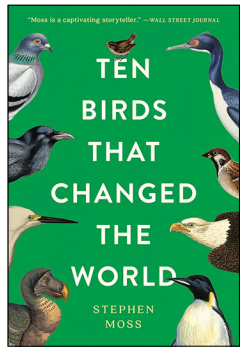
Ten Birds that Changed the World

By Stephen Moss. 2023. Basic Books. 416 pages and 10 black and white illustrations, 38.00 CAD, Hardcover, 29.99 CAD, Paper, 22.99 CAD, E-book.



How does one determine which 10 birds changed the world out of around 11 000 known species (IOC 2024)? In the Introduction, Moss states that each species he chose relates to "a fundamental aspect of our humanity" that changed the course of human history (p. 4). In the order that the species appear in the book, these themes are: mythology, communication, food and family, extinction, evolution, agriculture, conservation, politics, hubris, and the climate emergency.

Common Raven (*Corvus corax*; Chapter 1) is prominent in the mythologies of many cultures around the world because of its intelligence, behaviour, and ability to adapt to a wide range of climatic conditions, habitats, and elevations. This species is so adaptable that the concept of it having native habitat hardly applies. Raven is ambivalent in many myths, playing both benevolent and malevolent roles, signifying vital connections between birds, people, and history.

The domestication of wild doves for food and feathers occurred between 5000 and 10 000 years before present (YBP) in the area of present-day Iraq. While there are more than 300 species in the family Columbidae, it is the ubiquitous Rock Pigeon (*Columba livia*; Chapter 2) that rose to importance because of its homing instinct. Tens of thousands of pigeons were used to send life-or-death messages during the two world wars of the 20th century, often trumping other methods of communication. Their advantages are many during wartime: they fly rapidly and so are difficult to shoot down; they return quickly; they have no radio signal to intercept; they cannot be interrogated by the enemy, nor betray their government by acting as double agents.

Wild Turkey (*Meleagris gallopavo*; Chapter 3) is the largest game bird in the world and was an early and welcome source of food for Indigenous peoples and settlers. It has become part of the founding myth of the United States and Thanksgiving celebrations. It is the only significant avian species to be domesticated in the Americas, which occurred between 2000 and 2300 YBP.

Moss says that Dodo (*Raphus cucullatus*; Chapter 4) "has become the definitive emblem of extinction" (p. 113). The first written description of the bird was in 1598 of a specimen from Mauritius—and by 1662 the species was extinct. It wasn't predation by humans that did Dodo in, but predators introduced by humans, which ate eggs and chicks from their ground nests. Moss laments that we know less about the biology of Dodo than we do of famous dinosaurs.

Moss's icon for evolution is not a single species, but the group known as Darwin's Finches (subfamily Geospizinae; Chapter 5) found in the Galápagos Islands of Ecuador. The ancestral species was likely blown over from the mainland two to three million years ago and then evolved into 17 species (depending on the taxonomic authority) through adaptive radiation. The size and shape of their beaks reflects differences in food and feeding methods. While these finches did not actually inspire Charles Darwin's theories of natural selection, they are still one of the best demonstrations of those developed by his successors, such as David Lack, who is considered by some to be "the father of evolutionary biology" (p. 153).

The Pacific coast of South America—hot and dry with virtually no rainfall—has a rich marine environment because the Humboldt Current produces constant upwelling of cold water, which creates ideal conditions for fish. The fish, in turn, attract many seabirds, such as Guanay Cormorant (*Leucocarbo bougainvillii*; Chapter 6). Over centuries the birds' droppings, known as guano, formed a thick crust (up to 50 m deep) on their nesting islands. It was harvested and sold for fertilizer—from 1840 to 1879 some 12.7 million tonnes of guano were shipped from Peru to Europe and North America. This gruelling work was done by tens of thousands of indentured Chinese labourers in "a tale of greed and profit, horror and hardship, vast riches and almost unimaginable suffering" (p. 181). In the first 15 years of the industry, labourer mortality was 35 to 40%! Cormorant populations plummeted by 90% from the long-term damage to breeding habitats, daily disturbance by labourers, and the taking of birds and eggs to eat by the starving men. Guano is still harvested in some areas, although it has mostly been replaced by synthetic products.

Starting in the late 1700s, it became very fashionable for high-society women in Europe to wear bird feathers in their hats. This led to a very profitable plume, or millinery, trade, which was also very cruel and destructive—by the mid-1880s as many as five million waterbirds, including Snowy Egret (*Egretta thula*; Chapter 7), were being killed annually for their skins and breeding feathers. But it was also women in the United Kingdom who began lobbying to stop

this practice, culminating in the formation of the Society for the Protection of Birds (SPB, later becoming the Royal SPB) in 1891. In North America a similar effort led to the formation of the Massachusetts Audubon Society in 1896. While women were vilified for wearing the hats, it was a long time before anger was turned on the men doing the killing and profiting. It wasn't until significant laws such as the *Lacey Act*, the *Weeks–McLean Act*, and the *Migratory Bird Treaty Act* were passed that the trade began to decline.

While Bald Eagle (*Haliaeetus leucocephalus*; Chapter 8) is commonly used in iconography, marketing, and politics, and is the national bird of more countries and nation states than any other species, it was never officially adopted as the national bird of the USA (it is on both the Great Seal of the United States and the Seal of the President, though). The eagle is a symbol of strength, longevity, and freedom, but has also been used to justify power and authority from the Roman Empire to Nazi Germany.

Destructive authority was behind the slaughter of hundreds of millions (perhaps one billion) Eurasian Tree Sparrow (*Passer montanus*; Chapter 9) in 1958 after Mao Zedong, former chairman of the People's Republic of China, declared them pests in the name of preventing famine. Unsurprisingly, the following summer the rice harvest was a disaster as millions of insects, now not being eaten by sparrows, stripped the crops bare. While this was not the sole cause of the crop failure, the Great Sparrow Campaign showed "the danger of a society losing touch with fundamental ecological truths" (p. 291). Many other bird species also died during this campaign.

In the final chapter Moss uses Emperor Penguin (*Aptenodytes forsteri*) as "the poster bird of the impending catastrophe" of climate change (p. 300). Warming oceans are causing their food resources to decline or move farther away, and warming air temperatures are reducing the amount and extent of sea ice, impacting breeding colonies when the ice breaks up earlier and drowning chicks.

Moss does discuss many other species throughout the book, and readers can find more information in numerous footnotes and 58 pages of chapter notes. The 20-page index is thorough, including illustrations and footnotes. The leading page of each chapter includes a beautiful pen-and-ink illustration by Nicole Heidaripour of the relevant species. My one quibble is with the publisher, who bulked up the paper and used increased leading (the space between adjacent lines of text, in this case 27 lines per page rather than a more normal 37), which makes the book thicker than it needs to be and thus costs more than it needs to.

Literature Cited

IOC (International Ornithological Congress). 2024. IOC world bird list version 14.2, updates. Accessed 11 February 2025. https://www.worldbirdnames.org/new/updates/.

Cyndi M. Smith
Canmore, AB, Canada