

# COVID-19 and Animals in Captivity:

Rethinking our interactions with animals in captivity to reduce the likelihood of the next pandemic

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**Note About This White Paper:** The content in this document is evolving and reflective of the situation as of April 2021.

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### **About the Animal Legal Defense Fund**

The Animal Legal Defense Fund was founded in 1979 to protect the lives and advance the interests of animals through the legal system. To accomplish this mission, the Animal Legal Defense Fund files high-impact lawsuits to protect animals from harm; provides free legal assistance and training to prosecutors to ensure that animal abusers are held accountable for their crimes; supports tough animal protection legislation and fights harmful legislation; and provides resources and opportunities to law students and professionals to advance the emerging field of animal law. For more information, please **visit [aldf.org](http://aldf.org)**.



## Rethinking our interactions with animals in captivity to reduce the likelihood of the next pandemic

### Introduction

Mitigation of zoonotic disease requires the elimination or drastic reduction in our interactions with confined, stressed animals in captivity for human use as entertainment, food, or clothing and décor. Although zoonotic disease risk has been a reality throughout human history, our modern interactions with animals have massively exacerbated that risk<sup>1</sup> — especially our interactions with animals in captivity. Wild animals constitute a particular threat to human health, as they can act as a natural reservoir<sup>2</sup> for novel pathogens.

Zoonoses emergent from a wild animal reservoir are more likely to give rise to a novel disease — such as the novel coronavirus (COVID-19) — than zoonoses whose reservoirs are domesticated animals frequently in contact with humans. The movement of pathogens, vectors, and animal hosts plays a role in the spread of zoonoses.<sup>3</sup> In addition to natural movement of animals in the wild, like migration,<sup>4</sup> anthropogenic activities, like the global trade in animals, have been linked to the rise in emerging infectious diseases.<sup>5</sup> Such trade “provides disease transmission mechanisms that not only cause human disease outbreaks but also threaten livestock, international trade, rural livelihoods, native wildlife populations, and the health of ecosystems.”<sup>6</sup>

That human interaction with both wild-caught and captive-bred animals can increase the likelihood of emergence or reemergence of zoonotic disease makes their captivity all the more dangerous. “[O]ur quest for close contact with wild animals and for exotic pets puts us at risk for exposure to zoonoses.”<sup>7</sup> To decrease opportunities for zoonotic diseases in animals to jump to humans, we must craft comprehensive policies to reduce interactions between humans and captive animals, whether wild-caught or captive-bred.<sup>8</sup> Policies must address the myriad interactions with animals in captivity.

This paper focuses on the heightened risk involved with interactions between humans and animals (particularly wild animals), displayed, traded, or killed as entertainment, sold as food at live markets,<sup>9</sup> and raised and killed in factory-like operations for their fur. To reduce our

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1 NAT’L RESEARCH COUNCIL ET AL., SUSTAINING GLOBAL SURVEILLANCE AND RESPONSE TO EMERGING ZOO NOTIC DISEASES ch. 3 (Gerald T. Kuesch et al. eds., 2009), available at [link here](#).

2 A population in which an infectious pathogen naturally lives and reproduces, and from which a disease can reemerge.

3 Hilde Kruse et al., *Zoonotic Infections*, 10 EMERGING INFECTIOUS DISEASES 2067 (2004), [link here](#).

4 *Id.*

5 B. Karesh et al., *Ecology of Zoonoses: Natural and Unnatural Histories*, 380 THE LANCET 1936 (2012), [link here](#).

6 B. Karesh et al., *Wildlife Trade and Global Disease Emergence*, 11 EMERGING INFECTIOUS DISEASES 1000 (2005), [link here](#).

7 Bruno B. Chomel et al., *Wildlife, Exotic Pets, and Emerging Zoonoses*, 13 EMERGING INFECTIOUS DISEASES 6 (2007), [link here](#).

8 The results of a study on the wildlife trade in three provinces in southern Vietnam showed “unequivocally how viruses spread from animal to animal as they are transported in crowded conditions to market.” James Gorman, *Wildlife Trade Spreads Coronaviruses as Animals Get to Market*, N.Y. TIMES, July 6, 2020, [link here](#). Testing for six different coronaviruses in wild-caught field rats sold by traders, researchers found that the percentage of positive tests increased from 20 percent to slightly more than 30 percent at large markets, and finally to 55 percent of rats sold in restaurants. While these tests for common coronavirus were completed in 2013 and 2014 — long before the COVID-19 outbreak — researchers were spurred to look at how common the viruses are in bats and other wildlife specifically. *Id.*

9 This paper focuses on animals captive in live markets. The scale and massive risks posed by factory farming are addressed in a separate white paper. See ANIMAL LEGAL DEFENSE FUND, COVID-19 AND FACTORY FARMING: RETHINKING OUR RELATIONSHIP WITH ANIMALS TO REDUCE THE LIKELIHOOD OF THE NEXT GLOBAL PANDEMIC AND REFORM OUR FOOD SYSTEM (Nov. 2020), available at [link here](#). 4

risk from zoonotic disease — including the next pandemic — we recommend urgently and aggressively pursuing policies to protect public health and animals by addressing the threats posed by these heightened risk interactions between humans and animals in captivity.<sup>10</sup>

## Wild-caught and captive-bred animals

Animals in captivity may be domesticated, genetically adapted over generations to live in proximity to or as companions of humans (such as dogs, cats, and chickens), or wild (such as elephants, tigers, minks, and most reptiles and amphibians). Wild animals in captivity may have been “wild-caught” — born into and then captured from their natural habitat — or “captive-bred”<sup>11</sup> — born into captivity. Wild-caught animals may be legally captured or poached (illegally captured), then “used in a breeding operation, sold locally, smuggled out of the country, or intentionally mislabeled as captive-bred and exported legally.”<sup>12</sup> Certain species are more regularly bred in captivity — such as tigers, bears, and wolves; others are captured from their natural habitats — such as birds, reptiles, and amphibians. In short, certain species are “easier and cheaper to catch than to breed.”<sup>13</sup>

Both wild-caught and captive-bred animals are legally or illegally traded across state and national borders. The U.S. is the world’s largest importer of live wild animals, with 225 million animals entering the country each year.<sup>14</sup> Between 2000 and 2013, approximately half of the live wild animals imported were aquatic, amphibian, and invertebrate species.<sup>15</sup> Although cumulatively they represented only a small percentage of the individual specimens imported, more than 4 million live individual mammals were imported in that time frame.<sup>16</sup> Whereas in the late 20th century, 96 percent of internationally traded animals were wild-caught, today a majority are captive-bred animals.<sup>17</sup> This shift has raised concerns about the sources of animals being falsified.<sup>18</sup> Many jurisdictions allow trade in captive-bred wild animals but not wild-caught animals, and officials are unlikely to be able to tell the difference.<sup>19</sup> The trade in both wild-caught and captive-bred animals can involve international, interstate,

10 Researchers reviewing the consequences of human actions on risks for infectious diseases have concluded that, in both research and policymaking, “disease control and monitoring is no longer to be considered a science of medicine and epidemiology alone, but also must include the social, environmental, and economic values appreciated by people and societies.” Johanna F. Lindahl & Delia Grace, *The Consequences of Human Actions on Risks for Infectious Diseases: A Review*, 5 *INFECTION ECOLOGY & EPIDEMIOLOGY*, 2015, [link here](#); see ANIMAL LEGAL DEFENSE FUND, COVID-19 AND ANIMALS: RETHINKING OUR RELATIONSHIP WITH ANIMALS TO REDUCE THE LIKELIHOOD OF THE NEXT GLOBAL PANDEMIC 9-18 (June 2020), available at [link here](#). Policy discussions must reconsider the many contacts between humans and animals through farming, legal hunting, poaching, trafficking, entertainment, and habitat destruction. Karesh et al., *supra* note 6.

11 Jani Hall, *Exotic Pet Trade, Explained*, NAT’L GEOGRAPHIC (Feb. 20, 2019), [link here](#).

12 *Id.*

13 K.M. Smith et al., *Summarizing US Wildlife Trade with an Eye Toward Assessing the Risk of Infectious Disease Introduction*, 14 *ECOHEALTH* 29, 36 (2017), [link here](#).

14 Boris I. Pavlin et al., *Risk of Importing Zoonotic Disease Through Wildlife Trade, United States*, 15 *EMERGING INFECTIOUS DISEASES* 1721, 1723 (2009), [link here](#).

15 Smith et al., *supra* note 13, at 32. “It is not surprising that the vast majority of imports (by specimen number) consist of aquatic species and herpetofauna; given that these animals are often shipped together in large numbers, they are in high demand by consumers and a number of other factors (e.g., small size, lack of requirement for individual health certificates, less likelihood of being protected). The fact that these species are likely to be shipped live and in large numbers means that a significant number could survive, even given long-distance shipment from Asia. The survival of large numbers of highly stressed live animals entering the USA increases the overall risk of disease introduction.” *Id.* at 36.

16 *Id.* at 33.

17 *Captive-Produced Animals and Artificially Propagated Plants*, CITES, [link here](#) (last visited Mar. 23, 2021); *Captive-Bred or Wild-Taken?*, TRAFFIC (2012), [link here](#).

18 Smith et al., *supra* note 13, at 36.

19 *Id.*; *Captive-Produced Animals and Artificially Propagated Plants*, *supra* note 17; *Captive-Bred or Wild-Taken?*, *supra* note 17. An animal’s true country of origin can be obscured by their exportation to a second country, then reexportation to a third or subsequent country. For example, one study found an allegedly wild-captured chinchilla whose country of origin was labeled as the Czech Republic, but chinchillas are not native to Europe. Pavlin et al., *supra* note 14, at 1723.

and intrastate travel, forcing interactions with or proximity to humans and other animals with which they may never have otherwise had contact. This increases the possibility of transmission of pathogens between host species that in nature would not interact, potentially worsening the spread of zoonotic diseases.<sup>20</sup>

Wild-caught animals may pose a higher zoonotic disease risk than captive-bred wild animals,<sup>21</sup> and many already suffer from disease or parasites at the time of capture.<sup>22</sup> Dr. William Karesh and his co-authors highlight this:

The global trade in wildlife provides disease transmission mechanisms that not only cause human disease outbreaks but also threaten livestock, international trade, rural livelihoods, native wildlife populations, and the health of ecosystems. Outbreaks resulting from wildlife trade have caused hundreds of billions of dollars of economic damage globally. Rather than attempting to eradicate pathogens or the wild species that may harbor them, a practical approach would include decreasing the contact rate among species, including humans, at the interface created by the wildlife trade.<sup>23</sup>

Once wild animals are reduced to captivity, inbreeding and loss of genetic diversity contribute to this “selection for tameness” and may reduce disease resistance.<sup>24</sup>

Whether wild-caught or captive-bred, animals kept on display at zoos and circuses and other exhibits, or as “exotic pets,” have repeatedly been linked to zoonotic infections.<sup>25</sup> And when animals are confined very closely, such as for travel or display, it is more likely that pathogens will be transmitted between animals, and between animal species, increasing the chances that they will jump to humans.<sup>26</sup>

## Captivity’s impact on zoonotic disease risk

Many animals in captivity are forced to spend most of their days and nights in cramped, barren cages, deprived of the ability to engage in their natural behaviors. They are often denied requisite care to satisfy their complex physical, behavioral, and emotional needs.<sup>27</sup> They may receive inadequate veterinary care, be fed an insufficient diet, and be forced to unnaturally engage with humans or other animals. Improved animal care standards are

20 PERVAZE A. SHEIKH & KATRINA C. O’REGAN, WILDLIFE TRADE, COVID-19, AND OTHER ZOOONOTIC DISEASES (Cong. Research Serv. No. IF11494, 2020), available at [link here](#).

21 Smith, *supra* note 13; Kristine M. Smith et al., *Exotic Pets: Health and Safety Issues for Children and Parents*, 26 J. PEDIATRIC HEALTH CARE, 2012, at e2, [link here](#). Veterinary and public health officials can monitor for disease risks in captive breeding facilities, whereas such monitoring of animals in the wild or at the site of wild-capture would be much more difficult. Özgün Emre Can et al., *Dealing in Deadly Pathogens: Taking Stock of the Legal Trade in Live Wildlife and Potential Risks to Human Health*, 17 GLOBAL ECOLOGY & CONSERVATION, no.e00515, 2019, at 14, [link here](#).

22 *Captive Bred vs Wild Caught*, TEXAS A&M U. VETERINARY MED. & BIOMEDICAL SCI., [link here](#) (last visited Mar. 23, 2021).

23 Karesh et al., *supra* note 6, at 1000.

24 R. Frankham, *Stress and Adaptation in Conservation Genetics*, 18 J. EVOLUTIONARY BIOLOGY 750 (2005), [link here](#).

25 Chomel et al., *supra* note 7.

26 Nat’l Ass’n State Pub. Health Veterinarians, *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings*, 251 J. AM. VETERINARY MED. ASS’N 1268 (2017), [link here](#) [hereinafter *Compendium*].

27 Lucy P. Birkett & Nicholas E. Newton-Fisher, *How Abnormal Is the Behavior of Captive, Zoo-Living Chimpanzees?*, 6 PLoS ONE, June 16, 2011, at e20101, [link here](#).

achieved when animals are well nourished, safe, and have the ability to engage in species-typical relationships, behaviors, and other brain-based skills while free from pain, fear, and distress.<sup>28</sup> These welfare goals must be assessed with regularity to ensure that an animal is not stressed and thus more susceptible to disease and more likely to shed pathogens.<sup>29</sup>

## Stress

Animals experience stress in captivity, which increases their susceptibility to disease, the risk they will shed viruses, and the danger they will transmit those diseases.

The causes of stress in animals in captivity are species-dependent but factors that elicit stress responses in captive mammals include sounds, smell of other animals or chemicals, confinement, unnatural concentration, unnatural proximity to humans, and unstable social groups, among others.<sup>30</sup> Introducing wild-caught animals to captivity may have long-term or permanent impacts on the physiological systems impacted by stress.<sup>31</sup> Persistent long-term stressors create an environment ripe for the spread of zoonotic infection.<sup>32</sup>

Stress occurs when an animal experiences intrinsic or extrinsic demands to which they do not have the resources to respond.<sup>33</sup> Public health specialist Dr. Aysha Akhtar notes that just as humans are more likely to contract disease when sick, weak, or wounded, these factors also suppress the immune systems of animals, leaving them at a heightened risk for contracting new infections.<sup>34</sup>

For wild animals in particular, the conditions of general captivity and exposure to humans may result in physiological stress.<sup>35</sup> Factors such as overcrowding, unsanitary living conditions, travel, confinement, and increased interaction with humans create a high-stress environment for wild animals in captivity, resulting in the shedding of pathogens at an increased rate.<sup>36</sup> Overexposure to these conditions can cause weight loss, decreased immune function, and reproductive issues.<sup>37</sup>

Animals on display can experience chronic stress when repeatedly exposed to negative factors without the ability to appropriately respond.<sup>38</sup> These may include noise from large crowds of visitors, which can lead to an increase in vigilance behaviors; noise from routine

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28 Alison L. Greggor et al., *Animal Welfare in Conservation Breeding: Applications and Challenges*, 5 FRONTIERS VETERINARY SCI. 323 (2018), [link here](#).

