HAWAAN
FOREST ESTATE
Nature's Doorstep

Allister Starke
ecology•horticulture•landscape
Box 166, Umdloti Beach, 4350, KwaZulu-Natal
phone: +27 0761456896 email: allister.sta3le@gmail.com

Hawaan Forest Conservation Trust

Monthly site inspection report:

Summary: 22.05.2023

i.The June site visit to the Hawaan Forest was conducted on the 22.06.2023. Staff have continued with their regulator activities such as maintenance of the grassland and forest trail network, clearing invasive plants while also cleaning and refreshing water points.
ii. Clearing of indigenous woody encroachment in the grassland together with Triffid weed (*Chromolaena odorata*) has been a particular focus for the HCT staff during June. Triffid weed flowers during June/July so it can be easily identified during this time. Although we do not have control of Triffid populations outside of the reserve, a key management objective of this species is to keep seed levels in the general environment as low as possible, so an active effort is made during this time of the year to remove flowering plants. Such activities include scouting for plants which occur within the reserve grassland, the bufferzone or any adjacent empty lots in the estate.
iii. An usual winter rainfall event of around 60 mm popped a manhole cover on the sewerage mainline on the western boundary of the reserve. This was reported by HCT staff during their patrols. A event log has been reported to the city and a temporary repair has been conducted.
iv. Tracerbelts were discussed and laid out by HCT staff during the site visit. We have a provisional date of late July-early August for the prescribed burn. Our application for the burn to emergency services for permits has been submitted.
v. Two snares were located on the western portion of the grassland during June.

Figure 1. Numbers on the map refer to items below.

(1)

House keeping around the Forest Management zone was in order during the site visit.

(2)

Forest pathways need to be trimmed back slightly before the end of June.

(3)

A few plants of *Solanum seafothianum* are flowering on the forest pipeline path and need to be cleared.

(4)

During the drier winter phase of growth season the structure and texture of the forest become clearer. For, example, the stems of the many Knobwood trees can now be easily noted along the pipeline forest trail.

(5)

No Albizia (Flat-crown) seeds have been harvested as yet but the seed pods are just about dry and will be collected during early July by HCT staff.

(6)

Water points have been serviced and were being used by Thick-Billed weavers during the site visit.

(7)

They don't look like much now, but 15 mature Pink velvet beans plants have been reintroduced into the grassland restoration zones.

(8)

A few Vernona wildflowers which were planted in the grassland last year suffered during the hot dry period in March-April. They have now been cared for by HCT staff who have added some compost. Hopefully we can nurse them through the forth-coming growing season, which will enable them to survive without care in the future.

(9)

Look out for the Cocktail Ants which have colonised the tops of shrubs on the eastern portion of the grassland. https://www.inaturalist.org/observations/170805723

(10)

These Cocktail ants can be seen feeding off the nectaries or scale insects on the Lucky Bean creepers in the grassland. https://www.inaturalist.org/observations/170805844

(11)

Grassland pathways have been mowed and neatly maintained by HCT staff during June.

(12)

Flowering in June out of the top of one or two bush-clumps in the grassland is Cape Honey Suckle.

(13)

Another species of grassland Ant (Savanna spiny Sugar Ant) were also out feeding off aphids on this yellow grassland creeper, *Senecio deltoides*. *https://www.inaturalist.org/observations/169146655*

(14)

During June, the HCT staff have spent quite a bit of time cutting back woody encroachment and hand-pulling annual aliens from the small valley in the central grassland area.

(15)

HCT staff have been hand pulling *Porophyllum ruderalle* in the western sections of grassland. These plants will get stockpiled and burnt during the prescribed burn in July.

(16)

In preparation for the prescribed burn, tracer belts will be cut around some of the forest edges in July.

(17)

A couple of small pepper trees were spotted in the grassland they will be removed by the end of July.

(18)

A species of Justica was noted flowering the grassland. It has been uploaded to iNatualist for help with identification.

