Climate Contingencies and Farmed Animals: Building Resilience

VLS Animal Law Symposium 2022

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## The way we eat could lead to habitat loss for 17,000 species by 2050

Two recent studies underscore the danger the meat production system poses for biodiversity.
By Jonny Splittor | Fob 18, 2021, 11:00am EST
 estation in South America and worldwide (De Sy et al. 2015; Henders, Persson, and Kastner 2015). Analysis of nations with high rates of tropical deforestation has shown that the amount of deforestation fueled by beef production is more than twice as large as the combined amount resulting from the production of soy, palm oil, and wood products-the next three largest drivers of tropical deforestation (Henders, Persson, and Kastner 2015). In South America, beef production was responsible for 71 percent of total deforestation between 1990 and 2005 (De Sy et al. 2015). Cattle are raised primarily for meat and dairy products, but the industry also produces a number of other cattle products, such as fats, leather, and gelatin, which can be found in everything from lotion to shoes.

Soy, the second largest driver of deforestation, also heavily affects the South American landscape. Every year, around half a million hectares are deforested for soy in major soyproducing tropical nations (Henders, Persson, and Kastner 2015). The majority of soy is used as animal feed; around 70 to 75 percent of the world's soy ends up as feed for cows, chickens, pigs, and farmed fish (Brack, Glover, and Wellesley 2016). Thus, soy is also connected to South America's largest meatpackers, which use large amounts of animal feed in their beef, poultry, and pork operations. While some progress has been made in tackling deforestation resulting from production


# Hurricane Florence: Animal Death Toll Reaches Millions in North Carolina 

BY SHANE CROUCHER ON 9/19/18 AT 9:45 AM EDT
sman ©
U.S. HURRICANE FLORENCE DEATH TOLL ANIMALS NORTH CAROLINA

## $\pm$ Powered by Trinity Audio 00:00 <br> Millions of livestock animals are dead in North Carolina due to Hurricane Florence, with more at risk as further flooding is anticipated.

The North Carolina Department of Agriculture reported the deaths by drowning of 3.4 million chickens and turkeys and 5,500 hogs, the Associated Press reported. Many died in farm buildings overcome by flooding as they waited to be taken to market.

In a statement, the North Carolina Pork Council said 2,100 farms in the state raise about 8.9 million pigs, which puts the losses in perspective. The Florence losses are almost double those of Hurricane Matthew in 2016 but around a quarter of those during 1999's Hurricane Floyd.

## Capital Weather Gang <br> Factory farming practices are under scrutiny again in N．C．after disastrous hurricane floods

By Arelis R．Hernández，Angela Fritz and Chris Mooney
October 16， 2016


In North Carolina，massive flooding in the wake of Hurricane Matthew isolated or swamped these and other hog farme and their waste lagoons raising feers of ervironmental contamination．（Arelis Hernàndez／The Washington Post）

## 畐 ロ へ

NEW BERN，N．C．－A filthy brown sea，a slurry of mud，debris， chemicals and waste，has overtaken miles of rural counties in North Carolina．Against the drab water，the shiny metal roofs of hog houses are impossible to miss，visible from the air，as are the rectangular and diamond－shaped outlines of massive lagoons constructed just feet away．

State environmental officials insist they learned lessons from Floyd．The previous year，the state had put a moratorium on building new farms with more than 250 hogs and expanding existing large farms．After the hurricane，it bought out 42 hog operations located in the floodplain， essentially removing 103 waste lagoons．Other lagoons were relocated to higher ground and，in some cases，re－engineered to withstand inundation．
［How Hurricane Matthew created such a devastating deluge in the Carolinas］

Yet the effort remains unfinished，with＂at least＂ 150 facilities that the state never closed，according to Michelle Nowlin，a professor of environmental law at Duke University．Many critics maintain that the moratorium contains loopholes that have long rendered the bill ineffective．
＂What I do hope，＂Nowlin stressed，＂is that this serves as a wake－up call in the aftermath for regulatory officials and elected officials to say，we need to finish this job，and get these animals out of the floodplain．＂


