



African horse sickness control

Movement report

2021

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Introduction

This is the fourth detailed report on equid movements in South Africa with respect to controls implemented to mitigate the risk of African horse sickness virus (AHSV) entering the AHS controlled area of the country. The initial report encompassed the 2017/2018 AHS season and is available online¹: it provides a more detailed explanation of the various movement types. Since 2019² the reporting period was set to the calendar year. For the report below, the period evaluated is the 2021 calendar year. We differentiate between movements from the infected part of South Africa and those that occur within the AHS controlled area, the latter only where movements occur to a zone of higher control. Wild equid movements are also evaluated as well as more detail on those stepwise movements that required a stopover quarantine period prior to entry into the AHS controlled area.

Permit based movements – infected zone to AHS controlled area

This section deals with any equid moving from the AHS infected part of South Africa directly into the AHS controlled area in the Western Cape Province. Movements from the infected zone require an AHS risk status classification which is reported by the State veterinarian (SV) of origin in the form of an area status declaration (ASD).

Domestic equids

A total of 1640 movement events consisting of 3348 domestic equids, all horses except for 5 donkeys and 1 mule, occurred in 2021, with an average of 2 equids moving per movement application. The most horses moved were Thoroughbred's, with 51.1% of the total

¹ <http://jdata.co.za/myhorse/documents/infographics/Reports/2017%202018%20Movements%20Report.pdf>

² 10.5281/zenodo.4316374

representing this breed (Table 1). The remaining movements were evenly spread across breeds with the only other breeds moving relatively frequently being SA Warmbloods (9.3%), American Saddlebreds (6.5%), Arabians (6.2%), Hackney's (3.6%) and Lipizzaner's (1.7%). Compared to 2020, Thoroughbreds were slightly less represented, but still moving just over half the equids moved in total. It should be noted that these are not necessarily racehorses as Thoroughbreds are widely used across all disciplines such as show jumping and dressage as well as for pleasure riding movements, and this data does not distinguish between racehorses or horses used in other sectors.

Table 1: Domestic equids moved, by breed, in 2020 into South Africa's AHS controlled area from the AHS infected zone

| Breed | Total moved | % of total |
|---------------------|-------------|------------|
| Thoroughbred | 1712 | 51.1% |
| SA Warmblood | 311 | 9.3% |
| American Saddlebred | 217 | 6.5% |
| Arabian | 207 | 6.2% |
| Hackney | 120 | 3.6% |
| Lipizzaner | 58 | 1.7% |
| Other/Cross breed | 723 | 21.6% |
| Total | 2692 | |

Figure 1 shows the time series analysis of domestic equids moved. Most equids moved between August-December 2021 – the February peak seen in 2020 (where over 400 horses moved) was not evident. The AHS surveillance zone remained the most common destination (70.8%, up from 63.3% in 2020) for equids moved (Table 2). Year-on-year there was a 24% increase in both the number of movement applications and total domestic equids moved – evidence of a post-covid recovery, although still below 2019 levels.

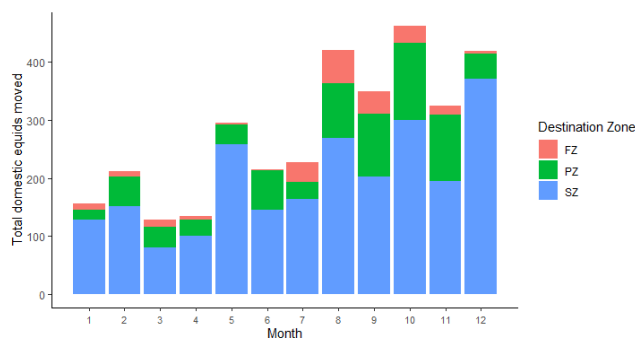


Figure 1: Time series plot of total domestic equids moved from the AHS infected area, and their destination within the AHS controlled area during 2021

| Destination | Total moved | % of total |
|-------------------|-------------|------------|
| Free zone | 226 | 6.75% |
| Protection zone | 752 | 22.5% |
| Surveillance zone | 2370 | 70.8% |
| Total | 2692 | |