29 *Id.*

30 M.E. McPhee & Kathy Carlstead, *Effects of Captivity on the Behavior of Wild Animals*, in WILD MAMMALS IN CAPTIVITY 304 (D.G. Kleiman et al. eds., 2010), available at [link here](#).

31 Clare Parker Fischer & L. Michael Romero, *Chronic Captivity Stress in Wild Animals is Highly Species-Specific*, 7 CONSERVATION PHYSIOLOGY, Dec. 4, 2019, [link here](#).

32 Kathleen N. Morgan & Chris T. Tromborg, *Sources of Stress in Captivity*, 102 APPLIED ANIMAL BEHAV. SCI. 262 (2007), [link here](#).

33 *Id.*

34 Joslyn Chittilapally, *How Factory Farming Breeds Deadly Viruses and Epidemics*, LIFE GATE (Apr. 16, 2020), [link here](#) (quoting Aysha Akhtar).

35 Fischer & Romero, *supra* note 31.

36 *Compendium*, *supra* note 26.

37 *Id.*

38 R. Scott Nolen, *Measuring Stress in Captive Animals*, AM. VETERINARY MED. ASS'N (Dec. 1, 2002), [link here](#).

human activity; artificial lighting conditions that reflect human needs rather than natural light patterns, which can suppress circadian activity and alter an animal's melatonin to serotonin; and the use or presence of certain odors, which can be a chronic source of distress (although some scents may be used as environmental enrichment to reduce stress, others cause stress — for example, prey animals may be constantly exposed to the scent of predators).<sup>39</sup>

### **Unnatural proximity to or contact with humans and other animals**

Animals in captivity are often forced into proximity<sup>40</sup> — or even physical contact — with humans and other animals. An animal's tolerance for and level of stress from proximity to or contact with animals varies across species and individuals within a given species. For instance, companion animal species typically prefer human interaction, whereas other domesticated animal species may tolerate such interaction, and wild animals are more likely to experience significant stress from such interactions.

Direct handling — such as found in exhibits allowing wild animal petting, feeding, selfies, or rides — is stressful to animals and can hinder immune responses.<sup>41</sup> Zoonotic disease has been linked to the interaction between infected animals and their keepers as well as members of the public.<sup>42</sup> The Centers for Disease Control and Prevention (CDC) notes that direct contact with saliva, blood, urine, mucous, feces, or other bodily fluids of an infected animal through touching, petting, bites, or scratches is a prime method of zoonotic transmission.<sup>43</sup> Zoonoses can also be spread through indirect contact with contaminated animal habitats, enclosures, objects, and other surfaces.<sup>44</sup>

In captive settings, the amount and type of human interaction with animals should be intentionally designed to meet the animals' needs (food, water, veterinary care, etc.), minimize each animal's level of stress, and mitigate zoonotic disease risk. Wild animals in captive settings, for instance, should have limited intrusion of humans into their environment and no direct public contact. Direct handling of wild animals in captivity may be necessary by veterinary or animal care professionals under very limited circumstances.

### **Reverse zoonosis**

While research on zoonotic disease typically focuses on the transmission of infectious disease from animals to humans, humans can also transmit pathogens to animals through a process known as reverse zoonosis.<sup>45</sup> COVID-19 is a prime example, with humans known to infect tigers and lions in a zoo setting and minks on fur farms.<sup>46</sup> Research is ongoing into other animals susceptible to SARS-CoV-2 transmission from humans.<sup>47</sup>

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39 Morgan & Tromberg, *supra* note 32.

40 *Id.*

41 *Id.*

42 Jonathan Stirling et al., *Zoonoses Associated with Petting Farms and Open Zoos*, 8 VECTOR-BORNE & ZOONOTIC DISEASES 85, 89 (2007), [link here](#).

43 *Zoonotic Diseases*, CDC, [link here](#) (last visited Mar. 23, 2021).

44 *Id.*

45 Ali M. Messenger et al., *Reverse Zoonotic Disease Transmission (Zooanthroponosis): A Systematic Review of Seldom-Documented Human Biological Threats to Animals*, 9 PLoS ONE, Feb. 28, 2014, at e89055, [link here](#).

46 *COVID-19 and Animals*, CDC, [link here](#) (last updated Feb. 10, 2021).

47 *Id.*

In the U.S., the first case of an animal testing positive for COVID-19 was a tiger at the Bronx Zoo, who began exhibiting symptoms on March 27, 2020.<sup>48</sup> Since then, four additional tigers and three lions at the Bronx Zoo, as well as three tigers at the Knoxville Zoo, three snow leopards at the Louisville Zoo, and two gorillas at the San Diego Zoo have tested positive for COVID-19.<sup>49</sup> In an effort to control the spread of COVID-19 between humans and big cats, the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Services (APHIS) issued an advisory note to zoos and big cat holding facilities requesting that members of the public maintain a distance of at least six feet from nondomesticated cats and that hands-on encounters with nondomesticated cats be suspended until it can be assured that members of the public do not pose a risk of infection to the big cats.<sup>50</sup> This advisory note is not binding, however, so it does not guarantee that direct contact with big cats will be halted during the COVID-19 pandemic.

Mink are highly susceptible to SARS-CoV-2 and, like humans, “can show a range of symptoms, from no signs of illness at all to severe problems, such as pneumonia.”<sup>51</sup> Facilities where mink are farmed for their fur have been associated with the spread of the virus in at least eight countries, beginning with the Netherlands in spring of 2020.<sup>52</sup> In the U.S., at least 16 coronavirus outbreaks have been documented at mink farms.<sup>53</sup> A wild mink in the vicinity of a mink fur farm in Utah has tested positive for COVID-19.<sup>54</sup> The leading theory for the spread of COVID-19 on mink farms is that an infected worker exposed the minks to the virus, the virus then spread between the minks — unsurprisingly, given the crowded and unsanitary conditions typical on fur farms — and may have also passed it back to humans.<sup>55</sup> Ecologist Kevin Olival notes that this type of transmission is cause for concern, explaining that if the virus “establishes itself” in animal populations — domesticated or wild — the virus could continue to “spill back” into human populations and make it extremely difficult to eradicate.<sup>56</sup> This “mink reservoir” can also increase the risk of mutations to the virus, including potentially dangerous mutations.<sup>57</sup> At least seven countries have reported mink-related SARS-CoV-2 mutations in humans.<sup>58</sup>

48 USDA Statement on the Confirmation of COVID-19 in a Tiger in New York, USDA (Apr. 5, 2020), [link here](#).

49 WBIR Staff, *Zoo Knoxville Tigers Enjoy the Sunshine Again After Fully Recovering from COVID-19 Virus*, 10 NEWS WBIR (Nov. 9, 2020), [link here](#); Scottie Andrew, *Three Snow Leopards Test Positive for Coronavirus, Making It the Sixth Confirmed Animal Species*, CNN, [link here](#) (last updated Dec. 11, 2020); Natasha Daly, *Several Gorillas Test Positive for COVID-19 at California Zoo—First in the World*, NAT’L GEOGRAPHIC (Jan. 11, 2021), [link here](#).

50 Advisory Note from USDA, to All Zoos and Facilities Holding Big Cats, *Limiting Close Contact Between Members of the Public and Nondomestic Cats* (May 14, 2020), available at [link here](#).

51 *What We Know About COVID-19 and Mink: The Latest on the COVID-19 Global Situation & SARS-CoV-2 in Mink*, WHO, [link here](#) (last visited Mar. 23, 2021).

52 Tony Diver & Grace Millimaci, *Virus Discovered in Mink in Six Countries, Warns WHO, as Vaccine Fears Grow*, TELEGRAPH, Nov. 7, 2020, [link here](#); Alessio Perrone, *France Culls 1,000 Mink After Discovering Mutated Coronavirus in Farm*, MSN (Nov. 22, 2020), [link here](#); Robert Hart, *Covid-19 Found in Polish Mink, Cull Feared*, FORBES (Nov. 24, 2020), [link here](#).

53 Dina Fine Maron, *First Case of the Coronavirus Detected in the Wild*, NAT’L GEOGRAPHIC (Dec. 14, 2020), [link here](#).

54 *Id.*

55 Pien Huang, *Dutch Minks Contract COVID-19 — and Appear to Infect Humans*, NPR (June 25, 2020), [link here](#).

56 *Id.*

57 In Denmark, researchers have identified at least 170 coronavirus variants from 40 mink farms, and further testing revealed that 300 people tested positive for variants thought to have first emerged in mink. *COVID-19 Mink Variants Discovered in Humans in Seven Countries*, THE GUARDIAN, Nov. 18, 2020, [link here](#); Smriti Mallapaty, *Covid Mink Analysis Shows Mutations Are Not Dangerous — Yet*, NATURE (Nov. 13, 2020), [link here](#).

58 Perrone, *supra* note 52; *COVID-19 Mink Variants Discovered in Humans in Seven Countries*, *supra* note 57 (reporting cases from Denmark, the Netherlands, South Africa, Switzerland, the Faroe Islands, Russia, and the U.S.); *SARS-CoV-2 Mink-Associated Variant Strain — Denmark*, WHO (Dec. 3, 2020), [link here](#) (reporting cases in Denmark, the Netherlands, Spain, Sweden, Italy, and the U.S.).

Our proximity to wild animals is putting them at risk from human pathogens beyond COVID-19, too. For example, salmonella and *Campylobacter* strains introduced by humans to Antarctic and sub-Antarctic wild animal populations threatened “local collapse and extinction” of certain species.<sup>59</sup> Domesticated animals (often companion or farmed animals) can also be infected with salmonella bacteria from humans.

### Insufficient diet

In captivity, omnivores and obligate carnivores are often fed a raw meat diet,<sup>60</sup> which can introduce pathogens.<sup>61</sup> The U.S. Food and Drug Administration (FDA) explains, “Some of these products may have included meat and other tissues from mammals or poultry that have died other than from slaughter or have otherwise been unfit for human consumption.”<sup>62</sup> Such diets are not balanced for vitamins and trace elements; they may transmit antibiotic-resistant bacteria and zoonoses.<sup>63</sup> For instance, raw meat diets are associated with significantly higher rates of salmonella than other diets, and asymptomatic shedding is common.<sup>64</sup> Contact with the raw diet itself poses a risk as does contact with feces from an animal fed such a diet, which may contain those same pathogens.<sup>65</sup>

According to the FDA:

Previously it was presumed that raw meat or raw animal tissues were primarily purchased and used by zoos, mink farms, dog racing facilities, or other professional establishments, and that these entities were aware of the potential risks of using such products, from both a food safety and nutritional deficiency perspective, and could take measures to mitigate those risks. However, an increasing trend is for use of raw meat foods for companion and captive noncompanion animals by owners who may not be as aware of the potential for harm.<sup>66</sup>

In fact, it is common enough for wild animals in captivity to be fed roadkill of unknown provenance that the Association of Zoos and Aquariums (AZA) released guidance discouraging the practice.<sup>67</sup> However, the AZA also describes the practice of feeding roadkill to animals as a “viable tool in good management protocols for many carnivore exhibits” if “it can be established that they are from a safe source.”<sup>68</sup>

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59 *Reverse Zoonosis: Human Pathogens Are Ruining Wildlife*, HEALTH EUROPA (Dec. 11, 2018), [link here](#).

60 *See Manufacture and Labeling of Raw Meat Foods for Companion Animals and Captive Noncompanion Carnivores and Omnivores: Guidance for Industry*, No. 122 (FDA 2004), available at [link here](#) [hereinafter *FDA Guidance*]. “Raw meat diets are most often composed of raw muscle, parts of organ, bones, offal, and other tissues derived from by-products of animals slaughtered for human consumption or from animals that died prior to slaughter or were condemned at slaughter inspection, so they are usually identified as low quality and as unfit for human consumption.” Rinosh Mani & Matti Kiupel, *Raw Meat Diet and Risk of Zoonotic Bacterial Infections for Dogs, Cats and Their Owners* 1-2, MICH. VETERINARY MED. ASS’N, [link here](#) (last visited Mar. 23, 2021).

61 *FDA Guidance*, *supra* note 60, at 3; Clifford Warwick et al., *A Review of Captive Exotic Animal-Linked Zoonoses*, 12 J. ENVT’L HEALTH RES. 9, 14 [n.d.], [link here](#).

62 *FDA Guidance*, *supra* note 60, at 3.

63 *Id.*

64 Karin Hoelzer, *Animal Contact as a Source of Human Non-Typhoidal Salmonellosis*, 42 VETERINARY RES. 34 (2011), [link here](#).

65 *FDA Guidance*, *supra* note 60, at 5; Emily Beeler & Meredith May, *Link Between Animal Feces and Zoonotic Disease*, RX FOR PREVENTION, June-July 2011, at 4, [link here](#).

66 *FDA Guidance*, *supra* note 60, at 3.

67 *NAG Carcass Feeding Statement*, AZA NUTRITION ADVISORY GROUP, [link here](#) (last visited Nov. 17, 2020).

68 *Id.*

## Lack of veterinary care

Poor welfare and lack of veterinary care can contribute to increased stress, sickness, and, potentially, spread of disease. Although it is illegal in many states, substandard breeding and lack of veterinary care are commonplace at facilities that keep animals in captivity for activities such as breeding and exhibition.<sup>69</sup> According to the National Association of State Public Health Veterinarians, the “best way” to prevent zoonotic disease transmission is “to prevent species likely to transmit these diseases from entering the country and the pet trade.”<sup>70</sup> Veterinarians can play a vital role in the early identification of diseases in animals, when there may be time to prevent those diseases from jumping to humans<sup>71</sup> if they have access to animals to provide such care and vigilance.

