



Jumping Worms (*Amyntas* spp.)

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Identification

Several species of worms in the genus *Amyntas* have common names such as jumping worms, Alabama jumpers, Jersey wrigglers, snake worms, and crazy worms. These common names reflect the very active escape behavior of these worms when handled or disturbed. Jumping worms thrash rapidly from side to side in a snake-like motion to escape capture and may even shed the tail end of their body.

Jumping worms are reddish to brownish-purple in coloration, and sometimes have a glossy, iridescent sheen (Fig.1). They typically measure 70-160 mm (nearly 3-6 inches) long and 5-8 mm (0.2-0.3 inches) wide. Some specimens measure up to 20 cm (8 inches) long. Their bodies are firm and not slimy to the touch. Identification of the exact species of *Amyntas* requires dissection of the internal organs.

Adult jumping worms can be identified from other adult earthworms by the appearance of the clitellum, a specialized band of tissue on the earthworm's body. The distinctive clitellum of jumping worms is pale-colored and completely encircles the body (Fig. 1). It is smooth and flush with the rest of the body, rather than a thickened swelling seen in other species of worms. The clitellum of other adult earthworms is reddish-pink or orange, may not completely encircle the body, may appear ridged instead of smooth, and tends to bulge out from the rest of the body (Fig. 2). In all species of earthworms, the clitellum secretes a small mucus "cocoon" that encapsulate the eggs. These spherical cocoons, about the size of a mustard seed (2-4

mm), protects the eggs when deposited in the soil.



Figure 1. A mature jumping worm (*Amyntas* sp.) showing the characteristic smooth, milky-pale clitellum near the top of the image (Nancy Knauss, Pennsylvania State Extension).

Life History

Jumping worms are thought to have a single generation each year with the eggs hatching in the spring. Immature jumping worms develop to adulthood by summer, and lay their eggs and die by the winter. *Amyntas* spp. are asexual and do not require a mate to reproduce. The eggs overwinter in their protective cocoons.



Figure 2. Mature common earthworm, *Lumbricus terrestris*, with a thickened, orange clitellum (Joseph Berger, Bugwood.org).

Jumping worms tend to stay in the leaf litter or in the uppermost level of the soil rather than in burrows deep below the soil surface. They can easily be transported in soil and any organic material accompanying plants. They can be found in potted plants and in mulch, compost, or top soil sold at nurseries, garden centers, and landscape supply companies. These materials may contain immature or adult worms, as well as cocoons containing their eggs.

Jumping worms are native to Japan and the Korean peninsula. They probably came to North America through the horticultural trade of imported plants or plant materials, either directly from Asia or from populations established in Europe. Movement of nursery stock has undoubtedly dispersed the worms through the United States. However, jumping worms are also used as fish bait and may have been intentionally released into new areas of the United States for this use. Jumping worms have also been sold online as live bait worms and may be found in batches of live worms sold for vermicomposting or pet food. They are now found throughout the eastern United States, although perhaps not widespread in each state where they are found.

Description of Damage

Jumping worms voraciously feed on leaf litter and mulch. They remove this organic layer and

drastically change the soil structure underneath. Their feeding leaves the soil bare, with a uniformly dry, granular appearance resembling crumbly coffee grounds. Consumption of the leaf litter may remove nutrients from the topsoil, change the moisture level of the underlying soil, and increase soil erosion. Other animals that live and feed in the leaf litter and in the topsoil may be affected by the loss of this habitat.

Established trees may have their root system exposed due to removal of the leaf litter and subsequent soil erosion (Fig. 3). Plant communities may be altered as well with reduced survival of newly sprouted plants, resulting in reduced native biodiversity in forest ecosystems. Invasive plants, being good colonizers of degraded habitats, may thrive in areas altered by jumping worm feeding. Gardeners may find that flower beds with jumping worms have poorer soil and less productivity than they had in previous years.



Figure 3. Tree roots exposed through leaf litter removal by invasive earthworms and subsequent soil erosion (Robert Lee, Bugwood.org).

Control

Do not intentionally buy jumping worms for bait, vermicomposting, gardening, or any other use. Earthworms used as live bait should never be released into the environment.

Monitor gardens for jumping worms and be on the lookout for their unique castings that look like dry, grainy coffee grounds. Do not dump infested soil outdoors or transfer to new areas unless you thoroughly solarize it to kill any worms and their cocoons in the soil.

Avoid introducing organic mulch or soil from outside sources unless it has been heat treated. Free leaf compost or mulch sometimes available to town residents in some municipalities may contain jumping worms; consider mulching and composting your own yard debris at your home rather than bringing in possibly-infested material. Check potted plants for jumping worms and the loose, crumbly soil that may indicate their presence. Plant bare root stock or seeds when possible. Be careful when sharing plants so you do not spread jumping worms from location to location. Monitor your plants for drought and root loss as many plants cannot grow well in soil transformed by jumping worms.

Adult worms may be more easily found in later summer or early fall, when they are at their largest size. If you find jumping worms on your property, remove and dispose of them as much as possible whenever found. Proper disposal methods for jumping worms include placing the worms in a plastic bag and leaving it in the direct sun for at least 10 minutes before disposing the bag in the trash, or drowning the worms in a container of soapy water deep enough that they cannot climb out of it. Make certain all worms are thoroughly dead before dumping the water and worms out.

Areas of ground containing jumping worms can be solarized to kill the cocoons. Place a sheet of plastic over moistened soil for 2-3 weeks, or until the soil temperature exceeds 104° F for at least three days. This is best done in early spring, before the eggs have hatched, or while the newly-hatched jumping worms are small and less mobile. Also consider repeating this solarization process in mid-autumn to reduce the

number of cocoons that may have been laid by then. This technique will kill any plants or turf under the plastic sheet, so it may not be an option for all sites in the landscape.

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