

Avian Influenza: H5 and H7 outbreak update report

8 December 2023



agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Report compiled by:
Directorate: Animal Health

Please note: This report includes all information as available by close of business on 8 December 2023.

1. Introduction and Background

Avian influenza is a highly contagious viral disease that affects several species of food producing birds, pet birds and wild birds. Occasionally other mammals, including humans, may also contract avian influenza. H5 and H7 avian influenza are classified into two categories according to the severity of disease it causes in poultry namely low pathogenic avian influenza (LPAI) and highly pathogenic avian influenza (HPAI). LPAI strains cause few or no clinical signs in poultry while HPAI strains may cause severe clinical signs and potentially high mortality rates among poultry. Outbreaks of HPAI in poultry may result in trade bans on the export of poultry and poultry products. Reporting of HPAI outbreaks in non-poultry (e.g. wild birds, pet birds, birds kept as a hobby, backyard poultry as defined by the 2021 OIE Terrestrial Animal Health Code), to the WOA do not have trade implications.

In South Africa, avian influenza of any subtype is a controlled animal disease in terms of the Animal Diseases Act, 1984 (Act No 35 of 1984). Any suspect or confirmed case of avian influenza of any subtype must be reported immediately to the responsible state veterinarian in terms of the Animal Diseases Act, 1984 (Act No 35 of 1984). Both passive and active surveillance for avian influenza are conducted across the country to detect any incursion of avian influenza. Passive and active surveillance in backyard and commercial chickens is continuing across the country.

In 2017 the first case of Highly Pathogenic Avian Influenza (HPAI) was confirmed in commercial chickens in South Africa. This was confirmed as HPAI H5N8. A HPAI H5N2 was detected in October 2022 in chickens of a small-scale farmer facility in KwaZulu-Natal Province in 2022. This is the first ever HPAI H5N2 in chickens in the country. HPAI H5N2 was detected in ostriches during 2004, 2006 and 2011.

Current H5 and H7 avian influenza outbreaks within the country are summarised in this report and are categorised according to pathogenicity (HPAI, LPAI or undefined). The HPAI outbreaks are discussed under point 2 and LPAI is discussed in point 5.

2. Highly pathogenic avian influenza (HPAI)

All HPAI suspect farms are immediately placed under quarantine and no movement of birds, eggs or products are allowed on, off or through these farms. Samples are collected for verification of the suspicion and back and forward tracing is implemented to detect any possible spread of disease. So far most of the affected properties have culled out the chickens and carcasses were disposed of by dumping at an approved hazardous dump site, incineration, rendering or composting on farm; or on farm burial were allowed by the Environmental Affairs Department. Eggs are either taken under veterinary supervision for pasteurisation or moved after double fumigation or fogging.

Passive and active six-monthly surveillance in the country is ongoing. Listed NAI free compartments are continuing with the monthly surveillance. In terms of the Animal Diseases Act, 1984 (Act No 35 of 1984) any suspect or confirmed outbreak of any avian influenza strain must be immediately reported to the responsible state veterinarian for immediate investigation.

If HPAI is suspected/detected in poultry, there is no scientific justification in placing a radius around the affected farms as a controlled/protection zone due to the mode of transmission, primarily by wild birds. However, all neighbouring farms are immediately visited, and all epidemiologically linked properties to an affected farm are immediately placed under quarantine until preliminary investigations can be conducted.

The recovery of country HPAI freedom may require additional surveillance over and above the current passive and active surveillance.

3. Overview of the new HPAI H5 event

Sequencing data that became available in April 2023, indicated that a new strain of HPAI H5N1 was introduced in November 2022 in the Free State Province. It was decided to report this outbreak and any future HPAI H5 outbreaks as new events with the World Organisation of Animal health (WOAH), unless proven otherwise.

