

# Home & Garden Pest Newsletter

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## Look Out for the Jumping Worm

The jumping worm, *Amyntas agrestis*, (Figure 1) is an invasive earthworm capable of harming native forests and has been recently reported in some areas of California. This pest devours leaf litter and other organic matter, changing soil texture and nutrient availability to a point where some plants are unable to survive. Its feeding can lead to a decline in diversity and population of native plants and other organisms in forests.

Although these worms are native to eastern Asia, they have been detected in dozens of states; including Massachusetts, New York, Wisconsin, and Minnesota. Jumping worms have since moved west to Washington and Oregon and were detected in California in 2021. The California Department of Food and Agriculture (CDFA) has labelled the jumping worm as an A-rated pest, meaning it can cause economic or environmental harm if it becomes established in the state.

In nurseries, any jumping worms that are present are likely to be found underneath pots sitting on the ground or on landscape fabric. In forests, they tend to be near the surface, just under accumulations of leaf litter, unlike other earthworms.

### How do you know if it's a jumping worm?

The jumping worm, also called the crazy worm or snake worm, can be distinguished from other earthworms (Figure 2) by a milky-white band (the clitellum) wrapping all around and flush with its body



Figure 1. The jumping worm, *Amyntas agrestis*. The distinctive white band (clitellum) around its body near the head is circled.

T Potterfield, Flickr



Figure 2. A common earthworm, *Lumbricus terrestris*.

Pixabay

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# Jumping Worm continued from p. 1

near the head as well as its characteristic “jumping” when disturbed. Jumping worms have been known to propel themselves off the ground and thrash when disturbed, almost like a provoked snake. Jumping worms are firm, smooth, and glossy, but not slimy. They are dark gray or brown in color, darker than other earthworms. This darker pigmentation helps protect them from sunlight since they live closer to the surface than do other species. Adult jumping worms are usually 4–5 inches long, tend to occur in large numbers, and are most noticeable in late summer or early autumn when most are fully mature. In the fall, adults produce cold and drought resistant cocoons (a hardened egg capsule) before dying. One worm can produce many cocoons without mating. The next generation of jumping worms overwinters in these mustard seed-sized cocoons, which hatch and develop into new worms in the spring.

## **How do jumping worms spread?**

Jumping worms live in leaf and plant litter. The tiny egg cocoons look like small bits of dirt so can easily be moved by raking leaves or by transporting mulch, potting mixes, and potted plants. Jumping worms can be spread to natural areas on soil particles attached to hiker’s boots, through movement of plant material sold by nurseries where the worm exists, or even by anglers if they use adult jumping worms as fish bait.

## **Prevent the spread of the jumping worm**

Prevention is by far the best approach to managing jumping worms. Don’t buy or use jumping worms for fishing bait, vermicomposting, or gardening. Learn how to recognize jumping worms and pass along the knowledge. Check new mulch, compost, and soil for evidence of jumping worms. Before you buy new plants, take a close look at the potting soil. If jumping worms are present, you will see their telltale, coffee ground-like castings (Figure 3) on the soil surface. Buy bareroot plants whenever possible. When gardening, keep an eye out for jumping worm adults and their castings.



Figure 3. A jumping worm on top of its coffee-ground like castings.

M Bertone, NCSU

## **What if you find jumping worms?**

If you discover jumping worms, contact CDFA or your local agricultural commissioner’s office to report the finding. If the CDFA confirms the worms are jumping worms, work with them to focus on preventing the spread of the worm. Don’t move materials such as compost, mulch, topsoil, or plants known to have jumping worms to new locations. Always clean dirt and debris off your equipment and shoes before leaving an area infested with jumping worms. Dispose of all contaminated soil and castings in the trash. Kill worms by freezing or leaving them in a plastic bag out in the sun, then discarding.

Jumping worms and their cocoons are unable to survive temperatures above 40°C (104°F). Increasing soil temperatures above this threshold for three days through soil solarization is one way to manage jumping worm populations. Be aware that re-infestation of the area may occur due to cocoon presence in areas beyond the treatment zone. Soil used for potting can be temporarily placed in plastic bins and exposed to direct sunlight.

Do not try to control jumping worms with pesticides. There are currently no registered pesticide products for this pest. Using pesticide products not intended or labelled for the jumping worm is illegal and can kill beneficial earthworms and cause harm to the environment.

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# Weird Worms: Land Planaria

**W**hat is that weird wormlike thing in your garden? A slug? An earthworm? It may be neither—it might be a land planarian. Land planaria are also called terrestrial flatworms and hammerhead worms. They are often colorful, such as the blue garden flatworm (*Caenoplana coerulea*) or patterned with stripes, like the shovel-headed garden worm (*Bipalium kewense*) (Figure 1).

