The annual meeting of private and public sector stakeholders held this year in Vermont focused on the fescue forage species and variety differences, pastured pigs, silvopasture, winter grazing, soil compaction in pastures, and pasture practices to achieve Chesapeake Bay’s TMDL pollution goals. Eighty people attended and participated in the Northeast Pasture Consortium (NEPC) Conference held at Lake Morey Resort in Fairlee, Vermont. This was our best turnout since 2017. This was helped by a Cedar Tree grant received by the University of Vermont that was used to bring New England collaborators of that grazing lands project together to attend this conference and financial support from USDA-Agriculture Research Service to fund farmer travel expenses. The federal budget was passed and signed into law just before Christmas 2019 so this allowed the highest attendance of grazing lands specialists from USDA-Natural Resources Conservation Service in some years. Several of them used this occasion to meet immediately after the Conference to discuss several pressing grazing lands issues facing the Agency. Our Conference was also providentially sited and timed to avoid any big winter storms for a change by adjourning two days ahead of a major snowstorm that swept across the Northeast. Eleven continuing education units (CEUs) were approved for Certified Crop Advisers and Certified Forage and Grassland Professionals by ASA-CSSA-SSSA and the American Forage and Grassland Council, respectively for our Conference technical sessions.

The fescues are getting another look as soft-leaf tall fescue varieties and meadow fescue are coming to the fore since endophyte infected (E+) tall fescue is avoided by dairy cows, and beef cattle feeders and stockers do not gain well on it in this Region. Endophyte-free (E-) and novel endophyte tall fescue varieties are available but are less persistent (E-) or are expensive seed (novel). E+ is also hard to eradicate cheaply and completely when replacing it with new varieties. Jessica Williamson from Penn State gave an overview of tall fescue toxicosis, which is the second largest annual economic loss to the U.S. cattle industry, and why there is interest in soft-leaf varieties and meadow fescue for better palatability and utilization. Jerome Magnuson from DLF Pickseed brought a stimulating message of what cows really want. “Animal preference is based on sugar and energy content in the plant more than how soft the leaf is. “There is no direct relationship between leaf softness and digestibility,” said Magnuson. (Leaf softness and coarseness is done by touch – too subjective.) “We need more trials, however, as we investigate how new varieties react to Northeast soils and weather.” He also mentioned in passing that there is a difference among tall fescue varieties in silicate content of their leaves. As the level of silicates rise in tall fescue, it reduces palatability, but currently it is not used in variety selection and breeding. Cornell University Forage Specialist Jerry Cherney introduced meadow fescue as a plant that’s been around for 11,000 years and thrives in the Northeast, even if it is a slow starter in a pasture or hay field. His forage trials show improvement in forage digestibility when it is sown with alfalfa or other mixtures at one to three pounds per acre. The neutral detergent fiber digestibility (NDF) is 2 to 4% higher than other grasses. It makes it much better in producing milk and daily gain than other fescues. “Just when you think it didn’t come up after planting, it’ll surprise you,” said Cherney. “Don’t give up on it.”

In the first-ever pastured pigs session, Phil Race of Valley View Devons in Nunda, NY, and Don Wild of Wild Acres Family Farm in Great Valley, NY, shared their experiences of raising heritage fresh air pork/woodland pork and harnessing their instinctive behaviors to produce meat their customers like. They described their feeding, fencing, grazing, and handling practices and Phil showed how he used hogs in his agroforestry system within New York’s 480A Forestry Program. Phil raises a heritage breed with a descriptive name, large black hog. They could have added “with big, floppy ears”.

Silvopasture presenters Kate MacFarland from the U.S. Forest Service, Jeff Jourdain of Jourdain Forest Management in Becket, MA, and Kevin Ogles from USDA-NRCS sought to a clarify what silvopastoralism is. They could not stress enough the need for sound planning and skilled management. The group highlighted what is and is not a silvopasture in the Northeast, establishing silvopasture in an existing forest as typically done in the Northeast, and how to identify the primary objective of integrating animals and woodlands. “The forestry must be sound,” said Jourdain. “No resource is managed to the detriment of the other.”

