

2011

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Citation

Springer, Claudia. "Watch the Birdie: Image-making and Wildlife Conservation." *Explorations in Media Ecology* 10.1/10.2 (2011): 7-23. Accessed at http://digitalcommons.framingham.edu/eng_facpub/29

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Watch the Birdie: Image-making and Wildlife Conservation

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Published in: *Explorations in Media Ecology* volume 10, numbers 1 & 2 (2011): 7-23.

Abstract

Photography and the modern wildlife conservation movement became entwined soon after their shared emergence in the middle of the 19th century. This article analyzes how photography, film, video, and digital imaging have shaped the movement and continue to exert influence. Images often dictate our knowledge of animal species in the wild, but they can be deceptive, and they have hindered as well as helped conservation efforts. The profusion of wildlife conservation imagery and continued politicized debates over appropriate strategies make it important to investigate the conflicted alliance between mechanical reproduction and the conservation movement.

Keywords

Photography, film, digital imagery, conservationism, wildlife, endangered species.

Author biography

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Transfigured: The Many Faces of Rebel Iconography (2007), both published by the University of Texas Press.

It was cause for rejoicing when a photograph of a South China tiger appeared in fall 2007. Seldom does a species thought to be extinct make an appearance, and a South China tiger had not been seen in the wild since 1964. About 60 of the tigers live in captivity and scientists estimated that 30 wild ones may remain, yet without a confirmed sighting in decades, their existence was in doubt. But suddenly a Chinese farmer announced at a press conference that he had succeeded in photographing one. He described his dedicated search for the tiger and the miraculous moment when he spotted one, crawled toward it, and quickly took a series of photographs before it fled into the forest. He displayed two photos as proof of his sighting and received a monetary reward. But the news proved too good to be true when skeptics identified irregularities in the photos and a man in China alleged that they looked suspiciously like the one on a mass-produced poster showing a recumbent tiger gazing placidly at the viewer. Soon after, photographic experts determined that the celebrated photos were in fact digitally manipulated fakes (Holden, 2007).¹

The scandal provides no new information about the South China tiger's status in the wild, but it does demonstrate the complex historical relationship between images and wildlife conservation. Both photography and the modern conservation movement got their start in the middle of the 19th century, and they have been entwined ever since. Photography shaped the movement's development and became indispensable to the tasks of educating people, soliciting funds, and learning about species' numbers and conditions

in the wild. Endangered species often are native to one area and elusive, making their numbers—and sometimes their very existence—difficult to determine, so images purporting to show them in their habitats are highly significant documents. Each successive image-making technology—film, video, and digital imagery—has joined photography in its close connection to the conservation movement and mediated our experience of animals and the environment. But over the years, mechanical images have not only helped but also hindered conservation efforts because of their unreliability. The history of wildlife conservation is so thoroughly enmeshed with photographic technologies that the movement's successes and failures can best be understood in relation to the accompanying swirl of images. At a time when species are disappearing at an alarming rate, the complex partnership between conservation and mechanical reproduction is an important consideration as we try to develop effective conservation strategies.

A successful partnering of photography and wildlife conservation occurred early in their existence when nature lovers discovered that photographs of animals provided the same—if not enhanced—enjoyment as stuffed specimens. During the 19th century, birds were routinely killed and stuffed for scientific study and nature collections. Natural history museums vigorously amassed their collections—nearly 2,000 were built in the United States, Europe, and far-flung colonies (Sheets-Pyenson, 1988)—and, on a smaller scale, Victorian homemakers enjoyed the popular trend of putting mounted birds on display in their parlors. Crafts magazines matter-of-factly instructed late 19th-century readers on the techniques of taxidermy in all its gory details. At the same time, and on a much larger scale, bird populations were being decimated by the fashion industry as

hunters slaughtered millions of birds annually to supply the demands of milliners for plumed hats. The body counts were staggering: One Florida hunter stated in 1892 that he and his companions had killed 130,000 birds for milliners the previous winter, and his take was a mere fraction of the birds slain that year ("To Hunt," 1899). Outrage over the butchery led to the creation of the Audubon Society in the 1890s and Congress passing a series of laws designed to protect birds and cut off the supply of feathers to milliners.

Conservation laws were effective, but photography also helped end the carnage. Taking photos was an easier and less bloody way than hunting to obtain a keepsake of wild nature, and conservationists in the 1890s and early 20th century urged people to forgo killing birds in favor of taking photographs. One such advocate was Dr. Thomas S. Roberts, director of the Department of Birds at the Natural History Survey of Minnesota, a camera enthusiast who in 1899 published an article titled "The Camera as an Aid in the Study of Birds" in the first issue of *Bird Lore*, the Audubon Society's magazine. In it, he refers to "the present widespread camera craze," and extols the power of photographs to convey the wondrous beauty of birds. He writes:

Words alone fail to tell the story so clearly, so beautifully, and so forcibly. And, best of all, this can be accomplished without carrying bloodshed and destruction into the ranks of our friends the birds; for we all love to call the birds our friends, yet some of us are not, I fear, always quite friendly in our dealings with them. To take their pictures and pictures of their homes is a peaceful and harmless sort of invasion of their domains, and the results in most cases are as satisfactory and far-reaching as to bring home as trophies lifeless bodies and despoiled habitations, to

be stowed away in cabinets where dust and insects and failing interest soon put an end to their usefulness. (Roberts, 1899, p. 6)

