



INVESTIGATES 



AUDUBON ZOO

New Orleans, Louisiana

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INTRODUCTION



In March 2025, our team completed our first undercover zoo investigation for one of the top Association of Zoos and Aquariums (AZA)-accredited zoos in the United States: the Audubon Zoo in New Orleans, Louisiana.

During our visit, we assessed the accuracy and efficacy of each major aim stated by the zoo industry, including educating visitors about the animals, providing optimal animal welfare with appropriate physical and mental stimulation, and participating in, or leading, meaningful conservation efforts. It is our intention that with providing data from some of the top AZA-accredited zoos in the U.S., often considered the 'gold standard' of the zoo industry, that we illustrate a more accurate picture and scrutinize what these facilities offer the animal inhabitants and human visitors.

We then explore whether zoos can justify their existence and continue to keep wild animals in captivity based on our findings. We will only analyze zoos that are largely considered to excel in the fields of animal care and facilitating meaningful interactions between animals and human visitors. This initial research acts as a case study and template for assessment of the remaining nine zoos that we will evaluate as part of the larger investigation, and will be updated in due course.

ANIMAL DEMONSTRATIONS



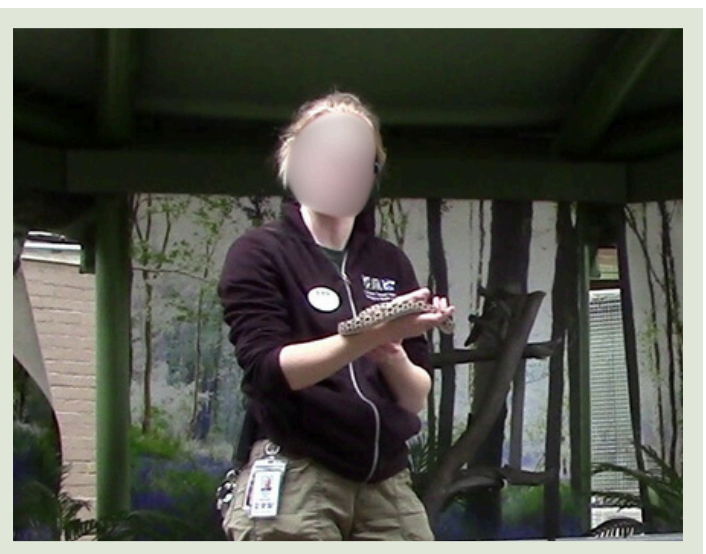
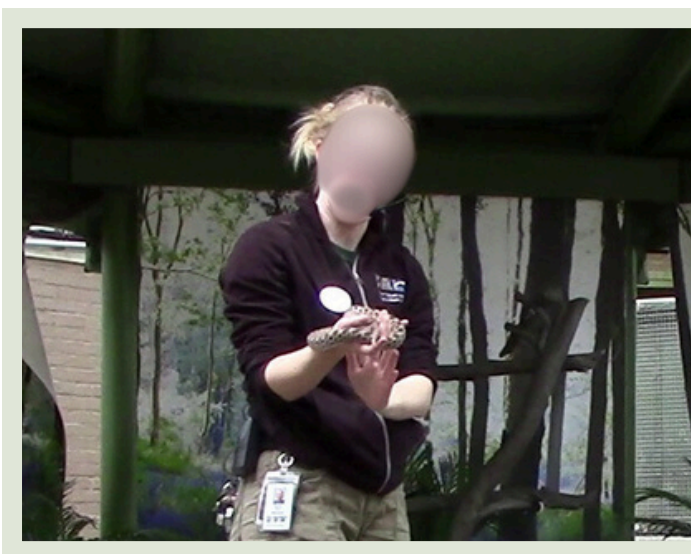
Upon entry, we first attended three live animal demonstrations with opossum, bull-nosed snake, and armadillo “ambassador” animals. The keeper presenting the animals stated that ambassador animals live “behind the scenes,” meaning that they are not available for public view during the time they are not actively being presented. The keeper did not give many details about their permanent living environment other than stating that they “have enough space.” She mentioned that they take the ambassador animals outside to get daily “exercise and vitamin D” which could suggest that the animals do not have access to enough space or direct sunlight in their “behind the scenes” enclosures. In addition to the live animal talks, the keeper said that they also remove some of the ambassador animals from their “behind the scenes” living spaces to be on public display in a designated area of the zoo every day at 10 and 11am.