Animals in captivity must be provided with preventive species-specific veterinary care, such as vaccines and parasite control, and be monitored for signs of illness or injury to ensure prompt veterinary treatment when needed.<sup>72</sup>

## Existing federal laws

In the U.S., the few federal laws that address animal issues are largely related to interstate commerce or regulate certain endangered or threatened species. The discussion here helps to illustrate the inadequacies of U.S. animal protection law regarding mitigation of the risks of zoonotic disease.<sup>73</sup>

## Animal Welfare Act

The Animal Welfare Act (AWA) is the only federal law regulating the treatment of animals in research, exhibition, transport, and by dealers. The AWA establishes minimum standards for certain animals who are exhibited, including those on display at zoos, aquariums, circuses, and traveling shows or bred for commercial sale, but it does not specifically address zoonotic disease risks. The standards it sets forth are mere survival standards.

The AWA is chronically underenforced due to agency policies that heavily rely on warnings and discounted penalties that do not provide meaningful deterrence.<sup>74</sup> For example, one wildlife exhibitor in Indiana accumulated more than 120 violations of the AWA, including

69 See, e.g., *Kuehl v. Sellner*, 161 F. Supp. 3d 678 (N.D. Iowa 2016) (finding that roadside zoo kept endangered tigers and lemurs in unsanitary conditions and failed to provide adequate veterinary care in violation of both the AWA and Endangered Species Act); *In re Cricket Hollow Zoo, Inc.*, AWA Dkt. Nos.15-0152, 15-0153, 15-0154, 15-0155, 2017 WL 6506038 (USDA Nov. 30, 2017) (revoking roadside zoo’s AWA license for violations that included failure to provide sanitary conditions and proper veterinary care); *In re Douglas Keith Terranova*, AWA Dkt. Nos. 15-0058, 15-0059, 16-0037, 16-0038, 2019 WL 4580195 (USDA Aug. 30, 2019) (revoking roadside zoo’s AWA license for violations that included unsanitary enclosures and lack of program of veterinary care); *In re Timothy L. Stark*, AWA Dkt. Nos.16-0124, 16-0125, 2020 WL 836675 (USDA Feb. 3, 2020) (revoking AWA license for roadside zoo based in part on sixteen willful violations of the AWA by failing to provide proper veterinary care).

70 Bridget M. Kuehn, *Wildlife Pets Create Ethical, Practical Challenges for Veterinarians*, AM. VETERINARY MED. ASS’N (July 1, 2004), [link here](#).

71 Lynn Peeples, *To Prevent Pandemics, Bridging the Human and Animal Divide*, UNDark (May 18, 2020), [link here](#).

72 *FDA Guidance*, *supra* note 60.

73 In addition, some federal government and independent agencies, such as the AZA, USDA, and CDC, have developed standards, recommendations, or guidelines related to zoonotic disease transmission from animals in captivity, *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings*, 60 MORBIDITY & MORTALITY WKLY. REP., May 6, 2011, at 1, [link here](#) [hereinafter 2011 Compendium], and there are some state and municipal laws and regulations to mitigate risks. This discussion focuses on federal laws, but some of the state and municipal laws are mentioned at points later in this paper.

74 See Delcianna Winders & Varu Chilakamari, *Animal Welfare Act: Enforcement*, 25 ANIMAL L. 249 (2019); Delcianna J. Winders, *Administrative License Renewal and Due Process: A Case Study*, 45 FLA. ST. U. L. REV. 439 (2019), [link here](#). The *Washington Post* reported that USDA inspectors documented 60 percent fewer violations in 2018 than in 2017. A USDA spokesperson admitted to the *Post* that the agency is prioritizing “working with” the regulated community. Karin Brulliard, *The USDA Is Issuing Far Fewer Citations to Zoos, Labs and Breeders for Animal Welfare Violations*, WASH. POST, Feb. 26, 2019, [link here](#).

threatening government officials and beating animals to death, before his license was finally revoked.<sup>75</sup> Another received more than 200 violations and was still in operation until the time he was sentenced to prison and ownership of the zoo was transferred.<sup>76</sup> This lack of meaningful standards and repeated violations of the AWA not only impact animals but exhibit visitors as well. When animals live in sordid conditions without veterinary care for months or years, there is a higher likelihood that humans could come into contact with sick or diseased animals.

A May 2020 amendment to the AWA regulations to eliminate automatic license renewals and add stricter licensing requirements for exhibitors interested in expanding or changing their facilities<sup>77</sup> addresses an important issue regarding the lack of enforcement, though it remains to be seen how effective this rule is in actually closing facilities with AWA violations. Also, in August 2020, the USDA solicited public input for planned rulemaking specifying standards of humane care for birds.<sup>78</sup> In effect, that rulemaking would likely extend AWA protection to most birds at regulated facilities,<sup>79</sup> which could improve conditions and thereby mitigate some risks posed by live markets and animal exhibits, though again, that is subject to enforcement that has traditionally been weak.

### Endangered Species Act

The Endangered Species Act (ESA) limits various forms of taking and trafficking in wild animals, including wild animals in captivity.<sup>80</sup> Considered “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation,”<sup>81</sup> it largely prohibits the import, export, take, possession, sale, and transport of listed plant and animal species.<sup>82</sup> Animal species listed as threatened or endangered in the U.S. and beyond include birds, mammals, reptiles, amphibians, and invertebrates (including insects, crustaceans, and mollusks).<sup>83</sup> Violations of the ESA can result in civil and criminal penalties.<sup>84</sup> Private parties may bring enforcement actions in court.<sup>85</sup> Importantly, the ESA applies equally to all members of listed species, whether in the wild or in captivity.<sup>86</sup> However, it cannot protect species who are not classified as threatened or endangered in the U.S.

75 Tessa Duvall, “Tiger Baby Playtime” Roadside Zoo’s Wildlife Permit Revoked by Feds for 120+ Violations, LOUISVILLE COURIER J., Feb. 7, 2020, [link here](#).

76 Karin Brulliard, How ‘Tiger King’ Became a Tale More About People than Big Cats, WASH. POST, Apr. 6, 2020, [link here](#).

77 Animal Welfare: Amendments to Licensing Provisions and to Requirements for Dogs, 85 Fed. Reg. 28,772 (May 13, 2020) (amending 9 C.F.R.pts.1-3).

78 Establishing AWA Standards for Birds: Virtual Public Meetings, 85 Fed. Reg. 51,368 (Aug. 20, 2020).

79 Subject to statutory exemptions such as birds bred for use in agriculture and research. See 7 U.S.C. § 2132(g) (2018).

80 6 U.S.C. § 1538 (prohibition on take and interstate sales).

81 *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978) (finding that “Congress intended endangered species to be afforded the highest of priorities”).

82 The ESA provides various exceptions, including incidental take by federal actions, national security issues, hardship cases, possession of a preexisting historical item, and certain actions by Alaskan Natives. 16 U.S.C. § 1539.

83 See 50 C.F.R. §§ 17.11-17.12 (2020).

84 See 16 U.S.C. § 1540(a)–(b).

85 Private parties bringing enforcement actions must first provide adequate notice of sixty (60) days to both the violator and the Secretary of the Interior. *Id.* § 1540(g).

86 The term “fish or wildlife,” which are protected by the prohibition of “take” of listed “fish or wildlife,” is defined as “any member of the animal kingdom.” 16 U.S.C. § 1532(a). The U.S. Fish and Wildlife Service (FWS) has repeatedly explained that “the Act applies to both wild and captive populations of a species ....” Captive Wildlife Regulation, 44 Fed. Reg. 30,044 (proposed May 23, 1979); see also Captive-Bred Wildlife Regulation, 63 Fed. Reg. 48,634, 48,636 (Feb. 11, 1998) (explaining that “take” was defined by Congress to apply to endangered or threatened wildlife “whether wild or captive” and the “statutory term cannot be changed administratively”).

In 2019, the Department of Interior and Department of Commerce issued a rule that significantly weakened the Endangered Species Act. The regulations made it easier to delist species, removed immediate protections for newly listed threatened species, and made it more difficult to protect animals from the growing climate crisis. The change also allowed for the consideration of economic factors in deciding whether a species should be listed, when previous decisions to list a species were solely to be based on scientific analysis.<sup>87</sup> Shortly after, the Protect America's Wildlife and Fish in Need of Conservation Act was introduced in both chambers of Congress, which, if enacted, will reverse this rule.<sup>88</sup>

### **Lacey Act and Captive Wildlife Safety Act**

The Lacey Act of 1900 limits various forms of wild animal taking and trafficking.<sup>89</sup> The Lacey Act makes it unlawful to “import, export, sell, acquire, or purchase” any wild animals (including fishes) or plants that are “taken, possessed, transported, or sold” in violation of U.S. or tribal law or in interstate or foreign commerce involving any fishes, wildlife, or plants taken, possessed, or sold in violation of state or foreign law. In 2007, the Lacey Act was amended by the Captive Wildlife Safety Act (CWSA) to cover certain big cats such as lions, tigers, leopards, jaguars, cheetahs, cougars, and hybrids of these species.<sup>90</sup>

### **Poultry Products Inspection Act**

The Poultry Products Inspection Act of 1957 requires the USDA Food Safety and Inspection Service (FSIS) to inspect all domesticated birds when slaughtered and processed into products for human consumption. However, the law was not designed to address live markets, and live markets often take advantage of the numerous exemptions that allow slaughter operations to bypass “continuous bird-by-bird inspection and the presence of inspectors during the slaughter of poultry and processing of poultry products.”<sup>91</sup>

## **Primary policy recommendations**

Ultimately, private possession of wild animals must be phased out and replaced with safer and more humane sources of entertainment, food, and clothing and décor, and stronger protections for all animals in captivity. We recommend pursuing two primary policies to help achieve this transformative goal: prohibiting private possession of wild animals; and ensuring protections for animals who are kept in captivity.

### **Prohibit private possession**

To reduce pandemic risk and end the suffering of animals not adapted to living in proximity to humans, federal, state, and local governments must act in concert to effectively prohibit the private possession of wild animals. Ultimately, holding wild animals captive must be phased out with narrow exceptions, including for legitimate conservation programs or bona fide sanctuaries, rescue centers, or rehabilitation centers.

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87 Endangered and Threatened Wildlife and Plants; Regulations for Listing Species and Designating Critical Habitat, 84 Fed. Reg. 45,020 (Aug. 27, 2019) (amending 50 C.F.R. pt. 424).

88 S. 2491, 116th Cong. (2019); H.R. 4348, 116th Cong. (2019).

89 16 U.S.C. §§ 3371-3378, 18 U.S.C. §§ 42-43.

90 16 U.S.C. § 3371.

91 Exemptions for “small poultry producers” include the custom slaughter exemption, producer/grower-1,000 limit exemption, producer/grower/other person exemption (GPOP), producer/grower 20,000 limit exemption, small enterprise exemption, and retail exemption. For more information on these exemptions, see Guidance for Determining Whether a Poultry Slaughter or Processing Operation is Exempt from Inspection Requirements of the Poultry Products Inspection Act 5, No.FSIS-GD-2006-0001 (USDA Apr. 1, 2006), available at [link here](#).<sup>13</sup>

Congress' ability to regulate wild animals is constitutionally limited, but Congress can and should enact measures under its Commerce Clause powers to restrict private possession of wild animals. Specifically, Congress must prohibit the international and interstate trade in all wild animals, including, but not limited to, their import, export, breeding, sale, transport, and transfer. To stem the wild capture and captive breeding of wild animals, "all wild animals" in this context should include live wild animals as well as wild animal bodies, parts, or products, including those used for clothing and décor such as furs, skins, and taxidermy trophies.

State and municipal governments are better positioned to effectively eliminate private possession through use of their police powers, which enable them to protect public health, safety, and welfare. Many state and municipal laws already restrict or prohibit private possession of wild animals. However, these laws may only apply to certain species or categories of animals (e.g., elephants, big cats, primates, and bears); to certain purposes for which the animal is used (e.g., as "exotic pets"<sup>92</sup> or on display in performances;<sup>93</sup> or to certain types of possessors (e.g., individuals). Effectively eliminating private possession of wild animals would require addressing a broader set of circumstances.

Prohibiting private possession must include making it unlawful for any private person or entity,<sup>94</sup> excepting legitimate conservation programs, and bona fide sanctuaries and rescue centers, and rehabilitation centers<sup>95</sup> to possess or own any wild animals. Furthermore, the definition of wild animals must encompass all animals who are found in the wild or in a wild state or a hybrid thereof, including, but not limited to, hybrids with domestic animals, and such a prohibition must not be limited based on the purpose for which the animal is possessed (e.g., for food, clothing and décor, or entertainment).

Ultimately, state and municipal governments must pass legislation, including repeal of existing permitting schemes, to prohibit private possession of wild animals, and breeding and transfer of such wild animals,<sup>96</sup> unless such transfer is to a legitimate conservation program, or bona fide sanctuary or rescue center, or rehabilitation center.

### **Ensure animals in captivity are protected**

Where wild animals are still kept in captivity, including during phaseout periods, improving their welfare will reduce their vulnerability to disease as well as the likelihood of pathogen shedding.<sup>97</sup> Importantly, any animals remaining in captivity — including all domestic animals and wild animals in a legitimate conservation program, bona fide sanctuary or rescue center, or rehabilitation center, and those who were captive before bans are enacted, must be

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92 *Animals in Captivity: Summary of State Laws Relating to Private Possession of Exotic Animals*, BORNFREE USA, [link here](#) (last visited Mar. 23, 2021).

93 *Bans on Circuses*, FOURPAWS, [link here](#) (last visited Mar. 23, 2021).

94 Including any natural person or artificial person (a corporation, partnership, trust, or other entity).

95 Such as those meeting Global Federation of Animal Sanctuaries standards. See *Accreditation*, GLOBAL FED'N OF ANIMAL SANCTUARIES, [link here](#) (last visited Mar. 23, 2021).

96 Such laws will likely have to include grandfather clauses that allow for keeping and breeding of wild animals owned before the effective date of the legislation.

