



Extension  
UNIVERSITY OF WISCONSIN-MADISON  
BARRON COUNTY



## OUR MISSION STATEMENT

Encourage, foster, support, and promote horticulture for all Master Gardener Volunteers and residents of Barron County and to promote the UW-Extension from which we are founded.

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FALL  
NEWSLETTER  
2019

## Project Spotlight: Barron County Fair

Vegetables, flowers, fairy gardens, and a place to sit and take a break – that is what the Horticulture Building at the fair is all about. The building is set up and staffed by Barron County Master Gardener Volunteers (BCMGSVs). It is the site for both Youth and Open Class entries in the vegetables, plants, and flowers categories. During the 2019 Barron County Fair 23 BCMGSVs volunteered a total of 294 hours.

On judging day, BCMGSVs take in the entries, and then are at the building assisting the judge, sometimes until late into the night. In 2019, more than 60 youth (4-H members) entered plants, flowers, and vegetables; and over 100 people entered items in the Open Class category.

Along with the displays of entries, the Horticulture Building has a rest area set up by the Master Gardeners. This year's theme was based on one of the major projects of the BCMGSVs, the Pioneer Village Museum. Old garden tools were visible, as well as a history of the gardening project. An activity for children is always part of this area.

Grand Champion winners are awarded a certificate from a local garden center. Throughout the entire fair, a BCMGSV is always staffing the building, answering questions, and talking about garden issues with visitors. This year, there were more than 2500 visitors to the building!



# Now is the Time to Plant Spring-Flowering Bulbs

By Carol Kettner

Are you lamenting the disappearance of all your flowers, vegetables, and leaves, knowing that the next few months won't be as colorful? Don't despair. Just imagine how much color you can have early next spring if you plant some bulbs before the ground freezes.



Spring-flowering bulbs, like tulips, daffodils, hyacinths and crocus, are the first group of plants to bloom in spring. However, fall is the season to plant spring flowering bulbs. All too often, we tend to take things easy and before you know it, the ground has started to freeze. Then it's too late for planting bulbs.

But as long as you can still work the ground, you can take advantage of all those bulbs available in stores.

It is always a good idea to purchase your bulbs from a reliable dealer, to get vigorous, disease, and insect-free bulbs that have been handled and stored properly. However, when you can buy a big bag of daffodils for just a few dollars from a big box store, go for it. If they don't all survive, you haven't lost much and you will know to start looking for quality bulbs earlier next year.

Although the foliage and flower-bud from next spring's plant is already formed inside the bulb you plant, some attention to the soil will give better results, especially in later years. If the soil contains considerable clay, mix in compost, peat moss or rotted manure. Organic material can also improve a light, sandy soil by giving it "body" and improving its ability to hold moisture.

The rule of thumb is to plant bulbs at a depth equal to two to three times their diameter. Plant the bulbs slightly deeper in light sandy soils and a little shallower in heavy soils. After planting, bulbs will start to form roots immediately. So they need water. Soak the beds thoroughly after planting, six to eight inches deep. The soil around the bulbs should be moist. One good soaking is usually enough, unless there is an extended period of hot, dry weather.

Although spring-flowering bulbs are hardy, you should protect plants for winter. Once the ground freezes in late fall, mulch the soil over the bulbs. Use two to four inches

of shredded bark, compost, pine needles or other organic mulch material. This will keep the soil frozen, and help prevent freeze/thaw damage. In the spring when the first leaves appear, remove the mulch. New leaves may rot if you allow them to remain in contact with the mulch.

Some people complain that squirrels love to dig up their bulbs. One way to prevent this is to wrap each bulb in a thin layer of steel wool. You can also use chicken wire with 1-inch openings. Once the plants grow in the spring, you will notice that crocuses and tulips seem to be like candy for deer and rabbits. But they will almost always stay away from daffodils and ornamental onions (alliums).

Daffodils are now available in many colors and sizes, so you do not have to settle just for yellow. Alliums also come in different shades of purple and a variety of sizes.

So, while you are watching the colors outside fade and Mother Nature takes a break, you can look forward to all that color next spring.

*(Some of this information came from The Weekend Farmer.)*



Some of the many shapes of alliums.



