

MSU EXTENSION

LEELANAU COUNTY

ANNUAL REPORT



2023 - 2024

I'm delighted to share the results of another successful year of partnership between **Leelanau County** and Michigan State University (MSU) Extension. Because of your continued support, we've been able to make a difference in the lives of youth, families, businesses and communities.

MSU Extension offers a broad range of research-based educational outreach to county residents. Over this past year, we've empowered families and individuals to live healthier lives, supported new and local businesses, created opportunities for youth leadership development and career exploration, helped farmers with business management and mental health, and much more. Our staff live and work alongside county residents, are rooted in community relationships and are responsive to community needs.

We continue to provide our programs in a variety of spaces and delivery methods that are convenient for our participants to engage in and access. Our partnership with you makes this all possible. On behalf of the MSU Extension team serving **Leelanau County**, thank you for another great year. We look forward to your continued support and hope you will be able to join us during one of our upcoming programs.

— Jennifer Berkey, District 3 Director



MICHIGAN STATE UNIVERSITY | Extension

259

Programs accessed
by residents

44,077

Reached by
social media

5,262

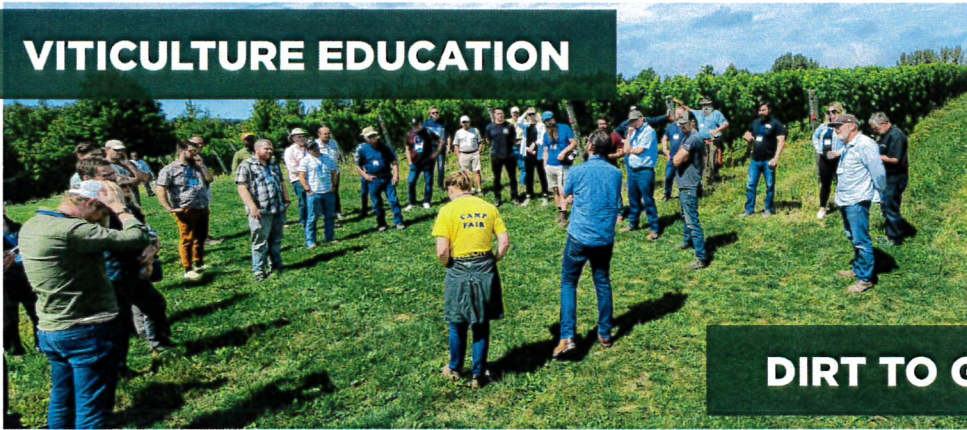
Reached through
programming

1,156

Reached
indirectly

SUPPORTING AGRICULTURE AND AGRIBUSINESS

VITICULTURE EDUCATION



16 educational programs engaged over **900** participants

DIRT TO GLASS FEEDBACK



Getting together in such a collaborative environment with like-minded viticulturists is something we feel very fortunate to have, and something we look forward to for years to come.

— Peter Laing,
MAWBY Sparkling Wines
and bigLITTLE Wines

VITICULTURE OUTREACH

To expand our outreach efforts, a diverse array of indirect activity strategies were implemented. Over the course of the year, we coordinated and co-hosted 16 educational programs, engaging a broad audience of over 900 participants. These programs served as invaluable platforms for knowledge exchange and collaboration, featuring insights from experts spanning seven states.

Covering a wide range of topics, our programs delved into areas such as viticulture, grapevine health, and sustainable practices like composting and biochar workshops. Highlights included flagship events like the “Dirt to Glass” conference, the “Great Lakes EXPO - Grape Sections,” and the “Michigan Grape Spring Kick Off Meeting.” Additionally, interactive showcases such as the “Bird Robotics

EDUCATIONAL PROGRAMS HOSTED

1. 2023 Dirt to Glass Conference
2. 2023 Great Lakes EXPO - Grape Sections
3. 2023 Michigan Grape Spring Kick Off Meeting
4. Bird Robotic Laser Repellent: Laser Demonstration Showcase
5. Dormant Pruning Demonstration - 4-H Viticulture Program with Greenspire High School at the NW MI Horticulture Research Center
6. Grapevine Dormant Pruning Demonstration
7. Grapevine Dormant Pruning Training Course for New Grape Growers
8. Leelanau Organic Composting Meeting
9. NE2220 Multi-state Coordinated Evaluation of Grape Cultivars & Clones Meeting
10. Northwest Michigan Orchard & Vineyard Show - Grape Section
11. NW Michigan Pre-bloom Meeting: Exploring Early-Season Disease Management & Soil Sampling in Viticulture
12. NW Michigan Wine Region Educational Tour
13. Optimizing Grapevine Health & Productivity: Michigan Grape Pre-Veraison Meeting
14. Sour Rot Summit Meeting
15. Wine America 2023 Fall Retreat
16. Workshop for Composting & Biochar



ROBOTICS LASER REPELLENT SHOWCASE



Laser Repellent: Laser Demonstration Showcase” and the “Northwest Michigan Orchard and Vineyard Show Grape Section” provided hands-on learning experiences for attendees. Each event was meticulously curated to offer valuable insights and foster meaningful networking opportunities. These initiatives collectively served to enrich the industry landscape and empower stakeholders with actionable insights and tools for success.

RESEARCH PROJECTS OVERVIEW

1. Modeling Michigan Grapevine Cold Hardiness

Third Year

As the principal investigator, I lead

this ongoing project addressing grapevine cold hardiness, a primary concern within Michigan’s grape and wine industry. Building on previous research funded by Project GREEN and the Michigan Craft and Beverage Council, our focus is on mitigating cold damage and ensuring sustainability amidst a changing climate.

