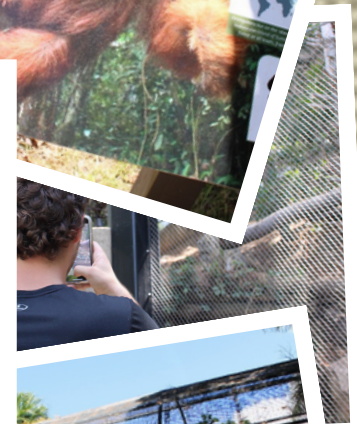
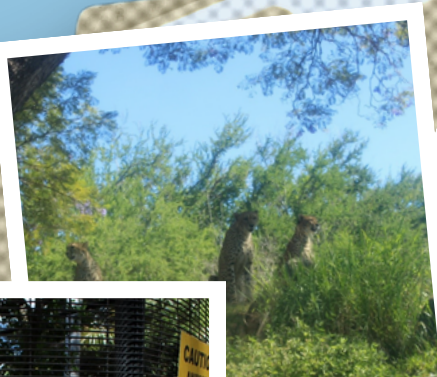




INVESTIGATES 🔍



HONOLULU ZOO

Honolulu, Hawaii

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INTRODUCTION



In September 2025, our team completed an undercover zoo investigation as part of our larger evaluation of the top zoos in the U.S.: the Honolulu Zoo in Waikiki, Hawaii. To ensure that we depict the zoo industry fairly, we only visited Association of Zoos and Aquariums (AZA) certified facilities that are widely considered to excel in the fields of animal care and facilitate meaningful interactions between animals and human visitors.

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 by providing data from the top zoos in the U.S., we illustrate a more accurate picture and scrutinize what these facilities offer the animal inhabitants and human visitors.

We then argue whether zoos can justify their existence and continue to keep wild animals in captivity based on our findings. This research acts as an individual case study and adds to our overall assessment of the remaining zoos, which we will update in due course.

The Present Case Study: Honolulu Zoo

The now 42-acre Honolulu Zoo was built on part of the 300-acre beach-adjacent Queen Kapi'olani Regional Park on Oahu. After the late 1800s, appointed Park Association members developed the land with the help of royal subsidies to display the King's private bird collection and a horse racing track. In the early 1900s, the City of Honolulu took over the park, and the first Park Director, Ben Hollinger, began collecting more "exotic" animals, like monkeys and bears, for the zoo. In the 1930s, the "Kapi'olani Bird Park" grew to include three large aviary complexes. The modern Honolulu Zoo originated in 1984, when the zoo organized all exhibits into three tropical ecological zones: the African Savanna, Asian and American Tropical Forests, and Pacific Islands.¹ The zoo lost its AZA accreditation in 2016 due to a lack of adequate and consistent funding. In 2020, the zoo regained its AZA accreditation.²



ANIMAL DEMONSTRATIONS



Upon entry, we attended the king vulture animal demonstration. While we also planned on viewing the cheetah demonstration, the keeper never showed up, even after we waited fifteen minutes past the scheduled time at the designated location.

The king vulture demonstration showcased two vultures: a male named Joe and a female named Cleo. The keeper fed both vultures an assortment of meat with metal tongs through a barrier during the presentation, using positive reinforcement to encourage them to perch on various surfaces. While Joe had already been at the Honolulu Zoo for a number of years, Cleo arrived one year prior in 2024 based on breeding recommendations from the AZA Saving Animals From Extinction (SAFE) program. Despite king vultures not being Endangered in 2026 (they are listed as Least Concern with a Decreasing population trend by the International Union on the Conservation of Nature- IUCN- Red List)³ and usually mating for life in the wild, they are “managed” in captivity through these breeding programs at zoos. This is also despite the IUCN, the most comprehensive database on the global extinction risk status of all animal, fungi, and plant species in the world, not recommending captive breeding as a necessary conservation action for this species. Instead, all the recommended conservation actions to combat the threats these animals face in their natural habitats would need to occur within their natural range, including protecting resources like water and land, establishing reforestation programs, quantifying population size and trends, and planning species recovery and action plans.⁴

The keeper stated that Joe was the oldest king vulture in human care at 70 years old; about 40 years older than the higher range of the typical lifespan of a king vulture in captivity. In the wild, perhaps due to their elusive nature, king vultures have been documented to live anywhere from fourteen to twenty-five years of age on average.⁵ According to the keeper, due to his age, Joe has some difficulty seeing, hearing, and getting around his enclosure.



