
ORCAS, AND TIGERS, AND PAINTED DOGS, OH MY! THE NEED
FOR TARGETED ZOO SAFETY AND SECURITY REGULATION

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In recent years, news outlets have increasingly reported on zoo animal attacks and escapes, drawing attention to the lack of safety and security regulations governing the animal exhibition industry. Various aspects of zoo operation and exhibit design are regulated by a patchwork of federal laws and regulations, state laws, and industry standards set out by accreditation organizations. Many of these regulations, however, are not targeted at zoo safety and security and therefore do not address all of the risks associated with organizations that must create a safe environment for animals, zoo employees, and the visiting public. This Note explores numerous zoo animal attacks on members of the public and zoo employees that resulted in both human and animal casualties, and it analyzes how these incidents illustrate shortcomings in the current regulatory patchwork governing zoos and the need for targeted zoo safety and security regulation. In light of this analysis, this Note recommends increased regulation of the zoo industry by the Animal and Plant Health Inspection Service by putting specific standards in place to ensure that animals are contained in their enclosures and the visiting public is prevented from entering animal enclosures. This Note also advocates for increased regulation of the zoo industry by the Occupational Safety and Health Administration to protect zoo employees from unsafe conditions and set standard emergency procedures for their safety.

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I. INTRODUCTION

A family visiting Sea World is on their way to Shamu Stadium to see the next show; they stop to view the orcas in their tank being fed fish by trainers. They watch in awe as the enormous whales swim by and disappear to be fed at the surface of the water and then return again for another lap around the pool. Suddenly, they see the whale return to the water dragging a trainer to the depths of the tank, thrashing her violently. They watch in horror as the trainer desperately tries to escape and other trainers frantically come to her rescue. Before they know it, the family is escorted away from the area, left with only a traumatizing memory of the scene and the realization that zoo safety and security is inadequate.

The news has been increasingly flooded with headlines reporting tragedies such as, “SeaWorld Trainer Dies in Killer Whale Attack in Orlando,”¹ “Outrage After Gorilla Killed at Cincinnati Zoo to Save Child,”² and “African Painted

1. *SeaWorld Trainer Dies in Killer Whale Attack in Orlando*, BBC NEWS, <http://news.bbc.co.uk/2/hi/americas/8535618.stm> (last updated Feb. 25, 2010).

2. *Outrage After Gorilla Killed at Cincinnati Zoo to Save Child*, CBS NEWS, <https://www.cbsnews.com/news/outrage-after-gorilla-harambe-killed-at-cincinnati-zoo-to-save-child/> (last updated June 1, 2016).

Dogs Kill 2-Year-Old Who Fell into Pittsburgh Zoo Exhibit.”³ These reports of zoo animal attacks and animal killings have drawn attention to the dangers that captive wild animals pose to zoo employees and the public as well as the insufficiency of security and safety measures at zoos.⁴ Some attacks have ended in a loss of animal life in addition to human life as zoo animals are killed to save members of the public who find their way into animal enclosures.⁵

Many notable zoo animal attacks and escapes have been linked to unsafe zoo procedures and inadequately secured enclosures that either allow the public to get into animal enclosures or animals to escape them.⁶ The root of the problem lies in the lack of federal laws regulating zoo safety and the vagueness of those that do exist, providing zoos with little guidance and much discretion when determining safety procedures and designing animal enclosures.⁷ Moreover, the limited numbers of existing regulations often go unenforced.⁸ It is only when a fatality occurs that inspectors are alerted to the safety and security problems of a particular exhibit at a zoo.⁹ Lack of specific zoo safety and security regulations and failure to enforce existing regulations has resulted in countless fatalities and necessitates increased regulation of zoo enclosure design and safety procedures.¹⁰

Part II of this Note will discuss the patchwork of regulations governing zoos as well as trends and changes in exhibit design that impact zoo safety. Part III will examine representative cases of zoo animal attacks resulting from inadequate exhibit security and safety procedures. Part IV will recommend appropriate regulatory solutions to minimize self-regulation in the zoo industry and enforce safety and security standards to protect the public, zoo workers, and animals.

3. Tary Lune et al., *African Painted Dogs Kill 2-Year-Old Who Fell into Pittsburgh Zoo Exhibit*, PITTSBURGH POST-GAZETTE (Nov. 5, 2012, 4:00 AM), <http://www.post-gazette.com/local/city/2012/11/05/African-painted-dogs-kill-2-year-old-who-fell-into-Pittsburgh-zoo-exhibit/stories/201211050136>.

4. Fiona Ortiz & Karen Freifeld, *Gorilla Death Highlights Vague U.S. Zoo Safety Rules*, THOMPSON REUTERS (May 31, 2016, 7:48 PM), <http://www.reuters.com/article/us-ohio-gorilla-rules-idUSKCN0YN2Y9>.

5. See Mike McPhate, *Gorilla Killed After Child Enters Enclosure at Cincinnati Zoo*, N.Y. TIMES (May 29, 2016), <https://www.nytimes.com/2016/05/30/us/gorilla-killed-after-child-enters-enclosure-at-cincinnati-zoo.html>; Ken Murray, *NYPD Kills Polar Bears at Prospect Park Zoo*, N.Y. DAILY NEWS (May 20, 1987), <http://www.nydailynews.com/news/animal-killed-due-human-intervention-gallery-1.2654874?pmSlide=1.2656509>.

6. See Vic Lee, *Feds Release SF Zoo Tiger Attack Documents*, ABC NEWS (Feb. 12, 2011 at 6:01 PM), <http://abc11.com/archive/7955146/>; Joe Mandak, *DA: Pittsburgh Zoo Removing Deck Where Boy Fell*, TRIB.-DEMOCRAT (Dec. 6, 2012), http://www.tribdem.com/news/da-pittsburgh-zoo-removing-deck-where-boy-fell/article_dccd7349-f4af-54bd-8dc9-adc44814c2e6.html; Shauna Steigerwald, *Report Faults Zoo's Gorilla Barrier in Harambe Case*, USA TODAY, <https://www.usatoday.com/story/news/nation-now/2016/11/17/report-cincy-zoos-gorilla-barrier-wasnt-compliance-but/94045870/> (last updated Nov. 18, 2016).

7. See Ortiz & Freifeld, *supra* note 4.

8. See *id.*

9. See Steigerwald, *supra* note 6.

10. See *infra* Part II.

II. BACKGROUND

Zoos are regulated by a variety of legal codes, but none of them address the safety and security needs of zoos as a whole, making for a fragmented patchwork of laws governing minute aspects of zoo operations.¹¹ In addition to laws and regulations, zoos are also affected by changing trends in zoo design as well as industry standards.¹²

A. Federal Laws and Regulations Governing Zoos

The Animal Welfare Act (“AWA”) regulates zoos, requiring “exhibitors” of animals to be licensed.¹³ The AWA, however, “is focused on the welfare of the animal[s]” not “caging standards for safety” of animals and the public.¹⁴ “Webs of law” apply to different aspects of zoos, “but none of them address standards for enclosures by species.”¹⁵ The United States Department of Agriculture’s (“USDA”) Animal and Plant Health Inspection Service (“APHIS”) requires zoos to “minimize harmful risks to animals and the public during public exhibition by providing sufficient distance or barriers between the animals and the public” to obtain licensing under the AWA.¹⁶ APHIS inspection guidelines are vague, as they require animal treatment and enclosures to be evaluated but do not provide inspectors with a list of measurements or specific criteria for determining whether animal enclosures are sufficient to contain animals and keep visitors from entering them.¹⁷ Exceptions to the overall vagueness of APHIS inspection guidelines are: perimeter fence height requirements, which were passed in 2000,¹⁸ and fence height guidelines for lion and tiger enclosures.¹⁹

In 2010, the Officer of the Inspector General conducted an audit of APHIS evaluating “whether APHIS has controls to safeguard both the animals and mem-

11. Irus Braverman, *States of Exemption: The Legal and Animal Geographies of American Zoos*, 43 ENV'T. & PLAN. 1693, 1694 (2011).

12. *Id.* at 1702.

13. 7 U.S.C. § 2133 (2018).

14. Braverman, *supra* note 11, at 1699.

Registrar Rachél Watkins Rogers of Zoo Miami provides an example of the practical effects of [] fragmentation [in law governing zoos]: “In California a tiger escaped and killed someone in the public. . . . It turned out that this facility had substandard exhibit height, moat depth, and width. How do I explain that this passed the eyes of the inspectors? The Animal Welfare Act is focused on the welfare of the animal. It’s not focused on caging standards for safety. . . . Fish and Wildlife is the safety of the public . . . , but I don’t think that they do that level of detail. . . . Now the tiger incident happened because there’s all these webs of law that apply to different aspects but none of them address standards for enclosures by species” (interview).

Id.

15. *Id.*

16. U.S. DEP’T OF AGRIC., ANIMAL EXHIBITORS FACT SHEET (2012).

17. See *Checklist for Animal Care Inspection Report*, U.S. DEP’T OF AGRIC., ANIMAL PLANT HEALTH INSPECTION SERV., https://www.aphis.usda.gov/animal_welfare/downloads/Inspection_Requirements_Attachments.PDF [hereinafter *Checklist for Animal Care*].

18. 9 C.F.R. § 3.127(d) (2017).

19. See *Lion and Tiger Enclosure Heights and Kick-Ins Inspection*, ANIMAL PLANT HEALTH INSPECTION SERV., https://www.aphis.usda.gov/aphis/ourfocus/animalwelfare/SA_Animal_Welfare_News/CT_Lion_and_Tiger_Enclosure_Heights_and_Kick-ins_Inspection_Guidance (last updated Sept. 29, 2016).

bers of the public who visit exhibitor facilities.” The audit revealed, “[r]egulations require that exhibitors provide either a sufficient distance and/or barrier to keep the public safe, but do not specify what distance or barriers would be considered sufficient[.]” and that “inspectors relied on broadly-worded guidance which they had difficulty interpreting.”²⁰ The audit also revealed that inspectors do not “consistently identify[] safety-related deficiencies during their facility inspections[.]”²¹ and are not aware of dangerous enclosure conditions that “could result in escapes by dangerous animals that would endanger the visiting public.”²²

APHIS regulations do not require zoos “to report animal escapes, even when these involve attacks by dangerous animals.”²³ This lack of transparency was heightened in February of 2017 when APHIS removed inspection records from its website, including those containing violations by zoos.²⁴ The records are subject to the Freedom of Information Act and are available upon request, but such requests can take years to receive approval.²⁵

The safety of zoo workers also falls under federal law, as the Occupational Safety and Health Administration (“OSHA”) is responsible for monitoring worker safety and health conditions.²⁶ Zoos fall under the Occupational Safety and Health Act, requiring employers to “furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees”²⁷ and “comply with occupational safety and health standards promulgated” by the Act.²⁸ Under the Act, employees are required to “comply with occupational safety and health standards and all rules, regulations, and orders.”²⁹ There are, however, no regulations that are specifically directed at zoo employees.³⁰ Nevertheless, “[w]here regulations and laws are not specific to the safety of [] animal keepers working directly with exotic animals, the employer still retains the duty to provide a safe environment[] for the employee[s] and, where hazards of working with animals are recognized, to train employees in safe work practices.”³¹

20. Gil H. Harden, Assistant Inspector Gen. for Audit, Office of Inspector Gen., Controls Over APHIS Licensing of Animal Exhibitors, Audit Report 33601-10-Ch, 1–2 (June 2010), <https://www.usda.gov/oig/web-docs/33601-10-CH.pdf>.

