

Is There a Place in the World for Zoos?

9

CHAPTER

David Hancocks

We human animals make rapid technological and cultural advancements because we have the ability to pass definitive information to succeeding generations. But we also accept too much from the past without challenge. The good, the bad, and the indifferent are muddled together, accumulating in layers that smother each succeeding age. Cultural mores ranging from the silly to the profane, from charming to dangerous, clutter our world. They exist only because, as the British are wont to say, “We have always done things this way.” One very troubling example is the public zoological parks found in almost every city: they are fundamentally unchanged from the first public zoo that opened in The Regent’s Park in London in 1828. Although significant modifications have taken place since then, particularly recently, for the most part, zoos continue to do things the way they have done them for almost two centuries. An objective reevaluation is long overdue.

One improvement that has taken place is that an accredited, professionally operated modern zoo is no longer likely to present animals to the public in rows of tiny, barred cages. Such zoos now display animals in simulated natural habitats. Modern veterinary medicine, too, has brought enormous benefits to zoo animals.

Preventive medicine and overall health care are now usually at very competent and professional levels of expertise. The zoo animals of today receive fresh and wholesome food in contrast to their predecessors, and their diets are carefully researched and evaluated. Zoo education programs reach millions of students each year. Keeper staffs are highly trained, knowledgeable, and dedicated.

When examined from the point of view of the visitor or the staff, in fact, conditions in today’s accredited zoos are far better than those of yesterday. But an examination from the animals’ point of view reveals that many of the problems of nineteenth-century menageries remain, inexcusably, in common practice.

If you examine the daily routine of a chimpanzee, lion, tiger, bear, or any other typical zoo animal, you will not find it unusual for animals in even the best zoos to spend the far greater part of each twenty-four-hour day locked in holding cages, “off display.” Far too commonly, these cages are almost exact replicas of the old menagerie cages that were viewed by zoo visitors, the only difference is that the cages are out of public sight. Night cages for zoo animals are invariably noisy, harsh, barred cubicles, lit by cold fluorescent tubes, with no attention given to acoustic comfort, soft lighting, or any behavioral or psycho-

logical needs of the inhabitants. Their only function, like the old menagerie cages, is secure containment. Everything in them is fixed and hard, immovable, never changing, and largely unusable by the animals.

The public display areas may be luxuriantly green in the best of the new zoos, but behind the scenes the nineteenth century still exists. Even worse, all too often the supposedly naturalistic display areas of the modern zoo are, as far as the animals are concerned, of even less functional value than were iron-barred menagerie cages. At least they had bars to climb on and swing from! Today electric wires and hidden moats all too often keep the animals away from the lush vegetation of the new habitat exhibits. Appearances to the contrary, the animals on display may have nothing but a small area to sit in all day and nothing natural with which to interact. Trees and shrubs that appear to be an integral part of the animals’ habitat are likely to be untouchable.

To add insult to injury, it is not unusual for the “natural habitat” to be composed of nothing but concrete and plastic. Some zoos and their designers boast of their skill in creating scenes that closely mimic the appearance of natural habitats by using entirely artificial components and materials. This public face of the new zoo may convince the visitors and

their video-camera view of the authenticity of the scene, but a “tree” made of epoxy resin or a “mud wallow” made of concrete is of no more use to a wild animal than is a plastic beach ball.

These shortcomings are especially evident in many of the “rainforest” exhibits that have mushroomed in American zoos in recent years. Unlike real rainforests, which are hushed, dark, daunting, and contemplative environments, zoo rainforest exhibits are invariably bright, colorful, and full of noise—more like a suburban garden center than the somber splendor of the Amazon. They are usually filled to overcrowding with the most colorful and noisy species, since quantity has always counted when it comes to zoo species, and zoos have never been able to resist the flashy and the cute. The mistaken impression left in zoo visitors’ minds is that rainforests are crammed with chattering monkeys and boldly colored birds. Botanical gardens fall prey to the same trap, preferring to present the grotesque and unusual rather than a true picture of nature.

The sense of awe inspired by the all-embracing quietude of the tropical forest is replaced by a gaudy, oversimplified spectacle. Overhead there is no closed green canopy, only the steel and concrete slabs of a glass roof. It is a kindergarten view of the natural world: to your right is the café, on your left is the public restroom, and ahead of you is the gift shop.

Animals as Jewels

Zoos have always had one overriding concern—that their animals must always be on view and easily seen. The general curator at the Bronx Zoo describes a recent instance in which he was consulted on the design of a new jaguar exhibit at an unspecified but “well known zoological park” (Seidensticker and Doherty 1996). The designers wanted to create the effect of a jaguar lying on a log in the sun at the edge of a tropical river

backwater. They had allocated less than 300 square feet for this tableau and were insistent that not only was more space not available, but it was also unnecessary.

This type of problem is found in zoos worldwide. It stems from a lack of awareness that zoo animals are living creatures and an apparent inability to place the animal’s needs—psychological and behavioral, as well as physiological—at the top of the list of design criteria. This myopia is typically exacerbated in zoo rainforest exhibits: their extremely high construction costs result in minimal space to the animals. Thus, zoo rainforest exhibits can virtually guarantee that both the quantity and the quality of space allocated to the animals are inadequate. Kept in tiny spaces with no access to any natural vegetation, animals have to learn to live with plastic. In the worst examples, such as Omaha Zoo’s Lied Jungle building, many animals spend their entire lives in cramped, completely artificial environments and never have contact with anything natural. The general design approach is closer to that used in store window displays, with the animals perched like jewels in the spotlight, dimensions calculated to the inch, than to habitats for living animals. No space is wasted, unless you take the philosophical position that the entire space is wasted, since these multi-million-dollar extravaganzas typically claim little authenticity and provide minimal educational value.

