

Rusty crayfish: *Orconectes rusticus*

Rusty crayfish are a large, aggressive crayfish; originally from the Ohio



Valley, and brought to our area as fish bait. Generally, they are easily identified by the large reddish spots on either side of the thorax. Their preferred habitat is rocky lakes and streams. They can have strong impacts on local ecosystems by out-competing and hybridizing with our native crayfish species. Rusty crayfish can remove much of the aquatic vegetation from lakes which is important cover for fish. In Sylvania they have invaded Crooked Lake. Crayfish can spread between lakes connected by creeks, but otherwise require people to move them around, so please don't!

Exotic earthworms

The Ottawa has no native earthworms because the area was glaciated approximately 10,000 – 12,000 years ago.



There are currently 5 species of exotic earthworms known on the Ottawa. They were most likely brought here from Europe in ship ballast, containerized plants, and as bait. Earthworms feed on the spongy duff layer of the forest floor. The duff layer is an essential habitat for many forest plants and animals, including invertebrates that form the bottom of the food web. Loss of the duff layer can affect the regeneration of tree species, such as sugar maple. Sylvania currently is lightly infested, primarily around the perimeter. Let's prevent any further infestation!

Effects of Invasive Species :

- ⇒ Loss of biodiversity as native species are replaced by invader species.
- ⇒ Harm to wildlife and fish habitat by loss of native food sources, nesting habitat, and introduction of disease.
- ⇒ Thick beds of invasive aquatic plants impede boat passage and pose a risk to swimmers.
- ⇒ Invasive plants such as European swamp thistle and Japanese barberry form spiny thickets and impede recreation and hunting access.
- ⇒ Non-native forest pests such as emerald ash borer and hemlock wooly adelgid threaten many forest trees.

Help protect Sylvania Wilderness from invasive species!

- ⇒ Carefully inspect and clean all seeds, soil, and debris from your clothes, boots, and equipment before entering Sylvania Wilderness.
- ⇒ Use the boot brush stations located at trailheads.
- ⇒ Inspect your boat, trailer, fishing and boating equipment and remove any plants and animals both before going in the water and after coming out.
- ⇒ Remember, live bait is prohibited in Sylvania, except Crooked Lake. Never release live bait!
- ⇒ Visitors to Sylvania are welcome to pull up thistle and knapweed plants, or cut the stems at the base, below the rosette of leaves. Wear thick gloves! Please report sites of other invasive species.
- ⇒ More information on how to identify these invasive plants is available at the Entrance Station. Please be certain of your plant ID skills before attempting to remove plants.

For more information or to report sites of invasive species, please contact:

Ottawa National Forest, Watersmeet Ranger District
E 24036 Old US 2 Watersmeet, MI 49969
(906) 358-4551 <http://www.fs.fed.us/r9/ottawa/>
USDA is an equal opportunity employer.

Images provided by [US Forest Service](http://www.usforestservice.com), www.invasive.org, [Shelly Fischman](http://www.shellyfishman.com), [Mike Rubin](http://www.mike Rubin.com), [Jari Taivainen](http://www.jari.taivainen.com), [Gina Mikel](http://www.gina.mikel.com), [New York Botanical Garden](http://www.newyorkbotanicalgarden.com), and www.aaronpeterson.net.

Invasive Species in the Sylvania Wilderness Ottawa National Forest



Aaron Peterson



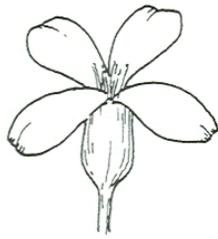
Non-Native Invasive Species are plants or animals that are not indigenous to an area and that cause harmful effects to the natural environment, economy, or human health. Invasive species reproduce rapidly and can overrun natural areas.



Ottawa Interpretive
Association



Garlic mustard: *Alliaria petiolata*



Biennial herb, 1 to 4 feet high, with small white flowers and narrow tubular fruits. The leaves are heart-shaped, coarsely toothed, and smell

like garlic when crushed. This is a highly invasive understory herb that outcompetes spring wildflowers. Garlic mustard is spreading northward and was first discovered in Sylvania in 2006 at Ash campsite on Clark Lake. Please watch for this species, and report sites to the Forest Service!

Japanese barberry: *Berberis thunbergii*



Small shrub, 2 to 4 feet high, with yellow flowers,

small spoon-shaped leaves, and short sharp spines. Egg-shaped fruits are green when young and turn red in the fall. In the western Upper Peninsula, Japanese barberry often forms spiny, impenetrable thickets in forests and openings. This shrub is planted for home landscaping, and birds spread the seeds to remote locations. The Forest Service has removed several bushes from Sylvania. Please help by reporting new sightings.



European swamp-thistle: *Cirsium palustre*



Spiny, narrow plant, to five feet tall. A prolific seeder, this plant is becoming abundant in the Upper Peninsula, and Sylvania is one of the few places where control is being attempted.

Other non-native thistles in Sylvania include Can-

ada thistle and bull thistle. European swamp thistle can be recognized by its spiny leaves and stems, clustered small heads with purple flowers, and no spines on the flower heads (unlike bull thistle). Cleaning your boots and equipment before you leave can help keep this plant from spreading to your neighborhood.



Eurasian water-milfoil: *Myriophyllum spicatum*



This submersed aquatic plant forms thick weed beds, and can harm lake quality and fish habitat. Eurasian water-milfoil typically has 12 to 21 pairs of leaflets on each leaf, while the similar native northern water-milfoil usually has 5 to 10 pairs of leaflets per leaf. A single segment of stem and leaves can take root and form a new plant, so fragments clinging

to boats and trailers spread this weed. An infestation discovered at the Crooked Lake boat launch in 2002 is still under treatment.



Purple loosestrife: *Lythrum salicaria*



Square-stemmed perennial, 3 to 5 feet tall. The purple flowers have 5 to 7 petals (unlike the native fireweed, which has 4). Purple loosestrife has escaped cultivation and is found along stream banks, lakeshores, wet meadows, and ditches. A single plant can produce 2.5 million seeds, which can be transported great distances by humans, animals, water, and wind. There is one known occurrence in Sylvania, on Clark Lake, which is being

checked and treated each year. Sylvania lakeshores are vulnerable to invasion by this species, so watch for it and report sites.



Spotted knapweed: *Centaurea stoebe*



Much-branched wiry stems with pinkish-purple, thistle-like flowers and leaves that are covered with downy grayish hairs. Since its introduction from Europe, this species has become problematic and widespread. It is unfortunately common along roadsides in the western Upper Peninsula, and we hope to keep it from becoming further established in Sylvania.



Other invasive species

In addition to the eight invasives shown here, please watch for curlyleaf pondweed, exotic honeysuckles, dame's rocket, Japanese knotweed, emerald ash borer, hemlock woolly adelgid, or any other non-native invasive species. For more information, please visit www.fs.fed.us/r9/ottawa/.