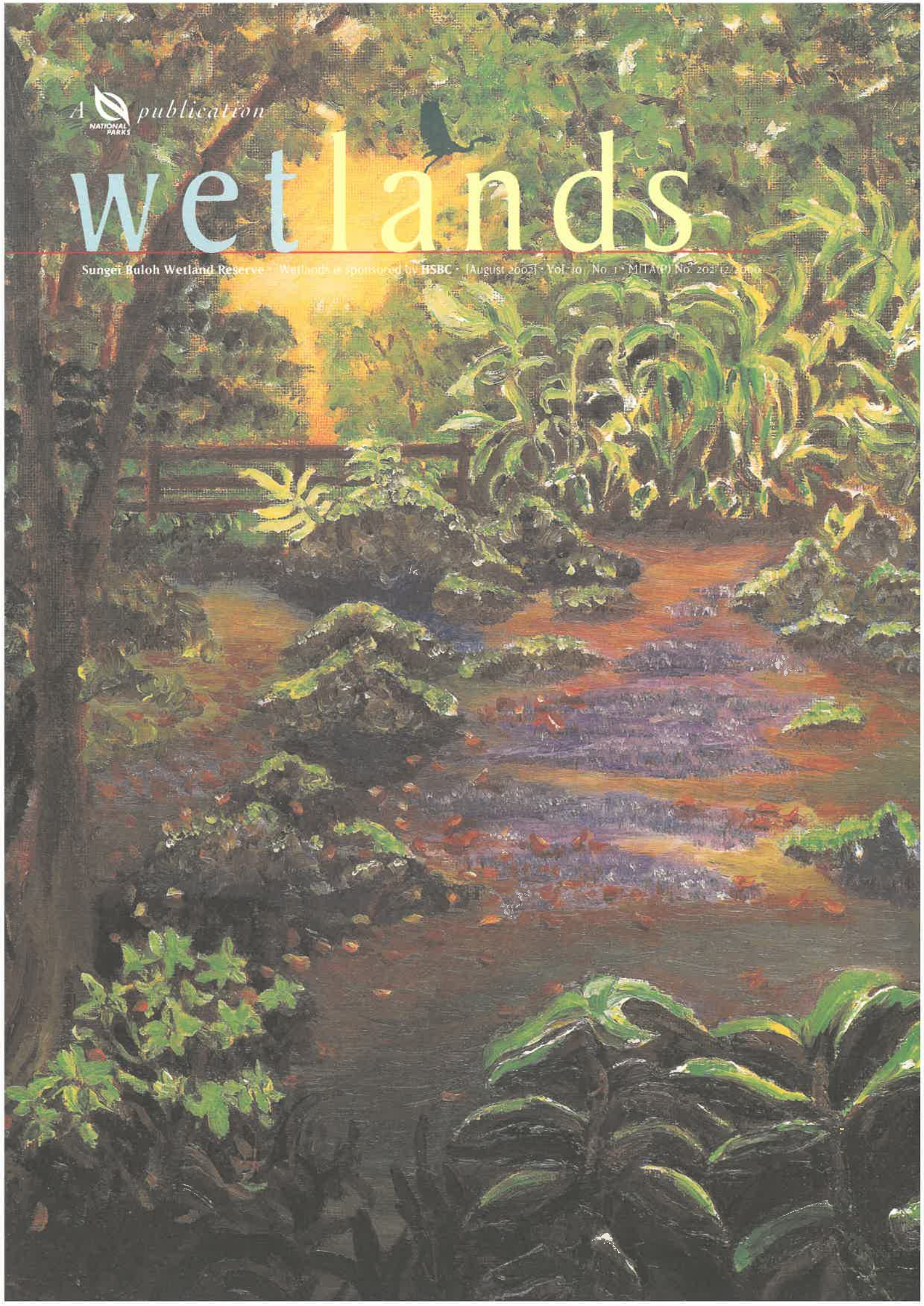




A publication
NATIONAL PARKS

wetlands

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"The Mangrove Boardwalk holds special treats for me each time I visit it. One such treat is in the early morning when the tide is low. The warm gentle rays of golden sunlight stream across the cushy carpet-like algae on the mangrove bed, glazing it with an ethereal glow of purplish hue and glistening, the moss covered lobster mounds with a brilliant greenish-yellow tint on its overnight mist. This magical quality is nature's artistry at work. Being able to enjoy this captivating visual experience is pure delight. It inspires me to look no further than this humbling habitat for a muse to my creative endeavours."

Tham Pui San, Volunteer Guide, Sungei Buloh Wetland Reserve, July 2002

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Cover drawing by Tham Pui San
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editorial Evident from the articles presented in Wetlands is an underlying passion the contributors have for Sungei Buloh Wetland Reserve. Expressions of their profound respect for and love of nature are clearly exhibited through the effort and time they put into researching subjects like the fascinating snakes, colourful and gregarious kingfishers, to the artistic interpretation of nature and the relentless effort to enrich the mangrove habitat for the inhabitants. This rare oasis has been a constant source of inspiration that beckons them to immerse and experience the bountiful beauty, establishing a sense of place between them and the natural environment.

Linda Goh



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HSBC's Care-for-Nature programme is dedicated to help conserve and protect our living resources in our natural environment and at the same time to generate awareness among the public to do likewise.

The sponsorship of 'Wetlands' is one such effort to help promote a better understanding and appreciation of wetland ecology such as Sungei Buloh and its importance to our natural landscape.

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Here are some amazing snake facts to be learnt at Sungei Buloh Wetland Reserve as Nick Baker, a research volunteer, found out.



snakes:

myth & reality

For thousands of years snakes have been hated, persecuted and killed for no other reason than fear and ignorance. Why do snakes provoke such extreme reactions? It may be that we are genetically-programmed to be cautious of snakes. Indeed, a sense of caution is recommended if you find an unknown species of snake. But here in the 21st Century, supposedly an age of enlightenment, there are still many people with 15th Century fears and superstitions of these fascinating creatures. It is a simple matter for people to recognise a few species of snake, and learn to appreciate their beauty.

