



## Upper Missouri River Volunteer Earns National Award

Longtime volunteer campground host Illa Willmore accepted the prestigious “Making a Difference” Lifetime Achievement award at the Montana State Office on May 23.

Illa has tended to Kipp Recreation Area and its visitors for more than two decades. She donates an average of 1,200 hours annually -- more than 25,000 so far-- toward maintaining the site and offering help wherever it’s needed.

“Illa is the backbone of James Kipp Recreation Area,” said Mark Schaefer, Outdoor Recreation Planner in Fort Benton. “She’s there almost every day from March through November to be the campground host and BLM ambassador to visitors from all walks of life.”

“Making a Difference” awards are presented by the BLM annually to recognize its most exceptional volunteers, whose efforts include trail repair, visitor services, habitat restoration, and many other duties.

This year, the award was presented to recipients at a recognition event via live video conference hosted at the BLM’s headquarters in Washington, D.C. The event included remarks from Sally Jewell, Secretary of the Interior; Neil Kornze, Principal Deputy Director of the BLM; and Carl Rountree, Assistant Director for the BLM’s National Landscape Conservation System and Community Partnerships.



Acting State Director Sandy Brooks presents the national “Making a Difference” volunteer award for lifetime achievement to Illa Willmore. Photo by Brad Purdy

Principal Deputy Director Kornze expressed his appreciation for the volunteers’ hard work in helping the BLM fulfill its multiple-use mission.

“Volunteer efforts – the seeing, the doing, and the leading – have helped us to fulfill that responsibility on the public lands,” Kornze said. “Your labors have made a lasting imprint, and you have left a legacy for others to follow.”

Other award winners were: Ray and Linda Panter, Central Yukon Field Office, Alaska; Annette Froehlich (Lifetime Achievement), Las Cruces District Office, New Mexico; Joshua Barlow, Price Field Office, Utah; Upper Ridge Wilderness Association (Lifetime Achievement), Redding Field Office, California; and Pat Williams (Milestone Award), Red Rock Canyon National Conservation Area, Nevada. Warren J. Trogden, Sr., Challis Field

Office, Idaho, is the winning BLM employee.

A national panel of BLM specialists and partner representatives selected the award winners from a record number of nominees submitted by BLM state offices. The winners were selected for their exceptional contributions to the conservation and management of public lands.

In fiscal year 2012, more than 30,000 volunteers contributed more than 1.1 million hours of their time in assisting the BLM. That is the equivalent of 637 “work years.” The value of volunteer contributions

as compared to project-related dollars expended by the BLM was 26 to 1.

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# First dinosaurs discovered in North America came from BLM land in Montana

Central Montana was still a remote and rugged place in 1855 when Ferdinand Hayden first visited the area to discover its natural wonders. For two years he'd been exploring the Missouri River collecting rocks, plants, animals, and fossils for science, and after a long winter and dry summer, he arrived in what is today the Upper Missouri River Breaks National Monument (UMRBNM).

In August 1855 Hayden traveled to the mouth of the Judith River to take part in a treaty negotiation with the Blackfeet Nation. The treaty was finalized in October, and for several days before departing the area Hayden explored the nearby outcrops.

There he collected many fossils he recognized as being significant, writing in a letter, "I made a small, but I think it will prove valuable, collection of vertebrate remains." These fossils he shipped to the country's sole fossil expert at the time, Joseph Leidy, at the Academy of Natural Sciences in Philadelphia.

The concept of dinosaurs is well-known to us today, but in the 1850s science was still struggling to understand much about the geologic past. In fact, the term 'dinosaur' was coined in 1842, just 13 years before Hayden made his collections, and no dinosaur



*Kristi Curry Rogers (center) with Zane Fulbright (left) and Chris Rye (right) from the Lewistown Field Office surface collecting at Hayden Site in the UMRBNM. Photo by Ray Rogers*

bones had been recognized from North America at that time.

