

# APNR QUARTERLY

elephants  
**alive!**

## REPORT



Grant Sloane

# JULY - SEPTEMBER 2021



Science & Survival

# ELEPHANTS ALIVE QUARTERLY REPORT: JULY TO SEPTEMBER 2021



CEO, Co-Founder &  
Principal Researcher:  
**Dr. Michelle Henley**

Development Manager: Harriet Nimmo; Tracking Projects Manager: Anka Bedetti; Tracking Project Technician: Kayla Zoon; Big Trees Projects Manager: Robin Cook; Coexistence Projects Manager: Jessica Wilmot; Researcher & Bees, Elephant IDs & Mortalities and Education Liaison Officer: Ronny Makukule; Researcher & Medicinal Plants, Elephant IDs & Mortalities and Education Liaison Officer: Joel Sithole; Office Administrator and Coexistence Liaison Officer: Tinyiko Bosch



Kayla Zoon

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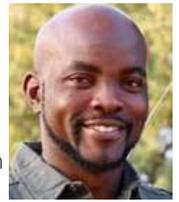
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**Ronny Makukule**  
 Researcher & Bees,  
 Elephant IDs &  
 Mortalities and  
 Education Liaison  
 Officer



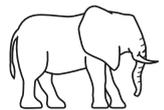
**Joel Sithole**  
 Researcher &  
 Medicinal Plants,  
 Elephant IDs &  
 Mortalities and  
 Education Liaison  
 Officer



We are always grateful for photos and location sightings submitted by the landowners and shareholders as part of our citizen science database. If you have any information and photos with regards to collared elephants, musth bulls or potentially large tusked individuals, please contact us at [info2u@elephantsalive](mailto:info2u@elephantsalive).

**Table 1:** Number of photos and animals processed based on our elephant identification study this quarter

<b>Number of processed photos:</b>	<b>4881</b>
<b>Number of female photos</b>	<b>208</b>
<b>Number of known female photos</b>	<b>9</b>
<b>Number of known bull re-sighted photos</b>	<b>50</b>
<b>Number of re-sighted collared bulls</b>	<b>36</b>
<b>Number of bull photos between 0-15</b>	<b>109</b>
<b>Number of young individuals that do have distinct ears for identification</b>	<b>13</b>
<b>Number of individuals from which only one ear could be photographed</b>	<b>21</b>
<b>Number of individuals which lack distinct ear patterns for identification</b>	<b>18</b>
<b>Number of photos not usable due to bad quality or vegetation obstruction</b>	<b>22</b>
<b>Number of ear patterns to be drawn</b>	<b>23</b>
<b>Number of dung samples collected for stress analysis</b>	<b>37</b>
<b>Number of tracking field days</b>	<b>25</b>



## TUSSE

Tussle is an emerging tusker who was first sighted by Dr Michelle Henley in 2005 and collared in 2006. He was named Tussle after he was first sighted tussling with another young bull on the periphery of his family unit.

This quarter, Tussle has returned to the Associated Private Nature Reserves (APNR; see tracking projects for more information).

It has been a pleasure to be able to once again monitor this bull in the field.



 VUTOMI

We recently received reports of a cow with a missing leg on Ceylon and were able to follow up on her in the field. The injury seems old as no open wound was present and she was foraging well with a good body condition. Vutomi moves slowly with her injury, remaining at the end of the herd while they are travelling. Remarkably, the Matriarch of the herd waited for her to move closer before leading the herd on. We are in the process of identifying the herd to get more information about her.





## IN THE SPOTLIGHT

Tussle is an incredible elephant to monitor due to the vast distances he travels. First collared in 2006, we were able to monitor him for a decade before he dropped his collar in 2016. We had been searching for him since to recollar, and in 2020, we were able to recollar him so we could once again monitor his movements.

