

The Lay of the Land

The Newsletter of the Maine Association of Professional Soil Scientists

IN THIS ISSUE

Volume 25, Issue #2

www.mapss.org

Summer 2022 Edition

2022-2023 Executive Committee

President Rodney Kelshaw

Vice President Roger St. Armand

Past President Christopher C. Dorion

Treasurer Gary Fullerton

Secretary Eric Whitney

Director Natalie Marceau

2022-2023 Committee Chairs

Technical Chair Tony Jenkins

Webmaster Matt Dorman/Chris Dorion

Newsletter Chris Dorion

Education Michael Jakubowski

State of Maine Liaison OPEN

University of Maine Liaison Ivan Fernandez (Orono)

USDA NRCS Liaison Lindsay Hodgman

IN THIS ISSUE	
President's Message - Rodney Kelshaw	Page 1
September 7, 2022 MAPSS – MAWS Field Conference - Rodney Kelshaw, Chris Dorion	Page 2
MAPSS E.C. Update - Rodney Kelshaw	Page 3
Wolfe's Neck Center & Farm Updates - Alex Gulachenski	Page 4
University of Maine Update - Dr. Ivan Fernandez	Page 6
New Soil Survey Exhibit at L.C. Bates	
- David Turcotte	Page 7
March 15, 2022 MAPSS Annual Business Meeting Minutes: <i>To be approved at</i>	
the 2023 MAPSS Annual Business Meeting – Eric Whitney	Page 8
Treasurer's Report - Gary Fullerton	Page 10

Note: Opinions expressed by the authors of articles are not necessarily endorsed by MAPSS.

A MESSAGE FROM THE PRESIDENT

Rodney Kelshaw, Maine LSS #522

Hello MAPSS Membership. I want to start by saying thank you for the opportunity to be a contributing member to our association and take on the role of President. Some of you may not know me; recently it came to my attention that I can fly under the radar. I have been in the Maine environmental consulting world since 1998 and a MAPSS member since the early 2000's. I hold the MAPSS past-Presidents in high regard and know what they have provided to this association over the years cannot be matched. My hope is to continue this tradition of public service and leave a successful association for the next President $\textcircled{\mbox{\scriptsize env}}$.

Just in the timeframe that I have been a MAPSS member, we have seen many changes that affect soil science in Maine. Markets change, sectors crash, energy sources emerge, and we are in the ebb and flow of it all, just trying to keep our heads above water, while remaining relevant and providing value where possible.

The Maine Association of Professional Soil Scientists (MAPSS) was formed in 1975. The Mission of MAPSS is to promote soil science through the exchange of technical, political, and regulatory information that influence and guide the profession of soil science. MAPSS members have interdisciplinary professional backgrounds in both the private and public sector, including soil consultants, wetland scientists, site evaluators, state and federal government scientists and regulators, students, and others with an interest in the natural sciences. The organization's goal is to ensure the success and promote the advancement of the soil science profession. MAPSS strives to provide guidance, education, and training to its members and the public on soil science issues of interest and concern.



In the last few years we have seen available classes in soil education at our Maine Universities seemingly erode away; however, now there is the possibly we are on the brink of a resurgence and expansion of that curriculum. Please see the updates from Dr. Ivan Fernandez.

2022 MAPSS and MAWS Annual Field Conference:

We need several MAPSS members to supervise stations. You need to arrive by 8:30am to get to your assigned station. Minor tasks would include cleaning off the face of a soil pit if needed, assisting meeting attendees with the station's points of interest (the specific criteria to investigate and take notes on), and assisting new attendees with soils' related information. In May 2021 the Maine Department of Agriculture, Conservation and Forestry (DACF) and the Maine Governor's Energy Office (GEO) convened a stakeholder group to consider the opportunities and challenges presented by solar energy development on NRCS mapped

agricultural land in Maine. The group provided the final report to the GEO for consideration. From this emerged statutes that, in some cases, require a high intensity soil survey to determine if the proposed solar development will be located wholly or partially on "Prime Farmland" or "Farmland Soils of Statewide Importance" as mapped by the NRCS. The MAPSS website contains detailed criteria for soil scientists on this special type of soil survey.

