

Biodiversity Assessment and Recommendations for a Revised Management Plan of Kota Damansara Forest Reserve

**Lim Teck Wyn
Resource Stewardship Consultants Sdn Bhd (RESCU)**

for

**Damansara Residency Residents' Association
UNDP-GEF SGP Kota Damansara Community Forest Project**

31 December 2010

CONTENTS

EXECUTIVE SUMMARY & RECOMMENDATIONS	2
PURPOSE.....	3
BACKGROUND	3
Overview	3
Sungei Buloh Forest Reserve.....	3
Sungai Buloh Botanic Garden Reserve.....	5
Cemetery	6
Kota Damansara Forest Reserve	7
BIODIVERSITY ASSESSMENT	8
Habitat.....	8
Plant Species.....	9
Animal Species.....	11
MANAGEMENT RECOMMENDATIONS	14
Principles	14
Plant Species.....	14
Animal Species.....	17
CONCLUSION.....	17
References	18
Annex 1. Historical Records of Species from Sungei Buloh Forest Reserve	19
Annex 2. Conservation of <i>Begonia aequilateralis</i>	34
Annex 3. Conservation of the aquatic plant <i>Cryptocoryne minima</i> in Kota Damansara Forest Reserve	35

EXECUTIVE SUMMARY & RECOMMENDATIONS

The following recommendations are based on the findings of the Biodiversity Assessment carried out in 2009-2010 under the UNDP-GEF SGP Project for Kota Damansara Forest Reserve (KDFR), Selangor.

- A (revised) Forest Management Plan (FMP) should be prepared and presented to the Forest Management Committee for approval.
- The FMP should consider the connectivity of the forest with other neighboring forests (e.g. the possibility of wildlife corridors to Bukit Lanjan should be considered)
- The FMP should consider the potential for further research to be carried out in the forest (in particular with regard to the aquatic ecosystem and the role of fruit trees and nest trees).
- The FMP should consider the zonation of permanent sample plots for long-term monitoring and research.
- The FMP should zone areas of the forest for research, recreation and education. These zones do not need to be exclusive however zones for public access (“Open Forest”) should be carefully planned and controlled so as to prevent encroachment or degradation of the forest.
- The recreational zone should centre on the area to the southwest of the forest which has already been used for the establishment of trails (with the addition of a future trail to the Forestry Training Centre in the north)
- The FMP should consider the carrying capacity and limits of acceptable change of the forest in terms of the number of visitors per year for each of the trails (this issue should be considered together with the question of enforcement)
- The state government should consider gazetting the entire freshwater swamp area in the north of the forest as part of the forest reserve (presently part of it is being considered for future expansion of a cemetery)
- The local authority should ensure that the existing cemetery is managed in line with the area’s status as a botanic garden reserve (e.g. trees should be planted between graves)
- The banks of Sungai Tambul (to the south of the reserve) should be planted with forest trees and maintained as a riparian reserve (the area should be gazetted as a river reserve)
- Connectivity between the Kampung Cubitt Forestry Training Centre (the remnant Sungai Buloh Forest Reserve) and the Kota Damansara Forest Reserve should be enhanced (both in terms of forest cover and visitor access): trails should be connected and a bridge over Sungai Hampar built.
- The recreation areas to the south (including the biking trails) should be gazetted as “Open Forest”; the remaining untouched areas should be zoned for total protection.

PURPOSE

This paper presents a compilation of the findings of the Biodiversity Assessment carried out in 2009-2010 under the UNDP-GEF SGP Project for Kota Damansara Forest Reserve (KDFR), Selangor. The paper also presents recommendations for a revised management plan for KDFR based on the results of the Biodiversity Assessment.

BACKGROUND

Overview

The Sungai Buloh valley lies about 10 km west of Kuala Lumpur in the State of Selangor. The area was originally covered with lowland mixed dipterocarp forest inhabited by the Temuan group of Orang Asli. The Sungai Buloh valley is fringed to the south by a small range of hills including Bukit Permatang Resam (222 m asl), Bukit Lanjan (333 m) and Bukit Kiara (264 m). These hills form the divide between the Sungai Buloh and Sungai Klang river basins.

Sungei Buloh Forest Reserve

In 1898 a total of 6,590 ha (hectares) of Meranti-Keruing forest surrounding Bukit Permatang Resam were gazetted as the Sungei Buloh Forest Reserve. This gazette notification (GN 9-98) was made under Article 6 of the Selangor Land Enactment 1897 and special rights/privileges were granted/conceded to the Orang Asli. In 1956, an addition of 184.062 ha was made to the reserve under the Selangor Forest Enactment (GN 405-56).

Over the years there have been numerous amendments to the boundary of the forest reserve (GN 334-09; GN 2097-34; GN 4588-35; GN 575-53; GN 651-55; GN 579-56; GN 580-56; GN 645-56; GN 371-61; GN 238-65; GN 329-89). In addition, a 33' (10 m) wide pipeline reserve was created to allow for the construction of a pipeline from the Subang Dam through the forest reserve. Following a final excision of 402.6 ha on 21 December 1993, only about 30 ha of the reserve remained. In 2010 about 320 ha was regazetted as Kota Damansara Forest Reserve (KDFR).

For management purposes the original forest reserve had been divided into more than 30 compartments. Fragments of six of these compartments (Compartment 10-15) remain under KDFR (**Fig. 1**). Compartment 10 is north of Sg Hampar; Compartment 11 is north of Sg Kemit and follows the divide between the Hampar and Kemit sub-catchments; Compartment 11 includes most of the Kemit sub-catchment; all these areas are in the Sg Buloh river basin. Compartment 13 includes part of the Simpai sub-catchment; Compartment 14 includes most of the Tambul sub-catchment; Compartment 15 includes part of

the Rumput sub catchment; all these areas are in the Sg Damansara catchment of the Sg Klang river basin. The compartments could be named as follows: Compartment 11: Hampar, Compartment 12: Kembit, Compartment 13: Simpai, Compartment 14: Tambul and Compartment 15: Rumput.

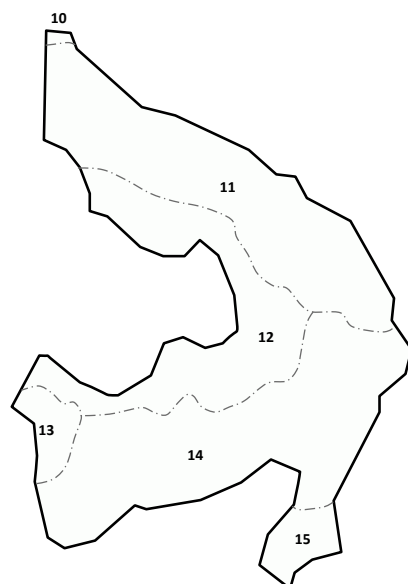


Fig. 1. Compartments of the former Sungei Buloh Forest Reserve inside the boundary of the Kota Damansara Forest Reserve.

Systematic logging is recorded as first taking place in 1931 and the whole forest appears to have been logged at least once. The silvicultural history for the remaining compartments is listed in **Table 1**, below.

Table 1. History of Silvicultural Operations in Kota Damansara Forest Reserve

<u>Years</u>	<u>Operations</u>
1931	Felling under the Malayan Uniform System (Compartment 13, 14)
1933	Selective felling (Compartment 12)
1933-1938	Felling under the Malayan Uniform System (Compartment 13, 15)
1935-1940	Felling under the Malayan Uniform System (Compartment 11, 12)
1936	Regeneration improvement felling (115 ha in Compt. 13, 14)
1936-1937	Pole felling & salvage felling for firewood (Compartment 15)
1939-1940	Felling under the Malayan Uniform System (Compartment 15)
1940	Thinning (214 ha in Compartment 11, 74 ha in Compartment 13)
1941-1947	Selective felling (221 ha in Compartment 14, 15)
1942-1943	Pole felling (Compartment 12)
1947	Selective felling (Compartment 15)
1949	Poison girdling and climber cutting (220 ha in Compartment 12)
1950-1953	Selective felling (Compartment 11, 12, 13)
1955	Poison girdling and climber cutting (8 ha in Compt. 11, 12, 14)
1957-1959	Pole felling (Compartment 14); Linear half-chain sampling (78.6% of Compartment 12, 13)
1965	Pole felling (Compartment 11)
1966-1968	Pole felling (Compartment 12, 13, 15)
1967	Planting Jelutong (29 ha in Compartment 15)

1971-1972	Selective felling (128 ha in Compartment 15)
1972	Planting Jelutong (30 ha in Compartment 15)
1973	Thinning (34 ha in Compartment 15)
1988	Felling under the Malayan Uniform System (Compt. 11, 12,13, 15)

In 1954, the Forestry Department established a training centre in Compartment 10 of Sungai Buloh Forest Reserve. This centre was named “Kampong Cubbitt Forest Village” after Mr. GES Cubitt, who directed forestry in Malaya from 1915 to 1929.

Kampong Cubbitt included a forest nursery and a series of experimental treatment plots (plots had been first set up in Sungei Buloh Forest Reserve before 1930). An area of approximately 30 ha around Kampong Cubbitt remains as the base of the Selangor State Forestry Department’s Training Unit. The rest of Sungei Buloh Forest Reserve was excised during the development of the Kota Damansara township.

Fig. The Kota Damansara Forest Reserve (Yellow Boundary) was set aside for conservation as part of the EIA requirements for the Sungei Buloh Forest Reserve Development (SBFRD) Project (1991).

Sungai Buloh Botanic Garden Reserve

On 21 December 1993 an area of 402.6 ha were excised from the forest reserve and on 3 February 1994 this excised area was re-constituted as the Sungai Buloh Botanic Garden Reserve (“Taman Botani”) under Section 62 (1) of the National Land Code 1965 (G.N. 77-1994). The Taman Botani, under the control of the State Secretary comprised three reserved parcels,

- A. PT 27006/27008 (52.0 ha),
- B. PT 27007 (3.7 ha) and
- C. PT 27009 (346.9 ha).

These parcels were displayed on the gazette plan PW 891 (see **Fig. 2**).

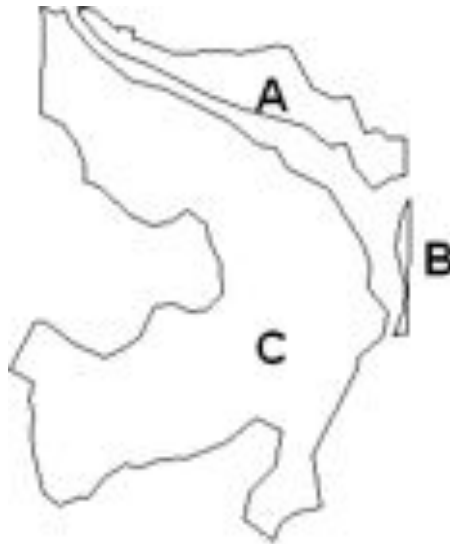


Fig. 2. The Sungai Buloh Botanic Garden Reserve (adapted from PW 891)

On 17 June 2004, notice of the intention to excise 58.83 ha from “Lot PT 27008” (taken to refer to parcels A&B) of the Taman Botani was published (GN 886-2004). It was reported that no objections to this proposal were lodged with the State Secretary and on 6 August 2004 the actual excision was gazetted (GN 1619-2004).

Cemetery

On 20 May 2002 newspapers reported that the State Government had abandoned the plan to establish a botanic garden in Sungai Buloh and planned to revoke the Taman Botani reserve to turn the area into a cemetery and residential development. In order to oppose the development and conserve the forest, the Malaysian Nature Society (MNS) worked with local residents’ associations to form the Friends of Kota Damansara (FoKD) grouping with the intent to manage the Taman Botani as the “Kota Damansara Community Forest Park”.

On 13 December 2006, the Selangor Executive Council (MMKN 30/2006) approved in principle the establishment of a cemetery on 50 acres (20.2 ha) inside parcel C of the Taman Botani (in in Kota Damansara Section 9 Addition, opposite Taman Rimba Riang, Section 8). The State Secretary gave control over the cemetery to MBPJ who contracted PKNS Infra Berhad to establish the cemetery (including a surau). On 17 March 2007 a groundbreaking ceremony was held and tree felling and earthworks commenced.

In October 2008, Resource Stewardship Consultants Sdn Bhd (RESCU) carried out a ground survey of the area for FoKD and determined that the entire 20.2 ha allocated for the cemetery had been logged in the middle of 2007. About 15 ha had since been stripped clear for a large access road, plots of graves and a surau. The remaining 5 ha had been logged, with all large trees removed, but had

already started to regenerate with a dense undergrowth of vegetation established.

Kota Damansara Forest Reserve

On 18 February 2010, the Selangor Government gazetted 321.748 ha (most of parcel C, excluding the cemetery area) as Kota Damansara Forest Reserve (GN 398-10) and classified it as amenity forest, education forest and research forest (GN 402-10). The present project is centred on this area which is referred to as 'KDFR' below.

The general topography of KDFR is shown in **Fig. 3**.