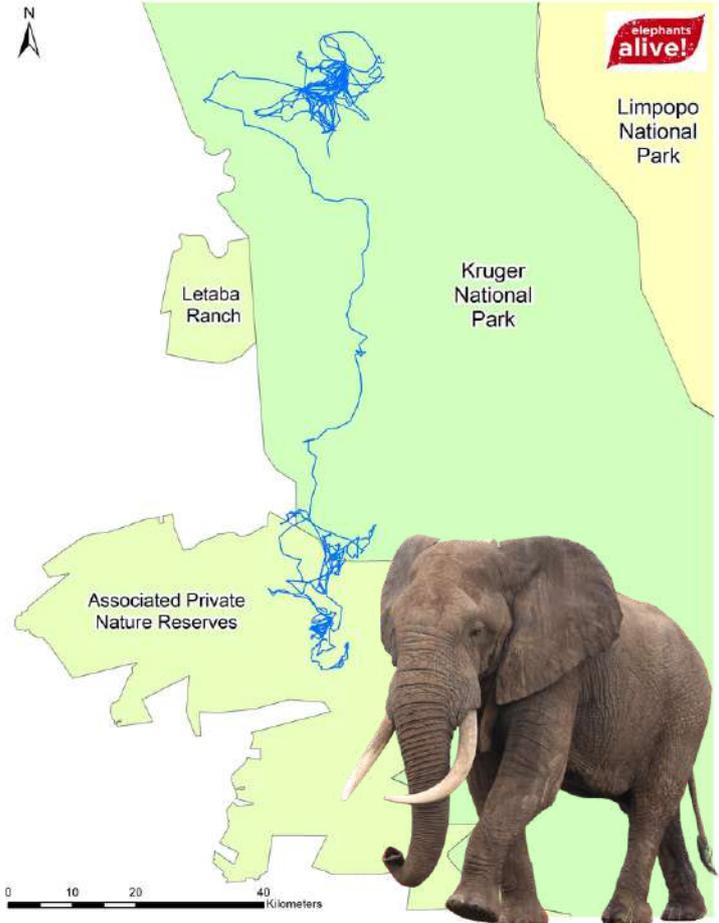
Tussle has returned to the Associated Private Nature Reserves (APNR) after he moved into Kruger National Park (KNP) in February 2021 during musth. He spent 7 months in the Mopani region of Northern Kruger. This is the first time we have witnessed Tussle's musth movements since he dropped of his collar in 2016. Tussle has covered 1057km over the last quarter.



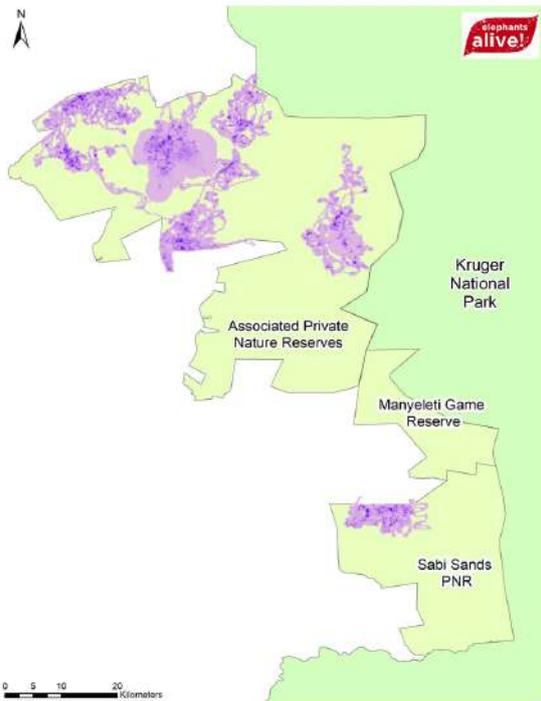
> **Anka Bedetti**  
Tracking Projects  
Manager



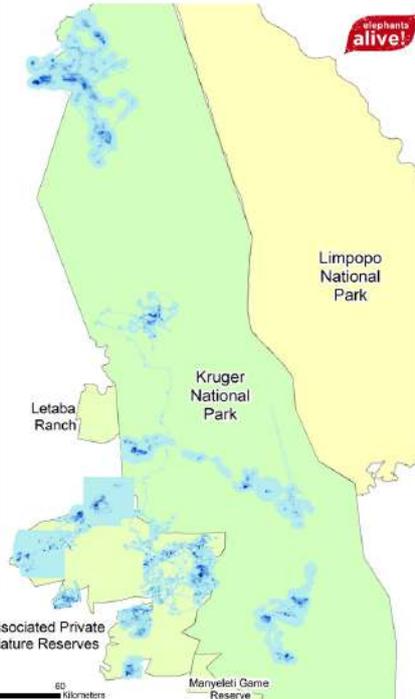
**Kayla Zoon** <  
GIS Technician



### COW MOVEMENTS



### BULL MOVEMENTS



### ALL APNR COLLARED ELEPHANTS

With the onset of the dry season, we observe a decrease in elephant movements as the elephants become restricted by depleting resources.