# Are You Killing Your Trees by Girdling Their Roots?

## (From the Missouri Botanical Garden)

A tree is girdled when something is tightly wrapped around the trunk or stem. A girdling root circles or partially circles the base of a tree at or just below the soil surface.



Some girdling roots are visible on the surface; others are not.

This can choke off the flow of water and nutrients between the roots and branches and food produced in the leaves from reaching the roots. They can also compress and weaken the trunk of a tree at or above the root collar flare (the junction between the trunk and the main roots) causing it to lean and lose

its stability. Trees having stem girdling roots suffer a slow decline in health and a premature death.

Most tree roots are in the top 6 to 24 inches of soil and grow out from the trunk in a spreading manner. Cultural practices that can adversely affect this natural root pattern include: (1) Planting in a hole that is too small so the roots can not easily spread out. (2) Planting container grown trees that have roots growing in a circular pattern. (3) Planting a bare root tree by twisting roots to fit into a small hole. (4) Leaving wire baskets, burlap, and any part of a container in the planting hole. (5) Piling mulch against the trunk of a tree (creating a mulch volcano).

The most common theory of the cause of stem girdling roots, is that they develop as a result of trees being planted too deeply. When root systems are buried, less oxygen and water is available. The roots will grow up towards the surface of the soil and tend to encircle the trunk. The more deeply buried the roots are, the fewer the roots available for the tree to become established.



The roots of this maple tree should have been cut when it was removed from the container for transplanting.

### Symptoms and Diagnosis

Symptoms of stem girdling roots include: (1) Scorch, early fall color, early leaf drop, damage on one or two branches. (2) Abnormally small leaf size. (3) Excessive twig dieback, the appearance of large, dead, leafless branches (stagheading). (4) Thin appearance to the crown, overall stunting. (5) Little or no trunk taper at the collar. (6) Leaning (7) Susceptibility to environmental extremes and other biotic problems.

Many of these symptoms can also be characteristic of other causes, such as drought or nutrient imbalances. A plant disease diagnostic laboratory cannot identify this problem. The only sure way to determine if a stem girdling root is the cause of a problem is to examine the root system and the tree trunk.

### Integrated Pest Management Strategies:

1. **Inspection.** Carefully inspect the root system at the time of planting. Remove any girdling root on bare-root plants. Cut away the wrapping on balled & burlapped plants, check for girdling roots and natural root flare. Cut through any circling roots of container grown plants in a few places. On mature trees, if any of the symptoms appear, examine the root collar by probing into the soil near the trunk flare with a stiff wire to find the depth of any stem girdling roots

2. **Planting.** Dig planting holes 2 to 3 times as wide as the root ball, with sloped sides and no deeper than the root ball. In heavy clay soil dig the holes shallower than the root ball by at least 3 inches. Make sure there is no soil above the root flare. If there is soil above the flare, very carefully remove it down to the flare. Apply mulch no deeper than 3 inches and never against the trunk of the tree.

#### Ongoing care.

Make sure to water a newly planted tree regularly and water any tree during drought periods. Avoid using fast-release fertilizers,



# Are You Killing Your Trees by Girdling Their Roots Continued ...

they may burn tree roots. Reduce environmental stresses on established trees and add nutrients if it appears there is a deficiency. Periodically examine the root flare to make sure it appears normal. If stem girdling roots are present, gently remove the soil until you can find the root collar flare. This may need to be done by a certified arborist.

4. **Pruning.** Stem girdling roots are commonly removed by using wood gouges, saws or pruners if they have caused minimal stem compression. If one has caused extensive compression, removal treatment must be care-

ful not to damage the stem. Such roots are frequently left in place when they cannot be removed safely. Again, it may be necessary to consult with a certified arborist.

5. **Removal.** If stem compression from a stem girdling root is more than one third to one half of the stem circumference, removal of that tree should be considered because the tree's stability is compromised.



A tree trunk that emerges straight from the ground without any flare roots, like this ash, usually indicates a tree that has been planted too deep and may develop girdling roots.



A tree planted properly should have visible flare roots as does this pin oak.



# “WHAT’S A GARDEN WITHOUT A FLOWERING CLEMATIS VINE?” by Marilyn Saffert

The beautiful and perennial clematis flowering vine puts on quite a spectacular show in the flower garden. There are hundreds of cultivars available, but which ones are good for our northern gardens? And what is the correct way to plant them? And how do we prune them once they are growing?

