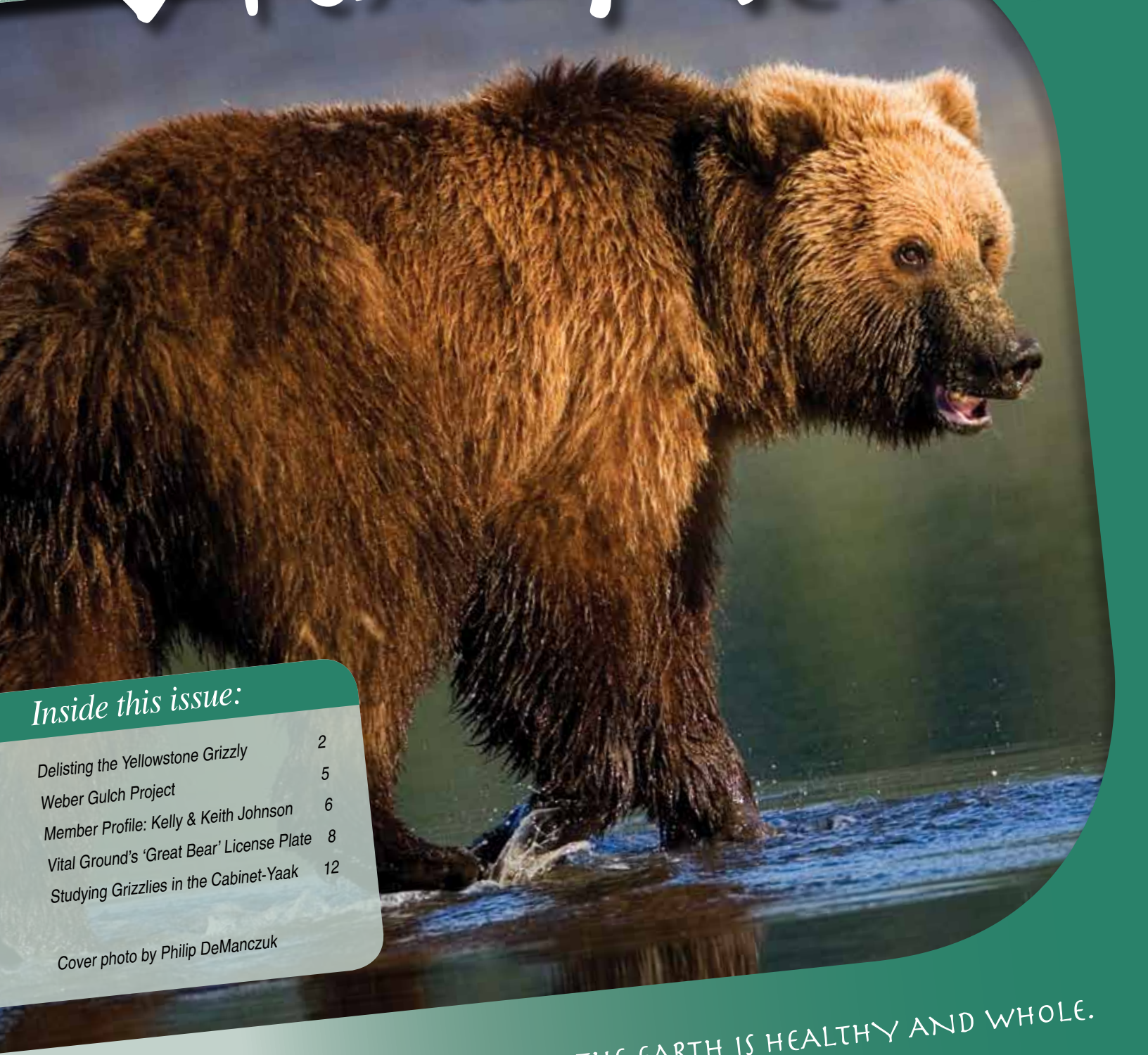
Vital News



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Cover photo by Philip DeManczuk

Where the grizzly can walk, the earth is healthy and whole.

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Executive Director's Corner

As winter broke in Montana, I began casting about for kernels to seed this installment of the Executive Director's Corner and quickly identified a bounty of fertile topics. Foremost, Vital Ground extends a huge THANK YOU for meeting the ambitious $1.5 million 25th Anniversary fundraising goal – your support resulted in the year-end closing of the organization's largest single conservation investment to date! (See page 4.) An amazing response to Doug and Lynne Seus' 2015 *Bart the Bear Memorial Challenge* must also be trumpeted along with a hearty welcome to the new members and supporters who helped meet that $50,000 charge in just two-and-a-half short months!

Predictably, I also nearly offered a short review of the many lessons from my first year as executive director, but then the U.S. Fish and Wildlife Service proposed removing grizzly bears in the Greater Yellowstone Ecosystem (GYE) from the federal lists of Threatened and Endangered wildlife. The announcement instantly garnered headlines nationwide and thrust the status of grizzly bears in the Lower 48 states back to the foreground of the conservation landscape. The announcement unquestionably confirms that tremendous strides have been made to recover the GYE subpopulation since it was first listed in 1975 – from fewer than 150 animals to more than 700 – that success deserves celebration!

Paired with the progress that bears and bear managers have made in bringing the Northern Continental Divide Ecosystem (NCDE) population to an estimated 1,000 animals, the GYE milestone prompts us to pause and contemplate the concept of "recovery"... not the technical legal definition for a single subpopulation, but the broader collaborative objective for all grizzlies in the conterminous states. What does recovery mean to the many stakeholders steadfastly focusing on the issue, and what does it imply for folks living, working and recreating in grizzly country throughout Idaho, Montana, Washington and Wyoming?

