

The Evolution of the Modern Zoo: A Brief History

Humans have been keeping animals in some form of captivity for thousands of years. Whether it was dogs for hunting and companionship, livestock for agriculture and food or even sacred animals seen in Egyptian culture, humans have always had a relationship with animals.

The first “zoos” were merely animal collections by the wealthy called menageries. These menageries were meant to show off their wealth and status. As far back as 2500 BCE, wall carvings in Egypt and Mesopotamia depict expeditions to retrieve exotic animals, including giraffe, elephants, bears, etc. There is even evidence that animal keepers were hired to care for these menageries.²⁹

One of the most famous menageries was the animal collection at the Tower of London. From 1200 to 1835, animals from lions to baboons roamed the tower grounds. There was even a polar bear that was allowed to fish and hunt in the Thames River.³⁰

When the animals were finally removed from the Tower, they were relocated to become the first animals of the London Zoo at Regent’s Park. Shortly before, the Zoological Society of London was founded.³¹

The London Zoo was not the first official zoo, however. From 1685 to 1815, During the Age of Enlightenment in Europe (circa 1685 to 1815), science, reason and logic were promoted as ideals of society and government.³²



While the Tower of London’s original menagerie is long gone, its former animal denizens are commemorated in 13 wire sculptures by artist Kendra Haste. In addition to the above three lions, the collection includes an elephant, a polar bear, and a baboon troupe, Guyla Peter/Creative Commons

²⁹ Clutton-Brock, Juliet. (1987). *A Natural History of Domesticated Mammals*. Cambridge: Cambridge University Press.

³⁰ Vevers, Gwynne. (1976). *London’s Zoo*. London: Bodley Head.

³¹ Vevers, Gwynne. (1976). *London’s Zoo*. London: Bodley Head.

³² Szalay, J. (2016, July 07). What Was the Enlightenment? Retrieved May 6, 2019, from <https://www.livescience.com/55327-the-enlightenment.html>

That scientific focus also included zoology and as a result, the first official zoo, Tiergarten Schönbrunn opened in Vienna in 1752. It is still in existence today. The animal collection was initially reserved for the viewing pleasure of the imperial family and the court, but was made accessible to the public in 1765.³³



*An 1835 print by Charles Hullmandel and George Sharff of the Camel House at the London Zoo.
From the Collection of the Museum of London*

Although the London Zoo was not the first zoo, it became known as the first scientific zoo and the beginning of the zoos we know today. The abbreviated “zoo” from zoological gardens began at the London Zoo as well.³⁴



The zoo was originally intended to be used as a collection for scientific study, but was eventually opened to the public in 1847.³⁵

In 1859, America followed suit with the formation of the Zoological Society of Philadelphia and opened Philadelphia Zoo in 1874; it is considered to be America’s first zoo.³⁶ During the next 100 years, tremendous advancements were made in animal care, animal exhibits and the overall mission of zoological parks that lead them to become modern zoos.³⁷

³³ Lindholm, Josef. (2013). *Zoo History. Zookeeping; An Introduction to Science and Technology*. University of Chicago Press; Chicago.

³⁴ Vevers, Gwynne. (1976). *London's Zoo*. London; Bodley Head

³⁵ Vevers, Gwynne. (1976). *London's Zoo*. London; Bodley Head

³⁶ Kisling, Vernon. (2001). *“Zoological Gardens of the United States” Zoo and Aquarium History*. Boca Raton; CRC Press.

³⁷ Reid, Gordon. (2013). *Today's Zoos. Zookeeping; An Introduction to the Science and Technology*. (pp. 43–51). Chicago; University of Chicago Press.

The Zoo Evolution

In 1899, William Temple Hornaday proclaimed “Every large mammal species on earth is being killed faster than it breeds.”³⁸ Hornaday is considered a pioneer in promoting conservation through zoos.³⁹ He began his career as a taxidermist, displaying his work in naturalistic habitats, and in 1896, became the director of the new New York Zoological Park, now known as the Bronx Zoo.⁴⁰ Hornaday played a pivotal part in bringing the plains bison back from the brink of extinction by breeding them at the New York Zoological Park. The park also bred and released herring gulls, whose eggs were collected for bakeries faster than they could sustain themselves.⁴¹

