2014 Final Report for the University of Massachusetts

Project Title: NE-SARE State Program (in partnership with CT and RI)

1. Report Summary

a. Why this project?

The UMass SARE Professional Development Program developed training and networking for Extension staff, other service providers and industry mentors in two subject areas critical to advancing sustainable agriculture locally and regionally, **native pollinator conservation** and **soil health assessment and improvement**. Soil health and pollinator conservation are both important to sustainability. In a pre-program survey Extension staff identified both these areas as important issues for their audiences (82% and 70%, respectively) and ones where their capacity to deliver training is low (60% and 81% agreed with this statement, respectively).

b. What was done in this project to address the problem?

Native Pollinator Conservation trainings and demonstration installations at UMass fruit, vegetable and cranberry facilities across the state as well as collaborative activities with other institutions provided comprehensive information on the role and importance of pollinators, their habitat needs and the recommended conservation practices. The goal of promoting a diverse and healthy pollinator population in the major farming systems found in Massachusetts defined the audiences and learning goals of project activities. Over the span of the project, 60 ag service providers, 30 producers received direct training in native pollinator conservation. An additional 1,600 people received native pollinator conservation information indirectly from ag service provider participants via newsletter articles, presentations, workshops and individual consultations.

Soil Health Assessment/Improvement trainings and demonstration projects at various locations across the state in collaboration with Massachusetts NRCS provided comprehensive information about the importance of soil health, its parameters, its assessment and practices that contribute to mitigation and long term improvement. Six trainings and one forum were held over the project term with 200 service providers, 113 producers and 100 students/others receiving direct training in soil health assessment and improvement. Service Provider participants delivered relevant information to an additional 2,100 people via newsletter articles, presentations, workshops and individual consultations.

Tri-State Grass-fed All Year Long Project

See CT report for project details.

c. What happened as a result of this project?

Native Pollinator Conservation project participants learned about the importance of native pollinators in fruit, vegetable and cranberry production, what some of the key species are and how to identify them, and what the important features of both forage and nesting habitat are. They also gained skills in assessing and improving existing habitat and in farming practices that promote native pollinator success such as modifying pesticide use and mowing schedules that

allow for continuous nectar and pollen sources through the season. Forty-eight participants report gaining knowledge about native pollinators and 14 service providers report incorporating new information into their programming and 17 producers report incorporating one or more new practices into their farming practices. The project also developed significant new pollinator protection information for inclusion in the New England Vegetable and Small Fruit Production Guides (2015) and the New England Tree Fruit and Cranberry Production Guides (2016)). Moreover, activities in this project have provided foundational support and functioning collaborations for continued efforts for pollinator protection.

Soil Health Assessment and Improvement participants learned how soil health impacts pasture and crop production and the key elements that determine soil health. They learned how to measure those elements, and what practices can be used to improve soil health over time (e.g., cover cropping or reduced tillage). One hundred twenty-nine participants report gaining knowledge about soil health and 55 service providers report incorporating new information into their programming and 29 producers report incorporating one or more new practices into their farming practices. In addition to participants learning new concepts and adopting new practices, the project also marked a significant increase in collaboration between Extension and NRCS in Massachusetts, which will continue beyond the project term.

Tri-State Grass-fed All Year Long Project

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2. Performance Target(s)

Initiative 1: Native Pollinator Conservation

15 ASPs will support producers who seek to implement pollinator conservation practices on their farms through direct training or by delivering relevant, timely resources through traditional (meetings, publications, fact-sheets) and novel (webinars, social networks) channels.

6 Extension ASPs will deliver in depth educational programming to 100 producers about the benefits of native pollinator conservation, practices that promote native pollinator conservation and how to access assistance in implementing these practices.

A total of 45 fruit and vegetable producers (10 in year 1) will adopt 3 or more new pollinator conservation practices on a total of 500 or more acres of cropland.

Initiative 2: Soil Health Assessment/Improvement

15 agricultural service providers will support producers who seek to assess soil health and implement practices to promote soil health on their farms through direct training or by providing relevant, timely resources through traditional (meetings, publications, fact-sheets) and novel (webinars, social networks) channels.