To get a new plant off to a good start, the planting depth is very important. Set the plant into the deeply dug hole so that the crown is 3 or 4 inches below your garden’s soil surface. Yes, the top of the soil-less mix in the nursery pot along with the bottom

of the stem will be planted quite a bit deeper than it was in the pot. You will want 2 sets of leaf nodes buried below your soil’s surface. This way they will grow extra flowering stems and roots in order to make a fuller plant faster. Stake the vine until it has grown enough to reach the trellis. In the first year, pinch out the tips of new shoots once or twice during the first growing season, to encourage better branching near the base of the plant.

Pruning of clematis vines is divided into 3 categories based on how and when they bloom. There are pruning methods for each of the groups to encourage your clematis to look great and bloom well every year. But the “do almost nothing” method of pruning can also work with many clematis vines in our northern Wisconsin gardens.

Group “A” includes clematis vines that flower in the springtime. These flowers are on growth from the previous year called “old wood.” Three vines that are deemed hardy for us are alpina ‘Pink Flamingo,’ alpina

‘Francis Reeves,’ and alpina ‘Stowijk Gold.’ If you want clematis that blooms in the spring, the alpina types are the ones to watch for, and not the Montana group which are not hardy enough for us. In my experience, ‘Stowijk Gold’ is zone 3 hardy and has bloomed successfully for years in my garden during the month of May. You should prune “A” vines right after they have finished blooming. The new stems that grow during the summer months will have time to make new flower buds for next spring. This is just like the procedure of pruning the lilacs right after they have finished blooming. Lilacs also bloom on “old wood.”

Group “B” clematis vines bloom in late spring or early summer, and then again later in the summer with less flowers in the second round. These clematis vines usually have the largest flowers. The first flowers open in June on “old wood.” By late summer going into the early fall, the “new wood” will produce flowers that are about half the size of the spring blooms. Some familiar clematis in this group are ‘Nelly Moser’, ‘President’, ‘Henryi’, and ‘Niobe’. In very early spring, take out any broken branches and thin out some of the stems to open up some space for new growth, but don’t cut off too much or you will lose the June blooms. It would be best if you can wait to prune until you see new buds popping. Another, probably easier way to prune this group, is to just cut back half of the vine, leaving the other half intact. That way you will have some spring and some summer blooms.



# What's A Garden Without A Flowering Clematis Vine?" Continued . . .

You may find it helpful to trim the tips of each of the remaining branches. And of course, sometimes our Wisconsin winters do the pruning for us. There is nothing we can do about that.

Group "C" is the easiest one for us to grow since they usually bloom only on "new wood." They form their flower buds on new stems. However, some will also bloom on old wood. Most of the time, this will not happen. These are our summer bloomers, and the list of familiar ones is long. The most popular one, 'Jackmanni', is the first modern clematis that was developed. Others include 'Ernest Markham,' 'Ville de Lyon,' and 'Madame Julia Correvon.' Some other familiar group "C" plants are the smaller bell-type flowers like 'Duchess of Albany,' 'Etoile Rose,' and 'Betty Corning.' When pruning in the spring, cut back the entire plant to about one foot from the ground. In most cases, the winter has already "pruned" them down to the ground for us.



Group "C" also includes some species clematis vines such as 'Bill MacKenzie', which is a bell-shaped yellow-flowered July and August bloomer. The silvery seed heads provide an extra interest through the winter. This is a vigorous vine that can quickly cover a wall. 'Bill MacKenzie' is zone 4 hardy and will produce flowers on both "old" wood" and "new wood." So prune accordingly. I have seen this one blooming on "old wood" vines that were grown in the previous year. And those "old" vines produced yellow bells 20-feet up on the side of our barn.

So what happens if you don't prune at all or prune wrong. The pruning recommendations are really just to help you get the most flowers over the whole plant. That "do almost nothing" method of pruning will work in many cases.



