

Kranji Marsh Adoption and Restoration Programme



PROJECT UPDATE

The project has been completed successfully and handed over to National Parks Board to be integrated into their future nature area planning. We would like to thank all our sponsors and volunteers for continuously supporting the project and making it the success it is.

Overview

The Nature Society adopted the area of the URA-designated Kranji Marshes Park under the PUB Water-bodies Adoption Scheme in **November 2008**. This Adoption Schemes falls under the **ABC Waters Programme of the PUB** which embodies the Principle of the 3Ps (the Private, the Public and the People). The Society, as one of the People stakeholders, is carrying out the ecological objectives of the ABC Waters programme by taking care of the Kranji Marshes.

Past & Completed Projects by Nature Society (Singapore)

The designated Marshes area is located along the north-western shore of the Kranji Reservoir, south of the Kranji Sancturay Golf Course. The area in total is estimated at 39 hectares, with adjacent woodland, and is a major freshwater marshland habitat in Singapore harbouring a rich biodiversity in terms of its birdlife and butterflies.

The Society has, as its initial activity, concentrated on opening up a much clogged pond in order to allow water birds such as the Lesser Whistling Duck and the Common Moorhen to find their preferred habitat. This restoration of the pond as an open water habitat, has also involved creating two small mud islands for birds. Whilst some of the clearing has to be done by machine, groups of volunteers, including some from Bloomberg, are involved in clearing unwanted vegetation from the edges and in heaping it up for transfer to a local organic farm as compost and mulch material. Success has already been registered by sightings of Cotton Pygmy Goose and of Common Moorhen at the pond in early 2010. Volunteers from the various NSS Special Interest Groups have also engaged in base-line surveys of all types of flora and fauna at the site, and will monitor over the years to see changes. Volunteers also lead regularly monthly walks for members of the public from Neo Tiew Lane to the marshes and onto the bund along the reservoir, as well as walks conducted by the Special Interest Groups for NSS members. Publications of informational booklets on the area are targeted.

The overall project has been supported by sponsorships from Bloomberg Organization and from the NEA-organized CEO Run at Semakau in 2008.



Latest Bird Surveys at Kranji Marsh and Pond Maintenance with Bloomberg and River Valley High School

July 13, 2010

By Dr. Ho Hua Chew

Pond Maintenance

Maintenance work for the Marshy and Clearwater ponds, at their landward edges and shallower parts, were continued by volunteers. Twenty **River Valley High School** students came back for a second time on 31 April 2010 to resume the clearing of unwanted vegetation. This was followed by 16 staff from **Bloomberg** in May 2010.



Past & Completed Projects by Nature Society (Singapore)



Bloomberg staff clearing unwanted vegetation from the bund

Apart from voluntary work, professional contract maintenance was also carried out in May at the deeper ends of both ponds. Aside from clearing the unwanted pond vegetation, workers also opened up a clogged stream that flows into the Marshy Pond and cleared the vegetation at the edge of the small bund dividing the two ponds. The cleared plants were sent once again to **Green Circle Eco Farm** for composting.

Bird Surveys

Three birdlife surveys were carried out in February and March 2010, with the objective of setting up an inventory of the types and numbers of bird species that can be found at the reservoir's Intake Bund and at the marshland fringe along the Intake Channel. One survey was conducted in the late afternoon while the other two were done in the morning. The transect was along the two kilometer Intake Bund, which is currently under restricted access controlled by PUB. These surveys will provide ecological information relevant to the issue of opening up the Bund on a free-and-easy basis to visitors, hikers, cyclists etc. We are concerned that the establishment of a park connector along the Bund will disrupt the birdlife that are using these areas for resting and feeding. The surveys recorded 39 species numbering 204 birds in all. These include the Little Tern(endangered), Grey Heron (vulnerable), Purple Heron (endangered), Yellow-billed Egret, Yellow Bittern and Yellow Wagtail. At least 17 Grey Herons were regularly using the Bund proper for resting and fish foraging.



Past & Completed Projects by Nature Society (Singapore)



Flock of Grey Herons on Kranji Bund by Ian Rickword



Flock of Grey Herons on Kranji Bund by Gerard Francis

A report based on these surveys, as well as information from recent observations outside the surveys, is in the process of being formulated and will be submitted to the relevant authorities by June 2010.

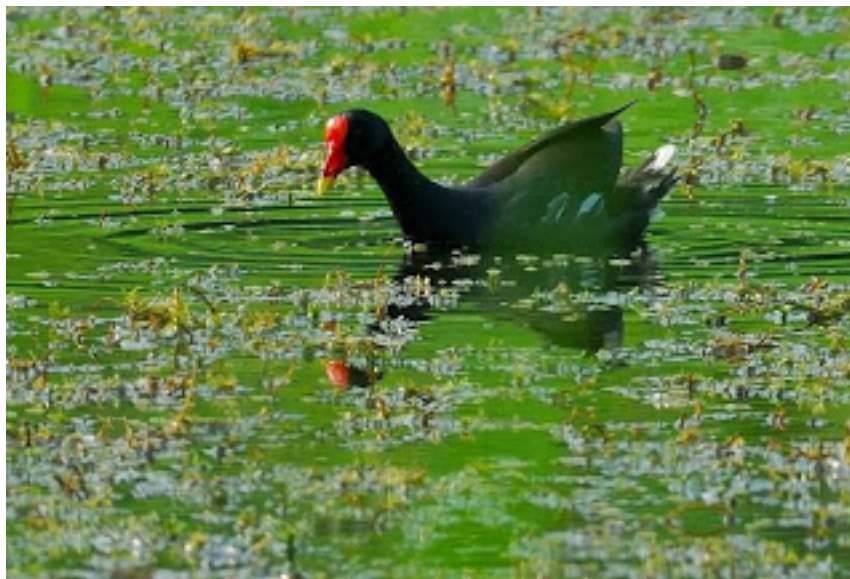
Exciting Bird Sightings and 1st Volunteer Pond Maintenance

