

Zoos behind the Wild Facade

BY JON KOHL

The histories of zoos and wilderness in America have been intertwined for 150 years. According to the World Zoo Conservation Strategy (WZCS) (World Zoo Organization 1993), their evolution is unfolding in three stages. Menageries marked the 19th century, when simple taxonomic animal collections were exhibited to the public. In the 20th century, zoos became zoological parks, where single-species cages give way to multispecies dioramas that look something like the natural homes of their animals. Last, the WZCS hopes that zoos continue to the final stage, where 21st-century conservation centers focus on the whole natural system, including interactions between soil, water, plants, animals, and people.

This evolution has been driven by environmental, wilderness, and social movements that increasingly feed the public's demand that zoos justify themselves. For many people, keeping animals like proboscis monkeys captive no longer suffices as adequate justification for zoo existence.

Roderick Nash notes in his classic book *Wilderness and the American Mind*, "Clearly it is not wilderness but people who need management" (Nash 1982, p. 320). Contemporary conservation thinking extols the necessity of understanding human activity at least as much as animal activity. Zoos focus almost exclusively on wildlife, despite humanity's central role in habitat destruction and conservation. Zoos' systematic ignorance of the impact that human behavior has on environmental problems *and* solutions has blocked their continued evolution.

The blockage proves ironic, since zoos' insistence on displays without people is squandering the immense potential to promote conservation. This potential of zoos, as well as of botanical gardens and aquariums, to be conservation centers can be counted in the thousands of institutions worldwide, the billions of dollars in investment, and the more than 115 million in visitors in the United States and 600 million in the world every year—equivalent

to 10% of the total human population (World Zoo Organization 1993).

No other type of conservation organization comes close to reaching so many people. With conservation issues evermore pressing, zoos find themselves not only trying to save wildlife, but also trying to save their own kind from becoming lost in irrelevance.



Article author Jon Kohl in a cave in Costa Rica. Photo by Marisol Mayorga.

Zoos' Wilderness Roots

In order to better design an exhibit mimicking natural habitat, a team of biologists and designers from Woodland Park Zoo in Seattle, Washington, traveled in 1985 to Tanzania to discover what savannah habitat really looked like, Jon Charles Coe, a landscape architect specializing in zoo design, however, did not see the terrain as the others did.

While the biologists catalogued the biophysical character of the African savannah, Coe began analyzing aspects of wilderness that he could re-create in an exhibit experience. "One aspect of wilderness in the zoo is to make people feel that sense of anticipation and anxiety" (personal communication, Coe 1997). Whereas many exhibit designers may go no further than using rocks and plants from the place they want to re-create, Coe goes beyond. He designs unfamiliar space that breaks down visitors' sense of security and brushes them with a feeling of wilderness. By building landscapes where people encounter animals, separated by invisible barriers, for a split second their survival instincts are turned on. They forget they are in a zoo. According to Coe, that feeling of lacking control is one important aspect of wilderness.



Figure 1—The Khao Kheow Open Zoo aviary mixes zoo with natural habitat. Photo by Marisol Mayorga.

Coe's search for this wilderness feeling in zoo design may sound novel, but the influence of wilderness on how zoos conceive themselves is hardly new. The modern zoo, in fact, was born during the first wilderness movement. The Philadelphia Zoological Garden, which opened in 1874, was the first animal collection to call itself a "zoological garden," an attempt to differentiate itself from earlier menageries. At that time American pioneers were finishing up their grand sweeping aside of not just

forests and grasslands, but wild animals like bison and wild places like the Great Plains. After the Civil War, however, many Americans grew increasingly concerned about the vanishing character of wild America.

Easterners and European immigrants left the vestiges of civilization behind as they marched onward into the wilderness. In the words of William Cronon, they "gained an energy, an independence, and a creativity that were the sources of American democracy and national character. Seen this way, wilderness became a place of religious redemption and national renewal, the quintessential location for experiencing what it meant to be an American" (Cronon 1995, p. 42). "It is no accident," Cronon continues in a piece adapted from his 1995 book, *Uncommon Ground: Toward Reinventing Nature*, "that the movement to set aside national parks and wilderness areas gained real momentum just as laments about the vanishing frontier reached their peak. To protect wilderness was to protect the nation's most sacred myth of origin" (p. 42).

In 1872, protected areas like Yellowstone National Park were set aside. Inside the cities, people were already building another institution that would preserve the concept of wilderness. By 1891, when the National Zoological Park in Washington, D.C., opened, many zoos had already been established. In 1889, Congress passed a bill to establish a national zoological garden as part of the Smithsonian Institution "for the advancement of science and the instruction and recreation of the people." Indeed, science, education, and recreation are three of the four principal missions of modern zoos. The fourth, conservation, soon followed when Smithsonian secretary S. P. Langley championed the idea of the National Zoo as "a home and a city

of refuge for the vanishing races of the continent" (Lefkowitz 1996).