4 UMass Extension staff will deliver educational programming to 300 producers about soil health, how to assess soil health and identify practices that will improve soil health, and how to access assistance in implementing these practices.

10 producers will conduct soil health assessment on their farms (500 or more acres); 10 will adopt 2 or more new recommended practices to improve soil health on 250 acres.

Initiative 3: Tri-State Grass-fed All Year Long Project

See CT report for project details.

3. Report on 2013-2014 Milestone Accomplishments

Initiative 1: Native Pollinator Conservation Initiative

1. 2 agricultural service providers **maintain first demonstration site** with assistance from the State Coordinator and provide opportunities for service providers and producers for hands-on learning about native pollinator conservation practices. **Spring -Summer 2014**
    - *Sonia Schloemann and James Krupa maintained demonstration nest and forage habitat areas established in 2012; made available for viewing and inclusion in various tours and meetings.*
2. 2 agricultural service providers **maintain second demonstration site** at UMass Agronomy Farm with assistance from the State Coordinator to provide hands-on venues for service providers and producers to see and learn about native pollinator conservation in practice. **Spring - Summer 2014**
    - *Sonia Schloemann, Amanda Brown and the Student Farm Enterprise maintained pollinator nest and forage habitat demonstration at UMass Agronomy farm; made available for viewing and inclusion in classes and tours. Jarrod Fowler and Sonia Schloemann established new pollinator habitat for instructional use at UMass Cranberry Station and UMass Ag. Learning Center.*
3. 30 agricultural service providers/educators & 50 producers receive notification of **training conducted by Xerces Society and/or local experts** in pollinator conservation concepts/practices in cranberry production **Summer 2014**
    - *Sonia Schloemann and Anne Averill planned native pollinator conservation training at UMass Cranberry Station for August 2014; event cancelled (and not publicized) due to unexpected infestation of new invasive scale insect requiring emergency response. However, the project helped establish 2 new demonstration nest/forage habitat installations (UMass Cranberry Station and UMass Ag. Learning Center) for future planned programming in 2015.*
4. 15 agricultural service providers/educators and 10 producers attend this training **Summer 2014**
    - 5 agricultural service providers/educators plan to deliver information about Native Pollinator Conservation concepts/practices and outline programs available through NRCS to 100 producers in their regular programming (twilight meetings, workshops, newsletters, etc. **Summer 2014**
    - 5 of the producers plan to implement 3 or more practices to promote or conserve native pollinators on their farm **Summer 2014**

- *Training canceled as described above. Rescheduled for 2015.*

5. 15 agricultural service providers/educators and 100 producers receive information and/or attend workshops or meetings where information about native pollinators is provided. **Summer 2014**
   - 6 agricultural service providers/educators acquire sufficient knowledge to support producers who seek to implement pollinator conservation practices on their farms
   - 10 of the producers implement 3 or more native pollinator conservation practices on their farm
     - see survey results
6. 30 agricultural service providers/educators and 50 producers respond to state coordinator's **year-end impact survey** of participants to verify learning milestones and performance targets. **Winter 2014-2015**
     - *conducted early December 2014 - survey results included in compiling this report.*

Native Pollinator Conservation -

Milestone Activities 2014
• Maintain Native Pollinator nest and forage habitat demonstration planting initiated in 2012 at UMass Cold Spring Orchard in Belchertown, MA – included in orchard tours, field days, twilight meetings and individual consultations (audience: growers, students, alumni, service providers – estimated at 250) • Maintain Native Pollinator nest and forage habitat demonstration planting at UMass Student Farm in S. Deerfield, MA – included in farm tours, field days, classes, workshops and individual consultations (audience: growers, students, service providers – estimated at 100) • Installed new Native Pollinator nest and forage habitat demonstration planting at UMass Cranberry Station – included in farm tours, field days, classes, workshops and individual consultations (audience: growers, students, service providers – estimated at 100) • Installed new Native Pollinator nest and forage habitat demonstration planting at UMass Agricultural Learning Center on UMass Amherst Campus – included in classes and individual consultations (audience: students, general public – estimated at 50) • 4/23/14 - Bee Smart, UMass-Amherst Event (audience – estimate 200) • 5/15/14 – Massachusetts Envirothon – Sholan Farms, Leominster MA (audience 160) • 5/17/14 - Native Pollinator Conservation MassAggie Workshop, Trustees of Reservations Powisset Farm, Dover MA (audience: 12)

