WHY THE OREGON ZOO'S PROPOSED THREE-ACRE ELEPHANT EXHIBIT RENOVATION PLAN WILL FAIL TO MEET ELEPHANTS' WELFARE NEEDS AND ZOO GOALS

A Report by In Defense of Animals

PART I: INTRODUCTION

The welfare of elephants in zoos has become a controversial issue worldwide due the needless suffering and premature deaths of elephants caused by inadequate zoo conditions. In the United States, zoos' elephant programs are under intense scrutiny from the public, mass media, animal advocacy groups and elected officials. Sixteen major zoos have closed, plan to close or will phase out their elephant exhibits. These include major urban zoos in Detroit, San Francisco, Philadelphia, Chicago, New York and other cities.

While In Defense of Animals (IDA) commends actions that significantly expand and improve facilities for elephants, most U.S. zoos are making token changes that will fail to demonstrably improve elephant welfare. This includes the Oregon Zoo.

The Oregon Zoo's recommended three-acre renovation plan is woefully inadequate for elephants as it will not provide adequate space and appropriate conditions for those elephants currently at the Zoo and for future offspring. Further, it is wasteful to spend precious taxpayer resources on a facility that is already outdated and will only cause elephants to continue to suffer and die prematurely at the Oregon Zoo.

IDA heartily agrees that changes must be made to improve the health and welfare of the elephants currently at the Oregon Zoo, but this must be done in a way that best meets their unique physiological, psychological and social needs. Otherwise, the Oregon Zoo will merely recycle the same old zoo facility and management approaches that have consistently failed to ensure the welfare of elephants in captivity and has subsequently resulted in a zoo elephant population that is not thriving and not self-sustaining.

The purpose of this report is to provide key decision-makers with essential information that must be considered when discussing a new home for Oregon Zoo's elephants. We also offer a viable alternative in the form of an expansive, natural environment facility outside of the Zoo, similar to the nation's two elephant sanctuaries. Such a place will better meet the elephants' needs, establish the Oregon Zoo as a leader in the care and management of elephants in captivity, and justify the expenditure of taxpayer dollars.

Oregon Zoo is at a crossroads with its elephant program. It can either cling to outdated methods of keeping elephants that, in light of the voluminous knowledge about elephants, are no longer defensible, or take the lead and create a spacious habitat that better meets elephants' needs while promoting an entirely different kind of appreciation for these highly endangered beings. IDA urges decision-makers to embrace this fresh and innovative vision for elephants.

PART II: OVERVIEW OF THE NEGATIVE IMPACT ON ELEPHANT HEALTH AND WELFARE DUE TO INADEQUATE ZOO CONDITIONS

"A zoo really isn't conducive to the health of elephants, and the feet are a large part of it…You just have to accept this as a chronic condition because you're not going to cure it."[1]

– Blair Csuti, Oregon zoologist who organized the first North American conference on elephant foot-care in 1998

A. Elephants need space

Elephants' space requirements are partially driven by their great size, but also by their natural history. They are highly social, powerful animals built to range large expanses of land while foraging for food, caring for offspring, socializing with family and kin, and exploring their environment. The typical home range for an elephant family is from 40 to over 200 square miles, with free-ranging elephants walking an average of five to fourteen miles per day[2].[34]

In contrast, the typical urban elephant exhibit offers a few acres or less. The Oregon Zoo exhibit currently provides less than 1.5 acres outdoors for six elephants (subdivided into smaller yards), giving each elephant roughly one-quarter acre of space. Even if the space is doubled, it will remain inadequate for earth's largest land mammals.

B. Lack of space and unnatural conditions cause serious problems for elephants in zoos

Restricted space is associated a host of problems, including physical (foot and joint disease, excessive weight), behavioral (abnormal repetitive behaviors), reproductive (impaired fertility, high infant mortality), and social (aggression). Small enclosures preclude the creation of more natural elephant groupings and behaviors.

