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A West that works

Across fencelines



Rick and Heather Knight have brought energy and expertise to preserving some of the last undeveloped country along Colorado's Front Range.

—Courtney White photo

A Colorado couple shows conservation grows among neighbors, and recreation is not the saving grace everyone seems to think

By Courtney White for Headwaters News

One glance at the busy bookshelves and coffee tables in Rick and Heather Knight's home tells the visitor that they are up to something big.

The books and the stacks of articles range from scholarly histories and professional papers on conservation biology to environmental journalism and humorous cowboy stories, but the theme is the same: the American West, big.

In fact, the scale of the Knights' professional and personal focus is neatly summarized in the title of one of Rick Knight's own books: "Stewardship Across Boundaries."

And as the title suggests, much of this focus could be called unorthodox.

Still, it is not a coincidence that one of their favorite authors is the late Wallace Stegner, award-winning novelist, essayist, historian and iconic dean of the region. Like Stegner, the Knights are passionately devoted to the West, to its history, its wildlife and its wide open spaces.

And also like Stegner, both are actively dedicated to creating, in the words of the famous author, "a society to match the scenery." It hasn't been easy.



Courtney

White writes a monthly column for Headwaters News that focuses on people who embrace a sustainable approach to western resources.

White is executive director of the Quivira Coalition, a Santa Fe-based group devoted to collaboration as the approach to an ecologically healthy region.

Much of Quivira's emphasis is on ranching, but its principles of education, cooperation and innovation apply to many of the region's biggest issues.

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We found out that if conservation were only about money, it would be easy. But it's mainly about relationships and working across boundaries with neighbors, especially if you want the results to be longer-lasting.

– Heather Knight

"We live in a take, take, take world," said Rick Knight. "Even recreation is a form of taking, though most people don't think of it that way. What we need to do instead is give, and that means becoming involved in a place-based conservation effort."

Which is exactly what the Knights have done. In their case, the 'place' is the mix of private and public land that stretches north from Fort Collins, Colo., to the Wyoming border – the last significant block of relatively unfragmented land left along Colorado's Front Range.

Considering what has happened to the land from Fort Collins south to Colorado Springs and beyond – gone to subdivisions at the rate of an acre per hour – the Knights believe the only hope for their community is through a collaborative effort that unites ranchers, farmers, conservationists, scientists and local officials.

"There is no other way," said Heather Knight. "Either we link arms to protect this precious landscape, or we're going to lose it forever."

Becoming Native

United in their goal, each has chosen different paths of action. Heather works for The Nature Conservancy as director of the Laramie Foothills Mountains to Plains Project, which aims to conserve the private land in the "danger zone" through a combination of conservation easements, tax incentives, land purchases and stewardship initiatives.

"Heather is the keystone in an incredible community effort," said her husband. "No one I know works harder, or has had more success."

Rick Knight has been a professor of wildlife biology for 19 years at nearby Colorado State University and has eight books and 110 peer-reviewed articles under his belt, most of them focused on land use and conservation. He has sat on numerous boards, including the Society for Conservation Biology, and remains involved in active research, not to mention his full-time teaching duties.

Ironically, neither Rick or Heather Knight are native to the West, which doesn't make them any less "western" than many other worried residents, including Wallace Stegner, who was born in Iowa. In fact, like the novelist, their experience in "becoming western" has provided rich material for their careers as well as their concerns.

Rick Knight was "born on wheels," as he put it. His father, a Navy scientist and world authority on mosquito-borne diseases, moved the family from Maryland, where Rick was born, to Florida, then to Egypt and beyond, meeting career demands.

In addition to cultivating a desire for life-long learning (there are five doctorate degrees in Knight's family), his father's agrarian roots also had a profound impact on the future biologist. "I grew up with a healthy respect for rural people," said Knight, "which only grew stronger as I got older."

After a tour in Vietnam as a Marine himself (a platoon commander in the DMZ), Knight returned to the States to pick up his education. A master's degree in wildlife biology at the University of Washington was followed shortly by a Ph.D. from the University of Wisconsin at Madison, the stomping ground of another of Knight's heroes, Aldo Leopold. An offer of a faculty position at CSU and a move to Fort Collins came next.

