UCDAVIS VETERINARY MEDICINE

Poultry Ponderings

Edition 34 - Spring 2024

A quarterly newsletter detailing poultry related work, research, and events in California

Inside this issue:

Questions or Comments?

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Oh the places you'll go!..if you're Highly Pathogenic AI

Mrs. Theresa Gendreau, Creative Director, UC Davis School of Veterinary Medicine Cooperative Extension Poultry Lab

Have you wondered how far this HPAI outbreak has stretched across the Americas? A team of UC Davis and UC ANR researchers have created an interactive map that shows how HPAI spread among wildlife and domesticated animals over 2+ years and counting from North to South America. The map was created to better visualize the sheer size and scope of the current outbreak which is likely the largest animal disease outbreak since the agricultural revolution approximately 7-10,000 years ago.

The North American data includes both domestic and wildlife detections while the South American data only represents wildlife. In addition, data for wildlife in South America may be inconsistent across countries due to differences in surveillance strategies and to some countries discontinuing their reports of confirmed HPAI H5N1 cases to WAHIS/WOAH since late 2023.

By mapping and visualizing the cases in wildlife and domesticated poultry along a timeline, you can see how Canada's surveillance system worked as a method to warn the U.S. that HPAI was coming to the U.S. Likewise, the U.S. system identified waterfowl detection in the Carolinas before detections in commercial poultry. This type of surveillance is critical toward creating a robust international surveillance system which helps farmers at a regional and hyper-local level.

Continued next page...

Poultry? We have an app for that!

Backyard Poultry Central is your hub for the latest information on husbandry practices for new and experienced backyard owners. Get notified of outbreaks as soon as they happen, and recievie critical information at your fingertips.

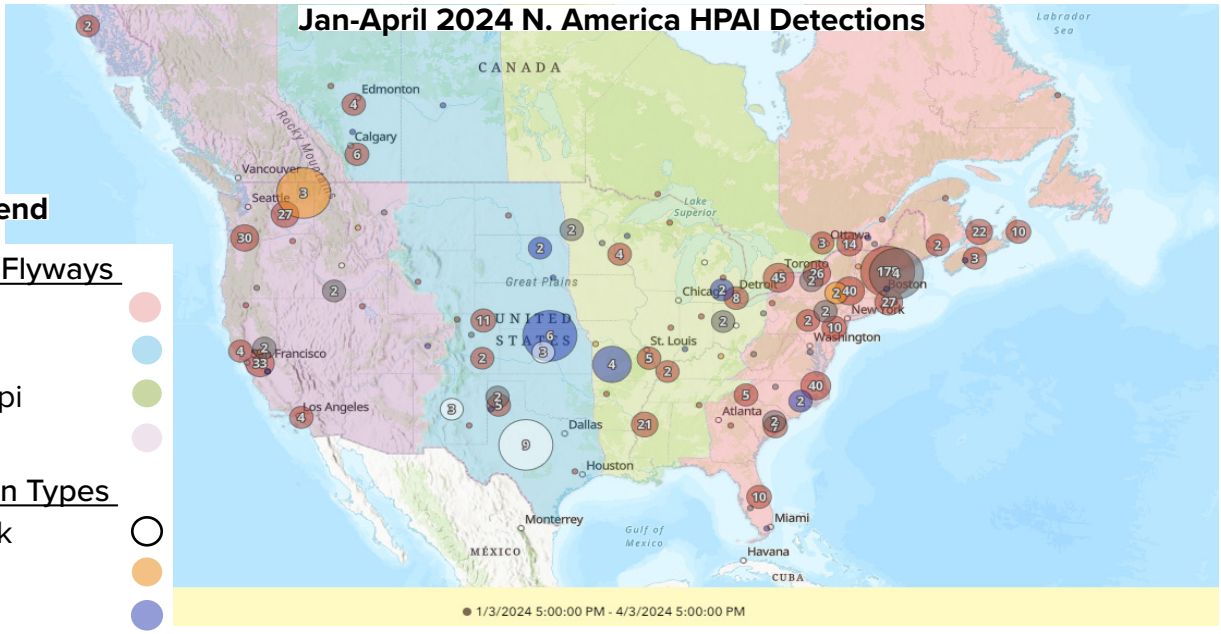
Download the "Backyard Poultry Central" app on the Google Play Store

