

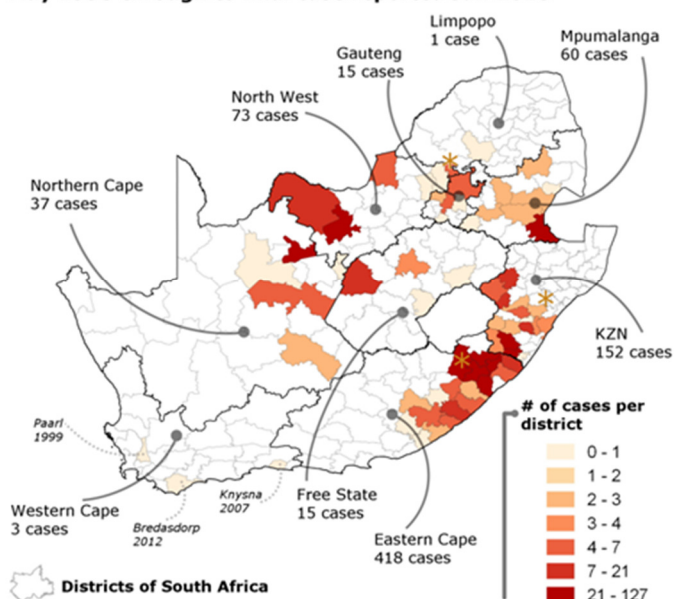


## Dourine freedom survey in the AHS surveillance zone

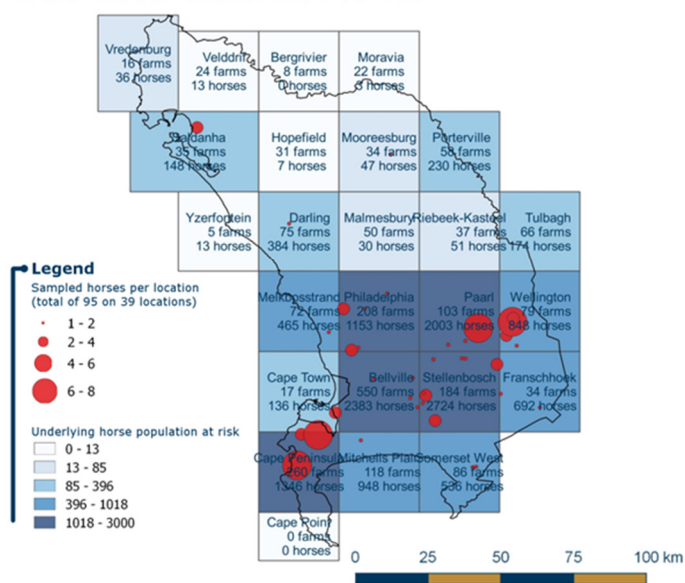
Adapted from the SA Equine Health and Protocols Dourine in Equids Surveillance Report by J.D. Grewar and C.T. Weyer

This is the second surveillance report relating to dourine, a sexually transmitted trypanosomal (*Trypanosoma equiperdum*) disease of equids, in the African horse sickness surveillance zone of the Western Cape Province. A detailed introduction to the program can be found in the first report, featured in the April 2018 Epi Report. Dourine is a disease that impacts on the trade of horses between South Africa and the European Union. While the only explicit condition is the testing of horses in quarantine prior to export, the preamble in that decision describes a required period of freedom from dourine in the Western Cape during the 6 months prior to export. Since 1997 and the direct exports of horses to the EU, freedom from dourine within the territory of dispatch has relied on primarily clinical passive surveillance by private veterinarians, the active surveillance undertaken within the breed societies and the individual testing of horses in quarantine prior to export. The active dourine surveillance described in this report relates to the additional surveillance undertaken to further address the freedom status of the AHS controlled area for export purposes.

