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NEWSLETTER

Featuring updates on grizzly bear conservation activities,
and the latest *Grizzly Times* Blog and Podcast
from [Louisa Willcox and David Mattson, PhD.](#)
Co-Founders of *Grizzly Times*.

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February 13, 2023

Dear Friend of the Grizzly,

Featured Report:

Grizzly Bears for the Southwest: History and Prospects for Grizzly Bears in Arizona, New Mexico and Colorado

by Dr. David Mattson

For perhaps 30,000 years grizzly bears ranged throughout the mountains and riparian areas of what would eventually become the southwestern United States. But in a remarkably short 50-year period between 1860 and 1910, Anglo-Americans killed roughly 90% of the grizzly bears in 90% of the places they once lived. Most of the remaining grizzlies had been killed by the 1930s, with perhaps a handful surviving up to the 1970s in the San Juan Mountains of Colorado and the Sierra Madre Occidentale of Chihuahua, Mexico. The last known grizzly bear in the Southwest was killed in 1979 in the San Juan Mountains of Colorado.



A (photoshopped) grizzly bear digging pocket gophers on the back side of Escudilla Mountain in Arizona. Aldo Leopold's classic essay, "Escudilla," in Sand County Almanac, features the killing of the last grizzly on Escudilla Mountain. He writes: "Escudilla still hangs on the horizon, but when you see it, you no longer think of the bear. It's only a mountain now."

This newsletter features a series of recently published technical papers and reports authored by David that provide an overview of the history, current status, and future prospects of grizzly bears in Arizona, New Mexico, Colorado, and Utah. David describes how grizzlies made a living in the Southwest for millennia, and also ample opportunities that remain for restoring grizzly bears in this region. David specifically describes the potential for grizzlies to thrive once more in the Mogollon Highlands of Arizona and western New Mexico and the San Juan and Sangre de Cristo Mountains of Colorado and northern New Mexico—even in the face of climate change, human population growth and other human-related impacts.

David's technical analyses, summarized in three papers, offer a detailed description of the methods he used to assess potential for recovery of grizzly bears in the Southwest.

1. A summary of contemporary grizzly bear densities and relations to habitat conditions: https://www.mostlynaturalgrizzlies.org/files/ugd/779f47_1619dd4492a4464aba6c72a662825190.pdf

2. a method for estimating potential densities as a function of habitat: https://www.mostlynaturalgrizzlies.org/files/ugd/779f47_abceabbb992d453f94fbc78e512a242.pdf

3. and a detailed geospatial analysis of recovery potential: https://www.mostlynaturalgrizzlies.org/files/ugd/779f47_be943540053d427f838ef2a7f6f71b70.pdf

The full report, *Grizzly Bears for the Southwest*, covering history and current and future prospects can be downloaded here: https://www.mostlynaturalgrizzlies.org/files/ugd/779f47_3a62a219e70a46b8b41987325cfb6169.pdf

Not surprisingly, David's report has been enthusiastically received by the international scientific community, in part because his cutting-edge methodology provides a roadmap for analyzing potential recovery of grizzlies and brown bears in other ecosystems where they have been extirpated. The report has generated more interest than 99% of all other research products posted in 2022 on ResearchGate, a popular site for scientists to share their work, and been featured by the Rewilding Project and other organizations interested in ecological restoration.

