Foot and Mouth Disease outbreak and surveillance update report

5 September 2022*

Report compiled by:
Directorate: Animal Health

* This report includes all information as available by close of business on the indicated date. All the updates contained in this report may not currently reflect on the WOAH WAHIS system due to technical difficulties with the WOAH reporting system. This report reflects changes since the previous update report of 29 August 2022.

1. Introduction and summary

South Africa currently has 142 open Foot and Mouth Disease (FMD) outbreaks in the previous FMD free zone. The outbreaks affect the Limpopo, North West, Gauteng, Mpumalanga, Free State and KwaZulu Natal Provinces of South Africa. In order to halt the spread of FMD, the movement of cattle in the whole country was temporarily suspended on 18 August 2022.

Map 1: Reported outbreaks in the previous FMD free zone 2021 - 2022

Note: Dots on the maps that indicate locations in close proximity might appear as single dots.

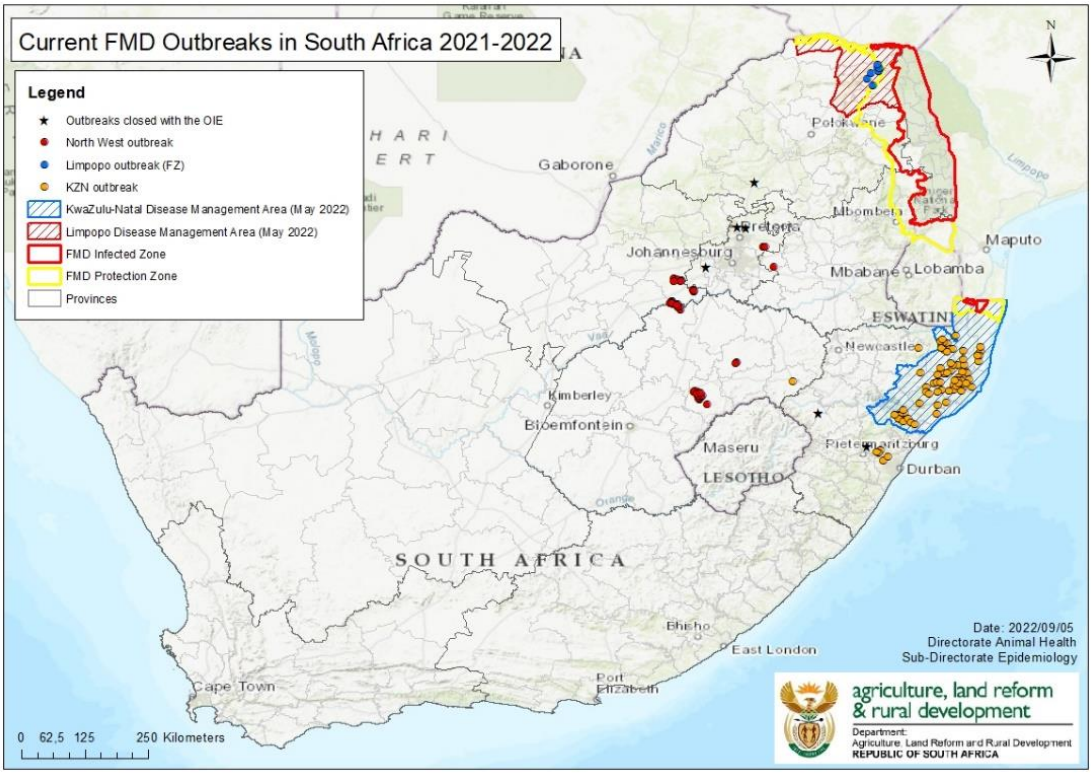


Table 1: Summary of active outbreaks per province:

Province	Number of open outbreaks	Number of resolved outbreaks	Total number of outbreaks	Last reported outbreak
KwaZulu-Natal	87	2	89	2 September 2022
Limpopo (previous free zone)	7	1	8	13 June 2022
North West	14	0	14	21 June 2022
Gauteng	3	3	6	29 August 2022
Free State	30	0	30	5 September 2022
Mpumalanga	1	0	1	5 August 2022
Total	**142**	**6**	**148**	

2. Control Measures

2.1 National Cattle Standstill

A national movement ban on cattle was declared in the Government Gazette notice 2391 on 18 August 2022 and the country is currently in the second week of the national movement ban. This restriction will remain in place for only a short period of time, until the current exponential spread of FMD has been stopped. Due to the major disruption that the movement ban will cause in the normal business of many sectors, the ban is only applicable to cattle, as the movement of cattle was identified as the main cause of the continued spread of the outbreaks.