Leidy recognized that some of the teeth from Hayden's collection belonged to the group of ancient animals we call dinosaurs, and he reported them to the world in a scientific paper the next year. Therefore, the first dinosaur skeletal fossils from North America came from what today is BLM land in Montana.

However, the exact location of Hayden's first dinosaur discoveries was lost on the Montana wind. Hayden did not keep a journal, and few letters exist to give clues to his collecting activities. Where, exactly, did these first dinosaur bones come from?

This question is now thought to be answered, thanks to the work of BLM permit-holders Ray Rogers and Kristi Curry Rogers. For the past ten years they have been collecting fossils in the UMRBNM, and they think they

have walked in Hayden's fossil collecting footprints.

In the summer of 2012 the Rogers team explored in the vicinity of Council Island near the mouth of the Judith River, where they knew Hayden was after the treaty council. They located several sites in the area that produced fossils, but only one had the diversity of fossils, and included many of the same species, that Hayden had collected 157 years before.

They feel confident that they have identified a good candidate for the locality of the first North American dinosaurs.

Just a few years after Hayden's discovery, dinosaur fossils were found and recognized across the United States. Soon, it was realized that the American West held an immense treasure in scientific knowledge waiting to be uncovered. And it all began on public land.

*Greg Liggett  
Geologist (Paleontologist)  
Montana State Office*



*A meat-eating dinosaur tooth, similar to those first collected by F. V. Hayden in 1855, and described in the scientific literature by Joseph Leidy in 1856. BLM photo*

# Daisies plant trees and shrubs

In May, a Daisy Girl Scout Troop and the girls' families helped Wildlife Biologist Craig Miller plant 200 willows and 50 buffalo berry shrubs around a reservoir in the Havre Field Office area of north central Montana.

The reservoir's vegetation had been stripped by cattle when drought gave the cattle access around the water-gap fence. Two years ago, Havre changed the fence to exclude livestock from the reservoir and built a new water source for the cattle. This year the reservoir was ready for new plants.

These kindergarten and first grade Daisies (and two younger brothers) had a blast putting the roots down as deep as their hands could go, getting muddy with their moms' blessing, and having a "who can push the planter fastest" race at the end. They planted a "bajillion trees" all the way around the reservoir. The girls and boys had so much fun that they want to do a similar project again next year.

The girls also had fun spotting a bird nest and many snails. They learned a bit about what digs holes in dams (badgers), how to tell when the dam was built (BLM survey marker dated 1960), and some of the different things BLM biologists do (like counting Greater sage-grouse on leks before the girls even wake up for school).

This project completed a Girl Scout Journey which took several meetings, starting when there was still snow on the ground. These Daisies learned about water safety, fish handling and habitat, and fish identification courtesy of Montana Fish, Wildlife, and Parks. They also studied the parts of shrubs and flowering plants, and what kind of plants make good riparian habitat for fish, waterfowl, other birds, and animals. Their hope is to come back and find the BLM reservoir as fun to visit as the small lake where they went fishing and watched Canada geese and songbirds. That's our hope, too!

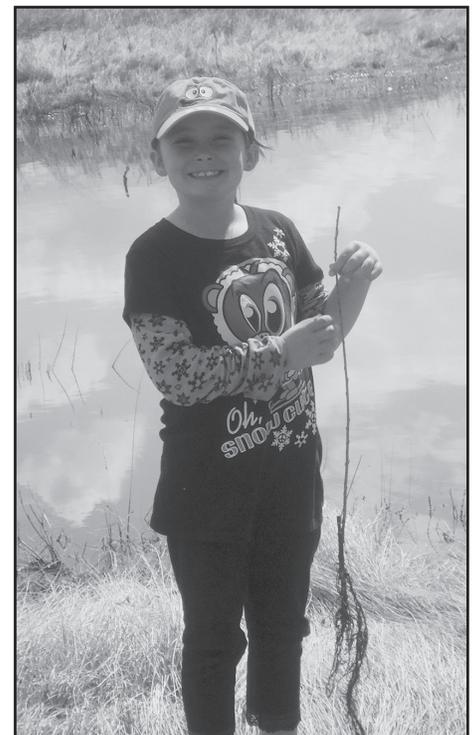
*Kirsten Boyle  
Natural Resources Specialist  
Havre Field Office*



