

State of New Jersey Invasive Species



FoHVOS New Jersey
Invasive Species
Strike Team

Presented by Michael Van Clef, Ph.D.,
Strike Team Program Director



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Our Mission

We work to protect natural lands, with their full abundance and diversity of native plants and animals, from future damage through coordinated strategic invasive species management. Active mapping, data analysis, engaging in community outreach and training, and practicing early detection and rapid response (ED/RR) to new threats; we are the only entity solely dedicated to protecting rare species and special places from invasive species throughout New Jersey.

STEWARDSHIP = *Mitigation of human impacts on natural systems*

Our Methods

Mapping, Data Analysis & Reporting: *Gather / synthesize data and update comprehensive statewide database made available to all, free of charge.*

Outreach: *Publicizing threats posed by invasive species and value of native plant gardening through public programs, tabling events, and plant buy-backs.*

Training: *Regularly working in the community, providing workshops to professionals and the public covering information about invasive species threats, control techniques and fostering local Strike Teams to amplify our efforts.*

Search & Eradicate: *Early Detection and Rapid Response* is key to the success of preventing future damage from invasive species. As resources allow, infestations are either eradicated or controlled through a strategic plan.



FoHIVOS Strike Team Staff

- Jenn Rogers, *FoHIVOS Executive Director*
- Mike Van Clef, *Stewardship Director & Strike Team Program Director*
- Dana Christensen, *Land Steward*
- Beth Craighead, *Senior Land Steward*
- Brian Kubin, *Land Steward*
- Leslie Kuchinski, *Operations Manager*
- Kaitlin Muccio, *Land Steward*

Steering Committee

- Michele Bakacs, *Rutgers Cooperative Extension*
- Emile DeVito, *New Jersey Conservation Foundation*
- Ken Klipstein, *New Jersey Water Supply Authority*
- John Landau, *Friends of Foote's Pond Wood*
- Kristi MacDonald, *Raritan Headwaters Association*

Technical Advisory Committee

- Kerry Barringer, *Flora of North America Association*
- R.J. Curcio, *Monmouth County Parks*
- Danielle Dyson, *NJ Bureau of Marine Fisheries*
- Art Gover, *The Pennsylvania State University*
- Rachel Mackow, *Wild Ridge Plants*
- Samantha MacQuesten, *NJDEP Aquatic Invasive Species Coordinator*
- Emily Mayer, *NJDEP Bureau of Freshwater and Biological Monitoring*
- Ben Pisano, *NJ Forest Service*
- Christopher Smith, *NJ Fish & Wildlife*
- Robert Somes, *NJ Fish & Wildlife*



United States Forest Service

Goals

- Strategic control across 9,000 acres
- Implement existing plans for 30 private forest landowners
- Develop Forest Stewardship Plan for Higbee WMA
- Eliminate 100 acres of Linden Viburnum
- Restore over 60 acres of dense infestations (control and tree planting)
- Plant 15,000 trees in the Sourlands - 75 private lands plus public lands

Partners

- Mercer County Parks – Baldpate Mountain
- Morris County Parks – Mahlon Dickerson
- New Jersey Audubon – Cape May Point State Park

- Sourland Conservancy – Multiple Private Forest Landowners
- Strike Team - 30 Private Forest Landowners



Contracts 2025

- Duke Farms
- Essex County Parks
 - South Mountain Conservancy and Hilltop Conservancy
- Friends of Jockey Hollow
- Hacklebarney Trout Unlimited
- Lawrenceville School
- Morris County Parks
- Morris Township
- Municipality of Princeton
- Princeton University
- Union County Parks

Results!

Since Inception in 2008

Acres Searched

800,000

Populations Detected

27,500

Eradications Completed

7,400

(plus 4,000 initiated)

Important Note!

35% of sites have **NO** emerging species. Plus, 45% of sites have <10 populations





Training & Outreach Efforts Since 2018

- Educational Presentations, Tabling Events, and Training Sessions
 - Includes invasives, natives, deer and customized
 - Multiple “Volunteer Stewardship Team” events
 - 175 events reaching over 8,200 people

Proposed Legislation Update

- Support from conservation community, NJ Nursery and Landscape Association, NJ Farm Bureau, NJ State Board of Agriculture
- In 2023...
 - Passed unanimously in the state Senate and Assembly
 - Veto by Governor
- In 2024 & 2025...
 - Legislation revised with agreement between state agencies
 - Senate passed 39-0 in Spring 2025
 - Awaiting vote by the Assembly
 - Then Governor's signature and assignment of NJ Invasive Species Council members
 - Then Council gets to work!
 - Review of species for future potential listing, among other things

