

A  publication

# wetlands

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...birds are far more than robins, thrushes and finches to brighten the suburban garden, or ducks and grouse to fill the sportsman's bag, or rare waders or warblers to be ticked off on a bird watcher's checklist. They are indicators of the environment - a sort of environmental litmus paper.

Roger Tory Peterson  
American Ornithologist



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Cover photo by James Gan  
Juvenile Tiger Shrike in Hand.



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**editorial** The quest for knowledge is insatiable. With the wind beneath our wings, we soar to the heights in order to explore and fathom the secrets of the birds. In this special edition, we are publishing interesting data collected based on the Park's bird ringing studies for the community, all in the hope that we can contribute to the better understanding of these feathered neighbours of ours.

Be forewarned, this edition is operating on an "Air Alert" mode. 🌿

*Linda Goh*



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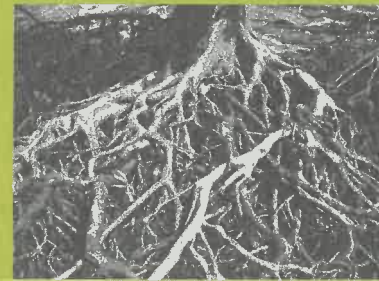




The mangal substratum consisting of dense mud is rather anaerobic (lack of oxygen) and unstable. The mangrove plants, commonly found in the Park, have invariably adapted to this exacting environment by having lenticels (respiratory pores) and numerous passages through their spongy tissues to allow air to enter to the roots below.

by Ali Ibrahim,  
Conservation Officer

surface-roots



# breathing organs in mangroves

Roots that are exposed to the atmosphere, at least during low tide, may be called aerial roots. These rooting adaptations include stilt roots, various types of pneumatophores and aerial roots. Not all mangrove species possess a specialised root system while some species possess more than one of the mentioned adaptations.



knee-roots

**Pneumatophores** (erect, asparagus-, peg- or torpedo-shaped) are respiratory roots belonging to *Avicennia* sp., *Sonneratia* sp. and *Xylocarpus moluccensis*. In the former

species, the roots are pencil-like arising upright from massive subterranean cable roots system into the outer environment. When not inundated these roots are able to breathe. The pneumatophores produce extensive net of fine nutrition roots that can also assimilate oxygen from the uppermost mud layer. A close examination at the pneumatophores will reveal the presence of barnacles, molluscs and algae on its exterior. A myriad of crustaceans, mudskippers and fishes also treat the site as feeding or play-ground.

**Knee roots** in *Bruguiera* sp., *Ceriops tagal* and *Lumnitzera littorea* provide air to its root system via a system of quaint, knoblike structures. These lenticillated pneumatophores being periodically exposed to the air facilitate gas exchange between the atmosphere and the internal tissues of the plant.

**Stilt roots** in *Rhizophora* sp., with water-accustomed arching appendages arising from the trunk and lower

branches, besides aiding in aeration serve also to anchor the tree in the soft and unstable mud. Birds and tree-climbing crabs even use the trunk and extended arms of *Rhizophora* to perch.

**Prop roots** in *Rhizophora* sp., *Avicennia* sp. and *Acanthus ilicifolius* are unbranched adventitious roots growing downwards from branches or the canopy to the bottom. Unlike stilt roots, these aerial roots are of uniform thickness and flexibility and will not root on reaching the ground. They however lend support to the tree.

**Surface roots** occur in *Excoecaria agallocha*, *Aegiceras corniculatum* and *Cerbera* sp. The network of spreading surface roots is able to absorb sufficient oxygen during low tidal exposures.

Finally, **plank roots**, which are thin, branched, ribbon-like buttresses spreading out from the base of its trunk also aid in the aeration of *Xylocarpus granatum* and *Heritiera littoralis*. It is therefore imperative for the survival of mangroves that oil pollution on a large scale must not occur, as breathing roots when coated will suffer from dire physiological consequences. For to err is human, to breathe... simply divine!

Do look out for these mangrove plants on your next visit to the Park. You would be amazed at the intricate structure and inherent beauty of these "breathing roots".

