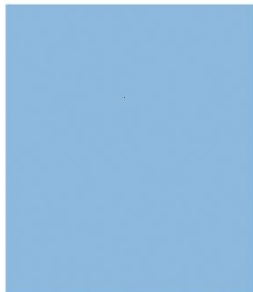
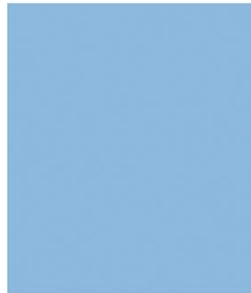


2022-2023 ANNUAL REPORT

Piscataquis County
University of Maine Cooperative Extension



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*Putting university research to work in Maine homes, businesses,
farms, and communities for over 100 years*

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2022 Annual Report

Office of the Dean

Welcome to the University of Maine Cooperative Extension! We are located in every corner of the state in 16 county offices, research farms, 4-H camps and learning centers, and online. We are the largest outreach component of the University of Maine and reach more Maine people than any other entity within the seven campus University of Maine System. Our work is focused on helping Maine communities thrive and we do so by connecting people to research-based information, education and services. UMaine Cooperative Extension conducts the state's most successful out-of-school youth education program through 4-H, empowering young people to reach their full potential. Our youth programming also includes our 4-H camps and learning centers which provide opportunities for youth to engage in outdoor experiential learning. Extension also helps support, sustain, and grow the food-based economy across the entire state of Maine. In addition, we provide valuable statewide programming in nutrition education, healthy families and communities and within the aquaculture industry. We also partner with other organizations and programs to provide additional educational opportunities to a diversity of audiences across this state.



Extension faculty and staff across the state have also contributed to significant digital outreach this past year. Our Extension website (extension.umaine.edu), which is a combination of 57 interconnected websites, received 3.1 million views in 2021. We have over 700 research-based publications that are available as free downloads at extension.umaine.edu/publications. And in this past year, we had more than 5,000 customers register for workshops, events, webinars and more through our online registration system.

UMaine Cooperative Extension is determined to make a positive difference in our areas of excellence and beyond for the citizens of Maine. Explore our website, visit a county office, and contact our enthusiastic workforce.

— Hannah Carter, Dean

Piscataquis County Extension Association

Executive Committee

Beth McEvoy, DVM – President
Rick Cabot, MD – Treasurer
Kim Merritt

Piscataquis County Staff

Sheila Norman, 4-H Professional
Trisha Smith, 4-H CEA
Anette Moulton, Administrative Specialist
Laurie Bowen, Food Systems Program Associate

Piscataquis County Highlights

Food Safety and Food Preservation

Safety is the number one priority when it comes to home food preservation and with the rising cost of food, many Mainers are turning to food preservation as a resource. Dial pressure gauge testing is provided to home food preservationists free of charge and is one of the many services provided by UMaine Cooperative Extension. Dial gauges must be tested annually to ensure accuracy for safely preserving low acid foods.

The latest, most up to date, tested and reliable recommendations from the USDA are also provided. Boiling water bath canning, pressure canning, freezing and dehydration are among the hands-on workshops offered to residents of Piscataquis County.

Cooking for Crowds, a food safety volunteer training program, is designed for non-profit audiences that cook food for the public as part of food fundraisers and organizations that provide meals at no cost to the public. Cooking for Crowds also meets the requirements of the Good Shepherd food safety training requirements for those who work in food distribution centers.



Other programs that have been offered include growing microgreens, making cost effective spice mixes and workshops on safely preserving wild game. UMaine Cooperative Extension is available to offer assistance to those who are new to food preservation as well as the experienced home canner.

Piscataquis County 4-H

As the youth programming arm of UMaine Cooperative Extension, 4-H grounds its practices in positive youth development, where youth “learn by doing” and are guided by caring adults. Traditionally associated with animal, crop, and homemaking projects, 4-H has expanded to support youth interests in STEAM (Science, Technology, Engineering, Art, Math), civic engagement, community leadership, and outdoor learning, as well. Online offerings have also improved and expanded to help fill gaps created by pandemic restrictions.

2023 is marked by growth and revitalization of 4-H in Piscataquis County. In February, we welcomed former Home Horticulture Community Education Assistant (CEA) Trisha Smith back to Extension in the role of 4-H CEA. Born and raised in Piscataquis County, Trisha hit the ground running, as she came with an understanding of Extension and had worked with 4-H and school youth in her previous role.

