There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hillsides of orchards where, in spring, white clouds of bloom drifted above the green fields. In autumn, oak and maple and birch set up a blaze of color that flamed and flickered across a backdrop of pines. Then foxes barked in the hills and deer silently crossed

5 flickered across a backdrop of pines. Then foxes barked in the hills and deer silently crossed the fields, half hidden in the mists of the fall mornings. [...]

So it had been from the days many years ago when the first settlers raised their houses, sank their wells, and built their barns. [...]

Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community: mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. In the town the doctors had become more and more puzzled by new kinds of sickness appearing among their patients. There had been several sudden and unexplained deaths, not only among adults but even among children, who would be stricken suddenly while at play and die within a few hours.

There was a strange stillness. The birds, for example—where had they gone? Many people spoke of them, puzzled and disturbed. The feeding stations in the backyards were deserted. The few birds seen anywhere were moribund; they trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus

20 of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh.

On the farms the hens brooded, but no chicks hatched. The farmers complained that they were unable to raise any pigs—the litters were small and the young survived only a few days. The apple trees were coming into bloom but no bees droned among the blossoms, so

- 25 there was no pollination and there would be no fruit. The roadsides, once so attractive, were now lined with browned and withered vegetation as though swept by fire. These, too, were silent, deserted by all living things. Even the streams were now lifeless. Anglers no longer visited them, for all the fish had died.
- In the gutters under the eaves and between the shingles of the roofs, a white granular 30 powder still showed a few patches; some weeks before it had fallen like snow upon the roofs and the lawns, the fields and streams. No witchcraft, no enemy action had silenced the rebirth of new life in this stricken world. The people had done it themselves.

This town does not actually exist, but it might easily have a thousand counterparts in America or elsewhere in the world. I know of no community that has experienced all the misfortunes I describe. Yet every one of these disasters has actually happened somewhere, and many real communities have already suffered a substantial number of them. A grim specter has crept upon us almost unnoticed, and this imagined tragedy may easily become a stark reality we all shall know. What has already silenced the voices of spring in countless towns in America? This book is an attempt to explain.

## CPES1 TEXT A:

The ongoing sixth mass species extinction is the result of the destruction of component populations leading to eventual extirpation of entire species. Populations and species extinctions have severe implications for society through the degradation of ecosystem services. Here we assess the extinction crisis from a different perspective. We examine 29,400 species of 5 terrestrial vertebrates, and determine which are on the brink of extinction because they have fewer than 1,000 individuals. There are 515 species on the brink (1.7% of the evaluated vertebrates). Around 94% of the populations of 77 mammal and bird species on the brink have been lost in the last century. Assuming all species on the brink have similar trends, more than 237,000 populations of those species have vanished since 1900. We conclude the human-caused 10 sixth mass extinction is likely accelerating for several reasons. First, many of the species that have been driven to the brink will likely become extinct soon. Second, the distribution of those species highly coincides with hundreds of other endangered species, surviving in regions with high human impacts, suggesting ongoing regional biodiversity collapses. Third, close ecological interactions of species on the brink tend to move other species toward annihilation when they 15 disappear—extinction breeds extinctions. Finally, human pressures on the biosphere are growing rapidly, and a recent example is the current coronavirus disease 2019 (Covid-19) pandemic, linked to wildlife trade. Our results reemphasize the extreme urgency of taking much-expanded worldwide actions to save wild species and humanity's crucial life-support systems from this existential threat.

"Vertebrates on the brink of biological annihilation and the sixth mass extinction", Gerardo Ceballos, Paul R. Ehrlich, Peter H. Raven, PNAS [Proceedings of the National Academy of Sciences, USA], 1 June 2020

## TEXT B:

Imagine, for instance, that the last dodo didn't perish. Imagine a single survivor, a lonely fugitive at large on mainland Mauritius at the end of the seventeenth century. Imagine this fugitive as a female. She would have been bulky and flightless and befuddled - but resourceful enough to have escaped and endured when the other birds didn't. Or else she was lucky.

5 Maybe she has spent all her years in the Bambous Mountains along the southeastern coast, where the various forms of human-brought menace were slow to penetrate. Or she might have lurked in a creek drainage of the Black River Gorges. Time and trouble had finally caught up with her. Imagine that her last hatchling had been snarfed by a feral pig. That her last fertile egg had 10

been eaten by a monkey. That her mate was dead, clubbed by a hungry Dutch sailor, and that she had no hope of finding another. During the past half-dozen years, longer than a bird could remember, she had not even set eyes on a member of her own species.

Raphus cucullatus had become rare unto death. But his one flesh-and-blood individual still lived. Imagine she was thirty years old, or thirty-five, an ancient age for most sorts of bird but not impossible for a member of such a large-bodied species. She no longer ran, she waddled.

15 Lately she was going blind. Her digestive system was balky. In the dark of an early morning in 1667, say, during a rainstorm, she took cover beneath a cold stone ledge at the base of one of the Black River cliffs. She drew her head down against her body, fluffed her feathers for warmth, squinted in patient misery. She waited. She didn't know it, nor did anyone else, but she was the only dodo on Earth. When the storm passed, she never opened her eyes. This is extinction.