She also informed us that Joe no longer had the skin flap over his beak that other king vultures have due to an injury he suffered at a previous facility. When we asked the keeper about whether this physiological change affects him, she stated that she did not know what function the skin flap serves. After conducting some independent research of our own, we discovered that the orange, fleshy skin flap on a king vulture's beak (a caruncle), is believed to play a role in courtship and mate attraction by signaling good health and fitness to potential mates.⁶

For their diet, the keeper stated that they feed the vultures dead chicks, mice, and ground horse meat. In the wild, king vultures prefer to sit high and out of sight in tree canopies or soar high in the air, looking for food. These opportunities were not provided in the vultures' closed-top enclosure. According to the sign outside of the exhibit, king vultures' preferred diet in their native South America is carrion (decaying/dead animals), particularly the monkeys and sloths that live in the canopy of the tropical lowland forests there.

Cleo has laid two eggs since her arrival one year ago, but neither has been fertile (possibly due to Joe's age). When we inquired whether Cleo or Joe would be moved to a different facility if they cannot produce offspring, the keeper stated that may be likely, as it is "very common to pass animals around between zoos in the Species Survival Plan" (SSP). King vultures successfully breeding and reproducing in captivity can be difficult; while vultures can successfully mate and lay eggs if provided with a quiet, secure, and spacious environment to ensure that they feel safe enough to perform their elaborate courtship displays, many zoos face challenges with parents that damage, reject, or even consume their own eggs or newly hatched chicks.^{7,8}



For example, Burgers' Zoo in Arnhem, Netherlands, previously managed the European captive king vulture population program for many years. In some instances, they intervened and hand-reared chicks; even with a pair that had consistently produced fertilized eggs, the male often pecked at the eggs. As a result, hand-reared chicks were permanently housed in incubators equipped with stuffed king vultures and mirrors to ensure that the chicks would experience optimal temperatures during this sensitive life stage and imprint on their own species instead of the human caregivers.⁹ Hand-rearing appears to be a relatively common practice for vulture chicks born at zoos; in 2025, the Bronx Zoo reported using a decades-old method—a vulture puppet—to feed a newborn chick to prevent them from imprinting on human zookeepers. The article mentions that the chick was being hand-raised to “to ensure its successful development as some vulture parents can be neglectful toward their chicks.”¹⁰ This chick was the first king vulture hatched at the Bronx Zoo since the 1990s.

Zoos have also decided to hand-rear vulture chicks when it was not immediately necessary for the bird's survival; at Zoo Atlanta in 2021, for a lappet-faced vulture pair named Amana and Anubis, keepers “removed the egg to an artificial incubator and replaced it on the nest with a ‘dummy’ egg that would allow the vultures to continue to engage in the important behavior of incubation [without incubating their own chick]. The chick hatched 54 days later on April 24, and following 10 days of hand-rearing by the team as a precaution, was reintroduced to its parents.” The zoo stated they made this decision because the first-time parents were “inexperienced.” Prior to this birth, the pair had many unsuccessful breeding attempts; over a period of eight years, they produced 12 infertile eggs.¹¹

Similarly, in 2020, Zoo Atlanta announced their first successful hatch of any vulture species at the zoo: a hooded vulture chick. The zoo did not mention why they decided to hand-rear this chick, but did state that they were “using the strategy of puppet rearing. [They] use[d] a puppet made to look like an adult vulture to feed and interact with the chick while hiding the rest of [their] bodies with a visual block.” The zoo then went on to say that the chick had reached their first big milestone: “The chick was able to move to the inside area of the hooded vulture habitat on the opposite side of their shift door. This allow[ed] the chick to see the adults in the habitat at all times, and vice versa. To be honest, there [hadn’t] been much interaction yet! The adults [were] scared of the brooder keeping the chick warm, and the chick [was] much more interested in its reflection in the mirror than in what [was] happening outside.”¹² Again, we question why the zoo decided to hand-rear this chick without providing a medical explanation and want to reiterate that vultures would not be deprived of such crucial bonding and learning experiences with their parents in the wild.

Zoos have also intentionally stolen vulture eggs to “contribute” to AZA breeding programs. For example, also at Zoo Atlanta, the Curator of Birds explained the process of vulture “fostering” in a blog published in 2023. She stated that “because the hooded vultures [at Zoo Atlanta] are all genetically related, none of them were recommended to breed by the SSP.” When a hooded vulture pair at the Dallas Zoo named Pierre and Trudy laid an egg at the same time as a Zoo Atlanta pair named Tai and Acacia, “Aviculturists at the Dallas Zoo simply removed the single egg from Pierre and Trudy, which simulated it being snatched by a predator, and sent it to Zoo Atlanta to incubate and hatch. Pierre and Trudy, thinking that their first clutch had failed, re-clutched several weeks later. So, while Tai and Acacia are raising Pierre’s and Trudy’s first chick of the season, Pierre and Trudy are raising their second chick of the season – all unbeknownst to them, of course.” Again, Zoo Atlanta decided to artificially incubate, hatch, and hand-rear until the chick was given to their “foster” parents at eight days old. According to the zoo, “hand-rearing ensures the chick is healthy and giving a good feeding response before returning it to the nest.”¹³

