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The Unzoo Alternative

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Foreword

> *"Stop showing the world's inhabitants behind bars and wire. I don't care how good the cage is, it is still a cage. We are the masters; they who live out their lives behind bars, the possessed. Create a place where the residents share the land. Create a place where the viewer is not the owner but a humble guest. Remind people that we are all connected and that wild places have spiritual and emotional wealth beyond dollar value. Make that your mission!"*[1] Ray Mendez, 1999

Two zoo design consultants and a project manager were having dinner together. Ray Mendez (Work as Play), Tony Kotevski (Zoos Victoria) and I (Jon Coe Design) began discussing the future of native animal parks. Ray mentioned his long connection to the Asa Wright Nature Centre in Trinidad (see post script) and his 1999 recommendation that fauna parks should stop trying to become zoos and instead should develop innovative and effective ways to bring guests closer to free-ranging animals in nature. We decided they should move from being zoos with pens, grottos and exhibits to something new, or old, or different… They should become "unzoos". But what would an unzoo be like and how could it be accomplished? After a lengthy and lively discussion, Ray and I agreed to outline the unzoo alternative.

The Vision

> *"We need another and a wiser and perhaps a more mystical concept of animals. Remote from universal nature, and living by complicated artifice, man in civilization surveys the creature through the glass of his knowledge and sees thereby a feather magnified and the whole image in distortion. … They are not brethren, they are not underlings; they are other nations, caught with ourselves in the net of life and time, fellow prisoners of the splendour and travail of earth."*[2] Henry Beston, 1928

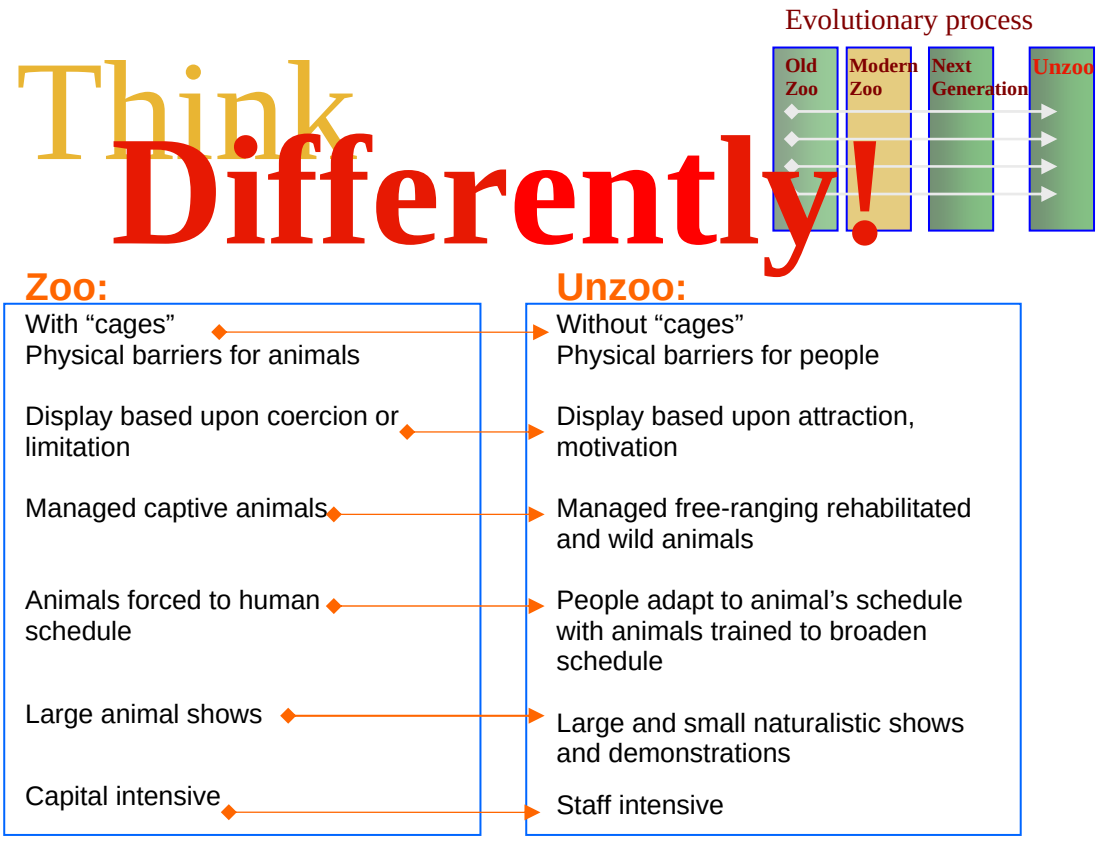
Definitions:

Zoo: *A park displaying live animals …from different parts of the world ... kept in cages or enclosures for people to come and see, and where they are bred and studied by scientists.*[3]

Unzoo: *A place where the public learns about wild animals, plants and ecosystems through interaction with and immersion in original or recreated natural habitats.*

Is the "unzoo" a possible alternative to current zoos? Many have dreamed of the "cageless zoo", yet how can we keep fragile and rare animals safe, secure and visible without close confinement? Advances in the philosophy and technology of zoo design and management are in fact evolving toward the unzoo paradigm. Old cages

have been replaced with open “barless” grottos, which in turn are being replaced by “immersion” exhibits with hidden barriers. Isolated enclosures are being linked to form networks of “rotation” displays. Animal shows are moving into the bush, evolving into “habitat theatre”. Advanced animal training techniques make display, husbandry and transport far safer, less stressful and more humane. Radio telemetry, night vision and other high-tech ways of seeing are being linked to computer network to study, record and present animals in the wild. What if these separate evolutionary trends were to converge through design? Could we, through test and time, advance the evolution of zoos to unzoos, greatly reducing reliance on physical barriers along the way?



While elements of the unzoo hypothesis may benefit all types of zoos, this paper will focus on planning and operation of facilities specializing in native wildlife and ecosystems.

History

There has been a long co-evolution among zoos, sanctuaries and natural history museums.[4] Nature parks began putting wildlife in pens for the public to see and urban zoos developed more naturalistic animal displays modelled after the dramatic dioramas of natural history museums.

Healesville Sanctuary in Victoria, which opened in 1934, is an early and excellent example. Other Australian examples include the David Fleay Wildlife Park (Fleay had done important work at Healesville) and Currumbin Sanctuary, both in Queensland, and Warrawong Earth Sanctuary in South Australia. More recent examples include the Desert Wildlife Park and Territory Wildlife Park, both in the

Northern Territories. In the United States, the American Museum of Natural History opened Bear Mountain Trailside Museum in the 1930s. William Carr, who helped develop Bear Mountain, opened the Arizona Sonora Desert Museum near Tucson, Arizona, in 1952. Living Desert, in New Mexico, Northwest Trek, in Washington, High Desert Museum in Oregon and California Living Museum are more recent examples.

Most American and Australian native animal zoos adhere to the "biopark"[5] model. The focus is on local and regional natural systems: geology, soils, plants and animals as well as indigenous and early settlement cultures. Many proudly proclaim themselves to be "living museums, not zoos". However, over the years they have relied upon the technology of zoos for their displays. A plethora of pens, pits, cages, moats and animal houses were added to natural forest, bush, swamp and desert landscapes becoming constant and contrary reminders of human domination over nature, and thereby undercutting the professed message: *reverence for and service to nature, its protection and conservation.*

Tools of Change

While old zoo and museum attitudes and technology may have distracted native wildlife parks from their purpose, recent zoo thinking can help them get back on target. Several recent trends can be thought of as tools to advance the evolution from zoo to unzoo.

Immersion Design Theory

> *"One can judge the effectiveness of an exhibit by the pulse rate of the zoo-goer."*[6]
> Jon Coe 1987

"Landscape immersion" theory and design was pioneered at Woodland Park Zoo in the U.S. in 1976.[7] From an educational perspective, immersion design theory contends learning is initiated by emotional responses such as awe, love, fear, surprise, and delight, for example. These may then lead to cognitive outcomes such as acquisition of information. High levels of emotional connection lead to high motivation to learn about the subject and to take action to protect and advance the subject's interests. Furthermore immersion theory holds that humans in a subordinate position to animals and landscapes are predisposed to learn from them, while those in a superior position (for example looking down on animals) tend to want to dominate the subject animals rather than to learn from them.[8]

