Missoula County Department of Ecology and Extension ANNUAL REPORT 2024

Missoula County Department of Ecology and Extension Staff

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> SARAH HOLDEN MSU Extension Horticulture Agent

SANDY PERRIN Plant Clinic Coordinator

> PHOEBE KNIGHT 4-H Administrator

JEAN JENKINS Foundation Coordinator

MARIROSE KUHLMAN Habitat Coordinator

REBECCA BUSBY Aquatic Invasive Species Coordinator

STEFFANY ROGGE Education Coordinator

> JED LITTLE GIS Coordinator

LAYNE VON LANKEN IPM Coordinator

MELISSA MAGGIO Statewide Biocontrol Coordinator **2024** marked the first full year of the Department of Ecology & Extension operating out of the new Gerald W Marks Exploration Center and the official opening of the Rocky Mountain Gardens to the public! We learned a lot about working out of this space over the last year, but the most important lesson we learned is that the residents of Missoula County are excited to be here enjoying this new community space! Whether it was learning how to grow, harvest, and prepare artichokes in the Honeyberry Kitchen as part of our Cultivate & Cook series, getting their hands dirty establishing gardens at one of the many volunteer events hosted in the Rocky Mountain Gardens, bringing their kids by for 4-H events, or coming in to get land management recommendations and resources, the facility and its gardens were buzzing with activity and learning all year long!

Even more exciting is that our relationships with our building partners the Missoula Butterfly House & Insectarium and the Missoula Conservation District continue to blossom, resulting in a unique blend of programming and promotion that expands the reach of all our programs to audiences that each of us individually would not be exposed to. Our foundation, Healthy Acres, Healthy Communities, also continues to grow, and with it, its ability to provide sustaining financial support to the Department's projects and programs. And those programs and services also continue to grow! We were excited to add the Home Upgrade Hub to our department in the fall, providing information and resources to you on how to make your home energy use more efficient and affordable, while also making your home more comfortable to live in.

We take a lot of pride in helping members of our community, so whether you want to grow the perfect tomato or upgrade your electrical panel, we would love to help answer any questions you might have on your path to success!



PROGRAM OVERVIEW

Missoula County Department of Ecology & Extension strives to inspire and empower our community through hands-on education and the demonstration of sustainable practices in the areas of:

Ecosystem Management: Programs focused on mitigating the economic and environmental impacts of terrestrial and aquatic invasive species in Missoula County, while at the same time prioritizing pollinator, water and native plant community conservation. This includes the active management of new invasive species populations, research and development for new biological weed control agents, and management of the Clearwater Watercraft Inspection Station.

Horticulture/Agriculture: Programs focused on showcasing the parts and pieces of the living landscapes that surround us, as well as inspiring and assisting in reaching your gardening and landscaping goals. This includes Master Gardener, plant/pest/disease identification and recommendations, research trials, and demonstrations in the Rocky Mountain Gardens.

Nutrition, Health & Wellness: Programs to inspire confidence in the kitchen! Hands-on learning opportunities focused on conveying science-based information on all things related to food. Major program series include Cultivate & Cook, Food as Medicine, Intro to Canning & Food Preservation and Expanded Food & Nutrition Education Program (EFNEP).

Home Resiliency: Programs focused on improving the energy efficiency and comfort of the places we live while making utilities more affordable. Major program areas include the Home Upgrade Hub, a one-stop shop for resources on how to make your home more efficient, and the How to Retrofit Your Home Series.

Youth Development: Programs that provide mentorship and servicebased learning opportunities in natural resources, agriculture, nutrition and community development. Major program areas include the Missoula County 4-H Program, EFNEP, and the Youth In Restoration Program.

MOLLY ATTWATER MSU Extension EFNEP Nutrition Educator

ALYSSA FOOTE MSU Extension EFNEP Nutrition Educator

MOLLY ANTON Rocky Mountain Gardens Coordinator

ALEX BROWN Rocky Mountain Gardens Program Development Coordinator

ZEDD MARTIN Rocky Mountain Gardens Technician

CALLYE FOSTER Home Resiliency Educator

COREY DADDS Home Resiliency Project Manager

CHELSEA PASCHALL Administrative Assistant



Sagebrush butterfup illustration by Evelyn Neel

Front cover: Beautiful Blooms Annual Garden designed by Sandy Perrin.

