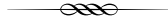


Chapter 8

## Rare Birds and Rare Books

### The Species as Work of Art

Gordon M. Sayre



Of the nearly five hundred bird species that John James Audubon painted in the four hundred and thirty-five plates of his *Birds of America*, six have become extinct since that great work was published, and at least two, the great auk and the California condor, were not actual portraits of specimens he had shot in the field.<sup>1</sup> Audubon proudly claimed, ‘I have never drawn from a stuffed specimen’, and directed his engravers to add the phrase ‘drawn from nature’ alongside his signature on most of the *Birds of America* plates, so these two species undercut his statements of method.<sup>2</sup> Why did he nonetheless include the two birds in his series? The story of these two species can teach us a lot about early efforts towards bird conservation, and about the role of art and media in humans’ conception of endangered species.

The great auk was the first widely publicized and fetishized endangered species in the anglophone world. Audubon himself associated the great auk with extinction. While hunting bison along the Missouri River in 1843 he wrote: ‘this cannot last . . . before many years the Buffalo, like the Great Auk, will have disappeared; surely this should not be permitted’.<sup>3</sup> As a large flightless seabird nesting in dense and highly social colonies on small islands in the North Atlantic, unable to reach the steeper, more inaccessible cliffs and sea stacks where other birds found protection from predators, the great auk was (like the dodo two centuries earlier in the Indian Ocean) highly vulnerable to hungry sailors and fisherman. Like the passenger pigeon, a species better known to American birders and fans

of Audubon, the great auk's dense flocks made its roosting sites juicy targets for hunters, and encouraged mass slaughters with little thought of the bird's rarity. Funk Island, near the north-east corner of Newfoundland, was one such site, home to the largest known colony of great auks in the Americas (it still hosts large colonies of guillemots, murres, and other species). Because it was an early landfall for ships crossing the stormy North Atlantic, and close to the cod fisheries that had been exploited since the 1400s, the birds were slaughtered there repeatedly.

The great auk's rarity, large size, strikingly patterned eggs, and picturesque habitat near northern Europe gave it such notoriety that Audubon must have felt obligated to include it in *Birds of America*, even if he could not obtain a specimen because the birds no longer lived on or near the continent. During a voyage to Newfoundland in 1833 to collect those North Atlantic seabirds he needed to complete the *Birds of America*, Audubon tried to find a great auk. He wrote in his *Ornithological Biography* of the species this pathetic story:

The only authentic account of the occurrence of this bird on our coast that I possess, was obtained from Mr Henry Havell, brother to my engraver, who, when on his passage from New York to England, hooked a great auk on the banks of Newfoundland, in extremely boisterous weather. On being hauled on board, it was left at liberty on the deck. It walked very awkwardly, often tumbling over, bit every one within reach of its powerful bill, and refused food of all kinds.<sup>4</sup>

Audubon must have used stuffed great auk specimens preserved in England or Scotland as models for his painting (Illustration 8.1).

The bird still survived on the European side of the Atlantic for a short time after Audubon's work appeared. St Kilda, west of the Outer Hebrides, was one island group where great auks were often found, and where the ethnographic interest of the local human population had enhanced the lure for bird collectors and other readers of books like Martin Martin's *A Late Voyage to St. Kilda, the Remotest of All the Hebrides, or Western Isles of Scotland* (1698).<sup>5</sup> The inaccessibility of these islands, the short summer nesting season of the great auk, and the absence of photography in the early nineteenth century meant the birds were not individuated by those who 'collected' or killed them. These collectors did not seek to bond with the live birds, but they treasured the specimen commodities, such as eggs, which became valuable artefacts. In *The Great Auk*, bird artist Errol Fuller includes photos and provenance for each of seventy-six remaining eggs of the species, and each of eighty stuffed specimens (as well as several skeletons). Most of Fuller's entries have a photograph and description, and the distinctive patterns that helped to make the large eggs so collectable



Illustration 8.1 John James Audubon, *Great auk*, 1836. Hand-coloured aquatint.

enabled him to cross-reference old photographs to the individual eggs on display today. Fuller's catalogue of species artefacts resembles research by art historians and bibliophiles on the paintings and publications by Audubon and by Mark Catesby, and, as we shall see, the work of conservation biologists on the California condor.

The California condor that Audubon painted was based upon descriptions and paintings by John Kirk Townsend, a friend from Philadelphia who had travelled with fur trade entrepreneur Nathaniel J. Wyeth to the lower Columbia River in 1834–35.<sup>6</sup> Townsend returned just in time for Audubon to paint the *Californian vulture* in 1838 and publish it among the last three sets of *The Birds of America* plates, sent to subscribers in 1839 (Illustration 8.2).

The California condor, the largest North American bird measured by wingspan, was fairly common along the Pacific Coast and inland valleys at that time, but its population then declined steadily for a century and half. In the twentieth century its remaining habitat in southern California was invaded by miners, ranchers and real estate developers, and it nearly went extinct in the 1980s. Today there are about five hundred birds alive.

