

MONTANA Naturalist

Fall 2014

TO PROMOTE AND CULTIVATE THE APPRECIATION, UNDERSTANDING AND STEWARDSHIP OF NATURE THROUGH EDUCATION

The Taste of the Wild



Alpine Explorations | Wildfires and Climate Change | What's That Leaf?

inside

Features

4

THE TASTE OF THE WILD

Reveling in Nature's Harvest Bounty

BY LENA VIAL

6

WARMING CLIMATE, HOTTER FIRES?

How Much is Climate Change Affecting Wildland Fires?

BY GIL GALE



Departments

3

TIDINGS

9

GET OUTSIDE GUIDE

Leaf quiz; kids' nature poetry; naturalist crossword puzzle; autumn kids' books

13

COMMUNITY FOCUS

Connecting kids with their place in the Bitterroot

14

FAR AFIELD

Wondrous Wildflowers:

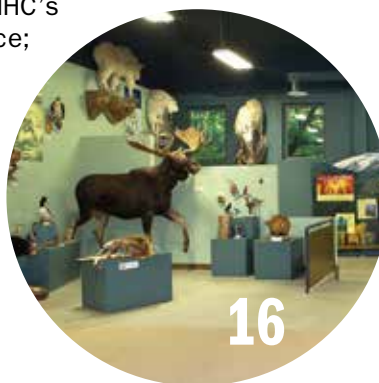
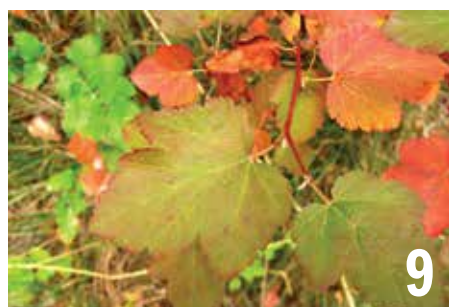
Alpine Adaptations

BY ALLISON DE JONG

16

IMPRINTS

An inside look at MNHC's newly-renovated space; thank you, Big Sky Brewery!; MNHC Fall Celebration; welcoming fall Visiting Naturalist in the Schools instructor Lily Haines



18

MAGPIE MARKET

19

REFLECTIONS

Visions of Wilderness

Cover – Two raccoons out just after dawn in a cottonwood snag near the Bitterroot River. Photo by Nelson Kenter, www.kenterphotography.com

No material appearing in Montana Naturalist may be reproduced in part or in whole without the written consent of the publisher. All contents © 2014 The Montana Natural History Center.



Montana Natural History Center
Connecting People with Nature

120 Hickory Street
Missoula, MT 59801
406.327.0405
www.MontanaNaturalist.org

Executive Director
Arnie Olsen

Education Director
Lisa Bickell

Assistant Education Director
Brian Williams

Community Programs Coordinator
Christine Morris

**Volunteer Coordinator & Editor,
Montana Naturalist & Field Notes**
Allison De Jong

Development & Marketing Director
Whitney Schwab

Naturalist
Alyssa McLean

Office Manager
Deb Jones

Executive Assistant
Lena Viall

Visiting Naturalist Instructors
Christine Wren
Lily Haines

**Volunteer Visiting Naturalist
Instructors**
Valerie Bayer
Vicki Cox
Rod Snyder

**Forest for Every Classroom &
Education Intern**
Thomas McKean

Board of Directors
Hank Fischer, *President*
Stephen Speckart, *Vice President*
Marcia Kircher, *Secretary*
Betty Oleson, *Treasurer*
Julie Cannon
Janice Givler
Susie Graham
Ryan Huckleby
Sally Johnson
Mark Metcalf
Edward Monnig
Rick Oncken
Penny Ritchie

**Montana Naturalist
Art Director**
Eileen Chontos

tidings

Last weekend I hiked with some friends to the Blodgett Canyon Overlook in the Bitterroots. It had been a year or two since I'd traversed the trail, and I loved seeing how much taller the young lodgepole pines had gotten, was saddened

to see that the whitebark pine that stood near one of the big rock outcrops had succumbed to blister rust. What struck me most, however, was how different the views were on our hike back to the trailhead. On the way to the overlook, I'd focused more on the vivid colors of the Oregon grape berries and fireweed flowers, the angle of the mountainside rising on my left, the patterns of dappled sunlight created by the shifting clouds. On the way back, my attention was drawn out, to the views across the Bitterroot Valley, the pine-covered ridges to the south, and a glimpse of a rocky peak through the glacially-carved cliffs above Canyon Creek to the west. I covered the same ground, but saw completely different things.

That shift in perspective was both refreshing and a little disorienting, yet all I did was turn around. And while I felt as though I were seeing new things, it wasn't as though that craggy peak or the long views over the valley had burst into being as soon as I turned around; they'd been there the entire time. It was a reminder to me that there is always more to observe, that whatever way I'm looking may not show me everything there is to see. It reminded me to look for what I might be missing.

It's a good question to ask ourselves: what might we be missing? How might we benefit from seeing the places, people, or issues around us from a new angle? As we celebrate the 50th anniversary of the Wilderness Act this fall, we can find inspiration in those who considered wild places from a different perspective: that of the plants that grow there; of the animals that call wilderness home; of wild, intact landscapes as a whole—and how that motivated these visionaries to create protections for these special places.

We can take further inspiration from the pieces in this issue: ecologist and former wildland firefighter Gil Gale explores the effect climate change has on wildfires—which, he finds, may be different than we think (p. 6); educator Karen Daniels is looking at teaching in a new way, incorporating learning outside the classroom into her kindergarten curriculum (p. 13); and naturalist Lena Viall ponders wild harvest, and how gathering foods and medicines from our native plants helps us be more in touch with our place (p. 4).

And so, as the season shifts, perhaps it is a good time for us to shift, as well: to turn around, look in another direction, and see what “discoveries” await in a landscape we already think we know.



PHOTO BY KARA ROBINSON

Looking out over Upper Semyore Lake from Goat Flat in the Anaconda-Pintler Wilderness.

Allison De Jong

EDITOR

adejong@MontanaNaturalist.org

THE TASTE OF

The leaves are getting crispy, the days are getting shorter . . . it must be autumn! Growing up, one of my favorite things about this time of year was (and still is) finally nibbling a sun-ripe raspberry after watching it grow all summer long. It is now that we go out with friends to hunt for elusive huckleberries and collect and dry herbs for the winter ahead. Learning to identify and use wild edibles is one tangible, tasty way to connect to your local ecosystem. The fall harvest is much more than an autumn adventure, though. It has a very real purpose in nature, one in which humans have participated for generations.

Through the process of evolution, some plants have adapted to encourage other species to help them reproduce. Many berries, for instance, are sweet and brightly colored to attract animals like birds, bears, and insects to eat them. The hope is that these animals will eat the whole fruit and then move on—depositing the seed, along with some convenient fertilizer, somewhere away from the parent plant. With a little luck these seeds will survive the winter and will sprout in the spring to start the whole process over somewhere new. In this way, critters that are drawn to a shrub's fruit as a food source wind up helping that shrub sow the next generation. For example, many conifers can attribute their range to the American red squirrel (*Tamiasciurus hudsonicus*). In their quest for a winter supply of pine nuts, squirrels inadvertently plant millions of new trees each year by

forgetting where they bury pine cones. Although more taxing to the tree, it is in a pine's best interest to produce sweet, protein-rich pine nuts inside their cones, if only to attract a hungry squirrel.

Nature's autumn bounty isn't only vital for the reproduction of plants. Nearly all species depend on this last harvest to prepare for the winter ahead. Whether they are hibernating, migrating or just toughing the winter out, survival in the wild would be difficult without a fall crop. Bears depend on a bounty of fruits and nuts in order to forgo eating most of the winter. Migrating birds gobble up fall's feast to build up reserves for their long journeys. Our year-round residents, like elk, chomp on as much summer grass as they can hold, knowing snow drifts are only a few short months away. Humans too can gather a huge variety of edibles, both native and introduced, in our region: amaranth, burdock (*Arctium minus*), a variety of mushrooms, miner's lettuce (*Montia perfoliata*), wild onions, berries in every color and size, and even certain kinds of cactus! This cycle continues on up the food chain. Growing up in a family of hunters, I learned early on that the Thanksgiving holiday not only meant squash from the garden, it meant wild game in the freezer as well. And by thinning out a few animals, the pronghorn herd we harvested from will have more sustenance to go around come January, a boon for both of us. Plants and animals (including humans) each depend on one another to complete the circle.