Collaborating with Cornell AgriTech, we aim to establish the Michigan Grapevine Cold Hardiness Model (MGCHM) tailored to local conditions, providing crucial support to grape growers.

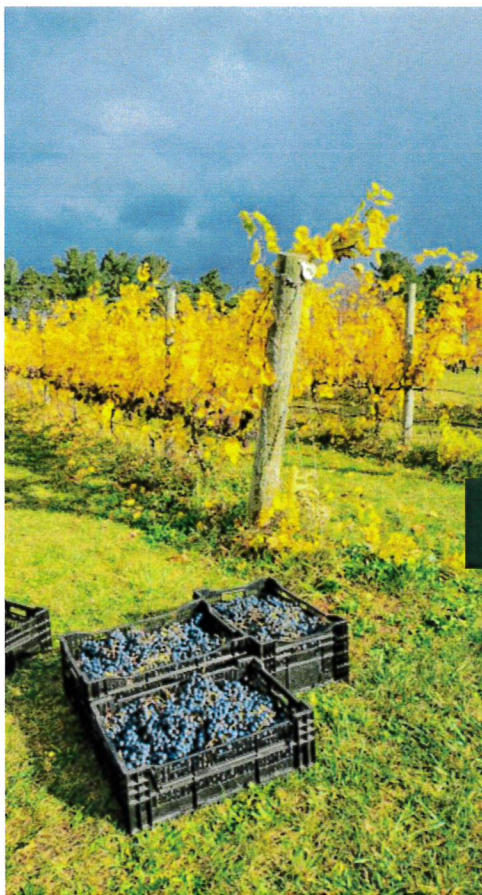
We collect weekly bud wood samples from 10 selected varieties for differential thermal analysis (DTA) tests throughout the winter of 2023-2024, inspired by Cornell University’s model. Our evaluation process involves comparing model predictions with observed low-

temperature exotherms (LTEs) data, optimizing parameters for enhanced accuracy. This collaborative and iterative approach underscores our commitment to addressing industry concerns and equipping grape growers with resilient production tools.

2. Robotic Laser Bird Repellent *Second Year*

In the second year of this project, I continue to explore the efficacy of robotic laser bird repellent as a high-tech solution for bird control in vineyards. Building upon first-year results, I will collect data throughout the harvest season to evaluate the system’s performance across different grape varieties. Results will be disseminated through an extension article and poster, facilitating knowledge sharing within the industry.

SUPPORTING AGRICULTURE AND AGRIBUSINESS



NW MI ORCHARD & VINEYARD SHOW



3. Enhancing Regional Grape and Wine Production and Quality

As the principal investigator, I lead this nationwide project aimed at improving grape and wine production quality, with a specific focus on Michigan. By adopting a holistic approach and engaging industry stakeholders through a confidential questionnaire, we seek to address challenges and drive innovation in viticulture, enology, and winery business management, ensuring sustained growth and prosperity.

4. NE2220 Multi-state Coordinated Evaluation of Grape Cultivars and Clones Program

Chairing this collaborative effort, the NE2220 program evaluates grapevine cultivars and breeding selections across multiple states in the Northeast region.

Initiated in 2004, the project aims to enhance sustainability and productivity by assessing grape varieties' performance and suitability through uniform protocols and data collection methods. The program contributes significantly to driving innovation.



NORTHWEST MICHIGAN ORCHARD AND VINEYARD SHOW

The annual Northwest Michigan Orchard and Vineyard Show was another great success with over **310** tree fruit and wine grape producers in attendance and **48** vendor booths at the Grand Traverse Resort. Dr. Brent Black and members of his team from Utah State University (USU) joined us

again to provide an update on the Specialty Crop Research initiative project in collaboration with MSU on precision orchard management. This year he was joined by Dr. Alonso Torres-Rua, an expert on irrigation and water management, who discussed new technologies for mapping and remote sensing of irrigation needs and water stress. Richard Price and Dr. Todd Einhorn presented some of the MSU side of the research project on remote sensing for yield estimations and experimenting with variable rate irrigation in tart cherries.

The 2024 tree fruit educational sessions featured other new topics and speakers including a talk on forest carbon offsets by Daphna Gadoth-Goodman from the MSU Forest Carbon and Climate Program and a segment by Parker Jones from the MSU Product Center on agritourism and cost studies for value-added products to help growers see ways to diversify

HOP RESEARCH



their income streams. This year's program also featured a section on agritourism, including a panel of local and statewide growers who have integrated agritourism in diverse ways on their farms.

HOP RESEARCH, EDUCATION & OUTREACH

RESEARCH & GRANT FUNDING

MSU Extension Educators, professors, specialists, and graduate students continue to secure federal and state funding for hop research in Leelanau County.

MSU Hop Research Projects with Leelanau County hop growers and stakeholders

- Integrated Practices to Managing Cone Diseases with Hop Alliance
- Testing and Managing for Hop Virus and Viroids with Hop Alliance

- Management Strategies for Plant-parasitic Nematodes in Hopyards with Hop Alliance
- Pending: Adding Value and Sustainability to Specialty Crop Production Systems by Integrating Grazing with Hop Alliance

Local partners & stakeholders

- Brian Tennis, Hop Alliance, Northport, MI
- John Hardy, Hop Alliance, Northport, MI
- Alex Adams, Cambium Analytica, Traverse City, MI

With assistance from MSU Extension, the Hop Growers of Michigan were awarded a USDA Specialty Crop Block grant for \$110,810 entitled: "Enhancing the competitiveness of the Michigan hop industry". The project will run from October 2023-September 2025. The project objective is to increase sales of Michigan-grown hops in Michigan and throughout the Great Lakes Region through a targeted promotion campaign

and a brewer/consumer engagement strategy.

