



Welcome to Missoula County

Missoula is known as the Garden City because of its ability to grow local food crops. In the early days, fruits and vegetables were marketed to surrounding mining communities. Today a number of stores and restaurants use locally-grown food crops, and producers can market through seven farmer's markets.

Missoula County has a population of 116,130 people. Missoula, the county seat, has a population of 72,186. The major industry for many decades was timber. That has declined significantly since the early 1970's and Missoula has become a regional trade center. Additional categories of economic importance are educational services, health care and social services. Ninety percent of the wage and salary workers are employed by small businesses of 20 employees or less. One out of four people are self-employed.

Subdivision since the 1970's has resulted in many small acre parcels of land. The current GIS data shows 5,936 individual landowners in Missoula County that own five acres or more of land. The 2012 Census of Agriculture reports 637 farms in Missoula County with average sales of \$21,355 per farm.

Due to the interest and concerns about invasive species, the MSU Extension office and Weed District are combined into one department. Considerable effort has resulted in new tools and sustainable methods of managing invasive weeds, such as the biological weed control program. The concerns about invasive aquatic

species has brought new challenges. Through the encouragement of the Governor, the department has provided statewide leadership in organizing a Montana Invasive Species Council.

Youth education is an important part of our program. The 4-H program is very important in Missoula. Changes are under way that will enhance our abilities in working with 4-H youth and families. Youth education in natural resources and local-grown foods through the schools and non-profit groups is also an important part of our work.

Recently, the department collaborated with a number of partners to conduct a statewide landowner natural resources value survey. The results will be used in organizing upcoming programs.

These highlights are a brief look at the programs we do. We encourage people to contact us for information and to consider becoming involved in programs of interest.



Photo by Jed Little

Plant & Pest Education

Missoula Plant Clinic keeps residents in the know about plants and their pests

The Missoula County MSU Extension Plant Clinic provides leadership and educational opportunities to the public on the identification and integrated pest management practices (IPM) of plant diseases, pests and related plant health problems through the coordination and management of the Plant Clinic. The clinic:

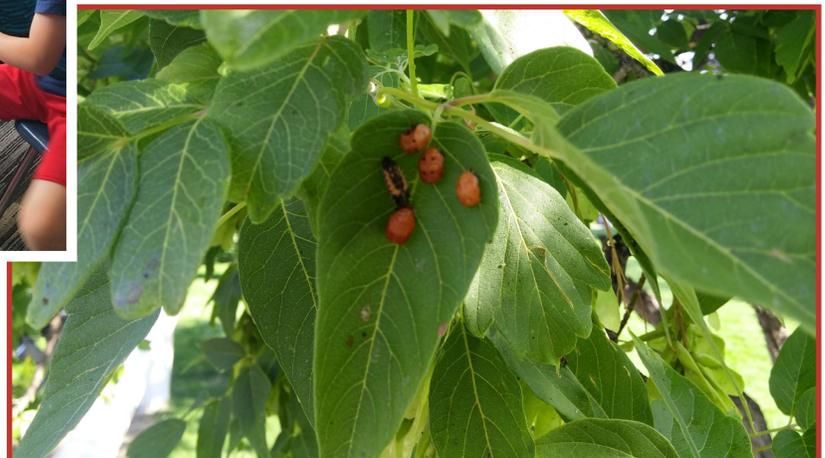
- Performs weekly scouting trips, checking on pest levels that challenge gardeners, landscapers and homeowners in maintaining healthy plant communities and environment.
- Traps for insects such as the codling moth, cherry fruit fly and currant/gooseberry fly to give Missoula County residents timely information on when to spray for those pests to control damage to fruit. This information helps reduce unwarranted pesticide use.

- Updates the Pest Alert Hotline, which is distributed through email, Missoula County MSU Extension website and phone recording.
- Provided information for 1,600 calls, walk-in clients and emails this year including information on soil testing, pruning, plant identification, and pest control.
- Collaborates with the YMCA's Gardening for Kids Camp. Thirty children were given magnified bug viewing containers to examine provided lady bugs. We talked about good and bad bugs in the garden and what role bugs play.
- Assisted the City of Missoula Parks department by training 10 volunteers how to maintain plants in traffic circles.
- Participates in two radio talk shows answering horticulture questions from listeners.
- Partners with FCS Agent Kelly Moore in teaching four Lunch and Learn classes: subjects include Stevia, fruit leather, beet growing and harvesting, and growing herbs.
- Held a class for 10 people on how to grow salad greens in containers (Seed to Salad).
- Works with the local native plant society and U of M maintenance on diagnosing problems in their native plant garden at the University of Montana.



ABOVE: Talking about good and bad bugs in the garden with the YMCA youth gardening class.

RIGHT: Lady beetle larva pupating into adults.