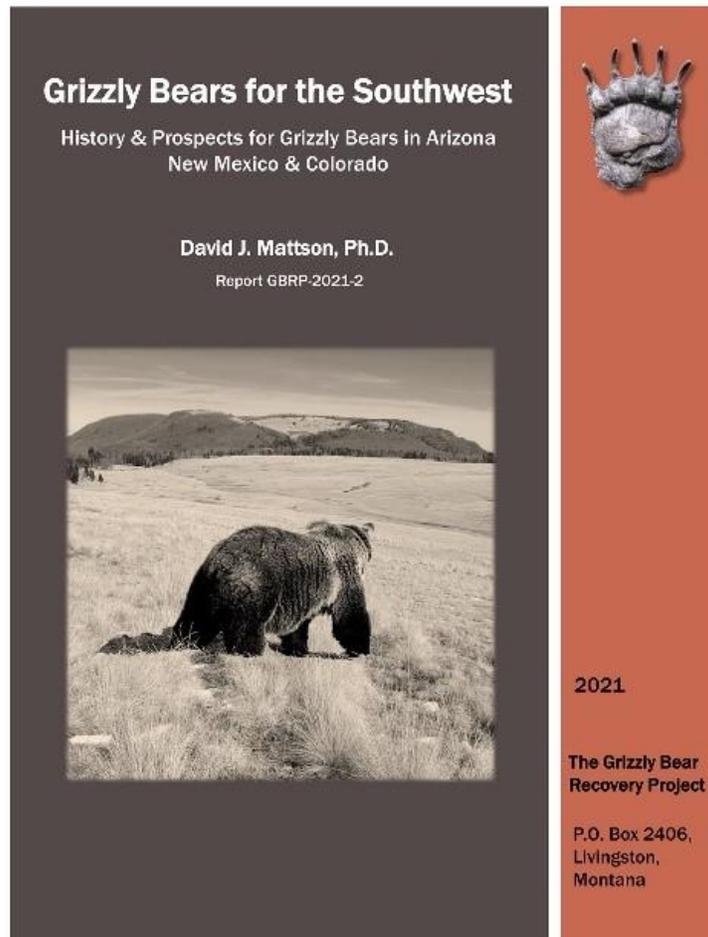
The concluding part of this newsletter provides a summary of the report, featuring the compelling history of grizzlies in the Southwest along with the reasons why David dug into a topic that many, including in the federal government, have ignored or forgotten. We conclude with a call to restore grizzly bears to the Southwest as "one small atonement for the slaughter of every living thing that interfered with a presumed manifest destiny."

We hope that you find this featured work inspiring and thought-provoking.

Grizzly Bears for the Southwest: History and Prospects for Grizzly Bears in Arizona, New Mexico and Colorado