The Michigan Craft Beverage recently announced the recipients of their 2024 Research Grants. Nearly \$350,000 was awarded to twelve projects. Three of the twelve projects will directly benefit the Michigan hop industry and related craft brewing industry and a fourth proposal will likely have a positive impact on Michigan's hop industry as well.

Dr. Aaron Staples who recently completed his Ph.D. at MSU, Dr. Trey Malone (formerly at MSU), and Dr. Rob Serrine were awarded MI Craft Beverage Council funding for their proposal: "Benchmarking best practices to expand craft beverage markets for the Michigan value chain". This project will identify the regulatory, marketing, and other constraints related to local craft beverage supply chain development. It will also determine consumer policy and purchasing preferences across craft beverage value chains and explore which marketing strategies might be most

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SURVEY INNOVATION

Based upon requests from the **Michigan Brewers Guild** and the **Hop Quality Group**, MSU designed a survey instrument to collect cultivar, acreage, yield, and hop quality data from all Michigan hop growers. Those who responded accounted for **85% of the total hop acreage** in Michigan. Brewers, growers, and MSU researchers will be able to use the information to improve plant selection, improve hop quality, incorporate Michigan hop varieties into new beer recipes, and more. Presentation of the survey results spurred conversation with the Michigan Department of Agriculture and Rural Development. We are in conversation to codify collection of this important data on an annual basis.



effective for promoting the development of the Michigan craft beverage industry.

EDUCATION & OUTREACH

MSU extension educators, professors, and graduate students continue to deliver educational content in a variety of forms including conference presentations, the annual MSU Hop Management Guide for growers, peer-reviewed journal articles, and more.

MSU Annual Spring Hop Kickoff Meeting

MSU Extension hosts the **annual online ZOOM meeting** each April with hop growers, researchers, specialists, and additional stakeholders. The meeting includes important updates to the MSU Hop Management Guide, pest control

New in 2023 Dr. Rob Serrine produced bi-monthly **hop reports** for **8 regions** across Michigan during the growing season. The reports included up to date precipitation levels, daily temperature, and accumulated growing degree days as well as temperature, soil moisture, growth, disease, and insect pressure forecasts.

options and recommendations, irrigation and fertility best practices, and updates from the Hop Growers of Michigan.

MSU Hop Chat Webinar Series Bi-monthly May-August

MSU Extension hosts a **bi-monthly online meeting** that brings together hop producers, educators, scientists, state and national industry experts, and more to discuss current growing conditions, best management practices, and pertinent issues such as potential changes to maximum residue limits that may impact Michigan hop exporters.

MSU Extension Regional Hop Growing Reports

New in 2023 Dr. Rob Serrine produced bi-monthly **hop reports** for 8 regions across Michigan during the growing season. The reports included up to date precipitation levels, daily temperature, and accumulated growing degree days as well as temperature, soil moisture, growth, disease, and insect pressure forecasts.

SUPPORTING AGRICULTURE AND AGRIBUSINESS



MICHIGAN'S GREAT BEER STATE CONFERENCE & TRADE SHOW

6 invited conference speakers were from MSU

Over **550** speakers, trade-show representatives, and attendees from across the U.S.

\$200,000 generated in direct economic contribution to the local economy. This includes hotel rooms, conference facility costs and transportation, but does not include indirect or induced economic benefits.



Michigan's Great Beer State Conference & Tradeshow

Radisson Plaza Hotel at Kalamazoo Center, Kalamazoo, MI. Organized and hosted by the Michigan Brewers Guild, MSU Extension, and the Master Brewers Association of the Americas-District Michigan.

Michigan Craft Beverage Summit

The Summit was organized by the **Michigan Craft Beverage Council and Pure Michigan Business Connect**. The summit aimed to educate and connect growers, producers and other industry suppliers and to create collaborative partnerships and advance an ever growing state craft beverage industry. The Summit objectives included: Convene a statewide network of MI craft beverage companies, including wineries, cideries, breweries, and distilleries; Connect MI based suppliers to a unified craft beverage industry; Disseminate craft beverage



specific research, education, and economic development opportunities; and Provide an arena for supply chain connections through a MI based supplier trade show and one-on-one meetings. Dr. Sirrine was invited to participate on a speaker panel discussing Michigan terroir with an emphasis on Michigan hops. He also organized a session on hop-quality that included Michigan hop growers and brewers. The summit was attended by over **300** people.

MSU Coordinates the **Great Lakes Hop Working Group**, a multi-state collaborative, comprised of university

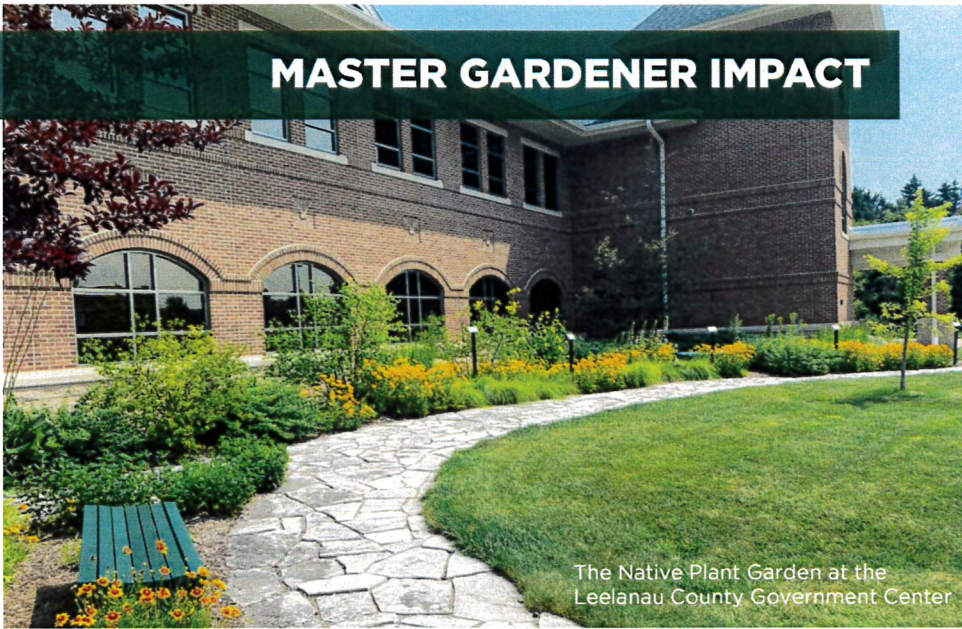
scientists, specialists, and government agriculture workers, that develops hop research and education priorities to meet the needs of hop growers across the Central and Eastern U.S. and Canada.

