# Your Biodiversity Guide to Windsor Nature Park and TreeTop Walk

Windsor Nature Park is Singapore's sixth nature park and is located on the eastern side of the Central Catchment Nature Reserve. The 75-hectare park is located on the grounds of a former kampong that dates back to before the 1950s, and currently features a regenerating secondary forest and marsh habitat that support a wide range of biodiversity.

Traverse Windsor Nature Park and venture into the heart of Central Catchment Nature Reserve, where your hiking efforts will be rewarded with a stunning view of the forest and reservoir from the TreeTop Walk. This 250 m long suspension bridge connects the two highest points in MacRitchie, Bukit Peirce and Bukit Kalang.

Windsor Nature Park acts as a green buffer for the Central Catchment Nature Reserve by providing extended habitats for our biodiversity and an alternative venue for nature-based recreation. As you venture on the trails and discover the nature park's biodiversity, remember to abide by the trail etiquette for a pleasant and memorable walk.



### Nature Park & Nature Reserve Opening Hours:

7 am - 7 pm daily

(Entering or staying in the nature park after 7 pm is not allowed)

## Windsor Nature Park Car Park Opening Hours:

7 am — 7 pm daily (Car park gantry will be

locked after 7 pm, and will only reopen at 7 am the next day.

Smoke-free car park



#### TreeTop Walk Opening Hours:

Mondays (except public holidays): Closed

Tuesdays to Fridays: 9 am to 5 pm (last entry at 4:45 pm)

Weekends and public holidays: 8:30 am to 5 pm (last entry at 4:45 pm)

For your safety, do not enter forested areas during and just after a heavy storm, and seek cover at the nearest shelter available during bad weather.





**Difficulty level:**Moderate
to Difficult\*



#### **Terrain:**

Some areas are undulating with steep slopes at certain points.



Walking time: 3 to 4 hours



Distance:

7 km

Entrance:
Car park along
Venus Drive

Negrest

Entrance 2:

Drop-off point along Venus Drive

\*Not suitable for pregnant ladies, young children, the disabled, people with a fear of heights or pre-existing heart conditions.



#### Windsor Legend **Suggested Routes** Hanguana Trail (350 m) Nature Park Nature Reserve Toilet Squirrel/Drongo Trails (2.2 km) Wetlands Page Car Park Trail to TreeTop Walk (7 km, full trail) **Nature Park** Trail Bus Stop Venus Loop (1.8 km) Boardwalk No Entry Except Áuthorised Vehicles □ Bridge and Personnel Entrance/Exit Island Club Roac **Bright Hill** Bus Stop ID: 53071 MRT station **Singapore Island Country Club** (Island Course) Sin Ming Avenue Upper Thomson MRT station Windsor Nature Park Vindsor Park Estate To TreeTop Walk To MacRitchie Reservoir Central Park **Catchment** Nature Reserve (MacRitchie) Adelphi Park Estate 5 Stream 2 Drop-off point 3 Toilet block 4 Pavilion 6 Stone path Main entrance (Car Park)

#### **NATURE PARK TRAIL ETIQUETTE**

To ensure the safety of all visitors and to protect the rich flora and fauna that are found in the nature park, please observe the following trail etiquette:

- Avoid carrying plastic bags, as monkeys tend to associate plastic bags with food and may try to grab them.
- Do not feed the animals. There is sufficient food in the forest for wildlife and feeding them would disrupt their natural behaviour.
- Stay on designated trails for your own safety. Do not venture off the trails as you will risk disturbing and trampling on our flora and fauna.
- Take home nothing but fond memories. Do not remove any plants, flowers, or fruits as these are necessary for the nature park's ecosystem to thrive.
- Keep your volume low to hear the natural sounds of the nature park. Move quietly and carefully as noise may disturb the animals and other park visitors.
- Pets are only allowed along Venus Walk. Wildlife can be affected by the scent of pet animals, causing them to change their behaviour.
- Do not release animals into the nature park. Released animals are unlikely to adapt, and can disrupt the ecosystem.

