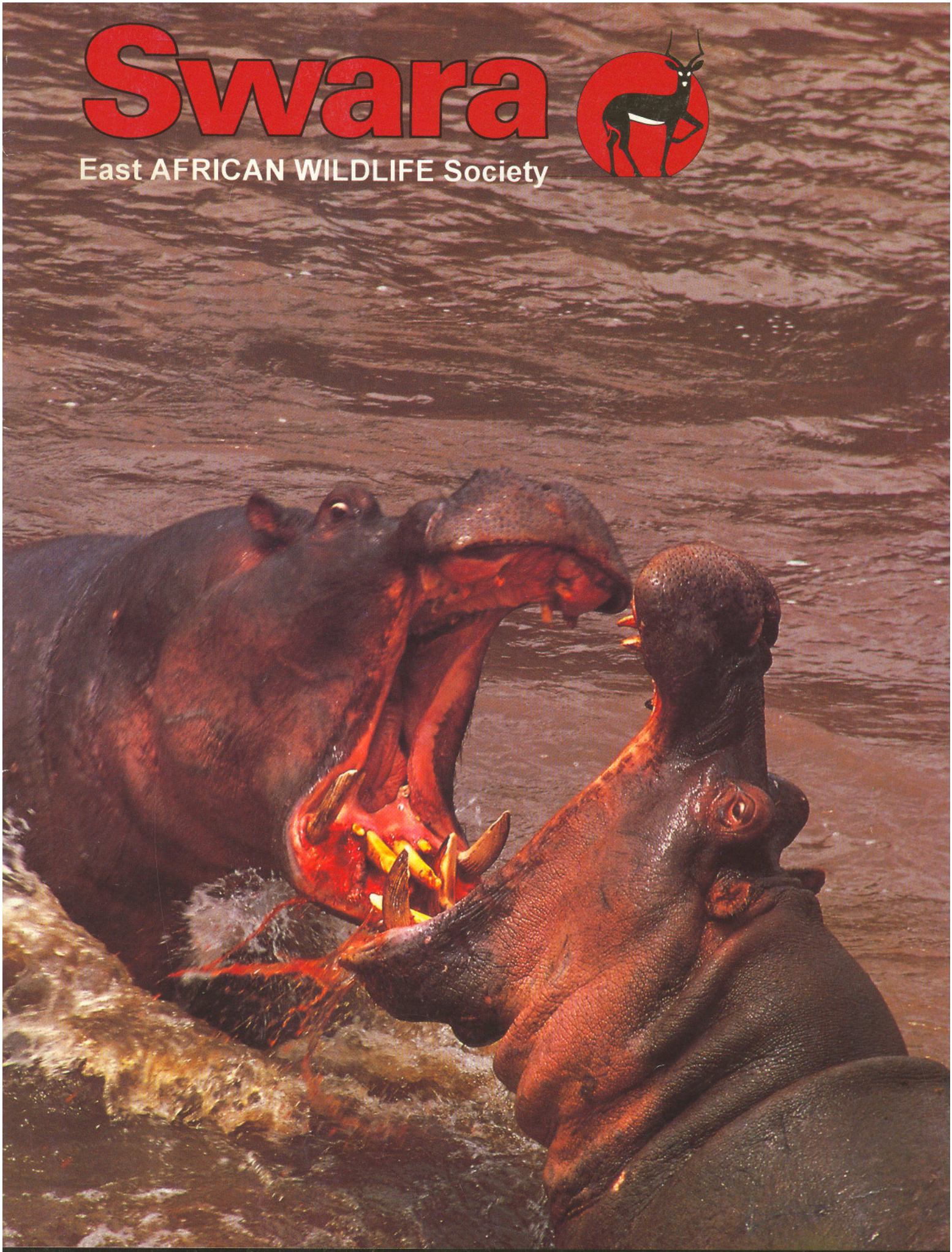
Swara

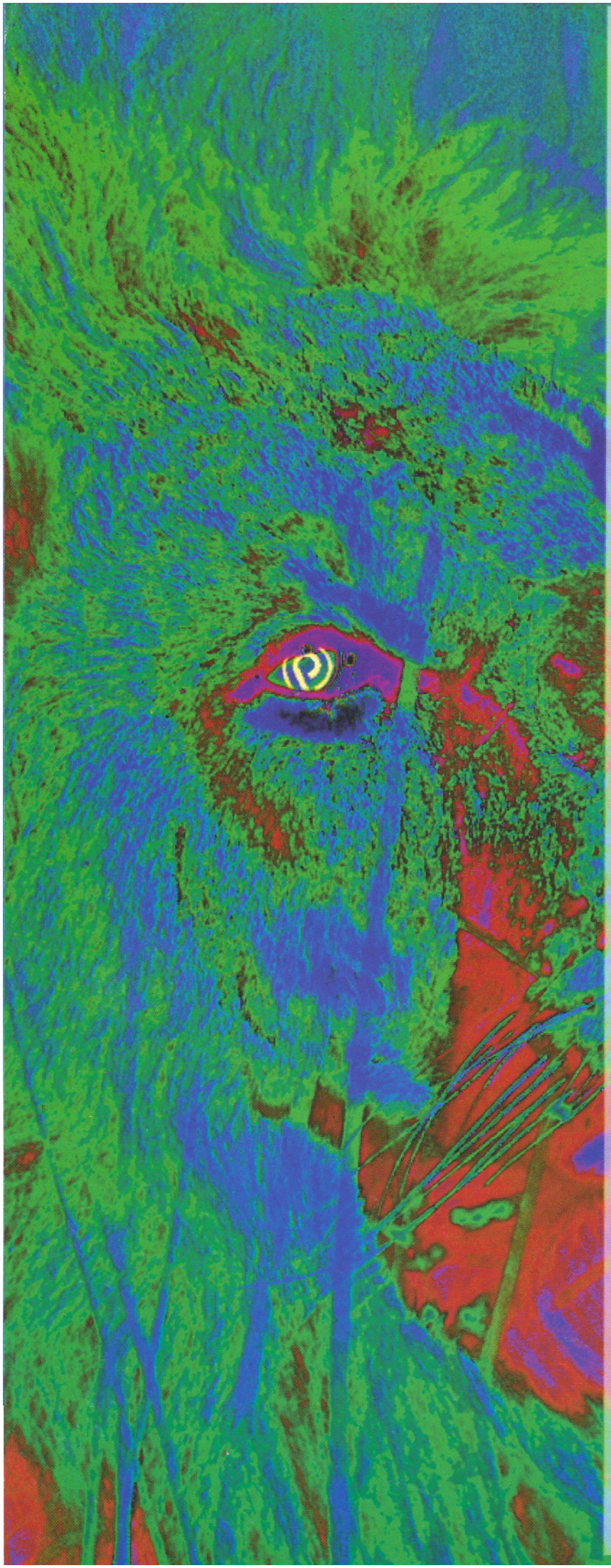
East AFRICAN WILDLIFE Society



1995
SEPT/OCT
VOL.18 NO.5

Inside:

Forests of Kenya & East Africa



NO need

AWARD WINNING BROCHURES

TO *look*

ANNUAL REPORTS

FURTHER

LOGOS

if

CALENDARS

you WANT

PHOTOGRAPHY

the best

PACKAGING

in DESIGN

DIRECT MAIL

and *repro*

ADVERTISING

YOU can

PRESENTATION SLIDES & OHPs

get it ALL

POSTERS

under

COLOUR SEPARATIONS

one roof

PREPRESS PRODUCTIONS

PO BOX 39676 NAIROBI KENYA
TEL: 442702, 442426, 442566 FAX: 442523

Swara

Magazine of the East African Wild Life Society

September/October VOL. 18 NO. 5

Cover photo: First Prize of the photography competition. Hippos fighting.

by Alan Binks.

The Impala antelope is the symbol of the East African Wild Life Society. Swara (sometimes pronounced Swala) is the Swahili word for antelope.

Editor: Louisa Lockwood.
Editorial Committee: Fleur Ng'weno, Esmond Bradley Martin, Jonathan Scott, Janet Njoroge, Daniel Stiles.
Advertising/Editorial Assistant: Jane N. Kariuki. **Graphic layout:** Louisa Lockwood.
Printing: Majestic Printing Works Ltd. **Colour Separations:** PrePress Ltd.
Advertising Sales: Advertising Department, Swara Magazine, P.O. Box 20110, Nairobi, Kenya. Tel:748170. Fax:746868.
Swara Offices: 2nd Floor, Museum Hill Centre, Museum Hill Road, Nairobi.
Swara Magazine: P.O. Box 20110, Nairobi, Kenya. Tel: 254-2-748170. Fax: 254-2-746868. E-mail: EAWLS@elci.gn.apc.org
Swara is a bi-monthly magazine owned and published by the East African Wild Life Society. The Society is a non-profit making organisation formed in 1961 by amalgamating the Wild Life Societies of Kenya and Tanzania (both founded in 1956). It is Society policy to conserve wildlife and its habitat, in all its forms, as a national and international resource.