So what about the snakes of Sungei Buloh? Well, the commonest snake is certainly the Dog-faced Water Snake (*Cerberus rynchops*). This is a common species of the mangrove habitat; it emerges after dark to feed on small fish, but you may sometimes encounter this species on overcast days beneath the Main Bridge. As many volunteers helping with research work have found to their delight, these snakes are easily handled; though the larger specimens may attempt a harmless bite when handled, there is little to fear from these creatures.

The commonest arboreal snake in the reserve is probably the Paradise Tree Snake (*Chrysopelea paradisi*). This beautiful snake species, patterned in green and yellow, is rather shy and will not hesitate to move away quickly when disturbed. If there was any superstition about 'flying snakes' then this is the species to blame; snakes of the *Chrysopelea* genus are able to dorso-laterally flatten their bodies to allow them to glide long distances from tree to tree in a sinuous snake-like motion.

Also present in Sungei Buloh is the handsome Oriental Whip Snake

(*Ahaetulla prasina*). A startlingly vivid green colour, this species can be found in both mangrove and secondary habitats. In Singapore this beautiful, harmless species is often killed by the public in parks and gardens because it is believed to be dangerous. Such a sad end for one of nature's most stunning snakes.

Bronzebacks are to be found here too, the most common being the Painted Bronzeback (*Dendrelaphis pictus*). This brown, cream and turquoise species may adopt a defensive posture if disturbed and attempt to snap at an intruder. But when you consider this species is so slim that its mouth measures less than 1 centimetre across, you realise how brave it is to bluff in this manner.

What of the Cobras, Vipers and Pythons? Well, the Black Spitting Cobra (*Naja sumatrana*) can be found in the reserve, but extremely wary of people and will not hesitate to flee, while the non-venomous Reticulated Python (*Python reticulatus*) is common but elusive. Perhaps the most venomous snake here is the rare Shore Pit Viper (*Trimeresurus purpureomaculatus*) which lies coiled on the branches of mangrove trees; but consider that this species has only

been sighted three times in the last year, you realise how rare it is.

Finally, do you know that Sungei Buloh has the longest snake species on earth, the Reticulated Python, as well as one of the shortest, the Common or Brahminy Blind Snake, (*Ramphotyphlops braminus*). This tiny species reaches a maximum length of just 17 cm, and most specimens are less than 10 cm. This is a burrowing species with tiny, virtually useless eyes. Amazingly this is the only snake species in the world to reproduce by parthenogenesis; this means that all the snakes are female and that reproduction is asexual. When the blind snake feels like having children she just goes right ahead and has as many as she likes! 🐍

It is worth noting that less than 20% of snake species are considered venomous enough to be hazard to us humans.



text and illustrations
by Joseph Lai,
Conservation Officer

Feel & Fly

For Students

Feel & Fly

With words & wings

Me & I

We talk about everything!

*Me and I - that's me in one.
I am my own best friend.
We talk about everything
and at any time in our own
inner space. Having said so,
you might think I am mad.
Not so, indeed. It's my inner
space that gives real
meaning to the 'outer'
world I live in. Staying
connected. Keeping in touch
with my feelings. Knowing
myself. That's me and I —
a perfect start in knowing
and understanding the
world I live in, and making
sense of the experiences I
encounter in my life.*

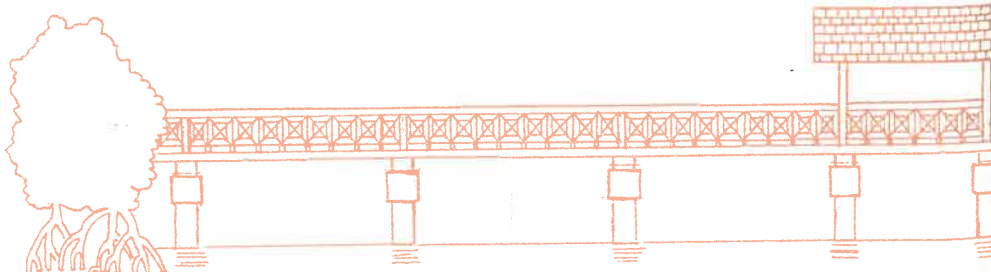
Poems are like little bridges. They connect feelings and experiences. And if you look at life as a journey, which indeed is true, you will see countless number of bridges we have to cross. Even if you don't write poems, these bridges do exist in your life. They are there when we laugh, cry or sing. Poets are people who cherish these bridges. They build them with heartfelt words and make them visible. When we do find someone else's poem enjoyable, it is because it makes our invisible bridge visible. That's when we say, 'I felt like that too!'

'So what's wrong with me?' you may ask. Why can't I write? Well, nothing is wrong. As poets will tell you, there is a time and place for everything. A good start is to read anthologies. When you have found a particular poet interesting, read more of his or her works, and analyze them. But most importantly, give your 'me and I' a chance to meet. Inculcate quiet time.

Visit nature areas like Sungei Buloh. Slowly but surely, you will find your inner space in the creative space of

Nature. Listen with your eyes and see with your ears. Jot down your thoughts, feelings and imageries. Save them. One day, you will be inspired to build your first bridge. And it can be as short and sweet, swift and spontaneous, and as simple as 'Feel & Fly'!

Always be natural. Don't try to be sophisticated. Speak truly from your heart and be not afraid. Your poems matter only to you. They are as beautiful and unique as you naturally are!



For Parents & Teachers

I have been inspired by the migratory birds in Sungei Buloh to write 'Feel & Fly' and 'My Little Candle'. Their wandering in the wilderness attracts me with pure wonderment. When I saw them flying, 'me and I' were flying with them in our inner space. And I felt very happy.

That is what I want my 8-year-old son to 'see' and feel when I bring him here. My role is simply to open up for him new experiences to exercise his natural sense of wonder and curiosity, and to spread his 'wings' to think and express, on his own terms, through spontaneous self-discovery.

