

MONTANA

Fall 2009

# Naturalist



**Wilderness Volunteers**

**Nature of Wolves**

**Grasses for  
Your Garden**

**Nature  
News**

see  
Get Outside Guide,  
page 9



**Montana Natural History Center**  
Your Base Camp for Discovery

# MONTANA Naturalist

## Features

- 4 **Citizen Science** by Tim Gibbins  
*In the field with the Wilderness Institute*
- 6 **The Nature of Wolves** by Caroline Kurtz  
*Habits of the most feared, revered species*
- 8 **In Praise of Poaceae** by Leah Grunzke  
*Native grasses add year round interest to gardens*

## Departments

- 3 **Tidings**
- 9 **Get Outside Guide**  
*What insect is this?, bird behaviors, new books for kids, music CD celebrates nature's genius*
- 13 **Community Focus**  
*Roots in a special place* by Byron Weber
- 14 **Far Afield**  
*Bitterroot BioBlitz, ferruginous hawks, autumn rituals*
- 16 **Imprints**  
*Come Soar With Us, MNHC people, supporter thank-yous, a legacy of philanthropy*
- 18 **Magpie Market**
- 19 **Reflections**  
*The Naturalist Tradition*

**Cover photo** – Eugene Beckes took this photo of a *Smerinthus cersyi*, or one-eyed sphinx moth, at rest. Only one feathery antenna is visible; the other is folded out of sight. "I was disappointed I couldn't get shots of both antennae, not to mention of the 'eye' pattern on the wings, but the moth would not cooperate. Such is nature!" Beckes says.

*No material appearing in Montana Naturalist may be reproduced in part or in whole without the written consent of the publisher. All contents © 2009 The Montana Natural History Center.*



4



6



8



9



13



14



16



**Montana Natural History Center**  
Your Base Camp for Discovery

120 Hickory Street  
Missoula, MT 59801  
(406) 327-0405  
office@MontanaNaturalist.org  
www.MontanaNaturalist.org

**Executive Director**  
Arnie Olsen

**Education Director**  
Lisa Bickell

**Community  
Programs Coordinator**  
Jessie Sherburne

**Lead Naturalist**  
Brian Williams

**Naturalist**  
Alyssa Taylor

**Volunteer Coordinator**  
Allison De Jong

**Field Notes Coordinator &  
Montana Naturalist Editor**  
Caroline Kurtz

**Administrative Assistant**  
Joy Setterlund

**Board of Directors**  
Hank Fischer, *President*  
Marilyn Marler, *Vice President*  
Alan Okagaki, *Treasurer*  
Melynda Goldberg, *Secretary*  
Betty Oleson, *Financial Advisor*  
April Christofferson  
Anne Garde  
Jim Gladen  
Marcia Hogan  
Betty Oleson  
Rick Oncken  
Susan Roy  
Lance Schelvan  
Stephen Speckart  
Glenna Tawney  
Steve Woodruff

**Montana Naturalist  
Art Director**  
Eileen Chontos



**VNS students learn  
about bird identification  
during fall field trips**

In nature, timing is everything; one transition leads seamlessly to another. As day length shortens, fruits ripen, animals harvest in one way or another, and get ready to stay or go as their nature dictates. For Montana's large grazing mammals – bison, elk, moose – it's already time to think about finding mates in order to ensure the proper timing of the birth of young next spring. For other animals, from birds to wolves, young of the year are now fending for themselves or busy acquiring the skills necessary to keep up with adults through the leaner months to come.

As this issue of Montana Naturalist goes to press, there's still a lot of time left for all of us – human and wild alike – to grow, experience, learn. Inside you can read about opportunities such as the Wilderness Institute offers to help with backcountry research while exploring new places and gaining insight into natural communities. Or about events like June's BioBlitz at the Lee Metcalf National Wildlife Refuge, where members of the public were able to partner with scientists in the field for a day. Or how to get involved with ongoing volunteer projects like the Visiting Naturalists in the Schools program.

From tips about using native grasses in your garden to fun facts about birds and bugs, we hope stories in this issue will inspire you to use time well experiencing the great outdoors.

**Caroline Kurtz**  
*Editor*

# CITIZEN SCIENCE: TAKING ROOT IN THE WILDERNESS

Story and photos  
by Tim Gibbins

By detecting these invasive plants early, and educating people about prevention, the odds of halting their spread are excellent.



Photo by Richard Old, XID Services, Inc., Bugwood.org



**ABOVE, FROM LEFT:** spotted knapweed; lush alpine meadow, not in the current study area but which shows the same native plant community described; volunteer with armload of knapweed; trip leaders Gaskill and Loomis.

It is even here, in a lush alpine meadow in the Sapphire Mountains of western Montana – spotted knapweed. Field-study leaders Eli Loomis and Whitney Gaskill stop and point out the row of bunched together, dried stalks. They unshoulder their packs, dig out GPS devices and delegate tasks to the group. One person marks the knapweed's coordinates on the GPS, another records the stand's density on a topographic map; the rest of the volunteers uproot the invasive weeds with a few old-fashioned yanks.

The six people working with Loomis and Gaskill are volunteers, aged 17 to 65, who are participating in the fifth year of the Wilderness Institute's Citizen Science Project that monitors invasive weeds and wilderness character. For five days, these volunteers have left their day jobs behind – as students, professors, carpenters and doctors – to collect data that will help determine the eventual Wilderness status of the Sapphire

## Wilderness

Study Area. Behind the group, timbered foothills roll into the flat river valley beneath the granite horizon of the Bitterroot Mountains. At their feet lies a vibrant ecosystem of alpine bluegrass, Indian paintbrush, marsh marigold and larkspur. The native plants are thriving, but the group is here for the weeds.

"I knew what knapweed was, but I still walked right past it. When others would spot it, I'd look down and it'd be so obvious. How could I not have seen that?," asks 22-year-old volunteer Evan Holmstrom, a college junior majoring in Japanese. "I didn't have a lot of experience before I came on this project, so I was a little surprised by how slowly we walked and how closely we looked at the plants."

The volunteers walk slowly because they are using a monitoring protocol designed by the Wilderness Institute with direction from Paul Alaback, emeritus professor of forest ecology at the



**Volunteer records weed location on a GPS; trailhead sign at Chain of Lakes in the Sapphire Mountains posts multiple-use information.**

University of Montana, and Peter Landres, an ecologist at the Aldo Leopold Wilderness Research Institute. Initially, the protocol concentrated on invasive weeds with some wilderness-character monitoring; now it has expanded to focus equally on invasive weeds and wilderness character.

The volunteers catch on quickly.

“My favorite question to hear them ask is, ‘Should we be monitoring this or that?’,” says Gaskill. “It shows they are starting to think about recreation impacts in their own ways.”

Bear scat, wolf tracks, the sight of an eagle flying overhead, or the sounds of distant traffic or trash left at campsites, volunteers record all things wild and all that may interfere with that wildness or lessen the wilderness experience. They assess the impact of how people have been using the land and what they have left behind, from deeply rutted roads to stone fire rings to the compacted ground of a campsite. They are like detectives, looking for clues about how people use the land and how those uses are affecting wildlife and the landscape. For invasive weeds, the monitoring protocol is fairly simple – map the species abundance and distribution.

