

## THE KINGDOM OF RARITIES

Eric Dinerstein, in “The Kingdom of Rarities” (2013), invites us on treks through (mostly) remote malarial jungles and treacherous mountain forests, hoping to catch glimpses of the planet’s rarest mammals and birds. Picture him on an elephant’s back, moving through high grass among tigers and rhinoceroses.

At 7 billion, he asks, how can humans live sustainably without destroying the last strongholds of rarities? And how important are rarities?

The One horned rhinoceros – hence unicorns, perhaps – deposits fruit seed filled dung in massive piles, apparently to communicate with each other through odors, and from these piles, forests of fruit trees grow, in a land where trees find it hard to get a foothold.

Elsewhere, without fruit eaters, trees with wind and gravity dispersed seeds proliferate, and these sequester far less carbon. So a single rare species can have a major impact on its environment, simply by eating and defecating.

With the exception of rhinoceroses, jaguars, tigers, armadillos and cranes, many of the animals Dinerstein names may be mere sounds to many of us – pangolins, armadillos, armadillos, sloth bears, honeycreepers, saolas (the most

recently discovered large mammal, in 1992), muntjacs, duikers, chevrotains, silver langurs, birds of paradise, bowerbirds, maned wolves, etc.

Among natural causes of rarity is isolation, on islands or remote areas cut off by rugged mountainous terrain, where territories are sharply limited – and it's to these locales that Dinerstein often leads us. At another extreme, through competition for resources, sheer numbers of species may force individual species to remain small. Or, predators and prey may prefer a narrow range of food – jaguars' favorite prey is the white-lipped peccary; its favorite food is one species of pine nut. In Dinerstein's summary, rarity's main natural causes are narrow range, low numbers (due perhaps to long gestation or intermittent breeding) and extreme habitat requirements.

Among human causes of rarity are habitat loss through global warming, war, logging, and conversion of forest land to agriculture. With an estimated 9 billion of us on earth by 2050, the world demand for food will double, and corporations are already buying wild tropical acreage to fulfill that demand.

Hunting also continues to take heavy tolls, for bushmeat, for aphrodisiacs (rhino horns) and trophies.

Add the introduction of alien species like mosquitoes, cows, pigs and rats, and you have the "sixth extinction" – 1,000 times the normal, background rate, thanks to human activity.

Some statistics: as few as 25% of earth's species account for 90-95% of total individuals, so almost 75% of species are rare. Tropical forests, with 5% of earth's area, hold 60% of its species. Worldwide, almost 40% of mammals 20 kilos or bigger are threatened with extinction. Hawaii has 45% of the U.S.'s endangered species.

How should we go about saving rare animals?

First, certainly, by learning as much as we can, through field work involving camera "trapping," tagging, radio collars, "sniffer dogs" – dogs that find scat which can tell researchers complicated stories. Then applying this knowledge, by providing refuges of adequate size for wide roamers like jaguars, by seeing that the females of large mammals live to a ripe old age, for best reproductive success, and by protecting the widest possible range of habitats.

Finally, by controlling poachers and alien predators, even hand pollinating rare plants.

Ironically, three of the poorest nations, Bhutan, Nepal and Namibia, have the best environmental protection worldwide. In the Himalayas, monks and monasteries sometimes ban hunting and offer sanctuary to wildlife, thanks to Buddhism's compassion for all living things. "The global conservation crisis, Dinerstein says, is ultimately a spiritual crisis in disguise."

As of 2007, 130 big mammal reserves worldwide protected wildlife well enough that species there are as they were 500 years ago. That, certainly, is a place to begin.