Table 2: The destination zone of domestic equids moving from the infected area into the AHS controlled area of South Africa in 2021

Figure 2 gives an indication of the primary origin of equids moving into the AHS controlled area. In this case we have categorised the movement by the State Veterinary area of origin. These areas are specifically labelled if 100 or more equids moved from that region during the year. The main province of origin was the Western Cape Province, with the George and Beaufort West State Veterinary areas most represented – in 2020 Swellendam was also included but did not feature as heavily in 2021. These two areas of origin accounted for 37.6% of all equids moved from the infected area during the year. The Northern Cape (Kimberley), Kwa-Zulu Natal (Umgungundlovu), Gauteng (Germiston) and Eastern Cape (Port Elizabeth) were most represented outside of the Western Cape. Heilbron in the Free State also was an important source of domestic equids during the year. The seven labelled areas in Figure 2 accounted for a total of 76.5% of all domestic equids moved during the year.

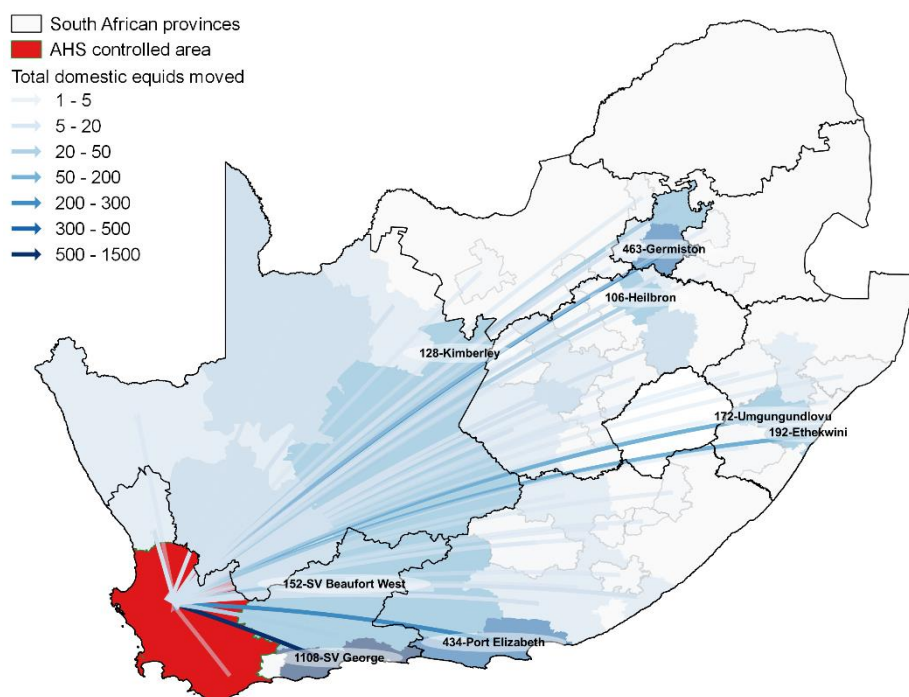


Figure 2: The total number of equids per State veterinary (SV) area of origin that moved into the AHS controlled area in 2021. Areas are labelled if 100 or more equids moved from the region during the year. Note the Swellendam SV area intersects the AHS controlled area – movements in this case are only from the AHS infected area of that SV area.

Wild equids

A total of 80 (compared to 34 in 2020 and 26 in 2019) wild equids (all zebra) were moved into, within or from the AHS controlled area during 2021 (Figure 5). All bar 3 were Burchell's zebra (aka Plain's zebra - *Equus burchelli*) – the remaining were Cape Mountain Zebra, and those the 3 that moved into the controlled area.

| | | FROM → | | | |
|------|--------------|----------|------------|--------------|------|
| | | Infected | Protection | Surveillance | Free |
| TO ↓ | Infected | NA | 16 | 12 | 0 |
| | Protection | 3 | 10 | 33 | 0 |
| | Surveillance | 0 | 3 | 3 | 0 |
| | Free | 0 | 0 | 0 | 0 |

Figure 5: Number of zebras moved during 2020 and associated with the AHS controlled area. The zone of origin is shown horizontally, and the zone of destination is shown vertically.

