



National Parks NParks' Publication

wetlands

december 2008 VOL. 14:3 sungei buloh wetland reserve



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COVER PICTURE BY:

Firefly by Colleen Goh
Canon 40D, 100mmf.2.8 USM,
Canon MR-14EX



"Take care of the earth and she will
take care of you."

Author unknown

WETLANDS VOL. 14.3

15 Years of Wetland Conservation at Sungei Buloh Wetland Reserve (SBWR)

**EDITORIAL**

This year is Sungei Buloh Wetland Reserve's 15th Anniversary. What
better way to celebrate her anniversary then to showcase the diverse
biodiversity of the reserve! There were several rare sightings of bird
species this migratory season that drew many interest groups to
flock to Sungei Buloh. The firefly project and the continuous study on
Migratory bird longevity are just two of many research projects that
aim to showcase the ecological gem we possess in Singapore..

Mendis Tan



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HSBC in Singapore launched the Care-for-Nature Programme in
November 1989 as a long-term environmental conservation and
education project to help conserve and protect our living resources and
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HSBC has since initiated and supported a wide array of community
initiatives including conservation projects at key nature areas such as
the HSBC TreeTop Walk, Chek Jawa, and the Singapore Botanic Gardens,
in partnership with like-minded individuals and organisations.

HSBC's support and involvement in Sungei Buloh Wetland Reserve is
another such effort in nurturing a better understanding and
appreciation of our wetlands and the importance of protecting
our living environment.

Please call 6530 5074 if you wish to know more about HSBC's
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contents

My name is Henry, a Common tailorbird staying at Sungei Buloh. I was born last year in 2007. My family tree actually extends to about 15 years ago when my great grandfather decided to setup his home here.

OVER THE LAST 15 YEARS

By a first winter Common Tailorbird

MENDIS TAN, SENIOR OUTREACH OFFICER, SBWR

Each day, at about 9am, I'll visit the visitor centre to see what's going on that day. My dad told me many stories about the changes he saw as well as those told to him by Grandfather.

I was told that way back in the early 1990s, some humans with their photographic equipment and binoculars appeared here; taking pictures and looking at all the flora and fauna around this area. Soon, more people came. My grandfather told me that a very tall man with many other humans came to our forest one day. Later, a squirrel said that man was Prime Minister Goh Chok Tong. He was constantly nodding his head and using binoculars to look around him. On 6 December 1993, my Grandfather told me there were many people who had gathered around near our nest and clapping to a declaration made by Mr Goh Chok Tong. My father added that day was really special because from that day onwards, many changes took place over here.

My father and Grandfather were not happy talking about the changes. They added that they felt threatened in the beginning of the development of SBWR. They told me that there was always construction going on and more people visited Sungei Buloh. In 1994, Sungei Buloh had their first 100,000th visitor. I asked my father about some of the letters I see all over the place; especially the HSBC letters. My dad told me that the letters seem to refer to a very general bank that donated a lot of money because of their love

for nature. My father got very excited and told me that in the year 2002, our home became a protected reserve and was officially renamed Sungei Buloh Wetland Reserve.

Father continued to talk about special friends who had flown from far away countries to SBWR. My Grandfather added that many friends he made came from Siberia and Mongolia. He added that his friends use SBWR during the winter season in those countries. He also added that he always waited in anticipation for his friends to return from August to the next year April every season. He would fly to the main hide and see if some of his friends have arrived. Of course, he would catch an insect or two to snack on while keeping a lookout for them. The thought of the great flocks his friends flew in with always brought a sparkle in his eyes.

He added that SBWR joined the East-Australasia Shorebird site network in Jan 2002 because of his good friends who fly in faithfully every year. Also, in 2003, SBWR was officially Singapore First ASEAN Heritage Park. I myself have made some friends! And my best friend is a Common Redshank who has been coming back for the last 4 years!

