

"Opinionatedly Yours"
Essay, December 30, 1997

When Zoos Tell Lies

Barry Kent MacKay

When you walk into the Sacramento Zoo, about the first thing you encounter is a wide expanse of water, surrounded by vegetation, with an island in the middle. A low fence is all that separates you from the birds therein. Being a fanatic about birds, I find myself drawn to this miniature lake during my zoo visits. As a wildlife artist I benefit from close up looks at these exotic birds. But that does not justify their incarceration.

Zoos on the Defensive

As the animal rights movement grows in public support, zoos find themselves increasingly on the defensive.

Even if you do not oppose the concept of zoos, if you have a gram of compassion you most certainly will have felt uncomfortable about at least some forms of animal imprisonment seen in some zoos. Zoos argue that they serve many different functions that are of value, if not to the individual animals, at least to the species. Indeed, in places where some form of peer accreditation seeks to provide at least minimum standards, it is not supposed to be enough merely to have animals on display, merely to entertain.

So what is the purpose of that lake that greets the visitor just past the gate of the Sacramento Zoo? Well, it's supposed to be "educational," or so I was once told by the zoo's director.

When zoos are defended it is usually first and foremost on the grounds that they do captive breeding of endangered species. While I personally value the survival of the species over that of any one individual of that species, such a lofty goal does not satisfy all zoo critics. Some such detractors choose to deny that captive breeding can even help a species survive. They are wrong, it can, although rarely does the presence of *any* zoo animal have the slightest thing to do with effective conservation that will lead to restoration of depleted wild populations. The fact that captive breeding can and has led to effective conservation does not mean that all zoo animals contribute to such goals; in fact almost all of them do not.

That is an issue I may deal with in a future essay.

What is denied by zoo apologists is that the animals are there almost exclusively as entertainment. Whether the goal is to make profits or to enhance pleasure of residents and tourists, it is argued that people learn about animals by visiting zoos.

If you interview people before and after they visit a zoo or aquarium you will find that even in institutions with numerous and accurate signs and clever educational displays, very little, if any, rubs off. Gibbons and orangutans are still called "monkeys," vultures are "buzzards," and it's unlikely that the visitor will be able to recall what a lechwe, frogmouth, or wallaroo is, what it eats, or where it lives, let alone some of the more fascinating aspects of taxonomy, distribution, behavior, or appearance.

However, let us be charitable to the people who go to zoos and say they are not there simply to amuse themselves, but to actually learn something about the wonderful creatures who share this planet with us, particularly those of them held confined and on display.

I would certainly agree that learning is important to the levels of understanding and appreciation that are necessary if we are ever to succeed in achieving justice for animals, or reversing the greatest destruction of species since the loss of the dinosaurs. I would also argue that there is nothing wrong with simply being amused, only that we should not deprive animals of their freedom in order to achieve such diversion. It has not been so long since the public was charged admission to visit "lunatic asylums" to view the antics of the mentally and emotionally challenged unfortunate human prisoners incarcerated in such institutions. Society's values do change and such forms of entertainment are no longer felt to be morally acceptable.

Which brings us to the fake lake that meets us at the entrance to the Sacramento Zoo.

[The Lakes](#)

The lake is actually in two parts. The first part is supposed to symbolize or in some manner represent Lake Maracaibo. The real Lake Maracaibo is located at the northwest corner of Venezuela, and flows directly into the Gulf of Venezuela, at the southern corner of the Caribbean Sea, near the border with Colombia.

The "upper" lake, the one that is farther from the zoo's entrance, is supposed to represent the famous Lake Victoria, of Africa.

In appearance, of course, neither end of the pond has the slightest resemblance to either Lake Maracaibo or Lake Victoria. That's understandable. Each of the real lakes is a huge body of water inhabited by multitudes of wildlife species under conditions that could hardly be replicated in an urban park in Sacramento.

But what of the species on display? Well, it happens that they are all birds, my specialty, so let's see what we "learn." On my last visit I took a few notes.

As usual, the birds that first caught my attention were the southern, or crested, screamers. You don't often see them in North American zoos. When I was in Sacramento last spring there were at least three chicks, but on my last visit, in December, there was only one left, looking gawky

with his baby down and incoming adult feathers, his small head, huge feet and rounded belly. He kept close to momma. What do these birds teach us?

