Central Jersey Invasive Species Strike Team

Friends of Hopewell Valley Open Space

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Michael Van Clef, Stewardship Director

Upper Raritan Watershed Association

Melissa Almendinger, Invasive Species Coordinator

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Funders: The Bunbury Company, Conservation Resources, Inc., Conserve Wildlife Foundation & NJDEP Division of Fish & Wildlife, Defenders of Wildlife – Living Lands Biodiversity Program, Merck & Co., Washington Crossing Audubon Society, The 1772 Foundation

In-Kind Contributors: Duke Farms Foundation

Presented by:

Michael Van Clef, Ph.D.

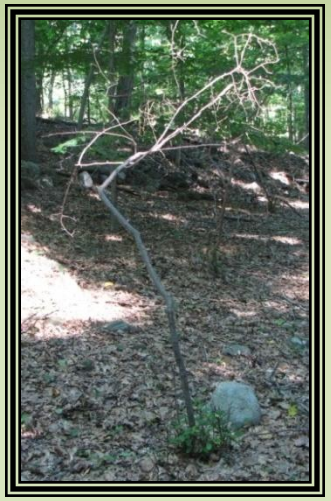
Ecological ES Solutions

The Root of New Jersey's Invasive Species Problem

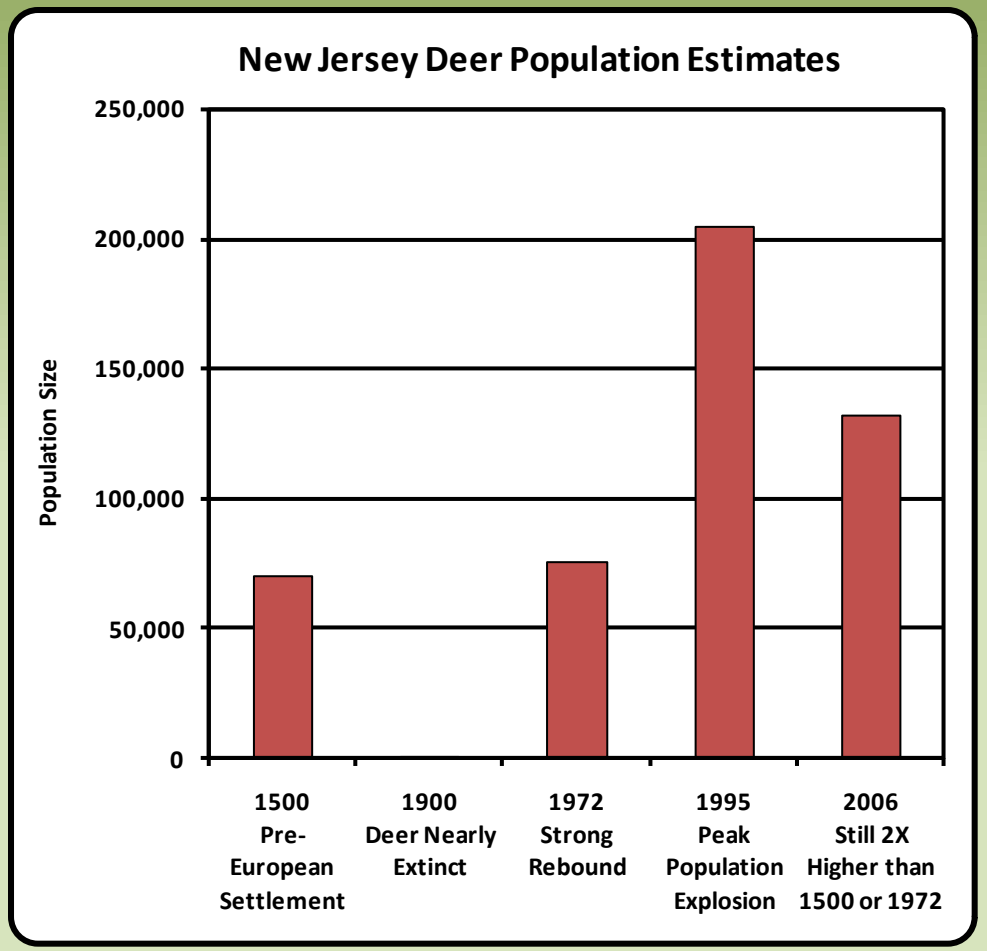
- Steady flow of new species

- Drastic habitat modification
  - Fragmentation of forests
  - Constant disturbances
  - Long-term soil impacts from agriculture

