Climate Change, Zoonoses, & Animal Agriculture

VERMONT LAW SCHOOL
ANIMAL LAW SYMPOSIUM 2022
PANEL 1: CLIMATE CONTINGENCIES AND FARMED ANIMALS: BUILDING RESILIENCE
# Climate Change & Disease

## Infectious Disease in an Era of Global Change

<table>
<thead>
<tr>
<th>Climate Change</th>
<th>Technological Change</th>
<th>Demographic Change</th>
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</thead>
<tbody>
<tr>
<td>Drives range shifts for reservoir species</td>
<td>Affects transmission and susceptibility</td>
<td>Affects the geographical range of vectors</td>
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<tr>
<td>Improved global surveillance</td>
<td>Vaccination affects dynamics</td>
<td>Air transit and high-speed rail affect pace and range of spread</td>
</tr>
<tr>
<td>Improved care reduces burden</td>
<td></td>
<td>Larger population travelling</td>
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</tbody>
</table>

**Population growth and land use**
- Increased contact with reservoir species
- Population numbers affect evolution, birth rates affect dynamics
- Larger population travelling

**Urbanization**
- Depends on species
- Density affects contact rate
- Urban population more connected

**Ageing**
- Immunosenesence affects spillover risk
- Ageing population increases transmission
- Possible larger burden

*Image sources and references: [Climate Change & Disease](https://example.com), [Infectious Disease in an Era of Global Change](https://example.com)*
This triangular rotation among animals, workers, and homeowners is no fluke. It repeats again and again. Consider another similarly structured example: the problem of viral disease. It is well-established that close confinement leads to the “increased risk of the spread of disease” between hogs. J.A. 5206; see also Brief for the Humane Society of the United States as Amici Curiae Supporting Plaintiffs-Appellees 17, McKiver v. Murphy-
Avian Influenza

- Avian influenza (AI or bird flu) is a viral respiratory disease that infects all avian species and can also infect pigs and humans.
- Common disease but frequently changes.
- Highly infectious and potentially fatal virus.
- Based on the severity of illness, the disease is classified as either high or low pathogenicity avian influenza (HPAI/LPAI).
Mitigation

Lower stocking density reduces the risk of the incubation and spread of disease

**Issue:** One commenter suggested APHIS should reduce the number of birds allowed in poultry houses.

Response: The commenter suggested including an alternative where APHIS agreements with farmers require reductions in the number of birds per house, theoretically decreasing the potential for HPAI mucus spread by ventilation systems. APHIS and the poultry industry agreed that the OIE's efforts to develop guidelines where poultry production is highly concentrated and networked, making it difficult to contain and clean up an outbreak, the poultry industry is reconsidering the construction of highly concentrated and networked poultry production complexes. While APHIS is not going to adopt this type of governmental restriction at this time, APHIS will encourage farmers to consider reducing the number of birds in poultry houses as part their best management practices.

*USDA APHIS, High Pathogenicity Avian Influenza Control in Commercial Poultry Operations – A National Approach: Final Environmental Assessment (Dec. 2015)*
SECOND BIRD FLU OUTBREAK IN MISSOURI IN TWO DAYS

By Chuck Abbott
3/11/2022
“Another day, another state confirms HPAI presence”
2022 Detections of Highly Pathogenic Avian Influenza in Wild Birds

Last Modified: Mar 9, 2022
2022 Confirmations of Highly Pathogenic Avian Influenza in Commercial and Backyard Flocks
<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Date Confirmed</th>
<th>Flock Type</th>
<th>Flock Size</th>
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<tbody>
<tr>
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<td>3/8/2022</td>
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<td>Buena Vista</td>
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<tr>
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<td>Dubois</td>
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<td>Commercial Turkeys</td>
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</table>
Highly Pathogenic Avian Influenza
A Guide To Help You Understand the Response Process

1. Detect
You see unusual signs of illness or sudden deaths in your flock. You can report it to your private veterinarian or a State or USDA veterinarian. Samples are taken and tested. You find out your flock is positive for HPAI.

2. Quarantine
USDA and State personnel come to your farm. We assign you a case manager, who will be your main point of contact onsite, answer your questions, and guide you through the needed paperwork. We will also place your operation under quarantine, meaning only authorized workers are allowed in and out, and movement restrictions for poultry, poultry products, and equipment go into effect. We contact neighboring poultry farms and start testing their birds to see if they’ve been affected, too.

3. Appraise
We work with you to create a flock inventory. This tells you how many birds you have, what species they are, their age, and other key details. USDA will compensate for birds that must be destroyed using species-specific calculators.

4. Depopulate
Infected flocks are depopulated as quickly as possible—ideally within 48 hours of the first HPAI detection—to get rid of the virus.

5. Compensate
Affected producers and growers must certify that a biosecurity plan was in place prior to an HPAI detection. Split payments can be provided between the owner and contract grower. You receive your first indemnity payment early on in the response process. We also pay you a standard amount for virus elimination activities (clean up work).