The attitude that a zoo animal is merely an object for display is disquietingly prevalent in many zoos, but fortunately there are some exceptions. When Zoo Atlanta built a large exhibition habitat for gorillas in the late 1980s, it included several big trees in the animal areas. The designers were aghast when the gorillas began to inflict heavy damage on these trees and asked the zoo director, Terry Maple, to install electric wires to protect them. His response was, “Plant cheaper trees!” (Croke 1997). There are other refreshing signs, particularly of a new trend in zoo employees. Zoo keepers, in particular, are

these days likely to be well educated, well trained, and dedicated to the well being of the animals in their care. Many of the younger zoo directors, too, bring compassion and powerful intellects to their profession. What is generally lacking within the profession, however, is an eagerness to look for fundamental changes to the whole zoo concept. Few recognize that a complete reexamination of zoos is necessary: there are too few zoo heretics.

The most urgent and fundamental change needed for the new millennium is for zoos to recognize that they do not need to focus exclusively on animals, particularly on those species traditionally kept in zoos. If we compare the zoo collections of today with those of one hundred years ago, we find the same distorted emphasis on big, colorful, and charismatic species. The richness and the complexity of nature is completely overshadowed by this obsession to an astonishing degree. About 1,640 of the 30 million species of animals on the planet are mammals. The average American zoo contains 53 of these known mammalian species, a ratio of 1:31. For birds, the ratio is 1:98; for reptiles, 1:104. Amphibians are represented in the average American zoo at a ratio of only 1:2,000. For invertebrates it drops to one in several millions (Boyd 1997). Zoos present an upside down view of the animal world. More than 95 percent of all species are small enough to fit in the cup of your hand and are completely unknown in zoos.

This is particularly galling, since invertebrates, especially, typically have more biological mass than any other species in a natural habitat, and thus greater biological importance and influence. As Harvard biologist E. O. Wilson has suggested, we need to better demonstrate that in many critical ways it is often the little critters that run this world. Zoos are missing a golden opportunity to do so.

The persistent dedication of zoos to a very small segment of the animal world raises the question of why zoos should limit themselves to the field of zoology. That restriction is after all

completely anti-natural. The Victorian zoo visitors were most suitably impressed to see the new scientific tool of taxonomy made clear to them through the invention of the public zoo that put all the primates together in one building, all the parrots in another, all the hoofed beasts over there, the bears over there. That they could go to the zoo to see wild animals, and try to make comparisons between the different orders, was sufficiently edifying for the day. But nature does not function in tidy packages of separated scientific disciplines, and although it is of value to study the natural world in distinct related components, there is no virtue in presenting it to the general public in such a manner. We need natural history institutions that can reveal the connectedness, not the separateness, of the natural world. Zoos must metamorphose (Hancocks 1996). Instead of restricting themselves to displaying wild animals, they must become places that celebrate nature in its entirety. For this, zoos must first appreciate that it is impossible to tell the critically important stories of nature with exhibits that represent only a very small fragment of the cast of characters. Complex interdependencies between plants and animals that have evolved over millions of years, for example, are becoming increasingly vulnerable, because of pesticide use, habitat loss, and decreasing diversity. Zoology exhibits alone cannot reveal the reasons for and the ramifications of this story, nor can solely botanical displays. We need “zoos” that focus on biology, on ecology, and on nature.

Our general level of understanding of nature is declining precipitously as people become ever more separated from the natural world and more reliant upon a technological and domesticated environment. Children speed along the information superhighway instead of walking along country lanes. They browse the World Wide Web rather than observe a spider spin. They are exposed more to rap than to bird song and spend more time in shopping malls than in mead-

ows. This is why we need partnerships among zoos, botanical gardens, arboretums, natural history and geology museums, aquariums, science centers, even libraries and art galleries. With shared programs or connected thematic exhibits, our cultural, scientific, and natural history institutions could collectively engage a public debate about new ways to look at nature and about sound ecological practices, and they could devise many different ways to promote conservation. People are hungry for this information.

Most of all, we need to rekindle a love for all wildlife, and a respect that goes beyond the aesthetics of the television documentary or the IMAX spectacular. To this end we also need zoos to desist from perpetuating the image that only the cute and the cuddly animals are worthy of our concern. Furry mammals elicit far more support for our affections than “slimy” snakes or “warty” toads, and we seem to be instinctively fascinated with what we perceive as the bizarre and the peculiar, such as albino tigers or oversized specimens. Zoos have the ability and the opportunity to dispel myths and to help people realise that “ugliness” in the animal world is nothing more than a product of our cultural bias.

We have an innate affinity for and a deeply embedded fascination with animals. E. O. Wilson has coined the term “biophilia” to describe this phenomenon (Kellert and Wilson 1993). This attachment reveals itself in both beneficial and harmful ways. Animals that reflect human infantile features, such as large heads and big eyes, are especially popular for zoo displays. (The giant panda is the classic example.) Appeals to the public to help save the tiger, or the koala, or some other charismatic creature fall easily upon sympathetic ears. Zoos can quite easily find people to champion their pretty, or cute, or spectacular animals. Conversely, they can always draw a crowd with spiders and snakes because the public finds these species repulsive. The fascination does not seem to extend to concerns about their welfare or survival, however. It would be a most useful challenge for

zoos to try to change the public’s thinking on both fronts.

If people are to accept responsibility for the enormous damage that humankind has inflicted on wildlife, they must learn to act and think like good custodians of the earth. Objective, carefully considered, and extraordinarily difficult decisions will have to be made about the conservation of wild animals and their wild habitats. How much? Where? When? At what cost? For the specific benefit of which species or ecosystems? Such judgments will tax new generations for decades, even centuries, to come. Zoos can, if they will accept the challenge, be an effective medium for helping people to consider such questions.

The western mind learned to make sense of the apparent chaos of nature by dissecting it and sorting its component parts into degrees of relatedness. In doing so we lost the holistic view, in which, in the words of John Muir, “everything is hitched to everything else.”