by Dr. David Mattson

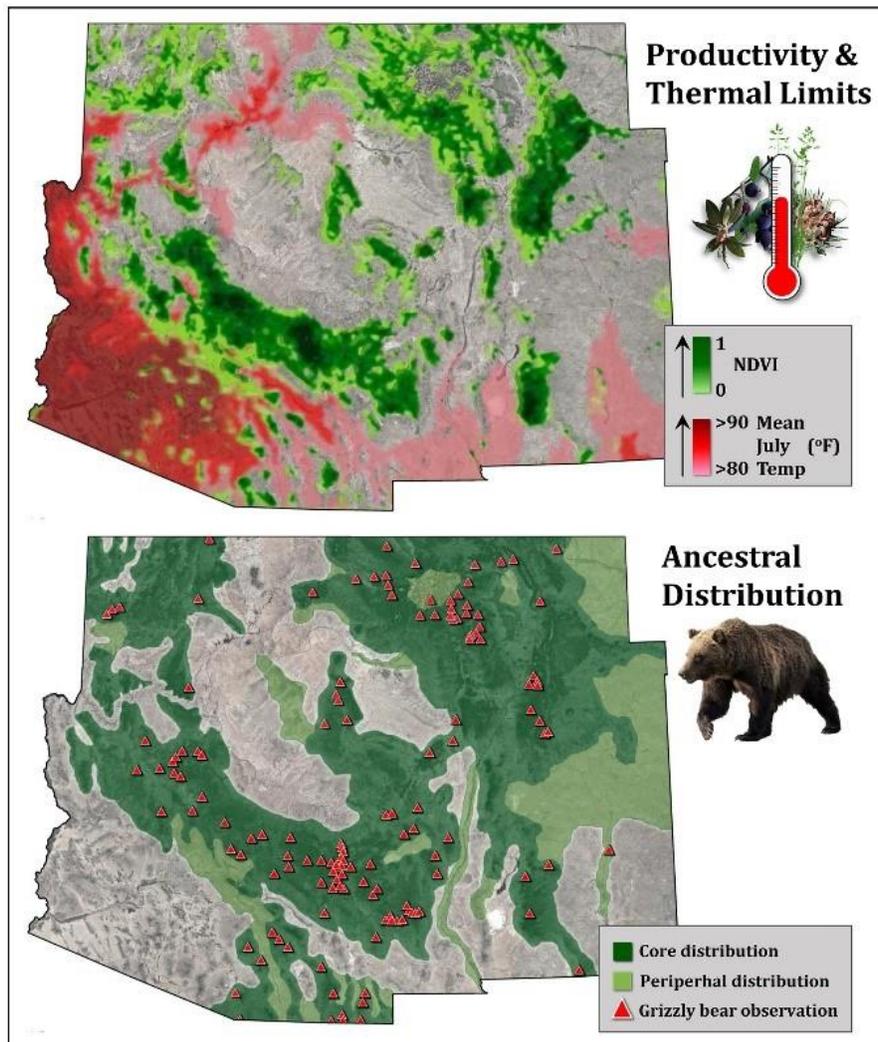
A Thumbnail Description



This report tells the story of grizzlies in the Southwest chronologically, beginning with deep history spanning the late Pleistocene up through arrival of European colonists (Section 3.1); the period of Spanish and Mexican dominance (Section 3.2); and then the period of terminal grizzly bear extirpations that began with the political and military dominance of Anglo-Americans (Section 3.3). Section 4 examines current environmental conditions and related prospects for restoring grizzly bears to the Southwest. Section 5 completes the chronological arc by forecasting some of what the future might hold, with implications for both grizzly bears and humans.

The background provided in Section 2 offers a synopsis of grizzly bear natural history as well as a summary of foods and habitats that were likely important to grizzlies. Throughout the Holocene there was a remarkable concentration of diverse high-quality bear foods in highlands of the Southwest, notably in an arc from the San Francisco Peaks of Arizona southeast along the Coconino Plateau and Mogollon Rim to a terminus in the White, Mogollon, and Black Range Mountains in New Mexico. Additional high-quality habitat existed in the

Sacramento, San Juan, Jemez, and Sangre de Cristo Mountains of New Mexico and adjacent Colorado.

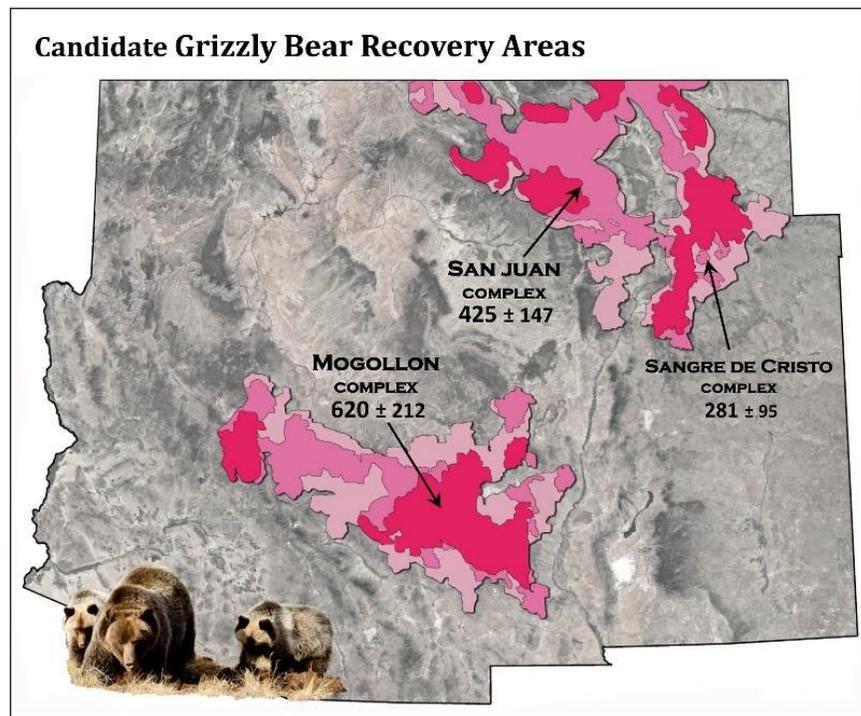


The top map above shows grizzly bear habitat productivity in Arizona, New Mexico, and adjacent Utah and Colorado in shades of green. Areas shaded red were likely too hot and dry to support grizzlies during recent millennia. The bottom map shows core and peripheral grizzly bear distributions for the same region, with historical grizzly bear locations show as red triangles.