## Classification Of Zoonoses

According to the Etiological agents
( Bacterial monoses $\rightarrow$ eg anthran, brucellosis, plague, leptas pirasis, salnone losic, hare dsesse
Viral zoonoses $\rightarrow$ e ह rabies, arbowirus infections, NFD , yellow fever, influeate
$\checkmark$ Rickettial monases $\rightarrow$ e.g. murine typhus, tick typhus, scrub tpphu, Q fever

- Protosoal zoonoses $\rightarrow$ e e tosoplas mas is, trypanosoniase, leishmanisis
(Helminthic zoonoses - e e echinococcasis (hydatid dise asel), taenisiz, schis tosariises dracunculasis
- Fungal zoonoses - eg-deep imposied-histoplasnosis, cryptocacooses. superficial dermatophytes.


## Zoonotic Diseases

- Since its emergence in late 2019, the SARS-CoV-2 virus has caused a pandemic of respiratory disease known as Covid-19 that as of yesterday has caused almost 6 million deaths.
- COVID-19 falls into the category of diseases called "zoonotic diseases"AKA an infection or infectious disease transmissible between domestic or wild animals and humans.
- Other examples of zoonotic diseases include: rabies, plague, brucellosis, swine flu, avian influenza, etc.


## MotherJones

FOOD AUGUST 11, 2020
Industrial Hog Farms Are Breeding the Next Pandemic
And the goverrment is doing a "very spoty" "job of monitoring for dangerous strains of swine flu.

credit: Mother Jones illustration; Getty

## Covid and farm animals: nine pandemics that changed the world

Covid-19 has got experts thinking urgently about the risk of diseases passing from farmed animals to humans. We examine the major outbreaks of the past two centuries

## Tom Levitt

Tue 15 Sep 202007.40 EDT

"Pandemics almost always begin with the transmission of an animal microbe to a human," writes biologist Nathan Wolfe in the introduction to The Viral Storm. This year has been, more than most, a manifestation of that fact.

## Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)

## Media Release

- Access the executive summary and the full Report here: www.ipbes.net/pandemics

Access social media assets/images here: https://bit.ly/PandemicsReportResources

- For interviews: media(\%)ipbes net


## Escaping the 'Era of Pandemics': Experts Warn Worse Crises to Come Options Offered to Reduce Risk

Highlights: Intergovernmental Council on Pandemic Prevention, Addressing risk drivers including deforestation \& wildlife trade; Tax high pandemic-risk activities
$631,000-827,000$ unknown viruses in nature could still infect people; More frequent, deadly and costly pandemics forecast; Current economic impacts are 100 times the estimated cost of prevention

Future pandemics will emerge more often, spread more rapidly, do more damage to the world economy and kill more people than COVID-19 unless there is a transformative change in the global approach to dealing with infectious diseases, warns a major new report on biodiversity and pandemics by 22 leading experts from around the world.

Rising demand for meat consumption and the globalized food trade drive pandemic riak, through land use change and climate change The rising demand for meat, particularly in developed countries and emerging economies, has continued to bolster an unsustainable globalized system of intensive production that threatens biodiversity through a range of mechanisms (e.g. land use change, eutrophication) and contributes to climate change ${ }^{\text {rp }}$. For example, global demand for meat has indirectly and directly led to deforestation, forest degradation and expansion of pasture in Brazil and other parts of the Amazon ${ }^{\infty 0-42}$