Well, over the last year here in SBWR, I am proud to be living here. I must say I am enjoying the fruits of the work that has been put to make SBWR a wonderful place for me to live in. I am sure you will enjoy SBWR as much as I do.



sungei buloh wetland reserve

[03. 14. 3]



The Asian Dowitcher

(*Limnodromus semipalmatus*)

MENDIS TAN, SENIOR OUTREACH OFFICER, SBWR



On 25 August 2008 at around 4.30pm, I peered through the windows of Hide 1C through my binoculars and observed all the shore birds one by one. It was high tide and most of the birds were close by; resting on the little islands found there.

Suddenly, an unusual bird moved out of the crowd. It had a long thick bill and its colours were different. I called my colleague to check what kind of bird

this was. It was the Asian Dowitcher.

The Asian Dowitcher, *Limnodromus semipalmatus*, is a rare medium-large wader. Adults have dark legs and a long straight dark bill, somewhat shorter than that of the Long-billed Dowitcher. The body is brown on top and reddish underneath in breeding plumage. The tail has a black and white barred pattern. The winter plumage is largely grey. Their breeding habitat is

grassy wetlands in inland northern Asia. They migrate to southeast Asia as far south as northern Australia. This bird is always found on coasts during migration and wintering.

These birds forage by probing in shallow water or on wet mud. They mainly eat insects, mollusks, crustaceans and marine worms, but also eat some plant material. Since the 25 August 2008, we have not seen the Asian

Dowitcher again. We hope to catch another sighting of this beautiful bird before the migratory season ends in April 2009.

Mendis Tan, Senior Outreach Officer Nikon D2x, Nikkor 600mmF4 Ai-S IF-ED.

References

BirdLife International (2006).
Limnodromus semipalmatus. 2006
IUCN Red List of Threatened Species.
IUCN 2006. Retrieved on 11 May 2006.
Database entry includes a brief
justification of why this species is near
threatened.



A GLOBALLY THREATENED SPECIES

visits Sungei Buloh Wetland Reserve

The Chinese
Egret is classified
as a vulnerable
species with the
current population
estimated at
between 2,600
and 3,400 birds
globally.

MENDIS TAN, SENIOR OUTREACH OFFICER
VETTED BY DAVID LI, CONSERVATION OFFICER

Following the sighting of the Asian Dowitcher, we were anxious to find birds arriving in Sungei Buloh Wetland Reserve. David Li, our new conservation officer, went out to the reserve to conduct a bird survey.

David notified us of the Chinese Egret and James and I rushed out with photographic equipment to capture this magnificent bird on digital film.

The Chinese Egret or Swinhoe's Egret, *Egretta eulophotes*, is a short legged, full-crested, white egret with yellow dagger shaped bill and black legs with yellow feet in its breeding plumage. The non-breeding Chinese

Egret sports a black upper bill, yellow lower bill and green legs. The Chinese Egret we photographed was in its breeding to non-breeding plumage.

It breeds in Russia, North Korea, South Korea and mainland China, and then

This photograph shows the features to differentiate the Chinese Egret from the Little Egret, which is very similar from afar.

migrates south through Japan, the Philippines, Malaysia, Singapore and Indonesia. The main wintering grounds appear to be in the Philippines and East Malaysia

The Chinese Egret is classified as a vulnerable species with the current population estimated at between 2,600 and 3,400 birds globally.

The main threat to the Chinese Egret is habitat loss.

We hope this beautiful bird visits us again soon!





Guess what we found
along the walking trails
near the freshwater
ponds in early

September this year? We
were conducting night
surveys in Sungei Buloh
and saw quite a number
of "little stars" twinkling
amongst the vegetation.

Yes, they are fireflies!
They are often called
lightning bugs, glow
worms or Kelip-Kelip (in
Malaysia) and Hing Hoi
(in Thailand), and are
fascinating insects to
watch at night.

Twinkle, Twinkle Little Stars @ Sungei Buloh

HAVE YOU WONDERED WHAT THEY ARE?

