



Community for Emerging and Zoonotic Diseases

Identifying emerging risks through collective intelligence

CFIA One Health HPAI Meeting
16 June 2022

www.cezd.ca

USGS Map



National Wildlife Health Center
Madison, Wisconsin
Updated June 14, 2022

Data: USDA, CFIA, OIE, States
Provisional. All locations are approximations
based on best available information.

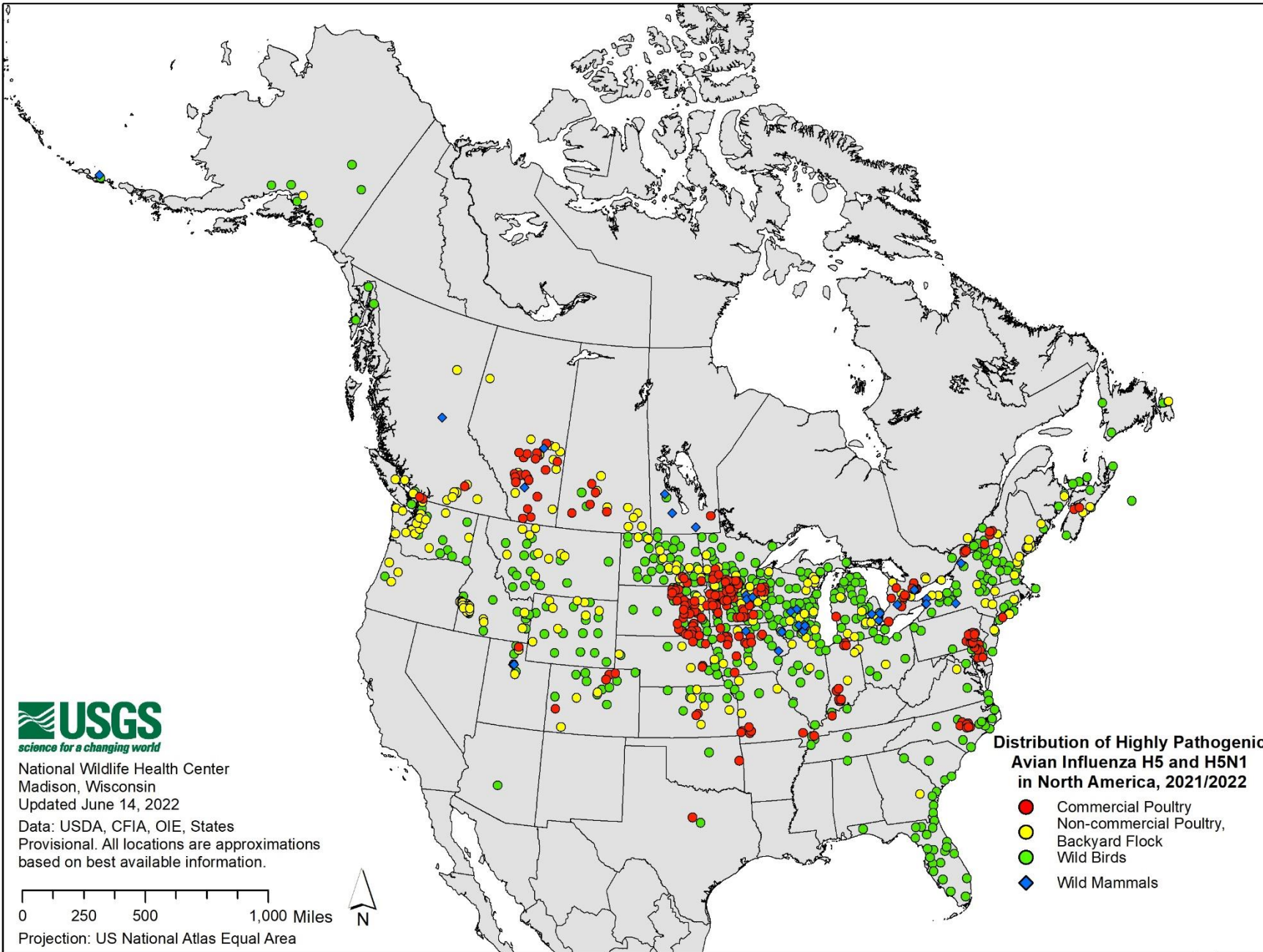
0 250 500 1,000 Miles



Projection: US National Atlas Equal Area

Distribution of Highly Pathogenic Avian Influenza H5 and H5N1 in North America, 2021/2022