In the 1960s, many zoos had become run-down, and the public did not approve. Several bills floated in Congress to ban zoos, although none passed. Zoos came under heavy pressure to get their act in line. In general, the zoo community reacted to public outcries in two ways, according to Vernon Kisling (personal communication 1997), the American representative of the Bartlett Society, an international association of zoo historians. First, the national organization, the American Zoo and Aquarium Association (AZA), developed professional standards and a code of ethics for individuals and accreditation for zoos. Second, "they began a major effort at lobbying and became pretty good at it," Kisling adds.

In the late 1960s, zoos started to do what they wanted to do: get rid of barred cages. Several forces combined to bring wilderness to zoo design. The wilderness movement instilled designers with the values, the historical moment provided them with the opportunity, and animal husbandry science (vaccinations, for example) allowed them to escape enclosures of bathroom tiles and operating room decor necessary for preventing infections—designers could now build naturalistic exhibits with plants, rocks, streams, and other animals.

Coe, an active outdoorsperson, was only one of several to launch the modern conception of immersion exhibits, in which visitors are immersed in the natural landscape alongside animals of the exhibited region. In the early 1970s at Woodland Park Zoo, Coe worked with Grant Jones, Dennis Paulson, and architect David Hancocks, who was the zoo director. Hancocks wanted to create a new kind of zoo, one with exhibits based on bioclimatic zones, ecological habitats, and animal social behavior.



Figure 2—The Khao Kheow Open Zoo in Thailand breeds clouded leopards for increasing the genetic stock of zoo-based clouded leopards. Photo by Karen Povey.

Together, they created the gorilla exhibit that is still considered one of the best immersion exhibits ever built.

But even as designers like Coe, Jones, and others strive to include every detail necessary—each rock and leaf—to convince the visitor that, just for a second, he or she was in the heart of Africa. The myth of wild or wilderness may impede the path of zoos trying to become conservation centers.

Erecting the Wild Facade

Flashing the big-eyed fuzzy face of a baby cheetah or gorilla, zoos frequently promote themselves as saviors of wilderness and of animal species. The wild myth gives zoos a frame in which they can romanticize their missions as ones that do not require human considerations. Even while other sectors of the conservation community, such as the World Wildlife Fund and World Conservation Union, have long since devised strategies attending to human social problems that endanger wildlife, zoos lag far behind.

Hancocks (personal communication 1997), former director of the Arizona-Sonora Desert Museum, asserts that certain tactics, such as the wild facade in Ndoki, belie the truth about the success of zoo conservation. Promotion of conservation successes abroad reinforces a facade that hides zoos' true passion: conservation driven by science and technology. To become conservation centers, zoos want to carry out conservation through technological approaches. In the 1980s, zoos conceded they should not be the Ark (still a very popular metaphor for captive breeding) that carries captive species across a 50- or 100-year span necessary for the subsidence of human destruction, after which, the idea goes, new habitat for reintroductions will be created or discovered. They now declare that captive breeding was just one tool for conserving wilderness. Yet tech-

nological capacity for breeding has only been increasing. Zoos do not just hire veterinarians anymore—now the modern zoo staff includes specialists in animal reproductive physiology, genetics, molecular and small population biology, endocrinology, animal behavior, nutrition, and animal infectious diseases (Eisner 1991). And their technology is impressive: *in vitro* fertilization, cryogenic preservation, implantation surgery, and video microscopy (Stevens 1993).

Zoos promote these high-tech images in their research mission as well, despite captive breeding's many problems. It is, for example, very expensive; it can draw funds away from cheaper and more effective wilderness conservation projects; it generates surplus animals that must be disposed of; it presupposes that reintroduction is the solution to endangerment when reintroduction cannot address habitat loss, a prime cause of endangerment; it is biased toward large, charismatic mammals cherished by marketing and public relations departments; it draws attention away from the social and policy side of conservation; and, most of all, it can boast little success—only 13% of reintroductions have succeeded (Beck 1995).

Zoos often declare that the principal means of effecting conservation of species and wilderness is through education. Yet looking behind the wild facade, one can see that education is the highest priority only insofar as it serves zoos' interest in promoting scientific research. Here in the United States, for example, zoos argue that making Americans more knowledgeable and conscious of biology and extinction will ultimately help to conserve places like Ndoki. When pushed to explain a direct link between conservation there and education here, money to fund international projects



Figure 3—The Tiger Farm in Thailand claims that nursing newborn tigers on pigs rather than real tigers avoids their acquiring wild habits of the mother. Photo by Marisol Mayorga.

is that link. The most famous example of fund-raising in the name of education is the panda renting of the late 1980s and early 1990s, when zoos competed for pandas from China. It was estimated that Toledo earned about \$60 million through tourism from a panda rented to the Toledo Zoo in 1988 (Cohn 1992). In 1990, a consortium of organizations, including the AZA, the World Wildlife Fund, the World Conservation Union, and International Union of Directors of Zoological Gardens voted for a worldwide moratorium on all panda loans.