Partnerships: Refining Outreach through Social Understanding

In 2013, the weed district brought together an interdisciplinary group of natural resource managers, social scientists, and conservation leaders to work collaboratively to find ways to improve outreach effectiveness and enhance natural resource stewardship in Montana. Natural resources issues identified by the group included mitigating the impacts of wildfire, wildlife conflict and invasive weeds. With funding provided by the Missoula County Weed District, Montana Department of Natural Resources, Gallatin Valley Land Trust, Defenders of Wildlife, Montana State University Extension and the Montana Department of Agriculture, the group partnered with the Human Dimensions Lab of the University of Montana to conduct a statewide survey that could provide a better understanding of landowners' attitudes and values toward key natural resource issues, constraints, and preferences for information sources. This information could then be used to clearly identify groups of Montana landowners most in need of assistance and develop audience appropriate messaging and information for them. The survey was completed in 2016, and here are the results of Landowners' perspectives on weed control across Montana.

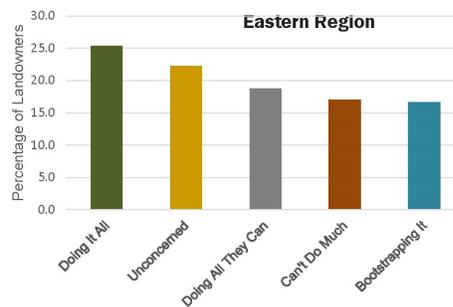
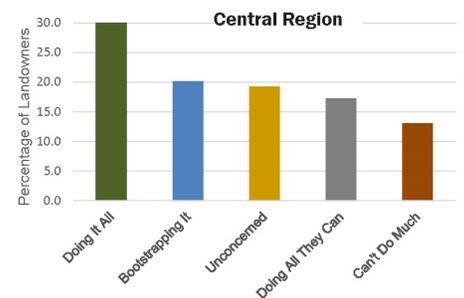
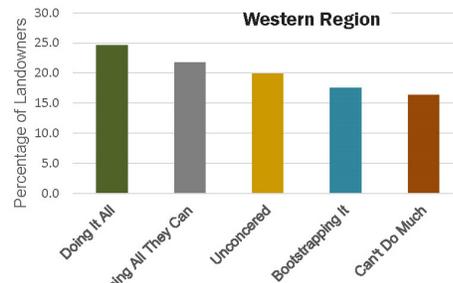
- 70% of landowners said they always checked their property for weeds.
- Almost 90% of landowners believed their personal actions could help control weeds, only 31% of respondents believed that

controlling weeds on their property would motivate their neighbors to take action.

- While 70% of landowners reported checking their property for weeds, only 40% of landowners thought their neighbors were taking action.
- 80% of landowners are willing to use herbicides to help control noxious weeds on their property; only 44% of landowners were willing to apply for a government grant program to do so.
- Friends and family and general internet search were the most popular sources people used to get info. Workshops/classes and federal government were the least popular sources.

Different Types of Landowners

Across the state, we identified different types of landowners who displayed similar needs and behaviors within their group. Each region had a different proportion of the five types of landowners. Landowner outreach will be most effective when programs and outreach messages are tailored to these specific types of landowner audiences.



Doing It All: (Moderately concerned, actively controlling low constraints, satisfied with weed control in their area, somewhat connected with others) These landowners know weeds are a problem, have the resources to control weeds, and engage many weed control activities. They believe their neighbors expect them to control for weeds on their property.

Doing All They Can: (Highly concerned, some actions, highly constrained, dissatisfied with weed control in their area) These landowners see weeds as a big problem, and they are not satisfied with the weed control in their area. They are doing all they can to control weeds, but do not have enough time or money. While they believe their neighbors expect them to control for weeds, they don't think their neighbors are taking action themselves.

Unconcerned: (Moderately to highly concerned, taking few actions, satisfied with weed control in their area) These landowners don't think weeds are a big problem. Despite having resources needed to control weeds, they still don't engage in much weed control. They are generally satisfied with weed control in their area.

Can't Do Much: (Few actions, highly constrained, unsatisfied with weed control in their area, not connected with others) These landowners know weeds are a problem, but they don't have the knowledge, time or money needed to take action. This group has low resources and low confidence in their ability to control for weeds. They don't believe their neighbors are controlling for weeds, and they don't think their neighbors expect them to control for weeds.

Bootstrapping It: (Highly concerned, actively controlling moderately constrained, satisfied with weed control in their area, connected with others) This group thinks weeds are a big problem, and they work to control them even though they have limited time and money. This group was most connected with their neighbors regarding weeds, and believed their neighbors expected them to control for weeds.