Rocky Mountain Gardens

Rocky Mountain Gardens grew from decades of dreams. As these dreams became concrete, years of careful planning led to 2024, a year of fervent planting. With the help of countless individuals volunteering their time and energy, we opened our gates to the public on September 14. Already, the community response has been dramatic.





DESTINATION GARDEN EVENT

September 26, 2024

On a perfect late summer evening, we welcomed over 100 guests to the stunning Rocky Mountain Gardens for our annual fundraising dinner and auction. Set against the backdrop of vibrant demonstration gardens, attendees enjoyed an unforgettable evening of fine dining, live music, and community spirit.

Five of Missoula's most acclaimed chefs crafted a gourmet feast, while the smooth sounds of jazz, performed by UM graduate musicians Dylan Bautista and Connor Roscoe, set the tone for an elegant and lively gathering. Guests mingled with the chefs, explored an array of silent auction treasures, and wandered through the gardens in the golden evening light.

The evening's program featured inspiring stories from our Youth Crew alumni, Tyler and Abby Brett, as well as Molly Sutton, a former participant in the Leave No Weeds program who has since come full circle to become one of our talented garden designers. Their journeys underscored the impact of our programs in shaping future conservationists and land stewards.

Thanks to the generosity of our Missoula community, the evening was a tremendous success, raising over **\$37,000** to support Youth Development programs and ensure transportation access for hands-on learning experiences.

We are deeply grateful to everyone who contributed—your support helps us cultivate the next generation of leaders. Thank you!

Rocky Mountain Gardens & Education Center Membership

In February 2024, we hosted our first-ever Membership Social, where approximately 40 attendees enjoyed an exclusive preview of upcoming MCDEE activities and programs. This event marked the beginning of an exciting year of growth, with our membership expanding to 120 dedicated supporters.

Membership benefits include:

- Early access to event and class announcements
- Reduced fees for MCDEE programs and classes
- Exclusive memberonly discounts at local businesses

Membership fees directly support **garden maintenance**, **public programming**, and **free admission to the gardens**, ensuring that our space remains a welcoming and educational resource for all.

Thank you to our members for being an essential part of our growing community!

foundation

104 event attendees



2 UM Graduate Jazz Musicians

\$137,118 Provided to support MCDEE programs



5 Amazing Local Chefs

Sector Sec. 1



11 Extraordinary Board and Event Committee Members

UNITING FOR NATURE: THE POWER IN PARTNERSHIP

A Collaborative Approach to Youth Conservation Education

Over the past year, our commitment to youth conservation was enhanced by partnering with organizations that share our dedication to preserving natural spaces and all they provide. By working together, we have expanded opportunities for young people to connect with nature, develop leadership skills, and instill a sense of responsibility to care for the world around them. These collaborations allowed us to expand our reach, enhance our educational programs, and create lasting impacts on the next generation of conservation leaders.

NATURE WALK WEEK

Partnering with the Watershed Education Network, Montana Department of Agriculture's AgCorp, Missoula Parks & Recreation, and the Bob Marshall Wildness Association, the Department of Ecology hosted Nature Walk Week at Marshall Mountain. Over two days, 256 3rd-grade students, teachers, and many parent volunteers explored the wonders of this public natural place. Through five engaging, hands-on stations students were introduced to the possibilities of outdoor recreation, spatial awareness through mapping, the importance of aquatic health through invertebrate identification, the role of native plants, and the ethics of recreating and camping responsibly. Designed to spark curiosity and foster a deeper connection with nature, Nature Walk Week encourages kids to discover and appreciate nature while cultivating a sense of responsibility for the public natural spaces around them.



