

## Migration



The word "migration" is derived from the Latin "migrare" meaning to move from one place to another. Migration is the regular and usually annual movement of a population from a breeding area to a non-breeding area, and the return of most of these individuals to the breeding area.

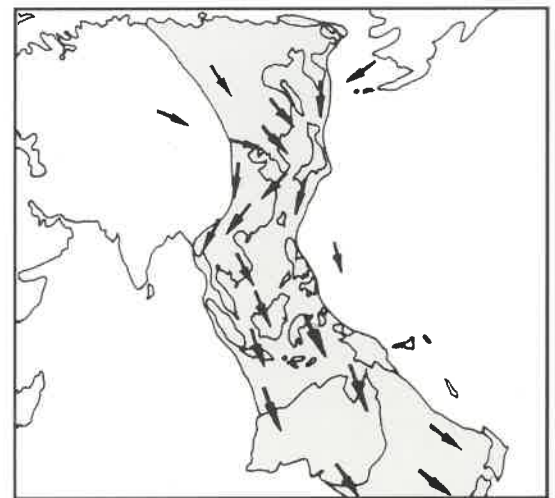
### Migratory birds

Birds and other animals migrate because of changes in weather. Before the onset of winter, they move to where it is warmer and where there is food supply. Among all animals, birds have the longest migratory range. Migratory birds may fly thousands of kilometres to spend the winter in the south where it is warmer. Waders<sup>1</sup> migrate from their breeding grounds in Siberia and northern Asian countries to warmer regions in South-east Asia and the Southern Hemisphere. Waders are not the only birds that migrate. Other migratory birds include warblers, swifts, swallows and kites.

### Finding the way

For those who have thought about the problems involved, navigation is the most mysterious aspect of migration. The vast distances involved and the tremendous feats of endurance performed by the birds only serve to underline this most wonderful part of the whole phenomenon - the fact that the birds are able to find their way on long-range flights often to return, year after year, to exactly the same breeding site. There are many theories on how birds navigate. The Circadian Rhythms and the Celestial Navigation theory proposes an internal clock in a bird for full celestial navigation. Important navigational tools would include visual markers like landmarks or clues from taste, smell, light, dye or anything familiar emanating from a particular direction. Birds could also orientate with a fair degree of accuracy with reference to the direction of the sun, the stars and cues from the earth's magnetic field.

### The flyways



The East Asian Flyway.

There are many paths, or flyways, taken by the majority of the migratory species. The route of migrating birds will often take them over areas totally inhospitable to the species. Land birds make long ocean crossings, water birds traverse the deserts and open country species fly over forests. In all cases the migrants are only likely to come to ground where they find a suitable habitat. This poses a problem for species which are site specific. These sites take on a very special significance and might, with some species, be so important that their loss could cause extinction of the species.

### Waders

Waders are some of the longest distance migrants. Many species of waders previously considered to be exclusive birds of the coastal and estuarine mudflats actually migrate overland. It has since been realized that vast distances are covered overland and across open seas on each migration by many species of waders.

### Stopover-sites

For most long-distance migrants, the amount of reserves stored before migration is insufficient to allow them to make the entire flight without rebuilding reserves. Thus, migration must involve a wavelike alteration

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*Waders at the Park.*

of migrating and feeding activity. Migrants make use of stopover sites like the ones found in the Park for refuelling before moving on again. Birds have evolved food gathering adaptations that enable them to feed on different types of organisms instead of depending on a particular species of organisms. Thus the Arctic wader that feeds on small worms in a sandy substrate is equally well equipped to feed in a muddy mangrove mudflat, like those found in the Park.

### Survival Strategies

The storage of fat reserves under the skin is an important adaptation of the migrant. The capability of forming such reserves is critical to survival in a competitive environment.

Territorial behaviour is another way in which the birds increase their chances of survival at stopover sites. Birds defend their territory against other birds of the same species to minimise competition for the limited food supply available.

Individuals of most species of transients<sup>2</sup> migrate at night to avoid air turbulence caused as the sun heats the earth's atmosphere, and perhaps to minimise the threat of predation.

Migratory birds also fly in certain formations. One of them is the well known "V" formation. The aerodynamics of flying in this formation results in less energy spent during flight.

### Sungei Buloh Nature Park

The Sungei Buloh Nature Park is situated along a major migratory route, the East Asian Flyway. During the migratory season from September to March each year, migrants stopover at the Park before moving on with their journey. Waders like the redshanks, whimbrels and plovers can be seen in hundreds, sometimes thousands, on the mudflats. Other birds like the reed-warblers, kingfishers and bee-eaters are also common migrants, among the trees and shrubs surrounding the ponds. Our unique mangroves, mudflats and freshwater habitats provide suitable conditions for both waders, passerines and other birds to feed and roost, and rare opportunities for visitors to enjoy the flight antics and sights of these feathered visitors from afar.

1 Waders are so called because they frequent coastal mudflats, wading about in the nutrient-rich mudflats to feed during low tide.

2 Birds that stopover at a location before moving on again.

### OUR "BABY" TAILORBIRD

Our "Baby", as we would call it, was found on the ground in the Park in a damaged nest after a storm, alone.