The display constituted the keeper setting up a two-year-old three-banded armadillo named Julio on the stage in a small three-foot-tall temporary enclosure with clear plastic siding, a small square of turf, and a small rubber ball to play with during the presentation. The keeper provided basic information about Julio, including that three-banded armadillos are native to areas in South America and dwell in habitats that are particularly dry (a climate that differs from Julio’s current home in the very humid, subtropical climate of Louisiana).

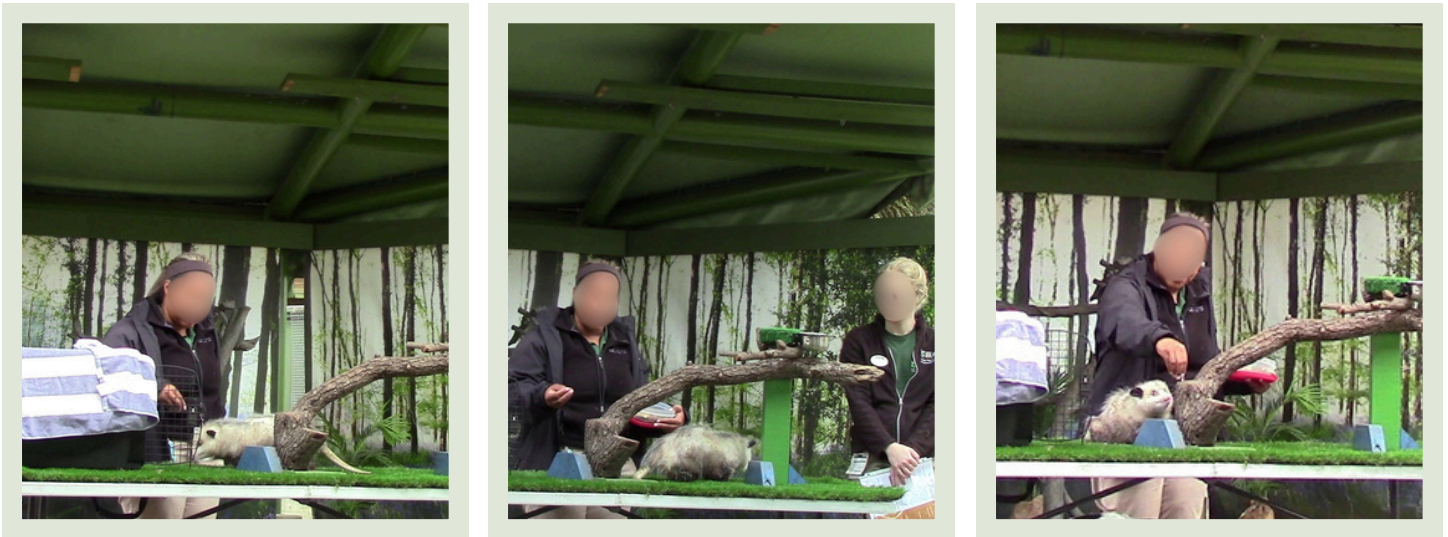


In the wild, armadillos typically move at an unhurried pace of no more than one-third mile per hour. For almost the entire presentation (about ten minutes), however, Julio ran in fast, tight, and repetitive circles around the temporary enclosure. When I asked the keeper about this behavior, she stated that it was a “normal” behavior for armadillos, and that they often perform this behavior when foraging for food in the wild. According to armadillo specialists, however, three-banded armadillos typically only run in circles when they feel threatened by a predator and are trying to escape. Therefore, it seems reasonable to conclude that Julio engaged in that behavior because he felt scared while on display.¹

Unlike Julio, whose natural habitat lies outside of the U.S., we next observed a demonstration with Teller, a western hog-nosed snake native to Louisiana. The keeper held Teller in her hands throughout the presentation and indicated that while hog-nosed snakes are venomous, they are not dangerous to most people, as their bite would likely cause the same amount of damage as a bee sting. The keeper failed to mention anything about the negative impacts associated with the reptile pet trade or the dangers of physically interacting with reptiles in captivity or in the wild. Julio remained on-stage and continued running in circles throughout Teller’s demonstration.



For her demonstration, the keepers placed a three-year-old Virginia opossum named Hazel on a table with her carrier, a strip of turf, and a branch with a small bowl of food positioned at the top. Throughout the presentation, it seemed that Hazel kept trying to go back inside the carrier, but the keeper dissuaded her from doing so each time by holding a treat in front of her face and guiding her away from the carrier door. The keeper told us that the average life expectancy for opossums in captivity is up to four years of age, and in the wild, opossums usually live for just one or two years. The keeper indicated that she did not know why the life expectancy for opossums is so short, nor did she expand on the main threats that opossums face in the wild that may end their lives after just a couple of years.