Annual Species Review

2025 Target Species

86 plants + 49 “animals”=

135 TARGET SPECIES



Target and Watch Species

- Stage 0 = 132
- Stage 1 = 35
- Stage 2 = 28
- Stage 3 = 13

• 76 Watch Species • 97 Widespread Species

Species Number Summary - 2025

Category	Note	Number of Species	2024	2023	2022	2021	2020
Plants - Widespread Invasive Species	Species considered to be widespread and causing significant harm in natural areas	50	50	50	50	48	39
Plants - Emerging - NJISST Target Species	Species selected for target list inclusion	86	84	100	99	94	106
Plants - Emerging - NJISST Watch Species	Species may show invasive potential in the near future	67	65	42	42	47	40
Animals, Insects, Pathogens - Widespread Invasive Species	Species considered to be widespread and causing significant harm in natural areas	47	47	47	45	45	45
Animals, Insects, Pathogens - Emerging - NJISST Target Species	Species selected for target list inclusion, or effective population reduction practices available	49	49	45	45	42	37
Animals, Insects, Pathogens - Emerging - NJISST Watch Species	Species may show invasive potential in the near future or no effective population reduction / eradication practices available	9	9	7	7	9	10
Totals		308	304	291	288	285	277

Plant Changes and Additions

- Dotted Duckweed – New to NJ
- Sacred Lotus – Newly found spreading
- Common Tansy - Moving up Stages, now Stage 1
- Rush Skeletonweed – Removed from list