The most significant physical problems are often-fatal foot and joint disorders, which are caused by lack of space and hard surfaces such as concrete that elephants are forced to stand on for prolonged periods.

- Over 60 percent of elephants in zoos have foot disease and nearly half have arthritis[5]; these painful conditions are the leading cause of euthanasia in captive elephants.[6] Oregon Zoo has a history of foot problems, which affect all five of the Zoo's current long-term elephants (see Part III for specific information on elephant health problems at Oregon Zoo).

- Since January 2006, 9 out of 12 elephants who died in AZA-accredited zoos suffered from serious foot and/or joint disorders prior to death.[7] This includes Pet at Oregon Zoo, who was euthanized in 2006 due to painful arthritis and chronic foot infections that had invaded the bone (osteomyelitis).

Inadequate zoo conditions and resulting health disorders are causing elephants to die prematurely. Of the 56 elephants who died in AZA-accredited facilities since 2000, less than half reached their 40th birthday.[8] In contrast, an elephant's natural lifespan is 60 to 70 years.[9] Considering the high level of keeper and veterinary care provided in zoos and the absence of factors that claim the lives of wild-ranging elephants (i.e., poaching, famine due to drought),

it stands to reason that elephants in zoos should live closer to their natural lifespans, but this is not the case.

C. Zoo conditions create social instability

Elephants have highly complex social structures. Free-ranging elephants live in stable, family groups of 8 to 12 related adult females and their immature offspring, though relationships extend to the larger population, encompassing hundreds of individuals. Elephant calves are born into a tight-knit family composed of the mother, aunts, siblings and other family members, all of whom play a part in the calf's learning process and socialization. Female elephants remain with their natal herd for life. Males leave the herd at approximately 14 years of age, though they still display social connections, including forming bachelor groups and frequenting areas with female elephants.

Yet, in zoos elephants are held in small unrelated groups, bonded females are routinely separated when transferred between zoos, and calves are separated from their mothers at as young as three years of age. Separation of females, through death or when one is transferred to another zoo, has resulted in depression/grief, abnormal behaviors such as repetitive motions and self-mutilation, and may affect maternal care.[10]

Of the 19 calves born at Oregon Zoo who survived more than two months, 13 were transferred to other facilities before age five. Twelve of the calves were less than three years old when relocated, with the majority being moved before age two (youngest was five months). In the wild, these babies would not have been weaned yet. (See Part III for more information on Oregon Zoo's breeding program failures.)

D. A new standard of care: elephant sanctuaries

Two U.S. elephant sanctuaries in Tennessee and California have set the bar for captive elephant care by providing large, open tracts of land for multiple elephants that range from 40 acres to more than 2000 acres. Elephants at these facilities have access to diverse terrain and natural substrates, social opportunities with other elephants, and live vegetation. Both sanctuaries report long-term improvements in the physical and mental health of the elephants.

PART III: HEALTH AND WELFARE ISSUES SPECIFIC TO THE ELEPHANTS AT OREGON ZOO

A plethora of health and welfare problems related to inadequate conditions and the Zoo's inhumane management methods have diminished elephant welfare.

A. Chronic health problems

Each of the five long-term elephant residents at Oregon Zoo (relative newcomer Tusko is not included as his medical records have not been reviewed) has suffered recurrent foot disorders such as cracked nails, abscesses, lesions, ulcers, fissures, fractured toes, according to Zoo medical records. Foot disorders, caused by lack of movement due to small enclosure size and hard surfaces such as concrete and hard-packed dirt, are the leading cause of suffering and premature death for elephants in zoos.[11] Foot disorders are rarely seen in wild elephants.

Despite intensive foot care and preventive measures, foot problems continue. Even the youngest elephants at Oregon Zoo have been plagued by foot problems.

- Chendra, an elephant from Malaysia, developed foot problems within two months of coming to the Oregon Zoo. Zoo veterinarians had recommended extra bedding in her stall to ease the transition for her feet from "forest and river ground to the hard flooring of captivity."