May 29, 2010

By Dr. Ho Hua Chew

Exciting Bird Sightings

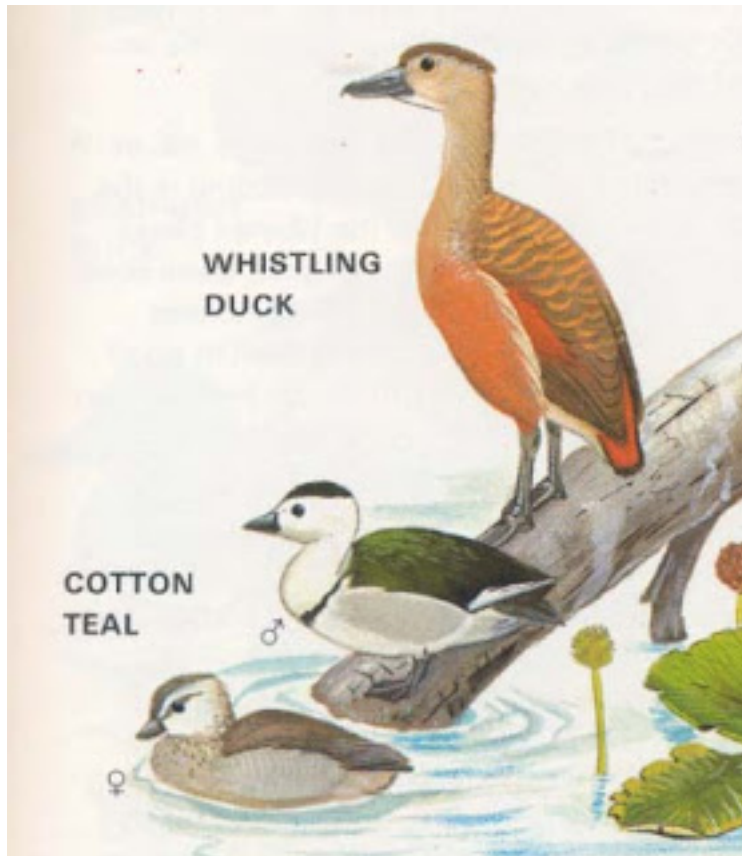
After much restoration work to the Kranji Marshes, as part of NSS' adoption of the Kranji Reservoir, the uncommon Common Moorhen was spotted at the marshy pond on two occasions. Three birds were seen by *Leslie Fung* on 9 March 2010 and one bird was recorded by *myself* on 18 March 2010.



Common Moorhen (Tsang KC)

Leslie even observed that one of the moorhens was a juvenile. This is good news as the Common Moorhen, which was supposedly common at one time, is hard to come by nowadays. Bird species that were previously not recorded before the restoration are also making a comeback. These include the Yellow-billed or Intermediate Egret, Yellow Wagtail and Von Schrenck's Bittern.

The best sighting to date is of 2 Cotton Pygmy Goose seen by *Lim Kim Seng* on 29 January 2010. The one-off appearance of this rare and critically endangered bird is highly significant as it has not been seen for many years. As one of only two wild duck species in Singapore, the Cotton Pygmy Goose may sadly be headed for local extinction. The challenge is to make the Kranji Marshes attractive to them so that they will continue to survive and make regular appearances. We also await the return of the Lesser Whistling Duck.



Cotton Pygmy Goose (or Cotton Teal) & Whistling Duck

Pond Maintenance

Twenty students from **River Valley High School** were down at the Marshes on 24 March 2010 to lend their muscles in clearing the overgrown vegetation at the marshy pond. Teacher-in-charge *Mr Azmi* and NSS Vice-President *Leong Kwok Peng* were there to coordinate the effort. Work began at 3 pm but after about an hour and a half, it began to pour heavily. Students quickly sought refuge in their nearby school bus, which acted as a rain and lightning shelter. Maintenance work resumed the following week on 31 March 2010 from 3 pm to 6 pm.

Past & Completed Projects by Nature Society (Singapore)



These helpful students concentrated their efforts in clearing the dry edges of the marshy pond as well as the shallower portions of the water body. The accumulated mass of vegetation was collected by Green Circle Farm's Evelyn Lim-Eng and her workers for composting.



This is the **first volunteer effort** in maintenance of the restored marshy pond. Students enjoyed the backbreaking work despite getting soaked, caked in mud, and scratched by thorny Giant Mimosa shrubs. Somebody even had a leech bite! A dab of Tiger Balm was enough to dislodge the bloodsucker. The Conservation Committee would like to thank River Valley High School students for a job well done.