Oh the places you'll go...if you're HPAI continued

If you are interested in learning more about HPAI in South America, you can watch and listen to Dr. Uhart give an update on the current state of HPAI at the last UC Davis Grand Challenges "Institute for Pandemic Intelligence" available as a recorded webinar on Youtube titled "Avian Influenza and an Emerging Planetary Crisis": https://youtu.be/6MxhHgp_KRY

For more information or questions about the map, feel free to contact Dr. Maurice Pitesky at mepitesky@ucdavis.edu
Highly Pathogenic Avian Influenza Map:
https://experience.arcgis.com/experience/77e38ab79bfe416ca6d72b796612ee83/

Jan-April 2024 N. America HPAI Detections

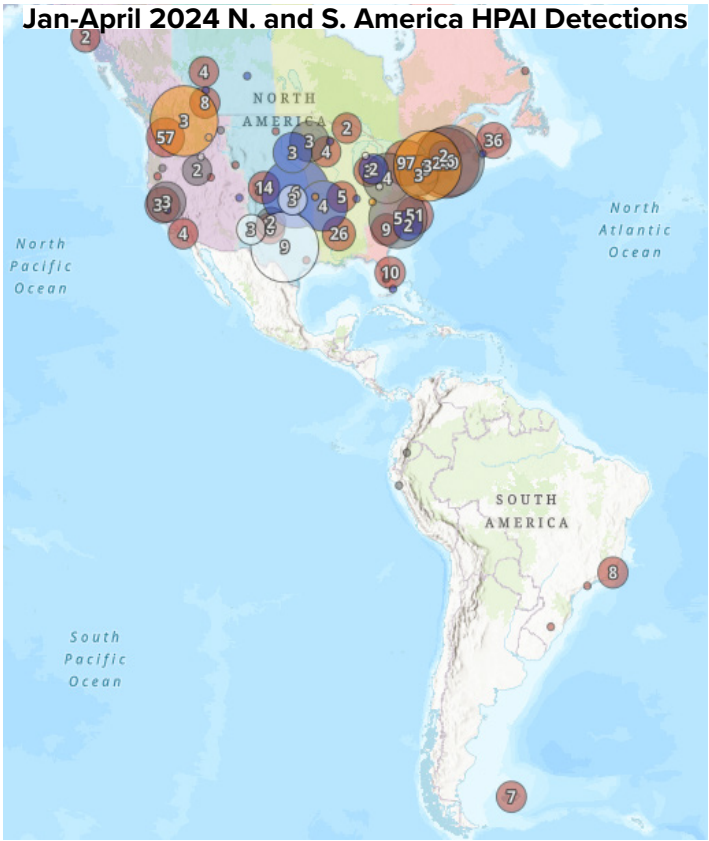


Map Legend

Wildfowl Flyways
- Atlantic
- Central
- Mississippi
- Pacific

Detection Types
- Livestock
- Mammal
- Poultry
- Non-Commercial Poultry
- Wildbird

Jan-April 2024 N. and S. America HPAI Detections



Contributors to this map include the following:
Ralph E. T. Vanstreels - *Associate researcher, Karen C. Drayer Wildlife Health Center, University of California, Davis*
Marcela Uhart- *Director, Latin American Program, Karen C. Drayer Wildlife Health Center, University of California, Davis*
Shane Feirer-*GIS Supervisor UC ANR*
Maurice Pltesky-*UC Davis School of Veterinary Medicine-Co-operative Extension*

Note: To view the outbreak as a dynamic video click on the play button on the bottom right. To see the legend click on the map layers in the top right. You can turn on and off these layers to better visualize specific data by click on the "eye" to the right of each item on the legend. You can also zoom in and out of the map. The numbers represent the number of accessions for each location and do not represent the number of dead birds."