- Although she is a young elephant, Rose-Tu has experienced foot problems such as cracked and overgrown nails, sole fissures and bone fractures in the toes of her back feet. Veterinary records attribute this to "possible substrate problem" or "repetitive stress" injury.

B. Oregon Zoo's breeding program failures

Despite its past reputation, the Oregon Zoo's lauded breeding program in reality has not been successful. More than half of the calves born did not survive to adulthood, young calves have been cruelly separated from their mothers when relocated to other facilities, and breeding-age females have been disabled by foot disease and arthritis, with many dying during their prime.

- **There have been no births at the Oregon Zoo in 13 years.**

- **Out of 26 captive births, 15 elephants are dead**. (Two of nine surviving elephants are in the Ringling Bros. circus; the whereabouts of another two are unknown.)

- **Of the seven females who gave birth, only one is known to be alive (Hanako at Point Defiance Zoo).** Free-ranging elephants are known to breed into their 50s and even 60s. In contrast, many of the female elephants at Oregon Zoo died during what should have been their prime breeding years, having succumbed to complications of foot and joint disease,[12][13] caused by unsuitable zoo conditions.

A secondary complication caused by foot disorders is the inability for a female elephant to breed and carry a calf to term. Pet was reproductively evaluated in 1999 and veterinarians concluded that "her reproductive tract would probably be healthy enough to carry a pregnancy, unfortunately her feet are not."[14]

C. Training and management methods negatively affect elephant welfare

The Oregon Zoo utilizes an outdated method of training and management called "free contact" that relies on dominance and physical punishment to control elephants. The number of zoos that employ this method, which is cruel for elephants and dangerous for keepers, is in steady decline. More than half of Association of Zoos and Aquariums (AZA)-accredited facilities have adopted a more humane technique known as "protected contact."

1. Oregon Zoo's training methods are inhumane

In the free contact training system, the elephant is forced into compliance through physical punishment, first to establish dominance and then to reinforce training. Desired behaviors are achieved by employing negative reinforcers (pain and discomfort, usually inflicted with a bullhook), corporal punishment or threat of it, and positive reinforcement.

The bullhook (also called an ankus or guide) is a controversial device resembling a fireplace poker with a metal tip and hook at the end. Trainers often embed the hook in soft tissue behind the ears, inside the ear or mouth and in tender areas under the chin and around the feet. Elephants' skin, though thick in places, is extremely sensitive.

2. Recorded incidents at Oregon Zoo illustrate the cruelty inherent in the Zoo's training methods

- In 2000, the U.S. Department of Agriculture formally charged and fined the Oregon Zoo for violating the Animal Welfare Act in the abuse of then six-year-old Rose-Tu, who had bullhook wounds (over 176 punctures) all over her body. Bullhook wounds were identified on at least three elephants for several years following these charges.

- Zoo veterinary records from 2003 reveal that Pet may have sustained numerous bullhook injuries, as keepers "communicated poorly about commands given and Pet was reprimanded in the process." Veterinarians reported "a problem with bullhook use on Pet" and keepers admitted to using the bullhook more on Pet to "maintain her activity level so she doesn't just stand around." Pet's mobility, in fact, was greatly slowed by painful arthritis and eroded feet. She was repeatedly been found to have skin lesions, puncture wounds and lacerations as a result of keepers' aggressive use of the bullhook on her.

- In May 2003, veterinary records report that skin nicks were found all over Chendra's left front limb metacarpal area "as though she were heavily cured with an ankus" there. Records further note that keepers "may cure her more frequently and aggressively on this side because it's her blind side."

- Oregon Zoo's medical records indicate that at one time bullhook wounds were found on at least four of six elephants.

The Oregon Zoo clearly is out of step with the zoo industry trend toward the use of "protected contact," a training method that utilizes only positive reinforcement and voluntary cooperation of the elephant. It is safer for keepers as they do not share the same physical space with the elephants, more humane for the elephants, and encourages more natural

behaviors. Zoos using this technique have successfully trained elephants for necessary veterinary treatment and husbandry procedures.