THE WILD

BY LENA VIALI

There is much more to be found in the forest than just a snack, though. For millennia, Native Americans gathered all sorts of plants as medicines. From alumroot to willow bark, bee balm (*Monarda fistulosa*) to rose hips to sages, the list of native herbal medicines goes on and on. Many of the herbs you can buy at the store are actually growing right outside your door—echinacea (*Echinacea purpurea*), valerian and licorice (*Glycyrrhiza lepidota*) are but a few of the “drug store” herbs that are native to our region. Want to reduce your hay fever? Something as easy as choosing locally-made honey may help through acclimating your body to local pollens. Wild dining provides much-needed soul medicine, too. There’s nothing quite like chokecherry syrup on your pancakes on a snowy February morning to make you appreciate where you live.

Since the advent of the grocery store and the freezer, we don’t have to depend solely on what we can gather to survive anymore.

**IT IS IMPORTANT THAT
WE DON’T FORGET TO
CHERISH AND PROTECT OUR
NATIVE “GROCERIES” AT
ALL TIMES OF THE YEAR.**

We are fortunate that we have canned and imported veggies to get us through times when our gardens and meadows are dormant. Yet as our climate changes and our wild places must cope with increasing human encroachment, we are

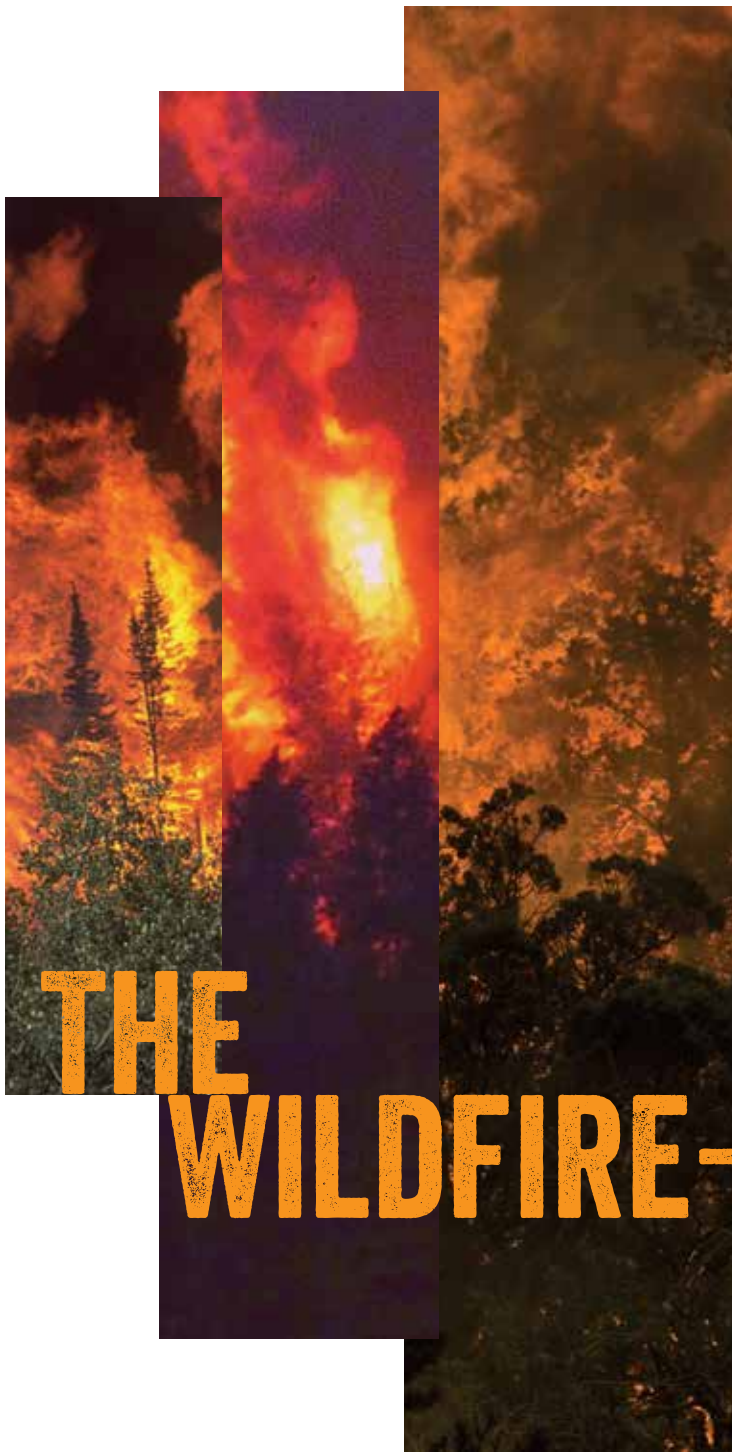
finding it more and more challenging to hunt and gather as our ancestors did. It is important that we don’t forget to cherish and protect our native “groceries” at all times of the year. After all, wild edibles are our direct link to the local food chain that all starts with good, clean sunlight and the soil under our toes.

This is not to say that exploring Mother Nature’s produce aisle doesn’t come with some risks. Many medicinal herbs can cause illness when used in large quantities. Inexperienced foragers also face the very real risk of mistaking one species for another. Keeping a guidebook on hand and a naturalist on call is essential if you’re just beginning to collect wild edibles, as many can make you sick and some are deadly toxic.

Yet, from dandelion greens in the spring to morel mushrooms in June to herbal tea during flu season, nature can and does provide for us throughout the year, if you know where to look. Armed with common sense and a sense of adventure, nature’s harvest can introduce you to a whole new way of thinking about eating—and you just might find that buffalo-berry jam is your jam. 🐻

—Lena Viall is the executive assistant at the Montana Natural History Center. She also freelances for publications in and around the Rocky Mountain Front. Her work has been published in Bugle, Oval, the Montana Journalism Review and on Montana Public Radio.





From a safe vantage point above Johnson Creek in the Anaconda-Pintler Range, late on an afternoon in August 2000, “Dugger” Hughes looked across a half-mile of solid green timber to the leading edge of the Mussigbrod Fire that was relentlessly growling its way towards him.

THE WILDFIRE-CLIMATE CHANGE LOOP:

Part 1, Asking the Questions

BY GIL GALE



Examples of high-intensity, high-severity wildfires in action

(L-R) BLACKHALL FIRE, WY, PHOTO BY KARI GREER, NATIONAL INTERAGENCY FIRE CENTER; FREMONT-WINEMA NATIONAL FOREST, PHOTO BY CARRIE MCDERMOTT, USFS; BIRDIE FIRE, COCONINO NATIONAL FOREST, AZ, PHOTO BY HEATHER PROVENCIO, USFS; GILA NATIONAL FOREST, PHOTO BY KARI GREER, USFS; YELLOWSTONE NP, DRUID COMPLEX, PHOTO BY MIKE LEWELLING, NPS

Dugger, who had twenty years of close-encounter experience with wildfires throughout the Rocky Mountain West, was working as an Operations Chief on this incident. As he watched, his assistant standing next to him, the fire fingered down into the bottom of the steep-sided drainage and seemed to relax its progress. Suddenly, it roared to life, spreading out and racing up the north slope at a speed that riveted Dugger in amazement. He had enough time to click the timer on his digital watch as the fire moved rapidly up through almost a mile of densely timbered mountainside. When it reached the top of the ridge, the fire slowed and resumed its earlier methodical pace. Dugger estimated the distance of the flashover he had just witnessed and then looked at the time it had taken for the flame front to reach the top of the ridge. He checked his calculation three times. He showed the number to his assistant and they both stared at it in disbelief. The fire had moved up the side of the mountain at a rate of over 60 miles an hour—a speed unheard of in the wildland firefighting world.

In recent years, fire behavior analysts have observed fire intensities and rates of spread that increasingly fall outside of the current model predictions—which is what they use to anticipate what a fire is going to do in the various fuel types on any particular day. Accurate predictions are critical for firefighter safety and wildfire management planning. Yet many fire analysts are beginning to question whether the assumptions built into their computer models are still valid and what they need to do to adapt to what appears to be a new trend in wildland fire behavior.