By forming unnaturally dense assemblages of often closely related individuals, livestock farming has historically driven the emergence of pathogens within the domesticated species. However, the increasin expansion of livestock and poultry production, the increase in the size and acreage of farms, and in the number of individual animals at a site have led to increasing potential for transmission of pathogens to people, e.g. the emergence of salmonellosis ${ }^{\text {as }}$, bovine spongiform encephalopathy (BSE) and variant Creutzfeldt-Jakob disease (CJD) ${ }^{4-\infty 8}$ and some strains of antimicrobial resistant pathogens ${ }^{\text {arase }}$. It has also led to pathogen emergence across the wildlife-livestock-humar interface ${ }^{90+52}$. For example, the emergence of novel strains of influenza has been linked to reassortment of viral genes following viral transmission among large poultry flocks mixing with wild birds, pig herds and people ${ }^{2 n-e s}$. Rabies cases in Latin America are linked to vampire bats feeding on cattle hosts $5^{03-60}$. The emergence of Middle Eastern Respiratory Syndrome (MERS) in people was due to transmission of a coronavirus that is likely of bat origin ${ }^{\infty-105}$, but became recently endemic in domesticated camels ${ }^{15 e} \cdot 107$, allowing repeated transmission to people ${ }^{100-120}$

## SARS-CoV-2 \& the danger of factory farming wildlife

- The living conditions in fur farms, which keep animals in close proximity and at high densities, are a hot-bed for disease activity.
- Captive mink raised for their fur are among the most vulnerable nonhuman animals susceptible to catching and spreading SARS-CoV-2.
- Since the beginning of the pandemic, more than 20,000 captive mink on U.S. mink farms have died from the disease, while in Europe millions more have either died from the disease or been killed to prevent its spread.



## NY Times Magazine: Animals Infecting Humans Is Scary. It's Worse When We Infect them Back (Jan. 19, 2022)



Unlike in Europe, health officials in the United States did not conduct active surveillance on mink farms for coronavirus, relying instead on mink farmers to self-report outbreaks. Publicly, industry representatives said they took the risk of coronavirus incursions seriously, but privately, many were almost dismissive about the threat the virus posed. One mink farmer, Joe Ruef, described coronavirus in mink as a "nonevent" when we spoke by phone. The industry trade group, Fur Commission USA, called it a "supposed 'public health threat," spoke by phone. The industry trade group, Fur Commission USA, called it a "supposed 'public health threat,"
in an email to its members that was leaked to activists and shared with me. And when word got out that I was visiting Utah mink farms, Fur Commission USA sent out a "security alert" to its members, with a photograph of my rental car and its license plates. "DO NOT let her on to your property," and "under no circumstances allow her near the mink sheds," it read, because "any pictures or documented cases of ranches that are not following the recommended biosecurity protocols could damage our efforts to defend the US producers."
As a relatively small industry that sells most of its animal products overseas as garments rather than as food, mink farms have escaped most regulatory oversight. Federal laws that pertain to animals - like the Animal Welfare Act and the Humane Slaughter Act - do not cover animals on fur farms. Few states require mink farms to be licensed or inspected; none require veterinary oversight. Like most states, Utah has no regulations on fur farming at all. Even the minimal containment strategies devised for infected mink farms proved difficult to implement. In Utah, mink farmers were "fairly resistant to having anyone come onto their facilities," the Utah state veterinarian Dean Taylor told me. In internal correspondence acquired through public-records requests, Utah health department officials discussed an infected farm that the department was not permitted to requests, Utah health department officials discussed an infected farm that the department was not permitted to access even for testing. Unregulated, secretive mink farms, Han
it, from these captive wildlife farms that we hear about in Asia."

Vison vison


## Mustelids of North America

- Kingdom - Animals - Animalia
- Phylum - Vertebrates - Craniata
- Class - Mammals - Mammalia
- Order - Carnivores - Carnivora
- Family - Weasels - Mustelidae
- Species - American Mink Mustela vison



## Wisconsin avian flu case claims 3 million layers

## News Release: March 16, 2022

Flock was located in Jefferson County and is the largest farm to be affected by the virus so far in 2022

## flyinola

A commercial layer operation in Jefferson County, Wisconsin, that has been affected by highly pathogenic avian influenza (HPAI) involved 3 million hens.

The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) reported the Jefferson County Case on March 14, but at the time a number of hens in the flock had not yet been released. However, information offered on the APHIS website this morning showed that there were 3 million hens in that flock.

APHIS is working closely with state animal health officials in Wisconsin on a joint incident response. State officials quarantined the affected premises, and birds on the property will be depopulated to prevent the spread of the disease.