Cluck n Roll: Chicken tractors

Beginner Farmers and Ranchers Development Program

Ms. Faye Duan, Research Assistant, UC Davis School of Veterinary Medicine, Cooperative Extension Poultry Lab

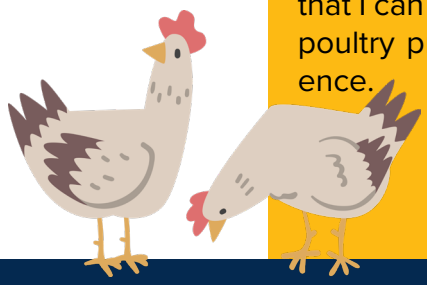
As part of a USDA Beginning Farmer Rancher and Development Program Grant, a workshop was held at the UC Davis Student Farm on February 29th. The workshop focused on the design and use of mobile coops, (aka "chicken tractors") in integrated pastured poultry-crop production systems. Speakers including Faye Duan and Dr. Todd Kelman presented on the integrated poultry-crop field trials conducted at UC Davis as one example of how an integrated system can work. The seminars were followed by a visit to a demonstration coop that was used in the field trial. Key insights from the workshop included:

- **How does one keep the poultry from damaging the crops in an integrated system?** One strategy is planning production so that the grazing comes before planting or after harvest. This means that if you are integrating laying hens, you need a place to house them while say, your tomatoes are growing. Or if you are raising broilers, you'd need to plan sufficient time between annual crop planting cycles to let the birds grow.
- **How can we manage food safety risks associated with animal integration into crops?** In sequential integration, the poultry would graze and deposit manure before the planting and/or they would feast on the crop residue after harvest. When planning their production, the important guideline for farmers to follow is to ensure that at least 90 days pass between the time that the grazing and harvest happens, or 120 days for crops that touch the soil.
- **How can we protect the safety and wellbeing of the chickens in the chicken tractors?** Keep at least 2 waterers in the chicken tractors in case one malfunctions on a hot day. Use quarter inch hardware cloth (instead of chicken wire) to cover the chicken tractor frame to prevent rodent entry. Move the chicken tractor slowly, and ideally with a second person to supervise, in order to prevent leg and foot injuries to the birds.
- **Do we have to have feeders for chicken tractors?** Yes, because chickens can't digest pasture solely to achieve a balanced diet for meat and egg production. However, chickens can displace some calories on pasture by eating insects, which is an emerging area of research.

If you are interested to learn more, please refer to the following resources that were provided during the workshop to guide their decision around what kind of chicken tractor design and integration schemes to choose for their production systems:

- Making a Hoop Pen for Pasture Poultry by University of KY
- The Egg Mobile by UC Davis
- Layer Coop Design and Construction by Dr. Todd Kelman, UC Davis

Of those that braved the rainy spring day to attend the workshop some were awarded a chicken tractor from our field trials to take home. We wish them great success on their pastured poultry endeavors!



Community Corner

An interview with Ms. Reena Grewal, Animal Science undergraduate intern in the CE Poultry Lab.

How did you hear about the CE Poultry Lab?

I was taking a first-year seminar that Dr. Pitesky was teaching Fall quarter called Agricultural Disasters in Neolithic Times. Learning about diseases and natural disasters and how it combined with the field of animal science really piqued my interest!

What do you work on in the lab?

I've been writing Extension-based articles for the SoCal Nestbox website, which has been really fun and interesting to tackle. An article written for the public is presented in a certain way, different from a research article.

Were you always interestd in poultry?

I grew up in Livingston, Ca, where the headquarters to Foster Farms is. My family did have poultry, a couple hens and a rooster. My neighbors didn't like it! I was also a part of Levingston FFA, where I got to work more hands-on with poultry.

Has there been anything unexpected that you've learned about the field?

I've learned that there are so many topics to talk and write about just regarding poultry, because that also includes different types of birds like turkeys, ducks, geese, waterfowl, and even companion animals like cockatiels and parrots. It has also been exciting to learn that I can combine my interests like poultry production and animal science.

continued next page...

