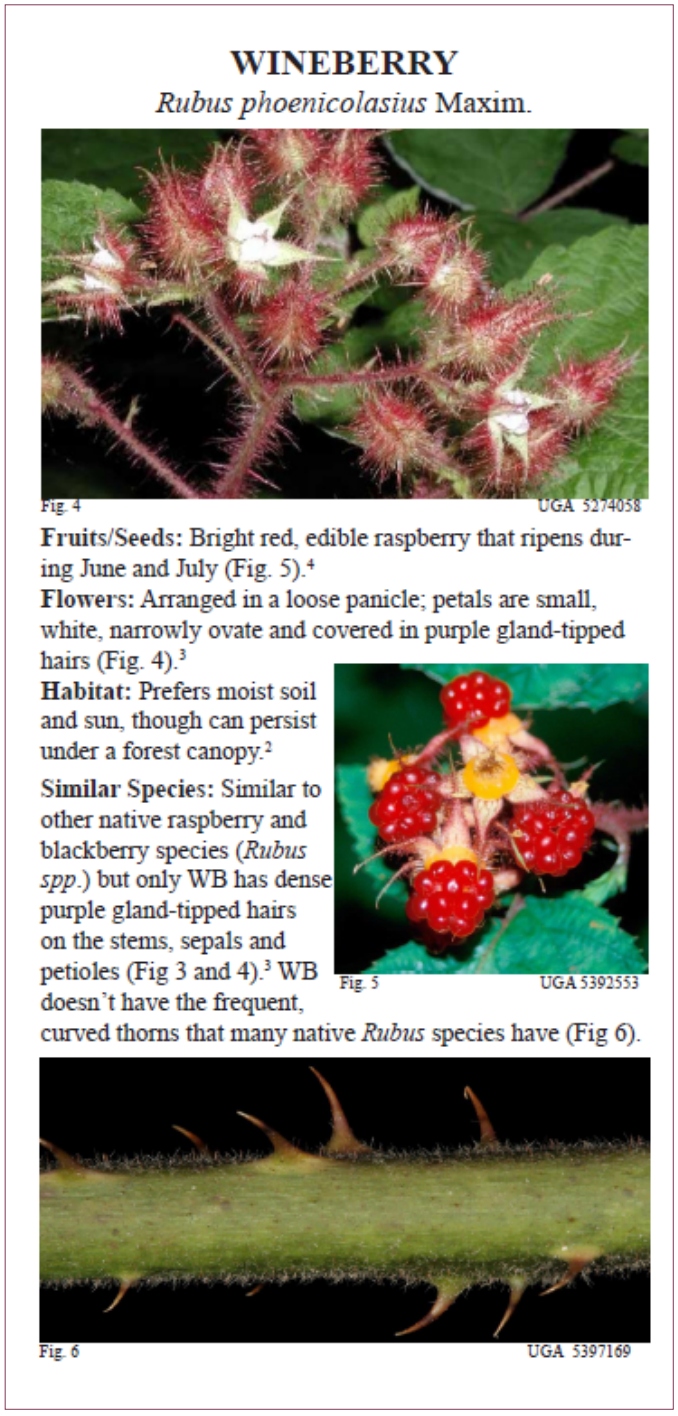
Park Invaders: 2013 Invasive Species Early Detection

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 environment, economy, 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 controls 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).



WINEBERRY

Rubus phoenicolasius Maxim.

Fig. 4 UGA 5274058

Fruits/Seeds: Bright red, edible raspberry that ripens during June and July (Fig. 5).[4]

Flowers: Arranged in a loose panicle; petals are small, white, narrowly ovate and covered in purple gland-tipped hairs (Fig. 4).[3]

Habitat: Prefers moist soil and sun, though can persist under a forest canopy.[2]

Fig. 5 UGA 5392553

Similar Species: Similar to other native raspberry and blackberry species (*Rubus spp.*) but only WB has dense purple gland-tipped hairs on the stems, sepals and petioles (Fig 3 and 4).[3] WB doesn't have the frequent, curved thorns that many native *Rubus* species have (Fig 6).