New Jersey Invasive Species Strike Team - 2025 DO NOT PLANT LIST

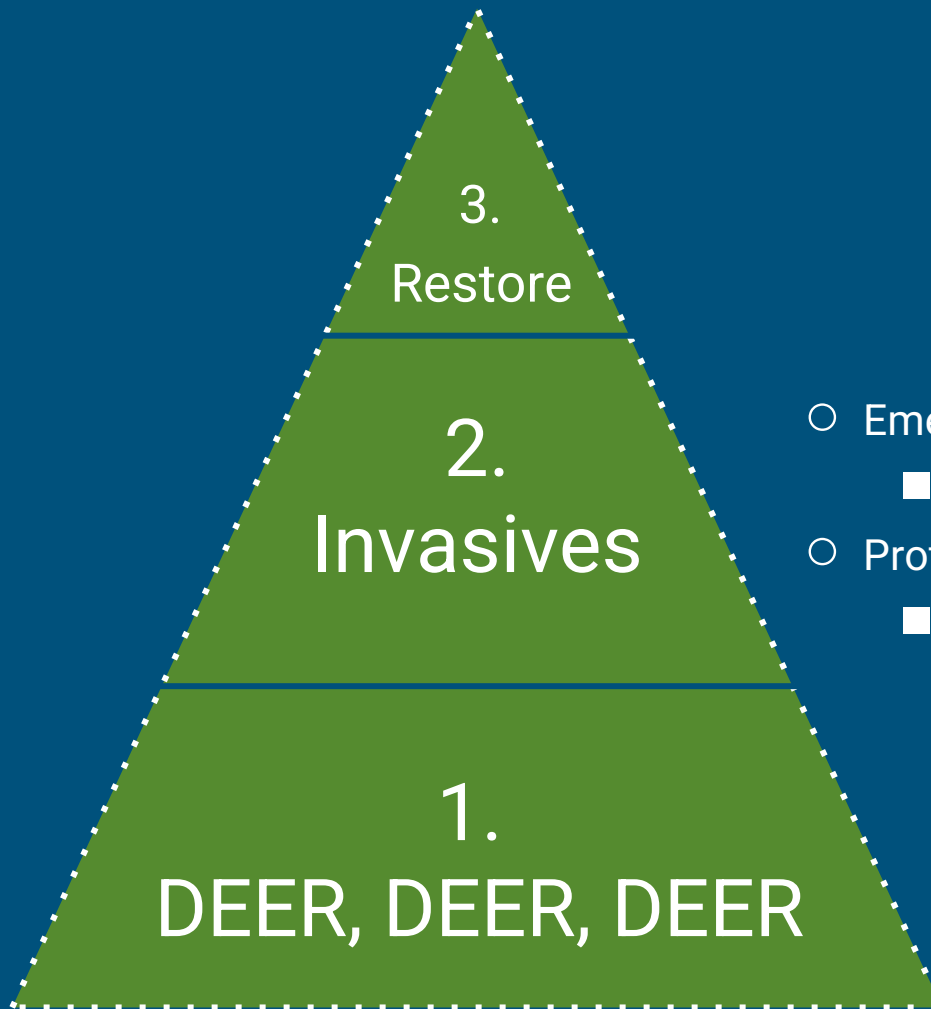
Scientific Name	Common Name	Invasive Status	Plant Type	Sold for Planting
Trees				
Acer ginnala	Amur maple	Emerging	Tree	Yes
Acer palmatum	Japanese maple	Emerging	Tree	Yes
Acer platanoides	Norway maple	Widespread	Tree	Yes
Acer pseudoplatanus	sycamore maple	Emerging	Tree	Yes
Ailanthus altissima	tree-of-heaven	Widespread	Tree	No
Albizia julibrissin	mimosa	Emerging	Tree	Yes
Alnus glutinosa	European black alder	Emerging	Tree	Yes
Aralia elata	Japanese angelica tree	Widespread	Tree	Yes
Broussonetia papyrifera	paper mulberry	Emerging	Tree	Yes
Cornus kousa	Kousa dogwood	Emerging	Tree	Yes
Malus toringo	Japanese crabapple	Emerging	Tree	Yes
Paulownia tomentosa	princess tree	Widespread	Tree	Yes
Phellodendron amurense	Amur cork tree	Emerging	Tree	Yes
Populus alba	white poplar	Emerging	Tree	Yes
Populus x canadensis	gray poplar	Emerging	Tree	Yes
Prunus avium	sweet cherry	Widespread	Tree	Yes
Prunus subhirtella var. pendula	weeping Higan cherry	Emerging	Tree	Yes
Pyrus calleryana	Callery pear (Bradford pear)	Widespread	Tree	Yes
Zelkova serrata	Japanese zelkova	Emerging	Tree	Yes
Shrubs				
Berberis thunbergii	Japanese barberry	Widespread	Shrub	Yes
Berberis vulgaris	common barberry	Emerging	Shrub	Yes
Buddleia davidii	butterfly bush	Emerging	Shrub	Yes
Citrus trifoliata	hardy orange	Emerging	Shrub	Yes
Cytisus scoparius	Scotch broom	Emerging	Shrub	Yes
Elaeagnus angustifolia	Russian olive	Emerging	Shrub	Yes
Elaeagnus umbellata	autumn olive	Widespread	Shrub	Yes
Eleutherococcus sieboldianus	five-leaf aralia	Emerging	Shrub	Yes
Euonymus alatus	winged burning bush	Widespread	Shrub	Yes
Frangula alnus	glossy buckthorn	Emerging	Shrub	Yes
Ligustrum obtusifolium	border privet	Widespread	Shrub	Yes
Ligustrum vulgare	European privet	Widespread	Shrub	Yes
Lonicera maackii	Amur honeysuckle	Widespread	Shrub	Yes
Lonicera morrowii	Morrow's honeysuckle	Widespread	Shrub	Yes
Lonicera standishii	Standish's honeysuckle	Emerging	Shrub	Yes
Lonicera tatarica	Tatarian honeysuckle	Widespread	Shrub	Yes
Mahonia bealei	Beale's barberry	Emerging	Shrub	Yes
Photinia villosa	Oriental photinia	Widespread	Shrub	Yes
Rhamnus cathartica	European buckthorn	Emerging	Shrub	No
Rhamnus davurica	Dahurian buckthorn	Emerging	Shrub	No
Rhamnus utilis	Chinese buckthorn	Emerging	Shrub	No
Rhodotypos scandens	jetbead	Emerging	Shrub	Yes
Rosa multiflora	multiflora rose	Widespread	Shrub	No
Rosa rugosa	seaside rose	Emerging	Shrub	Yes
Rubus laciniatus	cutleaf blackberry	Emerging	Shrub	Yes
Rubus phoenicolasius	wine raspberry	Widespread	Shrub	No
Salix atrocinerea	large gray willow	Emerging	Shrub	No
Salix cinerea	gray willow	Emerging	Shrub	No
Spiraea japonica	Japanese spiraea	Emerging	Shrub	Yes
Symplocos paniculata	sapphire berry	Emerging	Shrub	Yes
Viburnum dilatatum	linden viburnum	Widespread	Shrub	Yes
Viburnum lantana	wayfaring tree	Emerging	Shrub	Yes
Viburnum plicatum	Japanese snowball	Emerging	Shrub	Yes
Viburnum setigerum	tea viburnum	Emerging	Shrub	Yes
Viburnum sieboldii	Siebold's arrowwood	Emerging	Shrub	Yes