97 Dina Fine Maron, 'Wet Markets' Likely Launched the Coronavirus. Here's What You Need to Know, NAT'L GEOGRAPHIC (Apr. 15, 2020), [link here](#).<sup>4</sup> "When animals are under duress, viral pathogens can intermingle, swap bits of their genetic code, and perhaps mutate in ways that make them more transmissible between species." *Id.*

protected by cruelty laws and by meaningful minimum welfare standards. In a previous white paper, we established a path for ensuring that anti-cruelty laws address animal suffering in the factory farm context.<sup>98</sup> Similar exemptions and loopholes must be closed for wild animals, regardless of their use by humans.<sup>99</sup>

Beyond protections against cruelty, the complex nature and needs of individual species, as established in the scientific, veterinary, and animal protection communities, must be accommodated by humans keeping animals captive. Standards for animal care should be based on species, breed, age, and condition and, at a minimum, must include but should not be limited to:

- Adequate veterinary care, including preventive care, such as vaccines and parasite control, and monitoring for signs of illness or injury to ensure prompt veterinary treatment when needed;
- Sufficient diet, including access to clean water and nutritious food of adequate quality, quantity, and variety, presented appropriately to meet the animal's needs;
- Ample space and enrichments to facilitate engagement in species-typical relationships, behaviors, and other brain-based skills;
- Limited exposure to stress-inducing factors, such as anthropogenic noise, artificial light patterns, noxious odors, unnatural temperatures, inappropriate substrate, insufficient space to retreat, inadequate enclosure size, and dangerous objects or animals; and
- Appropriate proximity to humans and other animals, including suitable restrictions on the commingling of animals, between and within species, as well as suitable socialization opportunities.

To ensure these specific, enforceable, and ethologically appropriate minimum standards, the USDA must better implement the intent of the AWA by promulgating new, comprehensive, and species-specific regulations, which will require Congress to expand the scope of the AWA to include the animals and uses covered. For example, although it has held a public meeting to gather information regarding AWA regulations for birds, the USDA's Animal and Plant Health Inspection Service has not yet promulgated regulations and standards for birds not bred for research, despite its mandate to regulate birds who are exhibited to the public, sold for use as pets, or transported commercially.<sup>100</sup> Achieving adequate welfare for such birds would require sufficient space and enrichments to enable natural behaviors and, depending on the species of bird, this would include flight, ability to dustbathe and/or submerge in clean water, and socialization opportunities.<sup>101</sup>

98 ANIMAL LEGAL DEFENSE FUND, *supra* note 9, at 28-30.

99 See, e.g., Pamela D. Frasch, *State Animal Anti-Cruelty Statutes: An Overview*, 5 ANIMAL L. (1999), [link here](#).

100 Establishing AWA Standards for Birds: Notification of Public Meeting, 85 Fed. Reg. 51,368 (Aug. 20, 2020). Only birds bred for use in research or agriculture are exempted from the AWA. *Rats, Mice and Birds Excluded from Animal Welfare Act*, 33 IN BRIEF, July/Aug. 2002, at 14, [link here](#).

101 See 8 FOWLER'S ZOO AND WILD ANIMAL MEDICINE 75-246 (R. Eric Miller & Murray E. Fowler eds., 2015); *Animal Care Manuals*, ASS'N ZOOS & AQUARIUMS, [link here](#) (last visited Mar. 23, 2021); *Husbandry Manuals*, AVIAN SCI. ADVISORY GROUP, [link here](#) (last visited Mar. 23, 2021).

State legislatures must ensure that their cruelty laws cover all animals and such laws are effectively enforced.<sup>102</sup> The scope of a state’s cruelty law may need to be expanded so that it applies across all categories of animals and across contexts of animals’ use. Specifically, wild animals in captivity must be shielded from suffering cruelty at human hands to the same degree that domestic animals are protected — and vice versa. These protections must address not only animal fighting, abuse, and other types of proactive cruelty, but also passive cruelty in the form of neglect. Additionally, state governments should ensure those laws are enforced by providing training and resources, as they do to support prosecution of other crimes,<sup>103</sup> and by designating dedicated animal cruelty prosecutor positions, which has proven successful in both Oregon and Virginia.<sup>104</sup>

## Specific human use drivers, zoonotic risks, and policy recommendations: Entertainment, food, and clothing and décor

Human use of animals in captivity drives their capture from the wild, breeding, trafficking and transport, and ongoing confinement. The following sections describe the treatment of captive animals in entertainment venues (zoos and circuses, exotic pets, and canned hunting), live markets, and fur farms; show how those conditions exacerbate the transfer of zoonotic diseases; and provide our recommendations for improving animal welfare and thereby limiting the spread of zoonotic diseases.

### **Entertainment: Display and performance, exotic pets, and canned hunting**

Animals have been used as entertainment for centuries. Millions of wild animals are wild-caught or captive-bred, trafficked and transported, then confined for use as entertainment on display at stationary zoos and aquariums or in circuses and traveling shows, in private possession as “exotic pets,” or as trophy kills on canned hunting ranches.<sup>105</sup> Facilities, acts, and practices designed to amuse humans with animals in captivity, prioritize human entertainment — and the profit it derives — at the expense of the welfare of animals and significant zoonotic disease risk.

### **Display and Performance**

To entertain human crowds, animals in captivity are often put on display and sometimes forced to perform. Although some facilities display animals to educate and raise awareness or fund legitimate conservation efforts for animals in the wild or in captivity for population

102 For an overview of state animal cruelty laws and their effectiveness, see 2020 U.S. State Animal Protection Law Rankings, ANIMAL LEGAL DEFENSE FUND, [link here](#) (last visited Mar. 25, 2021).

103 *E.g.*, *OVW Fiscal Year 2015 STOP Formula Grant Program Solicitation*, OMB No. 1122-0020 (Dep’t of Justice 2015), available at [link here](#) (Office on Violence Against Women grant program); *Adult Drug Court Discretionary Grant Program FY 2016 Competitive Grant Announcement*, OMB 1121-0329 (Dep’t of Justice 2016), available at [link here](#); *Elder Abuse Prevention Demonstration Project: Planning Phase*, OMB 1121-0329 (Dep’t of Justice 2016), available at [link here](#); *Virginia Sexual & Domestic Violence Victim Fund (VSDVVF)*, VA. DEP’T CRIM. JUST. SERVICES, [link here](#) (last visited Oct. 22, 2020). California’s Central Valley Rural Crime Prevention Program (CVRCPP) distributes state funds via grants to county DAs and sheriffs for the express purpose of combating agricultural crimes. CAL. PENAL CODE ANN. §§ 14170-14174 (2020). Counties may supplement those grant funds from their own coffers. See, e.g., *Rural Crime*, KERN CO. SHERIFF’S OFFICE, [link here](#) (last visited Mar. 23, 2021) (“The Rural Crime Investigation Unit (RCIU) is a collaborative program designed to have experienced investigators work directly with stakeholders in the agricultural, livestock, and oil production industries... a percentage of the funding for the Kern County Sheriff’s Office Rural Crime Investigation Unit is provided by the State of California [via the CVRCPP], but the majority of funding for this unit is provided through Kern County general funds.”).

104 See, e.g., Jordan Miles, *Three Convicted in Animal Abuse*, CHARLOTTE GAZETTE, June 23, 2017, [link here](#); Lynne Terry, *2 Columbia County Residents Convicted of Animal Neglect in Abuse of Cattle*, THE OREGONIAN, Oct. 7, 2014, [link here](#).

105 Domestic animals are also used as entertainment in animal fighting, dog racing, and certain displays, but the discussion here focuses only on wild animals.

recovery purposes, an important distinction must be drawn between facilities that prioritize the interests of the animal and those that prioritize profit.

In the U.S., there are roughly 3,000 zoos and aquariums, and only 240 of those are accredited by the Association of Zoos and Aquariums (AZA),<sup>106</sup> an industry auditing agency with meaningful animal care and welfare standards that requires zoos and aquariums to meet minimum standards for animal care, including living environments, social groupings, health, and nutrition, and for enrichments to stimulate natural behaviors and provide variety.<sup>107</sup>

In contrast to accredited zoos, “roadside zoos” and “marine parks” are unaccredited facilities where wild animals are made available for public display and, in some cases, performances. Such zoos, like circuses and traveling shows, frequently force animals to live in small, dirty enclosures, where they are fed inadequate food and denied veterinary care.<sup>108</sup> They often allow public contact with both wild and domestic animals for petting, bottle feeding, walking, riding, or selfies.<sup>109</sup>

Circuses and traveling shows are infamous for forcing wild animals into close proximity with humans to perform and for cruel training techniques, such as bullhooks (a long wood or metal rod with a pointed metal hook on the end to force elephants into compliance), electrical shocks, and whips.<sup>110</sup>

Even at accredited zoos and aquariums, the financial toll COVID-19 has taken on zoos has placed animals in danger. Due to the COVID-19 pandemic, 80 percent of AZA’s accredited zoos closed; some have reopened but at diminished capacity.<sup>111</sup> Many face a severe lack of operating revenue, with no way to feed and care for their animals who, if dietary needs are met, have complex, specific — and expensive — diets. In one year, the San Diego Zoo and its Safari Park spent more than \$200 million feeding and caring for its animals, and the cost to feed one elephant at the Oregon Zoo for six months is approximately \$250,000.<sup>112</sup> The animal care difficulties resulting from COVID-19 are exacerbated at roadside zoos, which often neglect to pay for proper nutrition and veterinary care, even without the stress of a global pandemic.

### **Zoonotic disease risks from zoos and circuses**

From 1990 to 2000, more than 25 outbreaks of human infectious diseases were associated with visitors to animal exhibits, like roadside zoos.<sup>113</sup> One outbreak that occurred at a zoo

106 *Currently Accredited Zoos and Aquariums*, ASS’N ZOOS & AQUARIUMS, [link here](#) (last visited Mar. 23, 2021).

107 *Accreditation Basics*, ASS’N ZOOS & AQUARIUMS, [link here](#) (last visited Mar. 23, 2021).

108 See, e.g., *Roadside Zoo Checklist*, ANIMAL LEGAL DEFENSE FUND, [link here](#) (last visited Mar. 23, 2021).

109 As of 2019, there were 41 USDA licensed cub petting facilities in the U.S. *Cub Petting*, TURPENTINE CREEK WILDLIFE REFUGE, [link here](#) (last visited Mar. 23, 2021); *Big Cat Question and Answer: Commonly Asked Big Cat Questions*, USDA, [link here](#) (last visited Mar. 23, 2021).

110 *Prohibiting Circuses and Traveling Acts That Use Animals*, ANIMAL LEGAL DEFENSE FUND, [link here](#) (last visited Mar. 23, 2021). As the public becomes more aware of the cruelty endemic to animal-based circuses, attendance is dwindling: in 2016, it was estimated that circus attendance had dropped an estimated 30 to 50 percent over the last 20 years and gross revenue from circuses fell almost 9 percent between 2007 and 2012. Kate Vinton, *Ringmaster of the Universe: How Billionaire Kenneth Feld Keeps Ringling Bros. Circus Alive*, FORBES (Nov. 30, 2016), [link here](#).

111 Robin Wright, *Some Zoos, and Some of Their Animals, May Not Survive the Pandemic*, NEW YORKER (May 18, 2020), [link here](#).

112 *Id.*

113 *2011 Compendium*, *supra* note 73.

resulted in 65 children being infected with salmonella after touching a barrier around the exhibit of an infected Komodo dragon.<sup>114</sup>

Like roadside zoos and marine parks, circuses and traveling shows put members of the public, as well as staff, at risk from zoonotic disease by confining and stressing animals and forcing them into unnatural proximity with humans. Stress from confinement, constant travel, and cruel training techniques can weaken animals' immune systems, leaving them more susceptible to disease, which could then be passed on to the humans with whom they come into contact.<sup>115</sup>

Tuberculosis easily passes from infected animals to humans.<sup>116</sup> Twelve circus handlers became infected with tuberculosis after coming into contact with infected elephants.<sup>117</sup> Tuberculosis-infected elephants have even been used in shows and for rides.<sup>118</sup> Younger animals, who are typically used for bottle feeding, petting, walking, and selfies, often have a higher prevalence of certain pathogens than adult animals, further increasing the likelihood for zoonotic disease transmission.<sup>119</sup>

There is less risk of zoonotic disease transmission at reputable facilities that prioritize the best interests of the animals, including their welfare and disease risk. For wild animals, this means eliminating public contact and minimizing contact with animal care professionals. AZA accredited zoos and aquariums largely restrict visitor contact with wild animals<sup>120</sup> and require protected contact — a safe handling method using barriers — to separate keepers from certain wild animals, like elephants. The AZA not only prohibits direct, unprotected contact between visitors and big cats but also advocates for a federal cub petting ban to protect both animals and humans.<sup>121</sup> While there have been instances of COVID-19 reverse zoonotic infection at AZA accredited zoos,<sup>122</sup> the risk to both animals and humans is presumably higher at facilities that promote direct contact or close proximity between wild animals and visitors and where conditions create a high risk for zoonotic disease transmission.

### **Individual private possession of wild animals as “exotic pets”**

Some domesticated animals have evolved, through artificial or natural selection, to live in close daily proximity to humans as companions. Wild animals have not.

The trade in wild animals — including mammals, birds, reptiles, amphibians, and fishes — as “exotic pets” has proliferated in virtually every area of the U.S. Lions, tigers, cougars, ocelots, servals, wolves, bears, alligators, snakes, and primates like chimpanzees are commonly

114 *Id.*

115 Sophie Pierce, *Elephants and Tuberculosis: A Real Threat*, ANIMAL LEGAL & HIST. CENTER (2018), [link here](#).

116 Nathalia Holt, *The Infected Elephant in the Room*, SLATE (Mar. 24, 2015), [link here](#).

117 In 1996, two elephants used in an Illinois circus died from tuberculosis and 12 employees of the circus tested positive. Shortly thereafter, two elephants along with various other animals at the Los Angeles Zoo were diagnosed with tuberculosis and 55 of the employees tested positive, including many of whom had contact with the elephants. KATHRYN LOUGHEED, *CATCHING BREATH: THE MAKING AND UNMAKING OF TUBERCULOSIS* (2017); Rendi Murphree et al., *Elephant-to-Human Transmission of Tuberculosis, 2009*, 17 *EMERGING INFECTIOUS DISEASES* 366 (2011), [link here](#).

118 Susan K. Mikota, *A Brief History of TB in Elephants*, USDA, [link here](#) (last visited Mar. 23, 2021).

119 *Compendium*, *supra* note 26.

120 *Policy for Animal Contact with the General Public*, ASS'N ZOOS & AQUARIUMS, [link here](#) (last visited Mar. 23, 2021).

121 AZA and AAZV Letter to USDA on Emergency “Cub Petting” Petition, ASS'N ZOOS & AQUARIUMS (May 7, 2020), [link here](#).