WONG TUAN WAH AND CHAN SU HOOI, SBWR



[1]

We were delighted at what we saw as it is not easy to spot them. A few adults were seen flying around the low vegetation, as if they were dancing in a nice slow rhythm. They could be easily spotted due to their flashing lights on their lower abdomen. In the dark night, their signal lights were bright, attractive and yet, mysterious. They are simply amazing creatures to watch. How about the larvae? How did we manage to see them? Although the larvae were hiding among fallen leaves in the ground, they emit a soft tiny glow near the end of their abdomen. Walking quietly in the night, we could see this soft pulsating glow from a distance. When disturbed, the glow quickly disappears but comes on again after a short while.

Ever wonder why these tiny creatures keep twinkling their lights, like little stars in the night sky? Read on...!

Researchers estimate that there are 2,000 species of fireflies worldwide, and many of them are unnamed or not properly identified yet! Fireflies can be found everywhere - from the temperate to the tropical regions around the world. Their habitats range from mountain river valleys (eg. Great Smoky Mountains National Park, Tennessee, USA) to forests, grasslands and mangroves in South East Asia (eg. Sungei Selangor, Malaysia). They are also found in our wetland reserve, but in small numbers.

Fireflies are actually beetles and belong to the insect family Lampyridae - meaning "shining ones" in Greek. Many children, and adults alike, are fascinated and attracted to these night flying beetles. We had heard stimulating stories from our parents and grandparents like; "When I was child, I used to catch them and put them in glass bottles to admire them or used them as lanterns to light up my room". Those were the days where fireflies were much more common.

What's so interesting about the firefly's light? For the adults, the precisely timed



| 1 | Firefly symposium organiser and participants | 2 | Female Firefly | 3 | Male Firefly | 4 | Firefly dorsal view

bioluminescent flashes are actually courtship signals for species and mate recognition. The adult male normally rests on trees flashing its light signals to attract potential females. The adult female often waits near the ground and when she sees a (male) flash signal that she likes, she will respond with her flashes. However, these male / female flashing behaviour varies for different species of fireflies. The sole purpose of the adults is to mate and reproduce. Once they achieved this, they would have completed their life cycle and would die. For the larvae, scientists believe that the glow or flashes are to warn predators that they are distasteful and have "toxic" secretions.

Scientists have also made interesting discoveries on how the light is produced. They found that more than 90% of the energy spent to generate the light actually produces light, and only 3 percent as heat. This is indeed very efficient, especially when compared to a light bulb that gives off more than 90% of its energy as heat. This light is actually a cool chemical reaction where luciferin



[2]



[4]



[3]

The fireflies we found in Sungei Buloh had been previously identified as *Pteroptyx* species. They are known to occur near mangrove swamps along the north-western coasts of Singapore. In the past, Dr Ivan Polunin (a retired medical doctor and firefly enthusiast and expert), had found *Pteroptyx valida* in Sungei Buloh.

(a small organic molecule), reacts with luciferase (an enzyme) in the presence of oxygen in the firefly's abdomen. The energy for this reaction comes from ATP. ATP or adenosine triphosphate, is an energy source that is produced during photosynthesis and respiration and used by cells for biological reactions.

Fireflies are also found in the mangrove forests at Pasir Ris Park (near Car Park C). Walking along the boardwalk in the middle of the night, we saw many adults flying around and a large number of larvae glowing in the mudflats. One female adult even landed on one of our arms and we had to shoo it away. According to the Park Manager, the population of fireflies has increased over the last few months. This is indeed very encouraging as fireflies are considered as a good indicator of the health of an ecosystem. They are like "a canary in a coal mine" and the more fireflies there are, the healthier the surrounding habitats are.