- Deer overpopulation
  - Preferences for native species
  - Succession slowed by browsing of tree/shrub seedlings
  - Forest understory being severely browsed



Deer Population Growth



Overarching Strategic Vision

1. Deer herd reduction to facilitate **ECOLOGICAL CONTROL** of less palatable invasive species by more palatable native species

2. Early Detection & Rapid Response (ED/RR) to detect and eradicate emerging invasive species and prevent further degradation to natural lands [**SPECIES-BASED ED/RR**]

3. Protection of particular sites

   For nearly pristine sites: Eradicate new populations of all invasive species

   [**SITE-BASED ED/RR**]

   For impacted sites: Intense, coordinated, and pre-planned long-term control programs to reverse larger infestations; prioritize sites by ecological values

STEWARDSHIP =
Mitigation of human impacts
on natural systems

Early Detection & Rapid Response

- Detect newly emerging invasive species
- Eradicate detected occurrences

Technical Basis for Species Selection

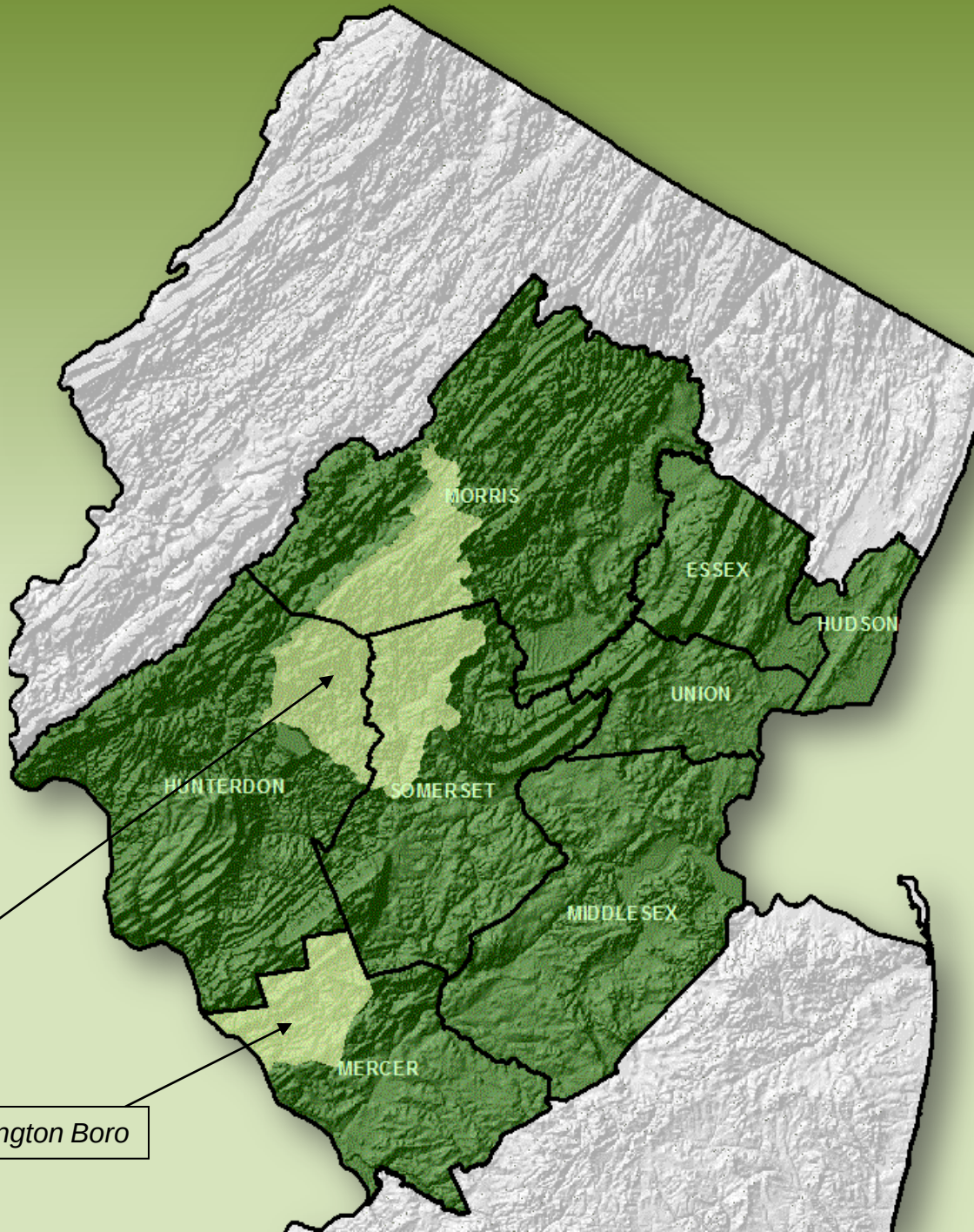
- Which non-native plant species to consider?
  - 1,000 documented in NJ (Listed by David Snyder, NJ State Botanist)
  - 200 species considered invasive or potentially invasive
    - Snyder, neighboring state lists, regional lists, personal observations