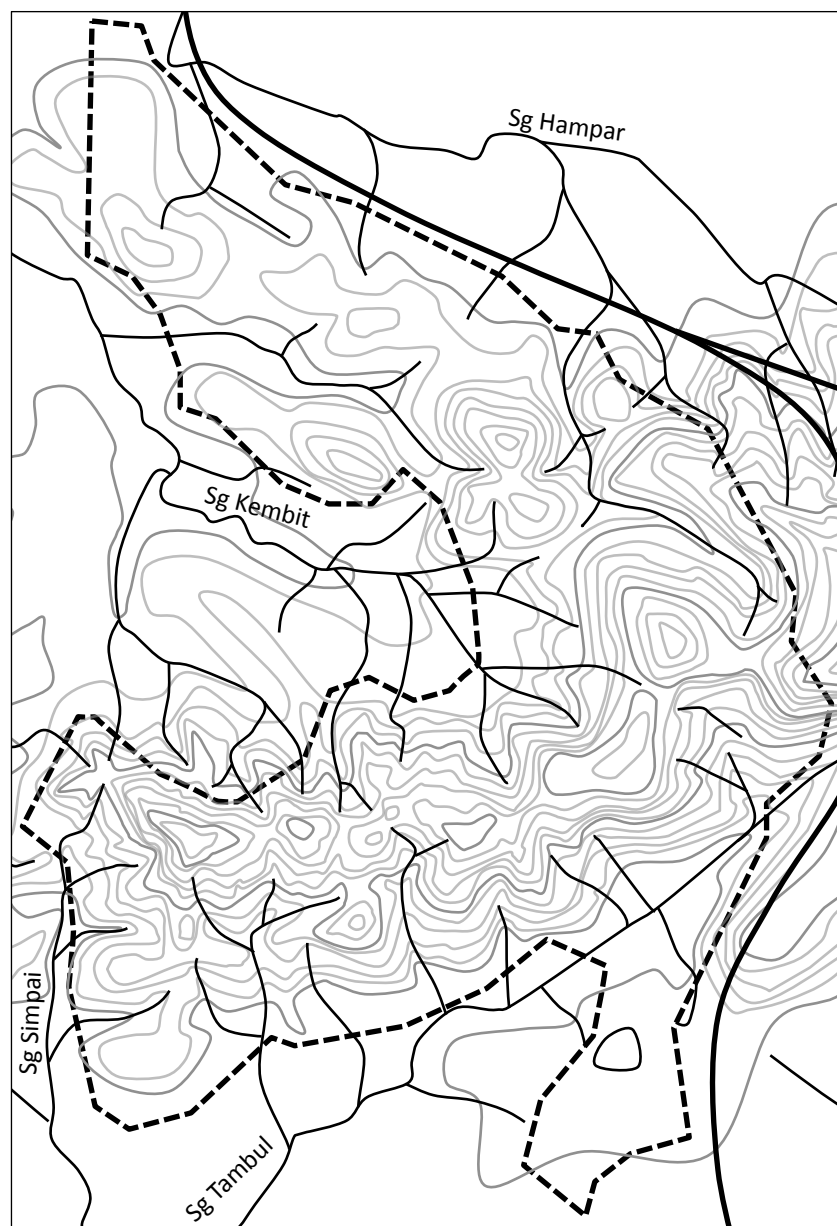


Fig. 3. General Topography of Kota Damansara Forest Reserve

BIODIVERSITY ASSESSMENT

Habitat

There are five main terrain units in KDFR, based on the underlying geology of the forest (**Fig 4**).

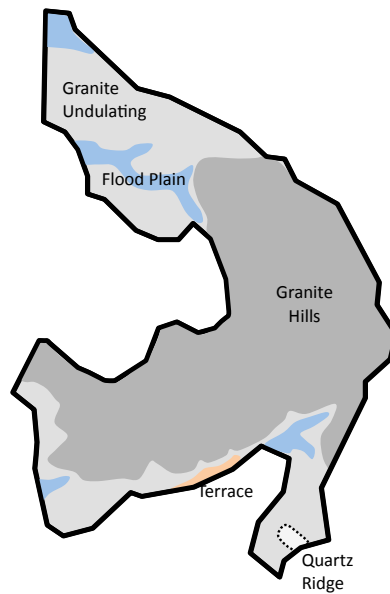


Fig. 4. Geological terrain units in Kota Damansara Forest Reserve (adapted from 1991 EIA).

Lim (1991) used Landsat TM data from February 1991 (Fig.) and identified four basic categories of habitat in KDFR which he termed H1, H2, H3 and H4 (**Fig. 5**).



Fig. 5. Classification of different eco-type habitats (H1-H4) in Kota Damansara Forest Reserve (adapted from Lim (1991))

H1 – moderately disturbed forest: tall primary tree species with intact crowns, small patches of closed canopy, rich ground vegetation where canopy has broken;

H2 – heavily disturbed forest: sparse relict trees, thick regeneration of secondary tree species;

H3 – secondary vegetation: practically no tall trees standing, advanced belukar;

H4 – cleared areas: abandoned agriculture, lallang, quarry.

In 2005, an assessment of the forest found that 38% of the area was shrubland and 62% was secondary forest, mostly secondary species such as *Macaranga gigantea* and *Alstonia scholaris* but there were some primary species such as *Shorea platyclados* and *Instia palembanica* (Salleh 2006). In 2008, the RESCU survey noted that a number of other areas in KDFR had been cleared. All these areas are displayed on **Fig. 6.**

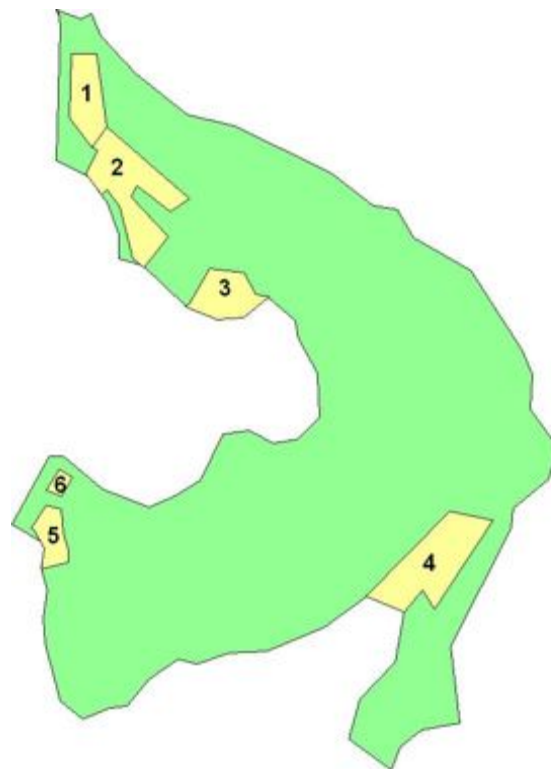


Fig. 6. Encroachment into Kota Damansara Forest Reserve.

1. Area logged for the cemetery but not yet cleared (5 ha);
2. Area cleared for the cemetery and surau (15 ha);
3. An abandoned plot 250 m south-east of the cemetery (4.2 ha);
4. Abandoned sand mine behind D'Limba Apartments (14 ha);
5. A heavily degraded area to the north of SMK Seksyen 10 (3.5 ha); and
6. A cemented-over area to the south of Section 9 (1.2 ha).

Plant Species

The EIA for the Kota Damansara development (Aziz 1991) inventoried 84 tree species along line transects across KDFR but found that “none of these species appear are endemic or endangered as they are quite common in areas of similar nature elsewhere in the country”. Salleh (2005) carried out an inventory in two 1-ha plots in the north and south of KDFR and found a total of 258 plant species in KDFR (including 53 medicinal species) but also found that “no rare or endangered species for this type of forest was found”. A booklet produced by MNS (Jutta 2006) identified an additional 20 plant species but none of the species were noted to be particularly rare or threatened.

Since these earlier studies, it has been reported that the rare water plant, *Cryptocoryne minima* (**Fig. 7**) and the endemic flower, *Begonia aequilateralis* (**Fig. 8**), were present in KDFR. The first record of these species in the area was first published in 2007 when the mainstream media noted that the Kota Damansara forest was being cleared for the cemetery (Chiew 2007). The existing management plan (Salleh 2006) had not taken the two rare plant species into account. Therefore, specific assessments of these species were carried out (see **Annex 2** and **Annex 3**).



Fig. 7. The “water trumpet”, *Cryptocoryne minima* is found only in freshwater swamp forests such as that in the north of Kota Damansara Forest Reserve. (Credit: H. Bernard 2007)



Fig. 8. The stream-side flower, *Begonia aequilateralis*, has only been found in the Sungai Buloh area. (Credit: Y.M. Chan, 2008)

Animal Species

The EIA for the Kota Damansara development (Lim 1991) involved 10 days of intensive field surveying and trapping together with reference to scientific literature on the area from 1960-1990. This study recorded a total of 357 vertebrate species in the Sungei Buloh Forest Reserve Development area. Of the total, 68 were mammals, 232 were birds and 57 were herpetofauna (44 reptiles and 13 amphibia). A particularly high number of animals were found in what is now the KDFR ("Zone A" in **Fig. 9**) where 315 species were recorded. Zone B had 194 species and Zone C had 72 species.

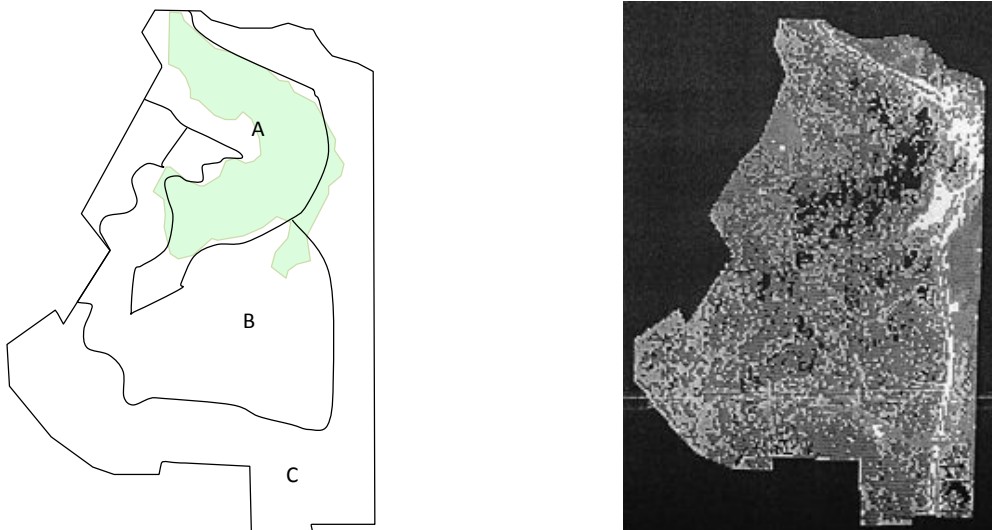


Fig. 9. *Left:* Zones used by Lim (1991) with over-lay of KDFR (shaded)
Right: Landsat TM image (National Remote Sensing Centre, Feb. 1991)

In 2003, additional surveys on the bird life of the KDFR were carried out by MNS and an additional checklist of the birds of the area was compiled¹ (Sebastian 2003). However this list appears to be out of dates since it includes such as the Great Argus *Argusianus argus* (**Fig. 10**) which does not appear to have been observed in the area since the clearance of the forest for the Kota Damansara township. The last record appears to have been made on 14 January 1990 when at least four individuals were heard calling in the vicinity of Sungai Buloh Forest Reserve (Chong 1990).



Fig. 10. The Great Argus pheasant was once found in Sungai Buloh Forest Reserve but is now believed to have been extirpated from the area.

More recently, a Masked Finfoot *Heliopais personatus* (**Fig. 11**), an endangered water bird, has been recorded from the KDFR. The sighting (Sebastian et al. 2004) was of a solitary female on the edge of the water, midway along the Salleh trail of the main pond area.

¹ This compilation does not make reference to a list that appears to have been produced by the Department of Wildlife and National Parks, Peninsular Malaysia (“Perhilitan 1998”) which lists some bird species that are not included here.



Fig. 11. A Masked Finfoot *Heliopais personatus* has been sighted in Kota Damansara Forest Reserve. (Image: T.P. Ong 2005).

The existing management plan notes that “there is still a relatively high number of wildlife present in the area especially birds” (Salleh 2006). In addition to birds, a survey carried out by Salleh (2005) used two line transects with 15 small mammal cage traps, 3 mist nets and 1 harp trap and local community interviews. This survey found only 15 species of non-avian vertebrates in KDFR. Of these 10 were mammals and five were herpetofauna (three reptiles and two amphibians). Jutta (2006) recorded the following species of vertebrate and invertebrate animals that had not been noted in the two previous studies: *Alcedo meninting*, *Oecophylla smaragdina*, *Pelargopsis capensis*, and *Vindula dejone*.

In order to confirm the continued presence of wildlife in KDFR a camera-trapping exercise was carried out (**Annex 4**). This study found that mammals such as deer, pigs and monkeys continue to inhabit the area. However, the study also noted that hunting and trapping was not under control.

MANAGEMENT RECOMMENDATIONS

Principles

Where relevant, the principles and provisions of the existing management plan (Salleh 2006) should be followed. The existing management plan refers to the following broad objectives: “sustainability, ecosystem management, increased forest productivity, environmentally friendly, conservation, R&D, recreation and education”. The plan also notes the following general principle:

“Conservation of biodiversity is recognised as an important factor in the management of the area. This will be translated into identification of areas for soil, water and biodiversity conservation, ensuring that all existing regulations on conservation are observed and [there will be] continuous monitoring of the impact of management activities on biodiversity.”

The in line with these principles, the plan gives three specific objectives: (1) no alienation or logging; (2) gazette as a community forest park; (3) rehabilitate the forest. In line with these objective, the plan includes the aim to “provide a guideline on various conservation issues such a natural forest conversion, environmental conservation and biodiversity conservation”. The plan has a section on forest vegetation (s 2.2.4), on faunal diversity (s 2.2.5), on conservation activities (s 4.2.5).