Through the years of traveling, studying, writing and teaching, a common thread to Knight's work emerged: Knowledge, to be relevant, needs to be place-based and applicable to the real world. This has frequently set him

at odds with his colleagues, especially in academia, who often are reluctant to bridge theory and practice.

"There is no reason for our teaching or our research to be esoteric," said Knight, "it needs to be relevant. And considering the world's conservation problems, what could be more important than teaching, service, and research that benefits both human and natural communities?"

One reason Knight is drawn to applied ecology is the sense of urgency he feels about his adopted home.

"Given the rate of loss of private ranch and forest lands in the West," he said, "what we accomplish in the next 10 years will be critical in how the West looks and for the long-term survival of much of the region's natural heritage."

A Longer Road

Heather Knight traveled more miles, and in less time, than her husband did to get to Colorado, which might explain why, despite nearly 14 years of steady work on land management issues, she is not ready to call herself a native. Another reason might be because a remnant of her Australian accent identifies her as "exotic" still.

Although Knight grew up in Sydney, she had family farming roots, which is why when she attended college (the first in her working class family to do so) she gravitated toward the "applied" side of her ecological studies. Desiring to be outside as much as possible, and needing a paycheck, she worked every summer in the field doing biological research, which also allowed her to exercise another passion – long-distance running.

After a post-graduation stint in the recreation industry at Alice Springs, Knight headed to Brisbane where she earned a graduate degree in science education. A teaching job was followed by more graduate research, this time focused on the of impact tourist helicopter overflights on the marine wildlife of the Great Barrier Reef, which the data demonstrated to be substantial.

Birds were another passion. In 1990, she accepted an invitation to deliver a paper at the International Ornithological Congress in New Zealand, where she met an exuberant American wildlife professor from Colorado, also there to report on recent research. Five days after making introductions, Rick Knight proposed.

"Fort Collins was a total shock," she recalled. "All the snow, and no humidity. The first time I went for a run I got a nosebleed. And it felt like I had a heart attack, because of the elevation."

Employing a runner's dedication and energy, she applied herself to the study of her new home. She volunteered for The Nature Conservancy, and was quickly promoted to a full-time position at the Conservancy's nearby Phantom Canyon Preserve.

The 400,000-acre Laramie Foothills is a biologically rich transition zone that stretches from shortgrass prairie in the east to alpine mountains on the west; more than 70 percent of this landscape is privately owned, and nearly all of it is threatened from contagious subdivisions to the south.

At the time, the conservancy was going through significant changes, including a transition to a community-based model of conservation. Another change was the realization that effective ecological protection meant working at the landscape scale.

Both of these changes resulted in a decision to 1) hire from within the community; and 2) begin a collaborative process that could engage the

wide variety of landowners and interested parties in a landscape.

"We found out that if conservation were only about money, it would be easy," she recalled. "But it's mainly about relationships and working across boundaries with neighbors, especially if you want the results to be longer-lasting."

Her work took her into the homes of local ranchers and farmers where her diplomatic skill helped her win their trust. She listened, too, to what the community said it needed. For example, she turned her prodigious energy to the creation of a local weed cooperative, needed in order to combat one of the West's most intractable challenges – the cancerous spread of non-native weeds.

"Weeds are the third-biggest threat to biodiversity in the West," said Knight, "so it's got to be taken seriously. And the thing about weeds is that it requires cooperation across fencelines. A single landowner can't do it alone."

Through countless meetings, and endless cups of coffee, Heather marshaled the weed cooperative into existence. To her surprise, her accent was not a liability.

"I'm an alien too," she said with her easy smile, "but I'm not invasive or noxious, I hope."

Success

All the trust-building and hard work over 14 years is about to pay off, hopefully, as the community finds itself on the brink of a major success.

It involves the 400,000-acre Laramie Foothills, a biologically rich transition zone that stretches from shortgrass prairie in the east to alpine mountains on the west.