- CJISST Ranking Process
  - Current Distribution
    - Emerging Stages: 0 (absent or very rare), 1 (rare), 2 (uncommon) or 3 (common)
    - Widespread
  - Threat to Native Communities
    - High, Moderate, Mild or Non-threatening
  - Assign ED/RR Action Code
    - 0 = No Action - Non-threatening (ca. 100 species)
    - 1 = Eradicate all occurrences - Threatening and not common (ca. 60 species)
    - 2 = Eradicate new occurrences only - Threatening and common (ca. 10 species)
    - 3 = Widespread Invasives - Site-based ED/RR only (ca. 30 species) – NOT PART OF CJISST

Examples of Troubling Emerging Species

Scientific Name	Common Name	Current Distribution Code	Threat Code	ED/RR Action Code
Aralia elata	Japanese angelica tree	Stage 3	High	2
Buddleja davidii	Butterflybush	Stage 1	High	1
Eleutherococcus sieboldianus	Five-leaf aralia	Stage 0	High	1
Miscanthus sinensis	Chinese silver grass	Stage 2	High	1
Photinia villosa	Oriental photinia	Stage 2	High	1
Rhamnus cathartica	Common buckthorn	Stage 2	High	1
Trapa natans	Water chestnut	Stage 2	High	1
Viburnum dilatatum	Linden viburnum	Stage 3	High	2
Viburnum sieboldii	Siebold's viburnum	Stage 2	High	1

Project Area: Central Jersey



Upper Raritan Watershed

Hopewell Twp, Hopewell & Pennington Boro

Building the Cooperative Approach

Recruiting Partners

- Government: Federal, State, County, Municipal
- Conservation Groups
- Community Groups
- Scientists and Technical Experts
- Private Natural Resource Professionals
- Private land owners

Memorandum of Understanding
Central Jersey Invasive Species Strike Team

A cooperative invasive species management partnership dedicated to early detection & rapid response

Current Project Partners

- Bowman's Hill Wildflower Preserve
- Brooklyn Botanic Garden
- Cora Hartshorn Arboretum
- Delaware River Greenway Partnership
- D&R Greenway Land Trust
- Duke Farms Foundation
- Friends of Hopewell Valley Open Space
- Gracie & Harrigan Consulting Foresters, Inc.
- Great Swamp National Wildlife Refuge (USFWS)
- Hopewell Township
- Hunterdon County Parks
- Hunterdon Land Trust
- Lawrence Brook Watershed Partnership
- Meadows + More
- Master Gardeners of Mercer County
- Mendham Township
- Middlesex County Parks
- Millburn Township
- Mercer County Parks
- Mercer County Planning Department
- Merck & Co.
- Morris County Parks
- Morristown National Historic Park (NPS)
- Native Plant Society of New Jersey
- New Jersey Audubon Society
- New Jersey Conservation Foundation
- New Jersey Forestry Association
- NJDEP – Division of Fish & Wildlife
- NJDEP – Division of Parks and Forestry
- Pennington Borough
- Raritan Valley Community College
- Rutgers University
- Schiff Natural Lands Trust
- Somerset County Parks
- Sourland Planning Council
- South Mountain Conservancy
- Stony Brook-Millstone Watershed Association
- Tewksbury Land Trust
- Tewksbury Township
- Upper Raritan Watershed Association
- Verona Park Conservancy
- Washington Crossing Audubon Society

Early Detection Phase

Select sites

Rule of Thumb...Anywhere & Everywhere!