Operations: Tasks 2023															
Category	Item	Task	**Schedule**	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Trails	1.1	Clearing away vegetation that is growing over, repairing washaways	Weekly	x	x	x	-	–	_	-	-	-	-	-	-
	1.2	Repairing washaways	Weekly	-	-	-	-	-	-						-
	1.3	Resetting concrete sleeper treads on steeper parts of the trails	Weekly	-	-	-	-	-	-	-	-	-	-	-	
	1.4	Cut the trails using a brush cutter once every two weeks in summer and check for overgrowth in winter	Weekly	x	x	x	x	x	x	-	-	-	-	-	-
	1.5	Trails should be maintained because they function as fire breaks or tracer breaks for fire-fighting when annual burn is done each year in July/August.	Weekly	x	x	-x	-x	-x	x	-	-	-	-	-	-
	1.6	Check trails for over-hanging branches and other vegetation.	Weekly	x	x	x	x	x	x	-	-	-	-	-	-
	1.7	Clearing litter on the trails and in the forest twice a week as not much pedestrian traffic if usage increases then checking daily will have to be done.	Weekly	x	x	x	x	x	x		-	-	-	-	-
	1.8	Check fuel and oil for machines and report.	Monthly	x	x	x	x	x	x	-					
	1.9	Snare management – check hot spot sites for re-applied snares on a weekly basis	Monthly	x	x	x	x	x	x		-	-	-	-	-
Water points	2.1	Check if waterpoints are soiled by animals	Weekly	x	x	x	x	x	x	-	-	-	-	-	-
	2.2	Fill waterpoints along the trails	Weekly	x	x	x	x	x	x	-	-	-	-	-	-
Infrastructure	3.1	Observe and report to Management where signage needs to be cleaned or replaced due to vandalism or fading	Monthly	x	x	x	x	x	x		-	-	-	-	-
	3.2	Check signs and clean signs and benches weekly	Weekly	x	x	x	x	x	x	-	-	-	-	-	-
	3.3	Check exclusion plot for fallen trees or branches damaging the wire.	Monthly	-	x	x	x	-	-	-					
	3.4	Keep tools and equipment clean and serviced daily for hand tools.	Weekly	x	x	x	x	-	-	-	-	-	-	-	-
	3.5	Clean and service machine tools after each session of use. Chainsaw, Brushcutter.	Weekly	x	x	x	x	-	-	-	-	-	-	-	-
	3.6	Service of machinery at Berries	Yearly	-	-	-	-	-	-	-	-	-	-	-	-

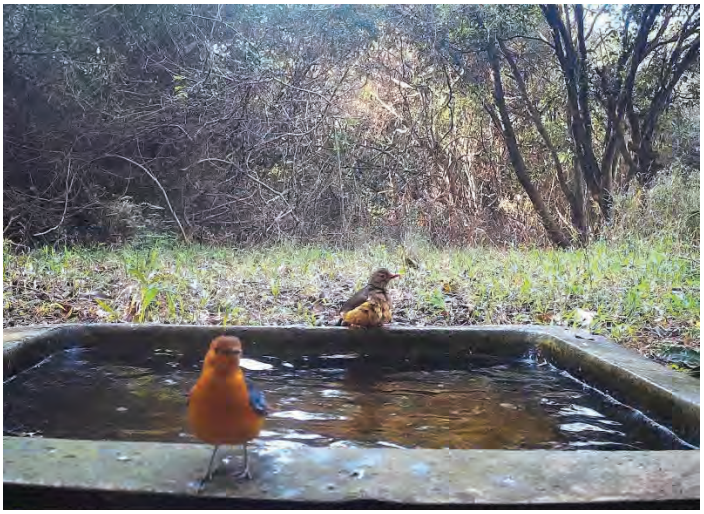
	3.7	Keep Tilley Huts neat and tidy sweep daily, clean windows every 10 days check maintenance and rusting on a monthly basis and report to HCT members.	Weekly	x	x	x	x	x	x	-	-	-	-	-	-	-
	3.8	Check that trail cameras daily to ensure they are not stolen.	Daily	x	x	x	x	x	x	-	-	-	-	-	-	-
	3.9	Cleaning of toilet and shower on a daily basis after use.	na	-	-	-	-	-	-	-	-	-	-	-	-	-
	3.10	Check and order cleaning consumables for shower and toilet	na	-	-	-	-	-	-	-	-	-	-	-	-	-
Woody plant management	4.1	On-going daily work is clearing invasive introduced plants such as Pepper Trees, Triffid etc..in both the forest and grassland systems.	Weekly	x	x	x	x	x	x		-	-	-	-	-	-
		Checking for regrowth of IAPs monthly and set out new work areas each month.	Monthly	x	x	x	x	x	x	-	-	-	-	-	-	-
	4.2	Removal of selected indigenous woody encroachment species such Silver Oak in the grassland section	Monthly	-	x	-	-	-	-	-	-	-	-	-	-	-
	4.3	Monitoring herbicide stores on a monthly	Monthly	x	x	x	x	x	x				-	-	-	-
Fire management	5.1	Ensure tracers belts and pathways in the grassland open before prescribed burn	Yearly	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.2	Service fire-fighting equipment once before the annual burn is completed and then oil up so that ne-t season the equipment has not seized up with rust. *Fire fighting =equipment one drip torch, 3 rubber beaters with handles, two Knapsack sprayers.*	Yearly	-	-	-	-	-	-	-	-	-	-	-	-	-
Consumables	6.1	Order uniforms and personal protective gear for the 2 staff.	Yearly	-	-	-	-	-	-	--	-	-	-	-	-	-

Item	Herbicide name	Active ingredient	Type	Litres in stock	Date used	Species applied	Location
1.	Gladiator, pre-mix	Picloram	Selective	15L (pre-mix)	16/4/22	Creeping inch	Forest mgmt zone
2.	Round-up	Glyphosate	Non-selective	3L	-	-	-
3.	Gladiator, premix	Picloram	Selective	Used 15L	15/11/22	Brazilian pepper	Eastern grassland
4.	Plenum 160	Picloram	Selective	20L – concentrate. Mixed 2L	25/02/23	Brazilian pepper – Yellow bells.	Eastern grassland

Item	Herbicide name	Active ingredient	Type	Litres in stock	Date used	Species applied	Location
5.	Plenum	Picloram	Selective	18L	13/4	Pepper, Yellowbells	West grassland
6.							
7.							
8.							