BUGS & BOTANY: Middle School STEM Camp

This past summer through a partnership with the Missoula Butterfly House & Insectarium we co-sponsored our first official summer camp at the GW Marks Exploration Center & Rocky Mountain Gardens. This middle school Science Technology Engineering Mathematics (STEM) camp offered 6th to 8th-grade campers the opportunity to work with botanists, ecologists, and entomologists on hands-on, sciencebased experiences and activities that were led by staff from both entities. Some of the highlights for campers were monitoring for biological controls for Dalmatian toadflax and spotted knapweed, learning to identify and articulate diagnostic characteristics of native plants to develop identification skills through haiku, and taking part in a "sweep" of the newly planted Rocky Mountain Gardens identifying visiting pollinators. We look forward to expanding summer camp experiences with our building mates.



youth development

Education Staff

ANNE RAZNOFF Education Assistant



AVERY ADAMS Education Assistant & Youth Crew Lead















1,088 Kids explored local open spaces





832 Fifth graders got dirty fingernails pulling Spotted Knapweed







*and 8 snowballs thrown at Steffany, 1 to the face

Youth Haiku

Cauliflower tops

Is known as nature's band-aid

Fuzzy fern-like leaves





4-H teaches leadership, citizenship, and life skills.

In 2024, Missoula County 4-H teens participated in State 4-H contests at Montana 4-H Congress on the campus of Montana State University in Bozeman. Three Missoula 4-H members earned a trip to National 4-H Congress, held in Atlanta, Georgia, in November 2024. Laynie Jensen from the Blue Mountain 4-H Club earned her trip by winning a State 4-H Award in the Beef Project. Gage Horn of the Mullan Trail Mustangs 4-H Club earned his trip by placing in the top of the Career Communications State 4-H Contest. Stella Truzzolino of the Mullan Trail Mustangs 4-H Club earned her trip by placing in the top of the Illustrated Talk State 4-H Contest. All three of these members also serve as Missoula County 4-H Ambassadors

TOP PROJECTS WHERE THEY LIVE Swine Archery 22% Beef Cloverbud 49% Sheep 29% Poultry Rabbit Cooking Baking in a town under 10K or suburb under 50K Dog in Missoula or a suburb Enrollment on a farm 436 1,104 **Educational projects** Youth members



Laynie Jensen

Gage Horn

Stella Truzzolino

youth development

WESTERN HERITAGE PROJECT CONFERENCE

In late August 2024, Missoula 4-H volunteers organized and hosted the State 4-H Western Heritage Project Conference and shooting competition. The event was held at the Western Montana Fish and Game Association's Deer Creek Range in East Missoula. The 4-H Western Heritage Project combines a comprehensive study of the Old West with the fastest growing shooting sports discipline in the world – western action shooting. Adult volunteers and 4-H youth study the history, lifestyle, culture, food, fashion and firearms of the American West from the period of 1860 through 1900. At the conference, members complete a test of firearm safety, American history, Missoula area history, and firearms ID. They then compete in a persona interview, where they are scored on their knowledge of the period-appropriate character they are studying, including their period-specific attire. Finally, participants are scored on speed and accuracy, shooting revolvers, lever action rifles and stagecoach shotguns.

Members from several Montana counties competed in the event, and the following Missoula 4-H members placed in this State 4-H competition:

Sylvan West – 1st Overall Intermediate Ivory West – 1st Overall Senior Rimfire



youth development

EFNEP YOUTH CURRICULUM

youth development

The Expanded Food and Nutrition Education Program (EFNEP) offers nutrition and physical education classes to community members who qualify for public assistance and children in Title One schools. This year, Missoula County EFNEP partnered with numerous community agencies, including the YWCA and Boys and Girls Club of Missoula County, where mothers of young children and youth learned to prepare healthy food on a budget for their whole family.

EFNEP taught at many Missoula County schools, including Seeley Lake, DeSmet Elementary, Clinton Elementary, Franklin Elementary, Hawthorne Elementary, Lowell Elementary, as well as Alberton School. The EFNEP educators encourage the children to be messengers and share their newfound nutrition knowledge with their families.