Birds are enchanting creatures to watch and can be seen in your own backyard, on the way to work or to school. Bird watching can develop into an enjoyable hobby for those who are curious about these feathered neighbours of ours. **Halilah Ahmad**, Education Officer, shares some insights into the art of bird watching.



peaceful dove

# *bird watching* techniques



tiger shrike

***At Sungei Buloh Nature Park, the walking trails are marked out clearly and there are many signposts to refer to for directions. If you are on a wild trail, it is best to go with a friend***

**Birds** are the most easily seen among the wild creatures in our urban city and watching them can be an enjoyable activity that lasts a lifetime. Each bird watching session can be an uplifting experience that takes you away from your ordinary, everyday cares and worries. It requires no huge investment in optical equipment, just a keen eye for observation and lots of patience. You too can pursue this hobby both indoors and outdoors at your own leisure time. Practising good bird watching techniques can add value and enhance your experiences with these wild creatures.



**Just follow these simple steps and an exciting and rewarding hobby awaits you. What you will need to start this hobby :**

**"In order to see birds, it is necessary to become a part of the silence."**

**Robert Lynd**  
Irish Journalist

#### best time to see birds

The best time to watch birds is during dawn to early morning and late afternoon to dusk when they are out foraging for food.

#### birdwatcher's code

1. Be as quiet as possible.
2. Do not disturb the birds.
3. Leave nesting birds alone.
4. Stay on established trails.

- A pair of binoculars for a magnified view with viewing power described as 8X30, 10X50. The first number indicates the magnification. For example in the 8X30 binoculars, things will look 8 times larger than its normal size. The second number refers to the width of the lens in millimetres. The bigger the lens, the brighter the view. A pair with magnification between 7 to 10 would be adequate for beginners.

- A telescope of at least 20X magnification would be useful to identify birds at a distance. Just a word of caution, the more powerful the magnification, the harder it is to spot the bird as the viewing area gets smaller. You will also need to invest in a good tripod or clamp to hold the telescope steady.

- A notebook and a pen or pencil to record your observations. You could include in your notebook some sketches of the birds spotted, their behaviour and the location or habitat in which they were seen.

- A good field guide is essential for proper identification of birds. Choose one that has good colour illustrations, a short description on its habitat and seasonal changes that describe the bird's migratory pattern or residential status during certain seasons.

If you are outdoors, be prepared.

- Wear comfortable clothes and a pair of good walking shoes.
- Gear up for weather change. Bring along a hat or cap and an umbrella or a raincoat.
- Bring along some drinks and a light snack, which will come in handy when you get hungry and thirsty during your walk. A word of caution, be aware of the surrounding wild creatures and do keep your food safely tucked in your bag. It is not wise to display your food or feed the wild animals.
- Do some research on the place you intend to visit. At Sungei Buloh Nature Park, the walking trails are marked out clearly and there are many signposts to refer to for directions. If you are on a wild trail, it is best to go with a friend and never on your own. We want to be safe and comfortable to enjoy this hobby!
- And lastly, why not join a group or society and get to know more birds and buddies. The fun never ends.

Besides, you will never know what awaits you... 

rusty-breasted cuckoo

**Epiphytes are plants that live on other plants. They are not parasites as they use the host plants for support only. Their habitat is often high above in the tree crown (canopy).**

Text and illustrations  
by Joseph Lai, Conservation Officer

## a place in space

About 25000 species of vascular plants and an unaccounted wealth of spore-bearing mosses, liverworts, algae and lichens, make up the epiphyte flora of the world. Some botanists estimate that canopy-based vascular epiphytes constitute fully one third, perhaps up to 50 % of the total vascular flora in some tropical rain forests. Thousands of animals depend on epiphytes for food and shelter.

Scientists are just beginning to unravel the astonishingly rich and intricate ecosystem formed by these canopy-based flora and fauna.

Here are some interesting epiphytes that you can find in Sungei Buloh. Note how 'innovative' epiphytes can be in tackling water and nutrient scarcity; conditions faced as a trade-off for a sunnier 'place in space'.

**1. *Dischidia major* | symbiosis with ants**

This plant has two leaf forms - round fleshy leaf and specialized hollow leaf (hl). Aerial roots (ar) enter through a tiny hole at the base of the hollow leaf as do ants that bring in organic debris that in turn becomes food for the plant. (See cross-section)

**2. *Dendrobium crumenatum***

(Pigeon Orchid) | possesses water-storage organs

Orchid roots are coated with a spongy layer called velamen (v). This layer keeps living root tissues (rt) from drying out (see cross-section). Swollen pseudobulbs (pb) store water for leaner times.

