) - Plant height from 2" to 2' tall; not flowering yet
- Reed canary grass (*Phalaris arundinacea*) - Seeds mature and falling readily; stems still green
- Phragmites (*Phragmites australis*) - Nearing full height, but not forming flowers yet
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruits hard and ~1/2" green with brown speckles
- Multiflora rose (*Rosa multiflora*) - Bountiful green hips to 1/4", sepals still present
- Crownvetch (*Securigera varia*) - Still blooming and flower buds present; seed heads also forming
- Johnsongrass (*Sorghum halepense*) - Stems up to 7' tall and flowering
- Periwinkle (*Vinca minor*) - No flowers; vines growing, but more slowly than spring

West Central

- Tree of heaven (*Ailanthus altissima*) - Fruit full-sized and yellow-orange in color
- Garlic mustard (*Alliaria petiolata*) - Seed set and leaves senesced in most areas; first year seedlings established
- Musk thistle (*Carduus nutans*) - Some flowering and others setting seed
- Poison hemlock (*Conium maculatum*) - Seeds maturing, plants dying back, nearly dry
- Queen Anne's lace (*Daucus carota*) - Full flower
- Teasel (*Dipsacus* spp) - Full bloom
- Common teasel (*Dipsacus fullonum*) - Full bloom
- Cut-leaf teasel (*Dipsacus laciniatus*) - Flower buds developed, but not yet flowering in some areas; full flower elsewhere
- Autumn olive (*Elaeagnus umbellata*) - Immature fruits present
- Sericea lespedeza (*Lespedeza cuneate*) - Plants up to 3' tall, actively developing side branches; no flowering observed
- Amur honeysuckle (*Lonicera maackii*) - Immature fruits
- Japanese honeysuckle (*Lonicera japonica*) - Full bloom
- White sweetclover (*Melilotus alba*) - Flowering
- Yellow sweetclover (*Melilotus officinalis*) - Mostly gone to seed, a few still flowering
- Wild parsnip (*Pastinaca sativa*) - Some flowring and others setting seed and dying back
- Reed canary grass (*Phalaris arundinacea*) - Dropping seed
- Phragmites (*Phragmites australis*) - Nearing full height, 5-6' tall, no flower development
- Crownvetch (*Securigera varia*) - Full bloom

East Central

- Garlic mustard (*Alliaria petiolata*) - Gone to seed and most second-year plants senesced
- Amur honeysuckle (*Lonicera maackii*) - Flower buds are beginning to open
- Multiflora rose (*Rosa multiflora*) - Leafed out; no flowers present in some locations

Northwest

- Garlic mustard (*Alliaria petiolata*) - Second-year plants fully senesced; first-year plants in rosette form
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out
- Poison hemlock (*Conium maculatum*) - Fully flowered and forming seeds; some starting to senesce
- Cut-leaf teasel (*Dipsacus laciniatus*) - Flower buds developed, and beginning to bloom
- Burning bush (*Euonymus alatus*) - Fully leafed out
- Bush honeysuckle (*Lonicera sp.*) - Fruits ripe and starting to dry in some areas
- Amur honeysuckle (*Lonicera maackii*) - Leafed out, not blooming
- Phragmites (*Phragmites australis*) - Near full height, but not yet flowering
- Common buckthorn (*Rhamnus cathartica*) - Fully leafed out with small green berries increasing in size
- Multiflora rose (*Rosa multiflora*) - Finished flowering with small 1/8" to 1/4" fruits forming

Northeast

- Garlic mustard (*Alliaria petiolata*) - Second-year plants senescing and dropping seed
- Field brome (*Bromus arvensis*) - Seed fully formed
- Canada thistle (*Cirsium arvense*) - Flowers present and most just beginning to open in some areas; plants beginning to senesce and some seed dropping in other areas
- Poison hemlock (*Conium maculatum*) - Beginning to senesce, but not dropping seed yet
- Queen Anne's lace (*Daucus carota*) - Most plants are in full bloom
- Teasel (*Dipsacus* spp) - Flower buds fully formed on most plants but flowers are not open yet
- Autumn olive (*Elaeagnus umbellate*) - Fruits forming
- Tawny day lily (*Hemerocallis fulva*) - Flower buds formed but not yet blooming
- Amur honeysuckle (*Lonicera maackii*) - No longer flowering, but not yet developing fruits
- Morrow's honeysuckle (*Lonicera morrowii*) - Fruit fully ripe with some beginning to mature
- Tatarian honeysuckle (*Lonicera tatarica*) - Fruit is fully ripe
- Purple loosestrife (*Lythrum salicaria*) - Full bloom
- Wild parsnip (*Pastinaca sativa*) - Two thirds in full bloom with no senescence and one third leaves yellowing and seed fully ripe
- Reed canary grass (*Phalaris arundinacea*) - Seed is present and fully mature
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruit is set and appears to be fully expanded
- Multiflora rose (*Rosa multiflora*) - Rose hips forming
- Crownvetch (*Securigera varia*) - Full bloom
- Giant foxtail (*Setaria faberi*) - Full bloom
- Common mullein (*Verbascum thapsus*) - Flowers just starting to open