Through that examination, Vital Ground will certainly hold true to its vision that grizzlies deserve a much larger footprint on the landscape than simply within the federally-defined recovery zones and the primary conservation areas outlined by state managers. Around and between those areas, there is so much wild country that is vitally important to bears' short-term seasonal habitat needs as well as for wider-ranging movements that promote the species' genetic diversity and increase its ability to adapt to long-term habitat changes.

Even while the GYE and NCDE show recovery success, a daunting amount of work remains in order to move toward a broad-spectrum definition of grizzly recovery in the Lower 48. DNA analysis recently confirmed that the Cabinet-Yaak subpopulation remains imperiled (see "Studying Grizzlies in the Cabinet-Yaak," page 12). The Selkirk Mountains ecosystem on the U.S. side of the Canadian border is not much farther along in its progress. Most notably, the North Cascades and Bitterroot-Selway ecosystems host designated recovery zones anchored by vast tracts of exemplary bear habitat – all of which is currently devoid of grizzlies by all objective standards. In short, there is simply no time to languish in the face of continued fragmentation of

Grizzly Recovery Zones

the irreplaceable habitat within and between these few intact ecosystems.

Durable, long-term grizzly bear recovery in the conterminous states will require that the animals are able to move regionally and to interact with other subpopulations. This would permit them to remain resilient to myriad threats stemming from climate change and continued human encroachment into their habitat. The cruxes to attaining this will be whether we can protect the tiny fractions of the great bears' original habitat that remain intact, and how well people share those portions of habitat occupied by both species.

In laying its foundation for the eventual state control of the species, Montana Fish, Wildlife and Parks has declared:

> *Management of grizzly bears in Montana will be conservative, and will be similar to how they have been managed for the past decade, with an emphasis on minimizing conflicts between bears and people, while allowing bears to occur where they are tolerated.*

What better opportunity for a group that has been working for more than a quarter century *to protect and restore* North America's grizzly bear populations for future generations by conserving wildlife habitat, and by supporting programs that reduce conflicts between bears and humans?

Increasing social tolerance for grizzlies will be critical to permitting brown bears to roam a regional landscape extending beyond and between traditional recovery boundaries. While expanding Vital Ground's private lands habitat conservation efforts to geographies not previously contemplated, we will concurrently augment outreach, education and sanitation efforts aimed at minimizing conflicts between an expanding bear population and an increasing human presence. During the upcoming GYE delisting debate, Vital Ground will stay its course in protecting the *Right Places* on behalf of all wildlife. To help ensure true long-term "recovery" of grizzlies in the Lower 48 states, we will also strive to provide this iconic species with the *room to roam* that landscape. Both grizzlies and people will need your help in finding that balance.

Vital Ground caps 25 years with largest ever conservation investment

Photo by Kevin Rhoades

The passing of Vital Ground's quarter-century mark was punctuated by the closing of a decade-plus effort to protect and continue public access to the only parcel of private land abutting Alvord Lake, a destination prized for its recreational values near the community of Troy in Lincoln County, Mont. The $1.15 million project was anchored by a $400,000 U.S. Forest Service Community Forest and Open Spaces Program grant and complemented by a substantial donation from the Friends of Alvord Lake in the form of a bargain sale to The Vital Ground Foundation. The Community Forest Program originates from the Land and Water Conservation Fund, which was temporarily reauthorized for a three-year period by Congress at the end of 2015.

"This project is a great example of how on-the-ground collaboration increases public access to Montana's treasured places," said Senator Jon Tester, who helped secure funding for the project. "The Land and Water Conservation Fund is one of the best conservation tools around, and I'm pleased it's helping outdoorsmen and women enjoy the beauty of Alvord Lake."

The federal Community Forest and Open Space Program is administered in Montana through the Department of Natural Resources and Conservation and requires involvement by either a local or tribal governmental entity or a qualified land trust in order to secure grant funding. A Community Forest ensures the public has access and that planning for the land's future is done locally. As the qualified nonprofit acquiring the property, The Vital Ground Foundation will manage the acreage in partnership with a local stakeholder's group that collaborated to produce a detailed Community Forest Management Plan to guide stewardship, public access, and protection of the property's conservation values.

The 142-acre property provides crucial habitat for grizzly bears, wolves, black bears, mountain lions, big game animals, Merriam's turkey, and bobcat. The area lies within known fisher habitat and potentially within wolverine habitat as well. Although Community Forest Program designation prohibits future subdivision and development of the parcel, active forest management will continue to be a sustaining element of the prescription for the holding. The Libby Chapter of the Society of American Foresters contributed the preparation of the management plan and will continue to play a role in those activities.

You're invited to help celebrate the Alvord Lake Community Forest!

When: Friday, July 8, 2016, 10 a.m. to 2 p.m.
Where: Alvord Lake, Troy, Montana
What: Learn about the recently protected Alvord Lake Community Forest. The celebration begins at Troy High School around 10 a.m., where you will be shuttled to Alvord Lake's Outdoor Classroom for an education/celebration event that includes lunch for all. Via educational stations and short presentations you can learn about the Community Forest, ongoing forest restoration activities, nesting loon activity and others birds and wildlife in the area. There will be time for birding and exploring the 3-mile trail loop around the lake.
For questions or to RSVP, please contact The Vital Ground Foundation at *info@vitalground.org*.