What they *don't* teach us is that there are three species of screamer, and while the zoo calls these birds "crested" screamers, the alternative name is "southern" screamer. That is in distinction from the northern screamer, also known as the black-necked screamer. There is a third screamer species: the rather different horned screamer.

The northern screamer's entire range is confined to a small part of northern South America, in northern Colombia and Northwestern Venezuela. Isn't that where Lake Maracaibo is located?

Yes.

The horned screamer's range includes a huge area of South America, from northern Colombia south to northern Argentina. Therefore it, also, might be found in the region of Lake Maracaibo.

But the southern, or crested, screamer, the most abundant of the three species, is found nowhere near Lake Maracaibo. Its range extends from southern Brazil south into Northern Argentina. In South America it is widely kept in zoos and is even sometimes kept as domestic fowl.

We should not be complacent about the survival of any of the screamers, all being threatened by habitat loss and overhunting, but those are threats that are not going to be addressed by the presence of the birds in the Sacramento Zoo.

My attention next went to a small flotilla of Chiloe wigeon. These pretty ducks are very closely related to the American wigeon that is so common each winter in the flooded rice fields and wetlands of California's Central Valley, surrounding Sacramento. The Chiloe is the South American version of our native wigeon, but it, too, is found nowhere near Lake Maracaibo. On the contrary, as suggested by its two alternative English names, southern wigeon and Chilean wigeon, the Chiloe is restricted to southern South America, south of Central Argentina, including the Falkland Islands. The northern end of its wintering range barely reaches the tropics. Indeed, our American wigeon, which winters as far south as Panama and the West Indies, comes far closer to Lake Maracaibo than does the Chiloe wigeon. But you wouldn't know that from visiting the Sacramento Zoo.

Next I noticed a male rosy-billed pochard, also known as the rosybill, the name on the sign beside the Lake Maracaibo exhibit. In the plumage of the adult male this distinctive duck has a bright red beak with a swollen red knob on the forehead.

[Is it native to Lake Maracaibo?](#)

No. Not even close, although just a little closer than the Chiloe wigeon. The rosybill is found in Chile, southern Brazil and Paraguay, south into eastern-central Argentina.

So far three out of three species in the "Lake Maracaibo" do not, in fact, occur in Lake Maracaibo. Of the three species of screamer, the only one *not* found in the vicinity of Lake Maracaibo is the one on display in the Lake Maracaibo exhibit. How can this be educational? One of the most striking species on display, a species found in many zoo collections, is the black-necked swan. This is a species I've seen in the wild, during a visit to Argentina.

[Did I say Argentina?](#)

Yes; the black-necked swan is yet another species whose natural range is restricted to southern South America. Implying it is native to Lake Maracaibo is like saying the polar bear can be found in Michigan, since both polar bears and Lake Michigan are in North America. In fact polar bears get a lot closer to Lake Michigan than black-necked swans, southern screamers, Chiloe wigeon, or rosybills get to Lake Maracaibo. You are as close or closer to polar bears in the wild if you visit downtown Milwaukee than you are close to southern screamers if you paddle around the shores of Lake Maracaibo.

Determined to find something in the Lake Maracaibo exhibit that could actually be found in Lake Maracaibo, I focused my attention on a solitary duck sitting on the island in the lake. This island is in both lakes, with a fence across it dividing the Lake Victoria part from the Lake Maracaibo part. To my chagrin I realized that I was not sure what kind of duck I was looking at. This was an embarrassment to my ornithological acumen. So I took a sequence of photographs of it. Later, looking at them carefully, I realized that the bird was a somewhat aberrant female rosybill, showing an unusual amount of white on the head. Perhaps had she been with the male rosybill I would have realized her identity earlier, but my point is that even someone with a reasonably well developed ability to identify non-native waterfowl had to work at the identification to a degree that can't be expected of the average zoo visitor.

Not much educational value there.