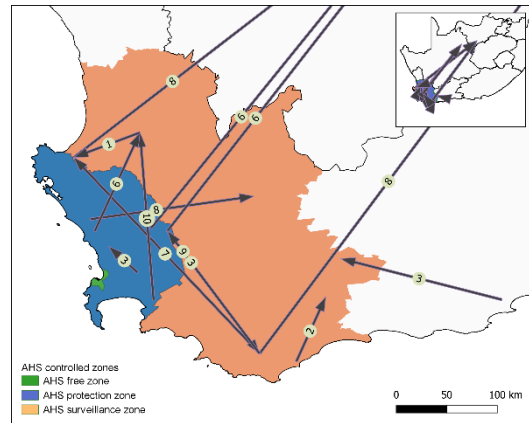


Figure 6: All zebra movements during 2021 that were associated with the AHS controlled area. Numbers on each line represent the total moved for each of the movements (n=14) that occurred. The arrow represents the origin and destination of each movement in relation to the AHS control zones underlying the movement.

As in the previous analyses zebra generally move during the colder winter months (Figure 7) even though the only official constraint for zebra movement temporally is when they originate in the AHS infected zone. This is most likely due to the decrease in risk of heat stress for the animal if darded and translocated during the cooler winter months.

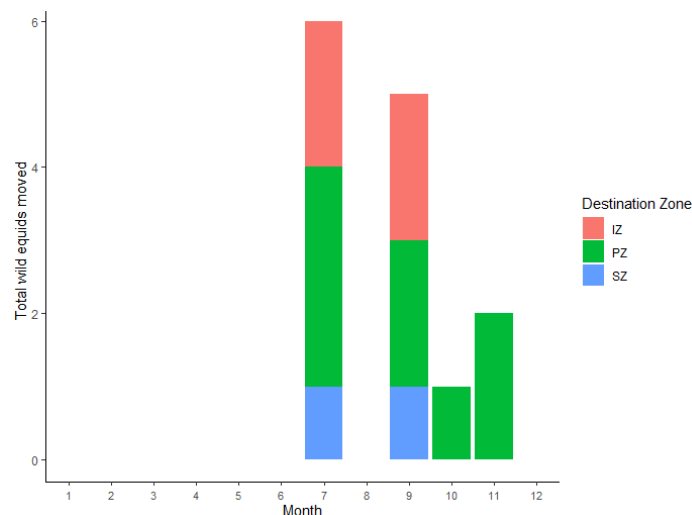


Figure 7: Zebra moved during 2021 with their month of movement and destination shown.

Concessions and declined permits

The purpose of the permits issued for movements from the AHS infected zone into the AHS controlled area is to ensure that movement is only allowed from an area with a low AHS risk at origin as well as compliance with passport (identification) and vaccination requirements prior to movement. During 2021: 14 horses were declined movement due to passport non-compliance; 23 horses were declined due to vaccination non-compliance; and 66 horses were declined due to a high-risk AHS status at origin. Two horses received vaccination requirement concessions – further risk mitigation in these animals required stop over quarantine as well as negative AHSV PCR testing prior to travel (reference: 10871 and 10860).

Pre-notification only based movements - within controlled area

Movement within the AHS control area to a zone of higher control requires that notification of movement occurs within 72 hours of movement in place of a permit being issue. The passport, vaccination and health certification requirements are otherwise the same as for a movement in to the AHS controlled area. A total of 2728 equids moved in this fashion during the year, down from 2860 in 2020 and 3939 in 2019. Most equids that moved within the controlled area were Thoroughbreds (78%). Most (and like the 74% and 77% in 2020 and 2019 respectively) moved from the AHS protection zone to the AHS surveillance zone (Figure 8).

An important consideration for these movements is that there are a considerable number of horses that move from in the AHS controlled area on the multiple movement permit system, which is a same day return movement licensing system allowing horses to move in this fashion without pre-notification of movement. The information reported here refers to movements where horses would generally not be returning, the same day, to their origins.