3.1 Overview of the new HPAI H5 poultry event

The index case of the new HPAI H5 poultry event has a start date of 18 April 2023 and was detected in poultry layers in the Swartland Local Municipality within the Western Cape Province. A total of twenty-three (n=23) outbreaks were reported to WOAH as part of the new HPAI H5 poultry event - sixteen outbreaks in the Western Cape Province, four outbreaks in KwaZulu-Natal Province, one outbreak in North West Province, one outbreak in Mpumalanga Province and one outbreak in Northern Cape Province. The affected local municipalities in the Western Cape and KwaZulu-Natal Provinces are represented in Table 1 below.

PROVINCE AND LOCAL MUNICIPALITY PER PROVINCE	Breeders	Broilers	layers	Ostrich	poultry (chicken)	Grand Total
01 MPUMALANGA		1				1
101 Steve Tshwete		1				1
04 NORTH WEST PROVINCE			1			1
474 Kgetlengrivier			1			1
06 KWAZULU NATAL	3				1	4
609 Mpofana					1	1
611 The Msunduzi	2					2
612 Mkhambathini	1					1
08 WESTERN CAPE PROVINCE			7	9		16
801 City of Cape Town			2			2
808 George			2	2		4
817 Swartland			1			1
819 Mossel Bay				1		1
821 Oudtshoorn				2		2
822 Drakenstein			2			2
824 Hessequa				2		2
832 Witzenberg				2		2
09 NORTHERN CAPE PROVINCE		1				1
994 Phokwane		1				1
Grand Total	3	2	8	9	1	23

TABLE 1: AFFECTED LOCAL MUNICIPALITY PER PROVINCE FOR HPAI H5 IN POULTRY

Thirteen (n=13) of the HPAI H5 poultry outbreaks were resolved. The number of resolved outbreaks per Local Municipality is represented in Table 2 below.

Province and local municipality per province	Number of outbreaks resolved
08 WESTERN CAPE PROVINCE	13
801 City of Cape Town	2
808 George	3
817 Swartland	1
819 Mossel Bay	1
821 Oudtshoorn	2

Province and local municipality per province	Number of outbreaks resolved
822 Drakenstein	2
824 Hessequa	2
Grand Total	13

TABLE 2: NUMBER OF RESOLVED OUTBREAKS PER AFFECTED LOCAL MUNICIPALITY PER PROVINCE FOR HPAI H5 IN POULTRY

3.2 Spatial distribution of the new HPAI H5 poultry event

The spatial distribution of the reported HPAI H5 outbreaks in poultry is represented in Figure 1 below. Please note that some of the closed outbreaks are adjacent to each other and not clearly visible as individual dots.