Upon further investigation, we discovered that the puppet feeding method does not quite fully replicate king vulture chick feeding in the wild; like other New World vultures, king vultures are unique in how they feed their young. Unlike other birds of prey, who deliver food to their young with their talons, king vultures have a large muscular pouch that allows them to carry food in their gut, which they then regurgitate to feed their young.¹⁴ This feeding method is highly beneficial to the young chick’s health and development; the extremely acidic stomach pH of the parent helps eliminate harmful pathogens/bacteria that live in decaying meat (like salmonella, anthrax, and tuberculosis), the regurgitated food is partially digested, making it easier for the chick to digest, and the regurgitated food contains small bone fragments, which help support healthy calcium levels for the chick.^{15,16} King vulture chicks in the wild typically remain dependent on their parents for the first eight months of their lives and may stay close to them for another two years.¹⁷ While the puppet-feeding technique was also used in the 1980s to release Andean condor chicks back into the wild, the king vulture chick will remain at the Bronx Zoo for the rest of their decades-long life.

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During the demonstration with Joe, we noticed that he engaged in repetitive preening and head-rolling behaviors for much of the presentation, likely a stereotypy. Stereotypies, or abnormal repetitive behaviors that serve no apparent function, can be attributed to various limiting factors present in captivity, including improper diet, social frustration, aggressive tendencies, high stress level, and boredom. King vultures have been observed to demonstrate serious, potentially harmful stereotypies; in one instance, at another facility, a paper from 2022 described a captive king vulture who exhibited such severe self-inflicted injuries that they became infected and exposed underlying bone.¹⁸

While most of king vultures' natural behaviors cannot be replicated or supported in restrictive captive environments, flying remains the most complex and thus denied behavior for vultures at zoos. For example, king vultures in the wild spend hours every day soaring at high altitudes without flapping their wings. By using thermal drafts and air currents, they glide effortlessly across large distances in search of food. Due to their larger body size and heavier weight compared to other vultures, flying at higher altitudes enables king vultures to expend less energy, as flying at greater heights requires less wing flapping.¹⁹ These flying conditions, of course, cannot occur in captivity, and potentially account for one of the reasons Joe exhibited possible welfare-related stereotypies during our visit. Thus, in addition to the chick birthing and raising process, which does not seem easily replicable in unnatural circumstances at zoos due to the accounts outlined above, it seems that flying also falls into that category, with no true artificial replacement that accomplishes the same goal.

SIGNAGE, STAFFING, AND VISITOR ENGAGEMENT



While the signs at the Honolulu Zoo provided adequate information about the animals, their threats in the wild, distribution, and conservation work being done to protect the species, most of them specified that organizations separate from the zoo do this work; not the zoo itself. Although we did find some signs that highlighted partnerships between the Honolulu Zoo, other zoos, and/or conservation organizations that work together to combat habitat loss and encourage repopulation efforts in the wild, many of the signs provided links to direct visitors to the organizations responsible for doing the majority of this important work on the ground, like “worldlandtrust.org,” “birdscarribean.org,” “wwf.org.py,” “guyra.org.py,” and “osaconservation.org.”

For example, even though they are listed as Least Concern by the IUCN Red List (and thus not under the immediate threat of extinction), the sign at the king vulture exhibit stated that “World Land Trust helps to protect king vultures in the wild by protecting their forest habitat.” While providing this detail is more informative than signage at other zoos, it reinforces the fact that most legitimate, productive conservation work is done in situ, or in the animals’ natural habitats; not at zoos that keep and breed animals in captivity. In fact, for most species threatened with extinction in the wild, the IUCN Red List does not list captive breeding as a recommended conservation action. Additionally, according to Benjamin Beck, former associate director of biological programs at the National Zoo in Washington DC, in the last century, “only 16 of 145 reintroduction programs worldwide ever actually restored any animal populations to the wild. Of those, most were carried out by government agencies, not zoos.”²⁰



We also found that the zoo had an appropriate number of cautionary signs; they had detailed signs advising against feeding/harassing the animals and ensuring to respect them, complete with a “zoo hotline” phone number people could call in the case of a disturbance.



Keepers, however, were largely unavailable at this zoo; the only time we saw keepers around the facility was during the animal demonstrations we attended. Therefore, despite having signs that may discourage zoo visitors from entering potentially dangerous prohibited areas or inappropriately interacting with the animals, we saw no one that could enforce the safety directions these signs provided.

Some of the signs at the animal exhibits stated information about the animals that directly contradicted the conditions in which they were kept at the zoo. For example, for particularly wide-ranging birds like the pacific golden plover, who migrates up to 3,000 miles from the Arctic tundra to California, Hawaii, parts of Asia, and Northeast Africa, these birds were kept in an enclosure just roughly 4 square feet by 6 square feet by 5 square feet tall.