In August this year, we had the opportunity to attend the 1st International Symposium on Diversity and Conservation of Fireflies held at Queen Sirikit Botanic Gardens, Chiang Mai, Thailand. We met many experts and made many friends who

are willing to share information and help us identify our fireflies. About 100 firefly experts, naturalists, enthusiasts and students from 13 countries, namely Thailand (host country), Australia, Belgium, China, Japan, Malaysia, Portugal, Singapore, South Korea, Sri Lanka, Switzerland, Taiwan and USA attended the 5-day symposium. The next symposium is proposed to be held in 2010 in Malaysia, and delegates would have the opportunity to visit and see the world-famous synchronous flashing firefly (*Pteroptyx tener*) that are commonly found along the riverbanks at the lower reaches of Selangor River, Malaysia.

Accompanying our many night surveys was Colleen Goh - a Sungei Buloh volunteer, nature lover and photographer. Thanks to her determination and passion, she managed



[1]



[2]

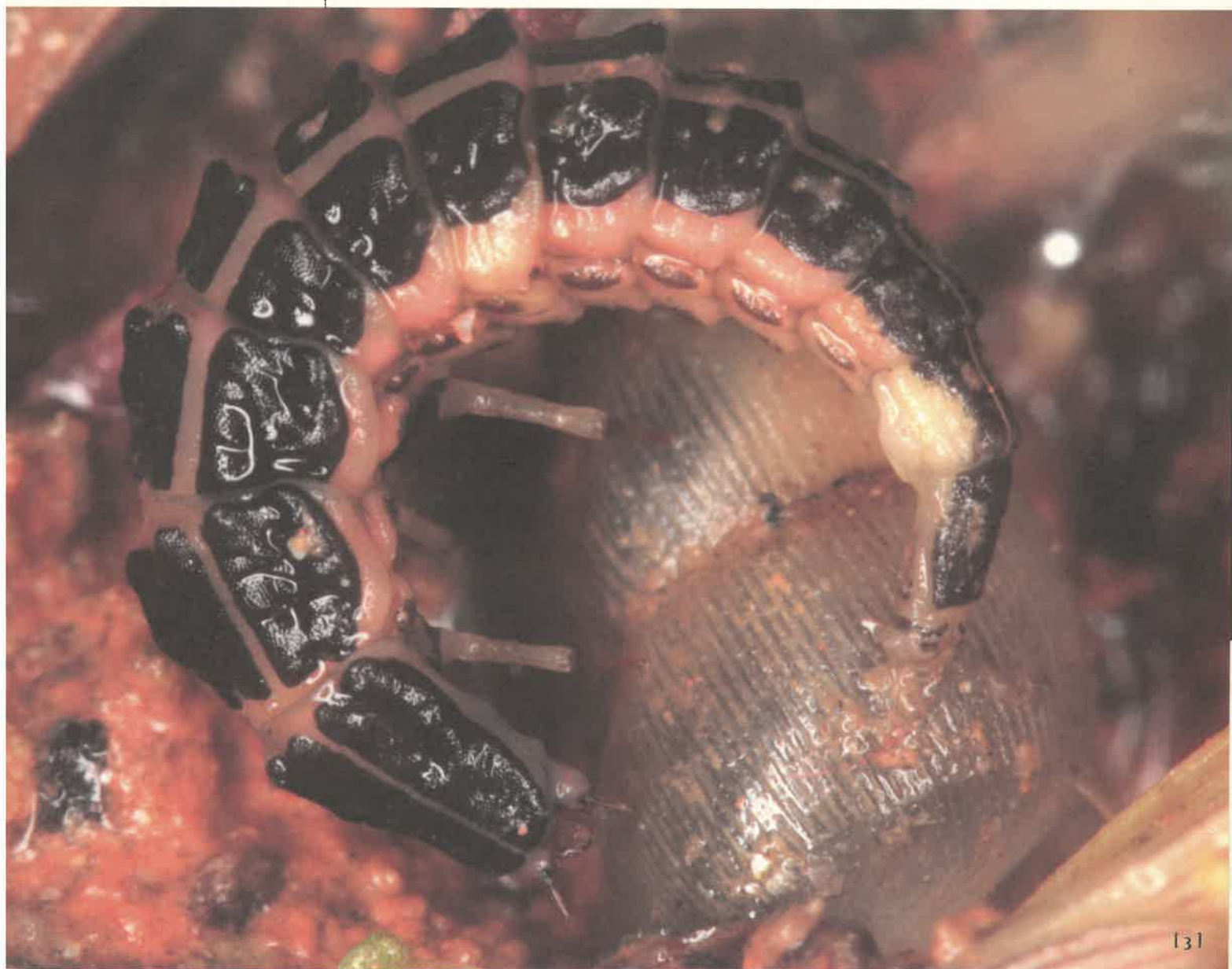
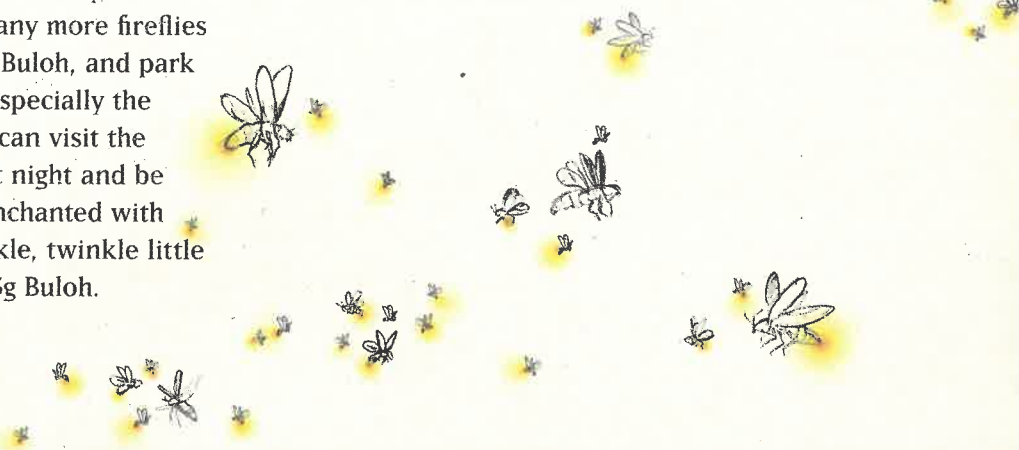
[1] Mr and Mrs Ballantyne with NParks staff Wong Tuan Wah and Chan Su Hooi [2] Firefly larva feeding on snail [3] Firefly larva

