THE NEW YORK BOTANICAL GARDEN

FINAL REPORT TO THE LOWER HUDSON PRISM
DECEMBER 2019

*2019 INVASIVE SPECIES SUMMIT*

The New York Botanical Garden (NYBG) is pleased to submit a final report to the Lower Hudson Partnership for Regional Invasive Species Management (LHPRISM) for the 2019 Invasive Species Summit. Accomplishments based on the project work plan are as follows:

Deliverable 1. Organize

a) The Event was held at NYBG on November 15, 2019 with 473 people registered for the morning session; at least 200 participants stayed for the afternoon session, making the whole-day program a success.

*Left to right, Dr. Tallamy, Dr. Sears, Dr. Westbrooks, and Ms. Schuler*

b) Invited speakers were Doug Tallamy, Ph.D., Professor, Department of Entomology and Wildlife Ecology, University of Delaware, and award-winning author, and Randy Westbrooks, Ph.D., Invasive Species Prevention Specialist, U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS). Carolyn Sears, Chair of the Conservation Board and Co-Director of The Invasives Project-Pound Ridge, was the LHPRISM partner to present in the morning, with seven Lower Hudson PRISM partners presenting in the afternoon during the *LHPRISM Partner Showcase*. Jessica Schuler, Director of the Thain Family Forest, was the program moderator.

c) Morning Keynote Session (10:30 a.m. – 12:30 p.m.)
*A Guide to Restoring the Little Things that Run the World*, Dr. Tallamy
*A Land Conservation Challenge for the 21st Century*, Dr. Westbrooks

*Presenter's Biography:* Dr. Tallamy has authored 95 research publications and taught insect-related courses for nearly 40 years. Chief among his research goals is to better understand the many ways insects interact with plants and how such interactions determine the diversity of animal communities. His book Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens, published by Timber Press in 2007, was awarded the 2008 Silver Medal by the Garden Writers' Association. The Living Landscape, co-authored with Rick Darke, was published in 2014. Dr. Tallamy's new book Nature's Best Hope will be published by Timber Press February 2020. Among his awards are the Garden Club of America

Margaret Douglas Medal for Conservation and the Tom Dodd, Jr. Award of Excellence, and the 2018 AHS B.Y. Morrison Communication Award.

*Dr. Tallamy delivering his keynote presentation in Ross Hall*

*Presenter's Talk Abstract:*
A recent United Nations report predicts that as many as one million species will disappear from Earth because of human activities. Many of these are insects, and nearly all at-risk species rely on insects. Insects have already declined 45% since 1974. The most alarming part of this statistic is that people do not seem to care, despite the fact that a world without insects is a world without humans. The question is how to build beautiful landscapes that support the pollinators, herbivores, detritivores, predators, and parasitoids that run the ecosystems upon which we depend. Insects play many essential roles in our ecosystems, and everyone can make simple changes in their landscapes and attitudes to keep insects on the ground, in the air, and on plants.

*Presenter's Biography:* Dr. Westbrooks served as a Federal Invasive Species Prevention Specialist with the USDA APHIS and U.S. Geological Survey from 1979 to 2012. He now is training the next generation of Field Specialists through six online courses through the North American Invasive Species Management Association.

*Presenter's Talk Abstract:* In recent years, World Weed Geographer Rod Randall from Western Australia documented over 35,000 invasive plants species worldwide, of which 5,000 have been introduced to the U.S. to date. The overall goal of Invasive Species Early Detection and Rapid Response (EDDR) is to detect and eradicate new invasive species before they spread, such as Kudzu (*Pueraria montana*), now growing in New York. There are three approaches to EDRR that have been identified in recent decades: Single Agency-led Weed Eradication Projects (e.g., USDA/Carolinas Witchweed Eradication Program); Interagency Weed Eradication Projects (e.g., Carolinas Beach Vitex Taskforce); and The Landscape Approach to EDRR on public and private land units (e.g., parks, forests, farms, and ranches).

An example of an emerging invasive species in the eastern U.S. is Laurel Wilt Disease (LWD) (*Raffaelea lauricola*). LWD was introduced to the U.S. by the Red Ambrosia Beetle (*Xyleborus glabratus)* in wooden crates of machinery from China through the Port of Savannah, Georgia, in about 2002. The Red Ambrosia Beetle and LWD are now spreading along the East Coast and having a devastating ecological impact on native Red Bay (*Persea borbonia*) and Swamp Bay (*Persea palustris*) trees. LWD is also a serious economic threat to Avocado (*Persea americana)* production in south Florida. Fortunately, the fungicide Propiconazole is showing promise in controlling LWD. Laurel Wilt Disease is an example of a new invasive species that can be addressed through EDRR to protect vulnerable native trees and avocado production in Florida.

d) A total of eight LHPRISM partners presented as part of the Partner Showcase in the morning and afternoon sessions.