Hediger’s Philosophies

Our urgent need for institutions that reveal the complexities and the connections within nature in no way diminishes zoos’ responsibilities to the animals in their care. The standards of a zoo’s animal care should be above reproach. It’s as simple as that. Ironically, if the typical zoo would shift away from big mammals and focus instead on smaller species, it could find that its abilities to meet its inmates’ requirements would be greatly enhanced. It is easier to satisfy the needs of a group of meerkats than a herd of elephants or of a beetle than an orangutan.

Large, social, strong, intelligent animals with a high level of awareness place very great demands upon their caregivers. This is not to suggest that the husbandry for small animals or for creatures such as reptiles and amphibians is in any way facile, nor does it imply that such animals do not have their own very specific and

sometimes elaborate psychological and social requirements. But there is a more acute sense of failure in not meeting the needs of a more highly perceptive animal. One is not making value judgments when one acknowledges that a dog or an elephant or a baboon demands more work than does a beetle or a starfish.

These complex needs have too rarely been considered in zoos. There are far too many instances of misery and deprivation in these public institutions. Seldom are these the product of any deliberate callousness or sadism. Much more likely is a situation like that of the gorillas at Zoo Atlanta, who were going to be deprived of contact with live trees because they were inflicting damage upon them. When Maple called for “cheaper trees” he may simply have been espousing a natural affinity for the needs of these apes, but it is probably not coincidental that he is also a disciple of Heini Hediger.

In 1950 Hediger, director of the Basel Zoo in Switzerland, published *Wild Animals in Captivity*. If more zoo professionals had embraced Hediger’s teachings and philosophies, much of the suffering and inadequacies of care endured by thousands of zoo animals over the past fifty years could have been avoided. Hediger believed that zoo environments should be managed in such a way that critical aspects of the animals’ lives mirror as closely as possible those of their wild conspecifics. He advocated an ethological approach to zoo management. Hediger was not particularly concerned with how a zoo exhibit looked to the public, at least in terms of whether or not it looked “natural,” but he was adamant that it should duplicate the animal’s spatial, social, and environmental needs and challenges. He argued the need for recognizing animal territories, and flight distances, in the zoo, and he strongly advocated occupational therapy, based upon natural behaviors, to relieve the omnipresent boredom of zoo animals. He spoke eloquently of the need for considering the animal as a whole being, a *living* being, drawing a parallel be-

tween the standard zoo enclosures of the time and the cabinet displays of a natural history museum: “The death chambers of the menagerie were, in a way, the ante-rooms of the museums... the animal in its narrow cage was provided with food, the stuffed one with preservative.”

Zoo managers were offered much practical advice in Hediger’s writings, all based upon the principle of using nature as the norm. He described everything from types of flooring substrates and the quality of the ambient environment to the different foods—and methods of food presentation—for captive animals. Much of what Hediger advocated was labor intensive and sometimes a bit difficult. It did not appeal to managers looking only at the bottom line. His attention to the needs of the animals was easily shoved aside by promoters who wanted only baby animals for the Spring Break and bean counters who wanted a minimal labor force. Ever since the first huckster put a lion in a cage and charged a penny to see it and the first public menageries opened their doors, the click of the turnstile and the chink of a coin in the cash box have drowned out the cries of those that need wallows to roll in, trees to climb, and thick grass to sleep in.

Hediger argued that zoo enclosures should be planted with shrubs and bushes left untrimmed and landscaped with boulders and fallen trees, because the animals need such things. They provide cover for individuals that may wish to get out of view and hours of entertainment for those that prefer to peel the bark off a fallen tree. Rubbing his way past shrubs or scraping against tree branches combs and freshens an animal’s coat. Such natural components of the environment provide opportunities to interact. He has places to scent mark, for example. Natural components change and decompose with time. An object as simple as a big root ball, with clods of mud and dirt sticking to it, offers ever-changing opportunities for investigation as it slowly rots and falls apart. Concrete and plastic objects, by contrast, never change from

one day to another.

Big cats, Hediger implored, should be given whole carcasses to tear up and thus exercise their muscles and clean their teeth. When Seattle’s Woodland Park Zoo began offering uncut sheep carcasses to lions in the early 1970s, there were vitriolic letters of complaint from visitors repelled by such a sight. “In the good old days,” complained one letter to the local newspaper, “the lions were fed nice chunks of meat.” It seems that visitors have always been ready to participate in the old zoo game of delusion, preferring not to see the zoo animals as real, “wild” animals with real needs. It shouldn’t be all that surprising. If zoo environments place wild animals in completely artificial environments then it is inevitable that visitors will see zoo animals as somehow *different*. They may look like wild bears and tigers but, see, they pose for our cameras! The monkeys bring their babies to the front of the cage to show them off to us! They listen to what we say!! The distortions in the zoo mirror can be disturbingly profound.

Of Cages and Habitats

Zoos have traditionally served as places for human recreation. Whereas some people have traditionally attended zoos to gaze in wonder at big wild animals or to marvel at the colors and patterns of exotic creatures, others have wanted only to laugh at the animals and see in their dumb captivity a reassurance that here, at least, were beings that fell below a man. Zoos historically have reinforced this amusement-park attitude, offering camels and elephants to ride in circles. Animals could be made to beg for nothing but peanuts, and until recently, feeding the animals was an integral part of going to the zoo. No wonder that after any summer weekend zoo inmates suffered abundant diarrhea, vomiting, and nausea.