The meeting also informs stakeholders about ongoing Regional research projects via a poster paper session. This year’s 15 poster papers covered many diverse topics: the efficacy and accuracy of in-field brix measurements on forage crops, production management practices on organic grass-fed dairy farms, updating the pasture condition scoresheet, the implications of mob and rotational grazing systems on plant diversity along with forage yield and quality, evaluating compaction BMP effects on soils, environmental assessments of grass-based dairy production, soil carbon storage in pastures, using a grazing chart as a planning and monitoring tool, evaluating water quality BMPs in the Chesapeake Bay Watershed, prebiotic effects on health-promoting dairy bacterial cultures, and converting low-grade sheep wool into pellets that can be used as a slow-release nitrogen fertilizer for vegetable farms.

Winter or extended grazing was a topic of particular interest as the weather challenges of 2019 led to feed inventory shortages. Jessica Williams discussed interseeding forages into corn to extend the grazing season and alluded to the fact that “timing is everything”. Troy Bishopp, a New York grazier and Upper Susquehanna Coalition grazing specialist, described how he uses perennial pastures and stockpiling management strategies on his farm to get 240 days of grazing in a year. Winter snows and “perpetual Novembers” though have limited his progress in achieving the ultimate goal of 365 days. Dr. Heather Darby, agronomy and soils specialist for University of Vermont Extension, offered her extensive experience in using annual cool and warm season forage crop regimes to increase grazing days, improve soil health, and build feed inventories.

On the evening of January 15, the Northeast Pasture Consortium honored its retiring executive director, James Cropper, with a “Grazing Champion” plaque for “A lifetime of dedicated service to well-managed pastures and the human and ecological communities that benefit from them.”

The Producer Showcase session followed after the award ceremony. Randy Robar, owner and operator of the “Kiss the Cow” dairy farm, gave the history of starting out with just one cow at a very small farmette to a much larger dairy on a 500-acre Vermont Land Trust farm that is an Agricultural Land Preservation zone. His cows graze 175 acres of that farm. He and 3 other people rent acreage on this farm. Kiss the Cow farm process their own milk and have a farm store. They sell farm products from 50 small Vermont farms. They also produce maple syrup and process 3000 chickens, ducks, and turkeys each year that they raise. They practice strip grazing without a back fence. Randy finds this cuts down on goldenrod, bedstraw, and brush. He likes to use apprentices to help him operate the farm.

The second speaker at the Producer Showcase was Lora Goss, owner and operator of Stonefen Farm. It is a beef farm running Polled Red Devons. Lora was a longtime Ayrshire dairy farmer before her legs and knees gave out. She had daily milked over 50 head of Ayrshires before semi-retiring as a beef farmer. She has worked closely with the USDA-Natural Resources Conservation Service to install two grassed, 2000-foot long waterways, a pond that feeds 3 water hydrants, plastic water line system to supply water to grazing paddocks, fencing for the grazing paddock system, 4000 feet of perforated drain pipes, and built a high tunnel to house the cattle when there is freezing rain.

In the morning of January 16, Cornell Small Dairy Support Specialist Fay Benson spoke about identifying and quantifying pasture soil compaction and measures to avoid compaction by livestock while South Kortright, NY, Consulting Agronomist and Soil Scientist Larry Hepner discussed soil structure changes due to pasture soil compaction and how to fix the problems. Fay finds that using a soil penetrometer that measures soil resistance to the probe being pushed into the soil at a fenceline where livestock cannot tread on the soil surface and then out in the pasture can reveal how much soil compaction by livestock hooves has occurred. This comparison is good for that particular field and other fields done under the same soil moisture conditions, but is not able to show differences among fields when the soil texture varies greatly among them or over the season when soil moisture conditions can vary from very dry to very wet. More resistance occurs as the soils dry out. The relative difference in soil compaction between fenceline and in-pasture can be quite telling about how much surface soil compaction exists.

Mark Dubin, agricultural technical coordinator for University of Maryland Extension, gave some challenging figures to achieve mandated TMDL reduction goals in the Chesapeake Bay Watershed by using pasture management practices such as prescribed grazing, alternate watering sites, and animal-excluded stream buffer areas. “To meet EPA’s 2025 water quality goals under the ‘modeled’ pasture practices, West Virginia needs two times the level of effort from agriculture, Maryland and Delaware need six times the level of effort, Virginia needs 14 times and New York needs 67 times the level of effort while Pennsylvania needs 69 times the level of effort from agriculture,” he reported.