In addition to many individual Vital Ground donors and project stakeholders, the following partners were critical to the success of the Alvord Lake acquisition:

- U.S. Forest Service Community Forest and Open Spaces Program
- Friends of Alvord Lake, LLC
- Montana Fish & Wildlife Conservation Trust
- Donner Canadian Foundation
- First Interstate Bank
- First Security Bank
- Flathead Audubon Society
- Flathead Wildlife, Inc.
- Montana Dept. of Natural Resources and Conservation
- Montana Fish, Wildlife and Parks
- Montana Loon Society
- Oberweiler Foundation
- Society of American Foresters (Libby Chapter)
- The Cinnabar Foundation
- Troy School District
- The William H. Donner Foundation
- Yellowstone to Yukon Initiative
- Yaak Valley Forest Council

Weber Gulch

New Vital Ground Project in the Works

Perched atop a steep ridge overlooking the Clark Fork Valley near Thompson Falls is a 40-acre undeveloped private parcel surrounded by Montana's Lolo National Forest lands, the Cube-Iron Roadless Area, and the Cabinet-Yaak Grizzly Bear Recovery Zone. If accessed by road for timber or residential uses, a private access road would need to cut across U.S. Forest Service lands before working up to the ridge and private inholding.

If developed, the changes in land use could lead to impacts to the valley's views, increase conflicts with non-motorized Roadless Area management and lead to an increase in human and wildlife conflicts including those with grizzly bears that are gradually increasing their footprints in this area.

Although located at the southern edge of the Cabinet-Yaak Ecosystem, biologists report that sightings of grizzly bears within this part of the ecosystem have increased over the last 5-10 years. Additionally, recent population research (Kendall et al., 2015) indicates grizzly bear occupancy within five miles of the proposed project. Grizzly bears within the area remain about half the desired population goals. Development could also lead to increased fire risk and spread of noxious weeds.

Vital Ground is working with both the landowner and the Lolo National Forest to acquire this parcel and convey it to the forest to be managed as part of the Cube Iron-Mount Silcox Roadless Area and protected for its wildlife habitat and Roadless Area values.

The parcel provides habitat for calving elk as well as seasonal habitat for mule deer, white-tailed deer, moose, black and grizzly bears and potentially threatened Canada lynx. If all goes well this spring with appraisal and other due diligence, Vital Ground could close on the project by mid-July 2016.

The U.S. Forest Service, U.S. Fish and Wildlife Service and Montana Fish, Wildlife & Parks all support Vital Ground's acquisition of this parcel as it would maintain the integrity of the existing Roadless Area, protect the existing non-motorized recreation values, and ensure neither roads nor development would impact the important wildlife habitat values of this area.

– contributed by Gael Bissell
Vital Ground Conservation Manager

Wildlife scientists' research shows increased grizzly bears on the landscape in areas surrounding Weber Gulch, which is in the Cabinet-Yaak Grizzly Bear Recovery Zone. Photos by Gael Bissell.

Passion, Pride, and a Lasting Legacy of Conservation

By Adrienne Ingram

Kelly Johnson

Like The Vital Ground Foundation has its mission, Kelly Johnson has hers: to protect wildlife and wild spaces for future generations. Since 1998, Kelly has actualized her passion for bears and conservation through Vital Ground. She firmly believes, "If you follow your passion, fulfillment will come to you."

Luckily for the organization, Kelly was introduced to Vital Ground and its founders Doug and Lynne Seus. For over 17 years, Kelly has supported the organization with generous donations of her time, talent and treasure.

Growing up in northwest Pennsylvania, Kelly's home was surrounded by hundreds of acres of state game land; running through the pristine wild places of Pennsylvania was second nature to Kelly. Following her adolescence, she studied at Penn State University, all while having an undying devotion to wildlife and the land.

Her life journey, however, had other plans and took her to New Zealand for 12 years where she lived and had two daughters Gabrielle and Brianna.

It was not until Kelly moved back to the United States and Park City, Utah, that she realized she could get involved and help protect one of her favorite creatures: bears. Kelly's first acquaintance with Vital Ground and Doug and Lynne at a Vital Ground event shortly after moving to Utah helped her fill a void in her life as well as actualize her passion for protecting wild places. Kelly immediately volunteered and participated in organizational events, and in 2002 she was elected to the organization's board of trustees. Looking back, she believes Vital Ground was the reason she called Utah home.

Kelly's commitment to bears and Vital Ground continued during her real estate career in Utah. Even while she was selling houses, Kelly brought people to the wildlife-habitat conservation organization. "My passion for bears always came through somehow and people would be interested to learn about Vital Ground," she said. In 2010 Kelly organized and chaired the 20th anniversary gala celebration in Park City. It was a great success in all respects and raised the most funds for Vital Ground of any event to that date.

Now living in California with her husband Keith, Kelly focuses on being a supportive mom and enjoys life with Keith, who also serves as an advisor to Vital Ground and chairs the Governance Committee.

The organization is fortunate to benefit from this combination of passion and experience the Johnson team brings to the table.

Keith spent 20 years on the California board of The Nature Conservancy and served other conservation organizations including Ducks Unlimited, Teller Wildlife Refuge, and the Rocky Mountain Elk Foundation. Together, the Johnson duo make an ardent team that brings valuable insight and support to Vital Ground.