Initiative 2: Soil Health Assessment/Improvement

1. 2 agricultural service providers **maintain and evaluate demonstration sites** and provide opportunities for service providers and producers for hands-on learning about soil health improvement practices in vegetables and orchard production. **Spring -Summer 2014**
   - *No Soil Health demonstration site follow-up (or budget expenditures) in 2014 due to staff changes.*

2. 2 agricultural service providers **establish new demonstration site** at the Bristol County Vocational Agricultural School with assistance from the State Coordinator to provide a hands-on venue for service providers and producers to see and learn about soil health improvement in practice. **Summer 2014**
    - *No new Soil Health demonstration site establishment (or budget expenditures) in 2014 due to staff changes.*
3. 30 agricultural service providers/educators and 50 producers receive notification of **Soil Health Assessment Workshop** to receive training in Soil Health Assessment on public lands. **Spring 2014**
    - *2 training events were promoted in 2014; 2/18/14 Soil Health Cover Crop National Forum Broadcast (UMass Amherst Campus) and 11/5/24 Farming With Nature day-long training (UMass Amherst Campus).*
4. 20 agricultural service providers/educators and 10 producers attend workshop on Soil Health Assessment delivered by UMass Soil Lab to gain competency in carrying out soil health assessments and interpreting results **Summer 2014**
    - 8 of the agricultural service providers/educators report increased knowledge about Soil Health Assessment
    - 5 of the agricultural service providers/educators report sufficient capacity to conduct Soil Health Assessment Training
    - 3 of the agricultural service providers/educators conduct Soil Health Assessments (using Cornell (or similar) protocol and kits) on 3 farm soils each and help interpret results/recommendations for producers
        - *25 ag service providers/educators report increased knowledge about Soil Health Assessment following training events in 2014*
        - *7 ag service providers/educators report including more Soil Health Assessment information in their programming in 2014.*
        - *8 ag service providers/educators report delivering training/educational programming to 850+ people via workshops (3), newsletter or articles (2), online content (2) and informal or in-person contact (8).*
        - *No data collected on how many asps conducted on farm soil health assessments and helped producers interpret results/recommendations – follow-up planned as part of 2015 activities.*
5. 4 agricultural service providers/educators deliver Soil Health Assessment information and outline programs available through NRCS EQIP and CSP in their regular programming (twilight meetings, workshops, newsletters, etc.) to 100 producers. **Summer 2014**
    - 10 producers conduct soil health assessments on their land to determine if implementing soil health improvement practices is needed

- 10 of the producers implement 2 or more practices on 250 acres to improve soil health on their farm
    - *No data available on how many producers conducted soil health assessments*
    - *15 producers report implementing 2 or more new practices to improve soil health (no acreage data collected).*

6. 15 agricultural service providers and 50 producers respond to **year-end impact survey** of participants to verify learning milestones and performance targets **Winter 2014-2015**
    - *Year end survey results included in compiling this report.*

Milestone Activities
• 2/18/14 – National Soil Health/Cover Crop Forum Broadcast and workshop, UMass Campus, Amherst MA (35 partipants) • 11/5/14 – Farming with Nature Soil Health Workshop, UMass Campus, Amherst, MA (83 participants) • 11/6/14 – Farming with Nature Soil Health Workshop, Bristol Agricultural High School Dighton, MA (125 participants)

Initiative 3: Tri-State Grass-fed All Year Long Project

See CT report for project details.