We kicked off our revitalized program by piloting Maple Sugaring 101, a collaboration with 4-H Workforce Development Professional, Andrew Hudacs. In addition to online instruction from UMaine Extension experts, Maple Sugaring 101 included hands-on experiential learning at Duck Grove Farm in Dover-Foxcroft. Youth learned about maple tree identification, setting a tap, running lines and collecting sap, evaporating and testing syrup, and finally, tasting the product!

In April, we hosted a 4-H Roadmap, which introduced area families to each other and/or 4-H. Since that event, 3 new leaders have completed their certifications and trainings, 2 new clubs have been organized, and 4 new adult volunteers are in the process of application and certification. One club meets at the Guilford Community Garden and an archery club is forming in Dover-Foxcroft. A small ruminant (sheep and goats)/fiber arts club is in the works beginning in the fall.



Adventures in Health Science will be back in October 2023 as a 6-week Spin (Special Interest) club offered in partnership with Northern Lights Mayo Hospital. Youth 12-18 will have an opportunity to explore career opportunities in health care with local professionals as well as learn practical skills for healthy living.

Through online and hybrid statewide programs, Piscataquis County youth have access to a variety of opportunities such as the Summer Learning series, YOUth Have a Voice community action club, and Ag Leadership Team. Piscataquis youth will be encouraged to participate in 2024 County and State Public Speaking Tournaments, typically held in March and April, with opportunities to compete at higher levels later in the year.

We are grateful for the support of individuals and families, businesses and partnering organizations in creating a community where youth can develop confidence, mastery, and generosity in an inclusive, welcoming environment.



One Tomato™

One Tomato™ distribution is complete in Piscataquis and Aroostook counties. Over 525 cherry tomato seedlings were distributed. Growing instructions and surveys were distributed as well. This was a great opportunity to also provide the community with other resources such as soil test kits, bulletins on small space and container gardening, pest management, Cooperative Extension resources and instructions on how to preserve all those beautiful cherry tomatoes.

The goal of the One Tomato project is to encourage more people to grow their own food and eat more fresh vegetables. If a handful (less than a pint) was valued at \$1.50, the bowl full (pint to ½ gallon) valued at \$3 (Agricultural Marketing Service, Northeast, 2014-2018), 1/2 gallon to 1 gallon at \$10, and bucket full (over a gallon) at \$23 then the total estimated value of all the cherry tomatoes harvested from



these seedlings is over \$22,400 for the first seven years of the One Tomato™ project. That is an average of \$8.39 in cherry tomatoes from one seedling.

Preliminary results of the initial survey show about 71% of folks have never participated in the program before. Also, for 30% of people picking up a seedling, this was their first interaction with UMaine Cooperative Extension.

In Piscataquis County 400 tomato seedlings were given out in Dover-Foxcroft, Milo, Monson, Greenville, Sangerville, and Guilford. Our thanks go out to our staff, Master Gardener Volunteers and Executive Committee members for helping with the distribution. I would also like to thank all the businesses and organizations that hosted us for distribution and for their support of the program. We look forward to another successful distribution next year.

Pollinator-Friendly Garden Certification Program

The Pollinator-Friendly Garden Certification Program has certified over 94 gardens as pollinator-friendly since 2021 in Maine and in New Hampshire. The program educates the public on the importance of pollinators and their relationship with our native plant species as well as our food system. It is estimated that every third bite of our food can be attributed to pollinators. The program educates the public on how to support pollinators by providing food, water, shelter and protecting habitat which in turns helps support our food system.

Master Gardener Volunteers have donated over 500 hours for meetings and application reviews for this program. Outreach has been very successful with 350 native seed packets and 1,200 education material packets having been distributed in 2023 alone.



Collaboration with 4-H summer learning series on pollination and pollinators and the relationship between pollinators and our food systems have reached over 360 students in the past year and staff have presented over 25 programs on pollinator-friendly gardening in the past year.

Highland Area Gleaners



UMaine Cooperative Extension and Healthy Eating Active Living at Northern Light May Hospital together have created a gleaning initiative to help increase food availability for the community and reduce the amount of food waste entering landfills, both helping to prevent food loss. Quality produce gleaned from farms, home gardens and markets will be redirected back to communities in Piscataquis County.

Digital Contacts

The Central Maine Garden News, a monthly newsletter provides information on ornamental and vegetable gardening, pest management, food preservation, Cooperative Extension resources for the home and nature articles to over 2,500 subscribers every month. Maine Farm News, and the Beef Producers Newsletters have over 1,290 subscribers from Piscataquis County.