They aren't the only ones asking the questions about what is happening with our Montana wildfires—and what is in store for us. There are a number of articles in various popular publications that are making a strong claim that wildfire

occurrences, size and behavior are changing as a direct result of global warming. A 2009 article in *Scientific American* stated that we are witnessing an increasing number of these megafires. Thomas Swetnam, director of the Laboratory of Tree-Ring Research at the University of Arizona, cites a measureable increase in the magnitude and severity of wildfires across the globe, from Australia to the U.S. Southwest. In the past 20 years, the area scorched by fire in the western U.S. has increased 600% over the number of acres burned in the 1980s. Swetnam attributes this dramatic spike in wildland fire activity largely to the longer, drier summers emerging out of the global warming trend. Another summary paper out of Northern Arizona University cites the increase in average global temperatures over the last 100 years as already causing drastic ecosystem effects in the southwestern states—including

increased wildfire hazard. Land managers have begun to use the term “hot”

forest fires to distinguish the seemingly-unique characteristic of recent fires from the dominant fire patterns of several decades ago. “Hot” forest fires have more long-

lasting effects, such as altering the physical and chemical properties of soils.

There is no doubt that climate change can dramatically affect how wildfires operate on our landscapes. But was it a prime contributor, for example, to the event witnessed by Dugger on that hot August afternoon of the new millennium in western Montana, or was that just a freak incident? Just where are we, at this point in time, with the relationship between climate change and wildfire? Is climate change affecting wildfire behavior differently depending on latitude, location or habitat types across the country? And, lastly, does it matter how precisely we understand the various causes of fire behavior, or is that just an academic concern? Perhaps the most urgent question is how the interplay of all those factors should influence land management planning and actions. For example, will a more accurate understanding of the current interaction of climate change and wildfires influence the manner, location and degree of fire suppression and prescribed fires? And what difference would that knowledge make in designing management strategies for timber and forest fuels over the next couple of decades?

While there are varying opinions and interpretations circulating through the media and professional circles, no one involved in these discussions is debating the scientific fact and reality of climate change. Anyone who has read a sampling of the scientific literature on the topic knows that climate change is real. One persistent question, though, is whether or

THE FIRE HAD MOVED UP THE SIDE OF THE MOUNTAIN AT A RATE OF OVER 60 MILES AN HOUR—A SPEED UNHEARD OF IN THE WILDLAND FIREFIGHTING WORLD.



Elk Complex Fire near Boise, ID
Is recent fire behavior within or outside the historic range of variation?



Recent example of post-fire, high-severity impacts to western landscapes.

not we have reached some tipping point in the interaction between climate change and wildfire.

The ecological sciences have been described as the realm of extreme multi-tasking. Scientists are deep into the task of sorting out the cause-and-effect relationship between climate change and the wildfires that have moved over the landscape in recent years (see figure 1). Are the wildfires we've seen in the last decade, for example, really outside the range of natural variability? Jack Losensky, retired Historical Fire Ecologist with the U.S. Forest Service Rocky Mountain Research Station, says that the wildland fires in recent years are still consistent with those seen by the Rockies over the last 120 years. Present-day fire patterns, for example, can fit within the same range of natural variability that includes the ferocious fires of 1890 and 1910.

For Losensky, the key is in understanding the fuel accumulation picture on western forests over the last 100 years. Losensky says that the burn severity today is creating greater-than-average impacts because of the unnatural amounts of fuel that have built up, particularly in dry Ponderosa pine stands.

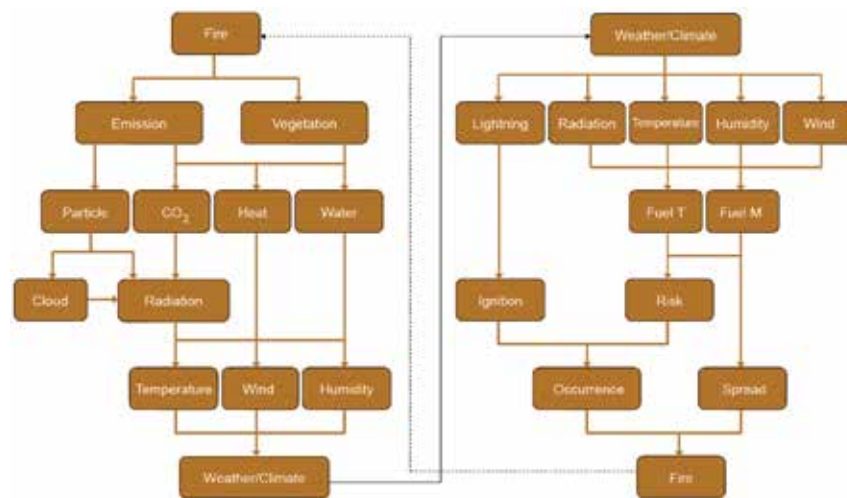


Figure 1: An illustration of the complex variables involved in determining the relationship between climate change and wildfire intensity.

LIU, YONGQIAN ET AL. (2014). WILDLAND FIRE EMISSIONS, CARBON, AND CLIMATE: WILDFIRE-CLIMATE INTERACTIONS. FOREST ECOLOGY AND MANAGEMENT, 317, 80-96.

He believes that climate change is one more factor contributing to the perceived trends in wildfire severity—which is then layered on top of other factors, including the fuel buildup and changes in species composition and forest structure that have resulted from decades of fire suppression. Other researchers recognize the interplay of factors, but there appears to be a difference in opinion about the degree to which climate change is influencing wildfire intensity at this time.

So have we reached a tipping point where climate change has indeed overtaken forest composition and other factors as the primary cause of intensifying wildfires? Are

we still in a transition phase where other ecological conditions play a dominant determining role in wildfires in the West? We'll look deeper for the answers to these questions in the next installment (*coming in the winter 2014-2015 issue.* —Ed.).

—Starting as a wildland firefighter, Gil Gale served for thirty-five years with the U.S. Forest Service on many suppression and prescribed fire management operations in roles including strike team leader, prescribed fire burn boss and resource advisor. Currently, he works as an ecologist and program leader for several resource areas on the Bitterroot National Forest.



What's That Leaf?

Each spring, we wait eagerly for the leaf buds to swell on their branches, bringing shade to our yards and streets once again. In the fall, the leaves draw our attention with their changing colors. How well do you know your native Montana leaves—of both cone-bearing and flowering trees and shrubs? Take our quiz and see...and then make sure to take a hike amidst the beautiful fall foliage to enjoy the leaves in their natural habitat!

A. Western Larch – *Larix occidentalis*

Larches: those fabulous deciduous conifers whose needles turn bright yellow-orange in the autumn, fall off, and then leaf out again in the spring, colored a vivid yellow-green. The leaves grow in tufts (with many tufts on one branch) of 15-30 soft needles which are 1-2 inches long.

B. Ponderosa Pine – *Pinus ponderosa*

This is Montana's state tree, and its leaves are easy to identify: the evergreen needles come in bundles of three (in western Montana, that is—elsewhere, they can have anywhere from 2-5 needles) and are the longest of any of our conifers: 4-10 inches long.

C. Lodgepole Pine – *Pinus contorta*

Given its common name for its straight, slender trunk, lodgepole pines have yellow-green to deep green evergreen needles that grow in bundles of two, and, at 1-3 inches long, are much shorter than those of the Ponderosa pine.

D. Black Cottonwood – *Populus trichocarpa*

Black cottonwood leaves are egg-shaped—slightly rounder at the base and tapering toward a sharply-pointed tip. They are 2-5 inches long, and are edged with small round teeth. They are a beautiful greenish-gold in spring and summer, and turn yellow in the fall.

E. Engelmann Spruce – *Picea engelmannii*

This tree has sharp, spiky, blue-green needles, which are somewhat flexible and tend to curve upwards from the branch. They are short, only about an inch long, and have a pungent smell when crushed (beware their pointy ends if you do try to crush a needle for its scent!).

F. Rocky Mountain Maple – *Acer glabrum* var. *douglasii*

Think of the Canadian flag, and you'll know what this leaf looks like! Typical maple leaves, these have 3-5 lobes, coarse teeth around the edges, and are 1-4 inches across. Dark green above and paler beneath, the leaves turn a range of bright orange-yellow to red in the fall.

G. Mountain Ash – *Sorbus scopulina*

The bright reddish-orange berries might catch your attention first, but the leaves of the mountain ash are compound, meaning each leaf has several (11-13) leaflets coming off the leaf stem. The leaflets are a glossy green, oval-shaped, 1½-2½ inches long, and have sharp teeth around the entire edge.