#### **HOW TO GET TO WINDSOR NATURE PARK:**



#### BY BUS

Take bus 132, 163, 165, 166, 167, 855, or 980 Alight at Upper Thomson Road (Opp Flame Tree Pk, Bus Stop ID: 53071; Flame Tree Pk, Bus Stop ID: 53079)

Take bus 52, 162, 162M, or 410 Alight at Sin Ming Ave (Blk 454, Bus Stop ID: 53361; Opp Blk 454, Bus Stop ID: 53369)



#### BY TRAIN

#### **Upper Thomson MRT station** Walk 1.2 km along Upper Thomson Road and

turn left into Venus Drive.

#### **Bright Hill MRT station** Walk 1.1 km along Sin Ming Ave to Venus Drive.



Windsor Nature Park car park is situated along Venus Drive, about 280 m away from Bus Stop ID 53071 (Opp Flame Tree Pk)

# Hanguana Trail From the entrance node, passing the visitor pavilion and the wetland leads you to the Hanguana Trail. This trail is home to unique herbaceous plants, like the two recently discovered Hanguana species. This wetland has a dual purpose; it not only diverts excess stream water runoff away from the entrance node, but it also provides habitats for biodiversity.

#### Flora and Fauna along this Trail

#### Genus Hanguana

Discovered in 2014 and 2015 respectively, *Hanguana neglecta* and *Hanguana rubinea* are flowering herbaceous plants that grow to about 1 m tall. The name *neglecta* reflects the long period this species remained undiscovered despite being located next to a path at the Bukit Timah Nature Reserve. The name *rubinea* was derived from the ruby-red colour of the fruit. This plant is endemic, which means that it can only be found in Singapore!



Photo credit: Ang Wee Foong



Photo credit: Dr Jana Leong-Škorničková

#### **Singapore Ginger** (*Zingiber singapurense*)

Discovered in 2014 as part of a conservation project initiated by the Singapore Botanic Gardens, the Singapore Ginger produces bright orange-red bracts with pale yellow flowers. Although it belongs to the same family as the culinary ginger (*Zingiber officinale*), this forest ginger produces a much smaller underground stem, measuring up to 1 cm in diameter. While the true stem is underground, it has a pseudostem (false stem) above ground, formed by leaf sheaths wrapped tightly around one another.

#### **Malayan Banyan** (Ficus microcarpa)

Growing to a height of 30 m, the Malayan Banyan belongs to the fig family Moraceae and can be spotted from the toilet block or along the trails in the wetland area. Look out for its numerous slender aerial roots hanging down from the branches, some of which develop into woody pillar roots that help support the spreading tree crown. As a keystone species, its dark purple figs feed various birds and mammals, including the Asian Glossy Starling (*Aplonis panayensis*) whose sharp whistling can be heard as large flocks gather to feast.



Photo credit: Han Xue Yi

#### **Common Sun Skink** (*Eutropis multifasciata*)

The Common Sun Skink can often be seen sunbathing as it basks along the trails. It uses ambient heat to increase its body temperature, which in turn increases its metabolic rate and helps it to move faster. Due to its mostly brown colour with some black and orange stripes, it can camouflage among the leaf litter as it searches for prey.



Photo credit: Han Xue Yi



Photo credit: Joseph Lin

#### Oriental Whip Snake (Ahaetulla prasina)

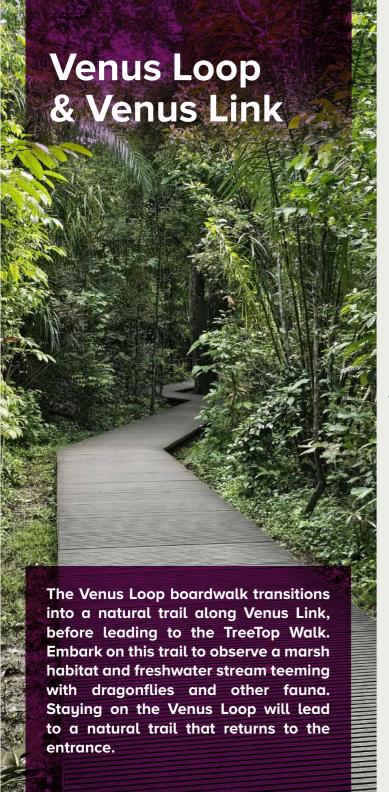
The Oriental Whip Snake can be hard to spot, despite its limegreen scales and distinctive "squinting" pupils. Long and slender, it looks like a vine as it slithers through bushes and trees, hunting for lizards, frogs and small birds. While it is shy and docile, this snake is still mildly venomous. Always observe wildlife from a safe distance!