In 2024, we saw growing rates of curiosity in children of all ages in our community. They became excited about trying new foods (like Salad Turnips!) and engaged in conversations about healthy living. We believe that when this ripple effect of healthy living begins with the children in our community, its reach extends to many corners of our society.

This year, EFNEP not only focused on educating individuals but also emphasized building lasting relationships with community organizations to strengthen the support network for families. For example, our collaboration with the YWCA allowed us to connect with mothers facing housing insecurity, equipping them with practical cooking and budgeting skills. Similarly, our partnership with the Boys and Girls Club empowered young people to develop confidence in the kitchen while learning the importance of balanced meals.

Looking ahead, EFNEP in Missoula County plans to expand its outreach by offering livestreamed classes to better serve our diverse population and those who wish to attend outside of Missoula County. We are also exploring opportunities to integrate gardening projects, allowing children and families to grow their own fresh produce while learning about sustainability and nutrition. By continuing to foster curiosity and confidence around food and health, we aim to inspire long-term, positive change in our community.

To learn more about EFNEP or get involved, visit our website or contact our office. Together, we can make healthy living a reality for every family in Missoula County.

572 Youth Reached









Kids Overcoming their fear of vegetables



POLLINATOR CONSERVATION

In April, we planned and hosted the inaugural Montana Pollinator Research Summit at the G.W. Marks Exploration Center. This two-day event brought together over 80 attendees, including researchers, conservationists, land managers, and community members for a dynamic exchange of ideas and research. Presentations covered a range of topics, including butterfly monitoring techniques, pollinator nutritional ecology, insect macrophotography, and how Extension engages Montanans in pollinator conservation. The summit provided a valuable opportunity for attendees to connect and gain a broader awareness of pollinator research and conservation efforts across Montana.

The Missoula County Department of Ecology and Extension takes an active role as a leader in Montana, sharing expert knowledge about native pollinators, supporting research, and facilitating connections to advance pollinator conservation efforts!

MONTANA BUMBLEBEE ATLAS TRAINING





MT BIOCONTROL COORDINATION PROJECT

Annual Accomplishments



NEW(ER) BIOCONTROL SYSTEMS

Flowering Rush

We continued our pre-release monitoring work on the flowering rush weevil (*Bagous nodulosus*) and installed rearing ponds in anticipation of approval for field release with the intention of increasing the number of weevils released at initial release sites. The weevil was approved for release in late 2024, meaning we will begin rearing weevils in our ponds in 2025!





Whitetop

We were able to join Jeff Littlefield (MSU) at one of the whitetop mite (*Aceria drabae*) release sites and assisted in his monitoring efforts. This biocontrol agent has increased its population at some of the initial release sites to the point of being moved to a distribution phase! We will assist with this effort in 2025 by working with land managers throughout MT who are interested in using biocontrol to aid in the management of whitetop infestations. Our role will include identifying appropriate release sites, collecting and redistributing, and monitoring.

Oxeye Daisy

In 2024, we also began to think about how we could help Jeff Littlefield (MSU) with the oxeye daisy moth (*Dichrorampha aeratana*) in anticipation of its approval for field release. We visited a potential release site with Jeff and his assistant to learn more about desired site characteristics. We are anticipating approval for field release in 2025 and will continue to help Jeff as appropriate. We will likely begin to evaluate potential future release sites and possibly begin pre-release monitoring if appropriate sites are identified.



AQUATIC INVASIVE SPECIES

The Missoula County watercraft inspection station, located at Clearwater Junction on Hwy 200, conducted over **25,000** boat inspections in 2024! The vast majority of boat traffic inspected at the station came from states where no mussels have been detected, but you can see from the numbers denoted in each state that there are still plenty of boats coming from high risk areas.

The Missoula County AIS District also monitored several lakes within the county, throughout the summer, for evidence of mussel larvae, including Browns, Holland, Lindbergh, and Upsata. We can happily say there were **no mussel detections for 2024**!