This particular case marks the largest number of birds to be affected by HPAl in a single flock so far in 2022. Prior to this case, the largest flock to be affected was a commercial layer flock in New Castle County, Delaware, which involved $1,146,937$ hens

In addition to the Wisconsin and Delaware cases, HPAI has been confirmed in commercial layer flocks in Cecil County, Maryland, and Taylor County, Iowa.

## ODA prepares as highly pathogenic avian influenza (HPAI) is confirmed in the Pacific Flyway

On March 2, the World Organization for Animal Health (OIE) confirmed a bald eagle found dead in British Columbia, Canada tested positive for the highly pathogenic avian influenza (HPAI) Eurasian strain H5N1. The detection is the first in North America's Pacific Flyway, since 2015. HPAI is a highly contagious, deadly disease in domestic poultry. According to the U.S. Centers for Disease Control (CDC) and Prevention, HPAI detections do not present an immediate public health concern. No human cases of these avian influenza viruses have been detected in the United States.
"The best protection for birds are owners who practice effective biosecurity," said Dr. Ryan Scholz, State Veterinarian, Oregon Department of Agriculture. "We must be vigilant and strict with our biosecurity practices especially for backyard flocks, as well as educated on when and how to report potential avian influenza deaths. Our preparation could reduce the risk of infection among poultry and prevent or limit the impact of HPAI introduction in Oregon."
Earlier this year, the United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) confirmed HPAl in wild waterfowl in the
 Atlantic Flyway, on the east coast. In addition, USDAAPHIS has also confirmed HPA infections in 16 states including both backyard and commercial flocks with new detections announced every week. across this post by @nashville_animal_advocacy. There is an avian influenza outbreak in the United States right now. Sanctuaries all over the country are trying to take precautions to limit contact between our flocks and wild birds who could bring in the flu. We're all closing bird intakes. I had a college student call me today and ask if I had baby chicks they could film, and if they had to buy some, if she could bring them to live here when they were done with them Nope.
There have been cases reported in Florida, pretty close to here. The bottom line is that, should a case be reported within a few miles, the state can (and will) show up at my front gate and kill every bird here. This is what happens when we consume animals. When we pack millions of birds into steel warehouses and force them to live in filth, diseases push back. Bird flu, swine flu, this pandemic, all of it. We have done this to ourselves by exerting control over other species and profiting off of their bodies. It is disgusting. The suffering is so immense, the numbers are so unfathomable. It hurts. And it is terrifying
3h
The Wisconsin "cull" would bring the number of commercially raised chickens and turkeys killed nationwide due to bird flu to 6.7 million since February. tt is the biggest U.S. outbreak of the disease in farmed Ods since 2015, when nearly 50 million birds died.

## $\bigcirc \bigcirc \nabla$

(6) Liked by jenny_howe and 46 others

Fundraising for Barn Renovation and Fencing \$602.80 raised of \$3,800
shelterfarmsanctuary I was just scrolling and came across this post bv @nashville animal advocacv. There is... more

50m Reply
psikearttattoo @shelterfarmsanctuary Even here in Italy there is an epidemic of avian flu that is affecting the large farms

2h Reply
alldaysaredogdays Humans perpetuate endless suffering


A memorial across from the JBS plant in Greeley, Colo., includes a photo of Tin Aye, left, one of six employees who died in the pandemic.

## On the Slaughterhouse Floor, Fear and Anger Remain

Workers say factories are still glossing over virus safety, as the meatpackers that dominate beef production harvest record profits.

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#}\mathrm{ Give this article & \ ■ $94
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By Peter S. Goodman Photographs by Erin Schaff
Published Dec. 29, 2021 Updated Dec. 30, 2021

Millions of US farm animals to be culled by suffocation, drowning and shooting

## Closure of meat plants due to coronavirus means 'depopulation'

 hens and pigs w inds experts say

- The pig industry is facing a major glut of market-ready hogs. Photograph: Scott OLson/Getty More than 10 million hens are estimated to have been culled due to Covid-19 by a water-based foam, similar to fire-fighting foam, a method that animal welfare groups are calling "inhumane".
The pork industry has warned that more than 10 million pigs could be culle by September for the same reason. The techniques used to cull pigs include gassing, shooting, anaesthetic overdose, or "blunt force trauma".