“The goal of this is to put quality data in the hands of managers,” explains Landres. “It’s a reciprocal relationship. Strapped-for-cash agencies get data they cannot otherwise afford, and the volunteers, besides having fun on the trips and learning about invasive plants, get to make meaningful contributions to management decisions,” he said.

Information from the Citizen Science Project is given to staff at the Bitterroot National Forest, who will use it to decide, in this case, whether the current Sapphire Wilderness Study Area should be

recommended as an official Wilderness Area, which would further protect it from human disturbance that comes with easy access for large numbers of hikers, mountain bikers and four wheelers. But research is only half the story; the other half is the impact of this educational experience on individual people.

“Citizen Science helps the public engage with and understand the issues surrounding invasive plants,” Alaback says, “and that education is just as important as the data they collect.”

As awareness of invasive plants has increased among scientists and the general public, so have the terms used to describe them, which can be confusing. Ornamental, introduced and imported species are all terms used to describe exotic species that did not co-evolve with native plants. Dalmatian toadflax is an exotic species. Initially introduced as a garden ornamental, it has aggressively spread throughout the region along roadsides, in disturbed areas and into pasturage. Because it creates specific economic harm, it also is considered a noxious weed. Cheat grass is another noxious species, because it creates poor forage for cattle that ranchers depend on. The term “invasive species” is a catchall for any plant that outcompetes and replaces native plants, and this problem is nothing new in Montana.

The first wave of spotted knapweed, leafy spurge and other invasive plants came with settlers in the late 1800s, spread by livestock, agriculture and home kitchen gardens. World War II ushered in the second wave of invasive plants through the rise of global commerce.

“Throughout history, there has been a close connection between weeds and our culture,” says Alaback. Even so, he adds, we can hold back the tide of invasive weeds with

early detection and prevention of their spread into areas where currently they do not exist.

Invasive plants are beginning to spread along trails into designated or soon-to-be designated Wilderness

– places rich in the biodiversity of native plant communities. Loomis says that Wilderness Areas typically are in the early stages of invasion. Weeds found along trails have colonized from seeds brought in on hikers’ shoelaces, ATV grills or horse tails. By detecting these invasive plants early, and educating people about prevention, the odds of halting their spread are excellent. “So these citizen scientist trips have the opportunity to make a really big impact,” he says.

After the group finishes mapping, documenting and removing the spotted knapweed, they continue up the trail toward the Chain of Lakes to camp. That night Loomis and Gaskill cook Thai noodles over the campfire. As they eat dinner, group members talk about what they value about the landscape and how they would like to see it managed.

“I went on this trip because I just wanted to go backpacking,” Evan Holmstrom says, “but now I understand more about what’s here and what’s at stake with invasive plants.”

*Tim Gibbins writes about wilderness issues as a graduate student in the Environmental Studies Program at the University of Montana.*

**To learn more about becoming a volunteer with the Citizen Science Project, contact the Wilderness Institute, The University of Montana, College of Forestry and Conservation at (406) 243-5361 or online at [www.cfc.umt.edu/wi](http://www.cfc.umt.edu/wi). The Citizen Science Project is funded in part by the National Forest Foundation and the Cinnabar Foundation.**

# The Nature of

by Caroline Kurtz

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

JANUARY

FEBRUARY

SEPTEMBER - DECEMBER

**As fall approaches,** wolf pups are big and strong enough to accompany adults on food forays, learning to become functional hunting members of the pack. This juvenile phase, which lasts until a wolf is two years old, prepares pups to be successful predators. Those that don't, won't last long. As James Halfpenny describes in *Yellowstone Wolves in the Wild*, once pups have tasted regurgitated meat, they must learn to eat solid meat brought home by adults. Next they have to associate eating meat with killing. First pups practice on dead or wounded prey such as mice, squirrels or rabbits, then start limited mouse hunting on their own to hone their abilities to stalk, chase and pounce. Finally, they join adults on a real hunt. Pups must learn when to be quiet, how to stalk silently and, eventually, when and how to test prey herds, like elk, for weak members, when to chase and strategies for killing. It takes time

to learn all this and many hunts fail. Even with skilled parents, wolves may attempt 20 chases before they are able to make one kill.

Fall is the time when wolves start to be on the move within their territories, following prey. A pack's territory might extend up to 400 miles or more, depending on pack size, how much food is available and the proximity of other wolf territories. Like any predator, wolves have to consider what prey will yield the greatest benefit in terms of amount of food for the pack, versus how much energy is needed to get that food and the risk involved. In Yellowstone National Park, wolves almost exclusively target elk, which offer the biggest nutritional bang for the energy-expense buck. But wolves also prey on bison, moose, deer, smaller mammals and sometimes, to the wolves' detriment, livestock and other domestic animals.



**Above all else, wolves are social animals with many complex ways of communicating.**

JANUARY - APRIL

**Unlike dogs,** female wolves only are able to breed once a year. They come into heat, meaning their reproductive system kicks into gear to produce eggs and support a pregnancy, in December. Mating occurs in late January or early February, and typically – but not always – only the alpha female in a pack bears pups. Gestation lasts around 60 days and litters average about 6 pups. Sometime in early March, or about two-thirds of the way through pregnancy, a female wolf will start exploring possible den sites and digging them out herself, usually on a hillside under some tree or rock canopy. Sometimes a female will dig multiple dens, which come in handy if one is discovered by predators, or becomes washed out in a rainstorm or is infested with parasites such as fleas. One of the biggest factors in

**They gambol behind their parents for short distances and by eight to 10 weeks will be able to travel to a rendezvous site, a prominent open area where pack members socialize and howl together.**

minimizing conflicts between wolves and people may be to discourage wolves from choosing a den location in the early spring that is too close to humans and their animals.

As delivery time nears, the female wolves stay more and more at the den site, while other members of the pack continue to roam. Many observers have reported wolves

## REFERENCES USED IN THIS ARTICLE:

- Yellowstone Wolves in the Wild*, by James Halfpenny (Riverbend Publishing, 2003)
- Decade of the Wolf: Returning the Wild to Yellowstone*, by Douglas W. Smith and Gary Ferguson (The Lyons Press, 2005)
- Wolf Pack: Tracking Wolves in the Wild*, by Sylvia A. Johnson and Alice Aamodt (Lerner Publications Co., 1985)
- Brother Wolf: A Forgotten Promise*, by Jim Brandenburg (NorthWord Press Inc., 1993)
- Never Cry Wolf*, by Farley Mowat (Atlantic-Little, Brown 1963)

Pack photo (above) and pup photo by Dan and Cindy Hartman

# Wolves

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

bringing food to the den and taking turns, once pups are born and active, acting as additional pup minders.



Under a watchful eye, a wolf pup begins to explore away from the den.

