Amynthas spp.
Jumping worm, Crazy Worm, Snake Worm, Alabama Jumper

Three species found in Wisconsin:
A. tokioensis
A. agrestis
Metaphire hilgendorfi

- They are a RESTRICTED species in Wisconsin under Invasive Species Rule NR 40. 
dnr.wi.gov/topic/invasives/classification.html
- The first population was identified in 2013.
**Amythas spp.**

- **Length:** 7 to 20 cm
- **Life Cycle:** Annual; over-winters as cocoon
- **Skin:** Darker dorsally than ventrally, slightly rigid
- **Clitellum:** Milky white, annular, smooth
- **Behavior:** Very active, snake like
- **Casts:** “Coffee grounds” soil signature
- **Loses its tail when handled roughly**

**Lumbricus rubellus**

- **Length:** 2 to 8 cm
- **Life Cycle:** Burrows into soil during winter
- **Skin:** Reddish-brown
- **Clitellum:** Raised, pink/red, “saddle” shape
- **Behavior:** Less active, “wiggly”
- **Casts:** Dispersed casts
- **Will not drop tail**
Jumping worms are most noticeable in late summer/early autumn.

<table>
<thead>
<tr>
<th>Time of year</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>April - May</td>
<td>Tiny jumping worms hatch from cocoon-encased eggs.</td>
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<tr>
<td>Summer months</td>
<td>Worms feed and grow.</td>
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<td>August – September</td>
<td>Mature worms reproduce, depositing egg-filled cocoons into surroundings.</td>
</tr>
<tr>
<td></td>
<td>Jumping worms are parthenogenic; each worm can reproduce on its own without a mate.</td>
</tr>
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<td>Adult worms die.</td>
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<td>Winter months</td>
<td>Eggs spend cold months protected in cocoons (about the size of mustard seeds!)</td>
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Soil with Amynthas spp.

Soil without Amynthas spp.
How did they get here?
How do they spread?
How do they spread?
How do they spread?
How do they spread?
How do they spread?
How do they spread?
How do they spread?
How do they spread?
Where have they been found?
What is being done about them?
Best Management Practices (BMP’s)

1. Watch for jumping worms and signs of their presence.

2. Educate yourself and others to recognize jumping worms.

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

4. Only sell, purchase or trade compost that was heated to appropriate temperatures and duration following protocols for reduction in pathogens (PFRP’s-detailed under NR 502.12).

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

• Control trials at the Arboretum are ongoing:
  • Early Bird (organic fertilizer)
  • Biochar
  • Diatomaceous earth
  • Temperature effects on cocoons within landscaping material
What can we do?

• Monitor your property for signs of jumping worms.
  • If feasible collect adults in a plastic bag and discard in trash.
• Consider reducing the amount of wood mulch applied to your garden.
  • Purchase mulch from a reputable source. Nurseries should know about the jumping worm.
• Experiment with pine needles, hay, or native grass mulch.
Resources

Wisconsin Department of Natural Resources

UW-Madison Arboretum (Land Stewardship; Research)
https://arboretum.wisc.edu/

Great Lakes Worm Watch
http://greatlakeswormwatch
What can I do to slow the spread?

Impacts of Jumping Worms

- Change soil structure, producing unique, crumbly soil that impacts plants
- May threaten:
  - forest health by altering soil structure and chemistry
  - biodiversity in affected areas
- Some forest and garden plants may have trouble growing in soil changed by jumping worms

Learn to recognize them and teach others to do so.

Plant, sell, purchase and trade only those landscape and gardening plants that you are reasonably sure are free of jumping worms. Buy bare root stock whenever possible. Be cautious when sharing and moving plants.

Look for jumping worms in your yard, garden and forest, mulch, compost, potted plants and other suitable places.

Sell, purchase and trade only compost that you know was heated to appropriate temperatures for the correct amount of time following protocols that reduce pathogens.

Arrive clean, leave clean. Remove soil and debris from vehicles, equipment, footwear and personal gear before going to and from work and recreational areas.

It is illegal to buy, sell, bring into the state, or release jumping worms to water or land in Wisconsin under the Invasive Species Rule (ch. NR 40, Wis. Adm. Code). dnr.wi.gov, keyword “NR 40”
Questions?