H. Quaking Aspen – *Populus tremuloides*

Also known as trembling aspen, this tree is so named because its leaves will tremble in the faintest breeze. The leaves are 1-3 inches long and roundish, with a wide base and a slight point at the tip. It is their long, thin, flat stalks that allow them to quake so easily in even a slight breeze. The leaves turn a bright golden yellow in the fall.

I. Chokecherry – *Prunus virginiana*

Chokecherry leaves are oval-shaped, rounded at the base and pointed at the tip, and often wider above the middle. They are 2-4 inches long, and are edged with small sharp teeth. Though hairless on the top, they are somewhat hairy underneath. They are deep green in spring and summer, and turn yellowish to reddish in the fall.

J. Red-Osier Dogwood – *Cornus sericea*

This is a beautiful shrub, whose vivid green leaves contrast nicely with its red branches. The leaves are narrowly egg-shaped, 1-4 inches long, with a pointed tip. They have very obvious veins that run parallel to each other and come together towards the tip, and turn red in autumn.

K. Ninebark – *Physocarpus malvaceus*

Ninebark leaves look somewhat like miniature maple leaves, about 1-2½ inches long and equally as wide. They have 3-5 lobes, rounded teeth on the edges, and very noticeable veins. The tops of the leaves are a shiny, deep green, while the undersides are paler; in the fall, the leaves turn a rich red.

L. Grand Fir – *Abies grandis*

To help recognize fir needles, remember “friendly fir, spiky spruce”! Grand fir needles are a shiny deep green, flat, with blunt (not pointed) ends, and only 1-1½ inches long. The easiest identifier may be the lines of white stomata (pores that the plant uses to “breathe”) on the underside of the needles.

ANSWER:
FIRST ROW: L. Grand Fir, H. Quaking Aspen,
SECOND ROW: I. Chokecherry, B. Ponderosa Pine,
THIRD ROW: C. Lodgepole Pine, J. Red Osier Dogwood,
FOURTH ROW: E. Engelmann Spruce, G. Mountain Ash,
FIFTH ROW: D. Black Cottonwood, F. Rocky Mountain Maple

get outside calendar

MNHC Hours:

Tuesday-Friday, 9 a.m. - 5 p.m.

Saturday, noon - 4 p.m.

Admission Fees: \$3/adults (18+),
\$1/children (4-18), \$7/family rate
Free/children under 4 and MNHC members

Programs for Kids

September 4 miniNaturalist Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

September 18 miniNaturalist Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

September 25 Fort Missoula Native Plant Garden, 5:00-7:00 p.m. Soup and Spud Fest. \$5 for dinner and beverages.

September 27 Saturday Kids' Activity, 2:00-3:00 p.m. Crystals and Gems. \$3; \$1 MNHC members.

October 2 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

October 16 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

October 25 Saturday Kids Activity, 2:00-3:00 p.m. Batty for Bats. \$3; \$1 MNHC members.

November 6 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

November 20 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

November 22 Saturday Kids Activity, 2:00-3:00 p.m. All About Bears. \$3; \$1 MNHC members.

December 4 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

December 6 Saturday Kids Activity, 2:00-3:00 p.m. Animal Olympics. \$3; \$1 MNHC members.

December 18 miniNaturalists Pre-K Program, 10:00-11:00 a.m. \$3; \$1 MNHC members.

Adult Programs

September Gallery, all month.
Rob Gappert: Chasing the Perfect Photograph.

September 5 First Friday Gallery Opening, 4:30-6:30 p.m.

September 11 Fort Missoula Native Plant Garden, 4:00-6:00 p.m. Nature Printmaking. \$5 for materials.

September 17 Glacial Lake Missoula Chapter Meeting, 4:00 p.m. Free and open to the public.

September 19 Friday Discovery Day, 10:00 a.m.-4:00 p.m. Mineral Mysteries of Lewis and Clark. \$10; \$5 MNHC members.

September 25 Fort Missoula Native Plant Garden, 5:00-7:00 p.m. Soup and Spud Fest. \$5 for dinner and drinks.

October Gallery, all month.
Rob Gappert: Chasing the Perfect Photograph.

SUN	MON	TUE	WED	THU	FRI	SAT
September						
	 September Gallery, all month. Rob Gappert: Chasing the Perfect Photograph 1	2	 Volunteer Naturalist Training & Pizza Party, 4-5 p.m. 3	 miniNaturalists Pre-K Program, 10-11 a.m. 4	 First Friday Gallery Opening, 4:30-6:30 p.m. Rob Gappert: Chasing the Perfect Photograph 5	6
7	8	9	10	 Fort Missoula Native Plant Garden, 4-6 p.m. Nature Printmaking 11	12	13
 Sandhill cranes prepare to migrate			 Volunteer Naturalist Training, 3:30-5:30 p.m. 16	 miniNaturalists Pre-K Program, 10-11 a.m. 17	 Friday Discovery Day, 10 a.m.-4 p.m. Mineral Mysteries of Lewis and Clark 18	19
			20	 Fort Missoula Native Plant Garden, 5-7 p.m. Soup and Spud Fest 25		 Saturday Kids' Activity, 2-3 p.m. Crystals and Gems 27
21	22	23	24	26	27	
October						
28	29	30	 October Gallery, all month. Rob Gappert: Chasing the Perfect Photograph 1	 miniNaturalists Pre-K Program, 10-11 a.m. 2	3	4
5	6	 Auction Volunteer Briefing, 4-5 p.m. 7	8	9	 Fall Celebration and Auction, 5-9 p.m. 10	11
 Glacial Lake Missoula Fall Field Trip: The Classic Tour, 9 a.m.-5 p.m. 12	 Red squirrels cache seeds		 Glacial Lake Missoula Chapter Meeting, 4 p.m. 14	 miniNaturalists Pre-K Program, 10-11 a.m. 15	16	17
18			 Secret Science Night, 7 p.m. Naturalist Trivia Night 22	23	24	 Saturday Kids Activity, 2-3 p.m. Batty for Bats. 25
26	27	28	29	30	31	1

PHOTO: U.S. FISH AND WILDLIFE SERVICE

PHOTO: MICHAEL MENGAK, UNIVERSITY OF GEORGIA, BUGWOOD.ORG

SUN	MON	TUE	WED	THU	FRI	SAT
November  November Gallery, all month. Melissa Madsen: Strange Birds						
2	3	4	5	6	7	8
 Whitetail deer in rut						
11	12	13	14	15	 Saturday Kids' Activity, 2-3 p.m. All About Bears	
16	17	18	19	20	21	22
23	24	25	26	27	28	29
December  December Gallery, all month. Melissa Madsen: Strange Birds						
30	1	2	3	4	5	6
 Non-hibernators remain on the prowl						
14	15	16	17	18	19	20
21	22	23	24	 Moose forage for willow twigs		
28	29	30	31			

PHOTO: USDA FOREST SERVICE, SRS, BUGWOOD.ORG

PHOTO: JIM PEACO, YNP

PHOTO: YELLOWSTONE NATIONAL PARK

October 10 Fall Celebration and Auction, 5:00-9:00 p.m. at the DoubleTree Hotel. Bid on exciting trips and experiences in our live and silent auctions, enjoy a delicious dinner, and celebrate with us a year of accomplishments and fun!

October 12 Glacial Lake Missoula Fall Field Trip: The Classic Tour, 9:00 a.m.-5:00 p.m. Cost TBA.

October 15 Glacial Lake Missoula Chapter Meeting, 4:00 p.m. Free and open to the public.

October 22 Secret Science Night, 7:00 p.m. **Naturalist Trivia Night.** \$4 suggested donation; MNHC members free.

November Gallery, all month. **Melissa Madsen: Strange Birds.**

November 5 Secret Science Night, 7:00 p.m. **Trumpeter Swans.** \$4 suggested donation, MNHC members free.

November 7, First Friday Gallery Opening, 4:30-6:30 p.m.

November 19 Glacial Lake Missoula Chapter Meeting, 4:00 p.m. Free and open to the public.

November 19 Secret Science Night, 7:00 p.m. **Naturalist Trivia Night.** \$4 suggested donation; MNHC members free.

December Gallery, all month. **Melissa Madsen: Strange Birds.**

December 3 Secret Science Night, 7:00 p.m. **Volcanoes and Climate Change.** \$4 suggested donation; MNHC members free.

December 4 Wreath-Making Workshop, 5:30-7:30 p.m. \$10; \$5 MNHC members.