This chapter examines these two bird species, and Audubon's artistic methods of representing them, as a means to better understand conflicts between the motives of collection and conservation, between economic possession and aesthetic pleasure, that afflict scientists, tourists and artists



Illustration 8.2 John James Audubon, *Californian vulture*, 1838. Hand-coloured aquatint.

alike. I argue that endangered species are treasured and protected according to principles of value that also structure the market for works of visual art, and that the aura of singularity that differentiates an original painting from its printed reproductions evolved in the eighteenth and nineteenth centuries alongside the concept of rare animal species and their artefactual specimens.

The great auk illustrates the dilemma of conservation and collection, because its extinction was a direct consequence of hunting by or for collectors, who were well aware of the threat they posed to the species' survival:

Paradoxically, amidst the rise of natural history and discussions of potential extinction, the great auk's rarity and threatened status accelerated its demise. The remaining birds and their eggs became a form of exotic animal capital, commodified and highly valued in the burgeoning market for specimens powered by museums and private collectors. Hunters scoured remote islands, braving dangerous seas and rocky cliffs in pursuit of birds and their large, striking eggs. The death of what were claimed to be the final great auks is well recorded. It took place on a small island [Edley] off Iceland in 1844, when a pair of birds were caught, clubbed and sent to a Belgian museum for stuffing and display.<sup>7</sup>

At the time Audubon was publishing and promoting his work there in the 1830s, bird fanciers and egg collectors in Britain knew the great auk was greatly endangered. One clue was that the prices paid for its eggs were among the highest of all in an oology market that received as much media attention then as auctions of masterpiece paintings and classic cars do today. The prestige of egg and specimen collecting was so great among the ruling classes that it was difficult to stop, even when the entire species was at risk. Audubon adopted the persona of a woodsman and hunter, as well as an ornithological expert. While in Britain promoting and selling subscriptions for his books, he dressed like John Filson's Daniel Boone or J.F. Cooper's Leatherstocking. The macho mystique of the American frontier hunter helped to burnish his image in the eyes of his customers, but Audubon also reminded his audience that their aesthetic pleasure in beholding his images of birds was a result of his exhausting, messy, smelly work seeking, shooting, stuffing, posing, and painting, from before dawn to last light. He routinely shot many dozens of birds to obtain specimens for his painting and writing, and reminded his readers/clients of their shared responsibility for this carnage: 'I was truly sorry to rob them of their eggs, although impelled to do so by the love of science, which offers a convenient excuse for even worse acts'.<sup>8</sup> Audubon would not have heeded anyone's command to stop hunting a bird, yet he still felt overhunting should not be permitted. His contradictory impulses were common; until

the early twentieth century, very few scientists were employed at academic institutions, but many collectors of bird eggs and skins thought of themselves as scientists empowered to collect and study bird specimens.<sup>9</sup> Joseph Kastner in his history of American birdwatching cites an influential 1902 pamphlet by Reginald Robbins, 'Bird Killing as a Method in Ornithology', which described ornithologists who 'speak up for protecting the lives of birds, but "using turgid talmudic arguments" they exempt themselves from this duty'.<sup>10</sup> The story of the California condor also demonstrates how scientists dedicated to protecting rare bird species display an insatiable desire to keep chasing after them, shooting, measuring and examining specimens, even if their methods no longer require more specimens of birds, just as Audubon often did in pursuit of his art.

The wildlife conservation movement arose in America and Britain in the late nineteenth century when activists aimed to persuade people to satisfy their desires for animals not by hunting or collecting animal bodies or the commodities derived from them (such as birds' eggs), but instead by collecting images or representations of these animals. The Audubon Society's drive to protect birds began with an effort to end the collecting of eggs and the killing of birds for feathers to use in hats, dresses and other fashionable attire, much like Audubon offered his art as a substitute for collecting living birds. The campaign was quite effective in changing the sartorial habits of bird lovers, but less so in changing the behaviour of bird scientists. The strategy of early Audubon societies was to appeal to conservationists as ethical consumers, similar to the early abolitionist movement a century before. Still today the politics of wildlife recreation are often defined by an ethical boundary between appropriative consumption (hunting, fishing) and aesthetic observation (birdwatching, nature photography). The leave-no-trace ethic, 'Leave only footprints, take only pictures', enforced in wilderness areas and by outing clubs like Outward Bound and the Sierra Club is another example of the principle. It implies that both footprints and pictures are ephemeral impacts, and that a picture of a bird can become an observer's unique possession, evidence of a singular event, yet equivalent to an indefinite number of other pictures of specimens of the same species.<sup>11</sup>

The commodification of animal species can take many forms, however, and I wish to argue that the distinction between appropriative consumption and passive observation is not so simple or obvious as it seems. For one thing, both academic ornithologists and a large and active group of amateur birdwatchers advocate for protection of rare birds and conservation of their habitats, but also work to protect their own claims of expertise and sovereignty over images and descriptions. Bird lovers have come to rely upon mass-media images of birds, in popular guidebooks, maga-

zines and smartphone apps, as well as academic journals. Collecting high-quality representations of birds is no longer limited to those who can afford to subscribe to Catesby or Audubon's series of engravings. But the sense of rarity and connoisseurship of rare birds flaunted by nineteenth-century collectors can now be exercised by supporting the conservation of rare species like the whooping crane and the California condor. Textual and visual artefacts of birds have become objects of authority and marketing that in a previous era were contested over specimens now held in archives and natural history museums. The oldest major ornithology journal in the United States, founded in 1884 by the American Ornithologists Union, is entitled *The Auk*, and the group's other journal (published since 1900 by what is now known as the American Ornithological Society) is entitled *The Condor*. These two extinct birds have totemic importance, and inspire fetishist behaviour whereby images and specimens of the birds are enshrined with a value of their own.