*Daisy Girl Scout Troop 3272 and younger brothers with Troop Leader Kirsten Boyle (left) and BLM Biologist Craig Miller (right) at Blaine Reservoir #13.*



*Two Daisy Girl Scouts (first graders) dig holes and place the willow seedlings carefully.*



*A Daisy Girl Scout shows off her sandbar willow seedling.*

*Photos courtesy of Girl Scout Troop 3272.*

# The Upper Missouri ROCKS!

*On the hunt for something new and different to do this summer? EarthCache sites along the Upper Missouri River might be just what you're looking for!*

An EarthCache adventure is a treasure hunt where participants look for unique geologic features in a particular place. It's similar to geocaching in that both use Global Positioning Systems, but while geocachers look for hidden containers, EarthCachers look for naturally occurring geologic features; their treasures are the lessons they learn about our planet.

Visiting an EarthCache site is a great way to learn more about our wonderful world. It can take you to places that you would not normally visit and teach you about those places' special or unique geologic features. EarthCaching also teaches important skills such as navigation and map reading. What better way to learn than to have fun exploring this amazing planet we call Earth?

## ***What do I need to visit an EarthCache site?***

1. A Global Positional System Receiver (GPSr or GPS for short). This is a device that reads satellite signals and then, through the use of mathematics, can calculate your position of Earth as a latitude (how far north or south of the equator), longitude (how far east or west of Greenwich, UK) and altitude (how far above sea level).

GPS units come in many shapes and sizes. The most commonly used by geocachers are small handheld units that can be purchased from sports, camping, and some department stores. These cost around \$95 for the basic model. The more you pay the more features the GPS has. However, the most basic unit is suitable to get started.

Read the instructions carefully and learn how to input latitude and longitude numbers so you can find a location.

2. Create an account at geocaching.com. It's free and takes only a few minutes. You will need to think of a unique caching name and a password.

3. A sense of adventure and a way to get there. Most people visit EarthCache sites by driving close to the site then walking to find the location. The Upper Missouri River EarthCache sites are only accessible by river, although some can be reached by car near the boat launch. There are plenty of online mapping tools that can help you "see" where you need to go to discover the Upper Missouri EarthCache sites.

## ***How do I find my Upper Missouri River EarthCache Sites?***

Once you have your GPS unit and have practiced entering latitude and longitude coordinates, go back to geocaching.com and check out the listings. Here all the EarthCache sites are listed in a table. You can sort them by country, state, name, etc. When you find one in the area you want to visit, click on its name and you will go to the page for that EarthCache site. You may have to log in to see the latitude and longitude details (use your log in name and password that you established before).

Print that page. It will have all the important information that you can use to find the EarthCache site. Some EarthCache sites have additional 'clues' which require decryption! Read all the information on this page so you know exactly what you need to do to fully experience the EarthCache site.

Enter the latitude and longitude for the EarthCache site into your GPS. Then select or set your GPS to find (GOTO) that location. Your GPS will be able to



*Tiny fossilized snails. These are found on land today, but they were in a big ocean when alive. BLM photo*



*A sandstone sandwich? BLM photo*

tell you how far away and in what direction you have to travel to find the EarthCache site.

Your GPS should be able to place you within 20 feet of the EarthCache site. In almost all cases, this is close enough for you to learn about some amazing aspect of the Earth at that place.

## ***Now that I have found my Upper Missouri River EarthCache sites, what do I do?***

When you get back to your computer, go back to the listing for that EarthCache site and click on the button to "log your visit." Here you can write comments, rate your experience, and even upload a photo.

*Connie Jacobs  
Director*

*Missouri Breaks Interpretive Center*

# Artifact Road Show draws a crowd

It didn't take long for Curator David K. Wade to realize this year's Artifact Road Show at the Billings Curation Center was going to be different.