Of course there were also the obligate mute swans. They are native to Europe and parts of Asia. They don't occur within thousands of kilometers of either Lake Maracaibo or Lake Victoria, but they are pretty and easy to breed in captivity. So there they were, swimming among the lotus pads, which, come to think of it, also don't belong in Lake Maracaibo.

Moving around the exhibit I found some American wood ducks. But these birds were in both sides of the display. That was because they, unlike other birds I've mentioned, could fly. All the others had one of their wings either clipped or, more likely, had one wing surgically altered by having the tip removed so as to render the bird permanently flightless.

But of *course* the American wood ducks could fly. The species is widely distributed in North America. Sacramento is well within its normal range. These were wild birds who found the presence of food and general absence of predators and waterfowl hunting in the zoo grounds to their liking. They were there by choice.

The American wood ducks' range, while including California, does not include either South America or Africa.

No less surprising was the presence of mallards, which are located throughout much of the world, excluding both Lake Maracaibo and Lake Victoria. Although none flew while I was there, I assume they, too, were local, native birds.

Moving Over to Africa

What about on the *other* side of the fence? Here were some very colorful, tropical looking water-birds with bright chestnut breasts; sharply demarcated black, white, and chestnut head and neck patterns; jet black backs, wings, and underparts with bright white edgings to the flanks and white lower abdomens and backs. They had small beaks and looked positively elegant.

One could be forgiven for thinking such beautifully patterned creatures were truly tropical birds but I knew them well, a favorite species -- the red-breasted goose. This species is actually native to northern Siberia! It nests on the tundra, most of the population confined to the Taymyr Peninsula, on the edge of the Arctic Ocean. It winters in the area of the Black and the Caspian Seas, no closer to Lake Victoria than Newfoundland is to Brownsville, Texas. The Delta marshes of the Danube are its major wintering ground. To imply that it can be found in Lake Victoria seems to be to be about as absurd as teaching people that harp seals can be found in the Lower Rio Grande, where the coast of Texas meets Mexico.

Although widely found in zoos, in the wild the red-breasted goose has seriously declined in recent years. Year round hunting pressure has been cited as one possible cause in the decline. But also its decrease seems to be associated with declines in populations of birds of prey in northern Siberia. The small goose nests close to the raptors, whose presence tends to deter nest predators, or at least that is the theory. It's thought pesticides might play a factor in the decline of the raptors.

All of which is quite interesting, but none of which is taught at the zoo. On the contrary, you'd be forgiven for thinking the geese were native to Africa. They aren't.

Ah, but I also saw some fulvous whistling-ducks. This bird, also called the "fulvous tree duck," is one of the world's most widely distributed species of birds, being found in North, Central and South America, Africa and southern Asia. Its huge range *does* include Lake Victoria.

Another of the Sacramento Zoo's captive duck species, the pretty white-faced whistling duck, has a peculiar range that incorporates both South America and Africa. These are two of the relatively few birds that can actually be found both in Lake Victoria and in Lake Maracaibo, although I noticed nothing to teach one of that fact.

Lost Points of Interest

Indeed, what is particularly interesting to zoologists about the distribution of these two ducks is that it appears that their range expansion must be quite recent. There seems to be no racial difference between the populations in the Eastern Hemisphere and those in the Western. As the birds are not habitual trans-Atlantic flyers, this lack of genetic variation suggests that the population has undergone a very recent trans-Atlantic range expansion.

Accurately, from an educational standpoint, the Lake Victoria exhibit contained a tiny duck called the Hottentot teal. This bird *is* found in Lake Victoria. In fact, the Hottentot teal is an exclusively African species (including Madagascar).

Or is it? There has been some confusion on the subject because the species is so similar to a species known as the silver, or Puna, teal. The silver teal has some black and white flank barring that is missing on the Hottentot. There are a few other minor differences. Obviously they have a common ancestor, but, unlike the fulvous whistling-duck or the white-faced whistling-duck, the silver and Hottentot teals have been separated long enough to evolve into different forms. The question of whether or not they have separated enough to be considered separate species is entirely academic, as the silver teal and the Hottentot teal live in entirely separate regions.

I mention all this technical taxonomic stuff because it seems to me that the presence of these birds would allow for a little lesson in animal distribution, assuming education really is the goal of the display.