To produce or collect images of animals does not eliminate the forces of supply and demand threatening endangered species, and may in fact exacerbate them. The commodification and fetishization of animal specimen products, such as bird feathers and eggs, shark fins, elephant ivory, rhinoceros horns and pangolin scales, continues to motivate the hunting, poaching and smuggling of endangered and protected species, as it has for centuries. Efforts to ban international trade in such items, notably the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), have failed to reduce what has become a speculative investor-fuelled mania for the commodities. Similarly, environmentalists are naive if they assume that scientific and touristic activity in pursuit of animal observation and animal images does not also damage the habitats and endanger the livelihoods of charismatic megafauna.

This paradox seems symptomatic of modern consumer society, but it began in the eighteenth century, before extinction was widely understood. Natural history books, such as the ones Catesby and Audubon produced, existed on a continuum between bodily specimens and textual representations.<sup>12</sup> They created the most beautiful and valuable bird books of eighteenth- and nineteenth-century America respectively, books central to the phenomenon wherein images of birds drive a luxury art market in the modern era, largely replacing the market for bird commodities such as eggs and feathers.<sup>13</sup> For Catesby and Audubon, ornithologist-artists on the supply side of the exchange, the goal was to create vivid, hand-coloured engravings for their books, and sell them to wealthy subscribers who perceived the exclusivity of ownership. Because each specimen of the book had a patron, it had an aura, to use Walter Benjamin's concept, that shifted its status from one element of a set of identical works, to an individual

work of art. Their success in publishing reproductions also enhanced the value of their originals. The paintings made by each artist and furnished to engravers were later nearly all acquired by a single institution. King George III acquired the Catesby watercolours in 1768 from a London dealer, and today they are held in the Royal Library at Windsor Castle, bound as three volumes rather than two with an appendix, but otherwise arranged to mimic the printed book, with the same text.<sup>14</sup> The original paintings that Audubon provided to his engravers in Britain were sold in 1863 by Audubon's widow, Lucy Bakewell Audubon, to the New York Historical Society, which bills itself on its website as 'the world's largest repository of Auduboniana'.

Studying the bird art by Catesby and Audubon reveals how the economic calculus of scarcity and value, the relentless force of capitalist markets, has structured books, pictures and other aesthetic representations of birds just as much as it has bird commodities like the feathers used for fashion accessories. And it continues to structure conservationists' assessments of the value of endangered birds, and priorities for protecting them.

The great auk became extinct just prior to the development of photography, and around the same time as Audubon was publishing *The Birds of America*. But contrary to the strategy of the Audubon societies in the late nineteenth century, it seems likely that photography would have done little to protect the great auk, as it has also served to circulate images of collectors' fetishes, such as the eggs in Fuller's book, as well as images of the wild birds. The value of an endangered species and the fetish for its specimens both increase with the circulation of such photographs. Some might argue that the photographs replace the specimens, but this seems true only in the economic logic that bad money drives out good.

The market for art antiquities has always relied on the dirty, risky and illegal work of looters who break into burial tombs, whether in Africa or the Americas, and the smugglers and dealers who evade customs controls and launder the provenance of these objects. Audubon at least was honest about his methods, and did not try to hide this messy business from the wealthy collectors to whom he sold his work, which he marketed as 'alive and moving', as more compelling or rewarding than the empty eggs and static stuffed specimens that had been fetishes for collectors of the great auk and other bird species.

Around the same time, the creation of mass-media reproduction technologies was changing the fine art and illustrated book markets. It became feasible to print indefinite numbers of copies of an illustrated book or of a famous painting. Whereas the woodblocks used for illustrations when printing was invented in the fifteenth century wore out after between five hundred and a thousand impressions, the later engraved metal plates and



lithographs were more resilient, and advances in inks also brought down the price of colour images. Mark Catesby and John James Audubon's careers spanned a century (roughly 1730s to 1830s) during which image printing technologies advanced quickly, culminating in photography. Using similar methods for both making and marketing their work, they created limited, or rare, sets of their work, and imbued them with the aura of a singular original.

