

Sustainable Landscape Management and Nursery Production FY23

Status: NIFA REVIEW

Project Director

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Organization Project Number

Accession Number

7002036

Start & End Date

10/01/2020

Organization

University of Massachusetts

To Project / Program

"Sustainable Landscape Management and Nursery Production"

Primary Critical Issue

Commercial Horticulture and Landscape Management

Fiscal Year

2023

In 2-3 sentences, briefly describe the issue or problem that your project addresses.

UMass Extension's Landscape, Nursery & Urban Forestry project works to support professional practitioners and land managers with research-based information on the best horticultural practices and technology for ornamental plant production, installation, and care. This work is conducted and delivered within a strong framework of sustainability, IPM, and Best Management Practices; most readily in the areas of water conservation and protection, nutrient management, soil health and pollinator protection. Key issues of note presently addressed include management of woody and herbaceous plants in ornamental landscapes; identification and management of insect, disease, and weed pests; management of invasive plants and insects; best management practices when using pesticides to reduce potential impacts to pollinators and other non-target organisms; and prevention of vector-borne diseases.

Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.

Working with some of the largest and fastest growing commercial agricultural segments in Massachusetts continually challenges the Landscape, Nursery, and Urban Forestry Program to address the industry's immediate problems and to anticipate future educational requirements. Education on pertinent topics in FY23 was delivered to stakeholders through a wide variety of web resources, social media, timely publications, in-person and online training programs (20+ single and multi-day events), and diagnostic services. Current activities are informed by ongoing research, real-time communications with practitioners and academic and regulatory cooperators, and an extensive in-field scouting network. We maintain partnerships with Massachusetts professional associations, local, state, and federal government agencies, and UMass faculty to tackle the most pressing issues facing the industry. Our program collaborates on grants and interdepartmental service agreements with the MA Department of Agricultural Resources and the MA Department of Conservation and Recreation, and also works closely with members of Cape Cod Cooperative Extension and Plymouth County Extension.

Briefly describe how your target audience benefited from your project's activities.

Our work is of continual and great significance to landscapers, arborists, land managers, nursery owners, and other Green Industry professionals in Massachusetts, New England, and the greater USA and Canada. Factors such as pests or climate, or uniformed or irresponsible decision making and management, carry real potential for economic, ecological, environmental, and human health impacts. Thus, quality training opportunities are necessary for safe, effective and efficient landscape management, and also foster individual career development and the growth and health of relevant industry segments. Our activities provided critically necessary training for large numbers of workers and managers, which served to improve their skill sets, employability, and value, and helped them to meet requirements for expedient industry certifications and licensure.

For example, for the March 29, 2023 Spring Kickoff for Landscapers:

- 78% of survey respondents indicated that their knowledge increased as a result of attending the program.

- 100% of respondents indicated that they were at least “somewhat likely” to incorporate what was learned at the event into their management program.

Briefly describe how the broader public benefited from your project's activities.

Broadly, research-based best management practices for landscape development and care help to support healthy, high quality plant material, vibrant businesses and markets, recreation and leisure, beautified spaces and enhanced value of properties, while simultaneously promoting efficiency, input reduction, lower resource use, and sustainable and ecologically sound managed spaces. The landscape and nursery industry segments contribute an estimated \$2 billion in sales to the Massachusetts economy, and employ over 12,000 individuals at approximately 5,000 companies. More specifically, in addition to the vast professionally-oriented resources that many consumers utilize for assistance in their landscaping efforts, UMass Extension’s Landscape, Nursery, and Urban Forestry Program coordinates a vibrant home gardener “help line” with assistance from dedicated Master Gardener volunteers (768 consultations in FY23) and authors and publishes a perennially popular, educational Garden Calendar that thousands of individuals avail themselves of each year (8290 copies sold in FY23).