As parents and teachers, we must recognize how stimulating and liberating Nature is. It is where children can be truly children. For children are not birds in cages. And 'fly' they will if we provide them the creative freedom to do so. Put the world of natural beauty on their mental map and they will lead the spirited life. With that, they can be everything they want to be, and be self-driven seekers of knowledge.

The great poet and philosopher, Rabindranath Tagore, once wrote:

'Children have their active subconscious mind which, like the tree, has the power to draw food from the surrounding atmosphere. For them the atmosphere is a great deal more important than rules and methods, equipment, text-book lessons... But in

our educational organizations we behave like miners, digging only for things and not like the tillers of the earth whose work is a perfect collaboration with nature.'

'My Little Candle' speaks about light, the light of sight, vision, hope, truth and journey. I have dedicated it to my mother who frequently warned me of the trappings of 'dead knowledge' in my schooling days. That it's not how much I can get from knowledge, but rather, how much I can make sense of it in the world to make it a better and more beautiful place to be.

Thanks, mum & 
Mother Nature!

My Little Candle

My little candle
does shed
a little circle of light,
which guides
my way in life
on a migratory flight.

The warmth I feel
within my heart
it stays,
and in the setting suns
on my horizon
does my spirit plays.

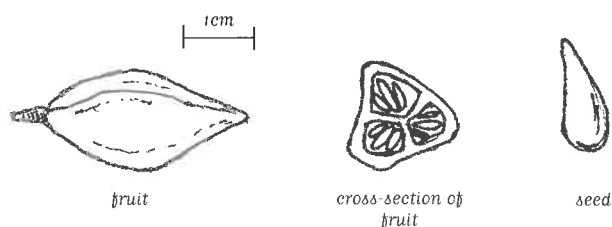
Rejoice thus I
within its glow
a flicker on my cheeks does show,
to smile with nature's creations
whose names
I need not know.

So might I remain
forever true and free
from snaring Dead Knowledge,
to hold fast my candle vigil
over the lightness
of my passage.

Whence with age my eyes doth fail
I hope the sparkle within
to keep,
and follow my heart
into the wonders
of a star-spangled sleep.

Joseph Lai

[scientific name] *Merope angulata* (Merope, the name of a Greek nymph and daughter of Helios. The Latin word, *angulata*, meaning angular, refers to the shape of the fruit)



text & illustrations by
Joseph Lai, Conservation Officer



here's a report of two success stories

finding & growing native plants

[common name] Limau Lelang (the Malay word, lelang, evidently compares its long thorns to a hawk's talons)

[habit] A lime-like shrub or small tree with stout single or paired thorns.

[leaves] 8 to 11cm long, alternately arranged, glabrous (hairless), thin leathery, margins faintly notched. Leaf blade oblong, blunt or slight pointed at the tip, covered entirely with minute oil glands that are visible as translucent dots when held against the light with an eye-lens, and aromatic when bruised. Midrib (main vein) raised prominently on the underside, side veins faint. Leaf stalk without the familiar wings found commonly on other lime plants.

[thorns] Pointed, woody and slender, up to 3.5cm long, single or paired on leaf axils.

[flower] Flower fragrant, single, axillary, petals 5, white, about 2cm long; bisexual, stamens 10, ovary superior.

[fruit] Like a miniature lemon, about 4cm long, triangular or 4-sided in section, consisting of 3 to 4 locules (fruit chambers). Apex of fruit pointed. Fruit ripens yellowish-green, filled with slimy large long, flattened seeds.

[remarks] *Merope angulata* belongs to the Lime Family (Rutaceae). It is restricted to back mangrove and river banks, and can be found along the western coast of Peninsular Malaysia

(Perak, Negri Sembilan and Malacca) to Singapore where it is currently very rare. The salt tolerant nature of this species had been considered as a potentially useful root stock for Citrus plant cultivation. The fruits are much sought after by the Malays for medicinal purposes.

This plant was recently spotted by the author while surveying the neighbouring back mangrove of the up-and-coming Kranji Nature Trail. There was a knee-high sapling as well as two large shrubs with an average height of 2m growing in close proximity on soggy (and brackish) substrate. Seeds have germinated successfully 3 weeks after sowing in June 2002. The parent plants will be monitored for more fruits. 🌿

Glochidion littorale...

[scientific name] *Glochidion littorale* (the name is derived from the root word of Greek origin, glochin - meaning a point; referring to the 6 stamens of the male flower which are joined in a pointed knob or column. The Latin word, *littorale*, meaning by the sea.)

[common names] Ubah, Jambu kera, Selunsor, Hujan panas, Daun san sik

[habit] A shrub or small tree with brown flaky bark, growing to about 6m high.

[leaves] Alternately arranged, short stalked, glabrous (hairless), leathery, obovate with a rounded apex, varying in length from 5 to 15 cm long. Underside greenish-yellow, upper side glossy, midrib (main vein) prominently raised, appearing white. Leaves wither bright yellow with red blotches.

[flower] The plant is *monoecious* (meaning literally one-housed, i.e., bearing separate male and female flowers on the same tree); flowers tiny, apetalous (without petals), in dense clusters in leaf axils, male flowers with 4 to 5 times longer stalks than female.

Male flower, pendulous, with 6 light green sepals, arranged in two sets of 3 on top of each other, stamens 6, joined in a short pointed knob.

Female flower with 6 somewhat joined short sepals, forming a cup. Styles fused into a fleshy pinkish-white knob, toothed at apex.

[fruit] A globose capsule, 1.5 to 2cm in diameter, lobed, consisting of 12 to 15 locules (fruit chambers). Apex of fruit depressed like a dimple. Fruit ripen red, splitting between the lobes. Seed red, 2 per locule.

[remarks] *Glochidion littorale* belongs to the Rubber Tree Family (Euphorbiaceae), but does not have white sap. It has a wide distribution, ranging from India, Sri Lanka, Indochina, S.E. Asia, to the western limit of the Philippines, but currently, it is very rare in Singapore. It occurs in sandy beaches and back mangroves. The young red leaves are edible.