Linda Dugan Partridge writes that Audubon's *Birds of America* was designed

to attract wealthy patrons with the appearance of opulence. Such luxury dictated not only the physical appointments of the book but also the presentation of the bird as a consumable good. This could be accomplished through representation of sensuous textures, sinuous contours, or feather coloration. It fed upper-middle-class tastes for other exotic imports (including even live birds and bird skins). The bird on the page undoubtedly ranked as a possession to be displayed beside other objects of art.<sup>15</sup>

The aptly named historian describes aesthetic features that birds share with luxury commodities and that could be conveyed in two-dimensional art. This is not exclusive to upper-middle-class moderns. The colours of birds' feathers and the durable aesthetic shapes of bills and claws have been luxury products in America for as long as people have lived there. Aztec artists collected feathers and ground them up to make colour tints for mosaic art.<sup>16</sup> The California condor in particular played an important role in the mythology of Native American peoples, including the Chumash of the Santa Barbara area. Chumash representatives secured permission in 1987 to be 'present for the trapping of the last three birds so that appropriate ceremonies could be performed'.<sup>17</sup> At the opposite end of the commodity spectrum, now extinct birds were once the source of food staples. Audubon wrote in his passenger pigeon biography: 'You may find several Indian towns, of not above 17 houses, that have more than 100 Gallons of Pigeons Oil, or Fat; they using it with Pulse, or Bread, as we do Butter'.<sup>18</sup>

Catesby's *Natural History of Carolina, Florida, and the Bahama Islands* and Audubon's *Birds of America* continued the tradition of birds as luxury art work. These two books are among the most valuable in Anglo-American publishing history. Recent sales at auction of complete sets of *The Birds of America* have set records for a printed book. Each artist travelled for years recruiting subscriptions from affluent individuals and from some of the same people and institutions who collected bird and other natural history specimens. Audubon, as we have seen, emphasized how his representations of birds were dependent upon his shooting and handling many specimens or models for his paintings. These bird books were not

at all like a modern pocket-sized Audubon or Sibley's field guide. They were marketed as specimens from a limited population, not as textual artefacts of potentially limitless supply. Catesby and Audubon pursued similar processes for reproducing, marketing and disseminating their work. Both worked in the field in America collecting (that is, shooting or netting) birds, and painting them in a mix of watercolour and other media. Both devoted great care to the engraving of their images; Catesby taught himself engraving and did this work over fourteen years, while Audubon travelled to Scotland and England to hire the best available engravers and publishers – William Lizars in Edinburgh and Robert Havell in London. Audubon and Catesby both asked subscribers to pay two guineas for each set of a multi-installment work that would be forthcoming on an uncertain schedule. Of Catesby's book, David R. Brigham reports: '*Natural History* was one of the most expensive publications of the eighteenth century, costing twenty-two guineas for a complete set'.<sup>19</sup> Catesby collected subscriptions for 166 copies from 155 subscribers, although evidently more were printed, because at his death his widow had some copies to sell as her legacy.

Audubon was an even more skilled marketer. He presented his method of painting as a means for viewers of his paintings (or buyers of the books) to see bird species 'alive and moving'. At the outset of his publication project in 1827 he decided to represent every bird in actual size, a decision that forced him to publish on the largest available paper, double elephant folio, measuring 39.5 by 29.5 inches. Subscribers to *The Birds of America* had to hire a bookbinder to collect the eighty-seven sets of five plates each, and sew them into bound volumes with covers. The resulting books are so large and heavy it is difficult to lift and open them. These are not guidebooks that a reader could take into the field in pursuit of the flying birds; they are great books at the centre of prestigious archives' permanent collections, and like sculptures displayed atop pedestals in a museum, the books inhabit special display and storage cases. For the largest bird species, such as the Californian vulture, the flamingo, great herons and some egrets, Audubon's goal of life-size representation results in an apparent imprisonment as the bird depicted folds its wings, lowers its head, or contorts its neck down to its feet so as to fit within the space of the paper. These large birds present very differently from the smaller ones, who cavort in flocks of up to five or six, either various species combined in one plate, or one species in a flock of male and female, younger and older specimens, arranged in a composition with tree leaves or flowers. For the largest birds, including the condor and great auk, the borders of the folio sheets and the bindings of the books resemble the cages at a captive breeding programme. The engravings hold the precious birds in stasis, so as to preserve the existence of their species, in contrast to their creator's goal of representing them 'alive

and moving'. Jennifer Roberts, in a study of Audubon's commitment to depicting all the birds in actual size, has argued that Audubon desired his bird species to carry the authenticity and the enduring value of gold specie: 'Audubon hoped that his bird pictures might function like gold coins rather than paper tokens – so that, as they were transmitted through space, their essence might hold steady as embodied and intrinsic, knitted into the substance of their support'.<sup>20</sup>

Audubon wrote in his journal on 21 March 1827 of his work as 'a book that in fifty years will be sold at immense prices because of its rarity'.<sup>21</sup> He was more prescient about the rarity of his book than about the rarity of many species in America that he studied. He predicted, for instance, that deer would become rare but the passenger pigeon would remain numerous. *The Birds of America* was described in 2008 as an 'endangered book' by John N. Hoover, the president of the Bibliographical Society of America, when he wrote a review of an updated edition of Waldemar Fries' 1973 book, *The Double Elephant Folio*. Hoover wrote, based on Fries' research: '[O]f an estimated 200–225 complete sets produced by Audubon, 119 full sets of 435 plates are known along with 18 incomplete sets. Forty other complete and incomplete sets have been broken up, and at least twelve of these have occurred since Fries published the first edition of his guide to Audubon'. A book dealer or even a library might make a large profit from a complete set of the work by taking it apart and selling the plates individually, but this would amount to reducing the 'living' extant book to a series of commodified specimens.