The existing management plan recommends the following research priorities: a. detailed flora survey; b. detailed fauna & habitat survey; c. assessment of the impace of current development activities on the ecosystem of the area; d. set up database of wildlife present, in particular keystone species.

Plant Species

Special attention should be made to avoid negative impacts on the rare plant species. *Begonia aequilateralis* grows on the banks of clean freshwater streams under intact primary-forest canopy. *Cryptocoryne minima* grows in low-lying freshwater swamps. The locations of the optimal habitats for these species in KDFR are indicated on **Fig 12**.

No clearance of forest or felling of trees should be permitted inside KDFR. However, in certain instances, the limited clearance of undergrowth for the construction of amenity trails (**Fig. 13 & 14**) should be allowed. The construction of new trails should follow best-practice guidelines (such as those developed by the International Mountain Bicycling Association) and be guided by experts from groups such as the Trail Association of Kuala Lumpur and Selangor (TRAKS). Furthermore, ecologists from FRIM or MNS should be

consulted prior to finalising the alignment of new trails to ensure that patches of rare plants are avoided. Special efforts should be taken to avoid soil erosion - particularly upstream of populations of begonias or crypts.

The re-introduction of rare species such as begonias or crypts should be considered at appropriate locations near educational spots such as the in-situ indigenous medicinal plants garden and along the Salleh Trail.

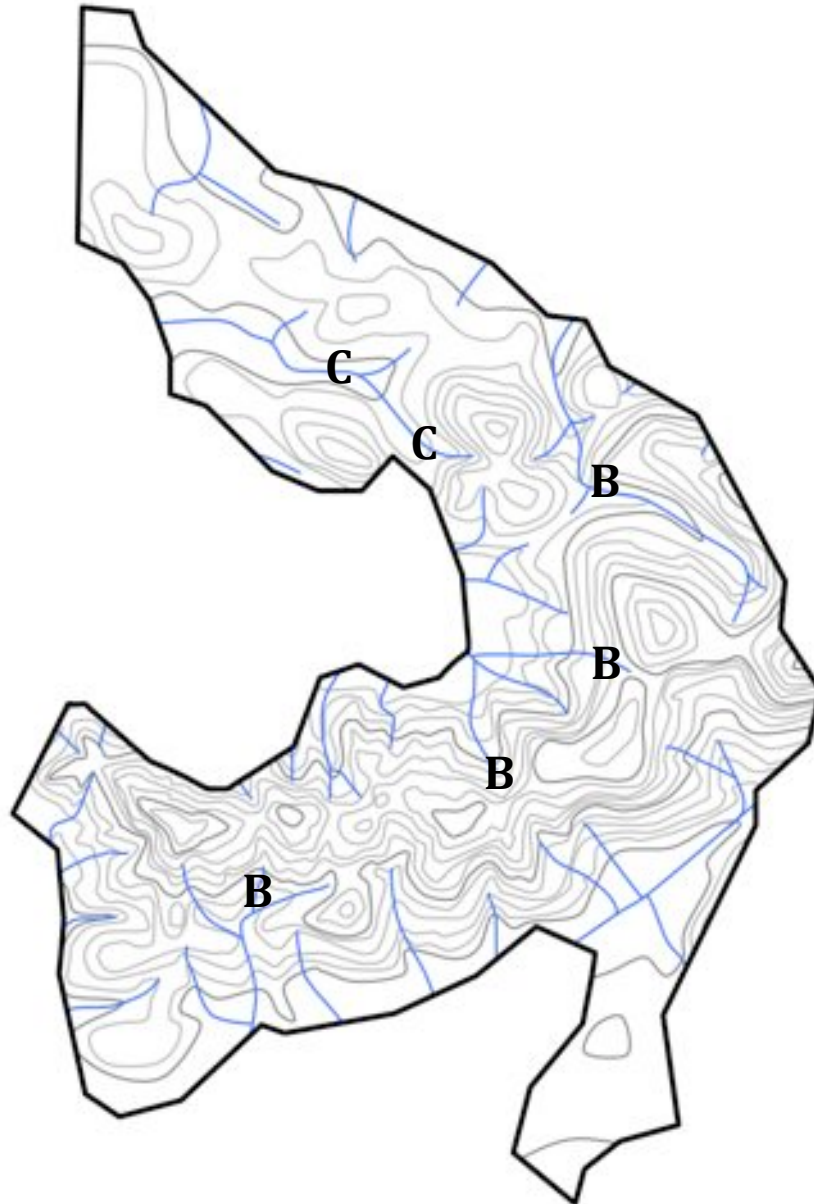


Fig. 12. Key localities for conservation of *Begonia aequilateralis* (B) and *Cryptocoryne minima* (C) in Kota Damansara Forest Reserve.

Restoration of degraded areas (**Fig. 6**) should be considered. The emphasis should be on encouraging natural regeneration any re-seeding or replanting should ensure that only native species are used (refer to **Annex 1**). Controlling invasive plant species should be a particular concern and the removal of *Acacia*, *Leucaena*, *Salvinia*, etc. should be considered.

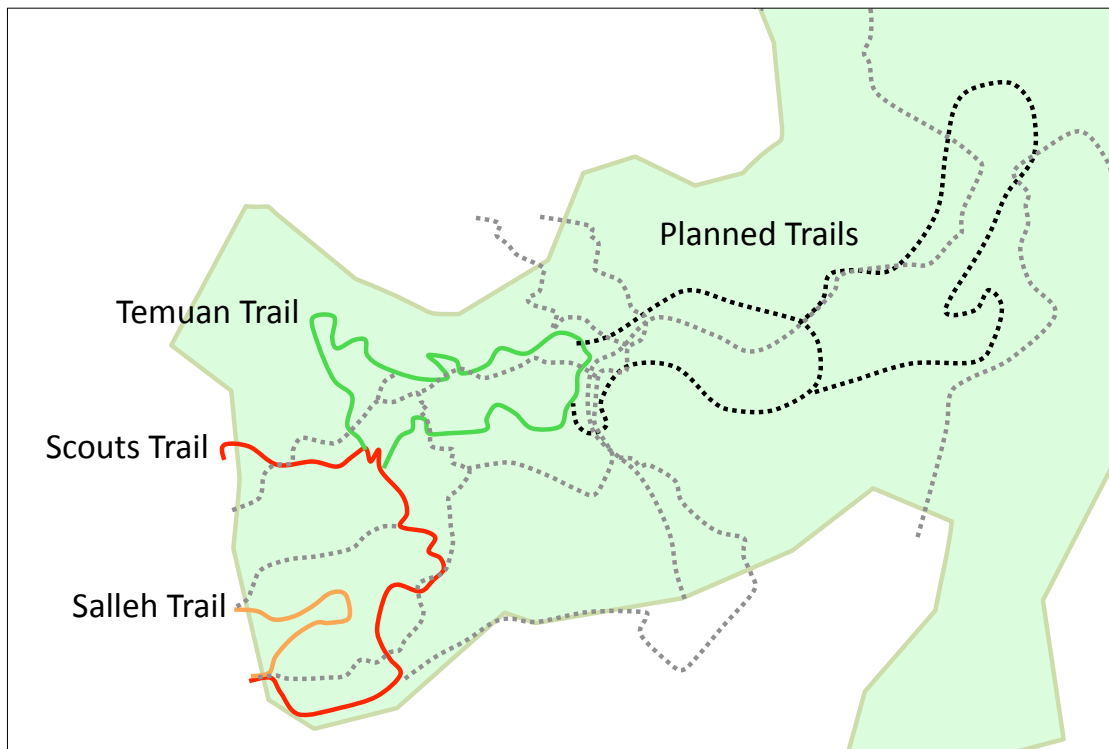


Fig. 13. Stacked-loop trails in the south of Kota Damansara Forest Reserve
Salleh Trail (orange line) built in 2006 by MNS as an educational trail
Scouts Trail (red line) built in 2009 by the Bukit Bintang and Bangsar Scouts under the guidance of TRAKS as an intermediate-level mountain-bike trail
Temuan Trail (green line) built in 2010 by a team of Temuan workers & TRAKS
Planned Trails (black dotted lines) are intended to be of increasing levels of difficulty (the final alignment of these trails has not been determined)
Older trails (grey dotted lines) are mostly overgrown and not maintained



Fig. 14. The TRAKS trails have been designed to have a low impact on the forest. (Credit: Joe Adnan 2010)

Animal Species

The existing management plan states that fishing should not be allowed in the forest, including in the existing ponds. The plan prescribes that “signages prohibiting fishing should be placed near the ponds with penalties to be paid if they are caught ... the enforcement should be strict and should come under the Community Forest Park Management Committee’s jurisdiction.” This outright ban should be reconsidered by holding dialogue sessions with the local fishing community. A programme to combine pond clean-up with fishing rights should be considered.

Steps should be taken to engage the local Temuan community, MNS and the Department of Wildlife and National Parks (Perhilitan) with regard to fishing, hunting and trapping in KDFR.

Efforts should be made to educate the public on the danger of feeding macaques. Perhilitan and MNS should be requested to provide signs. Efforts to control the monkeys’ access to refuse should also be made (secure rubbish bins should be provided to residents who require them).

In the long term, the potential to connect wildlife in KDFR with other green areas should be considered. Connectivity can be provided by a system of “stepping stones”, hedge rows, tree-lined avenues, river reserves and so on.

CONCLUSION

This report has demonstrated that the Kota Damansara Forest Reserve still has a wealth of biological diversity. The proximity to Kuala Lumpur means that KDFR can be a showcase for educating the public on the abundance of plants and animals native to Malaysia. The potential amenity value of the forest can be used as an enhanced justification for the conservation of the forest in its natural state in perpetuity.

References

- Aziz Saad (1991). Study of the Flora of Sungei Buloh Development Area. In: *Sector Studies on Flora and Fauna of Sungai Buloh*. Perbadanan Kemajuan Negeri Selangor (PKNS), Petaling Jaya, November 1991.
- Chiew, H (2007). 'Beautiful and hardy'; 'Saving rare plants'. *The Star*. 17 April.
- Chong, M. (1990). Sungai Buloh Forest Reserve. *Suara Enggang* 3/1, February.
- JPBD (2002). Laporan Cadangan Pelan Subjek: Kota Damansara. Jabatan Perancangan Bandar dan Desa, Kuala Lumpur.
- Jutta, M. (2006). *A Step Beyond the City: Guide to the common plants and animals of Kota Damansara Community Forest Park*. Malaysian Nature Society.
- Lim, B.L. (1991). Study of the Fauna of Sungei Buloh Development Area (with a view to recommend measures to preserve its fauna). In: *Sector Studies on Flora and Fauna of Sungai Buloh*. Perbadanan Kemajuan Negeri Selangor (PKNS), Petaling Jaya, November 1991.
- PKNS (1991). *Report for the preliminary environmental impact assessment for the development of 3900 acres of forest reserve at Sungai Buloh into a modern self-contained development area comprising residential, commercial institutional and industrial zones*. Perbadanan Kemajuan Negeri Selangor (PKNS), Petaling Jaya.
- PKNS (1991). *Supplementary report to the preliminary EIA study for the development of Sg. Buloh Forest Reserve into a modern self-contained development area comprising residential recreational, commercial institutional and industrial zones*. Perbadanan Kemajuan Negeri Selangor (PKNS), Petaling Jaya.
- Salleh, M.N. (2005). *Forest Inventory, Reptile and Mammal Survey for Sg. Buloh Forest Reserve, Selangor*. For: Residents and Owners Association of Selangor Polo and Equestrian Centre, Kota Damansara (RASPEC) and Malaysian Nature Society. TropBio Forest Sdn Bhd, Kuala Lumpur. 8 June.
- Salleh, M.N. (2006). *Community Forest Park Management Plan for Sungai Buloh Forest Reserve*. For: Residents and Owners Association of Selangor Polo and Equestrian Centre, Kota Damansara (RASPEC) and the Malaysian Nature Society. TropBio Forest Sdn Bhd, Kuala Lumpur. 5 January.
- Sebastian, A.J. (2003). *Birdlist: Sg. Buloh Forest Reserve (Taman Botani) - a compilation of Lim (1991), Anon. (1994) A Masterplan for the Creation of a National Botanic Garden, MNS Selangor Bird Group (June 2003)*. Malaysian Nature Society, Kuala Lumpur. September 2003.
- Sebastian, A.J., Tong Pei Sin et al. (2004). Taman Botani, Kota Damansara. *Suara Enggang* 12/2, March-April.

Annex 1. Historical Records of Species from Sungei Buloh Forest Reserve

Source: Lim (1991), Aziz (1991), Sebastian (2003), Salleh (2005) and Jutta (2006).

