Lower Hudson PRISM

Partners Meeting

March 21st, 2017 – 10:00 am-3:00 pm

Teatown Lake Reservation. Ossining, New York

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WELCOME AND UPDATES

Linda Rohleder took the floor, and we began with Lower Hudson PRISM updates and announcements.

If you are not on the **CCE Hudson ListServe** for Lower Hudson PRISM updates, please let Linda know at lrohleder@nynjtc.org, so we can make sure you are subscribed.

Please be sure to send any upcoming invasives events to Carrie Sears, Janis Butler and Heather Darley (invasives@nynjtc.org), so it can be posted to the LHP calendar and a press release can be sent out.

The **iMapInvasives Spring Training** for the Lower Hudson will be held on Wednesday, May 24 at Westchester Community College in Valhalla, NY.

The New York – New Jersey Trail Conference's art committee will have a **Juried Art Show of Wildflowers**. The call for entries is March 1st and will be accepted until the deadline on April 17th. We're looking to incorporate an educational piece as part of the art show on what is invasive and what is native. (More info: https://www.nynjtc.org/civicrm/event/info?reset=1&id=5537)

On Sunday, March 26 the Hudson Highlands Land Trust will be holding an event called **"Deer?! Oh Dear!: The Impact of Deer Overpopulation on our Environment and Ways to Mitigate It."** The event will be held at the Highlands Country Club in Garrison, NY from 11am-3pm and will feature panel discussions on horticulture, hunting and human health.

Jen Stengle of **CCE Putnam County** is holding the following trainings at Teatown Lake Reservation:

April 3rd – **Train-the-Trainer: Forest Pests for Volunteers**

April 4th – **Invasive Forest Pest Issues (Open to the Public)**

The Native Plant Center of Westchester Community College is currently holding their **Native Plant Center Sale** on April 29th.

The Westchester Land Trust needs your help planting 300 trees and shrubs as part of its **Forest Restoration Project at Otter Creek Preserve on April 7th, 8th, and 9th** from 10am – 4pm. Please email Tait Bushell at tate@westchesterlandtrust.org for more information.

The Westchester Land Trust is holding a **Native Bee Box Workshop** on Saturday, March 25th from 3pm-4:30pm in Greenwich, CT.

The Lower Hudson PRISM will have an **Early Detection Intern** contracted by NYS DEC from SUNY ESF. This intern will have a state vehicle and can be sent around to investigate Lower Hudson PRISM early detection reports from mid-April to August.

The **Mile-a-Minute Intern and Program** is being transferred to the Lower Hudson PRISM. There are currently some paperwork hurdles, but the intern will focus on biocontrol: introducing weevils in various locations and monitoring previous sites.

Linda Rohleder reported that **Emerald Ash Borer was found at Bear Mountain**. This is occurrence further south than previously known. The NYSDEC knows that EAB is in this area. IMapInvasives does not have the records yet, but they are looking to acquire them. We should assume that EAB is present throughout the LHPRISM, so if you have a healthy stand of ash, please investigate for infestations and make plans for treatment if you intend to preserve it.

Daniel Atha reported that **Italian arum (*Arum italicum) was reported in NYC,** in Manhattan and the Bronx**.** This is an opportunity for early detection and rapid response. A couple of reports from NYC Parks led to the realization that the plant is on the move and highly invasive, most likely due to climate change. These are the first reports of escape in cultivation in New York. Italian arum has been a big problem out west for the last 30 years.

Corydalis incisa **monitoring** is being organized by the Bronx River Parkway Reservation Conservancy and Iona College. Suzanne Nolan and Dr. Christina Andruk are planning to do research on the control methods. LHPRISM partners were asked to sign up to volunteer to help for survey and/or removals.

2017 FUNDED PROJECTS

Figure 1: 2017 Funded Projects Partners. From left to right: Samantha Epstein (Clearwater), Jonathan Rosenthal (ERI), Daniel Atha (NYBG), Linda Rohleder (LHP Coordinator), Joyce Tomaselli (CCE Dutchess), Megan Johnson (Scenic Hudson), Tom Lewis (Trillium ISM)

The 2017 Funded Projects Proposal Selection Committee was made up of Tate Bushell, Meredith Taylor, Karalyn Lamb, David Decker, Bob DelTorto, and John Thompson (CRISP.) The 2017 Funded Projects are:

CCE Dutchess – BlockBuster Training

Joyce Tomaselli received funding to plan, develop and teach the BlockBuster training sessions for 2017. The target species will remain the same as last year's. The training sessions will be lengthened to four hours and scheduled for June; the 2016 trainings were only two hours. The trainings will include hands-on/field work outside. Each CCE office will have two training sessions. If you would like to host a BlockBuster Survey training, please let us know.

