Hawaan Forest Conservation Trust

Monthly site inspection report:

Summary: 31.10.2023

i) The site visit the Hawaan Forest was conducted on the 23.09.2023. Work activities conducted during the month were routine snare checking and servicing of water points, however the main focus of Septembers operations was clearing bush-encroachment on the grassland.

ii) HCT staff, resident gardeners, were joined by local contractor Hlengiwe Luthuli whom spent 6 solid days clearing back the bush-encroachment from the grassland at Blocks .

iii) Bush encroachment is a process whereby indigenous trees colonise grassland and thereby outcompete grasses, converting the area into a forest or woodland. Authogh not all, a characterist if bush-encroachment trees is that they have fleshy fruit and are spread by birds or rodents. At the Hawaan, Sicklebush, *Dichrostachys cinerea*, *Rhus nebulosa, Allophylus natalensis*, *Euclea natalensis,* Silver Oak (*Brachylaena discolor*), Duikerberry, (*Sclerocroton integerrimus) , Ziziphus mucronata*, and Coastal bone-apple, *Catunaregam obovatum,* are some main encroaching species. The reduction of grassland at the Hawaan has consequences for birds, insects, and mammals that rely on grassland habitats to survive, either for feeding or breeding purposes, such as the Natal Spurfowl or the Scrub hare.

iv) Focus actions planned for November are to manage and weed trail pathways, while training of staff H&S will also be undertaken.

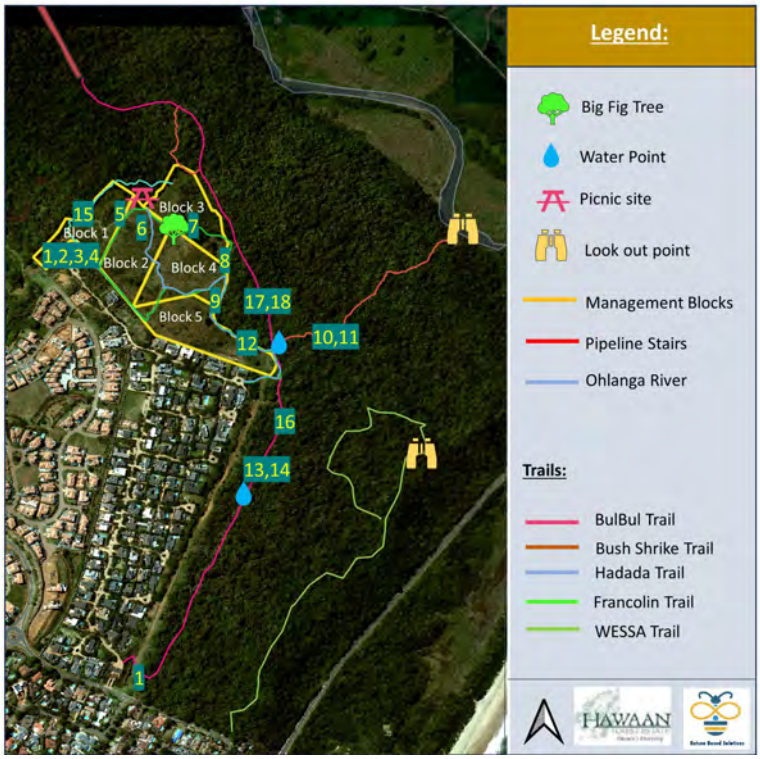

Figure 1. Numbers on the map refer to items below.

(1)

The compost area was neatly maintained during the inspection in October, 2023.

(2)

A programme of clearing of indigenous woody encroachment trees and shrubs in grassland Blocks 1,3,5 was undertaken by HCT staff, residents, and a local contractor.

(3)

Some of tree species cleared were: *Sicklebush, Rhus nebulosa, Allophylus natalensis, Euclea natalensis, Silver Oak, Duiker berry, Coastal bone-apple*.

(4)

Bushclumps are a natural component of the grassland ecosystem at the Hawaan, providing cover and breeding opportunities for birds, while also expanding the forest-grassland edge area of the reserve. The older, established bushclumps have been retained, and the focus of bush clearing has been on removing the outer growth, sometimes referred to as the 'skirt' of the bushclumps

(5)

Training, i.e. mixing and application, for foliar-spraying herbicide on *Searsia nebulosa* and coppice of other bush-encroachment species was conducted during the October site visit.