New Tools to Understand How Virulent Newcastle Disease Spreads

Mr. Alec Michael, Graduate Student, UC Davis School of Veterinary Medicine, Cooperative Extension Poultry Lab

California has suffered two large outbreaks of virulent Newcastle disease (vND) since 2002. The virus infects a wide variety of birds, both wild and domestic, but is especially lethal for poultry. In the 2002-2003 VND outbreak, the virus spilled over into commercial poultry flocks, resulting in over 3 million birds being culled, and in the 2018-2020 outbreak over a million birds were lost to disease and euthanasia[1]. Controlling the spread of this disease during outbreaks comes with many challenges. In addition to commercial premises, California also has many individuals who raise poultry as a source of eggs and protein for their household or for exhibition purposes. These locations, or premises, are often not documented or tracked anywhere, making disease mitigation efforts difficult. In addition, while most individuals raise exhibition birds for the purpose of attending shows, some fraction of this group, often with flocks featuring a high proportion of roosters, may also participate in bird fighting. As this activity is illegal in California, outreach to this community becomes even more difficult.

What else have you learned from the work you've done so far?

The biggest thing that I've realized with this internship is that backyard poultry (BYP) encompasses so much. I hadn't considered my experience with FFA to fall under BYP until talking to Dr. Pitesky about it. It's really important, especially with the rise of things like HPAI, to be careful and make sure you're applying those biosecurity practices. I have a lot more to learn.

What is your favorite chicken breed?

The Mille Fleur!

As part of an effort to better understand the spread of VND in California and surrounding states and to select optimal control strategies, the United States Department of Agriculture's Animal & Plant Health Inspection Service built a statistical model for the spread of VND incorporating many types of commercial premises as well as backyard farms and exhibition birds.

Our lab is working in coordination with the USDA's Center for Epidemiological Animal Health (CEAH) on adding the following features to their model:

- Including game fowl owners and where their birds travel by leveraging the analyses of social media based data
- Adding vaccination for Newcastle disease in non-commercial birds as a variable to understand how vaccinating these birds positively and negatively affects diseease spread. For example, while VND vaccines greatly reduce mortality, vaccinated birds can still be asymtomatic carriers and potentially spread the virus.

However, while these models are helpful, some of the most important things you can do to protect your birds from VND and other avian diseases involve good biosecurity practices. See the following websites to get more information:

- https://www.cdfa.ca.gov/ahfss/Animal_Health/Newcastle_Disease_Info.html
- https://ucanr.edu/sites/poultry/
- https://socalnestbox.com/