Collaboration

MSU Extension helps coordinate the **Great Lakes Hop Working Group**, a multi-state collaborative, comprised of university scientists, specialists, and government agriculture workers, that develops hop research and education priorities to meet the needs of hop growers across the Central and Eastern United States and Canada. MSU Extension works hand in hand with the Hop Growers of Michigan, a 501(c)(5) non-profit organization, whose mission is to: advance the interests of Michigan growers and the Michigan hop industry through support of research and educational initiatives and promotion of Michigan-grown hops.

SUPPORTING AGRICULTURE AND AGRIBUSINESS

MASTER GARDENER IMPACT



The Native Plant Garden at the Leelanau County Government Center



MSU Extension Master Gardener Volunteers Kathy Spinniken, Tom Patton & Jeanne Hunter Native Plant Garden at the Government Center

803 Extension Master Gardener Hours equate to a value of **\$26,892**

81 horticulture or pest management questions were answered through the Leelanau County office



Pollinators enjoying the flowers in Garthe's Gardens at the Leelanau County Government Center.

MASTER GARDENER

This year, through volunteer outreach, MSU Extension Master Gardeners continued to share science-based gardening knowledge, engaged citizens and empowered communities in environmentally responsible gardening practices. Currently, MSU Extension Master Gardener Volunteers are actively volunteering in 12 volunteer projects throughout the county. In 2023, Leelanau County MSU Extension Master Gardeners volunteered for 803 hours, a time contribution valued at nearly \$27,000. MSU Extension Master Gardener volunteer activities impacted county residents by improving quality of life, empowering youth, protecting waterways, and improving food security.

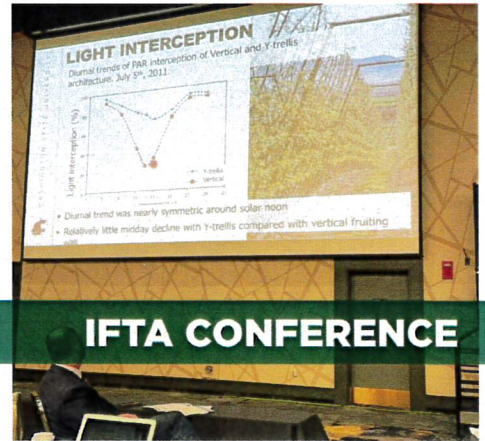
County residents are always welcome to call, visit or email the MSU Extension office for assistance with horticultural issues. Additionally, MSU Consumer Horticulture staff and MSU Extension Master Gardener Volunteers hosted a plant diagnostic clinic every Wednesday June through September of 2023. Residents were welcomed to bring samples of plants, insects, diseases and other problems; MSUE staff and Master Gardener volunteers provided the expertise to diagnose problems and provide management recommendations for 81 county residents last year. In addition, Leelanau County residents were able to receive answers to their horticultural questions by using either the online service Ask Extension or MSUE's statewide Lawn and Garden Hotline (1-888-678-3464), which are hosted by teams of MSU specialists, educators, and MSU Extension Master Gardener Volunteers.

This year marked the start of a collaborative effort between the Leelanau Conservation District and MSU Extension Consumer Horticulture to educate residents and county employees about the natural beauty present right on the Leelanau County Government Center Grounds.

In July and August of 2023 lunch hour nature hikes were hosted by the conservation district staff, the MSUE horticulture educator and MSU Extension Master Gardener Volunteers. These brief walks through the gardens and trails present on the grounds provided an opportunity for building employees to learn about the plants and wildlife of Leelanau while on their lunch break. Participants also learned about the native habitat restoration project (Garthe's Gardens) and ongoing efforts there to provide food and habitat for pollinators, songbirds, and other local fauna.

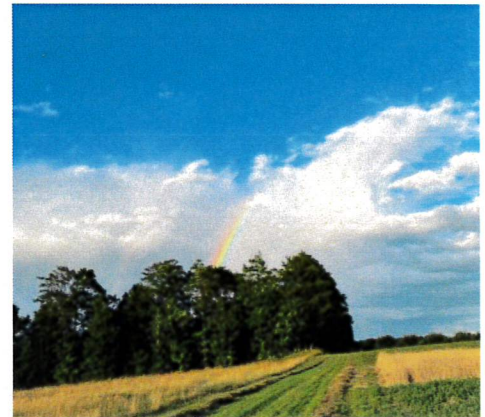
SUPPORTING AGRICULTURE AND AGRIBUSINESS

12 area farms representing nearly \$6 million in revenue in 2023



IFTA CONFERENCE

Year-end tax estimate meetings provided farmers with the opportunity to save over **\$119,000**, resulting in savings to allow for investment back into the farm business to help build farm resilience



FARM BUSINESS MANAGEMENT

Farm Business Management Educator Chris Bardenhagen assists farmers, businesses, families and individuals to improve lives and achieve goals through an educational process that applies management, production and economic knowledge to critical issues in our area. Working with 12 area farms, Chris helped farmers complete a business analysis using MSU Extension's Tel-Farm Record system to manage their taxable income. Farmers who participate in the program gain a greater understanding of their farm's financial strengths and weaknesses, and how they can improve upon their financial standing. These farms represent nearly \$6 million dollars in sales in 2023.

