

## Taking the wild out of wildlife

by John Morton



*Purple Martins east of the Mississippi no longer nest in the wild and are dependent on man-made structures.*

I find this a little depressing. A 2018 study published by the National Academy of Sciences estimates that by weight, 70 percent of all birds on Earth are farmed poultry and 96 percent of all mammals are cattle, pigs or humans. Only 30 percent of avian biomass and 4 percent of mammalian biomass on the planet are found in the wild! And only 23 percent of the global land area is wild and that's decreasing quickly.

The good news is that not all wildlife need wild lands. Indeed, some wildlife have become at least partially dependent on humans for their well-being. Perhaps the most widely distributed birds are the House Sparrow, European Starling and Rock Pigeon that co-exist with humans throughout the world, spread by European colonization. Starlings and pigeons now live on the Kenai Peninsula, and House Sparrows are seen frequently in Southeast Alaska.

Consider all the birds which now use boxes and platforms for nesting. Mark Laker, an ecologist here at Kenai National Wildlife Refuge, just penned an article about how storks in Poland nest on platforms in the same way that ospreys do here on the peninsula. Barn Swallows, Chimney Swifts and the eastern subspecies of Purple Martin only nest in or on man-made structures, no longer nesting in the wild! Wood Ducks and Eastern Bluebirds may well be headed that way, populations of which are already dependent on nest boxes.

Similarly, roost boxes are a common way of helping to sustain some bat species. Here on the Kenai Peninsula, there has never been a maternal colony of Little Brown Bats found in the wild. All colonies discovered to date have been associated with man-made structures, more often than not old log cabins still used by their human owners.

Matt Bowser, the refuge's entomologist, made an amazing find in 2005. He noticed a small insect walking across our laboratory counter. While most people would have ignored it or more likely killed it, Matt identified it. It turned out to be the first record of *Badonnelia titei*, a species of book louse, in the Western Hemisphere! This louse is not known to occur anywhere in the world other than in human dwellings.

The so-called London Underground Mosquito (*Culex pipiens molestus*) made the news last year because it may be a subspecies that evolved in that city's subway system. In contrast to other *Culex* species, this genetic variant has the ability to produce eggs without a vertebrate bloodmeal, mate in confined spaces, forego winter diapaus, occupy subterranean environments with limited surface access, and feed readily on mammals (including humans).

And then there are unique species which persisted for centuries in refugia created by humans, only to be re-dispersed by humans in modern times. For centuries, the Ginkgo tree was thought extinct until it was found growing in two small areas in eastern China. High genetic uniformity suggests these trees were likely planted and preserved by Chinese monks for 1,000 years. Ginkgoes are now planted widely around the world in gardens and urban landscapes. They were among the most common trees I saw planted in Chilean cities when I traveled there a couple years ago.

Père David's deer is the only member of its genus, unknown in the wild within historical times. The world's only herd was maintained in the Nanyuan Royal Hunting Garden near Beijing until the late 1800s. Destruction of a garden wall by a flood and consumption by occupying German soldiers during the Boxer Rebellion drove this deer to extinction in its native China. However, a British duke rounded up

a few deer, previously (and illegally) transported to Europe for exhibition and breeding, and propagated a herd at Woburn Abbey. Their descendants have since been distributed to zoos worldwide and reintroduced to China in 1985.

Certainly most endangered species in the U.S. have this special status because of the deleterious effects of human activities, but they also persist because of us. As a long-time member of the Mariana Crow recovery team, I've been involved in increasingly more extreme management as the population nears extinction. Reduced to a single small island in the Marianas archipelago, we've evolved from protecting their habitat to controlling their predators to captive rearing and now, possibly, translocating them to islands where they've never occurred before.

A 2010 article published in *American Forests* describes how Osage-orange and Kentucky Coffeetree—both “ecological anachronisms”—have persisted in the wild because of humans despite losing their natural disperser, the woolly mammoth, millennia ago.

Osage-orange was originally limited in distribution to the Red River region at the nexus of Texas, Oklahoma and Arkansas. Meriwether Lewis wrote the Osage Nation “so much ... esteem the wood of this tree for the purpose of making their bows, that they travel many hundreds of miles in quest of it.” Some historians suggest the high value that Native Americans placed on this wood for bows contributed to the great wealth of the Spiroan Mississippian culture that controlled the land upon which these trees grew.

European settlers subsequently planted Osage-orange widely as living fences, taking advantage of the tree's ability to spread via shoots from lateral roots. Despite the extinction of mammoths that liked to feed

on its big green fruit, Osage-orange is now found in 39 states and Ontario.

Another anachronistic tree is the Kentucky coffeetree, so named because early Kentucky settlers used its beans as a cheap coffee substitute. Coffeetrees have tough, leathery pods with large, toxic seeds surrounded by a sweet pulp that were once eaten and dispersed by mammoths.

These hard seeds were also used in a dice game by various tribes. As a result, they were carried about when the tribe moved, many becoming lost around villages. John Curtis, a famous botany professor at the University of Wisconsin-Madison, described in 1959 that “at present, the species has a very local distribution in Wisconsin, with each locality at or near the site of an Indian village.”

It is likely that “wild” plants and animals will become increasingly dependent on humans to sustain them. Some might consider that a sad turn of events. I do, but I also appreciate what an opportunity we have to help conserve biodiversity.

Recently, while walking down a sidewalk in Appleton, Wisconsin, I saw planted milkweed growing beneath city shade trees. What a nice treat for monarch butterflies that depend on milkweed!

Imagine if we all created gardens designed to attract pollinators, butterflies or birds; took up beekeeping; installed bat boxes; or planted rare native plants instead of the usual box-store ornamentals. The sad truth is there just aren't enough wild places like Kenai Refuge to stop the global loss of species.

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