Fig. 6 UGA 5397169

A look at the winberry early detection card for the park.

2013 was the 4th year of the invasive species early detection (ISED) program and, for many parks, the second visit from the NETN forest health monitoring crew since the protocol was adopted. In many cases, having the presence of field crews that venture beyond the front-country paths and roads has resulted in new detections of target invasive species. Program wide, early detection species were found in 29 different locations among all but two NETN parks during 2013. The numbers of reports have steadily increased in the last several years, compared with only six sightings in 2011 and 12 in 2012. In and of itself, this increase may not necessarily indicate higher prevalence of invasive species in NETN parks, but could be a reflection of higher skilled field crews that are using more efficient reporting tools.

Support of the ISED program from park staff and volunteers continues to enhance its efficiency and relevance. Successful rapid response when invasives are found remains crucial to maintaining its effectiveness within network parks.

Objectives and Methods

The main goal of this program is to detect invasive species in the early stages of establishment when the cost of eradicating them is still low. This is accomplished by first developing a modest list of target insect pest and exotic plant species that are specific to each park and 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 yet present in the park but 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 are using an off-the-shelf smartphone application (for Iphone and Android) called "What's Invasive?" to record sightings of invasive/exotic species. 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

WANTED

EMERALD ASH BORER

Emerald Ash Borer is an invasive, wood boring beetle that kills ash trees (Fraxinus spp) by eating the tissues under the bark. Native to East Asia, it was brought to the U.S. accidentally in the wood of shipping crates from China. Damage is caused by the larvae, which feed in the cambium between the bark and wood, producing galleries that eventually girdle and kill branches and entire trees. Irregular holes excavated by woodpeckers feeding on pre-pupal larvae may be the first sign of infestation. After at least one year of infestation, D-shaped exit holes (about ⅛ in. diameter) in branches and trunk indicate adult emergence. Vertical bark fissures, crown dieback and epicormic sprouting and suckering are also prevalent. When the bark is removed from infested trees, distinct, larval tunnels or galleries that etch the outer sapwood and phloem are readily visible on the trunk and branches. White ash is a common forest species in Saratoga NHP, and is one of the few tree species capable of penetrating and persisting in exotic shrub thickets found in the park. White ash is also the most abundant seedling in the park and its loss would cause major changes in forest composition and structure. Continued vigilance by park staff, cooperators and volunteers is important to slow the spread of EAB, which was detected in 2011 in a prism trap in Selkirk, NY only 40 miles south of the park.



Larval feeding galleries. Edward Czerwinski photo.



Full-sized adult on a penny.



A purple "Barney" trap used to determine if EAB is in the area.



D-shaped emergence hole of an adult EAB.

reporting is expected to increase with the use of this app in the field, which is also available for use by park staff, volunteers, and the visiting public.

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.

Results and Findings

Early Detections

Even though the park did not report any new observations of early detection species in 2013, it still has good reason to be cautious and keep dilgently looking out for potential park invaders. With the nearby and recent increase in observations of emerald ash borer, including in the Roosevelt-Vanderbilt National Historic Site, there is an increasing threat of invasion up the Hudson River valley into Saratoga county.

Invasive Species Management

The Northeast Exotic Plant Management Team (NEEPMT) and park staff inventoried roughly 14 acres in the field by stop 2 of the tour road for brown knapweed and Canada thistle. Approximately 283 square meters of these invasive plants were sprayed with herbicide. Park staff also focused on treating the following species: multiflora rose, Japanese barberry, bush honeysuckle , Norway maple, Japanese knotweed, common reed and garlic mustard. Some of these targeted areas were re-treated infestations from previous years. The total area treated with herbicide, including efforts from the NEEPMT, was just over 44 acres.

More Information

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Saratoga NHP Invasives Field Guide:
http://science.nature.nps.gov/im/units/netn/monitor/programs/invasiveSpecies/earlydetection_guides.cfm

Full Report online at:
http://irmafiles.nps.gov/reference/holding/493069

"What's Invasive?" Website
http://whatsinvasive.com/park.cfm

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