- Commercial Poultry
- Non-commercial Poultry,
Backyard Flock
- Wild Birds
- ◆ Wild Mammals





HPAI 2022 Confirmed Detections

as of June 15, 2022

Last reported detection Tuesday, June 14, 2022

Data updated weekdays by 12pm Eastern

[Download Data](#)

372 Confirmed Flocks

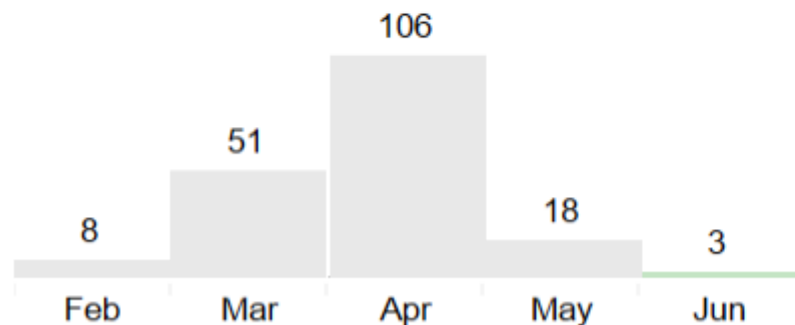
Birds tested and confirmed having HPAI

36 Affected States

States with at least one confirmed infected flock

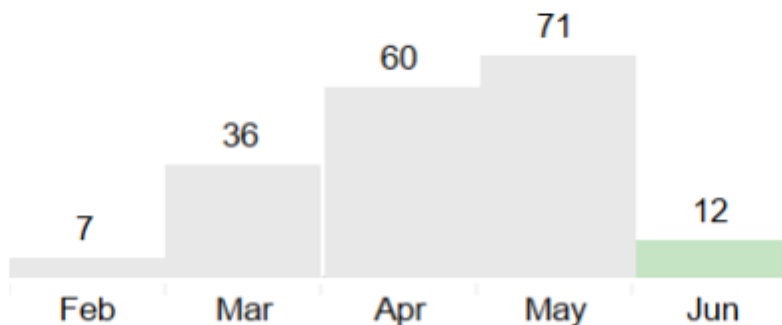
Commercial Flocks

186



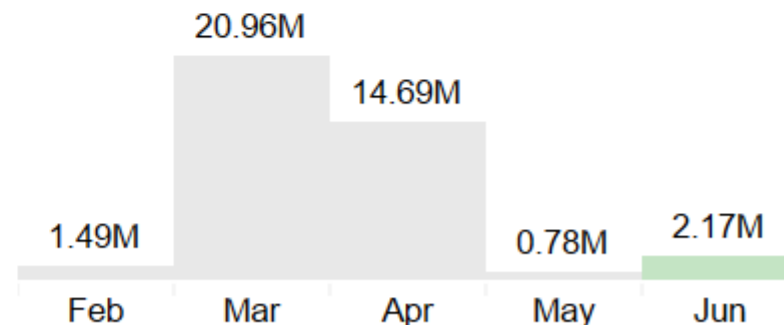
Backyard Flocks

186



Birds Affected*

40.09M



*Number of birds on confirmed infected premises.

Bars reflect most recent 4 months (numbers may not add up to total).

[USDA Dashboard](#)

USDA list outbreaks reported in

domestic birds

Colorado	1 new case 1 commercial	6 affected flocks 4 Commercial, 3 Backyard > 3.5 million birds
Utah	1 new cases 1 backyard (petting zoo)	4 total flocks 1 commercial, 3 backyard >1.5 million birds
Indiana	2 new case 2 backyard	13 total flocks 9 commercial, 4 backyard >189,000
Washington	5 new cases 5 backyard	19 total flock 19 backyard flocks 1,301 birds
Minnesota	1 new cases 1 backyard	80 total flocks 59 commercial, 21 backyard >2.9 million birds
Pennsylvania	1 new cases 1 Commercial	17 total flock 17 commercial flock >4.0 million birds