Kranji Reservoir Adoption: A Year to Recap

Feb 16, 2010

By Dr. Ho Hua Chew



One year has elapsed since the launch of NSS' Kranji Reservoir (Marsh) Adoption under the PUB's ABC Waters Programme. Much has transpired during this time and here are some updates:

Kranji Nature Walks

Twelve nature walks at Kranji Marsh were conducted for the whole of 2009. Six of these trips were organized for the public as part of our outreach programme; four walks were conducted for NSS members; the remaining two trips were for corporate and social organizations. All trips

had an average of 20 participants. The Education Group also held a “Fun at Kranji Marsh” session for 25 NSS Kids and their parents/caregivers, totaling 70 participants in all.

Pond Restoration and Birdlife

The restoration of the large marshy pond was completed in November 2009, which involved the clearing of unwanted vegetation that had overwhelmed the pond for many years. Now, two thirds of this pond comprises open water free of vegetation, with two small low-lying islands created from the dugged-out mud, which also helped deepen some water stretches. Several fallen tree-branches have been planted at strategic points in the pond to serve as bird perches. The smaller open pond has been left alone for the time being.

The big slabs of concrete lining the main track to the ponds were moved to the site of the Seaside Mempari tree (*Millettia pinnata*), just by the edge of the pond. These concrete slabs now encircle the tree at a safe distance to prevent soil compaction, serving as seats under the tree’s shade where one can enjoy scenic views of the pond and marshy landscape.

The Red-Wattled Lapwing (4 birds) has made a welcome appearance at the new islands created in the pond. Previously, for many years, these birds have avoided the pond area, restricting themselves to the field of the Mediacorp Transmission Station next door. Also new to the pond is an Intermediate Egret that likes to forage at its far end. The Purple Swampphen and Purple Heron, both of which like to lurk in and around the aquatic vegetation, are now easier to spot. Brown Shrikes and Blue-tailed Bee-eaters have been frequently observed at the marshy pond using the planted branches as vantage perches. This pond restoration will be followed by periodic maintenance to prevent aquatic vegetation from overwhelming the open waters again.

Biodiversity Surveys

Continual monitoring of the types of butterflies, dragonflies and birdlife found at Kranji Marsh are periodically carried out. Prior to the implementation of the pond restoration work, we completed an inventory of the plants, birds, dragonflies and butterflies found in and around the edges of the two ponds. Subsequent monitoring will give us a good picture of the results of the pond restoration work.

Rain-shelter and Eco-toilet

The area chosen to site a rain-shelter and eco-toilet comes under the Singapore Land Authority (SLA). This site is at the entrance to the ponds, close to the Kranji Pumping Station. Approval for the rain-shelter was sought from SLA but was not given. For your information, all dry land at the edges of the two ponds fall under the authority of SLA. We are currently using a bus to act as a rain-cum-lightning shelter, as well as to

ferry participants to and from our meeting point at Kranji Reservoir Dam Carpark. This has proven to be highly convenient. At present, there is only one Kranji countryside shuttle service to Neo Tiew Lane 2, but the service starts late at 9 am.

Shrub Planting

Shrubs will soon be planted at the small bund dividing the two ponds, stretching one-third of the way from the back end of the ponds. This exercise is meant to attract butterflies and more bird species to the edges of the two ponds. The Bird, Plant and Butterfly Interest Groups will assist in terms of recommending the various shrub species that can be planted.

Acknowledgements

The Conservation Committee would like to thank the following people for helping out in the implementation of the Kranji Reservoir Adoption Programme in its various manifestations (nature walks, pond restoration, biodiversity surveys): Leong Kwok Peng, Michelle Sim, Tay Kheng Soon, Stephen Lau, Gloria Seow, Timothy Pwee, Lena Chow, Angie Ng, Gerard Francis, Joseph Lai, Yap Von Bing, Wong Chung Cheong, Anuj Jain, Allan Teo, Margie Hall, Wing Chong, Lim Kim Chuah, Alan Owyong, Willie Foo, Kenneth Kee, Doreen Ang, Peng Ah Huay, Ian and Freda Rickword, Gan Cheong Weei, Simon Chan, Steven Chong, Tang Hung Bun, Cheong Loong Fah.

Note: This article was also published in Nature News Jan-Feb 2010 issue. It can be downloaded from <http://www.nss.org.sg/naturenews.html>

Wildflowers of Kranji Marsh

Nov 5, 2009

By Gerard Francis



You probably trample on many of these wildflowers without a second thought but look closer and find a world of beauty. Kranji Marsh is a great place to enjoy the wildflowers. Look for them on the grass verges of the road and paths where these low growing plants can get the sun. They climb the trees and shrubs and grow in the ponds. The ones pictured here are

common. They are native to our region or were introduced a long time ago and have become widespread and naturalized. Many have found traditional uses as indigenous medicines or foods.

***Hedyotis corymbosa*, family Rubiaceae**

Local name **Siku Siku**, **ixora family**. This plant only grows to 30 cm in height. It has really tiny white flowers 3 mm across, in groups of 2 or 4, and the narrow leaves are pointed at both ends. The leaves, or sometimes the roots are used by the Chinese to treat inflammation or to improve blood circulation. In Indian ayurvedic medicine, it is used for a whole range of conditions including fever and jaundice. In western medicine, it is currently being studied for its effectiveness against hepatitis



***Cleome rutidosperma*, family Capparidaceae**

Local name **Maman**, **cat's whisker family**. The family is so called because in some members of this family, the long stamens resemble cats' whiskers. A very common weed, of African origin. Has very irregular violet flowers with four petals gathered to one side like an insect landing pad, and six stamens hovering over them, to dust the insect with pollen.