Most conspicuous of the birds in the Lake Victoria part of the display are the greater flamingos. They are healthy-looking birds, until they spread their wings. Then you can most clearly see the results of pinioning, the surgical operation that renders them permanently flightless. The wings are mostly a deep, rich pink color, but long outer feathers, called the primary feathers, that constitute the wing-tips, are black. When the flamingos flap their wings you can see those primary feathers, attached to the tip of the wing on one side but not the other. They are missing from one wing because the part of the wing to which they attach has been removed.

I've seen greater flamingos in the wild both in Africa and in the New World, and one of the most striking things about them is their goose-like flying ability. They are powerful flyers, which may help account for the worldwide distribution of the five or six family members.

Five *or* six? Well, it depends on how they are classified. You see, the Chilean flamingo, the Andean flamingo, and the Puna flamingo are three distinct and obvious species restricted to South America. The lesser flamingo is a distinct species found in Africa and a tiny part of the Middle East and Asia. But the greater flamingo is another species found both in the Western Hemisphere and in the Old World, including Africa and Asia. It *can* be found in Lake Victoria. There's only one, somewhat complicated, problem. The New world race is distinctly brighter in color than the Old World race, thus they are sometimes considered separate species, and not merely races of the same species. As with the silver and the Hottentot teal, the question is pretty

well academic. But the birds on display in the Sacramento Zoo are, by virtue of their bright colors, clearly the New World race. What are they doing in Africa?

The situation is further complicated by the fact that for flamingos color, as the Sacramento Zoo *does* teach, is a function of food. Careful attention must be paid to food selection or the American race of the flamingo will grow pale plumage and wind up looking very much like the Old World race. That does not mean that the two birds are merely color variants of each other, but it does lend credence to the concept that the split that separated the Western Hemisphere birds from the Eastern Hemisphere birds is of recent origin.

Why Worry?

My boss at API, Alan Berger, and I have a bit of ongoing joke whereby I feign belief in the superiority of birds over all other animals. Alan can't get over the fact that the zoo has devoted so much space to these birds while one of its largest aquatic animals, its lone hippopotamus, languishes in a cage that provides only a fraction of the room available in the Lakes Maracaibo/Victoria exhibit. I, of course, claim the birds "deserve it." But I'm only kidding. The hippo has a concrete basin that is barely large enough for so large an animal to turn around in. A huge ball provides what passes for enrichment. Hippos live long and if current management "inherited" the situation, surely its resolution, or the needs of other animals, should have had first priority over the recently constructed lake exhibit. And the waterfowl don't "deserve" captivity, however fine.

Even if we divide the square footage available in the Lakes Maracaibo/Victoria display by the number of birds the display contains, even including visiting mallards and American wood ducks, each bird has much more space relative to body size than does the hippopotamus. Why, Alan wonders, were the needs of the hippopotamus (or any of numerous other large mammals held in small cages by the zoo) for more space not first accommodated, before producing yet another display and incarcerating yet more animals?

It may be that the Lakes Maracaibo/Victoria display is attractive to people; that is provides a restful setting or a spacious introduction to a zoo that contains (as its own director is the first to admit) far too many of the old "menagerie" style small steel and concrete cages. But that has nothing to do with either conservation or education, two rationales so often provided in justification of zoos. It serves human needs, but not animal needs.

It's not that the animals in the Lakes Maracaibo/Victoria display are abused. The presence of those American wood ducks, there by choice, clearly attests to the generally benign nature of the display. Whatever is killing off the world's remaining red-breasted geese certainly is not going to touch the red-breasted geese safe, if flightless, in the Sacramento Zoo. The rather shy Hottentot teals have thick vegetation in which they can hide from humans, and there are no crocodiles to worry about. The proud black-necked swans with their cygnets feel secure. Is loss of flight so great a price to pay in return for all of this relative security and comfort?

I wanted to photograph the crested screamer chick. I got as close as the low railing would allow and suddenly the parent bird tried to fly, or perhaps simply to defend her chick. Screamers have sharp spurs at the bend of the wing and maybe she wanted to bring them into play. Instead she toppled over, a big bird whose aerodynamic capability had been utterly and forever destroyed. She quickly righted herself and fluffed feathers into place, retaining a look of dignity. The whole thing had lasted less than two seconds, but it was a harsh reminder that things are not what they seem.

