NEW ENGLAND TRANSPORTATION CONSORTIUM
QUARTERLY PROJECT PROGRESS REPORT

A. PROJECT NUMBER AND TITLE: NETC 21-3: Seed Production for NE Roadsides

B. PRINCIPAL INVESTIGATOR(s) & UNIVERSITY(s): J. Kuzovkina, University of Connecticut

C. WEB SITE ADDRESS (*If one exists***):** NA

D. **START DATE (***Per NETC Agreement***):** May 18, 2022

E. END DATE (*Per NETC Agreement***):** June 30, 2024

F. **ANTICIPATED COMPLETION DATE:** June 30, 2024
If different from the END DATE in paragraph E., the reason must be given. It is the responsibility of the Principal Investigator to insure that the project, including review of the draft report by the Project Technical Committee and the printing of the Final Report, is completed prior to the Agreement End Date. Costs incurred after the Agreement End Date cannot be reimbursed. ***Requests for extensions of the Agreement End Date must contain the reasons for the request and be submitted so as to arrive in the Coordinator's office at least 90 days prior to the Agreement End Date.***

G. PROJECT OBJECTIVES: The objective of this project is to increase native plantings and pollinator habitats with seed from local ecotypes along roadsides throughout New England. The proposed work is designed: 1) to promote ecotypic seed production for effective establishment of native plants on roadsides in New England and 2) to expand management practices that result in the proliferation of existing native plant communities along the roadsides in New England.

H. REPORT PERIOD: July 1, 2022- September 30, 2022

I. **ACCOMPLISHMENTS THIS PERIOD:**

Completed the focus group interviews to identify the past use and future demand for native plant seed and to conduct the needs assessment:

- RI DOT (July 21)
- CT DOT October (October 7)

- MA DEEP (July 21; Ryan Kingston,)
- Vermont DEEP (July 22; Bobb Pepp)
- RI John (July 26; John Veale and Amanda Freitas)
- Maine DEEP (August 12; Sarah Spenser)
- NH Fishery and Wildlife Heidi Holman (August 26)

Other activities

- Meeting with the NETC TC (September 6).
- Meeting with Stakeholders from the region to discuss the Production of Native Plants at Highstead Arboretum (October 3; attachment 1)

- Meeting with Adam Boone and Greg Gallup at the CT DOT to discuss the selectin of the demonstration sites along Rt. 6 (September 13).
- Started treatments at the demonstration sites (Sept. 20, 26 and 29; attachment 2)
- Continued the literature search to assist with the development of Best Management Practices (BMP).

J. PROBLEMS ENCOUNTERED (If any): We invited Maine DOT to participate in the focus group interviews a few times but have not heard back. Therefore, we will prepare the summary of the interviews without its input.

K. TECHNOLOGY TRANSFER ACTIVITIES: *List any reports, papers, presentations published/presented during the report period or anticipated for the next quarter.* NA

L. STATUS BY TASK: *Show Work Task Number, description and % complete for each task including those completed, those underway, and those not started.*
Task1: Current knowledge and practices 15%
Task 2: Investigate local seed production opportunities 15%
Task 3: Establish and monitor roadside demonstration plots for training and research purposes 15%
Task 4: Draft Final Report and Technology Transfer Strategy and Toolbox 10%
Task 5: Deliverables: Final Report 0%

M. PERCENT COMPLETION OF TOTAL PROJECT: _____15____%

N. ACTIVITIES PLANNED FOR NEXT QUARTER:

- Analyze the focus group interviews; prepare a written report with recommendations for the future direction of the project, summarize the needs and problems identified by various states.
- Continue the development of the sections for the Best Management Practices (BMP):
  - The introductory section**:** The ecological integrity of the roadsides in NE (discussion of the current practices, their advantages and shortcomings and justification for the recommended approach)
  - Seed Zones Section: interview experts to present a consensus view on the seed zone delineation in NE
  - Preparation of the revised seed mixes for the roadsides in NE
  - Overview of the scientific evidence on the benefits of the reduced mowing

O. FINANCIAL STATUS:
As of: October 10, 2022
Total Project Budget: $ 200,000
Total Expenditures: $ 20,000

Note: This report should not require more than 2-3 pages & should be e-mailed to the NETC Coordinator so as to arriv e no later than ten (10) working days after the end of each calendar quarter.

