



Thad Box

# On Fossils, Buffaloburgers and Sustainable Ecosystems

The rat squirrel found on a meat hook in Laos and widely touted as a new mammal species isn't new after all. According to an article in *Science* it was first described from an 11-million-year-old fossil record found in China.

This spring a group of Australian and Indonesian scientists visited a remote mountain in Indonesia previously seen only by local tribes. They found a new species of bird, some 30 new species of butterflies, and many mammals that had not been seen in the wild for several decades.

Species of tree kangaroos, listed as rare and endangered elsewhere, were numerous. Animals showed no fear of humans, many allowing the researchers to simply pick them up and examine them.

New Zealand had only one mammal, a bat, when the first Polynesians arrived. Birds, many of them flightless, had evolved into the niches occupied by mammals on other land masses. Humans, rats, dogs, and swine arrived with the first boats. They soon destroyed many species that had evolved without predators.

Then Europeans arrived with their large ungulates, cows and sheep. They brought deer for sport and imported elk from America. Possums were introduced from Australia. Native grassland, forests, and heath were changed as the native plants were grazed out or deliberately destroyed and replaced by imported forage species.

The deer, elk and possum populations increased to plague proportions. Large natural areas were defoliated; many forests turned into wastelands. The Department of Conservation began a long and costly battle against the herbivores. Gunners from helicopters killed thousands of deer and elk, bringing their populations in most places under control. The abundant supply of slaughtered deer developed a market for venison.

As the herds were reduced to carrying capacity, farmers started deer farms. Today, deer and elk farms are common. Most were started by animals captured from the wild herds of imported, nonnative wildlife. But today, by almost any measure, they are domestic animals.

The theme of this issue of *Rangelands* is "Wildlife." This theme raises 2 questions for rangeland stewards: What is wildlife? And how does wildlife fit into the role of sustainability of rangelands? These questions are complicated both by the biological roles of the animals and by political interpretation of the beast in our culture.

When I first became a range management professional, wildlife was generally considered as game animals and furbearers. If it provided sport hunting or an economic gain we claimed it. Then we added another category of nongame wildlife to include hummingbirds, songbirds, and cute little chipmunks—those things that gave people pleasure just because they existed. To separate them from bothersome rats, starlings, and things that annoyed us, we coined the term pest wildlife.

Then rare and endangered species, those animals that were in danger of extinction, became key animals in our land use plans. It took special laws and court rulings to make those ani-

mals part of our working thoughts when managing rangelands. We were forced to look at the entire biota affecting rangeland use, not just those important in the marketplace.

Our rangeland focus has gradually changed from short-term economic gain to long-term sustainability. We realize we must be concerned with all animals' roles in the functioning of the ecosystem. Animals from dung beetles to elephants must be factored into the health of the land. We are still confused. It may seem logical to consider any species that reproduces and sustains a population in a habitat without human husbandry as wildlife.

Biological purists say the animal has to be native to the site, and argue for complete restoration of the site—soil, plants, and related animals—so the species can continue. Ecological pragmatists, more concerned with ecosystem function than with “first rights,” may readily accept an exotic species as wildlife as long as it contributes positively to energy flow, nutrient cycling, and system stability.

While we biologically oriented stewards wrestle with ecosystem function, political response to nonnative species is as confusing as the biology. Ring-necked pheasants, introduced game birds, are widely accepted as wildlife. Feral swine are considered wild boar, hence wildlife, in some places and pests to be destroyed in others.

We do not even agree on what constitutes feral animals. To some, any nonnative population is feral. This can include domestic livestock under management or starlings in our cities. To others, feral means an unmanaged domestic animal gone wild.

Free-ranging horses and donkeys are some of the most successful feral species on rangelands. A court case decided they are not wildlife. Another law protects them on some public lands, limiting what can be done to keep them in balance with their habitat.

When primary concern is for system sustainability, it may not be all that important to try to determine what is wildlife, what is native, what was there originally, or what is a domestic animal. The important question is whether the system, not the individual species, functions in a way that can sustain itself.

As our knowledge of succession evolved from the Clementsian paradigm to one that recognizes alternative stable states, we realized that thresholds are reached where systems themselves change. The old system morphs into something quite different, but often stable and perhaps sustainable.

The new system develops its own interrelationships and balances. To try to make it support original “wildlife” is no longer simply providing some past habitat that has been altered from misuse. Practically, original wildlife is now an alien, trying to find conditions that no longer exist in the new system. If sustainability is our goal, restoring original wildlife may not be the best path to take. We have to address what is needed for the new system to function most efficiently.

On a drive through desert rangelands between Las Cruces and Almagordo, New Mexico, one is more likely to see an oryx than a deer or pronghorn.

On the checkerboard ranges of southern Wyoming, huge, beautiful, “wild” draft horses, descended from Belgian work animals, graze forage once eaten by elk.

Large German brown trout lie waiting a fly in the streams of my valley; Rio Grande turkeys roost in the trees overhead.

In the rocky cheatgrass ranges of southeastern Idaho, chukar partridges flourish.

Wolves, giant condors, lynx, and other animals once extirpated from western ranges are being released; some reestablish themselves.

Steaks from bison raised on American ranches and venison from New Zealand farms join beef and lamb on menus of the world's finest restaurants. Buffaloburger is sold in my grocery store.

The real question about wildlife may not be which of these critters “belong” on our rangelands, but which can help our communities become sustainable. In the quest for sustainability, we still have to listen to the land.

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