The implications of the movement ban include:

- Cattle may not be moved from one property to another for any reason, except for direct slaughter at a registered abattoir.
- No cattle may be moved between farms, locations or premises for purposes of sale, shows, breeding, backgrounding, ritual purposes, lobola, or any other purpose.
- No cattle may be moved into feedlots, and movement out of feedlots are only allowed directly to registered abattoirs.
- No cattle may be moved for purpose of import or export.

2.2 Movement control

All affected farms and feedlots in North West, Free State, Gauteng and Mpumalanga Provinces are currently under quarantine with strict access control. The locations involved are well fenced and movement of animals from these farms can be effectively prevented.

There are still movement restrictions on cloven-hoofed animals, their products and genetic materials out of, into, within or through the KwaZulu Natal Disease Management Area (DMA) and the Limpopo Province DMA. The Movement Control Protocol was revised, and an updated version circulated on 25 May 2022. Visible Veterinary Patrols and roving road blocks are directed to cover high risk areas according to information on possible movement of animals. The control measures for movement of cloven hoofed animals and products out of the FMD protection zones have not changed.

2.3 Vaccination

In an effort to curtail the spread of the disease, vaccination campaigns have been initiated in affected provinces. A total of 508 766 vaccinations have been recorded so far. Although vaccination campaigns run continuously, the vaccination statistics for the purpose of these technical update reports reflect the consolidated information as received at the national office.

In KZN, the vaccination campaign started on 15 March 2022 and is still ongoing in the areas of the KZN DMA and outside of it where there appears to be active virus circulation. A risk-based approach is followed to determine which areas to vaccinate and over 270 000 cattle were vaccinated thus far.

The Thulamela area of Limpopo Province is being vaccinated to establish a band of resistant animals around the known positive dip tanks. Local dip tanks and crush pens have been revamped, enabling vaccination and surveillance teams to work more effectively. In addition to vaccinations within the previous Free Zone, the Protection Zone is also undergoing routine vaccinations. Vaccination statistics for Limpopo, thus far, indicate than 82 locations with a total of 99 522 cattle have been vaccinated, and the vaccination campaign continues.

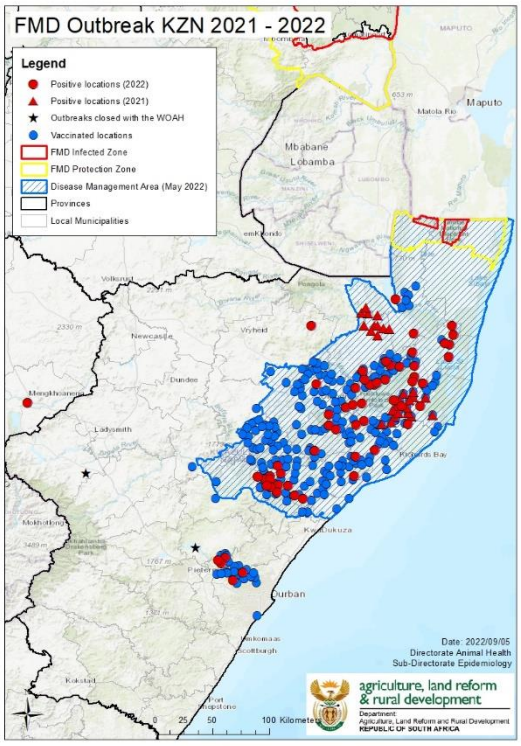
Vaccinations of affected premises in the North West Province began in early June 2022 and Veterinary Services has started with the second round of vaccinations. During the first vaccination campaign 28 895 animals were vaccinated and currently more than 4 530 animals have been vaccinated in the second round of the campaign.

The Free State Province vaccination campaign is ongoing, including vaccination of new affected premises. First round vaccination statistics for Free State are 59 269 cattle vaccinated at 27 locations in the Free State Province. The second round of vaccinations at some locations have started, with 154 second round vaccinations completed so far.

