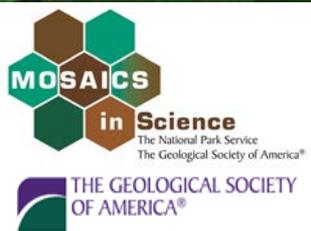


What's the meaning of invasive?

An organism, not native to an area or habitat that has negative effects on the environment

Mapping Invasive Plant Species in Forested Areas

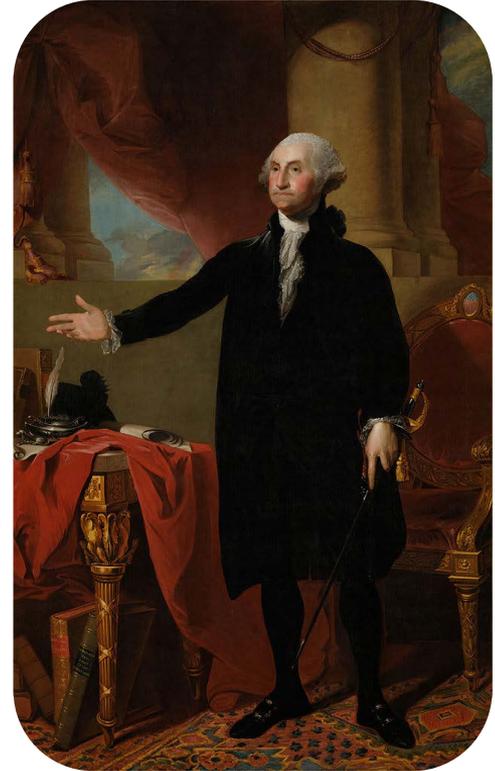
Valley Forge National Historical Park
Sydney Mathis



History of Valley Forge

George Washington's Continental Army Encampment during Revolutionary war (NOT a Battlefield)

- Park established in 1893 as Pennsylvania's first state park
- Established as a national park in 1976
- Many significant cultural resources
 - Suburban sprawl increasingly covers the land around Valley Forge
 - Park also increases in value as a bio-refuge for plants and animals



Plant Invasion

Invasives are the greatest threat to biodiversity

- Over 300 non-native plant species found at the park
- Mostly introduced from Asian Countries
 - Importation/Exportation on boats (Some unintended)
- **24 High priority** invasive plant species have been identified in the forests
 - * One not listed due to seasonality (25 total)

Scientific Name	Common Name
<i>Elaeagnus umbellata</i>	Autumn-olive
<i>Lespedeza cuneata</i>	Chinese lespedeza
<i>Alliaria petiolata</i>	Garlic mustard
<i>Phyllostachys aurea</i>	Golden bamboo
<i>Wisteria</i> spp	Invasive wisterias
<i>Berberis thunbergii</i>	Japanese barberry
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Humulus japonica</i>	Japanese hops
<i>Polygonum cuspidatum</i>	Japanese knotweed
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Persicaria perfoliatum</i>	Mile-a-minute vine
<i>Lonicera morrowii</i>	Morrow's bush honeysuckle
<i>Rosa multiflora</i>	Multiflora rose
<i>Acer platanoides</i>	Norway maple
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Phragmites australis</i>	Phragmites; common reed
<i>Ampelopsis brevipedunculata</i>	Porcelain-berry
<i>Paulownia tomentosa</i>	Princess tree
<i>Ligustrum</i> spp	Privet
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Ailanthus altissima</i>	Tree of heaven
<i>Rubus phoenicolasius</i>	Wineberry
<i>Euonymus alatus</i>	Winged wahoo
<i>Miscanthus sinensis</i>	Zebra grass; Chinese silver grass