Border State

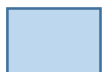
North Dakota	1 new case 1 backyard	16 total flocks 4 Commercial 12 Backyard >167,000 birds
Alaska	No new cases	1 total flock 1 backyard flock 30 birds
Montana	No new cases	9 total flocks All backyard >78,000 birds
Michigan	No new cases	13 total flocks 1 commercial, 12 backyard > 35,000 birds
Wisconsin	1 new cases 1 backyard	22 total flocks 8 commercial, 14 backyard > 3.0 million birds
Idaho	10 new cases 10 backyard	25 total flocks All backyard 988 birds

US Domestic Detections

[USDA list](#) of Affected Commercial and Backyard Flocks – states with no new detections

Vermont	No new cases	1 total flocks 1 backyard 30 birds
Maine	No new cases	12 flocks total 12 backyard 893 birds
New Hampshire	No new cases	1 total flock 1 backyard 150 birds
New York	No new cases	8 total flocks 1 commercial 7 backyard 7028 birds affected
Ohio	No new cases	1 total flock 1 backyard flock 20 birds

Oklahoma	No new cases	1 total flock 1 commercial flock 13,800 birds
Nebraska	No new cases	8 total flocks 4 commercial, 4 backyard >4.8 million birds
Missouri	No new cases	9 total flocks 6 commercial, 3 backyard >430,000 birds
Wyoming	3 new cases 3 backyard	8 total flocks All backyard birds 350 birds
South Dakota	1 new case 1 backyard	40 total flocks 36 commercial, 4 backyard >1.6 million birds
Oregon	1 new case	2 total flock 2 backyard flock 540 birds
Illinois	1 new case 1 backyard	4 total flocks 4 backyard flocks 150 birds



Border State

US Domestic Detections

[USDA list](#) of Affected Commercial and Backyard Flocks
new states with no new outbreaks reported

Delaware	No new cases	3 total flocks 3 commercial >1.4 million birds
Massachusetts	No new cases	1 total flock 1 backyard flock 240 birds
Connecticut	No new cases	1 total flock 1 backyard 160 birds
Kentucky	No new cases	2 total flocks 2 commercial >284,000 birds
Kansas	No new cases	6 total flocks 1 commercial, 5 backyard 7,546 birds
New Jersey	No new cases	1 total flock 1 backyard flock 60 birds