You can find the plant planted by the pond of our Visitor Centre. It was raised from seed collected by the author at the former back mangrove of Nee Soon Road in August 2000. It is now 2.5m tall. 🌿





Black-capped
Kingfisher

by Calvin W. L. Ho,
Reserve Volunteer

the kingfisher experience



Blue-eared
Kingfisher

A little known fact about the Sungei Buloh Wetlands Reserve (SBWR) is that it is home to all 8 species of Kingfishers recorded in Singapore. Three species are residents (Collared Kingfisher *Todiramphus chloris*, Stork-billed Kingfisher *Pelargopsis capensis* and White-throated Kingfisher *Halcyon smyrnensis*). The other five species are visitors (Black-capped Kingfisher *Halcyon pileata*, Blue-eared Kingfisher *Alcedo meninting*, Common Kingfisher *Alcedo atthis*, Black-backed Kingfisher *Ceyx erithaca* and Ruddy Kingfisher *Halcyon coromanda*).

Even less known may be the fact that Kingfishers have long captured the fascination of man. And those fascinated have not failed to record their "Kingfisher experience", with the

oldest record dating back to ancient Egypt. The uncontested eminence of Kingfishers may be attributable to their distinct features and traits that set them apart from the other birds.

the residents...

Bright and colourful plumage

Kingfishers are renowned for their vivid plumage. These range from all shades of blue to green, orange-brown to ginger, and even black and white. Not surprisingly, Kingfishers have been featured at an early stage of history as illustrated by a 14th century BC Egyptian painting of a Kingfisher against a marshland setting.

In the Far East, the ritual classic of the ancient Chinese Chou Dynasty (approximately 1050 - 256 BC) describes the use of Kingfisher feathers in the third of six ceremonial dances, apparently for the purpose of blessing the four quarters of the realm. The reference to the striking plumage of Kingfishers by Li Shang Yin, a famous poet of the late T'ang Dynasty, in his "No Title" poem, is just one among many sculptures, paintings, embroidery and other works of art that featured these magnificent birds since the Chinese T'ang Dynasty (approximately 7 to 10 AD).

Habitat by the Water, Swift Movement and Dives for Prey

The Kingfisher species recorded at SBWR generally live in habitats that are close to water. They have a reputation for direct and swift movement, whether it is in switching from one perch to another, defending territory, hovering momentarily before an attack, capturing insects in mid-air, diving for aquatic prey or swooping down for land prey. When hunting, a Kingfisher would typically be sedentarily perched on a snag, tree or

service wire overhanging an open area or water surface providing it with a clear view of potential prey. On locating its prey, it plunge-dives off the perch, captures the prey with its bill and returns to the perch position - all in a flash of single-minded resolve. Such swiftness has not escaped the attention of man and it has been depicted in various anecdotes:

- The socio-cultural transition of the Malay Archipelago from the Hindu-Buddhist era to the Islamic era led to a change in the construction and use of the kris. The Garuda-shaped hilt was replaced with the form of a Kingfisher (pekaka), perhaps to emphasize the swiftness which was necessary as the kris assumed a more prominent role as a weapon.
- Some of the Vimanas (airships described in ancient Indian writings) were named after Kingfishers in the Vedas, a collection of ancient Hindu poems.
- The swift movement of Kingfishers has been featured in the folklore of several tribes of the North American Indians, including the Sioux and the Arikara tribes. This has more recently been used symbolically in Gerard Manley Hopkins' poem which opens with the words "[a]s kingfishers catch fire, dragonflies draw flames" (in the study of counterpoints in language) and Charles Olson's "The Kingfishers" (in the examination of compartmentalization of information).

Distinctive Call and Bill

Kingfishers have comparatively distinctive calls; ranging from thin shrill squeaks to harsh discordant shrieks or cackles.

The Koreans have long noticed the distinctive calls and bills of Kingfishers and an explanation was attempted. In a folklore, the lengthy bill of a Kingfisher was the consequence of a physical confrontation with the locust (more likely to be a cicada) that arose from a dispute between them. This dispute has not been resolved and is regularly heard at SBWR.

In fact, Kingfishers have distinctively long and straight dagger-like bills in order to hold fast their prey upon capture. A firm grip on the captured prey is important as it is not immediately consumed. Once the Kingfisher has returned to its perched position, the prey is struck and battered against a hard object (which may take up to 30 minutes) before it is swallowed, usually headfirst.

Solitary and Solidarity

Kingfishers are particularly territorial and are usually seen alone, except during the breeding season when they can be sighted in pairs. This observation may have inspired the moving story in Greek mythology between Alcyone, daughter of Aeolus, King of the Winds, and Ceyx, son of the Morning Star. When Ceyx was drowned at sea, the distraught Alcyone cast herself into the sea in order to be with her husband. Moved by her devotions, the gods transformed both Alcyone and Ceyx into Kingfishers so that they could be together again.

Due in part to the Greek myth, it was once thought that Kingfishers built their nests out at sea. However, it is now known that their nests are found on land and are burrows excavated in the ground, usually near a river or some form of water body, in a termite mound or in decayed tree trunks.

