



**RISKY BUSINESS:
THE DANGERS OF ZOOONOTIC
DISEASE IN THE FUR TRADE**



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Cover photo: A light-colored mink kit looks up inside a bare wire cage on a fur farm. Minks have similar receptors in their upper respiratory tract to humans and birds, making them a very suitable intermediary host species for many viruses. Narpio, Finland, 2023. Oikeutta elaimille / We Animals Media

FOREWORD

Farming minks for their fur threatens public health and safety through the spread of diseases that can pass from animals to people. This report focuses on the magnitude of the threat this industry poses in the United States using global data from past zoonotic disease outbreaks that originated from animal sources, illuminating the consequences the fur farming industry will inevitably have on future human public health, wildlife conservation, and biological diversity if continued unchecked.

With an estimated 75% of emerging infectious diseases in humans being zoonotic, the threat of zoonoses is not to be taken lightly. The uncontrolled spread of zoonotic diseases caused by the unnatural confinement of wild animals in captivity impacts the health and wellbeing of billions of animals and humans around the world; millions of them in the U.S. alone. This industry also fuels the exploitation and mistreatment of animals forced to live in squalid, heartbreaking conditions on fur farms; all for financial profit and the materialistic desire for outdated fashion items made with real fur when identical, sustainable, and ethical alternatives are available.

Our rigorous research for this report confirms that unsanitary housing conditions are a contributing factor. A second critical factor is the anatomical similarity in the upper respiratory tracts of minks and humans, allowing for ease in transmission of respiratory viruses. They also act as reservoirs in which viruses evolve separately from human populations and cause greater harm to immunocompromised people, older generations, and unexposed younger populations. This hospitable environment leads to the potential for the next pandemic. In 2024, leading virologists' biggest concern is the susceptibility of farmed minks to COVID-19 and avian influenza A (H5N1).

The fur farming industry that exists today in the U.S. is largely unchanged since the 1800s, yet life on the planet has greatly changed. It is now more crucial than ever to make science-based decisions to protect ourselves. Fact-based evidence confirms that fur farms are responsible for zoonotic disease transfer from captive minks to humans and wild animals (even those without a direct connection to fur farms); a significant amount of toxic environmental pollution; and unsustainable resource use that accelerates the negative effects of global climate change.

No efforts to increase monitoring or change in fur farming regulations would be effective in addressing the industry's numerous and inherent problems. Therefore, Born Free USA, along with expert virologists, recommend that fur farming be abolished in the U.S. on the grounds of protecting human public health and safety. As such, we urge our supporters to call on their federal lawmakers to support the Mink VIRUS Act – a bill that would ban mink farming across the U.S. – before the next pandemic is upon us.

For the animals,



Angela Grimes, CEO

INTRODUCTION



A portrait of Noresia, a rescued female mink living at the Szopowisko Foundation sanctuary. She was found on the road leading to a factory farm where 90,000 minks are bred, and thousands are killed every November in a gas chamber for their fur. Noresia is now safe at the sanctuary founded by veterinarian Grzegorz Dziwak where she can play with other rescued minks and enjoy a hammock, tunnels, and even a swimming pool. Szopowisko Foundation Sanctuary, Lesna, Silesia, Poland, 2022. Andrew Skowron / We Animals Media

The uncontrolled spread of zoonotic diseases (infections that are spread between humans and nonhuman animals) caused by the unnatural confinement of wild animals in captivity has impacted the health and wellbeing of billions of animals and humans around the world; millions of them in the United States alone. Devastating and often fatal outcomes have increased in recent history due to the unsustainable human demand for the consumption of both live wild animals and their body parts in industries like fur farming, the wildlife trade, and the exotic pet trade. These trades are fueled by an overarching desire for financial profit. So insatiable is the human appetite for the exploitation of wildlife and other animals as commodities, that we have ignored what should have been heeded as warnings from the past to preserve future human public health and protect the inherent value of wildlife and biological diversity.

In 2024, as we live in what has been called the “Anthropocene,” an era defined by humanity’s domination over Earth, so, too, do we live in an era known as the “Pandemicene” among contagious disease experts; one defined by the “regular spillover of viruses into humans, caused by our disruption of the normal trajectories of viral movement in nature” (Tayag, 2023). The threat of zoonoses is not to be underestimated: according to the U.S. Centers for Disease Control and Prevention (CDC), there are over 200 known types of zoonoses that can be spread between animals and humans, and an estimated 75% of emerging infectious diseases in humans are zoonotic (CDC, 2007). Veterinarians also provide a solid indicator of the dangers associated with consistent human-animal contact; according to a study published in 2005, infectious diseases (19.1%) were among the top three most frequently reported occupational health claims among veterinarians, only outnumbered by respiratory illness (30.5%) and skin disease (39%) claims. Most practitioners (57.4%) were exposed to pathogens via hand contact, whereas 21.7% of pathogen exposure occurred orally (Neinhaus et al., 2005). In a 2012 survey of veterinarians in Minnesota, 27% reported having been infected with a zoonotic disease during their career (Fowler et al., 2012).

In addition to COVID-19, several recent pandemics that infected or killed thousands of people around the world likely had a zoonotic origin: the 2002 SARS (Severe acute respiratory syndrome coronavirus) outbreak infected over 8,000 people and was thought to have emerged from human interaction with the palm civet; virological evidence for MERS-CoV (Middle East respiratory syndrome coronavirus) suggests that it may have started from contact with dromedary camels; and fruit bats likely contributed to the spread of Ebola, which killed more than 15,000 people (Hulme, 2023). In less recent history, the “Spanish flu,” often referred to as the deadliest known pandemic of all time, killed at least 21 million people from 1918-1920 and likely originated from an avian influenza virus (Hubalek & Rudolf, 2010).