(6)

During October, HCT staff have maintained the planting basins which contain the wild flower plantings.

(7)

Two low-hanging branches on the large fig, will be pruned in November by HCT staff.

(8)

Richardia brasiliensis weeds are scheduled to be hand-pulled from the trails in November, 2023.

(9)

The camera traps were checked, serviced and will be deployed in early Novermber. Meanwhile, the scrubbing of Alga from the water troughs will be conducted.

(10)

Cavacoa aurea, is a characteristic forest tree with fluted stems, along the BushShrike trail, was flowering during October. https://www.inaturalist.org/observations/189467336

(11)

Pathways in the forest along the Bush Shrike trail were raked and checked in October.

(12)

Coastal Bone-Apple, Catunaregam obovata, was noted flowering the forest during October. https://www.inaturalist.org/observations/189466995

(13)

The forest Bulbul trail remained we'll maintained during October, and will mowed in early November.

(14)

A second wildlife camera trap has been set up at the Bulbul Trail water point.

(15)

Bush-clearing on the Western Grassland area has push back a lot of woody vegetation and open up the grassland in the Block 5 managment block.

(16)

It's interesting how the phenological cycles of trees in Hawaan differ throughout the growing season. For instance, unlike the White Stinkwoods, which sprout new leaves in late September, new leaf emergence for *Ziziphus mucrunata*, had not yet occurred by late October.

(17)

Common Cross-berry, *Grewia occidentalis,* is a very pretty generalist forest creeper and popular wildlife attracting plant. As it offers lots of pollen during early summer. https://www.inaturalist.org/observations/189467200

(18)

Another forest creeper which flowers in early summer is the Monkey Rope, *Secomne alpini.* https://www.inaturalist.org/observations/189466867

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	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	x	x -	x -	-	-	-
	1.6	Check trails for over-hanging branches and other vegetation.	Weekly	x	x	x	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	x	x	x	-	-	-
	1.8	Check fuel and oil for machines and report.	Monthly	x	x	x	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	x	x	x	-	-	-
Water points	2.1	Check if waterpoints are soiled by animals	Weekly	x	x	x	x	x	x	x	x	x	-	-	-
	2.2	Fill waterpoints along the trails	Weekly	x	x	x	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	x -	x	x	-	-	-
	3.3	Check exclusion plot for fallen trees or branches damaging the wire.	Monthly	-	x	x	x	-	-	x	x	x			
	3.4	Keep tools and equipment clean and serviced daily for hand tools.	Weekly	x	x	x	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	x	-	-	-	-	-	-
	3.8	Check that trail cameras daily to ensure they are not stolen.	Daily	x	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	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	x	x	x	x		-	-
	4.2	Removal of selected indigenous woody encroachment species such Silver Oak in the grassland section	Monthly	-	x	-	-	-	-	-	-	x	x	-	-	-
	4.3	Monitoring herbicide stores on a monthly	Monthly	x	x	x	x	x	x	x	x	x	x	-	-	-
Fire management	5.1	Ensure tracers belts and pathways in the grassland open before prescribed burn	Yearly	-	-	-	-	-	-	-	x	x	-	-	-	-
	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	-	-	-	-	-	-	-	x	x	-	-	-	-
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

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5.	Plenum	Picloram	Selective	18L	13/4	Pepper, Yellowbells	West grassland
6.	Plenum	Picloram	Selective	5L	05/9	Pepper,	West grassland
7.							
8.							

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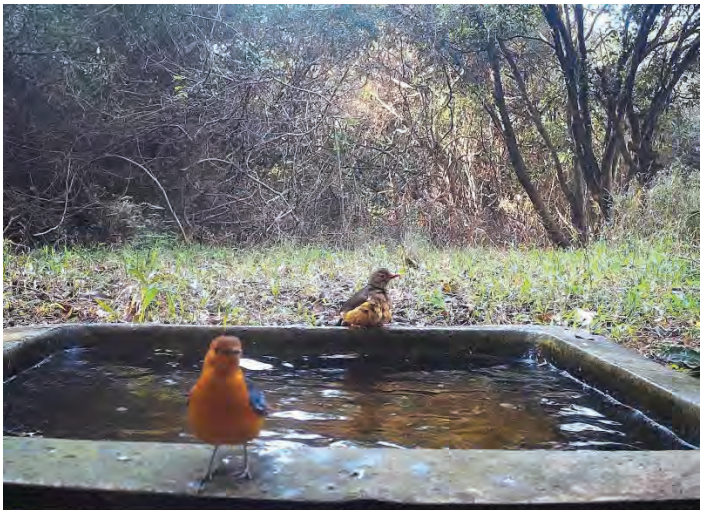
A lemon dove and male blue duiker



