

## Q & A - Jumping worms

### **Should I be concerned about jumping worms?**

Jumping worms can harm forests and other areas by disrupting ecological balances and altering soil. For example, they outcompete established earthworms, and their behaviors can deprive trees and native plants of necessary nutrients. They can change the texture of soil to favor invasive plants, and are easily moved to new areas.

### **Where is their native range?**

Jumping worms are native to parts of Japan, China and the Korean peninsula.

### **How did they get here?**

Jumping worms were introduced both intentionally and accidentally to North America by the green industry. They have been unintentionally spread because their tiny cocoons move undetected in soil, mulch, on equipment, in potted plants, and even on shoes and boots.

### **Do jumping worms have natural enemies in their native range?**

Many animals in Asia and North America prey on worms - birds, snakes, turtles, frogs, even slugs. Asian predators of jumping worms, however, are more familiar with these particular worms because they've co-evolved together. It may take North American predators a while to become as effective as their Asian cousins at suppressing jumping worm populations.

### **Are jumping worms the only invasive earthworms in Wisconsin?**

Technically, all earthworms currently found in Wisconsin are non-native invasive species. European earthworms, the ones with which we are most familiar, arrived with the first explorers and settlers. Asian earthworms arrived later. Both European and Asian species are potentially harmful to Wisconsin forests, which have not co-evolved with earthworms of any kind. European earthworms heavily damage northern forests, impeding tree and plant regeneration and disrupting the complicated fungal relationships between plants and soil. Both factors favor the establishment of invasive plants, which often take over forests. We don't know yet what the long-term establishment of Asian earthworms in the genus *Amyntas* will mean to northern forests, but their effects may be even more drastic.

### **Identification:**

#### **What do jumping worms look like?**

Both European and Asian earthworms are annelids – invertebrate animals whose bodies are divided into segments by transverse rings. Despite their similarities, they do have differences. Jumping worms are darker in color with comparatively rigid bodies when compared to European worms, such as nightcrawlers. A jumping worm's clitellum (a distinctive band on most earthworms' bodies) is relatively closer to its head, smooth to its body, and completely encircles the animal. On a typical European earthworm, the clitellum is raised, slightly off center and does not completely encircle its body.

**Why are they called jumping worms?**

Jumping worms, unlike European species, aggressively thrash, go rigid, and appear to jump when handled or pursued.

**How will I know if jumping worms are on my property?**

You will notice their appearance (dark, firm, and turgid) and behavior (thrashing, jumping, with snake-like crawling), and the fact that they are usually found in considerable numbers. You will never find just one jumping worm; they mass together. Their populations grow very large as, unlike European worms, they can reproduce several times during a single growing season. They dwell in the surface of the soil or just below – they do not burrow deeply as do some European worms. They produce a unique soil signature - look for a granular texture that some say resembles that of used coffee grounds or tapioca pearls.

**Will jumping worms harm my plants and soil?** It is unknown what the long-term effects of jumping worms will be on plants and soil. Research is ongoing.

**How are jumping worms spread into new areas?**

Jumping worms are spread in many ways; their movement is usually unintended and accidental. Whenever infested soil is moved - during landscaping, when sharing plants with friends and neighbors, even when moving soil in the treads of shoes and boots – the potential of carrying tiny jumping worm cocoons is high. Cities, towns, and municipalities often take part in leaf and garden debris pickup, which can also move jumping worms and cocoons into new areas.

**Should I still buy plants for my garden?** Yes! Although some plant sales have been canceled or postponed due to concern over spreading jumping worm cocoons, with proper awareness and precautions, the risk can be mitigated. Be pro-active when buying not only plants but any product containing soil or mulch. Ask questions about the plant's origin and history, examine its soil, make sure it is healthy. Remember, no one intentionally wants to intentionally spread jumping worms; most individuals and retail plant vendors are cooperative and concerned.

**What will I see if jumping worms are on my property?** You are likely to begin seeing jumping worms in mid-June when their first generation of the season reaches maturity. Most people will first notice their behavior; European earthworms such as nightcrawlers and red wigglers seem almost demure compared to the active thrashing of jumping worms. Gardeners may also notice that their soil's texture is changing.

**Lifecycle**

The lifecycle of jumping worms (*Amyntas* spp.) is very different from that of European earthworms. Jumping worms live through only one growing season; European earthworms typically live through several. Egg-filled cocoons shed the previous year by adult jumping worms survive winter in the soil and begin hatching in the spring. It takes roughly 60 days for a jumping worm to go from a new hatchling to a reproductive adult. As soon as they reach sexual maturity, they begin shedding egg-filled cocoons. Jumping worms' populations accumulate over the summer as generations overlap.

**What can I do if they are on my property?**

Don't panic. Follow best management practices:

- Educate yourself and others about jumping worms;
- Watch for jumping worms and signs of their presence;
- ARRIVE CLEAN, LEAVE CLEAN. Clean soil and debris from vehicles, equipment and personal gear before moving to and from a work or recreational area;
- Only use, sell, plant, purchase or trade landscape and gardening materials and plants that appear to be free of jumping worms; and
- Only sell, purchase or trade compost that was heated to appropriate temperatures and duration following protocols that reduce pathogens.

**Comparison of jumping worms (Asian origin) and common red wigglers (European origin)**

	<b>Asian jumping worms</b>	<b>Common red wigglers</b>
<b>Scientific names</b>	<i>Amyntas</i> spp. ( <i>A. agrestis</i> and <i>A. tokioensis</i> )	<i>Lumbricus rubellus</i>
<b>Life cycle</b>	Annual species. Several generations per season. Over-winters as cocoon. Parthenogenic (asexual reproduction)	Lives more than one season. One generation per season. Adults burrow into soil during winter re-emerges in the spring. Sexual reproduction.
<b>Adult length</b>	7- 20cm depending on species	3 - 10cm
<b>Skin</b>	Darker dorsally than vertically, slightly rigid and firm	Reddish brown
<b>Clitellum</b>	Milky white to gray in appearance, annular, smooth. Not split. Located on segments #14 - #16	Raised, pink/red, saddle shape, split down the back. Located on segments #26 - #32
<b>Behavior</b>	Very active, snake like, sheds tail when handled roughly	Less active, wiggles, slightly limp, does not shed tail
<b>Soil signature, casts (excrement)</b>	Coffee ground texture	Dispersed casts/piles
		