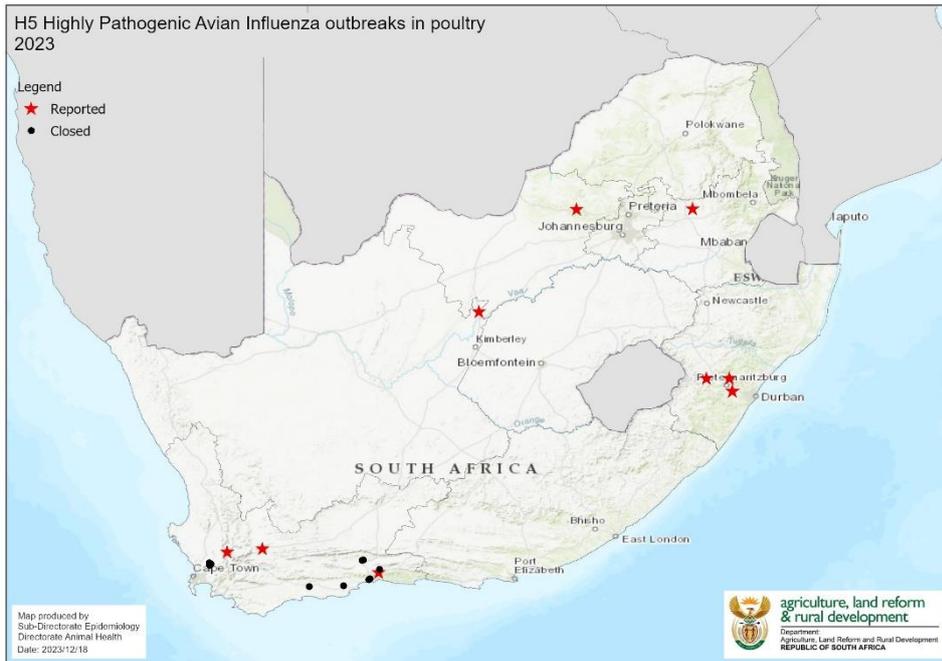


FIGURE 1: SPATIAL DISTRIBUTION OF HPAI H5 OUTBREAKS IN POULTRY

3.3 Temporal distribution of the new HPAI H5 event

The temporal distribution of the HPAI H5 event in poultry is depicted in Figure 2 below.

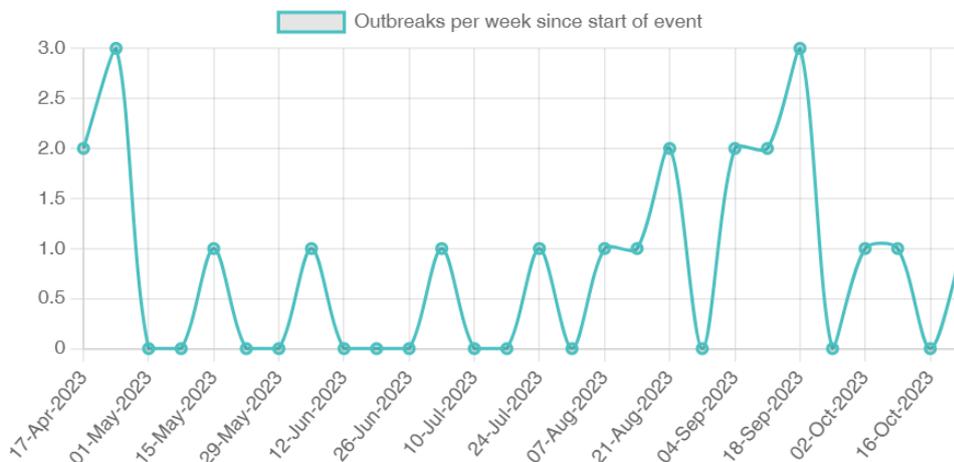


FIGURE 2: TEMPORAL DISTRIBUTION OF HPAI H5 EVENT IN POULTRY

3.4 Overview of the new HPAI H5 non-poultry (wild bird) event

A new wave of H5 avian influenza introductions started in March 2023. Forty outbreaks (n=40) were reported to WOAHA as part of this new HPAI H5 event. These outbreaks are distributed as follows:

Sixteen (n=16) in the Western Cape Province, six (n=6) in the Eastern Cape Province, five (n=5) in KwaZulu-Natal Province, two (n=2) in the North West Province, ten (n=10) in Gauteng Province and one (n=1) in Mpumalanga Province.

3.5 Spatial distribution of the new HPAI H5 non-poultry (wild bird) event

The spatial distribution of the reported HPAI H5 outbreaks in non-poultry is represented in Figure 3 below.

