

KOMBA

Komba 1 - 2014



WCK motto "Learn to conserve for a better tomorrow"



KOMBA is the Swahili name for the Lesser Bushbaby and the symbol of the Wildlife Clubs of Kenya (WCK). The magazine is owned and published by the WCK.

Hamjambo WCK members

In recent times, thousands of Africa's elephants have been killed to supply illegal ivory to markets in the world. It is estimated that approximately 100 elephants are killed every day – that is 30,000 elephants every year. In Kenya, we lost 51 elephants to poachers in the first three months of 2014. At this rate, the African elephant could become extinct in the wild by 2025.

We need to think seriously about this and act immediately if we are to save our elephants.

Through Education for Sustainable Development, the Wildlife Clubs of Kenya is raising awareness about poaching to the youth and communities. Education is important for sustainable development. It positively influences the management of the world's natural resources.

The Wildlife Clubs of Kenya aims to empower citizens to act for positive environmental and social change with knowledge and skills to find new solutions to their social, economic and environmental problems. Mismanaging our natural resources will adversely affect our future and the future generations.

Pupils learn that healthy wildlife populations impact not only the economy, but also their emotional experience in the wild. Through ESD, WCK aims to make youngsters aware of the sustainable commercial value of a live rhino and elephant in the form of job creation, tourism and other related industries. Our rhinos and elephants are not for poachers.

Now – sit back and enjoy this issue on Tana Delta. It's a fascinating ecosystem that must be managed sustainably – otherwise it will be a dead delta.

Meg – NC WCK

WCK Objectives

- To spread interest and knowledge about wildlife and the environment among the people of Kenya in particular and East Africa in general
- In this way, to make them aware of the great economic, cultural and aesthetic value of natural resources
- To develop a better understanding of the need to conserve natural resources for the benefit of the nation and its people.

WCK OFFICES

NAIROBI

Education Officer - Philip Gitahi
P. O. Box 20184, P.C. 00200, Nairobi
Tel: 020-8067644, 0724656667, Fax: 891906
Email: info@wildlifeclubsofkenya.org

KISUMU

Education Officer - Emmanuel Situma
P. O. Box 4201, P.C. 40100, Kisumu
Tel: (057) 2024162

MALINDI

Education Officer - Maryam Jenneby
P.O. Box 1758, P.C. 80200 Malindi
Tel: 0729 074006, 0734 674593

MOMBASA

Education Officer - Tsofa Mweni
P. O. Box 80591, P.C. 80100, Mombasa
Tel: (041) 5480002, 0733-700409, 0710-770103

NAKURU

Education Officer - Albanus Kioko
P. O. Box 33, P.C. 20100, Nakuru
Tel: 020 2671555/6
Guest House: 020 2671742

KITUI

Moses Katumbi
P. O. Box 1293, P.C. 90200, Kitui
Tel: 0722 975523

Avian Education Centre

Assistant Education Officer - Paul Ndungu
Tel: 254725770077, 0202021718
Email: info@wajeenaturepark.com
P.O. Box 148-10103, Mukurwe-ini

Wildlife Clubs of Kenya College (CTTR)

Principal - Isabella Mbandi
P. O. Box 20184, P.C. 00200, Nairobi
Tel: 020-8067644, 0724656667, Fax: 891906

WCK HOSTELS

LAKE NAKURU HOSTEL

Albanus Kioko - 0202671555

LAKE NAKURU GUEST HOUSE

0710 579944 / 020 2671742

LANG'ATA HOSTEL

Winnie Ndwiga - 0722 782953

KISUMU HOSTEL

Emmanuel Situma - 0721 263797

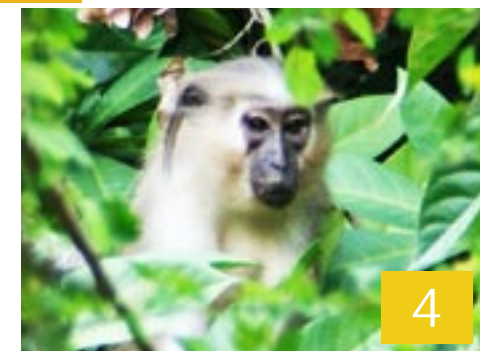
MOMBASA HOSTEL AND GUEST COTTAGES

Tsofa Mweni - 020 2337199

Inside

Monkey Business

Two rare species from the Tana only found in its forests the Tana River Mangabey and the Red Colobus Monkey



4

The Tana Delta by Olivier Hamerlynck... threatened but thriving



8

Birds of Tana



12

OUR FRIENDS thePollinators

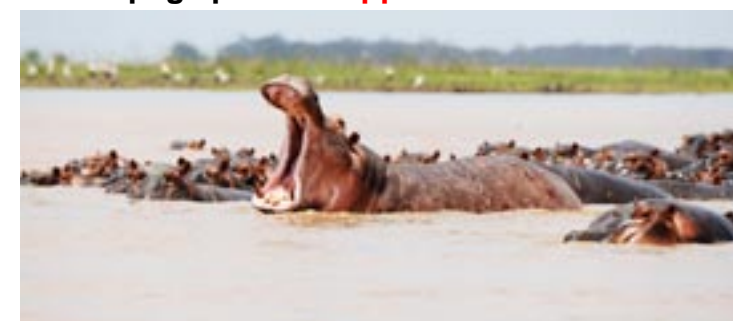
A handbook of Pollinator diversity and conservation in East Africa by Dino J Martins

Our Friends the Pollinators

A handbook of Pollinator diversity and conservation in East Africa by Dino J Martins

23

Middle page poster: Hippos of the Tana Delta



WCK CLUB BENEFITS

- * 3 issues of Komba-WCK magazine
- * Reduced fee to KWS Kenya National Parks & Reserves
- * Free lectures and video/slide shows
- * Borrow Wildlife Video Films at reduced rates
- * Students' half rate accommodation at WCK hostels
- * WCK roadshows by the Mobile Education Unit
- * The chance to help conserve wildlife
- * The chance to win prizes in WCK competitions.

Remember to renew your membership early every year!

Patron

Dr. David Western

Trustees

Mrs. D. T. Dobie
Amb. Bethwel Kiplagat
Mr. Philemon Mwaisaka, EBS,SS
Dr. Ibrahim M. Ali

Governing Council

Chairman: Mrs. Margaret Byama
Secretary: Mrs. Margaret Otieno

The WCK Governing Council

is made up of representatives of various stakeholding government ministries & parastatals, conservation entities and club patrons as follows:

Mr. Rick Anderson - AFEW (K)
Mrs. Margaret Byama - Min. of E. Afr. Aff. Comm. & Trsm.
Mr. Jagi Gakunju - Uvumbuzi
Representative Treasury
Representative WWF
Representative Min. of Ed. Sci. & Technology

WCK Regional Reresentatives

Mr. Cosmus Mutua - Eastern
Mr. Hassan Mwadima - Coast
Mr. Samuel Mbogo - Rift Valley
Mr. Godffrey Mwangi - Nairobi Region
Mr. Wenslaus Awori - Western Region
Mr. George Ouma Ong'ong'a - Nyanza Region
Mr. Ayub Yussuf Mahat -North Eastern Province
Mr. Gitahi P. Gathua - Central Region

