

GETTING THE WORD OUT ABOUT THE WORM:

How Integrated Pest Management
Communication Initiatives May Assist in
Slowing the Spread of Jumping Worms
(*Amyntas spp.*)



Maine Sustainability & Water Conference 2023

Regina Smith
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INTEGRATED PEST MANAGEMENT STRATEGIES - COMMUNICATIONS?!



Maine Agricultural Fair Series
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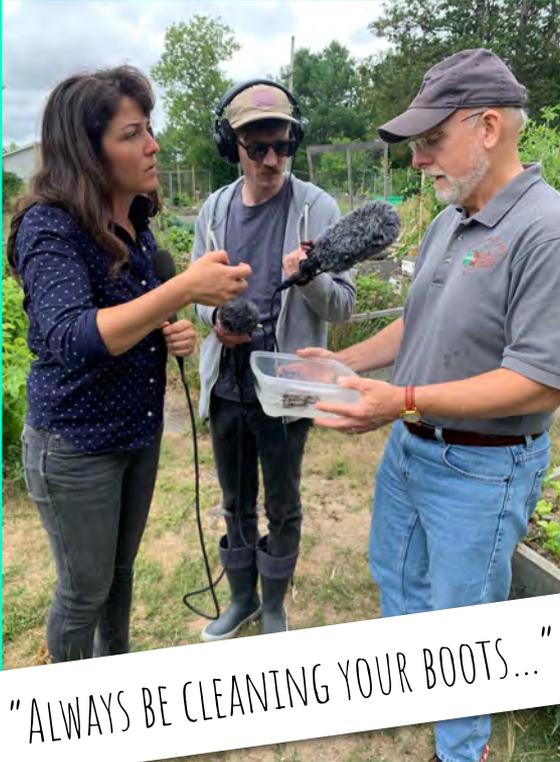
A close-up photograph of a tree trunk showing significant damage from an Emerald Ash Borer. The bark is peeling and the wood is exposed, with a large, irregular hole visible. The background shows other trees in a forest setting.

Liked by karencoluzzi and others

mainebugwatch This winter we're watching for woodpeckers. Why? Swipe to see the damages caused by emerald ash borer that can be revealed from excessive woodpecker flecking. Wood peckers feed on the larvae

THE VIDEO THAT HELPED SPREAD THE WORD ABOUT THE WORM





"ALWAYS BE CLEANING YOUR BOOTS..."

Endless Thread, Mass. Public Radio, interviews Gary Fish, State Horticulturist



A jumping worm found at a community garden in Bangor, Maine. Nora Saks



COOPERATIVE FORESTRY RESEARCH UNIT | CFRU
 INVASIVE EARTHWORMS: NOT SO SWEET FOR SUGAR MAPLE
 by Regina Smith, Program Manager, Cooperative Forestry Research Unit

Nearly all earthworms in the eastern United States and Canada are non-native. Around 10,000 years ago, glaciers reset the clock and wiped out any native earthworms in the area. Non-native species were introduced with European colonization and the common earthworms we see in our gardens today were imported, stored away on ships, or hiding in plants, and are still relatively new species to our landscape. Although jumping worms (*Amyntas* spp.) have only recently garnered attention in New England, the first records of their presence in Maine were in 1899 in a greenhouse setting. The first report of them outside of that setting came in 2014 and they've been spreading, mostly through human-assisted activities like plant swaps or nursery sales, ever since. In the spring of 2022, jumping worms were detected in New Brunswick.

Forest floor disturbances related to exotic earthworm invasions have been linked to sugar maple decline in areas of the United States. Jumping worms alter the physical, chemical, and biological characteristics of soil, with cascading effects on ecosystems.