A Red capped robin chat with a Olive thrush

Juvenile crowned eagle

A family of bushbuck

Large spotted Genet

Dwarf mongoose

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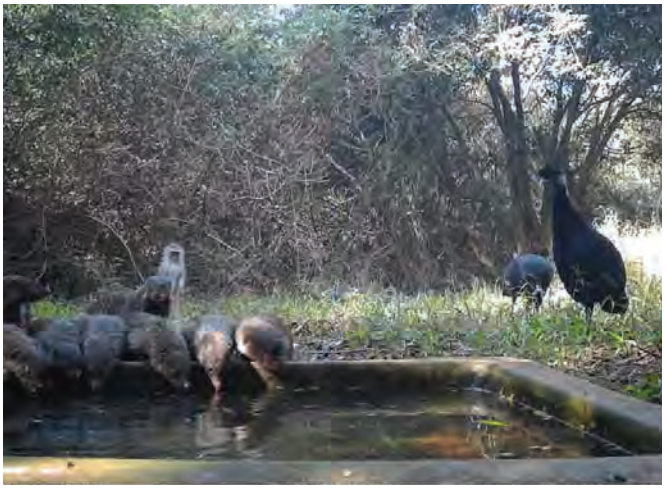
Red Duiker, female.

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)

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Red duiker (female)

Bush buck (female)

Blue duiker (pair)

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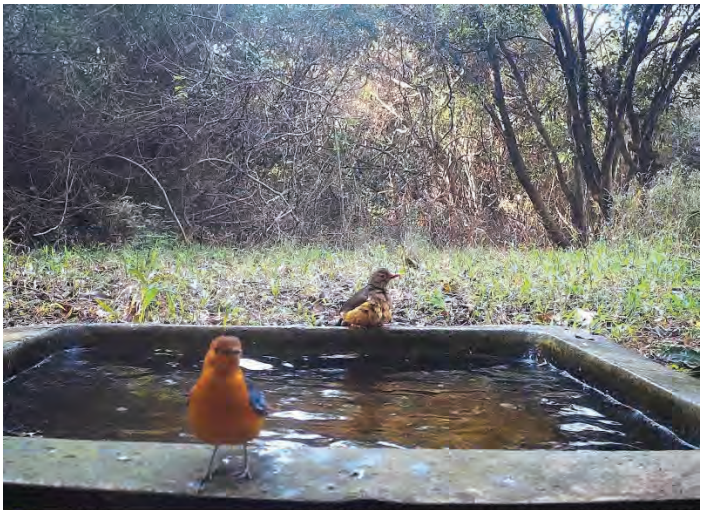

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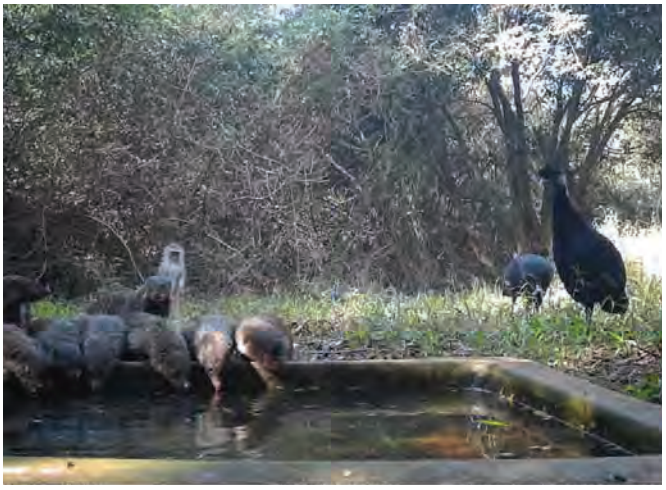

