Nature Society (Singapore)
Conservation Committee

Nature Society (NSS) 's Feedback on HDB's Environmental Baseline Study Report for Dover /Ulu Pandan

Summary: *This feedback proposes and argues for the whole of the* ***Dover/Ulu Pandan Forest to be designated a public-cum-nature park*** *based on the biodiversity data given in the HDB Baseline Study as well as NSS' cumulative information on the birdlife since 2007, which reveals also the presence of such nationally endangered species as the Buffy Fish Owl and Straw-headed Bulbul (also critically endangered globally) in the forest. A basic design plan is also proposed.*

A) Introduction

The Nature Society (NSS) has in the past engaged the HDB with respect to the conservation of the eastern sector of the Dover/Ulu Pandan Forest when a portion of that sector to the east of Ghim Moh Link was announced for development under the SERS scheme (NSS, 2007). After the development of that portion, the rest of the forest was left untouched for about at least a decade. The remaining forest has generally thrived, becoming more mature and mixed with native trees and shrubs gaining footholds in an area of largely 'abandoned land forest' comprising mainly of rubber trees and kampong vegetation gone wild. In correlation to this, the wildlife richness has increased

considerably, as can be seen in the NSS' birdlife records when in 2007 only 36 species (resident and migratory) were listed, compared with what we have now (with regular monitoring of course): 82 species, which is a vast difference (NSS, 2007; NSS, 2020). The conservation significance of the forest here has become very glaring given also the HDB results from its Baseline Study for the area (HDB, 2020).

B) HDB Baseline Study

The HDB baseline study/report for Dover/Ulu Pandan is impressive in terms of its coverage of the flora and fauna and the results obtained. The area is regarded largely as "Abandoned Land Forest". According to the report: " The flora baseline study recorded a total of 120 species from all survey efforts across the study area, of which 42.5% are native, 12.5% threatened, and 5% deemed threatened and of likely native provenance., In addition, 27 large trees of significance were identified. Dominant tree species are "*Falcataria moluccana, Aphanamixis polystachya (*Pitraj Tree*,* fruiting tree locally endangered) *Cinnnamon iners* and *Hevea brasiliensis*". A key finding was the discovery of the critically endangered *Ficus virens*, a mature tree…." The vegetation condition is deemed by the report to be mostly "Good (44.94%) with presence of all vegetation strata".

C) Biodiversity Importance of the Forest

The HDB Baseline Study also reveals an impressive richness in the birdlife together with some

species from other taxa of conservation concern such as Common Palm Civet *Paradoxurus hermaphroditus*, Green Crested Lizard *Bronchocela cristatellus*, Asian Softshell Turtle *Amyda cartilaginea,* Native Apple Snail *Pila scutata*, as well as a species of butterflies (Saturn *Zeuxidia amathystus*) and a couple of odonates. All these records together with the threatened plant species compel serious conservation attention.

Given the limited time frame for feedback, we will focus in more detail here on the birdlife recorded, taking also into account NSS' recorded list. This focus is pertinent to a general assessment of the ecological /biodiversity importance of any secondary forest as the birdlife more or less constitutes a higher trophic level of the food chain which will more or less indicates or has a correlation to the biodiversity at the lower levels --- as birds feed on honey, fruits and seeds, insects, reptiles, amphibians and mammals.

A total of 82 bird species is recorded in the Baseline Study, which is an impressive list for the secondary forest as the Dover/Ulu Pandan Forest. This coincides with NSS cumulative records since 2007 which also comes to a list of 82 species (NSS, 2020). Minus the overlapped species, 21 species in NSS' list are not in the HDB Baseline list (refer to the Appendix below; NSS cumulative list is available on request). The **combined total from both lists** thus **comes to 103 species,** which is simply astounding for a small secondary forest of 30-plus hectares.