to take many nice pictures of the adult and larva fireflies. Reproduced here is a collection of her excellent pictures, many of which were taken at high magnification using her personal "ultra-modern and expensive" camera equipment. The Front Cover picture, showing the ventral view of a female *Pteroptyx* species and its lantern (located near the end of the abdomen) is also from Colleen's collection of firefly pictures.

We intend to improve the habitats in Sungei Buloh to make it more conducive for fireflies to breed. We hope that one day, there will be many more fireflies in Sungei Buloh, and park visitors, especially the children, can visit the reserve at night and be equally enchanted with the "twinkle, twinkle little stars" of Sg Buloh.

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09



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Flickr group



[1] Robberfly by Shawn Low aka Dacookiemani [2] Acetylcholinesterase by Farhan Bokhari aka Myrmicid [3] Ant-like Crab Spider by Kam aka Tomatoskri [4] Yixiong aka Tiomanses shows us how it's done



The Macro Maniacs from Flickr hit Sungei Buloh again for a spot of macro photography.

This time round, there was an added bonus of a post-lunch sharing session by accomplished macro shooter, Colin Tan aka tltan. He kindly shared with us his experience shooting his fabulous flower macros. We came away from this talk with many tips on shooting techniques, processing and even how to DIY equipment. Thanks, Colin!



Macro maniacs shoot and share

BY COLLEEN GOH, A VOLUNTEER



| 5 | A rapt audience | 6 | Sungei Buloh by Jony Indahwan aka Bigbow78 | 7 | Peeking Out by Colin Tan aka dhan | 8 | Ya Want a Piece of Me by Colleen aka Damselfly

The weather was great - although a tad windy for macro. Everyone had fun nonetheless, with laughs all round. The 3-hour shoot took the 35 shutterbugs (photograph no. 5) on a leisurely pace around Route One. What an eye-opener it was for those who had never been to SBWR! They discovered what a fantastic place it was for macro photography.

