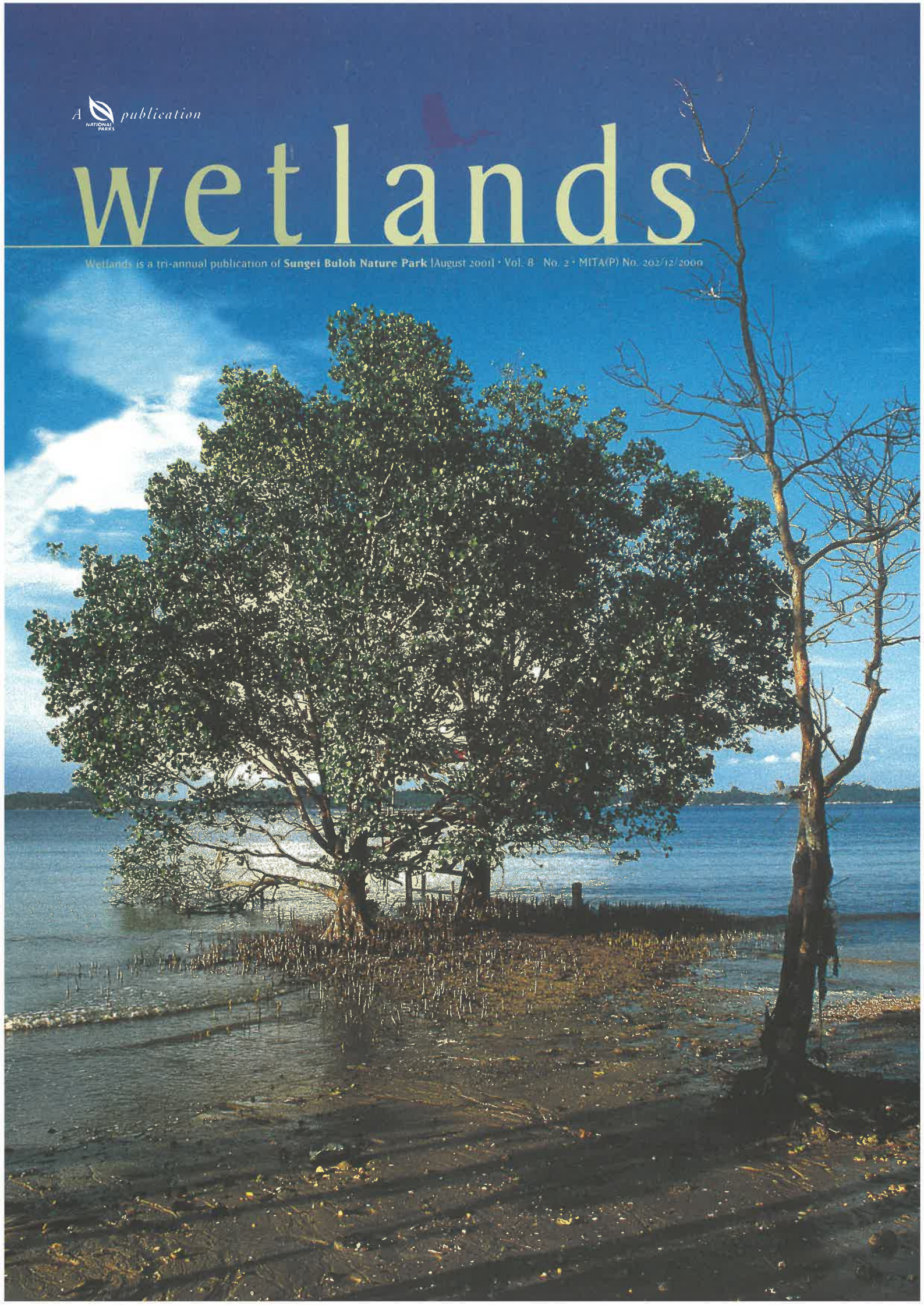


A  publication

wetlands

Wetlands is a tri-annual publication of Sungei Buloh Nature Park | August 2001 • Vol. 8 • No. 2 • MITA(P) No. 202/12/2000



We abuse the land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.



