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April 6, 2021

Sen. Jeff Golden, Chair
Committee Members
Oregon Senate Committee on Natural Resources and Wildlife Recovery

Re: Support for SB 832 to bring an orderly phase of mink farming in light of the ongoing COVID-19 pandemic

Dear Chair Golden and Committee Members:

I am writing as an expert of infectious disease and pandemics, and on behalf of Utah Animal Rights Coalition (UARC), in support of Senate Bill 832 (SB 832), sponsored by Sen. Prozanski. Currently available evidence supports that mink farms are a serious public health risk. By implementing an immediate halt to the breeding of new mink, requiring COVID-19 testing of employees on existing farms, and providing for the responsible phase out of mink farm operations, SB 832 is a justified and sensible public health intervention, and we urge all members of the Oregon legislature to support it.

Mink farms will be an enduring reservoir of the COVID-19 virus

To date, mink are the only species known to readily transmit the virus both to and from humans, a process known as bidirectional zoonoses.¹ Mink are extremely susceptible to coronavirus infection, likely due to the abundance of ACE2 cellular receptors in this host organism. The ACE2 receptor is the binding site of the “spike protein” of the virus in both humans and mink, enabling infection. Once infected, mink experience a similar wide range of clinical symptoms and outcomes as humans. Mink populations are so susceptible to infection that a recent World Health Organization (WHO) report stated that “the current evidence available cannot rule out the possibility for minks as the primary source of SARS-CoV-2.”²

The close proximity of thousands of animals in wire cages, means that the virus spreads easily and rapidly on mink farms once introduced. Out of 36 mink farms in Utah, 12 (33%) experienced COVID-19 outbreaks in 2020, revealing the susceptibility of this environment to outbreaks. More than 10,000 mink died during

¹ Gorman, James. Mink and the coronavirus: what we know. *The New York Times*. November 11, 2020. Available at <https://www.nytimes.com/article/mink-coronavirus-mutation.html>.

² World Health Organization (WHO). WHO-convened Global Study of Origins of SARS-CoV-2: China Part. Joint WHO-China Study. 14 January – 10 February 2021. Joint Report. Available at <https://www.who.int/publications/i/item/who-convened-global-study-of-origins-of-sars-cov-2-china-part>.

these outbreaks, and at least one mink farm manager in Utah also became infected around the time of the farm's outbreak. This mink farm manager died from COVID-19 infection.

It's important to understand that due to the annual production cycle of mink farms, the mink farming industry will likely be incapable of sustaining long-term eradication of the virus that causes COVID-19. Each year at the end of fall, mink farms "pelt" (kill) the vast majority of their animals, leaving behind only breeding stock for next year. Then in the spring, mink farms go through a breeding season; the breeding stock replenishes the farms with thousands of new animals. During this time, the population of mink often increases as much as eightfold due to new births. All of these new animals would likely be immunologically naïve and susceptible to a new introduction of the virus to the farm. It is likely that an annual cycle of COVID-19 outbreaks will occur on mink farms, and some of these outbreaks will leak into the broader community, thwarting our efforts to eradicate or significantly contain the virus.

The fur farming industry has itself admitted the severity of the crisis. At the September 28, 2020 annual convention of Fur Commission USA, Dr. John Easley, DVM, Director of Research, stated:

[Researchers are] extremely confident that they've been able to demonstrate that [COVID-19] was brought on to farms by humans, the virus changed in the mink, and that changed virus was then transmitted back to people, and the people that got infected, transmitted that virus to other people. This is new information that is out now, so that is extremely important to the industry. It shows that mink can potentially be a reservoir for the virus, for the human population.³

Mink farms give rise to variants of the virus that causes COVID-19

Prior to the COVID-19 pandemic, the Danish fur industry was the largest producer of mink pelts in the world, with an estimated 40% of the world's market share.⁴ But similar to the experience in the Netherlands, the fur industry there has been ravaged by COVID-19, with at least 216 out of 1,139 farms experiencing outbreaks in 2020. Most troublingly, using genomic sequencing, researchers identified several mutant strains of SARS-CoV-2 that arose on Danish mink farms, including one that

³ Video of this statement is available at <https://www.youtube.com/watch?v=o9dvnHcP2n0>.

⁴ Olsen, Jan M. North Denmark in lockdown over mutated virus in mink farms. *Associated Press*. Nov. 6, 2020. Available at <https://apnews.com/article/mutated-virus-mink-farm-denmark-lockdown-98ede7f921eb6cf3b312e53743fc3edb>.

resulted in an outbreak in the general human population, with more than 200 identified cases of human infection of this mutated virus.⁵ More than a quarter million Danes in the region of Denmark where this mutant strain arose were placed in lockdown due to this variant, and the United Kingdom temporarily prohibited nearly all travel between Denmark and the United Kingdom due to this mink variant.

Whenever a pathogen finds a new host species, there is unique risk for variants to arise. A November 12, 2020 report by the European Centre for Disease Prevention and Control (ECDC) makes clear the risk posed by mink farms for giving rise to variants:

The ability of SARS-CoV-2 to infect an animal depends on several factors that are not fully understood, including compatibility between the S protein of the virus and the host receptor ACE-2. Mink can be infected by SARS-CoV-2 and they can also transmit the virus to humans. It is rare that a novel variant becomes successful and gives rise to a new genetic clade that can spread globally. When this happens, it can be due to spurious founder effects and/or selective advantages. If the spread among mink is not controlled and there is recurrent spill-over into the human population, variants that provide a selective advantage in mink populations could become widespread in humans, even without any selective advantage in the human population.⁶

While many variants are insignificant or even self-limiting, some variants become “variants of concern” because they can result in a pathogen that is more transmissible, lethal, and/or evasive of vaccines. If a variant were to arise in mink that significantly changed the composition of the “spike protein” on the surface of the virus, it could result in greatly decreased efficacy of the currently administered Pfizer, Moderna, and Johnson & Johnson vaccines, all of which use this protein as a pharmacological “target” for the production of antibodies. A mink variant that undercut vaccine efficacy would be a truly disastrous scenario, forcing public health authorities to revert back to harsh non-pharmaceutical interventions, including business closures, stricter mask mandates, and social distancing requirements, until an updated vaccine was developed and distributed.