Educational strategies such as exhibit graphics have been criticized on numerous fronts. Kellert reviewed the literature, which has shown very limited results in the educational effectiveness of zoos (Kellert and Dunlap 1989). There is little evidence that visitors' attitudes become more favorable toward nature and conservation or that they have learned much at all. Yet zoos claim that education will ultimately make citizens more aware of environmental issues, resulting in better conservation-related behaviors.

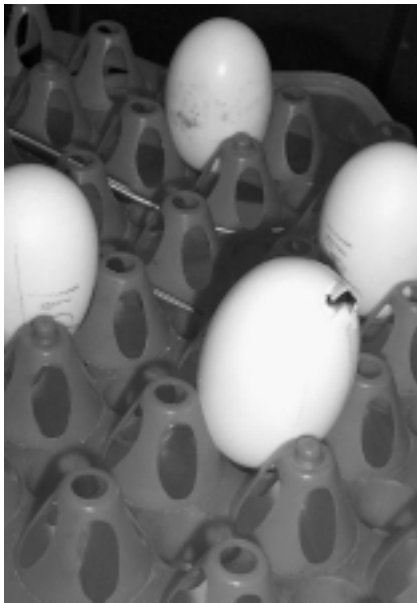


Figure 4—The Tiger Farm in Thailand sponsors an aggressive crocodile breeding project; here a newborn croc can be seen just cracking the egg. Photo by Marisol Mayorga.

Taking Down the Wild Facade

Many have argued that by exerting dominion over nature, humanity has attempted to separate itself from the natural context. This fundamental belief of separation underlies the wild myth. “Nature appreciation is a ‘full stomach’ phenomenon, that is confined

to the rich, urban, and sophisticated. A society must become technological, urban, and crowded before a need for wild nature makes economic and intellectual sense,” writes Nash (1983, p. 343). Zoos are built in highly populated areas, far from rural reality. The wild myth has emerged in part to deal with the stresses and artificiality of urban life. As Nash noted, city folk derive satisfaction—intellectual, recreational, historical, and spiritual—when they temporarily cross that divide into wilderness.

Despite the myth’s perseverance in cities, people have always lived in wilderness. The Amazon rain forest, the last great wilderness of tropical America, has been home to native groups for thousands of years, no matter how uninhabited the interior may seem to outsiders. Their agroforestry manipulations partially account for the existence of some communities of trees botanists today regard as virgin wilderness. Many cultures also use technologies that do not destroy nature, and some have even been credited for increasing biological diversity through their agricultural and forest management practices (Fairhead and Leach

1996). People not only live in wilderness, but shape it as well.

Becoming a conservation center requires a redefinition of wilderness to include local perspectives and traditions. Gómez-Pompa and Kaus (1992) note that most policy agendas and education curricula of conservation organizations neglect rural perceptions of the environment and traditional systems of resource management.

Many conservation organizations have already decided that lasting conservation involves cooperation with local communities, who have the right and experience to live where they do. Once again zoos lag behind in not integrating these people’s perspectives. They also do not realize that much of what they advocate, in fact, is to manage humans: posting guards, pursuing poachers, and setting up national parks. If zoos would only peek around the wild facade, they may find the path to becoming conservation centers.

Evolving into Conservation Centers

What would a conservation center look like? First the reader must throw out contemporary perceptions of a zoo. A few conservation centers have gone into the wilderness to work with people. The zoo in Chiapas, Mexico manages several large wilderness areas. All have people in them. Instead of pretending they do not exist, the zoo has engaged in teacher training, literacy programs, agricultural improvement programs, alternatives to hunting wild game, and integrating best practices of local communities into forest protection strategies. Each example represents a human management tactic for conservation. The Chiapas zoo recognizes that its audience is not just those who visit the zoo,



Figure 5—Boy feeding giraffes at the Khao Kheow Open Zoo in Thailand. Photo by Marisol Mayorga.


but all those who will never visit a traditional zoo (Kaufman 1990).