Linda Rohleder currently has volunteers working to refine survey forms and plant identification guides. The recruitment will mainly focus on gardeners, so that we have a surveyor population with botanical experience.

Ecological Research Institute – BlockBuster Protocol and 2016 Data Analysis

Radka Wildova and Jonathan Rosenthal received funding to help tweak survey protocol and analyze the 2016 BlockBuster Survey data.

New York Botanical Garden – 2017 Invasive Species Summit

Daniel Atha received funding to plan the 2017 Invasive Species Summit to be held on November 3rd. The summit will focus on invasive species management. The last summit was in 2015 and was attended by 400 people. The New York Botanical Garden has a lot of staff, parking, and marketing resources. There will be three speakers in the morning and two case studies in the afternoon. One case study will focus on urban restoration in the Thain Family Forest at NYBG, and the second case study will focus on suburban restoration to compare and contrast methods.

Clearwater – Aquatic Invasive Species Program

Samantha Epstein of Clearwater received funding to continue the Lower Hudson PRISM's Aquatic Invasive Species Program. The expansion of the boat steward program will now have six stewards at 9 or 10 sites. The program will also focus on volunteer surveying by holding a few public trainings and more group trainings for boat and yacht clubs.

Scenic Hudson – Mile-A-Minute Project in Esopus

Scenic Hudson will continue the mile-a-minute project in Esopus. Nate Nardi-Cyrus and Megan Johnson will partner with Tom Lewis of Trillium ISM. This is the third year of management for this site and will be a collaborative effort with four private land owners. The project will also focus on public outreach as well.

Trillium ISM – Hardy Kiwi Control in Bedford

Tom Lewis started the hardy kiwi control in Bedford last year in collaboration with the Bedford Conservation Board, Bedford 2020 and Bedford Audubon. All of the infestations were initially surveyed from the road, but it turns out that the infestation is more extensive than previously thought. There might be more populations headed inland, and the project will have a survey component to further understand this population of hardy kiwi.

Trillium ISM – *Salvia glutinosa* Control in Dutchess County

Tom Lewis will be working to expand control of this horticultural escapee. This *Salvia glutinosa* population is next to the Appalachian Trail in Dutchess County. It was discovered in 2009, and the National Park Service started control in 2013. Linda Rohleder and her ISF Crew started to do some control work and Trillium ISM did some control last year. The project proposes to increase the control perimeter. The Appalachian Trail Conservancy will add to their 2016 survey efforts to

understand the extent. This is the only reported infestation in the Lower Hudson PRISM. The only other reported infestation in New York State is in Madison County.

'ARE ALIEN PLANTS BAD?' BY DOUG TALLAMY

Doug Tallamy, author of *Bringing Nature Home* and professor of entomology at University of Delaware, presented the lecture 'Are Alien Plants Bad?' at the NYS Cornell Invasive Species Conference in November of 2016. LHPRISM partners viewed this lecture at our March meeting.

To view, please visit this link.

INTRODUCTIONS AND LUNCH

After listening to the Tallamy lecture, we went around the room with introductions and broke for lunch. (See attendee list below).

Tim Wenskus, NYC Parks, reported that he will be taking a new position with NYSDEC Region 2.

BLOCKBUSTER DATA OVERVIEW – ROBERT CELESTIN

Robert Celestin, GIS Associate at the New York – New Jersey Trail Conference, took the floor to present about processing the 2016 BlockBuster Survey data.

Robert began processing survey data in mid-fall of 2016. He started by going through data and developing a database format and processing protocols.

There were 55 blocks with species observations, 31 blocks with Group 2 Species observations, and 14 blocks that have yet to be processed with potential quality data.