# Winter Survival Strategies of Common Wisconsin Butterflies

\* Migratory Butterflies \* \* \* \* \* Some butterflies use flight to protect themselves from harsh winter weather, and to find the best sources of food for themselves and their offspring. Two-way Migration Magnificent Monarch butterflies (*Danaus plexippus*) migrate each autumn from their northern range to spend the winter roosting in forests in the Sierra Madre mountains of central Mexico. Up to 20 million Monarchs may gather there. In late winter, they fly north again into the southern US, where they lay their eggs and die. The next generation continues the flight north, some flying into the southern Midwest, and their offspring are usually the Monarchs that reach Wisconsin. The last yearly generation of Monarchs emerge in September and join the great Monarch migration to Mexico. Monarch nectaring Small Migration Some other butterflies migrate. Their migrations are smaller and less dramatic than the Monarch. Some Red Admirals fly south to overwinter in south Texas. As the weather warms in spring, they fly north looking for good food sources. Those who don't fly south die off in cold Wisconsin winters. Butterflies that have small autumn migrations include: American Lady (*Vanessa virginiensis*) Painted Lady (*Vanessa cardui*) Red Admiral (*Vanessa atalanta*) Common Buckeye (*Junonia coenia*) Immigrants Some butterflies migrate into Wisconsin most years from warmer areas. They come looking for food - for nectar plants, and for caterpillar food plants for laying eggs. They cannot survive our winters, so the last generation each year dies and new butterflies come north in the spring. Variegated Fritillary (*Euptoieta claudia*) Gray Hairstreak (*Strymon melinus humuli*) Sachem (*Atalopedes campestris*) Little Yellow (*Eurema lisa*) Dainty Sulphur (*Nathalis iole*)



\*\*\*\*\* Non-migratory Butterflies \* \* \* \* \* Many butterflies survive Wisconsin winters by entering a state called "diapause." Their bodies manufacture an internal antifreeze that protects their cells and keeps them from freezing over the winter. Mourning Cloak on leaf litter Adult Butterflies These butterflies hibernate through the winter. They find shelter in wood piles, beneath loose bark, or in hollow trees or logs. The Tortoiseshell butterflies often hibernate in groups, and may even congregate in sheds or outbuildings for shelter. Mourning Cloak (*Nymphalis antiopa*) Question Mark (*Polygonia interrogationis*) Eastern Comma (*Polygonia comma*) Gray Comma (*Polygonia progne*) Compton Tortoiseshell (*Nymphalis vau-album*) Milbert's Tortoiseshell (*Nymphalis milberti*) Eggs In autumn, these butterflies lay their eggs on the stems, twigs, or at the base of caterpillar food plants. The eggs spend the winter in diapause, and the tiny caterpillars hatch in the spring to feast on the newly-emerging leaves. European Skipper (*Thymelicus lineola*) Bronze Copper (*Lycaena hyllus*) Coral Hairstreak (*Satyrus titus*) Edward's Hairstreak (*Satyrus edwardsii*) Striped Hairstreak (*Satyrus liparops*) Banded Hairstreak (*Satyrus calanus*) Newly Hatched Caterpillars Some adult butterflies lay their eggs on caterpillar food plants in the autumn. The eggs hatch, but the little caterpillars do not eat. Instead they make nests at the base of the plant, and hibernate until spring, waiting for warmer weather and



# Winter Survival Continued . . .

the tender new growth. Aphrodite Fritillary (*Speyeria aphrodite*) Great Spangled Fritillary (*Speyeria cybele cybele*) Common Wood-Nymph (*Cercyonis pegala nephele*)

Mid-stage Caterpillars Most caterpillars go through five "instars" or stages of growth, shedding their skin between each stage. Some of them hibernate by going into diapause during one of the middle stages, resting through the winter to awake and complete their growth in the spring. Many of them make a leaf shelter by using silk to web leaves together into a tight roll. Some (White Admirals, Red-spotted Purples, and Viceroy) "sew" part of a leaf to a stem or twig. Eastern Tailed Blues spend the winter in seed pods of pea family plants such as alfalfa, clover, and beans. Others overwinter beneath leaf litter or forest rubble. Least Skipper (*Ancyloxypha numitor*) Long Dash Skipper (*Polites mystic*) Silver-spotted Skipper (*Epargyreus clarus*) Indian Skipper (*Herperia sassacus*) Peck's Skipper (*Polites peckius*) Northern Broken Dash (*Wallengrenia egeremet*) Dun Skipper (*Euphyes vestries metacomet*) Sleepy Duskywing (*Erynnis brizo*) Northern Cloudywing (*Thorybes pylades*) Dreamy Duskywing (*Erynnis icelus*) Juvenal's Duskywing (*Erynnis juvenalis*) Common Sootywing (*Pholisora catullus*) Pink-edged Sulphur (*Colias interior*) Eastern Tailed Blue (*Everes*