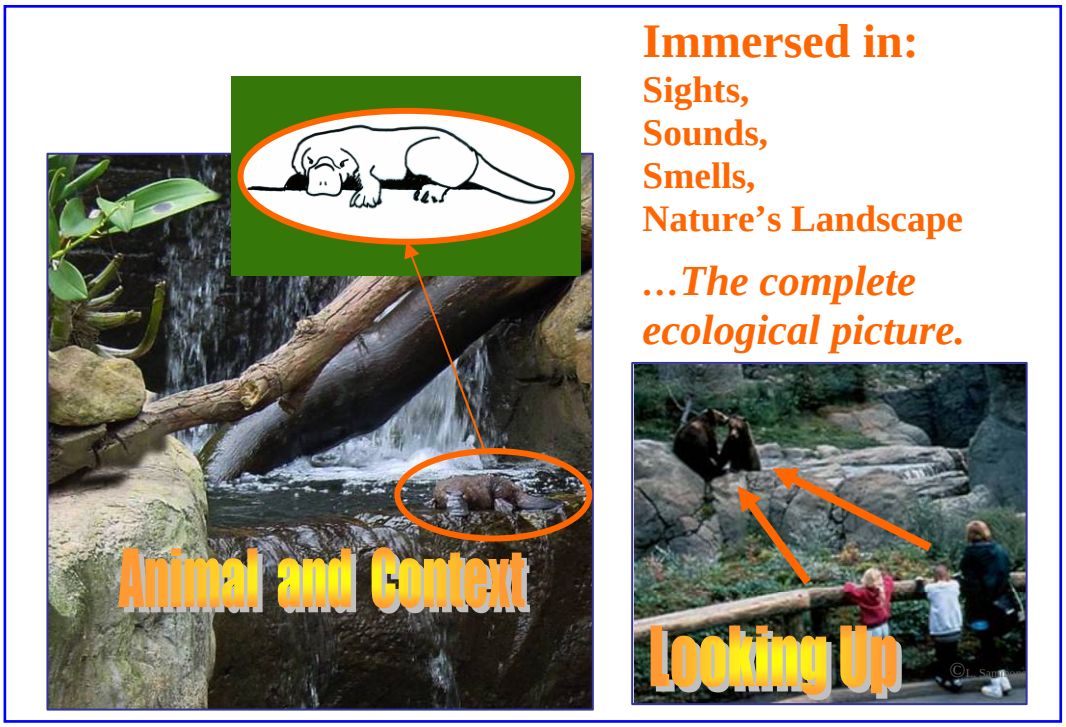
The best exhibits are those where the intended message is imbedded in the landscape or activity and can be interpreted through multiple means, including guides, graphics, games and so forth. Good immersion exhibits are good at telling stories; hence many are designed along carefully choreographed storylines.

From an animal welfare perspective immersion design believes that the more closely we recreate the environment in which a species evolved, the more apt we are to meet its needs, including needs we may not even recognize.

Immersion design is based upon the following foundations:

- Nature is the model: copy nature, not other zoos,
- If we would teach respect for nature, we must present nature respectfully,
- Demonstrate landscape as appropriate habitat and ecosystem.
- Immerse visitors in the simulated or restored natural landscape dominated by animals, without distracting views of large crowds, barriers, support structure or inappropriate objects.

Immersion



All good immersion exhibits fit seamlessly with the site and utilize important site features and more distant "borrowed landscape" backdrops.

The **Walk-Through Exhibit** should be the ultimate immersion experience:

Looking down between your feet, through metal decking, you see the forest floor far below. The elevated walkway sways slightly, and you grab the handrail. A possum ambles along a branch over you, heading for a cavity in the top of a lightening damaged tree. This, you realize, is the world of possums, gliders, birds and bats, and you are in it with them.

Multi-species walk-through kangaroo yards and aviaries have become clichés, yet they represent an idea with untapped potential. By containing many species within a single perimeter, they put people inside the fence. In some cases simple barriers like handrails keep the public in prescribed areas without impeding animal movement. Large drive-through open-range safari parks operate on the same principal; people are more confined than animals. Elevated walkways, floating marsh walks and boardwalks above coastal dunes operate in this way. In a subtler example, tour guides on bush walks provide the same regulatory function. When the enclosed area is large enough and resources are sufficient, smaller species, including creatures from outside the facility may be encouraged to establish home ranges within the perimeter.

Animal Training

> *"We have been training animals for thousands of years, and we almost never ask them to do this! To bring their own abilities to the table. To think."*[9]
> Karen Pryor, 1997

Humane training techniques developed with marine mammals by Pryor[10] and others as well as falconry training methods have been combined under the psychological term "operant conditioning." This approach has been popularized as "clicker training". [11] These formal reward-based training methods are revolutionizing zoos with more active displays and safer, more humane husbandry procedures. Both animals and caregivers clearly enjoy the training periods and find them enriching.[12]