122 Daly, *supra* note 49.

purchased as pets. Purchasing or acquiring a wild animal as a pet can be done online with virtually no restrictions.<sup>123</sup> Reptiles, rodents, and birds caught up in the exotic pet trade comprise a significant portion of the many millions of live wild animals imported into the U.S. annually.<sup>124</sup> A recent study found that nearly 4,000 reptile species (more than one-third of all known reptile species) have been traded online, many of them endangered.<sup>125</sup> Although the number of wild animals in captivity is not comprehensively tracked, there are estimated to be thousands of privately possessed primates in the U.S.,<sup>126</sup> and it is believed that there are more tigers kept captive in private possession in the U.S. than there are tigers in the wild globally.<sup>127</sup>

### **Zoonotic disease risk from exotic pets**

Prolonged direct contact and proximity with wild animals kept as “pets” creates an increased risk for the transmission of zoonotic disease. For example, human infections have been connected to “severe monkeypox related to pet prairie dogs[,] lyssaviruses in pet bats[, and] less severe but more common ringworm infections acquired from African pygmy hedgehogs or chinchillas.”<sup>128</sup> The CDC already restricts the importation of various animals because of the disease risk, including primates, turtles with shells under four inches long (“tiny turtles”), bats, African rodents, and civets.<sup>129</sup>

Due to similarities between primate and human genetics, keeping primates as pets creates a particular risk for zoonotic disease transmission to and from humans.<sup>130</sup> Diseases transmitted between the two species include hepatitis A, measles, Ebola, tuberculosis, and the Herpes B Virus.<sup>131</sup> Reptiles also pose a particular danger of zoonotic disease transmission: reptiles commonly kept as pets are frequent carriers of zoonotic disease, including turtles, geckos, and bearded dragons. The CDC estimates that roughly 7 percent of human salmonella infections are associated with having handled a reptile.<sup>132</sup> In just a three-year span, salmonella outbreaks linked to “tiny turtles” sickened 473 people (ranging from under a year to 94 years old) in 41 states, Washington, D.C., and Puerto Rico.<sup>133</sup> Contact with “tiny turtles” is so risky that the FDA banned the sale of turtles with shell lengths less than four inches in 1975.<sup>134</sup>

### **Canned hunting**

In a canned hunt, animals are held in a fenced-in area and participants pay hundreds or even tens of thousands of dollars to kill a specific native or non-native animal in captivity — often a threatened or endangered species. Animals may be hand-reared and made available for bottle-feeding, walking, or petting before being placed in fenced properties

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123 Wild animals can be found for sale online by simply performing a Google search. *E.g.*, *Baby Tiger for Sale at World Market*, WILD ANIMALS & PETS, [link here](#) (last visited Mar. 23, 2021).

124 Smith et al., *supra* note 13; Maryanne Mott, *The Perils of Keeping Monkeys as Pets*, NAT'L GEOGRAPHIC (Sept. 16, 2003), [link here](#).

125 James Dineen, *A Quarter of All Reptile Species, Many of Them Endangered, Are Sold Online*, SMITHSONIAN MAG. (Sept. 29, 2020), [link here](#).

126 Mott, *supra* note 124.

127 Alex Hannaford, *The Tiger Next Door: America's Backyard Cats*, THE GUARDIAN, Nov. 10, 2019, [link here](#).

128 Chomel et al., *supra* note 7.

129 *Bringing Pets and Wildlife into the United States: Licensing and Health Requirements*, CPB (Aug. 2014), [link here](#).

130 Vincent Racaniello, *Reverse Zoonoses: Human Viruses That Infect Other Animals*, VIROLOGY BLOG (Apr. 8, 2009), [link here](#).

131 *Id.*

132 Chomel et al., *supra* note 7.

133 *The Trouble with Tiny Turtles*, CDC, [link here](#) (last visited Mar. 23, 2021).

134 *Id.*

for a near-guaranteed kill and “trophy”: the head or body of the dead animal.<sup>135</sup> Breeding operations and zoos, despite inconsistency with AZA’s guidelines, supply captive-bred animals to canned hunts.<sup>136</sup> There are thousands of ranches in the U.S. that offer canned hunting and/or breed, buy, and sell animals for canned hunts.<sup>137</sup> In one type of canned hunting—fox or coyote penning—packs of hunting dogs are unleashed to chase and often tear apart live foxes and coyotes.<sup>138</sup> The animals used in fox and coyote penning operations are trapped in the wild and often shipped across state lines.<sup>139</sup> Canned hunting and fox penning operations serve no conservation purposes;<sup>140</sup> their purpose is purely the entertainment of trophy hunters.

### **Zoonotic disease risk from canned hunting**

The unnatural densities that characterize canned hunts, plus the constant movement of live animals to stock these facilities, creates a breeding ground for disease. Wild pigs, who are often used on and implicated in escapes from canned hunts,<sup>141</sup> have been connected to instances of pseudorabies and brucellosis, which can be transmitted to humans as well as farmed animals and other domesticated animals.<sup>142</sup> Similarly, these operations, and their bird breeding facilities, create a significant risk from avian flu, threatening birds (wild and domesticated, captive and free roaming) as well as humans who may have contact with them.<sup>143</sup> One such outbreak in a flock of quail at a canned hunting operation was tied to infections on four other premises.<sup>144</sup>

Because animals sometimes escape from canned hunting enclosures, captive and wild animals may interact and transmit zoonoses. Of particular concern to native wild animal populations is chronic wasting disease (CWD) — a fatal, incurable disease caused by an abnormally folded cell surface protein called a prion, which can devastate native deer populations. CWD has been found in 25 states, and new cases are found every year, many at canned hunting facilities.<sup>145</sup> Its risk to humans is currently being studied.<sup>146</sup> There is some evidence that the CWD prion can infect monkeys fed CWD-infected deer and elk meat.<sup>147</sup>

135 See Laura J. Ireland, Comment, *Canning Canned Hunts: Using State and Federal Legislation to Eliminate the Unethical Practice of Canned “Hunting,”* 8 ANIMAL L. 223 (2001), [link here](#); *Captive Hunts Fact sheet*, HSUS, [link here](#) (last visited Mar. 20, 2021).

136 *AZA Policy on Responsible Population Management*, AM. ZOOLOGICAL ASS’N (Jan. 12, 2016), [link here](#).

137 Douglas Main, *A Behind-the-Scenes Look at Texas’ Exotic Animal Ranches*, NAT’L GEOGRAPHIC (July 7, 2020), [link here](#). Americans also travel abroad to shoot captive-bred animals, such as lions, that are unavailable for canned killing in the U.S., then often apply for a permit to import the trophies into the U.S.

138 *The Cruel Practice of Coyote & Fox “Penning”*, ANIMAL WELFARE INT’L, [link here](#) (last visited Mar. 25, 2021).

139 *Id.*

140 Wilderness guide, environmental photojournalist, and director of Blood Lions, Ian Michler, explains “not a single lion bred under the current captive conditions has any conservation value.” Katarzyna Nowak, *The End of “Canned” Lion Hunting May Be in Sight*, NAT’L GEOGRAPHIC (Mar. 11, 2016), [link here](#).

141 See, e.g., *2012 Feral Swine Management Report*, USDA (2013), [link here](#); Mary Esch, *NY Seeks to Stop Wild Hogs, May Ban Captive Hunts*, NBCNEWS (Sept. 4, 2011), [link here](#) (noting that several states have already banned captive wild boar hunts).

142 Sherman W. Jack et al., *Serologic Evidence of Brucella and Pseudorabies in Mississippi Feral Swine*, 6 HUMAN-WILDLIFE INTERACTIONS 89 (2012), [link here](#); Ryan S. Miller et al., *Cross-Species Transmission Potential between Wild Pigs, Livestock, Poultry, Wildlife, and Humans: Implications for Disease Risk Management in North America*, 7 SCI. REP. 7821 (2017), [link here](#).

143 Katharine E. Slota et al., *Human-Bird Interactions in the United States Upland Gamebird Industry and the Potential for Zoonotic Disease Transmission*, 11 VECTOR-BORNE & ZOONOTIC DISEASES 1115 (2011), [link here](#).

144 *Id.*

145 *Chronic Wasting Disease*, USGS, [link here](#) (last visited Mar. 23, 2021).

146 *Chronic Wasting Disease (CWD): Transmission*, CDC, [link here](#) (last updated Feb. 25, 2019).

147 *Id.*

### **Entertainment recommendation: Prohibit the use of wild animals in captivity as entertainment**

To prevent the spread of zoonotic disease and protect both animals and humans, private possession of wild animals should be prohibited. Specifically, prohibitions should include bans on:

- Contact with wild animals in captivity, including at zoos, aquariums, circuses, and traveling shows;
- Wild animals in performances, including at circuses and traveling shows;
- Individual private possession of wild animals as “exotic pets”; and
- Canned hunting, including possessing, importing, breeding, or selling of an animal for use in canned hunting for amusement, sport, or gain.

Failing that, laws must be enacted to address the heightened risk interactions with animals in captivity for the sake of entertainment.

Since 1994, Congress has considered—but not yet enacted—crucial legislation that would address many of these recommendations if it were enacted. In 1994, Rep. George Brown (D-CA) introduced the Captive Exotic Animal Protection Act.<sup>148</sup> The Act would have prohibited knowingly transferring, transporting, or possessing in interstate or foreign commerce a confined non-native mammal “for the purposes of allowing the killing or injuring of that animal for entertainment or the collection of a trophy<sup>149</sup> in a canned hunting facility of fewer than 1,000 acres. It would also have prevented zoos from supplying animals to canned hunting facilities. The Act quickly died in committee, but was reintroduced five more times, most recently by Sen. Frank R. Lautenberg<sup>150</sup> when it also died in committee. This legislation is still necessary and should be enacted with some enhancements to strengthen its provisions. For example, ideally, the legislation would cover all wild animals, rather than only non-native mammals, since limiting the prohibition to non-native mammals would create a loophole, allowing canned hunting of native species, like white-tailed deer, who are commonly stocked at canned hunting facilities.

More recently, Congress has considered two bills that should be reintroduced and finally enacted. The Captive Primate Safety Act was originally introduced in 2005 by Rep. Eddie Bernice Johnson (D-TX)<sup>151</sup> and Sen. James M. Jeffords (I-VT).<sup>152</sup> It has been reintroduced several times, most recently in 2019 by Rep. Earl Blumenauer (D-OR)<sup>153</sup> and Sen. Richard Blumenthal (D-CT).<sup>154</sup> This Act would prohibit the interstate and foreign transport of certain species of primates for the private pet trade. Ideally, when this Act is introduced again, the scope of it would be expanded to cover all wild animals in captivity.

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148 H.R. 4997, 103d Cong. (1994).

149 H.R. 4997 § 2.

150 S. 2731, 108th Cong. (2004). In 2001, the Act was sponsored by then-Senator Joseph Biden. S. 1655, 107th Cong. (2001).

151 H.R. 1329, 109th Cong. (2005).

152 S. 1509, 109th Cong. (2005).

153 H.R. 1776, 116th Cong. (2019).

154 S. 2562, 116th Cong. (2019).

The Traveling Exotic Animal and Public Safety Protection Act, which would prohibit the use of wild animals in performances at a circus or traveling show, was originally introduced in 2016<sup>155</sup> by Rep. Raúl Grijalva (D-AZ), and most recently reintroduced in 2019 by Rep. Grijalva,<sup>156</sup> and Sen. Bob Menendez (D-NJ).<sup>157</sup> The Act defines “exotic and wild animals” as any animal “which is now or has historically been found in the wild or in the wild state, whether wild-borne or captive-bred, and any hybrid of such an animal, including hybrid crosses with a domestic animal or farm animal.”<sup>158</sup>

One additional bill is currently under consideration in 2021. The Big Cat Public Safety Act, originally introduced by Rep. Walter B. Jones (R-NC)<sup>159</sup> and Sen. Richard Blumenthal (D-CT)<sup>160</sup> in 2015, was most recently reintroduced by Rep. Mike Quigley (D-IL)<sup>161</sup> and Rep. Tom McClintock (R-CA)<sup>162</sup> in February 2021 and is making its way through Congress. This legislation would prohibit the private possession of big cats and direct contact between big cats and members of the public.

On a broader scale, the U.S. government should exert more global leadership<sup>163</sup> by making it unlawful to import, export, or facilitate foreign transport of wild animals, including for private possession or display in circuses and traveling shows. More specifically, the U.S. could significantly deter canned hunting abroad. The U.S. Fish and Wildlife Service should deny applications for trophy permits. Every year, Americans travel to foreign countries to kill endangered animals and then apply for a permit to import the trophies into the U.S. Many import applications involve bontebok, an antelope primarily found in South Africa and now nearly extinct in the wild and farmed solely to supply trophies.<sup>164</sup> Also in South Africa, it is estimated that more than 80 percent of lions are hunted in captivity, and 60 percent of captive lion trophies are exported to the U.S.<sup>165</sup>

Until the federal government takes sufficient action, it is left to states and municipalities to protect public health and the welfare of animals by preventing their use as entertainment. Many states and local governments have already enacted the recommended prohibitions listed above. Several states and municipalities have banned the private possession of certain species of wild animals, while others have licensing structures or specific rules on importing wild animals.<sup>166</sup> Thirty-one states ban pet ownership of big cats,<sup>167</sup> while an additional

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155 H.R. 6342, 114<sup>th</sup> Cong. (2016).

156 H.R. 2863, 116<sup>th</sup> Cong. (2019).

157 S. 2121, 116<sup>th</sup> Cong. (2019).

158 H.R. 2863 § 3.

159 H.R. 3546, 114<sup>th</sup> Cong. (2015).

160 S. 2541, 114<sup>th</sup> Cong. (2016).

161 H.R. 263, 117<sup>th</sup> Cong. (2021).

162 H.R. 211, 117<sup>th</sup> Cong. (2021).

163 Twenty-one countries and the European Union already ban the private possession of big cats. *Regulations Concerning the Private Possession of Big Cats: Comparative Analysis*, LIBRARY OF CONGRESS, [link here](#) (last updated Dec. 30, 2020). Some also address other wild animals, and more than 40 countries prohibit or restrict the use of wild animals in circuses and traveling shows. *Bans on Circuses*, *supra* note 93.

164 *Stop the Hunt: Canned Hunting and Trophy Imports*, ANIMAL LEGAL DEFENSE FUND, [link here](#) (last visited Mar. 20, 2021).

165 Richard A. Schroeder, *Moving Targets: The “Canned” Hunting of Captive-Bred Lions in South Africa*, 61 AFRICAN STUDIES REV. 8 (2018).

166 *Map of Private Exotic Pet Ownership Laws*, ANIMAL LEGAL & HIST. CENTER, [link here](#) (last visited Mar. 23, 2021).