Agricultural Support and Outreach



Programs for agricultural support and outreach include the Maine New Farmers Project, providing new farmers with a chance to learn with other farmers from an expert in the field with self-study options and other training opportunities. Questions on livestock water and feeding as well as meat processing, hay resources, growing vegetables, farming, farm stands, crop production and marketing, pesticides, disease and insect identification, soil test interpretation, irrigation and farm business planning are just some of the questions that Cooperative Extension answers for the people of Piscataquis County. From August of 2022 to May of 2023 over 425 face to face inquiries were answered.

University of Maine Cooperative Extension's 2022 Digital Presence

Website

University of Maine Cooperative Extension's website at extension.umaine.edu – a combination of **57 interconnected websites** consisting of nearly **12,000 pages** – received **3.1 million pageviews** from visitors in the 12 months between January 1, 2022 and December 31, 2022. Visitors searched for and found information on a wide variety of topics, including planting in Maine, small business management, harvest and storage of tree fruits, and tractor safety. Image galleries helped users identify pests, plant diseases, and weeds. A wide variety of interactive web forms allowed users to request assistance, presentations, newsletters, and updates; report volunteer hours; make donations; and respond to surveys. Nearly **54,000 web visits were referred from social media**.

Social Media

More than **43,000 followers** followed or were subscribed to UMaine Extension's **55 county and program-specific social media accounts** on Facebook, Twitter, YouTube, Pinterest, Instagram, and TikTok. We hosted or co-hosted **92 Facebook Events that reached 127,731 users**. Nearly **700 educational videos** were available to visitors on our 14 YouTube playlists; many were also embedded in our web pages. Extension's YouTube videos were the most watched on the University of Maine Channel, which received **1.2 million views and 66,000+ hours** of watch time. Top videos included Lobster Cooking and Eating, How to Seal Windows for Winter and Summer, How to Prune a Blueberry Bush, How Do I Prune Raspberries, and Tick Removal.

Publications

More than **700 research-based publications** on a broad range of topics were available for free download at extension.umaine.edu/publications. Popular fact sheets, such as *How to Tap Maple Trees and Make Maple Syrup*, *Sodium Content of Your Food*, and *Guide to First-Time Horse Ownership* received tens of thousands of pageviews each. New publications in 2022 included *Tarping in the Northeast: A Guide for Small Farms*, *Establishing and Using a Support Network for Individuals with Disabilities*, *Hawkweed in Maine Lawns*, *Growing Wild Blueberries in the Home Garden*, and *Calf and Heifer Management in New England*.



Maine Food System



Maine Harvest for Hunger Fights Food Insecurity

Relevance — Maine has the second highest rate of food insecurity in New England and ranks 35th in the nation. The USDA estimates that 9.5% of Maine households are food insecure. Nationally, 12.5% of households with children under the age of 18 and 9.5% of households where an older adult was living alone experienced food insecurity in 2021. With hunger affecting people of all walks of life in all communities, it is essential that every measure be taken to feed our neighbors in times of need.

Response — Since 2000, UMaine Extension’s Maine Harvest for Hunger (MHH) program has mobilized gardeners, farmers, businesses, schools, and civic groups to grow, glean, and donate fresh produce to food security agencies. Our work involves training volunteers, developing partnerships with farms and organizations, organizing and leading volunteer opportunities, maintaining databases of sites accepting produce donations, and building awareness of the extent, causes, and impacts of food insecurity.

Results — In 2022, 262 MHH volunteers grew, gleaned, and distributed 296,150 pounds of produce, valued at \$568,608, to 204 food security agencies located throughout the state. We partnered with 131 farms and community gardens on these efforts. Notably this year, our teams gathered and distributed 14,000 pounds of apples from orchards throughout the state. These farms reach out to us to annually organize gleaning events, knowing our trained volunteers can be trusted to safely and efficiently get their apples to where they’re needed most. Old Town Elementary School’s free farm stand offered 6,300 pounds of fresh fruits and vegetables gathered on-site and gleaned from area farms. Open to the public in an easily accessible site, this low-barrier program reached hundreds of individuals in a limited resource community. From backyards to farms to school gardens, MHH is enhancing access to healthy food and offering volunteers a truly meaningful way to engage with their community. Since 2000, MHH participants have distributed more than 3.5 million pounds of food to citizens grappling with hunger.

Master Gardener Volunteers Help Increase Food Security and Lift Communities

Relevance — Public and private gardens are important tools for enhancing physical and mental health. They also play a key role in sustaining the health and vitality of our natural communities.