FUR FARMS FUNCTION AS THE PERFECT INCUBATORS FOR HIGH-RISK AND EASILY TRANSMISSIBLE DISEASES TO EMERGE, WHICH CAN ULTIMATELY INFECT AND KILL HUMANS, THREATEN THE SURVIVABILITY OF THE WILDLIFE AND ENVIRONMENT IN WHICH THESE FACILITIES EXIST, OR EVEN CAUSE THE NEXT SERIOUS PANDEMIC.

The sheer volume of animal exploitation in the U.S. makes it a uniquely vulnerable location for a future pandemic to arise. For example, the U.S. is one of the top producers of fur in the world, along with China, Europe (including the top three fur producing countries in Europe: Denmark, Finland, and Poland), and Russia; in 2022, China produced 22 million furs, European countries produced 10 million furs, North America produced 2 million furs, and Russia produced 600,000 furs. Animals used in this industry include minks, foxes, raccoon dogs, chinchillas, and sables (rabbits and other animals trapped in the wild for their fur were excluded from these totals) (HSI 1, 2024). The U.S. is also the largest importer of live wildlife in the world, importing more than 220 million wild animals in one year, many without undergoing any health checks or disease testing prior to entry.

Like the fur trade, the U.S. exotic pet trade, valued at \$15 billion annually, creates high-risk human-animal interactions that can be opportunities for zoonotic disease transfer (NYU, 2023). By some estimates, there are as many exotic pets in the U.S. as there are cats and dogs; in 2020, approximately 17.6 million exotic pets lived in 9 million households in America (World Animal Protection, 2020). Problematically, animals in the exotic pet trade, purchased via both legal and illegal avenues, are often sold to owners without any disease

testing or veterinary oversight. Further, animals are typically transferred from breeders or vendors to their final destinations (often private animal owners) with minimal regulations regarding basic hygiene, number of animals, housing conditions during transport, length of travel time, and psychological/physical welfare, which can increase disease transmission risks and often lead to higher mortality rates in the animals involved in this trade. Despite the lack of regulation and failure to prioritize both animal and human health and safety, estimates suggest that non-native wild animals captively bred in the U.S. altogether number in the tens of millions. Some exotic animal dealers keep more than 25,000 wild animals together at a single facility, often in poor and tightly packed conditions that facilitate disease spread, before being distributed to customers across the country (NYU, 2023).

For example, during a major mpox (previously referred to as “monkeypox”) outbreak, which originated in one of these large breeding facilities that received a shipment of exotic animals from overseas, CDC agents were not able to track down a large number of infected prairie dogs that had already been sold through pet stores and swap meets. These animals potentially infected numerous humans with the virus down the length of the supply chain. Even less popular and more niche animal industries in the U.S. pose serious risks to human health, like crocodile farms, which have facilitated the spread of West Nile virus to humans (NYU, 2023).

Fur farms in the U.S. have grossly unregulated housing conditions, no minimum requirements for an acceptable standard of animal welfare, no basic security requirements to prevent escapes, and little to no veterinary oversight or monitoring for infectious diseases. They cram thousands of animals closely together, do not properly protect the safety of employees onsite, and fail to properly dispose of large amounts of toxic waste. As a result, fur farms function as the perfect incubators for high-risk and easily transmissible diseases to emerge, which can ultimately infect and kill humans, threaten the survivability of the wildlife and environment in which these facilities exist, or even cause the next serious pandemic. As such, the U.S. has a responsibility to protect the public from any known threats and must federally ban fur farms for good.

HISTORY OF FUR FARMING IN THE U.S.



Two grey minks on a fur farm stare through the wire mesh of a filthy cage. Korsnas, Finland, 2023. Oikeutta elaimille / We Animals Media

Minks were farmed in the U.S. as early as the 1860s (International Fur Trade Federation, 2011). Beginning in the early 1900s, selective breeding of fur-bearing animals on fur farms enabled fur farmers to keep up with quickly evolving fashion trends in ways that trapping had previously restricted. For example, while the foxes caught in the wild for the fur industry were predominantly common red foxes, the controlled environment of a fur farm allowed farmers to select for rare genetic traits that resulted in the appearance of unique “silver” pelts (ranging from black to white). Because these colorations were less common in the wild, they were highly valued in the fur market (Wisconsin 101 1, 2024). As animals with the most desired coat characteristics are often rebred, and animal exchange is limited between farms, these practices often lead to severe levels of inbreeding between genetically related animals, which can have negative health consequences including poor reproductive success (Demontis et al., 2011), high mortality, low growth rate, and higher frequency of hereditary abnormalities (Vogt et al., 2021).



Two minks in a cage in a fur farm in Italy. Minks are kept in steel cages with just a metal grid for the floor. They stay here for seven months before being killed in a gas chamber. Italy, 2012. Stefano Belacchi / Essere Animali / We Animals Media

AS ANIMALS WITH THE MOST DESIRED COAT CHARACTERISTICS ARE OFTEN REBRED, AND ANIMAL EXCHANGE IS LIMITED BETWEEN FARMS, THESE PRACTICES OFTEN LEAD TO SEVERE LEVELS OF INBREEDING BETWEEN GENETICALLY RELATED ANIMALS, WHICH CAN HAVE NEGATIVE HEALTH CONSEQUENCES INCLUDING POOR REPRODUCTIVE SUCCESS.