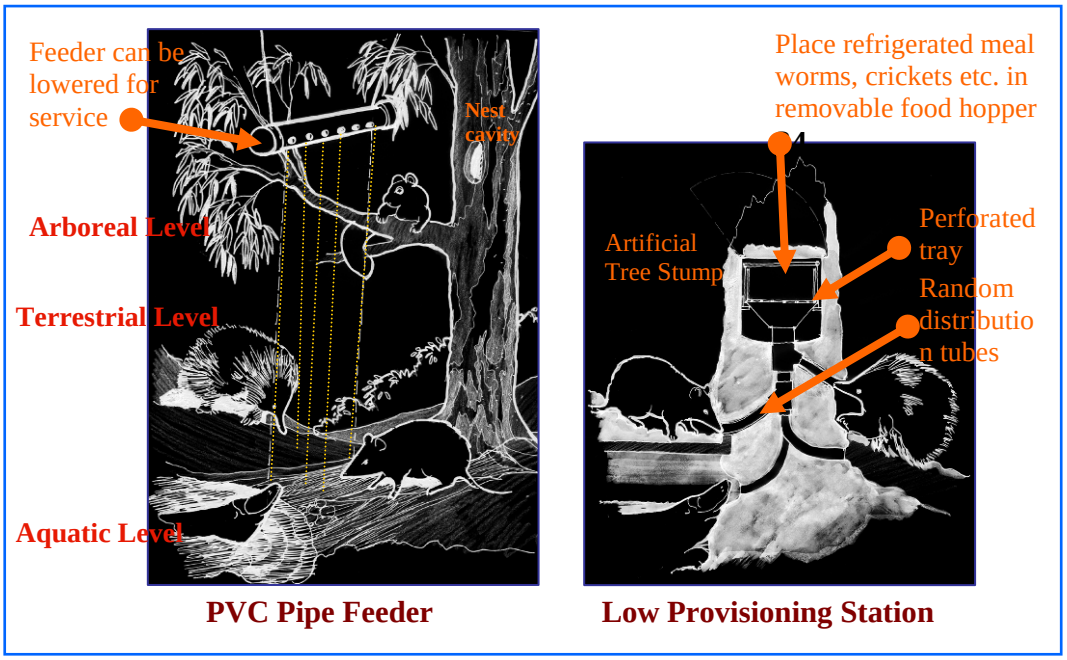
Training wild and free-ranging animals is also enhanced by using new techniques. While people have tamed wild animals since prehistoric times, clicker technology allows us to "capture" wild behaviours without capturing wild animals. For example, Ray Mendez used clicker training to teach wild bats to use artificial nectar feeders he had designed. The training only took a few hours and the bats remained entirely wild. The same techniques could be used for animals ranging from ants to antechinus.

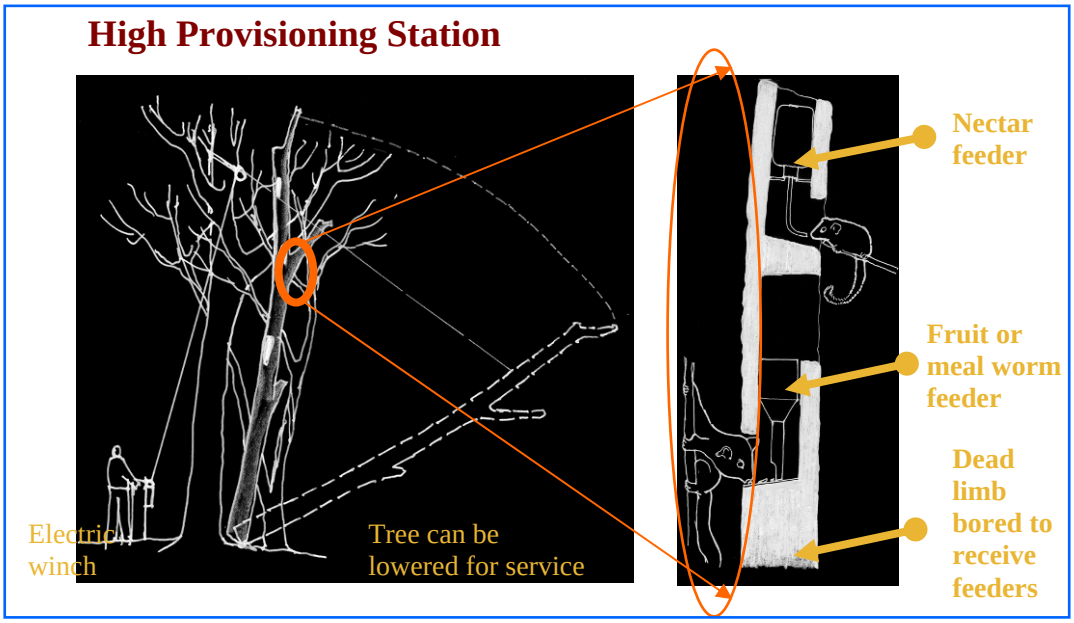
You're sitting on the terrace of the Mole Creek Tavern in Tasmania, enjoying a pint with other zoo professional attending a local conference. Movement in Mole Creek catches your eye. "Look, a wild platypus…in broad daylight."