If the principle reason for going to the zoo was entertainment, then it was essential for zoo managers to

ensure that the cages were full and the animals clearly visible, typically in barren concrete cages elevated to human eye level. Traders became wealthy obtaining animals from the wild to restock zoos each season. If changes were to be made they were to be only technical. Zoo managers wanted progress, not philosophies. They looked for technological solutions and called it science. Thus, the antithesis of Hediger's thinking prevailed throughout the zoo world, especially during the 1950s and 1960s. It was the age of B. F. Skinner, the psychologist who invented the Air-crib, a soundproof, air-conditioned box for raising babies in during the first critical years of their life. Vitamin pills were going to meet all our dietary needs. Formica was modern and wood was unhygienic. From Frankfurt to Philadelphia, zoos promoted the concept of reducing animal diets to a selection of formulated biscuits, full of proteins and vitamins but devoid of any sensual or therapeutic value. Iron bars were replaced with even more restrictive glass panels. Modernity was manifest in tiled cages. For zoos, it was the Disinfectant Age. Designers concentrated on meeting the needs of the hose and the mop and ignored the needs of the animal inhabitants.

Zoo managers not only ignored the behavioral and biological needs of the animals in their care, but they also provided equally sterile and miserable environments for their visitors. Zoo food service was awful. (Indeed, it often still is. Fresh fruit, healthy produce, or vegetarian alternatives is rarely available, but hot dogs remain ubiquitous.) Clean restrooms were a novelty (though they are a little less so now), but useful gift shops and worthy bookstores have always been in the minority. Contemplative spaces and edifying experiences are as elusive as ever.

Visits to public zoos in the 1950s and 1960s left strange memories: over-heated, stuffy, and vaguely grubby buildings; forlorn animals isolated on concrete slabs, the smell of hay and feces the only evidence of life; pop-

corn-strewn sidewalks; clipped hedges and chain-link fences. Do Not Walk On The Grass. A shackled elephant swaying trance-like to some internal rhythm. Glass-fronted boxes in the Reptile House containing snakes that never uncoiled. Completely immobile crocodiles. Slimy pools edged by tidily laid stones. A chimpanzee that screamed incessantly. Birds perched on bare branches greasy from overuse. Spilled seed from food dishes scattered across the sour earth.

The media at this time occasionally railed against the unsightly iron bars that were still a common feature in zoos, but only because they reminded them of prisons. Sentimentality and aesthetics were of greatest concern, with virtually no public debate about the physical spaces in which the animals were maintained and the repetitive regimes that controlled their days. It seemed to be accepted that zoo animals had to live empty lives in bare spaces that provided nothing of value. They were there only to satisfy our curiosity.

In the late 1960s, Desmond Morris, ex-curator at the London Zoo, wrote a scathing public attack on the "naked cage" (Morris 1968). Just as Hediger before him, Morris argued the need for more elaborate and intricate environments for zoo animals to match their behavioral and psychological requirements. Hediger's writings had been confined to specialist and relatively obscure scientific publishers, but Morris had become a household name with his book *The Naked Ape*, and suddenly he was able to use the powerful pulpit of *Life* magazine to promote these ideas. The public began to take notice of the inherent inadequacies of zoos. A steadily growing dissatisfaction began to swell in the 1970s. Attendance, especially in Britain and northern Europe, started to slide.

Over the next thirty years, zoos completely turned the game around. More visits are made now to professionally run zoos in North America than to all professional sports events combined. Newspapers and television stations pay lavish attention to their

local zoos. Booster clubs raise vast sums of money to build new zoo exhibits. Much has also improved for the zoo inhabitants, since zookeepers are now selected for qualities beyond their dexterity with a hose and a shovel. Many of them now dedicate much of their time to finding ways to keep the animals in their care more active and alert.

Children visiting an accredited zoo today are much more likely to find themselves exploring trails through densely planted jungles, seeing animals in more natural-sized groupings, absorbing images of replicated habitats that sometimes look surprisingly realistic. The old shabby wardrobe still pokes through in places, but for the most part modern zoos have dressed themselves in new finery, wearing green coats with a veneer of wildness.

The changes began in the late 1970s, with the adoption of a new zoo design ethic, called "landscape immersion." The term was coined by landscape architect Grant Jones, whose design firm developed the first such exhibits at Seattle's Woodland Park Zoo (Jones et al. 1976). It has since become the catchphrase for all modern zoo design, even as at the same time the purpose behind the nomenclature has been forgotten. Landscape immersion was a philosophy by which animals were to be given living spaces that as closely as possible replicated their natural habitat. It was Hediger's philosophy of practical biology expanded into naturalistic aesthetics. The landscape was intended not only to meet the animals' psychological, behavioral, and physiological needs but also to convincingly relate to zoo visitors the visual power and drama of wild places. The "immersion experience" came from the notion that the animals' replicated habitat was to be extended beyond the barriers and engulf the human visitors in the very same landscape. The hope and intent was that by engaging all their senses within a naturalistic habitat, zoo visitors would—at least subconsciously—come to a greater awareness of the connections between the animals they were seeing and the

habitat they were experiencing. Landscape immersion was to bond the images of wild animals and wild places in the visitors' experiential memory.

Initially rejected, and quite savagely, by other zoos, which saw so much space and money dedicated to landscaping as wasteful and unnecessary, and which chafed at the idea that animals could not now be so easily exposed to public view, this new design technique also took time to be accepted by traditional zoo visitors. Used to concrete sidewalks and neat flowerbeds, several complained vociferously about the new style. Few zoos of the time even kept animals on grass, and those that did, such as San Diego's, regularly mowed the grass in their animal enclosures, keeping it short and tidy.

The wild appearance of landscape immersion exhibits has now gained wide favor. A new specialty, zoo horticulture, has emerged from the concept, and skilled practitioners devote their budgets and energies to creating scenes that mimic the wilderness. The public likes it.

It might seem that with the greening of our zoos, especially in North America, all is now well. But zoos still have enormous progress to make if the animals in their care are to find themselves the beneficiaries of this trend. A typical zoo animal's day remains as devoid of contact with anything from nature as it did in the old menageries. The deception is simply more subtle than the painted scenes of desert and forest on the old zoo exhibit walls.