Aside from learning new photography tricks and tips from one another, it was also good to see the more

experienced photographers helping the newer ones get the hang of shooting macro. We all went away with new ideas to experiment with and great pictures from Sungei Buloh to post up on Flickr.

Come see the great collection of images from Sungei Buloh Wetland Reserve at <http://www.flickr.com/groups/SBWR>

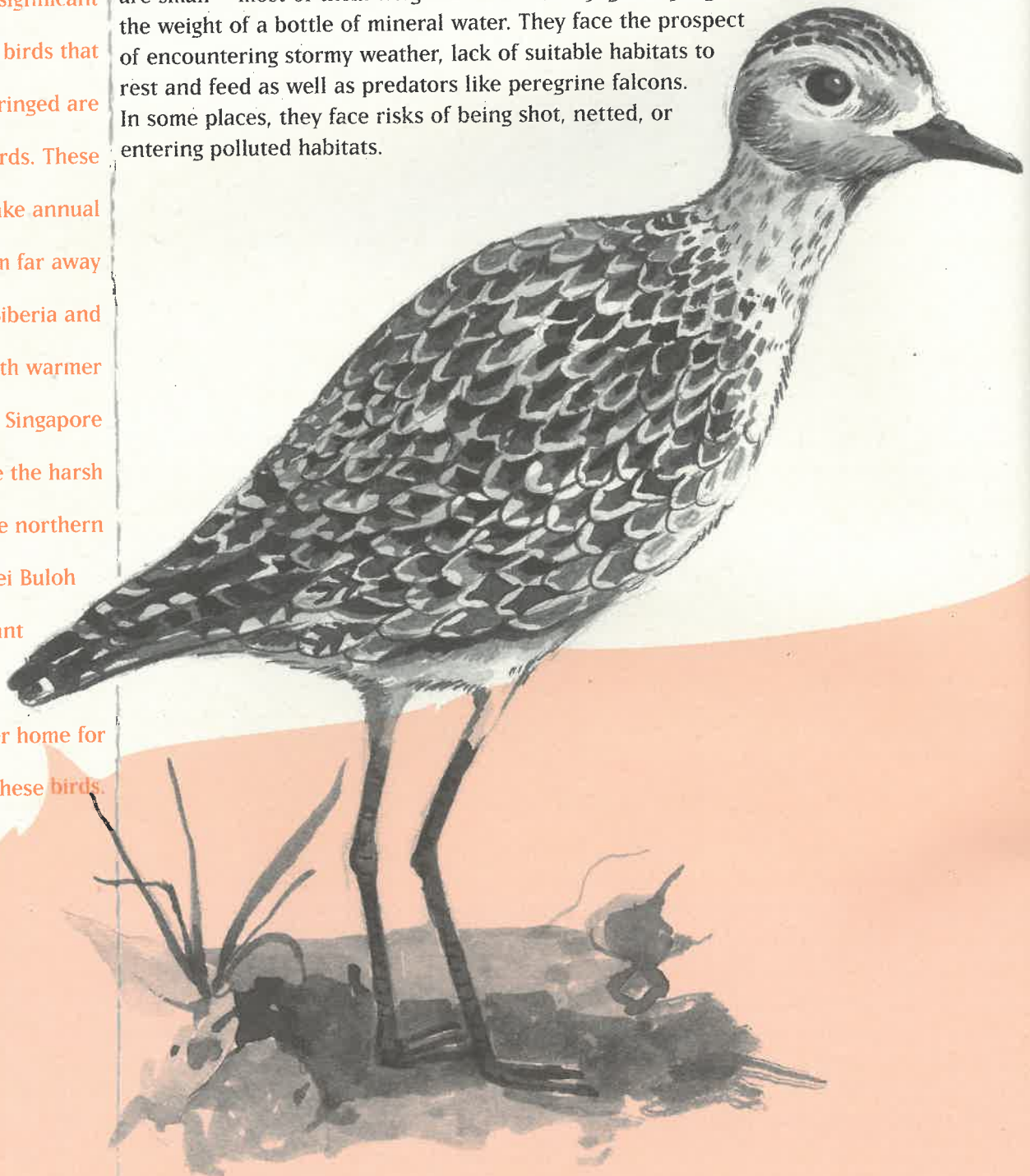


Migratory Shorebirds - How long do they live?