Visit the Wisconsin Jumping Worm website, dnr.wi.gov, keyword “jumping worm”
BMPS

New Publications

&

WI DNR Web Page
Outline

- Background
- Potential impacts
- Identification
- How they were introduced and where they are now.
- What can we do?
- Resources
Identification and biology

Where should I look for jumping worms?
- They do not burrow far into soil—they live on the soil surface.
- Look in your yard, garden, forest, and in mulch, compost, potted plants and other suitable places.

What do they look like?
- Smooth, glossy dark grey brown color.
- Cylindrical (lighter colored bands) is cloudy white to gray, completely encircles the body. Its surface is flush with rest of body.
- Bodies are firm and just coated in "slime".
- Snake-like movements.
- They do not occur singly—where there’s one, there are always more.

Citellum is a term that refers to the entrance to the body cavity that partially or fully encircles the worm’s body.

A comparison: Jumping worm and European nightcrawler

<table>
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<th>Jumping worm</th>
<th>European nightcrawler</th>
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<tr>
<td>Brown/grey</td>
<td>Black/Brown</td>
</tr>
<tr>
<td>Bodies are sleek, dry, smooth and firm</td>
<td>Bodies are slimy, flabby</td>
</tr>
<tr>
<td>Thrust violently when disturbed, make this movement</td>
<td>Wiggle and stretch when disturbed</td>
</tr>
<tr>
<td>Mature worms 4-5 inches long</td>
<td>Mature worms 6-8 inches long</td>
</tr>
<tr>
<td>Light colored, smooth citellum that is flush with body, tractially oval to round</td>
<td>Reddish or pink citellum slightly raised from rest of body, partially encircles body</td>
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When will I see them?

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It takes only 60 days between hatching and reproduction. Jumping worms, unlike European earthworms, can easily complete two generations per year.

COCOON
https://arboretum.wisc.edu/content/uploads/2017/05/16101
Earthworms have considerable capacity to **change the nature of their environment to suit their survival**. Ecological requirements (moisture, temperature, and food supply) greatly influence the rates of reproduction and growth
Management

Prevention

Prevention is by far the best approach to jumping worms.

The following simple steps to reduce the spread of jumping worms.

- Educate yourself and others to recognize 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;
- Use, sell, plant, purchase or trade only landscape and gardening materials and plants that appear to be free of jumping worms; and
- Sell, purchase or trade only compost and mulch that was heated to appropriate temperatures and duration following protocols that reduce pathogens.

What can I do if jumping worms are already on my property?

Don’t panic.

By taking precautions, you can continue enjoying your yard, trees and garden. Just because you have jumping worms in one part of your property doesn’t mean that they are everywhere. Take precautions to avoid spreading them.

Remove and destroy jumping worms when you see them.

Simply seal them in a bag and throw it in the trash - they will not survive long. Reducing the adult population will eventually reduce the number of egg-carrying cocoons in the landscape.

Experiment

If necessary, try a variety of plants or consider alternative landscaping in heavily infested parts of your property. Keep a log and share your successes with fellow gardeners.

Keep your chin up.

Research is moving forward to find ways to control jumping worms. Until a solution is found, learn to live with these unwelcome pests.

Other resources

Identification

Jumping worm field guide. Printable document from the Wisconsin DNR.

Articles

Jumping worms by Bernadette Williams and Colleen Robinson King, Forest Health Team, Wisconsin DNR. June 2015.

Bernie Williams serves as one of Wisconsin’s foremost experts on jumping worms, and has been working on the problem since they were first found here in 2013.


This short article serves as a great introduction to earthworms in general and the jumping worm in particular.

No damage to vegetation by jumping worms shown yet, but invasion is still new by Shelley K. Meych at Madison.com. January 2018.

A discussion of what we might expect as jumping worm populations continue to grow in Wisconsin.


Questions and answers with UW-Madison Arboretum’s ecologist Brad Herrick.

Research


A short overview of recent research on jumping worms at the UW-Madison Arboretum.


Fact sheets


Jumping Worms
Where did Jumping worms come from?
What types of habitats do they infest?
What do they look like?
Outreach and Education
What happens if I find them in my garden?