Regional Jumping Worms Survey 2025 Report

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Background

Jumping worms are an invasive earthworm that alter soil structure by rapidly consuming organic material. They can increase rates of erosion and generate forest understory conditions that are more susceptible to invasive plant establishment. They are an increasing concern in the Northeast in both agricultural and forest settings. Three species of jumping worms are found in this region (from most to least common): *Amynthas tokionensis*, *Amynthas agrestis*, and *Metaphire hilgendofri*. However, the distribution of jumping worms across forests in the region is not yet known (Johnson et al., 2021). At the Joint Committee Meeting in December 2024, FEMC cooperators identified a need for more information on jumping worm distribution in the Northeast, and FEMC undertook a project to include inventory of jumping worm presence/absence in the 2025 forest health monitoring effort.

Methods

FEMC worked with UVM Professor Josef Gorres to identify a suitable and efficient detection method that was then deployed across the FEMC Forest Health Monitoring (FHM) sites during summer 2025. The identified method employed visual surveys to note presence or absence of jumping worms or jumping worm castings, and added only a few minutes of additional time to the existing FHM protocol.

Figure 1. A crew member inspects the soil for jumping worms or their castings.

FEMC's FHM protocol utilizes two different plot layouts, with the style used varying by state (Fig. 2). Spoke-style plots include four subplots; in these plots we ran a transect between each subplot (total 3 transects) and randomly selected 4 locations along each transect for sampling. In nested-style plots we ran a transect in each cardinal direction and randomly selected 3 locations along each transect for sampling. As a result, both plot styles included up to 12 sampling locations. At each sampling site, the duff layer was cleared in a 2'x2' square and the soil surface was inspected for worms or castings. Since the method recorded only presence or absence of evidence of jumping worms at each plot, sampling ended in a plot if evidence of jumping worms was found.

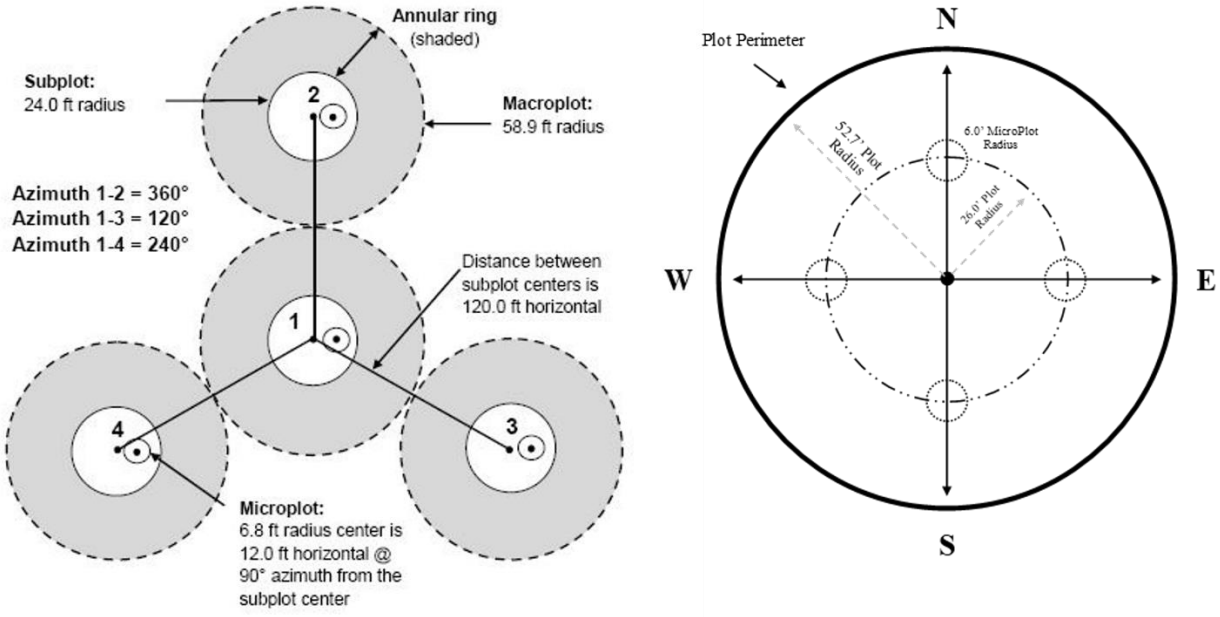

Figure 2. Two FHM plot types. Spoke-style plot shown at left, and nested style shown at right.

Results

Evidence of jumping worms was identified in only 8 FHM plots (Fig. 3), though it is likely jumping worms were not located in some plots where they are present due to misalignment with sampling locations or crew error. Eight detections do not represent sufficient information to estimate jumping worms distribution across the FEMC service area; however, FEMC intends to continue surveying for jumping worms as part of the FHM protocol for several more years with the hope of being able to better estimate distribution across the region.

Jumping worms were found across a variety of forest types and locations, though we note that 5 out of the 8 detection locations were in forests with a significant maple component. This may be due to the prevalence of maple across the Northeast landscape, or it may be due to the nutrient density of the leaf litter in maple-dominated stands. UVM Professor Josef Gorres has noted that maple forests seem to be particularly susceptible to jumping worms.