The body of stakeholders, private and public, continues to foster future work in quantifying economics for ecosystem services, soil health, climate resiliency and the viability of grazing enterprises. Here are the 2020 research, education, and technical assistance priorities:

1. Explore new methods to transfer knowledge and information to increase adoption of research findings within the agriculture community; incorporate social science research into increased adoption and technology transfer:
	* Including farm organizations and advocacy groups to additionally influence regulations and legislations.
	* USDA-ARS—keep working with and building partnerships and communicate with ARS headquarters about upcoming events.
	* Seek new contact with USDA-NRCS Chief, seek a commitment to encourage reps from every state (electronic options for joining?) and invite NRCS Chief to the 2021 NEPC Conference.
	* Strengthen Extension and university research connections, work listservs and across communication methods; —use OREI funding opportunity.
		1. Utilizing connections within Pasture Consortium; grazingguide.net
		2. Expand distribution list to a set list within each state for advertising date of upcoming NEPC (even if it is only a Save the Date w/o a set agenda)
		3. Advertise NEPC on already-existing websites and social media accounts owned by Consortium members (ex: Facebook pages, Instagram, websites)
		4. Invite farmers from all NEPC states (Cedar Tree grant—NE states, could apply to USDA OTT, USDA-NIFA Scott Angle) by reaching out to existing grazing networks within each state to reengage farmer participation. (Cedar Tree Foundation and NE Grazing Network as source of funding??)
	* More efficient outreach of objectives:
		1. Industry (ex: Organic Valley)
		2. Review newsletter distribution (one-click unsubscribe? Which email list to use? Sarah Goslee discussion; outreach to admin within universities and agencies)
		3. Educating new farmers; reaching the next generation.
2. Ecosystems Services and Disservices from Pasture Systems and Grazing Management:
	* Impacts to riparian areas,
	* Impacts to water quality and availability (citizen involvement),
	* Wildlife benefits to adaptive grazing management,
	* Impacts of permanent stream and streambank exclusion from livestock grazing riparian area pastures in the Northeast and economic impacts on producers,
	* Economic models for ecosystem service payments (measurement, payment, structure).
3. Silvopasture contributions to carbon sequestration; adaptive strategy in changing climate conditions.
4. Research adjustments in forage management needs in a changing climate:
* Regional management approaches (understanding variability),
* Species adaptation and evaluation (meadow fescue, use of annuals, increase in invasive plants),
* Impacts of grazing on greenhouse gas emissions and environmental resiliency,
* Management practices to reduce invasion of undesirable plant species due to increased water and lack of infiltration in pastures,
* Research on nutritional value of weeds, and
* Does climate change affect native/invasive species? Does it change pasture management? Change animal intake or increased lignification of plants?
1. Soil biology and management impacts on animal health and human health
* Small ruminant parasite research at WVU, Rhode Island, Cornell,
* Red and white clover functions in animal and soil health, pollinators, forage and animal production,
* Tanniferous forages to reduce worm load and increase bypass protein in animal diets, and
* Grazing management as it affects soil health (e.g., compaction, worms).
1. Further research in meat and dairy products regarding human nutrition and health:
	* Fatty acid updates, value of side chains on long chain FAs (Jana Kraft), and short chain FAs,
	* Artificial gut for milk digestibility located at the Wyndmoor, PA ARS Laboratory,
	* Whole milk/fats; A2A2 milk – effects on human health and getting information out to a larger audience,
	* Milk probiotics/prebiotics identified and their function in human health discovered,
	* C3, C4 grasses, forbs, and effects on Omega-3 content in milk and meat,
	* Impacts of plant-based products marketed as “meats” and “milks” to farmers and environment,
	* Dairy cow plant fiber digestibility impact on milk quality, and
	* Continue to quantify research in nutrient-dense foods; how does cooking affect beef/food nutrition values?
2. Addressing the Heavy Use Area/Pasture interface (vegetation management)
	* Comparison of options (deep-bed packs, composted packs, wood chips) and economic impact on handling facilities, heavy use areas, and cost-effective options,
	* Biological composition of bedded packs and livestock health (mastitis—John Barlow & Deb Neher),
	* Bale grazing & in-field winter management/calving,
	* Species evaluation for vegetated heavy use areas,
	* Using summer annuals to restore winter sacrifice areas, and
	* Research fact sheet updates?
3. Farm profitability and upcoming cultural/societal changes
	* Compare different philosophies, results, benchmarks,
	* Development of artificial and plant-based “meat” and “milk” (and other animal products) and how they will that affect our work, stakeholders, audience, and research. Three papers of interest listed below:
		1. Paper in Global Change Biology, Proceedings for Natl Academy of Sciences “Soil carbon sequestration is an elusive climate mitigation tool.” (2018 Nov 13; 115(46): 11652–11656),
		2. EAT-Lancet Commission Summary Report – “Our Food in the Anthropocene: Healthy Diets From Sustainable Food Systems”, Jan 16, 2019, and
		3. American Farmland Trust - Testimony of Dr. Jennifer Moore–Kucera, Climate Initiative Director of American Farmland Trust, before the US House Select Committee on the Climate Crisis, October 30, 2019.
	* Ecological/carbon footprint of animal production compared to ecological footprints of alternative products,
	* Quality assurance program requirements; impacts on profitability
4. **New:** Research on planting mixes of 6-12 species together to see what mix works well and remains diverse under well-documented grazing conditions, which species complement one another, and the economics involved in trying to maintain a diverse, as-planted mixture (cost versus value-added with increased meat and milk production and food quality).