#### Red-legged Crake (Rallina fasciata)

Mostly reddish-brown with black and white bars on the underside, red eyes and red legs, the Red-legged Crake is a waterbird which can be spotted walking around streams and wetter parts of the forest. The chicks are much duller than the adults, with dark and dull plumage. Adults grow up to about 25 cm tall and nest on the ground among tall grass or bushes.



Photo credit: Cai Yixiona



#### Flora and Fauna along this Trail

#### **Dragonflies** (Order Odonata)

Since 2008, 56 dragonfly species have been recorded in Windsor Nature Park, nearly half of the 122 dragonfly species found in Singapore. Among these, three species – the Nighthawker (Heliaeschna crassa), the Lesser Nighthawker (Heliaeschna uninervulata), and the Spear-tailed Duskhawker (Gynacantha dohrni) – are new records for Singapore. While dragonflies are typically active in the day, Hawkers are active from dusk and even after dark, particularly in swampy forests.



Photo credit: Robin Ngiam



Photo credit: Alex Figueroa

#### **Masked Rough-sided Frog**

(Pulchrana laterimaculata)

The Masked Rough-sided Frog has a high pitched *yip-yip-yip* call that can be heard in the evening. This uncommon frog likely got its name from its distinctive black mask-like marking around its eyes and ear drum. Frogs are an important part of the ecosystem as they eat a variety of insects including mosquitoes, and serve as prey to animals like birds and snakes. They are also an indicator of a healthy environment, as their permeable skin makes them susceptible to environmental pollutants.

#### Malayan Pygmy Halfbeak

(Dermogenys collettei)

The Malayan Pygmy Halfbeak has a distinctive elongated lower jaw that protrudes beyond its upper jaw, making it look like it has half a beak (hence its name). This native light grey-coloured fish can grow up to 6 cm in length and gives birth to its young alive. As a carnivorous fish, it frequents the water surface and hunts for insects that fall into the water. They can be found in forest and open streams, in both fresh and brackish waters.



Photo credit: Cai Yixiong

#### Fishtail Palm (Caryota mitis)

The fishtail-like leaflets of the Fishtail Palm are not just aesthetically pleasing, but were also used as thatching for huts and weaving in the past. This palm grows to a maximum height of 10 m and bears bunches of small globular fruits that ripen from green to red. Because this palm fruits year-round, it feeds many forest birds and mammals. However, the fruit is unsafe for human consumption as it contains calcium oxalate crystals, which causes severe itching when touched. Its trunk contains a starch that can be used to make sago.



Photo credit: Han Xue Yi



Photo credit: Sebastian Ow

#### **Blue-rumped Parrot** (*Psittinus cyanurus*)

Like many bird species, the males of the Blue-rumped Parrot are more vibrantly coloured than the females. Males have red bills, greyish-blue heads, and greenish wings, while females have brown bills and heads, and mostly green wings and bodies. This parrot's breeding season is from May to June, nesting in high natural tree cavities. It will descend from the tops of tree canopies to feed. You might be able to spot the parrot feeding on Star Fruits (Averrhoa carambola) along this trail!