Successful collaborative gardening initiatives are an important tool for enhancing public health and providing meaningful community engagement opportunities by increasing access to locally grown food, providing a safe space to connect with neighbors, and offering learning opportunities outside the classroom. Supports such as volunteer leaders, educational resources, and manual labor are key contributors to the success of these projects. Extension trains and supports Master Gardener Volunteers, who help extend university knowledge to their neighbors through the teaching of sustainable gardening practices.

Response — The Master Gardener Volunteers (MGV) program provides participants with a minimum of 64 hours of in-depth training in the art and science of horticulture. Trainees receive current, research-based information from our educators and industry experts and are connected with service projects that match their interests, skill sets, and availability. MGV coordinators facilitate relationships between MGVs and community partners, assisting with needs assessment, program planning, risk management, and problem-solving. MGVs play a vital role in connecting communities with educational resources through community events, social media, and programming.

Results — In 2022, 664 volunteers donated 30,262 hours to a variety of educational and food security projects throughout the state, including 23 school gardens, 16 demonstration gardens, 12 horticulture therapy gardens, 13 pollinator and native gardens, and 56 food security projects. Their efforts reached 1,744 youth and adults through direct programming and 7,452 Maine residents indirectly through outreach, news articles, TV features, and more. Many volunteers enter the MGV program with the goal of improving their gardening skills for their own personal benefit and leave surprised by how deeply involved and passionate they become about community projects.

Helping Culinary Arts Instructors Build Agriculture Literacy through an Immersive Culinary Experience

Relevance — The USDA 2018 Food Away from Home data reveal that since 2010 more than 50% of meals are eaten away from home. Restaurants are a driving force in Maine's economy, providing 63,900 jobs, which represents 10% of Maine's employment. The COVID-19 pandemic reinforced the need for a sustainable local agriculture-based food system within the restaurant and food service industry to support reliable, stable food access.

Response — UMaine Extension and Maine Ag in the Classroom collaborated to create the Building Agriculture Literacy through an Immersive Culinary Experience project to help career and technical education (CTE) culinary arts instructors increase their agricultural literacy and enhance the connectedness between agriculture and food service. This project seeks to create a skilled and educated workforce that will increase the usage of Maine-grown, -processed, and -produced foods in their programs and careers. Project activities included a weeklong Immersive Culinary Arts Summer Institute for CTE culinary arts instructors, hands-on experience in local food procurement practices, demonstrations of food system lessons, educational field trips, financial support for experiential activities through their existing school restaurants, participation in a University of Maine Local Foods Competition, and coaching during the school year.

Results — At the program midpoint, we had reached 74% of Maine's high school CTE culinary arts programs with at least one of our efforts. More than 800 students statewide have engaged in classroom/kitchen visits to learn about dietary restrictions, consumer food preferences, and local foods, and complete a local food cooking challenge to meet a dietary food preference, thus demonstrating their proficiency in local foods and dietary restrictions. Thirteen schools received \$28,000 in funds through a mini-grant program to support activities to develop their knowledge base of agricultural literacy. The Culinary Arts Summer Institute reached nearly 30% of Maine's culinary arts chef instructors. This immersive event involved experiential learning opportunities at multiple Maine food processing and production sites across the state.

The program is contributing to the success of Maine's local food system by changing the way tomorrow's food professionals think about food.

Through the project's emphasis on local food systems through strategic career-readiness, experiential education, and connecting with local stakeholders (career and higher education), these students are gaining a realization of the importance and value of local foods.

Our project requires CTE culinary arts programs selected for mini-grant funding to be engaged at the local level with stakeholders related to culinary arts and hospitality, including nonprofit organizations, community groups, private businesses, industry representatives, and higher education faculty and staff at Maine community colleges and universities. This type of community connectedness is fostering youth leadership and offering opportunities for students to develop a greater understanding of federal, state, and local food and agriculture policy and to network to make tangible connections for future careers.

Supporting Maple Producers and Encouraging Workforce Development

Relevance — Maine has the third largest maple production in the United States, behind Vermont and New York. Maine's maple industry has an estimated annual statewide economic contribution of more than \$48 million in output, 805 full- and part-time jobs, and more than \$25 million in labor income. Maine's maple industry annually produces more than 700,000 gallons of maple syrup.

Response — In 2004, a grant from the Maine Agriculture Center funded a collaborative effort by UMaine Extension, University of New Hampshire Extension, and the Vermont Agency of Agriculture, Food, and Markets to create an International Maple Syrup Institute (IMSI) Maple Grading School. To meet ongoing demand, the Grading School has been held annually and has been adopted by the IMSI as a signature event aligned with the IMSI mission to protect the quality and integrity of maple products. School attendees are from all areas of the industry: producers, bulk buyers and syrup packers, Department of Agriculture inspectors, Extension personnel, and chefs. Extension's maple education programs provide producers with resources about international grade standards, maple grading techniques, quality control, and food safety in the production process. A revamped UMaine Extension Maple Syrup Production website contains information on access to financial and business management resources, maple quality control, labor management, and expanded information for beginning producers.