Roberts was not alone in his enthusiasm; bird photography was emerging as a specialization, and the first nature book illustrated entirely with photographs had been published in 1895 by the Kearton brothers—Richard and Cherry—in England.² Also in England in 1895, the Royal Photographic Society added nature photography to the list of awards it granted (Yeates, 1950). As British naturalist and bird photographer G.K. Yeates wrote in 1950 about the last half century of wildlife photography, “This is the camera’s great contribution and appeal, for by the substitution of a lens for a gun and an album for a cabinet, records which cause no harm to the quarry can be obtained by the innocuous trigger of a shutter-release and by the silent exposure of light to sensitized film” (p. 8). Even ornithologists increasingly relied on photographs rather than specimens, and as photography became easier and more reliable, it contributed to scientists becoming less reliant on collections amassed by natural history museums. In a meticulous study of colonial natural history museums, Susan Sheets-Pyenson (1988) writes that the urge to collect specimens waned as the field of biology became increasingly fragmented into specializations and “moved toward the microscopic rather than the macroscopic” (p. 101). She writes, “Those who remained in the field found that new techniques like photography provided better data about ecology and behavior than a wealth of museum specimens” (p. 101). Countless birds got a reprieve from senseless slaughter when photographs began to replace stuffed specimens and, simultaneously, laws denied milliners easy access to feathers. Images joined legislation to save birds’ lives.

Birds' new lease on life countervailed the fear voiced in recent years by theorists of postmodernism that photographic simulacra are replacing actual bodies to the point of their disappearance. Many bird species had a greater chance of survival after their admirers substituted photos for feathers. Other types of images—drawings and paintings—could not perform this substitutive function in the late 19th century because only a photograph was perceived as having a direct link to its subject. Earlier scientific developments paved the way for a photographic paradigm; sight became the privileged sense during the 17th and 18th centuries when the discipline of natural history engaged in classifying “living beings” (Foucault, 1970, p. 60). When the camera was invented in the 19th century, it fulfilled the preexisting desire for “objective” scientific sight and viewers were prepared to invest photographs with the power of truth, distinguishing it from what they regarded as the more subjective arts of drawing and painting. An example of this perspective is found in an 1857 article written by author and art critic Lady Elizabeth Eastlake and published in the *London Quarterly Review*. She characterizes photography as a reliable medium for conveying facts, but scoffs at the idea that it could compete with drawings and paintings for “artistic effect,” arguing that photographs cannot attain the artistic “standard we are seeking. Art cares not for the right finish unless it be in the right place. Her great aim is to produce a whole; the more photography advances in the execution of parts, the less does it give the idea of completeness” (Eastlake, 1857/1981,95). Unable to compete with the artist’s unique vision, the camera, she writes, exists instead as a machine for gathering facts:

For everything for which Art, so-called, has hitherto been the means but not the end, photography is the allotted agent—for all that requires mere manual

correctness, and mere manual slavery, without any employment of the artistic feeling, she is the proper and therefore the perfect medium. She is made for the present age, in which the desire for art resides in a small minority, but the craving, or rather necessity for cheap, prompt, and correct facts in the public at large. Photography is the purveyor of such knowledge to the world. She is the sworn witness of everything presented to her view. What are her unerring records in the service of mechanics, engineering, geology, and natural history, but facts of the most sterling and stubborn kind? ... Her business is to give evidence of facts, as minutely and as impartially as, to our shame, only an unreasoning machine can give. (pp. 96-97)

Lady Eastlake expressed her era's prevailing view that the camera, as an "unreasoning machine," cannot produce art, which resides in paintings and drawings, where the artist's creative flair finds expression. Photos were praised for their superior ability to accurately provide facts as early as 1843, when an essay examining the strengths of the new medium noted solemnly that in photographs "are the incidents of time, and the forms of space simultaneously recorded; and every picture becomes an authentic chapter in the history of the world" (Edinburgh Review, 1843/1981, pp. 64-65).

The assumption that a photo tells the truth has always been doubtful because of photographic selectivity as well as outright hoaxes, but it is especially problematic now that digital technology has made possible computer enhancements that can alter the meaning of a photograph without being detected, and, in an even more dramatic shift, CGI creates images of things that do not exist outside of the computer. Digital imagery provides exciting new ways of seeing at the same time that it can disconnect us from our

surroundings by seducing us into virtual worlds where we do not have to face disturbing real-world problems, such as wildlife extinction. Kevin Robins (1996), a professor of cultural geography, points out that “there is an alternative possibility: that we might choose to resist the logic of the technological system; that we might decide to recognize our embodiment and immersion in the disorder of the real world; that we might try to find ways to see and be touched by the world’s events” (p. 34). He argues that images, whether photographic or computer generated, can move us deeply and enrich our engagement with the world. They have the potential to be politically and culturally relevant, if we choose to engage with them in this way, as we have always been able to engage with images, whether they were drawn, sketched, painted, or photographed.