21. *Id.* at 2.

22. *Id.*

23. *Id.*

24. Karin Brulliard, *USDA Abruptly Purges Animal Welfare Information From Its Website*, WASH. POST (Feb. 3, 2017), https://www.washingtonpost.com/news/animalia/wp/2017/02/03/the-usda-abruptly-removes-animal-welfare-information-from-its-website/?utm_term=.ba4f26bcad2a.

25. *Id.*

26. ED HANSEN, *Workplace Safety in Zookeeping: An Introduction to the Science and Technology* 65 (Mark D. Irwin et al. eds., 2013).

27. 29 U.S.C. § 654(a)(1) (2018).

28. *Id.* § 654(a)(2).

29. *Id.* § 654(b).

30. HANSEN, *supra* note 26.

31. *Id.*

B. Zoo Enclosure Design and Compliance with State Laws

In addition to federal standards, zoos must also comply with historic preservation, state, and local building laws.³² Compliance with these laws can impact exhibit design and cause safety hazards because they do not take into account the special needs of zoo facilities.³³ Zoos as they are known today go back as far as the mid-nineteenth century,³⁴ and as a result, buildings in zoos are often subject to historical preservation laws.³⁵ Many zoo buildings are national historic landmarks, which means that their facades must be preserved, making it difficult for zoos to build safe exhibits because their ability to alter those buildings is limited.³⁶

Zoos must also take state building codes into account when constructing animal exhibits.³⁷ These codes, however, do “not directly address the uniqueness of zoo facilities.”³⁸ Although safety is the chief concern of these laws, in a zoo exhibit setting, they can often be just the opposite.³⁹ For example, the Buffalo Zoo’s building code required guardrails in the elephant exhibit. But instead of serving as a safety feature for keepers to hold on to when going down stairs, it became a hazard.⁴⁰ The elephants dislodged the guardrail and swung it around, risking harm to themselves, other animals, zookeepers, and visitors.⁴¹ Another example is when zoos are required to put fire alarm systems into exhibits containing animals that react to loud noises with violence or stampeding, which can endanger zookeepers attempting to calm or evacuate the animals and also visitors in the vicinity.⁴²

C. Industry Standards

Aside from federal and state laws, zoos are also regulated by industry standards set out by zoo accreditation organizations.⁴³ The most prestigious of these organizations is the Association of Zoos and Aquariums (“AZA”),⁴⁴ which inspects accredited members and provides standards for animal care as well as zoo

32. Braverman, *supra* note 11, at 1699.

33. *Id.* at 1699–1702.

34. PAUL A. REES, AN INTRODUCTION TO ZOO BIOLOGY AND MANAGEMENT 36 (1st ed. 2011).

35. Braverman, *supra* note 11, at 1699–1700.

36. *See id.* at 1700; REES, *supra* note 34, at 1024 (“In some cases a zoo may even contain protected buildings . . . which cannot be demolished or significantly changed, or in some cases, must be painted particular colours.”).

37. Braverman, *supra* note 11, at 1700–1701.

38. *Id.* at 1701.

39. *Id.* at 1700–01.

40. *Id.*

41. *Id.*

42. *Id.* at 1701.

43. *Id.* at 1702.

44. ASS’N OF ZOOS AND AQUARIUMS, *Accreditation Standards and Related Policies* (2018), <https://www.speakcdn.com/assets/2332/aza-accreditation-standards.pdf>.

enclosure safety and security.⁴⁵ The AZA is “the gold standard for zoos”⁴⁶ and has created an extensive regime of minimum standards for “the physical facilities at [] zoo[s], the safety and security of zoo animals, staff, and the public.”⁴⁷ Those standards, however, are not law, and therefore, following them to receive accreditation is completely voluntary.⁴⁸ “[O]f 2,600 facilities that publicly exhibit animals, the AZA accredits and certifies only 223 zoos and aquariums.”⁴⁹

Industry standards set out by the AZA are much higher than those set by federal law.⁵⁰ The AZA has a variety of benefits incentivizing zoos to obtain accreditation such as gaining public trust by providing “a publicly recognized badge signifying excellence in, and commitment to, such things as animal management and welfare, safety, conservation and education.”⁵¹ AZA members also have increased “eligibility for funding and grants” and exemption “from certain government requirements” among numerous other benefits.⁵²

Zoos that either lose or are unable to obtain accreditation from the AZA tend to join the Zoological Association of America (“ZAA”),⁵³ which is another zoo accreditation organization that “promote[s] responsible ownership, management, conservation, and propagation of animals in both private and public facilities through professional standards in husbandry, animal care, safety and ethics.”⁵⁴ The ZAA is not as highly regarded as the AZA,⁵⁵ however, the ZAA’s standards offer more specific safety and enclosure design guidelines than those

45. *See About Us*, ASS’N OF ZOOS & AQUARIUMS, <https://www.aza.org/about-us> (last visited Jan. 5, 2019) (“AZA is the independent accrediting organization for the best zoos and aquariums in America and the world, assuring the public that when they visit an AZA-accredited facility, it meets the highest standards. Less than 10 percent of the 2,800 wildlife exhibitors licensed by the United States Department of Agriculture under the Animal Welfare Act meet the more comprehensive standards of AZA accreditation.”); *see also About ZAA*, ZOOLOGICAL ASS’N OF AM., <http://zaa.org/about-zaa> (last visited Jan. 5, 2019) (“As part of its core mission, ZAA accredits professional zoological facilities. ZAA accreditation is predicated on promoting the highest standards of animal welfare, as well as public and staff safety. Our accreditation standards meet or exceed all accepted industry standards and federal requirements.”).

46. *What’s the Difference Between the AZA & ZAA?*, BIG CAT RESCUE (Apr. 18, 2016), <https://bigcatrescue.org/aza-vs-zaa/>.

47. Braverman, *supra* note 11, at 1703.

48. *See id.*

49. *Id.* (“[T]he voluntary nature of this industry has meant that the AZA has been much less effective in enforcing these standards on its member institutions . . .”).

50. *See supra* note 44–47 and accompanying text.

51. *Benefits of Accreditation*, ASS’N OF ZOOS & AQUARIUMS, <https://www.aza.org/benefits-of-accreditation> (last visited Jan. 5, 2019).

52. *Id.*

53. *See* ASS’N OF ZOOS AND AQUARIUMS, *supra* note 44; Peter J. Brewer, Letter to the Editor, *The Zoological Association of America Is Committed to Animal Welfare and Public Safety*, PITTSBURG-POST GAZETTE (Aug. 26, 2015), <http://www.post-gazette.com/opinion/letters/2015/08/27/The-Zoological-Association-of-America-is-committed-to-animal-welfare-and-public-safety/stories/201508270057>; *see also* ZOOLOGICAL ASS’N OF AM., ANIMAL CARE & ENCLOSURE STANDARDS AND RELATED POLICIES (2016) [hereinafter ZOOLOGICAL ASS’N OF AM., ANIMAL CARE].

54. *History of ZAA*, ZOOLOGICAL ASS’N OF AM., <http://www.zaa.org/about-zaa/history-of-zaa> (last visited Jan. 5, 2019).

55. Rachel Garner, *How to Understand Zoo Accreditation*, WHY ANIMALS DO THE THING (July 4, 2016), <https://www.whyanimalsdothething.com/posts/howtounderstandzoos-accreditation>.

provided by the AZA.⁵⁶ “[T]he ZAA standards . . . sort[] all animals into three ‘classes’ of wildlife according to their potential lethality, and these classes dictate everything from the minimum perimeter containment a facility housing them must have to the amount of contact staff and guests are allowed to have with the animals,” whereas the AZA’s standards only offer “general guidelines with the exception of specific species.”⁵⁷ Despite these detailed standards, the ZAA has been criticized for accrediting members that allow human contact with dangerous animals like big cats.⁵⁸ ZAA membership provides “[l]egislative updates affecting the industry,” unlike AZA membership which provides members with exemptions from regulations.⁵⁹

Notably, the vast majority of incidents discussed in this Note occurred at zoos accredited by the AZA. This Note discusses eleven significant zoo animal attacks, and of those eleven attacks, nine of them occurred at AZA accredited zoos.⁶⁰ One attack occurred at a zoo that is currently accredited by the ZAA, but was accredited by the AZA at the time of the incident discussed here.⁶¹ Another attack occurred at a zoo lacking accreditation from any organization.⁶² The fact that almost all of these incidents occurred at AZA accredited zoos means that they occurred despite evaluation according to the AZA’s standards⁶³ and with access to exemptions from regulations provided by AZA accreditation.⁶⁴

D. Evolution of Zoo Exhibit Design

Zoo exhibit designs have changed significantly over time as new technologies and priorities emerged.⁶⁵ “Most zoos have evolved over a long period of time. Consequently, the design has developed piecemeal over many years”⁶⁶ Zoos as they are known today began in the mid-nineteenth century; during that time, animal enclosure design focused on elaborate architectural buildings housing barred enclosures.⁶⁷ By the early twentieth century, exhibit designs began to focus less on architecture and more on imitating nature by utilizing artificial rock

56. *Id.*

57. *Id.*; see ZOOLOGICAL ASS’N OF AM., ANIMAL CARE *supra* note 53; see also ASS’N OF ZOOS AND AQUARIUMS, *supra* note 44.

58. See *What’s the Difference Between the AZA & ZAA?*, *supra* note 46.

59. *Accreditation*, ZOOLOGICAL ASS’N OF AMERICA, <http://zaa.org/accreditation> (last visited Jan. 5, 2019); *Benefits of Accreditation*, *supra* note 51.

60. See *Currently Accredited Zoos and Aquariums*, ASS’N OF ZOOS & AQUARIUMS, <https://www.aza.org/current-accreditation-list#P> (last visited Jan. 5, 2019) [hereinafter *Current AZA Members*]; see also *infra* Part II.

61. See *Accredited Facilities*, ZOOLOGICAL ASS’N OF AMERICA, <http://zaa.org/accreditation/accredited-facilities> (last visited Jan. 5, 2019); see *infra* Part II.

62. See *infra* Part II.

63. ASS’N OF ZOOS AND AQUARIUMS, *supra* note 44, at 4.

64. *Benefits of Accreditation*, *supra* note 51.

65. See REES, *supra* note 34, at 104.

66. *Id.* at 33, 102.

