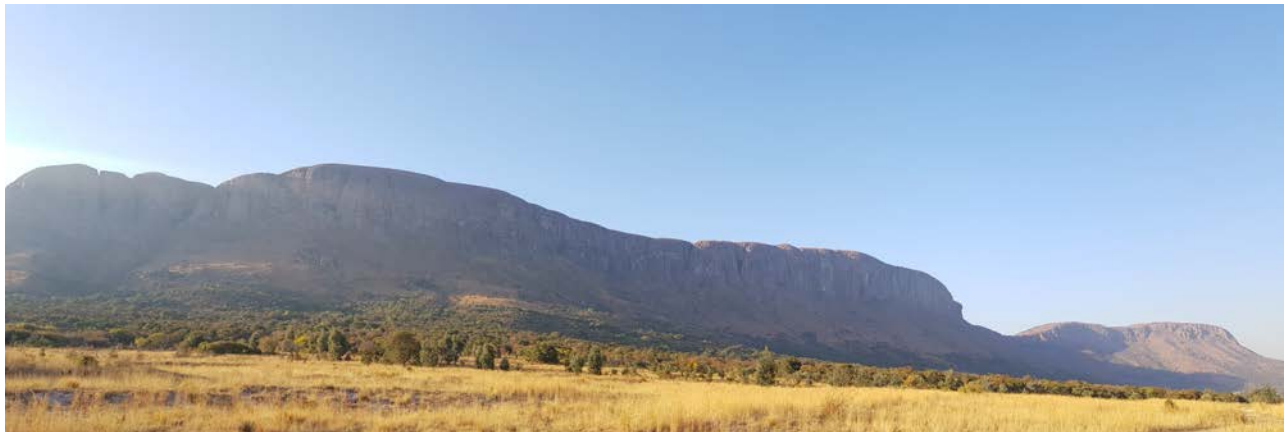# VulPro Monitoring Report 2020

Cape and African White-backed Vulture Breeding Surveys

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Summary

During 2020, we monitored six Cape Vulture colonies across the northern parts of South Africa. A total of 2071 active nests were observed during the initial survey. Furthermore, our African White-backed Vulture tree nesting survey efforts this year covered a total of four areas, comprising of 12 properties covering ~300km^2 and 128 active nests.

VulPro's cliff monitoring, which focused on the northern parts of the Cape Vulture population, was severely influenced by COVID-19, only allowing us to start with our Magaliesburg monitoring at the end of May 2020. The Manyelanong colony in Botswana was not accessible due to the ban on international travel. Furthermore, we experienced disruptions by local community members demanding money to monitor the Soutpansberg colony. Therefore, we observed fewer active nests this year than in 2019 but we observed more active nests at Kransberg, Moletjie, Skeerpoort, and Nooitgedacht, with Manutsa being stable. The breeding success for 2020 varied from 60 to 85%.