Aldo Leopold

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Cover photo by Wong Tuan Wah
Life at land's end - Pasir Ris Mangrove.
Bronica SQAi 50mm f3.5 lens, Fuji Provia 100



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editorial Mangroves seemingly live in the transient world of Land and Water. Life at land's end is harsh, yet many have triumphed over the adverse environment. These inhabitants have left imprints of their existence in the hearts and minds of the people who visit the park. 'LANDmark' rightly denotes the theme for this issue of Wetlands. Enjoy reading! 🌿

Linda Goh



Editor Linda Goh
Contributors Linda Goh Choo-Toh Get Ten James Gan
 Joseph Lai Chan Su Hooi
 Ramakrishnan R.K.
Design Studio Yan Design Consultants
Printer Octogram Press Pte Ltd
Photos Credits David Tan Wong Tuan Wah Ali Ibrahim
 Linda Goh James Gan Tan Yew Poo



Their ancestors were present to witness the rise and fall of the Dinosaurs. As dinosaurs struggled to survive, these creatures managed to outlast them for millions of years with apparently little change. In our present age, these living "fossils" which cross two boundaries, namely the sea and land's edge are called the Horseshoe Crabs. Linda Goh, Senior Education Officer, presents some interesting facts about these old timers.



horseshoe crab

survivors of time

The Horseshoe Crabs have successfully survived for millions of years. Their future depends on how much people understand and appreciate their importance to other wildlife and Man as well as the conservation practices taken to conserve them.

what crab! no crab! | The name Horseshoe was derived from the U shape of the shell that resembles the hoof of a horse. However, Horseshoe Crabs are not crabs. They are more closely related to spiders and scorpions.

survival series | To date only 4 species of Horseshoe Crab have survived, of which 3 species can be found in the Southeast Asian region. The tough mantle of the Horseshoe Crab prevents any potential predators from accessing the soft-bellied underparts. They have no known natural enemies except perhaps Man. Their capacity to endure extreme temperatures and salinity is believed to help to ensure the survival of these species. Slow and steady, they are indeed the real survivors of time.

mudflat cuisine | Horseshoe Crabs are scavengers and feed on whatever they meet on the mudflats. They do not have jaws and have to depend on the stiff hairs on the base of their legs to grind food. In other words, they have to walk in order to chew!

growing years | Growing is by means of moulting. After each moult, they emerge 25% larger than the last. It takes about 16 moults before they attain adulthood. They are sexually mature individuals at the age of 9 to 11 years. These creatures can live up to 19 years.

body-parts | The menacing looking tail gives the illusion that it is used as a weapon. However, the telson or tail


acts as a rudder to steer the Horseshoe Crab through the sand and to right itself when it accidentally tips over.

battle of the sexes | A scene of the males hitch-hiking on the females can be observed during the mating season. The males, which are much smaller, cling on to the females for long periods of time before the eggs are laid in dug out nests. That is why some locals identify the Horseshoe Crabs with matrimonial fidelity.

eye-deal | Horseshoe Crabs have been used for eye research as their large eyes and large optic nerve are easy to study. A great deal of what we know of the human eye and how we see are attributed to research done on their eyes.

royal blood | Two biologists from NUS had a breakthrough when they discovered an enzyme known as Factor C that is extracted from the Horseshoe Crab's blood. This enzyme has shown to be more powerful and efficient in killing bacteria than the common antibiotics. 4 US patents have been obtained for the replicated gene.

The Horseshoe Crabs have successfully survived for millions of years. Their future depends on how much people understand and appreciate their importance to other wildlife and Man as well as the conservation practices taken to conserve them.

Help Sungei Buloh Nature Park to protect these animals by taking care of their habitat! 

Insects are the most abundant and diverse group of animals on earth. Over a million species are described, and millions more exist. They are remarkably adapted to living everywhere on land, in the air and in fresh water. In the Asian mangroves, insects markedly dominate all life forms.



grasshopper

by Choo-Toh Get Ten,
Senior Education Officer

insect study

A black and white photograph showing a group of shield bugs (pentatomids) clustered together on a light-colored surface.

shield bug

At Sungei Buloh Nature Park, visitors are often greeted by the more flamboyant of these six-legged arthropods. Amidst the incessant chorusing of the cicadas, the colourful butterflies flutter around the butterfly trail, the solitary bumble bee buzzes amongst flowers, and the dragonflies glide swiftly or hover over the lotus pond.