One sign indicated that the zoo offered “Twilight Tours,” where visitors can pay extra to visit the zoo after regular closing hours every Saturday year-round. According to their website, Twilight Tours offer visitors the chance to “see the bedtime rituals of some animal residents, while others are just waking up. Areas tour-goers may visit include the African Savanna, Primate Island, and the Reptiles.”²¹ This experience sounds particularly disruptive to the animals, especially if it occurs when these animals would prefer privacy and quiet.

Allowing visitors to enter the zoo after normal business hours is harmful to the animals during their only downtime; increased human presence can increase their overall experience of chronic stress and frustration, potentially weaken their immune systems, and lead to an uptick in illness acquisition and spread as a result.



We saw a single-housed ring-tailed lemur in the aviary section of the zoo, who seemed sick, injured, and/or very old, but there was no signage provided to indicate why they were there. The lemur seemed sickly and struggled to move around the small enclosure (potentially due to discomfort or an injury) and proceeded to drink water for at least one minute while we observed. Excessive water consumption for abnormally long periods in primates could be a major red flag for medical issues like dehydration caused by severe diarrhea, or metabolic disorders like kidney disease or diabetes. We noticed several visitors approach the enclosure and wonder aloud what the lemur was doing there. Seeing an individual from a typically very social species single-housed with no further explanation provided by the zoo may cause confusion among visitors who may wrongly assume that lemurs can live happy, healthy lives in solitude.

When we called the zoo to inquire about the single-housed lemur after our visit, the keeper on the phone told us that they keep two “geriatric” lemurs- a male and a female they referred to as “husband and wife”- in this separate smaller enclosure away from the rest of the lemurs because they are “much older and have health conditions the keepers must closely monitor.” The keeper also mentioned that the small enclosure space is “ideal” for them and they are “perfectly happy there,” because due to their age, they no longer need the “extra space.” In 2024, the Honolulu Zoo Society sponsored a \$175,000 exhibit renovation to update the Primate Islands Habitat, which houses the lar gibbon and ring-tailed lemur group. The refurbished exhibit now has a new viewing platform for the lar gibbon, a bridge connecting two of the islands in the ring-tailed lemur exhibit, new climbing structures and ropework, and updated landscaping and rock work.²² Through our own research, we discovered that, altogether, there are five lemurs at the zoo; a mated pair (the “husband and wife” the keeper referred to) and three offspring.²³ A post on the zoo’s Instagram account²⁴ confirms that the mother of three of the ring-tailed lemurs born at the zoo, Remi, is just eleven years old. Eleven years old is still relatively young for a lemur; the average life expectancy for ring-tailed lemurs in the wild ranges from 15-20 years, and in captivity, lemurs have reached 30 years or older. Thus, we remain skeptical of why these two lemurs, who have not yet reached middle-aged, are being treated like “geriatric” animals and consequently denied the space and social benefits of the larger lemur enclosure.



ANIMALS OBSERVED AND ENCLOSURE NOTES



We observed the elephants, lions, cheetahs, rhinos, and orangutans to take more detailed notes on their social groups, enclosures, and welfare. Both the chimpanzees and gibbons were off exhibit during our visit.

We noticed that many of the animals around the zoo were not visible outside at their exhibits, as they were in indoor spaces off public view from the late morning to the early afternoon for much of the visiting hours, potentially due to the hot temperature and high humidity level on the days we visited.

The orangutan exhibit housed two long-term residents: a male named Rusti and a female named Violet, who have both lived at the zoo for over 20 years. During the two days we spent at the zoo, they were kept separated from each other, with only the opportunity to have minimal physical contact through the enclosure walls. One of the signs at the exhibit explained that they used to be housed together, with complete physical contact, but had to be separated from each other "for their welfare" when Rusti began demonstrating aggressive behavior towards Violet. Despite mentioning on one sign that female orangutans tend to be more social than males in the wild and "gather with other females and offspring of various ages," and on another sign that orangutans are "highly social and come together for feeding or mating in temporary gatherings known as 'parties,'" Violet was housed alone.

Rusti, who had access to the outdoor yard while we were there, sat outside by the guillotine door separating the yard from the other parts of the enclosure during most of our observation sessions over two days. Violet, who had access to a very small outdoor space with a concrete floor and roof overhead and an indoor area out of sight from the public and Rusti, sat right next to Rusti whenever she ventured outside. Both Rusti and Violet sat on the ground near each other for the majority of our observation time, with very few active moments.

While a variety of enrichment was provided in the exhibit, including wooden climbing structures, trees, toys, rope swings, tires, barrels, stools, and firehose, only one of the orangutans can enjoy most of these items and the larger space in the outdoor yard at a time. The indoor section was only large enough for one of the orangutans to take a few strides in either direction, which is not adequate for spending long periods of time. With Rusti and Violet not being able to share the same space, one of them must stay in this extremely restrictive part of the enclosure for far too long; potentially hours to days at a time. Similarly, the individual out in the yard could only hide from the public by entering the small shelter, which does not provide full coverage or privacy. Adding to this likely stressor, predator species were housed near the orangutan enclosure, including an alligator and gharial next door. The average amount of time visitors spent at the orangutan exhibit was one minute and 37 seconds, with the minimum being 20 seconds, and the maximum being three minutes and 59 seconds.