As the demand for fur increased into the 20th century, the first factory-style fur farms were established, involving the captive breeding and raising of animals (Warwick et al., 2023). Predictably, massive disease spread began shortly after confining so many wild animals in an unnatural manner. Distemper, a highly contagious viral disease related to human measles that can infect a large range of mammals including foxes, raccoons, skunks, ferrets, and dogs, became one of the biggest threats to the animals on fur farms in the mid-1920s. Distemper can infect respiratory, gastrointestinal, and nervous systems and suppress immune system function (Wisconsin 101 2, 2024). In unvaccinated mustelids (including minks, skunks, and ferrets) the mortality rate is close to 100%. In vaccinated animals, like domesticated dogs, the mortality rate declines to between 30-50% (NJ Office of Fish and Wildlife Health and Forensics, n.d.).

The Fromm Farm, a family-operated fur farm in Marathon County, Wisconsin, was renowned during the 20th century for their silver-coated “million-dollar foxes.” In 1929, one single shipment of pelts from the Fromm farm was bought in New York for \$1.3 million — the largest single payment made to a single fur farm at that time. To create these prized silver fox pelts, the Fromm brothers started with just six breeder animals, and the population quickly grew. Distemper, however, killed 40% of these foxes each year. In attempts to save their premier pelts, the Fromms hired a university scientist to develop a vaccine, who eventually discovered how to vaccinate the animals against distemper and, later, canine encephalitis (inflammation of the brain) after 15 years of research conducted via trial and error and countless animal deaths in the process (City Pages, 2012).

FUR FARMS BY THE NUMBERS

Animals born and raised in captivity to supply the fur industry, including minks, foxes, chinchillas, sables, and raccoon dogs, are usually killed via any of the following torturous methods: anal electrocution, cervical dislocation (dislocation of the spine from the skull or brain), or gassing, to make clothing and accessories out of their fur (HSI 1 2024; Shah, 2022). At least 250 mink fur farms operate across 21 states in the U.S. alone, which collectively generate approximately 3 million pelts per year (Shah, 2022). Figures on the other species of animals involved in the fur trade in the U.S. are not publicly available; the United States Department of Agriculture (USDA) does not require farmers to report the number of species farmed for fur other than minks.

Worldwide, 95% of all fur comes from fur farms and approximately 100 million animals are killed to supply the fashion industry (Fur Free Alliance 2, 2024). The global value of fur farming has been estimated at \$40 billion USD (Act Asia, 2019). There are at least 11,000 fur farms across Europe, North America, and China alone (Fenollar et al., 2021). The majority of these animals (~85%) are raised on intensive farms in battery cages (HSVMA, 2018). Humane Society International (HSI) estimates that as many as half the animals raised for their fur are killed just to supply the market for fur trim used in hooded jackets (HSI 1, 2024). To make just one fur coat requires up to 150-300 chinchillas, 50-60 minks, or 15-40 foxes (Animal Ethics, 2024).

Estimating the exact number of animals killed for their fur is difficult to quantify because of the differences between countries in counting and monitoring them. For example, in China, one of the world's largest fur exporters, fur farms are under no obligation to count the animals they kill at all. In other countries, like the U.S., the numbers of animals are measured by the "pelts" they produce. Because some animals produce pelts that are deemed "unusable" by fur industry standards, many animals are unaccounted for, and the suffering and lives lost remains unquantifiable (Foreman, 2023). The number of animals killed for their fur extends beyond fur farms. In



Filthy mink cages at a fur farm. Quebec, Canada, 2014. Jo-Anne McArthur / We Animals Media



Mink cages at a farm. Quebec, Canada, 2014. Jo-Anne McArthur / We Animals Media

addition to the fur industry, several million animals are trapped in the wild and killed for their fur. Most wild-trapped furbearing animals come from the U.S., Canada, and Russia. In 2018, an additional almost 3 million animals were killed for their pelts via trapping, including 647,000 raccoons and 363,000 coyotes (HSI 1, 2024).

To illustrate the often wasteful and merciless nature of fur farming, we use the case of fur farmers Casey Gavin and his father, who operated the Silver Hill Fur farm in western Prince Edward Island, Canada. One day, they had pulled 20,000 minks from their cages and slaughtered them to make a hasty deal with Asian fashion houses in search of pelts. At the time the deal was made, the pelts were worth up to \$1 million USD. But in the rush to meet the deal deadline, Gavin later claimed, the pelts had been “ruined,” and could no longer be sent to their destinations in Asia. In attempts to dispose of the rotting pelts, Gavin and his father had apparently put the pelts through a meat grinder and flushed them all down pipes that emptied into the Gulf of St. Lawrence. In its decline following this failed deal, the family-run fur farm ultimately took with it large sums of public money; up to \$8 million Canadian dollars in government loans and bailout payments and polluted a large body of water in the process (Cuthbertson, 2020).

**THERE ARE AT LEAST 11,000 FUR FARMS
ACROSS EUROPE, NORTH AMERICA,
AND CHINA ALONE. THE MAJORITY
OF THESE ANIMALS (~85%) ARE RAISED
ON INTENSIVE FARMS IN BATTERY CAGES.**

SQUALID CONDITIONS ON FUR FARMS AMPLIFY CHANCES OF DISEASE SPREAD



Piles of feces under mink cages at a fur farm. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

With little meaningful regulation dictating standards of care or attempts made to monitor conditions, fur farms demonstrate extremely poor animal welfare practices with no acknowledgement of these wild animals' species-specific needs as non-domesticated, solitary, and carnivorous animals. For example, minks are often kept in completely barren caging with no solid flooring, just 1' X 1' X 3' in size, and sometimes stacked on top of one another. While this setup allows farmers to maximize the number of minks they can have in a limited amount of space, minks may be consequently showered with urine and feces from those living above, exposed to each other's respiratory excretions, and have little access to sunlight or air circulation, which result in incredibly unsanitary housing conditions that exacerbate the rate of disease spread. Additionally, despite being semi-aquatic animals and spending much of their lives in water in the wild, water beyond the minimum needed for drinking is almost never provided (Born Free USA, 2020).