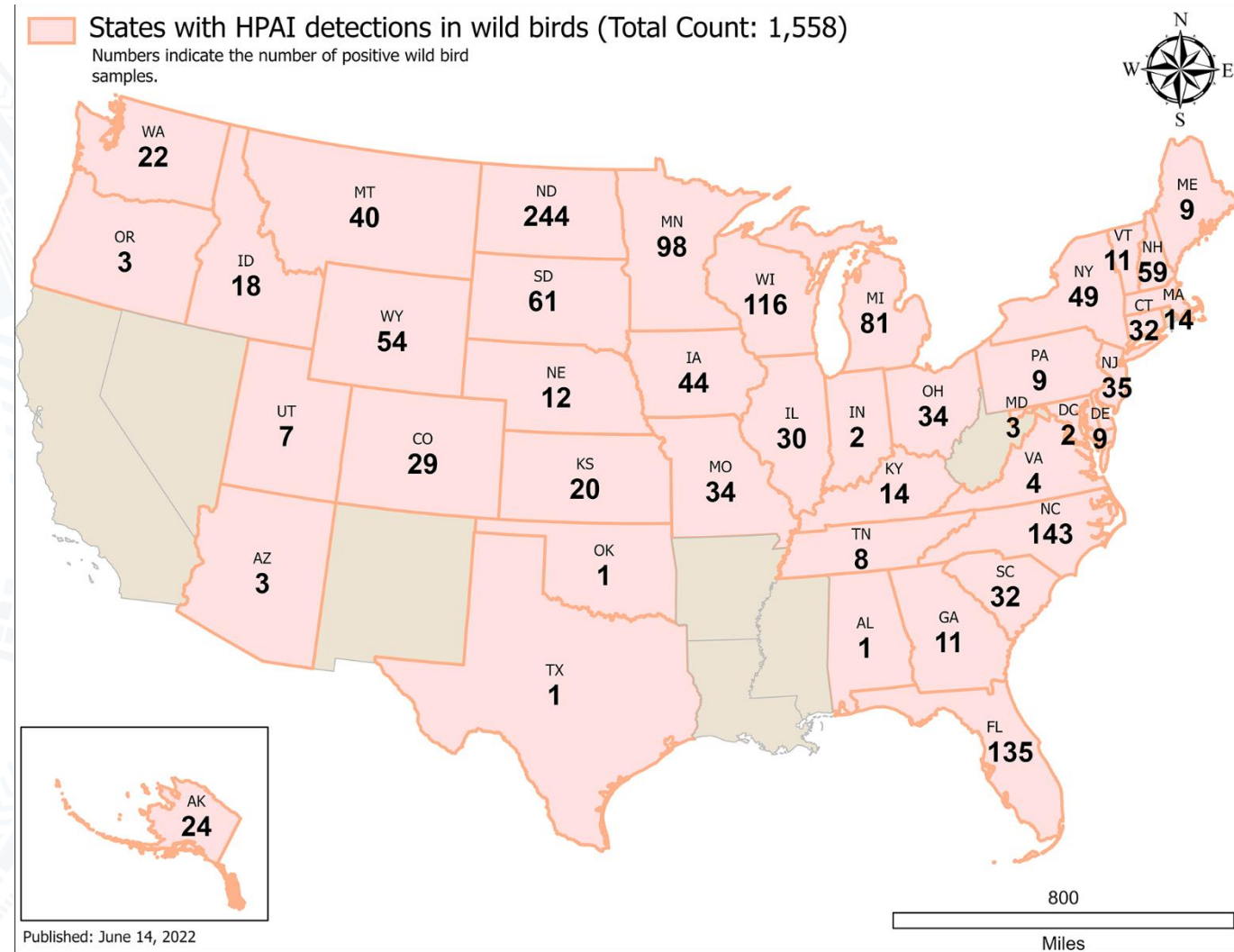
North Carolina	No new cases	9 total flocks All commercial >480,000 birds
Virginia	No new cases	1 total flock 1 backyard flock 90 birds
Maryland	No new cases	4 total flocks 4 commercial >1.7 million birds
Texas	No new cases	1 total flock 1 commercial flock 1,700 birds
Iowa	No new cases	19 total flocks 15 commercial 4 backyard >13.3 million birds
Georgia	1 new case 1 backyard	1 total flock 1 backyard 490 birds