In the early 21st century, CGI is blurring the line between photography and drawing, but at the turn of the last century, people were enthralled by the truth-telling potential of mechanical reproduction. It was the reproducibility of photographs that fascinated theorist Walter Benjamin in the 1930s when he famously wrote, “that which withers in the age of mechanical reproduction is the aura of the work of art” (Benjamin, 1935/2004, p. 1236). People used to have to travel to a painting to see it, be in its presence, and feel the special “aura” of its uniqueness, a sensation that originated in the ancient connection between art and religious rituals. But after the invention of the camera, people anywhere could see a painting in any number of photographic copies, thereby eliminating the concept of a unique work located in a single place. Benjamin endorsed the way photographs had a democratizing effect, removing art from the realm of society’s wealthy elite and making it available to people from all walks of life.

Wildlife photographs did not operate in precisely the same way—the concept of an aura is not identical—but nature lovers did substitute a reproducible image for the thing itself when they obtained a photograph of an animal. And photography dramatically increased the range of animals a person could “obtain,” making even remote and exotic animals accessible in picture form. To see a black rhinoceros, for example, one did not have to travel to Africa like Theodore Roosevelt and shoot one; a photograph could suffice (and could also evoke the spirit of the hunt, as do the photographs of Roosevelt’s well-documented 1909 safari). However, with the current acceleration of extinction, a version of the aura has unfortunately returned. The lone surviving animal of a species, as the only living representative of its kind, has a decidedly tragic aura of uniqueness, as its death will terminate the species for all time. Such is the case with Lonesome George, the only remaining Pinta Island tortoise. There are many photographs of George, but they cannot dispel the knowledge that when he dies, there will be no more tortoises of his kind.

Walter Benjamin credits films as well as photographs with taking art out of its exclusive sphere and bringing it to people of all classes. Film technology was introduced in 1895, and within a few years filmmakers turned their lenses on wildlife, introducing formative nature films that are well documented in historian-of-science Gregg Mitman’s (1999) book *Reel Nature*. The new medium showed events unfolding over time, making it effective at documenting phenomena and telling stories about imperiled species. Film was already harnessed to the conservation movement by 1924, when Caroline Gentry compiled a 14.5-minute silent film from found footage titled *Roosevelt: Friend of the Birds*, a passionate plea for bird conservation and a documentary account of then former

President Theodore Roosevelt's visit to several bird sanctuaries on islands in the Gulf of Mexico in 1915.³ Roosevelt championed bird preservation—notwithstanding his avid hunting of mammals—and established 53 wildlife sanctuaries while in office.

Shots of Teddy Roosevelt admiring black skimmers and royal terns on remote beaches promote the protection of threatened birds, but the film's prologue showing the slaughter of snowy egrets, shot at an unspecified earlier date, is even more effective at conveying the importance of conservation, and illustrates how adept the film medium can be at creating emotional appeals. Snowy egrets are shown in a mangrove swamp during mating season, when they become vulnerable to predation. Silent-film inter-titles refer to the female egret's "snowy plumes of rare beauty" and anthropomorphize her by referring to her "bridal gown." The birds are lovely in black-and-white footage, their white feathers glowing brightly against the dark foliage. Shots of an egret feeding its fuzzy chicks are cross-cut with shots of two hunters setting off by canoe from their campsite, and after a hunter takes aim and fires his gun, we see the adult bird fall from the nest. An inter-title drips with irony: "And they call it a *good* day's work." Back at their campsite, the hunters toss a pile of dead egrets from their canoe onto the shore, pluck the birds, and hang their limp featherless bodies on a wooden rack. An inter-title informs us that "the aigrette can only be obtained when the little ones most need the care of their parents. Deprived of this care they slowly starve to death." A weak orphaned chick is shown in the nest next to the slumped body of another chick that has presumably already succumbed. As powerful as any cinematic melodrama of its day, the film's techniques have become standard for films with a conservation message: anthropomorphism, an emphasis on family life and babies, and a critique of human behavior that threatens a

species. At their best, conservation-themed films improve human behavior toward animals, for as Jonathan Burt (2002) observes in his book *Animals in Film*, “animal imagery does not merely reflect human-animal relations and the position of animals in human culture, but is also used to change them” (p. 15).

Wild animal photography and filmmaking flourished throughout the 20th century, made popular by professionals and enthusiastically taken up by amateurs. I experienced the phenomenon personally during my childhood when my father took up photography as a hobby. He loved nature and hiking and would set off laden with cameras and lenses, prepared to photograph whatever he could find. Occasionally, he found wild animals, and when he did, he would sneak up on them to try to get the perfect photo. Three times, an animal he was sneaking up on turned around and charged him, furious at the intrusion. The first time it was an elephant at a watering hole in Murchison Falls National Park in Uganda. I was not there, but I heard the story many times of how he ran as fast as he could, and a priest who also had been watching the elephant ran too, his robes billowing behind him. The second time it was a moose in Glacier National Park, and I watched from a safe distance that allowed me to regard it as slapstick comedy. The third time—and this time my brothers and I warned him—it was a wild boar in England’s New Forest, hell-bent on protecting her piglets. My father emerged unscathed each time, and I learned that animal feistiness is thrilling. Animals have their own agendas, such as defending themselves against our unwelcome presence, while we go about trying to turn them into pleasing photographic compositions, a pursuit that means nothing to them. My father had no desire to harm animals, and stalked them with cameras rather than guns, but

he nonetheless provoked them by intruding, and by chasing him away they underscored their determination to maintain their distance from us.