Leaving the Visitor Centre, first time insect scouts may be disappointed at the apparent scarcity of other insects. The truth is, these tricky little creatures can hide or camouflage themselves very well amongst the vegetation. If you could stop walking for a while to look closely at the surrounding vegetation, you will soon see insects crawling on leaves or flying about. Just be patient and observant, know when, where and how to zoom in on their likely hideouts, and the amazing, bizarre world of insects will be unveiled before you.



tricky little creatures

animal taxa

| | |
|---------------------------|------------|
| Protoza | 18 |
| Sponges -Bryozoa | 5 |
| Coelenterata - Ctenophora | 3 |
| Non-polychaete worms | 13 |
| Polychaetes | 11 |
| Crustaceans | 229 |
| Insects-Arachnids | 500 |
| Molluses | 211 |
| Echinodermata | 1 |
| Fish | 283 |
| Reptiles | 22 |
| Amphibians | 2 |
| Birds | 177 |
| Mammals | 36 |

Number of animal species recorded in Asian Mangroves (Modified from IUCL 1983)

reference guide

Parker, S. 1992. *Insects*. Dorling Kindersley Limited. • Preston-Mafham, R and K, Preston-Mafham. 1996. *The Natural History of Insects*. The Crowood Press. • Sterry, P. 1997. *Insects - A Portrait of The Animal World*. Todtri Productions Limited. • Stokes, D. W. 1983. *Stokes Guide to Observing Insects*. Little Brown and Company.

where to find insects on plants

- The actively growing, more nutritious or palatable parts of plants e.g. shoots, buds, young/semi mature leaves, flowers, fruits, seeds, veins on underside of leaves.
- Around their homes e.g. ant nest, termite mounds or tracks, cases of bagworms.
- Where damage or abnormalities occur e.g. leaves distorted, rolled, webbed or folded, holes, cuts, burrows, stunting, wilt, colour change, black sooty mould.
- Near traces of insects e.g. cast skin, faeces, waxy or sugary secretions, silky web, egg or pupal cases

in other habitats

- In fresh or brackish water, under leaf litter, rocks, fallen logs, in/on mud or soil.

when to find insects

- Generally throughout the year, but some are abundant only when food supply and environment favour their multiplication
- For day-active insects e.g. pollinators and many leaf feeders, at most time of the day, especially late morning and late afternoon


- * For nocturnal insects e.g. moths, cockchafer and other beetles, mostly at dusk or just after sunset.

Do not look for insects right after rain when foliage is still wet.

how to get close to watch and study insects

- Wear clothes of neutral colors or shades of green, not gaudy colours, or black unless you like mosquitoes
- Bring a 10x hand lens, or 8-20x eye lens for examining small insects, or binoculars for examining those perched high up or far away.
- Bring along a camera with tele-macro lens for photographic record.
- Approach active, flying insects quietly and slowly, minimizing body movements and air vibration. Avoid casting shadows over them and remember to keep clear of insects which sting.
- If necessary, carefully capture active flying insects in a clear container for closer examination before releasing them back to where they are found.

what to observe

Having found insects, never miss the chance of observing their social behaviour, hunting techniques, feeding habits, home building activities, and last but not least, the myriad of their colours and structures that enable them to escape or survive the attack of their natural enemies. 



coreid bug



*Podocarpus
polystachyus*

Ali Ibrahim, Conservation Officer, highlights some interesting back-mangrove trees found in Sungei Buloh Nature Park.



*Barringtonia
racemosa*

zonation & the landward mangrove fringe

Generally, the seaward edge of the mangrove is dominated by pioneer species of *Avicennia* and *Sonneratia*. On the bank of river estuaries, *Rhizophora* replaces their position. Behind this is a zone of mixed mangrove forest species of *Rhizophora*, *Sonneratia*, *Bruguiera*, *Ceriops*, *Kandelia*, *Xylocarpus*, *Lumnitzera* and *Excoecaria*. But along rivers or in estuaries, groves of Nipah palms are usually found. Moving towards the landward side of the mangrove forest, at the upper limit of salt-water penetration, where soil is of firm clay, various tree species represented here can adapt and grow within their respective range of tolerance to the influence of salt or brackish water. This is also the zone flooded by exceptional high water spring tides.

their presence...