Komba Editorial

Rupi Mangat - **Editor**
Philip Gitahi, Margaret Otieno, Edward Mwendwa

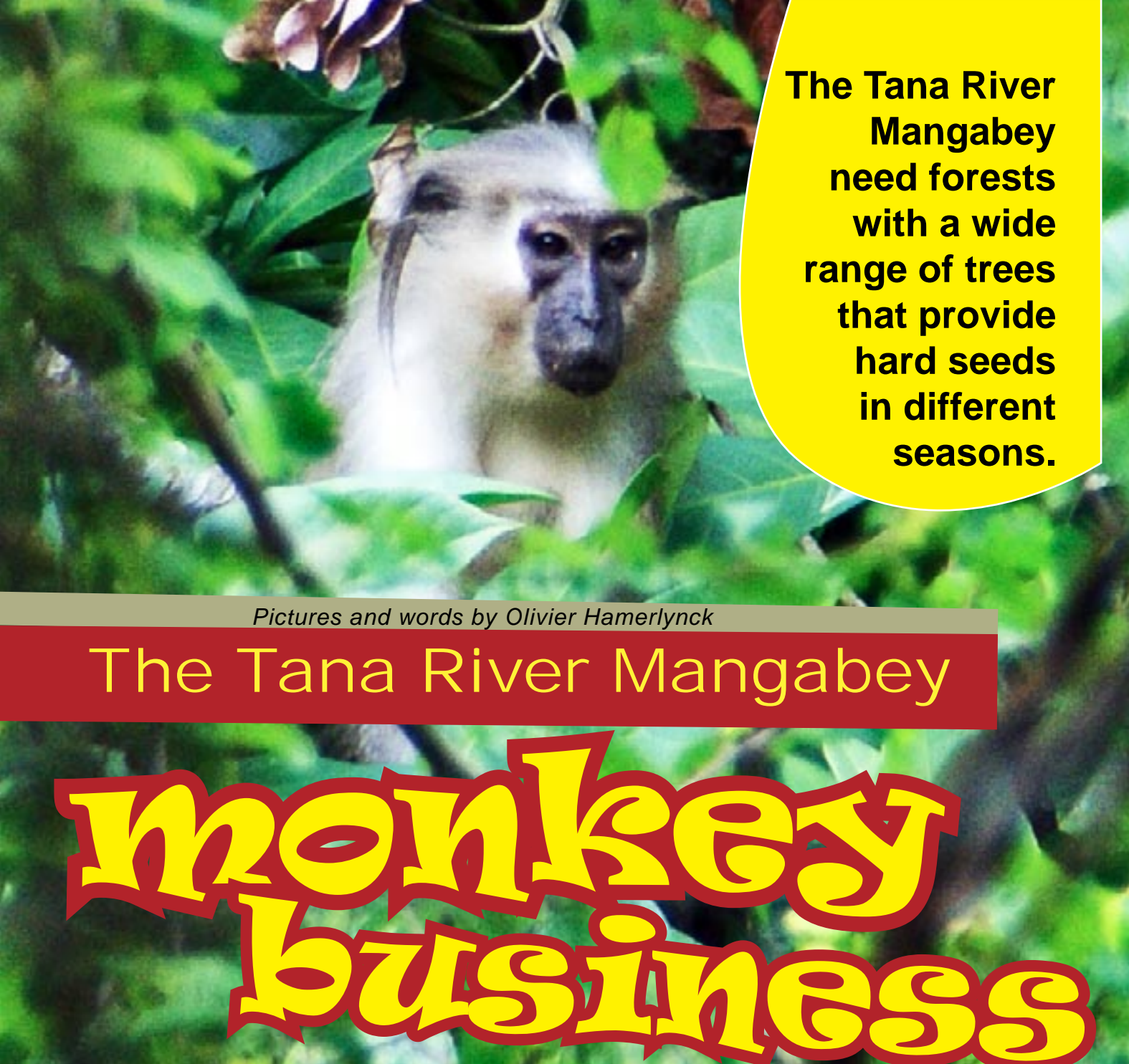
Design: Duncan Odhiambo

Cover photo: Egyptian Goose

Courtesy of Olivier Hamerlynck.

Egyptian Geese are often seen in the Tana Delta as they nest in holes in mature trees. The young take a tumble to the ground as soon as they hatch, often from over 10 m height!

Komba is owned and published by WCK



Pictures and words by Olivier Hamerlynck

The Tana River Mangabey

monkey business

Two rare species from the Tana only found in its forests

If you spend the night camping close to the edge of the forest you will wake up to the sound of the whoop-gobble call of the dominant male Tana River Mangabey making its territorial claim.

The silverish group will start moving, quickly but discretely, through the dense lower strata of the forest or even along the ground looking for the hard seeds that form the bulk of their diet.

The Tana River Mangabey need forests with a wide range of trees that provide these seeds in different seasons. They are semi-terrestrial and hard to see. Your best chance is to sit

The Tana River Mangabey need forests with a wide range of trees that provide hard seeds in different seasons.

quietly and they will come to check you out rather than you going after them.

The world population is estimated to be less than 2000 individuals. They are a bit more numerous and a bit more flexible than the Red Colobus as they can cross non-forested patches but we still need to save and expand the riverine forests for their survival.

The Red Colobus Monkey

It is in these forests and only in these forests hugging the Tana River that one can find the two endangered monkeys.

The Red Colobus is a leaf eater, moving with great agility through the canopy and picking young leaves that it stores in its expanded foregut.

Old leaves are highly toxic and that is why the Red Colobus needs highly diverse forests where different tree species will put new leaves at their disposal at different times of the year.

From early morning onwards they gorge on leaves and then settle down for a digestive slumber while bacteria do the hard work of breaking up the leaves into digestible molecules.

It is exciting to watch the monkeys jumping through the forest. These monkeys almost never come to ground.

They migrate through the lower Tana forests through a continuous canopy.

In fact, as they are totally adapted to swinging along

branches, they have lost their thumbs that would be an obstacle to their swinging in the trees (in Greek "Colobus" means mutilated).

The next closest population of genetically similar Red Colobus is in the Albertine Rift, the border between Uganda and the Democratic Republic of Congo.

The Red Colobus group evolved some 3.5 million years ago, much later than the continuous forest cover from West to East Africa (16 million years ago). They must have dispersed during the wetter phases when forests reconnected through corridors. Then, when the forests became isolated again during drier periods, they diversified into different

In Greek "**Colobus**" means mutilated.

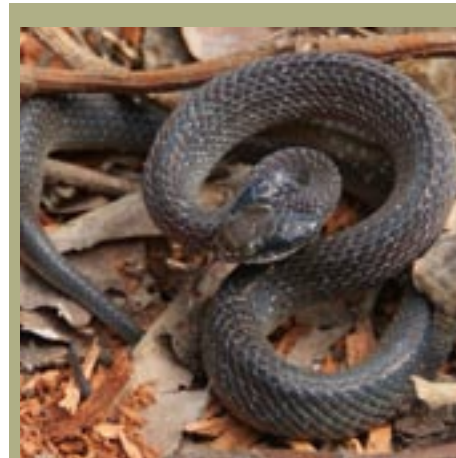
species, leaving behind such distinct creatures as the **Zanzibar Red Colobus** and the **Udzungwa Red Colobus**.