4. 3-Year Summary of Activities, Participants, Learning Outcomes and Products

Table 1 –Activities (*Initiatives 1 and 2 combined*)

Type of Educational Activity Conducted by Project	**Number of Each Activity Conducted**
Workshop/Field Day	**8**
On-farm Demonstration	**6**
Tour	**2**
Webinar/Talk/Presentation	**0**
Other on-line training	**0**
Individual Consultations (an estimate is acceptable)	**300**
Other (specify)	

Table 2 – Participants (*Initiatives 1 and 2 combined*)

Type of Agricultural Service Provider	Number Who Participated *
Extension	**69**
NRCS	**109**
Other Federal/State Agency	**38**
Other (non-Gov Organizations such as Trustees of Reservations, Beginning Farmer Network)	**41**
Total Number of Agricultural Service Providers*	**257**
Farmers	**96**
Students	**200**

**Reporting direct training for Native Pollinator and Soil Health initiatives; not for tri-state project or collateral trainings.*

Table 3 - Learning Outcomes

	Total Number of Agricultural Service Providers	Total Number of Farmers	Total number of acres or animals the farmers manage, if known
Verified an increase in knowledge, skills, confidence			
Native Pollinator Conservation			
Identification/Biology/Life Cycles	22	26	UNK
Characteristics of Forage Habitat			
Characteristics of Nesting Habitat			
On Farm practices to promote forage & nest habitat			
NRCS Programs that support pollinator conservation			
Soil Health Assessment/Improvement			
Soil Health Indicators	68	61	UNK
How to Measure Soil Health Indicators			
The Role of Organic in Soil Health			
Reduced Tillage Practices for Soil Health			
Cover Crop Practices for Soil Health			
NRCS Programs that support Soil Health			
Verified intention to use knowledge and/or skills learned			
Native Pollinator Conservation			
ASP - Deliver information about:			

Native Pollinator Identification/Biology/Life Cycles	12		
How to construct/preserve nest habitat	11		
How to establish/conserve forage habitat	14		
How to access relevant NRCS programs	8		
Producers – implement practices:			UNK
Conduct habitat assessment		17	
Construct or conserve nest habitat		12	
Establish or conserve forage habitat		13	
Soil Health Assessment/Improvement			
ASP – Deliver information about:			
Basic Soil Health Indicators	55		
How to measure soil aggregate stability	16		
How to measure soil compaction	17		
How to read/interpret Soil Health Test results	21		
Benefits of reduced tillage	19		
How to use cover crops for soil health	24		
How to develop management plan based on results	12		
How to access relevant NRCS programs	52		
Producers – implement practice:			UNK
Assess Soil Health		28	
Follow recommended soil health management plan		27	
Adopt one or more new soil management practices		29	
Cover cropping		25	
Reduced tillage		23	
*Bulleted list of only the key knowledge and skill areas for which you verified an increase in knowledge and skills.			

Table 4 – Products.

Type of Information Product Produced	Number of Each Type Produced
Fact sheet/Guidance document *Native Pollinator Habitat Assessment Guide* (in development for 2015)	**1**
Decision tool	
Website/web content	
Article (newsletter, press)	
Curricula	
Video	

Other (specify) *New Pollinator Protection and Soil Health information incorporated into 2015 New England Vegetable Management and Small Fruit Management Guides (in press)*	**2**

5. Performance Target Outcomes and Additional, Unanticipated Outcomes

a. Summarized Outcome Data

Table 5 – Numbers of agricultural service providers taking action

The **total number of agricultural service providers** who incorporated information and/or used skills learned through the state program training activities in their educational activities, services and/or information products for farmers.	*Native Pollinator Conserv.* *Soil Health Assess.*	*20* *33*
The **total number of farmers** these agricultural service providers reached through their efforts.	*Native Pollinator Conserv.* *Soil Health Assess.*	*1,600* *2,100*