Notably, more than 70 percent of this landscape is privately owned, predominated by a few remaining ranch families, and nearly all of it is threatened from contagious subdivisions to the south. In the mid 1990s, The Nature Conservancy decided that this 22-by-25-mile block of land was a top conservation priority.

One reason was a deep concern for wildlife. Rick Knight often points out that most western mountain ranges run north-south, which means most wildlife migrations are east-west, as they move from summer to winter pastures and back again. When ranches constitute the critical "in between" lands, the migrations are unobstructed. But when subdivisions move in, wildlife migration routes are severed, often to deleterious effect.

"Up and down the Front Range, the land is being broken into smaller and smaller pieces," said Heather Knight. "We all understood that the Laramie Foothills was our last, best chance to protect critical wildlife migration corridors."

One of Heather Knight's main tasks was to reassure private landowners that the word "work" would remain a part of "working landscapes" – something that was met with skepticism initially.

"There was a trust issue," said Knight. "Fortunately, being a foreigner, I genuinely wanted and needed to learn as much as possible. So I asked if I could come to their place and learn. I was also willing to admit mistakes. Both of these created a different kind of conversation with the landowners here."

Over time, she helped place 15,000 acres under conservation easements, through both The Nature Conservancy and a local land trust, thus protecting the land from development in perpetuity. She also worked hard to get local governments more actively involved, assisted by new tax laws that allowed for the purchase of open space.

"There's nothing more satisfying than seeing a diverse community come together for a shared larger goal," said Knight. "Now we have families

involved who absolutely stayed away in the beginning. It takes time, but the payoff in terms of conservation is bigger."

"Just as historically we overgrazed, overlogged, overmined and overdammed our public lands," he wrote, "today we are gathering together the forces that may overrecreate these lands in the future."

– Rick Knight

Today, there is a very real possibility that the Laramie Foothills will be protected as an intact, working landscape. Knight and friends have placed a large proposal in front of Great Outdoor Colorado, a state agency that uses lottery money to protect open space, to put all the pieces together; 55,000 acres of private land would be protected, 65 percent by easement and the rest by purchase.

Money for additional protection would be leveraged with The Nature Conservancy, county, and city money, protecting another 20,000 acres of private land from development.

Many fingers are crossed. If funded, the Laramie Foothills project could set a big precedent for the West.

"A skepticism about community-based collaboration I hear all the time centers on how long it takes," said Knight. "But it's the only way to get large-scale conservation done. And as my mother liked to say, patience is a virtue."

But perhaps most important to Knight was the trust and cooperation of the landowning families that she earned.

"It was incredibly hard," said Knight. "All the families are under incredible pressure, including pressure from internal conflict. But it was such a joy to work with them all these years, and I just hope and pray we can finish the job."

For The Birds

Rick Knight has a bit of the Man From La Mancha in him. That's because, like the famous Don, this professor of wildlife biology tends to charge at many of the West's sturdiest windmills.

Take the issue of recreation on public land, for instance. Most environmentalists and many federal managers now tout recreation as the "highest and best use" of our public lands. Recreation is also promoted as the principle economic hope for many rural communities, especially as the number of day-visits to our national forests and parks continue to rise – to more than 1 billion per year at last count.

"Thus, whether on foot, by horse, motorcycle, mountain bike, ski or snowmobile," wrote Knight in a recent article, "people will increasingly enter our public lands to seek spiritual elevation, aesthetic enjoyment, the companionship of family and friends, exercise, or just to escape from the stress of our urbanized cementscapes. That is the present and more of it will be in our future." [1]

"Isn't this ok?," he continued. "Hasn't this been the struggle that has defined the environmental movement for almost a century? Out with the damaging extractive uses of logging, mining and livestock grazing and in with the more environmentally friendly and benign pursuits of outdoor recreation."

Now comes the charge at the windmill.

To Knight, this shift may NOT be ok. "From where I stand, there appears to be a certain degree of duplicity in our discussions to substitute amenity uses for commodity uses."

That's because people are not asking two tough questions: whether recreation is ecologically benign, and whether we can better manage recreation than we did logging and grazing.