Survey Methods:

We administered a mail and internet survey following a Dillman tailored design method (2014). Our initial sample included 4,424 Montana landowners from across MT. We stratified the state by combing the seven MT Fish, Wildlife and Parks regions into three regions: East, Central, and West. In each region we sampled about 1,500 landowners. We drew our sample from the MT Cadastral database, a spatially explicit statewide database of all landowners. We had a response rate of 30%, and a final sample of 1,326 responses. Please contact Dr. Alexander L. Metcalf with any questions (alex.metcalf@umontana.edu).

Montana Biocontrol Coordination Project

The Montana Biocontrol Coordination Project works to provide the leadership, coordination, and education necessary to enable land managers across Montana to successfully incorporate biological weed control into their noxious weed management programs.

In 2017:

- 35 days were spent collecting insects
- Nearly 500 land managers assisted in collecting biocontrol agents
- 7 species were collected (*Mecinus janthiniformis*, *Mecinus janthinus*, *Agonopterix alstroemeriana*, *Aphthona* spp, *Oberea erythrocephala*, *Larinus* spp, and *Cyphocleonus achates*)
- 3 additional species were brought in and released in Montana (*Chrysolina* spp, *Hylobius transversovittatus*, and *Puccinia punctiformis*)
- 40 Montana counties collected or received insects
- 14 other states received insects (Colorado, Washington, Idaho, Nevada, Oregon, Arizona, Utah, New Mexico, Wyoming, Nebraska, South Dakota, Minnesota, Tennessee, and New York)
- Approximately 2.5 million insects distributed
- 16,520 acres treated (following rule of: 5 acres treated for every 1 release)
- \$550,000 approximate market value of distributed insects
- 15 workshops were coordinated or presentations were given in Columbus, Kalispell, Miles City, Missoula, Ovando, Deer Lodge, Dixon, Condon, Philipsburg, Whitehall, Browning, Fishtail, and Utica
- Over 300 participants were involved in these workshops or presentations
- Nearly 6,750 miles traveled throughout Montana for workshops and collections



Cyphocleonus achates-spotted knapweed root weevil

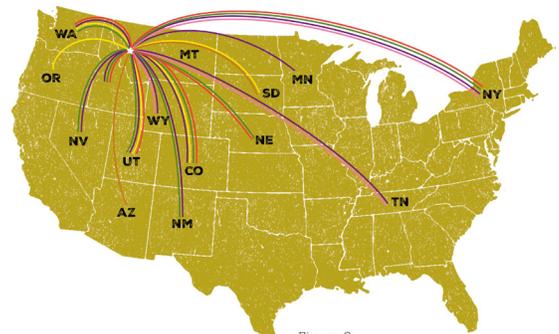


Figure 2:
Out of State Insect Distribution

- Yellow Toadflax Stem Weevil
- Dalmatian Toadflax Stem Weevil
- Spotted Knapweed Root Weevil
- Spotted Knapweed Flower Weevil
- Leafy Spurge Flea Beetles
- Leafy Spurge Stem Borer



Larinus spp - spotted knapweed flower weevil

Grocery shopping tours with Missoula EFNEP

The Expanded Food and Nutrition Education Program (EFNEP) provides free classes to low-income families in Missoula County. Class graduates have the opportunity to attend a grocery shopping tour. Families receive a \$10 gift card and are challenged to make a healthy meal consisting of all five food groups according to MyPlate. EFNEP partners with Super Walmart, a store that is convenient and familiar to families. During the 2016-2017 fiscal year, nutrition educators Julia Goar and Bonnie Medlin conducted six tours.

Recently, while touring the bread aisle, Bonnie Medlin asked her participants to grab the bread they normally buy and identify the fiber content. MyPlate teaches that a whole grain product is defined as 3g of fiber or more. One of her participants was shocked to discover that her normal bread purchase only contained 1g of fiber. She was tricked into thinking the bread was whole grain based off the color of the bread. The participant then chose to buy a loaf of whole grain bread with a higher fiber content.

Missoula EFNEP 2016-2017 Statistics

- 95 families graduated.
- 89% of families had a positive change, eating more of the five food groups. Graduates ate more food with fiber, calcium, and Vitamin A.
- \$8.12 is saved in healthcare costs by a family who graduated from EFNEP.
- 884 children reached in the 2016-2017 school year.



Missoula EFNEP nutrition educator Bonnie Medlin leading a shopping tour at Walmart.

Family and Consumer Sciences 2017 Program Highlights

- Powerful Tools for Caregivers. Two sessions were offered in spring and fall, in partnership with MAS (Missoula Aging Services). Twenty participants got information and peer support in groups. Participants are better able to utilize resources shared in class to ensure improved self-care during the challenges of family caretaking.
- DEEP (Diabetes Empowerment Education Program). Two sessions were offered in spring and fall with 15 participants. University of Montana Pharmacy School seniors presented updates on diabetes medications and management progress. Empowerment strategies are adopted by participants to better handle the challenges of diabetes self-care and management. The Community Diabetes Education Program presented the doctor-referred program for those with diabetes to continue to expand their diabetes awareness.
- Strong People. Two, six-week sessions of low impact exercises and strength training (with a nutrition component) were offered for an average of 6-8 seniors ranging in age from 55-94 at River Ridge Senior Apartments. Several participants expressed their excitement about having more energy and endurance as a result of the program.