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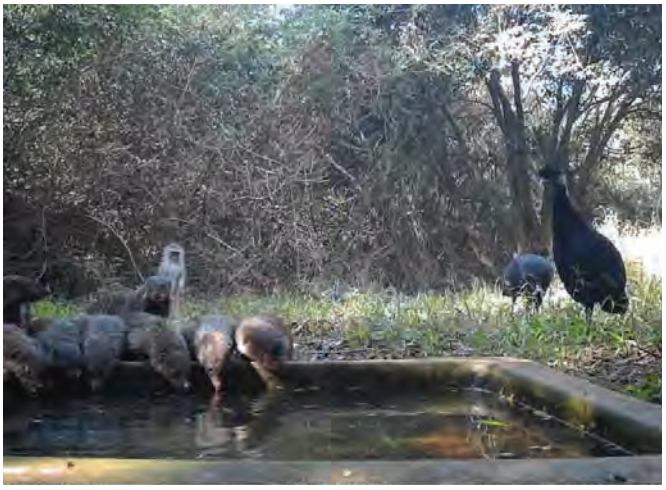

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September 2022

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Crested-guineafowl in the forest at night!

Blue duiker in the forest

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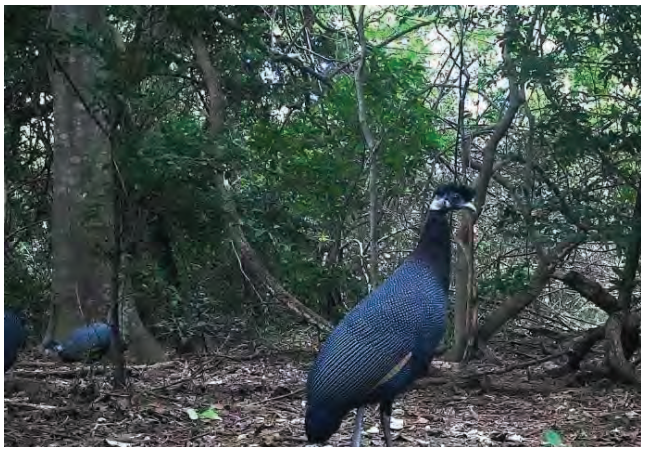
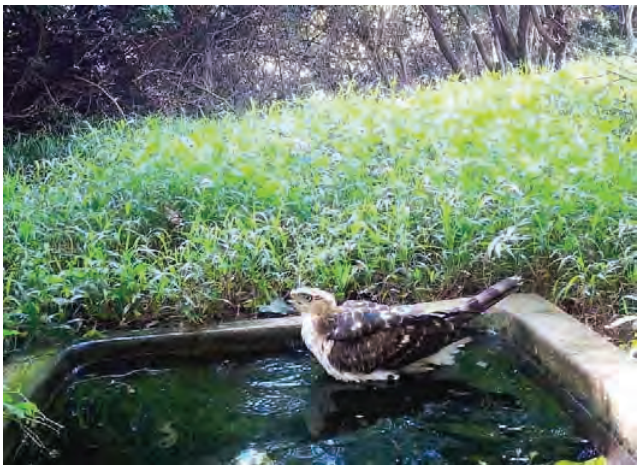


Crested Guinea fowl

Purple crested turaco



Crowned eagle (Juvenile)

Female bushbuck

Wood owl

Tambourine dove

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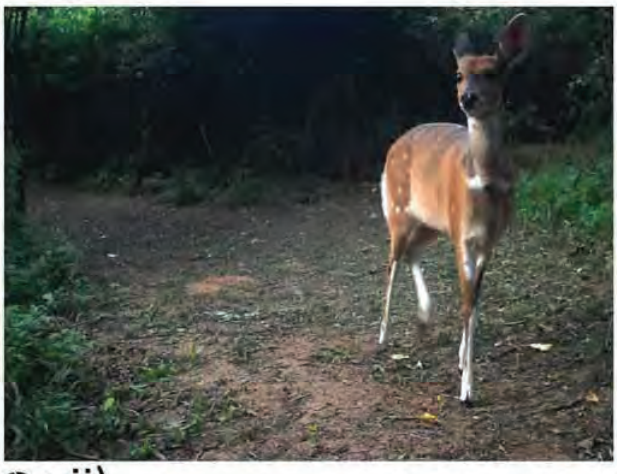