Using phenology data to inform invasive plant management

- Chemical treatments to annual or biennial plants should be applied before the plants start flowering
- Once annual or biennial plants have fruit forming, the most effective control measure is mechanically removing the plant, making sure to remove the fruits/seeds from the area. When the fruit start to mature and fall off of the plant, mechanical treatments should be halted
- When fruit mature on some invasive plants, such as garlic mustard Japanese stiltgrass, and Japanese chaff flower, care should be taken to avoid accidentally spreading the seeds of these plants.
- Chemical treatments on woody invasive plants should not be applied after bud swell/bud break until the plants have reached full leaf expansion
- Foliar chemical treatments should be applied to healthy, green, actively-growing foliage. When the foliage starts to turn its fall color, then foliar treatments are not effective

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Invasive Plant Phenology Report
August 2018

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Kevin Rohling, Forestry Technician
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This University of Illinois Extension Technical Forestry Bulletin series provides monthly reports on the development of invasive plant species in Illinois. Reports are summarized by region and produced from field observations collected between the 8th and 14th of each month.

Phenology is the study of seasonal natural phenomena. This observational project tracks the phenology of invasive plant species in Illinois throughout the growing season, noting when plants initiate growth, start flowering, ripen seeds, become dormant, etc. Data on the phenology of invasive plants is critical information for the development of effective management programs.

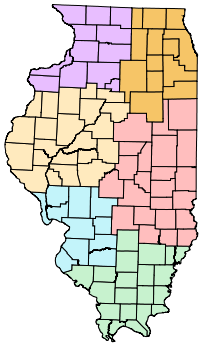
August 2018 General Summary

In August, many herbaceous plants have set seed and are either progressing towards dormancy or are developing first year rosettes in the case of biennials such as poison hemlock and the teasels. One exception is phragmites, which is just beginning to bloom. Most woody invasive plants are developing fruits and seeds before entering a period of senescence as fall approaches.

Regional Reports

South

- Japanese chaff flower (*Achyranthes japonica*) - Full bloom; some plants up to 6' tall
- Tree of Heaven (*Ailanthus altissima*) - Samaras developed and seed appears to be cured
- Mimosa (*Albizia julibrissin*) - A few plants still flowering, most with seed pods ~6" long
- Garlic mustard (*Alliaria petiolata*) - Second-year plants senesced and dessicating; first-year rosettes present
- Poison hemlock (*Conium maculatum*) - Fully senesced and dropping seed; first year rosettes present
- Cut-leaf teasel (*Dipsacus laciniatus*) - A few still flowering; most curing but not yet dropping seed
- Common teasel (*Dipsacus fullonum*) - Done flowering, but not yet dropping seed
- Autumn olive (*Elaeagnus umbellata*) - Fruits nearly ripe
- Burning bush (*Euonymus alatus*) - Fruits green and developing
- Wintercreeper (*Euonymus fortunei*) - Berries 1/8-1/4"
- Rose of Sharon (*Hibiscus syriacus*) - Still flowering
- Japanese hops (*Humulus japonicus*) - Flowering
- Sericea lespedeza (*Lespedeza cuneate*) - Most plants flowering
- Japanese honeysuckle (*Lonicera japonica*) - Some plants still flowering; others with green fruits ~1/4"
- Amur honeysuckle (*Lonicera maackii*) - Immature fruits ~1/8"
- Chinese privet (*Ligustrum sinense*) - Immature fruits ~1/8-1/4"
- Japanese stiltgrass (*Microstegium vimineum*) – Plants ~6' tall in some locations; not flowering
- Chinese silvergrass (*Miscanthus sinensis*) - Some plants flowering
- Princess tree (*Paulownia tomentosa*) - Fruits developing
- Common reed (*Phragmites australis*) - Flowering
- Reed canary grass (*Phalaris arundinacea*) - Seed mostly dispersed
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruits fully formed
- Multiflora rose (*Rosa multiflora*) - Rose hips present ~1/4" wide
- Crownvetch (*Securigera varia*) - Setting seed
- Johnsongrass (*Sorghum halepense*) - Seed is dispersing