Year-end tax estimate meetings provided farmers with the opportunity to save nearly **\$119,000** this year. These savings are often put back into the farm business for upgrading of new equipment and help build farm resilience.

Bardenhagen was also able to attend the International Tree Fruit Association Conference, held this year in Ya-Kima, Washington. He learned about Washington's apple production volumes and economic trends that also affect Michigan. He and other MSU Fruit Team members visited several apple orchards, investigating production practices and apple training systems to inform work here in Michigan. Participation in the IFTA Conference enabled Chris to work with local farmers on enterprise analysis and provide cost of production estimates for apples to help area growers strategize for the coming season.

FARM STRESS

MANAGING FARM STRESS RESOURCES

Farming can be an incredibly unpredictable, dangerous, and stressful occupation. MSU Extension is committed to supporting agricultural professionals as they navigate tough times and make decisions that impact their families, livelihoods, operations, and farms.

Combining farm business management guidance with mental and behavioral health expertise, MSU Extension's team of more than 20 dedicated professionals provides innovative resources and support to the agriculture community—from teletherapy and financial services to free online education and community presentations.

SUPPORTING AGRICULTURE AND AGRIBUSINESS



In 2023, the MSU Extension Farm Stress team conducted a record number of programs to a record number of participants; 68 unique direct program activities, which spanned 169 distinct sessions with 5,657 participants. 103 individuals enrolled in the Rural Resilience online D2L (Desire2Learn) training course and 35 farmers and farm family members were referred to counseling services.

This is a 52.17% increase compared to 2022. MSU Extension's farm stress specialist Remington Rice also appeared in several key media outlets to promote resources for farmers, including Michigan Ag Today, Up-North Live, WPBN-TV, the Agri Safe Network's Talking Total Farmer Health podcast, among others. As a result of this publicity, several new farmers have reached out to access MSU Extension's resources.

Rice cherished the individual farmers he and other educators have helped over the years, including this recent meeting with a Michigan fruit farmer:

"I journeyed to his farm, expecting a brief conversation, but what unfolded was a three-hour revelation. This farmer, disenchanted with his vocation and contemplating selling his farm, was recently divorced, and felt hopelessly adrift. We explored the roots of his passion for farming — pride in his work, cherishing public interactions at his farm stand and stewardship of the land. As he recounted his story, he rekindled his love for farming and found new meaning and advocated for the MSU Farm Stress Program, sharing history at Research Station events and among fellow farmers. His transformation is a beacon of hope for all."

—Remington Rice



SCHOOL FARMERS MARKETS

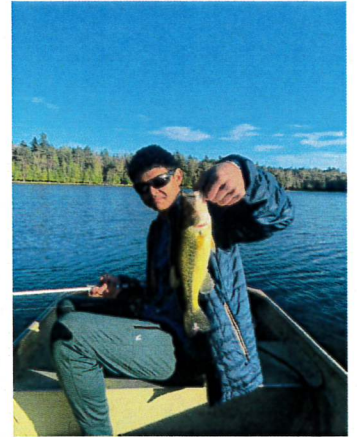
Our Leelanau County **School Farm Markets** were back in person this year, reaching five school districts: Glen Lake, Leland, Northport, St. Mary, and Suttons Bay. The markets were held outdoors in open areas, with local farmers providing fresh produce and other

products for the students to purchase and sample. MSU Extension provided 4-H STEAM trivia lessons with free prizes, crafts, a basic petting zoo (with 4-H club projects, including very popular goats, rabbits, poultry, and baby chicks), and free giveaways, the Northwest Michigan Horticulture Research Center provided an apple press and free apples, and our famous smoothie bike was on site, allowing youth to take part in healthy exercise and a delicious

treat. We reached a total of 2,295 youth, staff, and community visitors.



DEVELOPING YOUTH AND COMMUNITIES



4-H FUN

Our two Leelanau 4-H shooting sports clubs continued to grow this year. The **NW MI 4-H Shooting Sports Club** ran two sessions for youth out at Myles Kimmerly in the fall, reaching a total of 30 youth, with our two certified volunteers. The club met six times, and provided new archery t-shirts for all of the members. **Thunderbirds on Target** archery club at The Leelanau School grew to 17 youth members, under leadership of Joe Blondia, and has been meeting since fall. The club added fishing to their outdoor activities at the school, supported through the purchase of some sets of waders to use in the stream. A third archery club, **Leelanau 4-H Archery Club**, under new leader Allison Marion and teen leader Luella Marion, started this June, with 8 youth members. This club is currently meeting outdoors, at Myles Kimmerly, and uses the USA Ar-



chery curriculum to guide their weekly meetings.

Leelanau County worked with new community partner Suttons Bay Congregational Church to bring back our two tap dance 4-H clubs this year: **Tiny Tappers** for cloverbuds (ages 5-7) and **Tap Time** (for youth ages 7-9). Volunteer Robin Carden led these tap dance clubs after

school in the lower level of the church, in their new "Space to Tap In" funded fully by the church board to support these 4-H'ers and their families, and ran multiple sessions of Tiny Tappers and Tap Time, with performances at the end of each. 13 youth signed up to be a part of these clubs this year. These active clubs helped to meet the need of local families searching for engaging activities for younger children.