67. David Hancocks, *The History and Principles of Zoo Exhibition*, in *WILD MAMMAS IN CAPTIVITY: PRINCIPLES AND TECHNIQUES FOR ZOO MANAGEMENT* 121, 124 (Devra G. Kleiman et al. eds., 2d ed. 2010).

formations, grottoes, and islands.⁶⁸ These enclosures no longer had bars, but instead were surrounded by moats that blended into the scenery.⁶⁹ Carl Hagenbeck, who opened the first barless zoo in 1907, created this technique of using hidden moats.⁷⁰

Hagenbeck's work eventually gave way to landscape immersion techniques in exhibit design, which developed during the 1970s.⁷¹ The first exhibit to adopt landscape immersion was the gorilla exhibit at the Woodland Park Zoo in Seattle, Washington, which opened in 1978.⁷² As a result of landscape immersion, "[l]arge dangerous animals that were kept behind unnecessarily strong iron bars—often with visitors looking down on them—are now exhibited behind chain-link fencing and glass windows."⁷³

Because of their long history, "[m]any zoos contain old exhibits that could benefit from renovation."⁷⁴ Often, "exhibits are not designed from scratch but involve the reuse of old facilities designed for different species. Inevitably, the new design is a compromise between the requirements of the original and the current occupants."⁷⁵ In fact, "[m]any zoos have old low-walled enclosures that have been reused to house species for which they were not originally intended."⁷⁶ Additionally, improved animal nutrition and fitness in zoos has allowed animals to have greater physical capabilities, and as a result zoos are discovering that "enclosure specifications that were previously considered adequate are no longer so,"⁷⁷ as "[t]here have been a number of recent escapes in US zoos from exhibits that have not previously been breached."⁷⁸

Architects design modern zoo exhibits,⁷⁹ and their chief concern is immersion of zoo visitors into environments that are so naturalistic that they cannot perceive where the exhibit ends and the created zoo features begin.⁸⁰ Many zoo architects frown upon visibility of unnatural features, such as a fence or stainless steel food pans, and aim to shield from view any surrounding scenery that does not further immersion into the habitat.⁸¹ They must, however, also include elements that are not in nature for safety and sanitation purposes, "such as moats, glass windows, air pipes, and exit signs."⁸² Architects also focus on the visibility

68. *Id.* at 125.

69. Josef Lindholm III, *Zoo History*, in *ZOOKEEPING: AN INTRODUCTION TO THE SCIENCE AND TECHNOLOGY* 31, 37 (Mark D. Irwin et al. eds., 2013).

70. *Id.*

71. See REES, *supra* note 34, at 110.

72. *Id.*

73. *Id.*

74. *Id.* at 119.

75. *Id.* at 104.

76. *Id.* at 123.

77. *Id.* at 134.

78. *Id.*

79. Irus Braverman, *Looking at Zoos*, 25 *CULTURAL STUD.* 809, 835–36 (2011).

80. *Id.* at 816–17.

81. *Id.* at 817.

82. *Id.* at 819.

of the animals to visitors using barriers such as glass windows and “Vanishing Coil Mesh,” which appear to “become invisible as one looks through them.”⁸³

Modern zoo exhibit barriers come in a variety of forms such as vertical chain-link fences made of steel wire, steel bars, high and low walls, as well as pits, moats, windows, electric fences, and ha-has or concealed barriers, which consist of a section of ground that slopes down from the general ground level towards a sunken wall near the visitor barrier of an enclosure.⁸⁴ There are also visitor barriers in front of exhibits such as concrete walls, rope fences, wooden guardrails, low hedges, chains, and chain link fences.⁸⁵ Not all barriers are equally effective in preventing visitors from entering animal enclosures or preventing animals from escaping.⁸⁶ Barriers are only one of many aspects of zoo enclosure design that contribute to safety. Exhibit layouts, partitions within and behind exhibits, as well as locking systems and other safety measures are also imperative aspects of exhibit design.

III. ANALYSIS

Zoo facilities are unique because they must accommodate the animals they house, while also providing safety for employees and the visiting public.⁸⁷ When zoo facilities are not built to fulfill these functions, visitor, employee, and animal fatalities can result.⁸⁸

A. Public Safety Concerns

A number of animal attacks and escapes followed by litigation have revealed the inadequacy of security and safety conditions at zoos that have gone unchecked due to lack of regulation.⁸⁹ Many animal attacks at zoos occur when visitors, such as small children, fall into enclosures or enter enclosures deliberately.⁹⁰ Adequate perimeter barriers are also necessary to prevent animals from escaping and endangering the public.⁹¹ As such, it is imperative that perimeter barriers be constructed to prevent visitors from falling into animal enclosures, deter visitors from entering them intentionally, contain animals within enclosures, and minimize contact with the public.⁹²

83. *Id.* at 824–25.

84. REES, *supra* note 34, at 120–27.

85. *Id.* at 131.

86. *Cf.* Euan McKirdy & Elliott C. McLaughlin, *Safety by Design: How Zoo Enclosures Are Evolving*, CNN (June 1, 2016, 11:07 AM), <https://www.cnn.com/2016/06/01/health/zoo-enclosure-standards-gorilla/index.html> (“If space allows, moats—like at the gorilla enclosure in Cincinnati—are used to keep a safe distance between the animals and visitors and give the animals a more ‘natural’ environment. If space is more limited, heavy mesh or glass enclosures can give a similar experience.”).

87. Braverman, *supra* note 11, at 1703.

88. *See infra* Part II.

89. *See* Ortiz & Freifeld, *supra* note 4.

90. *See infra* Subsections II.A.1–2.

91. *See infra* Subsection II.A.3.

92. REES, *supra* note 34, at 131.

1. *Painted Dog Nightmare*

A representative case of unsafe exhibit design occurred at the Pittsburg Zoo, which in November of 2012 was accredited by the AZA and today is an accredited member of the ZAA.⁹³ In November of 2012, two-year old Maddox Derkosh, fell into the painted dog exhibit and was mauled to death by a pack of painted dogs. The boy's parents filed a negligence suit against the zoo⁹⁴ "arguing that the park was aware that railings and other safety measures were insufficient to prevent visitors from falling into a pen of African wild dogs."⁹⁵ In their complaint they cited testimony from a zoo employee who asserted that "parents would routinely lift their children up to see through the open and inadequately protected railing of the viewing window in the African wild dog exhibit."⁹⁶ The employee claimed that he voiced concern to his supervisor that a child would fall over the railing, but his concerns were disregarded.⁹⁷ Derkosh's parents alleged that prior to the incident, "the [z]oo defendants had no functioning tranquilizer darts"⁹⁸ to use in emergencies, the zoo was negligent in failing to construct a safe exhibit that would prevent the public from falling into the enclosure, and the zoo failed to have adequate emergency procedures in place.⁹⁹ The complaint alleged that the enclosure violated "applicable state, federal, and local regulations and codes."¹⁰⁰ These laws and regulations, however, do not provide specific guidelines for enclosure designs, but simply require that the public be kept out of contact with exhibited animals.¹⁰¹

The Derkosh's claim demonstrates how unsafe conditions in zoo exhibits go unregulated because inspectors and zoos are often unaware that an exhibit feature is inadequate until an incident that puts a visitor in contact with an animal occurs, since there are no specific guidelines to alert them to inadequacies prior to incidents in the first place.¹⁰² The Derkosh's case settled,¹⁰³ and the zoo later removed the observation deck from which the boy fell.¹⁰⁴ There was no ruling in the case, but the zoo's removal of the observation deck could suggest that it was inadequate to ensure public safety.¹⁰⁵

In its reply brief filed on August 2, 2013, the Pittsburg Zoo asserted that all of the cases cited by the plaintiffs were "misplaced" because they did not involve

93. See *Accredited Facilities*, ZOOLOGICAL ASS'N OF AM., *supra* note 61.

94. Kelly Knaub, *Pittsburgh Zoo Reaches Settlement with Mauled Boy's Family*, LAW360 (June 2, 2014, 5:27 PM), <https://www.law360.com/articles/543562/pittsburgh-zoo-reaches-settlement-with-mauled-boy-s-family>.

95. *Id.*

96. Complaint at 4, *Derkosh v. Pittsburgh Zoo & PPG Aquarium*, No. GD-13-009348 (Pa. Ct. Com. Pl. May 23, 2013), 2013 WL 2256211.

97. *Id.* at 5.

98. *Id.*

99. *Id.* at 14–29.

100. *Id.* at 27.

101. See *supra* notes 9–43 and accompanying text.

102. *Cf. supra* Part I.

103. Knaub, *supra* note 94.

104. Mandak, *supra* note 6.

105. See *id.*

zoos or wild animals.¹⁰⁶ The zoo's assertion was correct. Very little case law exists involving zoos and wild animals, giving parties and judges no choice but to look to less applicable case law.¹⁰⁷ This is because many cases against zoos settle, and therefore, do not generate precedent, making standards for zoos even more illusive.¹⁰⁸

2. *Child Falls into Cheetah Exhibit Followed by Parents*

In 2015, a boy fell into the cheetah exhibit at the Cleveland Metropark Zoo in Ohio, an accredited member of the AZA,¹⁰⁹ and his parents jumped into the exhibit to retrieve him.¹¹⁰ The child's father helped his son and wife climb out of the enclosure, and then the other visitors pulled him out of the enclosure.¹¹¹ Luckily the cheetahs did not interact with the child or his parents, however, the incident could have been deadly.¹¹² Some witnesses reported that the child's mother dangled him over the enclosure, and the zoo filed child endangerment charges against the boy's mother.¹¹³ The zoo altered the enclosure's observation deck to prevent future incidents by moving the wall back two feet and adding eight-foot glass barriers to the exhibit to increase visibility and safety for visitors.¹¹⁴ This incident exemplifies the dangers of inadequate enclosure designs that allow visitors to get into enclosures, as in this case when not only did a child fall into an exhibit containing dangerous animals, but the boy's parents were also able to enter the exhibit deliberately. Additionally, the zoo's charges against the boy's mother highlight another problem arising from zoo accidents involving children—as zoos often file charges against a child's parents,¹¹⁵ deflecting responsibility for the incident. Although the parents in these situations are partially at

106. Defendants' Reply Brief in Support of Preliminary Objections to Plaintiffs' Complaint at 1–3, *Derkosh v. Pittsburgh Zoo & PPG Aquarium*, No. GD-13-009348 (Pa. Ct. Com. Pl. Aug. 2, 2013).

107. *Id.*

108. See *Dallas Reaches Settlement in 2004 Gorilla Attack at Zoo*, ASSOCIATED PRESS (June 13, 2009), <http://www.foxnews.com/story/2009/06/13/dallas-reaches-settlement-in-2004-gorilla-attack-at-zoo.html>; Knaub, *supra* note 94; *SF Zoo Tiger Mauling Case Ends with Huge Settlement*, NBC NEWS (July 13, 2009, 8:50 PM), <https://www.nbcwashington.com/news/archive/SF-Zoo-Tiger-Mauling-Case-Ends-With-Huge-Settlement.html>.

109. See Current AZA Members, *supra* note 60.

110. *Toddler Falls into Cheetah Exhibit at Cleveland Metroparks Zoo*, NBC NEWS (Apr. 12, 2015, 5:32 AM), <https://www.nbcnews.com/news/us-news/toddler-falls-cheetah-exhibit-cleveland-metroparks-zoo-n340041>.