Heritiera littoralis

The phenomenon of zonation is still not fully understood.

Mangroves that are badly disturbed or found on narrow coasts do not show well defined series of zones paralleling the coast. The phenomenon of zonation is still not fully understood. Factors controlling zonation lie in the response of tree species to salinity, tidal influence and soil conditions. The morphology, buoyancy and mode of establishment of propagules and its competition among the species are other possible factors affecting zonation.

The landward mangrove fringe communities share and compete for the same pollinators with the true mangrove communities as well as share the same predators and parasites. In the latter instance, they perhaps benefit the mangroves by playing as alternative hosts. Their presence also exemplifies the adaptive and evolutionary transition of land plants and may give valuable clues as to how mangroves were derived.

Examples of some of these interesting trees found in Sungei Buloh Nature Park back-mangrove community:

- Dungun (*Heritiera littoralis*) has leaves with silvery - white undersurface and keeled, boat-shaped, brown fruits.




Dolichandrone spathacea

- Tui (*Dolichandrone spathacea*) is an endangered species, with pinnate leaves, very long tubular white flowers and long seed pods containing corky, winged seeds.
- Jati laut (*Podocarpus polystachyus*) is the only gymnosperm found in the swamp. Its long narrow leaf blade has an interesting light green flush when juvenile.
- Putat ayam (*Barringtonia racemosa*) has leaves obovate-lanceolate with leaf margin toothed and flowers on pendulous spikes.
- Portia tree (*Thespesia populnea*) has hibiscus-like yellow flowers which turn purple and fruits that are water-borne.
- Pong pong tree (*Cerbera odollam*) may remind you of a frangipani tree with white, yellow-eyed flowers and green turning red, apple-like fruits.
- Katong laut (*Cynometra ramiiflora*) has one to two pairs of leaflets and wrinkled and knobbed fruits.
- Ipil (*Intsia bijuga*) is a tall tree with spreading crown and flat oblong seed pods.
- Barat-barat (*Cassine viburnifolia*) is a small tree with inconspicuous greenish white flowers and small pendant-like fruits.
- Sea Hibiscus (*Hibiscus tiliaceus*) is a somewhat untidy-looking tree with heart-shaped leaves and bright yellow flowers that turn maroon before falling. 🌿



thespesia populnea

landmark invasion



Remember that monumental step on the moon? Astronaut Neil Armstrong leaping off Apollo 11 to make that first footprint on the lunar soil in July 1969? I was 9 years old then. It was the talk of the town for as many weeks as I could remember. We kids were no doubt excited too. The moon landing added spice to our huge appetite for spaceships, aliens, Ultraman and the like. 'One small step for man, one giant leap for Mankind' meant nothing much to us kids then.

And if knowledge should inspire, let the spirit of aspiration be rooted in love for the only home we know and should cherish — the Earth.

Of course we grew up and knew better. Man's two most entrenched aspirations since ancient time — to fly like a bird and to explore unknown frontiers - had taken a leap beyond the wildest dreams. The moon landing was a landmark victory for science, engineering and most of all, for the human spirit.

Yet as a biological entity, we human species are not alone in frontier exploration. Mudflats like those in Sungei Buloh were the monumental landing sites for sea-bound ancestors of plants that invaded dry land during the Silurian Period, 425 million years ago. With little more than rudimentary stem, ancient plants exerted their presence on land, leaving behind their familiar marine abode. 'One small stem for Plant, one giant leap for Plant Kingdom' — a *landmark invasion* from the sea that heralded land-plant evolution and aided the proliferation of land-dwelling creatures thereafter by becoming food for their sustenance.

The remains of many fossilized plants are still valuable resources in shaping the way we think about how present day plants are grouped (classified).

Their presence also provided clues to ancient geography and climate of the earth. One good example is the humble nipah palm. Paleobotanists (paleo - meaning ancient) are unraveling more mysteries as new fossils are discovered.

But more significantly, paleobotany reveals to us that Nature can survive, and did survive for about 3500 million years, without Man. Modern Man's evolution about 2 million years ago pales in comparison. Yet within this last century alone, despite our achievements, Man had been the single most destructive force against Nature through habitat destruction, pollution, and over-exploitation. The greatest irony is that Mankind cannot survive without Nature.