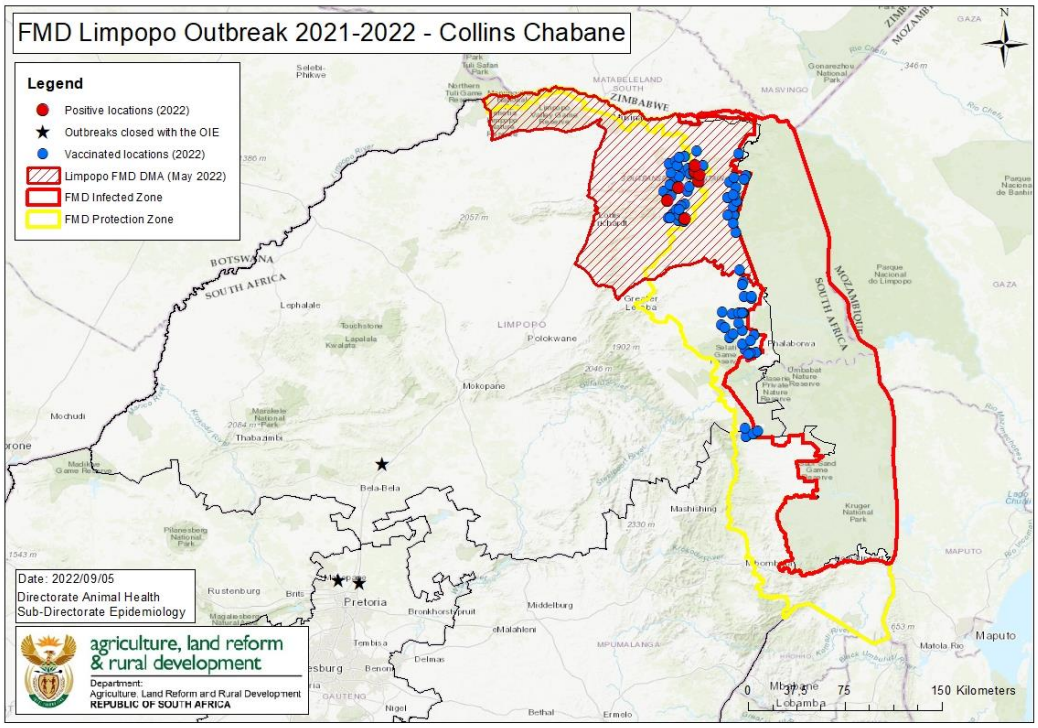
Vaccination campaigns at infected premises in Gauteng have vaccinated 20 323 animals at 3 locations and 26 073 animals have been vaccinated in Mpumalanga Provinces thus far.

The following maps reflect to the most recent consolidated vaccination statistics.

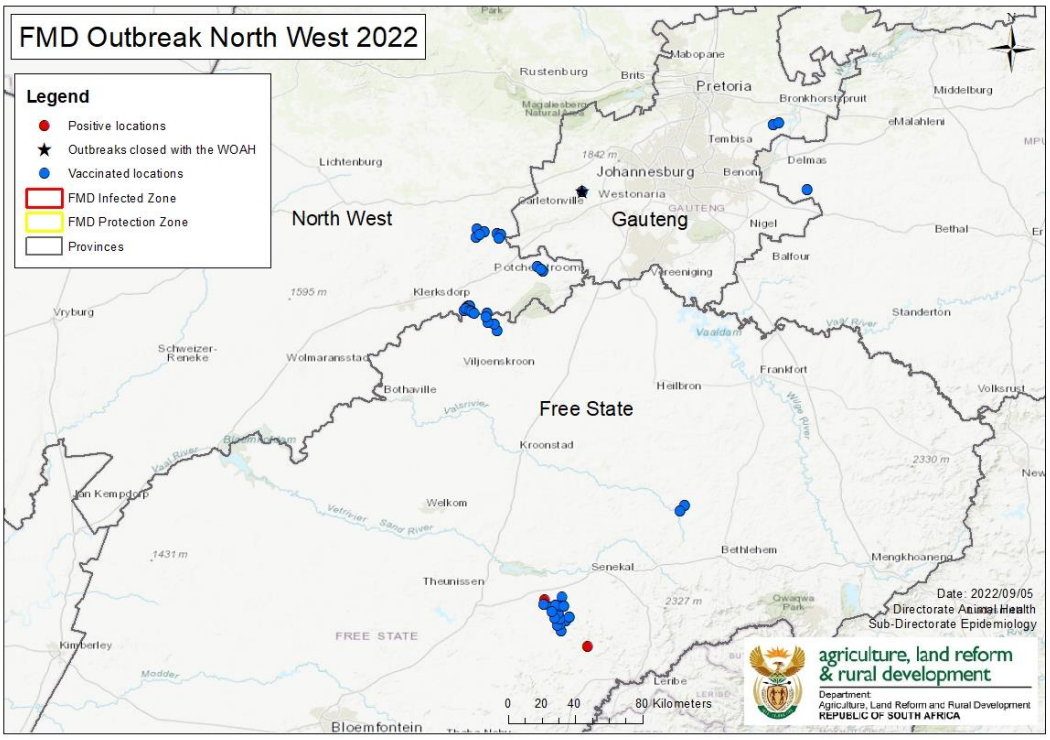
Map 2: Vaccinated locations in KwaZulu-Natal – Free State Provinces outbreak event (most positive locations are also vaccinated, therefore vaccinated and positive points are superimposed)