Development and revision of written resources for public access

- Garden Calendar: **8290 copies** sold to **2862 individuals** in FY23
- Fact sheets written or revised: **22**
 - Asiatic Garden Beetle (<https://ag.umass.edu/landscape/fact-sheets/asiatic-garden-beetle>): **2469 unique readers** in FY23
 - Boxwood Leafminer (<https://ag.umass.edu/landscape/fact-sheets/boxwood-leafminer>): **553 unique readers** in FY23
 - Boxwood Psyllid (<https://ag.umass.edu/landscape/fact-sheets/boxwood-psyllid>): **1908 unique readers** in FY23
 - Elongate Hemlock Scale (<https://ag.umass.edu/landscape/fact-sheets/elongate-hemlock-scale>): **31 unique readers** in FY23
 - Fall Cankerworm (<https://ag.umass.edu/landscape/fact-sheets/fall-cankerworm>): **226 unique readers** in FY23
 - Hemlock Woolly Adelgid (<https://ag.umass.edu/landscape/fact-sheets/hemlock-woolly-adelgid>): **1792 unique readers** in FY23
 - Japanese Beetle (<https://ag.umass.edu/landscape/fact-sheets/japanese-beetle>): **405 unique readers** in FY23
 - Magnolia Scale (<https://ag.umass.edu/landscape/fact-sheets/magnolia-scale>): **842 unique readers** in FY23
 - Spring Cankerworm (<https://ag.umass.edu/landscape/fact-sheets/spring-cankerworm>): **85 unique readers** in FY23
 - Tuliptree Scale (<https://ag.umass.edu/landscape/fact-sheets/tuliptree-scale>): **38 unique readers** in FY23
 - Viburnum Leaf Beetle (<https://ag.umass.edu/landscape/fact-sheets/viburnum-leaf-beetle>): **499 unique readers** in FY23
 - New UMass Extension Spotted Lanternfly Management Guide for Professionals (<https://ag.umass.edu/landscape/fact-sheets/spotted-lanternfly-management>): **740 unique readers** in FY23
 - Box Tree Moth (<https://ag.umass.edu/landscape/fact-sheets/box-tree-moth>): **634 unique readers** in FY2
 - Elm Zigzag Sawfly (<https://ag.umass.edu/landscape/fact-sheets/elm-zigzag-sawfly>): **274 unique readers** in FY23
 - Cedar-Quince Rust (<https://ag.umass.edu/landscape/fact-sheets/cedar-quince-rust>): **737 unique readers** in FY23
 - Botryosphaeria Canker (<https://ag.umass.edu/landscape/fact-sheets/botryosphaeria-canker>): **1312 unique readers** in FY23
 - Septorioides Needle Blight (<https://ag.umass.edu/landscape/fact-sheets/septorioides-needle-blight>): **72 unique readers** in FY23
 - Thyronectria Canker (<https://ag.umass.edu/landscape/fact-sheets/thyronectria-canker>): **230 unique readers** in FY23
 - Fusarium Wilt of Fragrant Sumac (<https://ag.umass.edu/landscape/fact-sheets/fusarium-wilt-of-fragrant-sumac>): **402 unique readers** in FY23
 - Beech Leaf Disease (<https://ag.umass.edu/landscape/fact-sheets/beech-leaf-disease>): **1272 unique readers** in FY23
 - Phyllosticta Leaf Blotch (<https://ag.umass.edu/landscape/fact-sheets/phyllosticta-leaf-blotch>): **755 unique readers** in FY23
 - Brown Spot Needle Blight (<https://ag.umass.edu/landscape/fact-sheets/brown-spot-needle-blight>): **55 unique readers** in FY23

Additional outputs for industry professional and general public continue in Comments.

Comments (optional)

Web and social media communications

- Greeninfo Email Subscription List:
 - **12,792 subscribers**
- Home Gardener email subscription list
 - **17,551 subscribers**

- ag.umass.edu/landscape web site:
 - **175,939 active users**
- Facebook posts
 - **46 posts**
 - **3422 followers**

One-to-one consultations

- Professional consultations based on direct inquiries (phone calls, e-mails, in-person): **1667**
- “Greeninfo” help line home gardener consultations: **768**
- Consultations based on samples submitted to UMass Extension’s Plant Diagnostic Lab: **684**
 - Woody plant disease: **660**
 - Woody plant insect: **24**
- In-depth consultations and site visits: **24**

Single day education programs/workshops

- Community Tree Conference (2/28/2023, online): **205 attendees**
- Spring Kick-Off for Landscape & Lawn Care (Landscape Topics, 3/29/2023 – online): **79 attendees**
- Ornamental Tree & Shrub & Insect ID Walkabout (6/27/2023 – Boylston, MA): **38 attendees**
- Weed Walkabout (8/17/2023 - Weston, MA): **30 attendees**
- Conifer Diseases Walkabout (9/12/2023 – Jamaica Plain, MA): **27 attendees**

Multi-day education programs/short courses

- UMass Extension’s Green School (10/25/2022 – 12/15/2022, online): **96 landscape students**
- Invasive Insect Certification Program (2 dates in FY23):
 - Day 1 (9/27/2023): **47 attendees**
 - Day 2 (9/28/2023): **46 attendees**
- Invasive Insect Webinar Series (3 dates in FY23, online):
 - Day 1 (1/25/2023): **603 attendees**
 - Day 2 (2/8/2023): **485 attendees**
 - Day 3 (2/22/2023): **675 attendees**
- Invasive Plant Management Certification Program (4 dates in FY23, online):
 - Day 1 (3/16/2023): **120 attendees**
 - Day 2 (3/16/2023): **123 attendees**
 - Day 3 (4/6/2023): **120 attendees**
 - Day 4 (3/16/2023): **122 attendees**

- Newsletters:

- ■ UMass Extension’s Landscape Message (<https://ag.umass.edu/landscape/landscape-message>)
 - **21 issues** published in FY23
 - **12,837 unique readers** in FY23
- Hort Notes (<https://ag.umass.edu/landscape/newsletters-updates/hort-notes-archive>)
 - **10 issues** published in FY23
 - **11,249 unique readers** in FY23

- Management guides written or revised: **1**

- ■ Professional Insect & Mite Management Guide for Woody Plants (<https://ag.umass.edu/landscape/publications-resources/insect-mite-guide>): **485 unique readers** in FY23

- Articles for outside entities: **5**

- ■ Diplodia twig canker (*Diplodia gallae*) of northern red oak (*Quercus rubra*) in the northeastern United States (Forest Pathology e12822, <http://doi.org/10.1111/efp.12822>)
 - Assessing likelihood of failure due to stem decay using different assessment techniques (Forests 14(5): 1043, <http://>

doi.org/10.3390/f14051043

- Internal decay in landscape oaks (*Quercus* spp.): incidence, severity, explanatory variables, and estimates of strength loss (Forests 14(5): 978, [http://doi.org/10.3390/f14050978](https://doi.org/10.3390/f14050978))
- Geometry matters for sonic tomography of trees (Trees: Structure and Function, [http://doi.org/10.1007/s00468-023-02387-4](https://doi.org/10.1007/s00468-023-02387-4))
- A review of Dutch elm disease and new prospects for *Ulmus americana* in the urban environment (Arboricultural Journal 45(1): 3–29, [http://doi.org/10.1080/03071375.2022.2082177](https://doi.org/10.1080/03071375.2022.2082177))

Invited presentations/lectures

- Guest lectures within UMass: 2
 - Prominent Diseases of Trees in the Urban Environment (Brazee, remote, 11/03/2022, Urban Forestry Today): **900 attendees**
 - Pathogens of Landscape Trees & Shrubs: Trends from the 2022 Growing Season (Brazee, remote, 02/28/2023, UMass Tree Conference): **145 attendees**
- Invited presentations for outside organizations:
 - Review of Pests and Pathogens from the 2022 Growing Season (Brazee, Framingham, MA, 10/03/2022, Annual Meeting of the New England Chapter of the International Society of Arboriculture): **300 attendees**
 - The Use of Sonic and Electrical Resistance Tomography in Tree Risk Assessment (Brazee, Louisville, KY, 12/02/2022, Annual Meeting of the Association of Consulting Arborists): **250 attendees**
 - Review of Pests and Pathogens from the 2022 Growing Season (Brazee, Sturbridge, MA, 01/01/2023, Annual Meeting of the Massachusetts Tree Wardens and Foresters' Association): **200 attendees**
 - Review of Pests and Pathogens from the 2022 Growing Season (Brazee, remote, 01/24/2023, Annual Meeting of the Cape Cod Landscape Association): **62 attendees**
 - Review of Pests and Pathogens from the 2022 Growing Season (Brazee, Foxborough, MA, 02/01/2023, SiteOne Recertification Seminar:) **100 attendees**
 - Pathogens of Landscape Trees & Shrubs: Trends from the 2022 Growing Season (Brazee, Concord, NH, 03/01/2023, Annual Meeting of the New Hampshire Arborist Association): **90 attendees**
 - Pathogens of Landscape Trees & Shrubs: Trends from the 2022 Growing Season (Brazee, Southbury, CT, 03/08/2023, Annual Meeting of the Northeastern Division of the American Phytopathological Society): **36 attendees**
 - Diplodia Twig Canker (*Diplodia gallae*) of northern red oak (*Quercus rubra*) in the northeastern United States (Brazee, Southbury, CT, 03/10/2023, Annual Meeting of the Northeastern Division of the American Phytopathological Society): **45 attendees**
 - Forestry Volunteer, Mass Envirothon Volunteer, Blackstone River and Canal (Brazee, Heritage State Park, Uxbridge, MA, 05/25/2023): **150 attendees**
 - The Use of Sonic and Electrical Resistance Tomography in Tree Risk Assessment (Brazee, Saratoga Springs, NY, 09/25/2023, Field Demonstration at The New York Invasive Species Expo): **25 attendees**
 - Tree & Shrub Disease Update (Brazee, Walpole, MA, 09/27/2023, Massachusetts Arborist Association Annual Field Day): **140 attendees**

Prostak: **5 presentations, 940 attendees** (no further detail available).

Liaison, leadership, and networking with industry and the public at large

- Board member - Northeastern Division of the American Phytopathological Association (Brazee (President) in FY23)
- UMass Frank A. Waugh Arboretum Committee (Brazee in FY23)
- Massachusetts Department of Agricultural Resources Spotted Lanternfly Working Group (Simisky in FY23)