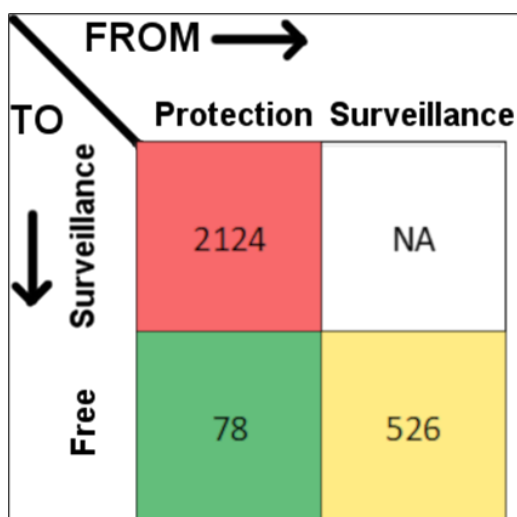


Figure 8: Movements of domestic equids within the AHS controlled area, where horses move to a zone of higher control, during 2021.

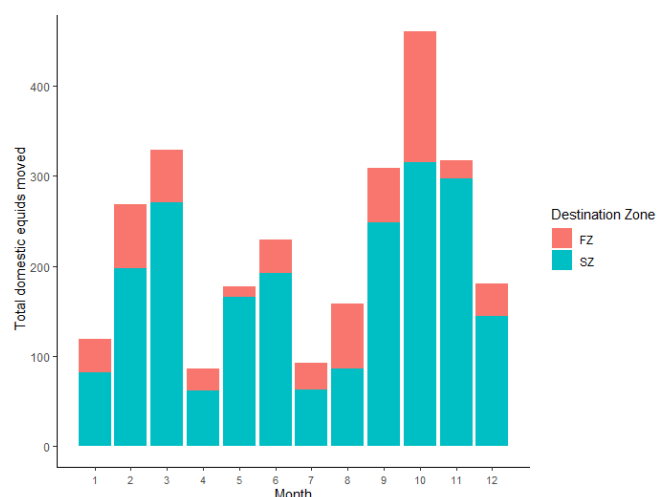


Figure 9: Time series lot of total domestic equids moved and their origin-destination for movements within the AHS controlled area during 2021

The movement pattern over time (Figure 9) is quite like that of infected area origin movements except for the higher levels early in the year (see Figure 1). Generally, the movements between the surveillance and free zone throughout the year will either be equids moving to one of the two veterinary practices that have their premises within the free zone or thoroughbreds in training that move from feeder farms in the controlled area to the training yards in Milnerton.

Discussion

A total of 6028 equids moved into a zone of higher control during the year which is an 8.5% increase from 5552 in 2020 – and an indication of a return (albeit slow) to pre-covid levels. Once again it is clear that most movements into a zone of higher control consisted of domestic equids and, while it's important to understand wild equid movements, the risk mitigation of AHS spread into the AHS controlled area through domestic equid control remains crucial. The AHS surveillance zone remains the most common zone of destination, both for infected area origin and controlled area origin movements. Most movements are associated with Thoroughbred horses.

Movement regulation requires close communication and interaction between various regulatory and State authorities. Movements originated from 49 of the 126 State vet areas in the country (like the 47 used in 2020).

Stop-over quarantine movements have assisted in facilitating the movement of 303 horses that would otherwise not have moved or would have required a 40-day residency in an AHS low risk area prior to direct movement. While this system is expensive and intensive it promotes the movement of high value horses or critical movements (such as high-level competition) and allows control and an acceptable system for the public needing to move horses.

Acknowledgements

The South African Equine Health and Protocols NPC have been the authorized permit issuing body during 2021 and provide this service on behalf of State Veterinary services in the Western Cape. Danielle Pienaar, Liezl Germishuys, Esthea Russouw, Marie van der Westhuizen and Johanne Jacobs are responsible for the day to day running of the various movement systems, all supervised by Dr Camilla Weyer.

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members of the Western Cape AHS regulatory committee that deals with movement non-compliance.

During 2021 the central auditing of movements was continued by the Department of Agriculture, Forestry and Fisheries (now Department of Agriculture, Land Reform and Rural Development) and Dr Kerry Loxley has been auditing individual movements in this regard.

We are grateful to all private veterinarians and members of the public who comply with movement control.