Map 3: Vaccinated locations in Limpopo Province outbreak event (most positive locations are also vaccinated, therefore vaccinated and positive points are superimposed)



Map 4: Vaccinated locations in North West - Free State – Gauteng - Mpumalanga Provinces outbreak event (most positive locations are also vaccinated, therefore vaccinated and positive points are superimposed)



2.4 Depopulation of affected premises and closure of outbreaks

In total, 6 premises where outbreaks occurred have been resolved and closed with the World Organization for Animal Health (WOAH founded as OIE).

One Free State farm was depopulated and remains under quarantine until 28 days after depopulation and disinfection. The outbreak on this farm will be officially closed once the disinfection process has been concluded.

Two farms in Gauteng were depopulated through movement of the cattle to a designated abattoir for controlled slaughter, and destruction with safe disposal of other cloven-hoofed animals that were present on one of the farms.

Serologically positive F-branded animals were found at two auction premises in Gauteng and Limpopo Provinces. These animals were slaughtered and disposed of, followed by disinfection of the auction premises, and these two outbreaks have subsequently been closed.

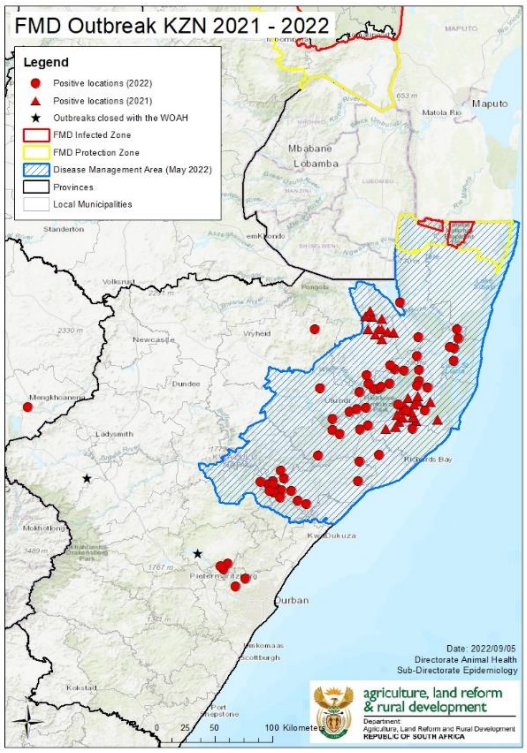
Two feedlots in KwaZulu-Natal Province were depopulated through controlled slaughter and the outbreaks on these properties were closed.

3. Details of open outbreaks

3.1 Outbreak event 1: KwaZulu-Natal – Free State Provinces

There are 88 affected properties in this outbreak event (87 in KZN and one in the Free State), while two outbreaks have been resolved. This outbreaks event started in May 2021 in KwaZulu Natal Province and has recently spread to a feedlot in the Maluti-a-Phofung municipality in the Free State Province. Since the previous update report of 29 August 2022, 9 positive locations were reported in KwaZulu Natal. One new positive location has been identified in Abaqulusi municipality and three new positive locations have been identified in Umshwathi municipality, adjacent to the positive locations in Ethekwini. Five positive locations have also been reported in the Mtubatuba municipality in KZN. These are not newly infected locations, but were identified through surveillance around previously known infected locations. Vaccinations in the areas surrounding the affected locations is ongoing to contain the spread of disease.

