

**2014-2017 State Program Plan for  
University of Maine**



**Project Title:** Building Knowledge, Skills and Networks for Soil Security in Maine

**State Coordinator:** Ellen Mallory

**State Outreach Coordinator:** Tom Molloy

## 2014-2017 Northeast SARE State Program Project Plan for University of Maine

### Project Title: Building Knowledge, Skills and Networks for Soil Security in Maine

#### PROJECT TOPIC AND JUSTIFICATION OF TRAINING NEED

Protecting and improving soil health is recognized as a key goal for sustainable agriculture yet many ag service providers feel ill-equipped to help farmers make informed decisions about adopting specific soil health strategies. They cite a lack of region-specific information and concrete local examples of successful cover cropping, reduced tillage, and rotational practices. Farmer focus group meetings held throughout the state by NRCS on February 18, 2014 in conjunction with national Cover Crops Conference found that farmers want more information on: costs and benefits of soil health strategies; cover crop species characteristics and uses; cover cropping “recipes” for specific crops and areas; detailed instructions on seeding and termination methods; and tillage options and equipment. Individual interviews with Extension educators and NRCS staff echoed these and other educational needs for them to feel confident making recommendations to farmers.

The Maine SARE Soil Health PDP will establish local teams of ag service providers that will increase their capacity to help farmers make informed decisions about adopting specific soil health strategies for our three main cropping systems:

- Potato-grain systems in northern Maine
- Dairy cropping systems in central Maine
- Mixed vegetable cropping systems in south-central Maine

This project will compliment and expand the NRCS initiative in this area by providing practical training and developing a collection of detailed profiles of local cover crop/soil health farmer practices and demonstration trials that will include field data and specific how-to information. An advisory board was formed in April to help guide project development and implementation.

#### 5. BENEFICIARY AUDIENCE DESCRIPTION and RECRUITMENT EFFORTS

##### Beneficiaries

This project will target two levels of participants – “core team members” who will commit to participate fully in the professional development training and “associates” who will be invited to the winter workshops and field days. This two-tiered approach will create a core group of expertise as well as increase general capacity in the state.

Core Team Members: 18 ag service providers from Extension, NRCS, Soil and Water Conservation Districts, Dept of Ag., crop consultants, and non-profits.

Associates: 18 ag service providers from the same organizations.

##### Recruitment Efforts

An email invitation will be sent to ag service providers from the above organizations that outlines the benefits of participating as a “core team member” (ex., increased knowledge; team approach to address local soil health issues; technical and financial support for on-farm demonstrations and case studies; attendance to regional cover crop conference ...) and the expectations (ex. one on-farm demonstration or case study per year). The invitation will also include the option to join an email list for “associates.”

#### 3. LEARNING OUTCOMES

Participants will increase knowledge, skills and confidence to provide education and recommendations to farmers about soil health strategies in these areas:

- Effects of soil health on crop productivity and environmental impacts
- Biological, chemical, physical components of soil health
- Soil health tests
- Cover crop species characteristics and “windows of opportunity” in current cropping systems
- Cover crop implementation details (machinery, seed rates, ...)
- Reduced tillage strategies
- Local examples of cover cropping, reduced tillage, rotations including impacts on crop production, soil health, nutrient conservation, costs and revenues.

#### 4. EDUCATIONAL ACTIVITIES PLANNED

- Individual viewing of selected archived presentations from the National Cover Crop Conference and other webinars as introduction.
- Winter workshops (1 per year) that include presentations by outside experts and participants, farmer panels, and group work.
- Core team meetings for each focus area two or more times per year to identify needs, plan/coordinate activities, and review outcomes.
- Creation of UMaine Extension Soil Health/Cover Crop website, organized by focus area cropping systems, where detailed written and video examples of successful soil health practices and summaries of on-farm demonstrations will be posted.
- On-farm demonstrations conducted by core team members. Summaries with photos and data to be posted on Extension soil health website. (15 per year)
- Detailed written profiles of successful soil health/cover cropping practices used by farmers to be created by core team members and shared via the Extension soil health website. (6 per year)
- Detailed video profile of successful cover cropping strategies. 1 per focus area group.
- Northeast SARE Regional Soil Health/Cover Crop Conference to be held during the winter of 2015/16.

#### SEE ATTACHED MILESTONES FOR YEARS 1, 2 AND 3

#### VERIFICATION OF LEARNING OUTCOMES

- All participants will complete a pre-project survey to gauge their level of knowledge and confidence in soil health principles and strategies.
- Participants will answer a selection of these questions in end of Year 1 and 2 surveys, and the full suite of questions at the end of Year 3.