> ***We have our mission in front of us, that's what we focus on, and we get the job done.***
>
> ***—Kelly Johnson***

Being involved all these years, Kelly has experienced the evolution of the group – growing pains as well as triumphs. But the promise of a steady, effective organization that is now Vital Ground did not always exist. Kelly recalls the worry of relocating headquarters from Park City to Missoula, Mont.

Keith Johnson

"Moving from Park City to Missoula was really about faith – to change everything. We weren't there to be hands-on, having confidence to say, 'Here take this and go with it to Missoula.' That's a huge leap of trust and it was a scary time. Gary Wolfe, along with the amazing staff he selected, led us through that scary time and helped us grow dramatically. Now with Ryan Lutey as our executive director, our organization continues on a successful path."

Vital Ground rose to the challenge, emerged edified, and Kelly remains proud. "It's amazing that we're such a fine, accredited land trust ... I'm so proud of this organization, and I'm proud to have been such a part for such a long time."

Kelly and Keith are constantly appreciative of how well the organization has developed over the years. Keith said, "The success is due to fine and tireless contributions by the board of trustees and a dedicated staff. It is a very EFFECTIVE , focused organization."

As much as the Johnsons love and appreciate the organization – Vital Ground appreciates the Johnsons.

Grizzly Council is available to donors who have made $25,000 or more in philanthropic contributions, or donated land or conservation easements valued at $100,000 or more. Eligible philanthropic contributions include gifts or cash, securities, the charitable portion of planned gifts, and irrevocable pledges. To learn more, contact Vital Ground.

Kelly and Keith's boundless passion, experience, and pride are not simply sentiments. The Johnsons have tremendously aided Vital Ground's endeavors by providing philanthropic support through matching grant dollars and through their family foundation, the Johnson Family Foundation, which is a member of Vital Ground's Grizzly Council, a special designation for major donors with opportunities to provide valuable input to the board and staff on fundraising strategies and habitat conservation.

Looking toward the future, Kelly and Keith hope to see Vital Ground acquire the right land in the right places at the right time and put all the pieces of the puzzle together, so that we might better protect wildlife and restore wild spaces for future generations.

Adrienne Ingram works for Vital Ground as a communications intern from New Orleans, where she attends Loyola University.

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Grizzly Blend is a full-bodied, medium-roasted coffee. Vital Ground receives $1.00 for each pound of Grizzly Blend purchased.

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Vital Ground receives $1.00 for each bottle of Prairie Thunder purchased.

TO ORDER, VISIT *WWW.TENSPOON.COM.*

FEATURE BY TODD WILKINSON

Put a Bear on Your Car, Help Keep Grizzlies Alive

In the vast Greater Yellowstone region, there's growing recognition of what some call "the grizzly economy." It's not a bearish attitude, but rather bullish enthusiasm for recovery of an iconic Montana species, Ursus arctos horribilis, and the fact that grizzlies, as assets, are now worth far more alive than dead.

The shift from viewing grizzlies solely as liabilities is actually a radical historical departure, generations in the making, from a past in which bears were thoughtlessly cleared from the landscape, maligned as menaces, overhunted, and shot at will by ranchers wishing to protect their livestock.

As everyone living in the northern Rockies knows, grizzlies in Greater Yellowstone have, since 1975, been listed as "threatened" under the Endangered Species Act and earlier this year the U.S. Fish and Wildlife Service announced plans to remove them from federal protection, handing management over the states of Montana, Wyoming, and Idaho.

Once upon a time there were 50,000 grizzlies west of the Mississippi in the Lower 48; today, slightly less than 2,000 inhabit just three percent of their original range. No matter which way delisting goes, Montana will continue to play a vital role in grizzly conservation, one that could ultimately determine whether the species persists in the face of growing 21st century threats.

Conservation biologists warn that when wildlife populations are confined to terrestrial islands of habitat with closed gene pools, they disappear at higher rates.

Government agencies and conservation organizations, including The Vital Ground Foundation, believe it is important to bring connectivity between the Greater Yellowstone population of bears and the next largest concentration of bruins—those in the Northern Continental Divide Ecosystem encompassing Glacier National Park and the Bob Marshall and Scapegoat wildernesses.

As all bear advocates know, grizzlies are quintessential emblems of wildness. Apart from that, evidence has been stacking up demonstrating their value to the economy.

In one survey, nine of every ten visitors to Yellowstone rated their desire to see bruins as a priority, higher even than making a pilgrimage to Old Faithful Geyser. Meanwhile a study of visitor attitudes showed that those passing through the gates would be willing to pay an extra $41 on top of $25 entrance fees if they were guaranteed seeing bears along the roadside.

Down in Jackson Hole, a sow grizzly given the numeric identity 399 by the Interagency Grizzly Bear Study Team has become the most famous bear in the world. Thanks to social media, she today has admirers around the globe who make travel plans just for the possibility of seeing 399 and her cubs.

Overall, the value of nature-tourism in Yellowstone and Grand Teton is worth an estimated $1 billion annually with grizzlies and wolves being prominent attractions.

Important to many Montanans is finding ways to show their love for grizzlies and helping to protect habitat bears need to survive. In recent years, many motorists have voted with their wallets by making statements on the vehicles they drive. How? By purchasing specialized license plates featuring the profile of the Great Bear.

It happens like this: Whenever the time arrives for Montana citizens to renew their vehicle registration at the local county treasurer's office, they can trade in their old generic Montana license plate for one featuring a bear painting by noted artist Monte Dolack.

With the new plate cost of $35, $25 goes directly to The Vital Ground Foundation whose primary mission as a land trust is to protect bear habitat through conservation easements and land purchases and educating the public. Afterward, the entire $25 annual license plate renewal fee goes to Vital Ground.