On the second question, Knight is not sanguine. Trends in tourism and rural economic development, recreational equipment and off-road vehicle sales, and federal land policy goals all point in one direction: up. In fact, Knight noted, the number of people participating in wildlife-oriented recreational activities is projected to increase between 63 percent and 142 percent over the next 50 years. This news is worrisome to the biologist.

"Just as historically we overgrazed, overlogged, overmined and overdammed our public lands," he wrote, "today we are gathering together the forces that may overrecreate these lands in the future."

Not So Benign

It is the answer to the first question, however, that most distresses Knight. Recent research, including his own and that of his students, suggests that the ecological effects of recreation are far from benign.

In one study, for example, the second leading cause of the decline of threatened species on public lands was recreation, right behind dams and other types of water development.

Recreationists, noted Knight, have various deleterious effects: They modify vegetation and soil with their activity; their presence can cause the abandonment of preferred wildlife feeding sites; and the stress they cause on wild animals can change reproduction rates, or even cause death.

"Recreation simplifies communities of plants and animals," Knight wrote. "It results in increased numbers of human-adapted species and reduced numbers of species whose evolutionary history and ecological requirements puts them at odds with people."

Scott Miller, one of Knight's graduate students, divided the learned responses of wildlife to humans into three categories: 1) avoidance – when humans are perceived as a threat, wildlife may abandon their usual habitat; 2) attraction – human rewards, often in the form of food, can alter a wild animal's natural behavior; and 3) habituation – repeated exposure to humans can also cause animals to become less "wild." [2]

"Many believed that nonconsumptive outdoor recreation was an environmentally Benign activity," wrote Miller. "Increasing evidence, however, indicates that these activities are, in fact, not Benign On the contrary, data suggest that outdoor recreation can affect wildlife individuals, populations, and communities."

Just how adversely recreation affects wildlife is still a matter of research. "Our knowledge is still rudimentary," noted Miller. "We can only speculate that increased mortality, reduced productivity, and displacement of individuals (all documented, at least anecdotally) will result in decreased populations."

Rick Knight summed up their research this way: "Regretfully, this new American West with its robust tourism-dependent economy will result in an altered natural heritage. Rather than seeing more species that have figured prominently in our imagination of the West, we will see fewer."

Land Use

Recently, and in perhaps his most quixotic adventure to date, Knight has tackled the politically volatile question of biodiversity and land use in the West.

Under traditional thinking, biodiversity – the quantity and richness of species in a given area – is always highest in protected areas, such as national parks and wildlife refuges, especially when compared to working ranches or exurban (low density) housing developments.

As a consequence of this thinking, the traditional response by conservation groups and others to threats to biodiversity has been to increase the size and number of acres in nonconsumptive use (other than recreation).

However, the results of a study led by another of Knight's students, Jeremy Maestas, challenges this conventional line of thought. [3]

As far as they could determine, no study had actually been done comparing biodiversity between protected areas, ranches and exurban developments. This was important for another reason: An emerging, alternative trend in the conservation movement is to work with ranchers to keep their land intact, and in agriculture, through conservation easements and other tools, rather than see the private property broken into ranchettes.

"This emerging trend to biodiversity protection has some untested assumptions," they wrote. "It assumes that biodiversity on ranches is no different than that found on protected areas, or at least that biodiversity is better served on ranches than on exurban developments."

This trend also conflicts with the argument made by many environmentalists that livestock grazing is the most destructive land use in the West today, as well as the principal threat to the region's biodiversity.

Knight and company decided to test these assumptions scientifically.

Results

The study site was a blend of public and private land northwest of Fort Collins. The team sampled plant and animal communities by selecting points randomly across the landscape for study. Particular attention was paid to songbird populations.

They found densities of native plants and animals higher on ranches and protected areas than in exurban developments. Human-adapted bird species, for example, reached their highest densities in the exurban areas. Dog and cat populations were very high in these areas as well, while coyotes were rarely seen.

This is significant because dogs and cats, which the authors call "subsidized predators," have a major impact on wildlife.