EAST AFRICAN WILD LIFE SOCIETY

Patrons:
President of Kenya
President of Tanzania
President of Uganda

The East African Wild Life Society was formed in 1961 by amalgamating the Wild Life Societies of Kenya and Tanzania (both founded in 1956).

Elected Chairman: Dr Theuri Njoka

Chief Executive: Nehemiah K. Rotich

Vice-Chairmen: David Andere, Dr Cornelius L. Mollel, Professor Derek E. Pomeroy

Treasurer: Andrew K. Mbaya

Trustees: Professor Fredrick I.B. Kayanja, John Koitie, Albert Mongi, George Muhoho, Hilary Ng'weno and Hon William A. Ole Ntimama

Hon Vice Chairmen: Mervyn Cowie CBE ED
Michael Werikhe, James H. Webb

Elected Members of Council:
Dr Theuri Njoka, Nathaniel arap Chumo, Fleur Ng'weno, Prof Steven Njuguna, Dr Reardon Olubayo, Mary Rigby, Daniel Choge

Members of Management Committee:
Nehemiah K. Rotich (Chairman), Mwamba Shete (Secretary), Nathaniel arap Chumo, Andrew K. Mbaya

Members of Scientifc & Technical Committee:
Programme areas : Species survival, national parks and protected areas, conservation education, wetlands, marine and forest resources and water catchments.
David Mbuvi (Chairman), Dr Paul Kimutai Rono, Dr Francis Muthuri, Dr Micheni Ntiba, Wilberforce Ottichillo, Jaspet Agatsiva, Nehemiah K. Rotich, Mwamba Shete

Honorary Members:
M. Bishop, James H. Webb, Webb & Sons Incorporated, Toyota Kenya, Chas G. Allen Jr

Head Office
P.O. Box 20110, Nairobi, Kenya.
Tel: Nairobi 748170. Fax: 746868.
Email: EAWLS@elci.gn.apc.org

Director's Office, Swara and Administration on the 2nd floor, Museum Hill Centre, Museum Hill Road, Nairobi.

Society Shop and Membership Sales:
Nairobi Hilton Arcade and Museum Hill Centre.
Telephone: 331888 or 221780

Uganda Branch
P.O. Box 7422, Kampala,UGANDA
Tel: Uganda 233061,
Email: EAWLS@mukla.gn.apc.org

Uganda Branch Officials:
Dr Mary Okwakol (Chairperson), Andrew Cavell (Treasurer), Alex Muhwezi (Vice Treasurer), Robert Law, Jimmy Kiberu, Ray Victurine (Committee)

Netherlands Branch
Stichting EAWLS Netherlands
Burg. Verheullaan 59,
2396 EP Koudekerk a/d Rijn
NETHERLANDS.

Members are requested to address any queries to the Chief Executive.

REPRESENTATIVES WORLDWIDE

ARGENTINA
Miguel A. Tausig
Av Libertador 17066
1 643 Beccar
PCIA BUENOS AIRES

AUSTRALIA
Mr Stephen Cameron
1st Floor 259 Coventry Street
South Melbourne 3205 VICTORIA
A. B. Steel (Geoff)
P O Box 703 South Perth and 3/33 Park St.,
Como South Perth 5152
WESTERN AUSTRALIA
Mr Ralph B. Tyrell
Flaxton Mill Road, Montville,
QUEENSLAND 4560

AUSTRIA
Pro Dr. Hans Norbert Roisl
Uhlplatz 5/8
A-1080 WIEN

BELGIUM
John Rowland
11 Rue Faider
1050 BRUSSELS
Mr Robby Bolleyn
Dascottelei 95 Bus 7
B-2100 Deurne
ANTWERPEN

CANADA
Robert R. Taylor
944 Windermere Ave
Winnipeg
MANITOBA R3T 1A1
Lisa Corewyn
87 Woodstone Avenue
Richmond Hill
ONTARIO L45 1BG

DENMARK
Mr Bo Finn Poulsen
Worsaaesvej 21972 FREDRIKS
BERG G

EGYPT
Dr James Dinsmore
Director,
Sinai Wildlife Projects,
SHARM EL-SHEIKH

FINLAND
Mr Tom Kumlin
Munkkiluodonkuta 6A3
SF-02160 ESTOO

GREAT BRITAIN
Mr David Keith Jones
11 The Windings
LICHFIELD WS13 7EX
Mrs P. Stubbs
Sloane Square House
LONDON SW1X9LU
Mr Andrew C. Fentiman
83 Gloucester Place
LONDON W1H 3PG
Mr & Mrs Gill
Grass Roots Travel Ltd
8 Lindsay Road
Hampton Hill
MIDDLESEX

GERMANY
Mr Wolfgang Doring
Am Tarpenufe 55
D-22848 NORDERSTEDT
Mr Klaus Fenger
Zugspitzstr 65
82467 GARMISCH - PARTENKIRCHEN
Rolf Weber
Dieselstr. 67
D-42719 SOLINGEN - WALD
Jutta & Dirk Ohlerich
Schutzbaumstrasse 50
D-63073 OFFENBACH
Mr Paolo P. Sepe
Serengeti Safari Park
29693 HODENHAGEN

GREECE
Mr Solomon Githinji
6 Tychis St.
ATHENS 11253

HOLLAND
Mr J. W. Elzenga
Burg Verheullaan 59
2396 EP Koudekerk
A/D RIJN

IRELAND
Kieran & Carmiel Moylan
6 Beverley, Ovens,
Co. CORK
Mr David Bockett
30 Zion Road,
Rathgar
DUBLIN 6

ISRAEL
Abed Azab
P O Box 231
Ara 30025

ITALY
Mr Nicolao Giorgini
Via Pietro Calvi 19
20129 MILANO

JAPAN
Mr Mustuo Tsukazaki
2-6-11 Shibuya Shibuya-Ku
TOKYO 150

KENYA
Mr Mark Easterbrook
P O Box 208
MALINDI
Mr Suthar Kiran
P O Box 1000
MERU

MEXICO
Mr & Mrs Enrique Mondragon
Pancheco
Coahuila No 603
CELAYA GTO

NEW ZEALAND
Mr Bruce Gardiner
33 Willoughby
St PAEROA

NORWAY
Mr J. E. Johnsen
Munkerdvelen 41 A
OSLO 1 1

SOUTH AFRICA
Dr Ian Skilling
c/o Department of Geology,
Rhodes University,
P O Box 94,
6140 GRAHAMSTOWN

SPAIN
Mrs Lidia Sanchez Rugules
c/o Nutria 26
La Moralega
28109

SWEDEN
Mr Hugo Berch
Kungsgatan
261 31 LANDSKRONA
Dag Peterson
Pl. 3550, Salgutsered
S - 51020 FRITSLA

SWITZERLAND
Anton-Pieter Duffhuis
Rutistrasse 5
8903 Birmensdorf-Waldegg
Therese and Berhard Sorgen
Erlenward 30
8302 Kloten

TANZANIA
John Vincent Bennett
P O Box 1410
MOSHI
Mr & Mrs Olson Pettersson
P O Box 458
MOSHI

U.A.E.
Mrs E. A. Sheppard
P O Box 6000
DUBAI

U.S.A.
Mr K. Tucker
Chief American Rep.
P O Box 82002
San Diego
CALIFORNIA 92138

Trevor Fernandes
346 Rheem Boulevard
Moraga
CALIFORNIA 94556
R. Simmon
4705 North 68th Place
Scottsdale
ARIZONA 85251
Cheryl S. Kuck
2332 Village Green Blvd
Plant City
FLORIDA 33566
Michael Banks
1054 Kane Concourse
Bay Harbour Islands
FLORIDA 33154
Lawrence A. Wilson
3727 Summitridge Drive,
Atlanta
GEORGIA 30340
Mr Gordon Crombie
2725 Park Ave
Franklin Park
ILLINOIS 60131
Sanford Takiff
P O Box 546
Highland Park
ILLINOIS 60035
Isabelle Linklater
Assisi Animal Foundation
P O Box 143, Crystal Lake,
ILLINOIS 60039-0143
Gary K. Clarke
Private Bag 4863
Gage Centre Station
Topeka
KANSAS 66604 - 0408
Mr C. G. Allen Jr
Barre 01005
MASSACHUSETTS
Mr Ronald Bergman
13 Briarwood Road
Framingham 01701
MASSACHUSSETTS
Mr & Mrs Harry Ewell
200 Lyell Avenue,
Spencerport,
NEW YORK 14559-1839
Ms Barbara Meyers
29 Lyman Avenue
Staten island
NEW YORK 10305
Mr Peter Bakker
175 West 79 St # 1 OE
NEW YORK
Melanie Mehlenbacher
PO Box 430
Trumansburg NEW YORK 14886
Tel: 607-387-6292
Fax: 607- 367-7538
George F. Roosz
61 Forest Ridge Drive
Worthington
OHI0 43235
Neil M. Krebsbach
7875 Strawberry Hill Lane
Maineville
OHI0 45039
Evelyn Bloom
1067 NE Cochran Dr
Gresham
OREGON 97030
James Archer
855 Springdale Drive
Exton
PENNSYLVANIA 19341
Grant and Barbara Winther
11771 Sunset Ave N.E.
Bainbridge Island
WASHINGTON 98110