On a daily basis we are learning more about the significant negative effect PFAS in the soil is having on certain communities and associated environments. One can only assume there will be an opportunity for soil scientists to contribute to eventual solutions for mitigating this issue.

The Maine Farmland Trust and their partners are starting groups like the Maine Soil Health Network. Read more on this from *Alex Gulachenski* in his article on the following pages.

Climate change is a topic with seemingly unlimited avenues for discussion. One that is a popular topic in Maine is the opportunity to combat the effects of climate change through carbon sequestration in soil.

As professionals we are being asked to provide services beyond typical soil surveys and the occasional soil test for stormwater designs. This is our opportunity as an association to continue to meet the charge to help educate the public, team with other associations/groups interested in soil science, and participate on boards and legislative panels to further soil science knowledge to help understand and protect healthy soil in Maine.

MAPSS – MAWS Annual Field Conference Wolfe's Neck Center & Farm Wolfe's Neck Woods State Park Wednesday, September 7, 2022 Rodney Kelshaw, Maine LSS #522 Christopher Dorion, Maine LSS #454

As with past field conferences over the last 30 years, the objective is to provide a professional level of training for natural resource professionals, ranging from soil scientists, site evaluators, wetland scientists, code enforcement officers, regulatory staffs, educators, and any interested individual from the general public. Pre-conference planning has identified 2 sites with a variety of parent materials and soil series.



The first site is the hayland and pasture surrounding the Mallett Barn, where registration and lunch were held last year, and will be again this year. This site contains a HA-HT (human altered – human transported) morphology due to drainage ditching. How are these types of landscapes described in soil surveys? If an NRPA stream is present, are there agricultural exemptions? Is the wet meadow a PEM1? Is it a Wetland of Special Significance? How are eroded soils described? Are the redoximorphic features active or relict? How do we determine this? Part of this area is within 250 feet of the Highest Annual Tide Line. How is this area treated on environmental surveys? A second area at the Mallett Barn will feature excavator dug soil test pits in a variety of parent materials, depth, and drainage classes.

The second site is in the State Park and will feature undisturbed forest land. Hand dug soil test pits will cover a catena of soils, from a wetland onto an upland. The wetland will be challenging in terms of its delineation. Botanists will be present to help guide attendees with plant identification.

Soil pits will be dug with a small excavator provided by NRCS and operated by Greg Granger. Wolfe's Neck Woods Center & Farm, as well as Wolfe's Neck Woods State Park, have generously offered their facilities and staff the day of the conference, as well as landowner permission, access, and Dig Safe location of utilities.

Please follow the MAPSS website for registration details and conference information.

MAPSS Executive Committee Update 2022

Rodney Kelshaw, Maine LSS #522

We wanted to provide the membership an update on some of the tasks/items/issues the MAPSS Executive Committee (EC) will be focused on in 2022/2023. Please contact Rodney Kelshaw (rodney@flycatcherllc.com) if you have questions, comments or are interested in being involved with any of these initiatives.

- 1. We have set up a MAPSS Google Docs site and have provided the MAPSS membership access, where we can store the documents, photos, and other data relevant to our association.
- 2. We will be updating the *MAPSS Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping, 2009.* We have added significant regulatory criteria since 2009. The 2023 version will be 100% digital and available on the MAPSS website. We also will print and bind the *Guidelines* for a nominal cost to members.
- 3. The 2022 MAPSS Fall Field Conference planning is in full swing. We have obtained permission from The Wolfe's Neck Center & Farm, as well as Wolfe's Neck Woods State Park again. NRCS has again generously agreed to provide excavator digging of the soil test pits. We are finalizing outreach, potential site selection, and topics to discus and review.
- 4. MAWS created a committee to explore the idea of creating an umbrella Maine natural resources association. The EC will work with the MAWS committee to explore the potential for such an organization.
- 5. Ivan wrote an article for the newsletter detailing the status of soil education at the Maine Land Grant University at Orono. We'll be supporting Ivan and to show how a robust soil curriculum has a positive effect on what we do as scientists in Maine.