BlockBuster Data Overview

- o 66 blocks processed data in database and catalogued
- o Total species observations 2,868
- o Group 1 species – 2,065 observations
- o Group 2 species – 126 observations
- o 65 species observed
    - 10 species are Group 1 (of 10 total Group 1 species)
    - 13 species are group 2 (of 17 total Group 2 species)
    - 42 are neither

Number of Species Observations by LHP County

- Dutchess – 45 observations
- Orange – 36 observations
- Ulster – 34 observations
- Westchester – 21 observations
- Rockland – 22 observations
- Putnam – 20 observations
- Columbia – 13 observations

Multiflora rose was the most observed species. The second most observed species was oriental bittersweet. Black swallowwort was the most observed Group 2 species, and mile-a-minute was the second most observed Group 2 species; Japanese angelica was the third most observed Group 2 species. The Group 2 species not observed in any block were Siebold's viburnum, linden viburnum, Amur cork tree, and European alder.

The problems with processing were factors that made data unable to be processed. These included lack of route description, missing/inaccurate/mismatched location data, and missing photos for Group 2 observations. Opportunistic data currently has no database structure to load the data into. Robert is working on developing the processing protocol for it.

The next steps for BlockBuster are that we are currently working with NYNJTC Invasives volunteers to develop a data collection mobile application (Survey123). These volunteers are also helping us with updating the design of data collection sheets and updating our training materials and plant identification guides.

Linda Rohleder reported that she has another volunteer GIS intern, Jordan, working on digitizing the natural area parking lots to use for enhanced 2017 block maps. Jordan is also attaching names to all the natural area blocks and adding to the trail shapes.

NY STATEWIDE SPECIES PRIORITZATION LISTING SYSTEM – LINDA ROHLEDER

Next, Linda Rohleder presented about the New York Statewide Species Prioritization Listing System currently being developed. (See attached chart of the draft). There are priority levels Tier 1 through 5, and the LHP Focal Species Working Group is re-categorizing our LHP invasive species into this system with monthly conference calls. This will be shared as a draft with LHP partners about where our LHP species would be placed under these Tiers. The blue and orange boxes along the top are where the high and very high-ranked invasives are targeted.

Tier 1 species are in the blue box. Tier 1 species are ones that are not yet in the LHPRISM. For example, wavyleaf basketgrass (*Oplismenus hirtellus)* would be a Tier 1 species. The subcategories in Tier 1 are A, B, C, and D and are assigned a letter based on how they close to our PRISM. Subcategory A is inside a buffer area near our PRISM. We decide the buffer, and it can be either a neighboring state, county, within 100 miles, etc. These are species that are more likely to invade our PRISM. Subcategory B is outside the PRISM and buffer area but close (i.e. North America.) Subcategory C is far outside the PRISM and buffer, but there is a known introduction pathway.

Tier 2 is species that eradication is possible; these are species that are high or highly ranked and at low abundance levels in the PRISM. This is difficult to determine, because a species could be impossible to eradicate and we won't know this until after we try, so we are just looking at abundance levels for now. Tier 2 species are ones that we want to focus our control efforts on eradicating.

Tier 3 species focus on containment. These are species that are too abundant in the PRISM to eradicate, but that we want to keep from spreading into uninvaded areas. Tier 3 species are ones that we could focus on county-by-county or boundaries of the infestation control.

Tier 4 species are ones that are widespread and can only be controlled locally for the protection of high quality resources or species. The yellow section is the Tier 5 species that need to be monitored and need more research and mapping to understand their invasiveness. These may include species that have not naturalized in our PRISM but have been shown to be invasive elsewhere.

All of these Tier categories are for the very high and high ranked invasive species. The opportunity for the medium-ranked species is to evaluate and decide if they would go into one of these Tiers. For the Lower Hudson PRISM, some species have been under-ranked, but we have seen them behave more invasively in our region. If we are concerned because of a species' behavior, we can rank them into these Tiers. *Corydalis incisa, Salvia glutinosa,* and silver vine will be added into these Tiers. There are no categories for low-invasiveness-ranked species; since this is a priority mapping.

Now with the idea behind this, you'll be able to go to another PRISM or place in the state, all using the same language. State grant applications will apply appropriately across the state. They are adopted by PRISM level; we will decide, finalize and post. Linda will be meeting with the other PRISM leaders on April 5th, and hopefully they'll be voting to finalize this categorization system at that time.

PLANNING FOR THE 2017 SEASON

Next, we went through our 2017 action plan goals to plan for the 2017 season.