African White-backed Vulture tree nesting surveys were conducted at only four sites, three of which have previously been surveyed and one new area. Due COVID-19 restrictions, which made it difficult to access sites due to provincial boundary restrictions; compounded with a lack of available accommodation and a reduction in funding, between one and two visits per site was conducted. The Olifants River Private Nature Reserve was unfortunately not visited this year due to COVID-19 restrictions.
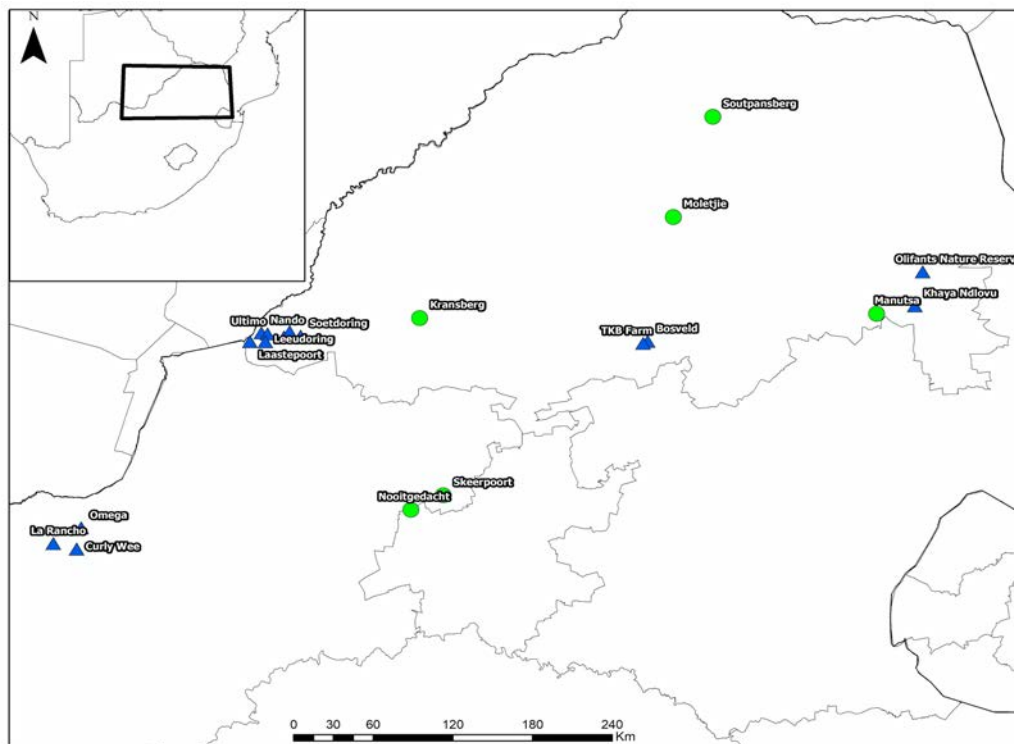
Figure 1. Map of the African White-backed, Cape and Hooded Vulture breeding sites monitored by VulPro across southern Africa

Survey Overview and Methods

Cape Vulture colonies were visited two to three times with the first survey in May to June to record breeding pairs, the second visit from July to August for the total number of active nests and a third survey, when possible, from September to October to record the number of fledglings. Breeding behaviours are observed from consistent locations using spotting scopes and following the monitoring protocol used since 2006 (for full protocol see Wolter et al. 2020). The following colonies were monitored in 2020: Kransberg in Marakele National Park, Manutsa Ranch near Hoedspruit, Moletjie in Moletjie Municipal Nature Reserve, Soutpansberg in Vhembe District, Nooitgedacht and Skeerpoort on the Magaliesberg Mountain Range.

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African White-backed Vulture population surveys were conducted at three of our existing sites and at one new site. These surveys were conducted once or twice in 2020. The reduction in sites surveyed was a result of COVID-19 restrictions making it very difficult to visit certain sites. As many as possible of our existing sites were surveyed, but unfortunately it was not possible to visit all of them for all of the usual surveys. The Mareetsane site was visited in August and again in October, while Dwaalboom was visited in October only. Khaya Ndlovu was surveyed twice in June/July and September - November 2020. A new site in Roedtan, Limpopo was also added to the surveys this year and was also surveyed in October only. These surveys were conducted following the "Southern African Vulture Tree Nesting Survey Protocol" set out by VulPro (Wolter et al. 2020).

Table 1. Summary of VulPro's 2020 Vulture monitoring across South Africa

Site	Work	Province	Country	Land Ownership/use	Habitat
Manutsa	Colony	Limpopo	South Africa	Private residential	Mountainous
Kransberg	Colony	Limpopo	South Africa	Protected government, Marakele National Park	Mountainous
Magliesberg (Skeerpoort & Nooitgedacht)	Colony	North West and Gauteng	South Africa	Private Biosphere Reserve	Highveld Afro-montane savanna
Moletjie	Colony	Limpopo	South Africa	Protected Limpopo provincial government	Mountainous
Soutpansberg	Colony	Limpopo	South Africa	Community owned	Bushveld
Mareetsane Area (three farms in total)	Tree-nesting	North West	South Africa	Private game and hunting reserves; pig and cattle farms	Savannah
Khaya Ndlovu	Tree-nesting	Limpopo	South Africa	Private share-holder block	Savannah
Dwaalboom Area (seven farms in total)	Tree-nesting	Limpopo	South Africa	Private farms with various use	Bushveld
Roedtan Area (two farms in total)	Tree-nesting	Limpopo	South Africa	Private game and hunting reserves	Savannah

