THE SPINE OF THE CONTINENT

The biomass of humans and cows now exceeds all other large animals combined. Humans' effects on the planet now rival the great forces of geology and weather. We're living in the geologic Age of Man – and will alone largely decide whether we and most of nature will sink or swim.

Mary Ellen Hannibal, in *The Spine of the Continent: The Race to Save America's Last, Best Wilderness* (2013) recounts the research and actions of scientists and activists who would keep us from sinking. In particular she focuses on the crucial contribution of "the other large animals" to the continent's health.

"Only connect," she says – landscapes, ecosystems, creatures and people. No thread of our earthly fabric can be lost with impunity; everything is linked. Weather, geologic forces and human activity determine soil types, which determine plant communities, and those, which animals will live there.

It's a race because the U.S. is now losing about two million acres of natural land a year -- 6,000 acres daily -- to human activity.

The last, best wilderness is the Rocky Mountain corridor, from Mexico to Canada. It's the ancient migration route of many of our large animals, and their last refuge today.

"Conservation" has meant setting aside protected areas for wildlife, such as the reserve in Tehama County soon to harbor elephants. Trouble is, such parks don't work for big animals, as least not in the long haul. They need genetic diversity for their species to evolve. Inbreeding in confined areas defeats that, and dooms them to extinction.

42 types of mammals have disappeared over the decades from 14 national parks – “protection” in parks clearly isn’t enough. And since development – housing, highways, mining, etc. – has made, and continues to make, islands of wild land everywhere, animals all over the continent now face “inbreeding depression and eventual extinction.”

So in addition to increasing and protecting reserves, we also need to protect corridors between them. Grizzlies, for instance, if they’re to survive, need access to their Canadian cousins, to keep the gene pool viable.

To the south, jaguars, pushed north by global warming, face the border fence – like a giant pair of scissors cutting across the landscape. They too are doomed if they can’t move north.

Why such concern with predators? Much of our ecological devastation is thanks to extirpating top predators – grizzlies, wolves, jaguars.

The logic goes like this: without predators, browsers – elk, deer, etc. – take down vegetation so far it can’t reproduce. Invasive species move in, stream banks erode, floods become more violent, water quality deteriorates.

With predators, the browsers know fear, and move along quickly, eating just enough to stimulate growth and thus improve root structure, the soil, and the stability of stream banks. Fear, not kills, does the work.

Unsupervised cattle have the same negative effect. With them, humans can play the predators’ role, moving them from field to field in a process called “mob grazing” which stimulates and fertilizes the grass instead of weakening it with overgrazing.

But how to protect the corridors big predators need? By calculating their numbers and movements and mapping them. Then we can build over- and underpasses or install electronic warning devices for motorists wherever links cannot be otherwise protected.

Besides the big predators, Hannibal discusses animals involved in “ripple effects”: take away blacktailed prairie dogs and you affect the sustainability of 70 other species. Remove beavers and our streams speed up, warm, and lose water quality and species drawn to clear, life-sustaining ponds. Without coyotes, feral cats decimate songbirds.

“What but the wolf’s tooth whittled so fine the fleet limbs of the antelope?” (Robinson Jeffers)

Only connect: habitats, species interactions, conservation groups, ourselves to the land.

The work is accepting citizenship in the continent itself.