

# Success of experiential learning celebrated

Werlands Vol 10:5

### EDITORIAL

In the last edition of "Wetlands" (April 2005), we featured the start of the "Reforestation and Reach Out Programme (RROP). In this edition, we continue with reports of a successful celebration from the reforestation and reach out project, which culminated from the start of September 2004. Toyota Motor Corporation generously sponsored, and the students from the partner schools gave their best to this project. (I must say they were a joy to work with!). Certainly not the least of all — our staff and volunteers selflessly chipped in heaps of time and effort to prepare for this celebration too. On the same note of sponsors, we also want to thank Underwater World Singapore for their contribution to the Marine Fish Programme. They too have made this programme educational, fun and exciting for the partner schools. I am sure those who have experienced it will agree that concepts are best learnt, memories are best kept, and education for our young ones on nature conservation can be brought out to its fullest potential when it is given a chance to go beyond the four walls of a classroom through experiential learning. Here in Sungei Buloh Wetland Reserve. It happens! Children learn the most, and education is made fun when they are provided with an experience that takes them on a learning journey through enjoyment and adventure in nature awareness!

– Jeanne Tan

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"Stink Horn Fungus" by Wong Tuan Wah
Outdoor Classroom, Nikon Dioo, Nikkor 200mm f4 Macro lens





'Wetlands' is sponsored by HSBC under its Care-for-Nature programme.

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 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.

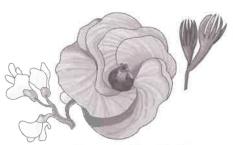
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### Did You Know?



Jeanne Tan, Senior Outreach Officer

Did you know that the old Outdoor Classroom which sits quietly at the junction of "Route One" and "Route Two" at Sungei Buloh Wetland Reserve has now been refurbished for a brighter and friendlier look? From 1 May 2005, teachers can bring their students there to learn about the different habitats surrounding the Outdoor Classroom, through field studies as well as through using the educational materials and tacilities housed there. (Please contact 67941401 or e-mail sbwr@pacific.net.sg to make a booking).

We would like to acknowledge Toyota Motor Corporation and our partner schools for their support and collaboration with us in this project.



Students learning about the mangroves through a boardgame!

There are four interesting habitats — Secondary forest, mangroves, back mangroves and freshwater pond, and one exciting spice garden that will keep your senses occupied as you explore these places! Do remember to check out the educational worksheets online as well as a board game that lets you have fun understanding more about the Mangrove Boardwalk! I will not say more, just come and explore!

The habitats around the Outdoor Classroom:

### **MANGROVES**

Mangroves are a unique kind of forest community found at the interface between land and sea. Salt is harmful to most plants, yet in many intertidal areas inundated by seawater, mangroves thrive. Mangrove plants comprise trees, shrubs, palms, and climbers. Mangroves can form stands that are many square kilometers in area, and line the banks of many tropical rivers for miles on end.

#### **BACK MANGROVES**

Back mangrove species are not subject to the same degree of tidal inundations as experienced by "true mangrove" species, growing near mangrove stands towards the landward side. Though able to withstand the high salinity and low-nutrient soils associated with coastal areas, these plants generally are not found in the intertidal areas colonised by true mangrove plants. Examples of back mangroves include the mangrove trumpet tree (*Dolichandrone spathacea*), with its large creamy white flowers and large seed pods.



An inviting freshwater pond where an interesting array of flora and fauna await your visit!



Visitors are captivated by what they see through these microscopes.

### FRESHWATER POND

Freshwater ponds are another kind of habitat encountered at Sungei Buloh. Home to a completely different plant community compared to that found in the nearby mangroves, these ponds also harbour a fascinating (and yes, different) kind of fauna as well. These ponds reward close observation — can you see some of our native freshwater fish species, dragonflies and damselflies, aquatic ferns and flowering plants? Though the freshwater ponds at Sungei Buloh may in part be an artifact of past human land use here, the presence of rich flora and fauna demonstrate the resilience of nature and the amazing colonising ability of plants and animals.