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The sign outside of the elephant exhibit stated that both Asian elephants were captured from the wild in India and transported to the zoo; Mari in 1982 and Vaigai in 1992. The sign then explained that the elephants were given to the Honolulu Zoo as gifts from the “children of India,” and arrived with their mahouts (trainers), who stayed with the elephants to help them “understand their English-speaking zookeepers.”

The Honolulu Zoo has been included on In Defense of Animals’ annual list of the worst zoos for elephants in North America four times (in 2009, 2010, 2011, and 2016). In one incident, Mari and Vaigai were found playing with a used car battery. In 2011, the zoo opposed legislation that would have required each elephant to be provided with at least one acre of space. Even after 12 million dollars’ worth of renovations in 2011, which added slightly more area to the exhibit and increased the total exhibit size by nine times to 1.5 acres (including a 7,260 square foot holding area, two pools, a shade structure, a rock wall, and fake rock structures that serve as feeding stations), the usable space to the elephants within this enclosure remains just about 37,000 square feet, or .85 of an acre.^{25,26}

Between the rocks and small pond in the enclosure, the true usable, walkable area for the elephants may equivocate to about $\frac{3}{4}$ of that space.

The zoo also used bullhooks as a training method (a long tool with a hook on the end used to control elephants through pain and fear of the infliction of pain) until 2016. National zoo legislation in North America permitted the use of “free contact” (no safety barriers between elephant and keeper) and bullhooks until 2023.²⁷ This method of handling elephants relies on coercion rather than cooperation and on the reinforcement of painful or aversive stimuli. Elephants handled using a bullhook are aware of the pain that the implement can inflict and typically move away when they see it. AZA, which had, until 2019, defended the use of the bullhook as an “essential management tool,” has since decided to begin phasing them out. The phase-out stopped the use of bullhooks at all AZA accredited facilities in 2023, with the exception of unspecified emergency situations.²⁸





The Asian elephant enclosure substrate was composed of packed dirt and rocks—hard materials that can cause foot disease and arthritis in elephants; both of which can be extremely painful and even fatal. Although we saw plentiful natural trees and other types of foliage surrounding the elephants' enclosure, giving the illusion to visitors that their space was lush, upon further inspection, none of these plants were within reach of the elephants. The only enrichment we observed included some toys, water features like a small pond, and a barrel; we did not see any hanging food enrichment to promote natural behaviors like foraging anywhere. In the wild, Asian elephants may consume between 330 to 440 pounds of plant matter daily. Meeting these needs requires near-constant foraging, with elephants spending up to 19 hours a day eating.²⁹ Mari and Vaigai do not have anywhere near the resources needed to engage in this natural foraging behavior in this enclosure. Further contributing to their likely stressful and limiting lives, predators were located near the elephants, including the gharial, alligator, and lion exhibits. The average visitor viewing time at the elephant exhibit was just 37 seconds, with the minimum time being 19 seconds and the maximum time being 56 seconds.



All the birds we observed (except for the flamingos) were kept in closed-top enclosures. While keeping the birds in enclosed spaces likely means that none of these birds were pinioned at the Honolulu Zoo (a practice that permanently and painfully prevents birds from flying), their vertical space and thus behaviors become very restricted as a result.



They had several native birds at the Honolulu Zoo, including nenes (Hawaiian geese), Hawaiian hawks, Kōleas (golden plovers), Hawaiian ducks, and the elusive pueo (Hawaiian short-eared owl). The Honolulu Zoo has helped rescue, rehabilitate, and release some of these native Hawaiian birds—one of the most successful cases being the nene, whose population had dipped to around 40 individuals in the mid 1900s, and now has a population of around 2,800 individuals in 2026 with the help of then Zoo Director Paul Breese, who chaired the Nene Restoration Project in 1949.³⁰ While the Honolulu Zoo has made significant strides to improve the conservation status of some native bird species, native Hawaiian birds remain in the distinct minority of the zoo's collection and are typically off exhibit in special, highly secure conservation breeding programs not open to the public. Although we admire the Honolulu Zoo's dedication to preserving endemic bird species, we feel that zoo visitors are not taught about the distinction at the zoo between keeping and breeding animals in captivity permanently for human entertainment versus keeping animals in captivity temporarily with the goal of eventual rehabilitation and release back into the wild.

The playground, park, and picnic areas provided for visitors were larger and more lush with natural foliage than most of the animal enclosures in the zoo, with some spaces being at least three to six times larger than any of the animal enclosures we saw (including animals with exceptionally large home range sizes in the wild, like the tigers and elephants).