**Business Meeting**

After the public and private sector reports on revised and new research, education, and technical assistance priorities were presented and discussed, the business meeting followed. Fay Benson, Public Sector Co-Chair and Don Wild, Private Sector Co-Chair, presided. The first order of business was to nominate and elect a public sector member-at-large and a private sector member-at-large to the Executive Committee. Jim Cropper nominated Dr. Tom Griggs, West Virginia University forage agronomist, for the public sector member-at-large. Jessica Williamson nominated Dr. Ben Goff, West Virginia University Extension ANR Agent- Mason & Putnam Counties. Once she nominated Dr. Goff, Dr. Griggs withdrew his nomination citing that he will be retiring before the 4-year term was up most likely and moving to Vermont. Thereupon, Jim Cropper seconded Jessica motion to nominate Dr. Goff. Nominations were closed by those present at the meeting. Dr. Ben Goff was unanimously elected to the Executive Committee. Don Wild announced that they had several private sector people interested in being a member-at-large, but when Aimee Braxmeier was proposed as a candidate, the other people rallied around her candidacy. Mrs. Lora Goss made a motion to nominate Ms. Braxmeier as the private sector member-at-large. Mr. Rob DeClue seconded the motion. Nominations were closed by those present at the meeting. Ms. Aimee Braxmeier was unanimously elected to the Executive Committee. Jim Cropper said he would send out their duties in a welcoming email along with background information about the Northeast Pasture Consortium since they were first year attendees.

Margaret Smith, NEPC Administrative Advisor, Cornell University Agricultural Experiment Station, Ithaca, NY presented a PowerPoint “NEPC is a Project of the Northeast Regional Association of Ag. Experiment Station Directors, NEERA 1603”. She provided a brief history of the origin of the Northeast Pasture Consortium that began as a concept and was approved by the Northeast Ag Experiment Station Directors in 1995. The first Multistate Project was established for the Consortium as NEERA1000 in 2001. It brought together a diverse, integrated group: University research and extension, USDA-ARS, NRCS, and farmers and industry. Two impact statement leaflets were produced for the Consortium for the last two 5-year projects, 2006-2011 and 2011-2016, with editorial support from the National Association of Ag. Experiment Station Directors. A support flyer was also produced to inform state and national agricultural agencies what the role of the Northeast Pasture Consortium is to bring this integrated group together to promote pasture-based livestock production and marketing. Already it is nearly time to submit a Project proposal - we need to renew! The current 2016-2021 project is almost over. After a question and answer period, Margaret asked the membership if they thought it worthwhile to renew for another 5 years. It was a general consensus that the partnership of private and public sector people were advancing the research, education, and technical assistance needed to create productive pastures throughout the Northeast in a manner that was cost-effective, environmentally friendly, and produced wholesome food. It is more important than ever to combine the ever-shrinking resources of university and agency people and funding to continue advancing the science and art of pasture-based farming.

Jenn Colby and Sid Bosworth reminded the attendees to submit any filled-in Future of the NEPC questionnaires that were still outstanding. They explained that these would be helpful to guide an ad hoc committee on how to proceed with the Consortium with Jim Cropper retiring as Executive Director in February and Sid Bosworth, the Principal Investigator, retiring in March.

Jim Cropper wrapped up the business meeting by thanking Jessica Williamson and Cliff Hawbaker for their many contributions while being on the Executive Committee. Both had served out their 4-year terms with distinction. He welcomed Ben Goff and Aimee Braxmeier to the Executive Committee. The two new co-chairs were announced, Kevin Jablonski- Private Sector and Daimon Meeh-Public Sector. The 2020 business meeting was then adjourned earlier than originally planned so those residing in the western part of the Northeast could head home in advance of a slow moving snowstorm.