

# **Reversing habitat loss in the West**

## **Is ecological restoration possible? There are signs of hope**

**By Sharon K. Collinge**  
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The landscapes of the American West have changed dramatically over the past 400 years, and no one can miss the great irony in this transformation.

Wildness defined much of the appeal and attraction of the West, and yet our ancestors transformed the wildness to meet the demands of their—and now our—appetite for convenience.

Western settlers found strong, towering trees they could turn into fuel, houses, and timber for framing mind shafts. They found fertile prairies that could grow wave after wave of grain. They also found some inconveniences—grizzly bears and wolves that ate their livestock, lands too arid to grow crops without irrigation, and soggy wetlands they couldn't use for farms or home-sites. In deftly using these resources and creatively overcoming these inconveniences, colonists transformed the West into a safer, more habitable place for comfort-oriented humans, turning rock, soils, plants, and animals into economic resources.

And now many have noticed the costs we've incurred. Conversion of native forests and grasslands to clear-cut ground and agricultural fields has left little territory available for native plants and animals to thrive. Those spaces that remain tend to be small, isolated remnants of land that can only support a few, reduced populations of say, prairie songbirds or forest-dwelling mammals.

The World Wildlife Fund estimates that only 5-9 percent of the grasslands in eastern Wyoming and Montana and western North and South Dakota remain undisturbed by human activities. These grasslands were home to enormous herds of bison and also contained among the highest numbers of bird species in North America. The conifer forests running north to south through Colorado have declined by 70-80 percent due to logging, hard-rock mining, oil and gas development, and residential construction. In fact, habitat loss and fragmentation are the greatest forces behind the decline of species in North America, causing risk to over 85 percent of the plants and animals on the endangered species list.

As scientists and activists exhort the public to tread this path of reparation for our past sins, citizens may well ask the basic question: Should we even bother to restore these native habitats? Didn't our predecessors in the region devote boundless energy and effort to make the substitute West a safer, easier, more convenient place to live? Should we try to reverse all their hard work?

A question such as this invites ethical argument and economic debate. But the bedrock response of advocates of restoration may well be this: we should restore native habitats

because humans shouldn't be the cause of species declines and extinctions. At the least, we should not diminish the natural heritage we will pass on to posterity.

If we decide that we should restore native habitats, we confront a second question: Is such a thing even possible? Do we have the scientific know-how to write a prescription for re-assembling the scattered pieces into a coherent whole? Or is restoration an uncertain promise, given the complex structure and function of native ecosystems? Studying ecological complexity, scientists try to define simple rules that will help us restore native habitats. It's too early to tell if we can return native habitats to the way they were, but some efforts provide a sprinkling of optimism.

My own research with temporary wetland habitats in California grasslands contributes mixed messages to the conversation about restoring native habitats. These vernal pools have declined in abundance by over 90 percent, and so you can find real vernal pools in very few spots. For the past four years I've painstakingly collected seeds of rare plant species from a relatively intact vernal pool habitat and used them to jump-start 256 newly excavated vernal pool basins near the same site.

Early results show that in some of the pools, these native plants are thriving. However, the rarest of the rare, a federal endangered plant species, only grows where I have planted it; so far it cannot colonize new pools on its own. Plants in other restored pools don't grow well because the environment conditions don't mimic real pools closely enough.

These modest findings suggest that we're still a long way from having on hand a reliable instruction manual on vernal pool restoration. In truth, it would be nice to work with less sense of urgency in timing; wouldn't it be logical to halt further destruction of vernal pool habitat until we learn more about the process of restoration?

Let's say that the scientists achieve their goals and decipher the mysteries of restoration. Will the citizens of the American West choose to put this understanding to work? Or do we lack the legal requirements, the financial incentives, and the political motivations to make restoration a working reality?

Our strongest societal motivation for restoration rests on the Endangered Species Act, declaring that it is illegal to harass, capture, or kill endangered species unless provisions are made to increase survival of endangered populations or species in some way. These provisions usually include creating or restoring habitat for the species in a similar, nearby place. Even though this legal requirement has produced many efforts at restoration, in most cases we're still unsure whether the endangered plants and animals will find their new homes appealing enough to stay a while.

Other restoration efforts draw more on ethical and esthetic motivations than on legal mandates. Nonprofit conservation groups such as The Nature Conservancy and the Predator Conservation Alliance have launched broad-scale efforts to restore grasslands throughout the Great Plains to provide permanent homes for charismatic species such as bison, pronghorn antelope, burrowing owls, ferruginous hawks, prairie dogs, and black-

footed ferrets. Their ambitious goal is to not only increase the numbers of these species but to restore the functioning grassland ecosystems of the Great Plains in particular sites.

These ecosystem restoration efforts may be the most hopeful restoration actions of all, since they are motivated by intangible notions of what is right and what is beautiful. If we so choose, such values can serve as our guideposts for the next 400 years of human habitation in the American West.

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