"People were waiting to get in 30 minutes before we even opened up the event. We had more people in the lobby than attended the event last year," said Wade. "It was great to see all the boxes filled with artifacts for our specialists to look at."

A team of BLM specialists gathered in the Curation Center waited for David's return, their specialties ranging from paleontology and archaeology to tribal history and culture.

"I was surprised how great the attendance was this year," said BLM Montana/Dakotas State Office Tribal Coordinator Mark Sant. "Maybe the only thing more impressive than the amount of people who showed up was the artifacts they brought."

Sant was especially impressed with some decorative items that looked to be 100-150 years old.

"We really need to take some steps to preserve these," he commented to the owner.

Several large, well-constructed bi-faces in great condition, probably used as knives at one time, also caught Sant's eye.



*BLM Paleontologist Greg Liggett examines an artifact for a member of the public during the annual Artifact Road Show held April 19 in the Billings Curation Center at the Montana/Dakotas State Office.*

One of the busiest men in the room was BLM Paleontologist Greg Liggett. Greg examined a fossilized horse jaw, the skull of what probably is an extinct species of bison, and several examples of baculites, an extinct group related to squids and octopuses. Greg was also a victim of the annual "stump the expert," which happens often when examining this number of artifacts in a short amount of time.

"At first I thought I was just looking at a rock," said Liggett. "Then I noticed some spots that had a spongy bone texture. I took it over to the microscope and it turned out to be some sort of fossil. I sure hope the owner brings it back. I'd like some more time studying it."

"I completely understand what Greg was going through," said Carolyn Sherve-Bybee, BLM Billings Field Office Archaeologist. "I was part of the 'stump the expert' crew last year, but we got it figured out this year."

Last year, Carolyn and Mark Sant were stumped by a large stone that was certainly modified by humans.

"Well, we knew it was a tool of some sort. It was too large for a hammer or club, we just couldn't figure it out," Carolyn explained. "This year, Chris Finley, an archaeologist from the National Park Service Big Horn Canyon National Recreation Area, came in and after Mark described the artifact to him, Chris said it was a horse hobble. Chris had found several similar artifacts on NPS lands and it took several



*Billings Field Office Archaeologist Carolyn Sherve-Bybee inspects a bi-face with an Artifact Road Show attendee.*

years of research and talking to the right people to discover what the artifact was."

This particular type of horse hobble was a large stone used in the late 1700s or early 1800s by tribes in the area. A 4- to 5-foot



*One item brought to the Road Show was a fossilized ammonite, which was a shelled predatory animal that lived during the time of the dinosaurs.*

strip of leather or rope was tied around the stone and the other end was tied around a horse's leg to keep it from running away.

"That's part of what makes this event so great," said David K. Wade. "There's nothing we archaeologists and paleontologists love more than a good mystery to work on, except for solving that mystery. I hope that the people who were asked to send pictures or bring a sample back actually do it. We're all fascinated by these things and want to know what they are just as much as the owners do."

*Photos and story by  
Brad Purdy, Public Affairs Specialist  
Montana State Office*

# A Tour of the Rosebud Mine

It wasn't your typical early March day in Montana. The wind was brisk, but skies were sunny and blue, making it feel warmer than it actually was and teasing that spring was just around the corner. Bob Giovanini, a mining engineer for the Montana/Dakotas Solids Branch, was headed out for his quarterly inspections of the surface coal mining operations at Western Energy Company's Rosebud Mine, and he let me tag along.

The BLM oversees mining operations in Montana, North Dakota, and South Dakota. It works closely with the Office of Surface Mining and the Montana Department of Environmental Quality to ensure that mining activities meet Federal requirements and specifications as laid out and approved in the company's most recent coal mining plan and Bureau Decision Record.

The BLM also checks what's actually happening on-the-ground to see that royalties collected are accurate--an activity that's important to the BLM's sister agency, the Office of Natural Resources and Revenue, whose mission is management of all revenues associated with both federal offshore and onshore mineral leases.