If wishes were wings and time space, I would like to travel in time to see the ancient landscapes with a bird's eye view. Who knows, one day we might. For the moment, a walk in Sungei Buloh will reveal many links to the past. And if knowledge should inspire, let the spirit of aspiration be rooted in love for the only home we know and should cherish — the Earth.



... a walk in Sungei Buloh will reveal many links to the past.

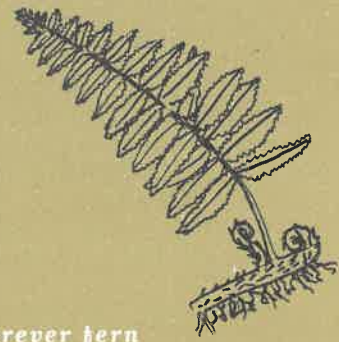


living fossil

Belangkas or horseshoe crabs are not crabs as their name suggested. They are closely related to the spiders and scorpions. Horseshoe crabs, which are sometimes called king crabs, have hardly changed in structure for the last 400 million years. For this reason, they are highly regarded as a living fossil.

first feathers

Birds are believed to have evolved from a crow-sized species of dinosaurs that appeared 150 million years ago. The first known bird is called *Archaeopteryx*, which means 'ancient wings'. It had lots of feathers, sharp teeth and a long rigid tail with two rows of feathers. Today's birds have no teeth or true tail. Instead, tail feathers are attached to a reduced bony stump called the *pygostyle*.



forever fern

One plant that has been widespread in both ancient and present vegetation of the Earth is the fern. Ferns are believed to have originated at about 400 million years ago and formed the main vegetation under the canopy of the tall pre-historic Clubmosses and Horsetails. Today, ferns number nearly 12,000 species and are still widely distributed throughout the tropics.

first flight

Insects first appeared during the Carboniferous Period 345 million years ago. They were the first

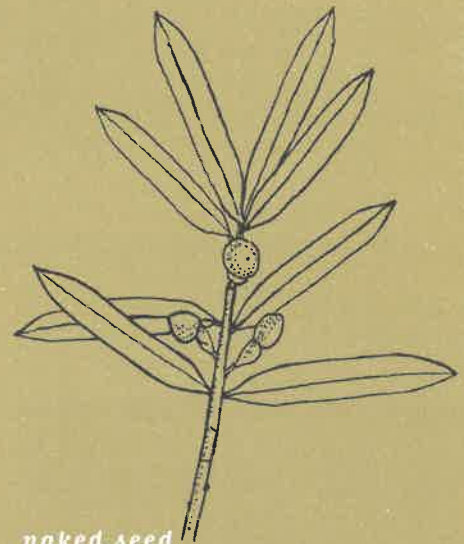
animals to take to the air, 150 million years before the birds. The giant *Meganeura* dragonflies, with a wingspan of over 27 inches, were one of the first. Though becoming smaller, the dragonflies remain the lords of the air as highly accomplished predators of the insect world.



small miracles

Pollen of nipah palm is the one of the oldest known mangrove fossil found, dating back to 70 million years ago. Small miracles, considering how well they can be preserved. The toughness is attributed to the presence of sporopollenin in the outer coating, the exine. Fossil fruits of nipah have also

been found in the clay of London and Paris, showing a much wider distribution than it is today.



ancient mariner

Algae, bacteria and fungi represent the earliest life forms on Earth. The oldest known fossils dating back more than 3000 million years are the blue-green algae. Most algae are found in the sea either as plankton or as seaweeds. Seaweeds are simple, usually feathery or ribbon-like plants and have no system of veins or roots, leaves or woody parts. They may be anchored to the seabed or free floating.



naked seed

Naked seeds, not enclosed in a fruit war, is a mark of distinction for the flowerless seed-plants called gymnosperms which include conifers. Examples of conifers are the pines, the giant redwood as well as Jati Laut (*Podocarpus polystachyus*) a native tree found above the high tide in our back mangrove. Early conifers first evolved at about 380 million years ago during the Devonian Period.

nest surprise

Crocodiles have been around for about 200 million years with little change. Their closest relatives are the birds. In fact, many crocodylians even gather grass to build nests. Crocodile brains are far more complex than those of other reptiles. Their hearts are almost as advanced as the birds and mammals.