ZANZIBAR
Rebecca Browning
Zanbro Travel Consultants
P O Box 152

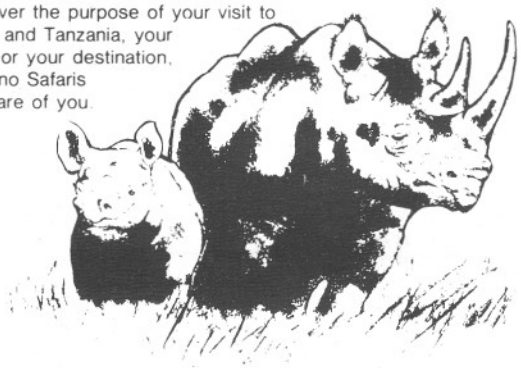
ZIMBABWE
Mr M. R. Drury
35 Cecil Rhodes Ave
Highlands
HARARE

Your Gateway to Adventure

Operating out of Nairobi in Kenya — the major jumping-off point for all safaris in Kenya and Tanzania — Rhino Safaris Limited, with the assured knowledge based on years of experience, provides the one-day excursion or ten-day safari that will meet your own exacting requirements.

We have built up a comprehensive transport fleet of buses and cars, self-drive or chauffeur driven, in an organisation geared to cope not only with our own very wide variety of scheduled tours, but also with specialised requirements of both large groups and the individual.

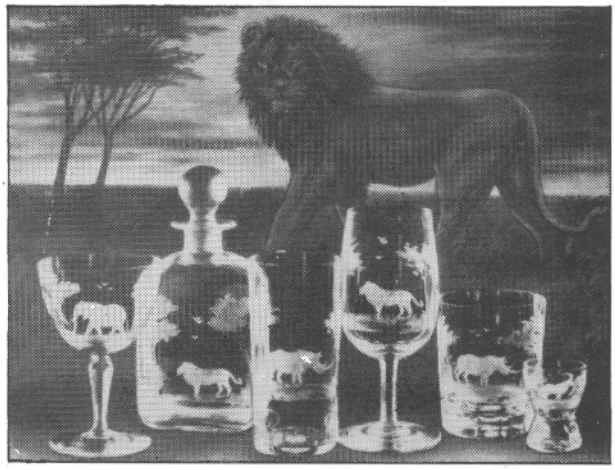
Whatever the purpose of your visit to Kenya and Tanzania, your route, or your destination, let Rhino Safaris take care of you.



rhino safaris ltd
safari & tour operators

Nairobi, Nairobi Hilton Bldg. P.O. Box 48023 Nairobi. Tel: 228102, 225419, 332372/3
Telex: 22801 Rhinocamp Fax: 338427
Mombasa, Oriental Building, Nkrumah Road P.O. Box 83050 Mombasa
Tel: 311755, 311141, Telex: 21287 Rhino Fax: 315743
Arusha, (Tanzania) Kudu Safari Ltd., Ngorongoro Building, Suite 215 A.I.C.C.
Tel: 057 8193/6065
London (England), 9 Galena Road, Hammersmith, London W6 0LX Tel: 081 7415333
Telex: 912037 Mrig, Fax: 081 7419030
Milan (Italy) Torre Velasca 20122 Milan Tel: 864 63062 8646 2272
Telex: 310585 Rinomi Fax: 863453

Rowland Ward's



BIG GAME HAND ENGRAVED CRYSTAL

INCLUDING

BIG GAME FISH SERIES

Please write to us for our illustrated catalogue (VI) which consists of our range of crystalware along with our prices.

ROWLAND WARDS

P.O. Box 40991, NAIROBI, KENYA TEL: 225509, FAX: 218154
On Standard Street behind the New Stanley next to Lonrho House

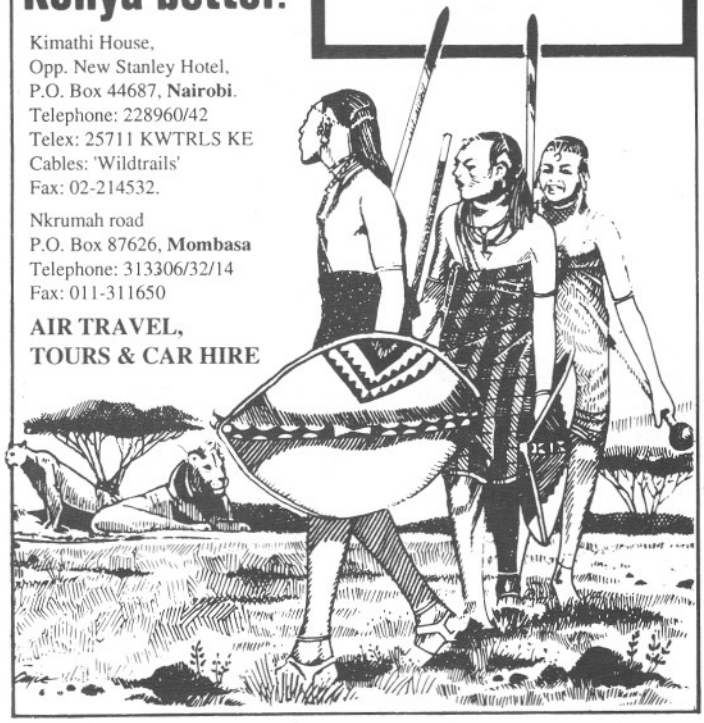
Follow the trail with us. The people who know Kenya better.

Kenya Wildlife Trails Ltd

Kimathi House,
Opp. New Stanley Hotel,
P.O. Box 44687, **Nairobi**.
Telephone: 228960/42
Telex: 25711 KWTRLS KE
Cables: 'Wildtrails'
Fax: 02-214532.

Nkrumah road
P.O. Box 87626, **Mombasa**
Telephone: 313306/32/14
Fax: 011-311650

AIR TRAVEL, TOURS & CAR HIRE



Black and white is good...

...but bring your colour film!

Bushbuck Adventures are specialists in real adventure photographic safaris. Expert guides to give you their personal attention; 4-wheel drive vehicles to get you to areas of great natural beauty and interest at a leisurely pace; private and secluded camps; professional safari cooks, they all combine to make **your** safari the safari of a lifetime. Send now for details.

Our personal attention is guaranteed

Bushbuck Adventures

Leaders in Ecotourism

Bushbuck Adventures Ltd. P.O. Box 67449, Nairobi, Kenya
Telephone: (254-2) 212975/6, 218478(O) 521554(H)
Fax: (254-2) 218735/212977 Telex: 22992Hosecs

KATO MEMBER

Hardwood Users

by Theresa C. Aloo, Department of Natural Resources, Egerton University.

FROM THE BEGINNING OF THIS century up to the late 1960s, *Podocarpus milanjianus* and *P. gracilior* were common construction species used in houses and in making boxes for the export of butter and other dairy products. This use resulted in the disappearance of podo forests. African pencil cedar, *Juniperus procera*, was also depleted in making shingles, posts and pencils. Podo and cedar are the only indigenous softwoods in Kenya. They are found in pure stands in certain areas, a rare occurrence for trees in the tropics. Lastly, mvuli, *Milicia excelsa*, was once the timber of choice for any furniture until the tree became rare due to over harvesting.

Tree harvesting for timber use tends to be selective in favour of large specimens with the best form and butt diameter. Consequently trees with the best genetic material for the said characters are removed, resulting in gene erosion.

In addition, over-exploitation of one tree species endangers other forms of life in the tree habitat. These include birds, mammals, amphibians, insects and micro-organisms as well as plants such as lianas and lichens. Thus consumers preferences for rare indigenous species contribute to the loss of the nation's biodiversity.

In Kenya the most abundant species are two widely-planted exotic conifers, cypress (*Cupresses* sp.) and pines (*Pinus* sp.). These two are now widely accepted in the construction industry, having successfully replaced podo. The same cannot be said of the furniture industry. Customers continue to ask for indigenous hardwoods in preference to the exotic softwoods. This encourages and sustains tree poachers.

It is my opinion that the customers preference for hardwoods is based on ignorance of the damage they are causing to indigenous forests. Furthermore, they may not be aware of the availability and suitability of the various alternative timbers. The use of the words 'softwood' and 'hardwood' might also be a contributory factor. These are technical terms used to distinguish between conifers and broad-leaved trees.

There are many hardwoods that have soft wood and vice versa. Moreover, the quality and strength of the timber does not depend on whether it is a softwood or a hardwood. The quality of the finished product will depend on many factors, among them the physical properties of the wood and the workmanship.

The strength of a timber varies with species and how well it is seasoned or dried. Well-seasoned timber is 40% stronger than green wood. Some timbers shrink and warp when seasoning. There are timbers that are easily attacked by insect borers and fungi. Some are difficult to cut because of their grain. An ideal timber is easy to work, and planes, nails, glues and polishes well. Use of unseasoned timber for furniture will invariably result in a poor end product. The wood may shrink and not glue properly, resulting in gaps developing in the finished piece.