New Jersey Invasive Species Strike Team - 2025 WATCH LIST

Scientific Name	Common Name	Invasive Status	Plant Type	Sold for Planting
Trees				
Kalopanax septemlobus	castor aralia	Uncertain	Tree	Yes
Koelreuteria elegans	golden raintree	Uncertain	Tree	Yes
Magnolia kobus	Kobus magnolia	Uncertain	Tree	Yes
Morus australis	Chinese mulberry	Uncertain	Tree	Yes
Pyrus betulifolia	birchleaf pear	Uncertain	Tree	Yes
Salix matsudana	Chinese willow	Uncertain	Tree	Yes
Syringa reticulata	Japanese tree lilac	Uncertain	Tree	Yes
Ulmus parvifolia	Chinese elm	Uncertain	Tree	Yes
Ulmus procera	English elm	Uncertain	Tree	Yes
Ulmus pumila	Siberian elm	Uncertain	Tree	Yes
Shrubs				
Berberis julianae	wintergreen barberry	Uncertain	Shrub	Yes
Deutzia scabra	fuzzy pride-of-Rochester	Uncertain	Shrub	Yes
Elaeagnus pungens	thorny elaeagnus	Uncertain	Shrub	Yes
Euonymus europaeus	European spindle tree	Uncertain	Shrub	Yes
Hippophae rhamnoides	seaberry	Uncertain	Shrub	Yes
Hydrangea paniculata	panicked hydrangea	Uncertain	Shrub	Yes
Ilex crenata	Japanese holly	Uncertain	Shrub	Yes
Kolkwitzia amabilis	beauty bush	Uncertain	Shrub	Yes
Ligustrum amurense	amur privet	Uncertain	Shrub	Yes
Ligustrum ovalifolium	California privet	Uncertain	Shrub	Yes
Lonicera fragrantissima	sweet breath of spring	Uncertain	Shrub	Yes
Osmanthus heterophyllus	holly osmanthus	Uncertain	Shrub	Yes
Ribes rubrum	garden red currant	Uncertain	Shrub	Yes
Rosa canina	dog rose	Uncertain	Shrub	Yes
Rosa luciae	memorial rose	Uncertain	Shrub	Yes
Rubus armeniacus	Himalaya blackberry	Uncertain	Shrub	Yes
Rubus parvifolius	Western thimbleberry	Uncertain	Shrub	Yes
Styrax japonicus	Japanese snowbell	Uncertain	Shrub	Yes
Tamarix ramosissima	salt cedar	Uncertain	Shrub	No
Viburnum opulus	Guelder-rose	Uncertain	Shrub	Yes
Vines				
Fallopia baldschuanica	Chinese fleecflower	Uncertain	Vine	Yes

Building a Robust Early Detection & Rapid Response Network

The Stewardship Effort Hierarchy



Invasive Species Strategy

- Emerging Invasive Species Control / Eradication
 - Stage 0, then Stage 1, etc.
- Protect High Conservation Value Areas
 - Rare species habitat, old forests, etc.

Scope of Challenge Detected Populations

- **Stage 0** – 11 species with 240 populations

Note: There are 84 species with no detected populations in NJ.

- Eradicated = 39
- Initiated = 27
- Not treated = 174

- **Stage 1** – 20 species with 636 populations

Note: There are 11 species with no officially reported populations, but they exist...

- Eradicated = 153
- Initiated = 100
- Not treated = 383

- **Totals – 31 species with 876 detected populations**

- Eradicated = 192
- Initiated = 127
- Not treated = 557

Scope of Challenge Detected Populations

- Eradication Notes

- Some populations are small with species that are easy to eliminate
 - One visit for initial / final treatment
 - Repeat visits for 1-2 years following “eradication”
- Some populations are large with species that are hard to eliminate
 - Repeat visits 1-2 times annually to gain initial control
 - Treatments may span several years
 - Repeat visits for at least 3 years following “eradication”
- Aquatic species require treatment by certified contractors
 - Example: Hydrilla
- All populations should be subjected to a ‘perimeter search’
 - Recorded population may be accompanied by nearby populations that were not initially detected

What else do we know?

- Questions with answers from available data
 - How many populations by species?
 - How many species with feasible control?
 - Trees & Shrubs – Definitely Yes
 - Perennial Herbs – Possibly Yes
 - Annual & Biennial Herbs – Probably No
 - How many populations by landowner type?
 - Public – Relatively easy to obtain permission – 90%-ish?
 - Private – Typically uncertain on obtaining permission – 70%-ish?
 - Fear of herbicide and/or general apathy and/or too busy
 - Should we consider Stage 2 species regionally within NJ?
 - Many species have skewed distributions with large areas virtually free of populations.
- What are the ultimate odds of success? Can we achieve statewide eradication of multiple species?
 - 'Slow the Spread' - Yes
 - Complete statewide eradication – Yes/No
 - New populations formed through escaped plantings
 - If legislation passes, work toward listing all Stage 0 and 1 species

Did we know what we didn't know? No...The iNaturalist Revelation

- Example: Kudzu (Stage 1)
 - Utilizing existing databases, detections by professionals, and historical records followed by field surveys
 - Many records were incorrect, primary issue was older records that did not require photos...lots of grapes, bittersweet, etc.
 - 32 populations confirmed
 - Status: Untreated=18, Completed eradications=6, Initiated eradications=8
 - Utilizing iNaturalist
 - 14 new populations



What we have now...

