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Horse packers help researchers study 8,000-year-old artifacts exposed by melting glaciers.

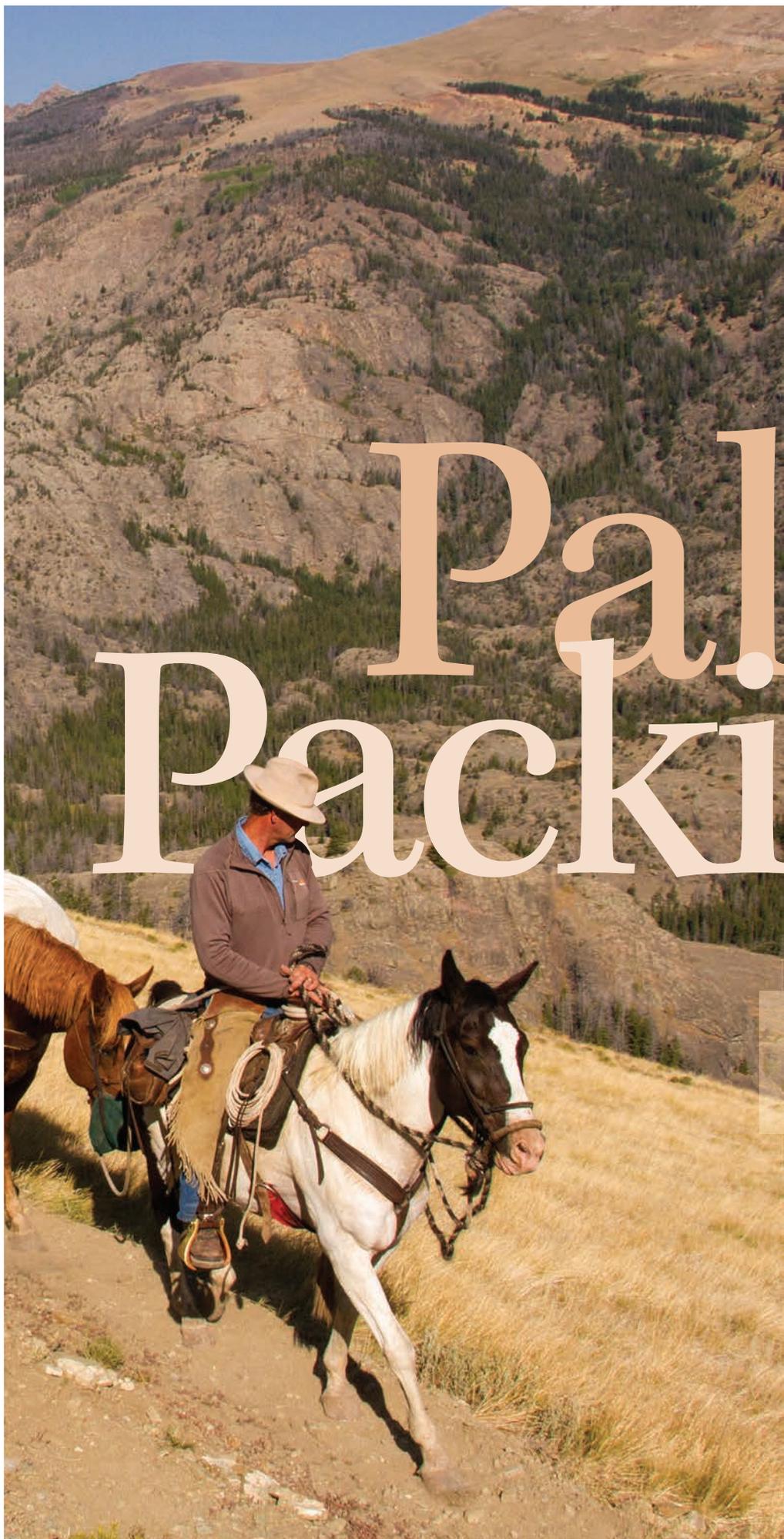
BY MELISSA HEMKEN

MELISSA HEMKEN



>> Bear Basin Adventures packers lead the pack strings up to Arrow Pass, with Wyoming's Wind River Mountains' spine rising in the background.