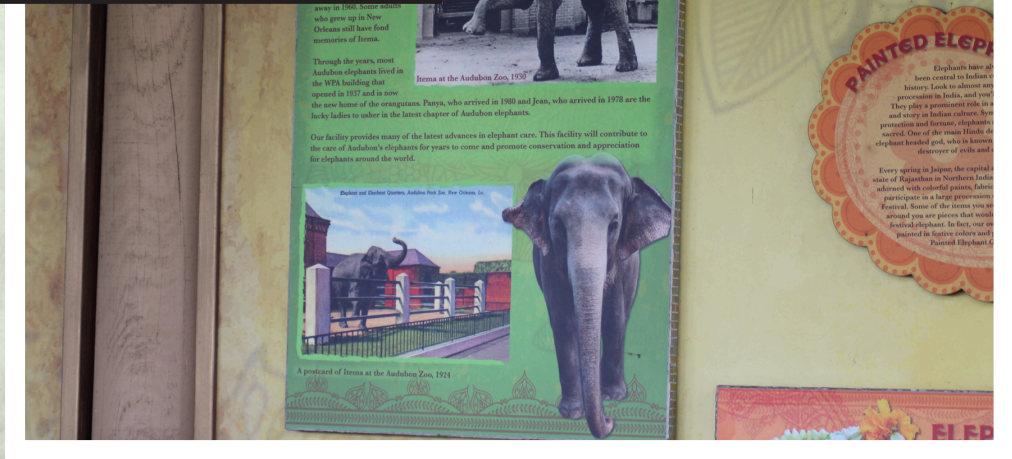


Additionally, this demonstration occurred in the late morning, when opossums would normally be asleep in the wild; as nocturnal animals, they are most active at night and spend most of their days resting. As a result, using Hazel as an ambassador animal directly conflicts with her normal activity schedule and prevents her from engaging in natural behaviors. The keeper also mentioned that she takes Hazel and other ambassador animals off-site to venues like hospitals, which would cause further disruption and stress to the animals, not to mention pose zoonotic disease risks to already vulnerable, sick humans. None of the demonstrations mentioned the animals' conservation statuses, the biggest threats to their populations in the wild, or what zoo visitors can do to help these animals in the wild.

During our visit, we did not get to observe the “Jammin’ with Jaguars” experience, which aims to teach visitors about jaguar care, training, and behavior from zookeepers, get a behind-the-scenes look at the exhibit, and offer the jaguars food on skewers. The Audubon Zoo offers other direct interaction experiences with rhinos, orangutans, black bears, giant tortoises, penguins, and butterflies.²

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SIGNAGE, STAFFING, AND VISITOR ENGAGEMENT



Overall, the signage we observed was basic but informative with some conservation, animal biology, and natural habitat facts, but we simultaneously saw conflicting information between the signage and the social structures, climate, and enclosure design present in the animal exhibits. We also noticed problematic messaging surrounding elephant painting, elephant rides, and working elephants in Asia at the elephant exhibit. Similarly, we observed conflicting messaging about the exotic pet trade of birds on the signs in the indoor aviary. Overall, it generally seemed that the keepers (who were only present at two of all the exhibits observed throughout the zoo), were relatively knowledgeable, but we felt that important welfare concerns were either glossed over or avoided in their conversations with visitors.

For example, despite the sign at the orangutan exhibit stating that adult male orangutans are typically solitary in the wild, the orangutans' group structure at the zoo included six mixed-sex and aged individuals, including one adult male. When we inquired about this group that so clearly differed from normal orangutan social structures in the wild (as stated by the zoo itself), the keeper responded by saying that as part of the AZA Saving Animals From Extinction (SAFE) breeding program, they must house the animals involved in these breeding programs as directed or as the facilities/space at the zoo allow. The keeper then admitted that they had to send the previous male away to a zoo in Denver due to issues with aggression; he had bitten two of the others' fingers off on separate occasions. The keeper then stated that the current adult male is "nice" and has not shown aggression to the other members in the group – yet.



At the elephant exhibit, while the signs provided details about the traditions of elephant painting, elephant riding, and training working elephants in Asia, the signage failed to acknowledge that these practices can be harmful to elephants and instead seemed to celebrate them. To train elephants to tolerate these close encounter experiences with humans, baby elephants are often prematurely separated from their mothers and other herd members, then placed in a small cage or restrained by chains, rendering them unable to move freely. To create a state of terror and dependence on their human handlers, elephants are often subjected to practices like starvation, sleep deprivation, and physical abuse.³



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Yet, none of the zoo visitors would know the truth behind these cruel practices from visiting this elephant exhibit and may even participate in these dangerous elephant experiences that encourage elephant abuse on their own after visiting the zoo. Equally problematic, we also observed an interactive elephant painting game on touch screens where people could design and paint their own virtual elephants, which people seemed to really enjoy; visitors spent far longer engaging in the elephant painting game than with any other sign or independent exhibit activity at the zoo.