US Wild Bird H5N1 Avian Influenza

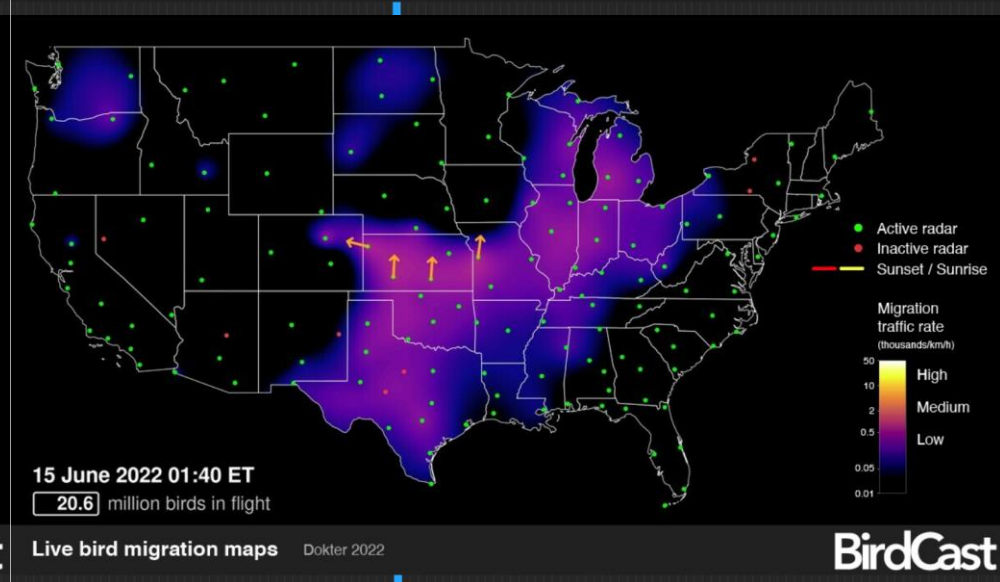
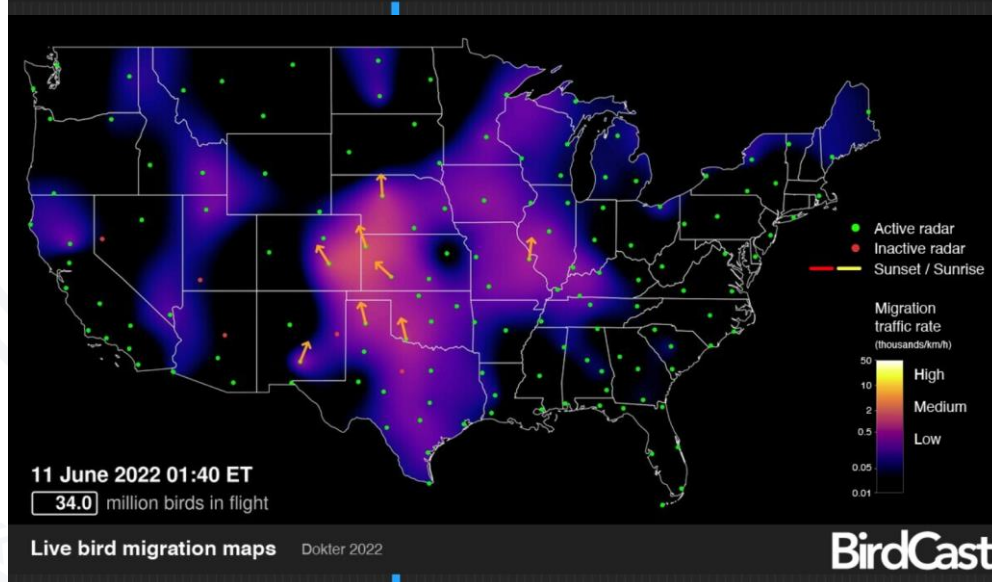
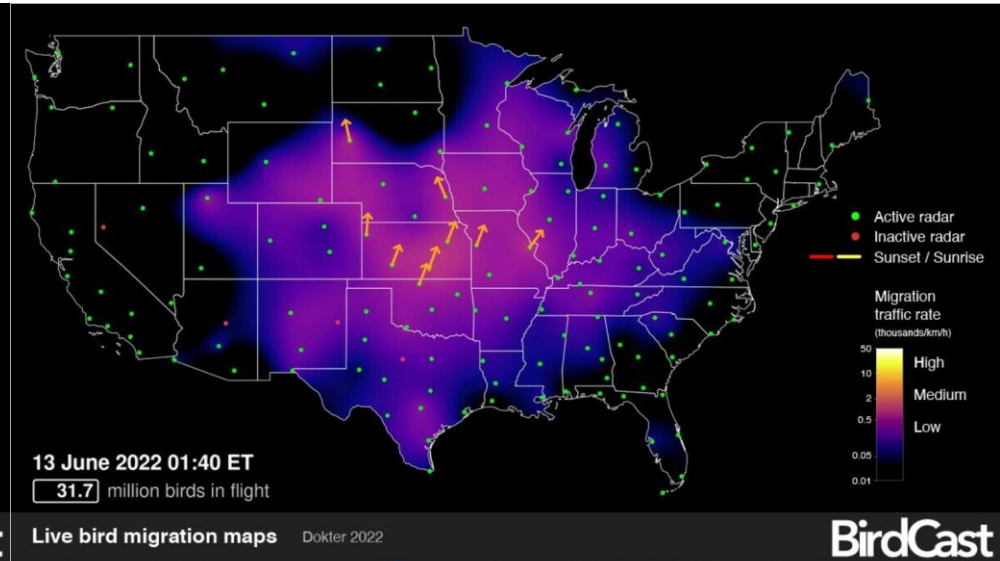
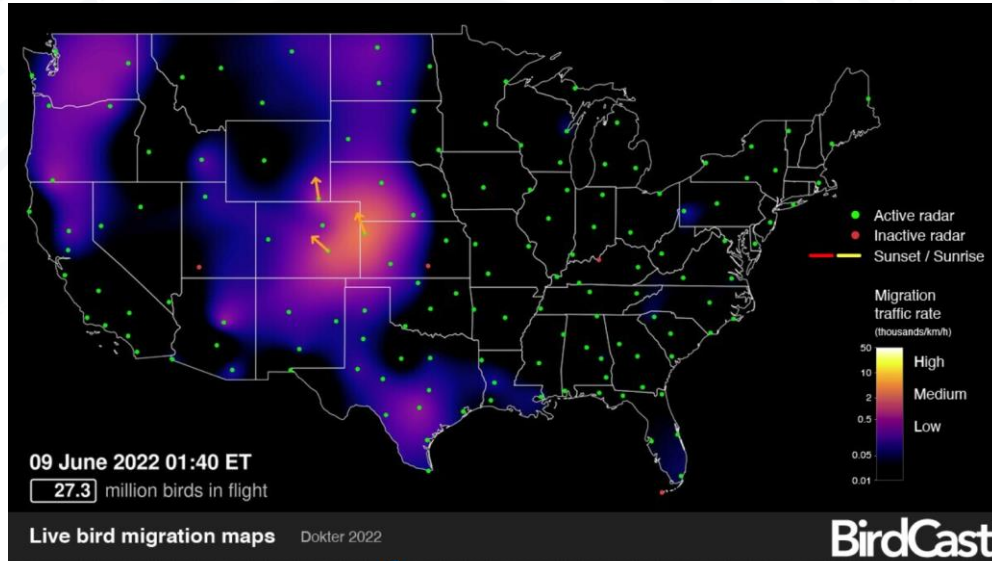
- [US Wild Bird Information](#)
- New state reporting detection Arizona
- Detections in all flyways