35 24 183 21,309 10 29 72 13 311 7 65 5 3 8 74 4 42 3 11 27 2 3 33 5 2 11 known populations of zebra or quagga mussels no mussels detected

The AIS District also had the opportunity to collaborate with the U.S. Geological Survey Montana-Wyoming Science Center to collect multiple samples from five different lakes within the Clearwater chain of lakes. These water samples will be assessed for nutrients, such as phosphorous, nitrogen, and chorophyll to ensure that the lakes are staying within healthy levels for both humans and animals.



AIS Staff

ZACH LEWIS Watercraft Inspection Station Supervisor

CLARISSA ORTON Big Sky Watershed Corps Member



Inspections by State or Province



PREVENTION

by the numbers

SPRAYING 435 **Buckthorn** 668 trees/seedlings 100+ 273 removed from **Total hours Maclay Flats** Sites spent spraying Gallons **RUSH SKELETON WEED SPECIES** 60 Blueweed, Rush sites number of sites 50 10 Skeletonweed, Common hours to manage 40 sinoy 8 Buckthorn, Yellow-flag Iris, 6 Orange Hawkweed, Perennial 20 Pepperweed, Whitetop, Purple 2 10 Loosestrife, Oxeye Daisy 0 Ω 2021 2022 2023 2024 POTOMAC OXEYE DAISY PROJECT YELLOW FLAG IRIS landowers number of owners Bitterroot acres treated 20 DC **Phone Calls** Clearwater Clark Fork 130 Blackfoot Pounds of 100 150 200 250 3<u>00 350</u> 50 mosquito **Total Infestations** larvicide used



ROCKY MOUNTAIN GARDENS

Celebrating the Connections Between Plants and People in the Intermountain West



After tucking in the very first plants in late fall of 2023, Rocky Mountain Gardens officially opened to the public on September 14, 2024. Our stunning 2.75-acre botanical gardens are the first of their kind in Montana, offering a space where visitors can explore, learn, and connect with nature.

It took a tremendous amount of work to transform this former parking lot into a paradise for plants, people, and a remarkable diversity of wildlife.

The gardens, free and open to the public, feature over 20 distinct growing areas, including waterwise, pollinator-friendly, native prairie and forest, vegetable, medicinal herb, sensory, rose, and ornamental gardens, as well as a fruit tree and berry orchard. Most of these areas were planted over the course of the season, but there is still much work to be done. The orchard and berry gardens are still in the early stages of planting, and the west side of the garden, currently cover cropped to improve the compacted soil, will eventually feature an outdoor classroom and veggie patch.

A Huge Thanks to Our Volunteers

We couldn't accomplish 2024's tremendous progress without the dedication of our incredible volunteers, who contributed over 1,000 hours in the gardens over the course of the season. Their efforts have helped transform this space into a flourishing educational and community resource.

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Visit Us This Spring

Rocky Mountain Gardens will reopen in April– we invite you to come explore, be inspired, and celebrate the deep-rooted connection between plants and people.

> 168 individual volunteers

> > 50 Volunteer events





780 Volunteer hours

\$25K

Estimated economic impact

BEAUTIFUL BLOOMS

The Art & Joy of the Annual Flower Garden

Landscapes are meant to be experienced, creating moments of joy. This philosophy drives the Beautiful Blooms annual flower garden—a vibrant, evolving display of color and texture. Designing, planting, and tending this space has been a labor of love and planning.

The season begins with bright bulbs, peonies, and fresh greenery. As early blooms fade, annuals take center stage, providing continuous color and solving landscape challenges.

Careful plant selection ensured a layered effect. The design included 800 marigolds, 500 zinnias, 200 blue salvia, 800 white alyssum, 300 celosia, 20 artichokes, 100 sunflowers, and 30 dahlias. Each played a role, from cheerful marigolds to statuesque sunflowers and textured artichokes.