A Walk through the Wetlands

SBWR provides wonderful opportunities for every visitor to share in this wealth of natural and cultural "Kingfisher experience" that has so enriched our ancestors. The colours that dazzled, the swiftness that marveled, the calls that astounded and the solidarity that inspired can still dazzle, marvel, astound and inspire today. All of these in a casual stroll through the Reserve. 

table provided by James Gan, Senior Conservation Officer

Species	Length (mm)	Weight (g)	Survival (months)	Occurrence at SBWR
Stork-billed Kingfisher (n=10)	348-388	154.0-224.0	25	All year
White-throated Kingfisher (n=11)	261-283	63.0-85.0	10 cf 66*	All year
Collared Kingfisher (n=60)	230-264	50.0-76.0	83 cf 131*	All year
Black-capped Kingfisher (n=9)	286-310	71.0-138.0	21 cf 99*	Sep-Mar (Oct, Nov Peak)
Blue-eared Kingfisher (n=1)	153	16.0	No info	Vagrant - 1 record
Common Kingfisher (n=12)	166-173	24.0-28.0	No info	Sep-Mar (Sep, Oct Peak)
Black-backed Kingfisher (n=1)	125	14.0	25*	Rare, Winter Visitor
Ruddy Kingfisher (n=2)	266-268	76.0-77.0	71*	Rare, Winter Visitor

Source of Bird Data are from SBWR Bird Ringing Programme. Those marked with an * are taken from The Birds of the Thai-Malay Peninsula by David R Wells



by James Gan, Senior
Conservation Officer

*Dehiscent Fruit Pods of
Dolichandrone Spathacea*

wetland rainforest

the sungei buloh mangroves

references

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The mangroves are a rare habitat in Singapore. In the 1950s mangroves covered over 7,000 ha (12% of the 577 sq km area then). Today, approximately 750 ha (1.1% of the 680 sq km now) still exist. Currently, the largest block of mangroves in Singapore totalling more than 100 hectares, is found in Sungei Buloh. This area is under legal protection as the biological significance of the mangrove ecosystem has been recognised by the government.



Sungei Buloh is conserved for its mangrove ecosystem, a key indigenous ecosystem that the government has committed to safeguard. Historical records state that the Sungei Buloh area consisted entirely of mangrove. Old photographs of the area support the records. In particular, the mangrove habitat found today on Pulau Buloh off the coast of Sungei Buloh appears to be undisturbed for at least the past 50 years. This was the case for most of Sungei Buloh until 1969. In the early

1970s, clear felling of mangrove trees was carried out. Earth bunds were constructed amongst the mangroves to form a network of ponds for the culture of prawns. When pig farming was phased out in the late 70s, the farmers were resettled in Sungei Buloh. The farmers involved in the prawn pond culture system ceased their operations when the Sungei Buloh site was approved as a park development project in 1989.

With a colourful history of plantation agriculture, agricultural mixed farming practices, prawn and fishpond culture, what mangrove flora remains in Sungei Buloh today?

It seems that quite a lot of mangrove flora have survived. The list of mangrove plant species recorded for Sungei Buloh according to the categories of major, minor and associate following the criteria of Tomlinson (1986) are provided in Table 1. Of the 62 species extant in Singapore, 47 species (75%) can still be found in Sungei Buloh. Of the 47, four species were brought in as part of an on-going conservation programme of enrichment planting. We expect that the next few years would see the re-establishment of all 62 extant species of mangrove thriving in dynamic equilibrium in Sungei Buloh.

Mangroves are generally very hardy and can thrive in areas that have been heavily disturbed. A good example is the Singapore River which has seen reclamation since 1822. Relic mangrove flora can still be found along its tributaries. Beside Zouk discotheque's carpark at Jiak Kim Street, several mature trees of the endangered *Dolichandrone spathacea* can still be seen together with *Avicennia officinalis*, *Aerostichum speciosum* and a few other mangrove species. In Sungei Buloh, botanical surveys over the years have revealed surprises too. The presence of mangrove species once thought to be extinct to the area include the *Oncosperma tigillarum*, *Brownlowia tersa* and *Merope angulata*.

Given another decade or two, the current mangrove ecosystem at Sungei Buloh could more closely resemble the original ecosystem. The challenge is to manage the existing mangrove in terms of species composition, stand maturity and to enhance the back mangrove while providing recreational and educational opportunities for visitors. We will play a key role in achieving this. When stenotopic species such as the Mangrove Blue Flycatcher (*Cyornis rufigastra*), Mangrove Pitta (*Pitta megarhyncha*) and Ruddy Kingfisher (*Haleyon coromanda*) take up residence in Sungei Buloh, we would know that our efforts have been realised. Let's work together to make this happen! 🌿