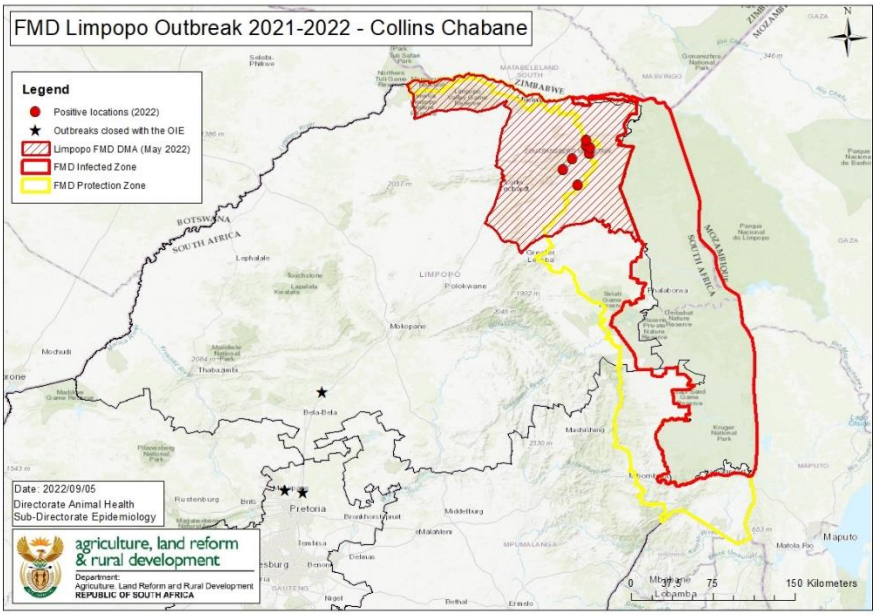
Map 5: Outbreak event in KwaZulu-Natal – Free State Provinces



3.2 Outbreak event 2: Limpopo Province

This outbreak event started in March 2022. There are 7 affected properties, with the last positive case reported on 13 June 2022. Three outbreaks have been resolved.

Map 6: Outbreak event in Limpopo Province



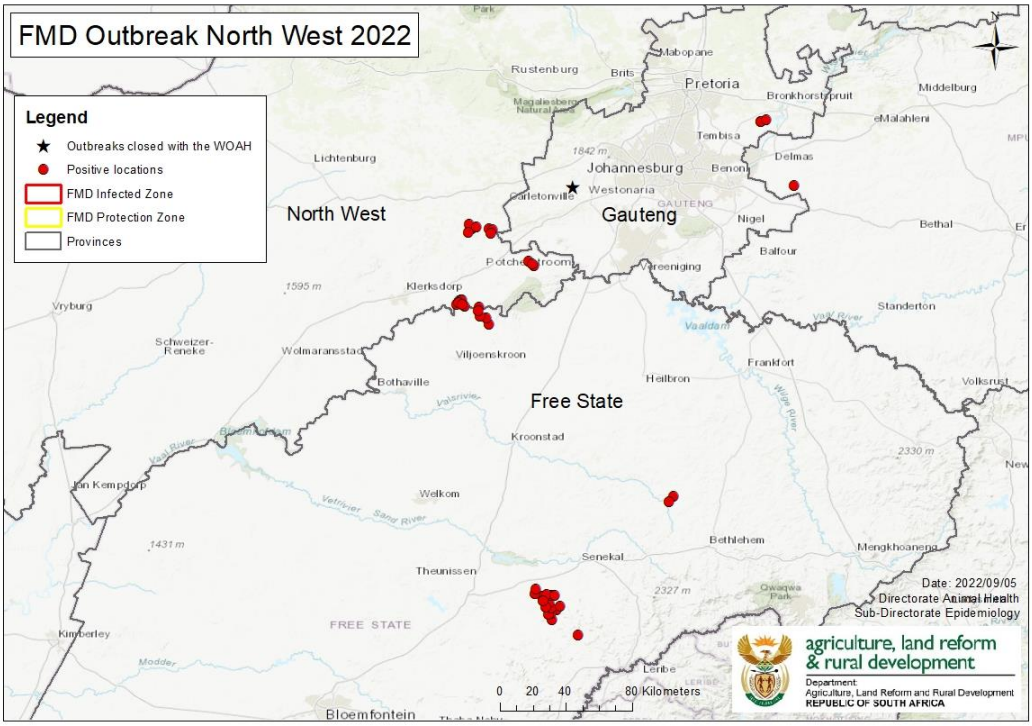
3.3 Outbreak event 3: North West - Free State – Gauteng - Mpumalanga Provinces

