Welcome to Valley County

Valley County is situated in the Northeastern corner of Montana, bordered by Canada to the north and the Missouri River to the south. The U.S. Census estimates that the number of people residing in Valley County at 7,539 giving it a population density of approximately 1.5 people per square mile. Valley County's 5,062 square miles were carved out of Dawson County in 1893. The county seat was known as Siding 45 until 1887, when a railroad clerk randomly poked his finger at a spinning globe thereby naming the site Glasgow. Fort Peck Dam was built in the 1930s as part of F.D. Roosevelt's New Deal, becoming a lifeline for the economy of Valley County after drought and crop failures had depressed the area. The county supports some of the best warm water fishing, elk, deer and antelope hunting, and dinosaur fossils. Valley County is primarily an agricultural community where small grains, pulse crops, cattle and sheep are grown.

Developing storm cell over Glasgow. Photo by Shelley Mills
Beekeeping workshops make an impact in Northeast Montana

With increased awareness of the importance of pollinators, bees and beekeeping has become much more mainstream today than 30 years ago. Three workshops – Beginning Beekeeping, In the Bee Yard, and Harvesting and Winterizing – were held on Saturdays in March, May and September respectively. Bee enthusiasts from five counties attended the day-long workshops which included lunch, demonstrations and door prizes.

During the first workshop, participants learned the basics of bee biology, plants and planting for foraging bees, and how to manage bees according to a beekeepers calendar. Patricia Gilbert (Natural Resource Specialist for the U.S. Army Corps of Engineers) demonstrated the new observation hive for the Fort Peck Interpretive Center and shared her experience with the Australian built Flow Hive™. Other guest speakers included Rick Molenda of Montana Bee Supply in Polson, who demonstrated beekeeping equipment, and Beth Eiring from the Montana Department of Agriculture, who spoke about the Montana Apiary program and pests of the hive.

For the second workshop, Jim Rodenberg a local commercial beekeeper, taught the participants how to open hives; check bees; identify when to add brood and honey boxes; how to detect mites, eggs, larvae, and pupae, and find the queen. The hands-on nature of this workshop and the access to such a valuable resource as Jim Rodenberg made this the highest ranked program of the three.

The final workshop focused on extracting and harvesting honey, utilizing bee products, and preparing hives for winter. Jim Rodenberg demonstrated how to prepare hives for winter while Patricia Gilbert, who has kept bees for five years, demonstrated how to extract honey from the traditional hives as well as the Flow Hive™, and encouraged hands-on participation.

Sixty-five percent of attendees to the first workshop returned for one or both of the other workshops. Based on survey results from 17 participants, their confidence level and understanding in purchasing and using equipment; bee biology; varroa mite management; and hive winterization, improved an average of 41% following the workshops. Eleven of 16 survey respondents already had bees when they attended
the workshop, but four of the remaining five said that attending the first workshop gave them the confidence to try beekeeping. Participants praised the workshops highly by ranking them at 1.6 on a scale of one (highest) to five (lowest) and asked for more workshops in 2018.

**Workshops provide invasive weed management strategies that save money**

Narrowleaf hawksbeard, a new invasive weed in northeastern Montana has become an increasing problem for area farmers and ranchers. Though technically a winter annual, the weed has the ability to germinate whenever conditions are favorable, and can have several generations per year. It is extremely cold hardy and a prolific seed producer. It infests crops, rangeland, CRP, pastures, hay meadows and roadsides and waste areas. It has spread through six Montana counties and into North Dakota. It is the Weed of the Year for North Dakota in 2018.

Research by Ed Davis, MSU Weed Specialist; Brian Jenks, NDSU Weed Specialist; Jane Mangold, Extension Rangeland Weed Specialist; and Shelley Mills, Valley County MSU Extension agent, over the last four years has provided growers with options to manage this weed when little was known about it. Mills has presented research findings to groups of producers and agronomists 18 times in the last two years across northeastern Montana and as far away as Boise, Idaho. In a recent survey of 48 participants of the workshops, 92% had incorporated some management strategy learned through MSU Extension programming.

Area agronomists attending the workshop noticed an 82% increase in hawksbeard inquiries from producers looking to manage weeds over the last two years.

Over 80% of the attendees added fall applications, spring and fall applications, and selected herbicides based on their ability to manage hawksbeard after learning that these strategies can help to minimize the impact of the weed. Other approaches included applying herbicides earlier in the spring and later in the fall, changing the rate of glyphosate products used in burn-down operations, rotating crops, and tillage. Producers also felt more confident in their identification and herbicide selection when managing hawksbeard following the workshops.