111. *Boy Who Fell into Cheetah Exhibit Was Dangled over Railing, Zoo Says*, ABC NEWS (Apr. 13, 2015), <http://abcnews.go.com/US/video/cleveland-zoo-cheetah-exhibit-accident-30276024> [hereinafter *Boy Who Fell into Cheetah Exhibit*].

112. *Id.*

113. *Id.*

114. News 5 Cleveland, *Changes Made Following 2015 Cleveland Zoo Incident*, YOUTUBE (May 31, 2016), <https://www.youtube.com/watch?v=tPYzGDBsV-w>.

115. See Alyssa Newcomb, *Pittsburgh Zoo Blames Mother in Mauling Death of Toddler*, ABC NEWS (Sept. 12, 2013), <http://abcnews.go.com/US/pittsburgh-zoo-blames-mother-mauling-death-toddler/story?id=20235482>; *Mom Charged in Cheetah Zoo Incident Is Childcare Worker*, USA TODAY (Apr. 13, 2015, 4:47 PM), <https://www.usatoday.com/story/news/nation/2015/04/13/child-in-cheetah-exhibit-charges/25706989/>.

fault, the accident would have been highly unlikely to occur had proper barriers been in place.

3. *Dallas Gorilla Rampage*

In 2004, a 350-pound gorilla named Jabari escaped from his enclosure at the Dallas Zoo, an accredited member of the AZA,¹¹⁶ injuring four zoo visitors who recounted horrifying memories of the gorilla attacking adults and children who fled for their lives.¹¹⁷ One victim, Rivers Noah, a three-year-old boy, suffered bites to his head and chest, while his mother sustained bites to her legs as a result of her attempts to save her child from the gorilla.¹¹⁸ Another victim of Jabari's rampage reported him slamming her against a wall and biting her arm repeatedly as she tried to protect her three children.¹¹⁹ The families injured in the gorilla attack filed suit against the City of Dallas, which oversees the zoo; the parties reached a settlement of \$500,000, the highest amount of damages allowed by the state of Texas for damages in civil suits against city governments.¹²⁰ "The U.S. Department of Agriculture also fined Dallas \$10,000 for Jabari's escape."¹²¹ Zoo officials were uncertain how Jabari escaped the sixteen-foot walls of his enclosure,¹²² noting that the escape "blows [their] minds" given that the enclosure won awards.¹²³ Subsequently, the Dallas Zoo spent \$2.2 million to create an "escape proof" gorilla enclosure.¹²⁴ The 2004 incident, however, was neither the first nor the last time the Dallas Zoo experienced an incident involving its gorillas, as a gorilla mauled a zookeeper when its cage was left open in 1998¹²⁵ and another gorilla escaped in 2010 despite the renovations.¹²⁶ Although the 2010 escape of a nineteen-year-old female gorilla did not result in any injuries or fatalities,¹²⁷ it was still a significant concern given the zoo's efforts to improve its gorilla enclosure; the escape was also a concern given the fact that it was unknown whether security cameras were operating at the time of the escape, and whether "one or more doors were left unlocked," allowing the gorilla's escape.¹²⁸

116. See Current AZA Members, *supra* note 60.

117. Tatiana Morales, *Gorilla Escapes, 4 Injured*, CBS NEWS (Mar. 19, 2004, 8:50 AM), <https://www.cbsnews.com/news/gorilla-escapes-4-injured/>.

118. *Id.*

119. *Id.*

120. *Victims of Dallas Gorilla Attack Share \$500K Settlement*, CLAIMS J. (June 23, 2009), <https://www.claimsjournal.com/news/southcentral/2009/06/23/101654.htm>.

121. Sherry Jacobson, *Dallas Zoo Investigating Second Gorilla Escape*, DALL. NEWS (Feb. 2010), <https://www.dallasnews.com/news/news/2010/02/16/20100215-Dallas-Zoo-investigating-second-gorilla-escape-1409>.

122. *Boy Attacked by Gorilla at Zoo Recovering*, ABC NEWS (Apr. 2, 2004), <http://abcnews.go.com/GMA/story?id=127927&page=1>.

123. Morales, *supra* note 117.

124. Jacobson, *supra* note 121.

125. Morales, *supra* note 117.

126. Jacobson, *supra* note 121.

127. *Id.*

128. *Id.*

As is true with many zoo animal escapes and attacks, the newly renovated exhibit “appeared to be working” until the gorilla escaped.¹²⁹

The Dallas gorilla escape highlights public safety issues arising from the lack of zoo regulation as the escapes likely occurred due to inadequate enclosure design or safety procedures.¹³⁰ Had the enclosure design and safety procedures of the zoo been regulated, the escape may have been avoided because zoo employees would ensure that enclosure doors were closed and more extensive inspection of the exhibit design might have prevented escape. Moreover, the fact that both escapes involved the same zoo, enclosure, and species of animal¹³¹ indicates that APHIS inspections of the exhibit were inadequate, as the recurrence suggests that inspectors were uncertain about what enclosure characteristics and security protocols were necessary to contain gorillas.

4. *Polar Bear Attack in Alaska*

In 1994, an Australian tourist visiting the Alaska Zoo in Anchorage climbed over two barricades, meant to keep visitors a safe distance from the animal exhibit, in an attempt to get a close-up picture of Binky the polar bear.¹³² Unfortunately she got more than a close-up picture.¹³³ Binky reached through the bars of his cage, grabbing the tourist’s leg and pulling it into his cage.¹³⁴ Meanwhile, visitors and zoo employees hit the bear with branches as the tourist hysterically screamed for help.¹³⁵ Binky eventually let go of the tourist, and she escaped with only a broken leg and bite wounds.¹³⁶ The tourist admitted that she was at fault and promised not to sue the zoo.¹³⁷ The incident, however, exemplifies the dangers posed by exhibit designs that allow visitors to get close to animals or inside enclosures, which continue to exist in zoos due to lack of regulation.

B. *Zoo Worker Safety*

Zookeeping is a dangerous occupation that exposes keepers to a variety of risks to their health and safety. To minimize the risks of working with wild animals, zookeepers should not enter enclosures while wild animals are present. Unfortunately, “keepers have been killed doing just that”¹³⁸

129. *Id.*

130. *Id.*

131. *Id.*

132. Animal Planet, *Polar Bear Zoo Attack*, YOUTUBE (Aug. 6, 2008), <https://www.youtube.com/watch?v=8wGbCNDw-m0>.

133. *Id.*

134. *Id.*

135. *Id.*

136. *Id.*

137. T.A. Badger, *Alaska’s Mr. Popularity: Binky the Bear*, ASSOCIATED PRESS (Oct. 2, 1994), <http://community.seattletimes.nwsourc.com/archive/?date=19941002&slug=1933698>.

138. REES, *supra* note 34, at 134–35.

1. Gorilla Attacks Intern at Lincoln Park Zoo

In 2005, an intern zookeeper at the Lincoln Park Zoo in Chicago, an accredited member of the AZA,¹³⁹ was attacked and bitten by a male gorilla when a “breakdown of safety protocols placed her in an outdoor gorilla exhibit while the animals were present.”¹⁴⁰ The gorilla exhibited signs of dominance by shoving the intern down and mounting her; she sustained bite wounds to her neck and a twisted ankle.¹⁴¹ “Silverback males . . . have long, sharp incisor teeth and extremely powerful jaws, [that] could have easily inflicted far more serious or even fatal wounds.”¹⁴² Although the intern’s injuries were minor, the zoo’s safety committee discussed disciplinary action¹⁴³ and questioned the incident given that another incident occurred at the zoo a few months earlier in which another zookeeper was mauled by lions, which OSHA determined to be from “human error.”¹⁴⁴ Likewise, this gorilla attack prompted another investigation by OSHA¹⁴⁵ and a \$3,000 fine by the USDA, as the zoo was found to be at fault for the attack, since “[t]he zoo did not have proper barriers in place at the gorilla habitat” and the attack resulted from “an employee’s error.”¹⁴⁶ Once the zoo paid the minimal fine, however, the USDA considered the matter closed and there were “no further investigations of the zoo.”¹⁴⁷

This attack, though not fatal, illustrates the dangers posed by inadequate safety protocols in zoos for workers handling wild animals. The gorilla attack occurred due to human error that could have been avoided had the zoo enforced strict safety protocols.¹⁴⁸ Another issue here is the fact that the USDA discovered safety concerns at the zoo, but only imposed a small fine rather than requiring the zoo to address its safety protocols and the improper barriers in its gorilla exhibit.¹⁴⁹ Multiple OSHA investigations did not result in the zoo addressing safety issues in its zookeepers day-to-day operations.¹⁵⁰ It seems that although

139. See Current AZA Members, *supra* note 60.

140. William Mullen, *Gorilla Attacks Keeper at Zoo*, CHI. TRIB. (July 6, 2005), <http://www.chicagotribune.com/chi-0507060240jul06-story.html>.

141. *Id.*

142. *Id.*

143. *Gorilla Bites Lincoln Park Zoo Worker*, ASSOCIATED PRESS (July 6, 2005), http://qctimes.com/news/state-and-regional/gorilla-bites-lincoln-park-zoo-worker/article_34c798ac-10fe-505e-bb10-500b45efa7cb.html.

144. *Id.*; Mullen, *supra* note 140.

145. *U.S. Probes Gorilla Attack*, CHI. TRIB. (July 7, 2005), http://articles.chicagotribune.com/2005-07-07/news/0507070265_1_lincoln-park-zoo-gorilla-zoo-spokeswoman.

146. *Lincoln Park Zoo Fined for Animal Deaths, Attack*, PANTAGRAPH (Aug. 9, 2006), http://www.pantagraph.com/news/lincoln-park-zoo-fined-for-animal-deaths-attack/article_d463775f-96f0-5599-b37e-855e0de590aa.html. The fine was partially assessed on account of the deaths of several monkeys at the zoo two months prior to the attack. *Id.*

147. *Id.*

148. *Id.*

149. *Id.*

150. *Id.*

these administrative organizations respond to incidents at zoos with investigations, they do not go beyond the investigations and force zoos to rectify problems identified by such investigations.

2. *Orca Attacks and the Death of Dawn Brancheau*

“The dangers posed by large marine species should not be underestimated.”¹⁵¹ There have been a number of orca attacks at various SeaWorld locations,¹⁵² all of which are accredited members of the AZA.¹⁵³ While more than twenty-five of these attacks have been documented, these exclude countless undocumented incidents and incidents caused by SeaWorld whales that were sold or leased to other aquariums.¹⁵⁴ The following analysis examines orca attacks at SeaWorld parks that were extensively documented.