Wolf pups are born blind and deaf and weigh less than a pound. They are quite helpless and stay inside the den with their mother for the first two or three weeks of life, after which they begin to emerge – curious and weighing around seven pounds. Already they are play fighting to establish positions in the social hierarchy of the litter and, eventually, the pack. At five weeks old, pups weigh about 13 pounds and are beginning to be weaned off mother's milk. They gambol behind their parents for short distances and by eight to 10 weeks will be able to travel to a rendezvous site, a prominent open area where pack members socialize and howl together.

MAY - AUGUST

### Growing up is a dangerous process

for wolves. The average life span for a wolf is only six months, due mainly to the high mortality of pups in their first year. In the wild, only 20 percent of wolves live to two years old. For those that do, life expectancy is about five years. A 10-year-old wolf is unusual. To reach maturity, pups have to contend with larger animals that could kill them, including bears, coyotes, mountain lions, elk and birds of prey, not to mention factors such as disease, starvation, floods, drowning and falls that also take a toll.

But assuming all goes well, summer is

the time for socialization, when pups build the emotional bonds with other group members necessary to assure the continuation of the pack. Pups and adults howl and play together. Running, jumping, climbing and gnawing on each other develops muscles and coordination and begins to teach pups the rudiments of working as a pack. The reintroduction of wolves to Yellowstone in 1995 and 1996 has provided almost 15 years of observation and research on wolf behavior, including much information about how wolves educate their young, like this example from *Yellowstone Wolves in the Wild*:

*It was a July day when adults from the Druid Peak pack led their pups to the rendezvous site for the first time. The adults were strung out in a long line with several adults leading, pups in the middle, and an adult at the end. The pups were going as fast as their short legs and inquisitive minds would allow; they paused to look at everything.*

*Climbing a small knoll the wolves surveyed the surrounding area. There was a herd of about 50 bison with 10 or 12 bulls pawing and bellowing... It was a formidable arena. The pups took one look and spooked, turning tail and galloping back the way they had just come. Soon the pups dropped out of sight into the river channel.*

*The adults lay down to wait. It was a long wait, more than an hour. Eventually, an adult, 42F, got up and went back, disappearing from sight. Another long wait. Nothing. Another adult got up and went back. Nothing. Finally all the adults got up and went back. Another long wait ensued.*

*Eventually they all appeared again in a long line headed for the knoll. Pups hung back, but all the adults went to the top of the knoll that overlooked the bison herd. The adults then proceeded down among the bison, which mostly ignored them. There the wolves lay down.*

*Eventually, the boldest pup came to the closest adult, who was at the edge of the herd. The adult got up and greeted the pup. The adult then walked with the pup to the next closest adult, who got up and greeted it. The second adult then led the pup through the herd to the next adult and so on. Another pup came forward to be met and escorted through the bison herd. Armed with their new knowledge, the pups didn't so much as look back as the pack all got up and wandered back to the rendezvous site.*



Some of Yellowstone National Park's wolf packs have learned to hunt bison.

Photo courtesy of the Yellowstone Wolf Project and made possible by a generous grant to the Yellowstone Park Foundation from Canon U.S.A., Inc., through Eyes on Yellowstone and is made possible by Canon.

# IN PRAISE OF *Poaceae*

By Leah Grunzke

[Editor's note: This article originally appeared in the summer issue of Kelsey, the newsletter of the Montana Native Plant Society.]

There's a rich satisfaction that comes with making the choice to work with the landscape around you, rather than against it. Native plants seem to settle cozily into our surroundings, complementing our sense of place. It's true that in most native plants you won't find the brazen showiness of their tropical cousins, or even the uniformity of a well-watered Kentucky bluegrass lawn. But plants that have evolved to survive here offer a different sort of appeal – one of a rigorous spirit that's as well-suited to this area as the mountains and rivers we hold dear. The muted tones of our native species work well with the palate of our landscape. And for good reason – many charms of natives are actually adaptations to this harsh environment. Silvery-grey foliage reflects hot summer sun, and small leaf-surface areas slow the loss of precious water.

The members of *Poaceae*, the grass family, embody many of these resilient traits. Most grasses have deep, fibrous root systems. This improves poor soil by depositing rich organic matter deep underground, increases water permeability and stabilizes the soil against erosion. At the same time, birds and other wildlife use grass stands as habitat and food sources.

Many of these grass species are now finding yet another niche, as gardeners become increasingly aware of their low-maintenance, year-round appeal as ornamentals. Below are some examples of native grasses that make great specimen or accent plants. All of these are bunchgrasses that grow in free-standing clumps. Showy seed heads form mid- to late-season. These can be left on throughout the winter until the following spring, when they should be trimmed back to make way for new growth. None of these are picky about soil conditions, and all will thrive in nearly any sunny, well-drained site. Rather than starting from seed, it is best to transplant from containers in spring. And remember, all plants need a little extra attention until their roots are established, so be sure to provide sufficient water for the first season or two. Beyond that, they require very little watering or fertilization. 🐦

*Leah Grunzke has a horticultural science degree from MSU-Bozeman and a certification in nonprofit administration from UM. She has worked on various research projects involving the use of native plants in landscaping and the effects of invasive weeds on native plants. Her passion is community education, such as outdoor science education for kids and demonstration projects for adults interested in native gardening.*

## Bluebunch Wheatgrass

(*Agropyron spicatum*; Syn. *Pseudoregenaria spicata*, *Elymus spicatus*): Montana's state grass grows in hearty 1-4' clumps. Leaves are bluish, with a pale yellow fall color. Extremely tolerant of fire, drought, cold and poor soils. In nature, it can often be found on dry montane slopes as a companion to big sagebrush.

## Prairie Junegrass

(*Koeleria cristata*): Perky and highly ornamental, this grass grows in erect 1-2' clumps – perfect for tight spaces. The large, silvery-green flowering stalks are at their prime in mid-summer, before the hot weather sets in.

## Idaho Fescue

(*Festuca idahoensis*): A common and easy-to-grow cascading ornamental grass with threadlike, blueish-grey leaves. Long-lived and easily propagated by division or from seed.

## Little Bluestem

(*Schizachyrium scoparium*; Syn. *Andropogon scoparius*): Robust with large bristly flowers, grows to 2-3'. Prized for its deep, mahogany-red fall color, which persists throughout winter and provides a striking contrast to the white of a fresh snowfall. The fuzzy white seeds are relished by small birds.





Female giant  
ichneumon wasp,  
eastern species.

## What Is It?

By Charles Miller

I've always been fascinated by insects with extra-long appendages. The long-horned beetle and its oversized antennae. The Madagascan hawk moth with its 12-inch proboscis. The giant ichneumon wasp with its four-inch ovipositor and guides.

In July, while stalking a McGillivray's warbler on a rural road near my house, I was startled by a huge insect crash-landing on a burned out Douglas-fir tree right in front of me. It was a female giant ichneumon wasp (*Megarhyssa sp.*) and I managed to capture it with my butterfly net – not an easy task as aerial nets are not designed for round tree trunks!

Ichneumon wasps belong to the order hymenoptera, which includes bees, wasps and ants. There are more than more than 3,200 species of ichneumon wasp in North America, but only four giant ichneumon species. Their bodies are black or reddish and yellow, and range up to 40 millimeters, or about an inch and a half long. Their most striking feature is the females' long, whip-like ovipositor, which looks scary but is not a stinger! This streaming appendage is an egg-laying organ. Two "tails" parallel it and serve as guides to direct and stabilize the ovipositor as it is inserted into a tree trunk in preparation for depositing eggs.