Kingdom /Class	Order	Family	Species
Amphibia	-	Bufo	<i>Bufo asper</i>
Amphibia	-	Bufo	<i>Bufo melanostictus</i>
Amphibia	-	Bufo	<i>Bufo parvus</i>
Amphibia	-	Elapidae	<i>Bungurus candidus</i>
Amphibia	-	Elapidae	<i>Maticora bivirgata</i>
Amphibia	-	Elapidae	<i>Maticora intestinalis</i>
Amphibia	-	Elapidae	<i>Naja naja</i>
Amphibia	-	Elapidae	<i>Ophiophagus hannah</i>
Amphibia	-	Emydidae	<i>Coura amboinensis</i>
Amphibia	-	Emydidae	<i>Cyclemys dentata</i>
Amphibia	-	Emydidae	<i>Hosemys spinosa</i>
Amphibia	-	Microhylidae	<i>Kalophrynus p. pleurostigma</i>
Amphibia	-	Microhylidae	<i>Kaloula pulchra</i>
Amphibia	-	Pelobatidae	<i>Leptobranchium hasselti</i>
Amphibia	-	Pelobatidae	<i>Leptobranchium nigrops</i>
Amphibia	-	Pelobatidae	<i>Megophrys monticola nasuta</i>
Amphibia	-	Ranidae	<i>Rana canrivora</i>
Amphibia	-	Ranidae	<i>Rana erythraea</i>
Amphibia	-	Ranidae	<i>Rana hosii</i>
Amphibia	-	Ranidae	<i>Rana laticeps</i>
Amphibia	-	Ranidae	<i>Rana limocharis</i>
Amphibia	-	Rhacophoridae	<i>Rhacophorus prominans</i>
Amphibia	-	Testudinidae	<i>Indotestudo elongata</i>
Amphibia	-	Testudinidae	<i>Manouria emys</i>
Amphibia	-	Trionychidae	<i>Amyda cartilagineus</i>
Amphibia	-	Viperidae	<i>Trimeresurus sumatrana</i>
Amphibia	-	Viperidae	<i>Trimeresurus wagleri</i>
Aves	-	Acanthizidae	<i>Gerygone sulpurea</i>
Aves	-	Accipitridae	<i>Accipiter trivirgatus</i>
Aves	-	Accipitridae	<i>Aviceda leuphotes</i>
Aves	-	Accipitridae	<i>Elanus caeruleus</i>
Aves	-	Accipitridae	<i>Pernis ptilorhynchus</i>
Aves	-	Accipitridae	<i>Spilornis cheela</i>
Aves	-	Accipitridae	<i>Spizaetus cirrhatus</i>
Aves	-	Alcedinidae	<i>Alcedo atthis</i>
Aves	-	Alcedinidae	<i>Alcedo meninting</i>
Aves	-	Alcedinidae	<i>Ceyx erithacus</i>
Aves	-	Alcedinidae	<i>Ceyx rufidorsus</i>
Aves	-	Alcedinidae	<i>Halcyon capensis</i>
Aves	-	Alcedinidae	<i>Halcyon pileata</i>
Aves	-	Alcedinidae	<i>Halcyon smyrnensis</i>
Aves	-	Apodidae	<i>Aerodramus brevirostris</i>
Aves	-	Apodidae	<i>Aerodramus fuciphaga</i>
Aves	-	Apodidae	<i>Aerodramus maxima</i>
Aves	-	Apodidae	<i>Apus affinis</i>

Kingdom /Class	Order	Family	Species
Aves	-	Apodidae	<i>Apus pacificus</i>
Aves	-	Apodidae	<i>Collocalia esculenta</i>
Aves	-	Apodidae	<i>Cypsiurus batasiensis</i>
Aves	-	Apodidae	<i>Hirundapus cochinchinensis</i>
Aves	-	Apodidae	<i>Hirundapus giganteus</i>
Aves	-	Apodidae	<i>Rhaphidura leucopygialis</i>
Aves	-	Batrachostomidae	<i>Batrachostomus auritus</i>
Aves	-	Batrachostomidae	<i>Batrachostomus javensis</i>
Aves	-	Batrachostomidae	<i>Batrachostomus stellatus</i>
Aves	-	Bucerotidae	<i>Anthracoceros malayanus</i>
Aves	-	Campephagidae	<i>Hemipus hirundinaceus</i>
Aves	-	Campephagidae	<i>Lalage nigra</i>
Aves	-	Campephagidae	<i>Pericrocotus divaricatus</i>
Aves	-	Campephagidae	<i>Pericrocotus flammeus</i>
Aves	-	Campephagidae	<i>Pericrocotus igneus</i>
Aves	-	Caprimulgidae	<i>Caprimulgus indicus</i>
Aves	-	Caprimulgidae	<i>Caprimulgus macrurus</i>
Aves	-	Caprimulgidae	<i>Eurostopodus temminckii</i>
Aves	-	Chloropseidae	<i>Aegithina tiphia</i>
Aves	-	Chloropseidae	<i>Aegithina viridissima</i>
Aves	-	Chloropseidae	<i>Chloropsis cochinchinensis</i>
Aves	-	Chloropseidae	<i>Chloropsis cynopogon</i>
Aves	-	Chloropseidae	<i>Chloropsis sonnerati</i>
Aves	-	Columbidae	<i>Chalcophaps indica</i>
Aves	-	Columbidae	<i>Ducula aenea</i>
Aves	-	Columbidae	<i>Ducula badia</i>
Aves	-	Columbidae	<i>Ducula bicolor</i>
Aves	-	Columbidae	<i>Geopelia striata</i>
Aves	-	Columbidae	<i>Streptopelia chinensis</i>
Aves	-	Columbidae	<i>Streptopelia tranquebarica</i>
Aves	-	Columbidae	<i>Treron curvirostra</i>
Aves	-	Columbidae	<i>Treron fulvicollis</i>
Aves	-	Columbidae	<i>Treron olax</i>
Aves	-	Columbidae	<i>Treron vernans</i>
Aves	-	Coraciidae	<i>Eurystomus orientalis</i>
Aves	-	Corvidae	<i>Corvus enca</i>
Aves	-	Corvidae	<i>Corvus macrorhynchos</i>
Aves	-	Corvidae	<i>Corvus splendens</i>
Aves	-	Corvidae	<i>Platysmurus leucopterus</i>
Aves	-	Cuculidae	<i>Cacomantis merulinus</i>
Aves	-	Cuculidae	<i>Cacomantis sepulcralis</i>
Aves	-	Cuculidae	<i>Cacomantis sonneratii</i>
Aves	-	Cuculidae	<i>Cacomantis variolosus</i>
Aves	-	Cuculidae	<i>Centropus bengalensis</i>
Aves	-	Cuculidae	<i>Centropus sinensis</i>
Aves	-	Cuculidae	<i>Chrysococcyx maculatus</i>
Aves	-	Cuculidae	<i>Chrysococcyx malayanus</i>
Aves	-	Cuculidae	<i>Chrysococcyx minutillus</i>
Aves	-	Cuculidae	<i>Chrysococcyx xanthorhynchus</i>

Kingdom /Class	Order	Family	Species
Aves	-	Cuculidae	<i>Clamator coromandus</i>
Aves	-	Cuculidae	<i>Cuculus fugax</i>
Aves	-	Cuculidae	<i>Cuculus micropterus</i>
Aves	-	Cuculidae	<i>Cuculus saturatus</i>
Aves	-	Cuculidae	<i>Cuculus spaveroides</i>
Aves	-	Cuculidae	<i>Eudyanmys scolopacea</i>
Aves	-	Cuculidae	<i>Phaenicophaeus chlorophaeus</i>
Aves	-	Cuculidae	<i>Phaenicophaeus curvirostris</i>
Aves	-	Cuculidae	<i>Phaenicophaeus javanicus</i>
Aves	-	Cuculidae	<i>Phaenicophaeus sumatranus</i>
Aves	-	Cuculidae	<i>Phaenicophaeus diardi</i>
Aves	-	Cuculidae	<i>Surniculus lugubris</i>
Aves	-	Dicaeidae	<i>Dicaeum agile</i>
Aves	-	Dicaeidae	<i>Dicaeum chrysorrheum</i>
Aves	-	Dicaeidae	<i>Dicaeum concolor</i>
Aves	-	Dicaeidae	<i>Dicaeum cruentatum</i>
Aves	-	Dicaeidae	<i>Dicaeum trigonostigma</i>
Aves	-	Dicaeidae	<i>Prionochilus maculatus</i>
Aves	-	Dicaeidae	<i>Prionochilus percussus</i>
Aves	-	Dicaeidae	<i>Prionochilus thoracicus</i>
Aves	-	Dicruridae	<i>Dicrurus aeneus</i>
Aves	-	Dicruridae	<i>Dicrurus annectans</i>
Aves	-	Dicruridae	<i>Dicrurus leucophaeus</i>
Aves	-	Dicruridae	<i>Dicrurus paradiseus</i>
Aves	-	Estrildidae	<i>Lonchura leucogastra</i>
Aves	-	Estrildidae	<i>Lonchura maja</i>
Aves	-	Estrildidae	<i>Lonchura malacca</i>
Aves	-	Estrildidae	<i>Lonchura punctulata</i>
Aves	-	Estrildidae	<i>Lonchura striata</i>
Aves	-	Estrildidae	<i>Padda oryzivora</i>
Aves	-	Eurylaimidae	<i>Calyptomena viridis</i>
Aves	-	Eurylaimidae	<i>Cymbirhynchus macrorhynchus</i>
Aves	-	Eurylaimidae	<i>Eurylaimus javanicus</i>
Aves	-	Eurylaimidae	<i>Eurylaimus ochromalus</i>
Aves	-	Falconidae	<i>Microhierax fringillarius</i>
Aves	-	Hemiprocnidae	<i>Hemiprocne comata</i>
Aves	-	Hemiprocnidae	<i>Hemiprocne longipennis</i>
Aves	-	Hirudinidae	<i>Delichon dasypus</i>
Aves	-	Hirudinidae	<i>Hirundo daurica</i>
Aves	-	Hirudinidae	<i>Hirundo rustica</i>
Aves	-	Hirudinidae	<i>Hirundo tahitica</i>
Aves	-	Irenidae	<i>Irena puella</i>
Aves	-	Lanidae	<i>Lanius cristatus</i>
Aves	-	Lanidae	<i>Lanius tigrinus</i>
Aves	-	Megalaimidae	<i>Calorhamphus fuliginosus</i>
Aves	-	Megalaimidae	<i>Megalaima australis</i>
Aves	-	Megalaimidae	<i>Megalaima chrysopogon</i>
Aves	-	Megalaimidae	<i>Megalaima hemacephala</i>
Aves	-	Megalaimidae	<i>Megalaima rafflesii</i>

Kingdom /Class	Order	Family	Species
Aves	-	Meropidae	<i>Merops philippinus</i>
Aves	-	Meropidae	<i>Merops viridis</i>
Aves	-	Meropidae	<i>Nyctycrnis amicta</i>
Aves	-	Monarchidae	<i>Hypothymis azurea</i>
Aves	-	Monarchidae	<i>Philentoma pyrhopterum</i>
Aves	-	Monarchidae	<i>Philentoma velatum</i>
Aves	-	Monarchidae	<i>Tersiphone paradisi</i>
Aves	-	Motacillidae	<i>Anthus novaeseelandiae</i>
Aves	-	Motacillidae	<i>Dendronanthus indicus</i>
Aves	-	Motacillidae	<i>Motacilla cinerea</i>
Aves	-	Muscicapidae	<i>Culicicapa ceylonensis</i>
Aves	-	Muscicapidae	<i>Cyanoptila cyanomelana</i>
Aves	-	Muscicapidae	<i>Cyornis banyumas</i>
Aves	-	Muscicapidae	<i>Cyornis tickelliae</i>
Aves	-	Muscicapidae	<i>Ficedula mugimaki</i>
Aves	-	Muscicapidae	<i>Ficedula zanthopygia</i>
Aves	-	Muscicapidae	<i>Muscicapa latirostris</i>
Aves	-	Muscicapidae	<i>Muscicapa sibirica</i>
Aves	-	Muscicapidae	<i>Rhinomyias bruneata</i>
Aves	-	Muscicapidae	<i>Rhinomyias umbratilis</i>
Aves	-	Nectariniidae	<i>Anthreptes malaccensis</i>
Aves	-	Nectariniidae	<i>Anthreptes rhodolaema</i>
Aves	-	Nectariniidae	<i>Anthreptes simplex</i>
Aves	-	Nectariniidae	<i>Anthreptes singalensis</i>
Aves	-	Nectariniidae	<i>Arachnothera affinis</i>
Aves	-	Nectariniidae	<i>Arachnothera chrysogenys</i>
Aves	-	Nectariniidae	<i>Arachnothera crassirostris</i>
Aves	-	Nectariniidae	<i>Arachnothera flavigaster</i>
Aves	-	Nectariniidae	<i>Arachnothera longirostris</i>
Aves	-	Nectariniidae	<i>Arachnothera robusta</i>
Aves	-	Nectariniidae	<i>Hypogramma hypogrammicum</i>
Aves	-	Nectariniidae	<i>Nectarinia calcostetha</i>
Aves	-	Nectariniidae	<i>Nectarinia sperata</i>
Aves	-	Oriolidae	<i>Oriolus chinensis</i>
Aves	-	Oriolidae	<i>Oriolus xanthonotus</i>
Aves	-	Passeridae	<i>Passer montanus</i>
Aves	-	Phasianidae	<i>Argusianus argus</i>
Aves	-	Phasianidae	<i>Gallus gallus</i>
Aves	-	Phasianidae	<i>Rollulus rouloul</i>
Aves	-	Picidae	<i>Celeus brachyurus</i>
Aves	-	Picidae	<i>Chrysocolaptes validus</i>
Aves	-	Picidae	<i>Dinopium javanense</i>
Aves	-	Picidae	<i>Dryocopus javansis</i>
Aves	-	Picidae	<i>Meiglyptes tristis</i>
Aves	-	Picidae	<i>Meiglyptes tukki</i>
Aves	-	Picidae	<i>Mulleripicus pulverulentus</i>
Aves	-	Picidae	<i>Picoides canicapillus</i>
Aves	-	Picidae	<i>Picus mentalis</i>
Aves	-	Picidae	<i>Picus miniaceus</i>