Species Survival

At about the same time that Seattle's zoo was pioneering new concepts in exhibit design, the zoo world was beginning to pay more attention to its breeding programs. For their entire history, zoos had succeeded in breeding animals only accidentally and with no projected outcomes. The main objective had always been to have baby animals available for the first flush of visitors in the spring. If animals died and cages became emp-

ty, a call could be made to an animal trader to find out what new specimens were available for trade or for sale. These animals came from other zoos' surplus stock or from the wild. In either case the source was fairly arbitrary and with little thought to provenance. If standard museum procedures were not considered, neither was much sleep lost over ethics. Killing several adult wild gorillas to obtain an infant, for example, and the subsequent high mortality rates involved in shipping such young animals, meant that each new ape introduced into a zoo carried a hidden toll—the deaths of many other apes. Breeding failures among captive stock compounded the problem.

In 1979 Katherine Ralls, a researcher at the National Zoo, in Washington, D.C., examined juvenile mortality rates correlated with inbreeding for sixteen species of animals at the zoo. The death rate for inbred animals was markedly higher than for those born from unrelated parents. Ralls made a follow-up study on forty-four species. This study reinforced her initial findings. It became apparent that a management program was needed. Intensive Population Management became the new catchphrase, and the American Association of Zoological Parks and Aquariums (now known as the AZA) began to strenuously promote the breeding of animals in genetically regulated programs.

The Species Survival Plan (SSP) of the AZA was founded in 1981. Its purpose was to ensure cooperative breeding programs for selected rare species in North America's zoos. The intent was to maintain healthy and self-sustaining populations of rare and endangered species.

Although landscape immersion, with its emphasis on strange expenditures like plantings for the sake of public perceptions, had first received a hostile reaction from zoo curators, the idea of controlled and managed breeding programs was enthusiastically adopted. This, after all, was an activity dear to the hearts of zoo specialists and one that they understood. Maintaining studbooks and tracking

births, deaths, transfers, and family lineage so as to develop breeding programs based on genetics and demographics was instantly understandable to them.

The ardor with which these managed breeding programs was adopted made itself evident in one unpleasant manner. Some zoo directors, wedded to their new role as the savior of endangered species, began euthanizing animals that were not considered pure or that occupied space that could be devoted to rare sub-species. The howls of protest in the animal welfare community were dismissed as mere sentimentality. The spurious defense was that only the purest-bred individuals, those with the most perfect bloodlines, could have space in the Ark. Even today, many zoo professionals will brook no criticism of their actions, cloaking themselves in the holy mantle of Conservation, protected from censure by the purity of their mission to save wild animals from extinction.

The pursuit of this role as guardian of the world's rare and endangered species sometimes brings to mind the horrible fervor of the American eugenics movement of the 1920s and its misconceptions about preserving the "purity of races." Although the prevalence of this element of zoo fanaticism has declined, some zoos continue to euthanize animals almost routinely, because they do not have room or to avoid financial inconvenience. Responsible zookeepers today try hard to prevent unwanted births, but even they typically fall back on euthanasia as a management tool. The gift of life should not be treated casually. For the individual animal, its life is precious. To take that away because it imposes upon the zoo's resources is not a justifiable action. We will have made significant progress when zoos come to realize that there should be no such thing as a "surplus" animal.

Zoos are not farms, where animals are produced specifically for consumption. They should be places that inspire and encourage sympathy for and awareness of wildlife. On one level,

zoos accept this premise: zoo marketers and promoters have no trouble slipping into sentimentality when they talk about individual zoo animals. At the same time, curators are expected pragmatically to discuss how to manage “collections” of animals.

That said, the SSP program *has* proven to be a success in many practical ways. Animals in accredited zoos are now bred sensibly and wisely, with a great reduction in capricious or erratic breeding of unwanted babies. Genetically viable collections of species have been established in zoos around the world. This is a significant mark of progress in zoos, and it reflects particularly well on the two individuals who championed it—William Conway, at New York’s Bronx Zoo, and George Rabb, at Chicago’s Brookfield Zoo.

SSP is essentially a sound business strategy: zoos must breed and maintain their captive populations if they are to have animals to display. SSP could more accurately stand for Self Sustaining Program than for Species Survival Plan. But in the 1980s the notion grew (probably with the help of someone in the marketing division of some zoo) that the SSP was to be the sanctuary for rare and endangered animals, and zoos launched themselves as the new Noah’s Ark. The media loved this simple imagery. Zoo publicists pushed the idea strongly, and the public quite eagerly devoured it. The plight of wild animals was becoming more evident, and the volume of news about the destruction of wilderness was increasing. Any indication that zoos could solve or ameliorate this horrific dilemma was welcomed. Up until that time, the only contact most people had had with exotic wild animals was through zoo visits. Zoos had for generations perpetuated the myth that they were displaying the abundance and diversity of animal life, so it is not surprising that the public could be bamboozled into believing that zoos could save the world’s wildlife. Each time a member of a rare species gave birth, zoo publicists proudly proclaimed it another example of America’s zoos saving the

endangered animals of the planet.

Today, thankfully, more zoos are acknowledging the depth and the breadth of the problem of species extinction and no longer claim to be providing a (self-serving) quick fix to the loss of wild species. Claims that zoos are breeding animals for future reintroduction to the wild are also being muted: the success rates in such endeavours are minuscule. When they do happen, such as in the unique example of the golden tamarin (in a long-term program led by the National Zoo’s Devra Kleiman), we all have reason to rejoice, but expectations that zoo-bred animals will repopulate the earth have sadly come to roost on a rather barren tree.

Present-day hopes that we can clone endangered animals will surely arrive at a similar destination. Some zoos have been promoting themselves as frozen Arks, with cryogenic repositories of flash-frozen sperm or the eggs of rare animal species. Once the cloning of animals became a viable tool and debate over replicating dinosaurs from preserved tissue hit the headlines, the public, as in the past, heaved yet another sigh of relief. It seemed that we had been saved from ecological disaster by the skin of our teeth, or at least some bit of it with a DNA component.