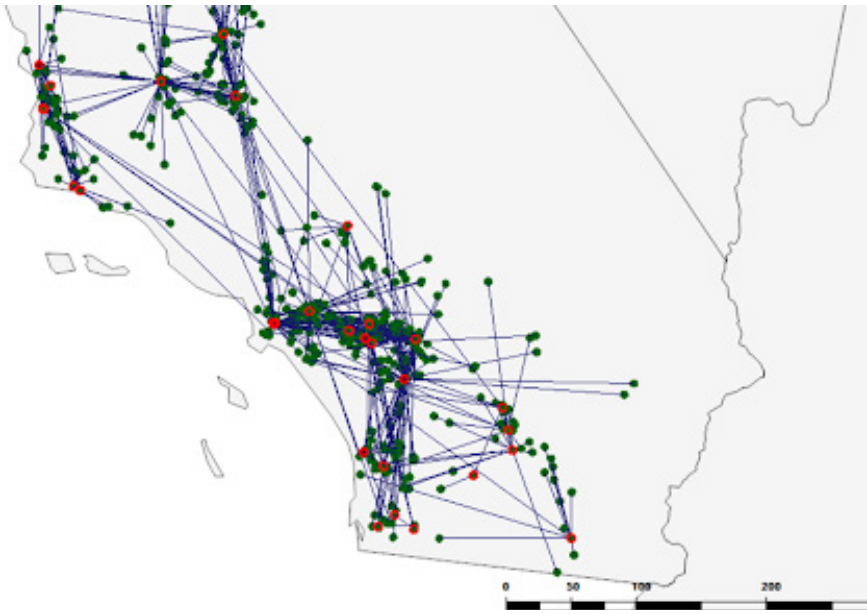


Figure 1. (on right) A single time point from a single simulation of a VND outbreak, demonstrating how the model depicts bird movements. The red points represent infected premises, the lines depict direct and/or indirect contact with other premises (green points) by the infected flocks. These types of simulations can provide insights on different mitigation approaches such as different vaccination strategies.

[1]Reference

USDA
CALLS FOR NOMINATIONS TO SERVE ON THE
2025-2027 AMERICAN EGG BOARD

SACRAMENTO, CA – The United States Department of Agriculture (USDA) is seeking nominees to serve on the American Egg Board (AEB) including individuals from AREA III the Western States area (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Iowa, Kansas, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming).

AEB is composed of 18 members and 18 alternates and administers the egg research and promotion program authorized by the Egg Research and Consumer Information Act of 1974. Board members are appointed by the U.S. Secretary of Agriculture. The diversity of the board should reflect the diversity of the industry in experience of members, marketing strategies, methods of production and distribution, and other distinguishing factors, including but not limited to individuals from historically underserved communities, that will bring diverse perspectives. AEB's mission is to maintain and expand the markets for eggs. For more information about the board please contact Barbara Josselyn at (202) 713-918 or email Barbara.Josselyn@usda.gov

To be eligible for nomination, individuals must be producers or representatives of producers and own more than 75,000 laying hens and be nominated by a certified eligible organization. Producers who own less than 75,000 hens are eligible provided they have not applied for exemption and are paying assessments to AEB. A list of the certified eligible operations within each area are available at https://www.ams.usda.gov/rules-regulations/research-promotion/eggs

All nominations should be submitted by May 27, 2024 to debbie@agamsi.com

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CONTACT: Debbie Murdock, Pacific Egg & Poultry Association at (916) 441-0801

Dr. Cluck's Pun Puzzle

"Why was the chicken thown out of the baseball game?"

This puzzle is a word search that has a hidden message in it! First find all the words in the list. Once found, copy the unused letters starting in the top left corner into the blanks to reveal the answer.

WORD BANK

America
Biosecurity
Community
Egg
Model
Research
Poultry
Safety
Virus
Backyard
Chicken
Disease
Map
Tractor
Avian
Board
Data
Influenza
North
South

T	H	A	E	E	Y	S	U	S	P	Y	E	C	R	Y
T	E	M	D	S	U	R	I	V	F	T	O	W	E	T
L	T	E	P	L	A	A	Y	N	A	I	V	A	S	E
Y	D	R	D	F	T	E	V	H	H	N	X	L	E	F
J	F	I	A	R	R	K	S	T	S	U	A	E	A	A
Y	B	C	A	C	A	B	R	I	N	M	Z	D	R	S
N	D	A	T	A	T	O	P	U	D	M	N	O	C	U
D	D	I	A	N	N	O	B	O	M	O	E	M	H	Z
Y	R	T	L	U	O	P	R	M	Z	C	U	Z	G	J
B	I	O	S	E	C	U	R	I	T	Y	L	S	N	T
E	X	L	C	H	I	C	K	E	N	C	F	Y	K	S
Z	J	J	K	K	F	E	T	S	G	S	N	I	O	G
Q	X	S	C	G	D	Z	X	N	M	T	I	U	F	W
I	M	D	R	A	Y	K	C	A	B	X	T	L	I	P
M	K	G	T	E	G	G	P	T	G	H	D	R	Q	A

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Have you seen our series, 'The Sitch'?

Sit down with Dr. Maurice Pitesky as he answers the most common questions for new and experienced backyard poultry owners alike. Get insightful and accurate information on the best practices for raising your own birds.

Visit our channel at:
https://www.youtube.com/c/ucdpiteskylab