### Dourine Cases reported to DAFF May 1993 through to final case reported Jan 2018



### Dourine Surveillance - February 2019 Sampled horses with underlying population at risk in the AHS surveillance and free zone



**Figure 1: Dourine survey locations showing proportional circles for number of horses tested per location. The underlying population at risk is shown as a light to dark blue gradient.**

**Figure 2: Historical dourine cases reported to DAFF from 1993 through Jan 2018. Cases have been aggregated by district while case totals per province are labelled. Additional cases reported since the 2018 dourine surveillance report are indicated by yellow stars (n=3).**

A goal of 60 serological sentinels per month is the requirement for AHS sentinel surveillance testing for direct exports from South Africa to the EU. Over and above this, South Africa generally samples another 90 horses in the AHS surveillance zone to test approximately 150 horses in the zone using PCR testing. Given that serum samples are taken from all 150 horses, the sampled horses for the dourine surveillance were targeted from the remaining horses sampled but not tested serologically for AHS. Samples were taken between 1<sup>st</sup> and 20<sup>th</sup> February 2019.

A total of 95 horses were sampled in 39 locations across the AHS surveillance zone. Proportional numbers of horses sampled across the surveillance zone are shown in figure 1. The AHS sentinel surveillance program makes every effort to sample horses in proportion to their relative underlying population at risk using a gridded surveillance system, as depicted in figure 1. The majority of samples were thus taken from an area of approximately 50 km around the Kenilworth Quarantine Station, from which horses are exported.

All 95 samples tested negative for dourine antibody using the CFT (tested at the Agricultural Research Council's Onderstepoort Veterinary Institute)

Currently the probability of freedom in the AHS surveillance zone for dourine ranges between 90.8% and 99.6% depending on the effective design prevalence used.

The surveillance evaluation to obtain a probability of freedom estimate is reliant on random and representative sampling. The sample frame for this surveillance is primarily in the commercial sector, horses are repeat sampled across periods and the selection of samples has a degree of convenience. Furthermore, for horses to be included in the sentinel program they should not have been recently vaccinated against AHS and this will bias the selection of horses. Furthermore, the geographical scope is limited to the AHS surveillance zone. Having said this, we believe this program is just a part of the overall dourine surveillance undertaken and should assist in export protocols that require dourine freedom statements where horses are exported from AHS free zone quarantine facilities such as Kenilworth Quarantine Station.

Figure 2 shows all dourine cases reported in South Africa from 1993 through Jan 2018 (data accessed April 2019 from [www.daff.gov.za](http://www.daff.gov.za) and collated to South African local municipalities). The cases reported in the last year do not influence these results since only an additional three cases,

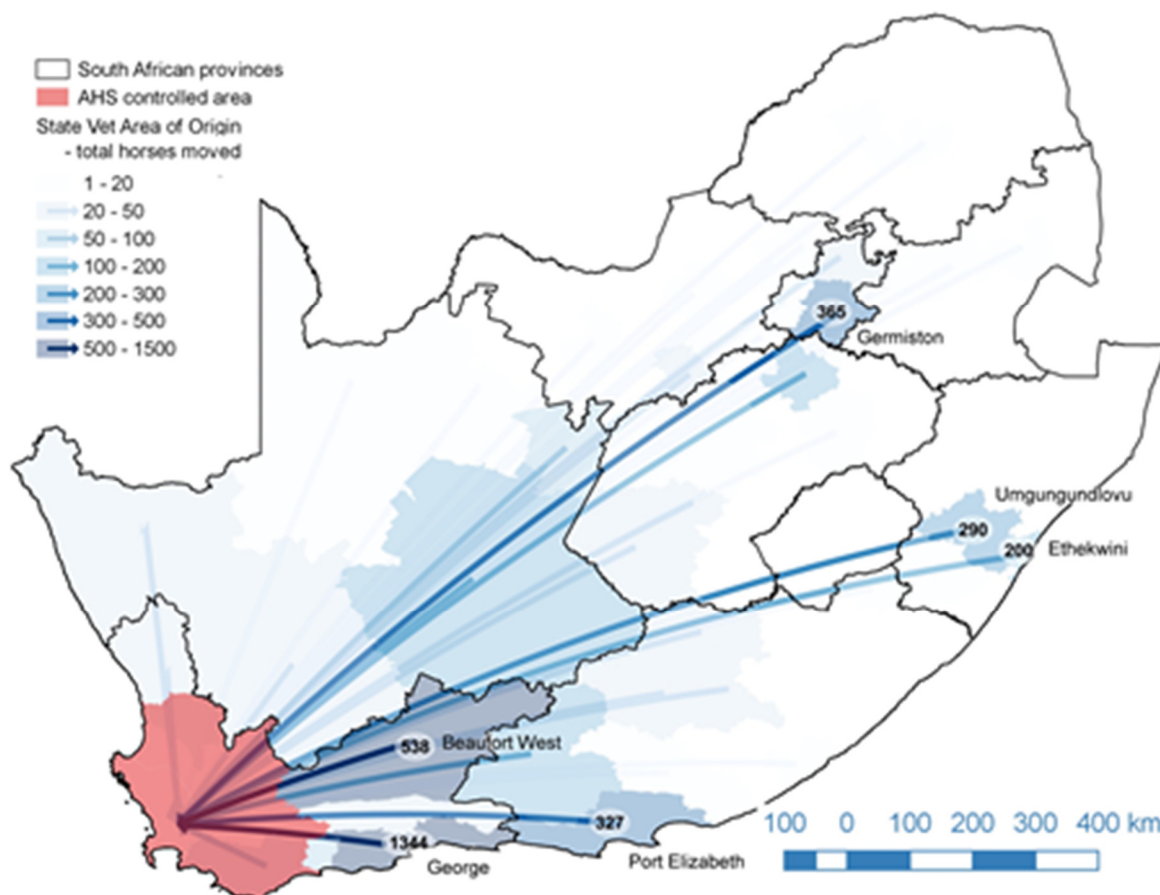
as indicated by stars in figure 2, were added to the disease database in the last year. In figure 3, we've included the equine movements that occurred from the AHS infected zone into the AHS controlled area during the 2017/2018 period. The majority of movements are horses within the commercial sector. In our previous report we suggested that Dourine is likely to be circulating in the non-commercial sector. The movement patterns of horses show that movements from heavily prevalent dourine affected areas occur less compared to those from non-dourine affected areas. Movements from the Eastern Cape, the most heavily affected dourine province, occur primarily from the south-eastern sector, with dourine occurring primarily in the north-eastern sector of this province. Similarly from KwaZulu-Natal, while there are dourine cases reported from areas from which horses move, these are less affected than surrounding districts in the province.