Kingdom /Class	Order	Family	Species
Aves	-	Picidae	<i>Picus puniceus</i>
Aves	-	Picidae	<i>Sasia abnormis</i>
Aves	-	Pitidae	<i>Pitta moluccensis</i>
Aves	-	Pitidae	<i>Pitta sordida</i>
Aves	-	Ploceidae	<i>Ploceus philippinus</i>
Aves	-	Psittacidae	<i>Loriculus galgulus</i>
Aves	-	Psittacidae	<i>Psittacula longicauda</i>
Aves	-	Pycnonotidae	<i>Criniger bres</i>
Aves	-	Pycnonotidae	<i>Criniger phaeocephalus</i>
Aves	-	Pycnonotidae	<i>Hypsipetes criniger</i>
Aves	-	Pycnonotidae	<i>Hypsipetes malaccensis</i>
Aves	-	Pycnonotidae	<i>Hypsipetes charlottae</i>
Aves	-	Pycnonotidae	<i>Pycnonotus atriceps</i>
Aves	-	Pycnonotidae	<i>Pycnonotus brunneus</i>
Aves	-	Pycnonotidae	<i>Pycnonotus cyaniventris</i>
Aves	-	Pycnonotidae	<i>Pycnonotus erythrophthalmos</i>
Aves	-	Pycnonotidae	<i>Pycnonotus finlaysoni</i>
Aves	-	Pycnonotidae	<i>Pycnonotus goiavier</i>
Aves	-	Pycnonotidae	<i>Pycnonotus plumosus</i>
Aves	-	Pycnonotidae	<i>Pycnonotus simplex</i>
Aves	-	Pycnonotidae	<i>Pycnonotus zeylanicus</i>
Aves	-	Rallidae	<i>Amourornis phoenicurus</i>
Aves	-	Rhipiduridae	<i>Rhipidura javanica</i>
Aves	-	Rhipiduridae	<i>Rhipidura perlata</i>
Aves	-	Strigidae	<i>Ketupu ketupu</i>
Aves	-	Strigidae	<i>Otus bakkamoena</i>
Aves	-	Strigidae	<i>Otus lempiji</i>
Aves	-	Strigidae	<i>Otus rufescens</i>
Aves	-	Strigidae	<i>Otus scops</i>
Aves	-	Strigidae	<i>Otus sunia</i>
Aves	-	Strigidae	<i>Strix leptogrammica</i>
Aves	-	Strigidae	<i>Strix seloputo</i>
Aves	-	Sturnidae	<i>Acridotheres fuscus</i>
Aves	-	Sturnidae	<i>Acridotheres javanicus</i>
Aves	-	Sturnidae	<i>Acridotheres tristis</i>
Aves	-	Sturnidae	<i>Aplonis panayensis</i>
Aves	-	Sturnidae	<i>Gracula religiosa</i>
Aves	-	Sturnidae	<i>Sturnis sinensis</i>
Aves	-	Sturnidae	<i>Sturnus sturninus</i>
Aves	-	Sylviidae	<i>Cisticola juncidis</i>
Aves	-	Sylviidae	<i>Orthotomus atrogularis</i>
Aves	-	Sylviidae	<i>Orthotomus ruficeps</i>
Aves	-	Sylviidae	<i>Orthotomus sericeus</i>
Aves	-	Sylviidae	<i>Orthotomus sutorius</i>
Aves	-	Sylviidae	<i>Phylloscopus borealis</i>
Aves	-	Sylviidae	<i>Phylloscopus coronatus</i>
Aves	-	Sylviidae	<i>Phylloscopus inornatus</i>
Aves	-	Sylviidae	<i>Prinia flaviventris</i>
Aves	-	Sylviidae	<i>Prinia rufescens</i>

Kingdom /Class	Order	Family	Species
Aves	-	Timaliidae	<i>Macronus gularis</i>
Aves	-	Timaliidae	<i>Macronus ptilosus</i>
Aves	-	Timaliidae	<i>Malacopteron affine</i>
Aves	-	Timaliidae	<i>Malacopteron albogulare</i>
Aves	-	Timaliidae	<i>Malacopteron cinereum</i>
Aves	-	Timaliidae	<i>Malacopteron magnirostre</i>
Aves	-	Timaliidae	<i>Malacopteron magnum</i>
Aves	-	Timaliidae	<i>Pellorneum capistratum</i>
Aves	-	Timaliidae	<i>Stachyris erythroptera</i>
Aves	-	Timaliidae	<i>Stachyris leucotis</i>
Aves	-	Timaliidae	<i>Stachyris maculata</i>
Aves	-	Timaliidae	<i>Stachyris nigncollis</i>
Aves	-	Timaliidae	<i>Stachyris poliocephala</i>
Aves	-	Timaliidae	<i>Stachyris rufifrons</i>
Aves	-	Timaliidae	<i>Trishastoma abbotti</i>
Aves	-	Timaliidae	<i>Trishastoma bicolor</i>
Aves	-	Timaliidae	<i>Trishastoma malaccense</i>
Aves	-	Timaliidae	<i>Trishastoma rostratum</i>
Aves	-	Timaliidae	<i>Trishastoma sepiarium</i>
Aves	-	Trogonidae	<i>Harpactes diardii</i>
Aves	-	Trogonidae	<i>Harpactes duvaucelli</i>
Aves	-	Trogonidae	<i>Harpactes kasumba</i>
Aves	-	Turdidae	<i>Copsychus malabaricus</i>
Aves	-	Turdidae	<i>Copsychus saularis</i>
Aves	-	Turdidae	<i>Enicurus ruficapillus</i>
Aves	-	Turdidae	<i>Luscinia cyane</i>
Aves	-	Turdidae	<i>Turdus obscurus</i>
Aves	-	Turdidae	<i>Zoothera citrina</i>
Aves	-	Turdidae	<i>Zoothera sibirica</i>
Aves	-	Tytonidae	<i>Phodilus badius</i>
Aves	-	Zosteropidae	<i>Zosterops everetti</i>
Mamalia	Artiodactyla	Suidae	<i>Sus scrofa</i>
Mamalia	Artiodactyla	Tragulidae	<i>Tragulus javanicus</i>
Mamalia	Artiodactyla	Tragulidae	<i>Tragulus napu</i>
Mamalia	Carnivora	Felidae	<i>Felis bengalensis</i>
Mamalia	Carnivora	Felidae	<i>Felis planiceps</i>
Mamalia	Carnivora	Mustelidae	<i>Amblonyx cinerea</i>
Mamalia	Carnivora	Mustelidae	<i>Martes flavigula</i>
Mamalia	Carnivora	Mustelidae	<i>Mustela nupides</i>
Mamalia	Carnivora	Viverridae	<i>Arctogalidia trivirgata</i>
Mamalia	Carnivora	Viverridae	<i>Herpestes brachyurus</i>
Mamalia	Carnivora	Viverridae	<i>Paguma larvata</i>
Mamalia	Carnivora	Viverridae	<i>Paradoxurus hermaphroditus</i>
Mamalia	Chiroptera	Emballonuridae	<i>Emballonura monticola</i>
Mamalia	Chiroptera	Megadermatidae	<i>Megaderma lyra</i>
Mamalia	Chiroptera	Megadermatidae	<i>Megaderma spasma</i>
Mamalia	Chiroptera	Molossidae	<i>Chaerophon plicata</i>
Mamalia	Chiroptera	Molossidae	<i>Mop mop</i>
Mamalia	Chiroptera	Pteropodidae	<i>Balionycteris maculata</i>

Kingdom /Class	Order	Family	Species
Mamalia	Chiroptera	Pteropodidae	<i>Chironax melanocephalus</i>
Mamalia	Chiroptera	Pteropodidae	<i>Cynopterus brachotis</i>
Mamalia	Chiroptera	Pteropodidae	<i>Cynopterus horsfieldi</i>
Mamalia	Chiroptera	Pteropodidae	<i>Eonncteris spelaea</i>
Mamalia	Chiroptera	Pteropodidae	<i>Penthetor lucasi</i>
Mamalia	Chiroptera	Rhinolophidae	<i>Hipposideros armiger</i>
Mamalia	Chiroptera	Rhinolophidae	<i>Hipposideros diadema</i>
Mamalia	Chiroptera	Rhinolophidae	<i>Rhinolophus luctus</i>
Mamalia	Chiroptera	Rhinolophidae	<i>Rhinolophus refulgens</i>
Mamalia	Chiroptera	Rhinolophidae	<i>Rhinolophus trifolius</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Glishropus tylopus</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Myotis mystacinus</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Pipistrellus javanicus</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Pipistrellus noctules</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Tylonycteris pachypus</i>
Mamalia	Chiroptera	Vespertilionidae	<i>Tylonycteris robustula</i>
Mamalia	Demoptera	Cynocephalidae	<i>Cynocephalus vaiegatus</i>
Mamalia	Insectivora	Erinaceidae	<i>Echinosorex gymnurus</i>
Mamalia	Insectivora	Soricidae	<i>Crocidura fuliginosa</i>
Mamalia	Insectivora	Soricidae	<i>Suncus murinus</i>
Mamalia	Pholidota	Manidae	<i>Manis javanica</i>
Mamalia	Primates	Cercopithecidae	<i>Macaca fascicularis</i>
Mamalia	Primates	Cercopithecidae	<i>Macaca nemestrina</i>
Mamalia	Primates	Lorisidae	<i>Nycticebus coucang</i>
Mamalia	Rodentia	Hystriidae	<i>Atherurus macrourus</i>
Mamalia	Rodentia	Hystriidae	<i>Hystrix brachyura</i>
Mamalia	Rodentia	Muridae	<i>Lenothrix canus</i>
Mamalia	Rodentia	Muridae	<i>Rattus annadalei</i>
Mamalia	Rodentia	Muridae	<i>Rattus bowersii</i>
Mamalia	Rodentia	Muridae	<i>Rattus cremoriventer</i>
Mamalia	Rodentia	Muridae	<i>Rattus exulans</i>
Mamalia	Rodentia	Muridae	<i>Rattus muelleri</i>
Mamalia	Rodentia	Muridae	<i>Rattus rajah</i>
Mamalia	Rodentia	Muridae	<i>Rattus rattus diardii</i>
Mamalia	Rodentia	Muridae	<i>Rattus sabanus</i>
Mamalia	Rodentia	Muridae	<i>Rattus surifer</i>
Mamalia	Rodentia	Muridae	<i>Rattus tiomanicus</i>
Mamalia	Rodentia	Muridae	<i>Rattus whiteheadi</i>
Mamalia	Rodentia	Petauristinae	<i>Hylopetes platyurus</i>
Mamalia	Rodentia	Petauristinae	<i>Iomys horsfeldii</i>
Mamalia	Rodentia	Petauristinae	<i>Petaurista petaurista</i>
Mamalia	Rodentia	Rhizomyidae	<i>Rhizomys sumatrensis</i>
Mamalia	Rodentia	Sciuridae	<i>Callosciurus caniceps</i>
Mamalia	Rodentia	Sciuridae	<i>Callosciurus nigrovittatus</i>
Mamalia	Rodentia	Sciuridae	<i>Callosciurus notatus</i>
Mamalia	Rodentia	Sciuridae	<i>Lariscus insignis</i>
Mamalia	Rodentia	Sciuridae	<i>Ratufa affinis</i>
Mamalia	Rodentia	Sciuridae	<i>Ratufa bicolor</i>
Mamalia	Rodentia	Sciuridae	<i>Rhinosciurus laticaudatus</i>