PART IV: WHY THE OREGON ZOO'S PROPOSED ELEPHANT EXHIBIT RENOVATION WILL FAIL TO ACHIEVE ZOO GOALS

In a 2002 Willamette Week article, Oregon Zoo director Tony Vecchio posed an important question:

> *"We don't have humpback whales in captivity, because we can't replicate the wild conditions… I make the argument that we have [elephants in zoos] because visitors expect them. Elephants aren't living the same life as they would in the wild… No zoo animal is. The decision is, can we provide enough to make their lives comfortable, worthwhile, enriched?"*

Based on the zoo-induced medical disorders from which all of the long-term elephants at Oregon Zoo suffer, the answer to this question regarding current zoo conditions is a resounding no. Unfortunately, an expanded three-acre exhibit will not significantly change the situation, and elephants at the Zoo will continue to suffer from psychological and physical conditions that could be prevented in a more naturalistic and spacious environment.

A. Failure to provide adequate space

1. Lack of space for current elephants

The recommended three-acre renovation necessarily will be subdivided into a minimum of four holding yards for the Zoo's six elephants and any future offspring. Therefore, it is unlikely that any yard will exceed an acre or so in size, with some holding multiple elephants. Such yards do not provide enough space to sustain natural and fresh vegetation or the space necessary for these enormous animals to engage in sustained natural activities that can make their lives "comfortable, worthwhile and enriched," which is the goal, according to Zoo director Vecchio.

Without appropriate space, elephant welfare will not be significantly improved, serious health disorders will continue, and the Zoo will leave itself open to continued criticism.

2. Lack of space for future offspring

If the Oregon Zoo's breeding program should produce offspring, it must be prepared to provide long-term housing for male offspring (few zoos have facilities for male elephants) and for female calves (who should never be separated from their mothers). However, the proposed exhibit renovation fails to provide the necessary space, even though it has already been reported that Rose-Tu is pregnant, with a due date of September 2008.

In a three-acre exhibit, holding areas will crowd quickly and negatively impact elephant welfare. The Zoo then will have the following options, none of which are acceptable, except under extreme or unusual circumstances:

- Hold an increasing number of elephants in an ever-decreasing amount of space per elephant, which will only worsen problems with foot disease, arthritis, and aberrant behaviors such as aggression.

- Separate offspring from the mother at a relatively early age by transferring adult or juvenile elephants to other institutions, causing major trauma to mother and offspring. As other zoos also lack space for elephants, especially males, the choice of acceptable facilities may be limited. In the past, the Oregon Zoo has transferred calves to circuses, a practice that would not be tolerated by the public today.

- Relocate post-reproductive adult females to other institutions. This approach is inconsistent with elephants' complex sociality as it may break important social bonds between females and cause social disruption and trauma. It may also be more difficult to place older and post-reproductive females at acceptable facilities.

B. Failure to incorporate humane training and management methods

As more and more zoos each year convert their elephant training programs to the "protected contact" method that utilizes only positive reinforcement, there is no excuse for Oregon Zoo to continue using a dominance-based training system that controls elephants through negative reinforcement and physical punishment. IDA urges the Oregon Zoo to discontinue this inhumane practice and join the scores of progressive zoos that now employ more humane training techniques that also protect keepers.

The decision to switch to "protected contact" should be made prior to the design phase of any elephant exhibit plan so required elements can be included.

C. Failure to provide conditions necessary for socially viable elephant groups

Elephants are intensely social animals, and social conditions are directly linked to elephant welfare. To maximize physical and mental well-being elephants must be held in *stable* social groups appropriate in size and composition for the species, which requires a great deal of space. The proposed three-acre renovation will not provide such space.

D. Failure to provide conditions necessary for healthy elephant breeding and calf-rearing

It is IDA's position that zoos should not breed elephants because of the lack of suitable facilities for offspring and subsequent suffering and early deaths.