Most Common Priority Invasive Plants



Most Common Priority Invasive Plants

Japanese Honeysuckle



Porcelain Berry



Multiflora Rose



Bush Honeysuckle



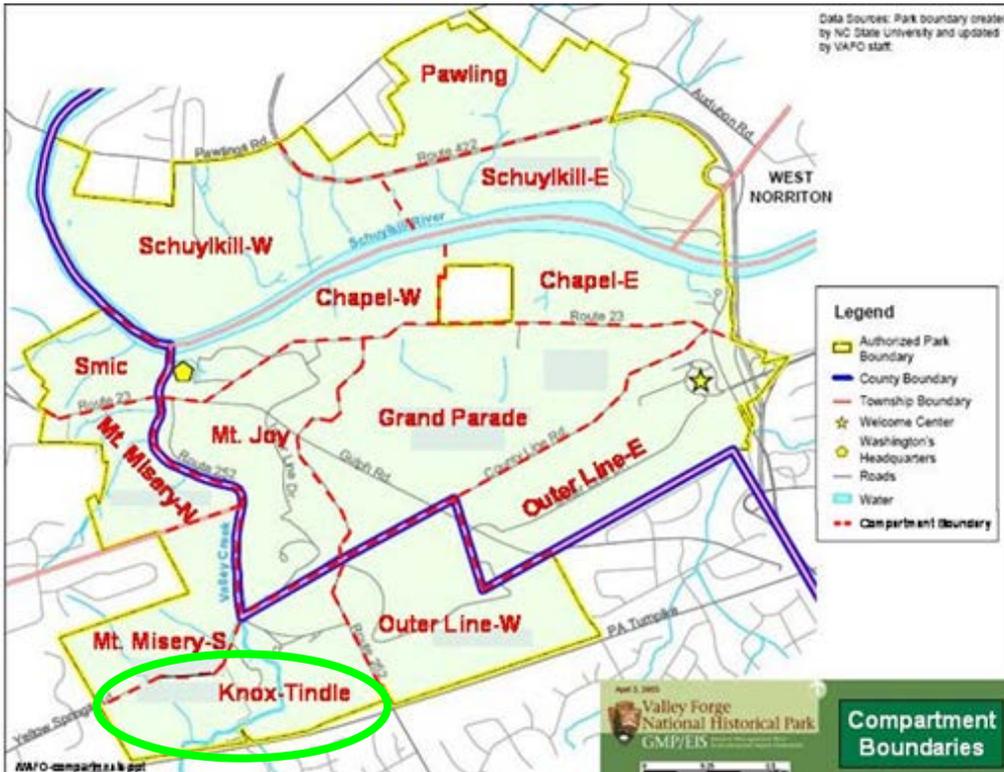
Privet





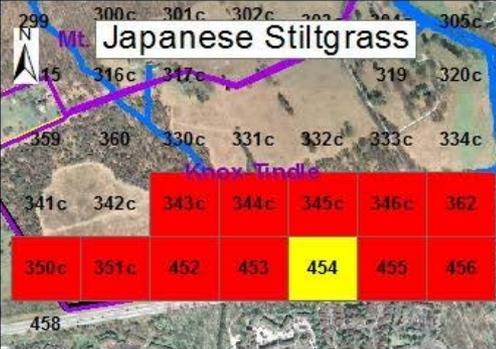
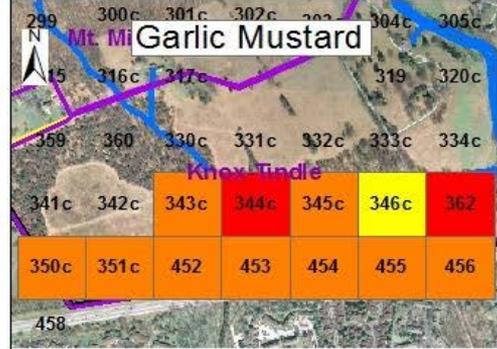
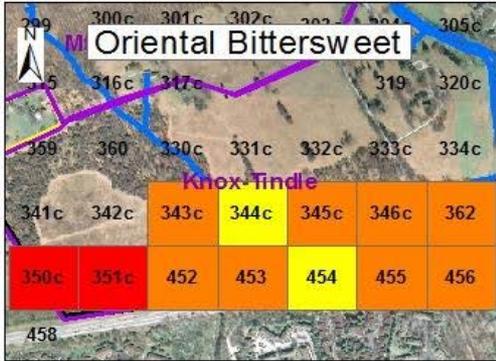
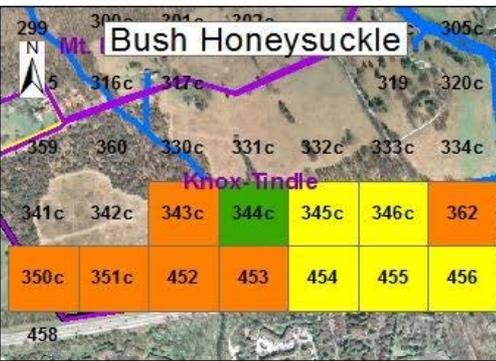
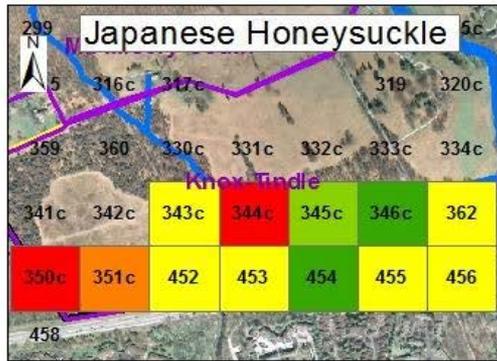
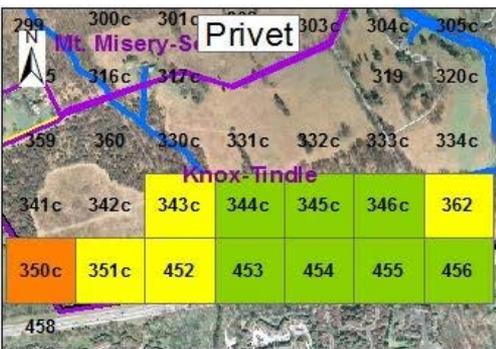
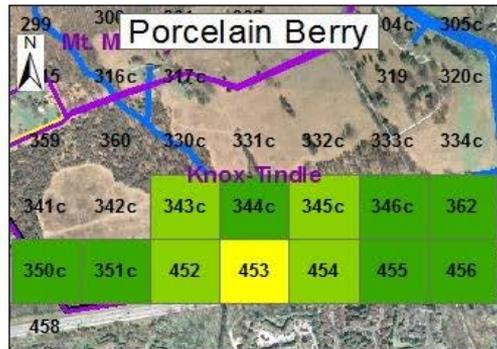
My Project