The forest fauna have been out in full force during August and the action has clearly revolved around the water point at the entrance to the Bush Shrike trail. One again some beautiful forest images have been captured.

A lemon dove and male blue duiker



A Red capped robin chat with a Olive thrush

Juvenile crowned eagle

A family of bushbuck

Large spotted Genet

Dwarf mongoose

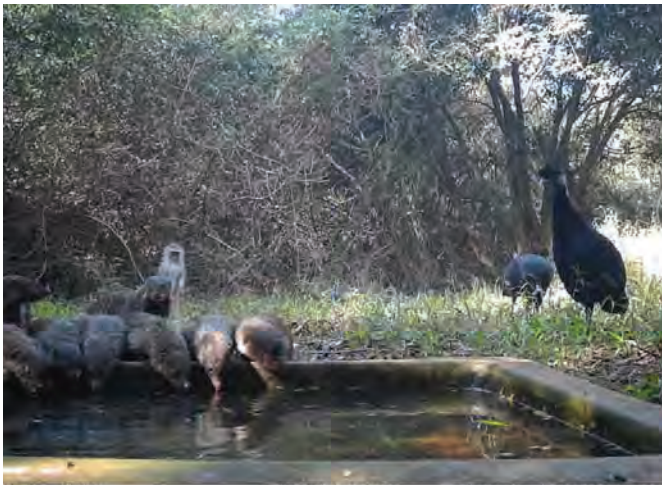
Some beautiful camera trap images were taken at the forest water point during July, 2022.

Red Duiker, female.

Bushbuck females.

Crested guinea fowel.

Red Duiker, male



Vervet Monkey, Banded Mongoose, and Guinea fowel.

Banded Mongoose.

Some beautiful camera trap images were taken within the dry forest interior during June.

Bush buck female)

Bush buck (male)

Bush buck (female)

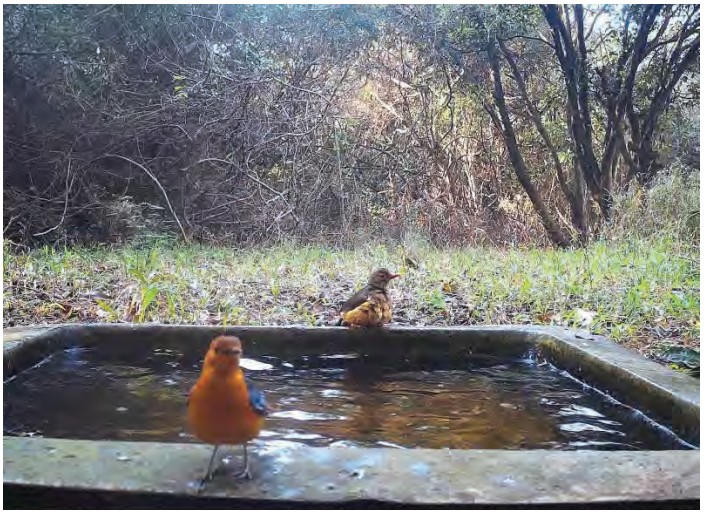
Red duiker (female)

Bush buck (female)

Blue duiker (pair)

The forest fauna have been out in full force during August and the action has clearly revolved around the water point at the entrance to the Bush Shrike trail. One again some beautiful forest images have been captured.

A lemon dove and male blue duiker



A Red capped robin chat with a Olive thrush

Juvenile crowned eagle

A family of bushbuck

Large spotted Genet

Dwarf mongoose

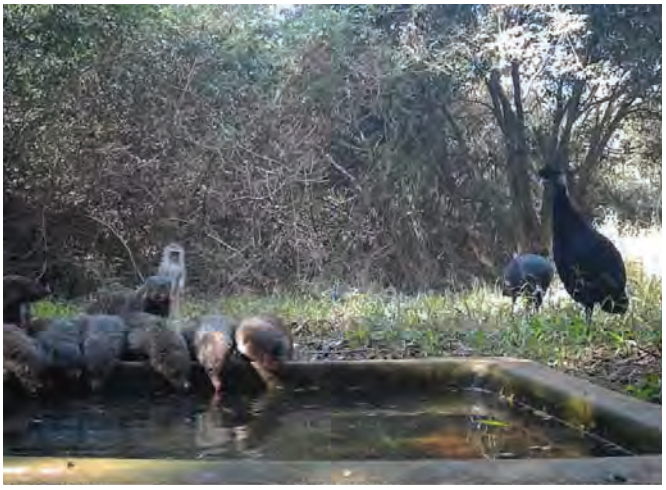
Some beautiful camera trap images were taken at the forest water point during July, 2022.

Red Duiker, female.

Bushbuck females.

Crested guinea fowel.