**3. *Drynaria quercifolia* (Oak-leaf Fern) | a natural 'monsoon drain'**

Specialized sterile leaves (sl) clasp loosely around branches to catch falling leaf-litter from the surrounding tree canopy, and to funnel rain water and dissolved nutrient to the roots within. The fertile leaves (fl) are very different - much lobed, erect and tall.

**4. *Pyrrosia piloselliodes* (Dragon-scale Fern) | has 'hugging leaves'**

Fleshy leaves (fl) keep their undersides tightly in contact with the exposed surface of a coconut trunk to help reduce water loss from their pores through transpiration.

**5. *Asplenium nidus* (Bird Nest Fern) | a natural 'trash basket'**

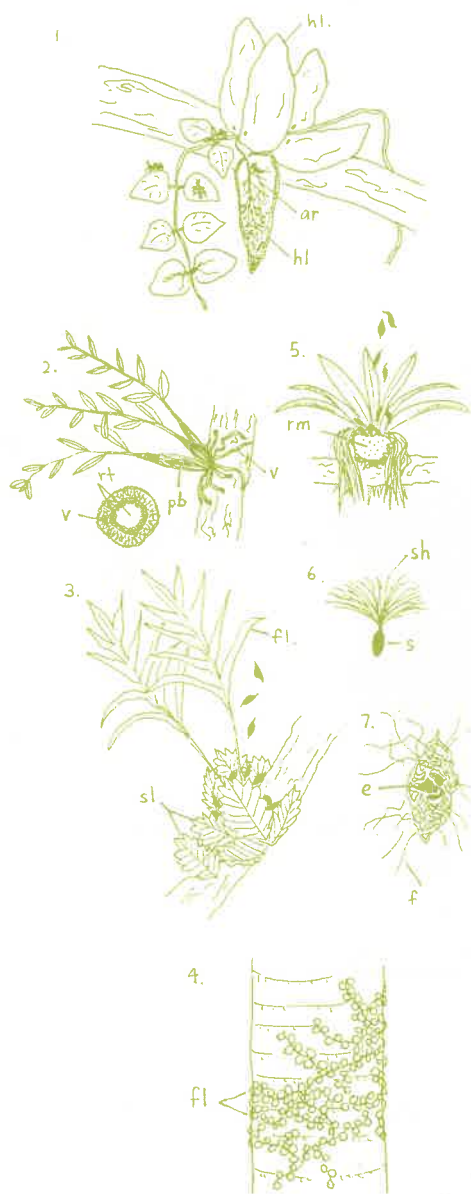
The wide rosette of robust and waxy leaves capture rain water and leaf-litter that falls from the surrounding tree canopy. The cross-section shows the thick water-retaining spongy mass of fine roots (rm).

**6. *Hoya verticillata* | produces 'paratrooper-seeds'**

The seed (s) of this plant has a tuft of long silky hairs (sh) that keeps it floating in the air longer and increase the chance of attaching itself to a branch in the tree canopy to start a new life.

**7. Orchid seed | symbiosis with fungi**

The fine filaments (f) of a fungus penetrate the almost foodless (with little or no endosperm) seed, supplying vital food to the embryo (e) for growth. The close symbiosis between orchids and fungi remains intact into maturity.



Joseph Lai  
12/2001



# bird ringing in sungei buloh nature park in 2000

by James Gan, Senior Conservation Officer



***Bird ringing has been conducted at Sungei Buloh Nature Park since 1990. In 2000, a total of 1,154 birds from 78 species (25% of Singapore's total bird species) were ringed.***

The ringing field works were conducted both at the fresh and brackish water ponds at the Park during the day and night throughout the year. A summary of the numbers of birds ringed in 2000 is listed in Table 1.

The most commonly ringed bird species were (numbers in brackets): Common Redshank (263), Javan Munia (80), Brown-throated Sunbird (73), Mongolian Plover (61) and Yellow-vented Bulbul (60).

Six species new to the Park were discovered for the first time: Ruddy Kingfisher, Siberian Blue Robin, Red-legged Crake, Little Bronze Cuckoo, Drongo Cuckoo and Black-browed Reed Warbler. Except for the Little Bronze Cuckoo, the new records discovered are believed to be migrants.