JAMES GAN, SENIOR CONSERVATION OFFICER, SBWR

Ringling work has been carried out at Sungei Buloh since 1990. A significant number of the birds that have been ringed are migratory shorebirds. These shorebirds make annual journeys from far away places such as Siberia and fly to places with warmer climates such as Singapore to escape the harsh conditions of the northern winter. And Sungei Buloh is an important stop-over site as well as a winter home for many of these birds.

These migration journeys are often fraught with danger for the birds. The shorebirds are small — most of them weigh in at between 50g and 300g. That is typically less than the weight of a bottle of mineral water. They face the prospect of encountering stormy weather, lack of suitable habitats to rest and feed as well as predators like peregrine falcons. In some places, they face risks of being shot, netted, or entering polluted habitats.



With so many
dangers around,
what is the
typical lifespan
of such birds?

Research at Sungei Buloh has revealed that the birds can live surprisingly relatively long lives even in this increasingly hostile environment. The oldest bird ringed and recaptured (controlled) was a Common Redshank. The bird was caught at Sungei Buloh on 1 Nov 1990 and over 15 years later, it was found again at Sungei Buloh on 12 Sep 2006. That redshank was believed to be at least 17 years in age. It was 125g when it was first ringed, was caught again on 16 Dec 1990 with a weight of 117g and weighed 124g on 12 Sep 2006. How many of us could say that we've maintained our weight after more than 15 years?!

The dates and capture-recapture intervals for some other species of shorebirds ringed at Sungei Buloh are provided in the table below.

Name	Ringed	Controlled	Interval-mths (yrs)
Common Redshank (<i>Tringa totanus</i>)	1 Nov 90	12 Sep 06	190 (15 yrs 10 mths)
Pacific Golden Plover (<i>Pluvialis fulva</i>)	3 Nov 90	30 Nov 04	169 (14 yrs 1 mth)
Marsh Sandpiper (<i>Tringa stagnatilis</i>)	31 Oct 90	23 Jan 01	123 (10 yrs 3 mths)
Common Sandpiper (<i>Actitis hypoleucos</i>)	15 Aug 97	15 Sep 04	85 (7 yrs 1 mth)
Mongolian Plover (<i>Charadrius mongolus</i>)	15 Dec 94	27 Sep 00	69 (5 yrs 9 mths)



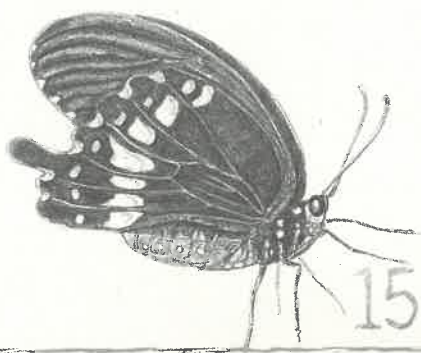
How do these longevity ages compare to other shorebirds around the world? Robinson, R.A. (2005) BirdFacts: profiles of birds occurring in Britain & Ireland (vi.21, Jun 2008). BTO Research Report 407, BTO, Thetford (<http://www.bto.org/birdfacts>) has data that the oldest redshank recorded in the United Kingdom was 19 yrs 10 mths. The oldest redshank ever recorded was 26 yrs 11 mths from Denmark. The typical lifespan though is just 4 years.