Table 6 – Actions taken by the agricultural service providers

Place an X next to all that apply	Types of Educational Activities Ag Service Providers incorporated information they learned into	Number of Each Activity Type, if known
X	Workshop/Field Day	*24*
X	On-farm Demonstration	*Unk*
	Webinar/Talk/Presentation	*6*
	Other on-line training	*8*
X	Individual Consultation (an estimate is acceptable)	*45*
	Fact sheet/Guidance document	*Unk*
	Article (newsletter, press)	*3*
	Web content	*Unk*
	Other (specify)	

Table 7 – Actions taken by farmers

The **number of farmers** who made a management change as a result of learning from the project activities and/or the trained agricultural service providers?	*59*
Bulleted list of the changes made by farmers	
<u>Native Pollinator Conservation</u> • Inventory of native pollinators • Assessing existing forage/nest habitat • Provide additional nest habitat • Provide additional forage habitat <u>Soil Health Assessment/Improvement</u> • Avoid activities that contribute to soil compaction • Use reduced tillage practices • Regularly incorporate organic matter • Use cover crops • Measure soil compaction • Rotate crops to manage soil health	
Number of acres, animals, or other appropriate production units that were affected by these changes. *(please enter your best estimate; you may leave this blank if you have no idea)*	Unk

Table 8 – Additional outcomes as a result of the project

Type of Outcomes Achieved	Number of Each Outcome
New working collaboration	6
Grants applied for	
Grants or other funds received	
Other (describe)	

b. Outcome Narrative

A needs assessment conducted prior to designing the project plan for the 3 years covered in this report clearly showed two main areas where service providers saw a constituent need for help and where their capacity to deliver that help was insufficient. These areas were: 1) how to support commercial pollination services in the face of Colony Collapse Disorder (CCD) by promoting the role of native pollinators, and 2) how to help producers evaluate soil health on their farms and adopt practices that would have a long run beneficial impact on soil health.

Both of these areas would require foundational learning of the basics as well as the learning of new techniques, skills, and information relevant to helping growers adopt new practices.

Over the course of 3 years, the project has conducted 8 service provider trainings and 6 on-farm demonstration projects. Fifty-three service providers were trained and, in turn, provide relevant content to an audience of over 3,700 producers and other landowners via workshops, newsletter articles, online content, and individual consultations.

Important new content for pollinator protection and soil health was developed for 2 major publications, the 2015 New England Vegetable Management Guide and the 2015 New England Small Fruit Management Guide. Similar content will be incorporated into Cranberry, Floriculture and Tree Fruit Guides in their next editions. Collectively these guides reach over 3,000 producers.

While the project helped advance service provider awareness, knowledge and skill in both topic areas, the need for continued training is apparent and will continue beyond the scope of the projects. Soil Health remains a focus for the next 3-year professional development program in Massachusetts and Pollinator Protection work will continue in collaboration with a task force of state, federal and independent stakeholders.

Performance Target Outcomes

Native Pollinator Conservation

2012

A half-day training was held focused on native pollinator conservation in fruit production systems at the UMass Cold Spring Orchard Research and Education Center in Belchertown, MA, which was attended by 25 service providers and 5 producers. Of these attendees, 8-9 service providers reported the intention of including native pollinator conservation in their future programming and 4 were able to follow through this year. Those 4 reported contacting 144 individuals with the program materials they delivered. 50-63% of producers surveyed at year's end report adopting new native pollinator conservation practices and as many as 87% report and increased awareness of native pollinators and their habitats on their farms. It is difficult to draw conclusions about impact this early on, but there seems to be increased awareness and adoption of practices occurring as the result of one round of training. An unexpected and very positive outcome was the formation of new collaborations among service providers who had not previously been connected, particularly between US F&WS and UMass Extension. We will build these new partnerships in the 2013 trainings. These trainings will also involve partnering with the UMass Student Farming Enterprise and The Farm School and focus on the role of native pollinators for vegetable production.

