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To inspire, educate, and demonstrate conservation in action.

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FALL FIELD NOTES

By Pete Lindbergh

Fall is in the air here at Teller Wildlife Refuge once again. Cooler nights and rain have vanquished the lingering smoke from the Roaring Lion Fire. There is a hint of color in the leaves along Willow Creek. The weather has been perfect for our archery hunting volunteers as they hone their skills in the early morning river bottom mist along the deer paths leading from our alfalfa and barley field to their bedding grounds.

While readying our waterfowl hunting blinds, I startled a pair of Sandhill cranes. Admiring their ponderous flight, I misstepped into deeper water. A boot-full of pond water confirmed that temperatures have plummeted drastically from the summer highs when we had to remind our fishing enthusiasts about "hoot owl" restrictions to avoid stressing the trout. Flocks of geese and ducks cross the sky in formation and splash down on our wetlands calling to one another and preening in the waters where our summer camp kids raced handcrafted cucumber boats and identified insects just a few short weeks ago.

Pheasants strut from the milo, millet and canola food plots, cross harvest stubble and queue up by the dozen on our winterized wheel lines, drying their brilliant plumage while the sun rises. The tallest Bitterroot peaks sport a fresh dusting of snow, giving winter a nod - but for the time being, happy fall from Teller.

SUMMER CAMP IS HANDS-ON LEARNING







Thanks to the generosity of Teller's Lucy's Fund contributors and a Bitterroot Audubon scholarship, 50 children from 3rd through 6th grade joined us on Teller this summer for our Nature Connections day camps! They spent most of their week outdoors while experiencing interactive, hands-on activities. Amanda Bestor, camp director for the past three summers, taught the kids fun, nature-inspired games and activities while they learned about how the ecosystem on Teller, and even in their own backyard, is connected. They learned bicycle safety and biked daily to Teller's open spaces from the historic Slack Barn. Campers waded in Thomas Pond and Gird Creek, played games and picnicked in open meadows, and found natural materials galore for treasure hunts and habitation games. Topics included animal migrations, nature journaling and mapping, aquatic and woodland habitats, outdoor awareness and observation, nature art, plant and animal adaptations, engineering, and more! Camp registration opens in early May 2017 for next summer's adventures. Check our website or follow us on Facebook for more information.

TELLER SUPPORTS AGRICULTURE EDUCATIO By Brandon Braaten Agriculture Education, Corvallis High School

The Corvallis Agriculture Education program is celebrating the start of our 2nd year, with 113 students enrolled in 5 different classes. Additionally, the Corvallis FFA Chapter is also growing strong. We would like to thank Teller Wildlife Refuge for being integral to our first year's success. This past year, we started four beehives on Teller property and have produced 5 gallons of honey. These beehives are serving as a business incubator for students to start their own beehives. We also did some work with the garden space at the Chaffin house, although we struggled with keeping ahead of the weeds. But we are excited to have had some students come on midway through

the summer and claim the garden as their project. They will be working on a business plan this fall and put the project into action in the early spring. We had the opportunity to celebrate the end of our year at the Slack Barn with 115 people in attendance at our end of year banquet.

As we look to the coming year, we hope to grow garden production and also our beehive experience for students. These are two very important components of experiential learning that students are able to receive. As the program grows, we hope to continue a collaborative and supportive relationship with Teller Wildlife Refuge.







WILDLIFE-FRIENDLY AGRICULTURE PROGRAM

Teller Wildlife Refuge was formally created in 1988, with a mission to inspire, educate, and demonstrate conservation in action. Part of that mission includes our wildlife-friendly agriculture program. In the late 1980s and early 1990s, when Otto Teller purchased the individual properties that now comprise Teller Wildlife Refuge, much of the land had been under agricultural production and had been intensively grazed and tilled for crops. Willows, shrubs and other cover had been heavily browsed. Wetlands and streambanks were heavily eroded.