December 17 Glacial Lake Missoula Chapter Meeting, 4:00 p.m. Free and open to the public.

December 17 Secret Science Night, 7:00 p.m. **Chemistry of Hotsprings.** \$4 suggested donation; MNHC members free.

Volunteer Opportunities

September 3 Volunteer Naturalist Training & Pizza Party, 4:00-5:00 p.m. Introduction to volunteering with the Visiting Naturalist in the Schools Program. No prior experience needed; pizza dinner provided.

September 17 Volunteer Naturalist Training, 3:30-5:30 p.m. VNS Field Trip Training. Learn how to teach kids about the flora and fauna of western Montana during the October VNS school field trips for 4th & 5th graders. No prior experience necessary.

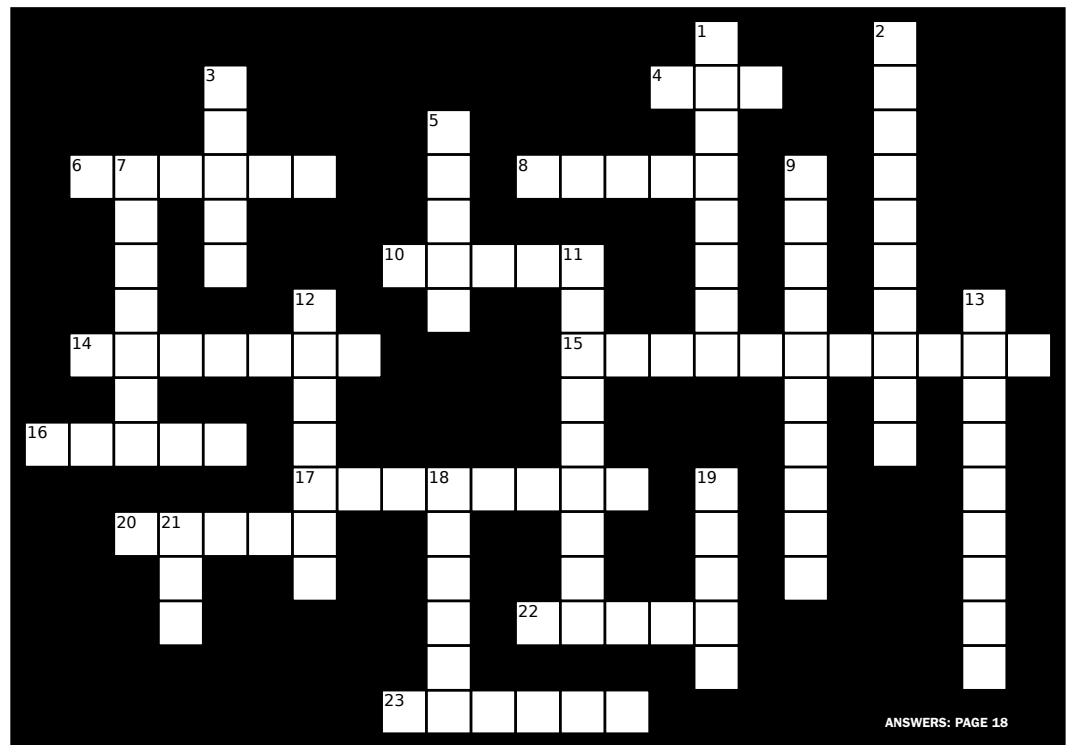
October 7 Auction Volunteer Briefing, 4:00-5:00 p.m. We need ~20 volunteers to assist with our Fall Celebration & Auction on October 10. At this brief training a few days before the event, we'll go over the schedule of events, assign tasks, and discuss the various duties for the evening.

December 3 Volunteer Fall Fiesta, 4:30-6:30 p.m. Enjoy good food and conversation with your fellow MNHC volunteers and staff in appreciation of your time and effort!

Naturalist Crossword Puzzle (many of the answers can be found throughout this issue!)

Across

4. Fruit of the rose flower
6. Bird called a "fish hawk"
(and also the name of
Missoula's baseball team)
8. Montana's biggest
ungulate
10. A squirrel's stash
14. The colorful result of
sunshine + rain
15. One of our favorite wild
fruits to gather in the
summer
16. Montana's best fir tree?
17. Montana's biggest lake
20. Common number of pine
needles in a Ponderosa
pine bundle
22. Canadian flag leaf
23. Term used when the moon
is changing from new to full



ANSWERS: PAGE 18

Down

1. This native plant's leaves look like little
maple leaves
2. We're celebrating 50 years of protecting
this this fall
3. Montana's deciduous conifer
5. This plant, found in large numbers in moist
meadows, has beautiful blue flowers and
edible roots
7. Pores in the leaves & stems of plants that
take in and release oxygen, carbon dioxide,
and water vapor
9. Montana's state flower
11. Plant often used in herbal teas & medicines
12. Type of trees that bear cones rather
than fruit; many are evergreen
13. Small, twisted alpine trees
18. Alpine ecosystem
19. Yummy Montana mushroom
21. Term used to describe extreme wildfires



Great Autumn Reads for Kids

The Little Yellow Leaf by Carin Berger

Pumpkin Soup by Helen Cooper

Wild Child by Lynn Plourde

Looking for a Moose by Phyllis Root

Look What I Did With a Leaf! by Morteza E. Sohi



KIDS' CORNER

A baby bird without wings was looking for his Mama without wings.
He had a telescope & his Mama had a telescope & they were looking at the stars.
The little bird found his Mama *with* wings & they flew to the East & the West.

~Camas Hopkins, age 2½



THE LOVELY, HAPPY BIRD

There was a bird that flew about.
It traveled its way through a cave and out.
It flew so happy.

~Finley Chatlain, age 5, Missoula

Calling All Kids!

Do you have any nature art,
photography, poetry, or stories you'd like to share?
We'll be showcasing kids' work in every issue in
our "Kids' Corner"—and here's your chance
for that work to be yours! Send submissions
to Allison De Jong, Editor, at 120 Hickory Street,
Missoula, MT 59801 or by email to
adejong@montananaturalist.org.



PHOTOS BY KAREN DANIELS



Planting Seeds, Growing Students: Karen Daniels connects kids with their place

BY ALLISON DE JONG

In 2008, educator Karen Daniels walked her first group of students from their classroom at Grantsdale Elementary in Hamilton a mile down the road to Homestead Organics farm, run by Laura Garber and Henry Wuensche. The class spent the afternoon there, touring the farm, playing with the animals, and doing a little work, too—tasks like planting potatoes, starting seeds in pots, or transplanting sunflowers. “Our area has a strong history of agriculture,” says Daniels, “but it’s no longer the main way of life here. My goal was to have the children experiencing it in some fashion.”

Over the years, she continued to take her classes down the road to visit the farm. “The kids loved it,” she says. “They really made a connection to the place. They’d drive past it and tell their parents, ‘That’s our farm!’” This connection to place is essential, in Daniels’ mind. “Teaching

“The kids loved it. They really made a connection to the place. They’d drive past it and tell their parents, ‘That’s our farm!’”

children about the place in which they live and making those connections,” she says, “are important for them to become caring citizens.”

Six years later, Daniels is teaching kindergarten at Washington Primary School in Hamilton, and she’s still taking her classes to Homestead Organics. But thanks to her recent participation in a Forest For Every Classroom (FFEC), a year-long, place-based workshop for educators, the class visits to the farm have shifted in focus. “One of the most valuable things I learned in FFEC is that service learning is more than just a field trip,” she says. “It’s about making an experience more in-depth, having focus, and getting the students more involved.”

This past year, instead of having her class visit the farm just once, Daniels’

kindergarteners spent two days at the farm. This coming year, she’s planning three trips. They’ll go once in the fall, for an introduction to the farm and to help a little with the harvest, and twice in the spring, when they’ll have time to work on a project—planting or transplanting, getting their hands dirty and learning about where their food comes from. Someday, she’d love to expand the projects even more, perhaps working with Garber to create a kids’ garden section at Homestead Organics, where the kids could be involved with everything from planting seeds to harvesting the veggies.

For her part, Laura Garber loves having kids visit—and work on—her farm. She is turning more and more to using Homestead Organics as a tool for education, and her current goal is to have each piece of food go through some other hands than hers before reaching the farmers market or the CSA box, whether it’s having kindergarteners planting potatoes, high schoolers weeding the squash plot, or fifth graders harvesting

beans. Daniels and Garber have enjoyed their collaboration thus far and look forward to new possibilities in the future.