STEM-based after-school 4-H club called **Make Our Way 4-H Club** found a new meeting location after school at Leland, and continued to use the Apple grant iPads, work with youth to come up with new club plans throughout the year, and have hands-on outdoor learning part of the plan. They also worked with Leelanau 4-H to receive a local Rotary grant to help with the purchase of LEGO Spike robotics kits and equipment, to add to their learning, and the club plans to move their robots outdoors for the summer months.

DEVELOPING YOUTH & COMMUNITIES



FAIR DAYS

The Northwest Michigan 4-H Livestock Council held its 51st Annual 4-H Livestock Auction in August 2023 and brought in almost a million dollars. Youth and volunteers were thrilled to be showcasing their skills and animal projects, and several non-animal projects and club booth displays were displayed in the 4-H Exhibit Building. Leelanau County youth were winners in our shows and auction this year: nine youth won Grand Champion and Reserve Grand Champion ribbons with their animals, and one won Overall Grand Champion. Two Leelanau 4-H clubs won barn awards, and two 4-H'ers won two of the three Heather Barley Scholarships. Two youth won the Rising Star awards for their species, three won Excellence in 4-H for their species. The resale auction was also a big success, and funds from the auction helped to

4-H LIVESTOCK COUNCIL PROGRAM 2023 COUNTY 4-H YOUTH ASSOCIATION

- Gross sales from the auction totaled **\$982,885.05**
- **364** local 4-H youth (ages 8-19) participated in the 4-H Livestock Council Program for 2023
- **9** Junior Beef projects were purchased by 4-H supporters and donated to 4-H youth to raise as market beef projects for 2024
- **100%** of the animals that were put up for auction were sold

support our Leelanau County 4-H Youth Association.

Our Northwest Michigan 4-H Livestock Council, working closely with 4-H staff and MSU Extension educators, offered our annual education expo held at the new location of Grand Traverse Resort. 20 educational sessions were offered to youth members (and adult

volunteers and family members) so that they could complete their educational credits in order to take part in the auction at fair. Over 500 4-H youth, family members, and volunteers were in attendance. The day was a large success, and the Council is already planning next year's event to be held at the Resort, as the space proved to be very positive and welcoming.

DEVELOPING YOUTH & COMMUNITIES



Leelanau County 4-H was able to offer our annual **4-H Tractor Safety** program this spring (April, May, and June), and our two 4-H volunteers worked with staff to present lessons in person, using the Purdue Extension Gearing Up for Safety curriculum. The lead instructor, Mark Miezio, built time with tractors into each lesson day, so that youth had experience prior to the test. We partnered with the Northwest Michigan Horticulture Research Center to provide the learning space and a by-appointment driving and written testing day in June, using the Center's tractors. All 15 youth (ages 14-15) who took part in the program passed their driving and written tests and received their certificates to drive this summer.

Leelanau 4-H is continuing its partnership with the **Maritime Heritage Alliance**, and offered a one-day sailing adventures aboard the Madeline, a classic sailing schooner. Youth were thrilled to be part of the crew and learn knot-tying, navigation, how to lower and raise sails, and more during these all-day camps, with the adding adventure of sailing to Power Island, mooring, and getting the chance to swim in West Bay.

Each year, Leelanau 4-H partners with our local libraries and other community stakeholders. In July, we held events in partnership with the Leland Township Library and the Glen Lake Community Library (a new partnership), and offered petting zoos with rabbits, guinea

pigs, poultry and goats, created free cloverbud crafts, and provided 4-H giveaways. We also partnered with **Parenting Communities** and took part in their street fair, and worked with **Leelanau Cheese** to take part in Cheese Fest. We reached hundreds of visitors at these fun events.

Leelanau 4-H worked with a local volunteer and farm owner to offer one **farm camp** for youth ages 7-10. Youth were able to handle animals (learning how to feed, groom, and care for them), play games, learn about farm safety, take a farm tour, and make and eat fun snacks from the garden in Lake Leelanau. We will be working to add more day camps here in Leelanau for next summer.

DEVELOPING YOUTH & COMMUNITIES



4-H EXPLORATION DAYS

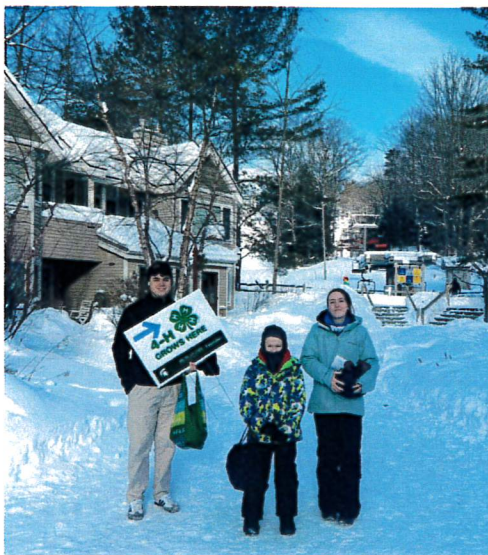
22 youth, 5 chaperones, and 2 bus drivers attended this year



EAST LANSING EVENTS

4-H Capitol Experience Youth Summit, offered statewide, and meeting for three days in Lansing, had a teen leader from Leelanau County in attendance, who also served on the Steering Committee for the event. Youth were able to tour the Capitol Building, work with groups of teens, and meet senators and legislators. They were also able to work with multiple educators and staff from Extension, including the Extension Director. This program is a way for our local youth to learn about government and take part in issues discussions in a meaningful way.