table 1: mangrove flora of sungei buloh

No.	Species	Family	Major	Minor	Associate	S'pore Status
1	<i>Acanthus ebraacteatus</i>	Acanthaceae	No	No	Yes	R
2	<i>Acanthus ilicifolius</i>	Acanthaceae	No	No	Yes	R
3	<i>Acanthus volubilis</i>	Acanthaceae	No	No	Yes	R
4	<i>Aerostichum aureum</i>	Pteridaceae	No	Yes	No	C
5	<i>Aerostichum speciosum</i>	Pteridaceae	No	Yes	No	V
6	<i>Allophylus cobbe</i>	Sapindaceae	No	No	Yes	R
7	<i>Ardisia elliptica</i>	Myrsinaceae	No	No	Yes	R
8	<i>Avicennia alba</i>	Avicenniaceae	Yes	No	No	C
9	<i>Avicennia officinalis</i>	Avicenniaceae	Yes	No	No	R
10	<i>Avicennia rumphiana</i>	Avicenniaceae	Yes	No	No	R
11	<i>Barringtonia asiatica</i>	Lecythidaceae	No	No	Yes	R
12	<i>Barringtonia racemosa</i>	Lecythidaceae	No	No	Yes	N
13	<i>Brownlowia tersa</i>	Tiliaceae	No	No	Yes	V
14	<i>Bruguiera cylindrica</i>	Rhizophoraceae	Yes	No	No	R
15	<i>Bruguiera gymnorhiza</i>	Rhizophoraceae	Yes	No	No	R
16	<i>Caesalpinia crista</i>	Leguminosae	No	No	Yes	R
17	<i>Calamus erinaceus</i>	Palmae	No	No	Yes	V
18	<i>Calophyllum inophyllum</i>	Guttiferae	No	No	Yes	R
19	<i>Cassine viburnifolia</i>	Celastraceae	No	No	Yes	N
20	<i>Ceriops tagal</i>	Rhizophoraceae	Yes	No	No	R
21	<i>Cynometra ramiflora</i>	Leguminosae	No	No	Yes	N
22	<i>Derris trifoliata</i>	Leguminosae	No	No	Yes	C
23	<i>Dolichandrone spathacea</i>	Bignoniaceae	No	No	Yes	N
24	<i>Excoecaria agallocha</i>	Euphorbiaceae	No	Yes	No	R
25	<i>Finlaysonia obovata</i>	Asclepiadaceae	No	No	Yes	V
26	<i>Glochidion littorale</i>	Euphorbiaceae	No	No	Yes	R
27	<i>Heritiera littoralis</i>	Sterculiaceae	No	Yes	No	R
28	<i>Hibiscus tiliaceus</i>	Malvaceae	No	No	Yes	C
29	<i>Intsia bijuga</i>	Leguminosae	No	No	Yes	R
30	<i>Lumnitzera littorea</i>	Combretaceae	Yes	No	No	R
31	<i>Lumnitzera racemosa</i>	Combretaceae	Yes	No	No	R
32	<i>Merope angulata</i>	Rutaceae	No	No	Yes	N
33	<i>Nypa fruticans</i>	Palmae	Yes	No	No	R
34	<i>Oncosperma tigillarum</i>	Palmae	No	No	Yes	R
35	<i>Pandanus odoratissimus</i>	Pandanaceae	No	No	Yes	C
36	<i>Podocarpus polystachyus</i>	Podocarpaceae	No	No	Yes	N
37	<i>Pongamia pinnata</i>	Leguminosae	No	No	Yes	N
38	<i>Portulaca obovata</i>	Sapotaceae	No	No	Yes	R
39	<i>Rhizophora apiculata</i>	Rhizophoraceae	Yes	No	No	R
40	<i>Rhizophora mucronata</i>	Rhizophoraceae	Yes	No	No	R
41	<i>Scyphiphora hydrophyllacea</i>	Rubiaceae	No	Yes	No	R
42	<i>Sonneratia alba</i>	Sonneratiaceae	Yes	No	No	C
43	<i>Sonneratia caseolaris</i>	Sonneratiaceae	Yes	No	No	N
44	<i>Sonneratia ovata</i>	Sonneratiaceae	Yes	No	No	N
45	<i>Terminalia catappa</i>	Combretaceae	No	No	Yes	C
46	<i>Thespesia populnea</i>	Malvaceae	No	No	Yes	R
47	<i>Xylocarpus granatum</i>	Meliaceae	No	Yes	No	R

C = Common • R = Rare • V = Vulnerable • N = Endangered



how sungei buloh 'got' me

Awakened by the true beauty of Sungei Buloh, volunteer Tham Pui San discloses how this wetland reserve captivated and captured his imagination, leading him to fulfil his desire to contribute to this unique ecosystem.

I was looking around for suitable spots for my nature photography and outdoor painting. I did not chance upon SBWR, but knew it was there to be visited if I could not find anywhere else to go. That was the attitude I had towards SBWR. There was no particular reason for me to return to SBWR, especially after a rather bad episode of an extended period of allergy from our winged bloodsucking friends, on my first visit in 1996.

Now, when I think about it, that excuse was indeed frivolous. To be put off by mosquitoes, forsaking the undiscovered wonders of SBWR is unjustly unthinkable for any nature lover.

My second chance encounter with SBWR came about on a photographic outing with my interest group in Dec 2001. That "rediscovery" of SBWR's attractions changed my mind entirely. From then on, I was there practically every weekend and sometimes, on weekdays, I would take leave from

work to enjoy the peace and serenity to sketch and paint.

Taking walks along the various routes, boardwalks and occasional sidetrack enabled me to uncover some wonders every now and then. In early Feb, I was digiscoping at Hide 2A when I witnessed a failed attack by a water monitor on an egret, which managed to escape with apparently only ruffled feathers. At the same pond on the next day, four otters made my day when they appeared out of nowhere, frolicking where I was sketching by the pond. The excitement got me messaging my wife, my children and nature friends. It took me several minutes to get over the thrill of sighting wild otters right here in urban Singapore! What a magical sight and moment of discovery for me!

Were the sightings fortuitous or do they happen all the time, without us humans bearing witness to such excitement? A quiet walk and

patient observation could yield some answers. There are the beautiful spiders of various descriptions, providing much interest to Arachnid fans, mantis that could be mistaken for twigs, fish that spit at insects, and the list goes on.

Not forgetting that I was seeking birds and landscape in the first place, which abound in the reserve, how could I become so insensitive to such beauty and wonder that a habitat like this could provide, and not become involved in a constructive way with this wonderful reserve. I decided I must do something.

I approached a helpful counter staff, Andrew, about the volunteer scheme and that afternoon, Keith contacted me, setting the path for me to become one. 🐼

Interested to attend an art workshop conducted by Pui San, call 67941 401.

by Jeanne Tan,
Senior Education Officer

world environment day 5 june 2002... ... connecting you and me ...



GIVE EARTH A CHANCE - The theme, "Give Earth A Chance" signifies a calling on each member of the human race to play a

part in the healing of this planet, plagued by many lingering problems. World Environment Day evidently becomes a principal tool through which world wide awareness of the environment is enhanced. You and I, we have a connection to our environment. Our lives depend on it. It is our inheritance, it is our world. On World Environment Day, the door has been opened to give us an opportunity to translate this connection into action!

Sungei Buloh Wetland Reserve partnered Ministry of the Environment (ENV) on 5 June 2002, to advocate World Environment Day as a people's event, inspiring and involving members of the public, to participate in different programmes. Environmental issues such as waste minimization, anti-littering and recycling were presented in a play

IN THE BEGINNING - World Environment Day was established by the United Nations General Assembly in 1972 to raise environmental awareness and to encourage action to protect the environment.

staged by students from Temasek Polytechnic. The play ran along a timeline, presenting important environmental issues through creative use of drama and songs, incorporating familiar tunes from the soundtrack of "Grease" and using interesting characters that appealed even to younger audience, such as those of the "Flower fluff" girls!