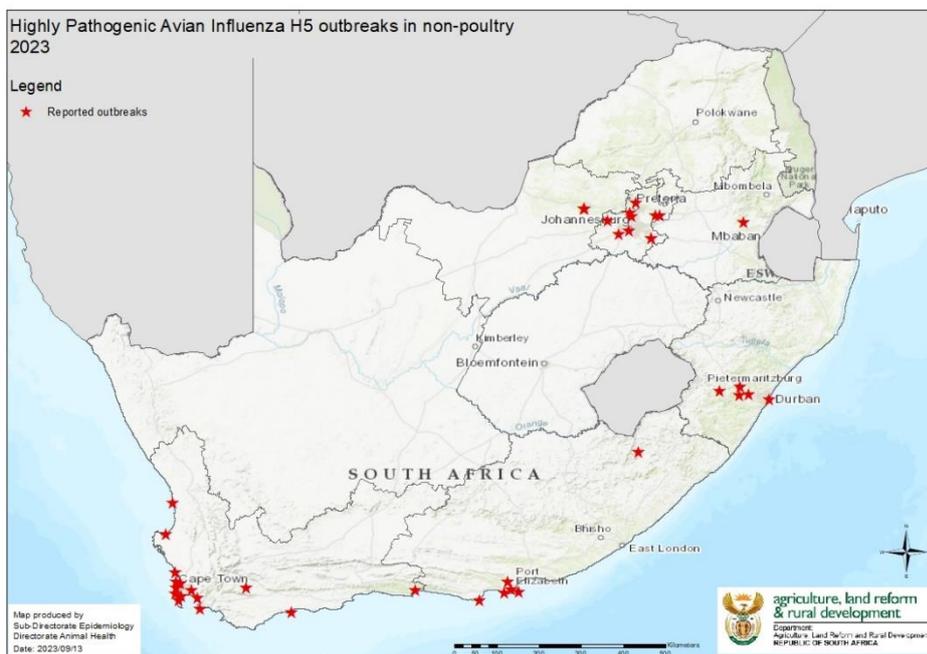


FIGURE 3: SPATIAL DISTRIBUTION OF HPAI H5 OUTBREAKS IN NON-POULTRY

3.6 Temporal distribution of the new HPAI H5 non-poultry (wild bird) event

The temporal distribution of the event in non-poultry is depicted in Figure 4 below.