James Gan, Senior Conservation Officer, highlights the fat issue of the Common Redshanks.

redshank



BY JAMES GAN, SENIOR CONSERVATION OFFICER
OF THE RANGITIKEI DISTRICT COUNCIL

fat worries of common redshanks

Ever felt fat and heavy? For many people, becoming fat is not welcomed but for many birds it is crucial for their survival and vital if they are to eventually reach their breeding grounds to successfully reproduce and raise young.

The absolute weight and proportion of fat in migrant birds, such as the Common Redshank (*Tringa totanus*) fluctuate like a yo-yo throughout the course of a year. Lean in one month, a few weeks later, considerable weight can be put on mostly in the form of fat. Why would this happen? In a word - migration.



The fuel used by migratory birds for their journey is fat. Fat has many advantages as a fuel. It can provide twice as much energy per unit mass than any other biochemical fuel available (provides about 8 times the energy as provided by protein).

common redshanks fuel...

The field data, all of which were collected during bird ringing sessions, have contributed a bit more towards the understanding of the migration patterns and weight gain strategies of not only the Common Redshank but other migratory shorebirds. In particular, we have learnt more about the varying weights of the Redshanks throughout the year and have obtained some indication of their weights close to their departure from the park during the northward migration. The information collected is invaluable for the conservation management of Sungei Buloh Nature Park.

Laid down predominantly under the skin, fat is also deposited around the liver, the gut and between the wishbone. Additional weight gain also comes from the increase in the mass of the flight muscles. It is thought that the increase in muscle mass is in preparation for the strenuous long haul flight and also serves as a protein reserve for the energy demands of courtship and egg-laying at the breeding site.

The weights of Redshanks from a sample of about 370 (of birds measured between Jan 2000 & April 2001 in Sungei Buloh Nature Park) ranged from 79g to 178g with the 3 lightest birds at 79g, 85g and 87g. These lean birds, interestingly all juveniles, were taken in late Sep and early Oct during the autumn migration and may have just arrived at the park to take a break from their journey to a destination further south. The 3 heaviest birds of 172g, 176g and 178g on the other hand were all recorded in early April and would likely be ready to depart for their breeding grounds that are thought to be in Tibet, Mongolia and Eastern Russia. Slightly more than 90% of the sampled birds had weights ranging between 100g and 140g for all periods of the year. Maximum weights in general did not exceed 140g between Aug and Feb and there is evidence to suggest that the weights of Redshanks over-wintering in the Park remained stable during that period. Records of Redshank weight suggest that fattening begins in March and continues in April. With one exception, Redshanks with weights above 140g were recorded

only in March and April. The birds, apart from appearing fat, had also acquired varying degrees of summer plumage, another indication of reproductive preparation.

Some Redshanks from the sample have shown that they are capable of rapid weight increase. For example, weight gains of 18g and 23g have been recorded in autumn (Sept) for some juveniles over a period of 15 days in both cases. More spectacularly, another juvenile weighing 98g that was ringed on 26 Sept and subsequently retrapped on 12 Oct had gained 28g over 16 days, an increase of 29% over its first recorded weight. If you are 60kg, imagine gaining weight at the rate of 1kg a day and ending up about 77kg in just over 2 weeks! The retrapped Redshanks and their weight records support suggestions that some birds remain for a certain period in the Sungei Buloh area to replenish fat reserves used during the migratory journey south to escape the harsh winter conditions in the north. The evidence of a high mass gain rate also suggests a ready availability of food and could reflect the relatively favourable ecological conditions in the area although more study is required.

Comments or feedback? E-mail at sbnp@pacific.net.sg ✉

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 Science frontier/Pgio 811



long-lasting companion of sungei buloh

Allan Teo, 53, is a veteran volunteer guide of Sungei Buloh. An operations manager, he finds time to volunteer at the park with his son.



the first step...

I was led to the Sungei Buloh Nature Park by my twin sons who were doing a school project about the Birds of Singapore way back in 1994. The staff extended such great hospitality that I wanted to contribute back to the park what they had shared with us.

The serenity of the park and the different sightings also make Sungei Buloh an interesting place to visit. There is so much of Nature for us to relish here.

the growing years...