**Carolynn Sears, Ph.D., The Invasives Project in Pound Ridge, NY**
*Talk Title:* The Invasives Project-Pound Ridge
*Biography:* Dr. Sears holds a Bachelor's in Biographylogy and geology, a Master's in education, and a Doctorate in Women's Studies. As chair of the Conservation Board and co-director of The Invasives Project-Pound Ridge, she actively engages in community outreach and education regarding invasive species.
*Presenter's Talk Abstract:* The most effective tool of The Invasives Project is a one-on-one site visit with each homeowner. Learn how volunteers promote and provide this free service to educate people about invasive plants and encourage participation in a regional pollinator pathway (a concept developed by Sarah Bergmann in Seattle).

**Chris McArdle, New York Restoration Project (NYRP)**
*Talk Title:* Urban Forestry for the Community
*Biography:* Mr. McArdle is an avid outdoor enthusiast and started with NYRP via AmeriCorps in 2015 after spending eight years in restaurant management.
*Presenter's Talk Abstract:* In northern Manhattan, NYRP works with the New York City Department of Parks and Recreation to steward 80 acres in three public parks. This work involves wetland and forest restoration as well as native gardening. In Highbridge Park, Mr. McArdle manages a small team, including regular groups of volunteers that maintain the park grounds and manage the forest in order to minimize disturbance and encourage native vegetation. They have converted vineland to forest through low impact/community driven invasive management. They also work closely with local community stakeholders including schools and environmental groups. Their volunteers are an important part of their strategy since they do not rely on chemical control. This sustained work by hand can have a

transformative impact on the accessibility and ecology of even the most neglected urban forest. They are planning to consolidate their gains in the forest, diversify the understory, and develop their capacity to monitor for emerging threats. Their volunteer recruitment tends to be web-based and by word-of-mouth with the goal of teaching their interns and the public about invasive threats. This has been a critical way to develop a culture of land stewardship, and build a knowledge base that is necessary for resilient, thriving natural areas in our cities.

**Diane Alden, Friends of the Old Croton Aqueduct (FOCA)**
*Talk Title:* Collaborating with Colleagues and Engaging with Community Members
*Biography:* Ms. Alden is an ardent amateur naturalist, focusing on the management of invasive species and encouragement of native species on the Old Croton Aqueduct State Historic Park. She is a long time member of the Friends of the Old Croton Aqueduct, currently a board member, and represents the Friends at the Lower Head PRISM meetings.
*Presenter's Talk Abstract:* FOCA has hosted volunteer events on the Old Croton Aqueduct (OCA) Trail since 2012. Volunteers plant native species and manage invasive species. Advocacy with New York State Parks to encourage management of vines on the trail evolved with the Friends taking on significant initiatives to manage invasive species. The initial goal: map 26 miles of Westchester section OCA for presence and extensiveness of 24 invasive species to inform comprehensive eradication efforts. They selected a section as a demonstration site. Many PRISM partners serve as crew leaders, along with other local organizations to collaborate to plan strategy. Scheduling is a challenge but that is out-weighed by benefits of collective expertise and leadership.

Participants include FOCA, neighbors, scout troops, previous participants, and members of sponsoring organizations. Volunteers find them in newspapers, postings on websites and Facebook pages, e-blasts, flyers, publicity by collaborating organizations, and personal outreach. They treat volunteers well, providing opportunities for learning. Participation has increased each year, exceeding 100 recently. Results are native trees and shrubs thriving, native species re-emerging, stone walls day lighted, and emerging species increasingly controlled. Future plans are to contact educational institutions and corporations, create an invasive species display at Keeper's House in Dobbs Ferry, inviting botanical artists, photographers, and those experienced in making herbarium specimens to participate. The long-term goal is to replicate efforts along other sections of the OCA. Suggestions or offers of help are welcome.