In 1971, Anne Godsey, a secretary at SeaWorld San Diego, was asked to ride on the back of an orca while wearing a bikini for a publicity stunt.¹⁵⁵ She rode on the orca’s back successfully until, suddenly, the whale dumped her into the water and pulled her under.¹⁵⁶ The whale took both of Godsey’s legs in its mouth as she held onto the orca’s head.¹⁵⁷ Personnel attempted to rescue Godsey, but the orca clamped down on her leg and would not let go. “A scuba diver tried to rescue her but he was also attacked. As trainers tried to drag Godsey out, the whale slammed into her.”¹⁵⁸ The orca finally let go of Godsey’s leg and she climbed out of the pool, resulting in physical injuries requiring 200 stitches as well as psychological damage.¹⁵⁹

In later years, SeaWorld employed trainers to work with its orcas.¹⁶⁰ According to Samantha Berg, a former trainer at SeaWorld Orlando, many trainers did not have backgrounds in marine biology nor did they have previous experience working with animals, let alone marine animals.¹⁶¹ She noted that the primary qualification for trainers at SeaWorld was strong swimming abilities, and trainers did not receive much training or instruction before being sent into the pool.¹⁶²

In 1987, John Silick, a trainer at SeaWorld San Diego, was riding on the back of Corky, a female orca, when Orky II, a male orca in the tank along with Corky, “propelled [himself] in the air and landed on the one [Silick] was riding,”

151. See REES, *supra* note 34, at 135.

152. BLACKFISH (CNN 2013).

153. See Current AZA Members, *supra* note 60.

154. See *Violent Incidents Between Humans and Orcas in Captivity*, FREE MORGAN FOUND., http://www.freemorgan.org/wp-content/uploads/2012/10/list_of_incidents.pdf.

155. *Anne Godsey Survived 1971 Killer Whale Attack*, INSIDE EDITION (Feb. 26, 2010, 12:00 AM), <http://www.insideedition.com/headlines/265-anne-godsey-survived-1971-killer-whale-attack>.

156. *Id.*

157. *Id.*

158. *Id.*

159. *Id.*

160. BLACKFISH, *supra* note 152.

161. *Id.*

162. *Id.*

trapping him between the two whales.¹⁶³ Silick was crushed by Orky II, a six-ton whale, breaking his “ribs, pelvis and femur.”¹⁶⁴ In that same year, another trainer at SeaWorld San Diego, Jonathan Smith, “was grabbed by two killer whales, that slammed him to the bottom of the thirty-two-foot-deep pool five times before he finally escaped” during a show. “Smith was left with a ruptured kidney, a lacerated liver, and broken ribs.”¹⁶⁵ Smith filed suit against SeaWorld “charging that the park ‘induced’ him into the pool, ‘representing to him it was safe for him to enter the pool with little or no training, knowing well that killer whales have a dangerous propensity for attacking, ramming, dragging and smashing people.’”¹⁶⁶ Smith asserted that “‘he was told the animals were gentle’ at a time when the park knew that the recent introduction of a new aggressive male with female orcas” made them unpredictable and dangerous to work with.¹⁶⁷ Smith’s “lawyer, Charles A. Bleiler, charged that most of the trainers had little experience working with animals.”¹⁶⁸ During this period at SeaWorld, there was “high turnover among the trainers[;] . . . many of the trainers were young people, none of whom were required to have experience working with animals.”¹⁶⁹ To make matters worse, SeaWorld had recently acquired Orky and Corky from another park, and experts speculated that the “introduction of Orky, an aggressive male, into the SeaWorld tank with females of breeding age may have altered the social mix,” leading to attacks and accidents.¹⁷⁰ Mr. Gault, SeaWorld president, acknowledged that SeaWorld “did not have enough experienced trainers” and that “[t]here was not enough training documentation.”¹⁷¹ These incidents, however, would not be the last orca attacks at SeaWorld.

This string of incidents at SeaWorld parks—from a secretary asked to swim with and then attacked by an orca to two serious orca attacks on trainers in the same year—should have warranted an OSHA inspection, but no inspection was done.¹⁷² These initial attacks illustrate the extreme severity that incidents must reach to attract OSHA’s notice and prompt investigation, calling attention to the need for specific safety standards for zoo employees, especially given that SeaWorld experienced increasingly brutal orca attacks as time went on and it acquired more orcas.¹⁷³

163. *The State: Whale Injures Trainer in Act*, L.A. TIMES (Nov. 23, 1987), http://articles.latimes.com/1987-11-23/news/mn-15854_1_killer-whale.

164. *Id.*

165. Tim Zimmerman, *The Killer in the Pool*, OUTSIDE (July 30, 2010), <https://www.outsideonline.com/1924946/killer-pool>.

166. Robert Reinhold, *At Sea World, Stress Tests Whale and Man*, N.Y. TIMES (Apr. 4, 1988), <http://www.nytimes.com/1988/04/04/us/at-sea-world-stress-tests-whale-and-man.html?pagewanted=all>.

167. *Id.*

168. *Id.*

169. *Id.*

170. *Id.*

171. Reinhold, *supra* note 166.

172. DAVID KIRBY, DEATH AT SEAWORLD: SHAMU AND THE DARK SIDE OF KILLER WHALES IN CAPTIVITY 175 (2012).

173. *See supra* notes 155–71 and accompanying text.

In 1991, SeaWorld obtained Tilikum from SeaLand of the Pacific, a marine park in Victoria, British Columbia.¹⁷⁴ SeaLand closed following a fatal orca attack leading to the death of one of its trainers, Keltie Byrne.¹⁷⁵ Eye witnesses, Corrine Cowell and Nadine Kallen, described Keltie falling into the pool with the orcas, and as she attempted to get out of the pool, an orca grabbed her foot and pulled her back in.¹⁷⁶ The whales thrashed around and repeatedly pulled Keltie into the water as she desperately screamed for help.¹⁷⁷ Corrine and Nadine specified that a large male whale with a collapsed fin pulled Keltie under; this whale was named Tilikum and was responsible for future attacks including the death of Dawn Brancheau.¹⁷⁸ Steve Huxton, the former director of SeaLand, noted in an interview that the park sold its orcas to SeaWorld with the understanding that they would not be used in shows or as performance animals given their role in the death of Keltie Byrne, since they believed that the orcas' behavior was likely to be repeated.¹⁷⁹

One of the whales sold by SeaLand, Tilikum, was brought to SeaWorld Orlando, where trainers were unaware that he caused the death of Keltie Byrne.¹⁸⁰ SeaWorld management, however, urged trainers to exercise caution while dealing with Tilikum.¹⁸¹ Shortly thereafter, Tilikum was spotted exhibiting signs of aggression towards a SeaWorld trainer.¹⁸² Jeffrey Ventre, a SeaWorld trainer who often videotaped shows, said that he witnessed Tilikum attempt to grab a trainer during a show and management instructed him to destroy the footage.¹⁸³

Infamously, in 2010, Tilikum killed Dawn Brancheau, an experienced SeaWorld trainer. Tilikum caused the death of Keltie Byrne nineteen years earlier¹⁸⁴ and was known to have a “negative history with trainers in the water”¹⁸⁵ and a tendency to lunge at trainers.¹⁸⁶ On February 24, 2010, the date of Brancheau's death, trainers were unable to control the whales, causing them to end a show early.¹⁸⁷ Later that day, Brancheau performed a “Dine with Shamu” performance with Tilikum.¹⁸⁸ During this performance, Tilikum pulled Brancheau into the

174. BLACKFISH, *supra* note 152.

175. *Id.*

176. *Id.*

177. *Id.*

178. *Id.*

179. *Id.*

180. *Id.*

181. *Id.*

182. *Id.*

183. *Id.*

184. Mark Mooney, *SeaWorld Trainer Killed by Whale Had Fractured Jaw and Dislocated Joints*, ABC NEWS (Mar. 31, 2010), <http://abcnews.go.com/GMA/seaworld-trainer-dawn-brancheau-suffered-broken-jaw-fractured/story?id=10252808>.

185. *Animal Profile: Tilikum*, SEAWORLD FLA. ANIMAL TRAINING DEP'T (July 2009), <http://www.orca-home.de/swprofiles3.pdf>.

186. BLACKFISH, *supra* note 152.

187. *Id.*

188. *Id.*

water and began thrashing her, causing her death.¹⁸⁹ Brancheau's autopsy revealed her cause of death to be "drowning and traumatic injuries" such as a broken jaw, fractured vertebra, a dislocated elbow and knee, in addition to countless other injuries.¹⁹⁰

Following Brancheau's death, APHIS investigated SeaWorld of Florida on March 16, 2010,¹⁹¹ and OSHA cited SeaWorld for workplace safety violations.¹⁹² OSHA filed suit against SeaWorld citing, "a serious violation of 29 C.F.R. § 1910.23(d)(1),¹⁹³ for failing to equip two stairways with standard stair railings on each side of the stairways . . .";¹⁹⁴ "willful violation of the general duty clause, § 5(a)(1) of the Occupational Safety and Health Act of 1970 (Act), 29 U.S.C. §§ 651-678[;]"¹⁹⁵ and for exposing animal trainers to struck-by and drowning hazards when working with killer whales during performances."¹⁹⁶ The claim alleging "violation of 29 C.F.R. § 1910.305(j)(2)(v),¹⁹⁷ for failing to enclose outdoor electrical receptacles," was later withdrawn.¹⁹⁸ Administrative Law Judge ("ALJ") Ken Welsch, affirmed SeaWorld's violation of 29 C.F.R. § 1910.23(d)(1); since SeaWorld failed to put railings on the stage at Shamu Stadium despite the existence of a fall hazard, employees were exposed to that hazard, and SeaWorld supervisors' had constructive knowledge of it.¹⁹⁹ Judge Welsch also affirmed SeaWorld's violation of the general duty clause § 5(a)(1) for two instances of its violation: (1) trainers engaged in drywork with Tilikum, and (2) trainers engaged in "waterwork and drywork during performances with all other killer whales kept at SeaWorld."²⁰⁰ Judge Welsch affirmed SeaWorld's violation of the general duty clause based on the long history of orca attacks at SeaWorld, safety protocols specific to Tilikum that prevented water-

189. *Id.*

190. *Autopsy Report for Dawn Brancheau*, OFF. MED. EXAMINER DISTRICT 9 (Feb. 24, 2010), http://www.autopsyfiles.org/reports/Other/brancheau,%20dawn_report.pdf.

191. *Report of Investigation: SeaWorld Florida*, U.S. DEP'T OF AGRIC., <https://www.scribd.com/document/53286451/USDA-APHIS-documents-Dawn-Brancheau-death-investigation-at-SeaWorld> [hereinafter *Report of Investigation*].

192. Lindsay Barnett, *OSHA Fines SeaWorld for Worker Safety Issues Following Orca Trainer's Death*, L.A. TIMES (Aug. 23, 2010, 7:13 PM), <http://latimesblogs.latimes.com/unleashed/2010/08/tilikum-orca-sea-world-orlando-osha.html> [hereinafter *OSHA Fines Seaworld*].

193. 29 C.F.R. § 1910.23(d)(1) (2017) ("The employer must ensure: (1) Fixed ladders are capable of supporting their maximum intended load").

194. Decision and Order, Secretary of Labor v. SeaWorld of Fla. L.L.C., Docket No. 10-1705, at 2 (OSHRC June 11, 2011) [hereinafter Decision and Order].