167 See Katharine Sucher, *Private Tiger Ownership in U.S.*, PULITZER CENTER (Mar. 6, 2015), [link here](#).

25 states have a complete or partial ban on the private ownership of primates.<sup>168</sup> Reptile bans vary from state to state depending on what the state defines as an exotic reptile.<sup>169</sup> State legislatures and municipal governments without enforceable prohibitions on private possession of wild animals should hasten to adopt them.

More than 150 cities and counties across 37 states have restricted or banned the use of wild animals in circuses and traveling shows.<sup>170</sup> Five states — California, Hawaii, Illinois, New Jersey, and New York — have banned the use of certain wild animals in traveling shows, while Rhode Island has banned the use of bullhooks, resulting in a de facto ban on elephants being used in such shows.<sup>171</sup> Municipalities are also banning the use of animals for entertainment at smaller events as well. For example, the City of Los Angeles has banned the use of wild animals for entertainment at private events.<sup>172</sup>

At least 20 states have banned or restricted canned hunting,<sup>173</sup> and some have laws and regulations restricting the type of animals that can be used (such as a prohibition on using mammals or non-native species) or the size of enclosures, for example.<sup>174</sup> Unfortunately, some state constitutions include language relating to hunting and trapping that may prevent canned hunting laws from being adopted in the state.<sup>175</sup> Additionally, some states have also enacted statutes prohibiting local jurisdictions from exercising home rule to curb canned and other exploitative hunting practices.

### **Food: U.S. live markets**<sup>176</sup>

Given the global impact and heightened risk factors associated with factory farming animals for food, we have addressed those issues and a vision for a reimagined food system in *COVID-19 and Factory Farming: Rethinking Our Relationship with Farmed Animals to Reduce the Likelihood of the Next Pandemic and Reform the Food System*.<sup>177</sup> In this paper, we focus on live markets as a significant retail outlet where animals are offered for on-site sale and slaughter for food. Live markets are not the predominant food retail outlets for most Americans, but they do exist in the U.S., and are fundamentally incompatible with a safe and sustainable food system.

Live markets may offer wild animals, domesticated animals, or both. Wild animals may include reptiles, amphibians, fishes, and crustaceans, including some who may be endangered or threatened wild animals. This legal trade in wild animals puts humans and

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168 See *SLU Anthropologist Co-Authors Global Study Confirming Dire Decline of Non-Human Primates*, ST. LOUIS U. (Jan. 2017), [link here](#).

169 *Animals in Captivity*, *supra* note 92.

170 *Id.*; *Bans on Circuses*, *supra* note 93.

171 *Animals in Captivity*, *supra* note 92; *Bans on Circuses*, *supra* note 93.

172 City News Serv., *L.A. Bans Exotic Animals from House Parties*, LOS ANGELES TIMES, Feb. 18, 2020, [link here](#).

173 Alabama, Arizona, California, Connecticut, Delaware, Georgia, Hawaii, Maryland, Massachusetts, Minnesota, Mississippi, Montana, Nevada, North Carolina, Oregon, Rhode Island, Virginia, Washington, Wisconsin, and Wyoming.

174 *Laws Related to Canned Hunting*, ANIMAL L. COALITION, [link here](#) (last visited Mar. 23, 2021).

175 *Right to Hunt Constitutional Amendments*, BALLOTPEDIA, [link here](#) (last visited Mar. 23, 2021).

176 There is no universally accepted term for markets selling live animals for food via on-site or home slaughter. Depending on the region and speaker, these markets may be referred to as live markets, wet markets, live animal wet markets, live animal markets, live meat markets, wildlife markets, live poultry markets, live bird markets, and other similar terms, but they are commonly known as “live markets” in the U.S. Patrick Kinsella, *Exploring the Ethics and Idiosyncrasies of Live Animal Markets, Near and Far, Old and New*, Love Nature (June 20, 2016), [link here](#). In this paper, we use the term “live market.”

177 ANIMAL LEGAL DEFENSE FUND, *supra* note 9.

animals at risk from exposure to pathogens.<sup>178</sup> Such trade also risks the introduction of non-native species into the wild, which can put native wild animal populations at further risk.

Although the exact number of live markets in the U.S. is unknown,<sup>179</sup> there are at least dozens of wild animal-selling live markets and hundreds selling chickens and other domesticated birds.<sup>180</sup> A survey of nearly 200 live markets selling birds revealed that markets in the Northeast tend to be larger than markets in California, Florida, and Texas.<sup>181</sup> New York City is believed to have the largest concentration of live markets in the U.S.,<sup>182</sup> with locations reportedly making “goats, sheep, chickens, guinea fowl, turkeys, partridges, rabbits, pigeons and quail” available for sale and on-site slaughter.<sup>183</sup> The Hill reported that New York City has roughly 80 live markets, most of which are located in Brooklyn, the Bronx, and Queens.<sup>184</sup> Los Angeles reportedly has about two dozen live markets.<sup>185</sup>

Farmers can use these live markets to avoid federal inspection and oversight by taking advantage of the Federal Meat Inspection Act’s “custom exemption,” which allows people to have their own animals slaughtered for food without being subject to federal food safety inspection as long as the animal will be eaten only by that person, their family, nonpaying guests, or employees.<sup>186</sup> Exactly how this exemption applies varies among the states. Some states have interpreted the “custom exemption” to mean a consumer may take ownership of an animal prior to slaughter, then slaughter the animal themselves, or have the animal slaughtered at an on-site custom slaughterhouse, so long as the meat and by-product from the animal is intended for consumption by the owner and their household. In some states, it is assumed that a person owns an animal upon purchase, including purchase via phone, and that a live market seller (like a farmer or slaughterhouse operator) may select an animal, or portion thereof, on behalf of the consumer, as well as arrange slaughter, processing, and transportation. Several states interpret the custom exemption to allow for the presale of portions of live animals, including halves, quarters, or sixteenths. Other states interpret the custom exemption as applying only to the person who raised the animal.<sup>187</sup>

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178 Jonathan Kolby, *To Prevent the Next Pandemic, It’s the Legal Wildlife Trade We Should Worry About*, NAT’L GEOGRAPHIC (May 7, 2020), [link here](#).

179 Acquiring accurate information on the number and location of live markets in the U.S. is critical to effectively eliminating or mitigating the risk they pose to public health. However, data is not readily available on all the animals being sold and slaughtered for consumption nor all live market facilities. For example, the APHIS list of slaughter and rendering establishments captures only establishments that have been approved to receive animals moved interstate. *Listed Slaughter and Rendering Establishments*, USDA, [link here](#) (last updated Mar. 5, 2021). The lack of accurate and easily accessible information on live animal markets is concerning because detecting emerging zoonotic diseases early is essential to trigger a timely disease outbreak investigation. SUSTAINING GLOBAL SURVEILLANCE AND RESPONSE TO EMERGING ZOO NOTIC DISEASES (Gerald T. Keusch et al., eds., 2009), available at [link here](#); *Live Animal “Wet Markets” in New York City Face Protests amid Coronavirus Pandemic*, CBS NEWS (May 9, 2020), [link here](#) [hereinafter *Wet Market Protests*].

180 See, e.g., *Live Market Protests*, *supra* note 179.

181 Lindsey Garber et al., *Description of Live Poultry Markets in the United States and Factors Associated with Repeated Presence of H5/H7 Low-Pathogenicity Avian Influenza Virus*, 51 AVIAN DISEASES 417 (2007), [link here](#).

182 Kinsella, *supra* note 176.

183 Brook Singman, *New York, California Lawmakers Call for State Ban on ‘Wet Markets’ amid Coronavirus*, FOX NEWS (Apr. 14, 2020), [link here](#).

184 *Id.*

185 Yingjie Wang, *LA’s “Wet Markets” Could Be on the Chopping Block*, LAIST (July 9, 2020), [link here](#).

186 See 9 C.F.R. § 303.1 (2021).

187 Martha Goodsell & Tatiana Luisa Stanton, *Guide to Direct Marketing Livestock and Poultry*, CORNELL SMALL FARMS PROGRAM (2019), [link here](#); FSIS Guidelines for Determining Whether a Livestock Slaughter or Processing Firm Is Exempt from Inspection Requirements of the Federal Meat Inspection Act (USDA 2018), available at [link here](#).

### Zoonotic disease risks from live markets

The conditions in live markets are ripe for the spread of zoonotic diseases. Live animals in these markets are typically confined, packed, and stacked in cages on top of one another, forced to share air and often expelling their own waste upon one another — conditions that create a virtual gravity well for pathogens.<sup>188</sup> The physiological stresses that animals endure from such confinement weakens their immune responses to pathogens and, as a consequence, they are much more likely to become vectors of disease.<sup>189</sup> Necropsies on frogs and turtles from California live markets have consistently revealed diseased or parasitized animals.<sup>190</sup> It can take vendors days or weeks to sell certain live animals so that new animals and old are commingled, creating optimum conditions for spread of disease.<sup>191</sup> Moreover, the fact that many live markets are permanent means that diseased animals may stay in the market for days or weeks shedding pathogens.

Indeed, domestic farmed animal markets and wildlife markets have been the sources of numerous zoonotic disease outbreaks. One of the earliest detections of an avian influenza (bird flu) outbreak in the U.S. was in East Coast live markets selling birds in 1924.<sup>192</sup> Bird markets are particularly dangerous because wild bird populations serve as a reservoir and make avian influenza virtually impossible to eradicate. Wild birds are the natural host for most avian influenza Type A viruses, though they often do not get sick when they are infected.<sup>193</sup> However, both highly pathogenic avian influenza (HPAI) A viruses and low pathogenic avian influenza (LPAI) A viruses are highly contagious to the domesticated birds that contact wild birds in the market, and these viruses can sicken or even kill chickens, ducks, turkeys, and other domesticated birds.<sup>194</sup> Moreover, LPAI viruses that do not cause disease in wild bird populations can evolve into HPAI viruses in domestic bird populations, with some causing up to 100 percent mortality.<sup>195</sup> Deaths resulting from avian influenza include 17 million birds killed to halt the spread of a U.S. outbreak in 1983–84.<sup>196</sup> When a strain of virus similar to one that killed 62 people and 140 million birds in Asia emerged in the U.S. in 2015, chicken farmers killed tens of millions of chickens to contain the outbreak, which fortunately in the U.S. did not spill over into the human population.<sup>197</sup>

188 For example, in a case in which a Philadelphia live market owner pleaded guilty to animal cruelty charges, the Pennsylvania SPCA, which enforces state animal cruelty laws, uncovered “unsanitary shelters and lack of access to food or water for the live birds on multiple occasions” at the market. Victor Fiorillo, *This South Philly Live Chicken Store Is in Trouble with the Feds*, PHILADELPHIA (Feb. 16, 2017), [link here](#).

189 Robert G. Webster, *Wet Markets: A Continuing Source of Severe Acute Respiratory Syndrome and Influenza?*, 363 *THE LANCET* 234, 234 (2004), [link here](#).

190 Dan Noyes, *Coronavirus Impact: Calls Mount to Close Live Animal Markets in Bay Area amid COVID-19 Crisis*, ABC 7 NEWS (May 6, 2020), [link here](#).

191 Webster, *supra* note 189.

192 *USDA Questions and Answers: Avian Influenza in the United States*, USDA (Apr. 2015), [link here](#); Blanca Lupiani & Sanjay M. Reddy, *The History of Avian Influenza*, 32 *COMPARATIVE IMMUNOLOGY, MICROBIOLOGY & INFECTIOUS DISEASES*, July 2009, at 311, [link here](#).

193 *Avian Influenza in Birds*, CDC, [link here](#) (last visited Mar. 23, 2021).

194 *Id.*

195 Mahmoud M. Naguib et al., *Avian Influenza Viruses at the Wild-Domestic Bird Interface in Egypt*, 9 *INFECTION ECOLOGY & EPIDEMIOLOGY*, 2019, [link here](#).

196 *Id.*

197 Stephanie Strom, *Egg Farms Hit Hard as Bird Flu Affects Millions of Hens*, N.Y. TIMES, May 14, 2015, [link here](#); Robert G. Wallace, *Breeding Influenza: The Political Virology of Offshore Farming*, 41 *ANTIPODE* 916, 928-29 (2009), [link here](#).

The types of animal–animal interactions inherent to live markets can increase the risk of cross-species virus transmission, particularly given prolonged exposure.<sup>198</sup> The human–animal interactions in these markets pose a grave threat to global public health.<sup>199</sup> Vendors and consumers may have close contact with infected live animals and their bodily fluids, with contaminated meat, viscera, or surfaces, or even airborne or waterborne pathogens.<sup>200</sup> Unsanitary conditions can exacerbate this risk, with unwashed hands transferring pathogens to surfaces and objects, like handrails and tabletops, which can then infect another person through contact with the eyes, nose, or mouth. The next global pandemic could so easily be spread by one human who comes into contact with a pathogen that ultimately results in a zoonotic disease outbreak.

### **Live market recommendations: Ban live markets**

It is incumbent upon federal, state, and municipal governments to take meaningful action to reduce the public health threat from these markets by banning live markets. A study on the effectiveness of live poultry market interventions on human infection with avian influenza A (H7N9) concluded that permanent closure of live poultry markets provided the most effective reduction in human infection.<sup>201</sup>

Congress should enact legislation to ban live markets, and, as necessary, fund agencies responsible for promulgating regulations and enforcement. Reintroduced in January 2021 with bipartisan sponsorship in both the House of Representatives and Senate, the Preventing Future Pandemics Act<sup>202</sup> would close live markets selling wild animals and the associated wildlife trade by prohibiting the import, export, and sale of live wild animals for human consumption in the U.S. and funding programs to phase out demand for wildlife as a food source. There is already a state-federal-industry cooperative program that involves some degree of oversight of live markets selling birds, including monitoring and surveillance. However, state participation is voluntary.<sup>203</sup> Absent an outright ban on live markets, state participation in the program must be made mandatory.

Alternatively, the Surgeon General and Secretary of Health and Human Services, under their authority “to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession,”<sup>204</sup> should be used to close live markets.<sup>205</sup>

198 Colin R. Parrish et al., *Cross-Species Virus Transmission and the Emergence of New Epidemic Diseases*, 72 *MICROBIOLOGY & MOLECULAR BIOLOGY REV.* 457 (2008), [link here](#).

199 Amanda Fine & Aili Kang, *Emerging Zoonoses and the Risk Posed by Wildlife Markets*, *WILDLIFE CONSERVATION Soc’y* (Mar. 16, 2020), [link here](#).