Indoor and outdoor sessions were also part of the day's agenda. The games and outdoor activities taught children the importance of the mangroves and how litter can destroy life. The games must have been a favourite with the children. It gave them an opportunity to take home, not only a prize (courtesy of ENV), but also several important messages that tied in with the games.

The take home messages revealed in different ways that preserving life on this earth is a common task to all mankind, and that there is a lot more to what we as citizens of this world can do to care for our environment, and work towards securing a more sustainable future.

On this World Environment Day, let us awaken and enlarge our reflections of the environment and the world that we live in, humbly examining the state of our environment and carefully consider what we as individuals can do to make that connection between our environment and us, a connection to commit ourselves to preserving what we have on this earth, respectfully embracing this sense of identity, belonging and continuity to our environment... 

calendar of events

compiled by Halifah Ahmad,
Education Officer

Creature Feature - Kingfisher

September - December 02
Sat from 9.15am to 9.45am

Hear the "King of the wetlands" call each time you cross its path in the Sungei Buloh's Mangrove Boardwalk. Do kingfishers nest on trees like their neighbours, the Yellow-Vented Bulbul? Come and join us for this interesting show-and-tell session and get to know some interesting facts on kingfishers.

Mangrove Mania

Every Saturday (except public holidays)
at 9am, 10am, 3pm & 4pm



Under the watchful eyes and expert guidance of our guides, discover the beauty of the Reserve's unique flora and fauna of the mangrove habitat. This programme may be replaced with other interesting programmes that coincide with the respective time slots.

Nature Detective

Daily

A challenging activity for the inquisitive mind, be a "Nature detective" for the day and you will be rewarded with a Nature Detective certificate. Nature Hunt questions are available at the ticketing counter.

Signs of Support

Daily

Explore the reserve and find out how you too can help care for our Park. Worksheets are available at the ticketing counter.

Art Form

Daily

Be an artist for the day! Submit a drawing or painting of Sungei Buloh and earn your artist stamp in your young naturalist passport. To participate in the Young Naturalist Programme, check out our website at <http://www.sbwr.org.sg>.

PrawnWatch 2002

31 August, 7 September, 23 November
and 28 December at 9 am to 11 am.



Come join us for this unforgettable experience to witness the traditional prawn harvesting

demonstration. Be at the reserve by 9am and our guides will bring you to the harvesting site.

Art in the Wetlands

7 September at 9am, 21 September at 2pm

A workshop over 2 Saturdays that includes a short theory session on various drawing techniques and field drawing. Participants can draw and paint using the different types of drawing medium. Limited to 25 people per group. Do call us at 6794 1401 to book a place for this exciting workshop.

sungei buloh wetland reserve's new video show



Titled 'Where Mangroves and Wetland Wildlife Thrive', this video is packed with information about the reserve, especially useful for a first-time visitor. Included in the video are the facilities that are available, flora and fauna found, research and educational activities conducted here, as well as snippets of volunteers' commentaries. All of the above serve to introduce the visitor to the reserve. It runs for a good 15 minutes, and replaces the old slide show shown previously. It is screened at SBWR's Theatrette at 0900, 1100, 1300, 1500 and 1700 hrs daily. Watch it now!

Patiently, as I waited in my car following the long queue, the tune of "Back Home Again" played soothingly in the background. Reflections of when I first came to the mangroves were conjured up and hanging by a song. Coming home to a place I have been before, leaving yesterday behind me, you might say I was 'born again'; you might say I found a key to every door...

My thoughts went back to the days when I spent my time in the mountains, the quiet solitude of the forest, the streams, the serenity of the clear blue lakes and having the experiences of seeing a lot of sunshine, sleeping out in the rain and camping a night or two with those I knew. The thundering noise from the railway track brought me back to existence. Driving through the concrete and steel of the industrial area, the sky opened up and I could breathe easily again. I sighed with relief as I gazed at the beautiful and comforting gleaming water of the reservoir and the Straits. As I turned right, unfamiliar landmarks appeared in front of me where grasslands used to dominate and where "Greater Coucals" used to dance. I peered up the line of lamp-posts for my morning friend who used to greet me when I drove pass this stretch of road, but Mr Black-shouldered Kite's familiar presence was not there.

Turning into the driveway, the *Erythrinas* seemed to bow and say "have a nice day". I smiled as I passed them, parked my car and hurried down to the main bridge to witness the coming of a new day, and it never fails to give me this nice feeling of familiarity, to be there alone with my old friend Mr Bridge and watching the

back home again

Tay Soon Lian has come a full circle to the arms of the place where he used to be. Now as one of the conservation officers, he is responsible for the well being of this rare oasis.

sunrise. I greeted him and shared with him a few things that had happened since the last time I saw him and he told me a few stories too. During our conversation, a happy tune came to my mind as I hummed and gazed out to a brand new day.

"Silently the morning mist is lying on the water,

captive moonlight waiting for the dawn.

And softly like a baby's breath, the breeze begin to whisper

The sun is coming, quick we must be gone.

Smiling like a superstar, the morning comes in singing,

the promise of another sunny day.

And all the flowers are opened up together in the sunshine

I do believe that nature is here to stay"

I closed my eyes, feeling the warmth of the morning sun and the peace. Here you can talk to God and listen to His casual reply. Reflections in the water weaved like shadows in my mind, spoke to me of passing days and nights and passing time. It seemed a shame to see the dawn swallowed by the sun and more than that it was oh so sad to see the morning end. Although the changes are a lovely thing to see, if it were mine to make a change, I think I would let it be.