#### SECONDARY FOREST

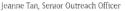
Where trees in a relatively undisturbed forest fall, a group of trees tolerant of the higher sunlight, hotter temperatures, and lower humidity of exposed patches take over. Their subsequent maturation leads to the formation of a forest composed primarily of fast-growing, high light-tolerant plants. We often refer to such areas as "secondary forests".

### Spice Gardens

Spices — people have used them since the earliest times! Wars were fought and lands have been conquered because of these plants. Today, we continue to depend on them for various uses. Bees, butterflies and other animals depend on a selection of these plants for their survival too. Some of the species here can encourage animal diversity in the garden because their flowers and fragrances attract insects.



Part 2: The Project Launch







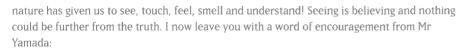
With the support of our sponsor Toyota Motor Corporation, 23rd April 2005 was an exciting, memorable and busy day for our partner schools. Toyota, SBWR and NParks staff who came together and worked hard to make the "Reforestation and Reach Out Project Celebration" a success. As part of the project, the students underwent a series of training, which culminated in a big reforestation activity over three days in December last year. As nature awareness was generated among the students, this project also enabled them to share creative and innovative ideas in environmental education and conservation with each other. Each played their role actively in creating and producing educational materials for use at the Outdoor Classroom.

Much to the delight of our staff, the day was clear, bright and sunny, much in tune with how the partner students must have felt, evidenced by their smiling faces. Each school felt a sense of achievement as they went forward to receive their certificates of participation after the guest of honour had delivered his speech. A freshwater plant, *Cryptocoryne ciliata* was presented to the guest of honour as a token of appreciation. It was chosen because of its status as a rare native plant and its representation as one of the plants that were reforested in the freshwater habitat near the Outdoor Classroom.

Volunteer guides were all ready to show the guests the way to the Outdoor Classroom that morning. Our guest of honour, Mr Kohei Yamada, Senior General Manager, External Affairs Department, officially unveiled the plaque which now sits proudly at the Outdoor Classroom. The students then took their positions in their respective 'habitat station', ready to present and share their creative and innovative touch with the guests. We were glad to know through speaking with some of the guests who were teachers, that this was a good avenue to explore nature and make learning more fun! Yes, I could not agree more! There is a whole new world of living organisms out there, and so much to explore in what



Group picture taken beside the Outdoor Classroom



"Here at Sungei Buloh Wetland Reserve, the Outdoor Classroom facilitates outdoor learning through exploring the various habitats and engaging in educational games. Through this project, we hope that visitors will learn more about nature conservation and share their memorable experiences with others."



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Presentation of a framed up "Spotted Archer Fish" as a token of appreciation to Professor Leo Tan. (From left to right: Dr Leong Chee Chiew, Professor Leo Tan and Mr Kwek Meng Tiam)

### The Marine Fish Programme —

## Promoting Marine Conservation at Sungei Buloh

James Gan, Senior Conservation Officer

It is a well-known fact among those interested in marine fish that Sungei Buloh Wetland Reserve (SBWR) possesses one of Singapore's best habitats for coastal fish. The Main Bridge over the Sungei Buloh Besar is a particularly good locale for the observation of an abundance of fish life represented by over 100 species.

With the official launch of the Marine Fish Programme on 14 May 2005, a fresh perspective was added to enhance the visitor experience at SBWR. This programme represents the first time the National Parks Board (NParks) has dedicated a programme entirely to marine fish. Intended to generate interest in the marine fish of the wetlands, it is part of NParks' wider efforts to reach out to Singapore residents, particularly the youths, to care for our shared natural heritage.

Sponsored by Underwater World Singapore (UWS), the programme includes free-guided walks and talks on marine fish. It also incorporates educational materials such as a poster exhibit on marine fish at the Nature Gallery and fish identification signs at the Main Bridge, both of which enable visitors to conduct self-guided walks. A full-colour fish identification chart was also produced to aid the guide leaders to improve the quality of their guided walks. The chart is also available for purchase.