We also noticed that one elephant, named Jean, was housed separately from the other two (Jothi and Surapa); when we asked the keeper why an individual of one of the most social species on the planet was by herself, the keeper responded by saying that she “preferred to be by herself,” as her favorite companion had died a couple years earlier, and they were not successful in matching her with the other two elephants at the zoo. She did not mention any plans the zoo had for introducing Jean to any other companions in the future or transporting her to a facility that could offer her a companion. As animals that typically live in intricate, multi-generational herds in the wild, elephants housed in solitude suffer immensely and experience excessive psychological stress.

What we saw at the elephant exhibit confirmed this unfortunate outcome; throughout our observation period (~10 minutes), Jean swayed repetitively almost the entire time. Swaying in elephants and other wild animals in captivity is a known stereotypy: a functionless behavior that animals who have experienced chronic stress, trauma, and/or boredom demonstrate as a means to cope with these negative feelings. Other stereotypies may include pacing, over-grooming, self-injury, and excessive aggression.⁴



Signage at the indoor aviary we visited would likely cause confusion among zoo visitors regarding practices that are known to harm wild animals. For example, one of the signs read “leave birds wild,” and stated that “birds in the wild function as important seed dispersers, pollinators, and predators.” The sign then pointed out that the future of hundreds of bird species worldwide is threatened by illegal trafficking, and that “demand for rare birds as pets supports this illegal industry.” On the very same sign, the text read: “if you are considering a pet bird, ask questions to confirm that it was bred in human care, not taken from the wild,” when in reality, we know that both the captive-bred bird trade and wild-supplied bird trade both increase the demand for keeping rare birds in captivity as pets and further harm wild populations of threatened bird species. We also know that keeping wild birds as pets negatively affects their mental and physical wellbeing, yet none of this information was presented by the zoo.⁵



Lastly, some of the signage in front of animal exhibits directly conflicted with the facts the zoo provided about their habitat and way of living in the wild. At the jaguar exhibit, the sign indicated that the jaguars there “reside in a misty Mayan rainforest known as Jaguar Jungle.” The jaguar exhibit, however, was a far cry from the “misty rainforest” jaguars would experience in the wild; the small enclosure constructed almost entirely out of concrete, stones, and chain-link fencing had barely any natural foliage, vertical climbing space, water features other than a narrow waterfall, or adequate hiding spaces.



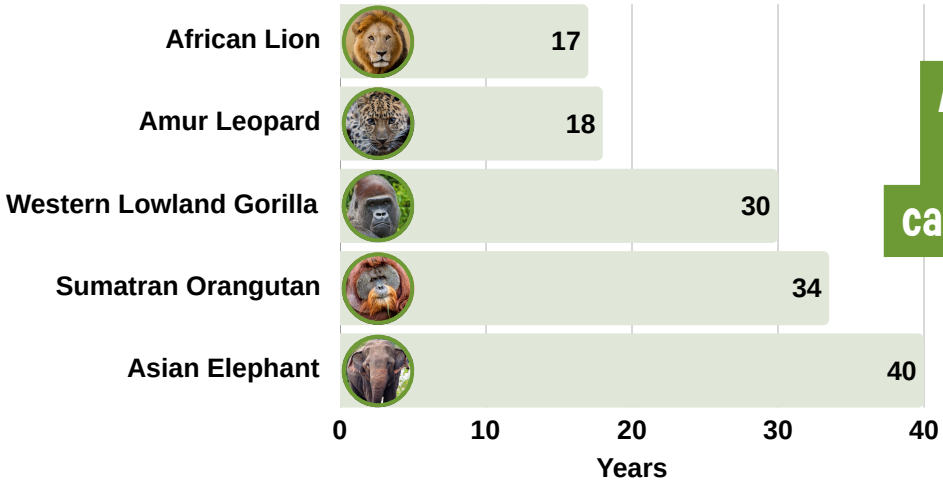
Perhaps most concerning, of the 138 zoo visitors we collected data on over two days, we discovered that visitors spent an average of just one minute and forty-seven seconds at the animal exhibits. We took data on the total visitor time observed at the elephant, leopard, orangutan, lion, and gorilla exhibits. Visitors spent the longest amount of time at the orangutan exhibit, with the average time spent here totaling two minutes and fifty-six seconds per person (range: the shortest amount of time observed was fifty-three seconds, the longest amount of time was four minutes and twenty-six seconds). Visitors spent the shortest amount of time at the elephant exhibit, with an average of one minute and eleven seconds (range: shortest amount of time: twenty seconds; longest amount of time: two minutes and thirty-five seconds).