VulPro deduces the total number of breeding attempts and the percentage of (un)successful attempts using the following descriptions of behaviour:

● Brooding: an adult is seen on the nest in a guarding or shading posture denoting the presence of a chick
● Chick: a chick/nestling is seen; a pair or individual bird is seen feeding a chick, but the chick is not actually seen, or a pair or individual bird behaves in a manner indicative to there being a chick present
● Copulation: a pair is seen mounting and/or copulating at a nest
● Fledgling: a large chick/nestling is seen, or when a fledgling is seen
● Hidden: there appears to be breeding behaviour at a ledge or crevice, but the observer cannot accurately see to record the data
● Incubation: an individual bird is laying in a manner indicative of incubation behaviour which is different from a sleeping posture
● Tenanted: a pair or individual bird is present at a nest where, based on the behaviour of either the pair or the individual bird, breeding is suspected
● Working: an individual bird or pair is actively building a nest on a ledge

Cape Vulture Breeding Surveys

During 2020, Skeerpoort and Nooitgedacht were the only colonies that were surveyed three times. Mid-season breeding estimates for Skeerpoort and Nooitgedacht were 62% and 88% and with end-season breeding success of 59% and 75%, respectively. We suspect this low breeding success is due to increased hiking activities to escape lockdown and a possible flyby from paragliders during July 2020. Due to COVID-19 regulations, we were only able to survey Kransberg and Manutsa during the second and third survey slots resulting in an end-season breeding success estimate of 85% and 81%, respectively. Moletjie and Soutpansberg were only surveyed during the second breeding survey slot due to security reasons.
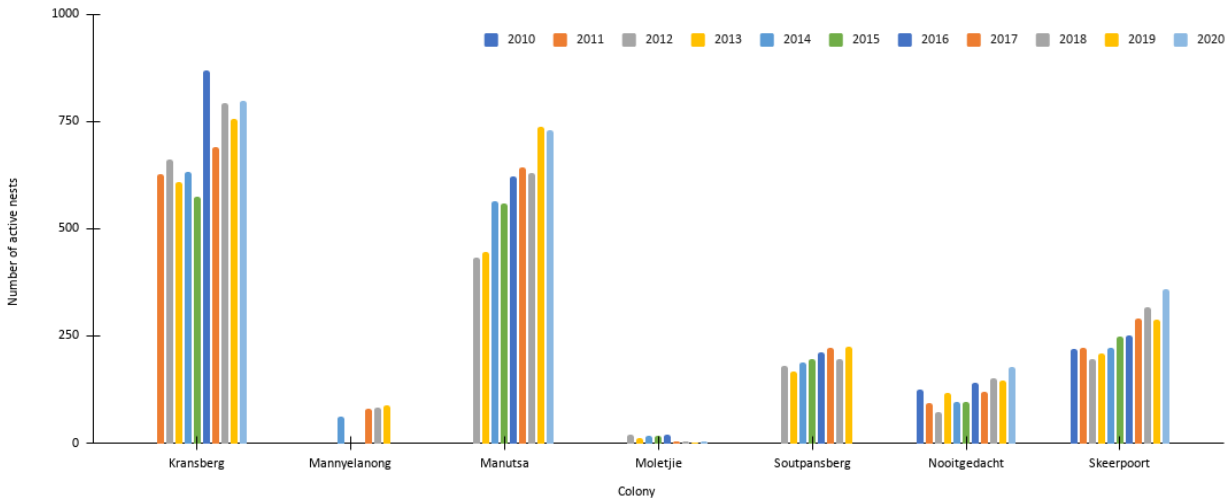

Figure 2. Annual estimates of the number of breeding pairs at each Cape Vulture colony monitored by VulPro throughout South Africa and Botswana

Even though we observed fewer active nests during 2020 compared to 2019, we observed more active nests at Kransberg, Moletjie, Skeerpoort, and Nooitgedacht, with Manutsa being stable. The Soutpansberg survey was rushed and had a final estimate of ~ 120 breeding pairs which is a 50% reduction since 50%. This could be due increased activity around the colony or due to incorrect count during the rushed survey. Therefore, we do not want to make conclusions, but are currently engaging with community members to continue our surveys at Soutpansberg during 2021.