#### 2a. AG SERVICE PROVIDER ACTIONS PROJECT PERFORMANCE TARGET

**18 ag service providers (“core team members”) who gain in-depth practical knowledge and skills in soil health strategies and their implementation will work with at least one grower each year to implement a soil health strategy on their farm (54 farmers total) and will reach an additional 5 farmers each through educational programs or one-on-one assistance (270 farmers total).**

**18 additional ag service providers (“associates”) who gain familiarity with soil health strategies help at least two growers each year make an informed decision about implementing soil health strategies on their farm (108 farmers total).**

#### 2b. INDICATORS OF AG SERVICE PROVIDER ACTIONS

- Number of ag service providers who deliver educational programming or provide one-on-one assistance to farmers related to soil health strategies and implementation.
- The number and types of programs or services they deliver.
- Number of farmers they reach and acreage managed.

#### VERIFICATION OF PERFORMANCE TARGET

- Team members and general members will respond to surveys at the end of each year that will collect the ag service provider action information above and assess learning outcomes and the ways in which the training can be improved.
- Team members will include a discussion of training effectiveness and needs in one of the winter team meetings each year after results from the above survey are available.

#### 1a. FARMER ACTIONS DESIRED

Farmers will:

- Test the health of their soil by sending to soil testing lab that has soil health tests (UMaine, Cornell or Haney), doing in-field procedures (penetrometer, infiltration, ...), or both.
- Adopt one or more soil health practices:
  - Cover cropping
  - Reduced tillage – frequency or intensity
  - Delay tillage to spring
  - Soil improving rotation

#### 1b. INDICATORS OF FARMER ACTIONS

- Number of farmers who test their soil for soil health for the first time and number of acres affected.
- Number of farmers who adopt or expand their use of soil health practices and number of acres affected.
- The types of practices adopted.

#### VERIFICATION OF FARMER ACTIONS (optional)

The ag service providers will record the above information in a template provided to them.

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**1. Milestones for Years 1, 2 and 3**

**Prior to Project Initiation**

1. A Maine state SARE PDP advisory board is formed that includes representatives of Extension, NRCS, and Maine Organic Farmers and Gardeners Association (MOFGA), as well as expertise in the following three cropping systems: potato-grain, dairy, and mixed vegetable. This group helps the SARE Coordinator develop the 3-year professional development training plan in soil health and will participate as “core team members” in one of the three cropping system focus area teams. (April 2014)

**Year 1: Oct. 1, 2014 – Sept. 30, 2015**

1. The Soil Health PDP advisory board and SARE Coordinator meet to discuss the 3-year project plan, outline Year 1 activities for each focus area team, and plan for the Year 1 Workshop. A team leader for each focus group is designated. (October 2014)
2. 60 ag service providers receive an invitation to participate in the soil health training project that outlines participant expectations. At least six ag service providers for each focus area (18 total) indicate their interest and agree to the expectations. These will be identified as “core team members.” An additional six ag service providers for each focus area sign up as “associates.” (October 2014)
3. Each focus area team meets with the SARE Coordinator to discuss the goals of the program and the resources available to the groups, including assistance from the Coordinator, and reviews the program expectations. The groups discuss the key areas of soil health/cover cropping need and opportunity for their particular focus area (i.e., potato-grain, dairy, or mixed vegetable), identify their and their farmers’ educational and informational needs related to these, and begin formulating ideas for Year 1 demonstration projects. Demonstration projects will provide concrete examples that service providers can use in their work with farmers. These will include on-farm demonstrations and detailed profiles (written or video) of model farmer cover cropping practices currently being used. (November 2014)
4. The Soil Health PDP advisory board and SARE Coordinator meet to further plan the Year 1 workshop taking into account reports from the focus area group meetings. (November 2014)
5. The SARE Coordinator will create a UMaine Extension Soil Health website, organized by focus areas (potato-grain, dairy, and mixed vegetable), where the participants’ demonstration project summaries and farmer practice profiles will be posted; as well as links to other existing resources of use to ag service providers. As such, this website will address the need for region-specific information and concrete local examples of successful cover cropping, reduced tillage, and rotational practices. A focus will be put on including detailed how-to information on seeding and termination methods, tillage options, and equipment. (November 2014)