Further, the extreme level of distress these animals experience, which can manifest as abnormal repetitive behaviors from chronic stress (stereotypies), self-mutilation, and/or cannibalism in some cases, causes immune system suppression and thus a weakened defense against diseases (HSVMA, 2018). Common health



Two white minks stand in their cages at a fur farm. Dead minks lay decomposing atop and in front of the cages nearby. Poland, 2019. Andrew Skowron / We Animals Media

issues for farmed minks include chronic disease, infected wounds, missing limbs due to biting incidents, eye infections, and foot and mouth deformities (Fur Free Alliance 3, 2024). Minks are not covered under the Animal Welfare Act or the Humane Slaughter Act; therefore, almost no requirements mandating veterinary care, killing method, or housing stipulations exist (Born Free USA, 2020).

WelFur is a “solution” proposed by the fur industry to address animal welfare concerns that allegedly intends to promote animal welfare and transparency regarding farmed animals’ housing, behavior, feeding, and health through a certification program sponsored by the European Fur Breeders’ Association (EFBA) beginning in 2009. Fur brands can become certified by WelFur if they satisfy these loose “standards.” The plausibility of the program and ability to realistically regulate the high number of animals on fur farms, however, is unverified, and the farming of wild furbearing animals remains inhumane and unethical despite any “modifications” that may be made. According to Dr. Clair Linzey, deputy director of the Oxford Centre for Animal Ethics, “When we looked at the standards that they imposed to regulate what was considered good animal welfare within the fur industry, they included things like bent feet, ocular discharge, chewing off tails, and we really started asking ourselves, if WelFur is really a good standard of welfare for the animals involved, then why are there any injuries at all? Why are these animals regularly experiencing severe injuries?” Instead of achieving the goal of promoting animal welfare, Dr. Linzey describes WelFur as an attempt by the fur industry to simply make the consumer feel better about buying fur (Foreman, 2023).



Top: Two adult minks lay in a small cage on a fur farm. One has a bloody wound on their tail. Minks are solitary animals, and the confined spaces often lead to aggression between animals. Poland, 2017. Andrew Skowron / We Animals Media

Left: Minks crammed into cages together sometimes begin to cannibalize one another. On fur farms, many kits will be missing ears and scruffs. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

Right: A white mink with injured feet lies on the bottom of a wire cage on a fur farm. The country's animal welfare legislation demands that fur farms do daily check-ups of animal health. However, due to the thousands of animals typically raised on these fur farms, it is almost impossible for farm workers to notice all the sick animals. Korsnas, Finland, 2023. Oikeutta elaimille / We Animals Media

In addition to the pathogen-related public health risks presented by fur farming, fur farms also pose serious environmental contamination risks that can adversely affect the health of the wildlife, natural resources, and humans that surround these facilities. For example, extremely harsh and toxic chemicals are used to preserve pelts, including formaldehyde and chromium (both listed as known carcinogens by the American Cancer Society in 2024). Animals on fur farms also produce large amounts of nitrous oxide through their excrement and ammonia through their urine, which can run off into and pollute nearby waterways. Mercury, polychlorinated biphenyls (highly carcinogenic chemicals), and pesticides in mink feed and mink waste have also been discovered in lakes near fur farms (Gregory et al., 2022). As a result, mink fur causes nearly 400 times more water pollution per kilogram than polyester. Further, potentially diseased animal carcasses and

other discarded animal parts not properly disposed of can cause serious ecological damage to ecosystems, while live escaped minks can threaten the viability of wild mink populations due to the risk of disease transmission, hybridization, and competition for resources (HSI, 2023).

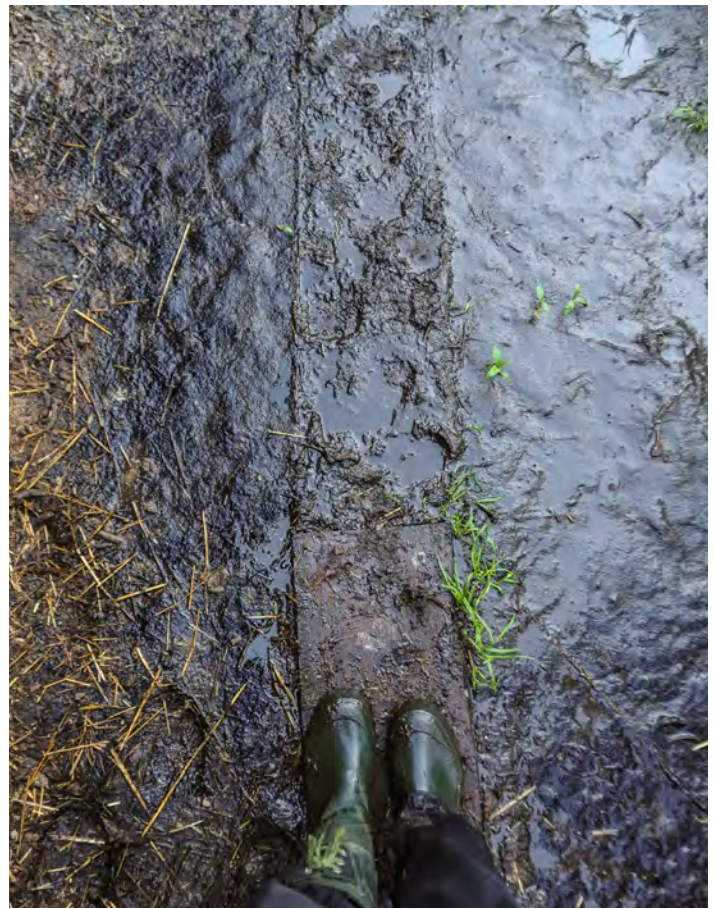
Pollution from agriculture often occurs more in rural communities of color with lower socioeconomic status, consequently impacting the health of poorer populations more frequently in areas with restricted access to healthcare. A 2007 environmental justice report discovered that ~56% of the 9 million Americans who live in neighborhoods within three kilometers of large commercial hazardous waste facilities were people of color. Those numbers, however, reflect a miniscule portion of the threats faced by families. Thousands of additional