Red Duiker, male



Vervet Monkey, Banded Mongoose, and Guinea fowel.

Banded Mongoose.

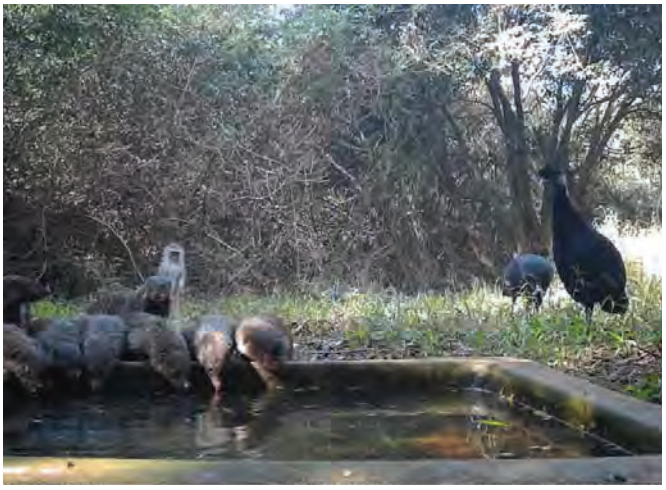
Some beautiful camera trap images were taken at the forest water point during July, 2022.

Red Duiker, female.

Bushbuck females.

Crested guinea fowel.

Red Duiker, male



Vervet Monkey, Banded Mongoose, and Guinea fowel.

Banded Mongoose.

September 2022

The Red Duiker are the most beautiful forest antelope we have at the Hawaan Forest. Larger, and less common than their smaller cousins the Blue Duiker, they may reach up to 12 kg. They are coloured a deep chestnut red which contrasts pleasingly with the luminescent greens of the forest foliage in summer and similarly with the dry-scrub brown of the deciduous winter phase of the forest. These camera trap images, taken this month in September, showcase this most graceful forest antelope amongst the soft greens and browns of the forest before the onset of spring.

Camera trap images February 2022

During Jan/Feb the HCT have worked closely with the HRA and Marshall security. The camera trap maintenance and daily checking is being conducted by Marshall security, though the HCT still have camera located in locations that will capture beautiful and interesting wildlife images. One highlight from February was a Bushbuck male captured at dawn on the interface between the estate and the grassland.

Bushbuck male at dawn.

Crested-guineafowl in the forest at night!

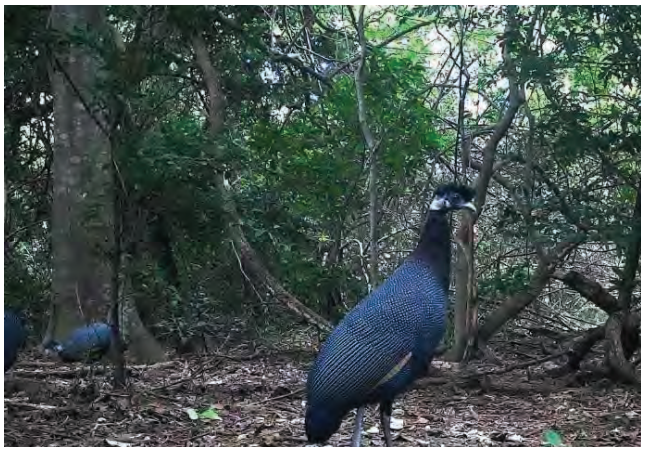
Blue duiker in the forest

Lemon dove in the forest leaf litter

The pair of resident water-mongoose

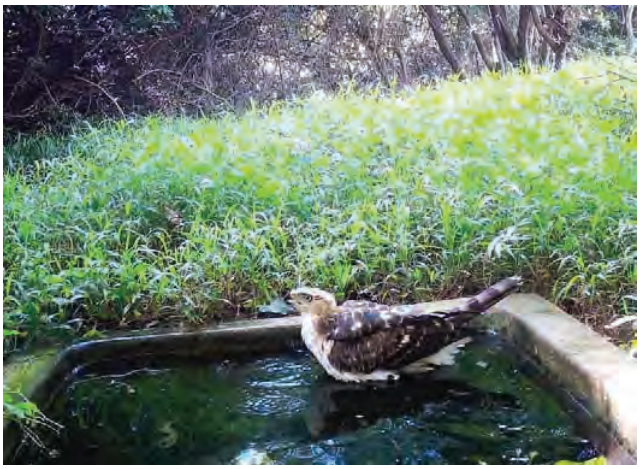
A pair of Olive-thrush's

Camera trap observation Jan 2022.Due to the heat in January the most notable camera trap observations for Jan 2021 focused on the water trough at Bushshrike trailAn exciting observation was a juvenile crowned eagle having a drink and cooling off in the water.