#### **Gold-ringed Cat Snake** (Boiga dendrophila)

The Gold-ringed Cat Snake has 40 to 50 narrow bright yellow bands across its shiny black body, which gives it its name. Also called the Mangrove Snake, this reptile is aptly named for the areas it inhabits: mangrove forests, riverine areas and lowland forests. This mildly venomous snake spends most of its time basking on tree branches 30 m or higher, but has also been spotted at lower heights of around 15 m. It descends to the forest floor at night to hunt lizards, birds, and small mammals.



Photo credit: Eunice Kona

# **Squirrel Trail** & Drongo Trail The Squirrel Trail and Drongo Trail

The Squirrel Trail and Drongo Trail offer an alternative route through Windsor Nature Park, while providing a glimpse of the remnants of kampong houses. Squirrel Trail runs along the stream, giving visitors a close-up look at the freshwater swamp habitat, while Drongo Trail is an elevated boardwalk that reaches up to 5 m above ground level at its highest point.

#### Flora and Fauna along this Trail

Rubber Tree (Hevea brasiliensis)

Originating from South America, Rubber Trees were imported to be grown in Southeast Asia as a cash crop. In the early 1900s, the rise of the automobile industry and increasing usage of electricity saw a growing demand for natural rubber made from the latex of rubber trees for tyres and electric wire insulation, leading to a boom in rubber tree cultivation. Today, most rubber is synthetic, leading to the abandonment of rubber plantations. Listen out for the Rubber Tree fruits "firing" their seeds as the woody capsule explodes, resembling the sound of a gunshot.



Photo credit: Jessica Teo



Photo credit: Han Xue Yi

#### **Elephant's Ear** (Alocasia macrorrhizos)

Growing up to 5 m tall, the Elephant's Ear is named after its large, heart-shaped leaves. Also called Giant Taro, it produces starchy underground stems which in parts of Southeast Asia are cooked for a long time to thoroughly break down the toxic calcium oxalates before consumption. The presence of this plant and others like Coconut (Cocos nucifera) and Tapioca (Manihot esculenta) were common in kampongs.

#### **Greater Racket-tailed Drongo**

(Dicrurus paradiseus)

An excellent mimic of other avian species' calls and even manmade sounds, the Greater Racket-tailed Drongo boasts black glossy plumage and two pendant-like tail feather extensions. While impressive, its vocal mimicry is metallic-sounding. Apart from confusing researchers, its convincing mimicry may be useful for blending into a mixed-species flock and engaging in food kleptoparasitism, in which they steal food, including insect prey, from other birds.



Photo credit: Eunice Kong

#### **Banded Woodpecker**

(Chrysophlegma miniaceum)

One of the eight species of woodpeckers in Singapore, the Banded Woodpecker has vibrant red plumage, a yellow nape, and black-and-white-striped chest. Named for its unique behaviour of pecking trees, woodpeckers peck at wood and probe into crevices with their long, sticky tongues in search of insect prey. They are also able to hop vertically on tree trunks with the aid of their stiffened tail feathers and 'X' shaped feet, with two toes facing forwards and two facing backwards.



Photo credit: Sebastian Ow



Photo credit: Han Xue Yi

#### Clouded Monitor (Varanus nebulosus)

Among the three monitor lizards found locally, the Clouded Monitor is the second most common and can grow to a length of 1.7 m. Like snakes, it mainly forages by using sight and smell, using its forked tongue to sense and transfer the scent to a sensory organ on the roof of its mouth. Monitor lizards prey on insects and other small animals, and also feed on dead animals. Once prey is located, they use their strong claws to dig through the leaf litter and soil.

#### Malayan Colugo (Galeopterus variegatus)

Often mistaken as a flying squirrel due to its arboreal climbing and gliding ability, genetic analysis has revealed that the Malayan Colugo is actually closely related to primates. This nocturnal mammal has large eyes adapted for night vision and teeth that resemble tiny combs for digging parasites out of its fur. Look out for the colugo camouflaging on the trees with its bark-like fur colouration, and remember to keep your volume down to avoid disturbing its rest during the day.