The recommendation initially for this surveillance was that it be repeated every six months in the AHS surveillance zone. Surveillance was not performed as planned in August 2018 due to logistical issues at the time. This lack of surveillance impacts the probability of freedom for both August 2018 and for the February 2019 periods.

## Acknowledgments

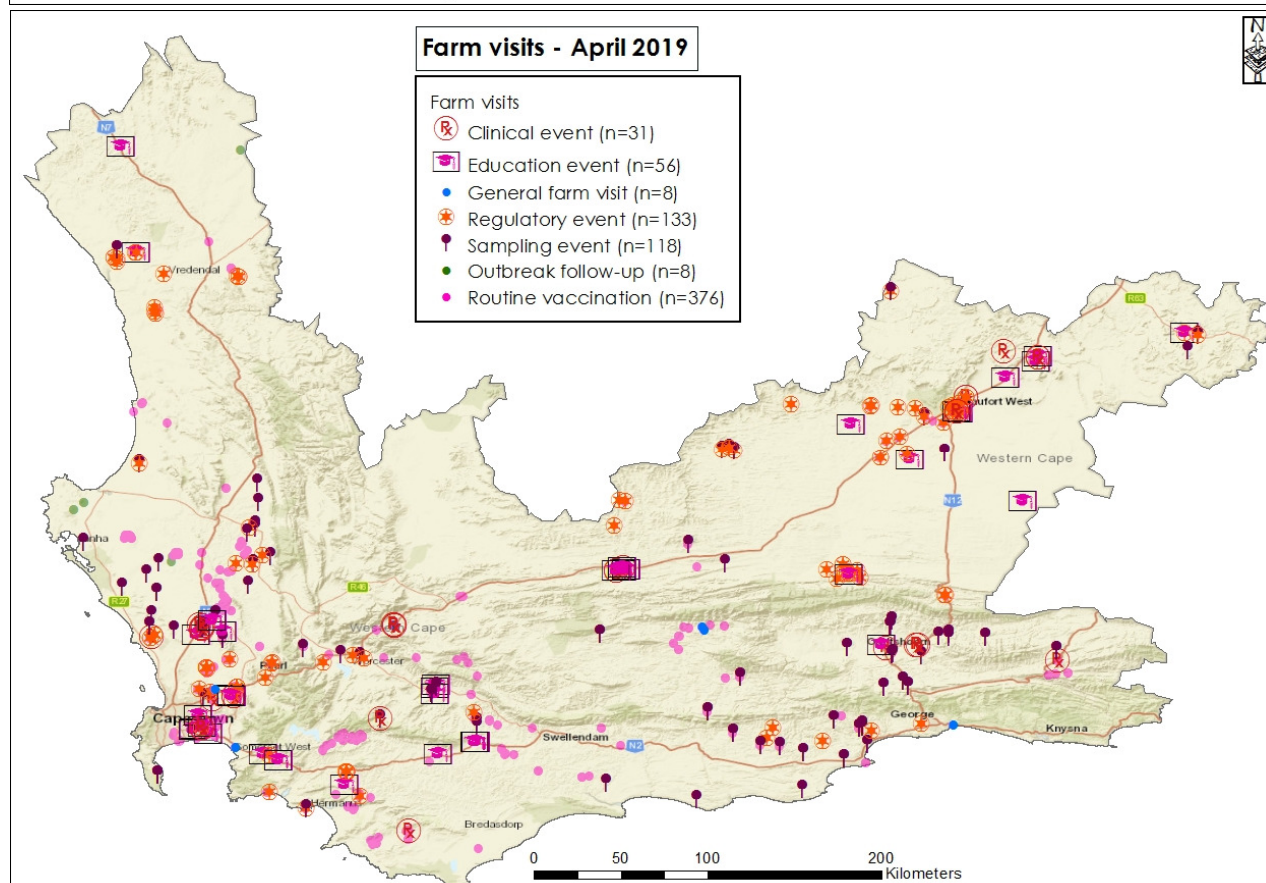
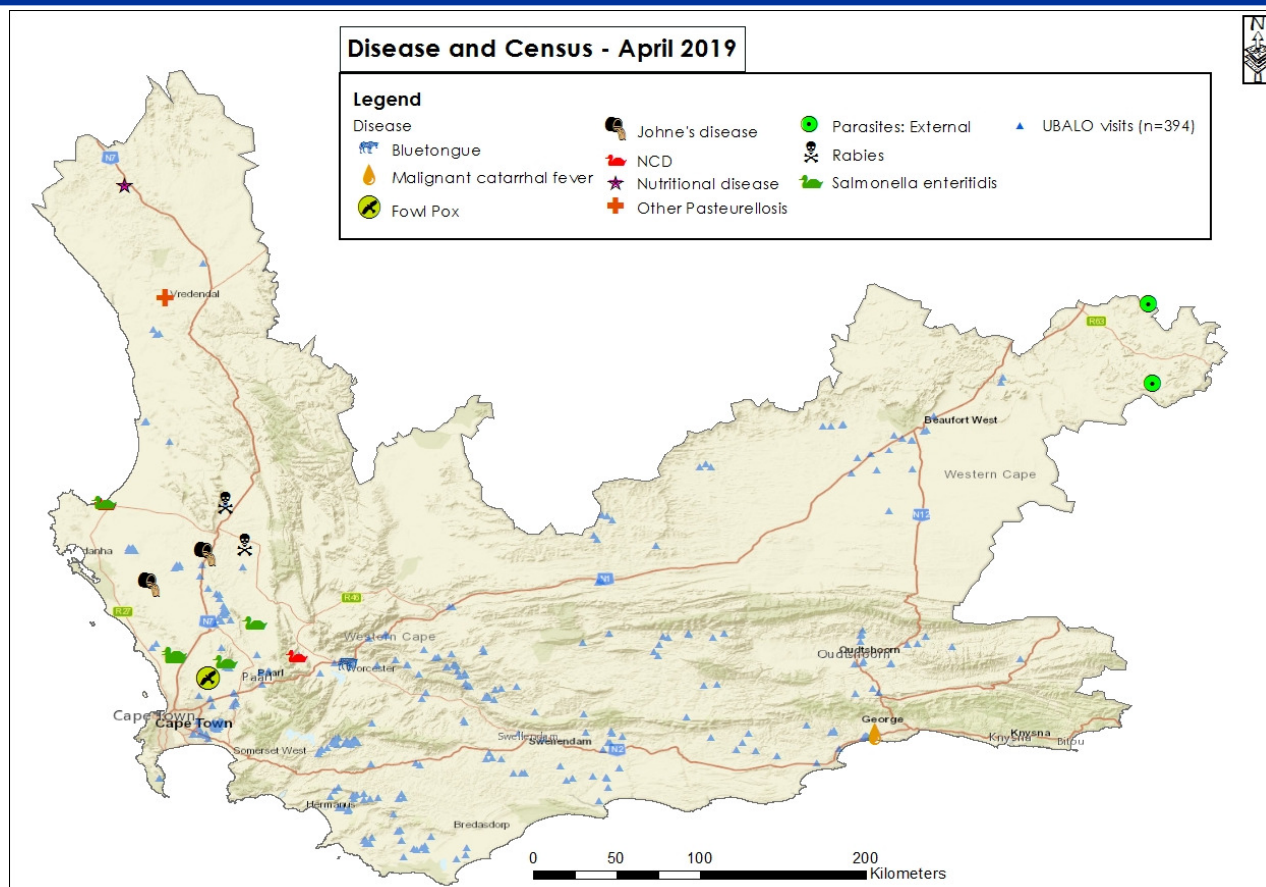
Funding for this project was obtained from the South African Equine Health and Protocols (SAEHP –sampling, logistic and