"Yes," the innkeeper confirms, "we see them most days at this time…just got used to people, I guess."[13] *Peter Stroud, 2005*

Nature lore abounds with stories of opportunistic wild creatures that lost their fear of humans or were tamed by patient people. Wildlife rescuers frequently find animals become quite tame, at least to them, during recovery.

Attracting Animals





Managed wildlife feeding programs can also provide spectacular results. The facilitation of public feeding of wild rainbow lorikeets at Currumbin Sanctuary has led to a rush in construction of popular lorikeet feeding displays in the U.S. Properly managed feeding programs can lead to higher sustainable wildlife densities and visibility while avoiding common behavioural and disease problems.

The important idea here is that wildlife "flight distance" and "reaction distance", to use Hediger's terms,[14] can be greatly reduced without otherwise affecting natural behaviour. When interactions between people and wildlife are properly managed, as they have been at Warrawong Earth Sanctuary and at the Mole Creek Tavern, wildlife goes about its business literally right under your nose. Of course, this is especially true for many insect species. The result can be a maximum of memorable close-ups and a minimum of fencing – the unzoo model.

Animal Close Encounters

Rotation exhibits[15] utilize the same training that makes animal husbandry safer and more humane. Rotation allows animals to time-share each other's space gaining exercise and stimulation in the process. Another advantage of rotation is that it allows habitat areas to recover from heavy use.

Shows & Habitat Theatre

Animal shows and demonstrations can be large or intimate, traditionally staged or a seemingly natural event.

"I would suggest you look at your landscape as a stage and the animals and staff as actors"[16] Ray Mendez, 1999

Respectful bird-of-prey demonstrations are replacing demeaning "orang-utan tea parties", but there is still room for growth and diversification. Shows can be formatted to inform us about animals of many types with emphasis on ecology and behaviour rather than on clever presenters. As one example, why not have a show based upon "Encounters at a Billabong" featuring multiple species of birds, fish, amphibians, reptiles and mammals from this habitat? Popular large capacity venues can take some of the traffic that might overwhelm the more intimate pathways, while maintaining high overall attendance levels and profitability.

Expanding the Senses

Walk in the bush surrounded by free-ranging animals, without a cage, grotto or aviary in sight. Triangulate on that hidden bird: up comes its species, history and activity. Key in a remote camera to zoom in for a close-up as it feeds its chick.

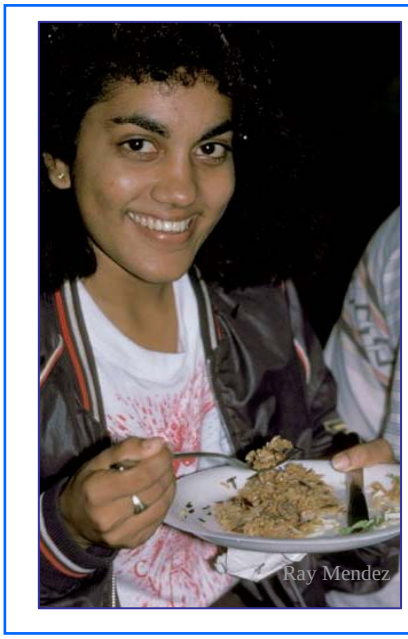
Wildlife scientists have developed a wonderful array of tools to expand their observational and research capabilities. Some of these truly could become tools for change in zoos and sanctuaries. Traditional tools like local guides or binoculars are still important but they could be supplemented by night vision, radio telemetry, embedded transponders and global positioning satellites. On Barra Colorado Island in Panama, a network of radio towers allows scientists in comfortable offices to simultaneously triangulate, identify, track and record dozens of animals of several species. These same tiny embedded transponders could allow remote sensors to recognize specific animals, perhaps opening gates for some (but not others) or releasing food items on a random or predetermined schedule.