[Live bird migration map](#)

Declining numbers June 9 – 15, 2022
<50 million birds each night, in last
couple of nights <30 million



Wild Bird Migration



Canadian Domestic Detections

Canadian Detections in Domestic Birds [CFIA Website](#) as of June 15, 2022

Province	New Cases Since June 9 nd , 2022	All Cases
British Columbia	2 new cases 1 commercial poultry 1 small flock poultry	1 Captive wild non poultry 4 Commercial Poultry 8 Small Flock Poultry 4 Small Flock non-poultry
Alberta	No new cases	19 Commercial Poultry 2 Small Flock Poultry 10 Small Flock Non-poultry
Saskatchewan	No new cases	5 Commercial Poultry 5 Small Flock Poultry 3 Small Flock Non-Poultry
Manitoba	1 new case – small flock non poultry	1 Commercial Poultry 1 Small Flock Non-Poultry
Ontario	No new cases	20 Commercial Poultry 5 Small Flock Poultry 1 Small Flock non-poultry
Quebec	No new cases	4 Commercial Poultry 2 Small Flock Poultry 1 Small Flock non-poultry
New Brunswick	No new cases	1 Small Flock Poultry
Nova Scotia	No new cases	2 Commercial Poultry 2 Small Flock Non-poultry
Newfoundland and Labrador	No new cases	2 Small Flock non-poultry

Wild Bird H5N1 Avian Influenza

[Canadian Wild Bird Information](#)

- Yukon
- Manitoba
- Saskatchewan
- Quebec
- Ontario
- British Columbia
- PEI
- Nova Scotia
- Newfoundland and Labrador
- New Brunswick



[Wild Bird Dashboard](#)

Maintenance and dissemination of avian-origin influenza A virus within the northern Atlantic Flyway of North America | PLOS Pathogens

- Retrospective study of surveillance data from 2015-17 in Atlantic Flyway
- Using genotyping and banding data to look for trends (statistically supported)
- Evidence of viral persistence on the northern breeding site (Maine)
- Did not find evidence of whole genome dispersal of IAV by wild birds between Maine and Virginia
- Found evidence of viral flow from breeding sites to stopover and overwintering sites in the Chesapeake bay