Leelanau County had **two** youth attend the **Veterinary Science Camp** down on the MSU campus this year, giving them the chance to explore veterinary programs, experience hands-



on learning in labs, and have the chance to connect with like-minded youth their age.

4-H Exploration Days was held on the MSU campus in June, and our Leelanau County 4-H delegation took two Leland school buses down and back

(and took other county 4-H delegations) and experienced this amazing pre-college event, living in the dorms, learning in exciting, hands-on educational sessions, and having their own adventures with new friends on campus. One of our teen leaders, who is also a member of the Statewide Youth Leadership Council, also taught a session on poultry to 20 youth. 22 youth, 5 chaperones, and 2 bus drivers attended this year.

Michigan 4-H Spectacular Youth Leadership Institute, a three-day event held on the MSU campus, had 5 out of the 39 youth attendees attend from Leelanau County this year, including one teen leader who provided a learning session on "Leadership Around the World," focusing on his 4-H travel experience for a month in Japan last summer through States' 4-H International Exchange and Michigan 4-H.

DEVELOPING YOUTH & COMMUNITIES



LET IT SNOW, LET IT SNOW...

We brought back our annual **4-H Ski and Snowboard Program** with our partner, **The Homestead**, and **61** youth and **7** 4-H volunteer chaperones, including two teen leaders, took part this season. It was wonderful to see so many families enjoying the slopes again. Unfortunately, the lack of snow provided so much of a challenge that we needed to cut the program short this winter. We will try again next year.

We celebrated our **4-H youth and volunteers** at the Cedar Maple City Lions Club with our annual awards celebration, in combination with our annual 4-H4All event, to offer an awards presentation (with trophies, certificates, and gift cards), pizza, 4-H cookies, hot chocolate, and a club *expo* for visitors with different activities, free

giveaways, project demonstrations, and hands-on learning. 38 people attended this fun event.

The Leelanau County 4-H Babysitting club partnered again in its seventh year with the Suttons Bay Bingham Fire and Rescue Department to provide four sessions of training in April, using MSU Extension curriculum and working with the Fire Chief to provide CPR/First Aid Training and American Heart Association certification to all of the 12 youth participants. Members ranged in age from 10 through 14, and joined in from three counties and seven different schools. Youth received items for various crafts; a first aid kit; and a binder with their curriculum, and prepared snacks each meeting, including using our brand-new Rock the Bike smoothie bike for older youth, created crafts, and worked together to learn important lessons like diapering and feeding babies.

Leelanau 4-H took part in two outreach events in late fall, first with the **Halloween at the government Center**, including fun 4-H crafts, a giant Sparty, and fun giveaways for over 75 people, and then the **Holiday Arts and Crafts Show** held at St. Mary, with multiple tables of crafts and giveaways for visitors to create gifts for their families. Two teen leaders assisted with these crafts as part of their 4-H volunteer work.

Orchard Tours and More was held at the **Northwest Michigan Horticulture Research Center** this July, the week of Cherry Festival. Our 4-H clubs and staff were there to offer petting zoos, bake sale fundraisers, cloverbud craft activities, a STEM trivia activity with the Apple iPads, and free giveaways. This is a great way for our 4-H youth and their animals to prepare for the crowds at fair, as there are a few hundred visitors that week.



From February through June, for the second year in a row, Suttons Bay Elementary School implemented the use of the iPads to work with **4th-8th** grade students in their art classes, **reaching 100 students**, using Adobe Fresco and Everyone Can Create curriculum, and in their elementary music classes, using the SoundForest app, with 1st-5th grade students, **reaching 135 students.**



TECHNOLOGY

With the help of 4-H volunteer and teacher Marni LaPaugh, we were able to offer another **4-H embryology** program to 15 kindergarten students at Glen Lake Community School this spring. Leelanau 4-H purchased new equipment, including an incubator with an automatic turner and candling light, and a brooder for the chicks when they hatched. The students learned quickly about which eggs were fertilized, and then watched every egg hatch. We will work on having this program at the school again next year.

Leelanau County 4-H had its second year with the **MSU Extension/4-H Apple Education Community**

Initiative grant, and used the classroom supply of iPads, Apple Pencils, a rolling charging cart, a classroom set of headphones, and a collection of Sphero robots for STEM-focused learning in clubs, programs, and in partnership with our local schools, as well as during multiple outreach events. From February through June, for the second year in a row, Suttons Bay Elementary School implemented the use of the iPads to work with 4th-8th grade students in their art classes, reaching 100 students, using Adobe Fresco and Everyone Can Create curriculum, and in their elementary music classes, using the SoundForest app, with 1st-5th grade students, reaching 135 students. We hope to continue this partnership in the fall, building more programs and reaching more youth in Leelanau with technology.



I Pledge

my **HEAD**
to clearer thinking,

my **HEART**
to greater loyalty,

my **HANDS**
to larger service, and

my **HEALTH**
to better living, for

my **Club**, my **Community**,
my **Country**,
and my **World**.

KEEPING PEOPLE HEALTHY & ENSURING SAFE FOOD



Cooking for One class



Teen Cuisine Nutrition Education Northport Students

NEW PARTNERSHIPS

MSU Extension supports individual and community level, or public health approaches, to prevent obesity. Through the **United States Department of Agriculture Supplemental Nutrition Assistance Program Education (SNAP-Ed)**, we provide a combination of educational strategies, accompanied by supporting policy, systems, and environmental change interventions aimed to increase the likelihood that limited resource youth, adults, and seniors can make healthy choices.

MSU Extension in partnership with ShareCare of Leelanau and the Friendship Center in Suttons Bay offered a **Cooking for One** class series. The class highlighted how to shop and meal plan while cooking for one. Hands on cooking and tasting

were a favorite part of class. Seniors shared that they learned new cooking techniques and ways to include more whole grains and produce.