The group that gave rise to the Tana River Red Colobus only came into being about a million years ago. This means that there must have been another more recent wet phase that allowed them to move from the Congo



A specialised leaf eater

Basin to our coasts. The world population is currently estimated to be less than 1200 individuals. The only way to save them is to stop cutting down the forests and restoring the connections between the now isolated patches.



White-lipped Snake
Crotaphopeltis hotamboeia,
a quite harmless snake
that hunts frogs at night. It
behaves like a cobra when
threatened and this often
gets it killed.



Steindachner's Toad
Bufo steindachneri one
of the many species of
amphibians that breed in
seasonal pools in the Tana
Delta forests



Baboon-spider or
Pterinochilus murinus. A
large spider with a rather
painful bite.

By Olivier Hamerlynck

Forest Dwellers of the Tana Delta



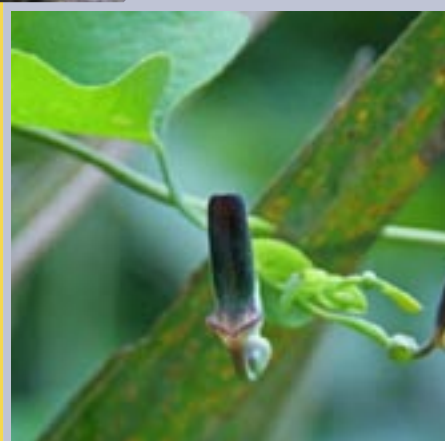
Zanzibar Pearl
*Majidea
zanguebarica*
has very
decorative
fruits



East African Puddle Frog
Phrynobatrachus acridoides.
These tiny frogs (less than 3
cm) have a very loud and sus-
tained cricket-like call. Many
more species in this genus
remain to be discovered.



Whip Spider Amblypigi are a
separate order of Arachnids
known from fossils dating
back to the Carboniferous,
just over 300 million years
ago. They look scary but are
quite harmless (unless you
are an insect).



Dutchman's Pipe *Aristolochia
albida* is a beautiful, strongly
scented but highly toxic vine.
Its flowers attract flies that are
retained by hairs until they
have collected the pollen.
They are then released.

WCK Corporate Members

AAR - Holdings
Access Kenya
AFEW Giraffe Manor Ltd.
African Line Biuro Trekingowe
Across Africa Safaris Ltd
A. F. E. W. Kenya
Air Kenya Aviation Ltd
Bata Shoe Company
Block Hotels Ltd., Nairobi
Born Free Foundation
CFBT Education Services
Cheli and Peacock Ltd
Coca-Cola (EA) Ltd., Nairobi
Copy Cat Ltd., Nairobi
D. T. Dobie Co. Ltd., Nairobi
Education Insight
Express (K) Ltd., Nairobi
Firestone (EA) Ltd.
Friends of Conservation
Glaxo Wellcome (K) Ltd.
Karen Country Club
Kenya Aerotech Ltd.
Kenya Wildlife Service
Kenya Wine Agencies Ltd.
Kenya Prison Services
Ker & Downey Safaris
Kilimanjaro Safari Club
Kodak (K) Ltd
Let's Go Travel Ltd.
Lloyd Masika Ltd.
Magadi Soda Co. Ltd., Magadi
Nairobi Upperhill Hotel
Newent Community School
Norfolk Hotel, Nairobi
Oserian Development Co. Ltd.
Panafrican Paper Mills (EA) Ltd., Nairobi
Pandhal Harjeet Singh & Sons Ltd
Safari Seekers (K) Ltd., Nairobi
Sameer Investments Ltd.
Sarova Hotels Ltd., Nairobi
Serena Lodges & Hotels
Text Book Centre Ltd., Nairobi
Unilever (K) Ltd.
United Touring Co. Ltd., Nairobi
Wildlife Safari (K) Ltd
World Wide Fund for Nature
Wonder Foods Ltd
Yare Camel Club and Camps

WCK HOSTEL CHARGES

LANGATA & MOMBASA

- ❑ Wildlife club student members - Kshs. 300
- ❑ Adult members - Kshs. 500
- ❑ Non-member student - Kshs 500
- ❑ Non-member adults - Kshs 700
- ❑ East Africans member WCU, Malihai Clubs of Tanzania - Kshs. 400
- ❑ East Africans non-members - Kshs 800
- ❑ Deposit Kshs. 2000 forfeited if the group does not come
- ❑ Booking Kshs. 500 with Ksh. 300 refundable when the kitchen and utensils are cleaned
- ❑ Foreigners Kshs. 1000

HALL HIRE

- ❑ WCK members - Kshs. 5000 per day
- ❑ Non-members - Kshs. 10000 per day

CAMPING

- ❑ Members - Kshs. 200
- ❑ Non-members - Kshs. 250

NAKURU AND KISUMU

- ❑ WCK member - Kshs. 200
- ❑ Non members - Kshs. 250
- ❑ Foreigners - Kshs. 1000
- ❑ E. Africans - Kshs. 600

NAKURU GUEST HOUSE

- ❑ Adult - Kshs 1250
- ❑ Children - Kshs 600

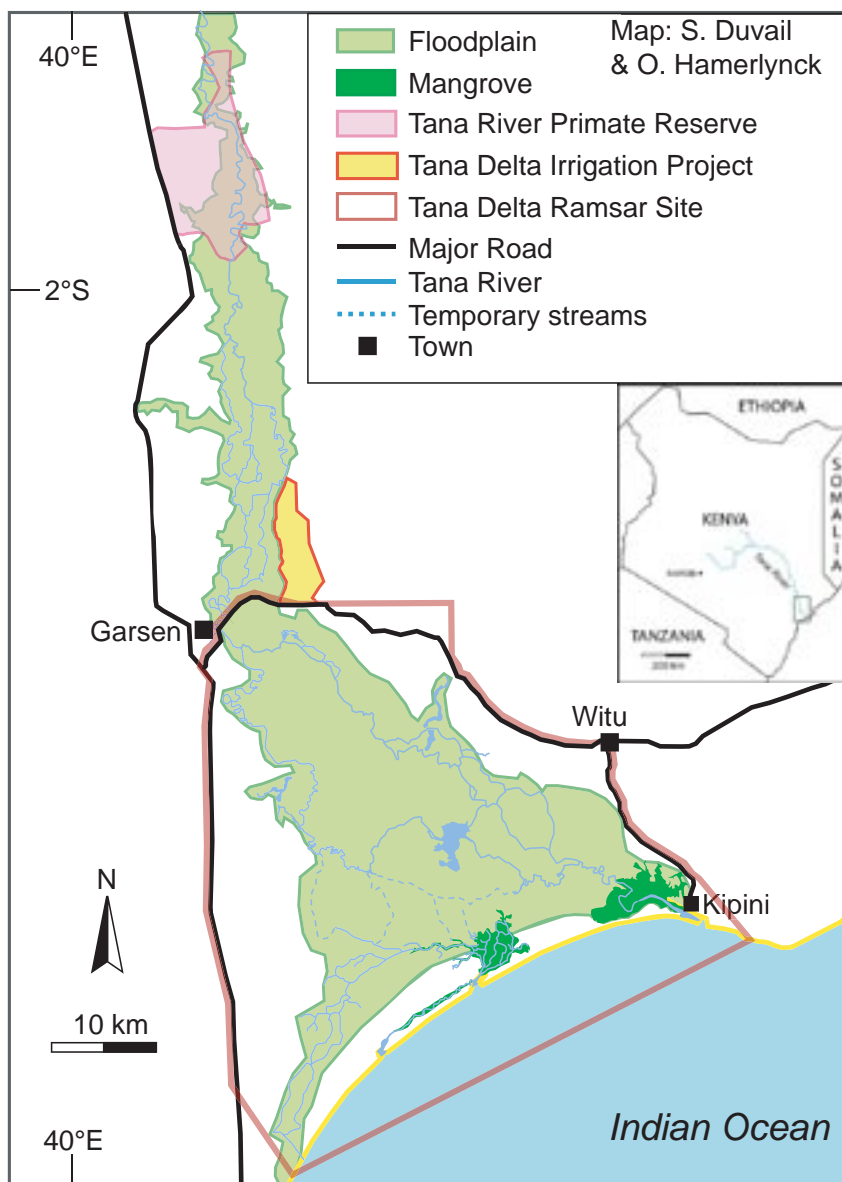
GUEST HOUSE AND COTTAGES (SINGLES)