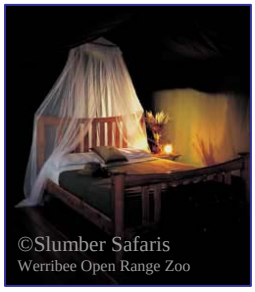
Extended Day Program

The campfire wildlife talk was good but this adventure in the woods at night was a bit scary – at least until we put on our night vision goggles. I never knew there were so many critters here! We'll spend tonight in a safari cabin and plan an early morning bird walk followed by a big breakfast. I never dreamed we could have a family safari so near our home.

The thrills of seeing active animals in the evening and night and waking to the early sounds of nature can form lifelong memories. Overnight and extended day programs have been available at open-range zoos like Werribee in Victoria and Fossil Rim in Texas for some time and are an important component of the Earth Sanctuary System in Australia.

Night Events





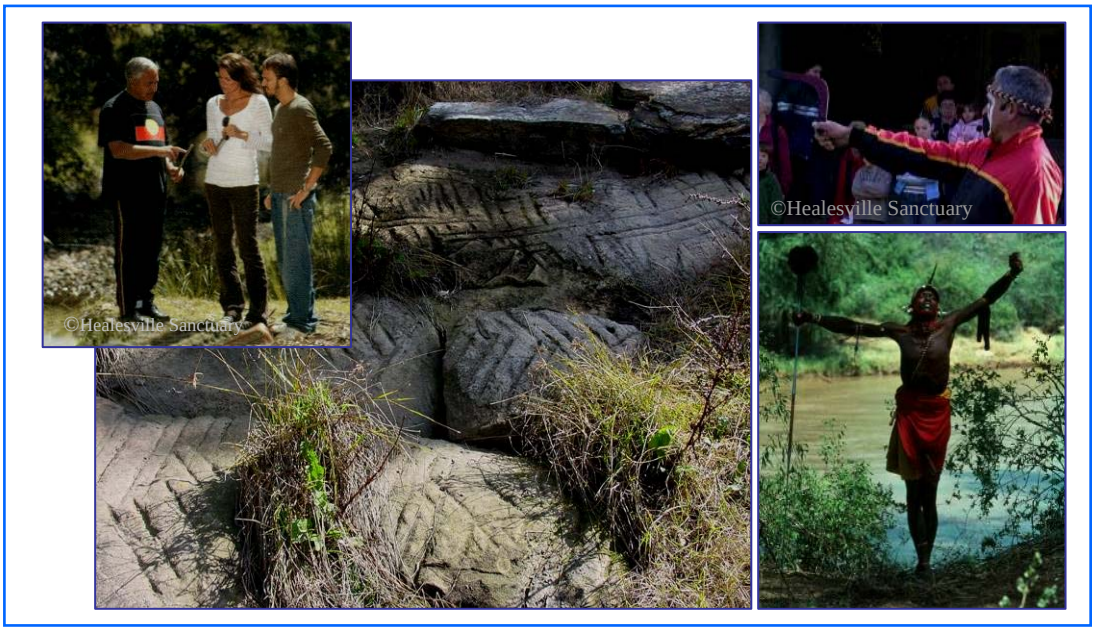
After hours uses can also benefit larger, higher attendance unzoos. The Singapore Night Safari demonstrates some of this potential.

- Night time immersion displays are easy to develop because desirable areas are subtly spotlighted while areas to be hidden (barriers, service areas) are simply left in the dark.
- Many animals, including diurnal species are more active during cooler evening hours.
- Nocturnal species can be shown in natural settings without need for expensive and distracting nocturnal houses.
- Night programs can be built around popular animal demonstrations and dinner venues for which people are willing to pay higher fees. Greater earned revenue from admissions, food, accommodations and typically higher per capita spending supports higher quality facilities, operations and guest experience.

Ethnic, Indigenous and Anthropological Integration

Murrundini, a Wurundjeri Elder, is relaxed, even humorous as he shows our kids how to properly throw a boomerang at Healesville Sanctuary. Later he will lead our group on a special tour of the Sanctuary's Corranderk Bushland Reserve. Corranderk has very special meaning to Murrundini, for it was his people's home as an Aboriginal Reserve for generations and, of course, was part of their traditional land for millennia. Where else could we have an experience like this?

Ethnic Connections



One of the pleasures of taking a safari in Tanzania or a river tour on the Mekong in Cambodia is meeting local and indigenous people and beginning to see the world through their eyes. Of course we can do the same thing at home. Several zoos and sanctuaries work with local indigenous groups to enrich the visitor experience. This opportunity could be even further integrated into the overall experience of the unzoo.