Grizzlies in the Southwest survived remarkable extremes of climate and habitats for perhaps as long as 100,000 years. They also survived substantial variation in human-propagated impacts punctuated by the Crisis of 875-1425 C.E.—a period typified by episodic drought and the highest human population densities prior to recent times. In contrast to relatively benevolent attitudes among indigenous populations, there is little doubt that the terminal toll taken on grizzly bears by

Anglo-Americans after 1850 C.E. was driven largely by a uniquely lethal combination of intolerance and ecological dynamics entrained by the eradication or diminishment of native foods and the substitution of human foods, notably livestock, that catalyzed conflict.

More positively, the analysis presented in the report of current habitat productivity, fragmentation, and remoteness—as well as regulations, laws, and human attitudes—reveals ample potential for restoration of grizzlies to the Southwest, including three candidate Restoration Area Complexes: the Mogollon, San Juan, and Sangre de Cristo, capable of supporting around 620, 425, and 280 grizzlies each.



The map above shows candidate grizzly bear recovery area complexes for Arizona, New Mexico, and adjacent regions of Colorado and Utah. Dark pink identifies core recovery areas; intermediate pink, areas that are less productive but still remote enough to support grizzlies; and light pink, productive areas that could support transient populations, but are compromised by lack of highly secure habitat. The larger numbers identified with each complex are the number of grizzlies estimated to be able to live there, plus or minus the smaller number to the right of each estimate.

Major foreseeable challenges for those wishing to restore grizzly bears to these areas include sanitation of human facilities, management of livestock depredation, education of big game hunters, coordination of management, and fostering of

accommodation among rural residents. Climate change promises to compound all of these challenges, although offset to an uncertain extent by prospective increases in human tolerance.

But the evolutionary history of grizzly bears provides grounds for optimism about prospective restoration. Grizzly bears have survived enormous environmental variation spanning hundreds of thousands of years, including many millennia in the Southwest. Grizzlies survived not only the inhospitable deeps of the Ice Ages in Asia and Beringia, but also the heat and drought of the Altithermal in North America. It was only highly-lethal Anglo-Americans that drove them to extinction in the Southwest, which is why human attitudes—more than anything else—will likely determine prospects for restoring grizzly bears.

Why Now?

There are no grizzlies left in the Southwest to inspire modern generations of people or instruct us about how this species lived and died in a semi-arid environment noted for its vicissitudes. We are left with little more than our imaginings, most of which are informed by written accounts left by the few Europeans who took note of grizzlies during the comparatively brief time that grizzlies and Europeans interacted in the Southwest.

These accounts mostly by Anglo-Americans are noteworthy for what they both include and exclude. There is little evident curiosity about grizzlies, except to the extent that curiosity yielded insight into how to kill bears more efficiently. A reader will look in vain for any mention of natural history—whether diets, habitats, or behaviors—other than as observations incidental to the pursuit and persecution of grizzlies.

Instead, the near exclusive focus is on the courage, skill, and endurance, not only of men pursuing and killing grizzlies, but also the beloved hounds that aided and abetted them. The grizzlies themselves feature only to the extent that they are wily opponents, ferocious foes, or merciless depredators—attributes that serve little more than to enhance the heroic qualities of those in pursuit.

The picture of grizzly bears that emerges is incomplete, distorted, and misleading. It is also a time capsule of human perspectives that were dominant for centuries and only recently supplanted by others more benevolent and graciously inclusive of wild nature—including grizzly bears. An ethos of domination, intolerance, and eradication that led to the slaughter of predators during the 1800s and early 1900s has been slowly displaced by an ethos of moral obligation and appreciation codified in U.S. laws such as the 1974 Endangered Species Act.

But, with the exception of a few surviving animals in the San Juan Mountains, grizzly bears in the Southwest had by 1975 already slipped through the safety net

of the ESA and been relegated to the literary dust-bin of self-congratulatory stories crafted by men who had, by and large, devoted themselves to glorifying their deeds and eradicating predators.

The time is ripe for a corrective that comports with emergent human values and worldviews, the insights we now have into grizzly bear natural history, and a substantially changed physical environment. A useful contemporary account of grizzly bears in the Southwest moreover needs to be comprehensive and attentive to the long arc of history—in contrast to the continuing emphasis placed by a corpus of recent Southwest literature on fractious relations between grizzly bears and Anglo-Americans during the last 200 years. This report hopefully offers such a corrective.