***Mimosa pigra*, family Fabaceae**

The Giant Sensitive tree or Catclaw Mimosa, legume family, is from tropical America. Its relative, the more common *Mimosa pudica* is the low growing, prickly-stemmed touch-me-not we see everywhere. This is the big brother growing to 1.5 m with bigger, pink powderpuff flowers. These filaments are the many stamens. Fruits are dehiscent legume pods. Unlike other legumes which split open at both edges to release their seeds (such as the acacia or flame of the forest), the ripe mimosa pod breaks into a number of small one-seeded segments that attach to animal fur or clothing. This kind of legume is called a loment. *Mimosa pigra* is listed among the world's 100 worst invasive species, having spread throughout south east asia and Australia. It can form dense, thorny, impenetrable thickets.



***Oxalis barrelieri*, family Oxalidaceae**

The **Lavender Sorrel** is from the belimbing family, as is the starfruit, *Averrhoa carambola*. The pretty flowers just 8 mm across, are at the end of long stalks, with five pale pink or lavender petals, yellow at their base. The fruits are like tiny starfruits that when ripe, split open at a touch to release the red seeds.



***Solanum torvum*, family Solanaceae**

This is the **Terong Pipit** or **Thai Pea Eggplant**. Related to our brinjal, *Solanum melongena* and to the potato, *Solanum tuberosum*. A hairy-leaved shrub to 1.5m high, the unripe fruit, looking like green peas, are an essential element in Thai green curry. The Thais call it makhua phuang. The fruit are slightly bitter, but crunchy and good-flavoured. They turn yellow when fully ripe. Flowers are white and yellow. This useful family, solanaceae also gives us chilli and tomatoes.





***Calopogonium mucunoides*, family Fabaceae**

A climber, with flowers blue-violet, fruit a brown, hairy pod, from tropical America, common in grassland areas. The inflorescence is a slender raceme, bearing 2-6 flowers, each 1 cm across. Used as a ground cover crop in tropical tree plantations and as forage for cattle. Recognized as a valuable pioneer species, because like all legumes, it has the property of fixing nitrogen and improving soil fertility.





***Ischaemum muticum*, family Poaceae**

The **Rumput Tembaga Jantan**, or **Seashore Centipede Grass** is wind pollinated like most grasses. With no necessity to attract insects, the flowers are inconspicuous. They grow in a long spike inflorescence and when ripe, the stamens hang out to catch the wind and disperse their pollen, while the stigmas are feathery to catch the pollen. There are 200 species of grasses in the Malay peninsula alone. Economically useful grasses include bamboo, sugar cane and maize. Worldwide, grasses such as rice and wheat, with their rich starchy endosperm supply most of mankind's food requirements.



Muntingia calaburia*, family *Tiliaceae

The **Buah Cheri** has woolly leaves and flowers with five white petals, and prominent yellow stamens that last for only a day. It fruits abundantly all year round bearing edible, sweet red berries. Birds and fruit bats (and small children) eat the fruits. It is also made into jam and cooked into tarts in Brazil, and tea made from the leaves. A pioneer species that thrives in poor soil, the buah cheri is fast growing and bears fruit its first year. A native of Brazil, it is naturalized in south east asia. In the Americas, it is also known as Jamaica cherry, Panama berry and turkey berry.



Polygonum pulchrum*, family *Polygonaceae

This aquatic plant can be found growing in the ponds, to one metre tall. The inflorescence is a spike-like panicle, densely flowered with tiny white flowers. With a hand lens, you can make out the 5 petals and 5 stamens in each flower. A relative of this plant, the fragrant daun kesom, *polygonum odoratum* is used in our laksa.



***Ludwigia adscendens*, family Onagraceae**

Commonly known as **Primrose-Willow**, or **Water Purslane**. This is another aquatic plant, that floats in the water aided by swollen, pithy floats at the roots, which function like air sacs, and are sometimes called water bananas. The striking flowers have five creamy, white petals, yellow at their base. This plant can colonize a wide area, with propagation even from broken pieces of floating stems. It is used in China for fever and its antismelling properties.



Identifying ferns with Prof Benito Tan

Oct 6, 2009

By Anuj Jain

Nature Society members continue to frequent the marsh surveying the pond and the pathway from the barrier at the Kranji farm resort all the way to the pond. But this was no ordinary trip. Angie, Yap Von Bing, his wife Ann and Anuj (me) from the Plant Group were fortunate to have **Dr. Benito Tan**, a world renowned Bryologist (we call him the 'Moss Man') with us to investigate the ferns around the marsh on **3rd October**.

Though it was 1:30pm in the afternoon, it was quite cool after the noon drizzle. There were plenty of plants to check on our way to the pond but we headed straight to the pond to identify the ferns first.

Last week, Gerard (a plant enthusiast and an active NSS member) had spotted an unidentified fern growing on the inaccessible side of the pond (it is lined with wild aquatic plants) so identifying this fern was the most exciting thing planned for this trip. Benito guessed the genus as *Cyclosorus* but it was hard to confirm the species as the details on the underside of the fronds were barely visible from such a distance (about 10 meters).



Past & Completed Projects by Nature Society (Singapore)

Surprisingly the fern seemed to grow only in a small patch on the inaccessible side of the pond. We wanted to see a close up of the fern but this proved difficult due to the muddy pond waters in between and the risk of crocodiles in them.

We thought off a few bright ideas to get close to this peculiar fern species but none of them worked. In the process, we noticed that few other ferns were quite abundant. Most common among them was ***Stenochlaena palustris*** (Akar Paku).