Crested Guinea fowl

Purple crested turaco



Crowned eagle (Juvenile)

Female bushbuck

Wood owl

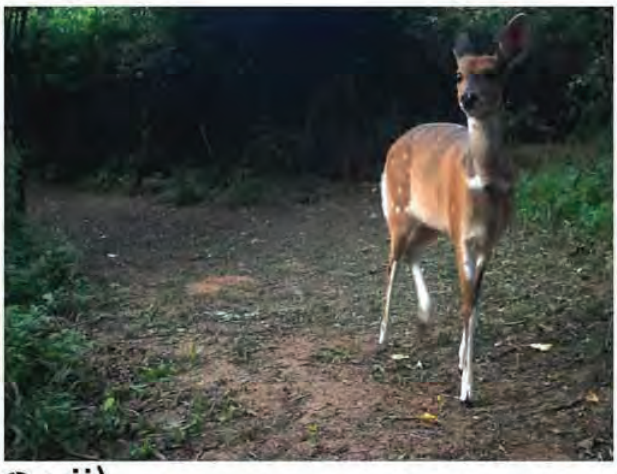
Tambourine dove

Six of the seven camera have been in operation during November-December. The Seventh camera is due to be installed within the next week. Camera batteries appear to last between 3-4 four weeks, while each camera used between 500 mb and 1gig of data. The data budget for each camera should be in the order of R 50-75 per month. Importantly no non-resident 'humans' have been noted on the cameras. AS will continue to monitor the camera in December but the way forward in January will be garner support from the HOA security to help with monitoring. Some interesting new species were observed over the Nov/Dec period, for example: on Camera V, a Steppe Eagle. Other observations in the images are : i) = Large spotted Genet ; ii) & vii) Female bushbuck; i) Water mongoose i) Male bushbuck.

v)

i)

iii)

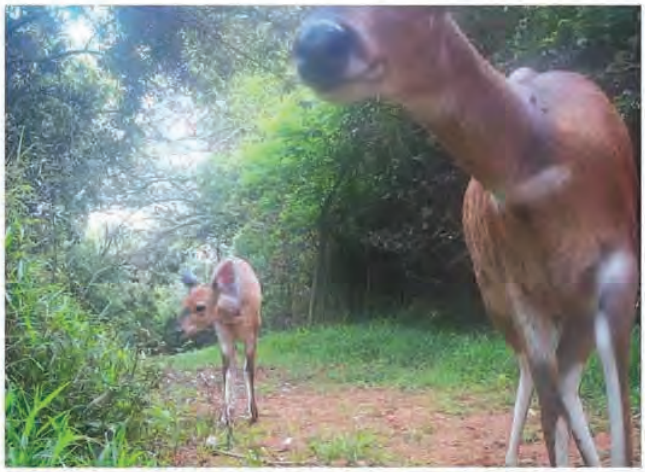


vii)

i)

i)

Camera trap images October-November 2021. New species observations in November were Water Mongoose. Other sightings include: Bushbuck family activity, Blue Duiker pairs and Crested Guine fowel.



Camera trap images March 2022

During March the HCT have again worked closely with the HRA and Marshall security. Highlights from March 2022 include: Many different forest fauna utilising the water point at the BushShrike junction, including: Blue Duiker; Black Sparrow Hawk; Purple Turaco; and a Wood Owl. The camera on the Bush-Shrike trail also picked up some beautiful images of foraging Banded Mongoose and Crested Guinea fowl.

Blue Duiker

Black Sparrow-Hawk

Purple Turaco

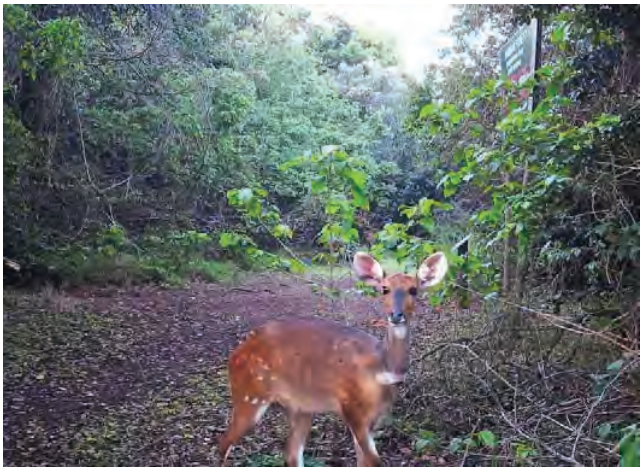
Wood Owl

Banded Mongoose

Crested Guinea fowl

Camera trap images September /October 2021

Given that we are still working out how best to deploy the camera traps in the nature reserve, some of the images received so far have been beautiful. Species noted below are as follows: Crested guinea fowl, spotted Genet, and female, male and juvenile bushbuck. Other forest antelope noted have been both red and blue duiker. Four cameras have now been deployed. Their locations have been sited in Fig. 1.



Some beautiful camera trap images were taken within the dry forest interior during June.

Bush buck female)

Bush buck (male)

Bush buck (female)

Red duiker (female)

Bush buck (female)

Blue duiker (pair)

Sewer break: During the rainfall and flooding in mid-April the municipal sewer pipeline on the boundary of the HFT property ruptured. The damage is therefore not in the HFT property but will effect the species in forest. The event resulted in a high pressure flow of sewerage which eroded sections of the pipeline infrastructure while causing a plume of waste into the forest. Fortunately, it appearers that the runoff did not undercut the pipeline too badly and good work from the city ensured that the issue was resolved timorously. What remains, is for the city to repair the ailing infrastructure and to co-ordinate a clean-up of the litter/plastics which was discharged into the forest.