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University of Florida

Comyntas) Meadow Fritillary (*Boloria bellona*) Silver-bordered Fritillary (*Boloria selene myrina*) Atlantis Fritillary (*Speyeria atlantis*) Silvery Checkerspot (*Chlosyne nycteis*) Pearl Crescent (*Phyciodes tharos*) White Admiral (*Limenitis arthemis arthemis*) Viceroy (*Limenitis archippus*) Red-spotted Purple (*Limenitis arthemis astyanax*) Northern Pearly Eye (*Enodia anthedon*) Little Wood Satyr (*Megisto cymela*) Appalachian Eyed Brown (*Satyrodes appalachia*) Eyed Brown (*Satyrodes eurydice eurydice*) Black Swallowtail Chrysalis Mature Caterpillars and Pupa (*Chrysalis*) Some butterflies hibernate as mature caterpillars, or shed their last skin and emerge as a pupa (chrysalis) and enter diapause until spring. Tawny-edged Skipper (*Polites themistocles*) Delaware Skipper (*Anatrytone logan*) Hobomok Skipper (*Poanes hobomok*) Black Swallowtail (*Papilio polyxenes*) Giant Swallowtail (*Papilio cresphontes*) Eastern Tiger Swallowtail (*Papilio glaucus*) Canadian Tiger Swallowtail (*Papilio canadensis*) Cabbage White (*Pieris rapae*) Mustard White (*Pieris napi*) Olympia Marble (*Euchloe olympia*) Clouded Sulphur (*Colias philodice*) Orange Sulphur (*Colias eurytheme*) American Copper (*Lycaena phlaeas americana*) Brown Elfin (*Calophyrus augustinus*) Spring Azure (*Celastrina ladon*) Summer Azure (*Celastrina neglecta*) Silvery Blue (*Glaucopsyche lygdamus*)



# Creeping Charlie, Creeping Jenny, or Ground Ivy?

Su-

san Mahr and John Steir, UW Horticulture

**What is creeping Charlie?** Creeping Charlie (*Glechoma hederacea*) is an herbaceous perennial plant that spreads by seed and by creeping stems (called stolons) that grow along the ground. Creeping Charlie was introduced into North America from Europe by early settlers who thought it would be a good groundcover for shade. A variegated form of the plant is sometimes used in hanging baskets. Creeping Charlie is also known as ground ivy, gill-on-the-ground, and creeping Jenny.

**What does creeping Charlie look like?** Creeping Charlie produces bright green, round or kidney-shaped leaves that have scalloped edges. The leaves are produced opposite each other on square (i.e., four-sided), creeping stems that root at the nodes. In spring, small, bluish-purple, funnel-shaped flowers appear. When the plant is crushed, it produces a strong mint-like odor. Creeping Charlie is often confused with henbit (*Lamium amplexicaule*), which is a winter annual.

**How can I control creeping Charlie?** Creeping Charlie thrives in moist, shady spots such as under trees and shrubs, and along the north sides of buildings. Altering these moist, shady conditions can discourage growth of creeping Charlie. If possible, improve soil drainage or water less frequently to dry the soil, and prune trees to open the canopy and increase light levels. If creeping Charlie is invading a thin lawn, try to improve turf health and density to get weeds under control. This can be accomplished by mowing regularly (to a height of two to three and one-half inches), fertilizing and watering appropriately, and overseeding in the fall. Also, make sure to grow the most suitable type of turfgrass for the location (e.g., plant shade tolerant turfgrass varieties under trees). Alternatively, consider removing grass and growing shade-loving plants such as vinca, English ivy, pachysandra or hosta that compete well with weeds. In areas where creeping Charlie has become established, try removing plants by hand. This is the control method of choice in vegetable or flower gardens. However, this may not be a viable option in heavily infested areas, as the extensive spreading stems of creeping Charlie can be difficult to completely remove. Once plants are pulled, make sure to dispose of the plants in such a way that they cannot re-root.