The conservation outreach programme is the joint effort of students from five schools — Canadian International, Commonwealth Secondary, Hillgrove Secondary, Peixin Primary and Yishun Junior College — together with volunteers and partners as well as staff of NParks and



UWS. Apart from learning about the marine fish at SBWR, the students also practiced their skills in public speaking, and learnt to conduct public guided walks. Since April 2005, 60 students from the five schools have committed themselves to conduct at least three public guided walks for the rest of the year.

UWS sponsorship contribution of \$10,000 to the Garden City Fund (GCF) will be used over one year to support the programme. Said Mr Charles Ho, Chairman, GCF, "I am heartened by UWS' active interest in the Garden City development. Their contribution towards value-added features and educational talks and tours for the Marine Fish Programme will benefit the general public, in particular the youths, and the Garden City. Together with partners such as UWS, the GCF hopes to play an even bigger role and bring more educational programmes and facilities to our community."

To celebrate the success, NParks and UWS organised the launch to present certificates to the students for their participation and offer a platform for them to share their work with the public. The launch also saw the staff of UWS kicking off the first in a series of three public talks.

On UWS' contribution, Mr Kwek Meng Tiam, General Manager of UWS, said: "With urbanization in land-scarce Singapore, we are rapidly losing our natural heritage. Fortunately for us, under the expert and careful hands of the NParks and other government agencies, a large part of our natural heritage is preserved. As UWS'is also committed to

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guiding' on marine fish for Professor Tan and the guests.



By the Main Bridge, one would be able to see a variety of

environmental and marine conservation, our partnership with the NParks marks a significant step in this direction. It will further demonstrate our role in educating our students and the general public on the importance of environmental and marine conservation. Through these activities, we hope to develop citizens who are more conscious of, and concerned for, marine life and the marine ecosystem, so that they will be better prepared for the environmental and conservation challenges of the future."

Added Dr Leong Chee Chiew, Chief Operating Officer, NParks: "This programme seeks to inculcate a sense of ownership of our natural heritage among our youths. Through enriching talks and hands-on activities, these youths learn more about the local marine fishes at our wetlands. I am particularly glad that these students are able to apply what they learnt by creating educational materials such as artistic fish mobiles to make marine fish education more interesting and exciting for other young people. We are very pleased that UWS recognises the importance of encouraging the next generation to care for our natural environment, and are grateful for their support."

The fish mobiles described by Dr Leong are a result of a brainstorming session by the students of Peixin Primary School and are displayed at the Visitor Centre. Teachers and students who wish to join the weekly guided walks to learn more about the local marine fish and their associated conservation issues may contact the wetland's visitor service coordinators at 67941401 or obtain more information at www.sbwr.org.sg. The weekly guided walks are led by trained students, volunteers and staff of NParks and UWS.