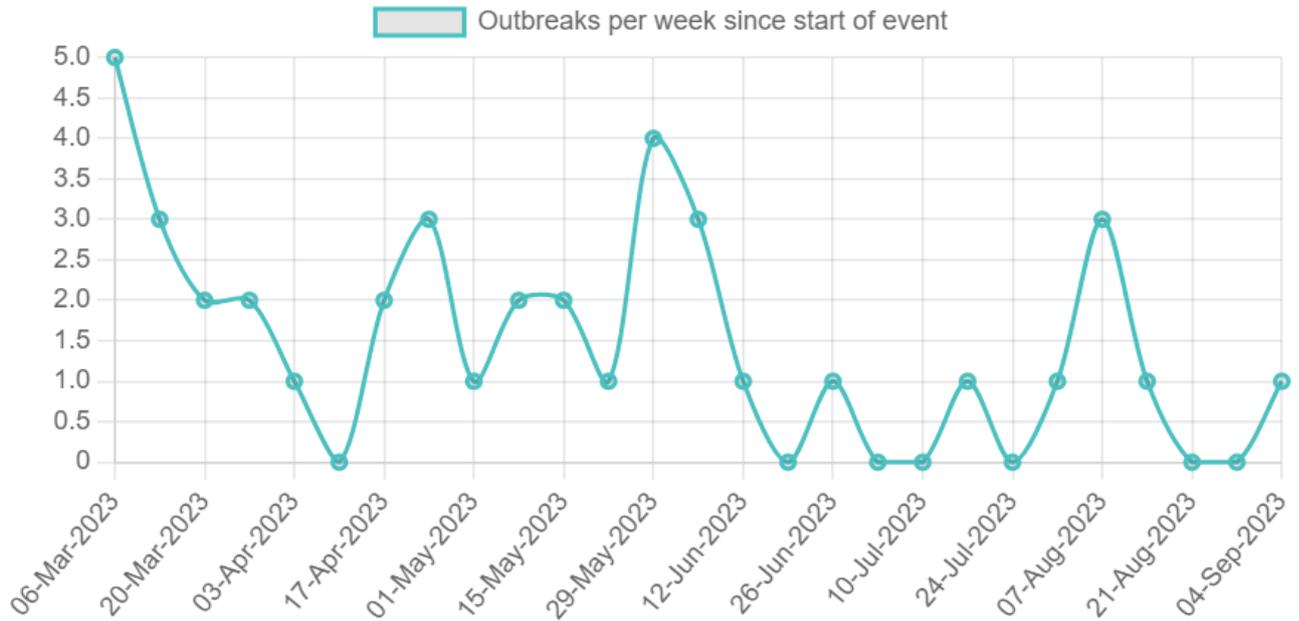


FIGURE 4: TEMPORAL DISTRIBUTION OF HPAI H5 EVENT IN NON-POULTRY

4. Overview of the new HPAI H7 event

The first ever HPAI H7 was detected in chickens in South Africa on samples collected in beginning of June 2023. The first H7 PCR positive was detected in non-poultry in a backyard chicken flock in Gauteng Province in September 2023.

4.1 Overview of the HPAI H7 poultry event

A total of a hundred and nine (n=109) outbreaks were reported up to date. Seventy (n=70) of these outbreaks are located in Gauteng Province; eleven (n=11) in Mpumalanga Province, four (n=4) in the Free State Province, five (n=5) in Limpopo Province, fifteen (n=15) in North West Province, one (n=1) in KwaZulu-Natal Province, one (n=1) in the Eastern Cape Province and two (n=2) in the Western Cape Province. Full genome sequencing is under way.

The sample from Gauteng Province just across the border from Mpumalanga, yielded an HAO cleavage-site sequence characteristic of HP H7. The sample yielded an HA sequence with less than 95% nucleotide identity to H7 viruses isolated in Egypt and Georgia. Sequencing of the NA gene yielded an N6 positive and an NA sequence with 97% nucleotide identity to a virus isolate obtained in Egypt and Georgia. The region sequenced for the HA gene was 300bp and further sequencing is underway to determine a more detailed genetic relationship with other characteristic strains.

Good progress is made with the development of a local H7 AI vaccine. It will however still take some time to gather all the required information to support registration.

4.2 Spatial distribution of the HPAI H7 poultry event

The spatial distribution of the reported HPAI H7 outbreaks in poultry is represented in Figure 5 below.

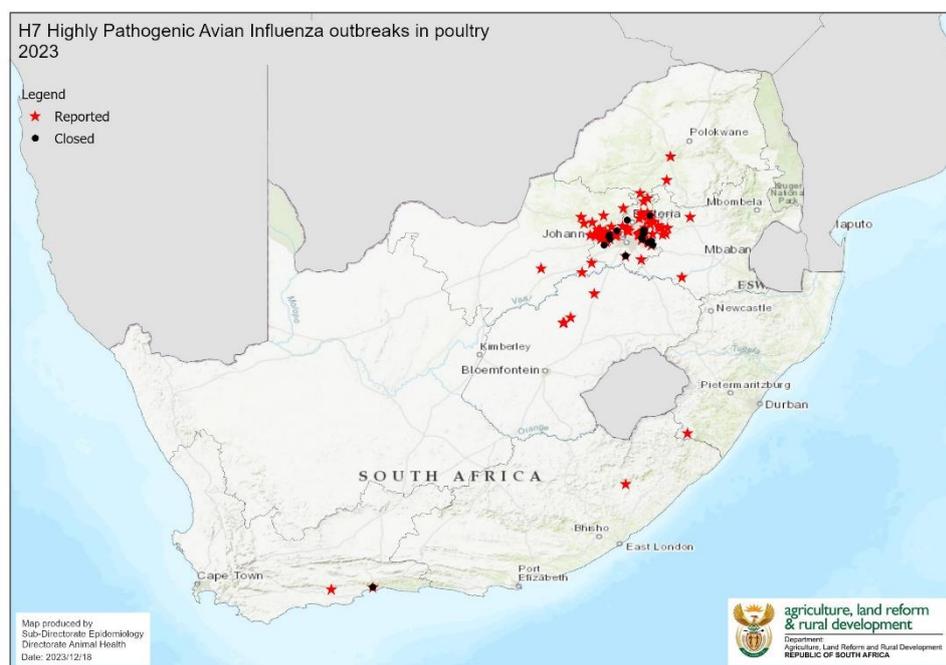


FIGURE 5: SPATIAL DISTRIBUTION OF HPAI H7 OUTBREAKS IN POULTRY

The affected local municipalities are represented in Table 3 below.