One Ruddy Kingfisher trapped in Nov, together with a sight record a few weeks earlier, constitute the first record in the Park.

Three Siberian Blue Robins were also trapped. Their presence had never been known in the Park previously. Their capture only during the migration months of Sept and Oct suggest that they are passage migrants.

The Red-legged Crake is elusive and has been known to occur in Lim Chu Kang and sporadically throughout Singapore. Of significance is its occurrence in a protected area other than the Central Catchment Area.

In addition, some rare species of interest were caught. Examples are the Asian Dowitcher, Oriental Scops Owl, Rusty-breasted Cuckoo (aka. Indonesian Cuckoo), Cinnamon-headed Pigeon and Magpie Robin. A White-chested Babbler ringed in the Park on 22 Aug 96 was recaptured. The capture of the Oriental Scops Owl is believed to be only the third record for Singapore. The second record in 1998 was also from the Park. The Cinnamon-headed Pigeon was previously sighted in the Park in 1988. This capture is the first following an absence of sightings after 12 years.

There were 53 recaptures of birds that had been ringed prior to 2000. These recaptures comprised of 18 species. The Common Redshank leads the list with 24 recaptures, followed by the Collared Kingfisher with 7 recaptures and Brown-throated Sunbird with 4 recaptures. One use for the data obtained from recaptured birds is the establishing of longevity records and enabling the active survival of bird species to be determined.



# Some of the birds caught at



<< common  
goldenback



<< ruddy  
kingfisher



rusty-breasted >>  
cuckoo

<< lesser coucal



<< drongo cuckoo

stork-billed >>  
kingfisher



<< ashy ta

cin  
headed



oriental >>  
scops owl



<< common  
kingfisher

scarlet-backed >>  
flowerpecker



<< pied triller

siberian >>  
blue robin



blu  
bo

<< eurasia  
curlew

In summary, bird ringing in 2000 has, for example, revealed the movement of birds in the park. Data collected are of use in the management of the Park.



# the Park...



ment, abundance and survival rates of birds in Sungei Buloh

The most commonly ringed bird species were (numbers in brackets): Common Redshank (263), Javan Munia (80), Brown-throated Sunbird (73), Mongolian Plover (61) and Yellow-vented Bulbul (60).



measuring birds

The longevity records are listed in Table 2. Of interest, the oldest recaptured bird was a Common Redshank. It was ringed in the Park on

1 Nov 90 and

recaptured on 27 Nov 00. The interval of just under 121 months (slightly over 10 years) is believed to be the longest recorded for the species. The oldest recapture of a non-migrant was a Collared Kingfisher ringed in Jul 94 and recaptured in Aug 00, an interval of 72 months (6 years).

One Black-capped Kingfisher exhibited high site fidelity. It was mist netted at the same net location and even the same section of net after an absence of one season. Ringed in Mar 00 and recaptured once in Nov and Dec, the capture data suggest that the Park locality is its ultimate wintering area.

A Philippine Glossy Starling recovered on 19 Jul 00 at the Visitor Centre had been ringed at the freshwater pond area on 15 Aug 94, about 72 months (6 years) earlier suggesting that frugivorous type birds do remain in the Park vicinity even after a number of years.

Shorebirds were colour-marked with yellow dye and their movements within the Park and throughout Singapore were recorded based on ad hoc observations by the Park's network of volunteers and friends. Some of the interesting sightings of colour-marked shorebirds are listed in Table 3. Of interest is a record of a yellow leg-flagged Common Sandpiper believed to have been ringed at Broome, NW Australia and reportedly sighted in the Park on 30 Sep 00.

In summary, bird ringing in 2000 has, for example, revealed the movement, abundance and survival rates of birds in Sungei Buloh Nature Park. Data collected are of use in the management of the Park.

This article is possible because of the field studies supported by NParks. Thanks to fellow ringers Ramakrishnan RK, Linda Goh, Adeline Chia, and Chan Su Hooi for contributing to the ringing work. Many others assisted with the ringing including staff, volunteers and friends especially Charles Lim, Stephen Chue, Patricia Phua, Kuriasegaran, Sherina, Ali Ibrahim, Joseph Lai and Halilah Ahmad. In addition, I am grateful for the voluntary help from Wai Heng, Hock Keong and Nick Baker. Thanks too to Satish Sreedharan for training the staff in field ornithology, to Serene Ho for compiling and computerising a substantial number of records and to the many individuals who had contributed in some way.