Table 2. The 2020 Cape Vulture monitoring data recorded during each survey for each colony:

Colony	Survey 1	Survey 2	Survey 3
Manutsa		Fledgling: 0 Chicks: 42 Inferred: 688 Total: 730	Fledgling: 323 Chicks: 133 Inferred: 174 Total: 597
Kransberg	Pairs: 799		Fledgling: 417 Chicks: 102 Inferred: 162 Total: 681

Skeerpoort (Magaliesburg)	Pairs: 177	Fledgling: 0 Chicks: 11 Inferred: 145 Total: 156	Fledgling: 52 Chicks: 48 Inferred: 33 Total: 133
Nooitgedacht (Magaliesburg)	Pairs: 360	Fledgling: 0 Chicks: 19 Inferred: 205 Total: 224	Fledgling: 52 Chicks: 48 Inferred: 33 Total: 133
Soutpansberg		Total: ~120	
Moletjie		Total: 5	
TOTAL:	Total pairs: 2,071 - excluding Soutpansberg ~48% of the global population**		

**Global population estimate of 4,400 breeding pairs taken from the Red Data Book of Birds of South Africa, Lesotho and Swaziland (Taylor et al. 2015).

The total number of breeding pairs estimated from the 2020 census at each site represents approximately 48% of the total global population of the endangered Cape Vulture. We continue to engage with landowners, stakeholders and the general public on the importance of protecting these breeding sites and mitigating threats in the surrounding landscapes.

<u>African White-backed Vulture Surveys</u>

This year served us with many challenges for tree nesting surveys. COVID-19 and South African provincial border restrictions meant that we were unable to reach sites for all three surveys that are usually conducted, and in some cases, we were unable to reach sites entirely. For this reason, it has been impossible to estimate breeding success rates at certain sites, but nonetheless we conducted as many surveys as possible in order to gather as much information as possible on the vultures nesting in these areas. The Olifants River Private Nature Reserve in Limpopo was not possible to survey this year, but the Mareetsane area in the North West Province (previously Omega Game Ranch and Curley Wee Farm), Khaya Ndlovu in Mpumalanga and the Dwaalboom area in Limpopo (previously the Madikwe Farm) were all surveyed this year, as well as a new area, specifically the Roedtan area in Limpopo.

The Mareetsane area of the North West Province was surveyed twice in 2020, in August and in October. The area consists of three farms, namely Omega Game Ranch (hunting and game farm), Bakoven (pig and cattle farm) and La Rancho Farm (hunting and game farm). Omega and Bakoven (previously Curley Wee) are farms that have been surveyed by VulPro in the past, and in 2019 the number of active African White-backed Vulture nests was recorded as 30 and two respectively. This year Omega had 56 active nests in the first survey and 48 in the second survey, resulting in an 85% breeding success rate. In the second survey we observed 33 chicks. Bakoven had two active nests in the first survey this year. However, we unfortunately found no active nests in the second season. This is consistent with our previous findings at Bakoven which was that the number of active nests has been steadily decreasing while the number of active nests in the surrounding areas have been

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increasing. We are unsure as to why this is, but it is suspected that the White-backed Vultures that previously nested at Bakoven are choosing to nest on neighbouring farms. We will continue to observe these sites and conduct further studies to try understand why this might be the case. In total these previously surveyed farms had 58 active nests in the first survey and 48 in the second survey, resulting in a 82% breeding success rate. The final farm that was surveyed in the Mareetsane area was La Rancho Farm. This farm has recently been brought to our attention as a nesting site for White-backed Vultures. We visited the farm while we conducted our second surveys in the area and for this reason, we could not determine breeding success. However, we were able to find 34 nests on the property during our time there, of which 26 were active. We look forward to surveying this farm in the future and studying the population dynamics of the African White-backed Vultures nesting here. In total we monitored 147 nests in the Mareetsane area this year.