6. All 36 Soil Health PDP participants (core team members and associates) receive and read or view educational materials prior to the first workshop. The educational materials will help ensure that all participants have a similar base level of knowledge. (November 2014 to January 2015)
7. All 36 Soil Health PDP participants attend a day-long workshop. In Year 1, the workshop will focus on providing the underlying principles and specific practical information regarding soil health, cover cropping, reducing tillage, and crop rotations; and serve to build connections among participants. Participants will work in groups to develop recommendations for case study scenarios and will meet by focus area team to further plan Year 1 demonstration projects. (February 2015)
8. Each focus area team meets as a group, including the SARE Coordinator, at least once in the spring to finalize Year 1 demonstration projects or detailed farmer practice profiles. The SARE Coordinator provides assistance with demonstration design, data collection planning, and other technical details. (February to April 2015)
9. One of the three focus area teams works with a UMaine Extension videographer and the SARE Coordinator to plan the production of a video to highlight one or more soil health practices of particular importance and promise for their cropping system of interest. (February to April 2015)
10. Core team members work with at least one farmer each to implement an on-farm demonstration or write an in-depth profile of a farmer soil health practice. An example of an on-farm demonstration already proposed for potatoes is to compare spring soil temperatures, soil moisture, and planting date following 4 winter soil cover strategies – fall tilled and bare, fall tilled with hay mulch, fall-planted cover crop that winter kills, fall-planted cover crop that continues growth in the spring. (March to October 2015)
11. The leader of the focus area team producing the video in Year 1 works with the UMaine Extension videographer and the SARE Coordinator to shoot, edit, and post the video to the soil health website. (March to October 2015)
12. Each focus area team organizes and hosts one field day/farm tour to highlight soil health strategies and on-farm demonstrations for their focus cropping system. All participants attend. (June to September 2015)
13. Focus area teams receive support from the SARE Coordinator for team meetings, design and implementation of demonstration projects, written and video profiles, field days, and inter-team communication. (Ongoing)

#### **Year 2: Oct. 1, 2015 – Sept. 30, 2014**

1. Program participants complete Year 1 follow-up survey (October 2015)
2. All Soil Health PDP participants receive an invitation to the NE-SARE Soil Health and Cover Crop Conference. (October 2015)
3. The Soil Health PDP advisory board meets to discuss Year 1 outcomes and coordinate Year 2 activities for each focus area team. (October or November 2015)
4. Each focus area team meets to share results from on-farm demonstrations and farmer soil health practice profiles; and to identify further educational and informational needs for themselves and

the farmers with whom they work. This latter information is used by the SARE Coordinator to make additional informational resources available (via website for instance) or to plan demonstrations or field day topics for the Year 2. (November 2015)

5. Soil Health PDP core team members attend the NE-SARE Soil Health and Cover Crop Conference. (December 2015 to February 2016)
6. Core team members send on-farm demonstration summary reports and case studies to State Coordinator who posts them on the Extension website. (December 2015)
7. Each focus area team meets at least once after the regional conference to discuss what they learned at the conference and how they will incorporate it into Year 2 activities; and to plan Year 2 demonstration projects and field day. (February to April 2016)
8. A second of the three focus area teams works with a UMaine Extension videographer and the SARE Coordinator to plan the production of a video to highlight one or more soil health practices of particular importance and promise for their cropping system of interest. (February to April 2016)
9. Core team members work with at least one farmer each to implement an on-farm demonstration or write an in-depth profile of a farmer soil health practice. (March to October 2016)
10. The leader of the focus area team producing the video in Year 2 works with the UMaine Extension videographer and the SARE Coordinator to shoot, edit, and post the video to the soil health website. (March to October 2016)
11. Each focus area team organizes and hosts one field day/farm tour to highlight soil health strategies and on-farm demonstrations for their focus cropping system. All participants attend. (June to September 2016)
12. Focus area teams receive support from the SARE Coordinator for team meetings, design and implementation of demonstration projects, written and video profiles, field days, and inter-team communication. (Ongoing)

### **Year 3: Oct. 1, 2016 – Sept. 30, 2017**

1. Program participants complete Year 2 follow-up survey (October 2016)
2. The Soil Health PDP advisory board meets to discuss Year 2 outcomes and coordinate Year 3 activities for each focus area team. (October or November 2016)
3. Each focus area team meets to share results from on-farm demonstrations and farmer soil health practice profiles; and to identify further educational and informational needs for themselves and the farmers with whom they work. This latter information is used by the SARE Coordinator to plan for the Year 3 winter workshop, to make additional informational resources available (via website for instance), or to plan demonstrations or field day topics for the Year 3. (November 2016)
4. Core team members send on-farm demonstration summary reports and case studies to State Coordinator who posts them on the Extension website. (December 2016)