In accordance with the Mineral Leasing Act, companies pay 12.5 percent of the coal selling price in royalties for Federal coal in Montana. That doesn't sound like much, but when you're digging million tons of coal per year from the earth, it adds up.

Rosebud coal is no longer hauled out of the area but used solely to feed the nearby Colstrip generating facility. Located just outside of Colstrip, Mont.,

a small community about two hours east of Billings, the Colstrip facility is the second-largest west of the Mississippi and sits atop the Fort Union coal formation. The plant generates about 2,200 megawatts, enough power to supply 1.75 million homes across the northwest grid.

Now, back to the Rosebud mining operations.

After a quick visitor safety training and orientation, Bob and I traveled west about six miles to the mine's administrative offices. Along the way, we crossed over the four-mile-long covered conveyor system that delivers the low-sulfur, sub-bituminous coal to the generating facility. "Small" haul trucks, which hold about as much as two railroad cars, busily hauled coal to the Colstrip plant like a trail of giant scurrying ants.

We met up with Gary Parry, a geologist and contract analyst for Western Energy, our tour guide for the day. He took us up and down, over and back, and around the 25,000-acre area to show Bob everything he needed to see for his inspection.

Along the way, Bob patiently made a few extra stops to show me, the newbie, some of the company's efforts to be a good neighbor as it digs deep for the brittle, black diamond in the rough.

One of those stops was at the restored post office, the first established in this part of Rosebud County, located beside the monolithic stone formation known to locals as Castle Rock. Parry recently led the painstaking restoration of the historic 1910 log cabin structure for Western Energy in collaboration with the State Historic Preservation Office and the BLM.



*Melodie Lloyd with the dragline bucket during a break in the action. BLM photo*

The Rosebud mining operations remind me of how resourceful we humans can be if we put our minds to it. In this surface mining operation, coal buried deep beneath the earth's surface is extracted after moving tons of earth, called the overburden, one narrow strip at a time – much like you did to get at those marshmallows in the bottom of your mom's layer salad.

Huge machines called draglines, with booms as long as a football field and heavy steel buckets bigger than an RV, move layer-by-layer of soil blasted loose with explosives. After all the coal is extracted, draglines return the soil layers to the disturbed cut. Here at the Rosebud Complex, about 9,790 acres have been re-contoured and reseeded with native plants after the soil stabilized.