Nationally & Globally Threatened Species: In the Baseline Study, 12 species are nationally near-threatened or threatened, with the following 6 species listed in the **Singapore Red Data Book** (**SRDB**, 2008):

1) Glossy Swiftlet (critically endangered)
2) Changeable Hawk Eagle (endangered)
3) Blue-crowned Hanging Parrot (endangered)
4) Violet Cuckoo (endangered)
5) Oriental Magpie Robin (endangered) &
6) Grey Heron (vulnerable)

Here we would mention 5 **SRDB** species in the NSS list that are not the HDB Baseline Report and these are:

1) Red-legged Crake (vulnerable)
2) Red Junglefowl (endangered)
3) Purple Heron (endangered).
4) Straw-headed Bulbul (endangered; critically endangered globally)
5) Buffy Fish Owl (critically endangered)

So we have, **given the combined list, a total of at least 11 species** in the **Singapore Red Data Book** (2008) --- and also, at least 2 species in the **IUCN Red List,** the Straw-headed Bulbul and the **Long-tailed Parakeet**.. Although the Long-tailed Parakeet is recorded and listed in the HDB Baseline Study as common in Singapore (which we are in agreement), we would like to emphasize that it is now regarded by the **IUCN Red List** update as vulnerable (2018) due to decreasing global population.

Forest/Woodland Dependent Species: Apart from highlighting the **SRDB** bird species in the above, that are nationally and globally threatened, it is very pertinent to emphasize also those species that are woodland/forest dependent ---- as the Dover/Ulu Pandan Forest is highly significant being a relatively large patch of woodland/forest habitat remaining among several others along the well-known suburban Sungei Ulu Pandan green corridor stretching from Ghim Moh Link downriver all the way to the last remaining mangrove fringing the Sungei Pandan contiguous to the Pandan Reservoir.

The HDB Baseline Study has identified 22 species --- both resident and migratory --- that are forest-dependent; NSS would like to add to this another 9 that are not in the HDB Baseline list, namely:

1) Red Junglefowl
2) Emerald Cuckoo
3) Blue-throated Bee-eater (listed in HDB list but we regard this as also forest/woodland –dependent)
4) Forest Wagtail
5) Ashy Drongo
6) Large Hawk Cuckoo
7) Chestnut-winged Cuckoo
8) Straw-headed Bulbul
9) Buffy Fish Owl

This will make a combined total of 31 forest/woodland dependent species, which comes to about 30 % ---- about a third --- of the combined total, which is of very high conservation significance.

D) Proposal for a Public-cum-Nature Park

Google Map 1

NSS position here is that the whole of the forest should be conserved as a public-cum-nature park, where human recreational uses and benefits are integrated with the conservation of the forest biodiversity and ecological assets.

Of prime consideration is the absence of a public park in this Dover/Ulu Pandan area now. This will serves as a recreational and green-lung area for the park-connector users, residents around the area as well as students in the schools and colleges around. Such a substantial park (about 33 hectares in total, with an estimated 10 hectares for a public park

section) set up in tandem with its natural assets is rather imperative for the well-being of all in this very dense and busy sector of Singapore, surrounded by schools and colleges, private housings and HDB flats as well the buzzing One-north Bio-tech Hub and Media complexes and offices.

E) Ecological Justification for the Public-cum-Nature Park

Google Map 2

Wildlife Connectivity in the Wider Regional Landscape: An important ecological feature of the park will be its role as a stepping stone for wildlife connectivity along the **well-known green corridor along the Sungei Ulu Pandan** and Sungei Pandan Canal all the way down to the mangrove area east of

Pandan Reservoir and also a connectivity northwards to Bukit Batok Nature Park and Bukit Timah Nature Reserve along the green belt of Commonwealth Avenue 6 and Toh Tuck Forest as well as through Maju Forest and Clementi Forest along the Rail Corridor.

