



Hawaan Forest Conservation Trust Monthly site inspection report:

Summary:

24.04.2023

- i. The April site visit to the Hawaan Forest was conducted on the 24.04.2023. The forest is starting to enter its dry winter phase. March and April have been hot with little rain and some of the forest deciduous trees (such as the forest Croton) are starting drop leaves.
- ii. Some work is needed to define the pathway along along the Bushshrike trail. The HCT staff have been instructed to ensure that the painted rock markers are visible while they will also ensure, on a weekly basis, that the leaves on trail raked neatly to show the way to pathway users.
- iii. The electricity and water services have been connected to the Tilly shed area at the forest management zone but outstanding is the connection to the newly installed Geyser.
- iv. No maintenance of the vegetation on the pipeline was conducted April.
- v. April has been short working month but aside the day to items the HCT staff have been focused on clearing some bush encroachment species located on the eastern portion of the grassland.
- iv. No snares were found during the patrols conducted in March 2023.
- iiiv. Members of HCT participated in the annual iiNaturalist City Nature challenge at the end of April. In all, 35 observations were logged which contributes to the broader knowledge of flora and fauna in the forest. The link to the Hawaan iNat pages is as follows: https://www.inaturalist.org/observations?place_id=168133



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

(1)



The Life landscape area around the Tilley shed was by in large neatly maintained during the insecticide application, but please ensure that work stations in area does not encroach into conservation areas.

(2)



During April, the HCT staff have cleaned up the storeroom at the forest management zone. The shower has been installed but the electricity is yet to be connected.

(3)



HCT staff have cleaned up around the sewer culverts.

(4)



Water points have been checked and cleaned.

(5)



Mowing of the forest and grassland pathways have been temporarily halted to let the seed drop and the grass to cover a bit.

(6)



Pruning of woody encroaching species has been conducted on the eastern section of the forest during April.

(7)



The forest trail cameras were checked and the units were bought in for charging.

(8)



Some work has been done on the Bush Strike trail in terms of clearing away (neatly) some leaves in the pathway so that users can find their way easily to the observation deck.

(9)



Blood berry weeds have been weeded from in front of the observation deck.

(10)



The observation deck has been cleaned and swept weekly during April.

(11)



The Umhlanga river mouth is currently closed so the flood plain has filled up with water.

(12)



In Autumn, the forest is starting to enter its annual dry phase which (unless there is winter rain) will last until late September.

(13)



For example delicious trees such as this White stinkwood (*Celtis africa*) will start to drop leaves soon.

(14)



This invasive *Eugeana unifora* is to be dug out of the edge of the pipeline trail during April.

(15)



The geyser has now been installed but an electric connection to the mains at the Life tilley shed is needed.

(16)



During autumn, it's common to see many butterflies in the forest. This may be because a significant number of larvae (caterpillars) have completed their feeding phase, and there is ample nutritious food available during the late summer months. The *Nepheronia argia*, also known as the Large Vagrant, likely feeds on plants from the Celstralaciea, Rhizophoraceae, and Oleaceae families, which all occur in forest areas.

During the adult phase of its life cycle, the butterfly primarily sips nectar from flowers, breeds, and lays eggs for the next generation.

Operations: Tasks 2023

[illegible]

	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	-	-	-	-	-	-	-	-	-	-
	3.8	Check that trail cameras daily to ensure they are not stolen.	Daily	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, Trifid etc..in both the forest and grassland systems.	Weekly	x	x	x	x	-	-	-	-	-	-	-	-	-	-
		Checking for regrowth of IAPs monthly and set out new work areas each month.	Monthly	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	-	-	-	-	-	-	-	-	-	-
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. <i>Fire fighting =equipment one drip torch, 3 rubber beaters with handles, two Knapsack sprayers.</i>	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 fowl.



Red Duiker, male



Vervet Monkey, Banded Mongoose, and Guinea fowl.



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)

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 appears 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 fowl



Crested Guinea fowl



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

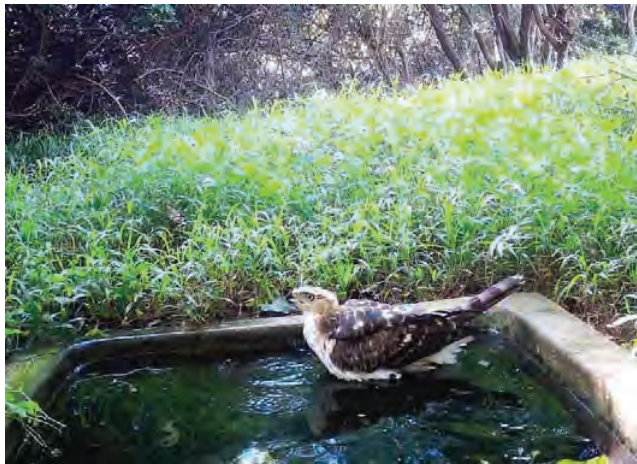
Camera trap observation Jan 2022. Due to the heat in January the most notable camera trap observations for Jan 2021 focused on the water trough at Bushshrike trail. An exciting observation was a juvenile crowned eagle having a drink and cooling off in the water.