From the maps on the left, we can see that elephant bull movement is widespread as far as the Punda Maria region in Kruger. Elephant cows tend to be more site faithful and most of our collared females remain in the APNR during both wet and dry seasons.



## BEES & TREES RESEARCH

The winter-feeding program for the beehives in the Jejane Private Nature Reserve study site has come to an end, with the bees now making use of the abundant knobthorn and russet bushwillow flowers, amongst others. An additional eight new beehives will be hung in the summer, bringing the occupancy level of the site to 25%. We are specifically testing whether beehives create fear zones for elephants and what is the lowest number of occupied hives to do so. The eight marula trees have been prepared for the hives to ensure that the actual hanging operation goes smoothly. Several camera traps have been deployed to capture which elephants are frequenting the study site, as well as which other species are moving around the beehives. These camera traps will remain inside the study site over the summer months to capture more encounters between elephants and the beehives. The six-year assessment of the study will take place in November 2021.

**Robin Cook**  
Big Trees Projects  
Manager



## UPCOMING TREE SURVEYS

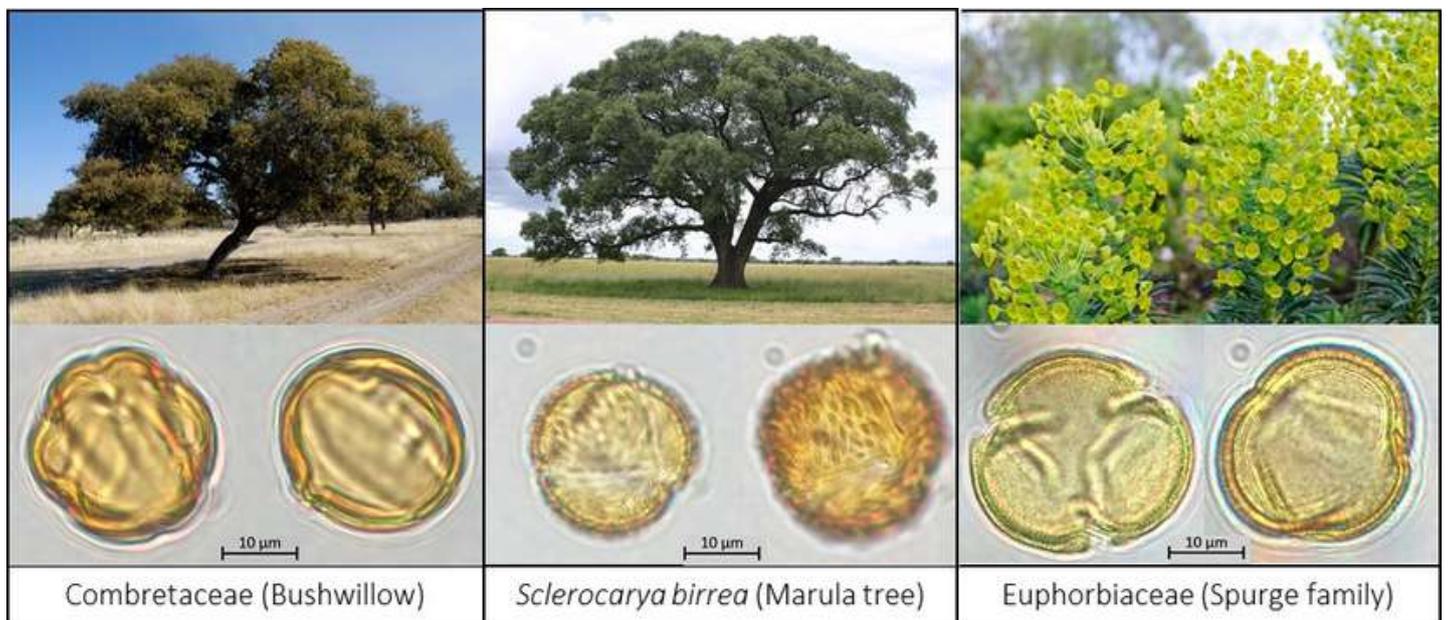
Elephants Alive's annual APNR vulture tree surveys will take place between October and November this year. Elephants Alive will be contacting reserve management ahead of time to structure the field days. The 2020 vulture tree report, distributed to reserve management earlier this year, is still available upon request.