Like a number of wasp species, the giant ichneumon is a parasite for part of its life. Specifically, the larvae of giant ichneumon wasps are endoparasites of other immature insects, in this case horntail wasp grubs. Ichneumon females lay their eggs inside the bodies of horntail larvae. Sensitive antennae sense the vibrations of host larvae inside a tree trunk and help a female giant ichneumon wasp decide where to insert her ovipositor.

Upon hatching, ichneumon larvae feed on the horntail larvae until the ichneumon are ready to pupate. They then remain dormant under the bark until the following summer, when they emerge as adults. Adult giant ichneumons never eat at all – their only interest is in finding a mate and laying eggs, and then they die.

This type of parasitic behavior has been very successful and fossil records suggest the ichneumon family was already well established as early as the Eocene epoch, starting around 56 million years ago. When a female ichneumon wasp locates a likely spot to find host grubs, she arches her abdomen up and points the tip down onto the tree trunk. The two filament guides form a counterclockwise loop to stabilize her body. The whole contraption – abdomen, guides and ovipositor – looks a bit like a miniature oil drilling rig. No one is quite sure how, but somehow the female ichneumon wasp finds a host larva body and pierces it in just the right place so her babies will thrive – at the expense of the horntail.

As a result of this endoparasitic lifestyle, some types of ichneumon wasps are used as biological controls of noxious pest insects. By reducing the number of detrimental insect larvae, ichneumon wasps reduce the destruction of food crops. The United States alone saves about \$20 million annually by using parasitoid wasps.

You can see two examples of giant ichneumon wasps and a horntail at MNHC in the insect display area. Images of giant ichneumons and their egg laying apparatus can be seen online at [www.cirrusimage.com/hymenoptera\\_ichneumon\\_megarhyssa\\_fem.htm](http://www.cirrusimage.com/hymenoptera_ichneumon_megarhyssa_fem.htm).

## Ask the Planet CD

Available from MNHC

Billed as a musical celebration of nature's genius, *Ask the Planet* is a collection of 17 songs written by Amy Martin and performed by the Missoula Coyote Choir to inspire kids about the wonders of the natural world and teach them about the concept of biomimicry, or studying nature's ideas and imitating them to solve human problems. The CD is full of guest appearances by such musical artists as Bill Harley, Ani DiFranco, Bruce Cockburn, Brandi Carlile, Laura Love, Bill Sims Jr., Dar Williams and Erin McKeown.



Martin and CD co-producer Allison Miller conceived of the project as a way to help spread the word about biomimicry and the work of the Biomimicry Institute in Missoula. The Institute is dedicated "to nurturing and growing the global community of people learning from, emulating and conserving life's genius to create a healthier and more sustainable planet."

In addition to the usual distribution channels, the Biomimicry Institute is collaborating with schools, environmental education organizations, nature centers and zoos across the country to make *Ask the Planet* as widely available as possible. You can pick up a copy of *Ask the Planet* at MNHC at 120 Hickory St.

Additional material for parents and curricula for teachers is available at [AskThePlanetCD.org](http://AskThePlanetCD.org).

To find out more about biomimicry, visit [biomimicryinstitute.org](http://biomimicryinstitute.org).

**September 1 Volunteer Naturalist Training,** 4:00-5:30 p.m. **What is a Naturalist?** Volunteer training for Visiting Naturalist in the Schools September class visits. No experience necessary.

**September 10 Volunteer Naturalist Training,** 4:00-5:00 p.m. **Field Trip Orientation.** Learn how you can help teach kids about the flora and fauna of Western Montana during our October Visiting Naturalist in the Schools field trips. Only one orientation meeting is necessary to participate.

**September 12 Saturday Kids Activity. Magnificent Migrators!** 2:00 p.m.

**September 14 Volunteer Naturalist Training,** 4:00-5:00 p.m. **Field Trip Orientation.** Learn how you can help teach kids about the flora and fauna of Western Montana during our October Visiting Naturalist in the Schools field trips. Only one orientation meeting is necessary to participate.

**September 16 Volunteer Naturalist Training,** 4:00-5:00 p.m. **Field Trip Orientation.** Learn how you can help teach kids about the flora and fauna of Western Montana during our October Visiting Naturalist in the Schools field trips. Only one orientation meeting is necessary to participate.

**September 26 Saturday Discovery Day.** Ice Age Features of Flathead Valley, 8:00 a.m.-5:00 p.m.

**October 10 Saturday Kids Activity. Big on Bison!** 2:00 p.m.

**October 14 Evening Lecture Series. Volcanoes of the Cascade Mountains,** 7:00 p.m. Presented by Ian Lange.

**October 21 Evening Lecture Series. New Discoveries in the World of Astronomy,** 7:00 p.m., followed by night sky viewing at 8:30 p.m. (weather permitting). Presented by Diane Friend.

**October 24 Saturday Kids Activity. Batty about Bats!** 2:00 p.m.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
<p><b>MNHC Hours:</b>                      Tuesday-Friday, noon - 5 p.m.                      and Saturday noon - 4 p.m.  <i>Beginning January 1, 2009</i>  <b>New Admission Fees: \$2/adults,</b>  <b>\$1/children 4-12,</b>  <b>free/children 3 and under</b>                      and MNHC members.</p>		<p>  <b>Volunteer Naturalist Training,</b>                      4:00-5:30 p.m. <b>What is a Naturalist?</b></p>	<h1>September</h1>				
		1	2	3	4	5	
6	7	8	9	10	11	12	
<p><i>Sandhill cranes prepare to migrate</i></p>	<p>  <b>Volunteer Naturalist Training,</b>                      4:00-5:00 p.m. <b>Field Trip Orientation.</b></p>		<p>  <b>Volunteer Naturalist Training,</b>                      4:00-5:00 p.m. <b>Field Trip Orientation.</b></p>	<p>  <b>Volunteer Naturalist Training,</b>                      4:00-5:00 p.m. <b>Field Trip Orientation.</b></p>		<p>  <b>Saturday Kids Activity. Magnificent Migrators!</b>                      2:00 p.m.</p>	
13	14	15	16	17	18	19	
						<p>  <b>Saturday Discovery Day. Ice Age Features of Flathead Valley,</b>                      8:00 a.m.-5:00 p.m.</p>	
			23	24	25	26	
			30	<h1>October</h1>			
				1	2	3	
				<p><i>Beavers cache willow and cottonwood twigs before ice sets in</i></p>		<p>  <b>Saturday Kids Activity. Big on Bison!</b>                      2:00 p.m.</p>	
4	5	6	7	8	9	10	
				<p>  <b>Evening Lecture Series. Volcanoes of the Cascade Mountains,</b>                      7:00 p.m.</p>		17	
11	12	13	14	15	16	17	
			<p>  <b>Evening Lecture Series. New Discoveries in the World of Astronomy,</b>                      7:00 p.m.</p>			<p>  <b>Saturday Kids Activity. Batty about Bats!</b>                      2:00 p.m.</p>	
		20	21	22	23	24	
	<p><i>Pronghorn, elk and moose rut continue</i></p>						
	27	28	29	30	31		