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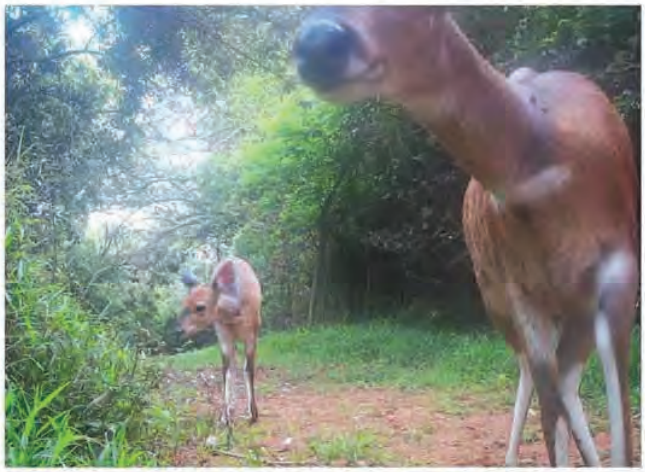

Camera trap images March 2022

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Blue Duiker

Black Sparrow-Hawk

Purple Turaco

Wood Owl

Banded Mongoose

Crested Guinea fowl

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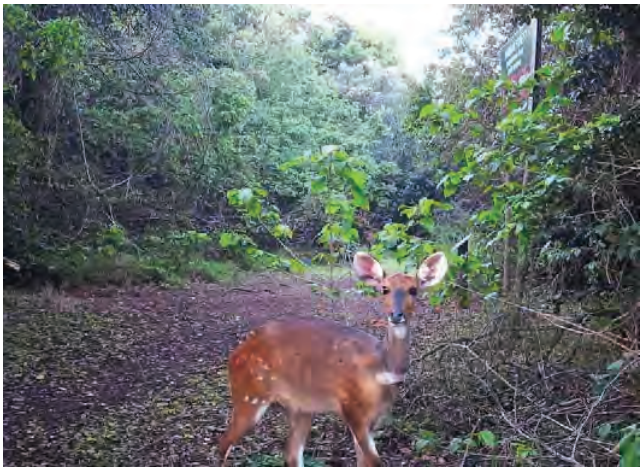

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Bush buck female)

Bush buck (male)

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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.

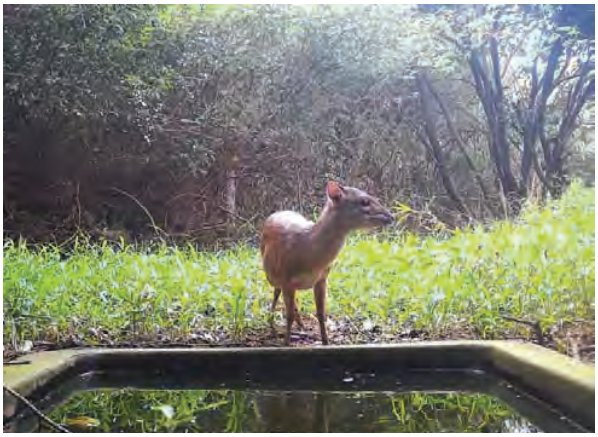
Fig2d. Some of the surrounding vegetation at the source point has collapsed but damage does not seem to be extensive. However, a full inspection has not been conducted.

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

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Bushbuck male at dawn.

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Blue duiker in the forest

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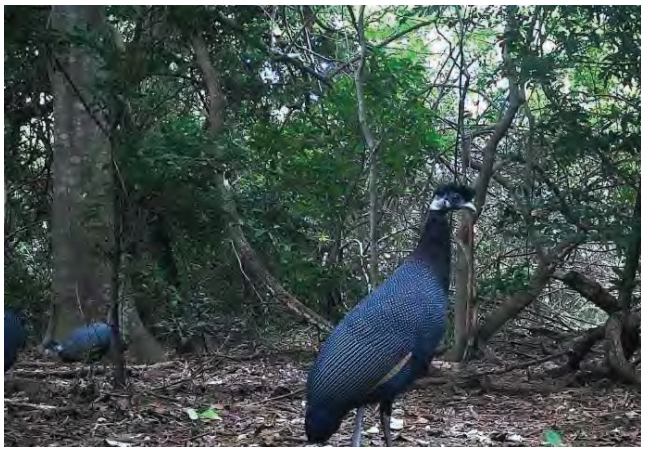