Our Motivation and Premise

David spent all or part of 19 years living, working, and recreating in the Southwest, both as a wildlife researcher and seasonal visitor. His investigations of mountain lions in the Southwest during 2002-2013 entailed field work in study areas that included the Flagstaff uplands, the North and South Kaibab Plateaus, the Grand Canyon in between Utah's Zion and Capital Reef National Parks, and the Nevada National Security Site. Taken together, these study areas spanned environments ranging from Mojave Desert to alpine, including piñon-juniper woodlands, ponderosa pine and mixed conifer forests, semi-desert and temperate grasslands, desert scrub, and interior chaparral.

More recently, our over-winter stays along the upper Gila and Mimbres Rivers in New Mexico have allowed us to make frequent forays into the Mogollon and Black Range Mountains where grizzlies managed to survive into the 1930s. From all of this we have been left with vivid impressions of not only extensive wild country, but also severe human impacts.

Of particular relevance to this report, David brought the critical eye of a grizzly bear researcher to these travels, developed by over 20 years studying grizzlies and providing expert input for grizzly bear managers in areas straddling the spine of the Rocky Mountains from the Yukon Territories to the Greater Yellowstone Ecosystem (<https://www.allgrizzly.org/david-mattson>).

More concretely, whether on the ground or driving roads, we found ourselves taking note of potential grizzly bear foods and habitats, as well as more problematic features such as livestock husbandry practices, off-road vehicles, sport hunters, and the overall human footprint. We were left with a profound curiosity about not only what life must have been like for grizzly bears prior to environmental transformations caused by Europeans, but also about prospects for restoring grizzlies to the Southwest with supplanting of the toxic human culture of

the 1800s and early 1900s by the more generous and inclusive culture of the past 50 years.

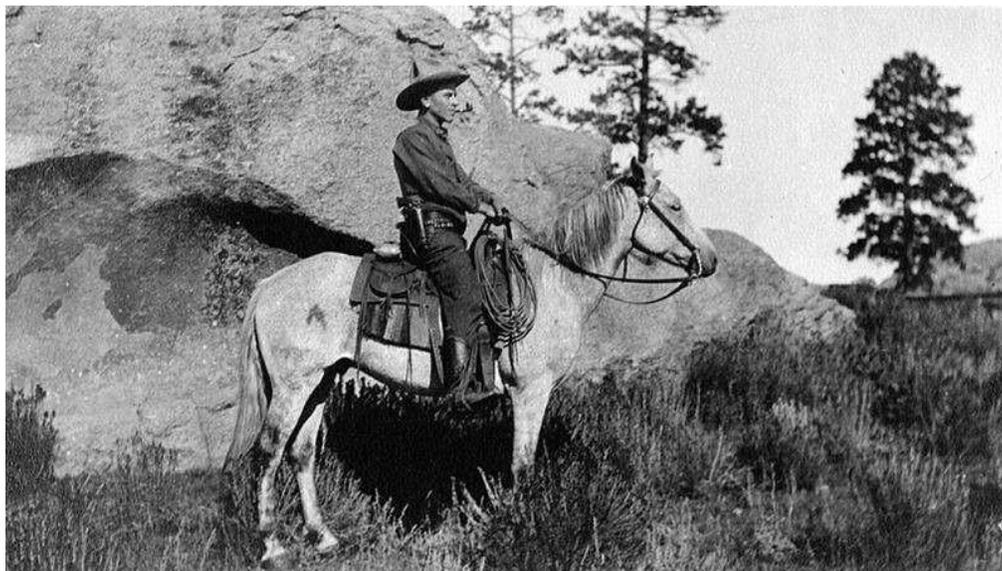
David approached this report with the premise that recent changes in federal law, human culture, and regional economic and demographic patterns allow for the possibility of restoring grizzly bears to the Southwest—something that may have seemed impossible 50 years ago. The Southwest’s extensive wildlands are also self-evidently home to thriving populations of black bears and replete with bear foods such as acorns, piñon pine seeds, and manzanita berries.

Even so, David did not approach his analysis naïvely. He looked with a critical eye not only at the exigencies of history and a current situation beset with problematic human impacts, but also at a future that promises to severely challenge both wildlife and humans.

This report hopefully paints a vivid yet realistic picture of not only the rich history and promising future of grizzly bears in the Southwest, but also the trials and tribulations that grizzlies successfully navigated for millennia, which is, in itself, cause for optimism.