Zoos have been unsuccessful in breeding elephants for a variety of reasons, including inappropriate social structure, lack of space, stress in the social environment, excessive weight, and early social deprivation and lack of maternal learning. Yet, the Oregon Zoo's renovation plan adheres to the same failed zoo practices that have resulted in breeding failure and an elephant population that is not thriving. The Zoo's plan also glaringly fails to factor in the births of male elephants, which present a special challenge (see point no. 4 below).

1. Lack of space precludes establishment of stable elephant groups

Large expanses of open land are necessary for establishing social groupings of size and composition appropriate to the species. Appropriate social groupings can lead to improved propagation of the species.[15]

2. Social instability negatively impacts welfare and reproduction

The primary social attachment in elephant society is between mother and calves. In free-ranging herds, females remain with their mothers for life and males would not leave the family until their teens. Even though elephant infants naturally do not wean until about

four years of age, zoos are allowed to separate elephant calves from their mothers at as early as three years of age.[16]

One can only imagine the terrible distress and life-long trauma this causes both mother and calf. Research on a range of species shows that early separation from the mother is highly stressful and can have a long-term impact on welfare, including abnormal behaviors, impaired reproductive performance, impaired immune function and psychological disorders.[17] In light of this knowledge:

- The Oregon Zoo should never separate female calves from their mothers, barring exceptional cause.

- Male elephants should not be separated from their mothers before reaching sexual maturity, excepting cases where it is unsafe to keep them together.

- Related females should never be separated from one another, absent extraordinary cause.

Uprooting and transferring adult female elephants may cause stress in both the elephants who have been transferred and among the remaining individuals. Some studies suggest that this practice may affect maternal care. Social disruption is also produced by the introduction of new elephants into a group. It has been suggested that this could cause fetal resorption in pregnant animals. One study found that when new elephants arrived into the herd, ovarian cycling stopped.[18]

3. Lack of facilities for male elephants

When breeding elephants it is expected that half of the offspring will be male and half will be female. Not only is even more space required for bull elephants (who are generally kept separated from one another), but facilities must be sturdy enough to hold these powerful and potentially destructive animals.

Relocating bulls to other AZA facilities is not realistic as the vast majority of zoos are not equipped to hold male elephants, and because of their dangerous nature many zoos prefer not to hold them. Therefore, Oregon Zoo must be prepared to provide long-term housing for male offspring.

PART V: PROVIDING OPTIMUM CONDITIONS FOR THE LONG-TERM HOLDING OF ELEPHANTS

If the Oregon Zoo truly wishes to be a leader in the care of elephants in captivity, it should base its expansion plans on the model already created by the two U.S. sanctuaries for elephants.

The Elephant Sanctuary is a 2,700-acre natural habitat refuge in Tennessee. The Performing Animal Welfare Society's ARK 2000 sanctuary encompasses 2300 acres in San Andreas, California. These sanctuaries provide elephants with:

- Open areas of natural habitat ranging from 40 to more than 2000 acres
- Varied terrain, including hills, pastures, creeks and ponds
- Natural substrate
- Live vegetation for foraging and a valuable source of nutrition
- Freedom of choice in companions and daily activities
- Year-round access to the outdoors

These conditions help to "reinstate the elephant's natural biology" and have restored quality of life to physically and psychologically debilitated elephants who have come from zoos and circuses to the sanctuaries. Increased activity, including walking long distances and swimming, results in weight loss and increased muscle tone, helping to relieve pressure on the joints. Varying topography and soft soil supports foot health by providing both climbing and sideways motion that strengthens tendons and ligaments in the feet. Natural foraging improves nutritional health, which also supports foot health. On average, elephants at The Elephant Sanctuary walk three to fifteen miles each day.

Case studies show that when elephants are freed from fear-based management systems, released from performing daily training behaviors and routines, and are given space and freedom of choice for activities and associations, psychology improves, repetitive behaviors and aggression decrease, and close bonds and friendships between elephants are able to form.