"House cats have been implicated in the decline and extinction of scrub-breeding songbirds in two studies in California," the authors noted. Dogs are known to harass and kill wildlife. "Research has shown that they can extend the zone of human influence and contribute to the annual mortality of some species."

More surprising was another conclusion.

"More species of native plants were found on ranches than on the other two land uses," they wrote. "The dominant non-native plant, cheatgrass, was more prevalent in terms of cover on the protected areas and exurban development than on ranches."

Ranches supported greater biodiversity than exurban development, they determined, for three reasons: Ranches had less human-adapted wildlife species, greater numbers of native wildlife species, and more native plant species than exurban developments.

"Our results," they concluded, "support the emerging strategy for biodiversity protection being implemented by environmental NGOs."

There was one more conclusion.

"Our study found that biodiversity was at least as well served on ranches as it was on protected areas."

They noted that most protected areas lie at higher elevations and on the least productive soils. Additionally, many critical riparian areas, which were homesteaded historically, lie on the lands of private ranches.

"Our results combined with this information suggest that we will not be able to sustain native biodiversity in the Mountain West by relying merely on protected areas," they concluded. "Future conservation efforts to protect this region's natural heritage will require closer attention being paid to the role of private lands."

Home

Author Wallace Stegner once called the American West the "native home of hope." Few individuals in the region understand this optimism better than Rick and Heather Knight. At the same time, few understand the challenges to hope better than they do.

"It's easy to despair," said Rick Knight, "but being involved in community-based initiatives is the best antidote for pessimism I can think of."

Knight finds solace and inspiration in his students. "I have been so blessed," he said. "Every one of my graduate students is working in conservation today. I love teaching. It's what keeps me going."

Knight recently led an effort to create a new, interdisciplinary department within CSU called "Forest, Rangeland, and Watershed Stewardship." Its goal is to integrate what had been disparate disciplines and focus the coursework on applied research and management. It is the first department of its kind in the nation.

"There was real resistance to the word "stewardship" within the university," Knight said. "Many academics still believe in the ivory tower. But the truth is, if we don't do something in the real world, we're going to lose most of what we love."

Following his own advice, Knight recently joined the Board of the Colorado Cattleman's Land Trust, an industry-led group dedicated to preserving ranching through the purchase of conservation easements and other emerging tools. He also serves on the Science Advisory Team for the Malpai Borderlands Groups, cooperative a community-based effort based in southeastern Arizona.

"At the end of the day, all of us who live in the West should pause and consider how fortunate we are," said Knight. "It reminds me of E.B. White's quote 'I rise every morning torn between a desire to save or savor the world. This makes it hard to plan the day.' "

Whatever happens, there is little doubt that the energetic Knights, who are as comfortable in cowboys hats and on horses as they are facilitating meetings or lecturing students, will continue to live their lives with as much gusto as possible. At work or at play, they are determined to fulfill Stegner's instructions to "create a society to match the scenery."

"What I've learned," said Heather Knight, "is that home is not a place where people live, it's a place where people care, about the land, each other, and a shared future."

Citations:

[1] This information is based on an article by Rick Knight in 'Outdoor Recreation: Promise and Peril in the New West: a Conference / June 1998' published by CSU. A condensed version can be found in the Quivira Coalition's June 1999 (vol. 2 no. 4) newsletter.

[2] "Environmental Impacts: the Dark Side of Outdoor Recreation," by Scott Miller, published in 'Outdoor Recreation: Promise and Peril in the New West: a Conference / June 1998' and reprinted in the Quivira Coalition's June 1999 (vol. 2 no. 4) newsletter.

[3] Quotes are from "Holy Cow! Biodiversity on Ranches, Developments, and Protected Areas in the 'New West'" by Jeremy Maestas, Richard

Knight, and Wendell Gilgert, in the Quivira Coalition's January 2002 (vol. 5 no. 1) newsletter.

Additional information can be found in "Ranching West of the 100th Meridian: Culture, Ecology, and Economics / edited by Rick Knight, Wendell Gilgert, and Ed Marston. Island Press, 2002.

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