Top: Algae bloom common in waters near mink fur farms in Nova Scotia. Nova Scotia, Canada, 2014. Jo-Anne McArthur / We Animals Media

Left: Thousands of illegally disposed and decomposing mink bodies. Sweden, 2009. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

Right: Hundreds of bodies behind a mink farm. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media



Left: A mink farm with years of feces and urine on the property. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

Right: A mink farm with years of feces and urine on the property. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

U.S. towns are near other major sources of pollution for which the true impacts on human public health remain to be published, including refineries, chemical plants, and fur farms, and can cause health issues that affect these communities disproportionately, including asthma, heart disease, lung disease, premature births, strokes, and increased risk of cancer (Kay & Katz, 2012).

Fur farming is also costly and unsustainable in resource use and emissions, notably contributing to the negative impacts of climate change worldwide.

According to a 2023 report by Humane Society International (HSI), the carbon footprint of just one kilogram of mink fur is substantially higher than other fashion textiles; mink fur produces a carbon footprint 31 times higher than cotton; 26 times higher than acrylic; and 25 times higher than polyester. Similarly, mink fur produces air emissions 271 times higher than acrylic, 215 times higher than cotton, and 150 times higher than polyester. Because the production of one kilogram of fur requires roughly 11.4 mink pelts (Bijleveld et al., 2011), almost 30,000 liters of water is required per kilogram of fur. The statistics from fox and raccoon dog fur farms largely reflect the same unsustainable trends (HSI, 2023).

POTENTIALLY DISEASED ANIMAL CARCASSES AND OTHER DISCARDED ANIMAL PARTS NOT PROPERLY DISPOSED OF CAN CAUSE SERIOUS ECOLOGICAL DAMAGE TO ECOSYSTEMS, WHILE LIVE ESCAPED MINKS CAN THREATEN THE VIABILITY OF WILD MINK POPULATIONS DUE TO THE RISK OF DISEASE TRANSMISSION, HYBRIDIZATION, AND COMPETITION FOR RESOURCES.

MINKS HAVE GREATER POTENTIAL THAN OTHER ANIMALS TO TRANSMIT ZOOSES TO HUMANS



Minks frequently wound and cannibalize one another in the cramped conditions of fur farms. Sweden, 2010. Jo-Anne McArthur / Djurrattsalliansen / We Animals Media

While all environments that allow unnaturally close interactions between wild animals and humans are dangerous, minks at fur farms present an elevated threat to human public health and safety. Minks demonstrate a physiologically similar upper respiratory tract to humans, meaning that they can become infected by and transmit some of the same respiratory viruses. Additionally, the ability of mink to acquire and spread both human and animal respiratory viruses renders them potentially potent “mixing vessels” for generating novel pandemic viruses by reassorting currently circulating influenza viruses. Animal experiments have confirmed that minks can transmit avian and human influenza viruses, and that human influenza viruses (but not avian viruses) were even capable of aerosol transmission (dispersed through the air and highly contagious) among minks (Sun et al., 2021).

One of the first viruses detected on mink fur farms with zoonotic disease potential was Aleutian disease. Aleutian disease, or mink plasmacytosis, is caused by Aleutian mink disease virus (AMDV). AMDV was first described in the 1940s in U.S. fur farms and continues to plague significant populations of minks on fur farms today with severe symptoms including weight loss, low fertility, reduced pelt quality in adults, and acute interstitial pneumonia (rapidly progressive lung disease that can lead to respiratory failure and acute respiratory distress) with high mortality rates in kits (young minks) (Farid, 2013). In kits, an infection with particularly hostile strains can result in a mortality rate greater than 90%, whereas less hostile strains have resulted in a 30–50% mortality rate (Vahedi et al., 2023). Large outbreaks of AMDV have occurred in fur producing countries around the world including Canada, Denmark, China, Russia, and Finland, confirming that strategies to control the spread of this virus have proven largely ineffective.

No successful treatment exists for this disease; no vaccines or therapies have been developed to effectively treat AMDV in minks at the time of writing in 2024. As a result, the most common method used in attempts to reduce the number of infected minks on fur farms has been the response-based and inhumane “test-and-removal” strategy (removal meaning killing) after an outbreak has already occurred, though this method does not result in complete eradication of the virus. Concerningly, AMDV has also been discovered in wild populations of mammals in areas near fur farms (Vahedi et al., 2023). In a study that tested samples from 462 wild animals of 12 furbearing species in Nova Scotia, Canada, they discovered that the samples were positive for AMDV in 93.3% of the American minks, 70.5% of the short-tailed weasels, 25% of the striped skunks, 18.2% of the North American river otters, 10.6% of the raccoons, and 10.0% of the bobcats (Farid, 2013).

In 2023, a report that conducted a literature review focusing on animal welfare, zoonoses/public health, and environmental impacts of fur farming examined 280 reports from 15 species farmed for their fur in 19 countries. They discovered 18 reports of endemic pathogens and diseases with confirmed or potential zoonotic and cross-species implications, including six bacterial reports, five viral reports, and seven parasitic reports. As a result of these findings, the authors concluded that increased monitoring or regulation changes of fur farming would be ineffective given the inherent problems of the industry and recommended that fur farming be abolished (Warwick et al., 2023).