Fig 1a. The flow of the effluent took a north-easterly direction.

Fig. 2b. Some areas of the pipeline have been undercut and will need to be repaired.

Fig 2c. The manholes on the pipeline remain open for the time being.

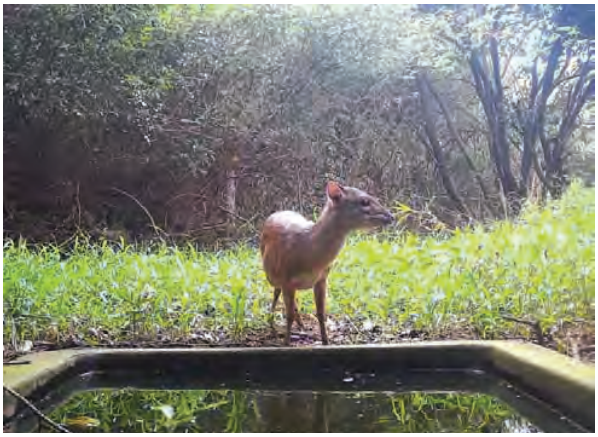
Fig2d. Some of the surrounding vegetation at the source point has collapsed but damage does not seem to be extensive. However, a full inspection has not been conducted.

Fig. 2e. The sewage plume continues in a north-east direction down the forest slope. Litter from this plume should be cleaned-up.

Some beautiful images and interesting sighting on the camera traps were observed during May. Firstly, a lovely bushbuck male on the Bushshrike trail camera. While many birds (tambourine dove, dark backed weaver, natal-robin, kurrichane thrush, wood owl, purple-headed turaco, thick-billed weaver and ashy fly catchers) and forest mammals (red and blue duikers, bushbuck, water mongoose, vervet monkey) have also utilised the water point.

Male bushbuck

Tambourine dove



Blue duiker (female)

Dark backed forest weaver

Purple-headed turaco

Vervet monkey

The most interesting camera trap images for October 2022 were of Bush buck males rutting, Red duiker and parties of Crested guinea fowl. Unfortunately we are yet to pick up Bushpig in the forest.

Bushbuck rutting

Bushbuck rutting

Crested Guinea fowel

Crested Guinea fowel

Red duiker

Red duiker

September 2022

The Red Duiker are the most beautiful forest antelope we have at the Hawaan Forest. Larger, and less common than their smaller cousins the Blue Duiker, they may reach up to 12 kg. They are coloured a deep chestnut red which contrasts pleasingly with the luminescent greens of the forest foliage in summer and similarly with the dry-scrub brown of the deciduous winter phase of the forest. These camera trap images, taken this month in September, showcase this most graceful forest antelope amongst the soft greens and browns of the forest before the onset of spring.

Camera trap images February 2022

During Jan/Feb the HCT have worked closely with the HRA and Marshall security. The camera trap maintenance and daily checking is being conducted by Marshall security, though the HCT still have camera located in locations that will capture beautiful and interesting wildlife images. One highlight from February was a Bushbuck male captured at dawn on the interface between the estate and the grassland.

Bushbuck male at dawn.

Crested-guineafowl in the forest at night!