MSU Extension began a new **partnership with Northport High School** this year. We provided support, education and resources to the Science class at the high school. This class is available to 9th grade students. It includes nutrition education focused on how nutrition affects each body system. Hands on cooking classes are also part of the education. MSU Extension secured funding to purchase kitchen equipment and supplies to outfit the science room with 5 cooking kits. This provides the students with the tools they need to measure, chop and practice cooking healthy recipes. 10 students participated in the Teen Cuisine nutrition education curriculum.

CONTINUED PARTNERSHIPS



Leelanau Christian Neighbors Food Pantry is a long-standing partner with MSU Extension. LCN is expanding the storage area of the pantry to increase purchases of local meats and produce. MSU Extension supported the project by securing funding for new carts to be used by pantry volunteers and pantry neighbors. MSU Extension continues to provide pantry focused recipes and food demonstrations at the pantry site.

KEEPING PEOPLE HEALTHY & ENSURING SAFE FOOD



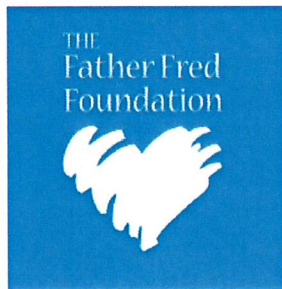
We have tried vegetables processed in the boxes that my family would not have purchased or known how to prepare otherwise. This is a wonderful way for us to try new foods! With the rise in grocery prices this helps us financially. We are so grateful for the program.

— Benodjenh Family



The Pantry to Preschool Program serves 182 families at 10 early childcare sites

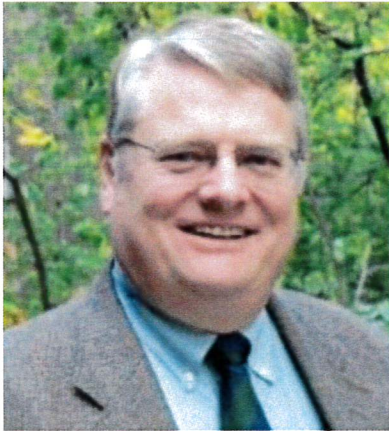
MSU Extension continues to partner with the **Father Fred Foundation Food Pantry** on the Pantry to Preschool Program. The program serves 182 families at 10 early childcare sites. The program connects families to nutritious foods. The boxes are delivered to the families twice a month. Boxes include the recipe ingredients to create a family-friendly meal along with the recipe and other pantry staples. The Grand Traverse Band Benodjenh Center in Leelanau County is one of the schools participating in the program since it started in 2020.



Benodjenh Head Start Preschool student participate in nutrition education provided by MSU Extension. In this program, kids learn about the 5 food groups and how food fuels their bodies. The students also get to try new foods that include fruits, vegetables and whole grains.



FOSTERING STRONG COMMUNITIES



Leelanau County Commissioner delegate **Gwenne Allgaier** (above right) is an active participant and represents Leelanau County well in the Northern Michigan Counties Association (NMCA). Approximately 30 counties in the northern lower peninsula are members and participate regularly. NMCA exists as a local forum for commissioners and/or administrators to learn about and discuss topics of particular interest or concern to county government in the northern lower peninsula. Association support service is provided by MSU Extension.

MSU Extension Educator **John Amrhein** (above left) assisted Leelanau County Commissioners in their discussion of plans to restructure their administrative department to bring all county board financial responsibilities together in one department overseen by the board. John shared input gathered from interviews with commission chairs and administrators in six similar counties, as well as relevant points from additional sources.



- Assisted Fishtown Preservation Society (Leland) with commercial fishing information; commercial fishing heritage information, and apprenticeship information.
- Assisted Grand Traverse Band of Ottawa & Chippewa Indians agriculture department with information on fish waste composting into fertilizer
- Worked with Ohio Sea Grant and Council of the Great Lakes Region to bring the BeBot beach robot and Pixie Drone marina plastics removal education tools to Suttons Bay, Northport, and Elmwood in conjunction with The Watershed Center Grand Traverse Bay.
- Participated in Sleeping Bear Dunes Lake Michigan Research Day.

Michigan Sea Grant is a cooperative program of the University of Michigan, Michigan State University Extension, and the National Oceanic and Atmospheric Administration that funds research, education, and outreach projects designed to foster science-based decisions about the use and conservation of Great Lakes resources.



**REGION'S
FIRST COMMERCIAL
HAZELNUT ORCHARD**

Andrew and Alena of **Cherry Basket Farm** launched the region's first commercial hazelnut orchard. The Omena-based couple learned more about the economic and ecological benefits of hazelnuts at a program hosted by the MSU Product Center, Crosshatch, and regional conservation districts in August 2021.

PRODUCT CENTER

Hallsted Homestead, an MSU Product Center client, was one of three farms to host **New York Times Cooking**. Their on-farm event featured storytelling, a no-cost cherry u-pick, and a "[Cherry Jubilee](https://www.leelanauticker.com/news/new-york-times-cooking-sets-course-for-leelanaus-hallstedt-homestead-cherries/)" dessert cooked by NYT staff. The event elevated the profile of their farm and Michigan agriculture nationally. <https://www.leelanauticker.com/news/new-york-times-cooking-sets-course-for-leelanaus-hallstedt-homestead-cherries/>



**MSU PRODUCT
CENTER IMPACTS**

- 11 client businesses
- 113 counseling hours
- \$30,000 in sales growth (combined)
- 1 license obtained
- 1 new product lunch
- 57 total new employees (combined)

Hallsted Homestead, an MSU Product Center client, was one of three farms to host **New York Times Cooking**

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