As an alternative cypress is light, easy to work, seasons rapidly without warping or splitting and does not suffer from blue stain. In addition, the wood is quite strong. Mature Kenya-grown pine has similar properties but suffers from blue stain, easily chemically treated during seasoning.

Cypress forms 45% of Kenya's plantations, pines 31%, eucalyptus 10%, while the rest is made up of various indigenous species. Cypress and pines are readily available. Besides, it is possible to obtain knot-free pieces that make good furniture. Other wood species that are easy to obtain are *Grevillea robusta*, the silky oak, and the indigenous but easy to grow *Markhamia lutea*.

While the 1986 ban on felling and logging of indigenous hardwoods lasts, the Forest Department and interested NGOs should embark on educating consumers to use these species instead of the indigenous hardwoods. The ban on logging should be lifted only when:

1. An inventory of all indigenous forests is made.
2. Management plans for each forest are complete and used to plan logging operations.
3. A comprehensive study of each species is made so that only old trees are removed.
4. The price for indigenous timbers is high enough to reflect their value.
5. The wood harvested is reserved for high value articles.

If the above measures are taken, perhaps, our indigenous forests might be conserved while being sustainably used.

Demand for hardwoods is based on ignorance of the destruction made to the forests and of available alternatives.

The unsustainable use of any one species is inexcusable.

EAST AFRICAN WILD LIFE SOCIETY

CORPORATE MEMBERS

ABN Amro Bank
Abercrombie & Kent Ltd
Aberdare Educational Centre
AcaciaTrails Ltd
Acacia Travel Inc
Africa Safari Club
Africa Expeditions Ltd
African Fund for Endangered Wildlife (K) Ltd
Air Kenya Aviation Ltd
African Tours and Hotels
African Wildlife Foundation
African Wildlife Safari P/Ltd-(Australia)
Agricultural Finance Corporation
Albatros Travel and Safaris
Alfahd Ghater Tahsheen
Allison Joseph
Apollo Insurance Co. Ltd
Aquasearch Ltd
Archers Tours & Travel Ltd
Associated Battery Manufacturers
Atlas Copco (K) Ltd
Avon Rubber Co (K) Ltd
Bamburi Portland Cement
Barclays Bank (Kenya) Ltd
Barclays Bank (Uganda) Ltd
Baring J.
Bartkus J.
B.A.T. (Kenya) Ltd
B.A.T. (Uganda) Ltd
Big Five Tours & Safaris
Big Five Tours & Expeditions Ltd
Bishop A.J.
Block Hotels Ltd
Blue Marlin & Lawford's Hotels
Bookings Ltd
Borton Overseas
Brooke Bond (K) Ltd
Bruce Travel
Business Machines (K) Ltd
Caltex Oil (K) Ltd
Canon Assurance (K) Ltd
Carbacid (CO_2) Ltd
Charlet, A.
Cheli and Peacock Limited
Catering Levy Trustees
Chickadee Hill Farm Inc
Chicago Zoological Society (USA)
Coca-Cola Africa Ltd
Cogefarimpresit (T)
Columbus Zoo Park Association
Commercial Bank of Africa Ltd
C.M.C. Holdings
Condor Air Services
Contina Javier
Crown Berger Kenya Ltd
De Filippi, Carlo
Delamere Camps
Designplus Ltd
De Wilde Laurent
Diamond Trust of Kenya Ltd
Dipti (K) Ltd
Down A.W.A.
Dowse R.K.
East African Industries Ltd
E.A. Ornithological Safaris Ltd
East African Portland Cement
East African Storage Co. Ltd
East African Wildlife Safaris Ltd
EBAA Iron Inc.
Ecological Safari Co.
Elzenga J.W.
Ethiopian Wildlife and Natural History Society
Ethiopian Wildlife Conservation Organisation
Express Kenya Ltd
Express Mombasa
Farmers ChoiceLtd
Firestone (E.A.) 1969 Ltd
Food & Agricultural Organisation
Foundation De Bellerive (Switzerland)
Four Seasons Travel
Friends of Conservation
Feibjrghaus E.F.
Fritidsbus Temaresor
Fun Tours and Safaris Limited
Gajjar M.M.
Galaxies Travels Agencies
Gametrackers (K) Ltd
General Motors (K) Ltd
Garcia I Garcia
Glaxo East Africa Ltd
Global Safaris
Groth Wolfgang
Guerba (K) Ltd
Gunter Bolte
Hartsfield J.W.
Henniges A.
Heritage Insurance Co. Ltd
Higgins, Mr & Mrs
Hillcrest Secondary School
Hilton International
Highways Tours & Safaris
Hoechst East Africa Ltd
Hoope Adventure Tours Ltd
Hornor, Mrs J.W.
Hovmand Anne Bolette
Intensive Care Air Ambulance
Interact Ltd
International Distillers (K) Ltd
International School of Tanganyika Ltd
International Ventures Ltd
Isler Mr H.H.
Italian Cultural Institute
Ivory Safaris Tours (1975) Ltd
Jambo Safari Club
Japan Int. Co-operation Agency
Jet Travel Ltd
Journey Kenya Ltd
Jubilee Insurance Co Ltd
Kakira Sugar Works (Kampala)
Kapi Ltd
Katatumba B.
Kenkels Kurt
Kensta
Kenya Airways
Kenya Beach Hotel
Kenya Belgium Project
Kenya Breweries Ltd
Kenya Institute of Tourism
Kenya Wildlife Service
Kibo Safaris EA (TZ) Ltd
Kilimanjaro Safari Club
Kimbla (K) Ltd
Kobil Petroleum Ltd
Kobo Safaris
Kodak (Kenya) Ltd
Kumuka Expeditions
Kuoni Travel Ltd
Leisure Lodges Ltd
Lentz Gerald S.
Let's Go Travel
Library Museum of Comparative Zoology
Linner Dr.J.L.M.
Lion of Kenya Insurance Company Ltd
Lloyd Masika Ltd
Longman (K) Ltd
Lonrho Hotels (K) Ltd
Luxury Tours and Travel Ltd
Masai Mara Sopa Lodge Ltd
Mayfair Court
Micato Safaris
Mombasa Academy
Monsanto Central African Inc.
Motor Mart Group Ltd
Mpata Investments Limited
Murere Educational Centre
Mweka Wildlife College
Nairobi Educational Centre
Nairobi Safari Club
National Industry Credit
National By-Products
National Environmental Secretariat
National Outdoor Leadership School
NCR Kenya Ltd
Nolan-Neylan K.
Offbeat Safaris Limited
Oserian Development Co. Ltd
Panafrican Paper Mills
Papyrus Tours
Patel Dr A. R.
Paulson Ms. E.
Payless Car Hire and Tours Ltd
Perry Mason Safaris Ltd
Peregine Travel
Phoenix of East Africa Assurance Co. Ltd
Photomap (K) Ltd
Piglia Vanzetti M
Pollman's Tours & Safaris Ltd
Pouw J.G.
Prestige Hotel Ltd
Prestige Safaris Ltd
Price's Tax Service
Private Safaris (EA) Ltd
Private Safaris Zurich
Provincial Insurance Co.of EA Ltd
Pyles Lumber Co Inc.
Rajair Travel & Tours
Reckitt & Colman
Repro-Scan Kenya
Rhea Dr.M.J.
Rhone-Poulenc Kenya Ltd
Rotel Tours
Rosenberg R.P.
Roy Safaris Ltd
Ruia R.R.
Rudolf Bacher
Safari Beach Hotel
Sadolin Paints Lts
Safaris Unlimited (A) Ltd
Sarit Centre
Sarova Hotels/Across Africa Saf.
Saunders Mr R. B
Savuka Tours and Safaris
St. Lawrence University
Schulz J.
Scientific Consultant Ltd
Scorpio Enterprises Ltd
Securicor Kenya Ltd
Serengeti Safari Lodges Ltd
Severin Sea Lodge
S.G.S.(K) Ltd
Shelly Beach Hotel
Shell Uganda Ltd
Sise Company Ltd
Skyteel
Solio Ranch Ltd
Sona Industries Ltd
Southern Cross Safaris Limited
Special Camping Safaris
Stanbic Bank (Uganda) Ltd
Stokes Kennedy Crowley Services Ltd
Sun and Sand Beach Hotel
Symbion International
Tamarind Management
Tanapa Community Conservation Services
Tanzanian Cattle Products Lt
Terjersen B.
Text Book Centre Ltd
Textprint Ltd
The Ark
The Paper House of Kenya Limited
Transworld Safaris Ltd
Trichem Ltd
Tsavo Educational Centre
Turtle Bay Beach Hotel
Unga Group Ltd
UNIGHIR Ltd
United Finance Ltd
United Insurance Ltd
United Millers Ltd
United Touring Company Ltc
University of Nairobi Library
Vacational Tours & Travel
Valla Mrs M.
Van Den Abbeele De Nil
Van Leer East Africa Ltd
Vezia R.
Vikings Ltd
Vogue Tours & Travel
Voyage Special
Wanderlust Safaris Ltd
Walt Disney Imagineering
Webb J.H. Jr.
Wienand M.P.
Wigglesworth Exporters Ltd
Wildlife Safari - (Kenya)
Williamson (K) Ltd
Worldin Tours and Travel L
WWF (UK)
Yare Safaris Company Ltd
Zanbro Ltd.