While the trips to the farm are a great opportunity for the students, Daniels has also brought the learning even closer to home. Through a grant from the Whole Kids Foundation, she and six other teachers have set up a vegetable garden at the school and will, with their classes, be growing everything from greens to strawberries to beets—just one more way for the



Top: Daniels’ students pose proudly at their school garden with the veggies they helped plant.

Above: A student shows off the fairy garden he planted at Homestead Organics.

students at Washington Primary to make connections to the world around them.

When asked if she had any advice for teachers interested in incorporating place-based learning into their curriculums, Daniels recommended starting small. “Find something you’re interested in, and don’t be afraid to talk to people, to network and connect. The ideas will just blossom.”

....And so will the students. 🌱

Tenacious Beauty: *In Awe of Alpine Wildflowers*

TEXT AND FLOWER PHOTOS BY ALLISON DE JONG

It was a sunny, gorgeous Sunday in late July. My husband, two friends and I had scattered ourselves across the broad alpine meadow of Goat Flat in the Anaconda-Pintler Wilderness, noses to the ground, peering at the myriad tiny wildflowers strewn across the landscape; most of the bright bits of color reached no higher than the top of our hiking boots. From a distance the meadow looked fairly uniform—low, matted plants, flashes of intermingled colors—but upon closer inspection, the flowers revealed dozens of unique shapes and shades.

Paintbrush, their colorful bracts low to the ground, painted a vivid magenta. A plant with a tall reddish stem and a spiraling cluster of white flowers on top: alpine bistort (*Bistorta vivipara*), which I'd never seen before. Another white flower, six-petaled, with a circle of green on the inside: mountain death-camas (*Zigadenus elegans*), so toxic that the Okanagan people mashed up the bulb and used its poison to tip their arrows.

The tundra is a harsh environment, and the species that live there have, through necessity, adapted to be tough little buggers. Their home is scoured by wind, subject to bitter temperatures (on both extremes), and exposed to intense solar radiation. Not only that, it's covered with snow eight to nine months out of the year, making for a very short growing season; even during the summer months frost can descend at any time. Yet these little plants make do and even thrive. And when I knelt down for a closer look, I was reminded that toughness in no way precludes beauty—up close, these tiny flowers were vivid and breathtaking.

Crouched down, I also realized that there was a difference between the conditions at human level and the conditions at alpine wildflower level. The breeze I felt standing up was greatly diminished near the ground. The sunshine beat down. The ground was warm, its heated surface sending up an earthy fragrance. I could understand why the plants here had adapted to be shorter than their lower-altitude counterparts—in this environment, a few inches is the difference between survival and extinction.

Alpine plants have other adaptations as well. In a windy environment, wind-dispersed seeds are an advantage, so many tundra plants have seeds that are winged, or hairy, or tiny and lightweight. Another form of wind dispersal is found in plants like paintbrushes, champions, and poppies, which have capsules on stems that stick up through the crust of the first early snowfall: when buffeted by the wind, they drop their seeds atop the crusty snow to be skittered away across the landscape. The leaves of some alpine plants, such as louseworts, some saxifrages, and Sitka valerian (*Valeriana sitchensis*), have deep red and purple pigmentation to warm themselves more quickly when the sun comes out, and the dark colors may also help protect the plants from the sun during their more sensitive phases in spring and fall. Another common adaptation is hairiness, which can provide protection from the sun, keep moisture from escaping, and even create a greenhouse effect by holding in heat and warming the plant.

Goat Flat is home to many of these plants. That bright July day, we continued to amble across the hummocky landscape,



Indian Paintbrush



Alpine Bistort



Mountain Death-camas



Moss Champion



moving slowly, not wanting to crush any of the minute flowers beneath our boots. Grasses intermingled with the flowers which intermingled with cushiony mosses, patches of bare earth, and scattered rocks. A sprinkling of low white flowers caught my eye, and I bent down for a closer look. The flowers were cup-shaped with dark bluish-purple dots on the edges of the petals and a few vertical stripes of the same deep hue tinting the outside of the “cup.” My plant-loving husband told me it was a gentian—I’d never seen a white gentian before—and I found out later from my field guide that it was the aptly-named whitish gentian (*Gentiana algida*). The field guide also informed me that one of this plant’s adaptations is to close up its petals before storms, presumably to keep its pollen from being swept away by the rain.

Another gentian in this meadow was impossible to miss: monument plant (*Frasera speciosa*). It was one of the few flowering plants that stood taller than a hiking boot; in fact, it was about two feet tall and looked rather like a Christmas tree, the bottom half whorls of lance-shaped leaves; the top half mostly greenish-white flowers with deep purple flecks. And, of course, this plant also has some impressive adaptations: the plant populations form their flowers three years or more before they actually bloom, and then the plants all flower together . . . and then die. The leaf litter from the parent plants helps protect the seeds and new young plants as they grow and start the process all over again.

The more I ponder the array of alpine plant adaptations, the more I wonder if my perception of the tundra as harsh is completely accurate. It is harsh to me—I could not survive there. But if I were a plant like a mountain avens (*Dryas sp.*), with bowl-shaped flowers that reflect and focus sunlight to speed up growth as well as provide a warm, enticing spot for pollinators to land, perhaps I would not perceive a meadow at 9,500 feet above sea level as such a challenging place. After all, the deep snows found in some alpine areas insulate the ground—and the dormant plants—below, and may provide

such protection for nearly nine months of the year. Indeed, Goat Flat still had a few lingering snow fields melting away in the last week of July.

Visiting this remote, wild place reminded me that my human perspective is limited. To the flowers that bloom there, I am just a shadow that falls across their petals or a shoe that crushes. I am but a brief visitor in a cycle of sun and cold and wind that has spanned millennia.

What might future years bring to alpine habitats such as this? Our too-rapidly-changing climate threatens the survival of the flora and fauna that make their homes in high-altitude places like Goat Flat. Yet I can’t help but find hope in the fact that the vast array of plants in that meadow have developed myriad creative adaptations to conditions we humans consider harsh. I am humbled by their resiliency, and I can’t help but believe that they will continue to adapt, somehow, to whatever comes next. And I find in myself a renewed desire to protect their habitats, so that these wild places, and the plants that call them home, will remain to awe future naturalists with their exquisite perseverance.



Monument Plant

Approximate scale of alpine wildflowers



2 ft.

1 ft.

6 in.

3 in.

1.5 in.

imprints



Have You Stopped by MNHC Lately? Because We Are Looking GOOD.

This time last year, our exterior renovations were nearly complete, and we unveiled Stephanie Frostad's beautiful mural at the beginning of October before taking our renovations indoors. This last year has been a flurry of construction activity at MNHC—from pounding hammers to drywall installation to plumbing work to those final touches of paint, we've seen (and heard) it all. But our renovations are now complete and we've been enjoying our new space for several months—and so have the exponentially-increasing number of visitors we've had this summer. Want to take a look?

Re-envisioned Exhibits

While improving and adding to our exhibits is an ongoing process, we are very happy with the fresh paint job and our "Explore!" theme. From learning about pollinators to comparing dozens of different skulls to enjoying a peek into several different habitats to checking out some great animal mounts from the UM Zoological Museum, our exhibit center offers lots of great ways to find out more about the natural history of our state. Stay tuned for new exhibits! And a big thank you to Eileen Chontos for designing our beautiful new exhibit banners!



Ellen Knight Sense of Wonder Classroom

We are thrilled to have this big, beautiful space at our disposal for everything from summer camps (who enjoyed it very much!) to evening lectures to volunteer trainings. It can seat up to 75 people, has gorgeous views out of the long row of windows on the north, and even has a SMART Board if we're feeling technologically inspired.

Ralph Lee Allen Environmental Education Library

The MNHC library has moved into a new space! In a quiet corner away from the bustle, with windows looking south onto water and green leaves and a collection that has been sorted through and slimmed down, the new library is a great place not only to look for a good natural history read but to sit down and hang out for awhile. A big thank you to volunteer librarian John Bremer, who has worked tirelessly these past months to sort and organize the collection.



Kids' Discovery Room

Our kids' room has gotten a facelift, too! Missoula artist Melissa Madsen spent many dedicated hours painting a vibrant natural history mural on the walls, making this great room an even more delightful space for kids to explore.