Terry L. Spivey, Terry Spivey Photography, Bugwood.org

Photo by Steve Hillebrand, USFWS

Photo by Eugene Beckes

SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY

# November



**Volunteer Naturalist Training,**  
4:00-5:00 p.m.  
**Plants: What Are Flowers For?**



**Saturday Kids Activity. Scaly! Spiny! Spectacular!**  
2:00 p.m.

1

2

3

4

5

6

7



*Grizzly bears den up*

11

12

13

14



**Evening Lecture Series. Beetles and the Secrets Behind Animal Weaponry,**  
7:00 p.m.



**Saturday Kids Activity. Totally Turkeys!**  
2:00 p.m.

18

19

20

21

22

23

24

25

26

27

28

*Resident waterfowl seek out open water*



**Volunteer Naturalist Training,**  
4:00-5:00 p.m.  
**Plants: What Are Fruits For?**



**Saturday Kids Activity. Camouflaged Critters,**  
2:00 p.m.

29

30

1

2

3

4

5

# December

6

7

8

9

10

12

13

14

15

16

17

18

19

20

21

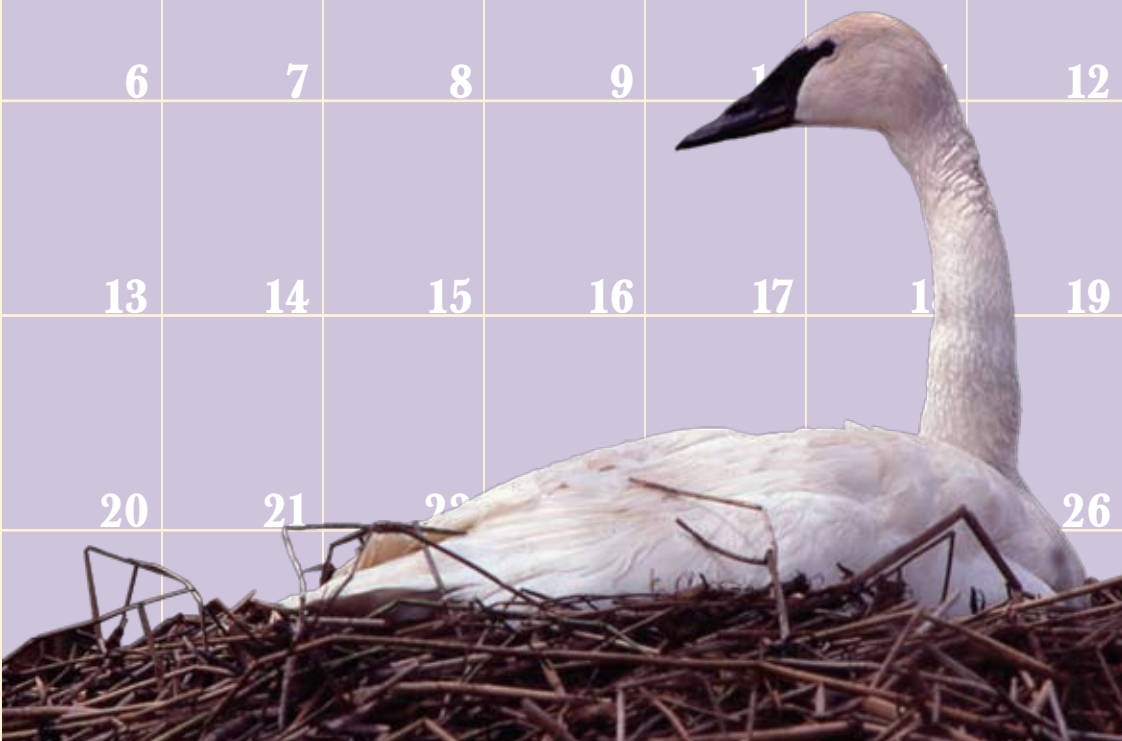
22

23

24

25

26



Joseph LaForest, University of Georgia, Bugwood.org

## NATURE'S ARMS RACE

**November 18 Evening Lecture Series. Beetles and the Secrets Behind Animal Weaponry,** 7:00 p.m. Presented by Annika Johns. Read a feature about this work in the New York Times, [www.nytimes.com/2009/03/24/science/24armo.html](http://www.nytimes.com/2009/03/24/science/24armo.html).



**November 21 Saturday Kids Activity. Totally Turkeys!** 2:00 p.m.

**December 1 Volunteer Naturalist Training,** 4:00-5:00 p.m. **Plants: What Are Fruits For?** Volunteer training for Visiting Naturalist in the Schools December class visits. No experience necessary.

**December 5 Saturday Kids Activity. Camouflaged Critters** 2:00 p.m.

Look for these program symbols in *Montana Naturalist* and on our website at [www.MontanaNaturalist.org](http://www.MontanaNaturalist.org).



Adult Program



Youth Program



Volunteer Opportunity

Photo by Bryan Harry, YNP

Photo courtesy of YNP

Wilson's phalarope



Photos by Eugene Beckes

## Bird Behaviors

**Wilson's phalarope** is interesting for several reasons: the female (TOP, RIGHT) is the more brightly colored, while the male is the bland one, and it is female phalaropes that initiate courtship by swimming next to males and chasing off other females. And get this: phalaropes spin like tops on the water – as fast as 60 times a minute – creating small whirlpools that pull food to the surface where the birds can pick it off with their long, slender bills.

**Western tanagers** usually search for insects in trees, but occasionally go out on a limb for a meal. Here a male hover gleans an insect from a Douglas-fir tree.



Western tanager "hover gleaning"

Some birds, like warblers and swallows, are expert at "hawking" insects, or catching them on the wing.



and with a tasty catch.

Photos by Eugene Beckes

Lewis' woodpecker



You wouldn't think of a woodpecker as one of these, but Lewis' woodpecker sometimes will enjoy an aerial buffet, often in the company of tree swallows.

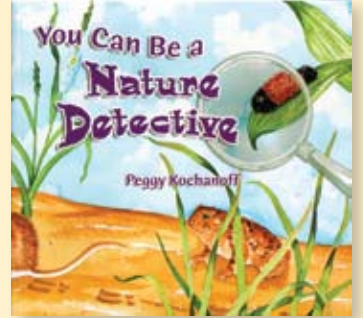
Photo by David Menke, USFWS

## BOOK CORNER

Check out these two recent additions to the children's library at the Montana Natural History Center.

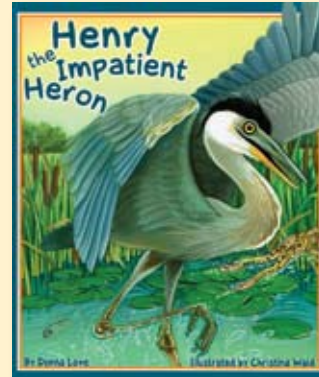
### You Can Be A Nature Detective

by Peggy Kochanoff  
(Mountain Press Publishing Co., 2009)



With her cheerful refrain of "Let's look closely and find out," author and illustrator Peggy Kochanoff leads children (and grownups) on a ramble through nature, asking questions like "There's something calling in the dark. How can you tell which frog or toad it is?" or "There's a terrible smell. What could it be?" or "There are some footprints in the snow. Who was here before you walked by?"