**Kevin Peraino, Jay Heritage Center**
*Talk Title:* The Restoration of the Jay Meadow
*Biography:* Mr. Peraino is Executive Director of the Jay Heritage Center in Rye, NY, and the author of two works of history, A Force So Swift: Mao, Truman, and the Birth of Modern China, 1949; and Lincoln in the World: The Making of a Statesman and the Dawn of American Power. He has also written for *The Wall Street Journal*, *Newsweek*, *Foreign Policy*, and other publications.
*Presenter's Talk Abstract:* Mr. Peraino discussed the goals and progress of the restoration of the Jay Meadow behind the Jay Heritage Center (JHC) in Rye, NY. The meadow restoration project is being completed under the guidance of landscape architect Larry Weaner and his team. The goal is to reinvigorate the meadow which had become overgrown with invasive species. In 2017, Mr. Weaner and his team seeded the meadow with numerous native

species. Last summer, they saw seedlings sprouting everywhere, albeit still through a thick layer of mugwort and Pennsylvania smartweed. They have spotted snapdragon, tickseed, sweet William, black-eyed Susan, pearly everlasting, coreopsis, coneflower, golden Alexander, sedges, butterfly weed, spiderwort, smooth aster, foxtail barley, and dotted mint. The goal now is to encourage the native seedlings while simultaneously slowing the growth of the invasives.

**Christopher Gow, Tuxedo Park**
*Talk Title:* Restoration of the Abandoned Tuxedo Park Horseracing track into a Native Meadow
*Biography:* Trained at the Louvre, Paris and with an MBA, Christopher worked for Sotheby's as a sculpture specialist before co-founding Creel and Gow, which he recently sold in order to focus, instead, on environmental projects concerning invasive and native species, putting to use his BSc Botany from Durham University, England.
*Presenter's Talk Abstract:* The project started in 2016 when the village of Tuxedo Park created a Tree Advisory Board to maintain and renew the mature trees planted in the 1890s when the Lorillard tobacco family founded this gated community. The focus soon shifted to the removal of terrestrial invasive species and their replacement with natives in a rare open area of the generally unbroken forest of the Hudson Highlands, situated in the path of many migratory birds between Sterling and Harriman Forests. The ecological benefits of the project were promoted along with the improved aesthetic appeal of a native wildflower meadow and the positive effect it would have on real estate prices as well as educational opportunities for local children. Peer pressure and doing the right thing environmentally, especially in one's own backyard, generated sufficient tax deductible donations to engage a professional meadow expert, Larry Weaner, to create and implement a five year restoration plan. Sales of herbarium artwork and limited edition prints have continued raising funds to ensure ongoing maintenance as reliance on volunteers has been challenging. Success so far has been very good, not just in creating the meadow but it acting as a carrot and inspiring many residents to replace their own lawns with meadows and making them more engaged and environmentally knowledgeable. The most important take-away concerning this project is learning how to compromise and strike the right balance in effectively communicating compelling environmental needs so that they resonate in the right ears and wallets.

**Keri VanCamp, Vassar College**
*Talk Title:* Prioritizing and Protecting Conservation Targets at the Vassar Ecological Preserve
*Biography:* Ms. VanCamp has been the Field Station and Ecological Preserve Manager at Vassar College since 2008. She received her Master of Science in Botany with a focus in Plant Ecology from the University of Maine in Orono in 2008 and her Bachelor of Science from SUNY New Paltz in Organismal Biographylogy in 2000. Ms. VanCamp uses monitoring and research to guide land management decisions. She works to engage a diverse group of undergraduate students in monitoring, management, research, outreach, and restoration efforts.
*Presenter's Talk Abstract:* The Vassar Ecological Preserve (VEP) is a formerly agricultural natural area that faces many of the challenges that are commonly associated with urban open spaces. The VEP recently completed a Conservation Action Plan that prioritized conservation targets, identified indicators for the condition of the targets, developed monitoring plans to track changes over time, and identified the barriers to conservation.

Their invasive species management plan focuses on preventing the introduction of new invasive species, eradicating emerging invasive populations, and reducing the abundance of widespread species in priority areas. Their work plan highlights the need to collaborate with stakeholders, conduct outreach to the community, in addition to taking direct action. They conduct outreach to other campus groups, local municipalities, and neighbors to prevent the introduction of new invasives and eradicate emerging invasive species. Their restoration plan focuses attention on the role that climate change is playing in shaping community composition and aims to remove barriers to recovery, increase native plant diversity, increase genetic diversity and presence of climate resilient species, and identify places that they can take action to restore altered processes. Undergraduate students implement their monitoring, management, outreach, and restoration plans through their summer research program, work-study, Community Engaged Learning, coursework, and paid internships. They host volunteer events that target the campus and neighboring community to accomplish large projects but struggle to maintain a volunteer base. In the future, they hope to broaden their volunteer network to assist with the management and restoration plans at our site.