Average viewing time at the lion exhibit was one minute and twelve seconds (range: 0.13, 2.16); the average viewing time at the leopard exhibit was one minute and thirty-seven seconds (range: .27, 3.14); and the average viewing time at the gorilla exhibit was two minutes (range: 1.1, 3.26). These results beg the question: is it truly worth it to keep wild animals in captivity for humans to view them, on average, for less than two minutes? Especially when visitors may be learning inaccurate or even harmful information about them? Even if the educational offering of zoos had potential to teach positive messages, what could someone possibly learn when there is so little interest in observing animals for more than minutes, or even seconds.



Average reading speeds solidify the fact that most zoo visitors, especially children, cannot read or fully comprehend the information presented on most zoo signs in less than three minutes. For example, the average reading speed for first graders in the U.S. (ages six-seven years old) ranges from 53-111 words per minute, and the average reading speed for college-educated adults ranges from 220-350 words per minute.⁶ Even the most basic signs at the Audubon Zoo had at least 100-150 words, and most exhibits had more than one sign of this length or longer. In the AZA Accreditation Standards & Related Policies manual, the only requirements for signage are as follows: “The exhibit graphics and other interpretive devices must be in good condition and functioning, and be based upon relevant scientific knowledge and reflect relevant interpretive methods.”⁷ Therefore, AZA does not mandate any specific requirements regarding age level targeted education, word count limits, or content specifications to ensure that appropriate education occurs at each animal exhibit. To confirm these claims, our zoo visitor observations revealed that only a small handful of visitors (less than ten of the 138 total) intentionally stopped to read the signage.

Median Lifespan in Captivity



Animals spend decades in zoo captivity so that zoo visitors can look at them for an average of less than two minutes.

ANIMALS OBSERVED AND ENCLOSURE NOTES



At the Audubon Zoo, we observed and recorded behavioral data on several of the most popular animals at the zoo, including elephants, leopards, orangutans, lions, and gorillas for ten-minute periods. The biggest commonalities we observed between the animals were as follows: most of the animals demonstrated stereotypic behaviors; most of the animals were kept in unnatural social groupings; most enclosures forced predator and prey animals to be within close proximity to each other, within a range that the animals could sense the others via sight, smell, or sound; and none of the enclosures provided an adequate amount of space or hiding opportunities from the public or other animals in the same enclosure.

For example, while off-view indoor shelters were provided for all animals except Jean the elephant and remained open during the observation time, we did not see any other areas in which the animals could hide from the view of the public in the outdoor enclosures themselves. This is especially problematic for big cat species like tigers, leopards, and jaguars, who tend to be more elusive and sensitive to loud noises during the daytime when visitors are present, or for animals in enclosures with multiple individuals, where the space of the indoor shelter would limit how many animals could use it at one time. The single-housed elephant could not enter her indoor shelter while we were there, as the keeper had closed the guillotine doors that allowed her access inside.

The lions and gorillas were the only animals that demonstrated somewhat appropriate social groupings which loosely mimicked how they would live in the wild. Even these groupings, however, presented some flaws. For example, lions in the wild typically live in a pride with related females and a few unrelated males. The group at Audubon Zoo, however, had all unrelated individuals, including Arnold (the male) and females Nia, Kali, and Zuri. Gorillas in the wild typically live in stable social groups called troops that can be made up of up to 30 individuals, consisting of one dominant male, several adult females, and their offspring. Young gorillas stay with the group until they reach maturity,



at which point males often leave to form their own groups or become solitary bachelors. The Audubon gorilla troop consisted of one male named Okpara and three females, Tumani, Praline, and Alafia.

The elephants, leopards, and orangutans were all placed in completely unnatural social groups. Although Asian elephants live in multi-generational herds in the wild comprised of six to seven related females and their offspring, Jean lived by herself and the other two lived separately in another part of the enclosure; while leopards typically live alone in the wild, two leopards lived together in the same enclosure; and an adult male orangutan that would typically be solitary in the wild lived with a group of five other orangutans.