Each question is followed by a number of explanations for the phenomenon observed. Almost without realizing it, readers learn what the caterpillars of a number of different butterflies look like, what happens inside leaves when they change color in the fall, how it is that mushrooms can appear overnight in a place where there were none the day before. Kochanoff's writing is simple and concise, but contains much information; her colored, journal-like drawings add depth to each concept.



### Henry the Impatient Heron

by Donna Love (Sylvan Dell Publishing, 2009)

"Henry was a young heron, a Great Blue Heron that lived near a pond. His long, thin legs were great for wading, and his long, pointed bill was great for catching

fish. But the young heron had a problem. He couldn't stand still."

With that introduction, Donna Love tells the story of Henry, how he struggled to fit in and how he came to learn the most important lesson of his life. Along the way, young readers will learn a lot about herons – where they live, what they eat and how they behave – and perhaps learn a lesson in patience themselves. The illustrations by Christina Wald are lively and comical, and a section at the end of the book contains additional fun heron facts and more information about heron natural history.

Middle Butte at Ranch

East Butte at Ranch

Sweet Grass Hills 1987

BioBlitz 2009

# On Being A Naturalist

## Roots in a very special place

By Byron Weber

Recently a friend asked how I became a naturalist. I wasn't sure at the time, but it made me reflect a bit. I thought perhaps I was born with an interest in studying nature. I recall observing birds and flowers at an early age, and no one pointed them out to me; they were my own discovery. Yet I attribute this interest in part to luck. It was my great luck to spend summers on a cattle ranch in the Sweet Grass Hills, where my grandfather homesteaded and my mother grew up. When I was too young to work in the hay field, I would help with chores and then explore the environs of a small stream filled with willows, beaver dams and birds. I found that there were rewards for just sitting quietly under a bush. My only obligation was to be home when the dinner bell rang.

My selection of the Sweet Grass Hills as an actual area of study developed after years of thought about how I could make a mark as a naturalist. I kept going back to readings in which the scientist stayed put in one place. I thought of Jane Goodall, who was ready to quit studying chimpanzees after 10 years. Then she began to discover behaviors previously unknown to humans – war, meat eating and the use of tools. I recalled reading about a man in the Adirondack Mountains, who for years took pH samples from specific lakes. His records over time provided a basis for subsequent research on acid rain. And I still think of my friend Will Kerling, who studied the botany and wildlife in the Rattlesnake Recreation and Wilderness areas for many years. Hardly a day went by he didn't hike on Mount Jumbo. His

journals represent a detailed documentary of the Rattlesnake Valley and surrounding mountains.

In 1980 I went to live in a small cabin on the Bitterroot River. I discovered life without a phone and television, and for the next six years I hiked the river bottom and nearby hills almost daily. My journalistic skills developed and I compiled my observations to produce natural history calendars. This was my attempt to carry through with an idea I've always had – that citizens of a community should be the


**“citizens of a community should be the recorders of its natural history”**

recorders of its natural history. Our environment is simply too precious to rely on the government or other single entity to monitor. The government can help with funding and expertise, but the task is simply too massive to carry out alone.

Then in 1995, I made the conscious decision to do a serious survey of butterflies of the Sweet Grass Hills. I now have an extensive collection from the three buttes that make up the Hills and the surrounding prairie. On many trips the weather would change by the time I arrived, so I began to collect other insects as well. At night I discovered moths, and have become an ardent fan of these marvelous winged jewels.

Along with my bird, mammal, reptile, amphibian and flowering-date observations, these collections create a portrait of the natural history of the Sweet Grass Hills.

I don't know where all this will end up. I know I never go anywhere in the summer without a mercury vapor light, white sheet and small generator for collecting moths on the spot. And I spend a few days every year at the state insect collection at Montana State University. There's a special feeling associated with holding a moth collected in Montana in 1893. I wonder if naturalists and scientists will be peering at my insects 116 years from now.

E.O. Wilson wrote about “the naturalist's trance...when connections to other creatures mean as much to me as my humanity.” I think this is true for me. I recall as a child sitting in tall grass and watching a family of young weasels run over my shoes and sniff my pant legs. I remember leaning over the bank of a small stream and watching a garter snake catch a small brook trout. Downstream I watched a kit beaver nurse from its mother as darkness fell. These events filled my childhood with a deep internal happiness. Now they offer me memories of my past and of the real world in which I live. Studying the cycles of nature provides me with comfort in a world filled with chaos. I can't imagine a life without my binoculars and notebook. 



BioBlitz tally sheet kept running count of species identified; snapshots of Metcalf flora and fauna.



The BioBlitz was a chance for the public to see and participate in science-in-action.

Photos courtesy of Lee Metcalf NWR

## Bitterroot Valley BioBlitz

Some 400 people – researchers, volunteers and interested observers – descended upon the Lee Metcalf National Wildlife Refuge near Stevensville, MT June 26 and 27 for the refuge’s first ever BioBlitz. Part scientific endeavor, part educational festival, the event provided much-needed baseline information about the area’s plant and animal communities while giving the public a chance to see and participate in science in action.

Both goals were met with great success, according to event organizer Frances Graham. The scientific data obtained from surveys conducted over an intensive 24 hours will be used to help refuge staff as they embark on a comprehensive conservation plan that also will draw heavily on public input. “It’s important we know what’s here, and make sure there’s not something here that we didn’t know about,” said Refuge Manager Erin Holmes. But the real pay-off, said

Graham, came from seeing the eager involvement on the part of kids and families. “It’s fantastic to see that “ah ha!” moment, to watch people get inspired about nature and what’s out there,” she said.

Scientists and volunteers headed into the field on Friday at noon, and continued to identify species and plot their locations on maps of the refuge until well after midnight, when it got too cold to continue. They were back at it with early-morning



Photos by Alan Creatix

## The Siren Sounds of Fall

If spring is the season for birds, fall is the season for ungulates. This is the time of year when Montana’s large grazing mammals – bison, elk, antelope, moose, deer, bighorn sheep and mountain goats – engage in their various mating rituals.

From August through November, the different species go on a hunt of their own to reproduce. Males leave their summer haunts and join females, becoming defensive of territories and breeding when the time is right. This is the time of year when elk bugle, bighorn rams clash and white-tail bucks with swollen necks roam the countryside (and city neighborhoods) looking for females.

The timing of these mating seasons, or rut, is not as backward as it may seem. Young need to be born in the spring, so to accommodate the long gestation periods of

large mammals they must be conceived in the fall. Being born at just the right time is crucial for the young’s survival. Too early means increased danger of exposure to late snows and a lack of succulent green forage needed by mothers to produce milk. Too late does not allow babies time to grow enough to survive the following winter. The rut is triggered by photoperiod, or day length, and is not subject to delays due to weather, as is sometimes believed. The young have to be born at the same time every year, which is around mid-May to mid-June for most species in Montana.