testing costs), Western Cape Department of Agriculture (sample kits). We are as always very grateful to the owners and managers of the sentinel horses in the AHS controlled area in the Western Cape, they are always willing to assist and their collaboration allows us to make scientifically backed statements regarding disease freedom for a number of equine diseases.



**Figure 3: Movements of equids between the AHS infected zone and the AHS surveillance zone between September 2017 and Aug 2018. The six most common origins for these movements are labelled.**

# Disease and surveillance



## Outbreak events

Two different farmers, one near **Porterville** and another near **Piketberg**, shot **bat-eared foxes** that attacked their vehicles as they were driving on their respective farms. Both foxes subsequently tested positive for **rabies** and dogs and cats in the area were vaccinated in response.

A flock of 27 Namaqua Afrikaner **sheep** (fig 4) in **Worcester** were observed showing clinical signs of **bluetongue** by a private veterinarian. The sheep were not previously vaccinated against bluetongue.

**Newcastle disease** was reported in backyard **chickens** near **Worcester**.

Domestic **pigeons** in **Velddrif** showed nervous signs, including star gazing, and diarrhoea, followed by acute death. The pigeons tested positive for virulent **Newcastle disease** and pigeon paramyxovirus.

Two **sheep** farms near **Mooreesburg** tested positive for ovine **Johne's disease** after the farmers noticed some of their ewes becoming emaciated. Both farms were placed under quarantine and plan to start vaccinating their flocks in the future. One of the farmers additionally uses agricultural lime in the camps where ewes lamb down, to neutralise the acidic soil.

**Salmonella enteritidis** (SE) was detected on five properties in the Malmesbury state vet area:

- ⇒ Chick box liners and dead-in-shell chicks in **broiler** hatcheries near **Paarl** and **Herman** tested positive for SE. Increased monitoring and disinfection is taking place in the hatcheries and in the broiler breeder flocks supplying them.
- ⇒ Boot cover swabs on two **broiler** farms near **Atlantis** tested positive for SE. Broilers in the positive houses were treated and follow-up testing and increased monitoring will take place once treatment is complete.
- ⇒ SE was detected on dust swabs taken from the beginning of the production stages of **fish meal** at a plant in **Velddrif**. Swabs taken from later stages of processing, including after fish meal was heat-treated, were negative for SE. A deep clean of the factory with acid treatment was done.

Four **cattle** died of **anaplasmosis** in **Cape Town**.

Cases of wildebeest-associated **bovine malignant catarrhal fever** were reported near **George**.

Backyard **chickens** were observed with cases of **fowl pox** on two different properties in **Klipheuwel**.

Two **sheep** in a flock of twelve were affected by **pasteurellosis** near **Vredendal**.

Young **piglets** near **Mamre** showed signs of oedema disease, caused by infection with **Escherichia coli**. Older piglets also showed neurological signs, consisting of trembling and falling which were attributed to *E. coli* infection.

Cases of **tick paralysis** were reported in **sheep** in the **Murraysburg** area.

**Abomasal impaction** was identified as the cause of death of a **sheep** in the far **north** of province.



**Figure 4: The Namaqua Afrikaner is an indigenous breed of fat-tailed sheep (Photo: Groottfontein Agricultural Development Institute)**

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