An animal or plant species, by Ernst Mayr's standard definition, is a set of organisms of the same kind, living in a contiguous habitat, where they reproduce to perpetuate their population. Each individual organism is one element of the set, interchangeable with any other, and to observe an individual is, for the typical birdwatcher or wildlife tourist, to observe the species. A coin or stamp collector generally treats units of currency in much the same way, and species and money have subversive similarities beyond the common etymology in *specie*. The number of elements in the set (of animals or of bills or coins) is indefinite, and is hard to census or count without using high-tech cameras, sensors and telecommunications to capture or track the animals. Nineteenth-century naturalists like Audubon rarely tried to estimate bird populations and did not see their 'collecting' as reducing the number. This logic today supports the quasi-competitive activity of birders who maintain lists of the species they have observed, often subdivided by region or season. A similar logic structures the publication of bird guides, including Audubon's nationalistic *Birds of America*. Since the development of modern species taxonomy by Linnaeus in the early eighteenth century, descriptive field guides have supported the na-

tional and regional identities of human readers by assigning natural organisms to their given place. As human populations caused the populations of charismatic megafauna species to decline, however, efforts of humans to observe, study and conserve the animals intensified, and these efforts often become concentrated in small fractions of habitat that are legally protected and/or have been developed with touristic or scientific infrastructure. Species populations are now definite and delimited – mountain gorillas in the Ruwenzori Mountains, Uganda; giant pandas in Sichuan Province, China; orcas along Vancouver Island, Canada – all of these species have become emblems for tourism in those regions, and support the industry there. Guides become skilled at leading clients to view individual animals whose location is known, and conservation biologists study individual animals over their lifespan, as Jane Goodall did with chimpanzees in Tanzania, beginning in 1960. These small reserves function as outdoor museums for eco-tourists. Birds, especially seabirds and migratory birds, maintain more extended and diffuse habitats, however, which preserves the aleatory, sporting flavour of birdwatching. Only recently, as we shall see, have individual birds been named and particularized by the naturalists who work to conserve them.

In the history of wildlife conservation and tourism, the great auk and California condor exhibited important developments across 150 years, from the 1830s to the 1980s. The way each species was collected, represented, displayed and valued illustrates how endangered birds have been mediated and commodified, and how media technologies have shaped human understanding of rare animals. The great auk demonstrates the problem of the fetish, of humans valuing commodity specimens, such as collectable eggs, more highly than the species population itself. Because the auks were seabirds that roosted on inaccessible islands, they could not easily be represented or perceived through visual images or through casual tourism. The California condor, a very large bird with a habitat close to a major metropolitan area, is more accessible, and its recent history illustrates the problem of intimate commodification, whereby humans confuse their bonds with individual birds for the value of the broader species population. Each of these problems found reflection in visual media: painting and engraving in the time of Audubon and Catesby and the great auk, photography and film in the time of the California condor.

Conservationists and sportsmen have both argued since the late nineteenth century that wild animals are a public good; and whereas specimen commodities were limited in number and thus available only to elite collectors, members of the wider public could all enjoy the excitement of seeing charismatic birds and mammals. Zoos have been one venue for such public spectacle, and optical technology was also decisive for the early con-

servation movement. The portable camera was one such invention, but before 1900 it was too large and its exposure times too slow for capturing birds. The development of improved field glasses was instead the major catalyst for the reaction against shooting birds for collection. Field glasses introduced around 1900 were an improvement upon opera glasses, such as those Florence Merriam Bailey wrote about in *Birds through an Opera Glass*, which helped to popularize birdwatching as an activity that, unlike hunting, was widely appealing for women.<sup>22</sup> This led to a gender divide among birdwatchers, as Joseph Grinnell complained that the 'opera glass student' cannot take the place of the collector, because 'the skin record is essential'.<sup>23</sup> Also, guidebooks changed in the early 1900s to emphasize the visible features of birds that could be discerned from a distance, on the fly, through field glasses, compared to the enumeration of wing feathers, and other structural features perceptible only upon examining a dead specimen. Photographs were visual artefacts that could be reproduced indefinitely, unlike specimen fetishes, or the limited editions of engraved, hand-coloured prints that Catesby and Audubon sold to their subscribers. Through photography, anyone could possess a beautiful image of a rare species, and thus all could share in the treasure of rare birds and their preservation. With the California condor, however, the public stewardship of endangered species was carried to a new extreme.