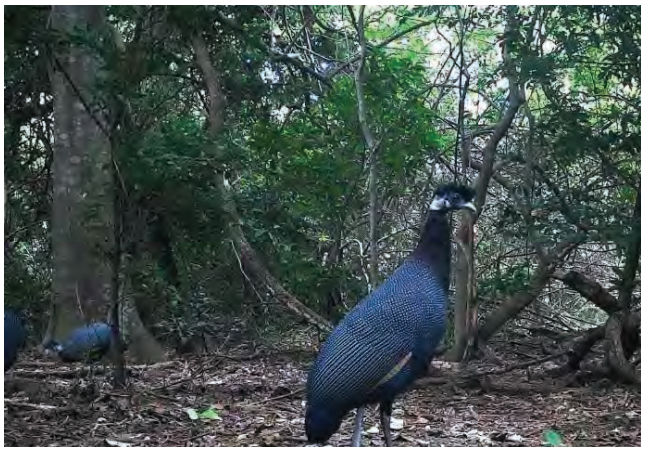
Blue duiker in the forest

Lemon dove in the forest leaf litter

The pair of resident water-mongoose

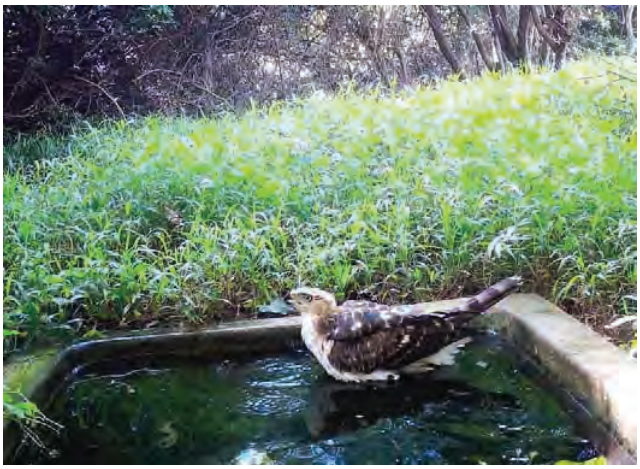
A pair of Olive-thrush's

Camera trap observation Jan 2022.Due to the heat in January the most notable camera trap observations for Jan 2021 focused on the water trough at Bushshrike trailAn exciting observation was a juvenile crowned eagle having a drink and cooling off in the water.



Crested Guinea fowl

Purple crested turaco



Crowned eagle (Juvenile)

Female bushbuck

Wood owl

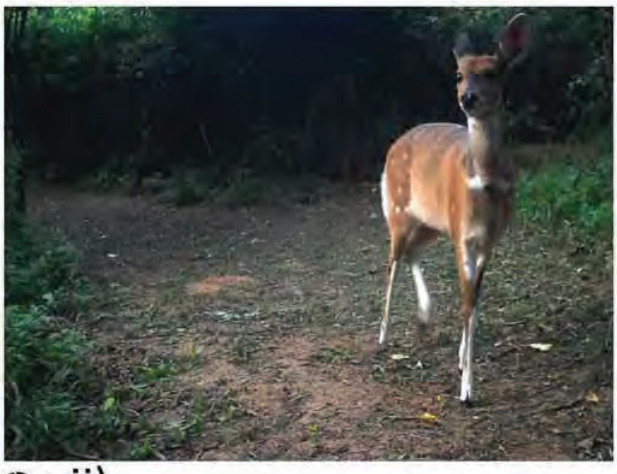
Tambourine dove

Six of the seven camera have been in operation during November-December. The Seventh camera is due to be installed within the next week. Camera batteries appear to last between 3-4 four weeks, while each camera used between 500 mb and 1gig of data. The data budget for each camera should be in the order of R 50-75 per month. Importantly no non-resident 'humans' have been noted on the cameras. AS will continue to monitor the camera in December but the way forward in January will be garner support from the HOA security to help with monitoring. Some interesting new species were observed over the Nov/Dec period, for example: on Camera V, a Steppe Eagle. Other observations in the images are : i) = Large spotted Genet ; ii) & vii) Female bushbuck; i) Water mongoose i) Male bushbuck.

v)

i)

iii)

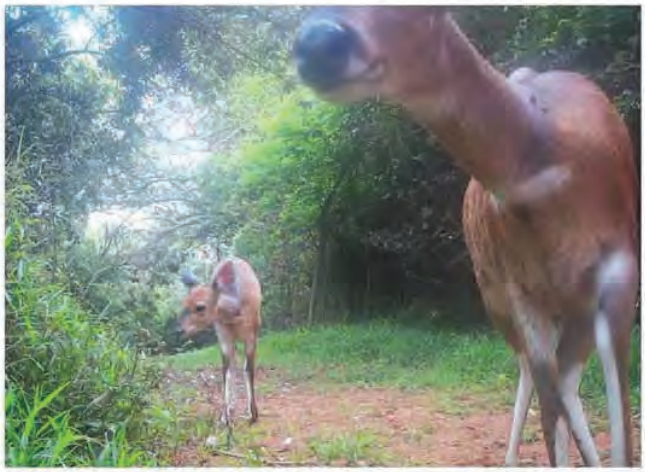


vii)

i)

i)

Camera trap images October-November 2021. New species observations in November were Water Mongoose. Other sightings include: Bushbuck family activity, Blue Duiker pairs and Crested Guine fowel.



Camera trap images March 2022

During March the HCT have again worked closely with the HRA and Marshall security. Highlights from March 2022 include: Many different forest fauna utilising the water point at the BushShrike junction, including: Blue Duiker; Black Sparrow Hawk; Purple Turaco; and a Wood Owl. The camera on the Bush-Shrike trail also picked up some beautiful images of foraging Banded Mongoose and Crested Guinea fowl.

Blue Duiker

Black Sparrow-Hawk

Purple Turaco

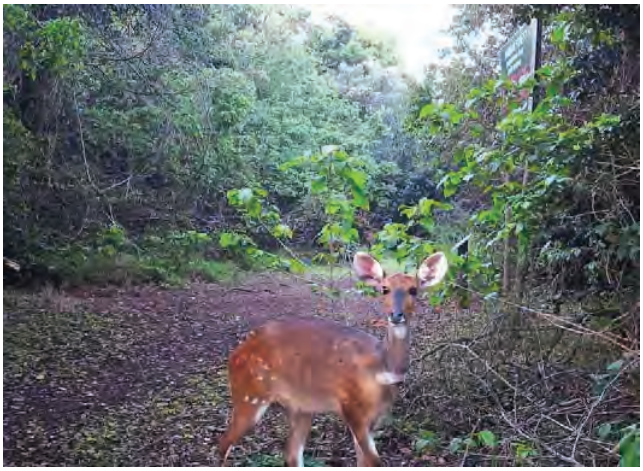
Wood Owl

Banded Mongoose

Crested Guinea fowl

Camera trap images September /October 2021

Given that we are still working out how best to deploy the camera traps in the nature reserve, some of the images received so far have been beautiful. Species noted below are as follows: Crested guinea fowl, spotted Genet, and female, male and juvenile bushbuck. Other forest antelope noted have been both red and blue duiker. Four cameras have now been deployed. Their locations have been sited in Fig. 1.