⁵ Murphy, Simon and Beaumont, Peter. Travel to UK from Denmark banned amid worries over COVID in mink. *The Guardian*. Nov. 7, 2020. Available at <https://www.theguardian.com/world/2020/nov/06/coronavirus-mutation-danish-mink-spreads-to-214-people>.

⁶ European Centre for Disease Prevention and Control (ECDC). Detection of new SARS-CoV-2 variants related to mink. Nov. 12, 2020. Available at <https://www.ecdc.europa.eu/sites/default/files/documents/RRA-SARS-CoV-2-in-mink-12-nov-2020.pdf>.

Mink farms are already infecting wildlife, threatening future pandemics

SARS-CoV-2, the virus that causes COVID-19, is currently classified as a “Risk Group 3” agent, which means it is a pathogen that represents “high individual risk” of infection for those around it, and can also “present a significant community risk if spread in the environment.”⁷ Risk Group 3 pathogens can only be used in research in modern facilities that meet the standards of Biosafety Level 3 (BSL-3) regulations, including stringent structural and facility requirements and use of personal protective equipment (PPE) that can ensure proper containment and minimize risk of leakage.

Mink farms do not begin to resemble BSL-3 laboratory facilities. They are porous, open facilities with regular escapes of mink and interfaces with a variety of wild animals. Many mink farms have adjacent colonies of feral cats, which are attracted by the food given to the mink, which often includes byproducts from fish processing plants.



A mink farm in Utah County, as seen from the public right-of-way. Typical of mink farms, the sheds are largely open-air and provide for easy interaction between captive and wild animal populations.

⁷ Kaufer AM, Theis T, Lau KA, Gray JL, Rawlinson WD. Laboratory biosafety measures involving SARS-CoV-2 and the classification as a Risk Group 3 biological agent. *Pathology*. 2020;52(7):790-795. doi:10.1016/j.pathol.2020.09.006. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7524674/>

In Utah, there has already been laboratory-confirmed cases of SARS-CoV-2 infection in free-ranging mink located near L&S fur farm, a COVID-infected farm in Morgan County, Utah. When the outbreak occurred, they disposed of the infected carcasses by on-site burial near a river located at the rear of the property. The COVID-infected mink was trapped just 242 meters from the burial site, near a stream. The researchers stated that the “exposures in escaped mink were unsurprising given biosecurity practices on some premises did not exclude incursions of escaped mink into barns” and that this could “represent potential transmission pathways for spillover of SARS-CoV-2 into wildlife and could lead to health consequences or establishment of new reservoirs in susceptible wildlife.”⁸



Point A: Infected shed of a mink farm in Morgan County, Utah.

Point B: A pile of COVID-infected mink carcasses.

Point C: The location where a SARS-CoV-2 infected wild mink was trapped, next to a stream.

⁸ Shriner SA, Ellis JW, Root J, et al. SARS-CoV-2 Exposure in Escaped Mink, Utah, USA. *Emerging Infectious Diseases*. 2021;27(3):988-990. doi:10.3201/eid2703.204444. Available at https://wwwnc.cdc.gov/eid/article/27/3/20-4444_article.

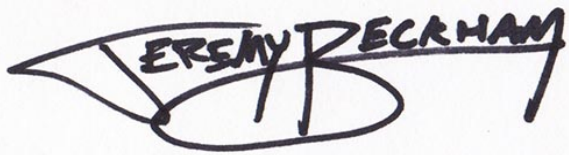
A public health emergency justifies passage of SB 832

When Danish Prime Minister Mette Frederiksen announced new measures to control the mink variant that arose in Denmark, she gave a public address, where she stated:

We have a great responsibility towards our own population, but with the mutation that has now been found we have an even greater responsibility for the rest of the world. The mutated virus in mink could pose a risk that future vaccines won't work as they should. It risks being spread from Denmark to other countries. The eyes of the world are on us.⁹

There is a shared global responsibility to contain the COVID-19 pandemic. We urge the Oregon legislature to recognize its responsibility in containing this emerging threat. Mink farms, which exist to produce an unnecessary luxury item, primarily for export to China, do not represent an essential business activity. They do, however, represent a serious public health risk. Because mink farms threaten to exacerbate and prolong the disastrous COVID-19 pandemic, serious intervention is warranted in Oregon, just as it was in the Netherlands, Denmark, and the other nations that have implemented shutdowns of their mink industry. UARC urges all members of the Oregon legislature to recognize the urgency of this crisis, and to rise to the occasion by supporting SB 832 to protect public health and save lives.

Sincerely,

A handwritten signature in black ink that reads "JEREMY BECKHAM". The signature is written in a bold, slightly slanted, sans-serif font. The first name "JEREMY" is written above the last name "BECKHAM". There is a large, stylized flourish or underline that starts under the "B" and extends to the right, crossing under the "M".

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⁹ Dyer O. Covid-19: Denmark to kill 17 million minks over mutation that could undermine vaccine effort. *BMJ*. 2020;371:m4338. Published 2020 Nov 9. doi:10.1136/bmj.m4338.