Land planaria are generalist predators of earthworms, slugs, and other mollusks. They capture prey by wrapping their bodies around it (Figure 2) and engulfing the prey with mucus. Planaria mouths are not at the end of their body like most animals, but on the underside near the middle of their body. Unlike slugs, land planaria do not have tentacles (such as eyestalks), which is a useful way to distinguish them. Like snails, they are hermaphroditic, meaning each individual has both male and female reproductive organs and can mate readily with any other worm of the same species. Land planaria can also reproduce by binary fission, which is when one individual planarian splits into two. You may remember an experiment from middle or high school science laboratory where a planarian cut in half regrows into two separate planaria.

These animals need moisture, so they live in wet environments. Examples include under rocks and logs, in plant pots and mulch, under bushes, and along streambanks. In nurseries, they are commonly found under plant pots. After heavy rains, they might be found on sidewalks and driveways.

## Do land planaria cause problems?

Land planaria may be considered minor pests, but they don't damage plants or harm people, but can negatively sometimes reduce earthworm populations in natural environments. Land planaria have very few predators since their mucus is distasteful. While some species (*B. adventitium* and *B. kewense*) produce a neurotoxin, they cannot inject it into pets or people and are only toxic to small animals when eaten. Some species can carry rat lungworm, an internal parasite. Wash your hands thoroughly after handling land planaria to avoid these problems.



Figure 1. Blue garden flatworm, *Caenoplana coerulea* (A) and shovel-headed garden worm, *Bipalium kewense* (B).

(A) D Beckers, (B) W Cranshaw, Bugwood



Figure 2. A group of land planaria feeding on a snail.

PK Boll et al., Wikimedia

Some land planaria are invasive, but their impacts on the environment and native flora and fauna will depend on the species, their prey preferences, and where they are introduced. In most cases, there is little impact. Invasive land planaria may present problems in the future since it is easy for land planaria to reproduce and spread.

Eradication of land planaria from a landscape is difficult, if not impossible. Cutting up planarians to kill them doesn't work since new individuals will grow from each section. They can be killed with salt or by submerging them in rubbing alcohol, but this is impractical for large numbers of planaria. There are no registered pesticides for land planaria and using a molluscicide to control them is ineffective and may be illegal since land planaria are flatworms and not snails or slugs (mollusks).

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# Invasive Pest Spotlight: Emerald Ash Borer

The invasive pest spotlight focuses on emerging or potential invasive pests in California. In this issue we are covering the emerald ash borer.

## *Emerald ash borer facts*

The emerald ash borer is a small (roughly  $\frac{3}{8}$  to  $\frac{5}{8}$  inches long) beetle with metallic green wing covers and a coppery red or purple abdomen. While there are other metallic wood-boring beetles, the emerald ash borer's body is longer and more cylindrical than others. Adults feed on the edges of leaves and lay eggs under tree bark flaps and in bark crevices. Once the eggs hatch, the larvae burrow into the tree to feed, creating S-shaped galleries in the wood. This disrupts the flow of nutrients through the tree and causes branch dieback and death of the infested tree in as little as 2 years. After pupating within the tree, they emerge as adult beetles, leaving behind D-shaped exit holes in the bark.

The emerald ash borer has killed over 40 million healthy ash trees in the United States since it was discovered in Michigan in 2002. As of 2018, this pest has spread to over 35 states and 5 Canadian provinces. Ash trees, olive trees, and other woody trees in the olive family are all susceptible to attack. In California, the native Oregon ash is highly susceptible to emerald ash borer attack. This pest is not currently established in California, but its introduction here could devastate our forests.

## *What can you do?*

The beetle doesn't fly far, and most long-distance movement of emerald ash borer has been directly traced to ash firewood or ash nursery stock. California currently has a regulation restricting the importation of ash firewood and other potentially infested material to protect our environment from



S Ausmus, USDA

Two adult emerald ash borers on a leaf.

this pest. You can help prevent the emerald ash borer from moving into California. Buy or gather firewood near where you'll burn it and don't bring home any leftover wood. Certified heat-treated firewood is safe to move long distances. Look for a state or federal stamp or seal on the package.

For more information, see the California Department of Food and Agriculture's Pest Profile at [www.cdffa.ca.gov/plant/PDEP/target\\_pest\\_disease\\_profiles/eab\\_profile.html](http://www.cdffa.ca.gov/plant/PDEP/target_pest_disease_profiles/eab_profile.html)

For more information about managing pests, contact your University of California Cooperative Extension office, or visit the UC IPM website at [ipm.ucanr.edu](http://ipm.ucanr.edu).

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