10% discount when Corporate Members advertise in *Swa*

Swara for Members

to help conserve wildlife in East Africa !

Founded in 1956, the East African Wild Life Society has safeguarded and promoted conservation and sustainable management of wildlife resources and their natural habitat in East Africa. Our belief is that this heritage should be preserved not only for its own sake but also for the benefit of present and future generations.

EAWLS promotes conservation awareness and popular understanding in the rural and coastal areas; sponsors projects and contributes directly to the purchase of materials such as vehicles, boats, radios and equipment for use in the field. Working with governments, non-governmental agencies, local communities, members and supporters throughout the world, EAWLS is backed by a competent Scientific and Technical Committee.

Members of the East African Wild Life Society receive:

- Six issues of *Swara* every year
- A Membership Card with a discount of 10% on all cash purchases over 100/= in our Society shops
- Access to the library in our offices at the Museum Hill Centre
- A discount with select tour companies and hotels in East Africa
- The *African Journal of Ecology* is only £42.50 or US $79.50 to Society Members (normal price is £156.50 or US $257.00)
- A free car windscreen sticker
- The satisfaction of helping conservation.

On display are some of the East African Wild Life Society items that we sell in our shops.

The East African Wild Life Society is a non-profit making organisation. All proceeds go directly to wildlife conservation projects.

Please affix stamp here

To :

The East African Wild Life Society.
Museum Hill Centre,
P.O. Box 20110,
Nairobi,
Kenya,
EAST AFRICA.

Please do not enclose cash

NEW SUBSCRIPTION RATES

Mark 'X' on your choice

SPECIAL MEMBERSHIP

Individual

	East Africa	Rest of Africa	Europe	USA, Asia, Australia, etc.	Canada
	Kshs	US$	Stg.£	US$	C$
Contributor	2500/=	75	50	85	120
Donor	3000/=	90	70	100	140
Sponsor	5000/=	150	130	200	280

Corporate

	East Africa	Rest of Africa	Europe	USA, Asia, Australia, etc.	Canada
	Kshs	US$	Stg.£	US$	C$
Contributor	15,000/=	350	250	400	560
Donor	20,000/=	400	300	500	700
Sponsor	50,000/=	500	500	750	1000

See Society Highlights on page 14 for an explanation of the new rates.

ORDINARY MEMBERSHIP

Individual

	East Africa	Rest of Africa	Europe	USA, Asia, Australia, etc.	Canada
	Kshs	US$	Stg.£	US$	C$
Surface	1000/=	48	35	50	85
Airmail	N/A	70	45	75	130

Corporate

	East Africa	Rest of Africa	Europe	USA, Asia, Australia, etc.	Canada
	Kshs	US$	Stg.£	US$	C$
Surface	10,000/=	280	190	300	490
Airmail	N/A	320	195	350	555

DONATION

Project Focus ☐

Save the Rhino Fund ☐

Initiated in a spirited attempt to bring the rhino back from the brink of extinction, the fund is primarily for fencing Kenya's rhino sanctuaries.
Other projects have included research, translocations and monitoring.

The African Elefund ☐

Started in response to declining elephant numbers the Elefund has involved active lobbying, research and elephant census as well as equiping anti-poaching teams.

General Conservation Fund ☐

To date more than 300 wildlife and environmental research projects have been funded as well as conservation education and species monitoring programmes. The fund is run by the Scientific and Technical Committee.

Tell me about Corporate Membership ☐
Tell me about your giftshop products ☐

MEMBERSHIP APPLICATION

Please enrol me as an Ordinary Member /Accept my Donation/Both (delete as applicable)

I enclose my cheque/money order for : ☐
Payable to the **East African Wild Life Society** or please collect by:

AMERICAN EXPRESS Expiry Date_____
BARCLAYCARD VISA Expiry Date_____
Card No:_____

OR: Please send me a BANKERS ORDER FORM ☐

NAME:_____
ADDRESS_____
_____
_____Post/Zip Code_____
DATE_____SIGNATURE_____

Society's code number will be entered below: ☐☐☐☐☐ ☐☐☐ ☐ ☐☐☐☐ ☐☐
Send Swara by: Surface / Airmail

Please enrol my friend as an Ordinary Member.

NAME_____
ADDRESS_____
_____
_____Post/Zip Code_____
DATE_____SIGNATURE_____

Society's code number will be entered below: ☐☐☐☐☐ ☐☐☐ ☐ ☐☐☐☐ ☐☐
Send Swara by: Surface / Airmail

Competition Winners . . .

2nd

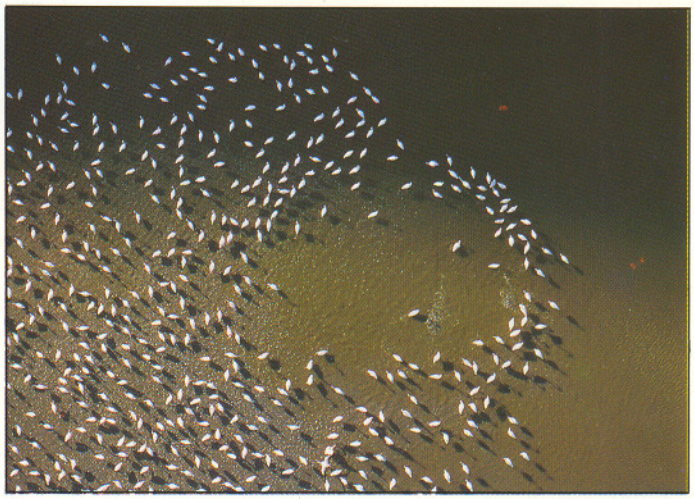
First Prize went to Alan Binks, whose winning photograph is on the cover.

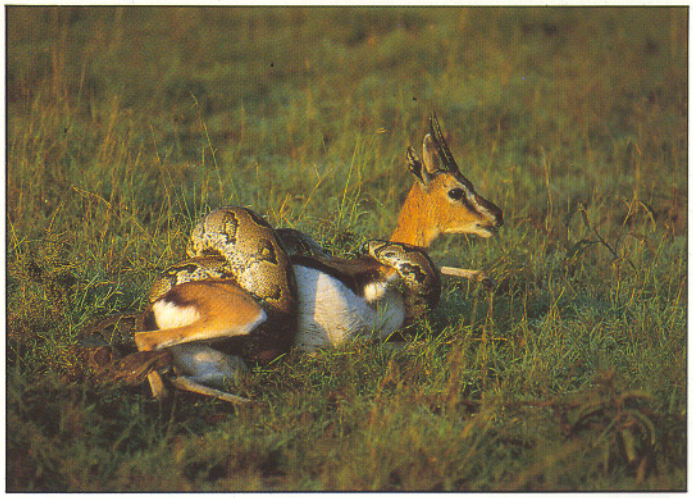
Second Prize, left, is of the Ngorongoro Crater, also by Alan Binks.

3rd

Third Prize, left, is an African fish eagle by Peter Blackwell.

. . . and Runners-Up!





No Easy Task

by Dave Richards, Jonathan Scott and Louisa Lockwood

FIRST OF ALL WE SHOULD LIKE TO say thank you to everyone who entered the first *Swara* photographic competition. We received entries from all over the world, from places as far away from East Africa as Tucumon in Argentina, Skokie in Illinois, Edolo in Italy and Alkmaar in the Netherlands. The majority of these entries were taken on safaris in Africa. Despite the breadth of the entries almost half of them were from within East Africa.

The response was encouraging from the point of view of the amount of interest generated. However, in the final analysis the judges felt that the overall quality of entries was a little disappointing. Photographs were judged for image sharpness, composition and colour. It seemed that a large number of entries had been taken on poor quality film stock or had been badly processed.

The photographs that did stand out gave a lot of encouragement for future competitions. The subjects were varied and some were very original - from a gazelle locked in a python's embrace, to a wildebeest mid-jump, a half moon in the bluest of skies, ivory alight and a bronzed elephant-rubbed bark.

THE WINNERS

First Prize - Hippos fighting

The cover of this *Swara* is the first choice, taken by Alan Binks from Nairobi. It is a dramatic photograph illustrating the raw power of two bull hippos fighting. The impact would have been that much greater if it had been possible to take it from a lower angle, and the branch in the foreground could have been avoided. Nevertheless it is certainly one to remember.

Second Prize - Ngorongoro Crater

The second prize also goes to Alan Binks but for a very different type of photograph; a beautiful, well-composed landscape that captures the dramatic quality of the sky and a sense of space when looking across the crater floor.