Kingdom /Class	Order	Family	Species
Mamalia	Rodentia	Sciuridae	<i>Sundasciurus lowii</i>
Mamalia	Rodentia	Sciuridae	<i>Sundasciurus tenuis</i>
Mamalia	Scandentia	Tupaiidae	<i>Ptilocercus lowii</i>
Mamalia	Scandentia	Tupaiidae	<i>Tupaia glis</i>
Mamalia	Scandentia	Tupaiidae	<i>Tupaia minor</i>
Reptilia	-	Agamidae	<i>Aplhaniatis fusca</i>
Reptilia	-	Agamidae	<i>Calotes cristellatus</i>
Reptilia	-	Agamidae	<i>Calotes versicolor</i>
Reptilia	-	Agamidae	<i>Draco maximus</i>
Reptilia	-	Agamidae	<i>Draco melanopogon</i>
Reptilia	-	Agamidae	<i>Draco quinquefasciatus</i>
Reptilia	-	Agamidae	<i>Draco volans</i>
Reptilia	-	Agamidae	<i>Gonocephalus borneensis</i>
Reptilia	-	Boidae	<i>Python reticularis</i>
Reptilia	-	Colubridae	<i>Ahaetulla prasina</i>
Reptilia	-	Colubridae	<i>Aplopeltura boa</i>
Reptilia	-	Colubridae	<i>Boiga cynodon</i>
Reptilia	-	Colubridae	<i>Boiga dendrophila</i>
Reptilia	-	Colubridae	<i>Chrysopelia paradisi</i>
Reptilia	-	Colubridae	<i>Dendrelaphis caudolineatus</i>
Reptilia	-	Colubridae	<i>Elaphe flavolineata</i>
Reptilia	-	Colubridae	<i>Elaphe prasina</i>
Reptilia	-	Colubridae	<i>Gonyocephalus oxycephalum</i>
Reptilia	-	Colubridae	<i>Macrophisthodon flaviceps</i>
Reptilia	-	Colubridae	<i>Ptyas korros</i>
Reptilia	-	Colubridae	<i>Rhabdophis chrysargus</i>
Reptilia	-	Geckonidae	<i>Cryptodactylus consobrinus</i>
Reptilia	-	Geckonidae	<i>Cryptodactylus pulchellus</i>
Reptilia	-	Geckonidae	<i>Gecko stentor</i>
Reptilia	-	Geckonidae	<i>Ptychozoon homalocephalum</i>
Reptilia	-	Scinidae	<i>Lygosoma olivaceum</i>
Reptilia	-	Scinidae	<i>Mabuya langicauda</i>
Reptilia	-	Scinidae	<i>Mabuya multifasciata</i>
Reptilia	-	Varanidae	<i>Varanus bengalensis</i>
Reptilia	-	Varanidae	<i>Varanus nebulosus</i>
Reptilia	-	Varanidae	<i>Varanus rudicollis</i>
Reptilia	-	Varanidae	<i>Varanus salvator</i>
Reptilia	-	Xenopeltidae	<i>Xenopeltis unicolor</i>
Plantae	-	Acanthaceae	<i>Strobilanthes</i>
Plantae	-	Achariaceae	<i>Hydnocarpus nana</i>
Plantae	-	Almaceae	<i>Gironniera</i>
Plantae	-	Almaceae	<i>Trema</i>
Plantae	-	Almaceae	<i>Trema augustifolia</i>
Plantae	-	Anacardiaceae	<i>Bouea macrophylla</i>
Plantae	-	Anacardiaceae	<i>Bouea oppositifolia</i>
Plantae	-	Anacardiaceae	<i>Bouea sp</i>
Plantae	-	Anacardiaceae	<i>Gluta curtisii</i>
Plantae	-	Anacardiaceae	<i>Gluta sp.</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Anacardiaceae	<i>Melanorrhoea spp.</i>
Plantae	-	Anacardiaceae	<i>Pentaspadon spp</i>
Plantae	-	Anisophylleaceae	<i>Anisophyllea sp.</i>
Plantae	-	Annisophylleaceae	<i>Anisophyllea corneri</i>
Plantae	-	Annonaceae	<i>Fiisistigma sp.</i>
Plantae	-	Annonaceae	<i>Fissistigma sp.</i>
Plantae	-	Annonaceae	<i>Merzettia spp</i>
Plantae	-	Annonaceae	<i>Mezzettia sp.</i>
Plantae	-	Annonaceae	<i>Polyalthia bullata</i>
Plantae	-	Annonaceae	<i>Popowia sp.</i>
Plantae	-	Annonaceae	<i>Pseuduvaria sp.</i>
Plantae	-	Annonaceae	<i>Xylophia sp.</i>
Plantae	-	Apocynaceae	<i>Alstonia angustiloba</i>
Plantae	-	Apocynaceae	<i>Alstonia scholaris</i>
Plantae	-	Apocynaceae	<i>Dyera costulata</i>
Plantae	-	Apocynaceae	<i>Kopsia sp.</i>
Plantae	-	Araceae	<i>Aglaonema sp.</i>
Plantae	-	Araceae	<i>Alocasia denudata</i>
Plantae	-	Araceae	<i>Amorphophallus paeonifolius</i>
Plantae	-	Araceae	<i>Amydrium medium</i>
Plantae	-	Araceae	<i>Epipremnum giganteum</i>
Plantae	-	Araceae	<i>Homalomena sagittifolia</i>
Plantae	-	Araceae	<i>Pothos peninsularis</i>
Plantae	-	Araceae	<i>Pothos sp.</i>
Plantae	-	Araceae	<i>Rhaphidophora montana</i>
Plantae	-	Araceae	<i>Rhaphidophora sp.</i>
Plantae	-	Araceae	<i>Schismatoglottis sp.</i>
Plantae	-	Araceae	<i>Scindapsus hederaceus</i>
Plantae	-	Araceae	<i>Scindapsus perakensis</i>
Plantae	-	Araceae	<i>Scindapsus pictus</i>
Plantae	-	Araceae	<i>Scindapsus sp.</i>
Plantae	-	Araliaceae	<i>Arthrophyllum diversifolium</i>
Plantae	-	Araliaceae	<i>Brassaiopsis sp.</i>
Plantae	-	Araliaceae	<i>Schefflera sp.</i>
Plantae	-	Araliaceae	<i>Trevesia burckii</i>
Plantae	-	Aralidiaceae	<i>Aralidium pinnatifidum</i>
Plantae	-	Aristolochiaceae	<i>Thottea grandiflora</i>
Plantae	-	-	<i>Acacia auriculiformis</i>
Plantae	-	-	<i>Acacia mangium</i>
Plantae	-	-	<i>Arenga westerhoutii</i>
Plantae	-	-	<i>Aspenium nidus</i>
Plantae	-	-	<i>Cratoxylum formosum</i>
Plantae	-	-	<i>Cyrtandra cupulata</i>
Plantae	-	-	<i>Dicranopteris spp.</i>
Plantae	-	-	<i>Freycinetia sp.</i>
Plantae	-	-	<i>Gleichenia spp.</i>
Plantae	-	-	<i>Globba patens</i>
Plantae	-	-	<i>Hydrilla verticillata</i>