Summer 2022 Edition

Volume 25, Issue #2

2022 MAPSS and MAWS Annual Field Conference:

Our associations will again be holding this conference on Wednesday, September 7, 2022, at Wolfe's Neck Woods Center & Farm and Wolfe's Neck Woods State Park. The soil test pits, wetlands, and other protected natural resources for this outstanding training opportunity are in new locations and environmental settings. Please check the MAPSS website for registration details and information.



Photo courtesy of Wolfe's Neck Center & Farm. Scottish Highland Cattle heading out to pasture at Sunrise Farm in Belgrade.

Wolfe's Neck Center Research and Networks Updates: Building Farmer networks For Soil Health

Alex Gulachenski, Wolfe's Neck Center's Farm Networks Coordinator

I am a recent addition to the Wolfe's Neck Center staff. As an ecologist by training, I view agriculture from a systems and community-centered perspective, and I work to build connections between agricultural management principles, farmer livelihood, and climate resilience. I hope you enjoy this short update about our work to address climate change through community, farming, and knowledge sharing!

Wolfe's Neck Center is committed to developing solutions to climate change through agriculture. A key component of that mission is both ground-truthing climate smart agricultural solutions through our own farm operations as well as supporting other farmers' adoption of climate smart practices. Wolfe's Neck Center is fostering collaborations amongst organizations, farmers, and institutions that aim to facilitate information sharing, innovation, and improved practices.

This work is not only embodied in Wolfe's Neck Center's role as an education and research farm, but also in its role as a convener and facilitator of farmer networks. As Farm Networks Coordinator, I am the person on the ground working with farmers to achieve these shared goals.



The Lay of the Land

Volume 25, Issue #2

Summer 2022 Edition

Maine Soil Health Network

Wolfe's Neck Center and Maine Farmland Trust (MFT) collaborated to launch the Maine Soil Health Network (MSHN) in 2021 to provide Maine farmers with information and support to improve soil health on their farms. Healthy soil is not only important to farmers for production and healthy animals, but also as a tool to combat climate change. Soil can mitigate harmful greenhouse gas emissions by absorbing carbon from living and dead organic matter. The carbon is stored safely in the soil until it is disrupted by practices like tilling, which releases carbon back into the atmosphere. Soil health is a key component in building climate resiliency in the agricultural system.

In support of Maine Soil Health Network's mission, I have been joining MFT staff on site visits to all participating farms. In my travels, I have learned about farmers' management strategies, soil health challenges and their long-term goals for climate adaptation. This year the overwhelming theme of these visits has been discussing the challenges and benefits of switching to minimal or no-till farming. Making the switch improves soil structure, reduces dependency on expensive machinery and equipment, reduces water pollution in runoff, decreases soil erosion, and creates more biodiverse and pest resistant soils. Through these farm visits, the Maine Soil Health Network has been able to connect farmers to share their challenges and successes and learn more through experts and focused educational events.

At the end of this summer, we will return to participating farms to aid farmers in soil health sampling. This sampling paired with detailed record-keeping allows farmers to participate in the much larger Soil Health Benchmarking Study by <u>PASA Sustainable Agriculture</u>. The Soil Health Benchmarking Study helps farmers gauge their soil health compared to other farms with similar crops or livestock. Started in 2016, it now includes over 150 farms across Pennsylvania, Maryland, and now Maine. Through networks like this one, farmers are also able to share their stories, access support and funding from local service providers for long-term planning, and access technical service and research in quarterly meetings, workshops, and an annual retreat. We are looking forward to a busy summer working to support on-going research here at Wolfe's Neck Center as well as through active participation in our growing networks –OpenTEAM, MSHN, and the New England Grazing network. These networks serve as an opportunity to build deeper connections, share knowledge, monitor data, and generate support across the region with the goal to create a healthier regional food system and safeguard the future of food and agriculture in Maine!