The sanctuaries do not breed elephants. These facilities accept elephants who have been sickened and debilitated by decades spent in zoos and circuses. More than anyone, they recognize the irresponsibility of breeding elephants when adequate living conditions are not available for them. Indeed, they deal with the sad results of it every day.

PART VI: CONCLUSION

The welfare of elephants in captivity presents one of the greatest management challenges that zoos face because of the elephant's immense size, keen intelligence, complex social structure, and large behavioral repertoire.

While the proposed Oregon Zoo elephant exhibit renovation plan is a clear acknowledgement that Earth's largest land mammals needs larger spaces to thrive, it falls far short by failing to significantly address the physical, social and psychological needs of elephants that are critical to ensuring optimal welfare.

Instead of presenting a progressive approach to elephant management, the Oregon Zoo appears poised to follow the same zoo practices that have proved disastrous for elephant health and well-being and resulted in a zoo elephant population that is not thriving and is not self-sustaining. This strategy puts zoo needs first, and disregards the welfare needs of individual elephants.

Oregon Zoo, perhaps more than any other facility, should be aware of the link between elephant welfare and the successful propagation of the species. Many of the Zoo's breeding females were lost to captivity-induced diseases during their prime, three of four breeding bulls died prematurely, and more than half of the offspring born at the Zoo are dead. The breeding program has not been self-sustaining, and it is now struggling as it once again starts from square one.

Without adequate space and conditions, the elephants at the Oregon Zoo only face more suffering in the form of joint and foot disorders, high infant mortality, continued abnormal behaviors such as repetitive swaying and rocking, aggression, and premature death. The Zoo itself will remain vulnerable to increasing public criticism.

As envisioned, the Oregon Zoo's elephant exhibit renovation will fail to provide a high standard of welfare for elephants, which will negatively impact every aspect of its elephant program and cause the Zoo to ultimately fail in its own mission. True success can only be achieved by creating a spacious, natural environment facility that better suits elephants' needs.

FOOTNOTES

[1] Newman, B., *Elephants Have An Achilles' Heel, And It's Their Feet*; Wall Street Journal, November 17, 2006

[2] Poole, J., Oct. 2005. Elephant Exhibit Study: Expert Survey, Los Angeles Chief Administrator's Office.

[3] Sukumar, R., 2003. The Living Elephants Evolutionary Ecology, Behavior and Conservation. Oxford Univ. Press.

[4] Williams, A. C., October 2005. Elephant Exhibit Study: Expert Survey, Los Angeles Chief Administrator's Office.

[5] Comments of In Defense of Animals on USDA Docket No. APHIS-2006-0044, "Captive Elephant Welfare," 2006.

[6] West, G. 2001. The Elephant's Foot. Iowa State University Press, Ames.

[7] In Defense of Animals. Compilation of information from various sources including zoo medical records, AZA elephant stud books and media reports.

[8] Ibid.

[9] Vidya, T.N.C. & Sukumar, R., 2005. Social and Reproductive Behaviour in Elephants. Current Science, Vol. 89, No. 7, 1200-1207.

[10] Clubb, R. & Mason, G., 2002. Report on the Welfare of Captive Elephants in Europe. Oxford: Animal Behaviour Research Group, University of Oxford.

[11] Schmidt, M., 2001. Jumbo Ghosts, The Dangerous Life of Elephants in Zoos. Xlibris Corporation.

[12] Personal communication, Schmidt, M., 2005

[13] Oregon Zoo medical records

[14] Oregon Zoo Veterinary Records

[15] Clubb, R. and Mason, G., cited in Optimal Conditions for Captive Elephants; Kane, L., et al, 2005.

[16] AZA Standards for Elephant Management and Care, 2003

[17] Clubb, R. and Mason, G., 2002, Ibid.

[18] Clubb, R. and Mason, G., 2002, Ibid.