Comments or feedback?

E-mail at [sbnp@pacific.net.sg](mailto:sbnp@pacific.net.sg)

### Table 3

Sightings of colour-marked shorebirds external to Sungei Buloh Nature Park In 2000

Whimbrel	: One was sighted on the mudflats at Sg Puaka, Pulau Ubin during low tide on 29 Oct 2000. One was also seen in a mixed flock of shorebirds at Sg Khatib Bongsu ponds on 2 Dec 2000 and another on 16 Dec 2000, both at high tide.
Curlew Sandpiper	: One was seen in flight at Changi Central South bay on 26 Dec 2000 during low tide.

### Other Interesting facts

Heaviest Bird Ringed : Eurasian Curlew weighing in at 730g

Lightest Bird Ringed : Scarlet-backed Flowerpecker which weighed in at a minuscule 4g

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**Table 1**

Summary of individual birds ringed (recaptures or recoveries for birds ringed before 2000 in brackets) at Sungei Buloh Nature Park in 2000

S/N	Species	Qty	S/N	Species	Qty
1	Abbott's Babbler	2	41	Lesser Coucal	1
2	Arctic Warbler	3	42	Little Bronze Cuckoo	1
3	Ashy Tailorbird	20 (1)	43	Little Heron	9
4	Asian Brown Flycatcher	2	44	Magpie Robin	12 (1)
5	Asian Dowitcher	1	45	Marsh Sandpiper	25
6	Baya Weaver	60	46	Mongolian Plover	61 (2)
7	Black Bittern	5	47	Olive-backed Sunbird	1
8	Black-browed Reed Warbler	1	48	Olive-winged Bulbul	7
9	Black-capped Kingfisher	6	49	Oriental Reed Warbler	2
10	Black-naped Oriole	5	50	Oriental Scops Owl	1
11	Black-tailed Godwit	1	51	Pacific Golden Plover	27 (1)
12	Blue Magpie	1	52	Pacific Swallow	7
13	Blue-tailed Bee-eater	3	53	Peaceful Dove	6
14	Blue-throated Bee-eater	6	54	Philippine Glossy Starling	53 (1)
15	Brown Shrike	4	55	Pied Fantail	10 (1)
16	Brown-throated Sunbird	73 (4)	56	Pied Triller	1
17	Chestnut Munia	2	57	Pink-necked Pigeon	8
18	Chestnut-winged Cuckoo	4	58	Red-legged Crake	1
19	Cinnamon Bittern	5	59	Ruddy Kingfisher	1
20	Cinnamon-headed Pigeon	1	60	Rufous-tailed Tailorbird	15
21	Collared Kingfisher	42 (7)	61	Rusty-breasted Cuckoo	1
22	Collared Scops Owl	5 (1)	62	Scaly-breasted Munia	45
23	Common Goldenback	1 (1)	63	Scarlet-backed Flowerpecker	1
24	Common Iora	6	64	Siberian Blue Robin	3
25	Common Kingfisher	15	65	Slaty-breasted Rail	1
26	Common Koel	2	66	Spotted Dove	3
27	Common Redshank	263 (24)	67	Stork-billed Kingfisher	9
28	Common Sandpiper	9 (1)	68	Terek Sandpiper	16 (1)
29	Common Tailorbird	15	69	Tiger Shrike	16
30	Crow-billed Drongo	1	70	Watercock	1
31	Curlew Sandpiper	26	71	Whimbrel	13
32	Dark-necked Tailorbird	3	72	White-breasted Waterhen	5 (1)
33	Drongo Cuckoo	1	73	White-browed Crake	1
34	Eurasian Curlew	1	74	White-chested Babbler	(1)
35	Greater Sand Plover	1	75	White-throated Kingfisher	10
36	Green-winged Pigeon	13 (1)	76	Yellow Bittern	17
37	Japanese Sparrowhawk	2	77	Yellow-bellied Prinia	3 (1)
38	Javan Munia	80	78	Yellow-rumped Flycatcher	5
39	Laced Woodpecker	4	79	Yellow-vented Bulbul	60 (3)
40	Large-tailed Nightjar	1			