CAPACITY BUILDING – Our September and November meetings will target new partners. And at the 2017 Invasive Species Summit being hosted by the New York Botanical Garden, we will work to grow membership. The Lower Hudson PRISM will continue to offer trainings for both partners (Train-the-Trainers) and volunteers.

INFORMATION EXCHANGE – We will continue to work on improving website usability and design. We need to restructure the website to ease use for the general user and the public; or in the least, we need to decide if this is what we want to do or if we want to keep the website as just a partner resource. Samantha Epstein will be working on changing the names of the tabs. Glenn Sungela is working on

building up the information that's on the resources page. We should also make the link to Hudsonia's Best Management Practices more accessible (possibly by adding a management tab.)

Please send any potential Facebook posts to Heather at invasives@nynjtc.org.

Also please remember to take photos (before and after!) of work you do over the season, so that we can use it for the Facebook page and press releases. We'd like to see pictures of smiling people working, and no butts in the air!

CONSERVATION TARGETS – The goal is to have a draft for ISPZ prevention zone classification by October for next season's use. Jonathan is currently setting dates for a conference call for this goal.

STRATEGIC MANAGEMENT – We are working on developing protocol for early detection and rapid response (EDRR.) We saw an example of EDRR with the Italian arum alert, and we may need to improve communication avenues. Our protocol should have an evaluation of whether the species is even a feasible eradication candidate. We should also use risk of spread to target surveys for early detection species. Ecological Research Institute is working on refining the BlockBuster protocol, data, and analysis.

We should also try to conduct management according to prioritization guidelines. The NYNJTC Invasives Strike Force crew selects projects based on early detection species. Bob O'Brien's team with NYS Parks and their regional biologist are looking at taking on some of our projects; they will be doing scotch broom monitoring. In past month or so, people have come to Linda and asked for management framework guidelines; Bob O'Brien and NYS Parks Invasives team are working on that. They're creating a plan for a park framework that will be transportable to a preserve. We would also like to develop a focal list of forest pests in the Lower Hudson PRISM.

MITIGATING PATHWAYS OF INVASION – Jessica Schuler of the New York Botanical Garden is working on our Part 575 goal and updating the "Mistake Identity Guide." If you'd like to add additional species to the Part 575 list, you can request a species evaluation through Linda. Daniel Atha of NYBG reported that less than 10% of the landscapers that he encounters know about Part 575, so since New York State isn't doing a very good job with outreach, the Lower Hudson PRISM should work on this.

As far as the aquatic invasive species program, Samantha Epstein of Clearwater has exceeded the goal expanding the watercraft inspection steward program and identifying 3 new sites. 7 new sites have been identified! A few LHP partners are also working on increasing the number of boot brush stations at trailheads. We are also participating in regional southern pine beetle monitoring efforts this year. Last year's efforts showed that southern pine beetles are present at Bear Mountain, Minnewaska, Roosa Gap and Schunnemunk Mountain, but we are not finding any infested trees.

EDUCATION AND OUTREACH – Jen Stengle of CCE Putnam and Hillary Siener of Teatown will be holding two forest pest workshops: a train-the-trainers and a volunteer training. No one is currently planning to do hold any "Managing Common Invasives in Home Gardens" presentations; if you would like to host or give one of these presentations, please let Linda know.

Joyce Tomaselli of CCE Dutchess is scheduling the BlockBuster Survey trainings for the month of June. The goal is to have 10 training sessions in all the LHP counties and two at each of the CCE offices. If you would like to host a BlockBuster training, please contact Joyce at jdt225@cornell.edu.

We'd like to continue developing the phenological calendar and reminders. Nicole Wooten of Hudson Highlands Land Trust will be sending out reminders as soon as the invasives start coming up. These reminders should be going out monthly, and everyone needs to go onto the form and report what you're seeing and when. The Community Action Plan (CAP) phenological calendar and reporting form can be accessed from the Lower Hudson PRISM website under the Information Exchange tab. You can put the phenological calendar as a layer on your Google calendar.

The new SUNY ESF intern that Linda has will also be supporting early detection and rapid response outreach efforts by developing education and outreach materials.

We also need to start thinking about planning and preparing for NYS-ISAW (Invasive Species Awareness Week.) This year it will be synced up with the National ISAW; it will be the second week in July from July 9th until July 15th. We'd like to see one event in every county in the Lower Hudson PRISM. ISAW events can be any kind of invasive species awareness event: removal, training, "walk and talk", presentation, tabling, library displays, film screenings, etc. We need to coordinates so not all of our LHP ISAW events are on the weekend and not everything is on the same day. We could do evening events during the week.