Apart from ferns, the pond and the surrounding area also has many other species of plants growing there. We took note of any new species that we had missed documenting earlier. During this survey work, we heard a few bird calls, an eagle calling and even spotted a Purple heron.

We went to check the bund area before calling off for the day. Benito was here for the first time so he was pretty fascinated by the CAUTION sign (as you can make out from his photo).



Past & Completed Projects by Nature Society (Singapore)



The Moss Man had an idea where else to look for his unidentified fern. Following him along the bund, to our surprise, we found a few patches of the fern - this time growing quite close to the walking path. Indeed! This was quite exciting for all of us. This is Benito's hand showing us the spores he needed for confirmation. He confirmed it as *Cyclosorus gongylodes*.



On the way back, we saw an Air Potato plant (*Dioschoria Bulbifera*) growing wild near the barrier. Seen are the female spikes 10-20cm long. We did not see the male panicles 2-3.5cm long though.

Past & Completed Projects by Nature Society (Singapore)



Next to the Air potato was the *Pipturus argenteus* plant. Angie helped me identify a leafhopper *Bythoscopus ferrugineus* crawling on its leaf.

The purpose of the trip was fulfilled! There are always new encounters - adding to our increasing list of flora and fauna found at the marsh. This makes it so much fun to go there time and again!

Pond Restoration - The Heroes at Work

Sep 27, 2009

By Anuj Jain

NSS Kranji Reservoir Adoption Committee with the aid of NSS members has rolled up their sleeves quite literally (see the pictures and you will know what I mean). Why? **They want to keep the marsh more marshy.**

The current indicators like the African tulip tree growing near the PUB station show that the pond is drying up. Put simply, the pond is covered with wild vegetation like Water Bananas (*Ludwigia Onagraceae*), Water Hyacinth (*Eichhornia crassipes*), Yellow Burhead (*Limnocharis flava*) and Simpoh Air (*Dillenia suffruticosa*). Leaving behind the important patches, the wild vegetation will be carefully cleared to create an open water area conducive to fowl like the Lesser and Wandering Whistling Ducks. The intent is to attract more water birds and preserve the biodiversity of the area.

Works have been on for a few weeks now.

Beating the warm Sun on the morning of **13th September**, few Nature Society members – Dr. Hua Chew, Kwok Peng, Allen, Wong Cheong and Anuj (me) were at the marsh to check the progressing work and **prepare conducive perches at the pond**. Dead branches of strong and durable Acacia wood are ideal for this task. Hopefully they would look naturally positioned in the pond.

We spotted some dead branches in the surrounding woodland but it was no easy task to transport them to the pond since the branches were pretty big. Imagine carrying a few of these for over a kilometer. Tiring isn't it?



Past & Completed Projects by Nature Society (Singapore)



On the way back to the pond, Allen spotted a hornet's nest on one of the Albizia tree.



We also heard a Greater Coucal (I couldn't photograph the birds but I saw a pair).http://en.wikipedia.org/wiki/Greater_Coucal

After struggling with the branches, Kwok Peng suggested us to use Hua

Past & Completed Projects by Nature Society (Singapore)

Chew car as a transport lorry. This saved much energy.



Finally we arrived at the pond.



Adventures are not over yet! Placing these branches in the water was no easy feat again! *'Roll up your sleeves, fold your pants and prepare to get*

Past & Completed Projects by Nature Society (Singapore)

muddy'. That was the slogan. The more experienced ones lead the way (Dr. Hua Chew & Kwok Peng below).



After some perseverance, the 3 perches were ready for the birds. They look quite natural to me. In the end, I was quite happy with the progress we made.



Perch #1

Past & Completed Projects by Nature Society (Singapore)



Perch #2



Perch #3

The next visit to the marsh will tell us whether these perches can stay afloat at the same location. Looking forward for the next visit!

History of the Kranji Marsh

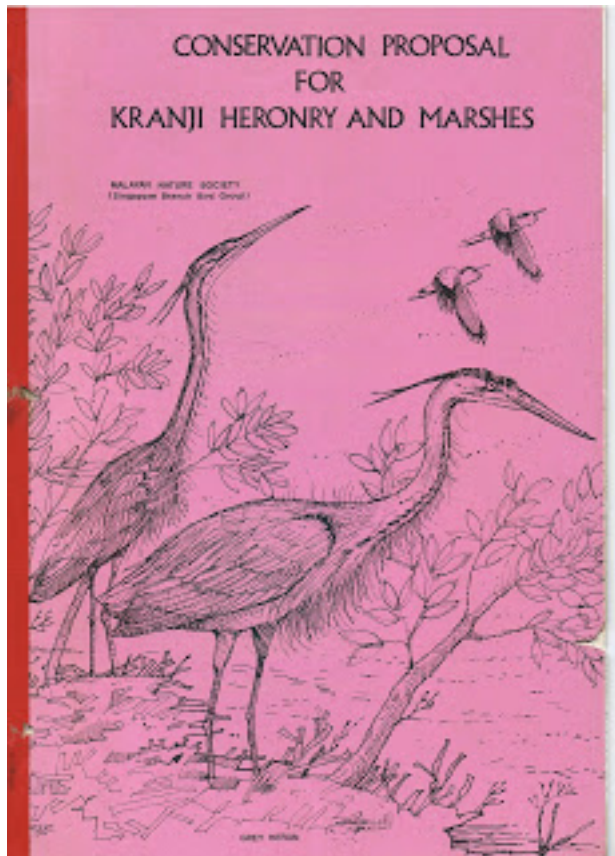
May 15, 2009

By Anuj Jain

One of the earliest reports I have seen about the Kranji Marsh dates back to 1985 titled – Clive Briffett, **“Kranji Marshes: An Outline Proposal for a New Nature Reserve”** (Malayan Nature Society MNS, Singapore Branch, 1985). This was after the nesting site of the Grey Heron was discovered here. The area had also become a popular birdwatching site. But the proposal for a *new nature reserve* here was rejected by the relevant authority.