While many diseases like AMDV and other reported zoonoses of concern have the potential to one day become the next pandemic, in 2024, the biggest concern for leading virologists is the susceptibility of farmed mink to both COVID-19 and avian influenza A (H5N1) (Hulme, 2023).

COVID-19



A group of young white mink kits look up from their tiny cage at a fur farm. Minks are solitary animals, and the confined spaces often lead to aggression between animals. Poland, 2017. Andrew Skowron / We Animals Media

Our understanding of the severity of zoonotic disease spread was amplified during the COVID-19 pandemic, which likely originated from human exposure to infected wildlife, and resulted in the death of almost 7 million humans globally, with more than 1 million of those deaths in the U.S. Thought to have originated in a wildlife market in China, COVID-19 also spread rampantly at mink farms across Europe and throughout North America, demonstrating that COVID-19 could be transferred between minks and from minks to humans. These outbreaks resulted in the deaths of millions of minks around the world.

Farmed minks have become infected with ten SARS-CoV-2 strains (the causative agent of COVID-19) in at least 12 countries to date, including the U.S. Since April 2020, COVID-19 has impacted more than 450 mink fur farms in Europe and North America and has caused the death of millions of animals due to culling efforts in attempts to control the disease spread. In Denmark alone, 17 million minks from more than 200 fur farms were killed in 2020 in attempts to stop the rapid virus spread. The first detected outbreak of COVID-19 occurred in April 2020 in the Netherlands. Following the initial outbreak, the illness had since been recorded on farms in Denmark, Greece, Canada, Poland, Spain, and the U.S. (Fur Free Alliance 1, 2024; Foreman, 2023).

In the Netherlands in 2020, COVID-19 was confirmed for the first time at two mink farms located in the North Brabant province. The government responded by closing off streets near fur farms, requiring screenings of all animals and quarantining of those that tested positive, banning the transport of mink and mink waste, and implementing the use of personal protective equipment (PPE) on farms throughout the country. Still, none of



Three young minks, approximately 4 months of age, inside a cage at a factory farm in Italy. They will be killed in a gas chamber when they are about 7 months old. Italy, 2011. Stefano Belacchi / Essere Animali / We Animals Media

these efforts quelled the virus spread. With mounting public safety concerns following the continued rapid spread of COVID-19 via mink farms, several European countries made plans to ban fur farming altogether, including Italy, France, Belgium, the Netherlands, Norway, Slovakia, Bosnia and Herzegovina, and Estonia. Alarming, even after these efforts to minimize COVID-19, variants of COVID-19 that mutated separately within mink farms appeared in Europe and the U.S. in people who had no direct connection to mink farming (Shah, 2022).

While other countries had taken swift and decisive action to close or quarantine mink farms, cull animals, and pass legislation to address this crisis, the U.S. did not follow suit, other than continuing to slaughter mass numbers of minks due to continued outbreaks. Beginning in 2020, outbreaks had been confirmed on at least 18 mink farms in multiple states (including Utah, Oregon, Michigan, and Wisconsin), with more than 20,000 minks reported dead from the disease in the U.S. Animal management, slaughter practices, and lack of proper biohazardous waste disposal on U.S. mink farms likely facilitated the spread of COVID-19 between humans and minks (Shah, 2022). Concerningly, in addition to minks, foxes and raccoon dogs have also been infected with the SARS coronaviruses (HSUS, 2020). COVID-19 also infected animals in zoos; in 2021, Dutch investigators described an outbreak of COVID-19 in western lowland gorillas and Asiatic lions at the Rotterdam Zoo in the Netherlands, likely caused by human-to-animal transmission despite the use of PPE by their zookeepers (University of Minnesota, 2023). Animals including tigers, snow leopards, hippos, hyenas, otters, and a cougar were also reported to have contracted COVID-19 at other zoos (National Geographic, 2021).

According to the Centers for Disease Control and Prevention (CDC), evidence confirmed that farmed minks had not only transmitted the virus to humans, but also to wild minks and other wild animals (Kesslen, 2020). “Spillback” refers to the directional transfer of pathogens from humans to nonhuman animals. While the devastation caused by COVID-19 among captive minks cannot be overstated, the “spillback” or “reverse zoonosis” effects on wild mink populations are cause for extreme concern regarding the future for the conservation status of wild minks. “Spillback” also becomes particularly problematic in the case of mink fur farms, where the opportunistic minks often escape and spread any diseases previously contained to farms to other animal species, even domesticated pets.

In December 2021, two separate incidents of minks in the wild tested positive for SARS-CoV-2 in the U.S. in Utah and Oregon. Evidence of COVID-19 antibodies was also discovered in white-tailed deer in the U.S. (Kessler, 2020). With its spread uncontrolled, “spillback” has the potential to cause major population declines in more animals than just minks, imbalance entire ecosystems, and potentially lead to the evolution of an even deadlier virus that could later transfer back to humans and become a greater threat than the COVID-19 pandemic.

These potential risks were made even more clear when a *New York Times* undercover investigator, Sonia Shah, visited multiple fur farms throughout Utah in 2022, where she witnessed that little to no biohazard precautions were taken to limit environmental contamination from mink waste; relatively no proper PPE; and virtually no structurally sound fencing around farm perimeters (Shah, 2022).