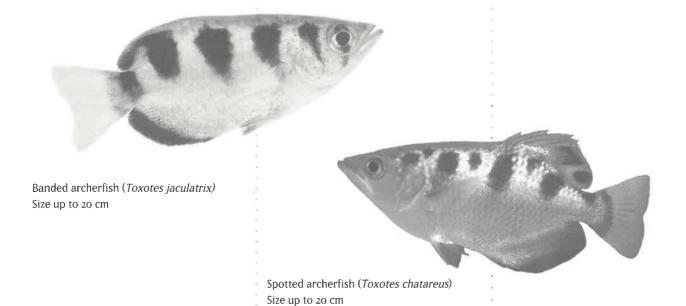
### Archers of

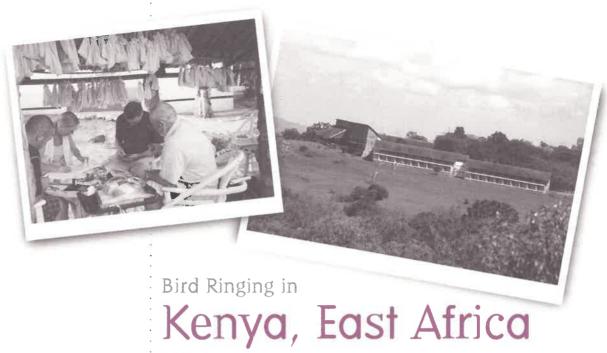
### Sungei Buloh Wetland Reserve

Conservation Officer, Ramakrishnan Kolandavelu

The start of the "Marine Fish Programme at Sungei Buloh Wetland Reserve (SBWR) has brought to attention the wonders of the local marine fish, and enabled an appreciation of the biodiversity and the marine environment here at SBWR. The highlight has now fallen on the importance between man and fish, not only for minor fisheries but for commercial aquarium trade too. What better way then to marvel at two species of archerfish than to see them in their wild environment! These fish are easily spotted at Sungei Buloh near the main bridge and around the sluice gates. This truly unique specialist, the archerfish, belongs to the family called *Toxotidae*. The two species found here are the more commonly spotted Banded archerfish (*Toxotes jaculatrix*) and the Spotted archerfish (*Toxotes chatareus*), which ironically, not as its name suggests, is not so easily spotted!

These fish are notable for their habit of preying on insects and other small animals by squirting beads of water from their mouth and shooting them down. They have been known to shoot water up to a distance of about 5ft. They are remarkably accurate in their shooting, and an adult fish is said to be almost able to hit their targets with their first shot. Their deep compressed bodies give them a straight line profile which allows it to creep up on its prey. In general the Banded archerfish is easier to spot because of their elongated spot markings adorning the sides of their bodies, as well as black and yellow markings on their dorsal and anal fins. To spot the Spotted archerfish, one would have to look out for their "golden eye lids" and spots between the elongated bands. So come and try to spot these unique hunters on your next visit to Sungei Buloh Wetland Reserve!





By Ray Knock Volunteer Bird Ringer and Trainer at Sungei Buloh Wetland Reserve

The Ngulia safari lodge is situated in the Tsavo west national park in Kenya, East Africa. Built in 1969, it stands impressive on the Ndewe escarpment 1,000 metres above sea-level. The original purpose of the lodge was to house visitors on short safaris in the park and as a viewing point for the leopards that Ngulia is renowned. The lodge has sets of electric lights around pools where the wildlife come at night, attracted to the prospect of cool refreshing water.

It was noticed that during the misty new moon nights at the year's end, flocks of migrating birds from East Europe and West Asia heading for their winter quarters in Southern Africa were attracted by the night lights in their thousands at Ngulia.

Two expatriate Britons, keen ornithologists, living in Kenya thought that Ngulia would be an excellent place to set up a ringing study area to monitor the Palaearctic migrants and in 1969, the first of many ringing sessions was organised. Every year since then, ringers gather at Ngulia to continue the research. The volunteer teams hail from many countries and since the conception of the project, nearly 370,000 migratory birds have been ringed, together with nearly 12,000 birds of the local African species.

I have been fortunate to have the opportunity to be a participant on two expeditions in recent years. It is an experience that I would recommend to anyone who is keen to see many different species of birds and to wonder and be amazed at the sheer number of birds that pass through this major flyway.

The ringing activities are extraordinary and extremely interesting! For example, when we were out catching birds at night that are attracted into the trees lit by the night lights, we were very much mindful that we were using the same tracks as the leopards that are attracted to a tree, where food was put out for them each night. Every sound I heard while retrieving the birds out of the mist nets was treated with a certain degree of nervousness and apprehension, wondering if the leopard had returned for a second helping!

We have had occasions when small herds of elephants dropped by for a drink at the pool at night. A fantastic sight indeed but a little disconcerting when we realised that the herd decided to move off after quenching their thirst in the direction of the lines of furled mist nets that we had permanently set up while at the site!

It is then just nothing short of amazing that throughout my two weeks at Ngulia, the elephants did not once damage any of the nets or the poles but instead carefully manoeuvred their bulky bodies to avoid contact with them.