Recommendations and next steps

In 2026 FEMC will continue to conduct long-term monitoring at all FHM sites to determine if populations are found in the same locations year-to-year or if jumping worm presence fluctuates across the landscape over time. As more data are gathered, we hope to identify

possible ecological correlates to jumping worm presence, potentially including soil type, moisture, forest type, and proximity to agriculture or developed areas.

An expansion of the monitoring protocol to include trailheads and the routes the crew travels into the plot locations would be favorable as it could shed light on how jumping worms travel from parking lots of other more heavily utilized areas. However, FEMC has not determined if the resources to support such a sampling expansion are available at this time.

FEMC's preliminary investigation into the presence of jumping worms and piloting of a quick presence/absence survey method could be leveraged by other organizations or researchers, or even citizen scientists, to increase areas being monitoring for jumping worms. Developing a shared data entry portal or shared jumping worms identification map could facilitate such an effort.

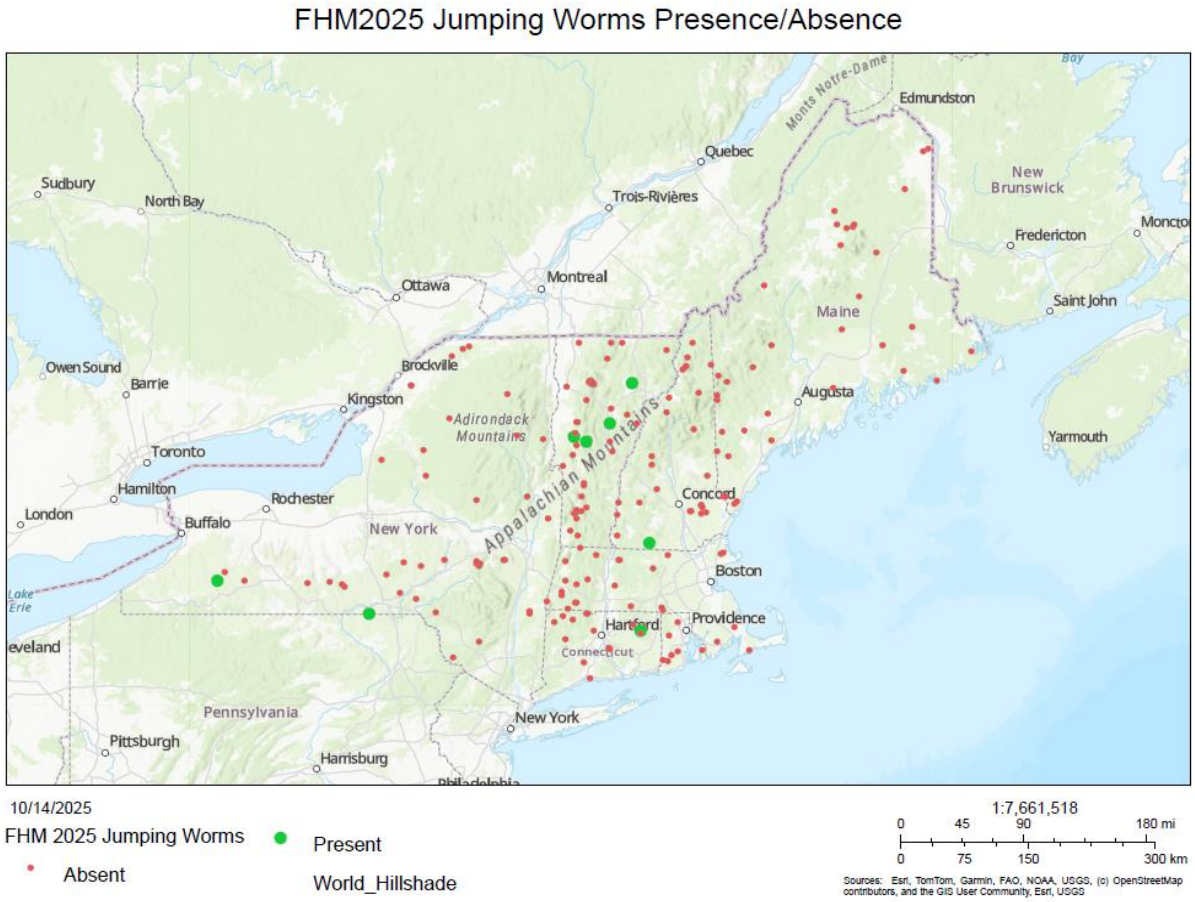

Figure 3. FHM plots where jumping worms were detected (green) and plots where they were not detected (red).

References

Johnson, D. M., Gale, K. M., Dobson, A. M., & McCay, T. S. (2021). Public Reporting and Perception of Invasive Pheretimoid “Jumping Worms” in the Northeastern United States. *Northeastern Naturalist*, *28*(3), 383–396. https://doi.org/10.1656/045.028.0311