**Table 2**

Longevity Records (Selected species)  
At least 6 months for resident birds or 1 season for migrants

Species	Date Ringed	Date Recaptured	Interval (mths)
Black-capped Kingfisher	22 Mar 00	20 Dec 00	9
Brown-throated Sunbird	28 May 97	16 Jun 00	36
Collared Kingfisher	29 Jul 94	25 Aug 00	73
Collared Scops Owl	23 Aug 96	20 Dec 00	52
Common Goldenback	29 May 96	24 May 00	48
Common Iora	22 Mar 00	21 Nov 00	8
Common Redshank	1 Nov 90	27 Nov 00	121
Common Sandpiper	3 Dec 99	11 Sep 00	9
Green-winged Pigeon	23 Aug 96	19 Jul 00	47
Javan Munia	23 Mar 00	21 Dec 00	9
Mongolian Plover	15 Dec 94	27 Sep 00	69
Pacific Golden Plover	12 Jan 94	12 Oct 00	81
Peaceful Dove	23 May 00	23 Nov 00	6
Terek Sandpiper	7 Feb 94	28 Nov 00	82
White-breasted Waterhen	7 Oct 97	23 May 00	31
White-browed Crake	22 Mar 00	17 Oct 00	7
White-chested Babbler	22 Aug 96	25 May 00	45
Yellow Bittern	22 Mar 00	21 Dec 00	9
Yellow-vented Bulbul	29 May 96	16 Jun 00	49

*Being strong supporters of nature conservation, volunteers play a paramount role as nature advocates. The rewards that are reaped from their efforts are bountiful. **Chan Su Hooi**, Education Officer, puts forth the work of the volunteers to you.*

## the gems of sungei buloh nature park

Group photo  
of staff &  
volunteers



Building rapport  
among volunteers.

Volunteers? You would probably associate these people to meaningful work like spending time with old folks, giving tuition to

under-privileged kids or helping out at a special school. Volunteers at Sungei Buloh Nature Park, on the other hand, contribute in a totally different aspect. What do they do?

They share the joy of observing and learning about nature by conducting guided walks for the public on Saturdays and Sundays; run programmes and activities organised by the Park; connect volunteers through creating a volunteer corner on the Park's website; share their knowledge and expertise by

conducting training for other volunteers; make the Park an even more interesting and exciting place by brainstorming for creative ideas; share their captured beauty of nature by contributing photographs; share their thoughts on nature by contributing articles; and assist in our study of this unique habitat by participating in the Park's research work.

Sungei Buloh Nature Park, certainly needs dedicated people like our volunteers to keep it growing. Their efforts are much appreciated by the mangroves, the wildlife and of course, the staff of Sungei Buloh. We all have the same goal, which is to pass on Sungei Buloh as it is to the future generation, so let's continue to work towards that! Let our love for the Park continue to flourish. Bravo to all! 🦋

## our long suffering "mother"

by Julian W., Park Volunteer

In today's fast-paced society, have you ever asked yourself if you have spent enough time with your loved ones? Most of us are too busy working and we often neglect the opportunity to spend time with them. The same scenario also applies to our planet Earth, affectionately known as "Mother Earth". It is not, without a good reason, why we call her "Mother". From the day Man walked on the surface of the Earth, we live off her resources. She feed us from her reserves of forests, rivers and ocean. She also provides us with water, a vital necessity for life. Unfortunately, Man has not been filial to her. Every year, rain forest many times the size of Singapore is destroyed for industrial, agricultural and commercial purposes;

the ocean poached for seafood every day; rivers poisoned with industrial waste; the list just seems endless.

It is imperative for us to realise immediately, the harm that we are inflicting on our "Mother". We are plundering her resources much faster than she can regenerate. By doing so, we are upsetting Nature's intricate web of balance. Landslides, floods and global warming are tell-tale signs that our "Mother" might not be able to withstand our abuse. Rising global temperature have caused the ice sheets to shrink at both poles. Clearing rain forest also contribute to global warming. Imagine if there are no trees left, what would the world be like? It would most likely become a desert.

I believe that it would take great effort to try and restore what has been destroyed. It would also take much effort to prevent extant flora and fauna from extinction. Everyone, as citizens of this world, should play their part in environmental conservation. Any effort, be it individual or group, and no matter how small or insignificant, helps.