In 1989, the Kranji Reservoir marshes, together with five other Singapore wetland sites, were included in the **IUCN's A Directory of Asian Wetlands** (Scott, D.A.; Gland, Switzerland: IUCN, The World Conservation Union, 1989). The Directory emphasizes that the freshwater marsh is *"a fairly rare type of habitat in Singapore and Peninsular Malaysia"* (Scott, 1989). The only other extensive example of this habitat in Singapore and also included in the Directory is the Poyan Marshes in the military zone of the Western Catchment Area, which is little known in terms of biodiversity. In 1990, when the plan for the SIMCOM transmission station to be sited at the Grey heronry area became known, another conservation proposal was submitted by MNS to the relevant authorities authored by my mentor Dr. Hua Chew titled **“Conservation Proposal for Kranji Heronry and Marshes”** dated September 1990.

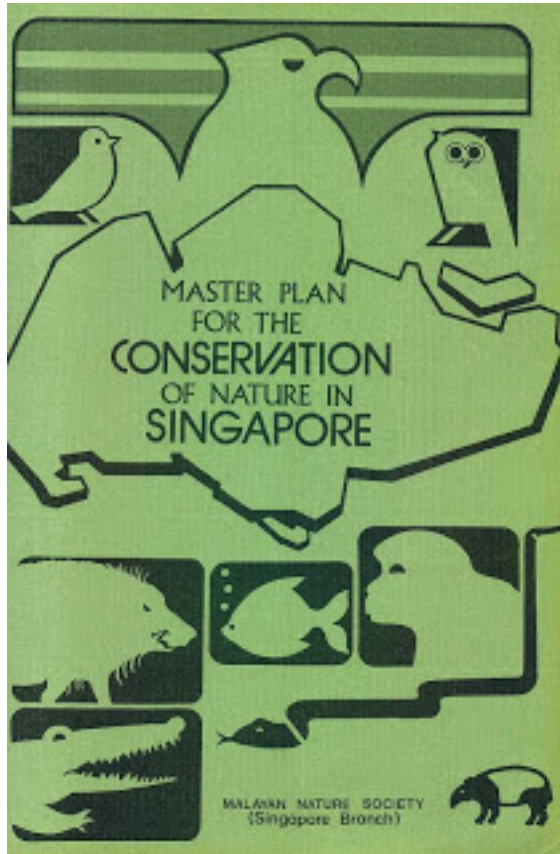




The proposal recommended the establishment of a new nature reserve consisting of a Heronry and several marshland sites around the Kranji Reservoir covering approximately 215 hectares. It highlighted the importance of the heronry and the area of ponds and mangroves around it and that they should be preserved instead of being used for the SIMCOM transmission station project. At the time of writing that proposal, the heronry was the only nesting site for the **Grey Heron** in Singapore. The proposal for the preservation of the heronry was however rejected on the grounds that an alternative site for the SIMCOM Transmission station was lacking and that it would be too costly. There was no indication that the rest of the Kranji marshes will be conserved or developed at this time.

After this unfortunate incident, the MNS (Singapore Branch)s conservation Master Plan titled "**Master Plan for the Conservation of Nature in Singapore**" (Briffett, 1990) was published, in which the Kranji Bund Marshes, rated a five-star site, was recommended with 27 others for conservation.

Past & Completed Projects by Nature Society (Singapore)



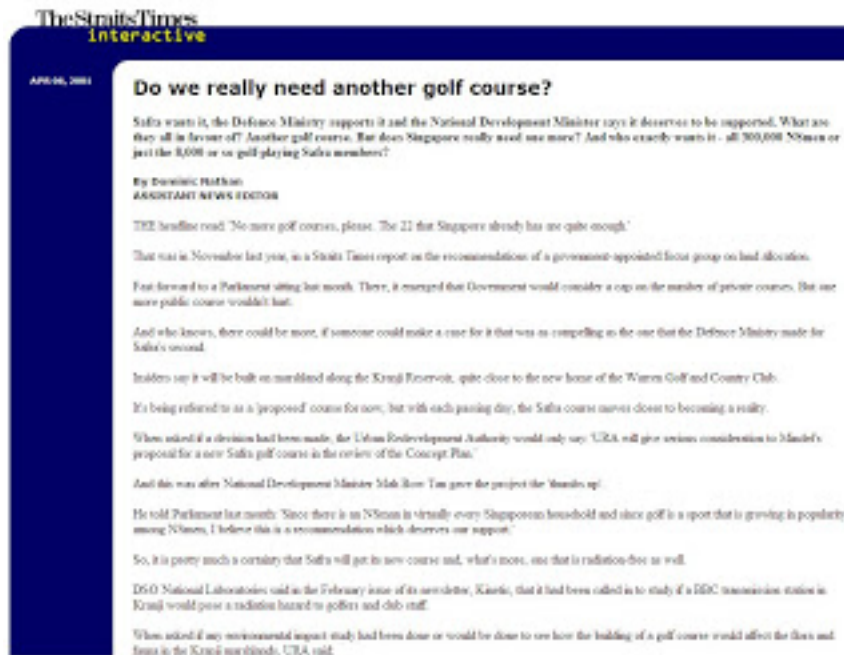
Then, in 1993, the Kranji marshes, with 18 other sites, were put into **The Singapore Green Plan (SGP)** as a "nature conservation area".

