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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 in which 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 forest health monitoring plot, the plot must not be specifically targeted for invasive species removal. In order not

to skew forest health data, forest monitoring plots need to be treated the same as the surrounding area and invasive species removal should only occur when it is conducted in a larger management area that happens to include one or more plots.

WINGED BURNING BUSH [*Euonymus alatus* (Thunb.) Sieb.] EUAL13



UGA2307066

Habit: Shrub typically to 2.5 m (8 ft)^{10,20} or possibly 7 m (23 ft) and equal in spread^{15,5}; size depends on cultivar of which there are at least 10⁵.

Reproduction: By seed^{10,20,15} and stem cuttings, success greater with the addition of the plant hormone IBA^{3,5,21}; possibly by root suckers¹⁸, though not confirmed in horticultural literature.

Leaves: Opposite, subsessile, elliptic to obovate, to 8 cm (3 7/8 in) long, sharply serrulate; upper surface dark green, turning bright red in autumn; deciduous^{10,15,20}; may be downy beneath^{15,5}.

Stems: Opposite with 2-4 conspicuous corky wings^{10,5,20,15} that run the length of the stem²¹ and apparently serve no function²; corky wings may not be present or as pronounced on the “Compactus” cultivar⁴.

Flowers: Small, 6-8 mm (~¼ in) wide, inconspicuous yellow-green flowers with four petals; April to June^{15,5}; stamens are opposite the petals and very short¹⁰.

Fruits/Seeds: Fruit smooth, purplish; 1-4-lobed capsule^{10,15}; 3-5 locules with 1-6 seeds per locule; fruit matures September-October at which time the fruit lobes split revealing the orange aril^{15,10,20}, releasing seeds through January¹⁸; cold moist stratification of the seeds is required for 1-3 months⁵; seeds are dispersed by birds⁵.