- ❑ Members - Kshs. 1500
- ❑ Children - Kshs. 750
- ❑ Non-members - Kshs. 2000

Accommodation rates are per person per night

WCK ANNUAL MEMBERSHIP FEE

- ❑ Club - Kshs. 1000
- ❑ Associate - Kshs. 500
- ❑ Corporate - Kshs. 5,000
- ❑ Foreign - US\$30 / £20 / €25
- ❑ Student membership cards - Kshs. 30
- ❑ Video library subscription - Kshs. 200
- ❑ Video library registration - Kshs. 500



By Olivier Hamerlynck

Since antiquity, people have known that deltas have the most fertile land on the planet. This is so because deltas are recharged with fresh water and fine silts deposited every year by floods.

The TANA DELTA

...threatened but thriving

The great civilisations of the Indus, Egypt and Mesopotamia happened because of the deltas. The deltas found in these ancient lands gave rise to the first complex agricultural societies – which enabled people to grow and store food and prosper.

They are called “delta” because of their triangular shape resembling the Δ , the 4th letter of the Greek alphabet.

Kenya's longest river, the Tana, is about twenty times smaller than the Nile in terms of flow but it also ends in a Delta.

How a Delta Works

When a large sediment-laden river reaches the low-lying areas next to the ocean, it will split into several branches. Some will build up land due to frequent floods while others will sink as their soils become compacted.

Soil becomes compact when water evaporates and trickles away towards the sea leaving the organic matter (plant material) to naturally decay. After a few decades, the main branch will shift to the lower lying land and the whole process starts again in the opposite direction.

The Tana Delta

Kenya's longest river, the Tana, is about twenty times smaller than the Nile in terms of flow but it also ends in a Delta.

The Tana Delta covers about 200 square kilometres made of different ecosystems like dunes, mangroves, coastal and riverine forest, floodplains and marshes and drier bush-covered terraces - each with its characteristic vegetation. It is an extremely important area for biodiversity and for people's livelihoods. Thus, on about 0.25% of

Kenya's land area, we find more than 12% of its plant species, over a dozen of which are threatened such as *Cynometra lukei* and *Oxystigma msoo*.

These trees have their closest relatives in the forests of West Africa, when forests existed as a continuous cover across Africa during the Miocene, some 16 million years ago. The climate was wetter then. After that, the climate became drier and the forests were separated by grasslands. Still, connections between eastern and central African forest

refuges did occur during wetter periods, mainly through strips of forest along rivers which allowed animals to migrate between them. Most remarkable among these are two unique monkeys, the Tana River Mangabey and the Tana River Red Colobus. Like most deltas, the Tana is also a haven for waterbirds - because it is a rich feeding area - with up to 100,000 birds present like pelicans, darters, cormorants, herons, storks, ibises, spoonbills, ducks, geese, waders, gulls and terns.

Cont. on pg. 10

Tribes of the Tana

There are Wataa hunters, Pokomo farmers, Orma livestock keepers and more recently fishers from the Lake Victoria who learned to benefit from the river - fishing during the flood, farming when the flood recedes, grazing cattle when the harvest season is over. The most important thing is that they know when to move away from the Delta to allow it to replenish itself.

For instance in 2013, the floods were very big and looked dangerous. But the local people knew that these floods fertilise and water the land and provide all they need for their livelihoods in large quantities. Big floods mean good rice farming, lots of grass for the cows, productive forests, big fish catches and many birds that attract tourists.



The endangered *Cynometra lukei* only exists along the Lower Tana in Kenya and the Rufiji in Tanzania. It is a *Cynometra* with floating seedpods, an adaptation to its riverine forest and floodplain habitat. All *Cynometra* species are heavily targeted for charcoal making.

No floods, no life

The main threat to the functioning of the system is no floods. Without the floods there will be no life. Traditional people have used the deltas sustainably for centuries.

Today, hydropower dams built upstream reduce the flood peaks. Large-scale irrigation schemes abstract so much water that the sea moves into the Delta during

the dry season making the land saltier. A lot of the sediments that would be deposited at the delta to make the soils fertile do not reach the delta. One case is that of the Aswan dam on River Nile, built in 1960.

The Nile Delta is eroding away. The coastline is receding at 30 to 100 meters per year in some places. Salt water is entering the lowest lying areas which are

sinking fast because they are no longer supplied with sediment.

Similarly, with five dams already existing and a much larger sixth one planned at High Grand Falls, the fertile lands of the Tana Delta are increasingly losing their productivity and they are also wanted for large-scale irrigation schemes and biofuel projects.

Olivier Hamerlynck is an ecologist with the Kenya Wetlands Biodiversity Research Team (KENWEB www.kenweb.or.ke). He loves the resilience of the ecosystems and the people of the Tana Delta facing misguided development and conservation projects that do not take into account how deltas work. . Each big flood resets the clock for the delta to survive.

Strophantus mirabilis Beautiful plant of the Tana



Strophantus mirabilis is undisputedly one of the most beautiful flowers of the Kenyan bush, growing just next to the Tana Delta forests on high, dry ground. Like most members of the Apocynaceae it may have medicinal properties - Picture and caption by Olivier Hamerlynck

By Olivier Hamerlynck

The Tana Delta is best known for its waterbirds. They are present in large numbers - 20,000 to 100,000 or more - all year round.

Birds of Tana Delta

Different species, Different Uses

The Tana Delta is Important for:

1. The Heronry

The Delta is most famous for its "heronry". It's one of the few waterbird breeding colonies in East Africa and most diverse.

Before the construction of the Seven Forks dam, it was the most important heronry in East Africa. Now during the dry years there is not much activity as the water is stored in the dams to produce electricity for Nairobi.