The Forest also serves as an important stepping stone for connectivity between the forests of the Southern Ridges such as Kent Ridge Campus (a nature area in the Singapore Green Plan) and Kent Ridge Park through the greenery of the Singapore Polytechnic and Medway Park on one side, and on the other, Bukit Batok Nature Park and Bukit Timah Nature Reserve through Maju and Clementi Forest.

A probable and important bird species that most probably has benefitted or will benefit here will be the **Straw-headed Bulbul** (globally critically endangered) mentioned above, which is recorded (30 March 2020, comm.. HC Ho) at Dover Forest/Ulu Pandan and also at a forest patch further downriver, after Faber Heights and before the AYE (comm. from Wing Chong, member of NSS) ---- as well as at Maju and Clementi Forest (Ho *et al*, 2019). The specimens recorded here and at Faber Heights could be searching for a new home or foraging around coming most probably from Maju or Clementi Forest where the species is regularly heard or seen. Another good example will be the **Long-tailed Parakeet**, a forest-dependent species also recorded here, although common in Singapore, it is vulnerable globally (in the **IUCN Red List**) due to decreasing population. The species is probably venturing here from the forested

Nature Reserves along the way as far as the parks of the Southern Ridges to forage for food.

The presence of other nationally threatened species such as the **Buffy Fish Owl** (critically endangered), **Oriental Magpie Robin**, **Glossy Swiftlet/Plumed-toed Swiftlet** (*C. affinis*), **Changeable Hawk Eagle** and the **Violet Cucko**o at various parts of the forest shows that it is also an important foraging ground and/or nesting ground for them. A pair of the Changeable Hawk Eagle have been using the eastern part of the forest for its nesting site since 2007. The very recent illegal clearing and cultivation of a patch close to the site has caused it to be abandoned the nest recently (2020), but the pair is still hovering around the forest and may return when the illegal cultivation is stopped or may shift its nesting site to another part of it.

F) Non-Ecological Justification for a Public-cum-Nature Park

1) In 2008, there was a petition mounted by residents of the area to save a part of the forest/woodland that have developed into the Ghim Moh HDB estate beyond Ghim Moh Link. 1,330 signatures were collected and sent to the relevant authorities (Petition, 2008). Although this failed to save that part of the forest, the sentiment expressed by concerned residents at that time was that there should be an accessible green lung for residents to de-stress and enjoy a pleasant green surrounds.

2) We will not focus here on the eco-system services provided by conserving forests/woodlands as these are nowadays widely understood and appreciated by all people including our authorities though they are preoccupied with the economic bottomline. The conservation of this forest --- apart from reducing the 'heat-island effect' and providing other eco-system services --- will foster a pleasant scenic natural landscape for all people using the park-connector for their daily exercises, working and/or living in the neighbourhood.

Coming into the 21st Century, it is very clear that the need and demand for recreational greenery among the public has accelerated and there is thus an urgent need to expand the green areas for recreational purposes. This is clearly seen at the Central Catchment Nature Reserve's Tree-Top Trail, where during the week-end, the line of people from all walks of life --- young and old, grandpa and grandma, students, toddlers and babies in prams --- is like a continuous column of ants, trudging and sweating up and down along the trail (HC Ho's personal observation). There appear to be a gravitation of Singaporeans towards a more natural arena for such outdoor pursuit or recreation, where there is obviously a yen to get in close touch with nature for various sorts of experiential benefits.

And during this Covid-19 times, the flocking of people to Clementi Forest is simply astounding given that the forest is not even a public park (TODAY, 2020). Also, if one have taken a walk or hike along our various

park-connectors during the current Covid-19 situation, especially on the week-ends, the congestion of users is shocking (HC Ho's personal observation). It is indeed imperative that more public parks need to be created and natural greenery conserved to absorb this accelerating demand, otherwise whatever that are now existing such as our nature reserves and nature parks will inevitably be eroded and degraded by over-use.