Reporting Regions

Southwest

- Tree of Heaven (*Ailanthus altissima*) - Samaras developed and seed appears to be cured
- Mimosa (*Albizia julibrissin*) - A few plants still flowering, most with seed pods ~6" long
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out; no flowers observed, but did not flower last year

Interested in becoming an invasive plant phenology observer?

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- Oriental bittersweet (*Celastrus orbiculatus*) - Fruits round and ripening with salmon/light orange husks
- Poison hemlock (*Conium maculatum*) - Fully senesced and dropping seed
- Cut-leaf teasel (*Dipsacus laciniatus*) - Most flowering and some finished flowering; first year rosettes present
- Autumn olive (*Elaeagnus umbellata*) - Fruits mostly immature with some nearly ripe up to 1/4"
- Burning bush (*Euonymus alatus*) - Fruits green and developing up to 1/4"
- Wintercreeper (*Euonymus fortunei*) - Finishing bloom period and beginning to form fruits
- English ivy (*Hedera helix*) - ~5% of plants beginning to bloom; green berries present where petals are gone
- Japanese hops (*Humulus japonicus*) - Actively growing overtop other vegetation; flower buds forming
- Sericea lespedeza (*Lespedeza cuneate*) - Most plants flowering
- Amur honeysuckle (*Lonicera maackii*) - Immature green fruits up to ~1/4"
- Japanese honeysuckle (*Lonicera japonica*) - Blooming; many buds at branch ends
- White sweetclover (*Melilotus alba*) - Blooming in some areas; seed heads in others
- White mulberry (*Morus alba*) - Fruits dropped; leaves beginning to yellow
- Beefsteak plant (*Perilla frutescens*) - Most plants at full height but not flowering yet
- Reed canary grass (*Phalaris arundinacea*) - Seed mostly dispersed; leaves mostly brown and stems browning
- Common reed (*Phragmites australis*) - Flowering or near flowering in most locations
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruits fully formed and ripening
- Multiflora rose (*Rosa multiflora*) - Rose hips developing up to 1/8"
- Crownvetch (*Securigera varia*) - Plants still blooming and with flower buds; seed heads forming on others
- Johnsongrass (*Sorghum halepense*) - Seed forming but not yet dispersing readily
- Periwinkle (*Vinca minor*) - Leaves dark green

West Central

- Garlic mustard (*Alliaria petiolata*) - Siliques dried and opening with leaves mostly brown in second-year plants; first year rosettes present
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out with no sign of flowering
- Musk thistle (*Carduus nutans*) - Gone to seed
- Poison hemlock (*Conium maculatum*) - Seeds are brown and dropping on most plants with leaves mostly senseced
- Common teasel (*Dipsacus fullonum*) - Finished blooming and seed heads drying out
- Cut-leaf teasel (*Dipsacus laciniatus*) - Second year plants nearly done flowering with leaves turning brown at base; rosettes green
- Autumn olive (*Elaeagnus umbellata*) - Immature fruits growing larger but still green, but soft
- Sericea lespedeza (*Lespedeza cuneate*) - Blooming
- Amur honeysuckle (*Lonicera maackii*) - Immature fruits growing larger but still very hard
- White sweetclover (*Melilotus alba*) - Gone to seed
- Yellow sweetclover (*Melilotus officinalis*) - Gone to seed
- Wild parsnip (*Pastinaca sativa*) - Seeds readily dropping and leaves senesced
- Reed canary grass (*Phalaris arundinacea*) - Continuing to drop seed with most leaves brown
- Multiflora rose (*Rosa multiflora*) - Immature rose hips present

East Central

- Garlic mustard (*Alliaria petiolata*) - Seed dropped in second year plants; first year rosettes forming
- Amur honeysuckle (*Lonicera maackii*) - Fruit maturing
- Multiflora rose (*Rosa multiflora*) - Leafed out