The heronry was discovered in the 1950s. Its location moves with the shifting course of the river. Most bird species breeding here are fish-eating birds.

The heronry's importance fluctuates with the importance of the floods. For each hectare flooded, it is estimated that fishermen can harvest about 50 kilogrammes of fish.

The heronry in July 2012 after a big flood.

African Spoonbill,

Intermediate Egret and

Glossy Ibis can be

seen here but over

a dozen species

use the colony. It

is estimated there

were more than

5000 pairs.

Birds of the Tana Delta Heronry

- Long-tailed Cormorant
- African Darter
- Black-crowned Night Heron
- Cattle Egret
- Common Squacco Heron
- Little Egret
- Black Egret
- Great White Egret
- Purple Heron
- Grey Heron
- African Open-billed Stork
- Glossy Ibis
- Sacred Ibis
- African Spoonbill

Other species like the White-breasted Cormorant, Yellow-billed Stork and Pink-backed Pelican, do not use the heronry and prefer nesting 25 m high in the crowns of Mvumo Palms. It's quite scary watching a chick balancing on the leaves during high winds.



Above: Madagascar Pratincoles are insect-eating waders. They are especially active in early morning and evening and gobble up thousands of insects while flying. Between November and April they will be replaced in the Tana Delta by similar numbers of Collared Pratincole from the Northern Hemisphere.

2. Migratory waterbirds

The Delta's first function is as a wintering ground for migratory waterbirds from both hemispheres. Tens of thousands of waterbirds use it as a stopover on their migration, staying for a few days or weeks to rest and store up fat for travel further south or back to north for breeding. The maintenance of a series of high quality coastal wetlands along these flyways, where birds can feed and gather strength is vital for their survival.

When Eurasia is covered by ice and snow between November and

March most of its waterbirds move to Africa. Numbers of birds like the Glossy Ibis in the Tana Delta go up from a few hundred to nearly 10,000.

In the opposite season, between May and October, the Tana Delta accommodates over 3000 Madagascar Pratincoles fleeing the dry season in Madagascar. The Madagascar Pratincole is a globally vulnerable species of 5000 to 10,000 individuals and unfortunately declining. The Tana Delta is its most important "wintering" ground.

Our breeding population of Glossy Ibis is reinforced by migrants when Russia freezes over.



The African Open-billed Stork sometimes evokes can number up to 20,000 in the Tana Delta. Its specialised bill works as a pair of tweezers to lift molluscs out of the mud.



3. Forests and bush birds

The floods keep the delta functioning. The forests are dependent on the groundwater recharge by the floods. It means that all of the 350 or so bird species in the delta are “water” birds in a way.

Thousands of Northern Carmine Bee-eaters liven the grasslands with their

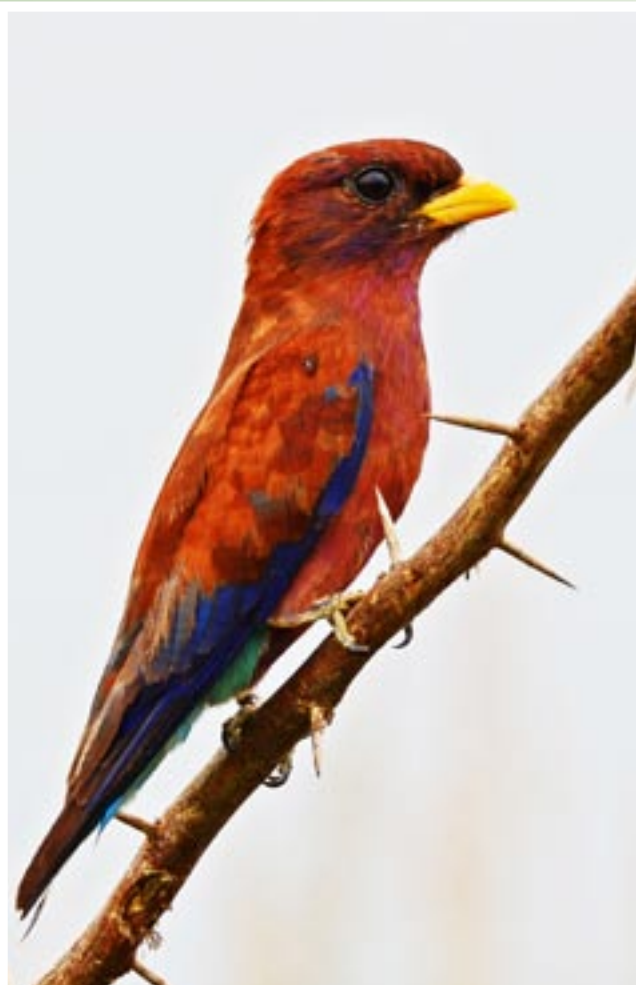


magnificent plumage. They follow the herds of cows and feed on the insects that these disturb, often perched on the cattle.

We think that the intra-African migrants like the Broad-billed Roller that come to breed in the forests of the Tana Delta during the long rains move to the Congo Basin forests during the dry season.

Thousands of Northern Carmine Bbee-eaters visit the Tana Delta and feast on its abundant insect population.

...of the 350 or so bird species in the delta are “water” birds in a way.



The Broad-billed Roller is an intra-African migrant, moving between the Congo and the Eastern African forests

Yellow-billed Storks and White-breasted Cormorants breeding high up in the Ron Palm fronds (Borassus)



The Pink-backed Pelicans also enjoy breeding with a view





Hippos of the Tana Delta

Several hundred Hippopotamus share the central floodplain of the Tana Delta with the tens of thousands of livestock of the Orma. They are very efficient grazers and are estimated to consume less than 1% of the grass production. Local fishermen know that they will catch more fish where hippos are present as they fertilise the waters with their dung.

by Olivier Hamerlynck

Lake Nakuru National Park

The rising lake level is amazing and rarely seen

Lake Nakuru water level has risen by more than 7 metres in the last 10 months.

This has changed the lake's characteristics. Lake Nakuru National park, famous worldwide as a bird lovers paradise, is now a pale shadow of itself. There are a

Rift Valley lakes (Lake Naivasha has risen over 3 metres, Lake Bogoria by over 2.5 metres, Lake Elementaita and Lake Baringo is twice its size). In Lake Nakuru, some think it is because of the rehabilitation of Mau forest which is the catchment for the lake. However, many researchers argue that the

The grass plains are flooded, displacing wildlife and people have not been spared either. Some of the administrative buildings inside the park are also flooded.

Report and pictures by
Albanus Kioko, WCK
Conservation Education
Officer -Rift valley



few flocks of pelican, ducks, Egyptian geese and storks but not a single flamingo.

The increased water level has led to a reduction in the blue green algae (*Spirulina platensis*) in which the Lesser flamingos feed. Researchers are not sure why the level has risen so fast in all the Kenyan

effects of the rehabilitation of the forest cannot be felt so fast because the planted forests are still immature. The rise in Lake Nakuru has led to the death of many yellow barked acacia (*Acacia xanthopholea*) and more of a fresh water lake. There is a sharp increase in mosquitoes.



An administrative building almost all under water.