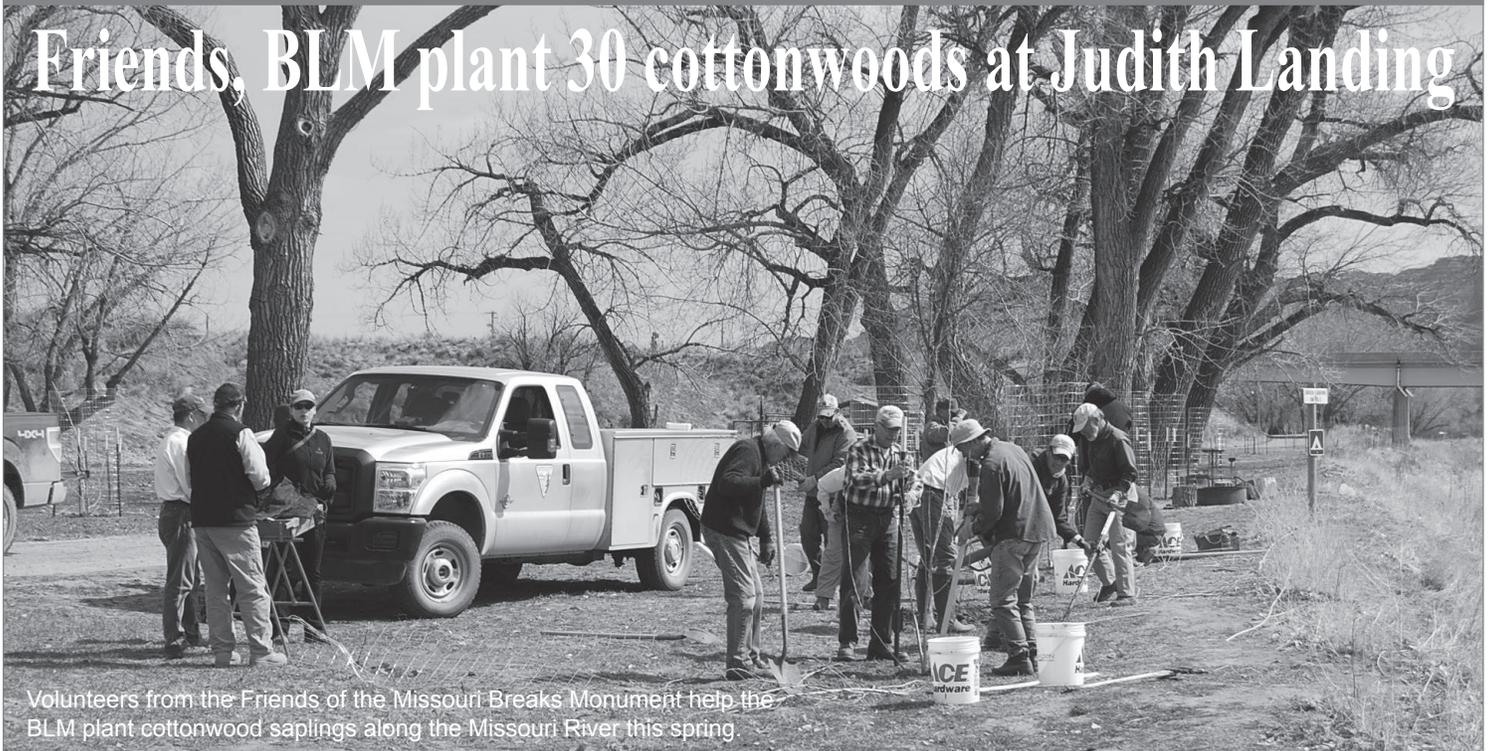
To the untrained eye, it's difficult to tell where the mining stopped and Mother Nature was left alone, with deer and antelope peacefully grazing the reclaimed hillsides. Parry shared that some sage-grouse have even returned to their historic leks after reclamation occurred. Could it be this is where Carole King was inspired to write her song from the 70s, "I feel the earth move"?

*Melodie Lloyd  
Supv. Public Affairs Specialist  
Montana State Office*



*Restored Castle Rock Post Office. BLM photo*

# Friends, BLM plant 30 cottonwoods at Judith Landing



Volunteers from the Friends of the Missouri Breaks Monument help the BLM plant cottonwood saplings along the Missouri River this spring.

LEWISTOWN – There’s an old saying: The best time to plant a tree was 20 years ago. The second-best time to plant a tree is now.

With that in mind, more than a dozen Friends of the Missouri Breaks Monument volunteers planted 30 cottonwood saplings along the Missouri River in partnership with the BLM in early April.

The honking ruckus of geese at Judith Landing northwest of Winifred gave way to a flurry of volunteers wielding shovels, lugging buckets of river water, and driving t-posts into the ground. In just a few hours, the group had planted 30 cottonwood saplings in the bare spots along the riverbank and fenced off the little trees from browsing deer.

The planning of this event came together nearly as quickly as the event itself. BLM’s original idea was to go big on the project – hiring heavy equipment to plant dozens of saplings and engaging dozens of volunteers for the fencing at several sites in the Upper Missouri River Breaks National Monument.

But like other programs affected by the sequestration, this one required some flexibility and creativity. The BLM and Friends of the Breaks still accomplished

the task—but on a much smaller scale and with a much lower budget.

“Project funding had been decreased,” said BLM hydrologist Chad Krause. “We could not successfully complete the project without the help of the volunteers.”

Friends of the Missouri Breaks volunteers turned out from Lewistown, Great Falls, Havre, Chester and Helena to help BLM plant the trees.