An alternative (and oftentimes more effective) means of controlling creeping Charlie is with a postemergence broadleaf herbicide. The best choice for homeowners is a weed killer that contains triclopyr. This active ingredient is found in many commercially available homeowner lawn care products, oftentimes in

combination with other herbicides such as dicamba (3,6-dichloro-o-anisic acid), 2,4-D (2, 4 dichlorophenoxyacetic acid) and mecoprop or MCPP [2-(2-methyl-4-chlorophenoxy) propionic acid]. Products containing 2,4-DP can also provide adequate control. All of the products listed above can be used for treating lawns, but cannot be used in vegetable or flower gardens as many common vegetables and ornamentals are broadleaf plants that are very susceptible to these herbicides. In areas of a lawn with an extensive creeping Charlie infestation, it may be easier to use a broad-spectrum herbicide (e.g., glyphosate) to kill all of the vegetation in the area and then reseed the lawn.

When using an herbicide for creeping Charlie control, be sure to read and follow all label instructions of the product that you select to ensure that you use the product in the safest and most effective manner possible. A general rule of thumb is to make applications when temperatures are in the mid 60s to low 80s, there is no rain expected for 24 hours following application, and there is little or no wind. DO NOT mow the treated area for several days before and after an herbicide application. Dicamba, triclopyr, MCPP, 2,4-D or 2,4-DP applications for creeping Charlie control should be made when plants are actively growing. A mid to late autumn herbicide application (after the first frost) is often particularly effective. During this period, plants are drawing nutrients from their leaves and into their roots for storage over the winter, and herbicides are more effectively moved into the roots as well, resulting in better control. A second application can be made in the fall if needed. Herbicide applications can also be made in the spring, but should be timed to correspond to creeping Charlie's blooming period (typically April to June). Plants are more sensitive to herbicides during this time. Again, a second application may be necessary to obtain adequate control. Note that any herbicide containing dicamba should not be used in a given area more than twice per year. Finally, borax has been touted as an organic control for creeping Charlie. However, research at both the University of Wisconsin and Iowa State University has shown that borax does not provide longterm control of creeping Charlie, and can injure turf and other plants, causing stunting and yellowing. Thus borax is not recommended for creeping Charlie (or other broadleaf weed) control.

# Jumping Worms

*(If you have not yet heard of jumping worms, it is time to learn about them. From the perspective of horticulture, it is already having an effect on plant sales and produce farms. We know this species is in Dunn, Chippewa, and Eau Claire County, but has not yet been identified in Barron County. The following article, by Bernadette Williams and Colleen Robinson Klug, gives you a good introduction.)*

In October of 2013, the Wisconsin Department of Natural Resources discovered a population of jumping worms in Dane County — the first to be identified and reported in the state. These worms are a big deal, but to understand them best, we'll start with a refresher on earthworms in general.

## Earthworms in Wisconsin

We don't have any native worms in Wisconsin. Our native worms were destroyed during the last ice age. That means Wisconsin forests as we know them evolved without earthworms. It's hard to believe worms are actually an invasive species. Not many people suspect that "nature's recyclers" have a dark side, but they do.

Historically, the verdict on worms has been in flux. Before Charles Darwin published one of his most popular works, "The Formation of Vegetable Mould through the Action of Worms, with Observations on their Habits" in 1881, worms were viewed as a pest and nuisance. Darwin's research changed public perception of these remarkable animals, which perhaps has played a role in their inevitable spread.

In Wisconsin, we've documented over 20 European species of earthworms in a variety of ecosystems. Researchers have studied their negative impacts on forest regeneration, ground nesting bird populations, and their role in facilitating the spread of terrestrial invasive plants like garlic mustard and buckthorn.

## Problems caused by earthworms

Forest floor leaf litter is comparable to the skin on an animal. It retains moisture, protects roots, breathes, prevents erosion, deters pathogens and non-native plants and promotes seed germination. When leaf litter is consumed by earthworms it's like removing the skin of the forest floor. Disturbance from earthworms exposes the soil and causes erosion, compaction and increased rainwater runoff. This disturbance favors invasive plants, beginning a cycle of non-native invasions competing for critical resources. The result is less diversity of native plants and animals in our forests.

## Problems caused by jumping worms

Jumping worms are a concern because they can consume the litter layer faster than any other earthworm in the

state. Where jumping worms are present, fallen leaves and topsoil are processed by the worms until the soil becomes granular, dry and looks similar to coffee grounds. We have even observed a decline in European earthworms where jumping worm populations are established. Research is ongoing to better understand why this happens.