Recipe for Change

> "*Do not create any more exhibits. Create feeding grounds, blinds, lookouts and nest cavities with cameras. Use all the techniques that are available to enable the visitor to see native wildlife. … Tear down all your cages.*"[17] Ray Mendez, 1999

When zoos and wildlife sanctuaries seek to diminish the physical and perceptual barriers between their guest and nature, they must return to their wilderness roots.

- Recall direct experiences of nature in its many forms.
- Design exhibits as interconnected experiences, not as objects.
- Stimulate human emotions and embed meanings.
- Provide memorable, personal encounters with other species without unnecessary sentiment or artifice.

Recipe for Change

The Tools…

- Immersion Design
- Positive Training
- Shows and Habitat Theatre
- Control People – Attract
- Provide Close Encounters
- Expand the Senses
- Night Encounters
- Ethnic Connections
- Invest in People, Not Facilities
- **Evolve!**

New tools can help. Clicker training and habituation allow animals to closely approach visitors without fear and greatly facilitates animal husbandry and well-being. Large multiple species walk-through areas, some many acres in extent can include integrated habitat theatre and subtly-managed trailside encounters. Other large venue animal presentations, formatted respectfully, can still serve large audiences cost effectively.

Remote sensing and field research technology can help us see and appreciate wildlife as never before. Immersion design techniques can blend remaining enclosures, if needed, into surrounding natural habitats. These can become interconnected for rotation and environmental enrichment.

All but the best existing exhibits can be phased out over time beginning with those which most isolate animals from surrounding nature. Pits and other depressed exhibits where animals pace below visitors should be phased out in favour of respectful presentations. Systematic Victorian era collections, such as those in reptile houses or small mammal houses can be replaced with the biopark ideal of multi-layered ecosystems.

As the shift from traditional zoo to unzoo evolves there will be a parallel shift from investment in capital assets to investment in staff, training and program development. This will allow great operational flexibility and future change. It will also require institutions to rethink their entire business strategies.

Reconnecting to the Vision

> *"My proposal is to* un*invent zoos as we know them and to create a new type of institution, one that praises wild things, that engenders respect for all animals, and that interprets a holistic view of nature."*[18] David Hancocks, 2001

About 78 years ago Henry Beston received a sublime vision of nature while walking an isolated beach on Cape Cod, Massachusetts. A few year later William Carr hiked along the Appalachian Trail above the Hudson River in New York and wondered how he could help city children to see nature as he saw it – whole and interconnected. At about the same time John Fleay may have had similar thoughts as he observed platypus in Badger Creek at Corranderk in the Yarra Ranges of Victoria. These visions and that of other insightful men and women have lead to our present international legacy of native wildlife reserves, sanctuaries and zoos. But along the way a lot of old ideas and artefacts from museums and zoos got between the dream and the reality, obscuring Beston's view of wildlife as "other nations."

Today, with new tools, we can hasten the evolution from exhibit to experience, from objects to ecosystems, from teaching to experiential learning, from 9-5 human time to 24 hour natural time and from capital intensive to human intensive assets. Following this path, our institutions may evolve from zoo to unzoo and, arriving there, we may find the unzoo is what we dreamed of all along.

Post Script

Ray Mendez offers this description of an unzoo, but of course, many other variations are possible in the Unzoo Alternative. Let this example inspire you, but don't let it limit your dream; adapt the unzoo to your site, existing facilities, location, attendance and institutional focus. Ray also sent along the valuable words of advice that conclude this case study.

*"I have served on the Board of the **Asa Wright Nature Centre**, Trinidad (http://www.asawright.com) for 20 years and during that time we have taken a cocoa/coffee farm in the northern mountain range and turned it into a premier birding destination and nature preserve. We have also more than doubled the size of our holding while supporting a staff of over 50 people. This includes armed guards, cooks, field hands, guides, room service folks, managers and two environmental educators. All are hired full time at the same or above government salary rates. Benefits for our staff include pension, sick time and retirement funds. We do this, instead of laying off during the slow periods, a standard in the hotel trade, because we believe that you can preserve the environment and generate meaningful work for local populations.*

Over the years we have protected local species from hunting including such diverse groups as deer, oil birds (we have a colony living in a cave on the property), tree ferns and land crabs. We have started reintroduction programs on our property and on the Island. We have sponsored scientists, books, scholarships, lecturers, school programs, teacher programs and sea turtle programs. We maintain Simla, a research facility originally founded by the Bronx Zoo via William Beebe, at low cost to visitors and do this staying in the black – most years. We do this with NO live animal collection. In a week you can see over 200 species of birds, 20-30 species of herps, hundreds of species of insects and a handful of mammals…all this with no cages surrounding them.