PHOTO BY PAM BARBOUR

MNHC PHOTOS

A Big Thanks to Big Sky Brewery!

It has been an epic summer of music for MNHC at Big Sky Brewing Company's summer concert series. Our volunteers and staff have poured beer for every show from mellow reggae to indie rock favorite Modest

Mouse. On average, we've had 28 volunteers at each show and collectively spent over 1,000 hours selling beer tickets, pouring beer and serving water to thirsty concert-goers.

Proceeds from the beer sales at each show will enable us to buy new buses to help keep us safely and reliably getting kids and adults out into nature. Big Sky Brewing Company's support has been tremendous and we can't thank them enough for allowing us this special opportunity!

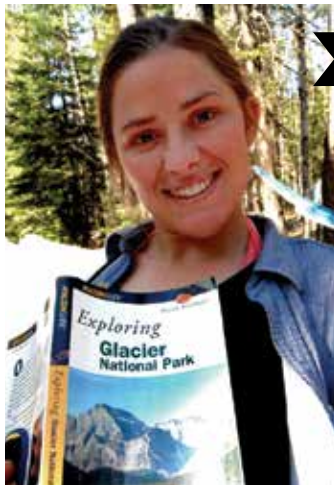


Make Merry With MNHC!



We have so much to celebrate this year—come party with us! MNHC's Fall Celebration & Auction is coming up on Friday, October 10th, 2014, at the DoubleTree Hotel. Join us for dinner, conversation, and the opportunity to bid on an exciting variety of nature excursions, unique travel packages, local artwork and more in both our live and silent auctions. Reserve your tickets today by going online to www.MontanaNaturalist.org or calling 327.0405. \$50 per person.

SPOTLIGHT:



Lily Haines, Fall Visiting Naturalist in the Schools Instructor

Lily earned her B.A. from the University of Montana in Botany/Ecology and spent several years as a riparian health and restoration specialist with the Bureau of Land Management. She began teaching with MNHC as field staff for the Visiting Naturalist in Schools Program in 2012. An avid lifetime learner and nature lover, Lily found that teaching struck a powerful cord. She is excited to spend more time with the VNS program this year, connecting children with their place and inner naturalist both inside the classroom and out under the Big Sky. Born and raised in western Montana, Lily spends as much time as possible sharing adventures and discovering Montana's wild places with her daughter, Mariah. Lily is filling in this fall for staff naturalists Brian Williams, who will be student teaching, and Alyssa McLean, who is taking maternity leave.

THANK YOU TO OUR BUILDING CAMPAIGN DONORS!

LEADERSHIP DONORS

Kendeda Fund
M.J. Murdock Charitable Trust
Engelhard Foundation
Gallagher Western Montana Charitable Foundation
My Good Fund
Steele-Reese Foundation
William H. and Margaret M. Wallace Foundation
Anonymous Family Foundation (2)
Kim and Ruth Reineking
Sue Reel and Dick Hutto
Wendy and Fletcher Brown
Rick Oncken
Nick Nichols and Robin Tawney-Nichols
Caroline and Willis Kurtz
Ken and Karen Dial
Penney Oncken
Stephen Speckart and Patricia Forsberg

DONORS

Carol and Gary Graham
Hank and Carol Fischer
Ellen and Bob Knight
Arnie and Pam Olsen
Mary Stranahan
Ron and Nancy Erickson
Dale Harris and Kathleen Kennedy
Doug Webber and Nancy Winslow
Mike Kadas and Martha Newell
Frank and Maggie Allen
Molly Galusha and Grant Parker
Marcia and Bob Kircher
Stuart and Mindy Goldberg
Jim and Marci Valeo
Bill Rossbach
Anne and Noel Hoell
Alicia Reich and Ryan Huckleby
Karen and Brian Sippy
Pam and Sandy Volkmann

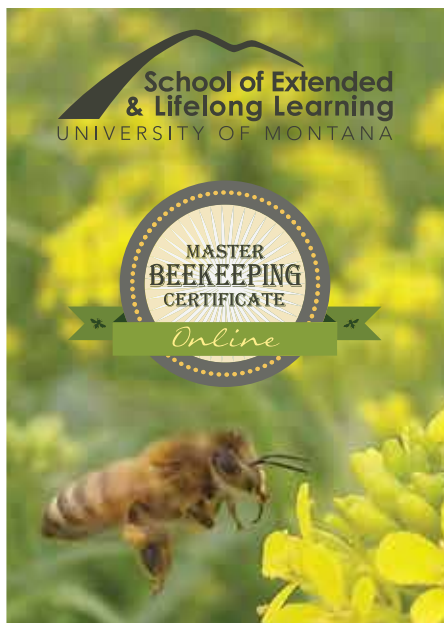
Nancy Seiler
Sarah Knight
Jack Sturgis
Bill Bevis and Juliette Crump
Julie Cannon and Allan Mozingo
Eileen and Dan Chontos
Willie Craig and George Risi
Wendy Sturgis
Marcia Hogan
Frank and Courtney White
Mike and Valerie Bayer
Becky and Stan Duffner
Julie Gardner
Jan Geer
Sally Johnson and Ross Miller
Mike and Bernice Johnston
Land Lindbergh and Janet McMillan
Bert Lindler and Kristi DuBois
Marilyn Marler and David Schmetterling
Fred Michini and Merry Hutton
Bill and Becky Peters

Nancy Seldin and Chic Fitts
Kathy Settevendemie
Chris and Jeannie Siegler
Chris and Bonnie Smith
Don and Andrea Stierle
Jack Ward Thomas and Kathy Thomas
Steve and Judy Laughrun
Steve Loken and Linda Saul
Greg Peters and Allison DeJong
Anne Garde
Debra Ritchie
Beth and Paul Loehnen
John and Lynn Thee
Arlene and Dave Andrews
Kristi Lawrence
Tom Bulger
Laurie and Jim Randall
Geoff and Nancy Birnbaum
Fran Tucker
Barbara Hand
Susie Miller and Elon Gilbert

Jeff and Jillian Seaton
Kristi Beck-Nelson
Colleen Shea and Art Dreiling
Dick and Sharon Barrett
Mike Combo
Thea Koehler
Jessica Glebke
Dennis and Ann Adams
Jo-Ann and Ian Lange
Tim Furey
Jesse and Ramey Kodadek
Elizabeth Oleson and James Gouaux
Jim Hamilton
Janice Givler
Penny and Bill Ritchie
Minette and Dave Glaser
Susie Graham and Chris Crabb
Ed Monnig and Jackie Wedell
Lisa and Dale Bickell
Whitney and Nathan Schwab
Christine Morris

Chris and Alyssa McLean
Brian and Carin Williams
Richard and Christine Wren
Debra and JP Jones
Candace Romero

Please accept our apology for any missing names.



UMT.EDU/BEE

Open to the public!

Montana State
Beekeepers
Association

Endorsed By:

• The American Honey
Producers Association • Project Apis m.



GOOD FOOD
S T O R E

www.goodfoodstore.com | Missoula | 406-541-3663

Fantastic watercolors bring these fluttering subjects to life.

WESTERN BUTTERFLIES
for Young Explorers
with a Field Guide
BRANDON LAMM

64 pages
Ages 6 & Up
Paper, \$14.00
(include \$4.00 for s/h)

Mountain Press Publishing Company
800-234-5308 • mountain-press.com

Friends of the

Lee Metcalf National Wildlife Refuge
P.O. Box 758, Stevensville, MT 59870
406-777-5645

**Love kids?
Love nature?**

Volunteer with our Visiting Naturalist full-day field trips!
Spend a day (or three) outside with 4th and 5th grade students teaching them about our big, beautiful world!
Field trips run every school day in October.

To volunteer or for information,
contact Allison De Jong, Volunteer Coordinator, at 327.0405
or adejong@montananaturalist.org.

JOIN US FOR OUR
**Fall
Celebration**

Friday, October 10, 2014
5:00-9:00 p.m.
DoubleTree Hotel, Missoula

Join us to support MNHC's ongoing efforts to
Connect People with Nature,
visit with old friends and meet new ones,
and bid on live and silent auction items.

www.MontanaNaturalist.org
or call **327-0405.**

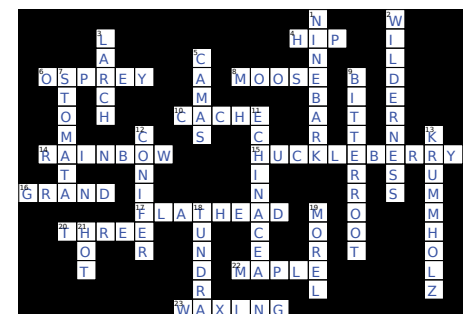
Tune in to
Field Notes

Hear all about the flora, fauna, bugs and birds of western and central Montana.