The zoo was also right next to a major road; we noticed the loud noise level almost immediately, which is likely stressful for the animals.

The zoo placed two Sumatran tigers—one male and one female—right next to each other in adjacent enclosures in which they shared a fenceline for potential future breeding purposes. One of the tigers paced along the fenceline for several minutes, while the other tiger remained out of view (likely in the indoor space off view from the public). We noticed two to three worn paths in each enclosure, indicating excessive pacing. The tiger exhibits were positioned directly across a small pathway to a children's playground, which seemed like poor placement when considering the persistent, loud noise level children make and its potential negative effects on these elusive predators that like to stay hidden.

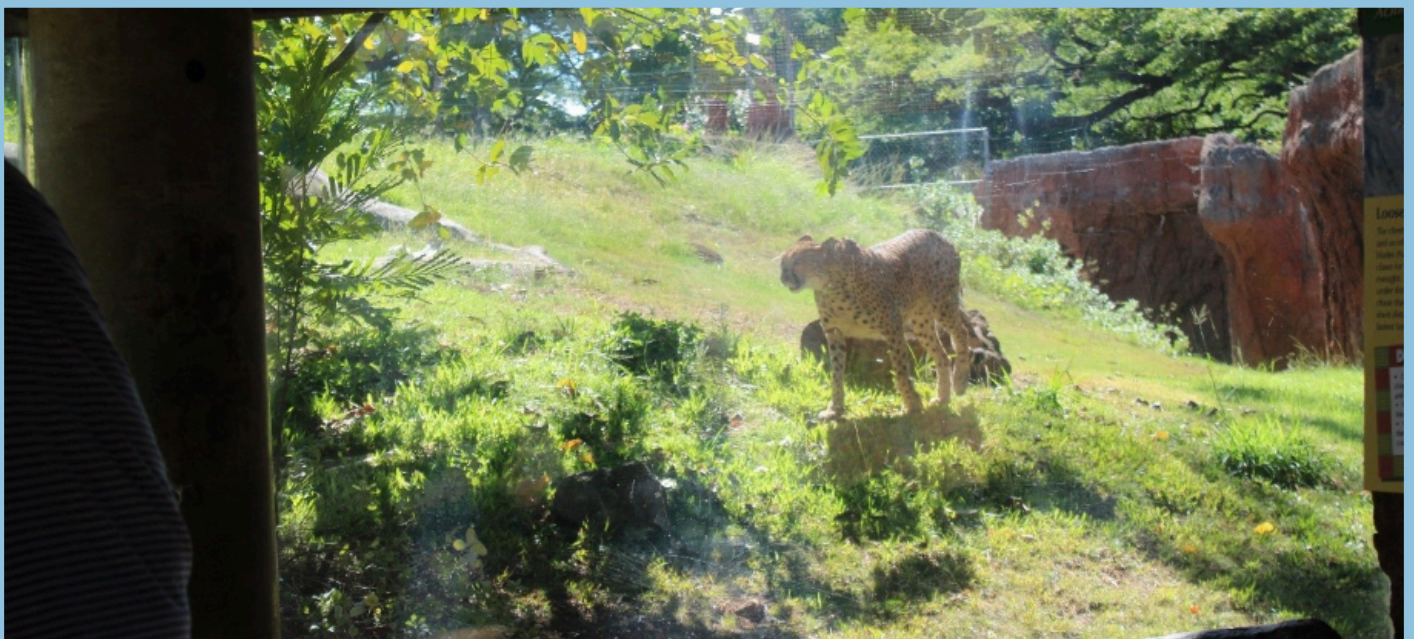


The cheetah enclosure also had deep paths from pacing etched around the enclosure, mostly around the perimeter. Three South African cheetah sisters have resided in this enclosure since they arrived from the Smithsonian Conservation Biology Institute in 2019: Fawkes, Nagini, and Picket. The three cheetahs were provided as part of a partnership with the AZA Species Survival Plan (SSP). According to a city press release from that year, “As part of the SSP, breeding facilities will send the offspring to holding facilities, like the Honolulu Zoo, until a genetically viable match is found. Once found, they will bring two animals together for breeding purposes.”³¹ Despite the breeding plan in place, the cheetahs born from these sisters will never be released into the wild to live freely in their natural habitat.

The only types of enrichment we saw in their enclosure were natural climbing structures like trees and rocks and some toys (like Kongs). While the amount of natural greenery like plants, shrubs, grass, and trees was some of the best we have observed in a zoo enclosure so far, the amount of space available to the cheetahs seemed very small. By our estimate, the enclosure encompassed roughly half an acre.