The condor nests in cliffside caves in steep, arid canyons that are nearly as remote as the islands once inhabited by the great auk. In the early twentieth century, oologists did collect the condor's large eggs, and conservationists both followed the knowledge of egg collectors and tried to foil their depredations. As a carrion eater like other species in the *Vulturidae* family of New World vultures, the California condor is aesthetically disagreeable. It has a mostly featherless head, and employs techniques such as urinating on its own legs in order to control the bacteria that thrive in its food sources. In spite of its grotesque appearance, however, the California condor has been a very charismatic species and a compelling story among conservationists in wealthy, fast-growing, media-centric southern California.<sup>24</sup> Since the 1980s, media technologies have followed the condor closely and it has been valued as a spectacle, for its size and rarity, for the dangers its claws and beak have posed for the conservationists who climb into its nests and capture it, and for its association with a region that was heavily populated and developed in the twentieth century. Advancements in visual observation and tracking technologies made it possible for conservationists to follow individual birds across time and space, and thereby to invest value in living individuals, rather than in the abstracted concept of the species, or commodified specimens of the species, such as an egg.

The first sustained field research on the California condor was done by Carl Koford over four years sandwiched around his service in the Second World War. He completed his PhD dissertation at UC-Berkeley under the direction of Joseph Grinnell, whose opinions were quoted above. In addition to observing the birds through field glasses, Koford was able to locate and access the nests of several mating pairs, and he made regular visits to these nests to observe the length of gestation, the size of eggs, the growth and feeding of fledglings, and the full reproductive cycle of the bird. Female condors lay one egg at a time, and only if that egg is lost or destroyed will she lay another – a behaviour that has been exploited for captive breeding purposes. Koford travelled throughout the remaining habitat of the species, in the Sierra Madre mountains along the southern California coast, and in the southern Sierra Nevada mountains inland. In a 1953 report based on his doctoral dissertation, he arrived at a population estimate of just sixty birds, and expressed alarm at the species' low reproductive rate. His research helped to establish the Sespe Condor Sanctuary in the Los Padres National Forest in 1947, and as Noel and Helen Snyder, prominent condor ornithologists of the subsequent generation, wrote: 'Koford's recommendations for condor conservation were to become the standard for several decades, and by the 1970s Koford himself had become a cult figure for wilderness enthusiasts, famed for his espousal of non-interventionist techniques in studying and conserving endangered species'.<sup>25</sup> The Snyders point out an irony: for his research Koford made near daily visits to nests, and measured the size and weight of eggs and chicks, yet in his publications and activism he insisted that humans should not disturb condor nests or habitat, and that captive breeding would not be an effective method of increasing the species population because the birds tried to avoid humans. Afficionados of the great auk had sought to acquire its eggs and skins, even as they knew it was close to extinction in the 1830s. Carl Koford, in his visits to remote condor nests, wished to protect the eggs and increase the species, but he also sought to prevent others from repeating his close contact with the living birds. Intimate observation of the birds had replaced specimen commodities as the gold standard of bird lore, the valuable treasure that only a select few, whether scientists or tourists, could experience.

In the 1960s and 1970s, the Sierra Club, the Wilderness Society, and Friends of the Earth promoted an ascetic version of American conservation that demanded large nature preserves where humans could visit but not live or build. They also created the 'leave no trace' ethic that elevated observation of wildlife and experience of nature as a spiritual privilege that nourished the soul but did not return tangible, material rewards. The Wilderness Act of 1964 was a great success of this movement, and arguably

has had its greatest impact in California. Almost 15 per cent of the state's land area is protected as wilderness, yet it is home to nearly 40 million people as of 2020, with an economy that would rank as the fifth largest among the world's nations. The mountains surrounding greater Los Angeles hold a ring of wilderness areas including the Sespe and Dick Smith, both created to protect the California condor. Whereas the condor builds its nests in cliffside caves accessible only to 'condorvationists', it feeds on carcasses it finds up to a hundred miles away on ranches and rangelands. These food sources are abundant, but eating them can be risky. Lead poisoning from shot lodged in deer and other wildlife killed by hunters, and coyotes poisoned by ranchers, has been the leading cause of condor mortality. The birds' lives encompass the geographic contrasts of modern California – from wilderness to some of the richest, most consumerist and unequal cities in the world.

The California condor has also lived amidst the modern developments of photography and film. William L. Finley, along with Carl Koford's advisor Joseph Grinnell, made the first detailed study of a nesting pair of condors in the San Gabriel Mountains above Los Angeles in 1906, and took fine photographs of those birds as well as of others in Oregon, where he lived near Portland and kept a California condor named 'General' as a pet. Finley was among the first American conservationists to produce wildlife motion pictures for education and advocacy, and his influence led to the creation of the Tule Lake, Malheur and Klamath national wildlife refuges. Noel and Helen Snyder's studies of the California condor also used photography to make an important breakthrough in the biopolitics of endangered species conservation. In 1982 the Snyders were part of a team that attached radio telemetry devices to the wings of California condors, enabling researchers to plot their movements, within range of radio towers or aircraft. The radio transmitters bore numbers that aided identification in photographs, and around this time Eric Johnson and Noel Snyder demonstrated that individual birds could be identified from photographs by virtue of distinctive patterns in their larger wing feathers. This method enabled them to solicit photographs from many volunteers and then to census and name each bird in the entire species population of just twenty-one individuals.<sup>26</sup> No longer did this endangered species consist of a set of functionally identical organisms; now each condor had a name and a casting photo, and was ready to be treated like a star.