Following five years later, what was most worrying is that, the *area size and boundary of these sites were not delineated* under the 1996 National Parks Act and the 1998 URA Master Plan despite the promise that it will be done over "the next five years" after 1993.

When the National Service Recreation and Country Club (NSRCC) first announced its intention of developing a *second golf course* in the Kranji Reservoir area in 1999, the **Nature Society (NSS)** expressed its concern publicly that the project should not be located at the existing "nature area" with justification given (*The Straits Times*, 16 February).



Past & Completed Projects by Nature Society (Singapore)



Another interesting Straits Times article that appeared in 2001.

NSS suggested alternative sites as a win-win solution at:

- 1) An area in Ama Keng;
- 2) An area in Choa Chu Kang near the new Warren Golf Course; and
- 3) An area south of the Tengah Airbase off Choa Chu Kang Road.

Another alternative NSS had proposed was to move part of the golf course into the URA-designated 'Reserve Area' south of the Kranji Radio Transmitting Station so that a larger marshy zone from the shoreline could be saved being about 200m from the shoreline.



Past & Completed Projects by Nature Society (Singapore)



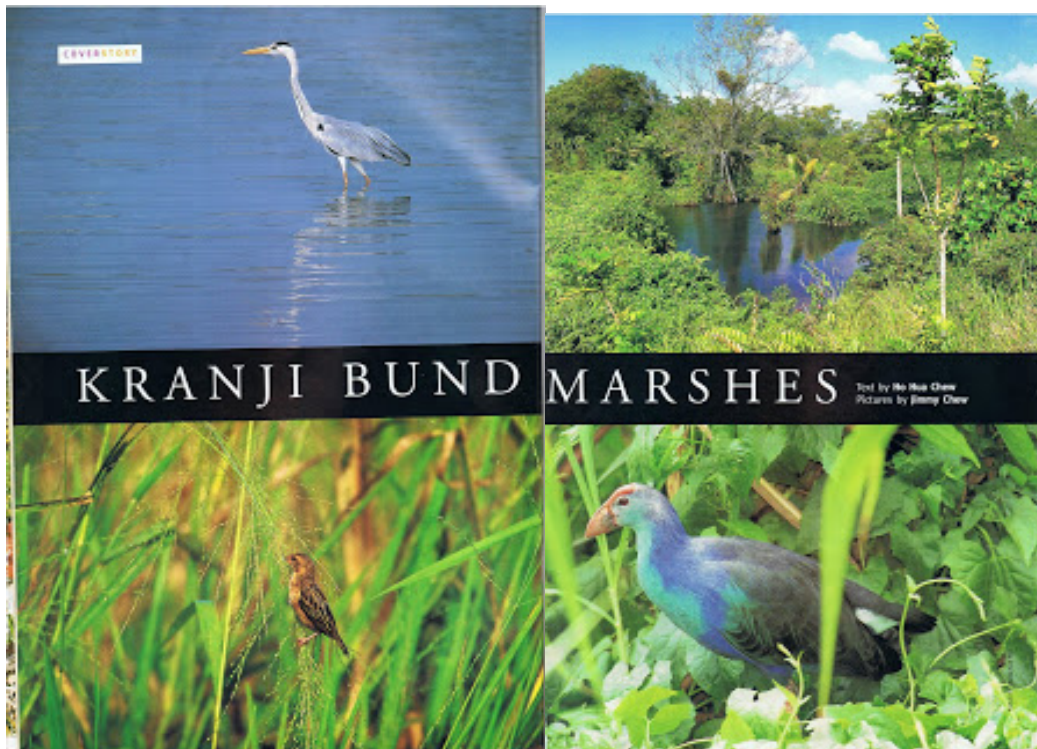
The Environmental Impact Assessment (EIA) that was conducted only after the leasehold was conferred to NSRCC in May 2000, reported its findings in April 2002. **It yielded about 140 species of birds in the area, constituting an impressive 40 per cent of the total number of species (350) recorded for Singapore.** Due to NSS contesting the creation in 2002 of the Kranji Sanctuary Golf Course, the biodiversity importance of the Marshes was highlighted in the media.

Further discussions brought about a compromise between NSS and NSRCC which allowed for a *60 m stretch from the edge of the marshes of the North Kranji Bund Marsh to be retained as a sort of 'buffer' for the wetland birds instead of from the PUB bund running parallel to the shoreline.* The golf course took up about 60 ha out of the 74 ha on leasehold for the project. *This meant that 70-80% of the marsh north of the BBC station was destroyed.*

About this time, Dr. Hua Chew also wrote a cover story for April – June 2002 volume of Nature Watch titled “**Kranji Bund Marshes**” further spreading awareness among the NSS members.