I'm not being anthropomorphic. All animals are prisoners of the circumstances of their being, as are all of us, usually to a lesser degree. The sudden stress, or the acute disappointment in flightlessness that the screamer might have felt, while unfortunate, was no greater than the stresses that a predator in the wild might have produced. But is it ours to say?

Without climbing onto the anti-zoo bandwagon simply because that is where so many of my peers ride in company with dogmatic belief that zoos are automatically invariably and absolutely wrong, I nevertheless see zoos as being part of "the problem" if they are not part of the solution.

Here, I, of course define "the problem" as the mass destruction of wildlife and the extermination of so many species. All of this derives, ultimately, from our hubris, our assurance of our superiority and distinction from the rest of nature and our conceit that we can do as we will to other animals precisely because we are humans and they are animals.

What's Education

If we, as producers of "the problem," must turn things around, our education becomes essential. Zoos surely fail in educating when they miseducate. I am using the showcase exhibit of the Sacramento Zoo to illustrate the point simply because it's convenient, being the closest zoo to API's headquarters. I've seen similar problems in other zoos.

Zoos can educate, although I think their role in education is limited by virtue of many things, not the least of which being that they are, by nature, not educational institutions. It is hard to teach what I think are the most important lessons because those lessons are not to be found at zoos. For example, I find that most people (including most animal rights advocates) have a terribly distorted view of animal diversity by virtue of their ignorance of the very existence of so many different kinds of animals. In part that is because more than 99 percent of all animal species are never seen in zoos and are very seldom portrayed, written about, or featured anywhere. Even if we exclude from this consideration invertebrate species (and there is no inherent reason we should) and fish, we still get a distorted view of things, concentrating mostly on the "charismatic megafauna," so identified by virtue of the impression those relatively few animal species make upon us or their value to us. Elephants we know, but perhaps not elephant-shrews.

A Couple of Simple Tests

Here's a test: I'm going to name ten goose and duck species. What I want you to do is tick off in your mind which names evoke a species-specific image. In other words, which of the following ducks would you know by sight? Also, what do they all have in common?

1: Black-bellied Whistling-duck; 2: Orinoco goose; 3: Muscovy duck; 4: Comb duck; 5: Northern pintail; 6: White-cheeked pintail; 7: Blue-winged teal; 8: Cinnamon teal; 9: Northern shoveler; 10: Masked duck.

Okay, if you guessed that all might be found in zoos, you'd be right, with the caveat that the masked duck might be considered an exception (any duck or goose species might be in some zoo, but all the others are much more frequently seen in captivity). So then can I assume that you have learned about them? Do you at least know what they look like? If not, and if you have visited zoos, I think we can say that for you, at least, the zoo experience hasn't been educational in terms of those species.

What they also have in common is that all, more than other waterfowl species, might be found in or reasonably near the area of Lake Maracaibo, although it's perhaps stretching it a little for a few of those species who might show up as winter migrants.

Here's another test. How many species of cats can you name? It's a bit of a trick question. If you start naming "Burmese" or "Siamese" or "Persian" or "American short-haired" or "Manx," you're wrong; none of those is a separate species. They are all breeds of one species, the domestic cat. But you may have started by naming the lion. Correct. That's one. When the Metropolitan Toronto Zoo opened about 25 years ago it had a large indoor "African Pavilion" that was state-of-the-art for its time and provided spacious accommodation for at least some of the species it contained, complete with ample vegetation and a controlled, tropical climate. But the public was dissatisfied because there was no African lion. So the zoo finally capitulated and installed a jarring note: a massive steel cage where the lion could be placed to the public's content. The lions have since been given much more spacious enclosure, but the message is clear: the public knows what lions are and expects to see them.

You may have thought of the tiger, as well. That is perhaps as well known to zoogoers and the rest of the general public as the lion.

