



The mink industry is associated with human disease, animal cruelty, and environmental pollution.

Edited by Jennifer Sills

Ban unsustainable mink production

More than 50 million minks are produced annually—primarily in China, Denmark, the Netherlands, and Poland (1)—to sustain the demand from the international fur industry (2, 3). In June, the Netherlands adopted a proposal to ban mink farming by the end of 2020 instead of phasing out the industry through 2024 (1). The Netherlands' decision was a step toward better protections for humans, animals, and the environment. China, Denmark, and Poland should support and extend the immediate and complete ban of mink production.

Minks harbor zoonotic infectious diseases such as leptospirosis, which leads to kidney failure in humans (4), and coronavirus disease 2019 (COVID-19), the illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 has been found in minks in the Netherlands, Denmark, Spain, and the United States (5, 6). In October, the spread of COVID-19 in Danish mink farms spun out of control, threatening the country's disease control and public health and resulting in the culling of millions of minks (7). Similar cases are likely in China, which harbors a multispecies fur industry (8). A recent study of

the SARS-CoV-2 genome and mutations suggests that the virus might be able to spread from minks to humans (9).

The mink industry is problematic beyond its potential to spread disease. Animal welfare practices fall short, with minks showing signs of fearfulness, self-mutilation, infanticide, and breeding difficulties (10). Mink production also leads to high N₂O emissions, eutrophication, and water consumption (11); the climate footprint of producing 1 kg of mink fur is 5 times as high as the footprint of producing 1 kg of wool (11).

The unsustainable use of natural resources by the mink industry impedes our response and recovery from the pandemic, puts animals in harmful conditions, and jeopardizes our ability to achieve the United Nations' Sustainable Development Goals (12). It is urgent to monitor, restrict, and—where possible—ban mink production.

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Support U.S. research during COVID-19

Colleges and universities are critical components of the U.S. innovation ecosystem. These institutions are called upon to play ever-evolving roles in building talent for a changing workforce; achieving scientific breakthroughs; creating new technologies, products, and companies; and contributing to local economic development. Yet, as the pace of change accelerates across our economy, federal and state budget constraints have made meeting these expectations increasingly challenging. The federal commitment to research and development stands at a multidecadal low as a percentage of GDP (1). Now, the coronavirus disease

2019 (COVID-19) pandemic has disrupted almost all aspects of higher education, including the ability to keep laboratories open, conduct research in a timely manner, collect and process data, and collaborate with colleagues and students.

As colleges and universities across the nation make difficult decisions to advance their vital missions this fall, the \$55 billion in federal support for university-performed R&D (i.e., on-campus research) is at risk (2). Maintaining the strength of the U.S. research enterprise—the same research enterprise that has enabled the rapid sequencing of the COVID-19 genome and launched numerous treatment and vaccine studies—must be a national priority. Laboratories must remain open, and researchers must be allowed to continue data collection and analysis, with all the necessary health protocols in place.

We cannot afford to shut down critical projects with long-term national benefits or to postpone projects that provide the hands-on graduate and undergraduate student research experiences necessary to train the next generation of scientists and engineers. In these difficult times, we call upon the federal government to provide the leadership, critical funding, and programmatic flexibility necessary to enable the nation's colleges and universities to continue the U.S. commitment to research, exploration, and new knowledge creation that will power our economy and provide opportunity for all.

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Hainan peacock-pheasant needs focused protection

The Hainan peacock-pheasant (*Polyplectron katsumatae*), a distinct species endemic to Hainan island (1, 2), requires protection. Since the 1950s (3), the Hainan peacock-pheasant population has dispersed into small, partially isolated subpopulations. As

their habitat of tropical and seasonal rainforests suffered from overexploitation and deforestation (2, 4), the peacock-pheasant population declined from about 2700 in 1990 (4) to only about 300 individuals in 2000 (3). With such small numbers, Hainan peacock-pheasants could lose their ability to maintain a self-sustaining population (5).

The Hainan peacock-pheasant has been categorized as Endangered on the International Union for Conservation of Nature (IUCN) Red List since 2016 (6) and is classified as Category I in China's list of nationally protected animals (3). Despite this recognition, current conservation efforts are insufficient (7). The Chinese government should continue to strengthen the protection of mountain rainforest vegetation and prohibit recreational hunting, especially at the altitudes the peacock-pheasants inhabit [up to about 1500 meters (8)]. Fortunately, Hainan Tropical Rainforest National Park, now under construction, could provide the peacock-pheasant with a more stable habitat (9, 10). If the peacock-pheasant's original habitat can no longer meet the needs of survival and reproduction, rescue measures should be taken, including breeding bases, gene banks, germplasm resource banks, and relocation to protected areas where they are more likely to thrive.

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