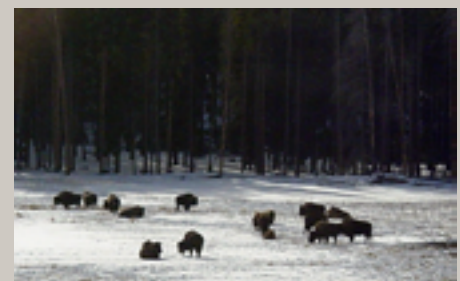
In 1924, the American Association of Zoological Parks and Aquariums (AAZPA) was formed. This organization eventually became the Association of Zoos and Aquariums (AZA).⁴² As more zoos were formed, and an increasing number of people came to visit, the way animals were displayed transformed. Instead of keeping animals in cages with iron bars, the focus shifted to mimicking natural habitats.

American Bison: A Conservation Success Story

At the founding of the United States of America, the continent was home to more than 40 million plains bison. By the early 1900s, there were barely 1,000—both wild and captive.¹ In 1905, officials at the New York Zoological Society (later renamed the Wildlife Conservation Society, which runs the Bronx Zoo as well as three other zoos and an aquarium) got together with other concerned individuals to address the bison’s decimated population. The result was the formation of the American Bison Society (ABS); its goal was to preserve and increase the number of bison in the U.S.²

ABS and the Bronx Zoo began sending bison to the American plains in 1907; the first three reintroductions were at Wind Cave National Park in South Dakota, Wichita Mountains Reserve in Oklahoma and the National Bison Range in Montana.³

The ABS’s efforts were effective and by 1919, the bison population climbed to an estimated 12,590.⁴ Today, there are approximately 500,000 bison in the U.S. Of those, between 20,000 to 25,000 are on conservation lands in national parks (*Image right: bison in Yellowstone National Park*) and wildlife reserves. The vast majority are kept as livestock on private lands.⁵



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1 U.S. Fish & Wildlife Service. (n.d.). Timeline of the American Bison. Retrieved April 29, 2019, from <https://www.fws.gov/bisonrange/timeline.htm>

2 Calvelli, J. (2013, December 26). Marking the 100-year Anniversary of Historic Transfer of Bison from the Bronx Zoo to Wind Cave National Park. Retrieved April 29, 2019, from <https://blog.nationalgeographic.org/2013/11/26/marking-the-100-year-anniversary-of-historic-transfer-of-bison-from-the-bronx-zoo-to-wind-cave-national-park/>

3 Aune, K. (2016, October 27). The President Who Saved the American Bison. Retrieved April 29, 2019, from <https://blogs.scientificamerican.com/guest-blog/the-president-who-saved-the-american-bison/>

4 U.S. Fish & Wildlife Service. (n.d.). Timeline of the American Bison. Retrieved April 29, 2019, from <https://www.fws.gov/bisonrange/timeline.htm>

5 Moran, M. D. (2019, January 18). Bison are back, and that benefits many other species on the Great Plains. Retrieved April 29, 2019, from <https://phys.org/news/2019-01-bison-benefits-species-great-plains.html>

38 Hornaday, William T. (1899). *Taxidermy and Zoological Collecting*. New York: Charles Scribner’s Sons.

39 Bridges, William. (1974). *Gathering of Animals: An Unconventional History of the New York Zoological Society*. New York: Harper and Row.

40 Hornaday, William T. (1925). *A Wild Animal Round-up*. New York: Charles Scribner’s Sons.

41 Lindholm, Josef. (2013) *Zoo History: Zookeeping: An Introduction to the Science and Technology*. Chicago: University of Chicago Press.

42 AZA (n.d.). Species Survival Plan® Programs. Retrieved on April 30, 2019, from <https://www.aza.org/species-survival-plan-programs>

Carl Hagenbeck of Hamburg, Germany, created the first large, open African plains scene, as well as an Arctic “panorama” using moats for part of the enclosure barriers. These enclosures debuted in 1907 and were well-received by visitors.⁴³



Polar bears in the Arctic Panorama at the Hagenbeck Zoo in Hamburg in the early 1910s.

Enthusiasm for this type of exhibit design resulted in moated enclosures in London (1914), Denver (1918), St. Louis (1921) and San Diego (1923).⁴⁴ By the 1960s, it became the preference for zoos around the world.