Results — In 2022,

- 1,192 members of the public learned about the maple industry, syrup grades, and diverse uses of syrup through direct contact and through podcasts
- 116 beginning or backyard sugarmakers participated in four Maple Sugarmaking 101 courses led by our team
- 32 commercial maple syrup producers gained expertise with grading and quality control of maple syrup.
- a six-week 4-H club engaged 25 youth, ages 9–16, including an in-person workshop at a Maine maple sugar house.

Youth learned about tree ages, identification, versatility of commercial and ecosystem benefits, the diversity of forest-related careers, and tapping maple trees. Youth interacted with forest industry professionals and received kits for accompanying hands-on activities, including tree cookie ornaments, identification books, maple candies, and maple syrup thickness and taste samples.

For 19 years, the Grading School has helped promote the wholesome image of the maple industry and shown that its participants are high quality and careful producers of unique maple products. The continued success of the school and its participants helps promote the exceptional image of both the maple industry and its producers who create high-quality products. The perpetuation of the school provides an excellent platform for industry discussion and education about maple products, grading, and quality issues concerning pure maple syrup. The school has received media attention including news articles by the Associated Press and National Public Radio, as well as local television and print media.

Home Horticulture Programs Help Gardeners Increase Yields and Efficiency and Reduce Inputs

Relevance — Every day, Maine gardeners are deciding on whether and how to manage pests, which fertilizers to use and how much, which plants to grow, methods to cultivate the soil, and how to use water resources to maintain landscapes. Nearly every residential site has a landscape that requires maintenance, and decisions made in these sites can have a significant impact on our natural resources. Home gardener success also results in improved food security and has an economic role in our green industry.

Response — In 2022, home horticulture programming directly reached 8,650 adults and 733 youth through more than 365 hours of educational programs, both in-person and virtual. This included 4,052 questions, received via email, phone calls, in-person events, and walk-ins, which were answered for home gardeners. Garden-related videos, newsletters, newspaper columns, and publications from Cooperative Extension indirectly reached an additional 49,679 home gardeners.

Results — As a result of Extension programs, participants reported using Extension to identify pest problems and determine research-based management strategies; develop a new garden or expand an existing one; increase garden yields and consumption of home-grown food; adopt sustainable gardening practices, including techniques to improve soil quality and practices that improve efficiency, reduce inputs, and negative impacts; adopt and maintain integrated pest management strategies; and adopt water-saving techniques.

Teaching Climate Adaptation to Farmers and Service Providers

Relevance — Current and projected changes in weather present new opportunities for Maine agriculture, such as longer growing seasons, but also increased risks, such as spring frosts, summer droughts, and more frequent and intense rainfall. In many cases, climate adaptation practices (e.g., irrigation and weather-based decision support tools) require new knowledge and skills, not just for the farmer but also for their service providers.

Response — UMaine Extension initiated a three-year Northeast Sustainable Agriculture Research and Education (SARE) professional development program to increase the ability of agricultural service providers to help farmers adopt climate adaptation practices, with each focused on a set of specific practices. The aim is not to create topic experts, but to help trainees become well-informed advisors who, in the context of their current positions, will help farmers frame the right questions, address relevant considerations, evaluate options, and connect with the most appropriate resources and experts.

Results — Agricultural service providers from Extension, nonprofits, state agencies, conservation districts, and the University of Maine increased their knowledge, skills, and confidence in providing information and recommendations about irrigation and other practices to cope with the increased frequency of dry spells and drought. Participants: 1) learned about water sourcing, water rules and regulations, types of irrigation systems, irrigation management and efficiency, and drought and water monitoring through farm tours and monthly webinars, 2) applied their knowledge by working in teams with farmers to develop farm plans for reducing the risks associated with increased drought and dry spells, and 3) co-developed the “Directory of Resources on Irrigation in Maine,” a curated list of more than 50 online resources covering all aspects of irrigation that will be posted on the UMaine Extension website for farmers and agricultural service providers to use.

Extension Shares PFAS Resources for Farmers

Relevance — “PFAS” is the short name for a large class of harmful, fluorinated synthetic chemicals that have recently been found in the environment, often at low levels. Higher levels are sometimes found near airfields and factories that have used fire-fighting foams, or on land where certain waste materials or biosolids containing PFAS have been used.