Province and local municipality per province	Breeders	Broiler breeders	Layer breeders	Layers	Layers & broilers	Ostrich	Parent broiler	Parent stock laying	poultry (chicken)	Rearing	Grand Total
01 MPUMALANGA	2	1		4	1				1	2	11
101 Steve Tshwete		1									1
102 Emalahleni										1	1
104 Victor Khanye				4	1				1	1	7
141 Lekwa	2										2
02 GAUTENG	1	12	3	47				2		5	70
219 Mogale City		3	1	17						3	24
221 Lesedi				1							1
224 City of Tshwane	1	8	2	19				2		2	34
232 Midvaal				1							1
250 Ekurhuleni		1		9							10
03 LIMPOPO	3			1					1		5
356 Modimolle/ Mookgophong	1										1
366 Bela-Bela	2			1							3

Province and local municipality per province	Breeders	Broiler breeders	Layer breeders	Layers	Layers & broilers	Ostrich	Parent broiler	Parent stock laying	poultry (chicken)	Rearing	Grand Total
367 Mogalakwena									1		1
04 NORTH WEST PROVINCE		3	2	7			2		1		15
445 JB Marks				1					1		2
472 Local Municipality of Madibeng				1							1
473 Rustenburg		2		5			2				9
474 Kgetlengrivier		1	1								2
482 Tswaing			1								1
05 FREE STATE		1		1					2		4
503 Ngwathe		1									1
584 Matjhabeng				1					2		3
06 KWAZULU NATAL				1							1
622 Msinga				1							1
07 EASTERN CAPE PROVINCE									1		1
737 Engcobo									1		1
08 WESTERN CAPE PROVINCE				1		1					2
808 George				1							1
824 Hessequa						1					1
Grand Total	6	17	5	62	1	1	2	2	6	7	109

TABLE 3: AFFECTED LOCAL MUNICIPALITY PER PROVINCE FOR HPAI H7 IN POULTRY

Twenty (n=20) of the HPAI H7 outbreaks were resolved. The number of resolved outbreaks per Local Municipality is represented in Table 4 below.

Province and local municipality per province	Number of outbreaks resolved
01 MPUMALANGA	3
104 Victor Khanye	3
02 GAUTENG	15
219 Mogale City	5
224 City of Tshwane	6
232 Midvaal	1
250 Ekurhuleni	3
05 FREE STATE	1
584 Matjhabeng	1
08 WESTERN CAPE PROVINCE	1
808 George	1
Grand Total	20

TABLE 4: NUMBER OF RESOLVED OUTBREAKS PER LOCAL MUNICIPALITY PER PROVINCE FOR HPAI H7 IN POULTRY

4.3 Temporal distribution of the HPAI H7 event in poultry

The temporal distribution of the HPAI H7 event in poultry is depicted in Figure 6 below.