Photo credit: Han Xue Y



#### **Routes**

Route 1 - Green 1∜x 3 km

( 1 hour <u>À</u> Easy

Route 2 - Purple ₹₹ 4.8 km ( 2 hours <u>À</u> Easy

Route 3 - Blue 秋 10.3 km (\) 4-5 hours \* Moderate/Difficult

Route 4 - Yellow

**∛k∛t** 11 km ( 4 hours ★ Moderate

₹ Difficult

Route 5 - Pink 秋 9.5 km ( 4-5 hours

Route 6 - Orange **秋** 7 km (\$) 3-4 hours

\* Moderate/Difficult

#### Legend

Nature Park

Trail

Boardwalk

Nature Reserve

Reservoir Park

Ranger Station

Refreshment

Toilet

↑ Entrance/Exit

Exercise Station

Fishing Area Car Park

Bus Stop

No Entry **Except Authorised** Vehicles

#### HOW TO GET TO MACRITCHIE RESERVOIR PARK

#### BY BUS

Take bus 52, 74, 93, 130, 132, 156, 157, 165, 166, 167, 852, 855, 980

Alight at Thomson Rd (MacRitchie Resvr, Bus Stop ID: 51071)

Take bus 52, 74, 93, 157, 165, 852, 855 Alight at Thomson Rd (Opp MacRitchie Resvr, Bus Stop ID: 51079)

#### BY TRAIN

#### **Caldecott MRT station**

Walk 850 m along Toa Payoh Rise and turn right onto Thomson Rd.

#### Marymount MRT station

Walk 1.5 km along Marymount Ln, turn left onto Upper Thomson Rd, and turn left to Thomson Rd.



#### BY CAR

MacRitchie Reservoir Park car park is situated along Lornie Rd and Reservoir Rd about 10 m away from Bus Stop ID 51071 (MacRitchie Resvr)

# **Peirce Track** As you exit Windsor Nature Park and enter the Central Catchment Nature Reserve. you will pass by the MacRitchie Nature Trail junction. You can continue straight along the shorter paved road or explore the more shaded Terentang Trail to your left. Before ascending the Peirce Track to the TreeTop Walk, consider taking a break at the Ranger Station, the only rest stop offering restroom facilities and a water cooler within the nature reserve.

#### Flora and Fauna along this Trail

#### Simpoh Air (Dillenia suffruticosa)

As a pioneer species, or early coloniser of disturbed environments, the Simpoh Air is a large shrub that can grow up to 7 m tall, providing shade for other less hardy plants to establish themselves. It can be found in various habitats, including forest edges, streams, secondary forests, and swampy grounds. This shrub has deep taproots that can reach underground water sources. Hence, its presence may suggest an available underground water source. Look out for its large bright yellow flowers that last for a day.



Photo credit: Han Xue Yi



Photo credit: Zestin Soh

#### Carpenter Bee (Genus Xylocopa)

One of the pollinators of Simpoh Air, Carpenter Bees are large insects, about 2 to 3 cm in length. You may hear their loud buzzing as they use vibrations to dislodge pollen from flowers, a process known as buzz pollination. While they may look and sound intimidating, they are peaceful and docile in nature. True to their name, these solitary bees create burrows in solid wood, usually dead tree trunks and branches.

#### **Giant Forest Ant** (Dinomyrmex gigas)

One of the largest ants in the world, the Giant Forest Ant can grow up to 3 cm long, making it hard to miss. These black and reddish-brown ants usually nest in soil at the base of trees. Giant Forest Ants forage at all hours, primarily at night, with different ants maintaining their own day or night "shift". These giants exhibit territorial behaviours, engaging in prolonged and violent fights to protect their colony from other ant species.



Photo credit: Han Xue Yi

#### **Bracket Fungi** (Order Polyporales)

Also known as Shelf Fungi, Bracket Fungi have woody or leathery fruiting bodies that resemble shelves or brackets on tree trunks or fallen logs. Unlike the fruiting bodies of other fungi that wither after releasing spores, those of most bracket fungi are long-lived and can last for more than a year. Some bracket fungi are important decomposers of fallen logs and aid in the recycling of nutrients in the forest, while others may be parasites of living trees and can cause wood decay.