The Imperative to Act

Aldo Leopold famously wrote, “One of the penalties of an ecological education is that one lives alone in a world of wounds...An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise.” As for so many naturalists and ecologists, Leopold’s insightful observation resonates deeply for both of us.



Conservation icon and author Aldo Leopold, shown above on his horse Polly on the Carson National Forest, worked in the Southwest with the U.S. Forest Service from 1909 – 1924. The region captured his imagination and profoundly influenced his thinking about ecology and ideas about our moral responsibility to preserving nature.

Photo Credit: Aldo Leopold Foundation, www.aldoleopold.org

David grew up on a small ranch in the Black Hills of South Dakota at a time when the largest wild animals in the area were white-tailed deer and coyotes, just east of the location where a cousin of his determined that Custer had killed “his grizzly,” and south of Harding County where his grandfather had raised sheep and participated in a posse that killed the last wolf in the state. Even as a young teenager, David felt a sense of loss which drove him to seek out wild places to work, including Yellowstone, where, even there, wolves had long before been eradicated.

Both of us have been confounded by numerous relatives and acquaintances who are content living in landscapes autoclaved by white Europeans for the purpose of producing human goods and services—all the while refusing to see “the marks of death.” This perverse persistence could fuel pessimism, even despair, about prospects for healing the ecological wounds. And yet, miraculous healing can and has occurred. Mountain lions and wapiti had returned to David’s family ranch by the time he was in college. Black bears are now reappearing. Wolves have been restored to Yellowstone and the northern U.S. Rockies. People with vision, optimism, persistence, and skill can imagine a better world—and make those imaginings come true.

This proposition is obviously relevant to restoring the Southwest’s grizzly bears. David’s report hopefully, not only clarifies the ample prospects for restoration, but also the rich historical tapestry of grizzly bears and their lives in the Southwest. As much to the point, David has tried to bring to life a shared journey of grizzly bears and people in this region that lasted for many millennia. The contentious terminal decades of relentless slaughter by Anglo-Americans featured in so many books and treatises were a tragic anomaly. They do not comport with the norm of human-bear relations for nearly all of the Holocene, and perhaps even the late Pleistocene. All of this hopefully serves to foster a new vision, at least for those who have an interest in nurturing it—a realizable vision of grizzly bears restored to and enriching the wild ecosystems of the Southwest.

The objective existence of ample habitat biophysically capable of supporting grizzly bears offers affirmative encouragement for restoration efforts in the Southwest. However, there is also a moral argument that conceivably creates an imperative. White Europeans bear an obligation of atonement for the devastation wrought by their ancestors on indigenous peoples and native ecosystems. Put

bluntly, we have a legacy of blood on our hands. Barring an unfortunate residual minority, Americans are no longer driven by or offered the justification of a narrative that permits the willful perpetration of genocides and extinctions.

Restoring grizzly bears to the Southwest would be one small atonement for the slaughter of every living thing that interfered with a presumed manifest destiny, including all of the grizzlies that once lived in the Southwest.

Please Consider a Gift to Grizzly Times...

We need your help! We have retired and are doing this full-time work pretty much gratis—despite the gradual dissolution of our physical bodies.

As you may have recently seen in the news, the U.S. Fish & Wildlife Service is yet again making a run at removing ESA protections from grizzly bears—potentially throughout Montana, Wyoming, and Idaho. This move has been catalyzed by petitions from the Republican Governors of Montana, Wyoming, and Idaho against a backdrop of legislation in all three states designed to persecute carnivores, with wolves targeted for especially vindictive measures. Grizzlies are also being set up for similar treatment if delisted. As always, we will be in the trenches trying to protect grizzlies and the habitats they depend on in this region and elsewhere.

As we do not have our own nonprofit, a not-for-profit tax-deductible organization, Conservation Congress, has agreed to be our fiscal sponsor. (*Thank you, Denise!*)

You can make a one-time contribution or sign up for a monthly donation through this link:

[DONATE HERE](#)

Or, you can mail a donation to:
Conservation Congress
c/o Denise Boggs
1604 1st Avenue South
Great Falls, Montana 59401

* Be sure to note that your contribution is for Grizzly Times (GT).

Thank you for your continued support—in any way—it is greatly appreciated!

For the bears,
Louisa and David