This outbreak event started in North West Province in March 2022. There are 47 properties currently affected in this outbreak event, with a total of 5 new positive locations reported since the update report of 29 August 2022, and 1 outbreak has been resolved. The breakdown per province is as follows:

- North West Province has 14 open outbreaks, with the last positive case reported on 21 June 2022 and no outbreaks resolved yet.
- Gauteng Province has 3 open outbreaks, with the last positive case reported on 29 August 2022, and 1 outbreak has been resolved.
- Free State Province has 29 open outbreaks in this outbreak event, with 5 new positive cases reported on 2 September 2022, and no outbreaks resolved yet.
- Mpumalanga Province has 1 open outbreak, which was reported on 5 August 2022 and not yet resolved.

Locations were detected through serological surveillance within the radius surrounding previously identified infected locations or through detection and reporting of clinical signs.

Map 7: Outbreak event North West - Free State – Gauteng – Mpumalanga Provinces



4. Diagnostic tests and epidemiology

The outbreak event in Vhembe district in Limpopo Province is caused by a SAT 3 virus, which is also responsible for the outbreaks in the North West, Free State, Mpumalanga and Gauteng Provinces. This virus appears to be highly contagious and spread continues despite the implementation of quarantine and movement control. From preliminary epidemiological investigations, it appears that there are three main routes of virus transmission:

- Movement of clinically healthy animals that are in the incubation period
- Contamination of properties by vehicles, persons, implements and other possible so-called fomites entering the farms due to inadequate biosecurity
- Nose to nose contact between cattle on neighbouring farms.

In KwaZulu-Natal Province, epidemiological investigations to date have not revealed a plausible source for the outbreak. However, the virus responsible for the outbreak is a SAT 2 serotype and is closely related to a SAT 2 virus responsible for an outbreak that occurred in the FMD Protection Zone in northern Limpopo Province in 2019. This SAT 2 virus was identified in a feedlot in the Free State, thus linking the Free State feedlot to the KwaZulu-Natal outbreak event.

For all reported outbreaks, confirmation of disease was done using a combination of the following diagnostic tests at the ARC Onderstepoort Veterinary Research Transboundary Animal Diseases laboratory (OVR-TAD):

- Solid Phase Competition ELISA (SPCE)
- Non Structural Protein (NSP) ELISA
- Polymerase Chain Reaction (PCR)

5. Surveillance

The three outbreak event areas continue to be subjected to clinical and serological surveillance, with intensified inspections around newly identified infected farms and dip tanks and at epidemiologically linked locations identified through forward and backward tracing. Within the Limpopo Province DMA, separate teams are also performing clinical and serological surveillance from the outskirts of the DMA towards the known affected areas.

Passive surveillance leads to reporting of suspect outbreaks by veterinarians and farmers that are followed up by intensive clinical inspection and laboratory testing. Some outbreak locations were identified as a result of such reports of varied clinical signs seen in cattle, while most were identified during trace back and trace forward exercises, including links of movements through auctions, as well as surveillance of farms adjacent to positive locations. The varying clinical presentation of the disease in different locations necessitates surveillance based on both clinical inspections, including mouthing, as well as serology.