So Montana’s ungulate breeding calendar is a full one, beginning, of course, with the largest mammal in the state, which requires the longest time to develop – bison. The bison rut begins in August, before we

are even thinking of fall. Dominant bulls defend groups of females from other males to maintain breeding rights. Loud roars echo as males assert their dominance and occasionally engage in spectacular pushing matches with their massive heads. The next ruts to take place are those of elk and moose. These species breed in September and early October, with the elk rut preceding the moose rut by a week or two. The familiar bugles of bull elk resound from the mountains at this time. Moose, although far less showy, do vocalize and have a ritual of their own. Bulls emit soft grunts while females have long whining calls. Moose are more solitary than elk, though, and generally do not defend harems.

Mule deer, white-tail deer, bighorn sheep and mountain goats all go through their

bird counts around 5:00 a.m. on Saturday. Results continue to be refined, but the preliminary species tally showed 413 plant and animal species identified, including four bats, 17 bees, 9 butterflies, 23 moths, two beetles, 16 dragonflies/damselflies, seven flies, two grasshoppers, seven wasps, 40 other kinds of macroinvertebrates, eight fish, XX reptiles/amphibians, 11 land snails, 90 plants, eight invasive plants, more than 50 lichens, 40 macrofungi, 16 mammals, two owls/raptors, five shore/marsh birds and 51 songbirds.

Dave Stagliano, aquatic ecologist with the Montana Natural Heritage Program, was happy to be involved in the BioBlitz. “Before this, the NHP had few records of invertebrates from the Metcalf, so this was a great opportunity to get more information.” In addition to the dragonflies and damselflies, he said his group found 12 aquatic snail species

– two introduced – and 32 other species, including a second state record (the second time found in Montana) of the mayfly *Ameletus sparsatus*.

“Personally, I enjoyed meeting old friends, hearing **“I’ve discovered the value of refuges as habitat, not just for ducks and migratory shorebirds, but for all types of flora and fauna.”**

from other scientists and developing a greater respect for the role of the wildlife refuge,” said naturalist Byron Weber, an independent researcher and expert on butterflies and moths of Montana. “I’ve discovered the value of refuges as habitat, not just for ducks and migratory shorebirds, but for all types of flora and fauna.”

The refuge staff hopes to hold a similar educational

festival every year, according to Holmes, and to conduct the scientific portion every three to five years. The inaugural BioBlitz at the Metcalf was funded by a grant from the U.S. Fish and Wildlife Service through the Audubon Society. The 2,800-acre Lee Metcalf National Wildlife Refuge is one of 28 NWRs in Montana, and 550 in the United States. It encompasses riverine, wetland, riparian and upland habitats.

“The Metcalf is a jewel here in the Bitterroot Valley, open to all as a federally protected area,” said Holmes. Yet of the 160,000 annual visitors, only a small percent are local. “We hope to see more people from the local communities get to know us” as a result of BioBlitz and future public educational events, she said.

– by *Caroline Kurtz*

**For directions and to find out more about the Lee Metcalf NWR, go to [www.fws.gov/leemetcalf](http://www.fws.gov/leemetcalf).**



**Ferruginous hawks are the largest of the Buteo genus of raptors found here and are not highly abundant in Montana, having fairly strict habitat requirements. They prefer arid grasslands and other treeless areas where they often perch on the ground, unlike most other buteos. These photos, taken on a private ranch west of Circle and south and east of Ft. Peck some years ago, show the hawk’s typical habitat and choice of nesting site. Ferruginous hawks may nest in isolated trees or on the sides of outcrops or other high ground. A pair often will work on multiple nests in the spring, eventually settling on one in which to lay two or three eggs. Ferruginous chicks hatch earlier than the chicks of the somewhat smaller Swainson’s or red-tailed hawks, so they can share the resources of a similar food base. Small mammals, or in this case jackrabbits, make up most of a ferruginous hawk’s diet.**



Photo courtesy of YNP

Hawk photos by Amie Olsen

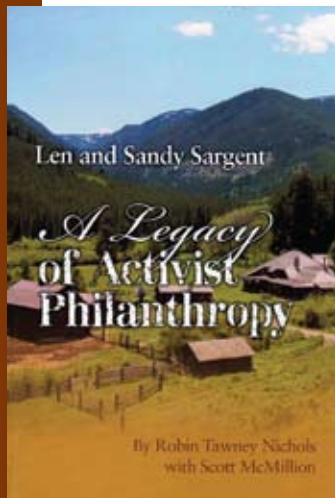
rutting periods in mid-November. They are smaller and have shorter gestation periods than their larger relatives. Although not thought of as vocal they all make sounds, generally in the form of grunts. Mule deer bucks emit a loud wheeze when confronting a rival. Bighorn sheep are well known for their head-clashing battles, making a

resounding crack that can be heard from a distance. The exception to the rut-timing schedule are pronghorn, the smallest of Montana’s ungulates. They mate about the same time elk and moose do.

– by *Milo Burcham*, for *Field Notes on Montana Public Radio*

## A Legacy of Activist Philanthropy

THE STORY OF LEN AND SANDY SARGENT and the Cinnabar Foundation is the story of how two people came to add their voices and



financial support to the growing environmental movement in Montana. In doing so they helped influence the way environmental organizations address state and regional issues today.

Written by the Sargent's longtime friend and colleague Robin Tawney, with contributions from

Scott McMillion, *Len and Sandy Sargent: A Legacy of Activist Philanthropy* (University of Montana Press, 2008) offers biographical information combined with personal reminiscences and historical background about some of the most important milestones in the Montana conservation movement.

As Tawney, MNHC supporter and former board member, writes in her author's preface, "Len and Sandy Sargent were ordinary people who left an extraordinary legacy. There is a lesson here for all of us."

The Sargent's legacy of activist philanthropy lives on in the Cinnabar Foundation, which has supported the educational mission of MNHC and the work of many other organizations. The Foundation was created by the Sargents in 1983 to foster environmental protection and wildlife conservation in Montana and the Greater Yellowstone ecosystem.

## New Curriculum Available from MNHC

The new Montana Master Naturalist Program Curriculum for Instructors now is available from MNHC. The curriculum was developed with the generous support of the Cadeau Foundation, Missoula County Extension Office and the Mountaineers Foundation. Please contact MNHC Director Arnie Olsen at 327-0405 to discuss guidelines for use.



Join us for MNHC's annual dinner and auction from 6 to 9 p.m. on Friday, September 25, in the Governor's Ballroom at the historic Florence Hotel. Call 327-0405 to make your reservations today!



**Up A Creek, With Paddles!** The Plum Creek Foundation recently gave MNHC \$2919 for a trailer to haul our kayaks, and also to purchase some new kid-sized furniture for our classroom. Plum Creek representative Ken Judge presents Arnie Olsen with a check.