Most of the animals we saw were positioned in a proximity that would be stressful for both the predator and prey animals. Directly opposite the lion enclosure, the zoo had placed a large mixed species exhibit with rhinos, pelicans, gazelles, and nyalas. While Asian elephants do not typically have natural predators due to their size, the tiger – one of the only animals that would attack an elephant in the wild – was placed right next to her. The orangutan enclosure was right next to the leopard and sun bear enclosures, and the flamingos were positioned right across from the leopards. The most strikingly unnatural enclosure positioning we observed was the less than twenty feet that separated the tiger enclosure from the Barasingha deer enclosure; just a narrow pedestrian bridge separated these animals, and all of them could see, smell, and hear each other very well.



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We observed several birds in open-air habitats outside, including macaws and flamingos, which indicates that these birds likely had their flight feathers clipped or were subjected to a surgical procedure called pinioning to prevent them from flying away. Pinioning is the amputation of a portion of the wing to permanently prevent them from flying. This mutilation is normally carried out without pain relief. Evidence suggests that pinioning is painful and has long-term physical and psychological effects, with many birds experiencing phantom limb pain long after the procedure occurred. The British Veterinary Zoological Society (BVM) recommends that pinioning be avoided whenever possible due to its negative effects on bird health and welfare.⁸ After all, flying is a natural behavior for most bird species.

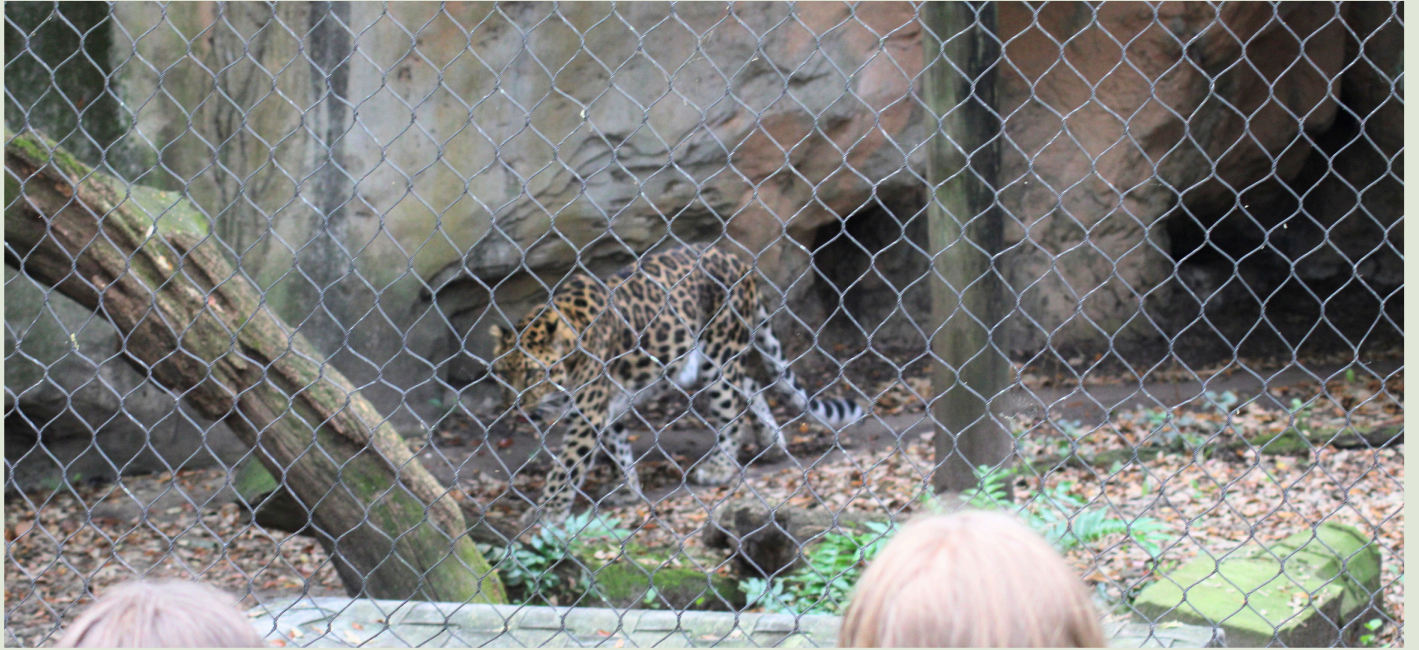


Several of the animals we observed seemed to suffer from zoo psychosis, a form of psychosis that develops in animals held captive in zoos that are unable to fully engage in natural behaviors, including the gorillas, siamang, leopards, and sea lions. The gorillas and siamang seemed particularly lethargic and abnormally unbothered by the excessive noise coming from the young children present at the exhibits. Even when the children shouted, jumped, or waved their hands to get the gorillas' attention, the animals remained sitting, blankly staring, without displaying any noticeable reaction whatsoever. These behavioral responses are a stark contrast to what these primates would do in the wild if they were confronted by a similarly aggressive human disturbance. Typically, when presented by what could be perceived as a threat, most primates display behaviors to discourage unwanted contact. In apes, these displays can include chest-beating, loud vocalizations, and bluff charges. Without seeing a normal behavioral response to aggression at the zoo, visitors may believe that this is normal for these animals in the wild, and mistakenly attempt to interact with them in the same way if they ever see them in the wild, which could result in a dangerous situation.