Crops may be grown on soil containing these PFAS, but how much of these chemicals are in the crop depends on the type of crop, what part of the crop is edible, soil properties, and PFAS levels in the soil. These chemicals may end up in the milk and meat of animals fed crops such as hay containing PFAS. These chemicals can also move from the soil into the groundwater and into well water. Consuming contaminated milk, meat, plants, or water are potential ways people can be exposed to these chemicals.

Response — The state of Maine has allocated significant funding to address issues related to PFAS and is dedicated to supporting landowners who are affected by land application of wastewater biosolids and fire-fighting foams, as well as Department of Defense sites, landfills, or other PFAS sources.

Results — UMaine Extension offers a dynamic set of resources about on-farm PFAS contamination available online to the public in one location. [Guide to Investigating PFAS Risk on Your Farm](#) is a comprehensive collection of resources about PFAS contamination in Maine. Topics include information on the sources of PFAS contamination, steps to determining risks and mitigation options for farms, and Maine’s response to contamination at agricultural sites. The website is continually updated as the research and resulting information evolves. The resources are from multiple Maine state agencies, including the Departments of Agriculture, Conservation and Forestry; Health and Human Services; and Environmental Protection; and the Center for Disease Control and Prevention. Supporting organizations contributing information include UMaine Extension, Maine Farmland Trust, and Maine Organic Farmers and Gardeners Association.

So You Want to Farm in Maine Program Educates Potential New Farmers

Relevance — Current farmers thinking about changing farm enterprises and new farmers interested in starting a farm may lack the skills, knowledge, and confidence to investigate their options to start, adapt, and maintain a profitable land-based business. Major issues farmers and potential farmers (whether full-time or part-time) need to overcome include access to capital, understanding of rules and regulations affecting agriculture operations, and marketing options.

Response — Since 2015, 349 people have participated through face-to-face, video-linked, webinar, live-streamed, Zoom, and archived sessions of the So You Want to Farm in Maine program to learn about agriculture enterprise selection, business planning, record-keeping, market research, regulations, and resource identification. Each class is designed to be interactive and features many guest speakers, including agriculture service providers from an array of sectors and those who are currently farming successfully.

The 2022 series offered a different approach. Participants included 44 aspiring farmers as well as 13 UMaine undergraduates, providing the opportunity for richer discussions and connections between those interested in starting Maine farms imminently and students with a variety of backgrounds and experience. The undergraduates were teamed with aspiring farmers to create draft business plans and enterprise budgets over the course of five weeks.

Results — Knowledge change was assessed by a post-program evaluation. Participants responding to a program evaluation reported having moderate to considerable knowledge and understanding of these topics following the program: goal setting and farm business management plan development; enterprise budget development and evaluating profitability; land and asset assessment; marketing and marketing research; record-keeping (production and financial); estate planning and insurance; permits, licenses, and regulations; credible sources of production information and pricing; taxes (local, state, and federal); and financial management. In 2022, income from all plans developed for the class by students and farmers

totaled more than \$2 million. All participants had the opportunity to receive USDA Farm Service Agency (FSA) borrower training credit; in 2022, 22 participants chose to get the FSA certification.

Soil Health Course Educates Farmers

Relevance — Soil health is of great interest to agricultural producers and a critical component of their success, yet farmers have limited access to in-depth training in the topic.

Response — Extension designed a new, 5-week online soil health short course for farmers to improve their understanding of soil health science, principles, and practical management strategies. Course topics included soil biology and soil organic matter, physical and chemical properties of soil health, soil health strategies and practices, cover cropping, reduced tillage practices, crop rotation, soil amendments, and soil health testing.

Results — Twenty participants completed the course, including nine farmers, five aspiring farmers, four gardeners, and two farm advisors. Fourteen said they intended to change a soil management practice as a result of what they learned, and 10 submitted soil for a free soil health test and received a follow-up consultation with one of the instructors.



4-H POSITIVE Youth Development

4-H Ambassadors Mentoring Students toward STEM Careers

Relevance — Developing Maine youth science, technology, engineering, and math (STEM) literacy is vital to ensuring that our state continues to thrive economically and socially. Given the remote and diverse communities where Maine youth live, informal education can help minimize inequities in rural youth STEM education and career pipelines. Future career opportunities in Maine will depend heavily on STEM skills, whether in the growing fields of healthcare and engineering, or in positions requiring technical skills, such as construction, and maintenance of transportation and energy systems.