Baby was too weak to even open its mouth when we first had it. Chicken pellets, mixed with vitamins and water, were fed to the bird with a stick. Baby survived, and soon became a feeding machine! The mouth, with the clearly evident gap, was all we could see with its constant chirp for food. The bird would only excrete after being fed, naturally while the mother should be around to clean up the nest. The excreta would come neatly in a bag which could be easily picked up and thrown away so it does not soil the nest - the wonder of nature!

After a week, it weighed about 10g. The feathers were fully out of the follicles and it could walk around the nest.

Baby, as it turned out to be, is a Common Tailorbird. When it grew too big for its tiny nest, it was ringed (identification band around the leg) and put in a 2m x 1m x 1m cage so that it could learn to fly while kept safe from predation. After a month, it was released. For a while, Baby could be seen around the cage pecking at the worms we left for him. Soon, it stopped hovering around and would disappear for the most part of the day. After about 5 weeks, Baby did not return again. We were glad for its freedom and hope it would one day come back to visit... with its family!



*"Baby" feeding outside the cage.*



## WHAT'S ON...

### THEY ARE BACK!

The much awaited migratory season has arrived! Come welcome our feathered friends from afar - where else, but the Sungei Buloh Nature Park, the place to be for migratory birds along the East Asian Flyway. The migrants will be stopping over to "refuel" before they head home for summer. Be captivated by the flight antics of the waders arriving in hundreds or thousands, as they go "woosh" pass overhead towards the mudflats in the Park.



### BIRDWATCH 1996

(17 November - 1 December 1996)

To raise awareness of the need to care for our environment, we are promoting birdwatching as a hobby.

During the period 17 November - 1 December 1996, free guiding service will be provided for the first 100 visitors for each 9.00 am and 3.00 pm session. Sign up at the ticketing counter before each session. The tour will focus on birdwatching, specifically wader watching.

Currently, guiding service is available only to prebooked groups of size 20-40.



*A solitary, solemn Common Redshank.*

### FEATURING T.T., THE COMMON REDSHANK...

T.T., the author of the booklet, "Endless Summer: The Story of a Seasoned Traveller", will be telling us about his annual pilgrimage to the southern hemisphere to escape the cold and harsh winter. This booklet will complement the trail, "Migratory Birds". The trail will be set up along route one and will be on for the entire school vacation period in December.

## WHAT HAPPENED THIS JUNE...

### FACTS OF LIFE



*Hmm... tastes like salt.*

Visitors at the Sungei Buloh Nature Park were seen at the Mangrove Boardwalk poring over quizzes while they go around stations, stamping circles on the quiz, tasting the leaves, moving the *Rhizophora* seedling... sounds interesting?

These visitors were on a trail at the Mangrove Boardwalk near the Visitor Centre. The trail, "Facts of Life", highlighted the reproduction and

adaptive features of mangroves. Many visitors were fascinated by the unusual features that allow mangroves to survive in a harsh, unforgiving environment.

This trail was one of the many school vacation activities that the Education Department organized so that visitors could enjoy a meaningful trip while having a fun day-out.

So, do keep a look out for other upcoming events .... won't you?



*Busy poring over quizzes at the Mangrove Boardwalk.*



*"... But wait... It's not a speck you see in the distance!... It's me.eee..."*

*T.T.*

## DEPTHS OF NATURE

The trees swaying slowly,  
The singing of the crickets  
In their own language,  
Yet I understand.

I walk on till I reach  
The murky depths,  
And in the tiny ripples  
Are hidden signs of life.

Further on I reach green grass,  
It towers above me  
Looking more like trees  
Without bark. On I go...

Barnacles, crabs, mudskippers  
Sea holly, lobster mounds,  
deadmans' fingers  
Are just the beginning of  
My trip to Sungei Buloh.

For there are more roots to observe,  
More birds to admire,  
More bridges to cross,  
In this enchanting presentation of  
flora and fauna.



Namrata Ahuja  
Age: 10  
9 August 1996

## VOLUNTEER NETWORK NEWS

Are you above 18?  
Do you love nature and the outdoors?  
Are you people oriented and would  
love to be of service to others?

If your answers are YES, come join us as  
a Volunteer of the Park.

Please call the Education Department at  
793 7377 for more information.

## Waxing lyrical?

If you've come to the Park and  
would like to wax lyrical about your  
trip, we welcome your contributions.  
Please send your contributions with  
your name, address and contact number  
to: the Education Department, Sungei  
Buloh Nature Park, 1 Neo Tiew Crescent,  
Singapore 718925.

(Please mark "Newsletter" on the  
top left-hand corner of the envelope).

## Park Information

### Opening Hours

7.30 am to 7.00 pm on weekdays  
7.00 am to 7.00 pm on weekends  
and Public Holidays

### Admission

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

### Audio-visual Show

*Mondays to Saturdays:*  
9.00 am, 11.00 am, 1.00 pm,  
3.00 pm, 5.00 pm  
*Sundays and Public Holidays:*  
Hourly from 9.00 am to 5.00 pm

### Getting to the Park

*Mondays to Saturdays:*  
TIBS 925 from Kranji MRT  
station to Kranji Dam carpark  
(15 min walk to the Park)  
*Sundays and  
Public Holidays:*  
TIBS 925 to the Park's entrance

### Sungei Buloh Nature Park

1 Neo Tiew Crescent .  
Singapore 718925  
Tel: 793 7377  
Fax: 793 7271



## Getting to the Park