## Horse packers help researchers study 8,000-year-old artifacts exposed by melting glaciers.

Story and photography by  
MELISSA HEMKEN

# Paleo Packing

**T**

HE HORSES STOP TO CATCH THEIR AIR on Arrow Mountain's shoulder, and it's no wonder they need a break. Outfitter Heath

Woltman and wrangler

McKenna Ryder of Bear Basin Adventures have climbed 2,640 feet in elevation during the three-mile ride from Trail Lake.

Each has a pack string of four horses carrying gear for Central Wyoming College's glaciology and archaeology research teams. They are in the Wind River Mountains south of Dubois, Wyoming, on a two-day, 25-mile trip into the Fitzpatrick Wilderness of the Shoshone National Forest. The route is not easy, climbing through the clouds over Arrow Pass (elevation 10,895 feet) and descending switchbacked cliffs to meadows along the milky blue Downs Fork and Dinwoody creeks.





▲ Heath Woltman fords a river with his pack string. The experienced packer began working on a dude ranch at age 14, and has guided backcountry trips since age 18.

◀ A bison horn is among the ancient items that have been found on pack trips in Wyoming.

Woltman leads his pack string down the infamous Honeymoon switchbacks above Honeymoon Lake. ▶▶

Known as the Winds, these mountains form part of the spine of the Continental Divide. Their granite trails warm horseshoes, and the acrid scent of hot iron mingles with the smell of horse sweat and leather.

“The Winds are somewhat arduous, I find, for my horses,” says Woltman, who owns Bear Basin Adventures in Fort Washakie, Wyoming, with his wife, Sarah. “It’s beautiful and rough. I’d rather be on foot walking, to be honest with you!”

The Central Wyoming College teams spend 12 days each summer measuring glacier depth, sampling water and documenting archaeology. The Dinwoody Glacier has melted 34 percent during the past 50 years, revealing prehistoric human tools and spear points on the southeastern slope of Gannett Peak, Wyoming’s tallest mountain at 13,804 feet. Horses are essential to haul in research equipment due to the terrain and restrictions on motorized vehicles in the wilderness area.

“In wilderness, we have to pack in everything either horseback or on our backs,” says Todd Guenther, a CWC

anthropology and history professor. “And we have a lot of gear. I mean, we even take a full-size dirt shovel. We don’t want to mess around with a collapsible, frail shovel. We’re archaeologists.”

CWC’s Archaeology, Environmental Health and Outdoor Education departments partner for the research expeditions. Assistant Professor of Environmental Health Jacki Klancher began taking her students into the Dinwoody in 2014 to track changes in glacial ice mass and measure Dinwoody Creek’s water quality. Two of Guenther’s archeology students were on that first expedition and discovered several lithic scatters—prehistoric stone spear points disturbed from their original context by natural or human processes.

“I come from a horse background,” Guenther explains. “Let the horse carry stuff. This ‘let’s walk three days with a 60-pound pack’—I told Jacki she was feverish. But for my







students, we got a [U.S. Forest Service] permit and went up to record what they found. We followed Jacki's shirttails in 2015 and found the highest recorded buffalo jump [a precipice where Native Americans drove animals to their deaths] in North America at 11,000 feet in elevation. And a series of paleo campsites, as much as 11,000 years old, used by people whose ancestors had recently arrived from Siberia. The campsites trace the melt of the glacier from the end of the Pleistocene Epoch."

Discovery of the bison jump solidifies Guenther's theory that unknown early people lived at high elevations all year. Formerly, it was thought they summered in the mountains and spent winters below on the plains. The oldest known tribes in the area are the Shoshone, who came north out of the Great Basin 500 years ago, and Apache and Navajo, whose ancestors worked their way south from Yukon territory in Canada.

To learn more, Guenther and Klancher again combined an expedition in August of 2016 to gather archeological data and monitor glacier decline.

"We identified, by satellite imagery, permanent snowfields [where snow accumulates and doesn't move] to investigate above the known paleo camp sites in the valley," Guenther says. "Snowfields with gentle slopes are where mountain sheep and other animals hang out to escape nasal bots and

▲ Woltman throws a hitch on a pack horse as the Central Wyoming College research team hikes past on the way to the rendezvous point further up the Dinwoody valley.

flies. We wanted to look for spears and animal bones from prehistoric hunters.