After that you might name such species as the cheetah; snow leopard; jaguar; leopard; mountain lion (also known as puma); ocelot; and maybe the caracal and the serval. You might know that the "panther" is not a separate species, but a term usually applied to the dark, melanistic color phase of the leopard. You may know that the lynx and the bobcat are, like the mountain lion, found in North America, and you probably know in a general sort of way what they look like. What of the fishing cat? This is a species rarely seen in zoos, although there are some in Sacramento Zoo. Each visit I try to see them but I never obtained more than a glimpse, at most,

until my last visit when two fishing cats were in full view. They are in small, old-style cages, although with enough den space and rocks and branches to escape public attention.

The sign on the cage explained how very rare they are, and how seldom they are seen in zoos, but that was about it. There is an audio device that you can obtain when you enter the zoo that gives an oral lesson about the animals on display. It was installed after a survey showed that the average schoolchild visiting the zoo was functionally illiterate. I'll return to that point in a moment.

Have you heard of the sand cat, African wild cat, European wild cat, Chinese desert cat, leopard cat, jungle cat, rusty-spotted cat, flat-headed cat, bay cat, black-footed cat, Pallas's cat, marbled cat, African golden cat, Temminck's golden cat, margay, tiger cat, mountain cat, kodkod, jaguarondi, pampas cat, or clouded leopard? These are individual wild cat species, each with its own appearance, breeding biology, diet, habitat, distribution, vocalizations and so on. A few may be seen in some zoos, but most are seldom or never seen in zoos and seldom seen in nature films or discussed in children's nature books. They share our planet, but not our conscience. Unlike the African lion, they are not "in demand." Unlike the tiger, their names evoke little or nothing in way of recognition. They are among the 99-plus percent of all wild animal species who might as well not exist, for all we know of them, and yet each may be profoundly affected by the actions of own species as we put ever increasing demands on the earth's ability to support us.

Each zoo has its "specialties" and the Sacramento Zoo has several wild cat species, such as the Geoffroy's cat, not always seen at all zoos. Better, from the viewpoint of the individual cat, most can hide from public view. What is missing is the space and diversity of the habitats the cats have lost by virtue of their imprisonment and the information leading to education that we are told justifies the incarceration in the first place.

Of course the argument I hear from zookeepers is that the public does not seem to want to know such stuff.

I agree. It is unfortunate. It does not mean that the information is not worth knowing, but it *does* suggest to me that zoos are not the medium to provide it. The problem is that they claim to do so and their defenders choose to blindly believe it.

And yet when most children are functionally illiterate in a wealthy city like Sacramento, how are we to expect them to even understand that there are things to know about animals beyond that they exist, conveniently caged for our amusement, and nothing more? I don't expect these children to be interested in the taxonomy of the Hottentot teal or greater flamingo, or care about the population status of the snow leopard or litter size of the fishing cat. But let's not amuse them under the guise of education if education does not occur.

Or does it? If "the problem" identified above stems, at least in part, from our self-alienation from nature, our self-centered unawareness of the natural world all around, is it not better that children

(and many adults) who almost never see any wild animals at least see some? Am I being too rigid in my definition of education?

I don't think it's too rigid to at least expect that what education occurs be accurate. And while I may be wrong, I think it can and does matter to children.

I was a child myself several decades ago when I visited the animal exhibit of the provincial government at the annual Canadian National Exhibition. What was then rather grandly called the Department of Lands and Forests (now called the Ministry of Natural Resources) always had some native wildlife on display.

I remember looking at the eastern cottontail rabbit and being puzzled. It didn't look like the cottontails I had seen in my backyard at home, although it was similar. Was I wrong? I was very frustrated because the cottontails I knew were like this only different. This looked to me like a European rabbit, but if it was, why was it labeled eastern cottontail, the species native to Ontario?

I was a shy kid but I finally got up my nerve to put the question to a uniformed government employee. At first he tried to tell me it really was a cottontail, but when he saw that I wasn't buying it, he admitted that it was, as I had suspected, a European rabbit that had been substituted, because no one would know the difference.

Perhaps it didn't matter, but then if it didn't matter, why put any rabbit on display?

[A Different Form of Education](#)

Not very far from Sacramento is another Zoo that, at first glance, looks much worse, at least in terms of the welfare of the animals therein. The tiny Folsom Zoo is tucked in behind the municipal buildings in Folsom, California. It consists of the old-style concrete and steel menagerie-type cages.