Wild animal populations acting as reservoirs in which viruses can evolve separately from human populations pose a particularly concerning threat to human public health. According to leading experts at Imperial College London’s Department of Infectious Disease, Dr. Thomas Peacock and Prof. Wendy Barclay, “Viruses that evolve on a separate trajectory from variants in humans sets a potential time bomb for re-emergence of the virus in humans—especially as immunity wanes in the older population and unexposed younger people make up a larger proportion of the population.” This same scenario precipitated the emergence of pandemic H1N1 influenza virus from pigs (also known as “swine flu”) in 2009 (Peacock & Barclay, 2023).

A study in 2019 discovered that minks had the highest diversity compared to other potential animal hosts, meaning that they can be infected with a more diverse array of influenza subtypes, and serve as a potential mixing vessel for the interspecies transmission of viruses among birds, mammals, and humans. During the 2009 H1N1 pandemic, pigs were considered a prominent nonhuman animal intermediate host for viral spillover to humans. In this study, however, the researchers concluded that minks need to be taken “more seriously in influenza surveillance and early warning” (Zhao et al., 2019).

H5N1: AVIAN INFLUENZA



A dead gull lies tangled in a net amid feces accumulated under mink cages on a fur farm. This method of bird control causes unnecessary suffering, slow death for the birds, and potential transfer of zoonoses between birds and minks. Korsnas, Finland, 2023. Oikeutta elaimille / We Animals Media

Avian influenza (also known as “bird flu” or H5N1) is a highly contagious and often deadly virus. It was first detected in 1996 at a domestic waterfowl farm in Southern China. From 2003-2005, wild birds then spread avian influenza to poultry farms in Africa, Europe, and West Asia. In 2024, a new, more evolved clade of H5N1 (a group of viruses that evolved from a common ancestor) referred to by virologists as 2.3.4.4b spread more rapidly and over a greater range, affecting poultry farms around the world. As of June 2024, the CDC reported that globally, 96,565,226 birds have been affected by avian influenza. This number includes more than 131 million domestic birds that died from the virus or culling efforts in 2022 following H5N1 outbreaks. In the U.S., these outbreaks have prompted officials to slaughter nearly 82 million birds (mostly egg-laying hens) in 47 states (CDC, 2024). Highly pathogenic avian influenza (HPAI) A H5N1 virus is an emerging disease in cattle and was confirmed in multiple U.S. states in March 2024. While cases among humans in direct contact with infected animals are possible, the virus is not currently believed to be transmitted through meat or milk (Texas Animal Health Commission, 2024).

Reports also confirmed positive cases of avian influenza in birds in the wild and at zoos in the U.S.; for example, Reid Park Zoo in Tucson, Arizona, closed its bird exhibits in 2022 after discovering the presence of bird flu in three birds, two of whom died. Zoo officials speculated that transmission occurred via wild birds like duck and geese freely roaming the zoo grounds (Reid Park Zoo, 2023). In January 2022, the United States Department of Agriculture (USDA) confirmed the presence of highly pathogenic avian influenza (HPAI) in

wild waterfowl along the Atlantic flyway (the north-south route that migratory birds in North America follow each year as they travel from Greenland to South America and the Caribbean). In February 2022, the USDA confirmed HPAI in a commercial turkey flock in Dubois County, Indiana. Since 2022, HPAI has been confirmed in multiple states and flock types, including commercial and noncommercial flocks of several bird species (Texas Animal Health Commission, 2024).

Following these outbreaks outside of the poultry industry and in light of the potential threat to human health, in May 2023, the World Health Organization (WHO) released a statement commenting on the global state of avian influenza: “Given the widespread circulation in birds and the constantly evolving nature of influenza viruses, WHO stresses the importance of global surveillance to detect virological, epidemiological, and clinical changes associated with circulating influenza viruses which may affect human (or animal) health” (WHO, 2023).

According to the WHO, from January 2003 to May 2024, a total of 254 cases of human infection with avian influenza A (H5N1) virus have been reported from four countries in the Western Pacific Region of the world (including Oceania, the Pacific, and parts of Asia). Of these cases, 141 were fatal, resulting in a mortality rate of 56%.

Globally, from January 2003 to May 2024, 889 cases of human infection with avian influenza A (H5N1) virus were reported from 23 countries. Of these 889 cases, 463 were fatal (demonstrating a mortality rate of 52%) (WHO, 2024).

While avian influenza viruses do not replicate very well in humans, if they replicate in an intermediate host species, the virus could then adapt and be spread to humans. Although the biggest avian influenza pandemic-related risk to humans remains through poultry via close contact with infected birds or contaminated surfaces, “sustained circulation of H5N1 within mink could drive the selection of a virus that could transmit by the airborne route. The virus does not adapt the same way in poultry” (Hulme, 2023). First detected at a fur farm in Galicia, northwestern Spain (Foreman, 2023), HPAI has already been confirmed on more than 70 fur farms in Europe and has resulted in the killing of more than 500,000 animals on the grounds of protecting public health. Federal and state authorities have yet to require testing for HPAI on U.S. fur farms, so the extent to which HPAI exists on fur farms in the U.S. remains unknown. To increase the difficulty in detecting this virus, HPAI can be asymptomatic in farmed minks (HSUS 1, 2024).



Two minks at a fur farm stare out through the wire mesh of a barren cage. Their tiny enclosure contains no nest or bedding. Quebec, Canada, 2022. We Animals Media

LEGISLATION



Rows of white minks in barren wire cages at a large mink farm. Poland, 2017. Andrew Skowron / We Animals Media

In general, the federal laws that currently regulate practices relating to animals in the U.S., including the Animal Welfare Act, Humane Slaughter Act, Endangered Species Act, Lacey Act, and the Fur Seal Act do not apply to animals on fur farms. Although the U.S. has adopted two federal laws prohibiting the sale or import of dog and cat products (the Dog and Cat Fur Protection Act) and requires all fur retailers to specify the source and species of all furs sold (the Fur Products Labeling Act), these laws do not take any measures to protect animals on fur farms. Twenty-eight states do not require any type of permit or license to operate a fur farm at all, and only seven states require fur farm inspections (Born Free USA, 2020).