Mass Migration

By Fleur Ng'weno

East Africa is famous for the wildebeest migration, but other mass migrations can also be awesome.

At the Coast, I have been fortunate to witness the migration of tiny isopods, less than one centimeter in length. These creatures are crustaceans, related to the crabs and prawns, but living on land.

At times these isopods congregate in millions and migrate over the landscape. Their many millions of feet make a rustling noise on the dry leaves.



Isopods near Buboya Forest, Tana River District,



The poplar tree

By Fleur Ng'weno

It is the Tana River Poplar, *Populus illicifolia*. The book "Kenya Trees, Shrubs and Lianas" says that this tree is "endemic to the Uaso Nyiro (North), Tana and Athi/Galana river systems."

"Poplar trees are common in the northern hemisphere, and represented in art and literature, but there is only one species in Kenya."



Tana River Poplar

the Hunt F

Dichapetalum

A rare find:
But the search
is on to see who
will be the first to
see the flowers of
this plant

R

*Pictures & story by
Olivier Hamerlynck*

Did you know there are some 10 million species of plants and animals on planet Earth? And only one-fifth of these have been described so far. Every year some 20,000 new species are described and published. That makes life on Earth exciting with new discoveries popping up all the time. Half of these 'discoveries' are insects.

For flowering plants (about 300,000 known species) it is estimated that another 15% remain to be described, and most of them are from biodiversity hotspots. The Eastern African coastal forest biodiversity hotspot has some 1,750 endemic plant species (species that do not occur anywhere else).

New species are still being discovered every year even though there are not many plant taxonomists (people who identify and classify species) in the region.

Discovering *Dichapetalum*

"We have found the plant, we know it is a new species but we need the flower to



*A new as yet undescribed *Dichapetalum* species was discovered in the riverine forests of the Lower Tana.*



In Kenya, the species that we think may be 'new' to science was actually found 25 years ago in the forests of the Tana by Ann Robertson and Quentin Luke - both well-known botanists.

describe it scientifically. Last year (2013) we were just too late in early July and only found the seed. Now we could go back probably in June and catch the flower," recent email from Dr Hamerlynck.

Classified into a family of their own *Dichapetalum* species are known for their toxicity. They can cause convulsions and cardiac arrest.

In South Africa, a number of cattle are killed each year by ingesting *Dichapetalum cymosum*. The study of their toxins is important for the pharmaceutical industry. Many species are also used in traditional medicine because of anti-microbial properties.

In Kenya, the species that we think may be 'new' to science was actually found 25 years ago in the forests of the Tana by Ann Robertson and Quentin Luke - both well-known botanists.

The leaves and other characteristics of this *Dichapetalum* are different from all known species in East Africa that are stored in the herbarium at the National Museums in Nairobi.

Now, to scientifically describe and name a species one needs the leaves, stem and roots. That's not all. The flowers, the fruits and the seeds must be described and drawn too – which for a new species, you don't always know when the flowers are going to bloom or when the seeds will appear. Once this has been done, there will be another search to compare it with *Dichapetalum* species in other collections such as from the Democratic Republic of Congo, Somalia and West Africa. Only when all of these prove to be different, a new species can be described and named. You can understand why even after 25 years we're not sure about the 'new' *Dichapetalum*.

After several expeditions by the Kenya Wetlands Biodiversity Research Team (KENWEB) and the plant experts from the National Museums of Kenya, no one has yet found a flowering plant. In July 2012, there was some excitement when an inflorescence was found but the flowers had already wilted. So the plant still cannot be described. It is hoped that a flowering plant will soon be found - and that it can be added to the 6,500 plant species already known in Kenya.

This species is clearly very rare. It might even go extinct before it is described. This will happen if the current plans for conversion of the Tana Delta, the construction of more dams and the increased abstraction of water for large-scale irrigation schemes upstream are put into place without proper measures to safeguard the downstream ecosystems. We could lose a lot of biodiversity.

Orma herder

Pictures by Olivier Hamerlynck.

The Lower Tana Delta Conservation Trust (LTDCT)

By Omar Ngama

The LTDCT focuses on environmental issues such as using the resources of the Tana Delta wisely. If you look on a good map of Kenya you will see the areas LTDCT works in such as Ozi Chara, Konemansa, Kilelengwani, Kipini and Tarasaa. All these areas have established community conservation



Luo and luhya fishermen in Tana areas and development zones to reduce dependency on natural resources and conflict.

Lower Tana is an Important Bird Area (IBA) and rich

in biodiversity. More than 21,000 species of birds have been recorded. They are found in the mangrove forests, the wetlands and the forest swamps, the farmlands and the sea shore. The area is suitable for community conservation area(CCA) – land set aside for wildlife, livestock and farming - to reduce human-wildlife conflict which happens during prolonged drought when animals need sufficient green pastures and water for survival.

The lower Tana Delta is home to many tribes. The Pokomo is the largest tribe (60 per cent). The Orma make up for 35 per cent while five per cent is made up of small tribes like the Giriama, Luo and Wardei practicing farming and live-stock keeping.

Challenges in Tana Delta

□ The threat posed by hydroelectric dams



Pokomo Tidal Rice

constructed along River Tana

□ Poaching and Logging

□ Saline water intrusion from Tana River to the farmlands at high tide. This reduces the rice yields. The increasing number of salt farms near the lower Tana delta conservation boundaries making the fresh water more salty

□ The increase in human-wildlife conflict. Due to population increase. Wild animals compete with domestic animals for pasture. Community wildlife sanctuaries in every location will help with peace