Mike Fargione of the Cary Institute is planning an invasives "walk and talk" with Gary Lovett on Saturday, July 15th; this event will be about invasive pests, primarily forest pests, and will be in Dutchess County. Bob DelTorto of Bronx River Parkway Reservation Conservancy will be doing his annual Green Teen event with high school students; they will be holding a vinecutting event at Westchester Community College. Joyce Tomaselli of CCE Dutchess will be holding invasives "walk and talks" at night throughout the week. Jen Stengle of CCE Putnam will be holding an invasives "walk and talk" either on July 8th or 15th. Carol Capobianco reported that the Westchester Land Trust will organize and lead an invasive plant removal. Samantha Epstein of Clearwater will be holding an aquatic invasives training and an aquatic invasives boat sail. Hillary Siener of Teatown reported that that week they will have a summer camp going on that will have some invasives-related invasives, but they currently have no

public events scheduled. If you're interested in doing a tabling event and would like to use the invasives posters created last year, please contact your county's CCE office. Each CCE office has two sets of the posters created by Joyce Tomaselli of CCE Dutchess.

Events that are not open to the public can still be counted for NYS-ISAW. Please remember to take lots of pictures, count the number of people involved/you interact with about invasives, the number of invasive plants removed and the number of hours worked. Last year's statewide survey showed that its especially important to hold ISAW events in urban areas.

Janis Butler will be helping with NYS-ISAW press releases. The deadline for submissions to have a press release drawn up by Janis is June 1st. To have your ISAW event posted on the LHP calendar, please contact Heather Darley. Please email your ISAW events and details to Janis and Heather at janisyb@gmail.com and invasives@nynjtc.org.

We will be emailing out all the resources you'll need for this year's ISAW. It will include the NYS-ISAW logo, the statement you should read at the beginning of your events, and the participant and organizer surveys.

CONCLUSION

The next meeting will be on Wednesday, July 26th, 2017 from 1:00PM – 4:00PM at Orange County Land Trust in Mountainville, NY. This meeting will have a remote participation option, but any in-person participants will be rewarded with a hike at Schunnemunk Mountain, a potential ISPZ, in the morning.

Notes prepared by: Heather Darley

ATTENDEES:

Carrie Sears	The Invasives Project – Pound Ridge
Daniel Atha	New York Botanical Garden
Diane Alden	Friends of the Old Croton Aqueduct
Carol Capobianco	The Native Plant Center
Catherine Ferreri	Mianus River Gorge
David Decker	Constitution Marsh Audubon Sanctuary
Emily Mayer	SOLitude Lake Management
Eric Roberts	Orange County Land Trust
Erik Kiviat	Hudsonia
Glenn Sungela	
Heather Darley	New York – New Jersey Trail Conference
Hillary Siener	Teatown Lake Reservation
Jason Klein	Westchester County Parks

Jen Stengle	CCE Putnam County
Jonathan Rosenthal	Ecological Research Institute
Joyce Tomaselli	CCE Dutchess County
Julie Ruben	Three Arrows Cooperative
Karalyn Lamb	Saw Mill River Audubon
Lauri Taylor	Putnam County Soil and Water Conservation District
Linda Rohleder	Lower Hudson PRISM Coordinator
Marjorie Thorpe	Putnam County Soil and Water Conservation District Board
Mary Rice	Friends of the Great Swamp
Matt Aiello-Lammens	Pace University
Megan Johnson	Scenic Hudson
Meredith Taylor	NYC DEP
Mike Fargione	Cary Institute for Ecosystem Studies
Nicole Wooten	Hudson Highlands Land Trust
Robert Celestin	New York – New Jersey Trail Conference
Samantha Epstein	Hudson River Sloop Clearwater
Shaun McCoshum	Westchester Land Trust
Tait Johansson	Bedford Audubon Society
Taro Ietaka	Rye Nature Center
Tim Wenskus	NYC Parks/Natural Areas Conservancy
Tom Lewis	Trillium Invasive Species Management