Photo credit: Han Xue Yi



Photo credit: Han Xue Yi

#### Wagler's Pit-viper (Tropidolaemus wagleri)

Vipers are venomous snakes with broad, triangular heads. Those found locally belong to a group called pit-vipers, named after a heat-sensitive pit between their eyes and nostrils for detecting warm-blooded prey. The Wagler's Pit-viper exhibits striking sexual dimorphism, where males and females have distinct appearances. Females are larger, reaching up to 1 m in length, and are black above with yellow bands and green spots, while males are less than half the length of females and are green with pairs of white and red spots.

#### **Orange-bellied Flowerpecker**

#### (Dicaeum trigonostigma)

Do you hear a high-pitched, high-frequency *tik-tik-tik* call coming from a small blue and orange bird? That is likely a male Orange-bellied Flowerpecker; females, on the other hand, are mostly olive brown with distinctive yellow rump and underparts. This bird feeds on nectar, small insects and fruits. It serves as an important disperser of mistletoe, which is a parasitic plant that grows on trees. Some mistletoe plants serve as food for butterfly species like the Great Imperial (*Jacoona anasuja anasuja*).



Photo credit: Shaun Spykerman

# TreeTop Walk The TreeTop Walk not only provides a panoramic view of nature and a glimpse of Upper Peirce Reservoir, it also plays an important role in forest canopy research, facilitation of surveys, and plant identification work. Observe the different forest layers and wildlife that inhabit the forest canopy. Tempinis Hut provides a rest stop after crossing the TreeTop Walk.

#### Flora and Fauna along this Trail

#### **Terentang** (Campnosperma auriculatum)

Growing up to 38 m tall and belonging to the mango family Anacardiaceae, the Terentang has long, teardrop-shaped leaves with two ear-like lobes at the bases of the stalk. Flowering shoots are similarly long, up to 50 cm, and bear tiny lemon-yellow flowers. The wood of Terentang was used to make the bases of blow-pipe darts, canoes and veneer, as it does not split easily. Spot the Common Staghorn Fern (*Platycerium bifurcatum*) with antler-like leaves which often grow on the branches of this tree.



Photo credit: Han Xue Yi

Photo credit: Cerlin No

#### **Dipterocarps** (Family Dipterocarpaceae)

The Dipterocarpaceae family is named after the two-winged fruits produced by many species, although some produce fruits with up to 5 wings. Believed to be the tallest tree in Singapore, the 60 m tall Seraya (*Rubroshorea curtisii*) belongs to the Dipterocarpaceae family of giant trees. Dipterocarps can grow to a height of 40 m or more, dominating the emergent layer of Southeast Asia's forests. Other members of this family include Meranti (*Shorea* spp.), Merawan (*Hopea* spp.), and Keruing (*Dipterocarpus* spp.).

#### Jelutong (Dyera costulata)

A native emergent tree that grows up to 80 m tall, the Jelutong has whorled leaves, resembling the fingers of an open hand. Like its leaves, its flowering shoots are arranged in whorls, bearing small white flowers. The fruit is a long, woody follicle, measuring 18 to 40 cm in length. They come in a pair and split upon maturity, releasing flattened, winged, wind-dispersed seeds. The tree was formerly tapped for its sap to make rubber and chewing gum.



Photo credit: Vicky Lim

#### **Olive-winged Bulbul** (*Pycnonotus plumosus*)

A medium-sized songbird of about 20 cm in length (bill to tail), the Olive-winged Bulbul is mostly brown with distinctive yellowish-olive wings and dark red eyes. It inhabits the canopy and is seldom seen on the forest floor, only descending to feed on berries in the lower trees or bushes. It is a common inhabitant of regenerating secondary forest. Listen out for its fast, repeated musical chattering, whip wi-wiu wrrh.