2013

Activities in 2013 focused on the role of native pollinators in vegetable production. Two partnerships formed to establish demonstration installations for pollinator nesting and forage habitat suitable for vegetable farms to be used for a planned training event. The UMass Student Farm Enterprise researched and installed both border habitat examples (4 types) as well as flowering cover crops (buckwheat and blue lupine) in rotation fields. A workshop in conjunction with the annual NOFA Summer Conference was planned. A smaller collaboration with The Farm School, a residential year-long farm training program, resulted in the establishment of some border plantings for pollinators and bumblebee nesting boxes were set out. Instructors and student farmers learned about the role of native pollinators in vegetable/fruit production and the important features of suitable nesting and forage habitat. The Greenfield Community College Farm and Food Systems class also visited the site and learned about Native Pollinator Conservation. Information about native pollinator conservation was published in UMass Ag Program newsletters and other publications and included in on-farm grower meetings. In addition a Native Pollinator Conservation workshop was included in the 2013 Mass Aggie Workshop Series. Project staff cancelled the planned training event due to severe weather and were unable to reschedule, so project impacts were mainly from demonstration projects and direct collaboration. A year-end survey documented 10 service providers and 4 producers receiving training on native pollinator conservation. Five service providers included native pollinator information in their programming in 2013 mainly as part of workshops or individual consulting reaching approximately 450 producers. Eleven producers indicated that they incorporated new pollinator conservation practices in their operations following direct trainings. These practices included pollinator ID/documentation, assessing existing habitat and establishing new habitat for pollinators (nest and forage). NRCS reports 5 new EQIP and WHIP contracts in Massachusetts in 2013. Future work includes collaboration with neighboring states in a new Native Pollinator Working Group for New England being formed with funding from Northeast IPM.

2014

The 2014 project plan to focus on cranberry production was amended due to unexpected infestation of new invasive scale insect in Massachusetts cranberry bogs, which required emergency response. Dr. Anne Averill, the primary collaborator for the cranberry pollinator work, was unavailable so training event was postponed to 2015. However, the project remained active in several areas and built new collaborations with key partners. Demonstration nest/forage habitat installations from prior years were maintained and used for instructional purposes. New installations were established at two locations, the UMass Agricultural Learning Center and at the UMass Cranberry Station. A training event was held in conjunction with the Massachusetts Envirothon where 160 Science teachers, other educators and students gained hands-on experience and skills in native pollinator conservation. The

project also participated in a campus-wide event demonstrating the importance of native pollinators and some practical conservation techniques at "Bee Smart, UMass-Amherst". A year-end survey documented 7 service providers and 3 producers receiving training in native pollinator conservation. Three service providers included pollinator conservation information in their programming mainly as part of workshops and individual consultations reaching approximately 850 people. Five producers reported adopting new on farm practices to conserve native pollinators. These practices included documenting the presence of native pollinators and increasing nesting and forage habitat. This project laid the foundation for continued work to collaborate with key service providers on future work including the development of a state pollinator protections plan as directed by a Presidential Memorandum in the coming year.

Soil Health Assessment and Improvement

2012

Soil Health Assessment/Improvement trainings were delivered in 2 events focusing on Pasture soil health in order to capture linkages with the Tri-State Local Meat project also funded through this award. The first training focused on the basics features of soil that can be measured to determine soil health and how to properly sample a pasture for soil health assessment. 25 service providers and 5 producers attended this training. Of these attendees, 10-11 reported the intention of incorporating Soil Health Assessment/Improvement information learned at the training into their programming. The second training was focused on interpreting the results from the Cornell Soil Health Tests run on the samples collected at the first event. Comparison samples were collected from two pastures, one high performing and one low performing. 18 service providers and 2 producers attended this training and not all were present at the first training. Of these attendees, 10-12 reported the intention of incorporating Soil Health Assessment/Improvement information learned at the training into their programming and, between the 2 trainings 8 were able to accomplish this in the current year. Those 8 report contacting 117 individuals with the program materials they delivered. Up to 83% of producers surveyed at year's end report adopting new Soil Health Assessment/Improvement practices on their farms with 'Regularly incorporating organic matter' and 'rotating crops' ranking highest among practices adopted. It is difficult to draw conclusions about impact this early on, but there seems to be increased awareness and adoption of practices occurring as the result of one round of training. Trainings in the second year will focus on fruit and vegetable production and will partner with the UMass Cold Spring Orchard and the UMass Student Farming Enterprise.