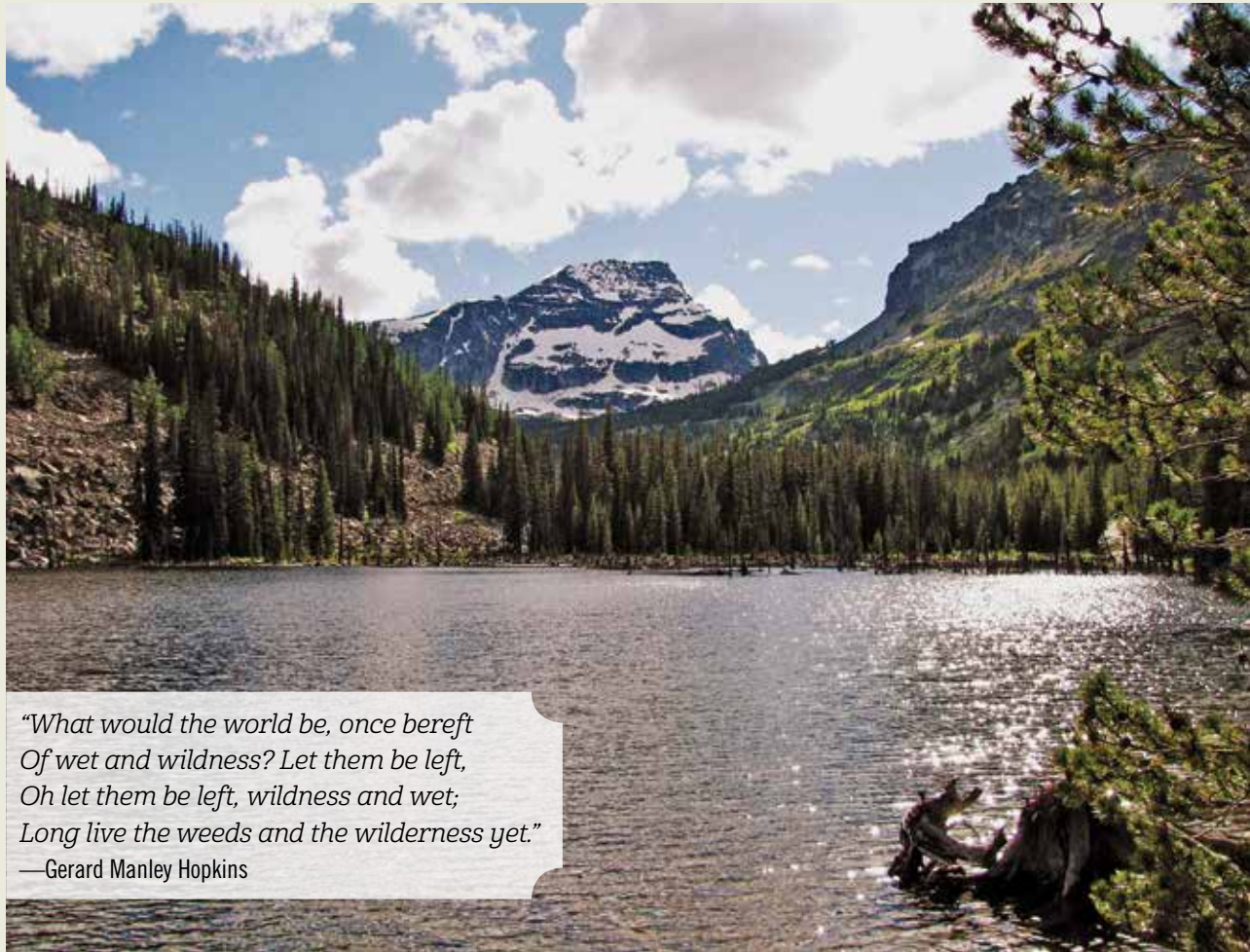
Field Notes can be heard Sundays at 12:25 p.m. and Mondays at 3:00 p.m. on KUFM/KGPR radio, 89.1 in Missoula and 89.9 in Great Falls.

Field Notes welcomes new writers and sponsors. Contact the Montana Natural History Center at 327.0405 for details.

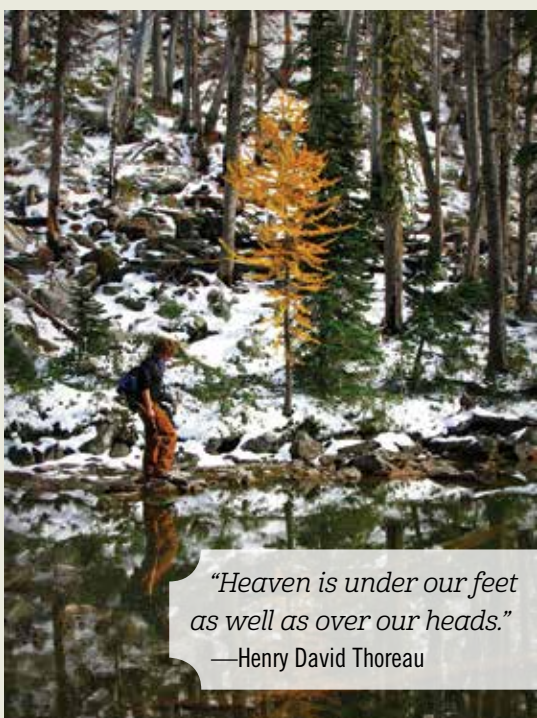
**Montana
Public Radio**



Answer to Naturalist Crossword Puzzle, page 12



*"What would the world be, once bereft
Of wet and wildness? Let them be left,
Oh let them be left, wildness and wet;
Long live the weeds and the wilderness yet."*
—Gerard Manley Hopkins



*"Heaven is under our feet
as well as over our heads."*
—Henry David Thoreau



*"To sit in the shade on
a fine day, and look upon
verdure is the most perfect
refreshment."* —Jane Austen

Top: View of El Capitan above Little Rock Creek Lake in the Selway-Bitterroot Wilderness.

Above: Nature journaling on a sunny day by Edith Lake in the Anaconda-Pintler Wilderness.

Left: Alpine larch changing colors at Glen Lake in the Selway-Bitterroot Wilderness.



Montana Natural History Center

Connecting People with Nature

120 Hickory Street
Missoula, MT 59801
www.MontanaNaturalist.org

NON-PROFIT
ORGANIZATION
US POSTAGE
PAID
PERMIT 569
MISSOULA, MT

Montana Natural History Center is an equal opportunity service provider.
Montana Natural History Center trips are permitted on the Lolo National Forest (Clause VII.B).

Yes! I want to become a member and support the
Montana Natural History Center. *All memberships are annual.*

☐ Family Membership: \$50 ☐ Individual Membership: \$35

☐ Supporting Membership (magazine subscription only): \$10

All gifts are tax deductible to the full extent of the law.

☐ I am enclosing payment by check.

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

☐ I would like to pay with credit card (circle one): AMEX VISA Mastercard Discover

Account Number _____ Exp. Date _____

Signature _____

☐ Sign me up for the monthly email newsletter.

Email address: _____

☐ I want to volunteer! Send me a volunteer application.

☐ I would like more information on making a planned gift or gift of stock.

Start getting connected with a visit to our website –

www.MontanaNaturalist.org. *Become a member online, explore our programs
and discover where the Montana Natural History Center can take you!*

**Fill out and mail to Montana Natural History Center, 120 Hickory Street, Suite A,
Missoula MT 59801 or Fax: 406.327.0421**

Family & Individual Membership Benefits

Annual subscription to **Montana Naturalist**
Free visitor center admission
Discounts on all programs
Invitations to special programs
Access to the Ralph L. Allen Environmental
Education Library



If you have enjoyed the articles and
photos in *Montana Naturalist*, won't you
please help us continue to celebrate
Montana's natural history by becoming a
supporting member? Your \$10 donation will
go directly to support the costs of producing
this magazine. *Thank you!*

Please send donations to:
Montana Naturalist,
c/o Montana Natural History Center
120 Hickory St.
Missoula, MT 59801