Third Prize - Fish Eagle

This was taken by Peter Blackwell, who works at Siana Springs, Kenya. It is a timely picture, nice and sharp and well-composed with plenty of space for the eagle to 'move' into. Again, it could have been improved by being taken from a lower angle, and the shadow across the bird's head does detract a little from the overall impression.

RUNNERS-UP

The python's deathly embrace by Peter Blackwell.
The improvement to this photograph would have been to ensure that the python's head was in focus, especially as that is the most important part of the action.

Flamingos at Lake Magadi by Nicolas Granier.
An original and attractive picture that the judges felt would have been improved without being split by the cloud shadow.

Secretary Bird by Wolfgang Braunstein.
A well-focused and dramatic backlit shot that could have been strengthened with more light from behind.

HIGHLY COMMENDED

Sunset with a giraffe silhouetted and another sunset with wildebeest kicking up dust, both by **Fernando Quevedo.**
A young elephant rubbing its head against an adults leg and two lions playing in a tree, both by **Wolfgang Braunstein.**
Cobra about to strike, by **Peter Blackwell.**
Ngorongoro Crater, a dung beetle digging and an elephant trunk, all by **Alan Binks.**

IN CONCLUSION

As the 15 photographs we have mentioned here were taken by only five different photographers, it seems that only a small proportion of amateur photographers are really aware of the results they will achieve.

It was not easy to chose the winners and we are sure that opinion amongst the membership will be divided, judges have their individual preferences for a picture and can only be technically objective - so enjoy the pictures that you see here and enter again next time!

We hope that this first competition will encourage more and more of you to take photographs of an increasingly high standard and to continue to participate in the East African Wild Life Society's activities through *Swara*.

Forest Conservation in East Africa

Story by Guido Broekhoven and Gideon Gathaara

This article is an introduction to the specific forests and their conservation status as discussed in this issue of Swara.

EAST AFRICA IS PARTICULARLY famous for its savanna ecosystems and their big herds of large mammals. Yet, the region also harbours a remarkably wide variety of natural forests, supporting a wealth of biological diversity and endemism among plants, birds and mammals.

The East Africa forest types include:

Lowland rain forest which occurs in Kenya and Uganda, and as a component of some relic grassland-forest mosaics in Kenya and Tanzania, and also as small remnants of coastal forest in Kenya and Tanzania.

Mountain rain forest and submontane forest are found in all three countries. The submontane forests of the Eastern Arc in Tanzania and Kenya have long been famous for their many rare animals and plants and particularly high rate of endemism.

Dryland forests and woodlands which are found throughout the region.

Swamp forests and mangroves. Swamp forests occur in Tanzania and Uganda and mangroves are found in patches all along the coastline of Kenya and Tanzania. It is now generally accepted that the forests of East Africa fulfill many functions at local, national and international levels: in addition to being the source of wood and non-wood products, they provide an irreplaceable habitat for many plant and animal species, protect watersheds, are part of the social and cultural life of many people and influence local climates.

This article will look at some of the major issues in relation to the management and conservation of the region's forests. The articles by Butynski about the Tana Delta (page 28) and Bennun about the Arabuko Sokoke Forest (page 22) will describe in more detail some specific forests and their biodiversity.

MAIN ISSUES IN FOREST CONSERVATION

In the 1980s, it became clear that there was increasing need for much greater emphasis and investment of both human and financial resources in natural forest management and conservation. Several initiatives were designed and implemented to this end. Tanzania was among the first countries in the world to develop a *Forest Action Plan* (in 1989), Kenya and Uganda followed with the *Kenya Forestry Master Plan* and *Uganda Forest Rehabilitation Programme* respectively. These programmes aim at developing a long term strategy for the management of national forest and tree resources and they all attach considerable importance to improved conservation and management of natural forests.

The implementation of these plans and other forest conservation initiatives in the region have had varying success to date and fierce debate continues about the principles underpinning appropriate forest management and conservation. Some of these issues will be reviewed in the following sections.

HOW MUCH FOREST DO WE NEED?

The status of forests in East Africa

All three East African countries share the problems of small, fragmented areas of forest under extreme pressure of encroachment and exploitation. The remaining forest patches make up less than three percent of the land area in the region and these forests are often heavily degraded. It has been suggested that the forest cover in East Africa was much more extensive some millennia ago. Yet, precise information on the history of the forest cover in the region is lacking.

Although it is difficult, if not impossible, to determine how much natural forest cover a country or region needs, it has been generally accepted that the few remaining natural forests in East Africa are too precious to lose. Yet, even without delving too deeply into the discussion about the definition of forests, natural forests, forest cover, etc, it is clear from the information presented in Table I and from other sources that there is still a reduction of the area of natural forest taking place in the region. This reduction is due to clearing for agriculture and settlement, with mining, small holder encroachment and urban development having impacts in localized areas. The article by Lockwood (page 18) describes in detail the process of deforestation and forest degradation on Mount Kenya.

The reduction of natural forest is partly compensated for with an increase in tree cover on farm land and in plantations in some areas of the region. Yet, this type of tree cover does not offset the threat to biodiversity, which accompanies the decrease of natural forest area.

Forests in East Africa can be found on private land and on government land. Forests on government land are managed by local authorities (district forest reserves or trust land) or by the central government (forest reserves). Some decrease of the area of natural forest is due to excisions from forest reserves. A recent study by IUCN about trends in forest cover in Kenya concluded that *'in spite of intentions stipulating that forest excisions* [from government forest reserves] *should cease, degazettement continues, and the forests that are excised are often significant in terms of biodiversity or in size, an important criterion in the maintenance of biodiversity.'* The study furthermore concluded that since 1986, Kenya has lost about 15,000 hectares of natural forest due to excisions.

Above; Log being 'pit sawn' in Kakamega Forest, Western Kenya.
CREDIT: Joseph Mutengela, KIFCON.

WHOSE FORESTS?

Forest management strategies, ownership and access rights

Much of the present debate about forest conservation centres around who should manage the forests. Government forest reserves have been established since the beginning of this century and are managed by the government, originally to supply industrial forest products and to generate revenue. Increasingly forests are seen as also being valuable for the conservation of biodiversity and for catchment functions. Yet, these forests were, more often than not, used extra-legally by people living in and around them. When the central government took over the control of forest resources local forest management arrangements, which had existed under traditional tribal law, were effectively weakened. Thus, the forests often became open access areas for local people and forest use became based on a *free for all* situation: no longer controlled through local forest management arrangements, local communities started to overuse the forest. This problem was further compounded by the fact that forest departments generally do not receive sufficient funds for forest conservation, since natural forests that do not produce timber are often seen as liabilities rather than assets.

The challenge for modern forest management is to reconcile the different interests in the forest (local, national, international), in particular the often overlooked local interests, and to develop long term and sustainable management strategies which meet the needs of all sectors of society.

The first step in this process is to *identify the groups that have an interest in the management of the forest.* These groups include local communities living around the forests and using its products, and both government and non-governmental institutions. The next step is to enhance the commitment of these interest groups in the conservation and management of the forest, through a carefully designed sharing of the authority and responsibility for the management of the forests. This is particularly relevant now that, due to economic reforms and Structural Adjustment Programmes, the role of central government becomes more focused on policy development and the responsibility for implementation is devolved to districts and other decentralized structures.

These shared management arrangements must take into account the local, national and global functions of the forest. A recent review of literature by WWF and IUCN in relation to local participation in natural resource management showed that in this respect it is important to take into account the following questions:

Do local people get sufficient incentives to participate in the management of the forest?

Are the benefits not too far in a distant future and do benefits sufficiently compensate for sacrifices associated with changed use of forest products and benefits?

Is there sufficient guarantee that the use of forest products will continue to be allowed in the future to enhance serious participation?

Do all groups involved have an adequate role in decision making, making sure that policies and proposals are realistic and desirable?

The challenge for conservationists is to accommodate the socio-economic needs (demand) of the people that use forest products with the ecological constraints (supply) of the forest. This is often done through the promotion of sustainable use of forest products by local communities and the promotion of alternative products for forest products.

The article by Hoefsloot and Onyango about Mount Elgon (page 33) illustrates an attempt to do just that: to improve the conservation of important forest sites through community participation. Similar initiatives are also implemented in Kenya (eg: on Mount Kenya) and in Tanzania (eg: in the East Usambaras Mountains). The goal of these projects,

The few remaining natural forests in East Africa are too precious to lose.

sometimes referred to as *Integrated Conservation and Development Projects* (ICDPs), is to manage the forest and its biodiversity in a sustainable way through a combination of local protection activities, sustainable use of forest products, and the provision of alternatives for forest products that are overharvested.

Table 1 Forest Cover and Annual Changes

Natural Forest (in 1,000 ha)	Kenya	Tanzania	Uganda
Status (1990)	1,187	33,555	6,346
Annual Deforestation (1980 -1990)	7	438	65

Source: FAO 1995

HOW TO MANAGE FORESTS?