He sought to continue the agricultural heritage, but implemented sustainable farming practices that would restore the land and water resources and emphasize wildlife-friendly practices. In cooperation with the Natural Resources Conservation Service, irrigation systems were upgraded to allow increased crop production and more efficient water use. With the cooperation of the Montana Land Reliance, which holds the conservation easement on Teller's property, sensible modifications were made to the easement rules, which greatly reduced weed, water and fertility problems, thereby increasing healthy plant and wildlife growth. Fences were constructed to exclude neighboring livestock; however, cattle are occasionally utilized for intensive, short-term grazing of weeds as a complement to Teller's integrated weed management program on the property. Additionally, Teller staff worked with Jim Story of the Western Agricultural Research Center in Corvallis, who released knapweed weevils on the property some 30 years ago. This was the first such experiment in Montana, and was successful in significantly reducing the presence of spotted knapweed on Teller land.

Teller operates its wildlife-friendly agriculture program with contract farmer, Bob Gingerich. Milo, wheat, canola,

WILDLIFE FRIENDLY, continued next page

Wildlife Friendly, continued

alfalfa and barley are planted and irrigated on approximately 150 of our 1,200 acres. Only portions of the alfalfa and barley are harvested for sale, with the remainder of all the crops left standing annually for wildlife food and cover. Wildlife rely on Teller's winter food and cover crops, which can reduce impacts to neighboring farms as well as supply critical habitat needs for a variety of wildlife species. Teller's wildlife-friendly agriculture program continues today thanks to generous donations that require only a portion of the crops to be sold, while wildlife benefit from the remainder. Seeing thousands of mallards circling Teller's barley fields in February reminds us that we are sending healthy birds north to their spring breeding grounds.

Otto Teller wanted to demonstrate that healthy wildlife populations and productive farmland are not mutually exclusive. From the very beginning, Teller's Board of Trustees have worked with staff and agricultural specialists, neighbors, and volunteers to create a balance of environmentally sensible farming and wildlife management that has benefited the land, wildlife, students, and visitors to Teller.

Thank you to Teller board member, Allen Bjergo, for his contributions to this story.



Otto and Anne Teller

TELLER ESTABLISHES MANAGEMENT SITES FOR YELLOW TOADFLAX

By Melissa Maggio-Kassner, MT Biocontrol Coordinator

Fields of flowering toadflax might seem appealing to some, with their showy snapdragon-like flowers, but in reality Dalmatian and yellow toadflax infestations are some of the most challenging to manage in Montana.

One of the reasons nonnative toadflaxes thrive in Montana is because they were introduced to North America without any of their natural enemies. One of these enemies are insects that co-evolved with these weeds and selectively utilize them as a host plant. North America currently hosts 8 biocontrol agents that target the toadflaxes. The insect that has had the most impact is a stem mining weevil (Mecinus) and was released in the US in the late 1990s. Prior to the release of this weevil in North America, tests were conducted overseas to ensure they would

not harm crops, ornamentals and native plants, especially threatened or endangered species. Up to a 70% reduction in average stem height has been observed in Dalmatian toadflax infestations were the weevils were released. Infested stems also have significantly less energy to invest in producing flowers and seeds. However, the weevils did not seem to be having an impact on yellow toadflax. Then about 10 years ago a rancher in Powell County, Montana noticed a small black bug feeding on his yellow toadflax. He asked MSU researchers to investigate and what

they discovered is that it was also a Mecinus species. This was the first discovery of a sustained population of these weevils on yellow toadflax in the US and North America! Through further investigation they discovered

> that the weevil that attacks Dalmatian toadflax is Mecinus janthiniformis and the weevil that attacks yellow toadflax is Mecinus janthinus. Each weevil species has a strong preference for their target toadflax species.