The same care that was made by the elephants however cannot be said for the local Baboon population, which took great delight in pulling down the poles holding up the nets. Some of the baboons even went as far as to swing themselves on the nets and are generally a nuisance. The baboons are of course not too popular with the bird ringers.

To make matters worse, the baboons will steal almost anything and one has to be careful not to leave binoculars, cameras or any movable equipment lying about otherwise it is likely to end up as a toy for a raucous baboon!

Despite the tribulations of ringing in the African bush, the rewards are spectacular. Most of the migrant birds that are caught are from the Eastern Palaearctic region. Consequently, many bird species encountered are either rare, or do not appear in Britain where I live. The most common species that were caught are the Marsh Warbler (Acrocephalus palustris), and the Thrush Nightingale (Luscinia luscinia). Both these species appeared in huge numbers, during my stay in Ngulia in 2004. We caught over 3,500 of each species and this, when the peak migration period had not yet arrived!

Other common species that occur in Ngulia are the Barred Warbler (*Sylvia nisoria*), Red-backed Shrike (*Lanius collurio*), River Warbler (*Locustella ţluviatillis*) and Basra Reed Warbler (*Acrocephalus griseldis*), birds that most western Europeans in their countries rarely see, if at all. We caught birds that had been previously ringed in countries such as Slovenia, Kazakstan and Russia and the data collected will add to the body of knowledge about their migration patterns.

Local sedentary African bird species are also studied. Catching local species allows the Nairobi Museum to do work on the ageing and sexing characteristics of Kenyan birds. The ringing teams always include people from the Museum who record plumage characteristics and in the process gain much useful knowledge about the local birds.

For me, the ringing of African birds is a great experience. The colours and diversity of the African species are a stark contrast to most of the birds I am used to handling in Britain. I was fortunate to catch and ring two new species for Ngulia during my last visit - a Wire-tailed Swallow (*Hirundo smithii*) and Rupells Long-tailed Starling (*Lamprotornis purpuropterus*). The opportunity to study new bird species adds to the thrill of ringing in such an amazing place.

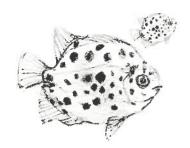
If anyone desires a truly unforgettable bird-watching experience, Ngulia during the bird migration period is certainly the place to visit. The national park is also host to many of Kenya's famous large mammals such as the giraffe, zebra, hippopotamus, various antelope species and sometimes the lion.

But definitely the birds are the stars for me. To witness thousands of birds dropping out of the night sky into bushes within a few feet from where one is standing, is without doubt one of the most amazing sights I have seen. Ngulia is one of the few places in the world where one can experience this phenomena and I for one will be back there again.



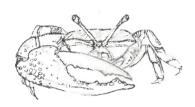
### **Activities Galore!**

compiled by Jeanne Tan, Senior Outreach Officer













#### Free guided walks on mangroves and marine fish

Join us for guided walks on saturdays (9am, 10am, 3pm and 4pm) within a mangrove habitat and learn about the interesting inhabitants of Sungei Buloh Wetland Reserve, their different adaptations and the relationship between mangroves and their associated marine life. The walks are weather permitting. Please check our website for specific time slots on marine fish guiding.

For pre-booked guided walks for school groups and organizations on weekdays, please call 67941401 to make a booking.

#### **Guided walks and Birdwatch**

If you love the mangroves and want to know more about migratory birds, these activities are for you! These activities will take place during the "Clean and Green Week" in the first two weeks of November. Call 67941401 for more information from October 2005.

#### Prawn Watch 2005

Dates: 10 September 2005, at 9:30am.

Come join us for an interesting and educational demonstration of traditional prawn harvesting. Learn how to identify the different types of prawns and other variety of fish and be amazed by how fertile the ponds are! This programme is weather-permitting. Interested participants are to assemble at the Visitor Services Counter by 8:50am. A guide will bring you in to the prawn pond. Please call 67941401 for more information. Admission charges apply.