During this era, researchers further studied animal health, nutrition and natural history of species in zoos.⁴⁵

It was not until the late 1960s and early 1970s, however, that zoos’ focus began shifting toward that of today. Although many zoos had captive breeding programs by this point, the main purpose of a zoo was to display animals. This changed as people became more aware of the environmental issues facing wildlife and the ethics of keeping animals in zoos.⁴⁶

At this time, the idea of zoos engaging in the conservation of animal and plant diversity began to take shape.⁴⁷ In 1981, the AZA developed the Species Survival Plan (SSP) program to manage cooperative captive breeding programs between zoological institutions.⁴⁸



Today, most zoos have a central mission of conservation and education. However, they might combine several roles that encompass animal welfare, research, rehabilitation, and community outreach and support. Animal “exhibits” have transformed to animal habitats that take into account animal welfare and visitor perception. Education displays strive to teach people about wild animals and how to preserve them in their natural habitats. Zoos want visitors to make a connection with wildlife during their visits.⁴⁹

⁴³ Ames, E. (2009). *Carl Hagenbeck’s Empire of Entertainments*. Seattle, WA: University of Washington Press.

⁴⁴ Ames, E. (2009). *Carl Hagenbeck’s Empire of Entertainments*. Seattle, WA: University of Washington Press.

⁴⁵ Ames, E. (2009). *Carl Hagenbeck’s Empire of Entertainments*. Seattle, WA: University of Washington Press.

⁴⁶ AZA (n.d.). Species Survival Plan® Programs. Retrieved on April 30, 2019, from <https://www.aza.org/species-survival-plan-programs>

⁴⁷ Reid, Gordon McGregor. “Today’s Zoos”. *Zookeeping: An Introduction to the Science and Technology*. Chicago: University of Chicago Press.

⁴⁸ AZA (n.d.). Species Survival Plan® Programs. Retrieved on April 30, 2019, from <https://www.aza.org/species-survival-plan-programs>

⁴⁹ Reid, Gordon, (2013). *Today’s Zoos. Zookeeping: An Introduction to the Science and Technology*. (pp. 43–51). Chicago: University of Chicago Press.

Ethics of Zoos

Since the beginning of time, animals have fascinated humans. And as long as there have been zoos, there has been opposition against them. However, early opposition revolved around the treatment of animals in zoos, and not so much the zoos themselves.⁵⁰ The fascination with and study of animal behavior led to training wildlife for public amusement and enlightenment. The training techniques were often cruel and painful and the result was public outcry.⁵¹

In 1900, Great Britain passed the Cruelty to Wild

Animals in Captivity Act, which outlawed abusing captive animals. The act was replaced first in 1911 and then in 1912 with more inclusive versions.⁵²

In the U.S., anti-cruelty efforts began at the state level. New York passed an anti-cruelty law in 1828; the first state to do so. Massachusetts was second in 1835. And in April 1866, the American Society for the Prevention of Cruelty to Animals (ASPCA) was chartered in New York. By 1907, all 45 states had passed some form of anti-cruelty laws (Oklahoma became the 46th state in November of that year).⁵³

Throughout the 20th century, protests arose regarding the condition of captive animals, including those in zoological parks. The lack of knowledge on husbandry of exotic species was extremely evident in early zoos.⁵⁴ A lot of it was trial and error. Mortality during and after transfer of animals was also high, and the average lifespan of a carnivore in early zoo days was only 2 years.⁵⁵ Conditions in a zoo no doubt contributed to this.



Training animals to perform behaviors that were not instinctual to entertain visitors was a common practice at zoos during the first half of the 20th century. Socco, "the Monkey" at the National Zoo in Washington, D.C. in 1917. Harris & Ewing photograph collection/Library of Congress

⁵⁰ Kreger, Michael D. and Mench, Joy A. (1996). *Ethical and Welfare Issues Associated with Keeping Wild Mammals in Captivity. Wild Mammals in Captivity: Principles and Techniques*. Chicago: The University of Chicago Press.

⁵¹ Kreger, Michael D. and Mench, Joy A. (1996). *Ethical and Welfare Issues Associated with Keeping Wild Mammals in Captivity. Wild Mammals in Captivity: Principles and Techniques*. Chicago: The University of Chicago Press.