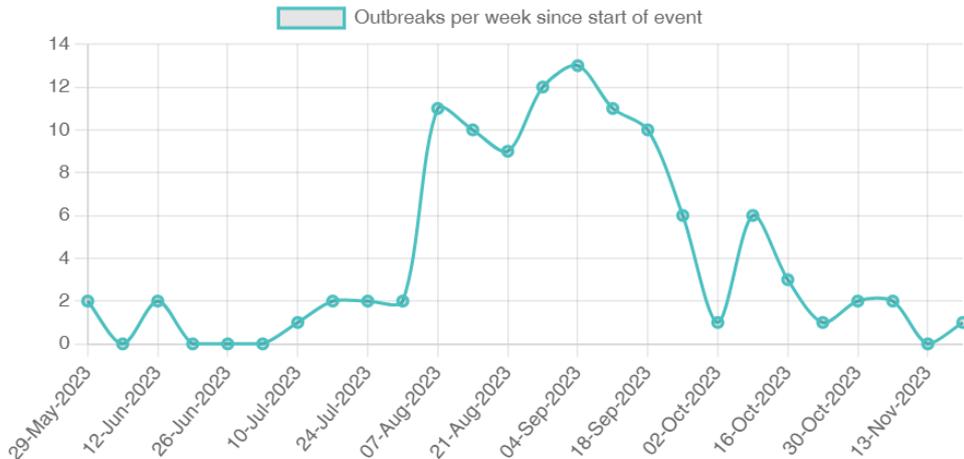


FIGURE 6: TEMPORAL DISTRIBUTION OF HPAI H7 EVENT IN POULTRY

4.4 Overview of the HPAI H7 non-poultry (wild birds)

The first outbreak of HPAI H7 has been reported in backyard poultry. This outbreak was detected in the City of Johannesburg Local Municipality in Gauteng Province on 2 September 2023. A total of two (n=2) outbreaks were reported as part of the HPAI H7 non-poultry event. The second outbreak being a hobbyist facility in City of Tshwane Local Municipality in Gauteng Province.

4.5 Spatial distribution of the HPAI H7 non-poultry (wild bird) event

The spatial distribution of the reported HPAI H7 outbreaks in non-poultry is represented in Figure 7 below.

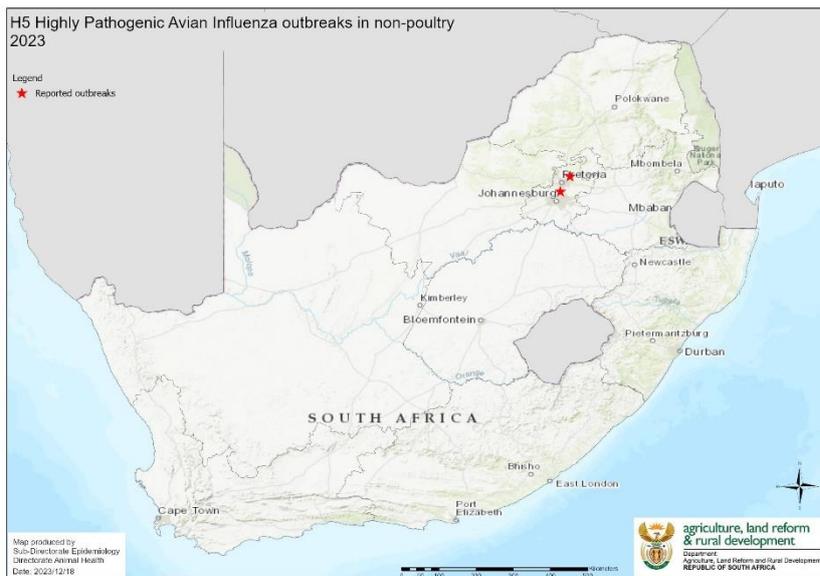


FIGURE 7: SPATIAL DISTRIBUTION OF HPAI H7 OUTBREAKS IN NON-POULTRY

5. Low pathogenic avian influenza (LPAI)

In accordance with Chapter 1.3 of the OIE Terrestrial Animal Health Code, the “low pathogenic avian influenza (poultry)” disease code has been delisted. As of 1 January 2022, LPAI is only being reported to the WOA as part of a country’s six-monthly surveillance.

Environmental wild bird surveillance samples that tested positive for LPAI H5 on PCR include: two locations in Gauteng Province during March 2023 and four locations during April 2023 in the Western Cape Province.

All LPAI strains however remain controlled animal diseases in terms of the Animal Diseases Act, 1984 (Act No 35 of 1984) and control measures and reporting will remain unaltered until reviewed.


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