Kept unnaturally by himself (as siamangs in the wild live in monogamous bonded pairs with their offspring), the siamang remained on the ground of his enclosure for the duration of our viewing, hardly moving or reacting to the visitors at all, even when a group of young boys shouted "monkey!" at him and repeatedly banged a plastic water bottle loudly on a fence. Spending so much time on the ground is also concerning, as siamangs in the wild are arboreal, meaning that they spend most of their time in the trees swinging through the branches to get around. They may occasionally descend to lower levels within the forest canopy, but rarely go below 25 feet.⁹ Thus, the visitors viewing these animals behaving in such unnatural ways ultimately defeats the purpose of "learning" about them.



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While one of the Amur leopards slept on a raised perch for most of the observation time, the other paced in the same circuit on the ground around the enclosure (which had been worn down to a dirt path over time, presumably from repeated pacing) for almost the full ten-minute observation period. For the entire time we observed the sea lions, all three of them swam the same repetitive circuits around their small tank, never breaking this hypnotic cycle for the ten minutes we spent there.

In addition to the unnatural social groupings and inability for many of these animals to engage in species-specific behaviors, the extent of the stereotypic behaviors we saw across such a vast range of animals could also be due to the small, restrictive enclosure sizes at the zoo.

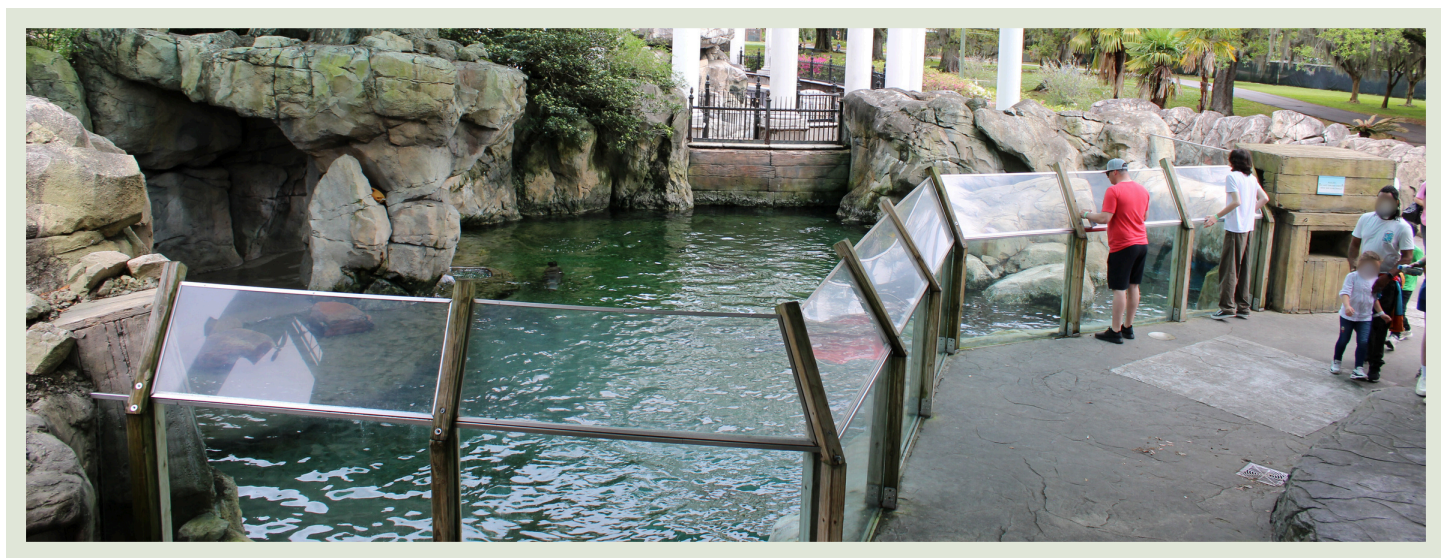
Measurements from Google Earth confirm that every enclosure at the zoo is several orders of magnitude smaller than the space these animals would occupy in the wild. Further, the surface area available to the animals is often even less than the Google Earth measurements, as the usable space in these exhibits is limited by other features in the enclosures, like water pools, shelters, climbing structures, rocks, trees, and barriers (like moats) separating the animals from the public.