G) NSS Proposed Basic Plan for the Public-cum-Nature Park

Refer to the **Google Map 1** attached

We are dividing the whole Dover/Ulu Pandan Forest (including both the eastern and the western sector and the open grassy mid-sector) into three (3) land-use designations/categories and these are:

1) Wildlife Core Areas and Corridor (in the red boundary)
2) Recreational Park Area (in the yellow boundary)
3) Community Garden & Facilities Area (in the blue boundary)

1) Wildlife Cores & Corridor Area

The wildlife core areas and corridor are marked out on the southern side of the forest facing Commonwealth Avenue West and the Singapore Polytechnic. The reasons for this delineation are as follows:

a) This southern stretch of the forest is generally denser than the northern stretch from Ghim Moh Link to Clementi Road.

b) Although it is flanked by a footpath along Commonwealth Avenue West, it is quieter on this side in terms of human activities and voices --- as the pedestrian walkway is not heavily used, compared to the Park Connector running along the Sungei Ulu Pandan at its northern flank.

c) The southern flank of the forest faces and is closest to the Singapore Polytechnic campus, where the existing greenery in small patches and belts of trees serves as intermediate stepping stones for wildlife dispersal or movement --- in particular for the birdlife --- to and/or from the forests at Kent Ridge Campus and Kent Ridge Park through Medway Park with its lush hedges further to the south.

The Core Areas: The eastern and western sector has each its own core areas as the two patches are separated by a large open, grassy portion in the middle, where the pedestrian path from the Dover MRT Station cuts across to Sungei Ulu Pandan. For terrestrial and arboreal wildlife, connectivity between the two sectors can be provided and/or enhanced by planting a belt of vegetation (a mix of shrubs and trees) to the front of MRT Station building.

The core area in **the western sector** has a denser forest and more mix of tree species. NSS has records of two nationally threatened species here: the **Buffy Fish Ow**l (critically endangered; comm. from J. Edgly) and the **Red-legged Crake** (vulnerable). It is also the haunt of resident forest species such as the **Grey-rumped Treeswift** (regarded as nationally near-threatened in HDB Baseline Study), Blue-throated Bee-eater, **Rufous-tailed Tailorbird** (uncommon), etc.

The core area in **the eastern sector**, where there is a large grove of mature Albizias, is the haunt of the Changeable Hawk Eagle for which we have records of two nesting sites on separate Albizia tree. As mentioned above, it has abandoned its current nesting site (mid-2020) due to an illegal cultivation near it but we believe it will probably nest in this core area again when the cultivation is stopped as soon as possible. It is also the haunt of the **Straw-headed Bulbul**, as mentioned above critically endangered globally, while the HDB Baseline Study shows the presence of the **Oriental Magpie Robin**, another nationally endangered species.

This core area covers **a freshwater stream** with ample buffer all the way to its outlet at Sungei Ulu Pandan. Such freshwater stream running through a forest is now an endangered wildlife habitat outside the existing nature reserves --- and is highly important as a habitat for nurturing freshwater aquatic life.

The extension of this core here to the Sungei Ulu Pandan canal is also to provide connectivity to the

belt of trees lining both sides of the river/canal all the way to the Commonwealth Avenue West bridge, where many forest/woodland species have been recorded foraging for food, in particular on the Banyan trees. The forest species recorded here includes: the **Straw-headed Bulbul**, Emerald Cuckoo (rare accidental visitor) as well as migratory species such as Large Hawk Cuckoo, Chestnut-winged Cuckoo, Ashy Minivet, etc.

To cater for the demand among Singaporeans for a venturesome experience within the forest, a trail can be created running from the one end of the forest to the other, but this must not run in the midst but close to the northern boundary of the forest corridor. Apart from creating this trail, the forest should be left as it is untouched --- including the Albizia trees.

2) Recreational Park Area

This zone can be made neater for human comfort and recreational uses like any public park. It can be manicured but existing mature trees or cluster of such should be preserved. Playgrounds and exercise plots can be introduced. Ponds can be created --- in particular at the marshy northern sector --- to enhance landscape /scenic beauty apart from promoting aquatic life.