We don't know the full effects jumping worms may have on our native forests, but given what we know about European species it's not something we want to find out. What we do know is that in Wisconsin, jumping worms appear to be concentrated in urban areas, though they may be hitching a ride to new areas by multiple means.

## The scoop on jumping worms in Wisconsin

In 2009, before they ever appeared in Wisconsin, *Amyntas* were classified as a "Prohibited Species," making it illegal to sell, introduce, transport, possess and propagate them in the state. But this Asian native may have been accidentally introduced in a potted plant, nursery stock, or soil.

Concerned about the discovery in October 2013, the Department of Natural Resources launched an outreach effort to inform people about jumping worms. The public became actively involved in reporting their presence. During the summer and fall of 2014, DNR staff verified a number of populations in five counties. This surveillance allowed us to gain a better understanding of their spread and the possible ways they are moved from place to place. With populations established in five counties, jumping worms no longer fit the definition of "Prohibited," and were reclassified as a "Restricted Species" to better limit their unintentional spread. This classification still prohibits the sale, introduction, transport and propagation of jumping worms in the state.

## Jumping worm basics

This is no ordinary worm. Their appearance, life cycle, biology and behavior are nothing short of extraordinary, and once you see them you'll understand why this unusual worm is commonly called the "crazy" or "jumping" worm. When disturbed, jumping worms thrash violently, slither like snakes and jump into the air.

Jumping worms are darker and smoother than other earthworms in Wisconsin. They are relatively easy to identify if you look at their clitellum (the band around the body of a worm). The clitellum on a jumping worm is milky white to gray-colored, smooth and completely encircles the body of the worm. In contrast, the clitellum of European earthworms does not wrap entirely around the worm. Also, on a European species it is raised above the body of the worm, not smooth.



# Jumping Worms continued . . .

What makes jumping worms truly unique is their life cycle. We know jumping worms are asexual, which means an individual can reproduce solely on its own. These worms reach maturity within 60 days of hatching. Then they reproduce and drop cocoons in the soil. The cocoons hatch and start the cycle all over again. The adults do not survive Wisconsin winters, so the life of an individual worm ends there.

The bad news is that the cocoons those adults have dropped into the soil do survive Wisconsin winters. It's this ability that allows the next generation of jumping worms to go undetected well into the spring growing season, as tiny cocoons rather than adult worms.

You have surely seen a variety of European earthworms when you start turning your soil, putting in your vegetables or annuals and splitting your perennials in spring. These adult European worms have overwintered and become active and visible in spring. Be assured, you will not find adult jumping worms during that time of year. Surveys in Wisconsin during the summer of 2014 showed adult jumping worms did not become apparent until late June and early July.

Jumping worm cocoons hatch earlier than those of European worm species. With this early hatch, jumping worms reach maturity by early summer which allows for a second hatch of cocoons that can lead to infestation levels of jumping worms by early fall.

## What Can You Do?

In January 2015 the Department of Natural Resources organized representatives from the green industry, composters, master gardeners, cities and municipalities and the University of Wisconsin-Extension to develop a list of Best Management Practices to minimize the spread of jumping worms and educate the public.

Arrive clean, leave clean. Clean soil and debris from vehicles, equipment, gardening tools, and personal gear before moving to and from a work or recreational area.

Watch for jumping worms and signs of their presence. If you find them, report them to the DNR by email at [invasive.species@wi.gov](mailto:invasive.species@wi.gov).

Educate yourself and others to recognize jumping worms.

Only use, sell, plant, purchase or trade landscape and gardening materials and plants that appear to be free of jumping worms.

Only sell, purchase or trade compost that was heated to appropriate temperatures and duration following protocols for reduction in pathogens (see Wis. Admin. Code Ch. NR 502.12).

Join the UW-Extension First Detector Network. You can also report findings directly to the Department of Natural Resources by email at [invasive.species@wi.gov](mailto:invasive.species@wi.gov), or go to [dnr.wi.gov](http://dnr.wi.gov) and search "earthworms."

*(Bernadette Williams is a conservation biologist. Colleen Robinson Klug is a natural resources educator in the DNR Forest Health Program.)*



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