Kingdom /Class	Order	Family	Species
Plantae	-	-	<i>Ixora pendula</i>
Plantae	-	-	<i>Mallotus paniculatus</i>
Plantae	-	-	<i>Nenga pumila</i>
Plantae	-	-	<i>Oncosperma tigillarum</i>
Plantae	-	-	<i>Pandanus amaryllifolius</i>
Plantae	-	-	<i>Phyllagathis rotundifolia</i>
Plantae	-	-	<i>Renellia elliptica</i>
Plantae	-	-	<i>Salvinia molesta</i>
Plantae	-	-	<i>Tectaria singaporeana</i>
Plantae	-	Bombacaceae	<i>Durio griffithii</i>
Plantae	-	Bombacaceae	<i>Coelostegia griffithii</i>
Plantae	-	Bombacaceae	<i>Neesia sp.</i>
Plantae	-	Burseraceae	<i>Canarium littorale</i>
Plantae	-	Burseraceae	<i>Canarium rufum</i>
Plantae	-	Burseraceae	<i>Canarium sp.</i>
Plantae	-	Burseraceae	<i>Dacryodes sp.</i>
Plantae	-	Burseraceae	<i>Garuga</i>
Plantae	-	Burseraceae	<i>Kedondog spp.</i>
Plantae	-	Burseraceae	<i>Santiria laevigata</i>
Plantae	-	Burseraceae	<i>Santiria nana</i>
Plantae	-	Burseraceae	<i>Scutinanthe</i>
Plantae	-	Burseraceae	<i>Triomma malaccensis</i>
Plantae	-	Cecropiaceae	<i>Poikilospermum suaveolens</i>
Plantae	-	Commelinaceae	<i>Amischotolype griffithii</i>
Plantae	-	Connaraceae	<i>Agelaea borneensis</i>
Plantae	-	Connaraceae	<i>Connarus sp.</i>
Plantae	-	Convallariaceae	<i>Peliosanthes teta</i>
Plantae	-	Crypteroniaceae	<i>Crypteronia griffithii</i>
Plantae	-	Cyperaceae	<i>Mapania sp.</i>
Plantae	-	Cyperaceae	<i>Scleria sp.</i>
Plantae	-	Dilleniaceae	<i>Dillenia eximia</i>
Plantae	-	Dilleniaceae	<i>Dillenia reticulata</i>
Plantae	-	Dilleniaceae	<i>Tetracera indica</i>
Plantae	-	Dipterocarpaceae	<i>Anisoptera curtisii</i>
Plantae	-	Dipterocarpaceae	<i>Dipterocarpus baudii</i>
Plantae	-	Dipterocarpaceae	<i>Shorea bracteolata</i>
Plantae	-	Dipterocarpaceae	<i>Shorea leprosula</i>
Plantae	-	Dipterocarpaceae	<i>Shorea ovalis</i>
Plantae	-	Dipterocarpaceae	<i>Shorea parvifolia</i>
Plantae	-	Dipterocarpaceae	<i>Shorea platyclados</i>
Plantae	-	Dracaenaceae	<i>Dracaena sp. 1</i>
Plantae	-	Dracaenaceae	<i>Dracaena sp. 2</i>
Plantae	-	Dryopteridaceae	<i>Tectaria semipinnata</i>
Plantae	-	Ebenaceae	<i>Diosporos spp.</i>
Plantae	-	Ebenaceae	<i>Diospyros buxifolia</i>
Plantae	-	Ebenaceae	<i>Diospyros ismailii</i>
Plantae	-	Ebenaceae	<i>Diospyros styraciformis</i>
Plantae	-	Ebenaceae	<i>Diospyros wallichii</i>
Plantae	-	Elaeocarpaceae	<i>Elaeocarpus ferrugineus</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Elaeocarpaceae	<i>Elaeocarpus sp.</i>
Plantae	-	Euphorbiaceae	<i>Agrostistachys longifolia</i>
Plantae	-	Euphorbiaceae	<i>Andesma cuspidatum</i>
Plantae	-	Euphorbiaceae	<i>Antidesma cuspidatum</i>
Plantae	-	Euphorbiaceae	<i>Aporusa sp.</i>
Plantae	-	Euphorbiaceae	<i>Baccaurea griffithii</i>
Plantae	-	Euphorbiaceae	<i>Baccaurea motleyana</i>
Plantae	-	Euphorbiaceae	<i>Baccaurea parviflora</i>
Plantae	-	Euphorbiaceae	<i>Baccaurea racemosa</i>
Plantae	-	Euphorbiaceae	<i>Blumeodendron kurzii</i>
Plantae	-	Euphorbiaceae	<i>Drypetes sp.</i>
Plantae	-	Euphorbiaceae	<i>Elateriospermum tapos</i>
Plantae	-	Euphorbiaceae	<i>Endospermum diadenum</i>
Plantae	-	Euphorbiaceae	<i>Endospermum malaccense</i>
Plantae	-	Euphorbiaceae	<i>Hevea brasiliensis</i>
Plantae	-	Euphorbiaceae	<i>Macaranga gigantea</i>
Plantae	-	Euphorbiaceae	<i>Macaranga hypoleuca</i>
Plantae	-	Euphorbiaceae	<i>Macaranga spp.</i>
Plantae	-	Euphorbiaceae	<i>Macaranga triloba</i>
Plantae	-	Euphorbiaceae	<i>Mallotus spp.</i>
Plantae	-	Euphorbiaceae	<i>Pimelodendron griffithianum</i>
Plantae	-	Euphorbiaceae	<i>Pomeleodendron griffithianum</i>
Plantae	-	Euphorbiaceae	<i>Pomeleodendron macrocarpum</i>
Plantae	-	Euphorbiaceae	<i>Ptychopyxis spp.</i>
Plantae	-	Euphorbiaceae	<i>Sapium baccatum</i>
Plantae	-	Fagaceae	<i>Castanopsis sp.</i>
Plantae	-	Fagaceae	<i>Lithocarpus spp.</i>
Plantae	-	Flacourtiaceae	<i>Hydnocarpus sp.</i>
Plantae	-	Gesneriaceae	<i>Cyrtandromoea grandis</i>
Plantae	-	Gnetaceae	<i>Gnetum cuspidatum</i>
Plantae	-	Guttiferae	<i>Calophyllum spp.</i>
Plantae	-	Guttiferae	<i>Garcinia eugenifolia</i>
Plantae	-	Guttiferae	<i>Garcinia nervosa</i>
Plantae	-	Guttiferae	<i>Garcinia parvifolia</i>
Plantae	-	Guttiferae	<i>Garcinia scortechinii</i>
Plantae	-	Guttiferae	<i>Garcinia spp.</i>
Plantae	-	Hypoxidaceae	<i>Molineria latifolia</i>
Plantae	-	Lauraceae	<i>Actinodaphne macrophylla</i>
Plantae	-	Lauraceae	<i>Actinodaphne sesquipedalis</i>
Plantae	-	Lauraceae	<i>Actinodaphne sp.</i>
Plantae	-	Lauraceae	<i>Actinodaphne, Litsea, etc.</i>
Plantae	-	Lauraceae	<i>Alseodaphne perakensis</i>
Plantae	-	Lauraceae	<i>Cinnamomum javanicum</i>
Plantae	-	Lauraceae	<i>Cryptocarya costata</i>
Plantae	-	Lauraceae	<i>Dehaasia condolleana</i>
Plantae	-	Lauraceae	<i>Dehaasia cuneata</i>
Plantae	-	Lauraceae	<i>Litsea grandis</i>
Plantae	-	Lecythidaceae	<i>Barringtonia macrostachya</i>
Plantae	-	Lecythidaceae	<i>Barringtonia pendula</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Lecythidaceae	<i>Barringtonia macrostachya</i>
Plantae	-	Leeaceae	<i>Leea indica</i>
Plantae	-	Leguminosae	<i>Adenanthera malayana</i>
Plantae	-	Leguminosae	<i>Adenanthera spp.</i>
Plantae	-	Leguminosae	<i>Archidendron bubalinum</i>
Plantae	-	Leguminosae	<i>Bauhinia kockiana</i>
Plantae	-	Leguminosae	<i>Callerya atropurpurea</i>
Plantae	-	Leguminosae	<i>Desmodium sp.</i>
Plantae	-	Leguminosae	<i>Dialium indum</i>
Plantae	-	Leguminosae	<i>Dialium spp.</i>
Plantae	-	Leguminosae	<i>Entada spiralis</i>
Plantae	-	Leguminosae	<i>Intsia palembanica</i>
Plantae	-	Leguminosae	<i>Koompassia malaccensis</i>
Plantae	-	Leguminosae	<i>Milletia atropurpurea</i>
Plantae	-	Leguminosae	<i>Ormosia sp.</i>
Plantae	-	Leguminosae	<i>Parkia javanica</i>
Plantae	-	Leguminosae	<i>Parkia speciosa</i>
Plantae	-	Leguminosae	<i>Pithecellobium jiringa</i>
Plantae	-	Leguminosae	<i>Pithecellobium splendens</i>
Plantae	-	Leguminosae	<i>Saraca spp.</i>
Plantae	-	Leguminosae	<i>Sindora sp.</i>
Plantae	-	Linaceae	<i>Ixonanthes icosandra</i>
Plantae	-	Loganiaceae	<i>Fagraea gigantea</i>
Plantae	-	Loganiaceae	<i>Fagraea racemosa</i>
Plantae	-	Loganiaceae	<i>Fragraera sp.</i>
Plantae	-	Loganiaceae	<i>Strychnos ignatii</i>
Plantae	-	Marantaceae	<i>Donax parviflorus</i>
Plantae	-	Marantaceae	<i>Phrynium sp.</i>
Plantae	-	Marattiaceae	<i>Angiopteris evecta</i>
Plantae	-	Melastomataceae	<i>Clidemia hirta</i>
Plantae	-	Melastomataceae	<i>Dissochaeta gracilis</i>
Plantae	-	Melastomataceae	<i>Memecylon sp.</i>
Plantae	-	Melastomataceae	<i>Oxyspora bullata</i>
Plantae	-	Melastomataceae	<i>Pternandra echinata</i>
Plantae	-	Meliaceae	<i>Aglaiia sp.</i>
Plantae	-	Meliaceae	<i>Cedrela serrata</i>
Plantae	-	Meliaceae	<i>Toona sinensis</i>
Plantae	-	Meliosmaceae	<i>Meliosma sumatrana</i>
Plantae	-	Menispermaceae	<i>Coscinium fenestratum</i>
Plantae	-	Menispermaceae	<i>Fibraurea tinctoria</i>
Plantae	-	Moraceae	<i>Artocarpus [Cempedak]</i>
Plantae	-	Moraceae	<i>Artocarpus [Keledang]</i>
Plantae	-	Moraceae	<i>Artocarpus [Tempunek]</i>
Plantae	-	Moraceae	<i>Artocarpus [Terap]</i>
Plantae	-	Moraceae	<i>Artocarpus dada</i>
Plantae	-	Moraceae	<i>Artocarpus elasticus</i>
Plantae	-	Moraceae	<i>Artocarpus integer var. silvestris</i>
Plantae	-	Moraceae	<i>Artocarpus rigidus</i>
Plantae	-	Moraceae	<i>Artocarpus scortechinii</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Moraceae	<i>Ficus fistulosa</i>
Plantae	-	Moraceae	<i>Ficus spp.</i>
Plantae	-	Moraceae	<i>Horsfieldia sp.</i>
Plantae	-	Moraceae	<i>Maesopsis</i>
Plantae	-	Moraceae	<i>Sloetia elongata</i>
Plantae	-	Musaceae	<i>Musa acuminata</i>
Plantae	-	Myristicaceae	<i>Ardisia crassa</i>
Plantae	-	Myristicaceae	<i>Gymnacranthera sp.</i>
Plantae	-	Myristicaceae	<i>Horsfieldia superba</i>
Plantae	-	Myristicaceae	<i>Knema kunstleri</i>
Plantae	-	Myristicaceae	<i>Knema sp.</i>
Plantae	-	Myristicaceae	<i>Knema, Gymnacranthera, etc.</i>
Plantae	-	Myristicaceae	<i>Labisia pumila</i>
Plantae	-	Myrtaceae	<i>Eugenia</i>
Plantae	-	Myrtaceae	<i>Syzygium sp.</i>
Plantae	-	Ochnaceae	<i>Campylospermum serratum</i>
Plantae	-	Olacaceae	<i>Ochanostachys amentacea</i>
Plantae	-	Olacaceae	<i>Strombosia javanica</i>
Plantae	-	Opiliaceae	<i>Champereia manillana</i>
Plantae	-	Oxalidaceae	<i>Sarcotheca laxa</i>
Plantae	-	Palmae	<i>Arenga pinnata</i>
Plantae	-	Palmae	<i>Calamus manan</i>
Plantae	-	Palmae	<i>Calamus sp.</i>
Plantae	-	Palmae	<i>Caryota mitis</i>
Plantae	-	Palmae	<i>Daemonorops sp.</i>
Plantae	-	Palmae	<i>Eugeissona tristis</i>
Plantae	-	Palmae	<i>Iguanura wallichiana</i>
Plantae	-	Palmae	<i>Korthalsia sp.</i>
Plantae	-	Palmae	<i>Licuala longipes</i>
Plantae	-	Palmae	<i>Oncosperma horridum</i>
Plantae	-	Palmae	<i>Pinanga sp.</i>
Plantae	-	Pandaceae	<i>Galearia fulva</i>
Plantae	-	Pandaceae	<i>Microdesmis casearifolia</i>
Plantae	-	Pandanaceae	<i>Pandanus sp.</i>
Plantae	-	Passifloraceae	<i>Paropsia vareciformis</i>
Plantae	-	Piperacea	<i>Piper sp.</i>
Plantae	-	Polygalaceae	<i>Xanthophyllum affine</i>
Plantae	-	Polygalaceae	<i>Xanthophyllum eurhynchum</i>
Plantae	-	Polygalaceae	<i>Xanthophyllum spp.</i>
Plantae	-	Rhizophoraceae	<i>Carallia brachiata</i>
Plantae	-	Rhizophoraceae	<i>Carallia sp.</i>
Plantae	-	Rhizophoraceae	<i>Gynotrches sp.</i>
Plantae	-	Rhizophoraceae	<i>Gynotroches axillaris</i>
Plantae	-	Rhizophoraceae	<i>Pellacalyx axillaris</i>
Plantae	-	Rhizophoraceae	<i>Pellacalyx saccardianus</i>
Plantae	-	Rosaceae	<i>Parinari sp.</i>
Plantae	-	Rubiaceae	<i>Aidia densiflora</i>
Plantae	-	Rubiaceae	<i>Chasalia chartaceae</i>
Plantae	-	Rubiaceae	<i>Diplospora malaccensis</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Rubiaceae	<i>Hedyotis philippinensis</i>
Plantae	-	Rubiaceae	<i>Lasianthus oblongus</i>
Plantae	-	Rubiaceae	<i>Murraya paniculata</i>
Plantae	-	Rubiaceae	<i>Neolamarckia cadamba</i>
Plantae	-	Rubiaceae	<i>Pavetta siamica</i>
Plantae	-	Rubiaceae	<i>Pertusadina eurhyncha</i>
Plantae	-	Rubiaceae	<i>Pertusadina sp.</i>
Plantae	-	Rubiaceae	<i>Porterandia anisophyllea</i>
Plantae	-	Rubiaceae	<i>Porterandia anisophylla</i>
Plantae	-	Rubiaceae	<i>Prismatomeris glabra</i>
Plantae	-	Rubiaceae	<i>Psychotria rostata</i>
Plantae	-	Rubiaceae	<i>Rothmannia macrophylla</i>
Plantae	-	Rubiaceae	<i>Tarenna mollis</i>
Plantae	-	Rubiaceae	<i>Timonius wallichianus</i>
Plantae	-	Rubiaceae	<i>Uncaria sp.</i>
Plantae	-	Rubiaceae	<i>Urophyllum graffithianum</i>
Plantae	-	Rutaceae	<i>Melicope glabra</i>
Plantae	-	Sapindaceae	<i>Mischocarpus pentapetalus</i>
Plantae	-	Sapindaceae	<i>Nephelium cuspidatum</i>
Plantae	-	Sapindaceae	<i>Nephelium eriopetalum</i>
Plantae	-	Sapindaceae	<i>Pometia pinnata</i>
Plantae	-	Sapindaceae	<i>Pometia ridleyi</i>
Plantae	-	Sapindaceae	<i>Xerospermum noronhianum</i>
Plantae	-	Sapotaceae	<i>Madhuca spp.</i>
Plantae	-	Sapotaceae	<i>Palaquim maingayi</i>
Plantae	-	Sapotaceae	<i>Palaquium gutta</i>
Plantae	-	Sapotaceae	<i>Palaquium obovatum</i>
Plantae	-	Sapotaceae	<i>Pouteria maingayi</i>
Plantae	-	Sapotaceae	<i>Pouteria malaccensis</i>
Plantae	-	Simaroubaceae	<i>Irvingia malayana</i>
Plantae	-	Smilacaceae	<i>Smilax setosa</i>
Plantae	-	Smilacaceae	<i>Smilax sp.</i>
Plantae	-	Sterculiaceae	<i>Firmiana malayana</i>
Plantae	-	Sterculiaceae	<i>Pterygota alata</i>
Plantae	-	Sterculiaceae	<i>Scaphium macropodum</i>
Plantae	-	Sterculiaceae	<i>Scaphium macropodum</i>
Plantae	-	Sterculiaceae	<i>Sterculia foetida</i>
Plantae	-	Taccaceae	<i>Tacca integrifolia</i>
Plantae	-	Thymelaeaceae	<i>Aquilaria sp.</i>
Plantae	-	Thymelaeaceae	<i>Gonystylus affine</i>
Plantae	-	Thymelaeaceae	<i>Gonystylus affinis</i>
Plantae	-	Tiliaceae	<i>Microcos fibrocarpa</i>
Plantae	-	Ulmaceae	<i>Gironniera nervosa</i>
Plantae	-	Ulmaceae	<i>Gironniera subaequalis</i>
Plantae	-	Verbanaceae	<i>Vitex sp.</i>
Plantae	-	Verbenaceae	<i>Clerodendrum nutans</i>
Plantae	-	Verbenaceae	<i>Teijsmanniodendron sp.</i>
Plantae	-	Verbenaceae	<i>Vitex gamosepala</i>
Plantae	-	Violaceae	<i>Rinorea anguifera</i>

Kingdom /Class	Order	Family	Species
Plantae	-	Vitaceae	<i>Ampelocissus cinnamomea</i>
Plantae	-	Vitaceae	<i>Cayratia mollissima</i>
Plantae	-	Vitaceae	<i>Cayratia trifolia</i>
Plantae	-	Vitaceae	<i>Cissus sp.</i>
Plantae	-	Vitaceae	<i>Nothocissus spicifera</i>
Plantae	-	Vitaceae	<i>Tetrastigma sp.</i>
Plantae	-	Zingiberaceae	<i>Amomum uliginosum</i>
Plantae	-	Zingiberaceae	<i>Elettariospsis exserta</i>
Plantae	-	Zingiberaceae	<i>Etilingera sphaerocephala</i>
Plantae	-	Zingiberaceae	<i>Geostachys sp.</i>
Plantae	-	Zingiberaceae	<i>Zingiber puberulum</i>

Annex 2. Conservation of *Begonia aequilateralis*

Background

Begonias are popular ornamental plants. Globally, 1,500 species have been named and scientists believe there are more to be discovered. The colours and texture of begonia leaves have attracted interest in the horticulture trade where over 10,000 hybrids have been produced.

A four-year survey of wild begonias in Peninsular Malaysia (Kiew 2005) noted that half of the 52 native species were endangered by logging and quarrying. 26 species are known from single localities and some of their populations are small. Kiew (2005) noted that *Begonia aequilateralis* was only known from the forest around Sungai Buloh.

Begonia aequilateralis is notable for having equal-sided leaves, unlike most begonias that have strongly asymmetric leaves. First described in 1929, the species was thought to be one of the most endangered begonias of Peninsular Malaysia (Kiew 2005).

Conservation Status

Until recently, *B. aequilateralis* was only known from two localities inside Bukit Lagong Forest Reserve (BLFR). In 1946, the species was collected in Sg Kroh, behind the Forest Research Institute Malaysia (FRIM).

In 2003, only eight individuals of were recorded from the headwaters of Sg Buloh (Kiew 2005). In 2005, 11 individuals were recorded from the same locality (Sam 2006). In 2007, 25 individuals were recorded from KDFR (Chiew 2007, Chan 2008) and a further 120 individuals were recorded from another upper tributary of Sg Buloh in BLFR, named Sg Kepong (Chan 2008). In 2008 another population of 30 individuals was recorded from Sg Saneh (another tributary in BLFR).

Cuttings taken from the wild have been successfully cultivated in the FRIM nursery and there are plans to re-introduce these to the wild (Sam 2006, Chan 2008). Based on the number of individuals that have been discovered in the wild in recent years, the species is no longer considered to be Critically Endangered but is still considered to be vulnerable to extinction (Chua et al. 2009).

Chan Yoke Mui, Research Officer, Forest Biodiversity Division, FRIM

References

- Chan, Y.M. (2008). The Threatened *Begonia aequilateralis* in Bukit Lagong, Selangor. *FRIM in Focus*, December. Forest Research Institute Malaysia, Kepong.
- Chua, L.S.L, R. Kiew, Y.M. Chan (2009). Assessing conservation status of Peninsular Malaysian *Begonias* (Begoniaceae). *Blumea* 54: 94-98
- Chiew, H (2007). Saving rare plants. *The Star*. 17 April.
- Kiew, R. (2005). *Begonias of Peninsular Malaysia*. Natural History Publications (Borneo), Kota Kinabalu.
- Sam, Y.Y. (2006). Saving a highly endangered begonia. *Conservation Malaysia*, 3/2006. Forest Research Institute Malaysia, Kepong.

Annex 3. Conservation of the aquatic plant *Cryptocoryne minima* in Kota Damansara Forest Reserve

Background

Cryptocoryne is a genus of about 50-60 species of aquatic plants from the aroid family (Araceae). Crypts are found in lowland streams. They also live in seasonally inundated forest pools or on periodically submerged river banks. Crypts are sometimes referred to as “water trumpets” after their trumpet-like inflorescence, which includes a spadix enclosed by a spathe. Crypt species are particularly popular among aquarists due to their beauty.