⁵² Ryder, R.D. (1989) *Animal Revolution*. Cambridge: Basil Blackwell.

⁵³ Beers, D. L. (2006). *For the prevention of cruelty, The history and legacy of animal rights activism in the United States*. Athens, OH: Swallow Press/Ohio Univ. Press.

⁵⁴ Pope, A. (1915). *Animal Life in a Zoo: The Modern Way of Keeping Animals*. Scientific American, 112(17), 390.

⁵⁵ Ritvo, H. (1990). *The Animal Estate*. London: Penguin Books.

It became apparent that changes had to be made in order to maintain the animals in a collection, as well as participate in animal transfers between zoos. As the years passed, more research and attention were given to how to correctly care for animals in a captive setting to keep them alive, healthy and thriving. This along with new laws and legislation, such as the Animal Welfare Act of 1966, promoted the standards of humane care.⁵⁶

Long gone are the days where zoos' mission was simply to display animal for the enjoyment of guests. There is now a deeper mission; zoos aim to educate their visitors about the plight of animals in the wild and how important it is to conserve them and their natural habitats. Seeing these animals in a zoo helps people make connections. Many would never know about the black-footed ferret or golden lion tamarin without seeing them in a zoo. Both are endangered mammals that are now in conservation programs thanks to zoo efforts.⁵⁷



*Then: A typical primate enclosure at the National Zoo in Washington, D.C., in 1920 (top image).
Now: The enclosure for golden lion tamarins at the National Zoo in the 2010s (bottom image).
Top: National Photo Company Collection/Library of Congress
Bottom: Bruno Coelho/Adobe Stock*

Zoos have also expanded knowledge of wildlife research and animal behavior. Animals in zoos can be studied in regards to reproduction, behavior, nutrition, veterinary care, enrichment and training. In the past, research was limited due to the cost restrictions of housing and caring for these animals.

Despite law, legislation and standards of care, zoos are still vulnerable to criticism. More naturalistic habitats are still not the wild and animals are still “on display” to visitors. However, overall, people still have a positive image of zoos. In a survey in 2015, 70 percent of respondents said they have a positive opinion of zoos and aquariums. Just 11 percent have a negative opinion of them, and 20 percent were neutral.⁵⁸

⁵⁶ Beers, D. L. (2006). *For the prevention of cruelty: The history and legacy of animal rights activism in the United States*. Athens, OH: Swallow Press/Ohio Univ. Press.

⁵⁷ Kleiman, D. G. (1989). Reintroduction of Captive Mammals for Conservation. *BioScience*, 39(3), 152-161. doi:10.2307/1311025

⁵⁸ AYTM Market Research (June 12, 2015). Zoos and Aquariums Survey, San Diego Zoo, Sea World Named Favorites. Retrieved on April 15, 2019, from <https://aytm.com/blog/zoos-and-aquariums-survey>

Animal Welfare vs. Animal Rights

Many people use these terms interchangeably but they are actually very different. Animal rights groups maintain the position that animals should never be housed in captive conditions no matter what the rationale. This includes dogs, cats and other animals commonly held as pets. Animal welfare looks at how animals are treated in captivity with the goal of optimizing their treatment and care.⁵⁹ The chart below shows some of the main differences:

| Animal Welfare | Animal Rights |
|--|--|
| Animals can be used for human but with minimal discomfort. | Animals should not be used for human purposes under any condition. |
| Animals used by humans for food, clothing, research, etc., should be treated humanely during their life | Animals should not be used as food, clothing or any other human need. |
| Companion animals, such as dogs and cats, should be properly cared for. | Pet ownership is a form of captivity and should not be exercised. |
| Work animals (such as service dogs) should be humanely cared for. | Animals should not be used by humans for any reasons. |
| Regulations and humane care should be in place for sporting reasons (such as horse racing). | Animals should not be used for sporting reasons |

As you can see, the basic difference between animal rights and animal welfare is that proponents of the latter believe animals can be used to the benefit of humans as long as they are treated humanely. Animal rights supporters believe animals should not be used by humans for any purpose.

⁵⁹ Barber, Joseph C.E and Mellen, Jill D. (2013). *Animal Ethics and Welfare. Zookeeping: An Introduction to the Science and Technology*. Chicago: University of Chicago Press.