5. All Soil Health PDP participants attend a day-long workshop. In Year 3, the workshop will focus on sharing results from each of the focus area teams and identifying new opportunities. (February 2017)
6. Each focus area team meets at least once after the winter workshop to discuss what they learned and how they will incorporate it into Year 3 activities; and to plan Year 3 demonstration projects and field day. (February to April 2017)
7. The third of the three focus area teams works with a UMaine Extension videographer and the SARE Coordinator to plan the production of a video to highlight one or more soil health practices of particular importance and promise for their cropping system of interest. (February to April 2017)
8. Core team members work with at least one farmer each to implement an on-farm demonstration or write an in-depth profile of a farmer soil health practice. (March to October 2017)
9. The leader of the focus area team producing the video in Year 3 works with the UMaine Extension videographer and the SARE Coordinator to shoot, edit, and post the video to the soil health website. (March to October 2016)
10. Each focus area team organizes and hosts one field day/farm tour to highlight soil health strategies and on-farm demonstrations for their focus cropping system. All participants attend at least one field day. (June to September 2017)
11. Core team members send on-farm demonstration summary reports and case studies to State Coordinator who posts them on the Extension website. (October 2017)
12. Focus area teams receive support from the SARE Coordinator for team meetings, design and implementation of demonstration projects, written and video profiles, field days, and inter-team communication. (Ongoing)
13. Focus area teams and State Coordinator meet to review the results from three years of on-farm demonstrations and case studies and to develop a list of best practices and take-home lessons. (October 2017)
14. Program participants complete Final survey. (October 2017)
15. The State Coordinator works with each focus area leaders to develop an Extension factsheet on soil health and cover cropping for each focus area using the results from Milestones #13 and 14. These factsheets are posted to the Extension project website and made available as pdfs. (November 2017)
16. Program participants complete Final survey. (October 2017)

### **Key Individuals/Partners**

Ellen Mallory is the University of Maine Sustainable Agriculture Specialist (80% extension and 20% research) and the Maine State SARE PDP Coordinator. Ellen administers Maine's state PDP program and supervises the Maine SARE Outreach Coordinator.

Tom Molloy is the SARE Outreach Coordinator for Maine, committing .36 FTE to this effort. Tom coordinates and implements Maine's SARE outreach plan and fields questions about NE-SARE's mini-grant programs. Since 2012, he also assists the Coordinator in planning and implementing Maine's state PDP program.

Maine SARE Soil Health PD Program Advisory Board will provide guidance for Maine's state PD project. The board currently includes Alice Begin (NRCS Resource Conservationist), Dick Brzozowski (UMaine Extension, mixed vegetable), Rick Kersbergen (UMaine Extension, dairy), and Andrew Plant (UMaine Extension, potato-grain).

## 2. SARE Outreach Plan

The Maine SARE Outreach Coordinator and State Coordinator will:

1. Provide information about SARE resources and grant opportunities to growers and agricultural professionals through presentations and display tables at grower workshops, on-farm field days, and twilight meetings (at least 6 per year).
2. Work with county Extension educators to identify additional farmer groups or organizations that hold meetings where information about SARE resources and grant opportunities can be presented.
3. Respond to inquiries about SARE grant resources and programs via phone or email.
4. Maintain a SARE in Maine webpage, as part of the University of Maine Cooperative Extension Sustainable Agriculture website – <http://umaine.edu/sustainable-ag/>. This page contains links to Maine SARE Farmer Grant Profiles and a link to the Northeast SARE website.
5. Provide support for the Maine Sustainable Agriculture Society (MESAS) through funding for farmer-speaker honoraria.

Proposed SARE grant program outreach activities and events for Oct. 1, 2014 – Sept. 30, 2015.

<b>Event</b>	<b>Location</b>	<b>Month/Year</b>
Maine Farmers and Gardeners Association Farmer to Farmer Conference	Northport	November 2014
Maine Agriculture Trade Show	Augusta	January 2015
Annual Maine Potato Conference	Caribou	January 2015
Maine Vegetable and Fruit School	Portland & Bangor	March 2015
Maine Dairy Seminar & MDIA Annual Meeting	Waterville	March 2015
Maine Grass Farmers Network 10th Annual Grazing Conference	Fairfield	March 2015
Maine Sustainable Agriculture Society Twilight Meetings	various	2-3 events during summer
UMaine Sustainable Agriculture Field Day	Orono	June 2015
UMaine Highmoor Farm Field Day	Monmouth	July 2015
UMaine Aroostook Farm Field Day	Presque Isle	July 2015
UMaine Blueberry Hill Farm	Jonesboro	July 2015
UMaine Aquaculture Institute Open House	Orono	August 2015
Topical workshops and conferences	various locations	as opportunities arise