Table 2: Summary of Serological surveillance per province:

Province	**Number negative locations**	**Number of open positive locations**	**Total number of locations**
KwaZulu-Natal	357	87	444
Limpopo	199	7	206
North West	76	14	90
Gauteng	40	3	43
Free State	90	30	120
Mpumalanga	18	1	19
Total	**780**	**142**	**922**

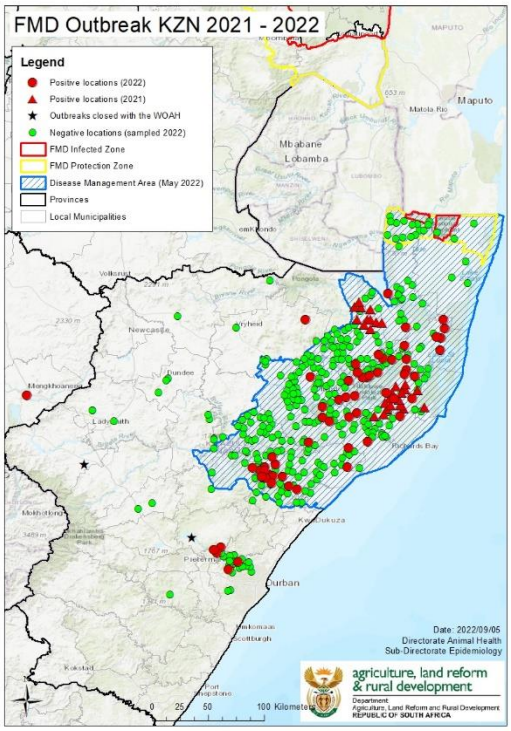
Once any animals are found to be positive at a location, the entire location with all in contact animals at the location, are regarded as positive. The table above therefore reflects the status of locations and not the individual animals at the locations.

Below are maps of each outbreak event, indicating all locations surveyed, with negative results indicated in green and positive locations in red. Note that the number of negative locations statistics are only updated when all the information has been received and consolidated and has not changed since the last report on 29 August 2022.

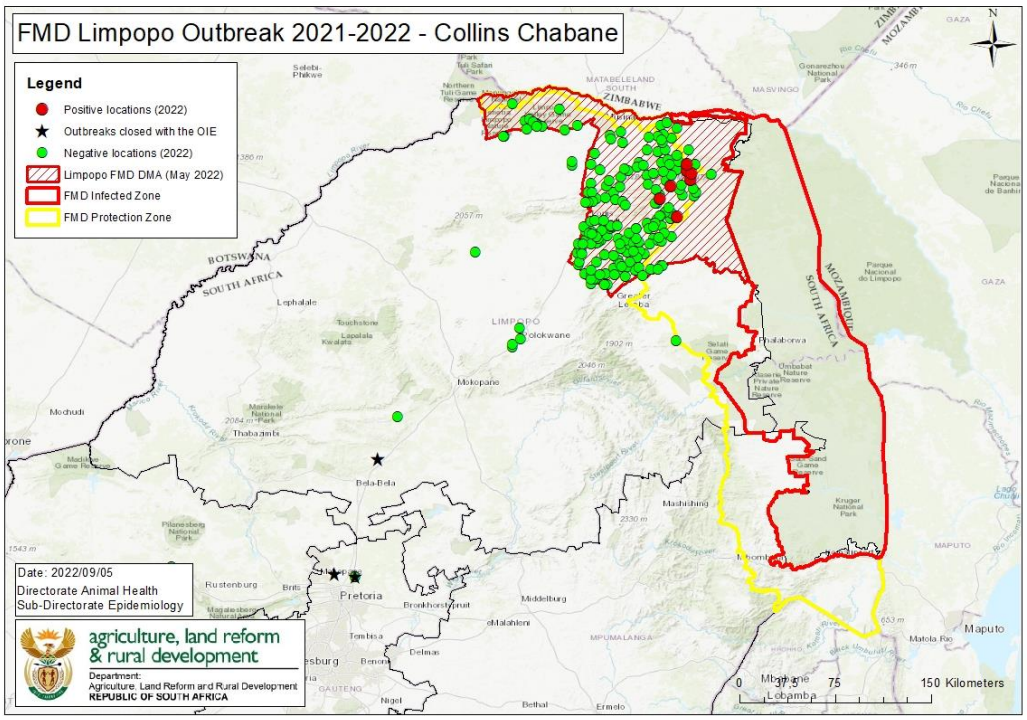
Note that the North West, Free State and Gauteng Provinces are undergoing the second round testing on previously identified linked locations and the numbers of the negative locations have thus not changed drastically for these provinces despite the number of locations tested having increased.