2013

Activities in 2013 focused on the delivery of two large training events in collaboration with NRCS in April. In addition two demonstration projects were initiated and will be carried

through into 2014. The first is with the UMass Student Farm Enterprise where students planted rotational cover crops of Blue Lupine and Tillage Radish to remediate soil compaction. Similarly the Bristol Agricultural High School also established cover crop plantings of Blue Lupine and Tillage Radish to remediate soil compaction. In addition, the UMass Ag Extension Newsletters and other publications shared information about soil health, soil health assessment and improvement and information was also delivered at on-farm grower meetings and other events. Post-training evaluations and a year-end survey showed that 20 service providers and 8 producers received training on soil health assessment and improvement. Sixteen service providers included soil health information in their programming in 2013 as part of workshops, newsletter and online content, or individual consultations reaching approximately 575 producers. Thirteen producers indicated that they incorporated new soil health assessment/improvement practices on their farms. These practices included soil health testing, soil compaction testing, reduced/zone tillage, organic matter incorporation, and cover cropping. Future work will focus on specific cover cropping and crop rotation practices as indicated by soil health or other goals (e.g., soil-borne disease management).

2014

Activities in 2014 focused on the delivery of 3 large training events in collaboration with NRCS. One was a nationally broadcast Soil Health Forum and the other two were entitled 'Farming with Nature: Improving Soil Health on Vegetable Farms. While the original focus was to be on soil health on public lands, the audiences for these projects were diverse and inclusive of all types of farming in the Commonwealth. Post-training evaluations and a year-end survey show that 34 service providers and 103 producers received training in soil health assessment and improvement. Eight service providers included soil health information in their programming, mainly as part of a workshop, online content or individual consultation reaching approximately 375 people. Fifteen producers reported adopting new soil health related practices on their land. These practices included soil health testing, soil compaction testing, reduced/zone tillage, organic matter incorporation, and cover cropping. Future work will focus on specific cover cropping and crop rotation practices as indicated by soil health or other goals (e.g., soil-borne disease management).

Other Results, Unanticipated Outcomes and Interesting Finding

In the design and conduct of training and demonstration activities, project staff strengthened connections with traditional partners (e.g., NRCS, Buy Local Organizations, etc.) and made significant new connections with non-traditional partners (e.g., US Fish and Wildlife, Greenfield Community College, Massachusetts Conservation Districts, Bristol Agricultural High School, Massachusetts Envirothon, etc.). The new network of collaborations improved the delivery of trainings offered, expanded the audience for these trainings and secondary audience reached

by participants, and has laid the groundwork for new collaborations that are already forming. These include a working group (lead by the Massachusetts Farm Bureau) on the development of a Massachusetts State Pollinator Protection Plan as directed by the Presidential memorandum of June 20, 2014. Another is working closely with the Massachusetts Department of Agricultural Resources on the training needs for new Nutrient Management Regulations (which is integral to the new MA 3-yr PDP plan).

6. 2013-2014 SARE Outreach Activities

	Number of Contacts *(please enter your best estimate)*	
Event/Activity	**Farmers**	**Ag. Professionals**
11/3/13 – Massachusetts Cultivated Blueberry Grower's Association Winter Meeting. Westboro MA	25	6
12/17-19/13 – New England Vegetable & Fruit Conference, Manchester NH.	800+	200+
3/22/14 – SEMAP Conference, Dighton, MA	100	15
4/24/14 – Sustainable Nantucket, Nantucket MA	15	2
7/9/14 – Massachusetts Fruit Growers Association Summer Meeting, Belchertown MA	75	20
Fielded inquiries from individuals via phone or email requesting information about grant applications or SARE resources.	12	
Disseminated 19 announcements from NE-SARE to MA SARE PDP distribution list.		44

*At the events listed above SARE program brochures and example publications were made available and a brief presentation about SARE programs was made; and, where possible, the MA SARE display was set up.