"But when we got there, some of those ice patches are simply gone, melted out in the last 12 to 24 months. Paleo wooden spear handles, cloth, bone tools, and other items quickly disintegrate when exposed to sun and elements. If you don't get there within a few weeks or months after it melts out of the ice, it's dust. It's gone," Guenther says.

"Todd promised me we would find a mammoth," Klancher jokes, somewhat disappointedly.

"I know," Guenther replies, "but then we didn't even find a permanent snowfield. They're extinct, just like the mammoths."

It's for conversation like this that the Woltmans enjoy packing in researchers.

"I like sitting around the fire listening to academics talk about what they're studying," Woltman says.

"Researchers travel so far and are excited to be on location," adds Sarah Woltman. "It's our back door, and we learn a lot about environmental conditions and historical use of this country."





Woltman begins the morning by tacking up his horses and mules. They carry in about 750 pounds of carefully packed equipment and food.



### TRAVELING IN WILDERNESS

Woltman and Ryder bring their pack string as close to Dinwoody Glacier as stock are allowed, and then drop off 750 pounds of equipment, food and fuel. Guenther, Klancher and their students shuttle it two and a half miles to their base camp on the lateral moraine—parallel ridges of debris deposited along glacier sides.

Research equipment is not anything like typical recreational gear. The most awkward-sized research item is the 2-by-4-foot screen used to sift cultural material out of soil, duff and snow.

“We can’t do our work without the screen,” Guenther says. “I custom-made it as big as I could to be useful for our purposes, but small enough it would fit on a horse as a top load. We sandwiched it between sheets of [lumber] to cover the handles so they wouldn’t break if it hit a tree going down the trail. And to protect it if stepped on by a horse in camp.”

There were also 12 pounds of skis for hauling two sleds over the glacier for ground-penetrating radars (GPR) to measure ice depth and image the sub-surface.

“We brought two GPRs worth \$80,000, packed in foam-filled Otter boxes, and trusted Heath to know what he was doing and put them on good solid horses,” Klancher says.

To ensure their horses are capable of carrying CWC’s delicate equipment, as well as Bear Basin Adventures guests, the Woltmans prefer to use their own stock for outfitting. This allows them to control the horses’ training and handling, instead of leasing horses for the summer season as many outfitters do. They breed a handful of mares every year, and purchase a few horses to fill any holes in their string.

“Sarah and I do a lot of training to work green and marginal horses into our string,” Woltman explains. “And our horses see a lot of miles, settling them quickly.”

The string consists of an eclectic mix of horses suited to the work: Quarter Horse types, Morgan crosses, half-drafts, a few mules and three Norwegian Fjords.

“They’re cute as a button, easygoing, sturdy and strong,” Woltman says when describing the Fjords, “and not so tall and broad they break you in half trying to get on them.”

Mares form a quarter of the herd and prove to be their hardest-working horses due to their grit. Woltman adds that they have a knack for preventing overnight horse escapes.





- ↗ Packing gear for an archaeology team involves loading some cumbersome equipment, such as a screen for sifting artifacts from soil and snow.
- ↖ The Woltman family, including (from left) Sarah, Iris, Cameron and Heath, owns and operates Bear Basin Adventures.
- ↙ Todd Guenther, a CWC professor, carries a pannier of gear from the line of horses.

“I like to take three to four mares on a trip because I can picket them and hobble everything else,” he says. “They hold geldings and mules in camp.”

Ten horses were needed for the 2016 CWC equipment drop, and the packers left only footprints and scattered manure by following Leave No Trace principles of minimizing land impact. Bear Basin Adventures, operating on a U.S. Forest Service special use permit, keeps its horses and mules on the meadow. This disperses impact and allows the horses to eat grass all night to re-fuel, and stand tied to trees only for saddling and loading. Mountain travelers have used the same meadows for thousands of years, and a paleo artifact can sometimes be found next to a 20th-century tent peg. While recreationists should photograph and leave artifacts, the CWC archeology team holds a USFS permit to excavate and collect specimens.