We had less people and attractions in the earlier days and our group of volunteers was not as organised as today. We virtually trained ourselves from the books we read and by joining the Nature Society to upgrade our bird watching skills. Now we have more organised training for the new

volunteers by fellow experienced ones. Sungei Buloh has grown from strength to strength from its infant stage to its present mature stage. With all the ideas and contributions from staff and volunteers, we are beginning to see the fruits of our labour.

It is most heartening that the Management has been a very supportive bunch that looks after our volunteer group's interest. Being able to work with the staff makes my day.

the satisfaction...

After all these years, I still enjoy my guiding sessions and I relish every moment that I spend with the groups that I bring in. It is very satisfying to know that I have contributed my share of knowledge to the small and unaware group that followed me in.

the words of wisdom...

To our core volunteers, carry on the GOOD work.

For all the rest of young volunteers, have no fear of leading any group. We have been through it before and we are all here to support you. 🦋



Boarding time came for 180 young participants to begin a learning journey of our natural heritage on World Environment Day. Linda Goh, Senior Education Officer, reports.

Lady Bond, guest-of-honour, presenting the Passport to Dr Leong, during the launch of the Young Naturalist's Pilot Programme.



young naturalists of sungei buloh nature park

On World Environment Day, 5 June 2001, National Parks Board together with Hongkong and Shanghai Banking Corporation Singapore launched a joint pilot project called the 'Young Naturalists Programme'. This programme was specially designed for children to encompass the sense of adventure and achievement in the learning about our natural world.



"How long do you intend to stay here?"

"Do you have anything to declare?"

"Your passport, please."

One by one, a group of young visitors were questioned as they proceeded to get their passports stamped by high-ranking officials at the immigration counters. They were about to enter the land where mangroves and wetland wildlife thrive and begin their journey of discovery into the wonders of nature.

Led by their assigned volunteer guides, 6 groups of children with their teachers and parents explored different parts of the park to complete their mission and earn the stamps for the activities they participated in. Some of these activities required the children to complete a word puzzle, write a poem, hunt for answers, and even build a nest!

The participants stand to earn 4 specially designed cotton badges when they complete all the activities in each category, namely, Nature Ramble, Nature Activities and Write Stuff, Thematic Trail and Natural Artist, as well as Special Mission.

Feedback from the pilot project will be collected to improve the programme before its full launch in November 2001. Look out for it. 🌿

calendar of events

compiled by Chan Su Hooi,
Education Officer



nature detective

Daily

Wanted: Active kids with inquisitive minds. A challenge awaits you to be the next "Nature Detective". Learn more about the Park and bring home with you a Nature Detective certificate. (Nature Hunt questions available at ticketing counter)

mangrove mania

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

Come discover the Park's unique flora and fauna as the guide leads you through the mangrove habitat. This programme may be replaced with other interesting programmes that coincide with the respective time slots.

endless summer

August 2001 - March 2002

"T.T" is back to do his rounds. Be armed with the booklet "Endless Summer- The story of a seasoned traveler" and begin your adventure with him on his migratory trip around Route One.

souvenir for every 1000th 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 the continuation of our new millennium celebration. It is also a gesture of thanks to you for your continuous support in visiting the mangroves and its inhabitants.

international coastal cleanup

8 September 2001, 9 am to 11 am

International effort runs locally to clean the shoreline of marine trash. Besides collection, the data are categorized and collated to develop a profile in trends of marine refuse regionally and internationally.

launch of sungei buloh

nature park new facilities

10 November 2001

The official opening of the revamped nature gallery, reconstructed boardwalks and newly built tower hide.

clean and green week and birdwatch 2001

Free Guided Walks at Route 1 and Birdwatching at the Main Observation Hide or Aerie with the guidance of experienced birdwatchers.

guided walks

4 Nov at 9am and 10am

7 Nov at 9am and 3pm

birdwatch 2001

4 Nov from 9-11am

7 Nov from 9-11am and 3-5pm

10 Nov from 9-11am and 3-5pm

launch of commonwealth secondary school adopt-a-park scheme

10 November 2001

The teachers and students of Commonwealth Secondary School have taken up the challenge of adopting the Sungei Buloh's Mangrove Boardwalk. Through this programme, the students get to learn about the unique mangrove habitat and share the wonders of it with their fellow friends and the public.



mudskipper





by Ramakrishnan R.K,
Assistant Park Officer

javan munia (*Lonchura leucogastroides*)

The Javan Munia is a small, seed-eating bird found in Sungei Buloh Nature Park. It was introduced to Singapore from Indonesia in the early 1920s. Often considered a pest by farmers, these birds are caught and sold in large numbers when they congregate in flocks during rice harvesting time. These birds are sometimes bought up by Buddhist devotees and released on Vesak Day.