People are much more willing to accept the Pandora’s box of cloning than the possibility that they may have to change lifestyle and values in order to slow the massive levels of predation we are currently inflicting on the natural world. We seem unable to conceive that the problem is not loss of species but loss of entire habitats and the eradication of complete, functioning, balanced ecosystems. In this regard, zoos—and indeed all of our natural-history institutions—have failed utterly. The western world has several hundred years’ worth of public zoological parks, botanical gardens and arboretums, public aquariums, and natural history museums. Yet all of their accumulated scholarship, massive plundering of the planet for their displays, and bil-

ions of hours of study have failed to generate in the general public even the most rudimentary understanding of the realities of nature. We maintain attitudes of dominance, believing that everything on the planet is here for our unbridled use. In a survey (Louis Harris Associates 1994) on biodiversity and the reasons for its collapse, only 8 percent of Americans were aware that destruction of wild habitats caused reduction in biological diversity.

The New Institutions

Zoos are not likely to go away. It would take an enormous effort and too much time to get rid of them, even if it were possible. Better, instead, that we should encourage zoos to recognize that it is time for them to accept a new role. They may continue to call themselves “zoos” but they will have a new purpose, a new look, a new goal.

More than any other kind of natural-history institution, zoos have the capacity to modify themselves to a remarkable degree and to become places that champion and celebrate the natural world. The move of humans into urban areas, and the even more insidious suburban sprawl, is accelerating around the world. Our demands on the natural resources of this planet are increasing. And the decimation of wild animals and plants is reaching proportions that beggar belief. Twenty-five percent of all birds have been driven to extinction in the past two hundred years. Almost all the big mammal species are in serious trouble. Ninety percent of the black rhinos have been eradicated in the past eighteen years. One-third of the world’s 226 turtle species are threatened with imminent extinction. It is not just the animals that are disappearing—their habitats are evaporating. Terborgh (1999) calculates that if the clearing of tropical forests were to continue at the 1979–1989 rate, the last tree in those forests

would fall in 2045. The rate of deforestation is increasing, however, not holding steady.

Bill Conway, retired president of the Wildlife Conservation Society and director of New York's Bronx Zoo, has said, "Wildlife conservation is destined to be among the main adventures, as well as challenges, of the twenty-first century" (Conway 1999). Many of the new adventurers are already aboard ship, on vessels bearing names like the Audubon Society, Friends of the Earth, Greenpeace, Earthwatch, and Nature Conservancy. It is imperative, however, that the public join this great expedition. For this purpose zoos are admirably suited. They reach vast numbers of people who come to them each year eager for contact with the world of nature. With imagination, creativity, and most of all commitment, zoos can fashion a strong and public voice for conservation. Instead of directing their educational programs to schoolchildren, they can educate the voters and decision-makers in our society. They can bring the beauty and fragility of wild places directly into our city centers, reaching and energizing an urban audience that needs to become more aware of the real need for wildlife conservation.

Ironically, zoos can achieve this with less dependence upon animal displays. New technologies, new techniques, and an acknowledgement of their true mission can transform zoos into champions of conservation. The wonder that is inherent in very small life forms can be magical, when presented in the right way. It is certainly more edifying and uplifting than watching the aimless shuffling of a captive elephant. Interactive zoo exhibits that reveal the connections in nature can benefit and inspire us intellectually, spiritually, and aesthetically. New types of zoo displays can help us to understand the interdependencies of flowers and bats, elephants and savannas, mushrooms and trees, ants and butterflies, minerals and bones. An example of this new approach, called Wildscreen, has recently opened in Bristol, England. It uses

multi-media to reveal behaviors and explain natural processes as well as the majestic splendor of wildlife spectacles, and it incorporates live-animal exhibits that focus on small life forms. It also has a very sound conservation philosophy. It dramatically illustrates how the benefits of such an approach are immeasurably greater than those derived from any bored zoo ape, listless lion, or pacing bear.

Zoos need to boldly broaden their focus, sharpen their mission, and form new partnerships with other cultural, scientific, and arts and humanities institutions. Then all of them can tell the story that wild places and wild animals are essential as well as wonderful and that we must learn to share the world with them.

Literature Cited

- American Zoo and Aquarium Association (AZA). 1994. *Species survival plan*. Bethesda, Md.: AZA.
- Boyd, L. 1997. *Zoological parks and aquariums in the Americas*. Bethesda, Md.: American Zoo and Aquarium Association.
- Conway, W. 1999. The changing role of zoos in the twenty-first century. Keynote address, Annual Conference of the World Zoo Organisation, Pretoria, South Africa.
- Croke, V. 1997. *The modern ark*. New York: Scribner.
- Hancocks, D. 1996. Gardens of ecology. In *Keepers of the kingdom: The new American zoo*, ed. N. Richardson. Charlottesville, Va.: Thomasson-Grant Lickle.
- Harris, L. and Associates. 1994. *Science and nature survey*. N.Y: American Museum of Natural History.
- Hediger, H. 1950. *Wild animals in captivity: An outline of the biology of zoological gardens*. London: Butterworth.
- Jones, G., J.C. Coe, and D.R. Paulson. 1976. *Woodland Park Zoo: Long range plan, development guidelines and exhibit scenarios*. Seattle, Wash.: Department of Parks and Recreation.

Kellert, S.R., and E.O. Wilson, eds. 1993. *The biophilia hypothesis*. Washington, D.C.: Island Press.

Morris, D. 1968. Must we have zoos? yes, but....In *Life magazine*, December 9, 78-86.

Seidensticker, J., and J.G. Doherty. 1996. Integrating animal behavior and exhibit design. In *Wild mammals in captivity: Principles and techniques*, eds. D. Kleiman et al. Chicago: University of Chicago Press.