Northwest

- Garlic mustard (*Alliaria petiolata*) - Second-year plants fully senesced; first-year plants in rosette form
- Japanese barberry (*Berberis thunbergii*) - Fully leafed out; no fruits observed yet; other areas with immature fruits
- Spotted knapweed (*Centaurea stoebe*)- Full bloom and starting to form seed heads; rosettes of non-blooming and first year plants fully emergent
- Poison hemlock (*Conium maculatum*) - Most plants fully senesced and most seeds have fallen; mowed plants are stunted and flowering; first year rosettes are fully developed and robust
- Cut-leaf teasel (*Dipsacus laciniatus*) - Most buds done flowering and are drying out
- Autumn/Russian Olive Sp. (*Eleagnus sp.*) - Fruits forming
- Burning bush (*Euonymus alatus*) - Immature fruits present
- Dame's rocket (*Hesperis matronalis*) - Second year plants senesced; first year rosettes robust and lush
- Japanese hops (*Humulus japonicus*) - No flowering observed
- Bush honeysuckle (*Lonicera sp.*) - Fruits ripe and are dropped on some plants
- Amur honeysuckle (*Lonicera maackii*) - Small immature fruits forming
- White sweetclover (*Melilotus alba*) - A few flowering; most are done flowering with seed ripening; significantly reduced in natural areas due to sweet clover weevils
- Yellow sweetclover (*Melilotus officinalis*) - Gone to seed; first year plants still relatively small; significantly reduced in

natural areas due to sweet clover weevils
- White mulberry (*Morus alba*) - Fruits dropped
- Wild parsnip (*Pastinaca sativa*) - Senescing and dropping seed; mowed plants stunted flowering; first year rosettes developed and robust
- Reed canary grass (*Phalaris arundinacea*) - Seeds are nearly mature; not yet entering summer semi-senescence
- Phragmites (*Phragmites australis*) - Full flowering
- Common buckthorn (*Rhamnus cathartica*) - Fruits ripening; blue fruits on most female individuals
- Multiflora rose (*Rosa multiflora*) - Finished flowering with small 1/8" to 1/4" fruits forming
- Crownvetch (*Securigera varia*) - Many plants still blooming; others with seed maturing

Northeast

- Field brome (*Bromus arvensis*) - Seeds beginning to drop and leaves drying at base
- Chicory (*Cichorium intybus*) - Ranging from bare stalk to full bloom
- Canada thistle (*Cirsium arvense*) - Seed is set and starting to disperse while some plants are still blooming
- Queen Anne's lace (*Daucus carota*) - Most plants are in full bloom with some beginning to set seed
- Cut-leaf teasel (*Dipsacus laciniatus*) - Full bloom
- Amur honeysuckle (*Lonicera maackii*) - Fruits fully developed and ripening on some plants
- Morrow's honeysuckle (*Lonicera morrowii*) - Fruit fully formed, some fruit is mature
- Tatarian honeysuckle (*Lonicera tatarica*) - Fruit is fully mature and starting to dry
- Birdsfoot trefoil (*Lotus corniculatus*) - Plants are blooming with some setting seed
- Purple loosestrife (*Lythrum salicaria*) - Full bloom
- Osage orange (*Maclura pomifera*) - Fruits 3-5" wide
- Phragmites (*Phragmites australis*) - Beginning to develop inflorescence
- Callery (Bradford) pear (*Pyrus calleryana*) - Fruit fully developed and no signs of senescence
- Giant foxtail (*Setaria faberi*) - Full bloom

Using phenology data to inform invasive plant management

- Chemical treatments to annual or biennial plants should be applied before the plants start flowering
- Once annual or biennial plants have fruit forming, the most effective control measure is mechanically removing the plant, making sure to remove the fruits/seeds from the area. When the fruit start to mature and fall off of the plant, mechanical treatments should be halted
- When fruit mature on some invasive plants, such as garlic mustard Japanese stiltgrass, and Japanese chaff flower, care should be taken to avoid accidentally spreading the seeds of these plants.
- Chemical treatments on woody invasive plants should not be applied after bud swell/bud break until the plants have reached full leaf expansion
- Foliar chemical treatments should be applied to healthy, green, actively-growing foliage. When the foliage starts to turn its fall color, then foliar treatments are not effective

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