But it is a profoundly different zoo. All of the animals in it are rescued animals. Virtually all are native to the region and yet could not, for various reasons, live on their own in the wild. In a sense it is possibly unfair to call it a zoo. It is a sanctuary whose inadequacies in terms of cage size are well known to its manager. But what it lacks in budget it makes up for in spirit. The animals are caged as an alternative to death. Each cage is filled with enrichment devices and places to hide, all changed constantly to keep the animals interested. Signs talk not only about the species, but about the actual individual animals. They have given names (something that is counter to the policy of the Sacramento Zoo). When a beloved prairie dog died its cage was left empty with a notice indicating a period of mourning. Visitors are warned when the coyote is acting in a certain manner that you are too close to his cage.

Anyone who has ever rehabilitated wild animals knows the horrible frustration of having an animal that is essentially healthy but, because of tameness or some minor disability, can't survive in the wild. One can't endlessly stockpile such animals, and no sanctuary is big enough to accommodate all who need permanent homes, but at Folsom Zoo at least some are given homes.

If I've implied that zoo visitors are indifferent to the welfare of zoo animals, I apologize. I didn't mean to do that. In fact they often become *very* interested in the animals, particularly if people in the zoo's community come to know specific individual animals of the larger species. They don't like to see animals who are disabled, injured, or sick. And yet these things do happen; not every animal can be perfect at all times. In the wild such animals often fail to survive. Given proper care, animals live longer, on average, in zoos, and thus the decrepitude of advanced age becomes apparent among zoo animals. It seems to me that the Sacramento Zoo has done the right thing with the exhibit of the melanistic jaguar by pointing out on a sign that the animal limps because of an infirmity that causes him no other problems. The Folsom Zoo provides such information for most of its animals, as they are there because of some problem that prevents them from being wild animals.

Folsom Zoo is far from perfect, but it does serve as a real lesson, real education, to personalize the animals to the point where they are seen as individual beings, compromised almost invariably by some human action, and now kept in the only sanctuary available. Because the species are native, they are not stressed by the climate conditions, unlike a snow leopard or polar bear expected to endure the searing heat of a summer day in the Central Valley of California.

Abstracted Animals

Last December, after leaving Sacramento I went to the 59th annual Midwest Fish and Wildlife Conference, in Milwaukee, Wisconsin. I arrived in time to attend a preliminary social event held in the Milwaukee Public Museum, in rooms featuring rainforest ecology. At the end of the conference I found an hour and a half to revisit the museum.

The museum features classic habitat "dioramas" in which stuffed animals, models of plants and animals, painted background and cleverly contrived artificial soil, rocks, water, ice and so on create a static "snapshot" representation of wild animals in natural habitats. It's easy for us, in the name of animal rights, to dismiss these exhibits as abusive. Certainly those animals killed to be put on display were victims of our mad love affair with ourselves to the exclusion of all who do not immediately serve or amuse us, and even them, when convenient. They do not honor any "rights" for animals not to be so killed, but are they educational?

In a sense they give a more balanced representation of the animal species within the context of its natural environment than can be found in most live animal zoo displays. But the motionless animals, no matter the quality of the taxidermy, do not evoke a sense of life. They are, like the paintings I do, an abstraction of the real animal, as are zoo exhibits.

In our flight from our own animalness, we have tended to consider nature the chaotic sphere in which we impose order. But nature in our absence is far more balanced and in order than it is in our domineering presence. The order we impose tends to be, from the perspective of all other species, naked aggression.

There is a harmony of interrelationships between animals and plants and the soil, water, and climate that includes death, suffering, and even extermination, but not the rampant destruction I have identified as "the problem"; not the self-absorbed dominance, subjugation, and cruelty that not only threatens so many other species, but ultimately spells our own doom, certainly as a society if not as an entire species, if we don't learn. Which brings us back to education, or lack thereof.