- Open space
  - Government and non-profit
- Private land
  - Easements
  - Farms
  - Larger Parcels
  - “Follow Your Nose”

Callery pear

- Select sites
- Recruit search teams
- Plant identification
- Survey site for emerging populations
- Enter data, create map

Early Detection Phase
Recruit search teams

- Organizational Staff
- Partners
- Volunteers
  - Master Gardeners, hike and trail building groups, community members, organizational membership
  - identification workshops, field training sessions

Japanese aralia

- Select sites
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Early Detection Phase

Plant identification

CENTRAL JERSEY INVASIVE SPECIES STRIKE TEAM

Invasive Plant Fact Sheets

Group A
Invasive Trees and Shrubs of Forests and Forest Edges

Norway Maple *(Acer platanoides)*
European Black Alder *(Alnus glutinosa)*
Japanese Barberry *(Berberis thunbergii)*
Five-leaf Aralia (Eleutherococcus seiboldianus)
Winged Burning Bush *(Euonymous alata)*
Glossy Buckthorn *(Frangula alnus)*
Oriental Photinia *(Photinia villosa)*
Common Buckthorn *(Rhamnus catharica)*
Jetbead *(Rhodotypos scandens)*
Linden Viburnum *(Viburnum dilatatum)*
Seibold's Viburnum *(Viburnum seiboldii)*

CENTRAL JERSEY INVASIVE SPECIES STRIKE TEAM
Invasive Plant Fact Sheet

Siebold's viburnum (*Viburnum sieboldii*)

Family: Muskroot (*Adoxaceae*)
Native range: Japan
General: Deciduous large shrub to small tree of 15 to 20 feet tall and 10 to 15 feet wide.
Leaves: Opposite, coarsely toothed, elongated and oval shaped, 2 to 5 inches long. Deeply veined. Leaf veins and leaf stems are covered in downy hairs. Crushed leaves may emit foul odor.

Flowers: Small, off-white, 5 petalled flowers borne on flat-topped clusters of 3 to 6 inches across, appearing in late May.

Fruit: Oval, single-seeded fruits borne in clusters with bright red stems. Appearing August to September. Maturing from red to black.
Look-alikes: None.
Habitat: Forest, open forest, forest edge, hedgerow, garden
Threats to native habitats: Siebold's viburnum can form thickets that displace native plants and prevent growth of native trees, shrubs, and herbs. It is shade tolerant and can overtop native understory trees and shrubs.
NJ Status: Siebold's viburnum is uncommon but spreading rapidly. It is *highly threatening* to natural plant communities. All detected occurrences should be eradicated.
Commercial Availability: Siebold's viburnum is widely planted for landscaping.

Sources: http://www.dcnr.state.pa.us/Forestry/invasivetutorial/viburnum.htm
http://hdl.handle.net/1813/1140

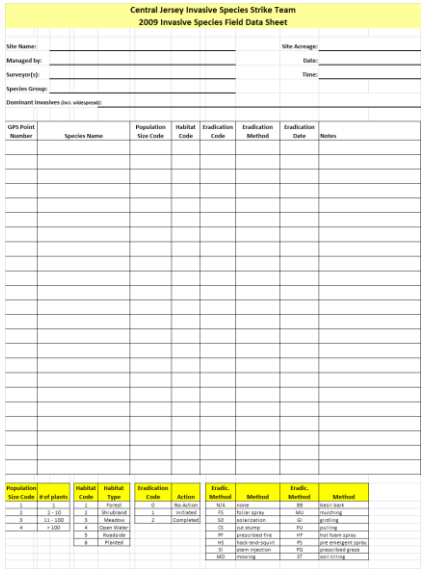
Central Jersey Invasive Species Strike Team (CJISST) is a regional cooperative effort to detect, map, and manage emerging populations of invasive species. This initiative is a partnership of state, county, and municipal agencies, conservation groups, and private citizens. To learn more, please contact us: **Friends of Hopewell Valley Open Space**, (609) 730-1560, www.fohvos.org or **Upper Raritan Watershed Association**, (908) 234-1852, www.urwa.org.

- Select sites
- Recruit search teams
- Plant identification
- Survey site for emerging populations
- Enter data, create map

Early Detection Phase

Site Survey

Field Tools: data sheet,
GPS unit, factsheets, site map



Central Jersey Invasive Species Strike Team
2009 Invasive Species Field Data Sheet

Site Name: _____ **Site Acreage:** _____

Managed by: _____ **Date:** _____

Surveyor(s): _____ **Time:** _____

Species Group: _____

Dominant invasives (incl. widespread)**:** _____

Population Size Code	# of plants
1	1
2	2 - 10
3	11 - 100
4	> 100

Habitat Code	Habitat Type
1	Forest
2	Shrubland
3	Meadow
4	Open Water
5	Roadside
6	Planted