Currently hawksbeard is being managed on 109,350 acres of the 189,900 acres of crop land owned or managed by 48 respondents, with roughly another 30,000 acres at high risk of infestation. Without the management techniques taught by MSU Extension, growers estimated an average loss of $63 per acre, which represents a total of $6,127,000 in potential lost revenue to narrowleaf hawksbeard.

**LEFT:** A field of wheat infested with narrowleaf hawksbeard. Control is very difficult in this stage.

**MIDDLE:** Narrowleaf hawksbeard usually blooms in late June to early July but it has been noticed blooming anytime from May through November.

**RIGHT:** The seeds of narrowleaf hawksbeard resemble dandelions and can float aloft for several miles. Each plant can produce from 3,000 to 50,000 seeds. Photos by Shelley Mills.
Positive youth development using STEM Activities

Science, technology, engineering and mathematics (STEM) programs, combine the strengths of experiential, hands-on education and inquiry-based science learning within a positive youth development framework. Valley County MSU Extension agent Roubie Younkin strives to address the developmental and educational needs of young people in an effort to develop a foundation of skills for productive, competitive, and civic-minded students.

STEM programming develops a set of thinking, reasoning, teamwork, investigative, and creative skills that students can use in all areas of their lives. STEM activities focus on real-world issues and problems often identified by the students. Lessons are guided by a flexible process that takes students from identifying a problem to creating a solution through productive teamwork.

Valley County MSU Extension serves hundreds of students during school time and out-of-school time settings by offering engaging STEM programming. Valley County youth are provided a variety of free choice and hands-on learning opportunities that promote excitement in learning about natural phenomena.

4-H afterschool students express enthusiasm for these hands-on activities, saying “I love STEM” or “What are we going to build today?” Science Sleuths participants were overhead telling friends “you should come to tonight’s program, we learn cool stuff.” Glasgow High School students are reported by their teachers to have increased social skills, communication skills, and are more successful in group projects.

Students reported the following data:
- 89% have felt increased interest in science and math classrooms
- 100% planned to attend future Science Sleuths sessions
- 95% felt challenged by the engineering challenges presented during 4-H afterschool and Science Sleuths
MSU Extension offers professional development for educators

Good teachers become great teachers when they go beyond the textbook to create an experiential learning environment. MSU Extension agents Shelley Mills and Roubie Younkin provide continuing education opportunities each year for local teachers. Workshop topics give teachers an extra boost of creativity, provide ideas to incorporate STEM activities in their classrooms, allow for networking with other educators and a direct link between MSU and Montana. Teachers leave the two-day workshop with a toolbox of ideas to integrate expanded science, technology, engineering, art and math into their classrooms, as well as 16 OPI renewal units and the option for one undergraduate or graduate credit from MSU-Northern. Ideas incorporated from this learning experience increase teacher’s effectiveness in the classroom and improve the learning experience of their students.

Participants report that attending continuing education close to home provides the ability to meet renewal unit requirements without incurring travel expenses. Teachers also report that by attending with other teachers from their schools, they can collaborate with others who attended this workshop to more easily implement ideas in their classrooms.

Program data summary:
- 83% of attendees (24) have utilized something they learned in a previous Teacher Workshop in their classroom.
- 96% said they prefer the activity-based program offered by MSU Extension. 88% said they preferred instruction from county agents over guest speakers.
- 96% said they felt the experience was worthwhile.
- 100% said they would attend future workshops.
- 54% said they would have spent over $200 in expenses if they had to attend this workshop elsewhere.

Healthy Living with MSU Extension

Self-management is at the heart of living with arthritis. Regular exercise has been proven to increase flexibility and alleviate the associated pain. MSU Extension agent Roubie Younkin hosts weekly arthritis exercise classes for participants suffering from joint pain. Exercises strengthen the muscles around joints, help maintain bone strength and enhance the quality of life for those exercising regularly. Strength-based exercise concepts from the Strong Women program are also incorporated into classes where participants increase bone density through a series of stretches and weight-bearing activities.

Weekly nutrition education focuses on heart health, diabetes management, increasing vegetable and fruit consumption and adapting recipes to fit a healthy diet.

Some participants report having increased energy levels and enjoying mealtimes with their families. One Strong Women participant says, “My husband bought a new pickup last year and had to buy a step stool for me to use to get in. Since doing these exercises I can get into his pickup myself without the stool.”

Photo by Roubie Younkin

RIGHT, L-R: Joyce Peters, Roubie Younkin, Louise Uphaus, Mona Amundson, Sheila Doll, Betty Vegge, Alyce Tracy, Nancy Koessel, Connie Wethern. Photo by Carol Christensen
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