Photos by Melissa Maggio-Kassner

This is where the Teller comes into the story. Here we are 10 years later working hard to establish new potentially collectible sites of the weevil for yellow toadflax (Mecinus janthinus) before the original collection sites collapse due to the drastic reduction of yellow toadflax. We look for sites to release these insects that will not be grazed or

treated with herbicide, as to allow the insects to thrive to the maximum. We also need sites where the land manager/owner will allow collection of the insects in the future if the weevil population flourishes, out growing the available toadflax. We released 500 insects in May 2016 and installed a monitoring transect that we will visit annually to determine the weevil's impact on the toadflax and population change. To learn more about this project please contact the MT Biocontrol Coordinator, Melissa Maggio-Kassner at 258-4223 or mmaggio@missoulaeduplace.org.

TOOLS FOR TELLER

We sincerely appreciate all who contributed useful "tools" during our 22nd annual TnT Dinner & Auction in June! If you missed TnT, one fun way to donate is through our Tools for Teller. These items include much needed "tools" that are essential to maintain our historic homes, manage our 1,200 acres, and educate our visitors. Please contact us if you'd like to donate an item in good condition or funds to purchase an item from the list of needs below:

	2 pairs of scissors for camp	\$10
	Game balls for camp	\$25
	Small white board with dry erase markers	\$25
	Fish food for Thomas Pond	
	Plastic containers for crafts	
	Acrylic paint set	
	Garden hose	
	Plastic cone set for camp	
	Chisel set	
	2 Insect nets for camp	\$40
	Fabric & clothes pins for camp	\$40
	Shovel	
	Framing hammer	
	Small square folding table	\$50
	Magnetic drill bit holder set	\$50
	Two four-wheeler tires	
	Power washer	
	Seed for wildlife food plots	\$250
	Gas-powered pump	
	Small generator	
	Four-wheeler weed spray tank with boom	\$1.500
	Tour wheeler weed spray tank with boom	. ۲۱,۵۵۵
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Photo by Jenny West

HUGELY POPULAR WOMEN'S BEGINNER FLYFISHING CLINIC

On May 15, Teller Wildlife Refuge hosted "A Cast for Conservation" clinic for the twelfth time. Over thirty women enjoyed a Sunday at Teller Wildlife Refuge learning about the art of flyfishing from local guides, Jenny West and Eddie Olwell. The participants gathered in Teller's historic Slack Barn for a morning of instruction on fly casting techniques, fish habitat, fish identification, knot tying, fly selection and entomology, and local Bitterroot River fishing knowledge. The group shared stories while they enjoyed a catered lunch from Red Rooster. The afternoon included hands-on casting lessons on the lush lawn of Teller's Slack Barn where Jenny and Eddie helped hone the participants' casting techniques. The guides generously donated part of the proceeds from the course registration to Teller and the Bitter Root Water Forum. Thanks again to Jenny and Eddie for leading this informative event!

We look forward to hosting the Women's "A Cast for Conservation" Clinic every May. Let us know if you are interested in participating in the 2017 class!



YOUTH CONSERVATION & EDUCATION EXPO

The fourth annual Youth Conservation & Education Expo took place at Teller's Slack Barn on Saturday, May 14. Over 350 kids plus their families attended this free-of-charge event. About 40 local and national wildlife and conservation organizations hosted educational booths and activities and gave away prizes. Activities included paintball, BB gun and archery ranges, Montana Fish, Wildlife & Parks' poaching trailer and laser shooting range, fly casting clinics, game calling, horse packing clinics, big game scoring and much more. Our staff hosted a booth where the youth made pinecone bird feeders. We also gave away two scholarships to our youth summer day camps.

Youth 6-18 years of age who participated in 12 or more of the activities had a chance to win one of over 90 summer camp scholarships. At the end of the day, youth who completed these activities may have been selected (through a random drawing) to attend a summer camps throughout the state. These camp scholarships were funded by local businesses, individuals, foundations and many of the participating organizations, who also gave away additional prizes including other summer camp, fishing and hunting opportunities. For a complete list of this year's partnering organizations, sponsors and prizes visit the Youth Conservation & Education Expo events page on Teller's website, www.tellerwildlife.org or find us on Facebook. To sponsor next year's event please call Lauren at Teller at 406-961-3507.