Terborgh, J. 1999. *Requiem for nature*. Washington, D.C.: Island Press.

Another View of Zoos

Richard Farinato

Zoos have engendered strong feelings in people ever since emperors and kings began assembling private menageries for themselves.

Although zoos have some ardent supporters, zoo critics have often succeeded in disseminating their view of zoos as little more than animal jails, concrete warehouses in which blameless inmates live out lives of desperate misery. In an effort to combat that negative image, during the past decade a small minority of zoos has gone out of its way to create the myth of the “good zoo.” This visible, vocal minority declares that gone are the days when zoo animals existed only to provide a family’s afternoon entertainment. Conservation and education are now the avowed purposes of zoos, they say. Endangered species are micromanaged down to the gene level for the enhancement of their survival. The zoo is an ark with a precious cargo to save. As animals disappear in the wild, zoos offer a last hope for such species’ survival and a last chance for visitors to learn about them. So they say.

Such cheerful pronouncements, however, haven’t changed what the average American zoo is or what the average American zoo does. The truth isn’t easily reconcilable with the new image. It is difficult to argue the merits of concepts like “precious cargo” and “education” when bears still endlessly pace the cement floors of zoo cages all over the country and chained elephants rock the decades away in dusty, barren enclosures better suited to the pony ride concession than to habitat for natives of the African savanna. It remains hard to

understand how the sale or loan of endangered tigers and orangutans to birthday-party entertainers “enhances the survival” of their species. No one seems eager to explain that when the spring crop of baby animals featured in the local newspaper’s “What’s New at the Zoo” article displaces last year’s crop, last year’s babies sit unnoticed in bleak “off exhibit” holding areas. Yet it should be impossible for everyone but the perky, positive, vocal pro-zoo few to ignore reality—that the vast majority of public-display facilities are not cutting-edge conservation societies underwriting conservation research in remote rainforests.

Zoos exist primarily to entertain people. They are businesses. The first concern of any business is the satisfaction of the customer, and a zoo, whether public or private, depends on repeat business from satisfied customers. Whatever the zoo has identified as necessary to visitor satisfaction will determine the zoo’s priorities. It shares with all other animal-based industries the same building blocks of business: produce or acquire animals; display and otherwise market those animals; and dispose of surplus, excess, or otherwise unwanted animals. In the course of conducting their business, zoos say, the public is educated, conservation is fostered, and visitors are entertained through the use or mere presence of captive wild animals.

For the most part, the public seems to believe them, judging from the popularity of zoos in general. Some ten thousand zoos are estimated to exist worldwide. Annual attendance is estimated at 700 million (IUDZG 1993). No one knows exactly how many zoos exist in the United States. In order to exhibit wild animals to the public, however, U.S. law does require that an exhibitor be licensed by the U.S. Department of Agriculture (USDA). Currently, approximately 2,300 USDA-licensed exhibitors are in operation. Since 1996 USDA figures show that exhibitor numbers have increased by an average of a hundred licensees each fiscal year. The

USDA doesn’t categorize its exhibitors by size, number of animals displayed, or any other criterion. It simply requires that they display or exhibit animals to the public. USDA-licensed exhibitors therefore can range from a gas station owner displaying a single moth-eaten tiger in a cage to the world-renowned San Diego Zoo.

For the purposes of discussion, let us arbitrarily cut the number of licensed exhibitors in half to eliminate the gas station tigers, mobile petting zoos, and birthday party monkeys for hire. Even so, the remaining thousand would still be enough to allocate twenty wild-animal display attractions to every state in the Union. Such operations may call themselves preserves, reserves, sanctuaries, rescue centers, wildlife parks, or nature centers, but since they all exhibit wild animals to the public on a predictable basis, they function for all intents and purposes as traditional zoos. Of this arbitrarily assigned thousand, less than 20 percent—185—are accredited by the American Zoo and Aquarium Association (AZA) (formerly AAZPA, the American Association of Zoological Parks and Aquariums), the professional membership association for zoos in this country. Within even this small subset, the quality of the facilities, staff, and animal care varies widely. In general, however, it is only a relative handful of these AZA-accredited institutions that has led the zoo field in innovative animal care and display, *in situ* conservation programs, and animal welfare. The remaining uber-majority are by-and-large silent and far, far behind.

Whenever the public reads that zoos are dedicated to the conservation of endangered species or are working to teach the public about the natural world, the story is likely to have originated with the comment of an AZA spokesperson or facility. It typically does not include the numbers of zoos actually involved in these laudable endeavors. Instead, the impression is left that all zoos are doing all these things all the time, and that the specific facility mentioned is sim-

ply a shining example of a pervasive state of affairs. Indeed, the zoo community is a unified and consistent entity, vastly changed for the better from what it used to be.

This is very different from the reality. The HSUS and other animal protection organizations deal with annually: the shabby reality of outdated facilities, miserable animals, unenlightened and misguided management, and suspect sales practices of zoos receiving public and/or private support. From 1996–1998, the USDA received more than eighty thousand inquiries from citizens, groups, and legislators concerned about animal welfare in regulated facilities in general (out of a total of 7,800 facilities regulated by USDA) (USDA APHIS 1998). Over that same time period and to the present, The HSUS routinely has received letters, e-mails, and phone calls of concern about zoo facilities on an average of three to five times a week. Green (1999) followed “de-accessioned” zoo animals via a paper trail from roadside menageries to exotic animal auctions to exotic-animal dealers back to zoos in a persuasive account that makes zoos’ affirmations of ethical treatment of animals disingenuous at best.

The AZA zoos that dominate the media present themselves as dedicated to educating the public and to conserving wildlife. Some zoos have made great strides in both areas, but relatively few AZA zoos, and virtually none of the non-AZA member facilities, are involved or effective in either conservation or education. Those that have anything tangible to show for such efforts rely on intuition, anecdotes, projections, and hypotheses built on hypotheses to imply that the whole zoo community shares in any successes. Studies (Kellert and Dunlap 1989; World Society for the Protection of Animals and the Born Free Foundation 1994) found little evidence of any substantive education taking place among zoogoers; although the potential for it was and may be present, education has not replaced entertainment during a zoo visit.