The plates have become quite fashionable, like the wapiti plates that benefit the Rocky Mountain Elk Foundation. In the last six years alone, more than $400,000 has been raised for Vital Ground and some of the money used to reduce bear-human encounters by helping homeowners and ranchers employ non-lethal deterrents such as electric fencing around pastures and chicken coops, retiring public land sheep grazing allotments in grizzly habitat from willing sellers, improving sanitation to prevent bears from getting addicted to human food, and teaching the benefits of carrying bear spray.

Vital Ground's license plate program (*vitalground.org,* in the "search window" type "Montana License Plate Program," then click "Search") allows citizens, including those who have no ambition of sport hunting a grizzly, to make an important contribution to conservation. Put a bear on your car, help keep grizzlies alive: It doesn't get any better than that.

Montana writer Todd Wilkinson is a correspondent for National Geographic and author of "Grizzlies of Pilgrim Creek, An Intimate Portrait of 399, the Most Famous Bear of Greater Yellowstone" featuring 150 bear images by noted American wildlife photographer Thomas Mangelsen (mangelsen.com/grizzly)

Bear photo by Larry Aumiller

Planned Giving: Grizzlies as the Beneficiaries of Life Insurance

The purpose of charitable planned giving is two-fold: to help manage and assign assets in the most charitable and beneficial way, and to support the work of an organization like The Vital Ground Foundation - a nonprofit with a clearly defined mission that you feel good about and want to support. The first step is identifying the organization or organizations that you feel most closely aligned to. Planned Giving is a way to help ensure their future. At the same time, you want to meet your own financial and charitable goals in the most beneficial ways.

Planned gifts can help avoid or reduce capital gains and estate taxes and provide an annual income for you or your beneficiaries, while preserving the principal assets for the nonprofits of your choice. Charitable planned gifts may be deferred as part of a will or a living trust or may involve property or insurance. We'll briefly cover benefits of life insurance in this column, while including more planned giving tools in future issues of *Vital News*.

Gifts of Life Insurance

A life insurance policy can be a particularly effective gift to leave to an organization whose mission you support. Vital Ground can be named as a primary, secondary, final, or remainder beneficiary of your current policy. You can also assign your yearly dividends to Vital Ground. You can give a fully paid policy or one on which you are still paying premiums, or obtain a new policy and simply name Vital Ground as the beneficiary. You can also add a beneficiary like Vital Ground to your life insurance policy without changing your will or other aspects of your estate plan.

Another method is to donate a paid-up life insurance policy by transferring ownership to Vital Ground, which can then either elect to cash-in the policy or retain it and receive death benefits later. The donor can thereby receive an immediate income tax deduction for either the cash surrender value or the basis (usually the cost), whichever is less.

Finally, you can purchase a policy and make Vital Ground sole owner and beneficiary. You can then make payments directly to the insurance company or through Vital Ground by way of a gift to the organization. You can then take an income tax deduction for the amount of the paid premiums, which ultimately result in significantly amplified benefits to grizzly bears!

Vital Ground Announces New Membership Program

New Benefits and Engagement Opportunities to Thank Our Supporters

We know that you cherish the majesty of wild places of North America that grizzlies call home, and we truly value the ongoing support and dedication you have provided over the years. To show our appreciation for all that you do for bears and wildlife, we have revamped our membership program in order to provide you with special benefits and opportunities to engage with our staff and board. As a Vital Ground member, your support will help to provide the land that grizzlies need to thrive, and will benefit countless other plants and animals that live in bear country. Please take a moment to review the membership graphic below for an explanation of our new membership levels and the benefits you can expect to receive as a member of Vital Ground!

Plus, we're now offering the opportunity to go paperless – sign up for a monthly donation at *https://www.vitalground.org/how-you-can-help/donate/donate-monthly/* and you can choose to receive only electronic communications from now on – no more paper appeals or letters! Go paperless, and you'll make sure that every penny goes toward helping bears and other wildlife thrive.

Keep an eye out for your Vital Ground membership packet – we will send them soon!

—contributed by Brian Wright

Welcome New Trustees!

Russell Fox

Russ re-joins Vital Ground's board of trustees after he was elected to complete the late Carolyn Dobb's board term after she passed away in 2014. Married for 42 years, Russ and Carolyn were both faculty members in environmental studies at The Evergreen State College in Olympia, Wash., for 40 years, and both are Faculty Emeriti. Their inseparable love of, exploration of and research in natural resource management issues and strategies in North America, Ecuador and Great Britain has included a focus on wildlife habitat protection. Russ has a master's degree in urban planning from the University of Washington and has a long history of public service in a wide variety of both governmental and non-profit community development initiatives in the state of Washington. He is currently board chair of the South of the Sound Community Farm Land Trust.

Andrea Nasi

Andrea was born in Torino, Italy. After obtaining a master's degree in business administration from the "Scuola di Amministrazione Industriale dell'Universita' di Torino," he moved to the United States for a series of year-long internships with Carl Ally Advertising and Westinghouse International in New York City and with Scott Paper Company in Philadelphia. Upon his return to Italy he joined the FIAT group, and specifically Fratelli Fabbri Editori – the group's magazine and book-publishing division. He moved to New York in the early '70s to establish FIAT's publishing activities in the U.S. In 1983 he founded Eridanos Press, a literary publishing company that he managed until 1990 when the firm was sold to David Godine Publishers in Boston. He returned to Italy where he joined the board of directors of IFI, FIAT's holding company, where he served until 2010. While in Europe, he purchased a controlling interest in Turner Libros, a Spanish art, art criticism and non-fiction well established in the Spanish-speaking world, involvement that continues to this date. In 2010 returned to the United Sates to be with his wife and children, first in Scottsdale, Ariz., and then in Ketchum, Idaho, where he currently resides.