Cryptocoryne minima is one of 13 crypt species known from Peninsular Malaysia where it is known from freshwater swamps in Kedah and Perak. It was first described in [TK]. Since then, much of the freshwater swamps have been drained for rice cultivation and the status of *C. minima* in the wild is uncertain.

Kota Damansara

Professor Dr Mashhor Mansor of Universiti Sains Malaysia noted the presence of *Cryptocoryne* sp. while doing fish surveys in the streams of Sungei Buloh Forest Reserve in the 1990s. The species was confirmed as *C. minima* during an expedition to the forest by a Zoo Negara team in 2006. This was the first record of the species in Selangor (although it has since been found in Rawang and in Bukit Cherakah Forest Reserve).

The population is situated on the edge of a stream inside the freshwater swamp forest to the north of the forest reserve. The stream has very clean water and is full of fish. Both sides of the stream are swamps. Many other plants, including *Barclaya motleyi*, a rare member of the water lily family (Nymphaeaceae), and three species of orchid (including a vanilla orchid and a ground orchid) were noted in this locality.

In 2007, the Zoo Negara team noticed that the area had been earmarked for development and were contacted to advise on the conservation of the crypt species. The team undertook an operation to bring some of the plants back to the zoo. These plants were eventually transplanted in the Forest Research Institute Malaysia (FRIM), in Kepong, as well as in a prominent private garden, Rimbun Dahan, in Kuang.

Following the advice of Zoo Negara, the cemetery was developed downstream of the crypts population and not upstream as initially planned. Part of the swamp has been dammed during the construction of the access road for the cemetery. This has made the lower stream section of the swamp become a small lake. The original swamp can still be found further upstream where the population of *C. minima* is still intact. Monitoring is still going on and the potential to develop the area as an educational forest should be considered.

Herman Bernard, Asst. Curator of Aquarium, Zoo Negara (www.natureye.com)



Aroh (Temuan informant) and Herman Bernard (Zoo Negara) rescuing crypts prior to the construction of the Kota Damansara cemetery (Credit: Joshua Siow/natureeye.com 2007)

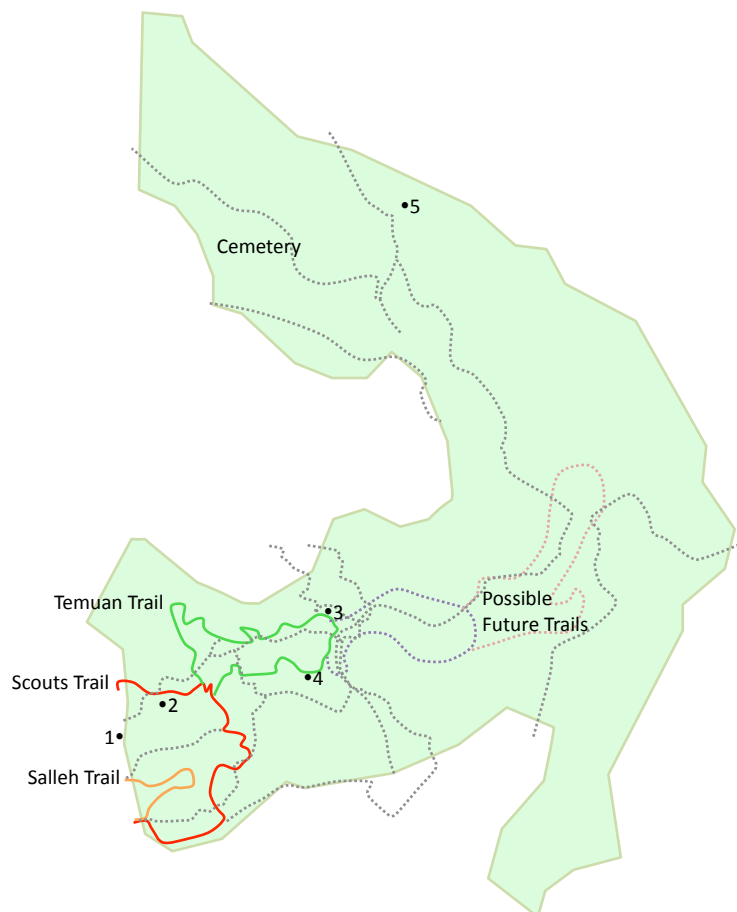
Annex 4. Survey of Mammals at Kota Damansara Forest Reserve

Objective

A survey of the wildlife at Kota Damansara Forest Reserve, Selangor, was carried out from June to August 2010. This survey involved setting up a series of camera-traps in the forest combined with observations along existing trails in the forest. The objective of the survey was to contribute to the biodiversity assessment being carried out under the UNDP-GEF SGP Project coordinated by Damansara Residency Residents' Association .

Methodology

Six trips were made to the forest on the following dates: 17 June 2010; 26 June 2010; 7 July 2010; 11 July 2010; 17 July 2010; 14 August 2010 (see **Annex A**). The survey used three digital camera-traps assembled by Wildtrack Photography. The camera-traps (**Figs 1&2**) were deployed in strategic locations throughout the forest reserve (**Map 1**). Wildlife signs and signs of poaching along the existing network of trails were noted and a list of mammals compiled.



Map 1. Location of trails and wildlife sighting in Kota Damansara Forest Reserve (numbers are referred to in the text).



Fig 1. Camera-trap set close by site with porcupine signs in Kota Damansara FR (location 3 in Map 1)



Fig 2. Camera trap set up on Temuan Trail next to an old animal trail (location 4 in Map 1)

Results

The presence of about 11 mammal species were recorded in the Kota Damansara Forest Reserve during the study period. These animals are listed below (arranged alphabetically according to order, family, species):

ARTIODACTYLA

Cervidae

Muntiacus muntjak (signs)

Tragulidae

Tragulus kanchil (sighting & photo)

Tragulus napu (signs)

Suidae

Sus scrofa (signs)

PHOLIDOTA

Manidae

Manis javanica (possible signs)

PRIMATES

Cercopithecidae

Macaca fascicularis (photo)

Macaca nemestrina (sighting)

Presbytis spp. (possible signs)

RODENTIA

Hystricidae (signs)

Sciuridae

Callosciurus caniceps (photo)

Callosciurus notatus (photo)

Images, common names and local names of these species are given in the following section.

Images

The following images illustrate the variety of mammal species found to be present in the Kota Damansara Forest Reserve during the study period. Unless otherwise specified, the illustrations are from Francis (2008).

Deer



Barking Deer *Muntiacus muntjak* or 'Kijang' (8a = adult male, 8b = adult female; 8c = juvenile; below = scat (on Scout's Trail – see Map 1))



Large Mouse-deer *Tragulus napu* (left) and Lesser Mouse-deer *Tragulus kanchil* (right)



Mouse-deer from camera-trap on Salleh Trail (left); file photo (right)



Trap (apparently set for mouse-deer) in the north of Kota Damansara FR (location 5 on Map 1).

Wild Boars



Eurasian Wild Boars *Sus scrofa*

Monkeys



Left: Long-tailed Macaque *Macaca fascicularis* or 'Kera' next to FoKD recycling bins (location 1 on Map 1);

Right: Pig-tailed Macaque *Macaca nemestrina* or 'Berok' (right)

Pangolins



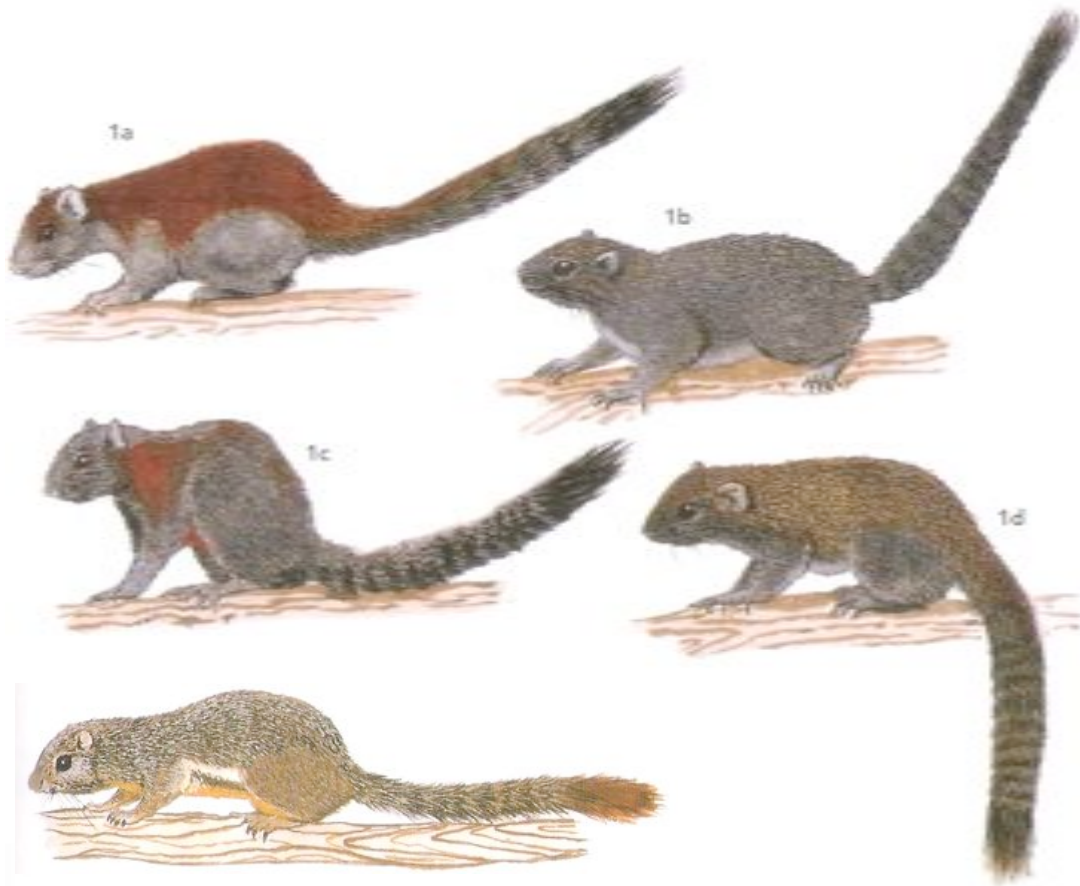
Sunda Pangolin *Manis javanica* or 'Tenggiling'

Porcupines



Malayan Porcupine *Hystrix brachyura* (1); Brush-tailed Porcupine *Atherurus macrourus* (2); Long-tailed Porcupine *Trichys fasciculata* (3); gnawing on bark along Temuan Trail (left); lair of porcupine or pangolin at the base of a large tree along Temuan Trail, up the slope from a nearby water source (right)

Squirrels



Grey-bellied Squirrel *Callosciurus caniceps* (1a-1d) and Plaintain Squirrel *Callosciurus notatus* (bottom) both species were captured by the camera-trap on Salleh Trail.

References

Francis, C.M. (2008), *A Field Guide to the Mammals of South-east Asia*. New Holland Publishers (UK) Ltd.

Conclusion

This report is submitted for the information and use of the UNDP-GEF SGP Project in Kota Damansara.

Lim Tze Tshen,
Resource Stewardship Consultants Sdn Bhd,
October 2010.

Annex A. Field Notes

26-Jun-2010 LTW and Eilwyn Lim set up CS's unit in Kota Damansara FR near Salleh Trail (Point 542 on Garmin GPS) (Lock P542)

17th June 2010, Thursday – LTT with Gonthong, Ben, Justine, etc.

Relevant photos start with 'KD-I'.

- Rooting signs along Scout Trail which could be the works of pigs or porcupines (Picture 1128).
- Nesting/resting site of pig along Scout Trail, grunting audible (Picture 1149).
- Troops of long-tailed macaque (Pictures 1182, 1184).

7th July 2010, Wednesday – LTT with Alok, local Temuan guide.

Relevant photos start with 'KD-II'.

- Gnawing and rooting signs by porcupines, along Temuan Trail (Picture 1877).
- First camera trap ('T1') set close by site with porcupine signs (Picture 1878).
- Lair of porcupine or pangolin at the base of a large tree along Temuan Trail, up the slope from a nearby water source (Picture 1902).
- Second camera trap ('T2') set next to an old trail used by animals (a series of foot-prints covered by dried vegetation) on Temuan Trail, some distance up the slope from a water source (Picture 1922).
- Clawing marks left by pangolin up a ledge along Temuan Trail (Picture 1948).
- Food residues (leaves and stems) of monkeys on Temuan Trail (could be macaques or langurs).
- Lair of porcupine or pangolin on Temuan Trail (Picture 1950).
- Foot-print of large mouse-deer (Picture 1968).

11th July, 2010, Sunday – LTT with Gonthong, LTW, Justine, etc.

Relevant photo starts with 'KD-III'.

- Fresh droppings of barking deer along Scout Trail (Picture 2586).

17-Jul-2010 LTW retrieves CS's unit from Kota Damansara. Images: DSC00516-567 (long tailed macaques, squirrel, mouse deer, sun-lit vegetation)

14th August 2010, Saturday – LTT with Alok.

Relevant photo starts with 'KD-IV'.

- Camera traps collected, both spoilt.
- Porcupine gnawing mark on tree trunk close to site of 'T1' (Picture 2992).
- Food remains (leaf stalks and vegetation) of monkeys (macaques or langurs) on Temuan Trail.
- One lesser mouse-deer sighted under bushes on Temuan Trail.