195. 29 U.S.C. § 654(a)(1)-(2) (2018) ("Each employer—(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; (2) shall comply with occupational safety and health standards promulgated under this chapter.").

196. Decision and Order, *supra* note 194, at 2.

197. 29 C.F.R. § 1910.305(j)(2)(v) (2017) ("A receptacle installed outdoors in a location protected from the weather or in other damp locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is covered . . .").

198. Decision and Order, *supra* note 194, at 2.

199. *Id.* at 10-14.

200. *Id.* at 14, 47.

work with him and emphasized increased caution, and ample evidence of SeaWorld administrators' knowledge of the dangers of working with orcas exhibited by their commentary and training manuals.²⁰¹ The Secretary of Labor offered a feasible abatement to these hazards by preventing trainers from interacting with Tilikum or with any of the other orcas without a physical barrier in front of them, or alternately using a decking system or oxygen supply system to protect trainers during shows.²⁰² While SeaWorld rejected this recommendation on the grounds that its operative conditioning techniques and safety protocols were adequate to protect trainers, Judge Welsch found these techniques and protocols to be inadequate since they held trainers to impossible standards and placed blame on trainers for the orcas' unpredictable behaviors.²⁰³ SeaWorld's violation of the general duty clause was not found to be willful; the Secretary of Labor "failed to establish SeaWorld disregarded the requirements of the Act. OSHA has no specific standard that regulates employees working in close contact with killer whales."²⁰⁴ OSHA's nonspecific standards that Judge Welsch pointed out drew attention to the lack of regulation targeted specially at zoos and how the absence of such regulation contributes to administrative failure to recognize and address safety issues in zoos until significant incidents and fatalities occur, revealing the severity of safety deficiencies.

SeaWorld unsuccessfully petitioned for discretionary review of Judge Welsch's decision by the Occupational Safety and Health Review Commission, making the decision final.²⁰⁵ SeaWorld then appealed to the United States Court of Appeals for the District of Columbia Circuit,²⁰⁶ contending that (1) "the finding that it exposed its employees to a 'recognized hazard' [was] unsupported by substantial evidence";²⁰⁷ (2) "when some risk is inherent in a business activity, that risk cannot constitute a 'recognized hazard';"²⁰⁸ (3) "the Secretary failed to prove feasible abatement methods . . . and that the ALJ failed to consider evidence these abatement measures present additional hazards and erred because eliminating close contact changes the nature of a trainer's job";²⁰⁹ and (4) "the general duty clause is unconstitutionally vague as applied because SeaWorld lacked fair notice of the Secretary's abatement measures."²¹⁰ The Court affirmed

201. *Id.* at 17–32 ("Whether the trainers were fully immersed and swimming with the killer whales for a waterwork show performance, or standing poolside or on a slideout for a drywork show performance, SeaWorld knew its trainers were at risk for being struck or drowned by a killer whale.").

202. *Id.* at 32–33.

203. *Report of Investigation, supra* note 191, at 34–37 ("The incident reports provide an insight into SeaWorld's approach. Upper management dissects each incident second by second, and then critiques the choices made by the trainers as the incident unfolded. Trainers are expected to decipher precursors and then choose the appropriate response with split-second timing, keeping in mind that they are performing in front of an audience. If the animal engages in undesirable behavior, it will be attributed to mistakes the trainer made.").

204. *Id.* at 44.

205. *SeaWorld of Fla., L.L.C. v. Perez*, 748 F.3d 1202, 1207 (D.C. Cir. 2014).

206. *See generally id.*

207. *Id.* at 1208.

208. *Id.*

209. *Id.*

210. *Id.*

Judge Welsch's findings on all accounts and denied SeaWorld's petition for review.²¹¹

The dissent likened training killer whales to extreme sports and entertainment shows such as football, stock car racing, and tiger taming,²¹² framing the issue as whether the Department of Labor has the "authority to regulate sports and entertainment so as to prevent injuries to participants"²¹³ The dissent asserted that the decision was inconsistent with *Pelron Corporation*, a case before the Occupational Safety and Health Review Commission, in which the Department of Labor issued a general duty citation to Pelron Corporation, "a manufacturer of liquid specialty chemicals, following a chemical explosion at one of Pelron's manufacturing facilities."²¹⁴ The citation was vacated on the grounds that "some industrial activities are by their very nature dangerous. To permit the normal activities in such an industry to be defined as a recognized hazard within the meaning of section 5(a)(1) is to eliminate an element of the Secretary's burden of proof and, in fact, almost to prove the Secretary's case by definition."²¹⁵ Accordingly, the dissent argued that working with orca whales was dangerous by nature.²¹⁶ The dissent went on to discuss how just as SeaWorld has been asked to eliminate trainer contact with whales, the National Football League could eliminate tackling or the National Association for Stock Car Auto Racing could eliminate driving at dangerously high speeds, but the Department of Labor has not regulated those activities because they are intrinsic to those respective sports.²¹⁷

The dissent's classification of tiger taming and orca training in the category of sports and entertainment calls attention to a key issue in the regulation of zoos.²¹⁸ Working with wild animals poses a very different risk than other occupations in the sports and entertainment industry because wild animals are often unpredictable and volatile, unlike the dangers posed by other sports and entertainment occupations that involve more calculated risks. Although the risk of a zoo animal attack can be compared to being tackled in football, the game of football is just that, a game, played with other human beings that understand the dangers of their actions and the rules against certain actions that can harm other players in ways not in the scope of their implied consent by engaging in the game of football. In other words, football players can expect to be injured in a variety of ways while they are on the field, however, they do not expect to be killed and actions that would cause such a result are against the rules. Players engaging in illegal moves and violating rules against such conduct can be suspended from the league and fined, in addition to exposing them to civil liability. Zoo animals,

211. *Id.* at 1205–16.

212. *Id.* at 1216.

213. *Id.* at 1221.

214. *Id.* at 1219.

215. *Pelron Corp.*, 12 BNA OSHC 1833 (No. 82-388, 1986).

216. *SeaWorld of Fla.*, 748 F.3d at 1219.

217. *Id.*

218. *Id.* at 1216.

on the other hand, possess the same natural instincts as their often deadly counterparts in the wild; they have no rules except those of nature, and they do not possess the same understanding as humans that their actions can be deadly.²¹⁹ These instincts make working closely with zoo animals dangerous in a way that is not true in other sports and entertainment fields.²²⁰

3. *Siberian Tigers Attack Zookeeper*

In July of 1985, Robin Silverman, a zookeeper in the mammal department of the Bronx Zoo in New York, an accredited member of the AZA,²²¹ was killed by two 300-pound Siberian tigers.²²² Silverman entered the tiger enclosure accompanied by a twenty-one-year-old volunteer, Barbara Burke, to clean it.²²³ When Silverman was about twenty feet inside of the enclosure, a tiger lunged at her, grabbing her torso, while a second tiger attacked her lower body.²²⁴ Burke escaped the tigers by scaling the fence with the tigers in hot pursuit.²²⁵ “Several zoo employees heard the women’s screams and went to the enclosure, using fire extinguishers to hold the animals at bay until Miss Silverman could be attended to by Dr. Emil Dolensek, the head veterinarian at the zoo”²²⁶ Silverman was rushed to the Bronx Municipal Hospital Center with deep cuts on her body and crush injuries to her head and neck; she died an hour later despite the trauma team’s efforts to save her.²²⁷ Dr. William Conway, director the Bronx Zoo, told the press that Silverman “violated the ‘cardinal rule of animal care’ by entering the two-acre enclosure without knowing where the tigers were.”²²⁸ He also seemed to place responsibility for the incident on Silverman’s shoulders saying, “[w]e don’t really understand it . . . She had to walk by the pens to get into the enclosure, and consequently had to see the pens were empty.”²²⁹ Conway said that Silverman “had extra training” and noted, “if you walk into an enclosure with tigers, these are not puddle ducks,” but admitted that Silverman “was a very highly respected and exceptionally competent person.”²³⁰

219. Cf. Braverman, *supra* note 11, at 1695.

220. See REES, *supra* note 34, at 134–35.

221. See Current AZA Members, *supra* note 60.

222. Jane Gross, *2 Siberian Tigers at Bronx Zoo Kill a Keeper*, 24, N.Y. TIMES (July 30, 1985), <http://www.nytimes.com/1985/07/30/nyregion/2-siberian-tigers-at-bronx-zoo-kill-a-keeper-24.html>.

223. *Id.*

224. *Id.*

225. *Id.*

226. *Id.*

227. *Id.*; *Tigresses Kill Zookeeper*, UNITED PRESS INT’L (July 30, 1985), <https://www.upi.com/Archives/1985/07/30/Tigresses-kill-zookeeper/9533491544000/>.

228. Gross, *supra* note 222.

229. *Tigresses Kill Zookeeper*, *supra* note 227.

230. *Id.*

It is unknown why Silverman entered the tiger enclosure while the tigers were still inside. It stands to reason, however, that the incident could have resulted from a defect in procedure or the design of the enclosure.²³¹ Silverman's parents intended to sue the zoo for negligence, arguing that the enclosure was improperly designed, that there was a failure to maintain the exhibit's safety features, and that the system of warnings and signals in the exhibit failed.²³² Silverman's parents, however, instead sued the architect and engineer who designed the tiger exhibit.²³³ They lost their case when "a Manhattan jury ended a month-long trial of the case with a verdict in favor of the defendants, deciding that Silverman had ignored safety procedures while working in the tiger pen."²³⁴

This incident is significant because the Bronx Zoo administration's response to Silverman's death at the hands of the tigers mirrors that of SeaWorld's response to their orcas' attacks on trainers. Conway, the director of the Bronx Zoo, said that Silverman should have seen the tigers in their cage and also commented on the dangerousness of working with tigers in general.²³⁵ Conway placed blame on Silverman without being certain of how exactly the incident occurred, just as SeaWorld tended to place responsibility on its trainers for the unpredictable behaviors of its orcas.²³⁶ Conway also mentioned Silverman's training, suggesting that the incident was not the zoo's fault, since they taught her safety measures for working with tigers.²³⁷ Similarly, SeaWorld often cited the extensive training that SeaWorld trainers received and the operant conditioning techniques used to train its whales as factors relieving them of responsibility for orca attacks.²³⁸ The similarities between SeaWorld and the Bronx Zoo administration's tendencies to hold employees working with zoo animals to impossible standards despite their unpredictability indicates that uniform standards for zoo employee safety need to be implemented in order to end this pattern of victim blaming in zoo accidents.

4. *Tapir Attack on Zookeeper*

Tapirs, which are pig-like in appearance, are about the size of a donkey and are related to the horse and rhinoceros.²³⁹ They are herbivores that can grow to 600 pounds.²⁴⁰ In November of 1998, a tapir attacked Lisa Morehead, a

231. *Parents of Mauled Bronx Zookeeper Intend to Sue for \$50 Million*, UNITED PRESS INT'L (Sept. 13, 1985), <https://www.upi.com/Archives/1985/09/13/Parents-of-mauled-Bronx-zookeeper-intend-to-sue-for-50-million/4409503431210/>.