Vital Ground Contributes to Outreach Project

Although Vital Ground's primary emphasis is to work with private landowners to conserve wildlife habitat for grizzly bears and other wildlife, we are contantly expanding our efforts to help reduce conflicts between bears and humans and to encourage and support "bear aware" communities and outreach projects. Along with many other partners, Vital Ground helped fund the "Grizzlies in the North Cascades" video by Ecologist Chris Morgan.

Washington state's National Park Fund partnered with National Park Conservation Association and Woodland Park Zoo to hire co-founder of Grizzly Bear Outreach Project and Conservation Ecologist Chris Morgan to create this video to educate the public about the facts associated with grizzly bears.

The video helps promote an accurate understanding of North Cascades' grizzly bears and includes facts along with visually-arresting graphics and photos designed to bring attention to fascinating and important elements of grizzly bear ecology, safety, behavior, and recovery of the species in the region. In addition to online use, the video is also shown at public meetings, particularly in communities adjacent to Washington's North Cascades. To see the video, go to *www.VitalGround.org* and click the "News & Media" tab, then the "Videos & Photos" tab.

A trail camera captures this image of a female grizzly with two yearlings at a corral sampling station, which attracts bears. When animals pass through a strand of barbed wire (visible in the foreground), they often leave hair samples, which are later collected for DNA analysis. Photo courtesy Wayne Kasworm, U.S. Fish & Wildlife Service.

Studying Grizzlies in the Cabinet-Yaak: Low Tech Meets High Tech

On a snowy night in early 2011, I braved a slushy Highway 2 to give a public talk in Libby, Mont., about the DNA-based grizzly bear study I had done from 2003-2007 in the Glacier National Park-Bob Marshall Wilderness area. I did not know it at the time, but the Lincoln County Commissioners had invited me to learn more about that project because they were interested in getting better data on the status of their grizzly population. That night I was quizzed about how much it would cost for a similar study on grizzlies in the Cabinet-Yaak Ecosystem in northwestern Montana and northern Idaho, a population designated as threatened since 1975. Things progressed quickly from there.

A down payment from Lincoln County allowed us to hire a small field crew that summer. Meanwhile, the list of supporters grew into a remarkable public-private partnership with broad support from federal, state, county, tribal agencies, state legislators, mining and timber industries and the environmental community, including The Vital Ground Foundation.

By early 2012, full funding for the project enabled intensive field work followed by genetic and statistical analyses required to complete the project. This is an account of what we learned about the grizzly bears of the Cabinet-Yaak and how we gained that knowledge.

The goal of our study was to get a rigorous estimate of the number of grizzly bears in the Cabinet-Yaak and to learn how they were linked to other populations. To accomplish this we focused on obtaining hair samples from as many bears as possible without capturing or handling them. DNA fingerprinting of those hair samples identified species, sex and individual identities of sampled

bears. To these data we added information about individual bears known to be in the Cabinet-Yaak through radio collars and remote cameras deployed by the U.S. Fish and Wildlife Service. Together, this supplied the data we needed for state-of-the-art statistical models that estimated population size.

Compared to the sophisticated genetic and statistical methods my colleagues contributed to the study, our hair-snaring methods were decidedly low-tech; hair corrals and bear rubs. Hair corrals consisted of a strand of barbed wire strung around several trees surrounding a pile of forest debris splashed with four liters of rotten fish juice and cattle blood. When bears crossed the wire to investigate the intriguing odor, they usually left small samples of hair on the barbs. We located the hair corrals systematically throughout our 9,900 km2 (2.44 M-acre) study area using a 5 X 5 km grid. One corral was built in each of 395 grid cells and checked and rebaited every 14 days for the first six weeks. Then each corral was taken down and rebuilt in another location within each cell and visited every 14 days for another month. For our secondary hair sampling method, we also collected hair from natural bear rubs that crews identified along trails and roads. Bear rubs are trees and posts that bears rub as an everyday part of their bear lives. We did not use bait to attract bears to rubs, but did add short pieces of barbed wire to increase the size and number of hair follicles in the samples.

Field technician Drew Carter pulls hair from a rub tree in the study area of Montana's Cabinet Mountains. Photo by Kris Boyd.

More than 10,000 bear-hair samples came from the nearly 800 hair corrals we built; the 1,300 bear rubs provided 8,300 hair samples. Genetic analysis identified 38 different grizzly bears from our hair samples and the U.S. Fish & Wildlife Service data contributed four more bears not detected by hair sampling. Of the 42 grizzlies detected in the Cabinet-Yaak in 2012, there were 20 females, 21 males, and one cub of unknown sex. Because bears are solitary, secretive, largely avoid humans, and often occupy remote areas that are difficult to access, it is virtually impossible to detect all the bears in an area the size of the Cabinet-Yaak. This means we had to rely on complex statistical methods generally referred to as "mark-recapture models" to estimate the number of bears that weren't sampled and, thus estimate total population size. These techniques told us we had 44-50 grizzly bears in the Cabinet-Yaak Ecosystem. This means that the population was only half way to the U.S. Fish and Wildlife Service recovery goal of 100 bears.