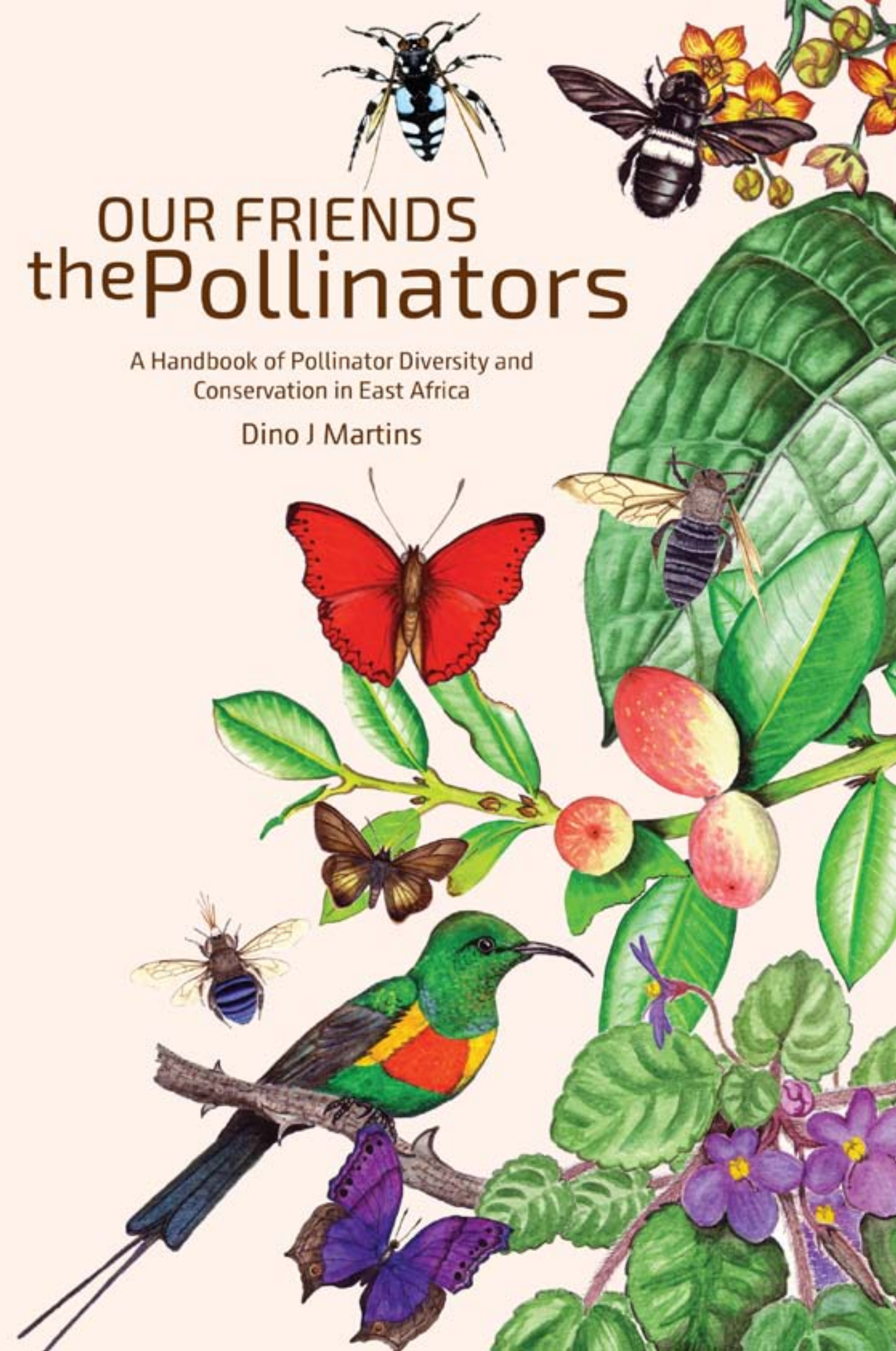
□ Bad roads

□ There are few investors in eco-tourism

OUR FRIENDS the Pollinators

A Handbook of Pollinator Diversity and
Conservation in East Africa

Dino J Martins





Carpenter Bees

Carpenter bees are familiar to farmers and gardeners as the bees that fly noisily around wooden buildings, and on farms in the mornings. They include the widespread and abundant genus *Xylocopa*, the large carpenter bees, and *Ceratina* and *Alloclapula* bees, which are known as small carpenter bees.

Carpenter bees include the largest bee in East Africa: *Xylocopa nigrita*, which has spectacular large females marked in black-and-white, and bright all-golden males.

Carpenter bee *Xylocopa inconstans*, approaches the flowers of *Cleome parvipetala* in Tarangire, Tanzania.

Large carpenter bees are active earlier and later than most other bees as their larger size enables them to warm up and forage on cool mornings. They often fly at

dusk visiting flowers that would typically not be available to bees. Large carpenter bees visit a wide range of flowers, where they serve as important pollinators of legumes that require 'tripping' of the flowers, and of plants that require buzz-pollination—such as *Solanum* spp. They also serve as pollinators of orchids, milkweeds (*Calotropis*), and cultivated passionfruit.

Most large carpenter bee nests are excavated in wood—hence their name. They burrow tunnels, and construct cells they fill with pollen from plants. Small carpenter bee nests are excavated in pithy dry stems of plants, including the old flowering spikes of aloes. ■



Carpenter bees. TOP, LEFT TO RIGHT Carpenter bee, *Xylocopa flavorufa*, approaches a flowering *Maerua*, carpenter bees on a coastal *Sterculiaceae* sp.

MIDDLE, LEFT TO RIGHT Carpenter bee on the flowering *Sterculiaceae*—note the large amounts of pollen on the bee's body, Blue-eyed carpenter bee on *Crotalaria* sp.

BOTTOM, LEFT Carpenter bee approaching wild basil (*Ocimum* sp.).

Leafcutter Bees

Leafcutter bees are named for their habit of cutting out circular pieces of leaves from cultivated plants. Leafcutters are stocky, robust bees with large eyes. They range in colour from grey to brown and can be boldly marked with orange, white, red, or yellow. Pollen is transported on the underside of their abdomen. When this is fully packed it makes a bright patch of colour on their bellies—readily visible as they forage from flowers.

Mass-flowering trees such as acacias are among the wide range of plants visited by leafcutter bees. Wildflowers are

visited for pollen and nectar, and leafcutter bees are especially efficient at 'tripping' the flowers of *Crotolaria*, *Indigofera*, *Tephrosia*, and other legume species.

Nests of leafcutter bees are distinctive and unique, constructed from overlapping circles of cut pieces of leaf taken from a variety of plants. Generally those having fairly flat, smooth leaves are chosen, and are glued together with resin and waxy secretions. Nests can often be found on furniture, walls of buildings, and other man-made structures. ■

Close-up of a freshly emerged leafcutter bee.



POLLINATOR DIVERSITY



Various species of leafcutter bees in action.
TOP, LEFT TO RIGHT
Megachile sp. on *Crotolaria*, *Gronocera* hovering near pigeonpea.



MIDDLE, LEFT TO RIGHT
Leafcutter bee gripping flower with its mandibles, leafcutter bee on *Crotolaria*.

LOWER MIDDLE, LEFT TO RIGHT
Leafcutter bee cutting leaf-circles from a capsicum, large leafcutter bee approaches *Crotolaria brevidens*—note the large patch of pollen carried on the bee's underside.



BOTTOM, LEFT TO RIGHT
Leafcutter bee carrying leaf to nest.

WCK Regional News

Briquettes from waste beats burning forests

By Maryam Jenneby

The Kilifi County government supported WCK Malindi and Mombasa to hold a one-day workshop on how to make briquettes. This was to train youth to manage the county's natural resources which include reducing pressure on forests which happens because of making charcoal.



Briquette made by sawdust.

Mr. Fadhili Kiringi, the Kilifi county executive for water, forestry, natural resources and environment opened the workshop. He briefed the youth on the county government efforts to conserve the environment. It will also support youngsters in such projects and they were promised a briquette-making machine by the executive.



Briquette making

The youth groups from Malindi, Kilifi and Mariakani sub-counties eagerly participated in the workshop because this will help them generate income from briquettes made out of recycled material such as sawdust and old newspapers. These are soaked in water, pounded with mortar and pestle before being shaped into bricks by the briquette-making machine.

Maryam Jenneby is the conservation education officer at WCK Malindi Office.

**Contact: +254729074006 / +254734674593
wckmalindi@yahoo.com**

Clean up day at Lake Nakuru National Park

In March 2014, the Wildlife Clubs of Kenya Nakuru together with the Kenya Wildlife Service, and the local community held a clean up activity at Lake Nakuru National Park. The purpose was to clean up the garbage along the sewer discharge canals in the park.