Or more to the point, miseducation. A mute swan is not native to South America and it should not be implied that it is. The cat family is wondrously more diversified than zoos or museums tend to teach us. And we are not independent of the natural world we so seek to dominate. To the degree that the museum or zoo legitimizes such domination, perhaps they contribute to the problem. But at least the museum dioramas were accurate within the constraints of their inherent artificiality. They weren't alive but they did have specific, visceral educational value.

Zoo animals bring life, but in the absence of the habitat they, too, are abstractions. One can better see a moose in a cage than in a northern forest spruce bog, but no cage can produce or sustain a moose. We see an essence of the moose, but we are taught little about moose. The moose loses that which defines its species. However, if the cage is also a sanctuary, adequate to the needs of the moose and an alternative to destruction, then the negatives and positives are closer to balancing.

Deep in the Desert

One of the most widely touted American "zoos" is actually called a museum. The Sonoran Desert Museum, located near Tucson, Arizona, does have some old, menagerie-style cages for some birds. But the zoo has posted signs that are critical of the cages. When I was there last year there was construction in place to replace those cages.

What makes the Sonoran Desert Museum so popular among biologists and naturalists is its educational value.

It really *is* educational. It features only animals and plants native to the Sonoran Desert. This means that the animals have evolved in the climate they inhabit while captive.

I mentioned the cat family above because the Sonoran Desert Museum has gone to the effort of displaying each of the wild cat species native to the Sonoran Desert. Each is housed in a spacious cage with lots of places for the animals to hide, just as they would in the wild. In two visits to the Sonoran Desert Museum I saw not a single cat. That number, zero, is about the number you

usually encounter when you look for wild cat species in their native habitat. In other words the cats in the zoo were no more forced to be gawked at than those in the wild. It was their choice, and as they are nocturnal by nature, they chose not to be present simply for zoogoers' edification. They weren't free, but they were freer than many cats in many zoos.

The Sonoran Desert Museum is not perfect and I'm not saying that animal incarceration is morally justified no matter how educational, but at least the Sonoran Desert Museum claims to be educational with accuracy.

Much of that education stems from museum-like displays with models. There are good signs and docents stationed throughout the grounds happy to talk to you about their various interests. There is a walk-in aviary that contains birds in extremely natural conditions free to nest, fly, feed, or simply disappear into the vegetation. I felt much less guilt than I normally feel when I sketch or photograph zoo animals as I sketched hooded orioles feeding inside the aviaries, while other hooded orioles clung to the outside, trying to get in. From the perspective of the birds, there was relatively little to distinguish the energetic cactus wrens who flitted at my feet on the paths through the desert habitat surrounding the aviary from those doing the same thing in on the path in the aviary.

And that is important, because I'm not suggesting that education takes value over the animals' welfare. If the greater flamingos at the Sacramento Zoo were moved to the other end of the pond, into the Maracaibo end, then it would be accurate. The bright pink American race of the greater flamingo can be found in the vicinity of Lake Maracaibo. But if the area where they are is better suited to their needs, then that is preferable. Just don't call it educational in an attempt to justify it.

I well recall a one-day symposium on zoos my friends and I conducted about ten years ago. A zoo spokesperson spoke eloquently of the "realness" of the animals and how there was no way that an image on a TV screen or in a book could compare to the real thing.

He had a point; if you've never seen an elephant all the pictures in the world won't prepare you for how big they are. Still on the subject of education, he pointed out that most of the support the general public now feels for dolphins and other cetaceans, unthinkable in earlier decades of this century, derives from the knowledge we've gained about them through exposure to captive specimens. It was, he argued, captivity that made us see them as highly intelligent, warm-blooded mammals with complex thought and social structures. The captive dolphins had acted like "ambassadors" for their species, and as a result, cetacean conservation now enjoys widespread public support.

I then asked him if, now that we know such things about cetaceans, we are morally justified in keeping them in captivity. There was a long pause before he answered. "No," he said, "I don't think it's justified."

There will always be times when we impose our will on others for their sake or for reasons that don't reduce those others -- our own species or other species -- to mere property to be used for our amusement and justified by false rationales. But perhaps, too, there will be a time when we feel for all animals what the zookeeper admitted for cetaceans; that their imprisonment is not justified.

Meanwhile, if we do rationalize that we are doing it to educate, let us at least teach an accurate lesson, or none at all.