This article is available online at RMBR's Habitat News <http://habitatnews.nus.edu.sg/pub/naturewatch/text/a102a.htm>

Past & Completed Projects by Nature Society (Singapore)



Thereafter, URA Master Plan (for the Northern Sector) designated the remaining marshes ‘**The Kranji Marsh Park**’, which alleviates the status of the marsh here to more than a Nature Area, like what Sungei Buloh was - a Nature Park - when it was first accepted for conservation. *Thus it has become another conservation achievement of NSS!*

NSS Kranji Reservoir Adoption Programme and Ceremony

Nov 29, 2008

By Anuj Jain



WHEN: On 29 November 2008, NSS launched the Kranji Reservoir Adoption Project under the PUB’s ABC Waters Programme

Past & Completed Projects by Nature Society (Singapore)

(<http://www.pub.gov.sg/abcwaters/Pages/default.aspx>). The Launch officiated by the PUB's Assistant Chief Executive, Mr. Chan Yoon Kum was held at the D'Kranji Farm Resort and about 40 plus people (PUB officials, NSS members & guests from both sides) attended the ceremony.

Below is Mr. Chan Yoon Kum, PUB Assistant Chief Executive presenting the Adoption Plaque to Dr. Shawn Lum, NSS President



It is a historic event because this is the first time NSS is taking responsibility for the care of a Nature Area --- striding forward from merely providing conservation proposals and feedbacks. The press release for the adoption is also available on the PUB website titled: Nature Society Joins PUB's Our Waters Programme:
<http://www.pub.gov.sg/mpublications/Pages/PressReleases.aspx?ItemId=191>

PERIOD & LOCATION: The Adoption involves the care of the Kranji Marsh Park (15 ha. area as in the map) for 2 years --- renewable at the end of the stretch.



OBJECTIVE: The Adoption project will be carried out through the promotion of nature education and ecological care of the Marsh, with the overall objective of inculcating nature appreciation among the people. This is to instill in them fondness for our reservoirs --- so that care for their cleanliness and sustainable use is not just a matter of health and survival but also one of pleasure as well.

APPROVED ADOPTION PROGRAMME This programme has been approved by PUB.

I) CARE OF THE MARSH

a) Habitat Restoration & Enhancement

- i) Opening up of the much-clogged-up pond near the PUB Pumping Station.
- ii) Clearing of undesirable plants in the general marshland area and the inlets & streams feeding into the marshland.
- iii) Enhancement of the pond & marshland habitat to attract birds and other wildlife.

b) Deterrence Against Poaching

- i) To keep an eye on poachers in the area
- ii) Where opportunity arises, to educate the poachers to desist from their activities.

II) EDUCATIONAL ACTIVITIES

a) *Nature Walks* i) A public nature walk open to only individuals and families will be conducted every month, starting from January 2009. ii) At the same time, the Society will increase nature walks to the marshland for its members. b) *Fun With Nature* i) The on-going Fun with Nature will also be held to introduce kids to the ecology of the marshland. c) *Other Educational Activities* If funds are available, NSS can provide various types of educational materials --- such as an information board, brochures, educational plaques, etc.

III) STUDY & RESEARCH

a) A *baseline biodiversity survey* of the marshland and its surrounding habitats, covering birds, butterflies and other wildlife, will be conducted. To be followed by a monitoring programme.



b) NSS will also conduct and/or assist in *any feasible wildlife & ecological studies*.

The Kranji Marsh area is very important for marshland and grassland birdlife. *59 species of wetland and grassland birds*, migrant and resident, are recorded *over the last 5 years*. Six of these are species listed in the Singapore Red Data Book and these are the Lesser Whistling Duck, Red-legged Crake, Grey Heron, White-chested Babbler, Purple Heron and the Greater Paintedsnipe. The White-chested Babbler is also globally endangered species.

For the other taxonomic groups, much work in terms of study and survey needs to be done. There is a great potential for interesting discoveries of uncommon and rare species in terms of reptiles, amphibians and butterflies. *27 species of butterflies* are recorded so far in the Kranji

Past & Completed Projects by Nature Society (Singapore)

Marsh and its adjacent areas of scrubland and woodland. This constitutes 10 % of the total number of species in Singapore. Of these 27, nine are considered rare in Singapore, e.g. the Pandita sinope, Banded Swallowtail, Long-banded Silverline, Peacock Pansy, etc.

IV) INFRASTRUCTURES

i) If there is fund, rain-cum-lightning shelters will be set up. ii) Also, viewing screens at sensitive spots.

V) ADVISORIAL ROLE

NSS will be available to assist PUB through providing ecological & biodiversity information for decision-making or problem-solving on any aspects of the waterbody management.

WORKING COMMITTEE for Kranji Reservoir (Marsh) Adoption Programme:

Co-ordinator: Ho Hua Chew (Conservation Committee) **Members:**

- Alan Owyong (Bird Group)
- Yeo Suay Hwee (Vertebrate Study Group)
- Gloria Seow (Education Group)
- Simon Chan (Butterfly Interest Group)
- Tsang Kwok Choong (BESG)
- Shawn Lum (President/Plant Group)
- Leong Kwok Peng (Vice-President)
- Cheong Loong Fah (co-opted, NUS)
- Lim Tian Soo (co-opted, The Green Circle)

Advisory Panel

- Tay Kheng Soon (Architect, Akitek Tenggara)
- Prof C. H. Diong (Zoologist, NIE)
- David Li (Ornithologist, Nparks)
- Michelle Sim (Wetland Ecologist, PUB)

Members of the advisory panel are not representatives of their organisations except for Michelle Sim.