# spotlight:

## Staff

**S**taff Naturalist **Alyssa McLean** joined MNHC this summer, fresh from a fellowship at the Welder Wildlife Foundation near Corpus Christi, Texas, and the completion of her master's degree in environmental education from the University of New Hampshire. She and her husband, Chris, were married May 16, immediately after which they packed up a U-Haul and moved to Missoula with their parrot, turtle and fish.

This summer McLean helped out with summer camps as a prelude to diving into classroom work with the Visiting Naturalist in the Schools program this fall. Although she has been involved in a number of research projects, McLean says that helping kids and adults understand what research is all about is also important – and fun. “I like helping people think about nature in new ways, and why we should care about it,” she says.

She and her husband, who has a degree in wildlife management, are happy to be in Missoula. They both like the west and have spent some time here visiting friends at the University of Montana. The McLeans



Photo courtesy of Alyssa McLean

enjoy mountain biking, hiking and “poking around in the woods.” Alyssa hopes to compete in her first full marathon in Billings in September, so watch for her logging miles around town when she’s not at the nature center!

## Volunteers

**T**hey may be the best part of MNHC, says Volunteer Coordinator Allison De Jong – the people who give their time and energy to help out with every facet of what we do. “We have volunteers who give days of their time in the spring and fall to help out with our 4th grade field trips. We have a dedicated handyman who is always thinking of creative new ways to add to our exhibits. We have college students who are eager to teach children more about the natural world,” she says. Here are a few faces that make a difference at MNHC:

A longtime teacher, now retired, **Christine Wren** has as been a volunteer Visiting Naturalist in the Schools instructor for a year and a half, working with classrooms at Lolo Elementary School as a lead instructor. She also helps out with the Watershed Science Festival and VNS field trips, giving very generously of her time.

“Christine has been an integral part of the VNS program in many ways,” says Brian Williams, MNHC’s lead naturalist. “She helped me improve and design the overall curriculum, she teaches two classes by herself all year, she helps out on field trips and finds ways to improve the program, like creating kid-friendly bird field guides that were huge hits on the field trips.”



Photo courtesy of Christine Wren

**Lane Reul** was MNHC’s first official Volunteer of the Month and is the “handyman of handymen!” according to Jessie Sherburne, our community programs coordinator. He has been an integral part of the set-up and



←

construction of all our exhibits over the past few years, coming up with new and creative ways to improve our displays. He comes to the center often to construct tables, boxes and other items, as well as doing endless tasks like painting or just giving a hand where needed. “Lane is a dedicated volunteer and we are very lucky to have him,” Sherburne says.

**Gary Graham**, a “mostly retired” local attorney, has been “a die hard volunteer for us in our most-neediest times – during VNS field trip season,” according to MNHC Naturalist Brian Williams. Gary started in spring 2008, and helped out immensely this past spring as well, leading stations on 10 of our field trips (which translates to about 65 hours of time). “He brings a big smile and boundless enthusiasm every day,” says Williams, “and does the little things to make sure each kid has a good time learning about nature, from bringing in pictures and props from home, to making sure each microscope is clean and ready to go every day.”

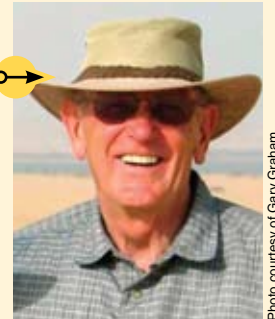



Photo courtesy of Gary Graham

*Thank you volunteers!*



**Learn. Explore. Play. Helena Knows Kids!**



Fun, hands-on exhibits, a variety of classes and programs, plus...a fantastic gift shop!

**ExplorationWorks!**  
An Interactive Museum of Science & Culture at the Great Northern Town Center

995 Carousel Way | 406.457.1800  
Great Northern Town Center  
www.explorationworks.org



**Outdoor Kidfitter Co.**  
keeping children active™  
a children's outdoor store



As parents, we know every outing is an Adventure!

Hours: M-F 10-6 Sat & Sun 10-4

411 N. Last Chance Gulch  
Downtown Helena | 406.443.3202  
www.outdoorkidfitters.com

on the walking mall!

Hours: M-F 10-5:30 Saturday 10-4



**WONDERFUL TOYS**

25 S. Last Chance Gulch  
Downtown Helena | 406.442.1594



**children's museum**  
MISSOULA

a part of Families First

**LEARN! PLAY! IMAGINE!**

406.541.PLAY  
www.learnplayimagine.org  
225 west front street downtown missoula



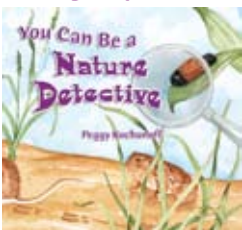
Bring this ad in for **10% OFF** your next purchase.

...where learning and fun go hand in hand.

Southgate Mall, Missoula  
543-0101  
www.learningtreemontana.com

TOYS • CHILDREN'S BOOKS • TEACHER'S RESOURCES

Step outside and solve amazing mysteries.



64 pages, paper \$14.00  
Include \$4.00 for shipping/handling.

**MP Mountain Press**  
PUBLISHING COMPANY  
800-234-5308

Tune in to *Field Notes*

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

Field Notes can be heard Thursdays at 9:25 p.m., Sundays at 9:00 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**



**GOOD FOOD STORE**

1600 S. 3rd St. West | Missoula | 406.541.FOOD



100% ORGANIC COFFEES  
hunterbay.com • 800.805.2263



**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, leading stations on wildlife, adaptation, or being a naturalist - teaching them about our big, beautiful world.

See calendar for orientation dates.

To volunteer or for more information, please contact Allison De Jong, Volunteer Coordinator, at 327,0405 or [adejong@montananaturalist.org](mailto:adejong@montananaturalist.org).

Field trips run every school day in October.  
**Come join the fun!**



Zoology class - 486.IX.041.105; Elrod's Butterflies - 486.IX.043.031; Mary Elrod Ferguson - 486.IX.045.089; photographer: Morton J. Elrod. Archives & Special Collections, Mansfield Library, The University of Montana.



## THE NATURALIST TRADITION

Students in Morton Elrod's zoology class at the University of Montana take their studies outside in Greenough Park, Missoula, 1926.

*Photographer: Morton J. Elrod.*



**Elrod's Butterflies,  
University Hall, 1904.**

**Mary Elrod Ferguson,  
in science lab, undated.**

*Photographer: Morton J. Elrod.*



**Montana Natural History Center**  
Your Base Camp for Discovery

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.*

- Basic Membership: \$50     Student Membership: \$25  
 Business Membership: \$250     Explorers Club Membership: \$1,000

*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

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.

*Make us your base camp for discovery with a visit to our website –  
[www.MontanaNaturalist.org](http://www.MontanaNaturalist.org). Become a member on-line, 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, Missoula, MT 59801  
or Fax: 406.327.0421**

**Basic 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

**Business Membership Benefits**

- Advertising discounts in *Montana Naturalist*
- A supporters link on our website
- Free meeting space (subject to availability)
- Invitations to special programs
- Recognition in our visitor center and in *Montana Naturalist*



**I**f 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 voluntary subscriber?  
Your donation will go directly to support the  
costs of producing this magazine.

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

*Thank you!*