Appendix 1. Meeting at Highstead Arboretum, Redding, CT, with Stakeholders in the Field of Native Plant Production and Use, October 3, 2022

The attendees included stakeholders working with native plants in the Northeast:

- Native Plant Trust
- CT Northeast Organic Farm Association
- The Ecotype Project
- Eco59 Seed Company
- Highstead Nursery
- Planters' Choice Nursery
- Norcross Wildlife Sanctuary
- Ecological Health Network
- Pinelands Nursery
- Hilltop Hanover Farm
- Wild Woods Restoration Project

Purpose of the meeting: To convene a wide range of stakeholders who work across public, private, and non-profit sectors and discuss the initiation of a network-based approach for strategic planning to strengthen native seed and plant material supply and demand chains in the Northeast US. This meeting had two different levels of discussion: 1) building a 'big-picture' or a 'systems-level perspective' of supply and demand chains to aid in strategic planning efforts; and 2) prioritizing next steps the group should address to produce actionable results in the immediate term.

Meeting objectives:

Objective A: Develop a plan for stakeholders to move into conceptual alignment on mission, goals, objectives, principles, and values for collaboration; the structure for network engagement and governance; geographic scope, target and/or priority ecosystems; decision making procedures, and funding models.

Objective B: Discuss the priority objectives and formulate an actionable plan to strengthen and reinforce network connections and to address gaps and barriers in the immediate (6-12 months) and mid-term (12-36 months).

1) Attendees designated which sectors of the native plant material supply chains their organizations will participate.
2) Attendees then decided to prioritize next step actions and to delegate work to the following committees:
    a. Supervisory Committee to oversee the work of the other committees
    b. Seed Zone Committee
    c. Seed Mix Committee
    d. Standards & Protocols Committee
3) Attendees also decided to participate as a group to attend the National Native Seed Conference to make connections with those from other regions who have developed supply chains.

Appendix 2. Demonstration Site Protocols

Our team decided that the best way to create demonstration plots during the two years allotted for conducting research under this grant would involve developing best management practices for reduced mowing and eliminating of the invasive species within native habitats.

Some of the challenges we have faced when we have tried to modify roadside maintenance protocols involved the timing of mowings. The ideal time to mow the roadsides is in early to mid-spring. Mowing during this time allows native forbs and warm-season grasses to flower and set seed in the fall. In addition, by allowing stands of warm-season grasses to remain during the winter months provides pollinators and other wildlife, such as birds, with shelter and nesting opportunities.

However, early spring in New England tends to be especially rainy, thus rarely leaving enough time to mow all roadsides during the spring. Therefore, we decided we would explore the possibility of mowing every other year, which would allow half of roadsides to be mowed one year and the other half to be mowed the alternate year.

Site locations: Route 6 near Willimantic, CT. The two sites east of the overpass would be mowed in Spring 2023 while the two sites west of the overpass would be mowed in Spring 2024.

This approach has one important problem: invasive species, especially woody ones, may establish and proliferate during the year a site isn't mowed. Therefore, since invasive species removal does not have to take place in the spring and can be conducted on the unmowed portions during the time freed up as a result of the department mowing only in the spring, we decided to explore the most effective methods for invasive species removal.

Figure 1. The conservation areas along Rt. 6 have already established plant communities with rich assortments of native species. However, there are some invasive species in many areas which could potentially proliferate if the sites are not mowed frequently. Therefore, to promote stable native habitats that can exist for some years without any input, patches of these invasive species should be eliminated.

Th following treatments will be applied for eliminating autumn olive and other invasive species:

1) Spray foliage with Round Up
2) Cut down plants with the Stihl brush cuter and apply glyphosate on stumps with paint
3) Cut down plants and dab glyphosate on stumps using herbicide sponge dabber
4) Cut down plants and spray stumps with higher concentration of glyphosate

For Site 1 toward the west end of Route 6 near Columbia, CT, we used vegetation tape to designate portions that would receive each treatment. The dates for each treatment were as follows:

- Site 1 on September 19th: Foliar spray; cutting down plants and painting stumps
- Site 1 on September 26h: Cut down plants and dab glyphosate (concentration 100%?) on stumps using herbicide sponge dabber
- Site 1 on September 29th: Cut down plants and spray stumps with higher (which concentration?) concentration of glyphosate
- Application of triclopyr to the bark of autumn olive (as per suggestion from Adam Boone) – scheduled for October 14.

Data collection: visual assessment of the efficiency of the herbicide treatments; images and video recording of the treatments (for each site, we recorded video of existing plant communities, noting native plants and invasive species that were present).