Response — 4-H STEM Ambassadors are trained University of Maine System students enrolled as 4-H volunteers who facilitate hands-on STEM activities with youth 8–14 years old throughout Maine. Since 2014, our 4-H STEM Ambassadors program has enrolled and trained more than 500 UMaine system students who have facilitated in-person, hands-on learning experiences fostering youth STEM enjoyment, literacy, and identity, reaching more than 6,000 Maine youth in classrooms, libraries, and after-school clubs across the state. In fall 2020, Extension redesigned the program to be virtual, including a training, mentoring, and experiential STEM programming.

Results — The shift to a virtual program allowed for multicampus student teams and increased access for more distant community partners regardless of local program model (remote, in-person, hybrid). In 2021 the program reached more than 300 students, grades 3–8, across 18 sites with the help of 39 volunteer Ambassadors and staff. In 2022 program staff spent the first part of the year upgrading the virtual programming and then reached another 89 students at seven sites with the help of 11 Ambassadors. Through this program, youth ages 8–14 come to view these Ambassadors as mentors and leaders in their community while also developing skills in STEM through hands-on activities and becoming connected to research, resources, and scientists at Maine’s public universities.



Sustainable Communities and Economic Development

Micro-credentialing through UMaine System Builds Workforce Competence and Confidence

Relevance — Extension provides valuable skills to both youth and adult learners. There is a need to provide employer-recognized evidence of trainings and skills for agricultural and other workers.

Response — In 2020 we began developing and issuing micro-credentials through the UMaine System. In 2022, these included micro-credentials and badges in Meat Cutting, Horticulture Apprenticeship, Seafood HACCP (hazard analysis and critical control points), Meat and Poultry HACCP, Food Processing Sanitation, Food Safety Systems, and Facilitation.

Youth in the 4-H Communication Science program are now eligible to receive the nationally normed and recognized "Oral Communication" badge from the Education Design Lab.

There is interest from additional Extension faculty, staff, and partners, and future possible Extension micro-credentials include those in farming and agricultural skills, volunteer management, and the Master Gardener program. A full youth-to-adult pathway in aquaculture is under development and should be completed in early 2023.

Results — Earners ranged from current UMaine System students to adults in the general public. These credentials can be used to showcase skills earned through the University of Maine Cooperative Extension and are verified by the University of Maine System. Micro-credentials help earners make competencies visible, beyond what is seen on a transcript or resume; demonstrate skills in real-world settings; gain work experience and receive valuable performance feedback; stand out to employers; better articulate the skills developed to potential employers; enhance digital identity; share badges; and be recognized. All micro-credentials/badges can be shared on social media and professional sites, such as LinkedIn and the holder’s personal website, e-portfolio, or resume.

Diagnostic and Research Laboratories Apply New Technologies and Cross-Disciplinary

Relevance — The COVID-19 pandemic provided a stunning demonstration of the degree to which so many aspects of our lives are now intertwined. Wildlife health affects farm animal health affects human health. Every part of our economy was affected by the pandemic, vividly illustrating the importance of growing our understanding of today's many agricultural threats and how to control them.

Response — The University of Maine Cooperative Extension Diagnostic and Research Laboratory occupies a 28,000-square-foot commercial laboratory building located a few miles from campus. It houses our Veterinary Diagnostic Lab, Aquatic Animal Health Lab, Arthropod Lab, and Plant Disease Diagnostic Laboratory. This facility is the most bio-secure location within the University of Maine System. Opened in 2018, the lab brings together scientists researching animals, agriculture, insects, and plants under one roof. The unique combination of researchers provides many teaching opportunities for students, as well as premier research and outreach facilities.

Results — By allowing for research contributions to agriculture, public health, communities, and wildlife, the lab benefits Maine in a variety of ways, including protecting the natural resource- and food-based economies, adding to food safety and human health, and providing unique diagnostic and testing services to farmers, homeowners, and the public.

FINANCIAL SUPPORT

University of Maine Cooperative Extension Support for Piscataquis County

Without statewide support, UMaine Extension would not be present in your county. Funds for projects are provided through the University of Maine, Federal Formula Funds, grants, contracts, and fees. Dollars from other sources support salaries and benefits for Extension specialists, county educators, Extension administration, computer equipment and networking, publications, postage, telephone, and travel.