Crested Guinea fowl



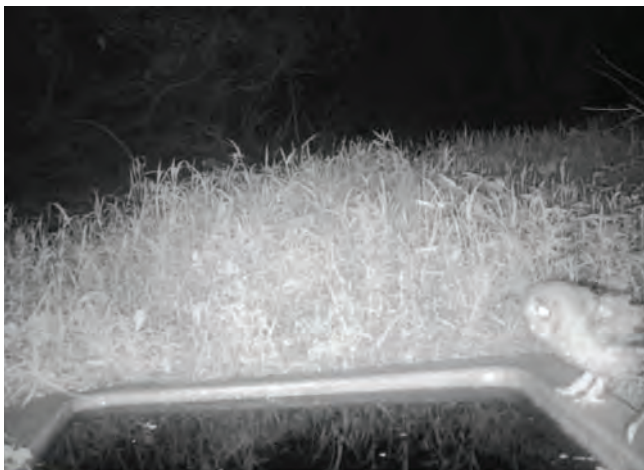
Purple crested turaco



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.



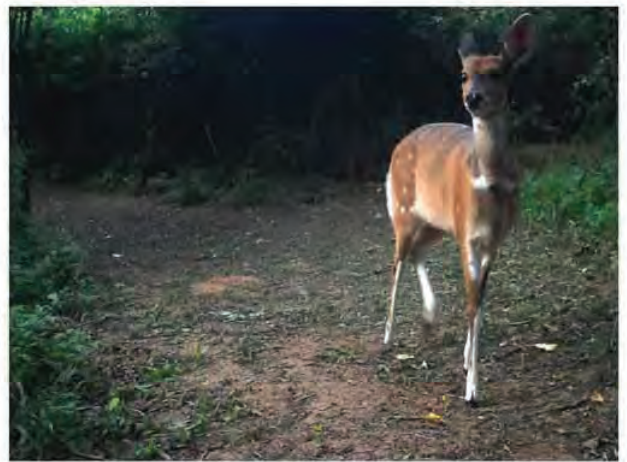
v)



i)



iii)



vii)

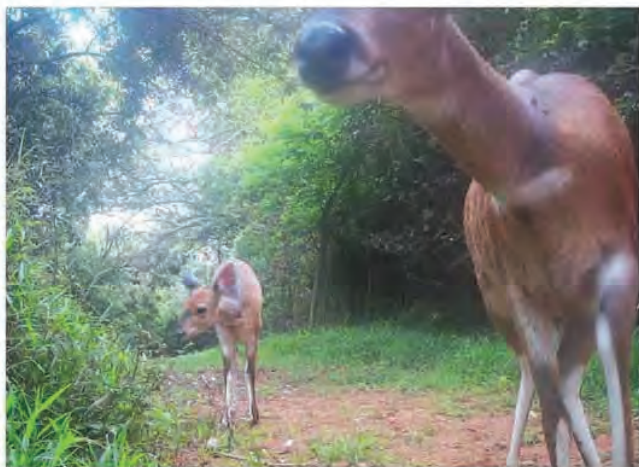


i)



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



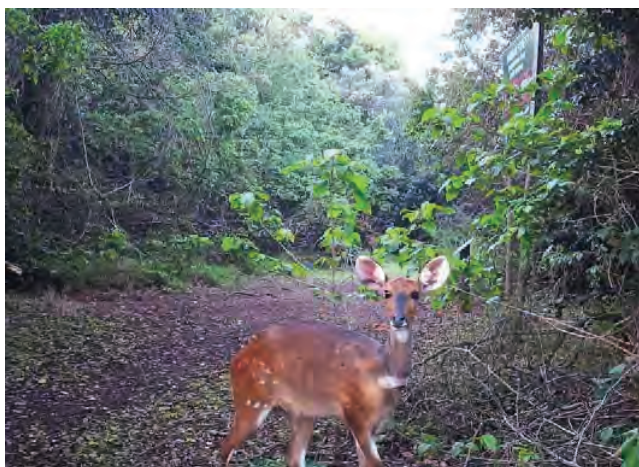
Banded Mongoose



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 conducted 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 (PSHB) 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

**HAWAIIAN ESTATE GRASSLAND
(ALIEN PLANT CONTROL)**

Scale: 1:1,000
Date: 11/2009
Drawn: 11/2009

Legend
 Parcels
 Study Area

DEVELOPMENT PLANNING
ENVIRONMENT & MANAGEMENT UNIT

BIODIVERSITY BRANCH
 Created by: Lucky murebe
 Tel Number: 081 311 7940
 Email address: murebe@hdm.bur.gov.za
 Peta C: ven lucky@26-01-2009 Richard

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MUNICIPALITY**