At the state level, California (which accounted for one of the world's largest markets for fur and more than one-fifth of the U.S. fur market) passed a law to prohibit all fur sales in 2019, and legislators in Hawaii, Rhode Island, Oregon, Connecticut, New York, Washington, Massachusetts, and the District of Columbia have introduced legislation that would ban fur sales or production. Fourteen municipalities have banned fur sales, including Ann Arbor, Michigan; Boulder, Colorado; Cambridge, Massachusetts; and Hallandale Beach, Florida; (AWI, 2021; HSI 3, 2024). The city council of Minneapolis, Minnesota passed a zoning regulation in 2023 that would ban furriers, with furriers defined as "establishments where either a majority of the products available for purchase or a majority of the sales are dedicated to the sale of animal fur, including clothing and accessory items with animal fur," (Personal Communication via email, Haley Stewart, 2023). Most recently, the Mink Facility Disease Prevention Act was introduced in the Illinois State Senate in February 2024. Sponsored

by State Senate Assistant Majority Leader, Linda Holmes, this bill would implement a complete ban on mink fur farming in the state of Illinois in January 2025 to protect public health. In Europe, 19 countries including the United Kingdom (the first to ban the practice in 2000) and 14 countries in the European Union have banned fur production (HSI 3, 2024).

Born Free USA is working with a coalition of organizations to encourage the swift passage of the Mink: Vectors for Infection Risk in the U.S. (the Mink VIRUS Act), introduced in June 2023 by Congressman Adriano Espaillat, which seeks to protect public health and human safety by implementing a one-year phase-out period of all domestic mink fur farms. The bill would also implement a program to compensate farmers as they transition out of the fur farming industry. In the meantime, we continue to engage with the USDA and other agencies to implement better oversight of the fur farming industry. A similar program was implemented in the United Kingdom in 2003, when England and Wales prohibited fur farming and compensated the farmers for their losses (AWI, 2021).

Together with a coalition of other animal protection organizations, Born Free USA submitted a petition to list minks as an injurious species under the Lacey Act, due to the risk of mink farms becoming reservoirs for COVID-19 and other potentially fatal diseases. This designation would prohibit U.S. import, transportation, and acquisition of live and dead minks, including parts containing fur, while reducing the significant risks that farmed minks pose to humans and wildlife and helping combat COVID-19 and potential future pandemics.

Based on the global findings consistently indicating that fur farming is a known threat to public health, expert virologists Dr. Thomas Peacock and Prof. Wendy Barclay made the following urgent recommendation in their 2023 study, corroborating Born Free USA's goal to end fur farming: "We strongly urge governments to also consider the mounting evidence suggesting that fur farming, particularly mink, be eliminated in the interest of pandemic preparedness."

CONCLUSION

According to Humane Society International (HSI), statistics from China's Fur and Leather Industry Association indicate a 50% decline in the country's fur production from 2022 to 2023 and a decline of almost 90% from 2014 to 2023, revealing an overall decrease in global fur production due to the shifting attitudes of global consumers and designers away from fur as a result of increasing concerns for poor animal welfare and negative environmental impacts (HSI 2, 2024). This declining trend is not specific to China; a poll in 2020 indicated that 71% of Americans oppose killing animals for their fur (HSUS 2, 2024) and 1,500 designer and retail brands have decided to go fur-free by 2024, with Gucci being the first major fashion house to make this commendable decision in 2017 (HSI 3, 2024). It is time to recognize fur farming for what it truly is: a dying industry that has caused the unjust killing of millions of animals worldwide and which puts human health and safety at substantial threat. Allowing the fur farming industry to continue is a risk that we should no longer be willing to take given the repeated health warnings that have occurred since the industry's inception in the 1800s.

The combined deaths of humans and nonhuman animals that have resulted from fur farming — amounting to a number in the multi-millions, potentially billions over two centuries — should be reason enough to ban this cruel, archaic, and dangerous practice. No material object, including coats, hats, or keychains, is worth the loss of one life, let alone the potential loss of countless more due to this ongoing practice or the next devastating outbreak.



A mink kit recently separated from their mother looks up through a cage on a fur farm. Poland, 2017. Andrew Skowron / We Animals Media

Having close-contact encounters with animals, particularly wild animals, increases the chances of harmful virus transferal, which — by the very nature of the extreme ease with which viruses like COVID-19 are transmitted — further endangers public safety each time they mutate and transfer between species. Therefore, in addition to its already glaring animal welfare concerns and unethical nature, the farming of furbearing species (particularly minks) must end from a public safety standpoint. Establishing rules or mandating certain restrictions will never decrease the occurrence of potentially fatal viruses or truly mitigate the risks posed by fur farms. The risks are too costly to justify continuing farming minks, who are meant to be living free in the wild, to produce outdated fashion and frivolous items. This is especially true now that lab-grown fur and plant-based fur alternatives continue to increase in availability (HSI 3, 2024). These animals need their skin; we do not.

Considering all the mounting evidence provided in this report confirming the increasingly dire threat to human public health presented by fur farms and exorbitant number of unnecessary animal lives lost in futile attempts to eradicate zoonoses threats, we urge our supporters to call on their federal Representatives and Senators to support the Mink VIRUS Act. We need this critical legislation passed and enacted to prevent the next pandemic from occurring. If we do nothing, the next pandemic is inevitable.

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