232. *Id.*

233. *Id.*

234. Salvatore Arena, *Parents Lose Suit in Fatal Mauling*, N.Y. DAILY NEWS (Apr. 8, 1995), <http://www.nydailynews.com/archives/news/parents-lose-suit-fatal-mauling-article-1.685838>.

235. *Tigresses Kill Zookeeper*, *supra* note 227.

236. *Report of Investigation*, *supra* note 191, at 34-37.

237. *Id.*

238. *Id.*

239. *National News Briefs; Zoo Keeper Loses Arm as Animal Attacks Her*, N.Y. TIMES (Nov. 21, 1998), <http://www.nytimes.com/1998/11/21/us/national-news-briefs-zoo-keeper-loses-arm-as-animal-attacks-her.html> [hereinafter *National News Briefs*].

240. *Id.*

zookeeper at the Oklahoma City Zoo,²⁴¹ an accredited member of the AZA.²⁴² Morehead was pushing food through a small door in the tapir enclosure, when Melody, the zoo's tapir, grabbed her arm and dragged her through the two-foot opening.²⁴³ Morehead's arm was detached from her body mid-way up her bicep; it became contaminated and too mangled to be reattached to her body.²⁴⁴ She also suffered facial injuries and a punctured lung.²⁴⁵ Zoo officials were uncertain why the tapir attacked Morehead, but speculated that it could have been due to Morehead's close proximity to the tapir's baby.²⁴⁶ "The attack was followed by allegations the zoo was not adequately protecting its workers. Two employees who said they witnessed the attack . . . alleg[ed] emergency response was slowed by rules against calling 911 without first contacting a supervisor."²⁴⁷ The municipal counselor's office investigated these claims and concluded those rules did not exist.²⁴⁸ Morehead filed suit against the zoo and the city for "failing to issue written policies regarding safety practices and emergency response."²⁴⁹ The court ruled that the case would be better suited as a workers compensation case.²⁵⁰ The discrepancy between the employees' claims and the investigation in addition to Morehead's claim indicate that if safety procedures did exist at the Bronx Zoo, they were not known to employees, which is a key safety issue in its own right. This incident points to the importance of definitive safety procedures in zoo settings both to prevent accidents and ensure an efficient emergency response when they do occur. It appears that either safety protocols or emergency response measures were inadequate in this case, which might have been avoided with government regulation of zoo safety protocols. Finally, the violent attack on Morehead by an herbivore indicates that animals deemed to be dangerous predators are not the only animals that pose a threat to the safety of employees.

5. *Recent Tiger Attack in Florida*

In April of 2016, a zookeeper at Palm Beach Zoo in Florida, an accredited member of the AZA,²⁵¹ was attacked by a tiger and was brutally killed. Stacey Konwiser, lead tiger keeper at Palm Beach Zoo, was going through her normal routine preparing for a daily tiger show called, "Tiger Talk."²⁵² When she entered

241. *Id.*

242. *See* Current AZA Members, *supra* note 60.

243. *National News Briefs*, *supra* note 239.

244. *Zookeeper Seriously Hurt as Tapir Bites off Arm*, CHI. TRIB. (Nov. 22, 1998), http://articles.chicagotribune.com/1998-11-22/news/9811220098_1_tapir-horse-and-rhinoceros-cage-and-bit.

245. *Id.*

246. *Id.*

247. Steve Lackmeyer, *Co-Worker Contradicts Zookeeper Attack Report Failure to Follow Zoo Policies Blamed*, OKLAHOMAN (Oct. 15, 2002), <http://newsok.com/article/2811077>.

248. *Id.*

249. *Id.*

250. *Id.*

251. *See* Current AZA Members, *supra* note 60.

252. Ralph Ellis and Keith Allen, *Tiger Attacks, Kills Keeper at Florida Zoo*, CNN (Apr. 16, 2016), <http://www.cnn.com/2016/04/15/us/tiger-kills-keeper-at-florida-zoo/index.html>.

the tiger enclosure, Hati, a male Malayan tiger, suddenly attacked her.²⁵³ “Konwiser had entered the ‘night house,’ where the tigers eat and sleep, and her view of the animal might have been limited . . . The tiger’s cage was open, though it was supposed to be locked.”²⁵⁴ Konwiser screamed into her radio for help, but help came too late as it took paramedics seventeen minutes to reach the tiger enclosure.²⁵⁵ Hati was found standing over Konwiser’s bloodied body with his ears pinned back guarding her like prey, “making it difficult to even shoot the animal. . . . The tiger was eventually tranquilized, but Konwiser succumbed to her wounds,”²⁵⁶ which included “a fractured spine and lacerated jugular.”²⁵⁷ The cameras in the exhibit were not in operation at the time of the attack, and it is unclear why Konwiser entered the tiger enclosure when a sign on the tiger’s cage “stated clearly that the animal was present in the ‘night house’ behind the exhibit.”²⁵⁸ Although the U.S. Department of Agriculture, Florida Fish & Wildlife Commission, and OSHA all attributed the accident to Konwiser’s error, “OSHA made eight recommendations to the zoo, including installing video monitoring equipment to ‘track locations of tigers’ and installing ‘electronic door position status detectors’ to display when animals have access to certain areas of the enclosure.”²⁵⁹ The zoo did not acknowledge whether it would implement OSHA’s recommendations.²⁶⁰

Despite Konwiser’s mistake contributing to her death, OSHA recommended safety improvements at the exhibit, indicating that the enclosure was hazardous. The problem is that OSHA’s recommendations are often reactive rather than proactive; OSHA’s investigations are prompted by accidents that are often fatal, leaving OSHA with only after-the-fact attempts to prevent future incidents.²⁶¹ APHIS could address these safety concerns during inspections, but unfortunately, APHIS inspections largely focus on enclosure standards for animals and public safety, but not employee safety standards.²⁶²

C. *Animal Safety*

When zoo animals escape, when members of the public find their way into animal enclosures, or when zoo employees are placed in dangerous situations with zoo animals, not only are people endangered, but also the lives of animals

253. Terry Spencer, *Zookeeper Killed in Tiger Attack Violated Safety Rules, State Report Says*, SUN SENTINEL (Oct. 3, 2016), <http://www.sun-sentinel.com/local/palm-beach/fl-ap-tiger-attack-safety-rules-2016-1003-story.html>.

254. Katie Reilly, *Florida Zookeeper Killed by Tiger Had Screamed into Her Radio for Help*, TIME (Sept. 24, 2016), <http://time.com/4506708/florida-zookeeper-tiger-attack-autopsy/>.

255. *Id.*; see also John Pacenti, *Tiger Attack: Zookeeper’s Parents Want ‘Honest Truth’ of Why It Happened*, PALM BEACH POST (Apr. 11, 2017, 7:00 AM), <http://www.mypalmbeachpost.com/news/tiger-attack-zookeeper-parents-want-honest-truth-why-happened/SARrtha9HdRrei3WQgGr7K/>.

256. Pacenti, *supra* note 255.

257. Reilly, *supra* note 254.

258. Pacenti, *supra* note 255.

259. *Id.*

260. *Id.*

261. See, e.g., *OSHA Fines SeaWorld*, *supra* note 192; Pacenti, *supra*, note 255.

262. See *Checklist for Animal Care*, *supra* note 17.

are at risk as emergency measures can escalate to killing zoo animals that pose a threat to human life.²⁶³ The animals killed in these instances are often members of endangered species, contradicting the reason for keeping them in captivity in the first place.²⁶⁴ As such, proper enclosure design and safety protocols are just as important to the safety of animals as they are to public safety and employee safety.

1. *Two Polar Bears Shot and Killed in Their Enclosure*

In May of 1987, four police officers shot twenty blasts from twelve-gauge shotguns and fired six bullets from .38-caliber revolvers killing two polar bears, Teddy and Lucy, inside of their enclosure at the Prospect Park Zoo, an accredited member of the AZA²⁶⁵ in Brooklyn, New York.²⁶⁶ Around seven o'clock p.m., when the zoo was closed, three eleven-year-old boys climbed over a fence at the Prospect Park Zoo and entered the polar bear enclosure, taking off their clothes and crossing the moat inside.²⁶⁷ The polar bears were awakened by their intrusion and one of them lunged at the boys, dragging one of them to its den.²⁶⁸ When officers arrived on the scene, the bears were pulling at the boy's body, eating his limbs; they called "Emergency Service unit officers, who fired the fusillade that killed the animals."²⁶⁹ Although two of the boys escaped the enclosure unharmed and the boy being mauled by the bears appeared to be dead, "Officer O'Donnell said the officers opened fire because the information they had received from the 911 call was that three children were in the zoo. They believed that two others might have been in danger even though they did not see them when they arrived . . ."²⁷⁰ Parks Commissioner Henry Stern said "polar bears are territorial and vicious by nature, but that these two—Teddy and Lucy—had never attacked anyone before."²⁷¹ Dr. Peter Borchelt, an animal behavioral consultant in Forest Hills, Queens believed that the bears behaved naturally when they attacked the boy. He explained, "They're predators and extremely dangerous animals in the wild, and there's no reason to believe they'd be less so in captivity."²⁷²

The deaths of Teddy and Lucy demonstrate the dangers that unfortified enclosure barriers pose to zoo animals. Not only was a child killed due to the enclosure's design allowing children to enter it, but the polar bears were also killed even though they behaved naturally in their own enclosure.²⁷³ Unfortunately, two

263. See *infra* Subsections III.C.1–2.

264. See *infra* Subsections III.C.1–2.

265. See Current AZA Members, *supra* note 60.

266. James Barron, *Polar Bears Kill a Child at Prospect Park Zoo*, N.Y. TIMES (May 20, 1987), <http://www.nytimes.com/1987/05/20/nyregion/polar-bears-kill-a-child-at-prospect-park-zoo.html>.

267. Gayle Young, *Two Polar Bears Kill 11-Year-Old*, UNITED PRESS INT'L (May 20, 1987), <https://www.upi.com/Archives/1987/05/20/Two-polar-bears-kill-11-year-old/9511548481600/>.

268. *Id.*

269. Barron, *supra* note 266.

270. *Id.*

271. *Id.*

272. *Id.*

273. See *supra* notes 265–72 and accompanying text.

rare animals were lost even though they were not the aggressors, but rather victims of human intruders when the incident could have been prevented had the enclosure and zoo as a whole been more secure.