Some of the most dramatic wild animal photography during the middle of the 20th century came from Africa, where cameras were replacing rifles and safari parks were refitted for conservation instead of hunting. *National Geographic* magazine and television's *Mutual of Omaha's Wild Kingdom*, which premiered in 1963, as well as the National Geographic Society's television series, starting in 1964, made the African savannah a common sight in American homes. Showing African landscapes and dynamic wildlife was an exciting way for television programmers to attract viewers, and the imagery evoked films—of the kind called jungle melodramas—that for decades had thrilled spectators by projecting Western stories and preoccupations onto the “dark continent” (Moore, 1990, pp. 4-6). A consequence of the 20th-century picturing of African wildlife is that several generations of Americans grew up thinking of Africa as a continent populated by animals, not people. Photographs intended to educate people about the continent ironically misled them and distorted their beliefs. What viewers outside of Africa did not learn about from the images was the distrust with which many Africans regarded the conservation organizations operating in their countries, and how some Africans came to perceive conservation efforts as an extension of European colonial exploitation (Adams & McShane, 1997). In their book *The Myth of Wild Africa: Conservation Without Illusion*, Jonathan Adams and Thomas McShane explain how conservation groups inherited the colonial-era myth of Africa as “a place to be tamed for the good of man and as a reminder of our savage past, to be held in trust for future generations” (p. 8). A corollary to this myth was the idea that the African continent had

always been sparsely populated, and not subject to fluctuations in population resulting from wars, drought, and, most importantly, European diseases that wiped out large numbers of people. Adams and McShane (1997) write that after “descriptions of open, uninhabited land captured the Western imagination” (p. 36), Europeans saw indigenous people as “invaders of paradise” (p. 35). Mid-20th-century photographs, films, and television programs fixed the imagery of vast savannahs inhabited by magnificent animals—but not humans—in viewers’ imaginations.

Conservation organizations based in Europe and the United States unfortunately drew on the colonialist paradigm by seeing their role as protecting African wildlife from African people. By positing an adversarial relationship between Africans and animals, these conservationists ironically brought about an adversarial relationship between themselves and Africans. It did not help that some conservation literature adopted a patronizing tone, and that conservation money sometimes played a role in supporting corrupt governments, creating a system that its critics describe as neocolonial for its indifference to Africans. Navaya ole Ndaskoi (2002), a Maasai scholar from Tanzania and coordinator of Indigenous Rights for Survival International, points out that “Conservation strategies were conceived on the basis of premises completely alien and unrelated to indigenous people’s concrete historical conditions” (p. 187). International organizations created conservation parks without seeking the participation of rural Africans, whose needs got overlooked and whose deprivations were masked. Instead, they were often demonized as dangerous poachers, while American and European conservationists were lauded as the last hope for endangered African species. Photos were used to perpetuate the falsehoods, showing images of African hunters labeled as

poachers while avoiding images of wealthy White hunters or conservationists' own practice of culling (Ndaskoi, 2002). Calling for change, Adams and McShane (1997) write, "conservation cannot be done 'to' or even 'for' or 'with' Africans. Conservation must be done by Africans" (p. 245). The debates continue, with some international organizations now advocating for local participation through Community-Based Conservation, a move that Navaya ole Ndaskoi, for one, criticizes as an inadequate measure that fails to redress the longstanding imbalance of power.

Conservation images also have been ambiguous closer to home. Under the George W. Bush administration, the Department of the Interior showed flagrant disregard for the principles of the Endangered Species Act. Department officials made it harder for new species to be listed as endangered and receive protection, sometimes by rejecting their own agency scientists' recommendations. Because of the department's obstacles and delays, the number of domestic species placed on the endangered list under the Bush presidency dropped drastically from the previous two administrations. And yet, the Department of the Interior's Website promoted its commitment to protecting threatened species, using photographs of birds to prop up its text, presumably in an effort to counteract bad publicity generated by the many lawsuits filed against the agency for its inaction. One page of the Website announced the "Birds Forever Initiative," a joint effort by the U.S. Fish and Wildlife Service and the U.S. Geological Survey to work with conservation groups to halt the decline of wild birds. Although the initiative was commendable, it could not offset the overall damage done by the Bush administration to the cause of conservation. For those unfamiliar with the administration's record, the Website provided a rosy outlook; President Bush was credited with the program's genesis

alongside a photograph of him with a small owl perched on his gloved hand. The photo's intended message was clear: We can count on our bird-loving president to do everything he can to protect our feathered friends. A more accurate interpretation is that we should be skeptical when looking at politically motivated conservation images.

The birds on the Department of the Interior's Website had been given the task of promoting the Bush administration's dismal conservation efforts. The birds that appeared in *Roosevelt: Friend of the Birds* (Gentry, 1924) were likewise immortalized in images to promote a U.S. president's commitment to conservation (after his term in office had ended, in this case). Context is everything when interpreting these images. Only with prior knowledge of each president's conservation record is it possible to evaluate whether the congratulatory rhetoric accompanying the bird images was justified or disingenuous. A bird is no longer just a bird when it appears in a photograph, film, video, or digital image; it is a sign, invested with meanings by accompanying text, and interpreted in a variety of ways by viewers. We create meanings by interpreting images as explanatory symbols. A bird—the thing in itself—is not the same as the ideas projected onto an image of a bird by an observer. Interpreting wildlife conservation images is an especially loaded endeavor now that the future of human cohabitation with animals is uncertain and misinterpreting an image can have dire consequences.