Photo credit: Shaun Spykerman



Photo credit: Han Hui Zhen

#### Pin-striped Tit-babbler (Macronus gularis)

Singapore is home to nine species of Babblers, including the Pin-striped Tit-babbler which has broad streaks on its yellow throat and breast. It grows up to 14 cm long (bill to tail) and feeds mainly on insects. Listen out for their call as small family or social groups move noisily through the mid-canopy of secondary forests. You may also hear individuals calling in a monotonous repeated *chut-chut-chut*, with a short pause every four to five notes.

#### **Changeable Hawk-Eagle** (*Nisaetus cirrhatus*)

Having two colour morphs, pale or black, the Changeable Hawk-Eagle is a medium-sized eagle that can grow up to 75 cm in length (bill to tail). The pale-morph adult has dark brown upperparts, white underwings and a white breast overlaid with dark streaks. The dark-morph adult is black all over with grey underwings and a dark-tipped tail. Listen out for its ascending series of shrill whistles, *kri-kri-kri-kri-kre-ah*, or *kreeee-krit*.



Photo credit: Sebastian Ow



#### Flora and Fauna along this Trail

#### Fishing Spider (Nilus albocinctus)

Its ability to run over water surfaces and dive into water are some of the unique talents of the Fishing Spider. Skidding across water surfaces allows it to attack and catch aquatic insect prey. Its diving ability enables it to stay submerged for five to 10 minutes, allowing it to hide from predators and catch small fish and tadpoles before bringing its meal onto land to enjoy. Spot it waiting for unsuspecting prey near the water's edge.



Photo credit: Han Xue Yi



Photo credit: Han Xue Yi

#### Medang (Litsea elliptica)

Growing to a height of 45 m, a mature Medang tree has buttress roots and smooth grey-brown bark covered in small lenticels (openings for gas exchange), giving it a unique 'bubbly' texture. Its clusters of small yellow fluffy flowers which typically go unnoticed from ground level due to the tree's height, become visible at eye level from the TreeTop Walk. The name Litsea comes from the Chinese words 'li' and 'tse', which mean little plum, while elliptica refers to the elliptic shape of the leaf blade.

#### Cempedak (Artocarpus integer)

Beside the Medang Hut is a tall Cempedak tree which can grow up to 20 m tall. The Cempedak fruit has softer flesh than its fig relative, the Jackfruit (*Artocarpus heterophyllus*). Birds and mammals like the Common Flameback (*Dinopium javanese*) and Long-tailed Macaque (*Macaca fascicularis*) feed on the Cempedak fruit that is borne on the trunk of the tree, a phenomenon known as Cauliflory.



Photo credit: Lim Yi H

#### **Common Mahang** (*Macaranga bancana*)

Growing to a height of 23 m, the Common Mahang is a mediumsized tree that has an obligatory relationship with Heart Gaster Ants (*Crematogaster sp.*). The plant provides shelter for the ants in its hollow stems and food in the maroon stipules (modified leaves). Additionally, the ants "farm" sap-sucking scale insects feeding on the plant to harvest their sugar-rich honeydew excretion. In return, the ants defend the plant from herbivorous insects and help prevent overgrowth of climbers by biting off foreign plant parts touching their leafy home.



Photo credit: Han Xue Yi



Photo credit: Han Hui Zhen

#### Hill Myna (Gracula religiosa)

Much rarer than the other Myna species encountered in our urban areas, the Hill Myna is mostly confined to forested areas. Its distinctive yellow facial wattles, orange-yellow bill, and yellow legs stand out from its predominantly black plumage. You can often hear its loud, piercing whistle, *ti-ong*, that repeats every few seconds. It is an excellent mimic, and also produces a wide range of squeaks, chirps and croaks. It is often seen in pairs or small flocks and perching on the exposed tops of tall trees.

#### Green Tree Snail

#### (Amphidromus atricallosus temasek)

Usually found in trees, the Green Tree Snail is an endangered mollusc with a unique yellowish-green shell that effectively camouflages it in the foliage, a useful characteristic as it feeds largely on algae. Interestingly, some snails will have shells that coil clockwise, while others coil counterclockwise, which is a phenomenon not seen in other snail species in Singapore. It can grow up to 5 cm with pale or orange body colouration. The shells of living snails appear green, while empty shells are often yellow.