Eradication Code	Action
0	No Action
1	Initiated
2	Completed

Eradic. Method	Method	Eradic. Method	Method
N/A	none	BB	basil bark
FS	foliar spray	MU	mulching
SO	solarization	GI	girdling
CS	cut stump	PU	pulling
PF	prescribed fire	HF	hot foam spray
HS	hack-and-squirt	PS	pre emergent spray
SI	stem injection	PG	prescribed graze
MO	mowing	ST	soil tilling

- Select sites
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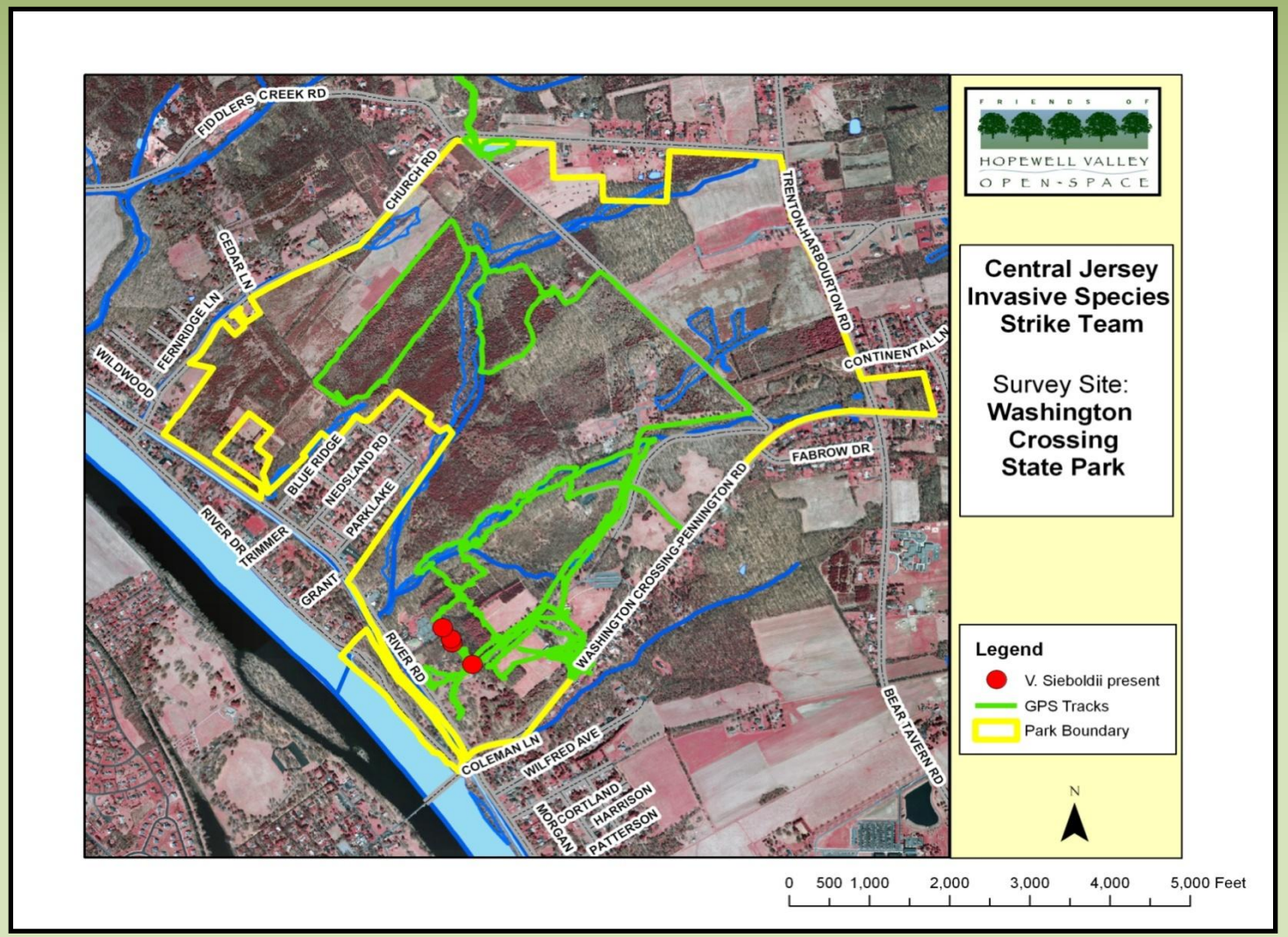
Early Detection Phase