Recently, a prize-winning photograph of a wolf in the wild turned out to have been staged, and the photographer was required to return his £10,000 prize. The "Wildlife Photographer of the Year" in London's Natural History Museum's prestigious competition, which drew more than 43,000 entries from 94 countries, had submitted a dramatic close-up of a wolf leaping over a gate against a dark background (Booth, 2010).

But Spanish photographers announced that they recognized the location as a Spanish wildlife park and the animal as the park's tame wolf named Ossian. And experts in wolf behavior also expressed skepticism, arguing that a wild wolf would be more likely to sneak through the bars than leap over the gate. The judges ruled that the photo was indeed staged after they reexamined it and compared it with photos of Ossian, and after the photographer could not provide adequate substantiation for its authenticity. One of the judges, a wildlife photographer himself, expressed dismay: "In wildlife photography there are ethical guidelines and there has always been an explicit understanding that if you take pictures of a captive subject, you declare it on your caption" (Booth, 2010) This honor system is being challenged by the ease with which manipulation can be disguised, especially when large monetary prizes are at stake.

It is commonplace for staged photos of tame animals to be passed off as authentic wildlife images, a practice dating back to early wildlife photography. A few organizations have adopted a policy of rejecting captive shots or publishing them with disclosures, but these groups are in the minority: "most magazines and virtually all publishers of posters and calendars, even those commissioned by environmental organizations, have no standard for honesty in wildlife photography," explains editor-at-large for *Audubon* magazine Ted Williams (2010, p. 3) in an article exposing phony wildlife photography. One of the problems Williams identifies is the ease with which photographers can now rent "model" animals from game farms, where cougars, snow leopards, grizzly bears, wolves, and other animals are penned until required to strike a pose for paying customers. Photographers welcome the chance to avoid time-consuming searches for actual wildlife in potentially harsh conditions, while game farmers can profit handsomely. Their

mutually beneficial arrangement, however, comes at the expense of honesty and animal welfare; observers have witnessed cruelty to animals on game farms, and law enforcement officials have closed some of them for illegal wildlife trafficking. Critics also point out that staged photos can mislead the public about the condition of an endangered species in the wild, where habitat-deprived animals or those suffering in polluted surroundings do not look as noble and majestic as their kin that are kept in a controlled environment and presented in a carefully orchestrated way. Staged shots can lead to serious misinformation, as Williams (2010) reveals when describing how animals were manipulated for television's *Mutual of Omaha's Wild Kingdom*, PBS's *Wild America* (which debuted in 1982), and, notoriously, the Disney film *White Wilderness* (1958), which, among other transgressions, perpetrated the falsehood that lemmings commit mass suicide by gathering some of the small rodents, transporting them to an environment far from their habitat, and flinging them over the side of a cliff.

When staged images are passed off as authentic, their versions of wild animal behaviors, which were in fact created by photographers and animal handlers seeking a particular effect, enter cultural knowledge about the species. Ever since photographers began to stage wilderness images in the late 19th century, certain animal poses have become clichéd signifiers for that species in the wild, and captive animals' performances have distanced us from the realities of wild animals' lives. Our long-established reliance on unreliable images creates a "shadow reality," in the words of historian Daniel J. Boorstin, whose 1962 book *The Image* explains that "The American citizen ... lives in a world where fantasy is more real than reality, where the image has more dignity than its original" (p. 37). He makes the important point that far from being victims of a

conspiracy designed to mislead us, we are “eager accessories to the great hoaxes of the age” (p. 37). And the misinformation often is disseminated by honorable people with good intentions. He writes:

We cannot say that we are being fooled. It is not entirely inaccurate to say that we are being “informed.” This world of ambiguity is created by those who believe they are instructing us, by our best public servants, and with our own collaboration. Our problem is the harder to solve because it is created by people working honestly and industriously at respectable jobs. It is not created by demagogues or crooks, by conspiracy or evil purpose. The efficient mass production of pseudo-events—in all kinds of packages, in black-and-white, in technicolor, in words, and in a thousand other forms—is the work of the whole machinery of our society. (Boorstin, 1962, p. 36)

To be sure, people who stage wildlife images and circulate them do so with good intentions, but, as Boorstin argues, there is a price to pay in the loss of our ability to “test the image by reality” instead of “testing reality by the image” (p. 258). The price is especially high when it comes to protecting endangered species, now that mass extinctions are underway. Phony images create phony impressions, and these are counterproductive when it comes to educating the public about actual conditions and the need to support—and fund—conservation measures.

Images can be challenging to interpret whether they are faked or not. A dramatic example of photographic uncertainty is the 4 seconds of video footage shot in Arkansas in 2004 and used as evidence that the ivory-billed woodpecker still exists in the southern United States (Luneau, 2004). These 4 seconds have been subjected to painstakingly