Canning demonstration and pressure gauge testing at Caras Nursery.

- ServSafe. This program was taught in May and November to 25 participants from Missoula and Ravalli Counties, in partnership with Ravalli County MSU Extension at Bitterroot College.
- Lunch and Learn. Offered from October through May, these one-hour lunchtime classes gave information and demonstrations on local foods, and how to grow and cook them. Classes like ‘Seeds to Salads,’ and ‘Growing and Eating Fennel’ averaged 8-12 participants.
- Canning Class Series. Three weekly evening classes were offered for making: pickle relish, apple pie filling, and pressure canning chicken at Moonlight Kitchens. Participants said they would continue canning classes throughout the year if offered. Several had never canned before and are planning on continuing as a result.
- Cooking Classes and Canning Demonstrations were given at the Indian Health Center Wellness Fair at University of Montana, Ace Hardware, Montana Outdoor Recreation Expo, Nine Mile Community Center Food Preservation Update, Good Food Store Local Foods Fair, Missoula Aging Services Senior Corp Volunteers FCS Program Update, and Missoula Food Bank. Tests were done on 45 pressure gauges.
- Missoula County MSU Extension FCS served as the Western Montana host site for Women In Agriculture (WSU sponsored), with 20 participants from around the state.
- MSU School of Nursing Project. Missoula County MSU Extension FCS served as a preceptor for two nursing students who worked on children’s pre-diabetes education.

Ambassador program helps 4-H teens succeed at life

The 4-H Ambassador program in Missoula County teaches teens how to be better leaders, communicators and community-minded citizens. Participation in the program causes teens to be more confident, outspoken and aware of their position as role models in the community. Seasoned 4-H Ambassadors make new friends more easily, they force themselves outside of comfort zones and they participate in statewide 4-H events at a much higher rate than non-Ambassador 4-H teens.

By their own admission, through responses to questions on the 4-H Ambassador application, 55% of applicants wanted to participate in the Ambassador program specifically because of the leadership development opportunities. Another 55% of applicants indicated a desire to give back to the 4-H program from which they had gained so much, by promoting 4-H in the community and mentoring younger members.

RIGHT: Lunch and Learn: Edible arrangements.



BELOW: Women in Agriculture Conference at Missoula County MSU Extension.



Several quotes from Ambassador applicants are noteworthy:

- I remember being a little kid and looking up to those who wore the ambassador shirts. I want to be that leader for the kids now. To be the leader I needed when I was younger.
- Being an ambassador has helped to develop my leadership, communication and public speaking skills. It has also motivated me to become the best person I can possibly be.
- I learned that there are different kinds of leaders. Knowing that made me feel more comfortable and secure when leading because I prefer not to be in the spotlight.
- I learned that being a leader has no breaks and that you always have someone looking up to you.
- Being an ambassador has helped me to take more risks and try new things.
- In my classes, I started speaking up and volunteering information and not being afraid that it was wrong.
- Before, I was scared to do my own thing and to stand up for myself, now I focus on doing whatever I'm doing at a 100% level...also, now I make decisions based on what I think is right or best, no matter if my friends are doing something different.

- Being an ambassador has helped me to make new friends and improve my social life.
- Having a goal has focused me and made me happier. Now I have a direction, and now I know how to get things done and be a good leader. I have found a family with the group of ambassadors, a safe space. So that gives me more confidence.

In 2017, all of the 12 teens from Missoula who traveled to Helena for the 4-H Legislative Breakfast event were Ambassadors. Eighty-six percent of Missoula's teens who traveled to Miles City for Montana 4-H Rec Lab were Ambassadors, and Missoula's delegation to Montana 4-H Congress in Bozeman was comprised of 52% Ambassadors, 48% non-Ambassadors. All of these 27 teens competed in State 4-H contests while in Bozeman. The 4-H Council Board in Missoula believes strongly in the positive impact the Ambassador program has on youth, and as a result, they invest nearly \$8,000 annually to support their travel to and participation in state- and national-level 4-H events and competitions.

LEFT: 4-H Ambassadors prepare to serve lunch while volunteering at the Poverello Center in Missoula.



CENTER: Missoula 4-H Ambassadors experience some Central Montana culture while road tripping home from Montana 4-H Rec Lab in Miles City.



FAR RIGHT: Missoula 4-H Ambassadors enjoy a tour of the State Capitol building following 4-H Legislative Breakfast.

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