This post was originally published on Wolfe's Neck Center's Blog. Learn more about Wolfe's Neck Center and read more about our ongoing activities <u>here.</u>

Website:

The MAPSS website is periodically updated. As we approach late summer, the registration details and associated information for the September 7, 2022 field conference will be updated frequently.

VERIFY YOUR LICENSE INFORMATION AND STATUS:

Go to:

https://www.maine.gov/pfr/professionallicensing/professions/board-licensure-geologists-soil-scientists



Link to the menu options in the right navigation pane to maintain the accuracy of your license contact information.

License renewals are due by December 31 each year. Failure to pay the renewal fee may result in the loss of your license and you will be required to reapply and retake all exams.

University of Maine Update

Dr. Ivan J. Fernandez

In keeping with my offering a "UMaine Update" for many years, usually 5 minutes at the podium, I instead will briefly describe what I think the membership might be most interested in relative to the soil program at Maine's land grant institution. "Soil science" education at the University of Maine has evolved over the years through various academic reorganizations, name changes, and program changes. Today, a student "majoring in soil science" would be in the Soil and Water Science concentration of the B.S. degree program in Ecology and Environmental Science (EES). Students also get training in soil science through other academic programs to a greater or lesser extent. Some students elect to declare a "Soil Science Minor" when they are in another major but want to both emphasize soil science in their academic work and receive formal recognition beyond the classic "Brady Soils Text") is a required course in many of the natural resource majors across agriculture, forestry, ecology, and wildlife. This course (EES 140 – Soil Science) typically has between 130-170 students each spring. I can report that student interest in soil science, soil health, soil carbon and other aspects of soil science is on the rise in the past few years.

The Bad News: As many in MAPSS are aware, the University investment in soil science faculty positions over the years has allowed us to slowly lose faculty expertise in this subject area. In recent years I have advised students away from declaring a Soil and Water Science concentration in EES or accepting students into the Soil Science Minor as the minor's advisor because we increasingly were not able to offer the courses needed. Too often the academic preparation depended on independent study courses to meet soil science credit thresholds. While the administration recognized the value of the discipline in general, the number of graduates and available jobs would typically weigh heavily in budget-driven decisions. This summer Susan Erich and Stom Ohno are retiring, both long-time Soil Chemistry faculty, leaving yours truly as (thus 1 FTE) the remaining soil science faculty. In addition, next academic year my involvement with climate work around Maine's programs and some new federal funding will have me stepping back from teaching the Basic Soil Science course in spring 2023 (and we are looking for a temporary instructor for that). As I have both feared and predicted for many years, this will be the low point for soil science at UMaine as the pendulum swings, but I am convinced that the momentum has now shifted.

The Good News: In short, recognizing that a land grant university should not be without soil science expertise, and to build back to preserve the academic programs around soil science, there is a move now to hire new soil science faculty. We have a new dean, Dean Diane Rowland, in the College of Natural Science, Forestry, and Agriculture who is very supportive of soil science and brings great vision for the college and its future. Soil science faculty positions will be housed in either the School of Food and Agriculture (where Susan Erich and Stom Ohno have been housed) or the School of Forest Resources (where I am housed). The EES program is a program and not an academic unit, so it does not directly employ faculty. As of this writing, two new soil science positions have been proposed to the administration for approval in the School of Food and Agriculture, one in Soil Chemistry and the other in Soil Health. These have been approved by the Dean and are working



their way through the administration. I also anticipate that my position will be replaced in the School of Forest Resources with a soil scientist in the near future who would teach the Basic Soil Science course with expertise in forest soils and possible other skills in areas such as digital soil mapping, site productivity, or watershed science.