For example, the Asian elephant enclosure measured just 0.96 acres, but the water pool, rocks, and tree stumps in the exhibit decreased the space available to her by 1/8 of the total area. In the wild, a female Asian elephants' home range size can encompass up to 80,556 acres, with them often traveling several miles in one day.¹⁰ The orangutan enclosure measured 0.12 acres, with half of the surface area taken up by a large wooden climbing structure in the middle of the exhibit. While the climbing structure provided a good opportunity for these arboreal animals to spend more of their time off the ground, it would have been beneficial for the orangutans to have more climbing affordances available, like cables or real trees. In the wild, female orangutans have home range sizes of up to 370 acres, while males can occupy up to 7,360 acres.¹¹ The tiger enclosure was a tiny island surrounded by a moat of water, measuring just 0.11 acres. In the wild, male tigers have demonstrated home range sizes as large as 74,131 acres, with females occupying up to 17,297 acres.¹² The negative effects of the small size of the enclosure were evident just from looking at the small island of grass; we immediately noticed three worn paths that revealed the pacing circuits the tiger walked every day.



Overall, it seemed that the zoo prioritized dedicating space to human visitors over the animals

The sea lions' tank, shared between the three of them, was just 0.10 acres across the top and approximately ten to fifteen feet deep. In the wild, male California sea lions migrate as far north as Alaska (~1,000 miles), whereas females generally remain within 90 miles of the breeding rookeries (a collection of breeding colonies on the coast).¹³ The gorilla enclosure measured 0.14 acres, with the usable area for the gorillas even smaller, as large rock and wooden platforms took up about half of the enclosure space. Average Westland lowland gorilla home range sizes in the wild typically encompass 1,331 acres.¹⁴ The jaguar enclosure measured 0.06 acres, compared to their average home range size of 8,848 acres,¹⁵ and the African lion enclosure measured 0.28 acres, compared to their vast average home range size of 247,105 acres on the African savannah.^{16,17}



Overall, it seemed that the zoo prioritized dedicating space to human visitors over the animals. For example, ~1\3 of the total zoo area was dedicated to the Capitol One Bank Park and stage. There was also a playground for kids and four places for visitors to eat, as well as multiple gift shops around the facility. We also noticed a picnic area near the reptile house, where a large party of about 100 people were enjoying loud music, food, and games that would be disruptive to the animals close by, especially those sensitive to vibrations and loud noises.

CONCLUSION



The Audubon Zoo visit left us with the following major takeaways: some of the signage was confusing and inaccurate, likely resulting in visitors leaving the zoo with the wrong idea of animal welfare and conservation; the average time spent at the major animal exhibits indicates that visitors do not often spend longer than two minutes looking at or learning about the animals; most of the animals were kept in unnatural social groupings; most enclosures forced predator and prey animals to be within close proximity to each other, within a range that would be stressful; none of the enclosures provided an adequate amount of space or hiding opportunities from the public or other animals in the same enclosure; and many of the animals demonstrated unnatural, stereotypic behaviors, indicating poor animal welfare.

As a result of keeping the animals in such unnatural environments, visitors learn the wrong things about them, like inaccurate information about their habitats, behaviors, social structures, diet, level of danger they may pose to humans, and more. With each animal held captive, zoos teach people that they can confine wild animals and prioritize human entertainment over the animals' species-specific needs; very few of which can be met effectively in captivity. What zoos fail to do is provide evidence that confirms how keeping these animals thousands of miles away from their natural habitats is saving them.

Zoos do not usually specify how many animals they release back into the wild, how many acres of land they save from deforestation, policies they implemented to help reduce the negative impacts of the exotic pet trade, or how they fight the impacts of global climate change because they are simply not doing these things at a level that would result in real change. For example, in the gift shop at the Audubon Zoo, one sign stated that "your purchase helps save animals in the wild," but failed to provide any further information about how, why, or what the purchase helps.



Instead, they breed them to live for generations in perpetual suffering, on constant display. The zoo industry operates on a business model that uses rare and threatened animals to make money (and makes people feel like they are helping the animals by visiting zoos). Thus, in efforts to combat this cruel cycle, we urge you to stop visiting zoos and aquariums to show the zoo industry that the public wants the funding and resources to go towards actually saving animals in the wild; not maintaining them in tiny artificial dioramas that are a bleak, barren box compared to the freedom they would experience in the wild.



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