



Management Plan for Addressing
Jumping Worms (*Amyntas* spp.) in the
UW-Madison Lakeshore Nature Preserve
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Background

Native earthworms haven't existed in Wisconsin since before the Ice Age. Our forests and other habitats have evolved without them. European and Asian earthworms have made their way back to Wisconsin as a result of human introductions. Although they may be good for our gardens they threaten our native plant communities because they consume leaf litter and disturb the organic layer that many of our native plant species need to get established. It may also facilitate the invasion of invasive plant species.

Amyntas (jumping worm) is a relatively new invader from Korea and Japan. They are more destructive and aggressive than the European earthworms species common throughout southern Wisconsin today. Unlike deep-dwelling European earthworms, jumping worms prefer to live and eat within a few centimeters of the soil surface. The inorganic nutrients left behind by the worms—nitrogen and phosphorus—spike in the top 2 inches of soil where they are inaccessible to plant roots and can be easily washed away by rains. They also leave behind a distinctive grainy soil full of worm castings.

Populations of *Amyntas* grow rapidly due to the fact that they mature in 60 days. The best time to find them is late June and July as the first hatchlings from last year's eggs mature. The mature individuals die in the fall but leave tiny cocoons that spend the winter in the soil. The animals are parthenogenetic: they can reproduce without fertilization. So one single individual can start a major infestation.

Amyntas species are prohibited in the state of Wisconsin under the Invasive Species Rule NR40.

Amyntas agrestis was first found in the UW Arboretum in Fall 2013. It is unclear when the first *Amyntas* was found within the Lakeshore Nature Preserve. Preserve staff first received an email in April 2014 that alerted us that 2 samples of *Amyntas* were collected from Eagle Heights Woods in the Fall of 2008 by a student in Don Waller's lab. Those samples were verified by Ryan Hueffmeier from the University of Minnesota-Duluth, Great Lakes Worm Watch program.

What Preserve staff have done to date:

- 1) Met with DNR staff Summer 2015
- 2) Met with Sara Hotchkiss and Brad Herrick (UW Arboretum Ecologist) Summer 2016
 - Graduate student Katie Laushman provided training to Preserve staff and interns on identification and survey process
 - Anne Pearce (our 2016 Invasive Species Technician) completed a survey of the Preserve with help from the Prairie Partners interns
 - Anne Pearce gave a presentation on *Amyntas* to Eagle Heights Community gardeners in September 2016

From our site surveys last summer we found *Amyntas* throughout the Preserve—from Muir Woods to Eagle Heights Woods. Some of the locations where *Amyntas* was absent appear to be infested with European earthworms (e.g. base of Picnic Point).

To date, there are no good control measures. Our goal is now to minimize the spread of *Amyntas* from the Preserve to places outside of Dane County by educating the public to their presence and encourage them to take steps to prevent their spread.

The UW Arboretum is providing leadership in conducting research on *Amyntas*. Preserve staff will monitor and follow their research and adjust management and additional survey needs as indicated.

Our proposed strategy is **Education**:

Messages will alert people to the presence of *Amyntas* in the Lakeshore Nature Preserve, define their harmful effects, and suggest steps people can take to prevent their spread.

The DNR has developed Best Management Practices (BMPS) to prevent the spread of *Amyntas*:

- Educate yourself and others to recognize them
- 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 that reduce pathogens.
- Watch for jumping worms and signs of their presence.
- Clean soil and debris from vehicles, equipment and personal gear before moving to and from a work or recreational area.

Preserve staff will spread our message through:

- Posters for Preserve kiosks
- Article for Summer 2017 Preserve newsletter
- Article for Friends newsletter
- Website information
- Facebook posts

Preserve will also share the message through our partners and stakeholders:

- Eagle Heights Gardens
- CALS (FH King, GreenHouse, faculty)
- Biocore Prairie
- Friends of the Lakeshore Nature Preserve