In "constrained circumstances", according to the American Veterinary Medical Association (AVMA), techniques [pdf] might also include a combination of shutting down pig barn ventilator systems with the addition of CO so the animals suffocate.
The 'depopulation' comes despite food banks across the US reportin unprecedented demand and widespread hunger during the pandemic, with six-mile-long queues for aid forming at some newly set up distribution centres.

The American meat supply chain has been hit hard by the closure of slaughterhouses, due to Covid-19 infection rates among workers. 30 to 40 plants have closed, which means that in the highly consolidated US system beef and pork slaughtering capacity has been cut by $25 \%$ and $40 \%$ respectively, according to the United Food and Commercial Workers (UFCW). The closures have meant that animals cannot be killed for food and many

Millions of farm animals culled as US food supply chain chokes up

US government vets said to be ready to assist with culls, or depopulation' of pigs, chickens and cattle because of coronavirus meat plant closures


## Tannen Maurd/EPA

Covid-related slaughterhouse shutdowns in the US are leading to fears of meat shortages and price rises, while farmers are being forced to consider "depopulating" their animals.

More than 20 slaughterhouses have been forced to close, although some have subsequently reopened. On Tuesday President Trump issued an executive order to keep slaughterhouses open which would, he said, help solve liability problems for meat companies.

At least two million animals have already reportedly been culled on farm, and that number is expected to rise. Approved methods for slaughtering poultry include slow suffocation by covering them with foam, or by shutting off the ventilation into the barns.

A nationwide advisory issued last Friday by the US Department of Agriculture and the Animal and Plant Health Inspection Service said state veterinarians and government officials would be ready to assist with culls, or "depopulation", if alternatives could not be found

## AVMA Guidelines for the Depopulation of Animals: <br> 2019 Edition

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## AVMA Guidelines

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crame a courts


Watch: Activist group secretty tapes euthanlzing of lowa plgs
Prosecutors have dismissed a second case against an Iowa animal rights activist who recorded secret video of hogs being euthanized at two Iowa pork facilities. Cresco native Matt Johnson, an activist affiliated with the organization Direct Action Everywhere, made headlines in early 2020 when he released footage of pork producer, early in the pandemic. Unable to ship pigs to slaughterhouses that vere shuttered due to covid, select Farms euthanized the animals by shutting down ventilation in their barns and overheating them.
Company officials said aftervard that the process was the safest and most humane Company officials said aftervard that the process was the safest and most hum
option available, and condemned activists for using hidden cameras and false retenses to infiltrate their facilities.
ohnson was charged with trespass and other crimes at two Select Farms facilities in Grundy and wright counties. Grundy county prosecutors dismissed their charges on the eve of a January 2021 trial, saying the cormpany had asked the case employees to testify.
Previously: Charges dropped against animal rights activist who secretly filmed owa pigs being killed
In Wright County, Johnson's trial was to begin Thursday, but again, prosecutors

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HOD recommends depopulation policy sent to expert panel for further consideration

Methods for depopulating swine, poultry in the spotlight after being used last year

## By Malinda Larkin

Published on August 25. 2021

Two methods of depopulating chickens or pigs listed in AVMA guidelines have come under scrutiny in the past year

During 2020, meat processing plants experienced substantial employee shortages because of COVID-19, with unprecedented declines in processing capacity nationwide. As a result. farmers were forced to hold animals longer than planned. leading to overcrowding and resulting in animals becoming too big for housing and processing facilities. After alternatives for marketing were exhausted, some meat processing companies used either ventilation shutdown or what is called VSD plus to quickly depopulate animals.