Although most of the enclosure was positioned on a hill, which offered the cheetahs a high vantage point over other parts of the zoo and good incline opportunity to build muscle, we did not see any other climbing structures or platforms that would offer the cheetahs more places to hide or perch away from others in the group. The animals did not seem to have any hiding places or shelters outside in the yard, so we assumed the only hiding spot was an indoor room away from public view. Prey species were positioned both opposite and adjacent from the cheetah enclosure; the aardvark, zebra, and flamingo enclosures were all close to these predatory cats. The average visitor viewing time for the cheetah exhibit was 52 seconds, with the minimum time being 21 seconds and the maximum time being one minute and 50 seconds.



In the black rhino enclosure, we found one male and female pair: Aria and Kendi. According to the zoo website, they arrived in Honolulu in September 2022 as a breeding pair under the AZA SSP. Just a few months later, they welcomed what the zoo referred to as “a historic milestone:” the birth of ‘Akamu, the first black rhino calf born at the zoo, on April 19, 2023. Although the zoo’s webpage goes on to say that “this achievement underscores our commitment to protecting these critically endangered species and ensuring their survival for future generations,” the zoo will not release ‘Akamu into the wild to contribute to their species survival. ‘Akamu will live the remainder of his life at the zoo.³² Despite the black rhino population plummeting by 96% in 1993, leaving just 2,300 individuals due to poaching and habitat loss, the zoo continues to sentence these fragile individuals to a lifetime of undeserved captivity that will in no way benefit their wild counterparts.

It appeared that the zoo kept the male, Kendi, separated from the others during our visit. In the wild, most black rhino adults are solitary and territorial, except for females with calves or temporary mating pairs. Females can have overlapping ranges and may form loose, non-organized groups. Adult males are highly territorial and defensive of their space, which could lead to dangerous conflict if adults are kept in the same enclosure or allowed physical contact.³³



The exhibit space appeared to be very small; both sections of the enclosures were about $\frac{1}{4}$ of an acre. The usable area available to the animals was just about half of the enclosure, as the moat and termite mounds reduced the walkable area significantly. The substrate was composed of packed dirt and rocks, and the enrichment opportunities were lacking; we saw just a few hanging enrichment objects around the enclosure with leaves and branches stuffed inside, a large toy ball, and a plastic barrel on the ground. All rhinos were pretty inactive during our observation time (potentially due to the heat), laying down next to the fence line that separated them. Predator species were positioned adjacent and opposite to the rhino enclosure; the lions and African dogs were the closest exhibits. The rhino exhibit signage had basic information about their conservation status, threats, and behaviors in the wild. The signs also indicated that rhinos eat a lot of woody plants, but other than what was minimally provided for enrichment, none were in the enclosure. The average amount of time visitors spent viewing the rhinos was just 22 seconds, with the minimum time being 11 seconds and the maximum time being 38 seconds.

The zoo had two African lions at the time of our visit: a male named Enzi and a female named Moxy. We did not see Moxy during our visit, but Enzi laid down in the same spot outside throughout our observation time. In 2021, the Honolulu Zoo's only male lion at that time, Ekundu, died after contracting coronavirus at thirteen years of age. He and Moxy both showed signs of an upper respiratory illness, including coughing, in October of that year. Ekundu, who had been treated for epilepsy for more than five years prior to 2021, continued to get sicker, was no longer eating, and eventually developed severe pneumonia. According to the zoo, the source of the virus remains unclear; staff who cared for the big cats were vaccinated and complied with the city's employee vaccination policy, and all tested negative for COVID-19.³⁴

Numerous animals at zoos across the U.S. were affected by COVID-19-related complications; at the beginning of the pandemic, at least seven big cats (three lions and five tigers) at the Bronx Zoo tested positive for COVID-19. From 2020 to 2023, 170 animals in U.S. zoos were confirmed positive for SARS-CoV-2. These animals represented 13 species in 28 U.S. jurisdictions. Of the affected animals, over 70% suffered symptoms, with over half of them experiencing upper respiratory issues like a cough. The likely source of SARS-CoV-2 in animals was a known infected caretaker in almost half of all cases.³⁵ More recently, in 2024, three snow leopards died of complications related to COVID-19 at the Lincoln Children's Zoo Nebraska, despite efforts by staff to restore their health.³⁶



In the lion enclosure, we saw one raised wooden platform, trees, water features, toys, and a small steel tunnel, but did not notice any type of feeding enrichment inside the exhibit. The substrate was composed of mostly packed dirt with a few grassy areas, with the total outdoor area encompassing approximately half of an acre, although a small pond, rocks, and large branches took up about 1/4 of the usable space. We did not see any outdoor shelters, so we assume the only area to hide from the public is an indoor shelter away from the public view. Several prey species were placed near the lion enclosure, including guinea fowl, African dogs, rhinos, baboons, and meerkats. A lion's roar can be heard up to five miles away; as such, the entire zoo, including all these prey animals and more throughout the zoo, could hear Enzi's roar loud and clear every time. The average amount of time visitors spent at the lion exhibit was one minute and 30 seconds, with the minimum time being 31 seconds and the maximum being three minutes and seven seconds.