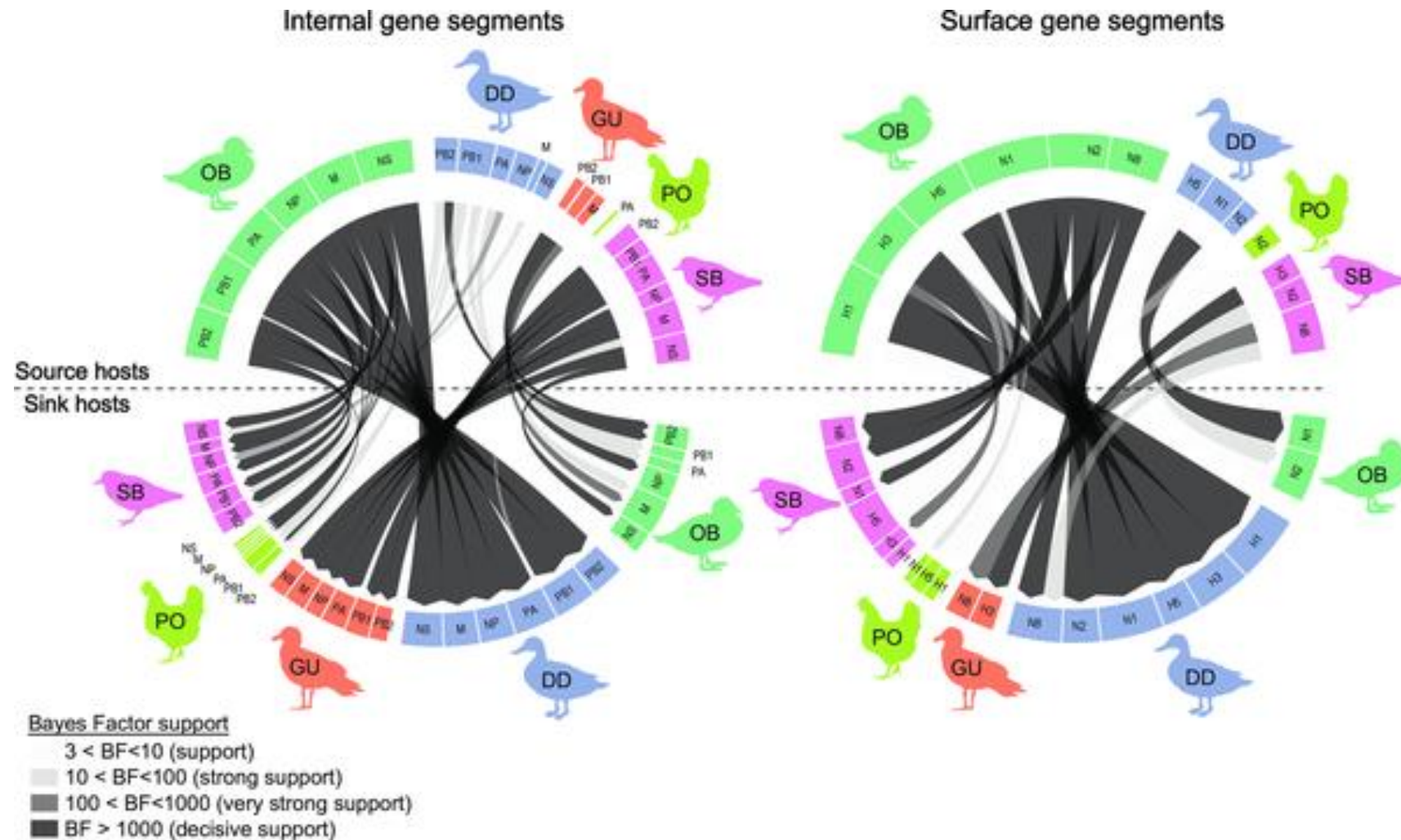
Viral Dispersal

- North Atlantic Flyway:
 - Evidence of viral dissemination from
 - shorebirds to gulls
 - dabbling ducks to shorebirds
 - dabbling ducks to poultry
 - No evidence of viral dissemination from
 - Gulls to any other group
 - Shorebirds to poultry



- Other flyways
 - Evidence of viral dissemination from “other North American Birds” primarily to dabbling ducks and shorebirds

Fig 3. Virus dissemination of gene segments for host groups.



Prosser DJ, Chen J, Ahlstrom CA, Reeves AB, Poulson RL, et al. (2022) Maintenance and dissemination of avian-origin influenza A virus within the northern Atlantic Flyway of North America. PLOS Pathogens 18(6): e1010605. <https://doi.org/10.1371/journal.ppat.1010605>
<https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1010605>