Crested Guinea fowl

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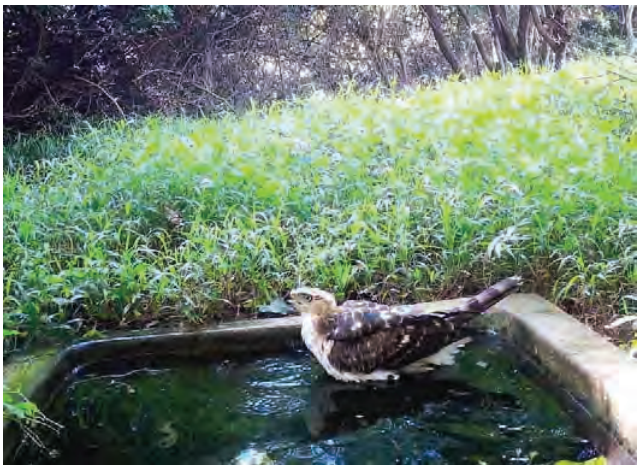

Crowned eagle (Juvenile)

Female bushbuck

Wood owl

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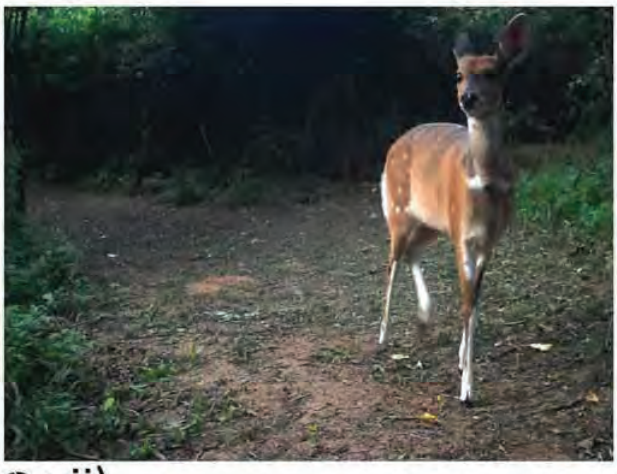

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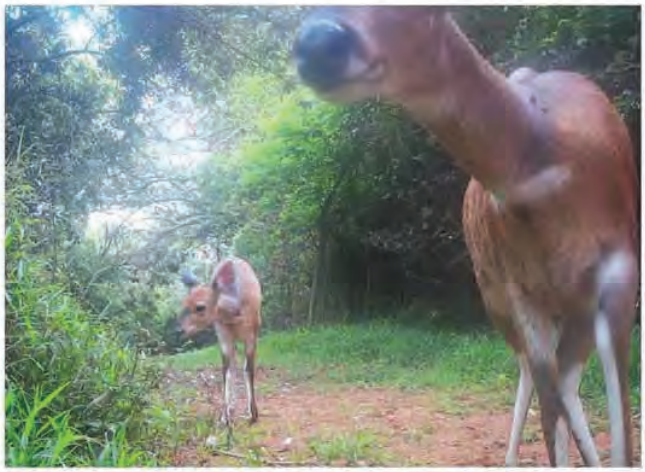

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Purple Turaco

Wood Owl

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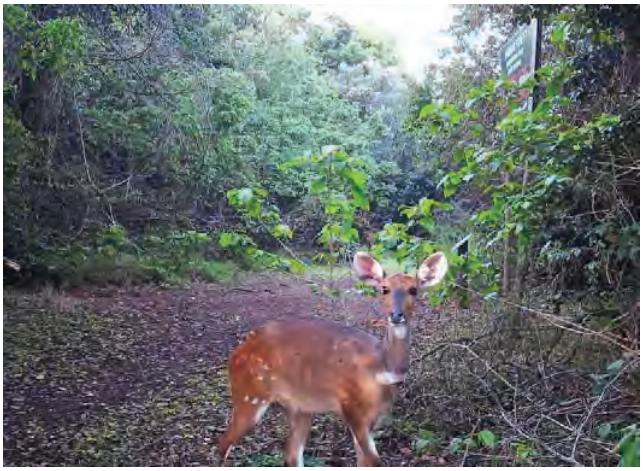
Given that we are still working out how best to deploy the camera traps in the nature reserve, some of the images received so far have been beautiful. Species noted below are as follows: Crested guinea fowl, spotted Genet, and female, male and juvenile bushbuck. Other forest antelope noted have been 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