The Javan Munia can be found in all kinds of cultivated areas and natural grassy patches in Singapore. Like all Munias, it feeds on the seeds of the grasses. Other species seen at Sungei Buloh include the Scaly-breasted, Chestnut and White-headed Munias.

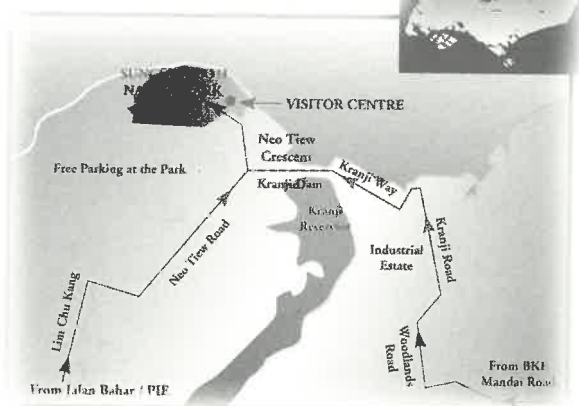
This species is usually outnumbered by the Scaly-breasted Munia, which is often seen feeding on the tall grass at the fresh water ponds area at Route 3 or the vacant land beside the Visitor Carpark. However, this is about to change as the Javan Munia has successfully adapted to the man-made environment, nesting and roosting on buildings and potted plants.

In March 2000, I found a pair busy collecting strips of grass and heading towards a potted Boston Fern. They were building their nest on the potted fern that was hanging along the extended roof around the Visitor Centre. These birds had chosen a safe and sheltered place close to people. I further discovered that there was not 1 nest but a total of 21 nests of which 15 were in use.

The nest is build out of grass stems, stripped grass leaves or flowering head woven into an untidy ball with a side entrance. The female lays from 4 to 5 white eggs and breeding usually starts from March to July. 🐦

note: Visitors are advised to leave nesting birds alone. When disturbed, these birds might abandon their nests which would be detrimental to the young.

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

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.
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>

Visitor Centre Facilities

- Theatrette
- 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



ORANG UTAN series



Care-for-Nature
PROTECTING OUR LIVING RESOURCES



If you want to help
the orang utans and
the rainforests to stick
around, start by
buying these stamps.



The Care-for-Nature stamp series is designed to promote public awareness and action in caring for our environment. And we are proud to continue our green efforts by devoting this year's issue to the orang utans. And who better than Ah Meng, the affable dame of the Singapore Zoological Gardens, to grace this issue and help raise the profile of her species. Privileged are we to have the opportunity to share a special association with these magnificent creatures with our adoption of Ah Meng in 1982.

Through the Orang Utan series, we hope to highlight the threat of extinction faced by this magnificent species and their natural habitat - the rainforests. By commissioning the beautifully illustrated Orang Utan series, we want to promote sensible management of our precious ecosystems.

As usual, proceeds from the sale of these covers and prints

are donated to the Care-for-Nature Trust Fund which has been set up since 1991 to provide financial support for environmental conservation and educational projects in Singapore and the region. If you wish to do your part for a greener future, please support our latest endeavour.

Exclusively pre-cancelled with the first day of issue date-stamp and corporate postmark, the Care-for-Nature Collector's Cover is yours at only \$9.90. For \$68, you can own a special 4-in-1 stamp print depicting Ah Meng in different stages of her life. An unframed set of 4 limited edition stamp print collection is priced at \$198 while a framed set is yours for \$338.

From 5 September 2001, the Care-for-Nature Collector's Covers and Limited Stamp Print Collection are available at Public Affairs & Advertising Department (HSBC Building #14-01, Tel: 530 5100), all HSBC branches in Singapore and Singapore Post main branches.

HSBC

YOUR WORLD OF FINANCIAL SERVICES