Photo credit: NParks Flora & Fauna Web



#### Flora and Fauna along this Trail

#### **Common Red-stem Fig**

(Ficus variegata)

Reaching up to 40 m tall, the Common Red-stem Fig produces figs that are pink or red and can be found in clusters along the branches and trunk. This keystone species supports a wide number of animals. The figs serve as food and habitat for fig wasps, and ripe figs are eaten by mammals like the Longtailed Macaque (Macaca fascicularis) and Plantain Squirrel (Callosciurus notatus). The leaves are also eaten by caterpillars of the Mecodina lanceola moth.



Photo credit: Han Xue Yi



Photo credit: Shaun Spykerman

#### Common Treeshrew (Tupaia glis)

Small and brown with a bushy tail, the Common Treeshrew might look similar to a squirrel (Sciuridae family), but it has a distinctive long, tapering snout that squirrels do not possess. You may see it foraging for fruits and insects on the ground or among shrubs, either alone or in pairs. Treeshrews were thought to be related to shrews (Soricidae family), but they are more closely related to humans and resemble early ancestral primates.

#### **Lesser Mousedeer** (*Tragulus kanchil*)

Neither a mouse nor a deer (as it lacks antlers), the Lesser Mousedeer is the smallest hoofed mammal in the world and is the smaller of the two Mousedeer species found locally. The Lesser Mousedeer is found in nature reserves on the mainland while the Greater Mousedeer (*Tragulus napu*) is restricted to Pulau Ubin. Spot it feeding on leaves, fallen fruit, and even fungi. It is well known in Malay folklore as the wily *Sang Kancil* that outwits large predators like the crocodile and tiger.



Photo credit: Shaun Spykerman

#### Dung Beetle (Family Scarabaeinae)

Dung Beetles support nutrient recycling in the ecosystem by feeding on feces and returning nutrients back to the environment. It has a shovel-shaped head and strong forelegs that it uses to roll dung into balls. Dung beetles either roll dung balls into their burrows (rollers) or push chunks of dung into their tunnels (tunnellers). Both larval and adult beetles consume the dung, and also use it as nesting material. More than 20 species of Dung Beetles have been recorded in Singapore's forest, the largest being the *Catharsius renaudpauliani* which measures about 3 cm long.



Photo credit: Sean Yap, TEELab



Photo credit: Mary Ruth Low

#### Paradise Tree Snake (Chrysopelea paradisi)

The more common of the two species of gliding snakes in Singapore, the Paradise Tree Snake can take off from one tree and land on another! For this slender reptile to glide, it first flattens its body to double its width, right before taking off. In the air, it further improves its aerodynamics by moving its head from side to side, creating waves down its body, as though it is slithering in the air. This metre-long snake is active in the day (diurnal) and it forages for lizards, frogs, and small mammals.

#### **Branded Imperial** (*Eooxylides tharis*)

Many butterflies in the Lycaenidae family (the second largest butterfly family), including the Branded Imperial, have an interesting defense strategy — a decoy head. Made up of two antennae-like tails on its hindwings and a few black spots, the decoy head aims to trick predators into attacking a less vital part of the butterfly's body. The butterfly can attempt to escape even if its hindwings are damaged.



Photo credit: Joseph Lin

## **End of Trail**

We hope you have enjoyed your walk at Windsor Nature Park and TreeTop Walk. Can you recall some of the memorable wildlife moments you have observed?

If you would like to do your part to help conserve our native species, we welcome you to join us as an NParks volunteer. If you wish to explore more of the Central Nature Park Network, Thomson Nature Park, Springleaf Nature Park and Rifle Range Nature Park are also rustic green spaces rich with biodiversity.

Scan the QR codes below to check out available volunteering opportunities, self-guided walks and guided tours.

Volunteering Opportunities



https://go.gov.sg/cnr-vol

Self-guided Walks and Guided Tours



https://go.gov.sg/self-guided-walks