Note that in both the table above, as well as the maps below, the number of locations that tested negative only indicates the number of locations that tested negative during this year (2022) from when the disease was found to be spreading again. The number of positive locations also includes the locations that were identified as positive last year (2021).

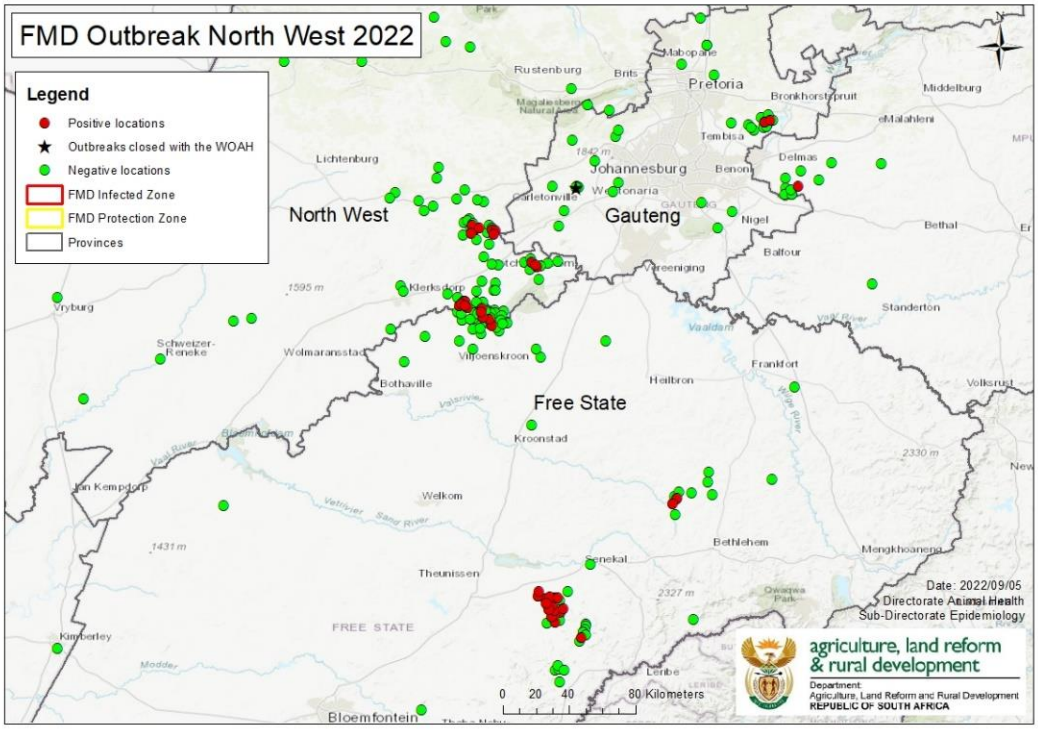
Map 8: Serological surveillance in KwaZulu-Natal-Free State Province outbreak event, showing 357 negative and 88 positive locations



Map 9: Serological surveillance in Limpopo Provinces outbreak event, showing 199 negative and 7 positive locations



Map 10: Serological surveillance in North West - Free State – Gauteng – Mpumalanga Provinces outbreak event showing 224 negative and 47 positive locations (please note that some of the points are superimposed due to close proximity)



6. Awareness and Illegal Movements

The movement of animals, especially cattle, remains the greatest contributing factor to the spread of disease. The ban on cattle movements was announced publicly to ensure that all role players are aware of this development.

The illegal movement of animals from the FMD protection zone with vaccination to the FMD free zone played a significant role in all of the current outbreaks. The outbreaks in KZN and Limpopo Provinces were directly caused by such proven or suspected illegal movements. The industry is actively assisting in the clamp-down on illegal movements by cooperating with veterinary services and Stock Theft Units in reporting suspect movements of animals and by reporting animals of suspect origin being presented at auctions. Any illegally moved animals found are seized and destroyed and perpetrators are prosecuted for contravention of the Animal Diseases Act, 1984 (Act No 35 of 1985).

The animals that caused the outbreak in North West Province moved from an area in Limpopo that, at the time of moving, the area of origin in Limpopo was already infected, though yet undetected at the time. This illustrates the real danger of animals moving during the incubation period of the disease.

Name: Dr Mpho Maja
Reason: .
Date: 2022.09.06 22:02:32 CAT

Director Animal Health