Embankment slip: The extensive rain in mid-April and flooding of the Umhlanga river has triggered a slip of a steep section of the northern forest embankment (Fig. 1a,b). This section of forest appears to have been compromised for some time as exposed sections vegetation (sandy areas in Fig 1c) are visible in the orthophoto which was taken in 2018-2019. The vegetation cover on this slope prior to the slip was largely composed of pioneer vegetation such as *Chromolaena odorata* and *Brachyleana discolor*. It is not immediately clear what management or rehabilitation actions can be conduced to secure such as steep slope. Its likely that the dune slope will find a natural gradient. Aside from engineering options, one approach could be to plant or reseed this bank with fast growing and deep rooting indigenous trees such as *Albizia adianthifolia*. These will take 10 years to become established but if so they will offer resilience to this area for next decadal-scale rainfall event.

Fig. 1a. A perspective of the slip, looking north towards the bend in the Umhlanga river.

Fig. 1b. A perspective of the slip, looking south across the Umhlanga river towards the forest embankment.

Fig. 1c. An aerial perspective of the area taken in 2018/2019 shows a previous slip which would have likely occurred due to a similar rainfall or disturbance event. The erosion site is located on the outer-apex of the river bend so this may be part of ongoing catchment-scale processes.

The Polyphagous Shot Hole Borer (*Euwallacea fornicatus**) and Fusarium dieback (*Fusarium euwallaceae*)

The Polyphagous Shot Hole Borer (PHSB) is an ambrosia beetle native to Southeast Asia. In 2017 this pest was detected on London Plane trees in the KwaZulu-Natal National Botanical Gardens, Pietermaritzburg. Its presence has since been confirmed in multiple locations in eight provinces in South Africa. The beetle has a symbiotic relationship with the fungus *Fusarium euwallaceae,* which serves as a food source for the adults and their larvae. In susceptible trees the fungus causes a disease called Fusarium dieback, which can lead to dying branches and tree death. The beetles attack a wide range of exotic and indigenous trees in urban, agricultural and natural landscapes.

Above: An adult female is 1.8-2.6mm long. Males are smaller and cannot fly.

PSHB is not able to complete its life cycle on all the tree species it attacks. Trees in which the beetle is able to breed and multiply are referred to as '**reproductive host trees**'. Important reproductive hosts include species of oaks, maples, willows and coral trees, avocado and castor bean. '**Non-reproductive host trees**' are attacked by the beetle, but the beetles do not establish galleries (tunnels) or breed. The fungus may, or may not cause disease. Trees are generally not expected to die. An updated list of confirmed hosts in South Africa can be viewed at www.fabinet.up.ac.za/pshb/

The movement of infested wood is an important means of spread of the beetle. Therefore, appropriate disposal of infested trees (by chipping/composting, solarization or burning) will be key to reducing the spread of this damaging pest. Surveys to monitor the spread of the beetle in South Africa are continuing. The public can assist by looking out for symptoms. Suspected instances can be reported to pshb@fabi.up.ac.za

Left: Chinese maple tree killed by PSHB and its fungus

Reproductive galleries in pecan

PSHB galleries in coral tree

Shot gun-like symptoms on London Plane

Compiled by Z.W. de Beer & T. Paap (Version 2021-03-04) www.fabinet.up.ac.za/pshb

*Some confusion existed about the Latin name of the PSHB [the species that is invasive in South Africa, California and Israel]. It has been referred to as *Euwallacea* nr. *fornicatus* and *Euwallacea whitfordiodendrus*, but as of 2019 the correct name to be used for this species is *Euwallacea fornicatus.*


HAWAAN ESTATE GRASSLAND
(ALIEN PLANT CONTROL)
Scale : 1: 2000
Date Created :30-07-2009
Block1
Area=1.7ha
Block2
Area=2.0ha
Block3
Area=1.99ha
Block4
Area=2.2ha
Block5
Area=2.4ha
HERRWOOD DR
HAWAAN DR
PYTHON PL
Legend
Parcels
Study Area
DEVELOPMENT PLANNING
,ENVIRONMENT & MANAGEMENT UNIT
BIODIVERSITY BRANCH
Created by: Lucky mncube
Tel Number : 031 311 7940
Email address:mncubel@durban.gov.za
Path:C:\esri\luckyas@26-01-2009\Richard
ETHEKWINI MUNICIPALITY