2. *Harambe*

Notoriously, on May 28, 2016, a four-year old boy fell into the gorilla enclosure at the Cincinnati Zoo,²⁷⁴ an accredited member of the AZA.²⁷⁵ The boy landed in the enclosure's moat and a 400-pound gorilla named Harambe entered the moat, picked up the child and began dragging him around the area.²⁷⁶ Videos taken by onlookers show the young boy cowering in the corner of the exhibit inside the moat, standing behind the massive gorilla.²⁷⁷ Onlookers screamed for someone to call the zoo or 911 as the situation escalated, and Harambe grabbed the child by his leg and dragged him from one side of the moat to the other as his mother frantically screamed to him reassuring the child of her presence and love for him.²⁷⁸ The child screamed and attempted to scoot away from the gorilla, and Harambe grabbed him while his mother shouted to him to remain calm as the gorilla dragged him through the moat once again.²⁷⁹ The zoo's animal response team shot Harambe with a rifle and "the child was taken to Cincinnati Children's Hospital with non-life-threatening injuries."²⁸⁰ Thane Maynard, Director of the Cincinnati Zoo, said that "zoo officials decided against shooting Harambe with a tranquilizer [rather than killing him] because the drug takes effect too slowly," which would have risked the gorilla having time to act aggressively or possibly fall on the child.²⁸¹ Harambe was a western lowland gorilla, which is a critically endangered species, making his loss a tragedy to the zookeepers who worked with him as well as to his species.²⁸² The death of Harambe sparked tremendous public outcry²⁸³ and represents the threat to animals posed by members of the public entering animal enclosures, and the casualties that result from inadequate enclosure security.

274. Ralph Ellis & Rashard Rose, *Cincinnati Zoo Kills Gorilla to Save Child Who Slipped into Enclosure*, CNN (May 29, 2016, 4:34 PM), <http://www.cnn.com/2016/05/28/us/zoo-kills-gorilla/index.html>.

275. See Current AZA Members, *supra* note 60.

276. Ellis & Rose, *supra* note 274.

277. 312 City, *Gorilla Zoo Boy: Did Harambe at Cincinnati Zoo Deserve to Die?*, YOUTUBE (July 9, 2017), <https://www.youtube.com/watch?v=5EJqCUztx0Y&t=4s>.

278. *Id.*

279. *Id.*

280. Ellis & Rose, *supra* note 274.

281. *Id.*

282. *Id.*

283. See Venkatesh Rao, *How Harambe Became the Perfect Meme*, ATLANTIC (Sept. 6, 2016), <https://www.theatlantic.com/technology/archive/2016/09/harambe-the-perfect-meme/498743/>.

IV. RECOMMENDATION

A. *Enactment of Legislation Setting and Enforcing Specific Zoo Enclosure Standards*

Inadequate enclosure designs often go unnoticed until incidents occur because federal zoo regulation is focused on animal welfare rather than safety, and zoo inspections are not conducted using particular safety specifications.²⁸⁴ While there are industry standards with specific requirements, it is not mandatory for zoos to follow them, and despite these standards, many members of zoo accreditation organizations have experienced significant breaches in zoo safety and security.²⁸⁵ To remedy this problem, APHIS should create a list of guidelines available for both inspectors and zoos that lists every animal kept in zoos with specific exhibit safety and construction requirements, taking into account each animal's physiological abilities and risks associated with them. To do this APHIS could work with zoological specialists who have extensive knowledge of each species of animal to decide what measurements and exhibit features would maximize security to contain the animals while also preventing visitors from entering exhibits.

Zoos are already required to undergo inspections before they can obtain licensing from APHIS.²⁸⁶ As such, APHIS would need to re-inspect zoos that are currently licensed, inspect those that are still unlicensed using these new guidelines, and close down exhibits that do not meet requirements until they are renovated to meet standards. Also, to ensure that federal regulations are enforced, exemptions provided to zoos by AZA accreditation should be eliminated, as a great number of fatal incidents have occurred at AZA accredited zoos, making it possible that these exemptions factored into those occurrences.²⁸⁷

In addition to conducting inspections, APHIS should also require engineers to approve exhibit construction designs to ensure that they comply with the new list of standards. These engineers should be able to determine whether or not the animals could escape the enclosures based on their capabilities and proposed enclosure dimensions.

Conducting these inspections is likely to be time consuming and costly in the initial phases of implementation; however, APHIS already conducts inspections of animal exhibitors during the licensing process, so this solution would simply require inspectors to become familiar with more specific guidelines and inspect zoos more vigorously in accordance with them.²⁸⁸ Some might argue that implementing these regulations would not have enough benefit to justify their cost. Doing so, however, would be a one-time investment with great benefits. Once the regulations are put in place, initial inspections using the new standards are conducted, and zoos become compliant, future inspections would be more

284. See *supra* Part I.

285. Braverman, *supra* note 11, at 1703; see also *supra* Part II.

286. See *Checklist for Animal Care*, *supra* note 17.

287. See *supra* Part II.

288. See *supra* Section II.A.

streamlined, allowing public, employee, and animal safety to be heighten going forward and preventing future fatalities. Requiring approval of construction designs is also likely to be costly to implement, since it is a new task that might make it necessary for APHIS to create a department to take it on. A new department in APHIS would not only create jobs, but also serve as a preventative measure to ensure that exhibits are built to contain the animals they are intended for, maintaining theirs and the public's safety.

B. Enactment of Federal Legislation Setting and Enforcing Safety and Emergency Protocols for Zoo Employees

OSHA does not have regulations targeted specifically at zoo employee safety, as ALJ Ken Welsh astutely pointed out in his ruling on *OSHA v. SeaWorld of Florida*.²⁸⁹ OSHA's lack of specific regulations for the employees working in zoos, as are in place for the construction, general industry, maritime and agriculture industries is problematic because this means that zoos fall under the general duty clause, which is deliberately nonspecific to apply to all employers.²⁹⁰ The nonspecific nature of the general duty clause, however, prevents zoo employers who willfully violate it by requiring workers to interact closely with wild animals from being penalized for doing so,²⁹¹ since courts cannot find a willful violation where OSHA has not set out specific standards.²⁹² Also, since OSHA does not conduct regular inspections of zoos, but rather inspection is triggered by an accident or fatality, OSHA does not effectively enforce zoo safety standards nor prevent fatalities.²⁹³ OSHA could create specific safety standards for the animal exhibition industry, just as it has for other industries,²⁹⁴ and require employees working with wild animals to be separated from them by a barrier at all times unless the animal is tranquilized in addition to other necessary safety requirements.

OSHA, however, is a small agency that is already unable to inspect every employer in the U.S., let alone every zoo.²⁹⁵ As such, APHIS, which is more equipped to create standards and regularly inspect zoos, should create specific safety standards in zoos to protect employees. In addition to exhibit design, these standards should include safety protocols to be implemented and enforced across all zoos as well as emergency procedures to ensure that assistance is rendered in the most efficient way possible in the event of animal escapes or attacks. Arguably, APHIS would need to take on a whole host of additional responsibilities, which might prove too much for it to accommodate. On the other hand, APHIS

289. Decision and Order, *supra* note 194, at 44.

290. See *OSHA Law & Regulations*, U.S. DEP'T OF LAB., <https://www.osha.gov/law-regs.html> (last visited Jan. 5, 2019).

291. See 29 U.S.C. §§ 654(a)(1)–(2) (2018).

292. See Decision and Order, *supra* note 194, at 44.

293. See *Commonly Used Statistics*, U.S. DEP'T OF LAB., <https://www.osha.gov/oshstats/commonstats.html> (last visited Jan. 5, 2019).

294. See *OSHA Law & Regulations*, *supra* note 290.

295. See *id.*; *Commonly Used Statistics*, *supra* note 293.

is the most appropriate agency to set regulations for zoo safety including safe conditions for zoo employees, since it is the agency that deals with animals and zoos.

C. *Considering Alternatives*

If APHIS were unable to take on all of the new responsibilities associated with increased zoo regulation, an alternative would be to create a new department or sub-agency within APHIS dedicated solely to regulation of animal exhibitors, since zoos are unique facilities that require specialized knowledge and attention. This department could be responsible for zoo inspections, approving zoo exhibit construction designs, and regulating zoo employee safety in addition to the animal welfare aspects of zoos that were originally overseen by APHIS.

Another alternative could be if APHIS worked with the AZA to create specific zoo safety and security standards for employees and enclosures and then required zoos to obtain accreditation as part of APHIS licensing. There may be a conflict of interest in this scenario, however, since zoos would receive accreditation from an organization to which they pay dues and that accreditation would be necessary for licensing. Despite this issue, APHIS working in conjunction with the AZA would be an effective regulation strategy because it would take some of the burden off of APHIS both financially and in the number of responsibilities necessary for successful regulation of zoos. On the other hand, requiring accreditation for zoo licensing might amount to the AZA's most all encompassing exemption yet, since relying on a third party that has an interest in acquiring additional accredited members to conduct inspections that are relied upon for licensing could create a discretionary problem that allows zoos to be even less safe than they were before. Therefore, regulation of the zoo industry will be most effective if conducted by administrative agencies.

V. CONCLUSION

Zoos are places where the public, employees, and wild animals meet, and as a result, they have unique needs to ensure the safety of all of the beings interacting within them.²⁹⁶ The current regulatory framework does not completely address zoos and their unique characteristics, resulting in a vague and often incomplete array of laws regulating zoos. This patchwork of laws and regulations comes from a variety of sources such as federal regulation from APHIS and OSHA, state regulation, and industry standards from accreditation organizations such as the AZA and ZAA.²⁹⁷ The incomplete and nonspecific nature of these regulations give zoos significant discretion. This discretion often results in fatalities, as regulation of zoo enclosures and safety protocols does not address all of the safety and security standards necessary to ensure public, animal, and worker safety. The absence of specific standards targeted at zoos played a significant

296. Braverman, *supra* note 11, at 1703.

297. *See supra* Part II.

role in the animal attacks discussed in this Note, which serve as key examples of the inadequacy of safety and security at zoos.²⁹⁸ These incidents illustrate that secure enclosure design is imperative to preventing members of the public from falling into exhibits, being grabbed through the bars of animal enclosures, or purposely jumping into enclosures.²⁹⁹ The examples of zoo animal attacks discussed also indicate that zoos require regulation aimed at protecting employees, since OSHA does not actively regulate the zoo industry and various animal attacks on zookeepers provide an abundance of proof that working with wild animals poses a very different kind of risk than most other occupations.³⁰⁰ Finally, animal attacks that resulted in the death of zoo animals exemplify another casualty of insufficient regulation of exhibit design.³⁰¹

There is no perfect solution to zoo regulation as it is an enormous undertaking that requires extensive expertise, inspection, diligence, and a great amount of thought. Regulation of the zoo industry will be costly, but it is necessary and worth the cost because it ensures safety for the public, protects animals in captivity, and provides a safe work environment for zoo employees. APHIS needs to set out specific safety and security standards for enclosure designs tailored to all animals housed in zoos.³⁰² Most importantly, APHIS needs to conduct inspections of all zoos to ensure that each one of them complies with the new set of regulations.³⁰³ These regulations could include safety protocols for zoo employees or OSHA could create specific standards for the animal exhibition industry.³⁰⁴ Both of these regulatory solutions take time and resources, but they are long-term strategies for maintaining the safety and security of the zoo visitors, employees, and animals.

298. *See supra* Part III.

299. *See supra* Section III.A.

300. *See supra* Section III.B.

301. *See supra* Section III.C.

302. *See supra* Section IV.A.

303. *See supra* Section IV.A.

304. *See supra* Section IV.B.