Forest conservation beyond projects

There are many indirect factors which slowly and inexorably may be influencing the future of the natural forests and which are undermining their sustainable use. Demographic changes, such as expanding populations and migration; rapidly changing social and cultural circumstances; macro-economic reforms; conflicting policies and land-use trends are examples of such factors. How can these broader issues be addressed?

The conventional approach to addressing forest conservation problems has been through implementation of special projects focused on a particular 'problem' and generally implemented through a single line agency (eg: a forest department). However, it is being recognized that many forest management problems require a range of responses that complement and integrate the work of various agencies at different levels (regional, national and local) as well as non-governmental agencies and others. There is a need to think beyond conventional projects to new project structures designed to link together all actors in relation to the broader development issues. Cooperation is necessary at different levels and between different sectors of society. Not only at the local level with the people that use forest products, as discussed above, but also at regional and national levels:

Regional Cooperation

Some forests in East Africa are shared by two countries. Examples include the Mount Elgon Forest, shared by Kenya and Uganda, and the Sango Bay - Minziro Forest complex, shared by Uganda and Tanzania. Proper management and conservation of these forests will need cooperation between the countries involved. Other issues where cooperation will be beneficial include, amongst others, monitoring of timber trade (See Marshall's article on page 24) and capacity building for forest conservation.

Cooperation at national level

Cooperation in the development of policy, legislation and planning between different government sectors and between the government and private and non-governmental institutions is required to address the complex underlying causes of the growing human pressures on the forest resources. *Planning* should be aimed at identifying, analyzing and understanding these underlying causes and on determining how these can be mitigated. Forests of high biological diversity need to be identified and their management integrated into a broader geographical, intersectoral and long term perspective.

OUTLOOK

Several promising initiatives are being implemented along the above lines by different sectors of society, including government and non-governmental organisations. Pilot projects are underway which explore new approaches to forest conservation and which build on local structures and management systems. Yet, much still remains to be done to create the enabling environment to exploit the potential of these initiatives and to stop further forest degradation and loss of forest cover.

SOCIETY *highlights*

Many Thanks!

Recent Donations

The Society wishes to thank all those that have made donations to the organisation. Each donation we receive, whatever size, boosts our conservation efforts and we would like to encourage such support.

The following are individuals who have contributed more than US $100 in the past few months. Mr Roche, Mr Roode, Mr Durand, Mr Douglas Aja, Mr Gerald Lentz, Mr Robert Sounders, and Mr John Cederholm. A special appreciation goes to Mr Paolo Sepe, our representative in Germany, who supports the Society each month with a donation of about US $500.

Membership Forums

Debates and Lectures

The Society plans to organise membership forums more frequently from now on; the hosting of the debate on 'Consumptive Use of Wildlife' in early August was the first one.

The next forum being held is an illustrated lecture about the Arabuko Sokoke Forest by Dr Bob Drews from the California Academy of Sciences in the United States. It will be on the 4th October 1995 in the Auditorium at the National Museums of Kenya.

Wanted

Information on Kenya Forests

The former coordinator of the Kenya Indigenous Forest Conservation Programme is planning to edit an illustrated and easily readable book about Kenya's forests.

It will be intended for the layman, not for forest specialists. The editor is seeking information/illustrations which might enhance the book's general interest. In particular personal anecdotes, historical recollections (esp. of colonial foresters), humourous items, songs or poems relating to forests would be welcome.

Please contact:

Dr Peter Wass,
P.O. Box 71943, Nairobi.
Tel/Fax:+254-2-520566.

Debate Summary

Consumptive Use Of Wildlife Outside Protected Areas

EVER SINCE THE KENYA WILDLIFE Service Director, Dr David Western, made his call for the lifting of the hunting ban of 1977, a huge amount of concern has been voiced regarding the future of Kenya's wildlife resources. His announcement created a furore amongst conservation circles and Dr Westen will need to do a lot of convincing for his plan to be accepted.

It was in light of the above that the Society felt it appropriate to offer an opportunity for discussion in which various points of views could be raised.

Amongst the guest speakers were Dr Western, Dr Theuri Njoka the EAWLS Chairman, Ms Cynthia Moss the Director of the Amboseli Elephant Research Project, Mr Joe Cheffings a professional hunter and owner of a safari company, Colonel Joseph Nguru the Chief Executive of the Kenya Association of Tour Operators, Mr David Hopcraft an experienced game rancher, Mrs Daphne Sheldrick the founder of the Tsavo Elephant Orphanage and Mr Kokai Oloitiptip the Chairman of the National Association of Landowners in Kenya.

The debate was chaired by Mr Hillary Ng'weno, a trustee of the EAWLS, who is a professional journalist and publisher. He was the former chairman of the Kenya Wildlife Service.

Participants in the well-attended forum included various national and international conservation organisations, large scale ranchers, local community representatives, safari industry representatives, members of the Society and general participants.

In summary, Dr Western's main concerns are to resolve the human/wildlife conflict, to find a secure place for wildlife outside national parks and reserves and to maximize use of wildlife. His views were supported by Mr Oloitiptip, Mr Cheffings and Mr Hopcraft. Colonel Nguru was very concerned that the term 'consumptive utilization' was disguising a long term objective to introduce sport hunting, which he believes would be a negative move for the conservation of Kenya's wildlife. Ms Moss and Mrs Sheldrick supported his views.

Dr Njoka highlighted the Society's apprehension about any form of consumptive utilisation for the moment.

Commenting on the debate, the Minister for Tourism and Wildlife, Mr Noah Katana Ngala, stated that the Kenya Government's ban on hunting still stood, as honoured by CITES. However, he added that the Government's position would be made known once the debate on the issue is exhausted.

Facing Forest Dilemmas

Compiled by Louisa Lockwood

Indigenous forests cover a total area of 1.24 million hectares. They are currently declining by 5,000 hectares per year.

Plantation forests cover 170,000 hectares, of which a large proportion has been harvested but not replaced.

LESS THAN 3% OF KENYA'S TOTAL land area today is gazetted forest. The term forest includes not just the closed canopy habitat but also glade areas and plantations, so the actual area of indigenous forest is small indeed. Forested land is under severe pressure from illegal cutting and new agricultural settlement, amongst other demands.

By looking briefly at the following forest areas the problems experienced by the majority of forests in Kenya are made clear.

Kiambu Forest

A small forest that lies 15 kilometres north-east of Nairobi City, Kiambu is important for conservation, water catchment, indigenous forest products and services and, as the urban area continues to expand, increasingly important for recreation. However, the forest has been the cause of an amount of controversy as 28 hectares were passed by the Ministry of the Environment for degazettment. One of the Members of Parliament, on behalf of concerned landowners and the local community, brought the case for the protection of the forest to court and the degazettment process was halted for some time. Recently the Minister for the Environment published a legal notice stating that the 28 hectares were indeed to be degazetted.

The Mau Forest

This forest has provoked an even greater amount of controversy. The Mau Forest complex contains 320,000 hectares of indigenous forest, the largest block, although not contiguous, of natural forest in Kenya. There are pockets of the Okiek Ndorobo community who live in the depths of the forest, as they have done since time immemorial. There are an estimated 3,000 households living within the forest reserve, and a further 800 living in temporary settlements near forest stations. A carefully prepared proposal was put forward by the Kenya Indigenous Forest Conservation Programme to resettle these forest dwellers on the fringes of the forest near to their ancestral areas, where they could continue to act as forest guardians. However, this proposal for the south-western Mau Forests has not yet been implemented.

Likia, Sururu, Nessuit and Meriashoni of the east and south Mau complex were areas of exotic plantations of mainly cyprus that are now being clearfelled. So far an area of over 25,000 hectares is in the process of being sub-divided for plots and marked by fences; but there are some pertinent questions that need answering. Have the Okiek Ndorobo forest dwellers left their patches within Mau forest and if not, as would appear to be the case, who has the land been given to? If some or all of the Okiek Ndorobo are receiving land, what is being done to ensure that they do not sell it and return to the forest? There are also concerns about the timber cut from the exotic plantations; is it being sold? If so, what level of revenue accrues and where is that potential revenue going?

Well-managed plantations in Kenya have the purpose of supplying wood for the country and reducing pressure of demand on the indigenous trees for construction timber, fuel and transmission poles. There is no guidance for the conservation of cut plantation land, which once settled provides no barrier whatsoever to the indigenous trees.

Mount Kenya and the Aberdares Forests

These are under extreme pressure from cultivation by the extensive shamba system and illegal destruction of the indigenous trees, whose hardwoods are used for commercial purposes, more often than not with the collusion of the foresters themselves.

Other problems include over-grazing, over-cutting (both licensed and illegal), fires and animal damage in adjacent plantations and farms. (See page 18 of this issue.)

There is an on-going project in the Aberdares for an animal-proof fence for the national park and the forest reserve to reduce the significant damage done to forest adjacent farms and people by wildlife. This is being done in collaboration with the local communities who will continue to have access to the partially fenced land for grazing, water, fuelwood and posts.