It is time for us to show our concern. We have ONLY one chance and if we lose this chance now, it could spell extinction not only for the environment but perhaps also for Mankind. Maybe for our very own survival; our aim to preserve Mankind for eternity, we should start doing something now? 🦋



## fabulous figs

by Joseph Lai,  
Conservation Officer

*Public talks are regular affairs at Sungei Buloh Nature Park. Speakers range from invited specialists from different fields to the Park's own staff. Various topics were raised and discussed, all in the hope of increasing nature awareness among our visitors. Here are extracts of the talks that took place.*

Figs are fabulous plants possessing one of nature's strangest growth habits and handsome diversity of forms. The figs have a quiet but quintessential place in ancient civilizations, religion, mythology and traditions. Numbering about 800 species worldwide and distributed throughout the tropics and temperate regions, figs are well recognized especially the massive rooting banyans. Like rays of divine light, the banyan roots stream earthbound with seemingly reckless abandonment,

filling not only the soft earth but also the fertile imagination of man. But here lies the paradox. Loved and revered by many, yet to some it is hated and condemned as a strangler of other trees or destroyer of buildings. However, not all figs are stranglers or destroyers.

This talk held on 10 Dec 2000 helped to increase public awareness of how fabulously beautiful figs are, how interesting they are in many aspects and most importantly, how vital figs are in the world. 🌿

## encounters with places and plants

by Ali Ibrahim,  
Conservation Officer

From the rare Rafflesia to the giant Redwood, plants are fascinating to look at. Often as you encounter plants or gain some kind of understanding about them, you will be keen to read

or travel to places far and remote to further discover their special beauty. In this talk, Ali Ibrahim shared his encounters with places and plants to the public. 🌿

# calendar of events

compiled by Chan Su Hooi,  
Education Officer

## Earth Day Celebration

22 April 2001

Magical Mangrove tours at 9am, 10am, 3pm and 4pm. Come join a group of Nature's Ambassadors in uncovering the beauty of the mangroves at Sungei Buloh Nature Park and take the opportunity to make a pledge on how you too can do your part to care for Mother Earth.

## Souvenir for every 100th visitor 2001

Goodies! Come on down to the Park and you might be the lucky one! Be surprised by the gift even before the inhabitants of the Park surprise you. This is a continuation of our new millennium celebration. It is also a gesture of thanks for your continuous support in coming to the Park.

## Heron Watch 2001

21 April and 12 May 2001, 3pm to 5pm

Large, ungainly birds, the herons are certainly not among the most graceful of birds. However, they are unique in their own special way. Watch them carry twigs as they construct their bulky nests. See them in their magnificent flight and hear their unusual calls, all here at the heronry. **Join us on a guided tour and learn more about these birds.**

## Talks

April, May, July 2001

Is the mudskipper a fish or an amphibian? Well, this is just one of the many questions students could ask and find out. Through these travelling talks, we aim to instill nature awareness among the young minds and to share the joy of learning more about nature.

## Free Guided Tours

Every Saturday



Free guided tours every Saturday at 9am, 10am, 3pm & 4pm (except for public holidays).

Hear the calls of kingfishers or the sound of water lapping against the rocks? Heed the call of Mother Nature. Come and follow our guide to discover the wonders of nature.

Guiding service may be replaced with other interesting programs that coincide with guiding time slots.

## Teachers' Workshop

June 2001

How should field trips be conducted at Sungei Buloh Nature Park? This half-day workshop will give teachers some ideas on the possible ways of using the Park as a living classroom and, at the same time, discover the little details of nature for themselves.



grey heron in flight



milky storks





by Ramakrishnan R.K,  
Senior Ranger

## reflections of a nature warden

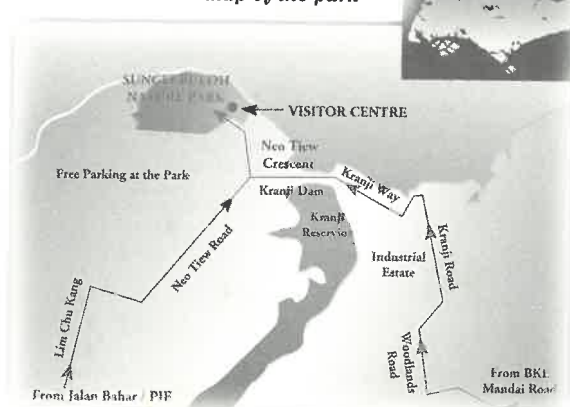
My love for animals started when I was a young boy, encouraged by my dad when he realized that I had amazingly good relationships with them. My collection of pets was slowly built up with his help. However, a time came when I had to give them up as we had to move house. Nevertheless my interest and respect for nature remained and grew.