minute frame-by-frame analysis, exceeding in intensity even the most methodical Biblical exegesis. Experts on both sides pore over the footage to draw meanings from it—those who assert that the bird shown flapping briefly among the trees in the background of the shot is indeed an ivory-billed, and those who argue that it is only a pileated woodpecker, a similar-looking but common bird. Because the ivory-billed is thought to have become extinct more than 60 years ago, the video would be enormously significant if it proved that the species still exists. Unlike the South China tiger and prize-winning wolf photos, the videotape is not a hoax, and although the woodpecker's true identity may never be known, the footage has resulted in millions of dollars being raised to protect the bayous where it was spotted and has led to additional image-making: the development of a new three-dimensional imaging technique to digitally recreate the flight of an ivory-billed. Computer scientists at Cornell University worked with the Cornell Lab of Ornithology for more than 2 years to create a three-dimensional computer model of an ivory-billed woodpecker in flight in order to determine whether flashes of white seen on the bird's wings in the blurry 4-second video were on the front or back part of the wings. Their careful work resulted in a three-dimensional digital bird flying identically to the one in the video, revealing that the white flashes were on the back of the wings and suggesting that it was an ivory-billed (Vance, 2008). Nonetheless, the debate over the identity of the bird has not been settled, and as the years pass without additional sightings of an ivory-billed, there is cause for pessimism about the species' existence in the southern United States.

High-tech imaging can benefit conservation efforts, as it did in 2007 when the GeoEye Foundation donated satellite imagery to groups involved in gorilla conservation

in the Virunga National Park region in Congo, where 60% of the world's dwindling mountain gorilla population resides. The images cover the more than 300-square-mile region and have given conservation groups a better understanding of the mountain gorillas' territory ("GeoEye Foundation," 2007). For those working to protect these gorillas, the satellite imagery provides valuable and otherwise unobtainable information. On the other end of the spectrum, even the most ordinary amateur low-tech photography can have meaningful conservation consequences, as Jonathan Franzen (2008) points out in an article in *The New Yorker* magazine about the recent emergence of birding aficionados in China, where rapid industrialization is laying waste to the land and water and depriving birds of their habitats at an unprecedented rate. The Chinese government's repressive policies preclude its citizens from forming an environmental movement, but there are individuals and small groups advocating for habitat protection and using cameras to monitor bird populations.

More than 100 years after American conservationists championed wildlife photography, it has become cheaper and easier for anyone—amateurs as well as professionals—to create and display conservation imagery, thanks to video and computer technologies. One famous amateur was Timothy Treadwell, a self-educated American bear expert who set up camp in a remote part of Alaska every summer for 13 years to live among endangered grizzly bears for the purpose of studying them and advocating for their habitat to remain protected, amassing 100 hours of videotape and 4,000 photos before one of the bears turned on him, mauled both him and his girlfriend to death, and partially devoured them. His life is the subject of the 2005 film *Grizzly Man*, in which director Werner Herzog scrutinizes Treadwell's compulsion to romanticize the natural

world that is, in fact, dangerously wild and indifferent to human desires. Treadwell's video footage can be interpreted as his attempt to impose his psychodrama on wild animals, but it is nonetheless spectacular and is featured in both Herzog's film and in an Animal Planet series from 2008 titled "The Grizzly Man Diaries." Treadwell used the camera not only to document bear behavior, but also as a confessional and as a tool with which to create himself as he wished to be seen. The convergence of factors—his obsession with grizzly bears, his self-endangerment, his dramatic footage of bears interspersed with disclosures about himself, and his dreadful death—have sparked debates about whether he was a troubled kook or a passionate advocate. His footage indicates that he was both. He confused his own needs with those of the bears, but in his role as an advocate, he did valuable work by spending the winter months visiting schools to educate children about the importance of wildlife conservation. He did not have the qualifications of a conservationist, and yet his amateur status did not diminish his power, or the power of his images, to inspire children to embrace conservation. Walter Benjamin's point that mechanical reproduction has an egalitarian effect extends to this slippage between professional and amateur image-making.

YouTube boasts a wide variety of professional and amateur conservation videos, from expensive television broadcasts to very short pieces made by individuals with a cause. Viewers can watch a video, post a comment, read the filmmakers' critique of their own work, or link to their Facebook pages. These low-budget innovations are in their own way as impressive as the technological marvels of wildlife filmmaking introduced in the BBC's *Planet Earth* series, first broadcast in the United Kingdom in 2006 and then aired on the Discovery Channel in the United States. This monumental undertaking cost

about \$25 million and took 5 years to make, with footage shot entirely on high-definition video in 204 different locations. Awe-inspiring images of the Earth's land and creatures, many of them breathtaking and filmed at risk to the crew, culminate in an effort to get viewers to support conservation efforts.

Conservation organizations have found another use for video and computer technologies with live webcams, which provide real-time coverage of animals in their habitats or, in some cases, zoos, giving viewers an opportunity to surreptitiously watch their daily lives unfold. Virtual proximity to endangered species, it is hoped, might encourage people to be concerned about their future and more likely to donate money to help pay for conservation measures. For example, on the World Land Trust Website you can watch footage shot by a webcam in Ecuador's Buenaventura Reserve showing rainforest birds alighting on a feeding dish to dip their beaks and sip. If we are lucky, the website tells us, we might see a coati appear on a platform behind the birdfeeder ("Webcam," n.d.).