## MELISSOPALYNOLOGY STUDIES

Elephants Alive have been collaborating with the University of the Witwatersrand's Dr. Frank Neumann and Ms. Nikiwe Ndlovu, in the use of melissopalynology to investigate which botanical species are being visited by the bees within the Elephants Alive beehives. Melissopalynology is a useful method for determining honeys' botanical and geographical origin through the application of light microscopy. The light microscopy enables the pollen types and concentrations to be detected within 10g of honey on a microscope slide.

Seasonality determines which plants grow in a specific biome. Consequently, each vegetation biome produces a characteristic pollen spectrum which might be reflected in a honey sample. This study is thus exploring the pollen spectra of the savanna biome reflected in the honey samples. Nikiwe is still in the final stages of her Master's degree write-up. However, a portion of the research has now been published in the South African Bee Journal (Ndlovu et al. 2021 – 'Melissopalynology uncovering pollen diversity within Lowveld honey').



## PRESENTATIONS

Elephants Alive have given several presentations this quarter related to big tree research amongst others not related to this topic specifically. Since July 2021, presentations on Big Tree Research have been given to Boston management (Balule Private Nature Reserve), South African National Park's Honorary Rangers, The Cuckoo Bird Club, The University of the Third Age – False Bay, as well as on the 'What Does the Giraffe Say?' online platform.



**Jessica Wilmot**  
Coexistence Projects  
Manager



**Joel Sithole**  
Researcher &  
Medicinal Plants,  
Elephant IDs &  
Mortalities and  
Education Liaison  
Officer

## COEXISTANCE GARDENS

It is harvesting season at Elephants Alive's HQ! Our food garden is thriving, and we have been privileged enough to harvest various spinaches, cauliflower, lettuce, rocket, parsley and baby marrow. It is very rewarding to enjoy the fruit of one's labour alongside The Black Mambas, while knowing that you are paving the way to food security for various families.

It has not been without its challenges though, with multiple insect species testing our organic farming ethos. However, we have planted enough marigolds and nasturtiums to ward off most pests and with multiple coriander seedlings on its way, we are keeping our fingers crossed that we will be able to keep insect impact to the minimum.



Our unpalatable garden is also slowly coming together, with *Pelargonium capitatum* and *Artemisia afra* being the most recent essential oil potential plant introduced. For now, our resident hippo bull has not dared browse on that during his midnight meander. Interestingly though, he has feasted on helichrysum, a species found in the sunflower family which is widely used for essential oil extraction. Continuing with the sunflower family, we have also planted common sunflowers for not only seed production but also due to its high pollen value for our bees – so far the hairy shoots have withstood any herbivory. However, we wait with abated breath to see how the baboons react as soon as they start flowering.



Our medical garden is also almost fully established with the last few remaining plant species currently being sourced. In total, 50 different plant species will be introduced after which a workshop will be hosted, showcasing the versatility of each plant.

We are excited to show The Black Mambas the benefits of sustainability utilizing indigenous plants for medicinal purposes and the small business opportunities that it holds.



Unlike our gardens, the bee apiary has taken a slight knock during winter despite rigorous artificial feeding of sugar water and pollen. However, with our thriving gardens and the current natural blooms we are eager to test our ability of catching wild swarms with the help of lemon grass essential oil – how fitting that an essential oil will be used for another project.

We look forward to the upcoming summer harvest season and learning all about propagating various plant species. Thanks to continued support of our donors, we will also be able to start the construction of our pack house where we will be upscaling our seedling house, pottery production and hopefully our small distillation plant.



Bees, Trees, Elephants & People

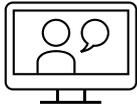
## PUBLIC RELATIONS



**49 Peer Reviewed  
Scientific Papers**



**12 Popular articles**



**9 Webinars**



**7 Scientific Papers  
currently in Review**



**1 participation in study with the topic:**

Looking at the gap between movement ecology and conservationists. - Rascha Nuijtem



“There is mystery behind that masked gray visage, and ancient life force delicate and mighty, awesome and enchanted commanding the silence ordinarily reserved for mountain peaks great fires and the sea.”

- Peter Matthiessen