**Budd Veverka, Mianus River Gorge Preserve**
*Talk Title:* Conserving the old-growth hemlock landscape of the Mianus River Gorge
*Biography:* Mr. Veverka is the Director of Land Management at the Mianus River Gorge. He holds a Bachelor of Science from Unity College in Maine and a Master of Science from Eastern Kentucky University and is a certified Wildlife Biographylogist through The Wildlife Society. He previously worked for eight years as a wildlife research Biographylogist in Indiana.
*Presenter's Talk Abstract:* Mianus River Gorge, Inc., is a non-profit organization protecting land within the Mianus River Watershed and has coordinated efforts to preserve the eastern hemlocks of its old-growth forest landscape with the New York State Hemlock Initiate, Cornell University, and Trillium Invasive Species Management, with much of the effort in combating the invasive Hemlock Woolly Adelgid. Since 2017, 2,340 trees have been chemically treated by Trillium ISM, MRG. Staff has removed invasive plants from within the forest and replanted natives, and the NYS Hemlock Initiative and Cornell University has begun efforts to introduce Biographycontrols in the Mianus River Gorge and collected cones for storage and propagation at the Saratoga State Nursery and for the hemlock genetic diversity studies through CAMCORE at North Carolina State University. Staff and volunteers will continue to plant native trees, survey hemlock growth and adelgid occupancy, and monitor adelgid phenology.

**Linda Rohleder, Ph.D., New York New Jersey Trail Conference**
*Talk Title:* How Citizen Scientists Are Helping Document Invasive Species
*Biography:* Dr. Rohleder is Director of Land Stewardship at the New York – New Jersey Trail Conference and coordinator of the Lower Hudson PRISM. She built the Trail Conference's Invasives Strike Force invasives-mapping volunteer program, has organized dozens of invasives-removal workdays, and runs a seasonal conservation corps crew.
*Presenter's Talk Abstract:* Dr. Rohleder started the Trail Conference's Invasives Strike Force volunteer program in 2011 and, since then, the program has trained over 400 invasives-mapping volunteers who have collectively surveyed more than 1,500 miles of hiking trails for invasive plants. Dr. Rohleder described the program, showed some of the results, and discussed keys to success.

Deliverable 2. Market

a) Botanical Illustrator, Bobbi Angel, was contracted to draw *Arum Italicum* as the logo for the event.

b) The event was promoted in the Fall/Winter 2019 NYBG Adult Education Catalogue in-print and online.

c) The event flier was produced and distributed widely. See attachment.

d) NYBG advertised the event through email blasts, Facebook post (https://www.facebook.com/events/new-york-botanical-garden/a-call-to-action-protecting-earths-Biographydiversity/1557499624415881/) and encouraged all Lower Hudson PRISM Partners to spread the word to their members and audiences.

Deliverable 3. Manage

The event was well managed and successful in terms of organizing speakers and booking travel. NYBG hosted a conference call for the three plenary speakers in October 2019 to ensure everyone was on the same page and able to coordinate. NYBG worked with various professional organizations to provide continuing education credits for attendees: ISA-CEUs, ASLA-CES, SER-CECs, and NY DEC CNLPs.

Deliverable 4. Execute

The event was successfully executed with 473 people registered and standing room only in attendance. Over 200 people stayed for the afternoon session. The audience was engaged and inspired. Many participants commented positively after the program and felt it was a true call to action. There were 14 Lower Hudson PRISM Members, 189 NYBG Members, 30 NYBG Employees, 34 NYBG School of Professional Horticulture Students, 13 NYBG Volunteers, 34 NYBG Bronx Green Up Members, and 159 non-members registered. Eight attendees signed up for ASLA-CES and seven signed up for ISA-CEUs. The geographic distribution was predominantly New York, with 359 registrants, and there were 35 people from New Jersey, 31 from Connecticut, one from Pennsylvania, one from Vermont, two from Massachusetts, and 44 unknown.

Deliverable 5. Publish

NYBG recorded the entire event and published the recording on the NYBG YouTube channel and NYBG website in December 2019, https://www.nybg.org/learn/lectures-talks-symposia/lecture-library/science-symposia/. The link was shared with Lower Hudson PRISM partners and Lower Hudson PRISM listserve.

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