Video has also made possible the phenomenon of Crittercams—small cameras mounted onto animals that record footage without requiring human presence. Animals bearing cameras date back to 1903 in Germany when pharmacist and inventor Julius Neubronner designed a small film camera and mounted it on the bellies of carrier pigeons. The German military subsequently used camera-equipped pigeons for aerial reconnaissance during World War I. Then in 1986, marine scientist Greg Marshall was inspired by the sight of small remora fish clinging to sharks to invent an attachable underwater camera for use on sea turtles and other marine animals. Named Crittercam by the National Geographic Society, the system is now also used on land animals (after

Marshall mounted it on lions in Kenya in 2003) and birds. Scientists collect data from the video footage, such as the discovery in 2009 that albatrosses, four of which were outfitted with tiny lipstick cameras, track the movement of killer whales in the open ocean and feed on scraps of the whales' prey (Bryner, 2009). Video obtained from animal-mounted cameras has been popularized in museum exhibits and on television broadcasts, most impressively in the *Raptor Force* (2007) film showing views from the backs of falcons and other birds of prey in flight.⁴ Crittercams have useful applications, but their footage does not, as is often claimed, show us "the animal's perspective." We do not see through the animal's eyes, only through human-made technology fastened to an animal's body; the perspective is decidedly human. What we are seeing from is the animal's position, not its perspective. Because we have long desired to bridge the gulf separating us from other animals, we want to believe that the Crittercam gives us access to the way animals see, as if it could open a channel of human-animal communication. The truth—that we are seeing through a mechanical device attached to an animal—is less wondrous, even though the technology is extraordinary and the views can be stunning.

Crittercams raise an ethical question about human manipulation of animals; when does it cross over into unacceptable interference? This was an issue in 1997 when a Smithsonian Institution expedition in search of giant squid found that suction cups failed to successfully attach Crittercams to sperm whales, and animal rights activists protested when the team considered using tiny hooks embedded in the whales' skin (Wormeli, 1997). Concerns are also being voiced about the increasing use of hidden motion-detection cameras in the wilderness; there are so many, often in remote places, that they threaten to become litter, and they raise the specter of an ever-expanding surveillance

society. Footage shows animals lashing out at the cameras in some cases, perhaps disturbed by their sounds. Hidden cameras provide invaluable information to aid conservation, but their ubiquity should be questioned, as historian-of-the-environmental-sciences Etienne Benson (2008) points out:

...the means we use to promote biodiversity can undermine our purposes and ... a technology that's right for one place isn't necessarily right for all places.

Wilderness activists of the last century believed it was crucial to maintain a few places where one could hike for days without encountering cars or roads. This wasn't because they hated automobiles—after all, it was cars that made wilderness areas widely accessible for the first time—but because they believed that certain valuable experiences could be had only in their absence. Wilderness activists of this century would do well to consider whether it's worth having a few places where you'll never find a surveillance camera strapped to a nearby tree.

Complicating the issue is that hidden wilderness cameras serve multiple purposes, as is often the case with wildlife imagery. Wildlife filmmakers, hunters, scientists, and conservationists—groups whose goals sometimes conflict—forge an uneasy coalition in promoting their use.

Conservationists make every effort to use images effectively to raise money for their cause, and consequently cute animals get star billing. The prominence of cute creatures has nothing to do with the reality of animal existence and everything to do with human predilections and prejudices. Endangered insects—the creepy-crawly things so vital to ecosystems—get less public support than soft, fluffy creatures. Even cute cartoon creatures, whose existence is purely pictorial, have been used for conservation purposes.

When the “Urban Treaty for Bird Conservation” sponsored by the U.S. Fish and Wildlife Service launched a pilot program in New Orleans in 1999, the official “spokesbird” was Tweety Bird, the yellow Looney Tunes canary (Tollefson & St. Louis, 1999). When a cartoon bird is used in place of an actual bird, it is easy to agree with cultural theorist John Berger when he writes in his 1977 essay “Why Look at Animals?” that despite conservation efforts, animals have been “rendered absolutely marginal” (p. 22) and that “the reproduction of animals in images—as their biological reproduction in birth becomes a rarer and rarer sight—was competitively forced to make animals ever more exotic and remote. Everywhere animals disappear” (p. 24).

Berger’s pessimistic appraisal seems warranted given the thriving illegal international trade in ivory, bushmeat, and other animal parts. It will be impossible for species on the brink to recover if they continue to be hunted. Feathers from endangered birds are still sought after, and on several continents bird species with prized plumage are on the brink of extinction. If photographs can save them now, it will not be as substitutes for their dead bodies. Now we yearn nostalgically for the days when animal species were plentiful, and, tragically, great monetary value is placed on the authentic body parts of species that are slipping into extinction. But photography still plays a valuable role in the battle against poaching; it serves as evidence of crimes against endangered species, thanks to the forensics laboratory of the U.S. Fish and Wildlife Service, where protecting wildlife with photography is an urgent task. As journalist Laurel Neme (2009) documents in her book *Animal Investigators: How the World’s First Wildlife Forensics Lab is Solving Crimes and Saving Endangered Species*, when the lab’s agents investigate crimes against murdered wildlife, they photograph evidence and seize cameras from suspected

perpetrators who unwittingly provide incriminating images for prosecutors when the cases come to trial. Without this kind of enforcement, laws to protect imperiled species would be empty rhetoric (Neme, 2009).