The thought of being close to nature has always been on my mind and I was keen to find a job that would bring me closer to nature. The break came on January 9th of 1995 when I was selected to work as a Park Warden at Sungei Buloh Nature Park. Never did I, like many Singaporeans, realize that tucked in the Northwest of Singapore is a nature park brimming with great treasures.

With its diverse habitats, the Park supports innumerable species of plants and animals, that are adapted to the different habitats like freshwater ponds, brackish water ponds and mudflats. The Park is an ideal and important stopover point for many migratory birds flying between Siberia and tropical Southeast Asia during winter. The mangrove trees with their unique features of adaptation can tolerate saline conditions being endowed with a physiological mechanism for salt exclusion (e.g. by excretion) and are morphologically adapted to their environment (e.g. by having aerial roots and vivipary of the embryo). This ecosystem also provides food and shelter for the animals.

During my five-year career, my passion for nature has developed further and I have grown to love and appreciate the park even more. What I do takes on added significance. Where once I took care of a few animals as pets, now I help to take care of a diverse habitat with many unique plants and animals.

map of the park



## park information

### Opening Hours

Mondays to Saturdays  
7.30am to 7.00pm

Sundays & Public Holidays  
7.00am to 7.00pm

### Admission

\$1.00 per adult  
\$0.50 per child/  
student/senior citizen

Sungei Buloh Nature Park  
301 Neo Tiew Crescent  
Singapore 718925

Tel: 794 1401  
Fax: 793 7271

### E-mail:

sbnp@pacific.net.sg

### Website:

<http://www.sbnp.org>

### Audio-visual Show

Mondays to Saturdays  
9.00am, 11.00am, 1.00pm,  
3.00pm, 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 Park.

Sundays and  
Public Holidays:

TIBS 925 will stop at the  
Park entrance.

### Visitor Centre Facilities

- Theatre
- Cafeteria
- Nature Gallery
- Nature Cove
- Toilet

### Park Facilities

- Boardwalk
- Route 1
- Route 2
- Route 3
- Bird Observation Hide
- Tower Hide
- Screen
- Outdoor Classroom
- Platform
- Shelter
- Binoculars
- Emergency Walkie-talkie



Help us make these stamps rare,  
so these animals don't have to be.



Year 2000 marks the 10th anniversary of the Care-for-Nature stamp series. HSBC Singapore has dedicated this year's issue to help promote awareness on the wetlands and the importance of conserving it. This year's issue is thus aptly named the Wetland Wildlife Series.

Wetlands are ecological jewels that support a myriad of flora and fauna. They are living classrooms where we can enjoy the unique opportunity to see nature at work, first-hand, and realise their ecological richness and educational value to our existence.

Habitats like the wetlands function best when left alone, and the stamps convey this message strongly in the artist's rendition of harmony found among the wetland's inhabitants.

Gracing our 10th year Care-for-Nature collector's cover are the water spouting Archer Fish, the elusive and shy Smooth Otter, the loud but magnificent Collared Kingfisher and the courtship-savvy Orange Fiddler Crab. These friendly but shy

wetlanders are making their debut in support of their habitat.

You can help them secure their home simply by buying the wetland covers and prints. Proceeds from the sales are used to fund education and conservation projects, including environmental initiatives to support conservation of habitats such as Singapore's very own Sungei Buloh Nature Park.

#### The Wetland Wildlife Series

For as little as \$9.90, you can help us help these animals thrive.

Care-for-Nature Collectors' Cover (\$9.90)

Special 4-in-1 print edition (\$68)

Set of 4 Limited Stamp Print Collection (\$338 with frames),  
(\$198 without frames)

From 11th August 2000, the Care-for-Nature Collectors' Covers are available at all HSBC branches, Public Affairs and Advertising Department (HSBC Building #14-01, Tel: 530 5100) and Singapore Post main branches.



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