It is accurate to say that people

respond on a basic, emotional level to seeing a live animal on display and that such observation can create a bond with an individual animal. But the bond between zoo animal and visitor is more likely to have been manufactured by the facility through sophisticated signage, favorable publicity (such as baby-animal “naming” contests and charity outings), and gift-shop novelties than through any spontaneous or genuine interaction. For that reason the quality of the interactions varies wildly, from negative to positive, depending on staff sophistication, physical resources, and institutional goals.

According to traditional zoo philosophy, people must see live animals in order to learn about a species (and consequently to care about the species and its habitat). To prove their educational effectiveness, zoos frequently cite their annual attendance figures, as though visitors learn about animals simply by walking through a turnstile. But does mere exposure to captive animals translate directly into practical action—or even heightened ecological awareness—as zoos claim? One could argue that it does exactly the opposite. Instead of sensitizing the visitor to animals and their (unportrayed) natural habitats, such exposure may plant the notion that wild animals belong in confinement and that artificial, visitor-friendly surroundings are natural or at the least representative of the animal’s native habitat. Viewing an orangutan sitting in a grassy, moated outdoor yard or a concrete enclosure teaches nothing about the nature of the animal or its role in the non-zoo environment. It encourages people to consider wild animals as isolated objects rather than as integral elements of an ecosystem with their own intrinsic value.

If the basic educational tool in the zoo’s classroom is the living animal and its surroundings, we must look closely at what a zoo exhibit tells a visitor. Some zoos teach that gorillas, orangutans, and chimpanzees are found in nature on grassy lawns at the bases of sheer cliffs. Visitors of other zoos may learn that these apes prefer

living with stainless steel, rope hammocks, and cardboard boxes. Still others will experience highly detailed re-creations of tropical rainforests. With little consensus and/or regulation within either the AZA or non-AZA zoo communities on the design and execution of exhibits, there is little consistency in the educational messages being delivered by zoos. What is being taught? What message does the visitor get? What has he or she learned about the animal? Should it vary according to each zoo’s display budget, geographical location, and educational mission?

The issue of education aside, vocal, visible zoos have increasingly promoted themselves as conservation centers, in some cases even changing their names to reinforce this image. Through skillful marketing and public relations, they miss no opportunity to emphasize their role as modern arks, hedges against the extinction of endangered species in the wild. The majority of zoos, however, do no more than produce multiple generations of common—as well as endangered—species. They label this breeding “conservation,” when the most that can be claimed for it is that it replenishes available zoo stock to minimize capture from the wild. Facilities with the financial resources, staff expertise, and commitment to engage in or support real conservation programs have always been few in number. Perhaps 10 percent of AZA zoos are involved in such substantial conservation programs, either *in* or *ex situ*, so to call conservation a purpose of zoos in general is misleading.

Yet there is no doubt that claims of conservation by a few zoos insulate all zoos from criticism and wrap them in a mantle of noble endeavor. Certainly, as the capture and import of wild animals have become more controversial, zoos have made captive breeding a central project, if only to provide themselves with a steady supply of replacement animals, but the captive birth of an animal does not necessarily enhance its species’ prospects for survival. Most captive-breeding programs ensure a supply of animals for

display or trade, and often create a growing number of surplus animals of questionable genetic backgrounds. Neither these animals nor their progeny can be considered as hedges against a species' extinction. All face uncertain futures at best.

Zoos claim that they foster not only education and conservation, but also research and scientific study of animals that benefits conservation. However, much of what can be learned from captive animals has limited application to the conservation of free-living populations. The majority of zoo-based research addresses husbandry techniques or other issues specifically aimed at the management of animals in captivity, and has little if anything to do with issues involving wild animals or populations. Conservation funding from various sources administered by AZA has been awarded to 130 projects from 1991 through 1999; 70 percent of these projects were dedicated to captive animal management or in-house education activities as opposed to conservation of species in the wild (www.AZA.org).

Zoos have a better reputation than they deserve. The same four to eight prominent zoos are trotted out over and over again so the media can pay homage to a handful of people or exhibits. The institutions that engage in meaningful programs for conservation and education and place a high priority on animal welfare are not typical zoos. They do not represent what commonly exists in so many municipalities, in city parks, on scenic routes in rural tourist areas, or in the multitude of other locations that have animals in cages on display. They ignore or deny or forget the squalid facilities that make up the large majority of zoos in this country. It is a disservice to the public and to the animals for the zoo community to act otherwise.

Zoo professionals need to accept that the welfare of any animal in any captive situation is ultimately their responsibility. They must engage in honest acknowledgement of conditions that are prevalent—rather than those that are desirable—in the zoo

world. Then they must do something to ensure that the ideals of the small percentage of “good” zoos becomes the standard by which all zoos are judged.

Literature Cited

- Green, A. 1999. *Animal underworld: Inside America's black market for rare and exotic species*. New York: Public Affairs.
- IUDZG—The World Zoo Organization and the Captive Breeding Specialist Group of IUCN/SSC. 1993. *The world zoo conservation strategy: The role of the zoos and aquaria of the world in global conservation*. Brookfield, Ill.: Chicago Zoological Society.
- Kellert, S.R., and J. Dunlap. 1989. *Learning at the zoo: A study of attitude and knowledge impact*. Philadelphia: Philadelphia Zoological Society.
- U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS). 1998. Animal welfare report: Fiscal year 1998. APHIS 41-35-059. Washington, D.C.
- World Society for the Protection of Animals (WSPA) and The Born Free Foundation. 1994. *The zoo inquiry*. London and Surrey, U.K.: WSPA and The Born Free Foundation.