One great advantage of knowing the genotype of each bear sampled is that it allowed us to evaluate how fragmented the Cabinet-Yaak population was, and to see if grizzlies were moving between the Cabinet-Yaak and other populations. We didn't need radio collars or sightings of these elusive animals to do this; all we needed was their genetic signatures. Unfortunately, we found that the Cabinets and the Yaak continue to be separate populations; there was no sign of interbreeding between these two regions. Our analyses also confirmed that the bears in the Cabinets are highly inbred. More promising for the future of these populations, however, are the migrants we discovered. With parentage analysis we documented natural migrants to the Cabinet and Yaak populations by bears born to parents in other populations.

A male we detected in the West Cabinets had the distinctive genetics of the Selkirk population of northern Idaho and southern British Columbia. His probable parents and a full sibling were captured and genotyped during a study of the Selkirk subpopulation in British Columbia. This was the first documented migrant from the Selkirks to the Cabinet Mountains. A male we found in the Yaak had the genotype of bears in the Northern Continental Divide Ecosystem (NCDE) population located east of the Cabinet-Yaak in Montana. My earlier research in the Whitefish Range and Glacier National Park had detected his probable parents at various times during 2000-2011, but clearly this bear spent part of his time in the Yaak. A third male that we detected in the Yaak was also a bear I detected in the northwestern NCDE a number of times during 1998-2004. This bear grouped with Yaak genotypes but his home range obviously included both ecosystems; we identified this bear as the probably father of four NCDE offspring by two NCDE females. These events suggest the expansion of neighboring populations may eventually

(continue on page 14)

(continued from page 13)

help bolster the Cabinet-Yaak populations. However, the small size, isolation, and inbreeding documented by this study demonstrate the need for comprehensive management designed to support Cabinet-Yaak Ecosystem population growth and increased connectivity and gene flow with other populations.

A technical article about this study [Kendall, K.C. et al. 2016. Density, distribution, and genetic structure of grizzly bears in the Cabinet-Yaak Ecosystem. *Journal of Wildlife Mgmt 80: 314-331*] can be requested at *http://www.nrmsc.usgs.gov/staff/kkendall/pubs.*

—Kate Kendall
United States Geological Survey
Research Biologist Emeritus

Editor's Note: To date, Vital Ground has helped to restore, enhance, and protect more than 2,000 acres of grizzly bear habitat in the Cabinet-Yaak region, including last year's Alvord Lake Community Forest Project.

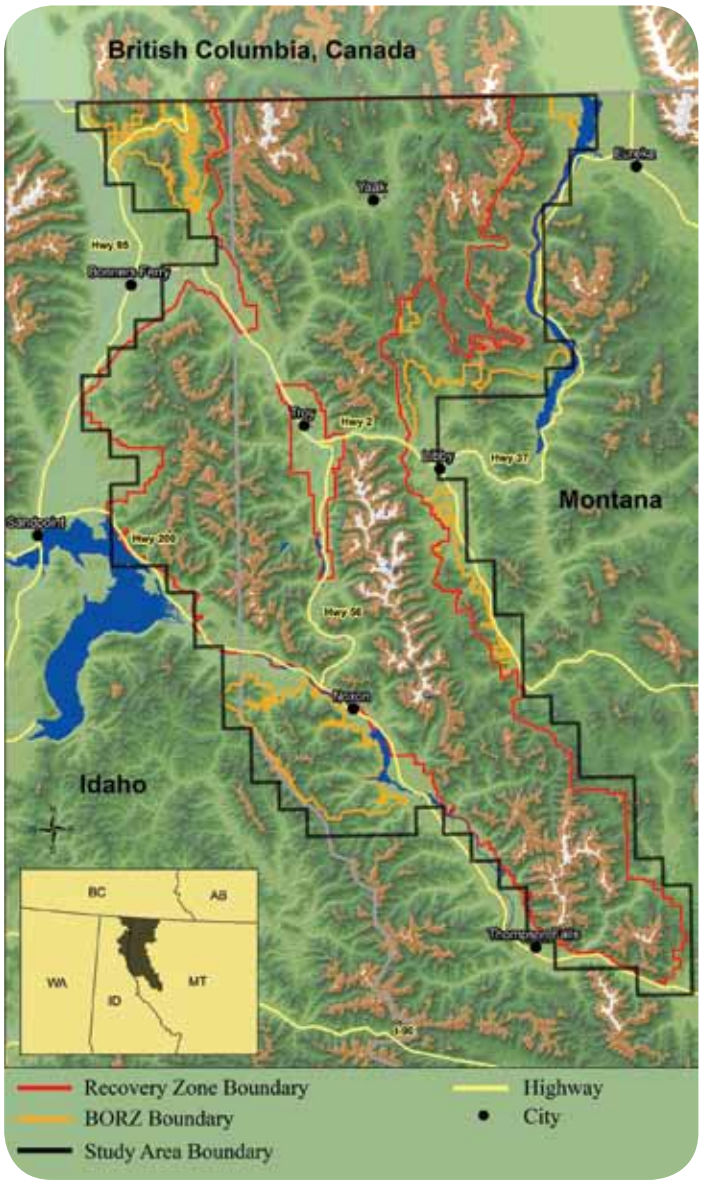

Figure 1. Study area in northwestern Montana and northern Idaho, USA, where we estimated grizzly bear abundance and density in 2012. BORZ (Bears Outside Recovery Zone): Areas encompassing locations with recent confirmed presence of grizzly bears outside the recovery zone boundary specified by the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service 1993).