200 *See Assemblymember Linda B. Rosenthal and State Senator Luis Sepúlveda Introduce New Legislation to Immediately Shutter New York’s Live Markets to Reduce Risk of Disease Spread*, *ASSEMBLYMEMBER LINDA B. ROSENTHAL* (May 5, 2020), [link here](#).

201 Wei Wang et al., *Effectiveness of Live Poultry Market Interventions on Human Infection with Avian Influenza A(H7N9) Virus, China*, 26 *EMERGING INFECTIOUS DISEASES*, May 2020, [link here](#).

202 S. 37, 117th Cong. (2021); H.R. 151, 117th Cong. (2021).

203 *Prevention and Control of H5 and H7 Influenza in the Live Bird Marketing System: Uniform Standards for a State-Federal-Industry Cooperative Program*, APHIS No. 91-55-076 (USDA Aug. 2020), *available at* [link here](#); *Previous Outbreaks of Avian Influenza in the U.S. and Surveillance for HPAI H5N1 in the U.S.*, *EXTENSION DISASTER EDUC. NETWORK*, [link here](#) (last visited Mar. 23, 2021).

204 42 U.S.C. § 264 (2018).

205 There is related precedent for this recommendation — in 1975, the U.S. Food and Drug Administration prohibited the sale of small “pet turtles” to prevent the spread of salmonella. *Salmonella Infections Linked to Small Pet Turtles*, CDC (Mar. 13, 2020), [link here](#).

States with larger numbers of live markets — such as California and New York — are already considering stricter state laws. On February 10, 2021, Sen. Henry Stern (D-CA) introduced S.B. 376, which would prohibit the import or live market sale of an animal “that is a known invasive species or that is of a taxa known or likely to be responsible for zoonotic transmission of a disease.”<sup>206</sup> This legislation would build on an existing law prohibiting certain specific practices at live markets selling frogs, turtles, and wild birds, such as confining, holding, or displaying certain animals in a manner that is likely to cause injury, starvation, or suffocation.<sup>207</sup> On August 10, 2020, New York Governor Andrew Cuomo signed into law S. 6252/A. 8009, extending a moratorium on live bird markets and slaughterhouses in New York City.<sup>208</sup> Introduced by Sen. Michael Gianaris and Asm. David Weprin, the legislation prohibits the New York Department of Agriculture and Markets from issuing licenses to live bird markets and slaughterhouses within 1,500 feet of a residential building in New York City.

Municipal governments can play a significant role in preventing zoonotic disease outbreaks and proliferation by using traditional municipal powers to address the risks from live markets. On June 10, 2020, the Los Angeles City Council passed a motion by Councilmembers Bob Blumenfield and Paul Koretz, which directed the Department of City Planning, Department of Building and Safety, the Department of Animal Services, and the City Attorney, with the assistance of the County Department of Public Health as needed, to conduct a feasibility report on the implementation of an ordinance prohibiting the sale of live animals for human consumption.<sup>209</sup> The completed report, released on November 18, 2020, recommends that regulations relating to these markets be strengthened. It presents a range of options, including various establishments and practices that should be prohibited.<sup>210</sup>

These state and municipal efforts demonstrate a recognition of the dangers live markets pose to both animal and human health, but they do not go far enough. It is not the case in the U.S. — as it is globally<sup>211</sup> — that live markets are a critical food source for segments of the population, nor are they significant markets for farmers. U.S. lawmakers can and should close and ban live markets.

Despite the overwhelming evidence in favor of banning live markets, governments may find it necessary to phase in bans. In these cases, governments should focus on enacting a moratorium on new operating licenses for live markets, phasing in a ban, and simultaneously adopting strict regulations for existing, licensed live markets, along with an effective enforcement scheme. At a minimum, specific and stringent regulations for live markets, combined with mandatory registration that explicitly discloses the person or persons legally and financially responsible for each stall and each enclosure, reporting, and regular inspections, are vital to protect public health.

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206 S. 376, 2021-22 Sess. (Cal. 2021). This bill previously died in process in the 2019-2020 legislative session. S. 1175, 2019-20 Sess. (Cal. 2020).

207 CAL. PENAL CODE § 597.3 (2019).

208 *Governor Cuomo Signs Legislation to Extend Live Poultry Market and Slaughter House Moratorium in New York City*, NY STATE (Aug. 10, 2020), [link here](#).

209 *Sale of Living Animals for Human Consumption*, Los Angeles, Cal., City Council No. 20-0425 (introduced Apr. 7, 2020), available at [link here](#); Wang, *supra* note 185.

210 Letter from Brenda F. Barnette, General Manager, Los Angeles Department of Animal Services, to Eric Garcetti, Mayor, City of Los Angeles, Report on Live Animal Sales: Sale of Living Animals for Human Consumption (Nov. 18, 2020), available at [link here](#). In January 2021, the City Council referred the issue to the City Arts, Parks, Health, Education, and Neighborhoods Committee. *Council File 20-0425: Activity*, LOS ANGELES CITY COUNCIL, [link here](#) (last visited Mar. 23, 2021).

211 Joshua Cho, *Why It’s Wrong (and Racist) to Blame COVID-19 on Chinese ‘Wet Markets,’* FAIR (May 7, 2020), [link here](#); Bettina Makalintal, *Coronavirus Fears Are Reviving Racist Ideas About Chinese Food* (Jan. 29, 2020), [link here](#).

Critically, improving the welfare of animals can measurably reduce disease transmission. Regulations must establish minimum standards for animal care in transport, on display, and during slaughter, including, but not limited to:

- Maximum duration of transportation, confinement, and handling of live animals by people;<sup>212</sup>
- Access to nutritious food and clean water;
- Animal enclosure standards, such as solid flooring<sup>213</sup> and minimum space allocation per animal;
- Restrictions on the commingling of animals, between and within species;<sup>214</sup>
- Exposure to extreme temperatures; and
- Allowable methods of on-site slaughter.<sup>215</sup>

Market sanitation and meaningful separation between vendor stalls and between animal enclosures can reduce the likelihood of disease transmission.<sup>216</sup> At a minimum, regulations should require:

- Regular cleaning and disinfection of the market, each stall, and each animal enclosure;
- Frequency of handwashing by vendors;<sup>217</sup>
- Establishment of handwashing stations, mandatory per a certain number of vendors or consumers;
- Minimum allowable distance between vendor stalls and enclosures or standard for erected barriers between stalls and enclosures;<sup>218</sup>
- Sanitary disposal of animal carcasses, viscera, and other waste, including blood, feces, and urine; and
- Conditions and utilities for processing and storage of food products.<sup>219</sup>

These measures are meaningless unless public health officials conduct inspections of markets (including each stall or storefront) that are frequent and, at least periodically, unscheduled. Inspections should be supplemented by serological (antibody) surveys.<sup>220</sup>

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212 Webster, *supra* note 189; *Compendium*, *supra* note 26.

213 During a 2006 conference in which OIE, WHO, and FAO discussed the need to contain AI-H5N1 at its source, which included wet markets, members of the conference suggested adding a bottom tray to animals' cages to reduce fecal contamination of roads and surrounding areas when poultry are transported to and from the market. Adam Soliman, *Wet Markets in China: A Food Safety Perspective*, FOOD SAFETY NEWS (Dec. 20, 2012), [link here](#).

214 *Id.*

215 *E.g.*, AM. VETERINARY MED. ASS'N, GUIDELINES FOR THE HUMANE SLAUGHTER OF ANIMALS (2106), available at [link here](#).

216 WILLIAM A. GEERING ET AL., MANUAL ON THE PREPARATION OF NATIONAL ANIMAL DISEASE EMERGENCY PREPAREDNESS PLANS 30, available at [link here](#) (last visited Mar. 23, 2010).

217 *Recommendations to Reduce Risk of Transmission of Emerging Pathogens from Animals to Humans in Live Animal Markets or Animal Product Markets*, WHO (Mar. 26, 2020), [link here](#) [hereinafter WHO RECOMMENDATIONS].

218 Carol Clark, *Spillover: Why Germs Jump Species from Animals to People*, eSCIENCECOMMONS (Feb. 13, 2020), [link here](#); Christine Kreuder Johnson et al., *Spillover and Pandemic Properties of Zoonotic Viruses with High Host Plasticity*, 5 SCIENTIFIC REP. (Oct. 7, 2015), [link here](#).

219 WHO Recommendations, *supra* note 217.

220 COVID-19 Serology Surveillance, CDC, [link here](#) (last updated Mar. 11, 2021).

Such serological surveys in animal populations have been recommended by the United Nations Food and Agriculture Organization to either “detect the spread of infection or to prove freedom from infection.”<sup>221</sup>

Vendors should be required to keep records and submit regular reports to public health officials, disclosing information about each animal brought to a live market. Animal identification and tracking enhances traceability of zoonotic diseases, which can enable a swift response to contain the spread of disease and reduce the number of people and animals exposed.<sup>222</sup> In the event of a zoonotic disease outbreak or incident linked to a live market, detailed reporting would facilitate tracing to the infected host animal(s) and their origin, such as a flock or herd on a specific farm or a wild animal population in a certain region. Reports should include:

- Species, approximate age, and sex;
- Origin (i.e., farm name and address or location of wild-capture);
- Transport to market, including date and time of departure and arrival, driver name and business address, vehicle type, and other species in shared transport; and
- Date and time of disposition (i.e., sale or slaughter, and, if slaughtered, the method used).
- Reporting procedures should also include a mechanism to expedite and escalate information sharing related to any potentially serious outbreak or incident, alerting relevant public health and animal health agencies across levels of government.<sup>223</sup>

A framework for a coordinated response to disease outbreaks at live markets, involving relevant public health and animal health agencies, should be established. The framework should include guidance for implementing disease control and eradication programs and should prioritize both public health and the welfare of animals, addressing methods for euthanasia and depopulation as well as safe disposal of carcasses and disinfection of premises.

Ultimately, banning live markets would result in the best outcome for people and animals, but until that happens, this level of regulation of live markets is crucial.

### **Clothing and décor: Fur**

Fur pelts and other animal fibers have been used as clothing as well as home construction and décor since early human history. Mink, foxes, chinchillas, raccoon dogs, rabbits, and other fur-bearing animals are farmed for their pelts. Alligators and snakes are farmed for their skins. And skin from cows and other farmed animals is turned into leather and used by humans in a variety of ways. Fur clothing and décor only emerged as a symbol of wealth, luxury, and high fashion in the mid-20th century.<sup>224</sup> With its rise in popularity, fur fashion became a subject of significant controversy for the threat it posed to endangered species and its inherent animal cruelty.<sup>225</sup>

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221 GEERING ET AL., *supra* note 216, at 21-22.

222 See, e.g., *id.* at 45; USDA, ANIMAL DISEASE TRACEABILITY REPORT 17-18 (Apr. 2017), available at [link here](#).

223 GEERING ET AL., *supra* note 216, at 22.

224 Alice Hines, *The History of Faux Fur*, SMITHSONIAN MAG. (Jan. 22, 2015), [link here](#).

225 *Id.* In the mid-1960s, environmentalists and conservations raised concerns about the fur industry depleting populations of endangered species. As protests over fur continued and animal rights activists waged public campaigns against the fur industry, the faux fur industry capitalized on the controversy.

Approximately 85 percent of fur comes from animals bred and raised in factory-like fur farming operations.<sup>226</sup> The remaining 15 percent is sourced from wild animal populations, largely through the use of baited traps.<sup>227</sup> Mink and foxes are the two most common animals bred at fur farming operations.<sup>228</sup> As of 2019, the U.S. had nearly 275 mink farms across 23 states.<sup>229</sup> These farms kill 2.7 million minks per year for their pelts (skin and fur) and breed enough females to produce more than 359,000 kits.<sup>230</sup>

Living conditions on fur farms result in poor animal health and welfare. Fur-bearing animals are often crowded into small cages with few, if any, opportunities to express natural behaviors, and they commonly exhibit signs of extreme stress, such as stereotypies, cannibalism, and infanticide.<sup>231</sup> The constant stress and inability to exercise experienced by these animals results in depressed immune systems, which, coupled with the fact that the animals are constantly in contact with the bodily secretions of their counterparts, makes fur farming operations an ideal environment for the spread of disease.<sup>232</sup> To prevent damage to animals' pelts, they are usually killed via suffocation, electrocution, or gassing, which is the method most commonly used, even though it can take as long as 15 minutes for the mink to die.<sup>233</sup>

### Zoonotic disease risks from fur farms

Because mink can catch and spread COVID-19 back to humans via reverse zoonosis, mink fur farming operations pose a unique risk to public health. Moreover, farmed and wild mink populations can serve as a reservoir for the virus, making it very difficult to eradicate and increasing the risk of potentially dangerous mutations of the virus.<sup>234</sup> A new variant of the virus could then be reintroduced to humans, potentially jeopardizing the efficacy of existing COVID-19 vaccines.<sup>235</sup>

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226 *The Fur Trade*, BUS. OF FUR, [link here](#) (last visited Mar. 23, 2021).

227 *Id.*; Lesley A. Peterson, *Detailed Discussion of Fur Animals and Fur Production*, ANIMAL LEGAL & HIST. CENTER (2010), [link here](#). Trapping is regulated at the state level, and many states do not regulate how often trappers must check their traps — meaning an injured fur-bearing animal could be stuck in a trap with no way to access food or water for hours or days before a trapper is required to return.

228 *Id.*

229 Elaine S. Povich, *Fur Clothing Bans Advance in More Cities and States*, PEW (Sept. 5, 2019), [link here](#).

230 *Id.*

231 *HSVMA Statement on Fur-Farmed Animals and the Risk of Disease*, HUMANE SOC'Y VETERINARY MED. ASS'N (Oct. 2020), [link here](#) [hereinafter *HSVMA Statement*]; Rachael Bale, *Fur Farms Still Unfashionably Cruel, Critics Say*, NAT'L GEOGRAPHIC (Aug. 17, 2016), [link here](#); EUROPEAN COMM'N, WELFARE OF ANIMALS KEPT FOR FUR PRODUCTION: REPORT OF THE SCIENTIFIC COMMITTEE ON ANIMAL HEALTH AND ANIMAL WELFARE (2001), available at [link here](#).

232 *HSVMA Statement*, *supra* note 231.

233 *Fur Farms*, ANIMAL ETHICS, [link here](#) (last visited Mar. 20, 2021).