- Strike Team's main mission since inception
- Strike Team app, then EDDMaps app
- Colleagues directly reporting sightings
- Funding...never been able to secure a grant dedicated to this VITAL purpose...
- Populations eliminated as they coincidentally overlap with existing grants and contracts
 - Exception: Sickleweed – Done as volunteer
 - Exception: Kudzu – Funding from F.M. Kirby Foundation and USFS, along with Delaware Bayshores initiative conducted by NJ Audubon and US Fish & Wildlife Service
 - Exception: Populations eliminated by partners (reported or not reported)

What we need...

- **Funding**

- “Selling” prevention is a ‘hard sell’
 - Doesn’t seem to immediately jibe with human nature
 - Calculate costs for Strike Team, partners, & contractors
 - Ballpark: \$500,000 - \$1,000,000

- **Searching (including post-treatment checks): Who will do the work?**

- Strike Team as lead to form a strong, coordinated effort
 - Strike Team maintains statewide database and communications
 - Technology coordination (e.g., GIS, GPS, Avenza maps, etc.)
 - Logistics vital for efficient operation (travel < 1 hour from home office)
 - Regional Coordinators
 - North, Central, South? By county? By project area units?
 - May be a challenge to get 100% statewide coverage
 - Conservation groups, Government agencies
 - General Public
 - Partnership with iNaturalist – Need to fully mine their existing data
 - Dedicated, experienced volunteers

What we need...

- Eradication: Who will do the work?
 - Certified Pesticide Applicators & Operators
 - Strike Team anywhere with permission
 - Contractors anywhere with permission
 - Most organizations can only work on lands they own
 - Volunteer Stewardship Teams
 - Selected parks or municipalities
- Outreach and Communications: Who will do the work?
 - This is critical to project success and tends to take a lot work!
 - Encouraging / organizing partners and public
 - Encouraging landowners to provide permission
 - Encouraging more people to care (and search)

What we need...

- If no new additional funding, what more can we do?
 - All ears on strategies...maybe joint fundraising?
 - Need to refocus some...Deciding to prioritize ED/RR could mean not doing something else
 - How much flexibility do any of us have?
 - Some things must be done programmatically, and many other activities are easier to obtain funding.
 - How many organizations can work on lands that they do not own?
 - For flexible funding, can we spend more money on ED/RR? Or is it a first things first situation since there really aren't too many Stage 0 and 1 populations?
 - Is deer management more important than ED/RR? Usually
 - Is protection of High Conservation Value areas more important than ED/RR? Often
 - Is outreach more important than ED/RR? Often
 - Is restoration more important than ED/RR? Probably No

Upcoming Events

Upcoming Event:

USFS Private Land Stewardship Workshop

- Who: Maricel Hermann
- What: Private land stewardship
- When: Saturday, June 28, 10am to 12pm
- Where: 287 Hopewell-Amwell Rd, Hopewell, NJ 08525
- Why: Learn about private landowner stewardship at home

Upcoming Event: USFS Private Land Stewardship Workshop

- Who: Jennifer Michelson
- What: Private land stewardship
- When: Saturday, July 19, 10am to 12pm
- Where: 100 Lambertville - Hopewell Rd, Hopewell, NJ 08525
- Why: Learn about private landowner stewardship at home

Upcoming Event:

USFS Private Land Stewardship Workshop

- Who: Carla Lee Lewis
- What: Private land stewardship
- When: Saturday, September 13, 10am to 12pm
- Where: 169 Stillwater Road, Hardwick, NJ 07825
- Why: Learn about private landowner stewardship, Ridge & Valley

Upcoming Event: Potluck Social

- Who: Everyone is invited!
- What: Forage and bring a dish of your favorite wild collected foods
 - If you are new to foraging, please bring your favorite non-foraged dish!
- When: Saturday, October 11, from Noon to 2pm
 - But start thinking about foraging now!
- Where: Private Residence, 219 Lambertville-Hopewell Road, Hopewell
- Why: Fun with friends and colleagues! Eating interesting foods!