FALL MEANS TELLER FIELD TRIPS



School is back in session! If you are planning a self-guided field trip or stewardship project on Teller or in a classroom this fall, be sure to check out the newly reorganized Education Resource Library in the basement of our office. There are countless materials and kits available to borrow to supplement any outdoor activity. We are pleased to share our tools that may enhance your field day while your group studies land use, adaptations, forests, meadows, ecology, wetlands, wildlife, and more! Be sure to stop by our office or give us a call to reserve library materials and schedule a self-guided field trip on Teller this fall!

BITTERROOT BARN WEDDING

AT TELLER WILDLIFE REFUGE



contact bitterroot cabins Call Sherrie at 406-363-2258 sherrie@bitterrootcabins.com bitterrootcabins.com/bitterroot-barn-wedding facebook.com/bitterrootbarnwedding

2017 WEDDING PACKAGE

Our wedding package includes use of the historic Slack Barn and acres of surrounding grounds for an entire weekend, along with lodging for 14 people at our heritage homes.

Host a rehearsal dinner, ceremony, reception and your family or friends all in one place!

Also included in the package:

- Park-like grounds with volleyball, horseshoes and croquet
- New tables and chairs for 200
- Assorted wooden benches, tables, chairs and stands
- Dance floor
- Trash removal
- Indoor restroom facilities

Package Cost - \$3,999

(Paid in 3 installments)

TELLER WILDLIFE REFUGE'S 22ND ANNUAL

TnT DINNER & AUCTION

THANK YOU to our sponsors, donors, attendees and volunteers who supported Teller Wildlife Refuge's TnT Dinner & Auction on June 18, 2016, a fun and special celebration at Teller's Slack Barn in the name of wildlife conservation and conservation education in the Bitterroot Valley.

> Special Thanks To:

Auctioneer: Rick Peverley and assistant Ron MacDonald **Master of Ceremonies:** Sam Lawry Music: Parr Sound

THANK YOU FOR YOUR SUPPORT!

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Keith and Patty Withycombe



By Sherry Ritter

In June, I stood about 30 yards from the Teller Trail, counting birds. I heard a crack and a rustling. I continued listening for birds while looking around for the source of the sound. Continued cracks, rustlings, and falling leaves finally helped me locate a partially fallen cottonwood hung up in another tree's branches. Within a few minutes, it fell to the ground with a loud crash.

This reminded me of two truths concerning the Bitterroot River. One is that trees can fall at any moment, even with no wind, so stay alert. The other truth is that the riparian ecosystem is dynamic. A tree here today, might be down tomorrow. If there are no young trees to replace these large ones that fall at the ends of their lives, we will lose some of the birds that live in our river bottom forest.

I was there that June day as part of a larger effort by birders to document bird use of the Bitterroot River Important Bird Area, which starts at Teller's south boundary and continues along the river almost to Lolo. Granted permission to go behind the gates, I had access to sites I hadn't birded in years, including several of Teller's habitat restoration efforts. While counting all birds, we were particularly interested in six focal species

identified by Montana Audubon that resulted in the recognition of the importance of the Bitterroot River to birds: Bald Eagles, Great Blue Herons, Lewis's Woodpeckers, Rednaped Sapsuckers, Willow Flycatchers, and Red-eyed Vireos.

Teller's restoration efforts in wetlands and the riparian river bottom have been going on since 2005. The fenced enclosures reduce deer browsing pressure on shrubs and trees, giving them a chance to grow high enough to survive once the fences are removed. Teller's deer hunting program also helps reduce the deer population.

I found a Willow Flycatcher, one of our focal species that makes its presence known with an emphatic "Fitz-bew". In fact, I found it and several other species in the exact locations as I did almost 20 years ago. Teller's efforts to protect existing willow stands and plant new ones will be a big benefit for this bird.

