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PLEISTOCENE PARK BOOK: SHORT PROPOSAL

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Why everything you know about pre-Columbian America is wrong: that “bison are a human artifact,” and so may be the Great Plains and the tundra; that the present Yellowstone megafauna are Eurasian; why we should (re)introduce elephants, horses, camels, and lions; why condors and certain plants may remain rare unless we do; what the Russians are doing about it.

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The cry “Revive the Pleistocene” is not new; I believe it was first said in a Michael McClure poem in 1975. But these days, as scientific knowledge of man’s impact on the megafauna and its associated ecosystem increases, it is looking like not only a romantic dream but a scientific possibility.

Since the 70’s, a few visionary scientists have been arguing that the return of the ghosts would be both desirable and feasible. Most noteworthy among them – and cited by every writer and scientist I mention here – is Paul Martin, Emeritus Professor of Geosciences at the University of Arizona in Tucson and co-editor of the magisterial *Quaternary Extinctions* (1984.) He was a persuasive early

advocate of the idea that horses and even elephants could restore plant (and therefore animal) biodiversity when reintroduced to the New World.

And now somebody is trying to do the revival, but not (yet) in the USA. If certain North American landscapes are “man-made,” so, argue some ecologists, is the tundra. It was once thought that changing weather conditions doomed the residents of the steppes that once stretched from Asia across the Beringia land bridge to Alaska, because the grass ecosystem that they lived on changed into one of moss and acid-tolerant vegetation. Now it is believed that humans killed off the animals – horse, elephant, musk ox, bison – that maintained the grass! An innovative Russian, Sergei Zimov, is attempting to rebuild the “Mammoth Steppe” on 24 square kilometers of land on the edge of the Siberian tundra. His tools so far are feral horses, American wood bison, and musk oxen, but he eventually hopes to put in Asian elephants if they can acclimate to the cold, and, of course, lions, which once ranged all the way to the American southwest. And if he’s successful, he wants to expand. He already has colleagues at the University of Alaska and UC Santa Cruz.

Siberia and parts of Alaska and the Yukon are full of bones. The rivers near Zimov have banks where anyone can put their hands on the visible bones of a mammoth or other Pleistocene mega-beast. A recent *Discover* article told how paleontologists are enlisting the help of placer gold miners, who are constantly blasting bones of extinct monsters out of the gold-bearing muck with their high-pressure hoses. (More creepily, the

Siberian sites are often overlaid with the bones of hundreds of prisoners from the Arctic labor camps; this might make a fascinating if grim digression in any book on the subject.)

Two recent popular books, Connie Barlow's *Ghosts of Evolution* and Tim Flannery's *The External Frontier*, deal with the human impact on the megafauna in America, starting 11-12,000 years ago. Barlow describes plants that need megafaunal "dispersers" – such things as honey locust and Osage orange *need* mammoths and mastodons! Flannery, an iconoclastic Australian mammalogist, narrates the biological history of North America since the meteor impact that destroyed the dinosaurs, but concentrates most on the periods immediately before and after humans arrived here. He is the one who states bluntly that modern bison are "a human artifact," selected from an older, larger species with different horns and feeding habits by the predatory habits of Clovis hunters. He also shows how the "native" megafauna of, say, Yellowstone – elk, modern bison, moose, grizzlies – are Eurasian, and invaded at the same time as humans. Horses, elephants, and camels are all more native than the species above. He says, provocatively, that a mere grizzly couldn't have competed with the swift, enormous (6 feet at the shoulder!) and entirely carnivorous short-faced bear until that predator's population dived as its food sources were killed.

Needless to say, these writers and scientists believe that the first human invasion more than decimated the megafauna and provide good evidence that this is so. A few plants hang on, "hoping" for their ghost dispersers to return. The California condor, once the smallest of an ecological "guild" of scavenger birds, hung on the west coast feeding

on whale carcasses; it probably won't return in numbers unless large carrion does. Other species might not be quite as happy at the return of the ghosts. Pronghorn antelope, like Pleistocene fruits, are "overbuilt" – they can run faster than any North American predator. Their foremost student, John Byers, argues in his monograph *American Pronghorn* that they evolved to outrun American cheetahs, short-faced bears, and cursorial hyenas!

Our (my) thesis? Eventually we should "bring back" elephants (both species? Mammoth clones?) as well as horses, probably zebras, some kind of camel, probably lions and cheetahs, for a more natural and diverse landscape, from Alaska to Arizona.

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I'm only scratching the surface here – the biological, and social, implications are wild, with impacts on conservation, human/animal interactions, evolution, the whole idea of "stability," of "nature," of what "wild" is, of what "artificial" is.

There's also the pure adventure of seeing the beginning of the return of the megafauna of Siberia. I have good contacts with many of the people involved already. Paul Martin is a former colleague of my wife Libby's brother (and friend of his) as well as the mentor of my friend Gary Nabhan, another well-known scientist and "restorationist." I have handled Pleistocene giant sloth droppings in his lab. Tim Flannery is a friend of a friend. I have good contacts in Russian paleontology, including an

American paleoarchaeologist (Laura Niven) currently at Tübingen, who has worked in Siberia. I have a contact in the Yukon who is both a mammalogist (specialty in caribou) and a guide, and owns a lodge there. I even have an embryonic idea (my own) of a place in the southwest where a restoration experiment might start.

I intend to follow up on all this. I need to get to Siberia next year. Not only do I want to visit the “Park”; there is a conference on mammoths being held in Yakutsk, and I want to attend; perhaps I could do that, then go on to Zimov’s. I want to make the Siberian Pleistocene Park the centerpiece; but I would also like to wander the desert with Paul Martin, research wild horses (good work recently done in California showing one herd in equilibrium with its predators, and why) interview John Byers and Gary Nabhan, talk to people re-introducing California condors in the Grand Canyon, etc., etc.. If possible, I’d like to visit the Yukon too. And all these contacts would undoubtedly generate more ideas.

The two books I mentioned, on certain aspects of the Pleistocene, sold well, as did one on mammoths. I believe that this one might even more exciting, and do better. The magazine possibilities are obvious. One possibility: *Sports Illustrated Adventures* already ran an excerpt of *Eagle Dreams*, and wants more.