The lab's images benefit endangered species targeted by poachers, but do other photographic images have direct, real-world impact? Writing specifically about wildlife films, often accused of exploiting nature for entertainment, filmmaker and author Derek Bousé (2000) says no, they do not actually harm nature for they operate in the realm of discourse without producing actual physical changes:

Image makers undoubtedly possess a good deal of power in the realm of culture, but the extent to which this translates into actual power over nature, or into political power of the sort that moves mountains, or that saves them from destruction, is unclear, and probably overstated. Despite presumptions about the power of the media to effect social and environmental change, there is little evidence that the state of wildlife and the natural world today is directly related to wildlife film and television. (p. 192)

Bousé downplays the power of images too hastily, for it is in the cultural realm that decisions are made and funds allocated, and these have direct consequences for actual endangered species, which will either gain protection or continue their decline. Public opinion is shaped in the cultural realm, and public support for conservation is crucial at a time when government funds are being slashed. What we learn from the media shapes how we see the world and, consequently, our lifestyles and priorities. Our experience of media-created worlds is a lens through which we view our real-world surroundings and evaluate its needs.

Additionally, Gregg Mitman (1999) argues that sensationalistic wildlife films have conditioned us to have a voyeuristic relationship with animals, expecting them to astound and thrill us, and we lose interest when they do not. We regard wild animals as spectacles in a world set apart from ours, and rather than work alongside them, we watch them from a safe distance (p. 206). This has consequences for the ways humans interact with nature and make policy decisions. Mitman (1999) writes that “conditioned by nature on screen, we may fail to develop the patience, perseverance, and passion required to participate in the natural world with all its mundanity as well as splendor. Trained as spectators, we make little effort to accommodate ourselves to nature” (p. 207). Taking stock of the situation, he concludes, “the critical issue is not how to remain separate, but how to act with integrity in our relationships with wildlife and the natural world” (p. 208).

Acting with integrity, however, means different things to different people. There is no consensus on which strategies are most effective and how to allocate resources for conservation. For example, it can be counterproductive to focus on saving an individual animal when the future of a species is at stake, as environmental studies professor Ralph Lutts (1990) points out in *The Nature Fakers*, his book about early 20th-century debates pitting science against sentimentality. He writes that “many people are emotionally and morally unable to leave a wild animal alone and let ‘nature take its course’ if they believe the life of an animal they like is endangered. Their reasons may be noble but this is not necessarily an effective way to achieve many wildlife protection goals” (pp. 196-197). Wildlife rehabilitation centers—which administer to injured or orphaned wild animals brought in by concerned citizens—evoke sympathy for individual creatures, but, as Lutts

(1990) argues, “wildlife rehabilitation is of little or no ecological benefit and it rarely has any impact upon the survival of a species” (p. 197). With time running out for many species, questions about conservation strategies should be brought into the open and debated, and competing interests that are blocking protective measures need to be disclosed. For instance, the Japanese government resists the international ban on whale hunting on the grounds that whaling and whale meat are significant aspects of its national culture. But in fact the whaling industry brings in a comparatively small profit, and Japanese people in general avoid eating whale meat. Analysts speculate that the Japanese government’s intransigence over whaling is motivated primarily by its hostility to foreign interference (Craft, 2010). It is only when we have accurate information about motivations and competing interests that debates can be productive and lead to successful policies.

When photographs first began to substitute for hunting, “reproduction” meant creating an image with a mechanical apparatus. Now it has a different connotation; it evokes genetic engineering and the notion that we will be able to literally—not just figuratively—reconstruct lost species. But in trying to revive extinct creatures—to raise the dead—we run the risk of abandoning efforts to protect endangered species, and, by extension, ourselves, by disregarding human dependence on the same damaged ecosystems that sustain other life, a point made eloquently by Harvard biologist Edward O. Wilson (2002) in his critique of “technomania” (p. 130). Although genetic engineering is entirely different from photography, they both engage in a type of re-creation; they seek to satisfy the urge to retain something after it is gone.⁵ Animal species are disappearing rapidly now while efforts to prevent further losses from pollution, climate

change, habitat loss, and hunting are disastrously hindered by politicized disputes. One fourth of the world's mammals are at risk for becoming extinct (Eilperin, 2008), and one third of the bird species in the United States are endangered, threatened, or in significant decline ("State of the Birds," 2009).⁶ For wildlife conservation to succeed, economic systems, government policies, and our everyday activities must be reconfigured. We must also learn about the importance of looking at images carefully, with knowledge of the contexts that produced them, and, crucially, with skepticism.

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¹The photographer was convicted of fakery in 2008 and sentenced to 3 years on probation, and in 2010 he was imprisoned and given a 2-year jail sentence for probation violation. There is reason to believe that local officials knew all along that the photos were fakes but used them to encourage tourism in the region, and several officials were consequently fired from their jobs for their role in the scandal (Le & Hornby, 2010).

² Their next book was more explicitly about photographing wildlife and was illustrated with many examples (Kearton & Kearton, 1897).

³ Caroline Gentry was the director of films at the Roosevelt Motion Picture Library at the Roosevelt House in New York City, where she curated a large collection of film footage pertaining to Theodore Roosevelt. The collection is now housed at the Library of Congress, where it was moved in 1962. The footage of Teddy Roosevelt's visit to bird sanctuaries on an Audubon Society expedition was shot in 1915 by Herbert K. Job. The prologue showing hunters destroying snowy egrets is undated.

⁴ The raptors were equipped with tiny cameras, batteries, and transmitters.

⁵ Taxidermy, too, can be interpreted as a technique for cheating death because the stuffed animal is made to create the illusion of life.

⁶ Produced by government wildlife agencies working in conjunction with conservation groups.