Precision in timing and calculations was key. Proper plant quantities and seeding schedules ensured transplanting on June 4th. Once planted, daily care, including watering and fertilizing, kept the garden thriving. Midseason maintenance, such as pinching back and deadheading, encouraged bushier growth and continuous flowering. The artichokes, chosen for their foliage, also provided a small harvest.

Watching the garden evolve was immensely rewarding. The interplay of color, texture, and structure reaffirmed that gardens inspire joy. The Beautiful Blooms display not only addressed design challenges but also demonstrated the impact of planning and dedication in creating breathtaking landscapes.

The color garden, featured on the cover, was designed by Sandy Perrin and sponsored by Stockman's Bank.

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MASTER GARDENER

In 2024, connecting the Master Gardener Program to the Missoula community was a key initiative led by Extension Horticulturist Sarah Holden. Master Gardener volunteers played a vital role by offering gardening advice and tips at the Ask a Master Gardener booth. Throughout the year, these volunteers were on hand at a variety of local events, from the Western Montana Fair to the Farmer's Market, answering questions and sharing their expertise. The Master Gardener community in Missoula is growing, with 47 new graduates completing the 12-week, hands-on course in 2024.

JUNIOR MASTER GARDENER

In 2024, Missoula County Master Gardener Julienne Bitely launched a pilot Junior Master Gardener (JMG) program, engaging 15 students from a local homeschool group, ranging from 3rd to 8th grade. The program used the JMG Wildlife Sciences curriculum, where students completed eight chapters focused on gardening with wildlife and participated in two service projects. One notable project involved helping to remove invasive plants at the John Toole Prairie in Missoula. Looking ahead, Extension Horticulture plans to expand the Junior Master Gardener program in Missoula County in 2025.

ASK YOUR NEIGHBOR SERIES

An exciting new series in 2024, Missoula County residents came together with their neighbors to explore a variety of specific horticultural topics. The *Ask Your Neighbor* series provided an opportunity for community members to learn and share gardening knowledge in a relaxed, interactive setting and learn from their peers. Hours of radio time answering questions & providing expert gardening advice

950 Calls, emails, and walk-ins for plant & pest ID

> Prerecorded horticultural minutes for local media on gardening tips

Educational program events, taught or presented to over

> **200** Gardening enthusiasts

23 Weeks of Pest Alerts

through phone hotline, emails & web notifications

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HONEYBERRY DEMONSTRATION KITCHEN

Family and Consumer Science, MSU Extension

The Honeyberry Teaching Kitchen provided educational opportunities for over 400 participants in 2024. It has become a destination spot for those seeking to learn more about food preservation and become more familiar with cooking and eating locally grown produce and locally processed meats. It has been, and will continue to be, a place to share expertise, provide valuable research- based information, a place to share food stories and food memories, and a place to celebrate the diversity that makes Missoula County an amazing place to live!



nutrition education

CULTIVATE AND COOK

Rocky Mountain Gardens provided peppers (some very hot), many varieties of squash, onions, leeks, potatoes, herbs, and tomatoes. Many of the recipes used in the Cultivate and Cook classes were chosen to allow participants to experience the freshest, locally grown produce from our gardens. Making Salsa Verde with end of the season tomatoes and peppers, was a great team building experience for the Ecology and Extension department and the Missoula County Conservation District staff.





nutrition education



THE HOME UPGRADE HUB

Missoula County Department of Ecology & Extension is proud to announce the launch of the Home Upgrade Hub: Missoula County's resource for Healthy & Efficient Homes. Located in G. W. Marks Exploration Center, the Home Upgrade Hub will serve county residents as both an in person and online resource to guide and support them in home energy retrofits, making their homes more comfortable and their utilities more affordable. Be on the lookout for educational events and opportunities in 2025!



Missoula County's Resource for Healthy & Efficient Homes

home resiliency

Program Partners

All Nations Health Center City of Missoula Office of Climate & Sustainability Clearwater Credit Union Climate Smart Missoula Human Resource Council Missoula County Planning,Development, & Sustainability NeighborWorks Montana

Green roof install



DEPARTMENT OF ECOLOGY & EXTENSION

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