The long and continuous ringing work in the United Kingdom (since 1909) and Europe in general have revealed interesting facts about these birds that undertake amazing journeys. As the southward migration commences this year, do take the opportunity to enjoy and be amazed by these spectacular birds. Over at Sungei Buloh, we are happy that these birds continue to faithfully return and break longevity records. We hope that they will continue to do so for many more years.



Photographs courtesy of Mendis
Tan, SOO, SBWR, Nikon D2x,
Nikkor 600mmf4 Ai-S IF-ED.

[1] Common Redshank [2] Pacific Plover [3] Marsh Sandpiper [4] Common Sandpiper



Calendar of Events

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COMPILED BY MENDIS TAN, SENIOR OUTREACH OFFICER
SBWR

Free Guided Walks

Every Saturday except public holidays (9.30am and 3.30pm)

Come and discover the wetland's unique flora and fauna as the guide leads you through the mangrove habitat. These walks are weather permitting. Please check our website for specific time slots for marine fish and prawn farming tours.

For pre-booked guided walks for school groups and organizations, please call 6794 1401 to make a booking.



World Wetlands Day

2 Feb 2009

Join us to celebrate World Wetlands Day. To find out more, check our website for more details.



Year of the Frog! - An exhibition by Chan Su Hooi

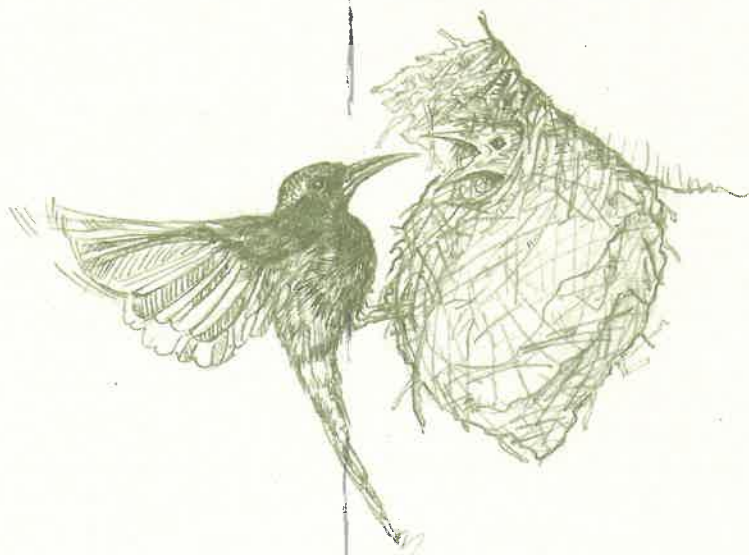
Dec 2008 to Jan 2009

This 3 month long exhibition showcases the many species of frogs found and studied in Sungei Buloh Wetland Reserve. Come and enjoy the extensive research done by Ms Chan. There are also many photographs of these beautiful animals by Colleen Goh.

Wetlands Alive — An art exhibition by Tham Pui San

Dec 2008 to Feb 2009

Wetlands Alive is an art exhibition by Mr Tham Pui San, a nature artist and SBWR volunteer. This exhibition consists of 40 pieces of his work all painted in Sungei Buloh Wetland Reserve. Mr Tham hopes to encourage all of us to visit the reserve and enjoy the beauty of this unique jewel in Singapore.



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Awarded by

Top 500 Financial Brands, March 2008 (The Banker Magazine)

Global 500 Banking Brands Index 2007 (The Brand Finance)

Forbes' list of the world's 2000 largest companies (Forbes Magazine)

Best Trade Finance Bank in Asia, 1997-2007 (FinanceAsia)

Best Trade Finance Bank in Asia, 2002-2007 (Global Finance)

Best Overall Bank for Cash Management in Asia, 2003-2008 (Global Finance)

Best Transaction Bank in Asia, 2008 (The Asset)

2008 Quality Leader Asian Interest Rate Derivatives (Greenwich Associates)

2008 Quality Leader Asian Foreign Exchange (Greenwich Associates)

Best Foreign Exchange House in Asia, 2007 (Euromoney)

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