We can do this because we have set goals and struggled to achieve them. Sometimes our simplest goals seem to take forever to achieve but we slug on. We lead

by example, even when the locals think we are nuts. Five, ten or fifteen years later our crazy ideas actually make sense. Tourism is our cash cow and being non-profit allows us to keep our money. We are fiscally very conservative and have a board that has great continuity and represents not only Trinidad (13 members) but foreign (12 members) concerns. Just because some/many outfits fail in these ventures does not mean we give up. If a child fell once and never again attempted to walk, we would all still be crawling around on hands and knees.

In conclusion, I wish to remind us all that we work in a wonderful industry. It serves the role of helping to breed animals and plants which have no other home; it provides the visitor with a healthy, safe, entertaining, educational environment; and it can further serve society as places dedicated to holding the moral line in regards to the use or abuse of our world's fellow travellers. I believe we need to be part of the segment of society which defends wild places and the animals that live in them, because they have intrinsic and spiritual worth. If we do not do this, our wild places will become nothing more than undeveloped shopping centres and the justification for their existence relegated to a simple dollar value. Our exhibits need to gently push the visitor so that love of wild places makes destructive behaviour both unimaginable and unacceptable." Raymond A. Mendez, 2005

Photos:

References:

1. Mendez, Raymond A., 1999. "The Mystery of Sound" Review of Meetings at Healesville Sanctuary October 18-19, 1999." (Unpublished).
2. Beston, Henry, 1928. *The Outermost House*, Doubleday, NY.
3. MSN, 2005. *Encarta World English Dictionary*. Online.
4. Coe, Jon C., 1986. "Toward a Co-Evolution of Zoos, Aquariums and Natural History Museums". *AAZPA Annual Conference Proceedings*, American Association of Zoological Parks and Aquariums, Wheeling, WV (now AZA, Silver Springs, MD), 366-67.
5. Robinson, Michael H., 1988, "Bioscience Education through Bioparks". *BioScience*, 38 (9):63-34.
6. Greene, Melissa, 1987. "No Rms. Jungle Vu", *Atlantic Monthly*, 760, 6 (Dec.)
7. Jones, Grant; Coe, Jon Charles; Paulson, Dennis R., 1976. *Woodland Park Zoo Long-Range Plan, Development Guidelines and Exhibit Scenarios*. Seattle Department of Parks and Recreation. This was revised as: CLRdesign, Inc., 2004. *Woodland Park Zoo Long-Range Physical Development Plan: Development Guidelines, Non-Exhibit-Recommendations and Exhibit Scenarios.* Woodland Park Zoo, Seattle, WA. Also see: Jones, Grant R., 1982. "Design Principles for Presentation of Animals and Nature". *AAZPA Annual Conference Proceedings*, American Association of Zoological Parks and Aquariums, Wheeling WV, (now AZA, Silver Springs, MD), p 184-92.
8. Coe, Jon, 1985. "Design and Perception; Making the Zoo Experience Real". *Zoo Biology*, Alan R. Liss, Inc., NY, 4:197-208.
9. Pryor, Karen, 1997. Acceptance Speech, Annual Award for Excellence in the Media, Association for Behavioral Analysis, Chicago.
10. Pryor, Karen, 1994. *Karen Pryor on Behavior: Essays and Research*. Sunshine Books, MA.
11. Pryor, Karen, 1985. *Don't Shoot the Dog*. Bantam Books, NY.
12. Laule, Gail, 1992. "Addressing Psychological Well-Being – Training as Enrichment". *AAZPA Annual Proceedings*, American Association of Zoological Parks and Aquariums, Wheeling, WV (now AZA, Silver Springs, MD).
13. Stroud, Peter, 2004, personal communication.
14. Hediger, Heini, 1950. *Wild Animals in Captivity*. Butterworth, London, p. 20 and 32.
15. Coe, Jon, 2004. "Mixed Species Rotation Exhibits". *Proceedings*, ARAZPA Conference, Christchurch, NZ.
16. Mendez, Raymond A., 1999. "The Mystery of Sound" Review of Meetings at Healesville Sanctuary October 18-19, 1999." (Unpublished).
17. Mendez, Raymond A., 1999. "The Mystery of Sound" Review of Meetings at Healesville Sanctuary October 18-19, 1999." (Unpublished).
18. Hancock, David, 2001. *A Different Nature: The Paradoxical World of Zoos and Their Uncertain Future*. University of California Press, Berkeley, Preface xv.

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