3) Community Garden & Recreational Facilities Area

The middle open ground at the MRT Station can be used for a community garden. A cluster of low buildings (about 3-storey high at the most) with a shops, foodcourt and/or restaurants as well as other recreational facilities that are in harmony with the natural environment can be created. The roofs of this cluster of buildings should be planted with small trees and shrubs to reduced the gap in the connectivity for wildlife between the eastern and the western sector of the forest.

H) Proposed Option Areas for the new HDB Estate

Here we to propose that HDB housing plan for Dover/Ulu Pandan be located elsewhere in an area that is either a brownfield site or in a more cleared/open area rather than in an existing secondary forest that has become very rich in wildlife. Possible options are:

1) the open patch at the junction of Ghim Moh Road and Commonwealth Avenue West (about 6 hectares), or /and;

2) the already degazetted Warren Golf Course to the east of Medway Park (about 6 hectares), or;

3) the open patch at the junction of Dover Road and North Buona Vista Road, opposite INSEAD (about 14.5 hectares).

Patch 3 is an open field and is about the same size as that Dover Forest's eastern sector, where the recent HDB project is projected to be sited. It is the most suitable as an option given it's size.

Also, there should be now a more serious exploration of sites for revamp of development usage. The following are possible options to explore in the immediate/medium future:

1) More degazetting of golf courses;

2) Revamp of old industrial sites (like Kadut & Senoko);

3) Revamp of roads and carparks and transport hubs for housing (and even for agriculture) for a carlite Singapore (like what has been planned for Paya Lebar Airbase & Tanjong Pagar/Pasir Panjang Port).

Dated: January 2020

Appendix: Bird Species not in HDB Baseline Study List but in NSS Updated List (2020)

Abbreviations
Abundance /Status
RB =Resident Breeder
R (B) = Resident, breeding not proven
WV= Winter Visitot

PM= Passage Migrant
ACC=Accidental Visitor
I = Introduced
A= Abundant
C=Common
U= Uncommon
R= Rare
In Bold = Listed in **The Singapore Red Data Book (2008)**
= Endangered
= Vulnerable
* = Listed in **IUCN Red List** as Critically Endangered

1) **Red Junglefowl *Gallus gallus* ##**	**U/RB**
2) Chinese Pond Heron *Ardeola bacchus*	C/WV
3) **Purple Heron *Ardea purpurea* ##**	**U/RB**
4) Eastern Cattle Egret *Bubulcus coromandus*	C/IR (B) WV
5) Asian Emerald Cuckoo *Chrysococcyx maculate*	R/ACC
6) Large Hawk-Cuckoo *Hierococcyx sparverioid*	R/WV & PM
7) Chestnut-winged Cuckoo *Clamator coromandus*	U/WV & PM
8) **Buffy Fish Owl *Ketupa ketupu* ###**	**U/RB**
9) Common Kingfisher *Alcedo atthis*	C/WV
10) Peregrine Falcon *Falco peregrinus*	U/WV
11) Tanimbar Corella *Cacatua goffiniana*	C/IRB
12) Ashy Drongo *Dicrurus leucophaeus*	R/WV
13) **Red-legged Crake *Rallina fasciata* #**	**U/RB & WV**
14) Japanese Sparrowhawk *Accipiter gularis*	C/WV & PM
15) Common Sandpiper *Actitis hypoleucos*	C/WV & PM
16) Yellow-bellied Prinia *Prinia flaviventris*	C/RB
17) Hwamei *Garrulax canorus*	U/IRB
18**) Straw-headed Bulbul *Pycnonotus zeylanicus* ## *** **	**U/RB**
19) Forest Wagtail *Dendronanthus indicus*	U/WV & PM
20) White Wagtail *Motacilla alba*	U/WV
21) Paddyfield Pipit *Anthus rufulus*	C/RB

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