Zoos that work with people understand the need for specialists in other fields. The Roger Williams Park Zoo, Providence, RI, is going through this transition now. Anne Savage is director of research and a biologist. Yet when she finds herself managing the zoo's cotton-top tamarin project in Colombia, she clips on her social sciences badge. She worked to reduce firewood consumption by promoting a better clay stove called a *binde* (personal communication, Savage 1997). Savage presages a time when conservation centers will hire anthropologists who study traditional conservation systems among forest-based people, sociologists interested in group function, psychologists in education, and economists to discuss economic alternatives to deforestation.

The WZCS clearly states that education is conservation centers' principal tool for conservation. Instead of talking about setting up national parks, conservation centers could be educators in the variety of cutting-edge conservation techniques. They include joint forest implementation plans, community-based conservation, high diversity agroforestry systems, and extractive reserves. They would also be involved in strategies such as conservation easements, land trusts, and ecotourism.

Conservation centers could design exhibits to include people. Jon Coe's colleague, Grant Jones, has designed an exhibit that includes a rich understanding of the interplay between forest peoples, wildlife, and wilderness. At Woodland Park Zoo, his firm designed an exhibit that simulates a partly deciduous tropical forest. The visitor starts in the highlands of Thailand where they encounter elephants in the wilderness. But later in the ex-

hibit, the scene changes to a logging camp with small buildings and elephants to drag logs through the forest. The exhibit portrays the elephant in its various roles as wild creature, cultural part of the landscape, and deity, all intertwined in this story.

Above all, conservation centers cannot be managed only by biologists and businesspeople. Conservation centers must diversify their income, collaborate with other kinds of institutions, and refocus on conservation, rather than animal exhibition. Although they will certainly remain involved in captive breeding and exhibition, the public may come to regard them as serious interdisciplinary institutions working with people for conservation and wilderness. 

REFERENCES

- Beck, Benjamin. 1995. Reintroduction, zoos, conservation, and animal welfare. In Bryan G. Norton, Michael Hutchins, Elizabeth F. Stevens, and Terry L. Maple, eds. *Ethics on the Ark* (155–163). Washington, DC: Smithsonian Institution Press.
- Coe, Jon Charles. 1997. Personal communication. Coe Lee Robinson Roesch, Philadelphia, PA.
- Cohn, Jeffrey. 1992. Decisions at the Zoo: Ethics, politics, profit, and animal-rights concerns affect the process of balancing conservation goals and the public interests. *Bioscience*, 42(9): 654–659.
- Cronon, William. 1995. The trouble with wilderness. *The New York Times*, 13 August, sect. 6, p. 42.
- Eisner, Robin. 1991. Scientists roam the habitat as zoos alter their mission: With species preservation now becoming at least as important as entertainment, researchers in many fields take up zoo residence. *The Scientist*, 5(11): 1–3.
- Fairhead, James, and Melissa Leach. 1996. Reframing Forest History: A radical reappraisal of the roles of people and climate in west African vegetation change. In Graham P. Chapman and Thackwray S. Driver, eds. *Time-scales of Environmental Changes* (169–195). London, UK: Routledge.
- Gómez-Pompa, Arturo, and Andrea Kaus. 1992. Taming the wilderness myth. *Bioscience*, 42(4): 271–279.
- Hancocks, David. 1997. Personal communication. Director, Arizona-Sonora Desert Museum, Tucson, AZ.
- Kaufman, Wallace. 1990. The zoo in the forest. *Orion* (Autumn) p 26–35.
- Kellert, Stephen, and Julie Dunlap. 1989. *Informal Learning at the Zoo: A Study of Attitude and Knowledge Impacts*. Philadelphia, PA: Zoological Society of Philadelphia.
- Kisling, Vernon. 1997. Personal communication. Zoo historian, University of Florida, Gainesville.
- Lefkowitz, Helen Horowitz. 1996. The National Zoological Park: City of refuge. In Robert J. Hoage and William A. Deiss, eds. *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century* (126–135). Baltimore, MD: Johns Hopkins University Press.
- Nash, Roderick. 1982. *Wilderness and the American Mind*. New Haven, CT: Yale University Press.
- Savage, Anne. 1997. Personal communication. Director of Research, Roger Williams Park Zoo, Providence, RI.
- Stevens, William K. 1993. Zoos find a new role in conserving species: Expertise is combined with high technology. *New York Times*, 21 September, sect. C4.
- World Zoo Organization and the Captive Breeding Specialist Group. 1993. *The World Zoo Conservation Strategy: The Role of the Zoos and Aquaria of the World in Global Conservation*. Chicago: Chicago Zoological Society.

JON KOHL wrote a research paper on this topic in 1997 and won the Gloria Barron Wilderness Essay Contest sponsored by The Wilderness Society and Yale School of Forestry and Environmental Studies. Jon's writings focus on conservation, sustainability, and other environmental issues (www.jonkohl.com). E-mail: writer@jonkohl.com.