Map Searched Area and Occurrences

Siebold's Viburnum: Washington Crossing State Park



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Eradication: Develop Strategic Approach

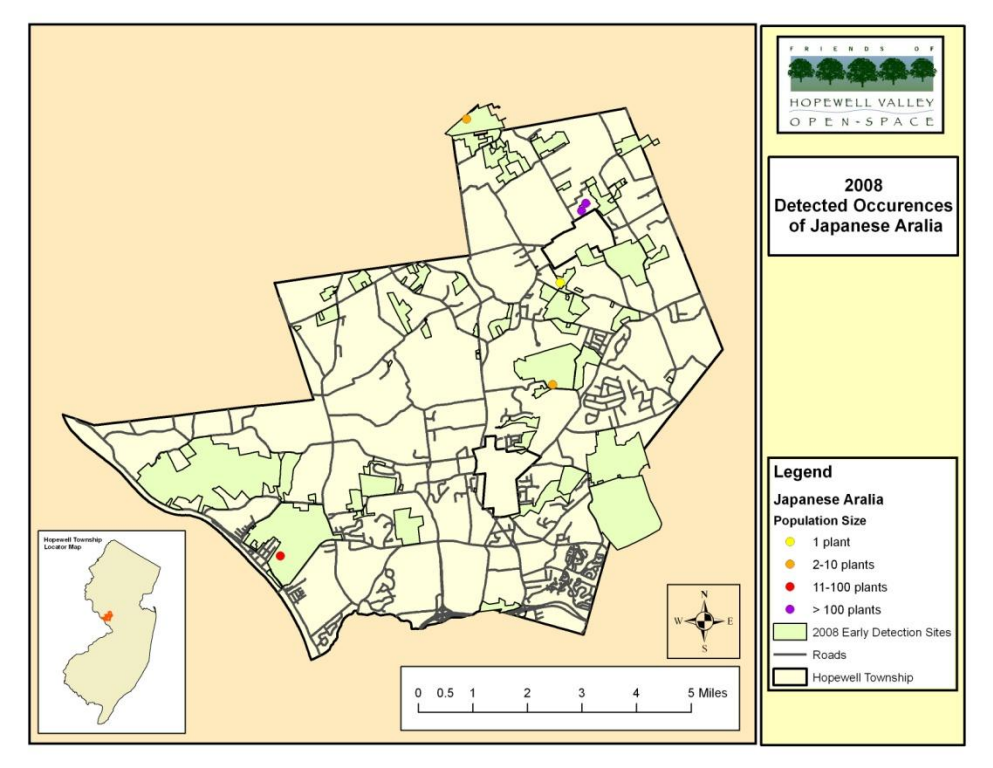
- Review GIS mapping data for all species
- Understanding mapped distributions
  - Has “emerging” species become a widespread invasive?
  - Is emerging species widely distributed as many small populations?
  - Is emerging species narrowly distributed as few large populations?
- Prioritize eradications by species and sites
  - Review Threat Level and Current Distribution
  - Consider site-level ecological values
  - Consider available resources for work days
    - Organizational staff → Multi-Organizational Staff → Volunteer Groups → Contractors

Eradication: Develop Strategic Approach

- Review threat level and current distribution

  example: Japanese aralia
  - Shade tolerant, fast-growing, prolific seed production, deer resistant

Japanese aralia (*Aralia elata*)



Analyze known distribution

- Present at only 5 out of 64 survey sites, 8% of total survey sites
- 2 populations: >100 individuals
- 1 population: 11 to 100 individuals
- 2 populations: 2 to 10 individuals
- 1 population: 1 individual

Develop a strategy

Eradicate all detected populations

- Determine treatment techniques
- Engage partners in treatment
- Work with private neighbors to conduct surveys of adjacent sites and perform eradications
- Perform follow-up visits to assure eradication

CJISST Progress Report 2008-2009

- Formalized Cooperative Invasive Species Management Area
- 42 project partners under MOU + cooperating private landowners
- Provided 20 training events and workshops
- Created CJISST Project Manual and 2008 Annual Report
- Prepared species fact sheets for 25 emerging species

- Identified and prioritized 70 emerging invasive plant species
- Established protocols for data collection and mapping
- Created website to provide effective and efficient communication

- Searched 10,000 acres
- Discovered 500 populations
- Eradicated 100 populations
  - Including multi-organizational and weekly volunteer work days

Q & A

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Please visit our website: www.cjisst.org