In closing, I think you will see the re-emergence of a soil science faculty cohort in the next several years. Students continue to express increasing interest in soil science driven by what they see and hear in society around sustainability, climate change, soil health, carbon, and even issues like (dare I say it) PFAS. I did not think my career would last long enough to see the amount of interest emerging around soil science, which is driving these hiring trends. Stay tuned!

New Soil Survey Exhibit at L.C. Bates

David Turcotte (retired NRCS soil scientist)

A permanent exhibit about the National Cooperative Soil Survey (NCSS) in Maine has been introduced at the L.C. Bates Museum at Good Will-Hinckley, located in the town of Fairfield (along U.S. Route 201). It is along the north wall of the impressive rock and mineral room – the first exhibit about soil science that the museum will have maintained. As of now the exhibit is all contained inside of and on top of / above a metal, glass display case. Earlier I introduced an interactive soil & water stewardship program for the museum for elementary school children, ideally best suited in an outdoors classroom on picnic tables behind the museum and by a couple of soil profiles (one in a nearby field and one in a nearby forest).

Due to complications and time constraints from COVID restrictions, two soil monoliths (6" x 24" profiles of a Colonel series under forest and a Lamoine series in a field) and two framed posters (one showing relative clay-silt-sand sizes and one of a typical soil composition pie chart) had to be tabled for the exhibit, but should be in place by next spring (when I return to at least visit from Arizona). Likewise, the museum is still closed because of COVID, but the museum's director hopes to open it back up by this summer.

Laminated pages of text or diagrams about the NCSS, a definition of soil, and the water cycle reside on the brick wall above the display case. On top of the display case will reside brochures (Soils of Maine, Web Soil Survey, National Soil Survey Center), bookmarks (of our state soil [the Chesuncook series] at least) and informational booklets about soil science (including some geared towards children).

The top and bottom glass shelves of the display case offer key NCSS references (red laminated Field Guide, Soil Survey Manual, Keys to Soil Taxonomy) and/or tools of the trade for pedologic and site / landscape observations. The glass behind the first shelf has laminated pages of text or images pertinent to Maine soils, the 5 soil formation factors, a soil/parent material/landscape block diagram, and photos of Colton, Sebasticook and Wonsqueak series profiles. A laminated textural triangle and diagram of nutrient availability as a function of pH also reside on the top shelf, next to the tools of the trade.

The middle shelf of the display case offers comparisons between historic analog (aerial photo pair, stereo scope and associated topo map) and modern digital (using GPS and GIS) soil maps, with examples of an associated map unit legend and a list of land uses with soil survey interpretations (either as capabilities or limitations). A brief introduction as to how historic and modern soil survey occurred/occurs is on the back glass on foam core. Besides a sharpshooter shovel and Dutch soil auger, the bottom shelf has trays of soils by horizons (one from a field and one from a forest), along with trays with silty clay, silt loam, the 5 sand fractions, and rock fragments finer than flagstones, stones and boulders).

Ideally it would be great to be able branch off of this exhibit at the museum with the Soils of Maine .ppt, maybe the MAPSS display board, and outdoor pedon-landscape relations in field and forest (near the museum). I encourage MAPSS members that live in southern Somerset or Kennebec Counties to volunteer there, particularly to help out with the museum's soil science or geology exhibits and programs. If interested and/or



The Lay of the Land

you visit the exhibit after the museum re-opens then please let me know what you think at turcthree@gmail.com. On behalf of the L.C Bates Museum at Good Will-Hinckley, I extend my gratitude to Nicholas Butler and Thomas Kielbasa of the Natural Resources Conservation Service for their support.

Maine Association of Professional Soil Scientists March 15th, 2022, Annual Business Meeting Minutes (to be approved/amended at the 2023 Annual Meeting)

Minutes compiled by MAPSS Secretary Eric Whitney, Maine LSS #610

11:00 AM to 12:30 PM via Zoom

The meeting was called to order at 11:00 AM by Maine Associated of Professional Soil Scientist (MAPSS) President Chris Doiron

Election of Officers

A motion was made and passed for the following slate of officers for 2022:

- President: Rodney Kelshaw
- Vice President: Roger St. Amand
- Treasurer: Gary Fullerton
- Secretary: Eric Whitney
- Past President: Chris Dorion
- Director: Natalie Marceau

Proposed slate was approved.