Making my way back, I saw a silhouette gliding freely and gracefully with the wind, I remembered someone once said to me, "He'll be a poorer man if he never saw an eagle fly". I guess I am not that poor after all. It is going to be a good day and I am glad to be home. 

reserve information

Opening Hours • Mondays to Saturdays from 7.30am to 7.00pm, Sundays & Public Holidays from 7.00am to 7.00pm **Admission** • \$1.00 per adult and \$0.50 per child/ student/senior citizen **Audio-visual Show** • Mondays to Saturdays at 9.00am, 11.00am, 1.00pm, 3.00pm and 5.00pm, Sundays and Public Holidays, Hourly from 9.00am to 5.00pm **Getting There** • Mondays to Saturdays: Board service TIBS 925 from Kranji MRT Station. Alight at Kranji Reservoir carpark for a 15 min walk to the Reserve. Sundays and Public Holidays: TIBS 925 will stop at the Reserve entrance. Sungei Buloh Wetland Reserve, 301 Neo Tiew Crescent, Singapore 718925. Tel: 6794 1401 Fax: 6793 7271 **E-mail** • sbwr@pacific.net.sg **Website** • <http://www.sbwr.org.sg>



THEY'RE STILL GOING STRONG
AFTER ALL THESE YEARS.
AND SO ARE WE.



The Tembusu, Flame of the Forest, Kapok, and Rain Tree you see on this page have a combined age of more than 300 years. Against all odds, they have not only survived decades of urban development but have also flourished,

providing us with much needed relief from our tropical climate and urban lifestyle.

Indeed, Singapore's reputation today as a verdant Garden City is testament to the ecological and historical impact these magnificent trees have had on Singapore. These monuments of our natural landscape must be treasured and protected, not taken for granted.

Let's preserve our roots by saving theirs

As HSBC celebrates its own 125th year in Singapore, we want to help Singapore conserve and perpetuate its natural heritage. That is why HSBC is working closely



with the National Parks Board (NParks) on the Heritage Trees Scheme to safeguard and protect our heritage trees and to educate the public on their ecological and historical significance.

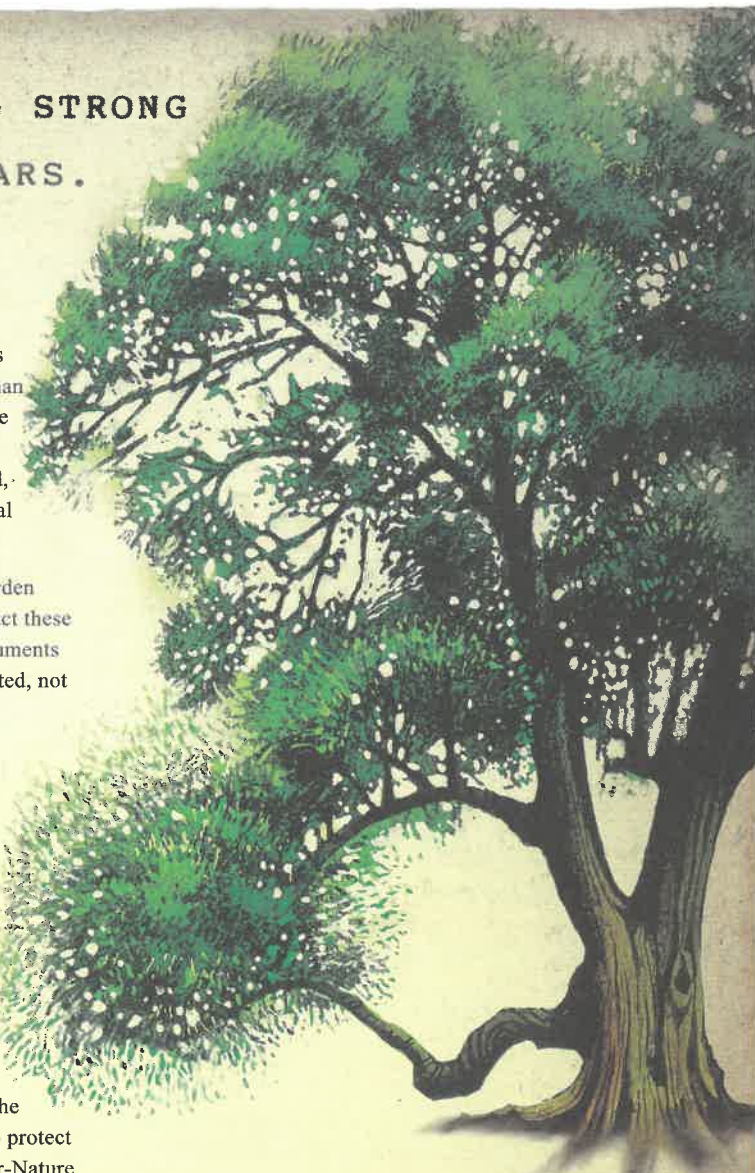
It is with this purpose in mind that HSBC has set up the Heritage Trees Fund with NParks to fund measures to protect our heritage trees, and is devoting this year's Care-for-Nature stamp series to these long-lived friends.

Four of them are featured on this year's stamp series, each one wonderfully rendered by artist Eng Siak Loy.

Commemorating our 125th Anniversary

2002 is the 125th year since HSBC first planted a branch office in Singapore. And like the Heritage Trees, we've been growing from strength to strength.

To commemorate our 125th anniversary milestone meaningfully, we are committed to a year-long programme to raise S\$1.25 million for the Community Chest to help the less fortunate. In line with this commitment, all proceeds from the sale of the covers and stamp prints for the Heritage Trees stamp series will be donated to the 'HSBC125 Fund for ComChest'. Also, HSBC will match the proceeds dollar for dollar.



This Tembusu Tree is a native of Singapore and one of the 35 trees conserved under the Heritage Trees Scheme. Two of Singapore's centenarian specimens are located in the Singapore Botanic Gardens.

Be a part of this good cause

You can own a piece of Singapore's Heritage Trees today by buying any of the Heritage Trees stamp prints or collector's covers and help our worthy cause. The collector's cover is yours for only \$9.90. For \$88, you can own a limited edition collector's stamp print, one of only 300 in the world.



From 25th September 2002, the Care-for-Nature collector's covers and limited stamp print collection are available at Public Affairs & Advertising Department (HSBC Building, #14-01, Tel: 6530 5100), all HSBC branches in Singapore, Singapore Post main branches and Nature Niche at Singapore Botanic Gardens.

HSBC 
The world's local bank