In reaction, a group of AVMA members submitted a late resolution by petition to the AVMA House of Delegates for the regular winter session in January. That resolution asked that the AVMA classify all forms of ventilation shutdown-VSD and VSD plus-as "not
recommended" for poultry and pigs within the "AVMA Guidelines for the Depopulation of
Animals: 2019 Edition.'



January 6, 2022
OPEN LETTER FROM VETERINARIANS AND ANIMAL WELFARE PROFESSIONALS TO THE AMERICAN VETERINARY MEDICAL ASSOCIATION

In 2020, hundreds of thousands - perhaps millions - of farmed animals were killed by purposely inducing heatstroke, using a method called "Ventilation Shutdown Plus" (VSD+). Thousands of pigs were sealed in barns, the ventilation was turned off, and heat and steam were pumped in, raising the temperature to as high as $170^{\circ} \mathrm{F}$, essentially baking the animals to death and causing prolonged and unimaginable suffering. ${ }^{i}$ All this occurred because slaughterhouses were shut down due to COVID-19 and the pork industry was unprepared for supply chain disruptions.

All veterinarians take an oath to prevent and relieve animal suffering. As such, the American Veterinary Medical Association (AVMA) campaigns to prevent heatstroke in dogs left in hot cars. Yet, the AVMA's permissive position on VSD+ has allowed corporations that carry out mass killing via heatstroke to claim they are using "veterinary-approved" methods. Despite sustained outcry from its members and the enormous emotional toll VSD+ takes on pig veterinarians and pig farm workers, the AVMA has yet to change its stance on this
animal Legal Defense Fund,
ANimal Equality, Animal OUTLOOK,
Animal Place, Association of
Irritated Residents, Center for
Biological Diversity, Compassion in
World Farming USA, Farm Forward,
Farm Sanctuary, The Humane League,
Johns Hopkins Center for a Livable
Future, Mercy for Animals, People for
the Ethical Treatment of Animals, World
ane Ethal Protection, and Woodstoce Farl
SANCTUARy,
Petitioners.
$\qquad$
Filed With:
Sonny Perdue
in his official capacity as Secretary,
United States Department of Agriculture.


## Euthanasia Options

The American Veterinary Medical Association lists possible depopulation methods in three categories (AVM, 2019):

| Preferred | Permitted in Constrained Circumatances | Not Recommended |
| :--- | :--- | :--- |


| Preterred | Permitted in Constrained Circumstances | Not Recommended |
| :---: | :---: | :---: |
| Gunshot | Ventilation shutdown plas | Nonel listed |
| Nonpenstrating captive bolt | Sedium nitrite |  |
| Penetrating captive bolt | Compounded or nonpharmaceutical-grade injectable anesthetics and euthanasia agents |  |
| Electrocution |  |  |
| Manual blunt force trauma |  |  |
| Movermens to sldugiter |  |  |
| Carbon diouride |  |  |
| Anesthetic overdose |  |  |

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BEFORE THE UNITED STATES DEPARTMENT OF AGRICULTURE, animal and plant health inspection service
[AMENDED] PETITION FOR EMERGENCY RULEMAKING
CENTER FOR BIOLOGICAL DIVERSITY;
NATURAL RESOURCES DEFENSE COUNCIL;
NATURAL RESOURCES DEFENSE COUNCIL;
OF IRRITATED RESIDENTS; CAPE FEAR RIVER
WATCH; CATAWBA RIVERKEEPER
FOUNDATION; CENTER ON RACE, POVERTY AND THE ENVIRIONMENT; COASTAL
CAROLINA RIVERWATCH; ENVIRONMENTAL
WORKING GROUP; JOHNS HOPKINS CENTER
FOR A LIVABLE FUTURE; MOUNTAINTRUE;
RURAL ADVANCEMENT FOUNDATION
INTERNATIONAL, USA; SOUND RIVERS; and
WATERKEEPER ALLIANCE,
Petitioners,
Filed With:
SONNY PERDUE, in his official capacity as Secretary of Agriculture; and KEVIN SHEA, in his official capacity as Administrator, Animal and Plant Health Inspection Service.


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