Inventory in Knox-Tindle Compartment along Valley Creek



- Valley Creek is a significant resource for the park
- Plotted Areas = 5 acres each (150m x 150m Grid cells)
- Survey of abundance for each priority invasive species

Results



Process for Reduction & Management

- NRM staff removal
 - Herbicide use
 - *Maintenance mowing
- Seasonal Intern Projects
 - Monitoring/Surveying/Inventorying/Mapping
 - Forest Regeneration
- Volunteer/paid Groups (Youth Conservation Corps or Student Conservation Association)
- Public Participation Events (Weed Warriors & Crayfish Corps)
- Park staff awareness meetings (Green Team)
- Information Brochures, Website

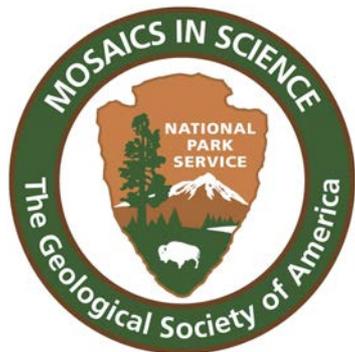


Recommendations

- **Partnership with maintenance**
- **Mile- A- Minute weevil study**
 - Will they behave the same if relocated?
 - Will they consume any other plants?
- **Sacrificial plants**
 - Similar to Deer monitoring “sacrificial trees”
 - Plant shrub and other small non-invasive plants similar to those being removed

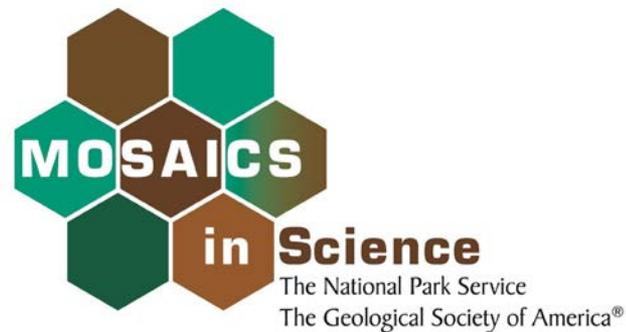


Acknowledgements



Valley Forge

NHP



Questions?