Catesby and Audubon had published their writing and art by subscription. Each copy was destined for a specific buyer, and the work was so successful that each copy is still tracked and treasured. Waldemar Fries' *The Double Elephant Folio* had included a bibliography of the location and provenance of every extant copy, much like Errol Fuller had traced and

photographed every extant great auk egg; and finally, the Snyders' team had photographed every surviving California condor.<sup>27</sup>

In April 1983 the first condor chick to be born in captivity was helped out of its shell at the San Diego zoo. Zookeepers named him Sisquoc, after one of the condor sanctuaries near Santa Barbara where public access is strictly limited. The new bird was greeted with manic publicity. For more than two decades condor conservation efforts had been riven by a debate between conservation biologists using 'hands-on' techniques that included removing eggs from the nests and hatching them in captivity, as Sisquoc was, and 'hands-off' environmentalists who insisted the birds were safest in their native habitat, and that wilderness preserves and bans on hunting were the best way to restore the species. The public's excitement at the birth of Sisquoc was a coup for the hands-on faction. Then, in the winter of 1984/85, 40 per cent of the wild population of condors died, most by unknown causes, and public opinion again shifted in favour of captive breeding programmes. The biologists then set out to locate and eventually to capture every surviving member of the species, a goal achieved by 1987. The techniques for raising condor chicks in captivity, apart from their parents (who were tasked with laying additional or 'relay' eggs in order to quickly boost the total population), involved keepers wearing condor hand puppets to feed the chicks. Similar techniques have been used for the whooping crane and other large bird species, whose chicks otherwise would imprint upon human caregivers and become incapable of life in the wild. The San Diego and Los Angeles zoos have cooperated in this work, at a cost of more than a million dollars a year, although it has also inspired large donations to the zoos.

The surviving California condors have become works of art, admired by the public and curated by zoo staff and by wildlife biologists, much like the extant sets of Audubon and Catesby bird books are conserved in libraries and museums, where portions of the art are exhibited and loaned out for travelling exhibitions. The population of condors has reached nearly five hundred in 2020. Just under half are in captivity, while the remainder have been introduced to the species' former habitat in southern California, as well as near Big Sur, in southern Utah and northern Arizona, and in Baja California Norte, Mexico. The California condor has been a high-profile success for captive breeding programmes, and fuelled plans for more such efforts on behalf of other endangered species. Conservation biologists have proposed more long-term captive breeding to maintain species *ex situ*, notably in response to the crisis of amphibians, as 'a new ark'. However, Noel Snyder and several co-authors published a paper in *Conservation Biology* on the ethical and practical limitations to captive breeding and reintroductions. The ark might be like a museum, but artworks require limited



care and no feeding compared to birds. Most animals, even insects, will become domesticated – or if that term is too imprecise, will evolve behaviours adapted to life in captivity that differentiate them from the wild animals they are meant to supplement when released into the wild. Snyder and co-authors were all involved in captive breeding programmes, and yet they asserted that

in practice the connection between captive breeding and habitat preservation is sometimes tenuous. Captive breeding can become an end in itself and may undermine rather than enhance habitat preservation by reducing the urgency with which this goal is pursued. The existence of a captive population can give a false impression that a species is safe, so that destruction of habitat and wild populations can proceed.<sup>28</sup>

Whereas ornithologists a century ago or longer sought to ‘collect’ or kill specimens of wild animal populations for museums or private collections, for the past fifty years wildlife biologists have often collected living animals for propagation in captivity, with the ostensible goal of protecting a species severely endangered in its natural habitat. These efforts have been supported by conservation movements and legal protections that establish wildlife as a public good, theoretically available to all as spectators, either in zoos or in the wild. Zoos have attracted public support and subsidies similar to art museums, centres for cultural edification through the open display of great works of art. The masterpieces that attract visitors to museums are valued for their rarity, much as endangered species lure visitors to zoos. Endangered species have become like works of art, dependent upon humans both for their protection and for their value. But humans lose sight of the fact that animals (like humans) cannot be held in archival stasis, cannot be taken out of their ecological habitat without losing the animated qualities that make them what they are. Species are defined by the process of reproduction, and therefore perhaps are better represented by the reproduction and dissemination of works of art, such as Audubon’s engravings, than by static, singular, originary works of artistic genius.