Khaya Ndlovu was surveyed twice this year in June and July, and then between September and November 2020. During this time 49 nests were surveyed, with 21 active nests. During the second survey, 10 active nests were found, giving as an approximate breeding success of 47%. The 21 active nests in this year's first survey is a reduction in active nests from last year's 29 active nests in the first survey but is an increase of 2% from last year's 45% breeding success. We will continue to monitor this population closely in order to see if the reduction in active nests during the first survey is a cause for concern or just a small fluctuation in the overall increase of this population.

The Dwaalboom area of the Limpopo Province was surveyed once in 2020, in October. The area consists of seven farms, namely Ultimo Farm (game farm), Nando Farm (game farm), Leeuwdoorn Farm (game farm), Loggerinde Hoek Farm (game farm), Soetdoring Farm (cattle farm), Numzaan Safaris Farm (game farm) and Laastepoort Farm (game farm). Only Ultimo Farm (previously Madikwe Farm) had previously been surveyed in 2019 and had eight active nests. This year unfortunately only one nest was found to be active. The remainder of the farms were found to have one, one, three, 15, 16 and 1 nest respectively. A final nest was found along a roadside in the area bringing the total of nests surveyed to 51 this year. In total 38 chicks were observed.

The Roedtan area of the Limpopo Province was surveyed once in 2020, in October. The area consists of two farms, namely TKB Farm (cattle farm) and Bosveld Farm (game farm). Neither of these farms have been previously surveyed but they had 1 and 4 active nests on them respectively.

All areas that have been surveyed for the first time this year will serve as a baseline for future surveys in the coming years.

Table 3. Survey results of the breeding success of African White-backed Vultures monitored at five study sites throughout northern South Africa in 2020

Location	Active nests (June/July 2020)	Active nests (Sep 2020)	Active nests (Oct 2020)	Estimated breeding success
Mareetsane				
Omega Game Ranch	-	56	48	86%
Bakoven	-	2	0	0%
La Rancho	-	-	26	-
Khaya Ndlovu	21	-	10	47%
Dwaalboom				
Ultimo	-	-	1	-
Nando	-	-	1	-
Leeuwdoorn	-	-	1	-
Loggerinde Hoek	-	-	3	-
Soetdoring	-	-	15	-
Numzaan Safaris	-	-	16	-
Laastepoort	-	-	1	-

Unknown roadside	-	-	1	-
Roedtan				
TKB Farms	-	-	1	-
Bosveld	-	-	4	-
Total	21	58	128	

As part of our tree nesting surveys, we continue to ring as many chicks as possible with SAFRING metal rings and coloured plastic identifying leg bands. We were able to ring chicks at three of our four tree nesting survey sites, specifically at Mareetsane, Dwaalboom and Roedtan. In total we were able to process 27 birds, four in Mareetsane, 19 in Dwaalboom and four in Roedtan. The processing of these chicks is critical as it allows us to conduct resighting studies, which allow us to understand the movements of African White-backed Vultures after they fledge. The fledglings were accessed by using professional tree climbing equipment allowing one person to access the nest, place the chick in a cotton bag, and lower it to the floor for processing by another person below. Once the rings and leg bands are fitted on the bird it is raised back up to the nest where it is carefully placed back in the nest. The whole process takes approximately 30 minutes, with as little time as possible spent at the nest tree to make sure that as little as possible disturbance to the chick and parents is caused.

Conclusion

Annual monitoring of breeding sites has become critical as all African Vulture species continue to rapidly decline across their ranges. This year has brought many difficulties with regards to monitoring as a result of COVID-19 but we are pleased with the results we were able to collect.

Beyond the collection of data we were also able to continue with other important work while in the field, such as interacting with and sharing our results with landowners and communities in order to demonstrate the importance of these populations. This helps us to continue to nurture good existing relationships with the landowners around these populations and fosters new relationships on new properties where we have not surveyed before.

VulPro will continue to work hard to continue to monitor these populations to the best of our abilities, and in doing so, help identify and mitigate potential threats to these endangered and critically endangered vultures.

Acknowledgements