Present and feeding in the uppermost layers of the forest floor, jumping worms disturb the organic horizon and mineral soil. Feeding creates an initial pulse in available nutrients that rapidly leaches out, leaving worm castings in place of rich soil. Soils that have been colonized by the worms take on a texture similar to coffee grounds. Worm activity homogenizes the soil and exposes it to harsh environmental conditions such as periods of warmer and drier conditions, or direct exposure to freezing temperatures. In a study, Bal. et al, 2018 in the Great Lakes region (US) examined the relationship between disturbances to the forest floor from exotic earthworm invasions with sugar maple dieback in the region. They found that earthworm invasions reduced the sugar maple leaf litter mass by 87-98% in one growing season.

Jumping worm write up in Northern Hardwoods Research Institute's The Leaflet, January 2023



PlayCleanGo Awareness Week

REMOVE



Clean your shoes, clothes, packs, and pets before and after exploring and stay on designated trails.



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Your Soil...

CRUMBLY or CLODDY ?

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

Leaflet No. 328

**BUY IT
WHERE YOU
BURN IT.**

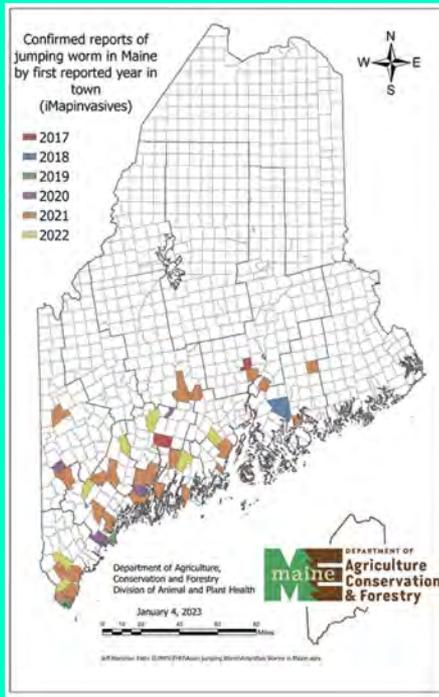
Stop the spread of tree-killing insects.

[Learn more](#)



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HELP SLOW THE SPREAD OF JUMPING WORMS IN MAINE



- [Report potential findings](#) to Department of Agriculture, Conservation and Forestry - even if you're unsure!
- Snap a quality photo to accompany your submission. Help the professionals to ID your worm by capturing the clitellum.
- Slow the spread! Start plants from seed, buy bare root, and be aware of potential risk when buying or moving horticultural material!



THANK YOU!

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SOURCES:

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- Chang, CH., Bartz, M.L.C., Brown, G. *et al*. The second wave of earthworm invasions in North America: biology, environmental impacts, management and control of invasive jumping worms. *Biol Invasions* 23, 3291–3322 (2021). <https://doi-org.wv-o-ursus-proxy02.ursus.maine.edu/10.1007/s10530-021-02598-1>
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- [DACF reporting link](#)
- University of Minnesota. Jumping Worm Management Report. 2022. <https://sites.google.com/umn.edu/invasive-species-citsci/jumping-worm-report-management>
- Saks, N. (2023, January 27). [Worm Wars: Invasive species and the stories we tell about them. *Endless Thread*](#). Podcast episode, Boston, Massachusetts; WBUR.

MUSTARD POWDER DETECTION METHOD

Mustard powder solution for detecting earthworms:

1. Establish a soil pit (1ft. X 1ft.) and remove leaf litter (if present) taking care to not remove any jumping worms in the process.
2. Mix 20G (~¼ cup) mustard powder into 2 liters of water.
3. Slowly pour half of the mixture over the soil pit.
4. Mustard powder is an irritant to earthworms, and within 30 seconds - 5 minutes, worms will appear at the surface.
5. Collect earthworms and inspect them for jumping worm characteristics (clitellum, behavior, etc.)
6. Wait 5 minutes and pour the remainder of the solution over the pit.
7. [Report any findings to DACF.](#) Not sure? Take a photo and be sure to capture the clitellum.