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## Notes

1. The extinct birds are the passenger pigeon (plate LXII), Carolina parakeet (plate XXVI), ivory-bill woodpecker (plate LXV), Bachman's warbler (plate CLXXXV), es-  
quimaux curlew (plate CCVIII), and great auk (plate CCXLI). Several other species  
are apocryphal: 'the Carbonated Warbler, the Blue Mountain Warbler, the Cuvier's  
Kinglet, and the Small-Headed Flycatcher are not familiar to the average bird student  
... these species, like the Townsend's Bunting here, are mystery birds that ornitholo-  
gists to this day have not been able to identify'. Slatkin, *John James Audubon*, 228.
2. Audubon's claim to have never drawn from a stuffed specimen appears in Audubon,  
'Method of Drawing Birds', 48–54, which functioned as a prospectus for his project  
as he was soliciting subscriptions and arranging for its printing and engraving in Ed-  
inburgh. It is reprinted in Irmischer, *John James Audubon*, 753–58. On the catchphrase  
'drawn from nature', see Irmischer, *The Poetics of Natural History*, 206–17.
3. Audubon, 'Missouri River Journal', 131.
4. Audubon, *Ornithological Biography*, 316. Fuller in *The Great Auk* includes a few other  
eyewitness reports of great auk behaviour (50–57), but not this one. He writes that  
Funk Island, a small rock islet forty miles off the NE corner of Newfoundland, was the  
'largest Garefowl colony of recent historical times' (368), but that the population there  
was likely wiped out before 1800. See also Kalshoven, 'Piecing Together the Extinct  
Great Auk'.
5. Martin, *A Late Voyage to St. Kilda*.
6. Townsend published an entertaining narrative of his encounter with the Californian  
culture and other species in his 'Popular Monograph of the Acciptrine Birds', 265–70.
7. Lorimer, 'On Auks and Awkwardness', 200. The same holds true for the American bis-  
on. Museums and collectors frantically tried to obtain stuffed specimens in the 1880s  
and 1890s when there was widespread belief that the species would become extinct.
8. *Birds of America* quarto edition, 5, 282, quoted in Irmischer, *Poetics of Natural History*,  
208.
9. As recently as 2015 this conflict between scientific ornithology and the protection of  
rare bird species recurred in the Solomon Islands, where Christopher Filardi, working  
for the American Museum of Natural History in New York, captured the first pho-  
tograph of a male moustached kingfisher and then collected (a gentle euphemism for  
euthanized) the specimen for further study. In an interview with the Audubon Society,  
Filardi said that finding the bird was like encountering a 'magnificent ... ghost', and  
that the experience evoked in him a 'surreal, childlike sense of a mythical beast come  
to life'. Although Filardi explained that collecting the male specimen was necessary for  
the species' conservation, outrage quickly followed the news of the bird's death. Avian  
advocates launched a Change.org petition, calling for the museum to 'Stop Killing in  
the Name of Science'. Wright, 'Reordering Nature', 16.
10. Kastner, *A World of Watchers*, 97.
11. 'Matthew Brower locates the preference for the image of the animal over the body of  
the specimen at the moment of the rise of animal photography. But ... that preference  
predates photography's advent, and can be found in the writings and drawings of  
Audubon.' Wright, 'Reordering Nature', 57.
12. Some natural history books were actually published with specimens of the flora they  
described affixed to their pages. See Secord, 'Pressed into Service'.
13. Catesby has become overshadowed by Audubon in the history of American ornithol-  
ogy. His artistic and publication methods were remarkably similar, despite working

- almost exactly one century earlier. The best biography and introduction to Catesby is Frick and Stearns, *Mark Catesby*.
14. Many of these are reproduced in the exhibition catalogue: McBurney and Windsor Castle Royal Library, *Mark Catesby's Natural History of America*.
  15. Partridge, 'By the Book', 272–73.
  16. See de Acosta, *Natural and Moral History*; Durán, *The History of the Indies*.
  17. Snyder and Snyder, *The California Condor*, 305.
  18. Audubon, 'The Passenger Pigeon', 265.
  19. Brigham, 'Mark Catesby and the Patronage', 93.
  20. Roberts, *Transporting Visions*, 190.
  21. Audubon, 'European Journals', 222.
  22. Bailey, *Birds through an Opera Glass*. For a brief portrait of Bailey, see Wolfe, 'Overlooked No More'.
  23. Grinnell, quoted in Kastner, *A World of Watchers*, 109.
  24. John Nielsen in his book about the bird writes of his memories of growing up in Piru, a small town in the Sierra Madre mountains near the concentration of California condor nesting sites. Settler colonial societies often shared a strong urge to create a perception of local bonds, values and ethics, and thus tried to form a bond with an animal like the condor, which was emblematic of that bio-region. Nielsen, *Condor*.
  25. Snyder and Snyder, *The California Condor*, 62.
  26. *Ibid.*, 137. The species was ideal for this method of identification, because it is so large, it soars over mountainous areas while only rarely flapping its wings, and it regrows wing feathers slowly over several seasons. The Snyders claimed the method would be effective on a population as great as sixty.
  27. The individuation of endangered animals for the purposes of conservation appeals and fundraising was also used with respect to humpback whales by the organization Whalewatch in 1990. Its Whale Adoption Project offered donors an 'adoption certificate' for one of eight named whales, identified by notches and distinctive shapes in their fins, and described by their affective traits. See Alaimo, 'Cyborg and Ecofeminist Interventions', 140–41.
  28. Snyder et al., 'Limitations of Captive Breeding', 345.

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