Another bird that will benefit from Teller's efforts is the Red-naped Sapsucker. This woodpecker nests in deciduous trees and was particularly abundant in the protected aspen stands. It also likes willow and alder stands for

Tree Falls, continued next page



Red-naped Sapsucker by Mike Braaten



Red-eyed Vireo by Kelly Colgan Azar

TELLER AWARDS 2ND SCHOLARSHIP

The second Teller Wildlife Refuge/Steve Powell Memorial Scholarship was awarded this year, to Ronny Jessop. Ronny graduated from Corvallis High School this spring, and is now attending Montana State University in Bozeman, with a planned major in wildlife biology. According to Ronny, a degree in wildlife biology "has been my dream since I was young. This scholarship is a huge help for me. I will use it to the best of my capabilities..."

We wish Ronny all the best as he pursues his college career, and give our thanks to Mike and Nancy Canning for their support of this scholarship.

Tree Falls, continued

making sap wells, those horizontal rows of holes you see on trees and shrubs.

I also found a Red-eyed Vireo. This elusive little singer used to be more common along the Bitterroot River as recently as 10 years ago but this year, despite a lot of survey effort, we only found three. The Red-eyed Vireo nests in cottonwood gallery forests with a good shrub understory and it apparently found at least one spot at Teller that met its needs. The Red-eyed Vireo has another threat besides loss of cottonwoods and degradation of the understory—it is particularly susceptible to nest parasitism by the Brown-headed Cowbird.

Birders from all over the country and Montana are thrilled to find such a big population of Lewis' Woodpeckers living along the Bitterroot. Teller has several pairs of this rosy-bellied, black-backed woodpecker nesting on its property. These birds use the big old cottonwoods for nesting and as perches as they fly out to catch insects in the air. The other two focal species, the heron and eagle, also depend on big cottonwoods as nest sites.

Bitterroot Audubon has been contacting landowners over the years encouraging efforts to enhance riparian habitat. Places like Teller Wildlife Refuge show that these efforts can pay off in better habitat for birds.

MILKWEED STUDY

By Beau Larkin

Milkweed plants earned their common name by producing copious amounts of latex. This white, sticky substance flows from any injury to the plant. If you have ever torn or broken a leaf off of a milkweed plant, you probably ended up with latex on your fingers. This liquid contains none of the nutritional properties of milk; instead, it delivers a face full of sticky goo to any insect that tries to eat the plant. If that fails to deter the insect, the toxic compounds in latex may then finish the job.

In large doses, these toxic compounds injure insects by disrupting their cellular metabolism. Healers have long recognized that in small doses, these chemicals can actually strengthen the heart muscle in humans. It is for this function that milkweed plants earned their scientific name, Asclepias, after the Greek God of medicine.

Most insects cannot cope with the combination of sticky latex and toxic chemicals, but a few have evolved behaviors that allow them to eat milkweed and thrive. This small group of specialists has grown to rely on milkweed, and in some cases, eats no other plants. Milkweed and its specialist insects have attracted the attention of researchers for over a century. Despite the rich history of knowledge gleaned from this research, we know little about how fungi interact with the milkweed.

Many species of fungi live in soil and the roots, stems, leaves and flowers of plants. Sometimes they cause disease; often we observe no symptoms. Some fungi even help plants acquire water and nutrients. We wonder if a small, specialist group of

fungi has adapted to milkweeds' toxins, like we have observed with insects. Working on Teller lands, we have started to identify some of the fungi that associate with milkweed and will learn whether they have also adapted to deal with the toxic environment created by the plant.

Beau Larkin is the manager of MPG North and Forest Ecologist at MPG Ranch in Florence, Montana.



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To inspire, educate, and demonstrate conservation in action.



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- Yes! Please send me more information about bequests to Teller Wildlife Refuge.
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