Lay of the Land editor: Chris Dorion will continue to work on "The Lay of the Land" newsletter for the short term but is looking for a replacement.

Treasurer's Report

Gary Fullerton reported on MAPSS finances for 2021. \$920 was collected from membership dues, \$1,285 was collected from the annual workshop. \$1,000 dollars was donated to the Envirothon. A motion was made and passed to approve the Treasurer's report. <u>Envirothon</u>

Envirothon plans to hold an in-person event for 2022. Last year, \$1,000 was donated to Envirothon. A motion was made and passed to donate \$1,000 to the 2022 Envirothon.

Janet Cormier Scholarship

Mike Jakubowski reported on the Janet Cormier Scholarship. Two individuals applied for the scholarship in 2021, Jasmine Gregory and Angy Consella(sp?). Mike stated that the scholarship would be more helpful if awarded in the Fall semester rather than the Spring. Mike believes that the Fall would allow for more applicants due to better timing with student's academic year. Concerns were raised regarding the logistics of "doubling up" on scholarships for one year. A motion was made to open the scholarship in Fall of 2022, the motion was passed.

Membership Updates

There are currently 18 full members. No new members in 2021. Congratulations were made to recently licensed members, Mike Jakubowski, Chris Coppi, Anne Biddle, and Eric Whitney.



Natural Resource Conservation Service Updates

Tony Jenkins and Nicholas Butler gave updates on the NRCS. The service has been making a push to hire additional staff. Last year, five new hires were made including Jasmine Gregory from the Janet Cormier Scholarship. Efforts are being made to map the White Mountains and Lake Champlain area, no recent mapping in Maine. Soil Forest Productivity data sets are being updated in Maine.

Natural Resource Field Workshop - Wolfe's Neck Farm

The 2021 Natural Resource Field Workshop was held at Wolfe's Neck Farm in Freeport, Maine. The successful field day has resulted in renewed interest in reusing Wolfe's Neck as a venue. New stations will be investigated to ensure variety.

University of Maine - Loss of Soil Science Curriculum

Ivan Fernandez has stated that the University of Maine would be cutting Soil Science credits from their program. Ivan has reached out to MAPSS to assist with promoting the field of Soil Science with the hopes of adding credits to the program once again.



Page 10

MAPSS 2022 Treasury Report		
MAPSS Checking Account as of 6/15/2022		\$14,272.23
2022 Income:		
2022 Dues (full membership)	\$725.00	29 full members at \$25.00 each
2022 Dues (associate membership)	\$105.00	7 associate members at \$15.00 each
2022 Dues (student membership)	\$0.00	0 student members at \$0.00 each
2022 Dues (honorary membership)	\$0.00	0 honorary members at \$0.00 each
	\$830.00	
Annual Meeting Registration	\$0.00	0 registrants at \$45.00 each
	\$0.00	0 registrants at \$50.00 each
	\$15.00	1 students at \$15.00 each
-	\$15.00	
2022 Workshop	\$0.00	0 registrants at \$45.00 each
-	\$0.00	0 registrants at \$50.00 each
-	\$0.00	0 registrants at \$30.00 each
	\$0.00	
2021 Workshop	\$45.00	
TOTAL INCOME	\$890.00	
2022 Expenses: Envirothon (Maine Association of Conservation Districts)	\$1,000.00	
Annual Meeting Facility		
Janet Cormier Scholarship (2021)	\$1,080.00	
Janet Cormier Scholarship (2022) Workshop	\$1,000.00	
Website Host (DiscountASP.net)		
Domain Registration (Speedsoft)		
TOTAL EXPENSES	\$3,080.00	
MAPSS Checking Account as of 6/15/22		\$12,082.23