“People have always wanted shelter, water and firewood—you know, a nice place to camp,” Guenther says. “There are over 11,000 years of people camping up there, and horses in the last 200 years. Horses are not even the full turn of one page when you think of it as a book. Horse and human use can mess up the archaeology. But if the paleo camping sites are signed ‘do not use,’ it attracts vandals with long-handled shovels to dig the sites.

“And if people don’t camp there, where will they camp? On the side of a cliff? It’s the multiple use debate: figuring out the best way to manage resources when they’re all in the exact same spot, and have been since the first people walked up [Dinwoody] canyon.”

### TECHNOLOGY FOR THE TIMES

Personal locator beacons and satellite phones allow backcountry users to call for help when injured, and such a phone helped an ill CWC student on the recent trip.

“He was sinking out there and getting worse every day,” Klancher recalls. “We saw that it was going to be very difficult to turn him around in the field without several days’ rest and palatable food—maybe even a boost from intravenous fluids. Ultimately, he really needed to exit the mountains, and traveling on foot was not an option for him. Our choices were to move him by helicopter, generally only an option if the injury or condition is immediately life-threatening, or on horseback.”

Woltman had already picked up the CWC equipment the team stashed for him, and, not knowing of the illness, was heading out of the mountains.



“With our ‘sat’ phone we called Sarah on her home phone,” Klancher says. “She gave us the direct number to Heath’s sat phone, and we were able to do sat-to-sat communication. Without that we would have had to send a runner team to ford the Dinwoody at waist height and catch up with Heath.”

“With no extra horse, Heath gave up his ride for the student. He walked 18 miles out in one day, leading a pack string in rain and snow. Good thing he was wearing low-heeled packers instead of cowboy boots! We owe him a bottle of Scotch.”

Guenther says he feels that with the easy availability of sat phones, expedition leaders and outfitters are liable for injury damages if they don’t have the technology.

“Why didn’t you have a cinch under that saddle? Why didn’t you have a sat phone in your saddlebags?” Guenther questions. “The contemporary horse packer needs to carry a sat phone.”

For Bear Basin Adventures the added cost of a sat phone is worth it, and the Woltmans have noted an increase in the number of guests asking if they carry a sat phone on trips. But he says that those who venture into wilderness areas must accept responsibility for helping ensure a safe trip.

“I think people are generally less risk-averse today,” Woltman says, “and have the impression technology is going to keep them safe. It’s there to help if something goes wrong, but we still need to act in a safe manner. We still have safe horses.”

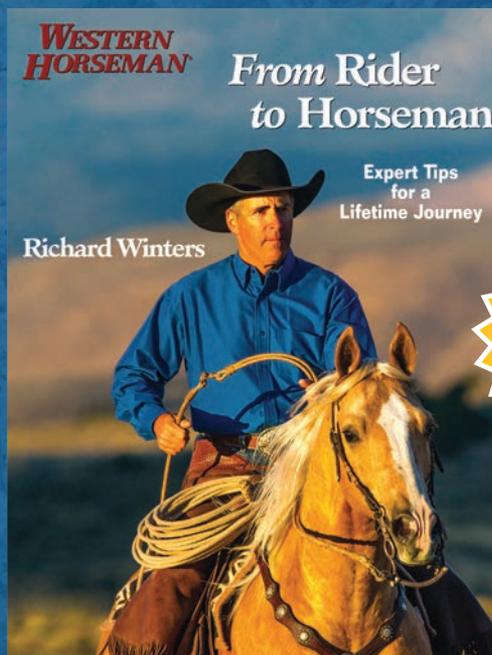
The expeditions involve more than paleo artifacts and walking on a glacier. Guenther notes that a high level of risk management and teamwork is needed among the packers, professors and students to ensure success.

“We teach how to take care of the people beside you,” he says. “How to travel in the backcountry, the ‘capital W’ wilderness. And then we teach college freshmen and sophomores to do cutting-edge, graduate-level science research projects in the middle of nowhere—where other people don’t want to go because it’s too hard to get there.”

**MELISSA HEMKEN** is a writer and photographer based in Wyoming. Send comments on this story to [edit@westernhorseman.com](mailto:edit@westernhorseman.com).

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