6. Manage Disposal
USDA will help you dispose of the dead birds safely. Disposal methods include composting, burial, incineration, rendering, or landfilling. The options you’ll have depend on several things: what type of farm you have, the specific conditions there, State and local laws, and what you prefer.

7. Eliminate Virus
The next step is to wipe out all traces of the virus at your property. To kill the virus, thoroughly clean and disinfect the barn, equipment, and all affected areas of your farm. You can do this work yourself or hire contractors to handle it.

8. Test
As soon as you’re ready, let your case manager know you’re finished with cleanup. Your site must then stay empty for at least 21 days. During this time, we’ll return to collect and test environmental samples. We need to confirm that your property is completely virus-free.

9. Restock
Once USDA and the State both approve, you can restock your facilities and start production again. State officials will release your farm from quarantine after all required testing and waiting periods are done.

10. Maintain Biosecurity
After restocking, you’ll need to continue maintaining the highest biosecurity standards to keep the virus from coming back. For biosecurity tips, go to www.aphis.usda.gov—publications and download the factsheet “Prevent Avian Influenza at Your Farm.”
“Depopulation”
(Euphemistic term for mass killing)

Ventilation Shutdown

Water-based Foam

Other Methods
- Gassing
- Poisoning
- Blunt force trauma
Compensate

Affected producers and growers must certify that a biosecurity plan was in place prior to an HPAI detection. Split payments can be provided between the owner and contract grower. You receive your first indemnity payment early on in the response process. We also pay you a standard amount for virus elimination activities (cleanup work).

Birds are destroyed usually within 24–48 hours of detecting the disease. USDA pays for birds that must be destroyed.

Disposal

(Discard of carcasses)

Unlined Burial

Open-air Incineration

Other Methods
- Composting
- Grinding

USDA or your State can help you dispose of dead birds.
You can restock your birds when USDA and your State confirm the virus is gone. You can resume normal operations when State officials release your farm from quarantine.

**Restock**

Once USDA and the State both approve, you can restock your facilities and start production again. State officials will release your farm from quarantine after all required testing and waiting periods are done.
HSUS, et al., v. USDA, et al., No. 2:20-cv-03258 (CDCA 2020)

A Litigation Strategy to Improve Animal Conditions on the Farm and Mitigate the Spread of Disease
HSUS sues USDA over policies that risk future pandemics

Today the Humane Society of the United States filed a federal lawsuit challenging the response plan for Highly Pathogenic Avian Influenza (or “bird flu”) of the United States Department of Agriculture. The response plan, produced by the Animal Plant Health Inspection Service, is shortsighted and dangerous.

For years, the HSUS has been warning USDA and the factory farm industry of the imminent threat of a pandemic resulting from zoonotic pathogens — diseases transmitted from animals to humans—that are closely associated with the intensive confinement of animals.
Litigation Strategy

Challenge USDA’s HPAI Response Plan as violating National Environmental Policy Act (NEPA) under the Administrative Procedures Act (APA)

NEPA

Mandates government examine major federal actions that significantly affect the quality of the human environment and evaluate alternatives that would cause less adverse environmental impacts

APA

Final federal actions must be:
- made in accordance with law
- reasoned / supported by the facts
- not arbitrary and capricious
Case Components

- Environmental Impacts
- Environmental Justice
- Alternative Approaches
- Mitigation Measures
# Environmental Impacts

**NEPA Regulation:**
40 C.F.R. § 1508.27(b)

<table>
<thead>
<tr>
<th>Environment Act/Act</th>
<th>Reference</th>
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<tbody>
<tr>
<td>Clean Water Act</td>
<td>33 U.S.C. § 1251</td>
</tr>
<tr>
<td>Clean Air Act</td>
<td>42 U.S.C. § 7401</td>
</tr>
<tr>
<td>Migratory Bird Treaty Act</td>
<td>16 U.S.C. § 703(a)</td>
</tr>
<tr>
<td>Bald and Golden Eagle Protection Act</td>
<td>16 U.S.C. § 668(a)</td>
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</tbody>
</table>
Environmental Justice

Identify and address “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

Exec. Order No. 12898, §1-101 (Feb. 11, 1994)

It is well-established—almost to the point of judicial notice—that environmental harms are visited disproportionately upon the dispossessed—here on minority populations and poor communities. See Brief of the North Carolina Environmental Justice Network

McKiver v. Murphy-Brown, LLC, 980 F.3d 937, 982 (4th Cir. 2020) (J. Wilkinson concurrence)
Alternative Approaches

NEPA Requirement: 42 U.S.C. § 4332(2)(C)

- More humane “depopulation” method
- Environmentally safer disposal methods
- Condition indemnification on cage-free, low stocking density adaptations
- Nitrogen-filled foam
Case Status


**Central District of California**

**Motion to Dismiss: Denied**  
Gov't argued Ps' lack standing (injury, causation, redressability)

**Continued pending settlement talks**
Questions?

Laura Fox (JD/MELP ’13)
lfox@vermontlaw.edu
ENV5336: Climate Change, Extinction, & Adaptation