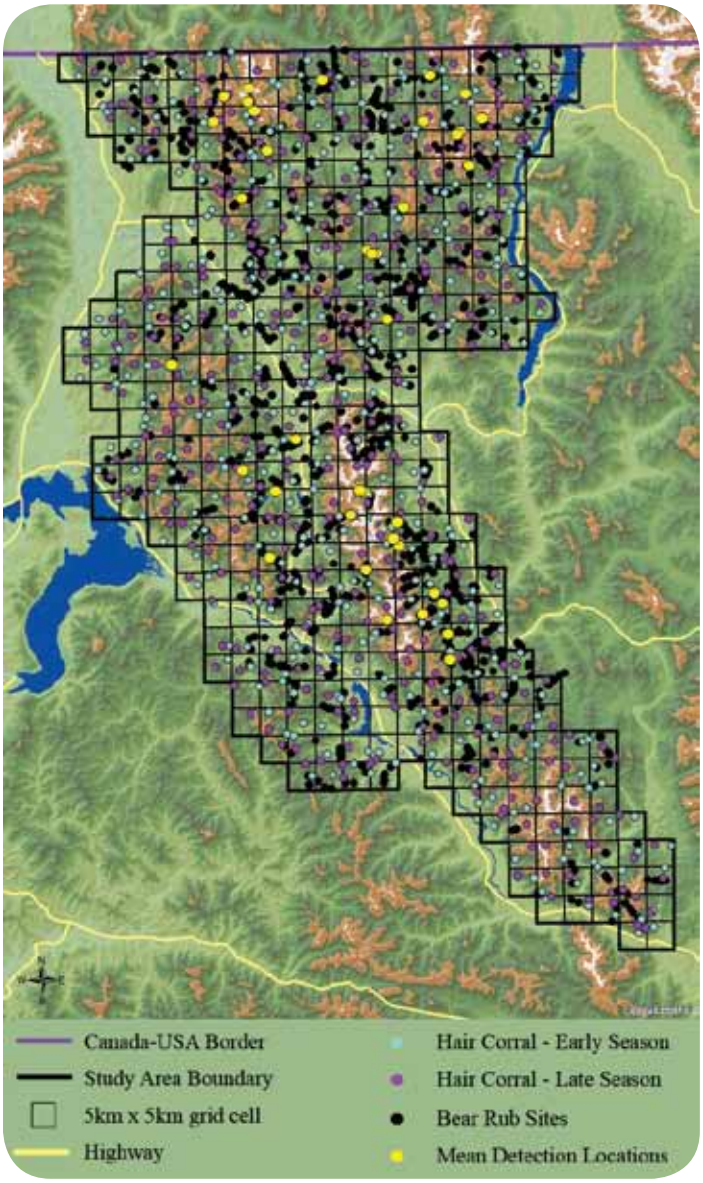

Figure 2. Locations; a) hair corral (n = 790) and; b) bear rub sampling sites (n = 1,374) in the Cabinet-Yaak Ecosystem in northern Montana and Idaho, USA. Corrals were systematically distributed in 395 5 km x 5 km-grid cells and were operational 7 June-13 July (early season: cyan dots) and 14 July-24 August (late season: purple dots). Rubs (black dots) were surveyed 7 June-21 September. Average detection locations of individual grizzly bear detected by hair sampling (yellow dots).

Vital Ground supports The Nature Conservancy of Canada in Protecting Key Wildlife Habitat

Vital Ground's board of trustees approved a $10,000 partner grant in March to The Nature Conservancy of Canada for their Luxor Linkage project, which encompasses two parcels totaling 960 acres of private land between the Purcell and Rockies Mountains of British Columbia.

The area is located in the Rocky Mountain Trench, north of Edgewater, B.C. Stretching from the Columbia River wetlands, across Highway 95 into the Rocky Mountains adjacent to Kootenay National Park, the lands are a critical part of a corridor for wildlife and help safeguard large, intact natural areas.

The Luxor Linkage Project supports a remarkable diversity of wildlife including grizzly bears, endangered badgers, mountain goats, cougar, coyote, black bear, white-tailed deer, mule deer, elk and moose. A seasonally important mountain goat mineral lick extends from north of the property along the Kindersley Creek Canyon. Winter range for Rocky Mountain bighorn sheep has been identified on the eastern extent of this property at the toe of the Rockies.

Dr. Michael Proctor, an independent Canadian bear research ecologist who also serves as a Vital Ground Advisor, has recently identified the lands near Luxor Creek as the only high-capability linkage zone from Fairmont to Golden.

Photo by Bonnie-Lou Ferris/TNC of Canada

Lynx, bobcat, wolf, cougar and black bear also likely move through these lands. Crown of the Continent land directly north of the private property ensures an even wider corridor for this conservation objective.

At its fall board meeting, Vital Ground's board of trustees will consider further funding for the Luxor Linkage project as it also considers funding for additional conservation partners.

Last year Vital Ground granted $55,000 to six partner organizations working either to promote grizzly bear education, outreach and/or bear research – or to groups working directly to conserve crucial landscapes for bears and other wildlife.

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The Vital Ground Foundation's mission *is to protect and restore North America's grizzly bear populations by conserving wildlife habitat for future generations. In support of this mission, we:*

- Protect lands that grizzlies need to survive, not only for bears but for all other species that share their world;
- Work where private lands and human impacts meet some of the wildest places left on the continent;
- Target projects that conserve critical lands, sustain habitat connections, and reduce conflicts between bears and people;
- Ground our projects on current science and strong collaborative partnerships.

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