The site is a place where discharge from sewage treatment plants flow through the park. Following the rainstorm during the week, the discharge pipes had burst and spilt over the banks leaving garbage like plastic and tins all over the place.

New WCK Meru Educatiaon Centre

By Gabriel Ngale MEU

WCK is launching its new Environmental Education Centre in Meru. Start your ecology program by visiting the WCK Meru Education Centre next to the KWS camping site at the lower Imenti forest, Kathoka area. Get a comprehensive ecology talk and practical guiding from our officers. While at our centre take a short nature walk to Imenti forest – please go with a guide from WCK. Imenti forest joins Mt Kenya on the upper side. It is a key habitat

WCK makes it BIG at Mombasa ASK Show

By Tsofa M. Mweni, WCK Regional Head- Coast

The annual Mombasa Agricultural Show at the Mombasa Show Ground in Nyali, Mombasa in August was exciting.

WCK had a stall. Kenya Wildlife Service (KWS) too was present and teaching children the importance of reptiles such as snakes. An excited group of children surrounded a man who was holding a four-year-old African Rock Python, python sebae.

I was asked to hold the python. At first I was scared and refused – but then picked up courage. I was amazed to see how a single animal could attract so many people, and we took advantage of this to show a documentary on the importance of preserving the snake's natural habitat.

The African Rock Python turned out to be the perfect environmental ambassador. It lives in a variety of habitats, from forests to near deserts, always near a source of

water. It's one of the world's largest snake species, with adults reaching up to six metres (20 feet). All pythons constrict their prey and swallow it whole, dining on birds, other reptiles and mammals including rats which make them great pest controllers.

Although not listed as endangered, their natural habitats are under increased pressure from humans. They are also hunted for meat and leather and killed to protect livestock or simply out of fear (though attacks on humans are very rare). They are also collected for the pet trade.

These snakes are now mostly found in protected areas.

We conserve what we understand. The fear of snakes keeps people from learning more about these amazing creatures. Snakes are a valuable link in the food chain and many ecosystems are dependent upon them to

maintain balance. Without snakes, the rodent population would flourish, negatively impacting human and livestock health, crops, stored food supplies, and property. The full effect of this would be unknown until it was too late.

In partnering with KWS and its python at the Mombasa Agricultural Show, we hoped to show that snakes pose few risks to humans and are far more beneficial to us than if they are dead. Snake venom is extremely useful in manufacturing medicine for preventing blood clots, treating strokes, cancer, asthma, high blood pressure and heart attacks, finding cures for neurological diseases such as Alzheimer's disease, and much more.

Wildlife Clubs of Kenya, Kenya Wildlife Service and Kenya Forest Service, were jointly awarded the third place in Conservation and Sustainable by the ASK.

for elephants. From the WCK centre you can visit the Meru National Park, an hour's drive away through Murera gate. Gazetted in 1966 the 870 square kilometers park is the former home of Joy and George Adamson who reared the orphan lioness Elsa. You can also easily reach Kora National Reserve through this park. Other attractions in the park include the Tana River and Adamson's Falls as well as wildlife species like elephants, Reticulated giraffe, Grevy's zebra,

hippopotamus and rhinos.

The Nyambene hills seen from the park are an important water catchment area for this region. During my visit, the KWS Meru National Park and WCK organised conservation rallies, tree planting, and World Wetlands Day to coincide with the MEU program.

From the WCK centre in Meru, you can include Samburu National Reserve which is an hour's drive through Isiolo via Archer's Post. The reserve is in a

semi-arid area and has wildlife similar to Meru national park like elephants, lions, giraffes, Gerenuks, Oryx, Reticulated giraffe, Grevy's zebra and the Beisa oryx. The Ewaso Nyiro river flows in the reserve and is a lifeline for the wildlife and communities.

Less than 40 minutes drive from the Meru WCK education centre is Lewa Wildlife Conservancy, home to some of Africa's endangered species like the black rhino and Grevy's zebra. **Contd pg. 30**



MEU in a Samburu School



KWS & WCK planting trees at Kaurine Primary School Meru.



WCK & KWS addressing pupils at Kamiruru Primary School during MEU.



The new WCK Meru office under construction.

from pg. 29
Make advance arrangements of visiting Lewa through their education centre.

Again from the WCK Meru education centre, you can visit or hike to Mt Kenya National Park via the Sirimon gate which is the closest or through the Naromoru gate past Nanyuki. The road to Nanyuki from Meru gives you a spectacular view of the magnificent landscape and you will drive over the Ngare Ndare Elephant Bridge which the elephants use to cross from Mt Kenya to Ngare Ndare Forest and Lewa Wildlife Conservancy – the elephants cross under the road.



Wildlife Clubs of Kenya College Centre for Tourism Training & Research (CTTR)

~Training for Conservation~

Training Opportunities in: Tourism, Wildlife & Hospitality Sectors



Evening &
Weekend
Classes
Available

Diploma

- ~Tourism and Wildlife Management
- ~Hotel and Restaurant management
- ~Tour and Travel Operations
- ~Housekeeping and Laundry
- ~Tourism and Hospitality Management

Certificate

- ~Tour Guiding and Administration
- ~Craft Certificate in Tour Guiding and Travel Operations

Short Courses

- ~KPSGA Training
- ~Basic Cookery & Service Skills
- ~Spanish DELE

Bridging course for Diploma in Hotel & Restaurant Management, and Certificate Course in Tour Guiding and Administration for those who do not qualify for direct entry

Admission Help Line: 0726 214 423 / 0724 656 667 / (020) 806 7644 - P.O. Box 20184, 00200 NAIROBI.

cttr@wildlifeclubsofkenya.org / www.wildlifeclubsofkenya.org

We are along Langata Rd. (Next to Bomas of Kenya)

African Fund for Endangered Wildlife - Kenya

GIRAFFE CENTRE

A.F.E.W. Kenya was founded in 1979 by the late Jock Leslie Melville and his American wife the late Betty. Their vision was to save the endangered Rothschild giraffe as well as establish an education centre. The giraffe centre was opened to the general public in 1983 and is located in the suburbs of Karen-Hardy area about 15Kms from the Nairobi City Centre. The Centre is open Seven Days a week from 9.00 am to 5.30 pm where visitors have a rare opportunity to feed the giraffes in close proximity and for the daring ones to get a kiss. Guided walks are conducted within an expansive dry forest where rare birds can be sighted.

The Centre is open free of charge to learning institutions who have made prior booking during the week days as from 9.00 am to 12.00 pm. We however encourage donations from the visiting institutions which are directed towards the ecology trip programme for the underprivileged children in Nairobi. For more information kindly contact the Education Department using the contacts below.

Other Facilities include:

- Daisy Zoovenir Shop. Stocked with locally produced hand made products by self help groups
- Tea House
- Auditoriums for watching wildlife videos programmes
- Funding of conservation projects
- Ecology trips for underprivileged children
- Workshops on sustainable environmental conservation for school teachers.

Contacts:
A.F.E.W. - K. Ltd.
P. O. Box 13124-00509, Nairobi, Kenya
Tel: +254 20 9407 0404/202 5189
Cell: +254 734 890 952, 723 786 365
Email: info@giraffecentre.org
Website: www.giraffecentre.org