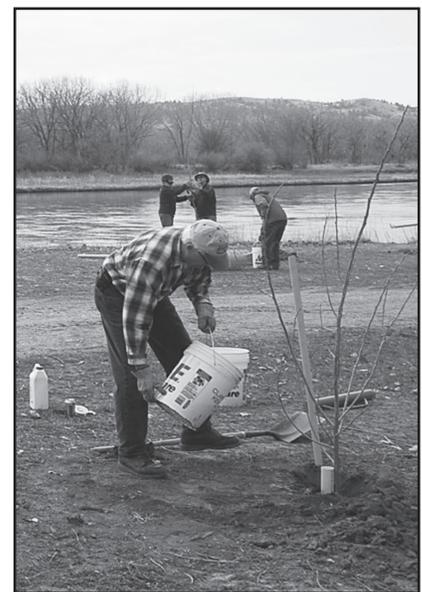
“We want to do everything we can to help BLM get conservation work done on the Monument,” said Friends Executive Director Beth Kampschorr. “This was a small project, but we’d like to turn it into an annual event – if we put in 30 to 50 trees every year, we’ll start to make a difference.”

Cottonwood trees are on the decline in the Missouri River corridor. The Friends and BLM will be working this year with other groups and agencies to try to establish more of these trees, which provide habitat critical to both birds and animals, and welcome summer shade to people.

The Friends of the Missouri Breaks is a 501(c)(3) organization that protects and preserves the Upper Missouri River Breaks National Monument by

educating the public, advocating for responsible access and environmentally responsible uses, and supporting groups and agencies that protect and restore the Monument. We’re on the web at [www.missouribreaks.org](http://www.missouribreaks.org), and at [facebook.com/friendsofthemissouribreaks](https://facebook.com/friendsofthemissouribreaks).

*Photos and text  
by the Friends of the  
Missouri Breaks Monument*



*A volunteer waters a newly planted tree on the banks of the Missouri River.*

# Attention BLM Retirees

## The BLM Retirees Association

Stay in touch! The BLM Retirees Association has a social gathering at 11:30 a.m. on the first Tuesday of even-numbered months at the Windmill (3429 TransTech Way) in Billings. If you would like to receive email or postcard notifications of these meetings, please contact Alice Slagowski at 406-259-9319 or [asluggo@bresnan.net](mailto:asluggo@bresnan.net).

## The Public Lands Foundation

The Public Lands Foundation (PLF) offers new retirees a free one-year membership. If you're interested, contact one of the Montana PLF representatives: David Mari at 406-538-7121 or [dmari@earthlink.net](mailto:dmari@earthlink.net); or Kemp Conn at 406-360-9252 or [montanakonn@wildblue.net](mailto:montanakonn@wildblue.net) (please note "PLF" on the subject line).

What is the PLF? It works to keep America's public lands in public hands, managed professionally and sustainably for responsible common use and enjoyment.

The goals of the PLF are to:

- Keep lands managed by the BLM in public ownership and open to use by the public.
- Support multiple use management under the Federal Land Policy and Management Act.
- Encourage professionalism by BLM employees.
- Increase the public's understanding of and support for the proper management of the public lands.

Although PLF membership consists largely of retired BLMers, current employees and anyone interested in the goals of the organization are welcome to join.

## Retired since January 2013:

Kathy A. Ray – 21 years  
Secretary (Office Automation)  
MSO, Fluid Minerals Branch, Fluid  
Minerals Adjudication Section

William C. Grayson – 32 years  
Supvy. Land Surveyor (GCDB)  
MSO, Division of Resources,  
Cadastral Survey Branch

Stephen L. Toth – 32 years  
Supvy. Land Surveyor  
MSO, Division of Resources,  
Cadastral Survey Branch

John A. Simons – 36 years  
Vegetation & Restoration Specialist  
MSO, Division of Resources,  
Planning & Biological Resource  
Branch

Nancy A. Griffith – 29 years  
Production Accountability Tech.  
Eastern Montana/Dakotas District  
Office, North Dakota Field Office,  
Division of Minerals

Bureau of Land Management  
Montana State Office  
5001 Southgate Drive  
Billings, Montana 59101  
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