We noticed several birds pacing on the ground at the Honolulu Zoo, including the great argus bird, green-naped pheasant-pigeon, Pacific golden plover, and Nicobar pigeon. Despite birds at zoos demonstrating a known variety of stereotypies (abnormal repetitive behaviors) that indicate poor welfare and potentially stressful environmental limitations, like over-preening, pacing, head-bobbing, route-tracing, biting cage bars, repetitive circling, and feather-plucking, the scientific community acknowledges that research on bird welfare is lacking. Furthermore, over the last ten years, the zoo industry has dedicated less than 10% of its overall research to bird-focused studies at zoos and aquariums.³⁷ How can zoos continue to argue that animal welfare remains their top priority for the animals in their collections, when so many categories and species of animals are significantly neglected in their research?

CONSERVATION MESSAGING



More so than most other regions of the U.S., Hawaii advocates for strict conservation, preservation, protection, and respect for its native lands and animals. For example, compared to other U.S. states, Hawaii imposes harsher limits on importing/exporting wildlife and banning the ownership of exotic species, in large part to prevent issues associated with invasive species. As such, one might expect that the Honolulu Zoo puts a similar emphasis on conserving native species. We found that upon our visit, however, these expectations were not met. Although the Honolulu Zoo houses over 1,230 animals, the vast majority are not native to Hawaii; instead, the zoo focuses on tropical species from around the world. While the zoo has been involved in breeding endangered native species like the Hawaiian nene, Kamehameha butterfly, and Hawaiian snails, and contributed to meaningful conservation of these species, its primary exhibits remain dedicated to keeping international animals in captivity.³⁸

The species distribution at the Honolulu Zoo mirrors that of most other AZA-accredited zoos in the U.S. that partner with the SSP program; research shows that these facilities have a taxonomic bias to focus on mammals and a geographic bias for non-U.S. species, many of which are native to African and Central/South American countries.³⁹ In addition to keeping and breeding mostly non-native species, counterintuitively, most zoos in the U.S. also do not place an emphasis on keeping and breeding animals that are threatened with extinction in the wild. Globally, research shows that 78% of all animals in the International Species Information System (ISIS) network (a non-profit organization founded in 1974 that created the world's largest database of wild animals in human care) are not threatened with extinction in the wild at all and, as such, breeding these animals in captivity serves neither potential, nor practical, conservation purposes. In the U.S., only ~10% of all species held in zoos are classified as threatened with extinction by the IUCN.

CONCLUSION



While it seems that the Honolulu Zoo does more meaningful conservation work and wildlife awareness promotion than many other zoos in the U.S., with legitimate rehabilitation and release work that has proven successful for a handful of native Hawaiian species, the bias towards human entertainment over animal welfare remains evident and consistent with that of other facilities. Instead of allocating more space for the animal enclosures to improve individual welfare and encourage the expression of more natural behaviors, especially for the birds held captive there, the Honolulu Zoo chooses to dedicate lush landscaping and larger spaces to the human entertainment spaces instead.

The Honolulu Zoo is not alone in this pattern; overall, zoos put substantially more financial resources into human-related attractions (like playgrounds, event venues, picnic areas, theme parks, eating establishments, etc.) and enclosure renovations than legitimate conservation work in the wild. According to the New York Times, in 2021, "AZA facilities report[ed] spending approximately \$231 million annually on conservation projects. For comparison, in 2018, they spent \$4.9 billion on operations and construction." By our math, that means that zoos spend over 20 times more on their operations and construction than on funding conservation-related projects. Further, despite all AZA institutions including conservation as a priority in their mission statements, conservation makes up less than one fourth of all AZA research.

Our zoo visitor observations data revealed that, across all the animal exhibits we closely observed including the rhinos, elephants, orangutans, cheetahs, and lions, visitors spent an average of just 52 seconds at each exhibit, with the least amount of time being 21 seconds, and the longest amount of time being one minute and 50 seconds. At the rhino and elephant enclosures, no visitors spent longer than one minute at either of these exhibits. From these results, we wonder: how much visitor education can truly occur when most of the visitors spend less than 60 seconds looking at the animals and zoo signage?

For us, it seems that the captivity-related health issues the animals face at the Honolulu Zoo and others (like the spread of contagious zoonotic diseases like COVID-19), species-independent demonstration of stereotypes that could indicate mental and/or physical suffering, and inability of zoo logistics to provide adequate enclosures and social groupings to satisfy species-specific needs provide more than enough reasons to reject the zoo industry. We are long overdue in agreeing that legitimate, lasting, and life-saving conservation happens in the real world; not behind bars. Please join us in refusing to support the zoo and aquarium industry with the hope that, one day, more resources can be funneled into keeping animals where they belong: in the wild.



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