Statewide Extension Funding

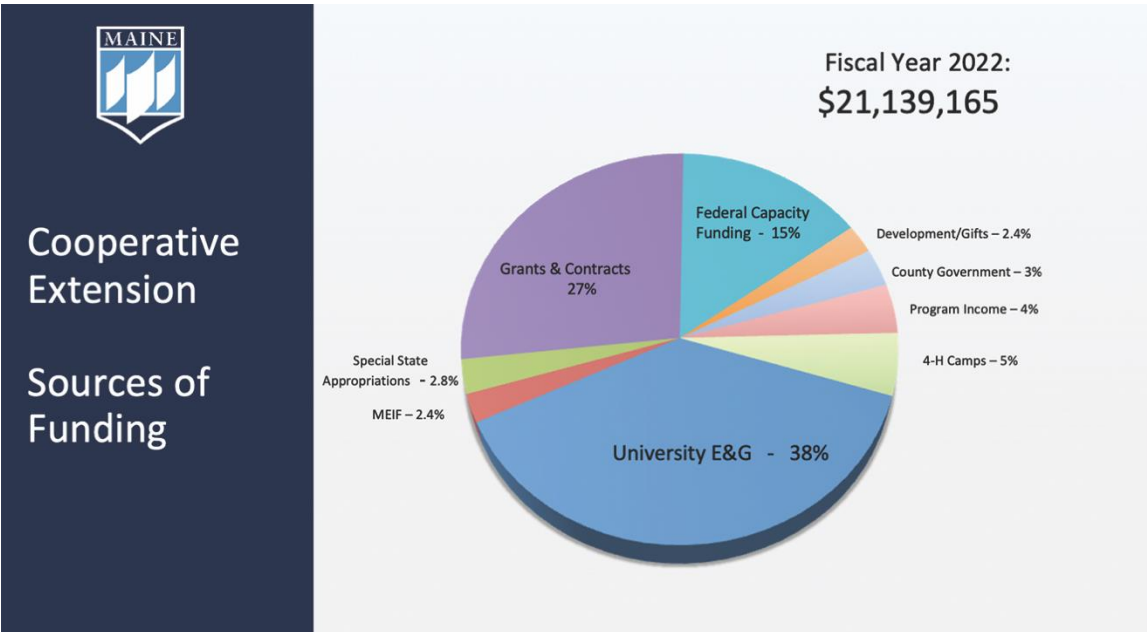
As a unique partnership among federal, state and county governments, UMaine Extension uses funding from Maine counties and the University to match and leverage support from the United States Department of Agriculture, other federal grantors, state agencies and private foundations. Each county UMaine Extension office is also part of a statewide organization and the national Extension system.

This pie graph illustrates the financial resources for programs offered, supported and managed out of the Piscataquis County office. Each year, Piscataquis County tax dollars support the UMaine extension with physical office space, support staff salaries, office supplies, equipment and some programming expenses.

Piscataquis County	2022
Local Salaries and Benefits	\$130,882
Prorated Support from UMaine*	\$577,300
Computer Equipment and Networking	\$4,425
Statewide Animal Diagnostic Lab	\$18,929
Marketing, Publications, Video	\$769
Local Programming Supplies & Expenses	\$327
Postage	\$1,443
Telephone	\$6,665
Travel	\$2,430
TOTAL	\$743,172

** Prorated support from UMaine reflects travel, postage, telephone, computer equipment & networking, salaries & benefits for administrative and state-wide staff.*

Statewide Funding Levels by Source – 2022



The County Extension Act

The County Extension Act explains the role of county government in funding local Extension offices.

Cooperative Extension work shall consist of the giving of practical demonstrations in agriculture and natural resources, youth development, and home economics and community life and imparting information on those subjects through field demonstrations, publications and otherwise. For the purpose of carrying out this chapter, there may be created in each county or combination of two counties within the State an organization known as a “county extension association,” and its services available to all residents of a county. The county extension is viewed as a unique and important educational program of county government. The executive committee of each county extension association shall prepare an annual budget as requested, showing in detail its estimate of the amount of money to be expended under this chapter within the county of counties for the fiscal year. The executive committee shall submit to the board of county commissioners on a date requested by the county commissioners, and the county commissioners may, if they deem it justifiable, adopt an appropriate budget for the county extension program and levy a tax therefore. The amount thus raised by direct taxation within any county or combination of counties for the purposes of this chapter shall be used for the salaries of clerks, provision of office space, supplies, equipment, postage, telephone, a contribution toward the salaries of county educators and such other expenses as necessary to maintain an effective county extension program.¹

¹Excerpted from Title 7, Chapter 7 of the Maine Revised Statutes, §191–§195.

For more information contact:

University of Maine Cooperative Extension Piscataquis County
165 E Main Street
Dover-Foxcroft, Maine 04426

Phone: 207.564.3301 or 800.287.1491 (in Maine)
Email: extension.piscataquis@maine.edu



extension.umaine.edu