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# On the Hunt for Invasives: 2012 Invasive Species Early Detection Report

Early detection is the key for controlling the spread of invasive/exotic pests and plants

## Background

“Invasive species” are alien species that cause or are likely to cause harm to the economy, environment, and/or human health, and are considered to be one of the leading threats to the biodiversity and integrity of ecosystems worldwide. In broad terms, they are organisms that have been introduced deliberately or unintentionally into an environment where they did not evolve, are capable of establishing self-sustaining populations in “untransformed ecosystems”, and have no natural enemies to limit their reproduction and spread. These are among the reasons why early detection of invasive species was identified as a priority vital sign by several Inventory and Monitoring networks including the Northeast Temperate Network (NETN).

## Objectives and Methods

The main goal of this program is to detect invasive species while they are still in the early stages of establishment when the costs of eradicating them are still low. This is accomplished by first developing a modest list of target insect pest and exotic plant species specific to each park. Species on the list must be recognizable to non-experts. The target list includes species that are either present in the park at low levels and of concern if new populations are detected, or not present in the park, but that threaten ecosystem health and function in the region. To aid with identification, NETN makes available laminated field guides and annual trainings to field crews and network parks. The field guides contain each park’s target list, identification cards for each species on the target list, and laminated pest and plant detection forms. As of the 2013 field season, field crews and even park visitors will be able to record sightings of invasive/exotic species into an off-the-shelf smartphone application (for Iphone and Android) called “What’s Invasive?”. The app includes updated target lists for each park, and automatically stores important data associated with the detection including GPS location, photographs, and extent of population. Prompt reporting is expected to increase with the use of this app in the field, which is capable of documenting invasive species directly to a web-based system immediately following a detection. This is considered to be the pilot year for using this app, and projects organizers are eager for feedback as to how it works in the field and ways it may be improved.

An important note is that if a target invasive species is found on an NETN monitoring plot, the plot must not be specifically targeted for invasive species removal. In order not to skew monitoring data, all plots need to be treated the same as the surrounding area and invasive species removal should only occur when it is conducted

### AMUR PEPPERVINE

[*Ampelopsis brevipedunculata* (Maxim.) Trautv.]

AMBR7

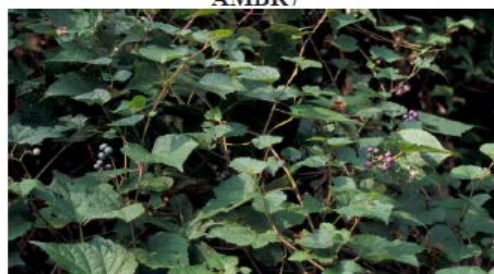


Fig 1

UGA 5379592

**Problem:** Native to Asia,<sup>2,3</sup> amur peppervine (APV) (Fig. 1) is a fast growing vine that can overtop and weigh-down native shrubs and trees, completely shading them from the sun and making them more susceptible to wind and ice damage.<sup>5</sup>

**Habit:** Perennial, climbing vine.<sup>4</sup>

**Reproduction:** Primarily by seed, vegetatively; seeds are dispersed by birds and water.<sup>5</sup>

**Leaves:** Alternate, simple, variable (Fig. 2); palmately 3 to 5 lobed<sup>3,4</sup> with coarse teeth with a heart-shaped base;<sup>1</sup> ~5 to 10 cm (2 to 4 in) wide. Young twigs, petioles and the undersides of the leaves are hairy.<sup>1,2,3</sup>

**Stems:** Woody, tendril-bearing;<sup>3</sup> can grow ~3 to 8 m (10 to 25 ft) or more.<sup>1</sup> Tendrils grow opposite the leaves on the stem.<sup>4</sup> The pith is white.<sup>2,4</sup>

**Flowers:** Small, inconspicuous, and greenish-white<sup>1</sup> (Fig. 3); Grow opposite leaves in cymose (flat or round-topped) clusters.<sup>2,3</sup> Appear May through August.<sup>4</sup>

**Fruits/Seeds:** Speckled, 6 to 8 mm (~0.25 in)<sup>1</sup> hard berries, ripening from September to October. Fruits are borne in



Fig 2

www.discoverlife.org

VINE

A look at the Amur Peppervine early detection field guide card for Boston Harbor Islands NRA.

in a larger management area that happens to include one or more monitoring plots.

## Results and Findings

### Early Detections

During the 2012 season, three target species were newly documented on three of the park’s units. At Webb Memorial State Park, a dense patch of garlic mustard was located along the west side trail and on the west

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AT BOSTON HARBOR ISLANDS

## GARLIC MUSTARD

Garlic mustard was first recorded in the U.S. in the 1860's in New York, and was likely introduced by settlers for food or medicinal purposes. Today it poses a severe threat to native plant and animal forest communities in much of the eastern and midwestern U.S. Many native wildflowers that complete their life cycles in the spring occur in the same habitat as garlic mustard, and once



introduced to an area it can outcompete these natives by aggressively monopolizing light, moisture, nutrients, soil, and space. Wildlife that depend on native plant species are also impacted. Small patches of garlic mustard have been detected on Thompson Island and Webb Memorial State Park.

Huron Pines photo



facing slope of the northern peninsula. A “sparse” patch of garlic mustard (as described in the 2012 early detection brief from park staff) was found in a forested setting just above the east facing beach on the north end of Thompson Island. Peddock's Island surveys turned up a small patch (500-1,000 individuals over about a half acre) of black swallow-wort at the Middle Head end of the Tombolo trail. Winged burning bush was also found in a mixed invasive shrub zone near West Head of Peddock's Island.

### Invasive Species Target List Review

Wine raspberry will be added to the target list on all units because it is found in nearby counties, invades disturbed open areas, and has been assigned a high invasive ranking on NatureServe. Expanding porcelainberry populations should be watched carefully in Webb Memorial State Park, if it becomes more established it may make sense to remove porcelainberry from this

park unit's target list in the future. European spindletree will be added to Spectacle Island. The invasibility of this species has not yet been ranked by NatureServe, but the shrub is found invading areas in nearby counties. Garlic mustard will be removed from the Webb Memorial State Park and Thompson Island lists because the populations that exist there are no longer likely to be effectively controlled by rapid response. Peddock's Island will have perennial pepperweed taken off its target list as two populations continue to persist there.

### Invasive Species Management

Eight island and peninsula units received some degree of invasive species management in the park. With a diverse group of invasive plants being treated, glossy buckthorn was a major focus throughout the park. Specific invasive species treated can be found in the appendix of the full report. Two porcelainberry patches (about 25 individual plants) first detected and treated in 2011 on Webb Memorial State Park were re-treated in 2012. These were located in the depression at the southeast corner of the park, as well as the hill-top on the northern lobe of the park. Bumpkin Island also had one porcelainberry individual, found in 2011, that was treated with herbicide this year. Hand-pulling retreatment of garlic mustard was conducted on a patch that was detected on Bumpkin Island in 2011.

### What's Next

The invasives program, now in its third year, has entered the stage of reviewing the original species target lists based on the number of detections and updated species ranges. Feedback from park managers has indicated that the target lists and field guides have increased awareness of priority invasive species, and have made identification of these species easier. Continued feedback about the *What's Invasive?* app will help to further enhance the effectiveness of the invasive species early detection program.

## More Information

### Contacts and Websites

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Full Report online at:  
<https://irma.nps.gov/App/Reference/Profile/2194335>

“What's Invasive?” Website  
<http://whatsinvasive.com>



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