Lower Hudson PRISM 2017 Training Dates

Workshop	Location	Date and Time	Contact
Train-the-Trainer: Forest Pests for Volunteers	Teatown Lake Reservation Ossining, NY	Monday, April 3rd 10am – 3pm	Jennifer Stengle jjs95@cornell.edu
Responding to Forest Pests	Teatown Lake Reservation Ossining, NY	Tuesday, April 4th 10am – 3pm	Hilary Siener hsiener@teatownlake.org
ATC Endangered Plant Monitoring	NYNJTC Headquarters Mahwah, NJ	Sunday, April 9th 11am – 12pm	Linda Rohleder lrohleder@nynjtc.org
Invasive Plants & Native Alternatives: A Primer for Gardeners	NYNJTC Headquarters Mahwah, NJ	Sunday, April 9th 2pm – 5pm	Linda Rohleder lrohleder@nynjtc.org
Southern Pine Beetle Trap Monitor Training	NYNJTC Headquarters Mahwah, NJ	Sunday, May 7th 11am – 1pm	Heather Darley invasives@nynjtc.org
iMapInvasives Spring Training	Westchester Community College Valhalla, NY	Wednesday, May 24th 10am – 2:30pm	imapinvasives@nynhp.org
Invasives Strike Force Training (Phase 1)	NYNJTC Headquarters Mahwah, NJ	Sunday, June 11th 9am – 4pm Saturday, June 24th 9am – 4pm	Heather Darley invasives@nynjtc.org
Invasives Strike Force Training (Phase 2)	NYNJTC Headquarters Mahwah, NJ	Saturday, June 10th 1pm – 4pm Sunday, June 25th 1pm – 4pm	Heather Darley invasives@nynjtc.org

Defining Invasive Species Lists

Attempt to standardize the types of lists for each PRISM

Impact (current and future)					
	Very High or High	**TIER 1** *Early Detection/Prevention* Highest level of survey efforts. Should conduct delineation surveys and assign to appropriate Tier if detected. a) Inside buffer, but not in PRISM b) Outside PRISM and Buffer, but close (eastern North America) c) Far outside PRISM and buffer (not in east NA), but introduction pathway exists	**TIER 2** *Eradication* Highest level of response efforts. High impact species with low enough abundance to make eradication feasible within the PRISM. Need delineation surveys to determine extent.	**TIER 3** *Containment* Target strategic management to slow the spread, as likely too widespread for eradication, but many surrounding regions could be at risk if left unattended. For plants, use the IPMDAT. Possible eradication candidate only if adequate resources and effective control methods available.	**TIER 4** *Local Control* Eradication from PRISM not feasible; focus on localized management over time to contain, exclude, or suppress to protect high-priority resources like rare species or recreation assets. Be strategic when deciding if / where to control. *Subcategory: Not established outside of PRISM, manage to contain within PRISM.
	Medium	*Evaluate (Medium Impact)* Further evaluate impacts and PRISM resources to see if the species should be assigned to one of the other lists. If this species could feasibly become high impact with climatic or other environmental changes, consider moving to the appropriate High Impact row based on abundance. If too little is known, consider moving to "Monitor".			
	Unknown	**X**	**TIER 5** *Monitor* Species that need more research, mapping, and monitoring to understand their invasiveness. This includes naturalized species and cultivated-only species that are known to be invasive in other regions but are not yet invasive here. Invasiveness may change with environmental or genetic changes. Should monitor populations on a regular basis to see if they are starting to become invasive and assign to appropriate Tier if invasive infestations detected.		
		None in PRISM	**Low** (Eradication/ Full containment may be feasible)	**Medium** (Strategic management to contain infestations and slow spread in PRISM)	**High** (Established/widespread in PRISM; only strategic localized management)
		Abundance (In PRISM plus Buffer) **Feasibility of Eradication / Cost of Control**			

Buffer: An area chosen by the PRISM that surrounds the PRISM and takes in certain counties, states and provinces. For LIISMA we chose 100 miles to take in counties up to Columbia, Green, Ulster, and Orange and the states of CT, RI, Lower half of MA, and NJ.

Impact: Use the PRISM-specific invasiveness rankings if available, or use NYS ranks (see nyis.info for existing ranks). For species that are not ranked yet, or PRISM-specific adjustments of state ranks are deemed necessary, use expert opinion and document justification. Low-impact species not included since cannot justify spending resources to control these.

Abundance: This is left as a qualitative metric, since assigning standardized values to categories is not feasible due to the diversity of species dispersal strategies and data gaps.