234 See *supra* note 51-58.

235 Helen Briggs, *Mutated Coronavirus May 'Jump Back and Forth' between Animals*, BBC (Nov. 13, 2020), [link here](#). 30

In the spring and summer of 2020, nearly 20 million mink were killed to halt the spread of COVID-19 after its discovery at 25 fur farming operations in the Netherlands,<sup>236</sup> and 69 fur farms in Denmark,<sup>237</sup> as well as other operations in cases in Lithuania, Spain, Sweden, Italy, Greece, and the U.S.<sup>238</sup> According to Denmark's health minister, half of the COVID-19 cases in Northern Denmark could be traced to mink farms.<sup>239</sup>

In the U.S., the first COVID-19 infection in mink was recorded at a Utah farm in August 2020 after mink were exposed to a human with a confirmed or probable case of COVID-19.<sup>240</sup> More than 12,000 minks on fur farms in Utah have died from COVID-19 infections.<sup>241</sup> The USDA has confirmed infections of COVID-19 in mink on farms in Oregon, Michigan, and Wisconsin.<sup>242</sup> Mink farming operations can also put wild mink populations at risk when farmed mink escape into natural ecosystems.<sup>243</sup> If a COVID-19-infected mink were to escape and interact with a wild population, it is possible that the infection could then be contracted by wild mink and decimate the entire population. A spokesperson with the Danish Veterinary and Food Administration confirmed that infected mink had escaped into the wild from fur farming operations, putting local wild and domesticated animals at risk and potentially creating new reservoirs for the virus.<sup>244</sup> Alarmingly, the first COVID-19 infected wild mink was found in December 2020, near a fur farm in Utah.<sup>245</sup>

This is not the first time fur farms have been associated with zoonotic disease outbreaks. In 2010, for instance, testing following a disease outbreak at a Midwest mink farm with 15,000 animals revealed the presence of hemorrhagic bronchointerstitial pneumonia as well as Influenza A virus of H1N2 subtype (swine flu<sup>246</sup>) in the lungs of the mink.<sup>247</sup> The source appeared to be uncooked turkey fed to the minks.<sup>248</sup>

236 Sophie Kevany, *A Million Mink Culled in the Netherlands and Spain amid COVID-19 Fur Farming Havoc*, THE GUARDIAN, Jul. 17, 2020, [link here](#). At least some of the mink were killed using carbon monoxide gas. Huang, *supra* note 55. In response to the outbreaks, the Dutch government, which had already approved a ban on mink breeding, expedited the closure of mink farms, moving an original 2024 deadline for closure up to March 2021, Reuters Staff, *Netherlands to Close Mink Farms after Coronavirus Outbreak*, REUTERS (Aug. 27, 2020), [link here](#), and providing nearly \$200 million in payouts to the farmers, Mike Corder, *Dutch Government to Shut Down All Mink Farms by Next Year*, AP (Aug. 28, 2020), [link here](#).

237 Staff, *Some Key Facts About the Mink Industry in Europe*, REUTERS (Nov. 5, 2020), [link here](#). In Denmark, the world's largest mink fur producer, authorities sought to eradicate farmed minks in the country, ordering the culling of more than 17 million animals with assistance from the army, police, and national emergency service, *Denmark Announces Cull of over 15 Million Mink over COVID Mutation Fears*, THE GUARDIAN, Nov. 4, 2020, [link here](#); Ben Kessler, *Here's Why Denmark Culled 17 Million Minks and Now Plans to Dig up Their Buried Bodies. The Covid Mink Crisis, Explained*, NBCNEWS (Dec. 1, 2020), [link here](#). However, the rushed mass burial of minks' bodies in Denmark has raised concern about the shallowness of the graves and the potential for groundwater contamination. *Decomposing Mink in Denmark 'May Have Contaminated Groundwater'*, THE GUARDIAN, Dec. 10, 2020, [link here](#); see also Jon Henley, *Culled Mink Rise from the Dead to Denmark's Horror*, THE GUARDIAN, Nov. 25, 2020, [link here](#).

238 SARS-CoV-2 Mink-Associated Variant Strain — Denmark, *supra* note 58.

239 *Denmark Announces Cull of over 15 Million Mink Over COVID Mutation Fears*, *supra* note 237.

240 *Cases of SARS-CoV-2 in Animals in the United States*, USDA, [link here](#) (last updated Mar. 22, 2021) [hereinafter *Cases of SARS-CoV-2*].

241 Wufei Yu, *Why Utah's Wild Mink COVID-19 Case Matters*, HIGH COUNTRY NEWS (Jan. 20, 2021), [link here](#). This means over half of the state's breeding population of mink has been infected. Victoria Bekiempis, *Nearly 10,000 Mink Dead from COVID-19 Outbreak at Utah Fur Farm*, THE GUARDIAN, Oct. 11, 2020, [link here](#).

242 *Cases of SARS-CoV-2*, *supra* note 240; Bruce Y. Lee, *Oregon Mink Farm Has Covid-19 Coronavirus Outbreak*, FORBES (Nov. 29, 2020), [link here](#); Kim Bellware, *Fourth State Confirms Mink Farm Coronavirus Outbreaks as U.S. Looks to Avoid Denmark's Disaster*, WASH. POST, Nov. 30, 2020, [link here](#).

243 Sussi Pagh et al., *Methods for the Identification of Farm Escapees in Mink (Neovison vison) Populations*, 14 PLoS ONE, Nov. 11, 2019, at e0224559, [link here](#).

244 Sophie Kevany, *Escaped Infected Danish Mink Could Spread Covid in the Wild*, THE GUARDIAN, Nov. 27, 2020, [link here](#).

245 Wufei Yu, *Why Utah's Wild Mink COVID-19 Case Matters*, HIGH COUNTRY NEWS (Jan. 20, 2021), [link here](#).

246 Swine flu causes acute respiratory disease with fever in humans and a variety of animal species .

247 Kyoung-Jim Yoon, *Naturally Occurring Influenza A Virus Subtype H1N2 Infection in a Midwest Mink (Mustela vison) Ranch*, 24 J. VETERINARY DIAGNOSTIC INVESTIGATION 388 (2011).

248 *Id.*

## Fur farm recommendations: Ban the manufacture and retail sale of new fur products

To protect public health and the welfare of animals, governments must take action to help end the practice of farming animals for fur. Specifically, federal, state, and local governments should prohibit the manufacture and retail sale of new<sup>249</sup> fur products.<sup>250</sup> Such sales bans should broadly cover new fur clothing and home décor products, including coats and hats, as well as accessories that have fur adornments like collars and trim. Effective bans should include fines for violation that are sufficient to deter the practice and complaint-based enforcement by agencies charged with protecting public health, consumers, and animal welfare.

Existing federal laws do not address the public health risks or animal protection concerns relating to animals raised in captivity for their fur.<sup>251</sup> States and local governments are leading the move to ban fur in the U.S. In 2019, California became the first state in the nation to ban both the manufacture and sale of new fur clothing and accessories.<sup>252</sup> The state law was enacted after several California cities — including West Hollywood,<sup>253</sup> Berkeley,<sup>254</sup> San Francisco,<sup>255</sup> and Los Angeles<sup>256</sup> — passed similar laws. The town of Wellesley, Massachusetts, has also passed fur-free legislation.<sup>257</sup>

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- 249 The retail sale of genuinely used or second-hand fur products (products that have already been worn or otherwise used by a person who made the purchase for personal use and not for resale or trade) could be exempted, assuming it does not meaningfully contribute to the demand for new fur products and the continued killing of animals for their fur.
- 250 Existing legal protections for religious practice and treaty obligations with American tribal nations may have to be exempted. For a primer on the law of the treaties between the United States and American tribal nations, see WILLIAM C. CANBY, JR., *AMERICAN INDIAN LAW IN A NUTSHELL* ch.6 (7th ed. 2020). Many of the 370 treaties between the United States and American tribal nations contain provisions guaranteeing tribes fishing rights, hunting rights, and usage rights to the animals tribes traditionally relied on to maintain their way of life. Even where Congress has subsequently abrogated tribal rights through later legislation, tribal rights are often considered. For instance, the Endangered Species Act was clarified in 1997 to recognize American tribal nations' rights with respect to indigenous culture, religion, and spirituality. The order authorized the federal government to “issue guidelines to accommodate [indigenous] access to, and traditional uses of, listed species, and to address unique circumstances that may exist when administering the [Endangered Species] Act.” American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act 6, Order No.3206 (Fish & Wildlife Serv. June 1997), available at [link here](#). Further, states like California have exempted religious and cultural uses in recently passed fur bans. This would allow, for example, new shtreimels — fur hats often worn by men of the Hasidic Jewish faith on special occasions — to continue to be sold. CAL. FISH & GAME CODE § 2023(c)(2)-(3) (2019).
- 251 The Fur Products Labeling Act is a consumer protection act that prohibits misbranding and false advertising of fur products and requires labels on most fur products. 15 U.S.C. § 69 (2018). The Dog and Cat Protection Act of 2000 prohibits the importation of any products containing dog or cat fur and provides for civil and criminal penalties for violations of the Act. 19 U.S.C. § 1308. Although this does arguably protect animals on fur farms in other countries, it does nothing to address conditions on U.S. fur farms. A ban on the retail sale of all new fur would go a long way to drying up the market for all imported fur.
- 252 *Governor Newsom Signs Package of Bills to Fight Animal Cruelty, Promote Animal Welfare*, OFFICE GOVERNOR GAVIN NEWSOM (Oct. 12, 2019), [link here](#). California also banned commercial and recreational fur trapping with the passage of the Wildlife Protection Act of 2019. Trapping for sanitation and public health is still permitted. Ch. 216, 2019 Cal. Stat. 2622.
- 253 *Fur Ban Information*, CITY OF WEST HOLLYWOOD, [link here](#) (last visited Nov. 19, 2020).
- 254 Emilie Raguso, *Fur Goods Now Illegal to Sell in Berkeley*, BERKELEYSIDE (Mar. 31, 2017), [link here](#).
- 255 Mahita Gajanan, *San Francisco Becomes the Largest U.S. City to Ban Fur Sales*, TIME (Mar. 20, 2018), [link here](#). The San Francisco fur ban was challenged as unconstitutional by the International Fur Trade Federation, and the challenge was dismissed in July 2020. *San Francisco Fur Ban Upheld as Challenge Is Dismissed*, ANIMAL LEGAL DEFENSE FUND (July 16, 2020), [link here](#).
- 256 Emily Alpert Reyes, *L.A. Will Become Biggest City in the U.S. to Ban Fur Sales*, L.A. TIMES, Feb. 12, 2019, [link here](#).
- 257 Warrant from Marjorie R. Freiman, Chair, Town of Wellesley Board of Selectmen et al., to Any Constables of the Town of Wellesley, *Warrant for a Special Town Meeting* (Sept. 8, 2020), available at [link here](#).

## Conclusion

When wild animals are kept captive for human uses like entertainment, food, and clothing and décor, there is a high risk of transmission of zoonotic disease that endangers both humans and animals. It is crucial that federal, state, and municipal governments act promptly to prohibit keeping wild animals in captivity for these uses, or at least phase out these uses, while simultaneously regulating them to protect the welfare of the animals and limit the risk of disease transmission. With entertainment and fur particularly, there are alternatives that completely defuse arguments against prohibiting keeping animals captive.

There are nonanimal alternatives to using animals in captivity as entertainment and responsible nonexploitative animal viewing opportunities. Modern circuses featuring skilled human performers (acrobatics, aerial arts, acting, music, and other elements) have been credited with reviving the circus tradition in recent decades.<sup>258</sup> Nonexploitative opportunities to see wild animals include visiting sanctuaries or rescue and rehabilitation centers accredited by the Global Federation of Animal Sanctuaries (GFAS) or participating in responsibly managed wild animal viewing or photography tours. Critically, these must prioritize the best interests of the animal, and laws and regulations should be reflective of this.

Animal cruelty-free alternatives to fur have existed since the beginning of the 20th century.<sup>259</sup> Technological improvements and public awareness campaigns over the past several decades have increased the demand for, and the prominence of, faux fur.<sup>260</sup> Today, faux fur is virtually indistinguishable from animal fur and is touted by many designers as the “more ethical” choice.<sup>261</sup> Support for a transition away from fur is being demonstrated by the growing number of brands and retailers adopting fur-free policies, including Macy’s, Versace, Bloomingdale’s, Gucci, and Prada.<sup>262</sup> Magazines have also taken a stand against fur; for example, *InStyle* banned fur from its pages in 2018.<sup>263</sup>

In transitioning to the alternatives to using animals in captivity for food, clothing and décor, and entertainment, it is important that policymakers consider the impact of such transitions to workers and to the animals held captive. This may, for instance, require phasing out certain practices, rather than banning them immediately, funding buyouts to transition farms or other businesses,<sup>264</sup> and, importantly, as appropriate for the species and the individual animal,<sup>265</sup> coordinating adoption of animals retired from these operations or funding their lifelong care in bona fide animal sanctuaries.<sup>266</sup> Ultimately, however, it is imperative that we end the captivity of wild animals for human entertainment, food, and accessories.

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258 See Holly Millea, *Step Right Up! See the Reinvention of the Great American Circus!*, SMITHSONIAN MAG., July/Aug. 2017, [link here](#).

259 Hines, *supra* note 224.

260 *Id.*

261 Emily McCay, *What Is the Future of Fur in Fashion?*, STYLED (2018), [link here](#).

262 Colleen Kratofil, *Luxury Fashion Brands That Are Anti-Fur*, PEOPLE (Sept. 30, 2020), [link here](#).

263 Nadia Murray-Ragg, *InStyle Becomes First Fashion Magazine to Ban Fur*, LIVE KINDLY (Apr. 4, 2018), [link here](#).

264 *E.g.*, Corder, *supra* note 236; Dutch Mink Industry to Close in 2021 Due to Coronavirus, No. NL2020-0042 (Foreign Ag. Serv. Sept. 2, 2020), available at [link here](#) (the cull and mandatory buyout together will cost roughly 180 million euros); Louise Boyle, *Coronavirus: China’s Farmers Offered Buy-Out to Grow Plants Instead of Breeding Wild Species in Clampdown*, THE INDEPENDENT (May 18, 2020), [link here](#) (compensation amounts for the 14 covered species of farmed wildlife range from \$11 for a bamboo rat, to \$345 for a wild goose or Chinese muntjac deer).

265 Domesticated animals may be candidates for adoption dependent upon each individual animal’s physical, mental, and emotional health, including their behavior or temperament.

266 See, *e.g.*, Karen Brulliard, *One Problem Closing Down the Circus: Where Will the Animals Go?*, WASH. POST, Jan. 19, 2017, [link here](#).

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