Supplement 1, July 2006

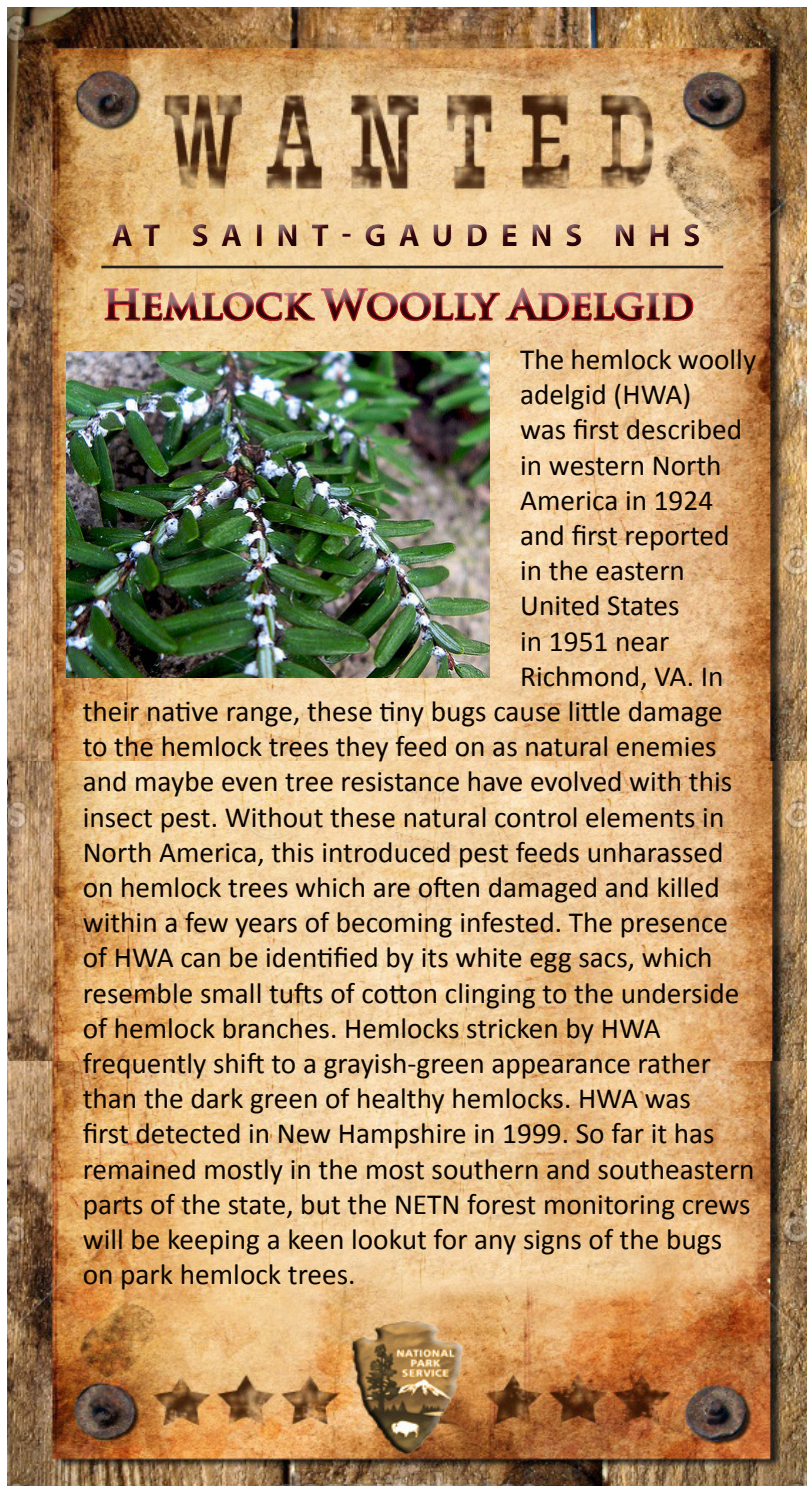
SHRUB

A look at the winged burning bush early detection field guide card for Saint-Gaudens National Historic Site.

Results and Findings

Early Detections

No new detections of target terrestrial or aquatic species were observed in Saint-Gaudens NHS during 2012. While sampling forest plots, the NETN forest crew visually inspected eastern hemlock trees in forest plots for signs of the hemlock woolly adelgid but did not detect any.



WANTED

AT SAINT-GAUDENS NHS

HEMLOCK WOOLLY ADELGID

The hemlock woolly adelgid (HWA) was first described in western North America in 1924 and first reported in the eastern United States in 1951 near Richmond, VA. In their native range, these tiny bugs cause little damage to the hemlock trees they feed on as natural enemies and maybe even tree resistance have evolved with this insect pest. Without these natural control elements in North America, this introduced pest feeds unharassed on hemlock trees which are often damaged and killed within a few years of becoming infested. The presence of HWA can be identified by its white egg sacs, which resemble small tufts of cotton clinging to the underside of hemlock branches. Hemlocks stricken by HWA frequently shift to a grayish-green appearance rather than the dark green of healthy hemlocks. HWA was first detected in New Hampshire in 1999. So far it has remained mostly in the most southern and southeastern parts of the state, but the NETN forest monitoring crews will be keeping a keen lookout for any signs of the bugs on park hemlock trees.

Invasive Species Target List Review

NETN staff decided that all species should remain on the target list. Although there are some invasive species of concern that are creeping closer to park boundaries (e.g., glossy buckthorn, common barberry and Japanese honeysuckle), they do not need to be added to the current list just yet. One new species, common reed, was added to the target list because of its high invasive ranking from NatureServe and close proximity to the park. In addition, Saint-Gaudens NHS has vulnerable wetland habitat that could be significantly impacted by an infestation of common reed. The stream alga species, didymo (also known endearingly as “rock snot”), was added to the aquatic invasive list for 2013.

Invasive Species Management

The Northeast Exotic Plant Management Team did not visit the park in 2012, yet treatment efforts were conducted by park staff on several invasive species. Staff mechanically removed an impressive 5,000 Japanese tree lilacs from an area close to its source in the historic landscape, across the road from Aspet - the home of Augustus Saint-Gaudens. The vast majority of individuals were seedlings, though some saplings and mature individuals were removed as well. Park staff also mechanically removed ten Japanese barberry shrubs and 123 Morrow’s bush honeysuckles near Blow-Me-Down Pond.

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

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Full Report online at:

<https://irma.nps.gov/App/Reference/Profile/2194335>

“What’s Invasive?” Website

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