#### Clean and Green Week 2005

Programmes - Guided walks, Bird watching and Fund Raising for conservation. If you love the mangroves and want to know more about migratory birds, these activities are for you! They will take place during "Clean and Green Week" in the first two weeks of November 2005. Please call our mainline for more information. Also in the pipeline, our partner school Hillgrove Secondary, is putting up a fund-raising session to help the conservation circle on 5 November 2005, from 9am - 2pm here at SBWR. There will be sales of painted stones, finger printing bookmarks, pyrography and balloon sculpting with nature and animal motifs. A sure hit with children!

### Look who's talking again!

If you are keen to know more about the living inhabitants of Sungei Buloh Wetland Reserve, we have a series of talks catered for young children held at the community libraries this coming September holidays. Please call 67941401 for venue, dates and time of these talks.

### Young Naturalist Passport (YNP) Camp

Dates: 6 December 2005 (Tuesday), 9am - 5pm

Limited to 40 children between the age of 6-12 years old, this one day camp encompasses a series of fun-filled and educational indoor and outdoor learning of the wetlands and nature conservation issues through worksheets, nature walks and hands-on activities. Children will earn a striking cloth badge for every completed category of activity. Not only will they take back all their 'hands on' craftwork and activities, but they will take home a whole new world of knowledge about nature and wonderful memories of their time here and new found friendships with their campmates!

Each participant needs to purchase a young naturalist passport at 50 cents.

Registration of \$5 is applicable, and cheques will be returned upon completion of the camp. The fee will be donated to the SBWR education fund if the child fails to turn up for the camp upon registration and confirmation.

Admission charges (50cents per child) apply.

For more information about the programme, log in to our website at www. sbwr.org.sg or call 67941401 for enquiries.

# Tranquility in the Wetlands

Tania Shaw

Reserve Information

Volunteer with SBWR currently doing Bachelor of Veterinary Science in the University of Sydney, Australia

The warmth of the morning sunshine beaming on your face, birds chirping merrily in the distance, the rustling leaves high up in the treetops... just imagining such a setup already puts a smile on your face, does it not? And that's exactly what entices me to make a trip down to Sungei Buloh Wetland Reserve on bright Saturday mornings if I were back in Singapore!

Recalling the trip made the last time I went back to Sungei Buloh during one of my summer breaks...I would remember taking a deep breath and savouring the fresh morning air. Ahh... what a refreshment!

I would amble off into the mangrove, into a milieu of tranquility. I settled down on Platform One, looking out across Sungei Buloh Besar and Sungei Bilabong Buloh, with Johor Bahru in the horizon. The sluice gates to the left allow the water to gush into the pond, creating sounds akin to a waterfall.

As I sat on the bench, looking out into the distance, I indulged in the sounds of nature, oblivious to everything else. For the duration of my stay, I shove all my worries aside and took in the pleasure of the mangroves. Every so often, I would be interrupted by the patrol boat passing by, but that did not dampen my mood.

Tap tap tap. Taptap. I turn to see two Common Flameback woodpeckers pecking away at the tree beside me, as a flock of waders skim overhead. I look into the sky and spy a raptor soaring in the distance. On careful observation with a pair of binoculars, I discerned it to be a White-bellied Sea Eagle, easily sighted in Singapore if one is lucky.

*Splash!* I peered into the water below me and watched as a Malayan Water Monitor stumbled into the water for its morning swim, and perhaps a catch of breakfast. I took a good look at the lush greenery around me and took another deep breath. What a luxury to be able to unwind in the gentle arms of Mother Nature!

I decided to venture on towards the Aerie, an 18-metre tall tower hide that overlooks much of the Reserve. I made my ascent up to the top, excitement building up inside me. I could not wait to take in the beautiful panoramic view! When I reached the top the sight was just mesmerizing. I gazed down upon the mudflats, eager to spot some of the Reserve's wide array of fauna.

The wind blew across my face. I closed my eyes and started to take some time for personal reflection. If only the moment could last forever...

I finally made my way back to the Visitor's Centre, concluding yet another gratifying day at the Reserve. I returned home refreshed and ready to tackle the challenges that the real world has in plan for me...

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