The Gatamayu Forest

Gatamayu is important for water catchment, biodiversity of fauna, flora and habitat and recreation. However again, all these functions are being

negated by the momentum of destruction of the indigenous trees. This has persistently been raised by the public and key conservationists but with very little apparent effect. Information on the ground indicates that local communities contribute to the patrolling and guarding of the forest against illegal logging, but only during daylight hours of the week. The loggers operate throughout the weekend and during most nights. What remains to be seen is whether those on the ground are working in collusion with the loggers or not.

Kakamega Forest

Kakamega has the highest biodiversity of any forest in Kenya and it is a remnant of the once vast tropical rainforest that covered Central Africa. It is subject to extensive illegal grazing, pressure from the shamba system, extensive tree poaching, population pressure, gold mining, wildlife snaring and charcoaling. Further support should be sought to effect sustainable protection of the forest whilst also regulating effective management and conservation of the ecosystem with the communities for shared benefits.

Ngong Road Forest

This little known but beautiful patch of indigenous forest lies on the Ngong Road between Kibera and St. Francis Church. The bypass road, originally planned to cut through the middle, will now be diverted round the edge. But other threats remain - proposed excisions, illegal tree-cutting and debarking, dumping of rubbish, theft of plants and soil. The Ngong Road Forest Sanctuary Trust is negotiating with the Forestry Department on a proposal for a scheme to conserve this forest by establishing a sanctuary and raising revenue to develop it as an attraction for tourists and local visitors and for research.

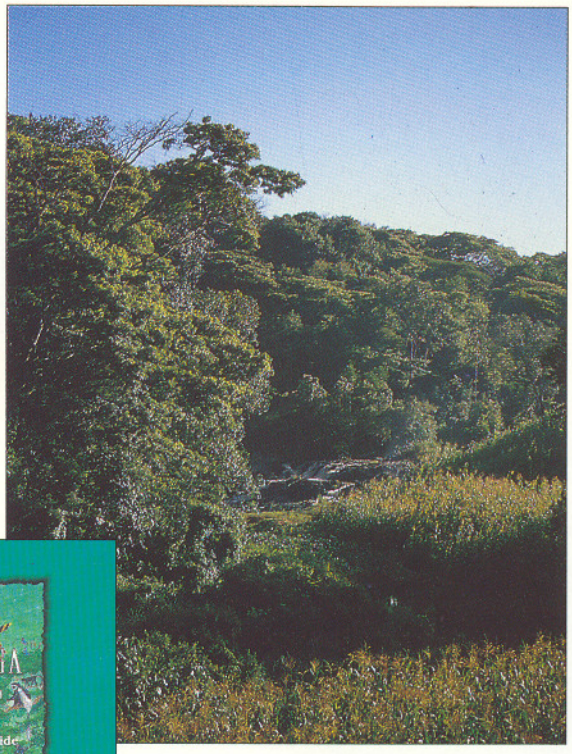
Situation Critical

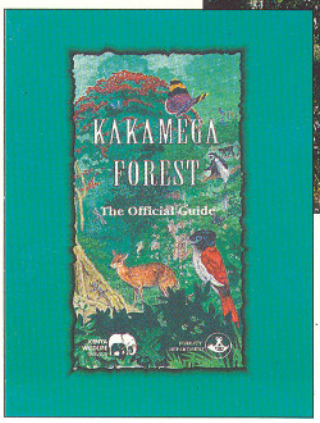
Land is a fixed resource and in Kenya there is no comprehensive land use policy. Without one, how can the little forest that remains be protected and the conservation of indigenous trees be enhanced? Trees could ultimately be used in the same way as coffee and tea, as an agricultural crop for private development, but this process has to be accelerated if forests are to remain even a small percentage of Kenya's land.

According to one scientist, Richard Barnes, with a current population growth rate of 3.8% and an annual deforestation rate of 1.5%, by the year 2040 there will be no natural forest left in Kenya.

Information compiled from the *Kenya Forestry Master Plan*; the *Daily Nation* and *The Standard* newspapers of Kenya; *Destruction and Management of a Tropical Mountain Forest Ecosystem* by R. Bussmann; personal observation and from J. Sylvester about the Ngong Road Forest and P. Wass about the Nairobi Arboretum.

Right; Kakamega Forest with maize plantations grown right to the edge. Early each morning the children light fires and make noise to keep the de Brazza and colobus monkeys away from their shambas.



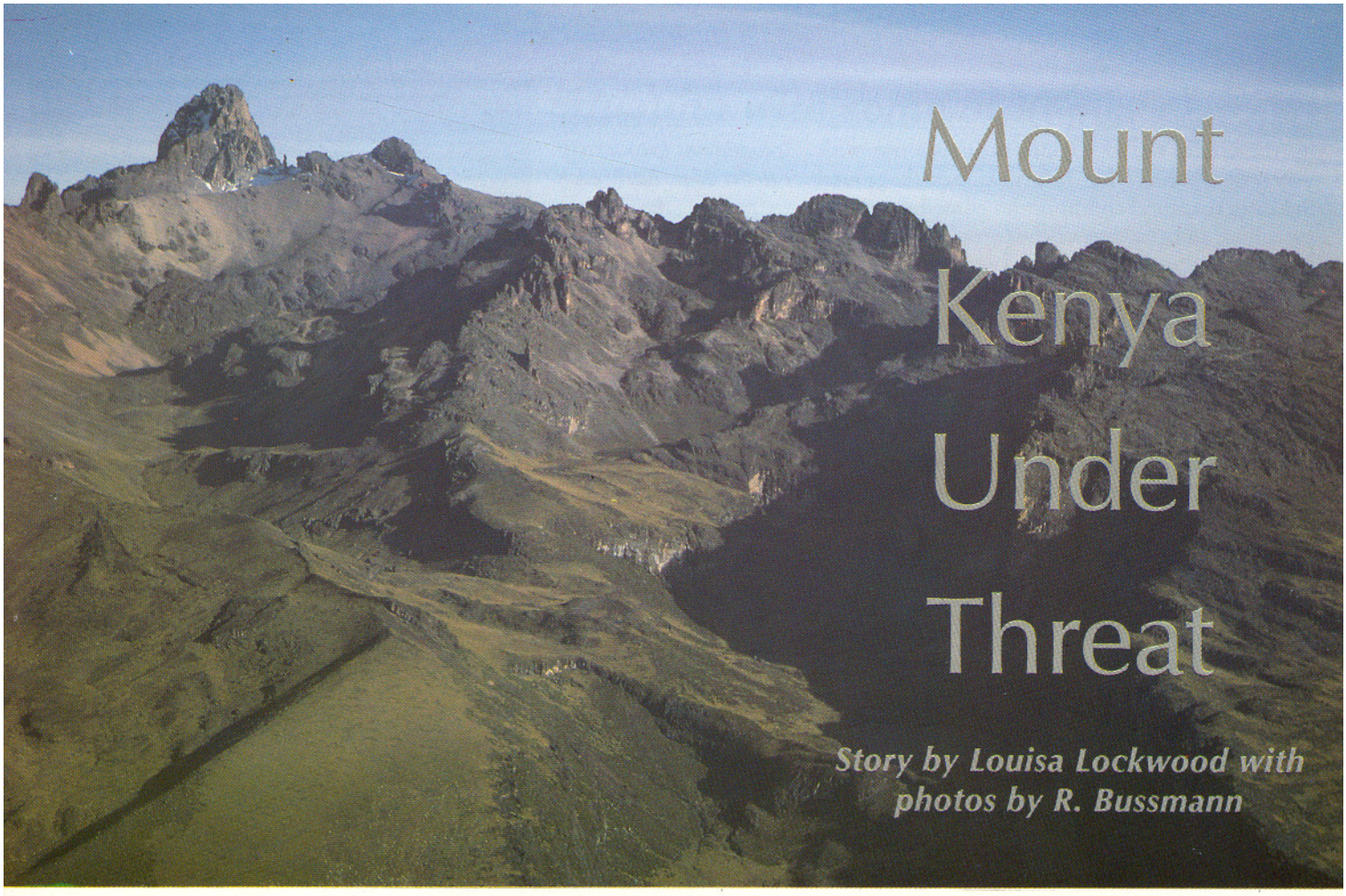


Insert; Kakamega Forest, The Official Guide. *See page 32 for information.*

Nairobi Arboretum

This 30 hectare forest reserve, situated in the city, had suffered many years of neglect until it started to receive some help recently through FONA, the Friends of Nairobi Arboretum, which has been formed under the active leadership of Mrs Ann Birnie, co-author of *Trees of Kenya*.

Amongst other achievements, FONA has improved several areas of the Arboretum, erected and maintained an information board, provided seats and rubbish bins, run a programme of monthly events, employed a young graduate to promote environmental awareness, and provided the finance for the Arboretum Forester to attend a two-month course in botanic garden management at Kew Gardens, UK. As a result of FONA's demonstrable assistance, the Director of Forestry has approved a recommendation made by visiting specialist, Mr Rod Leslie of the UK Forest Enterprise, to establish a management board consisting of official and non-official members. An interim board has now been set with Major M. Kaigwa as chairman, and Dr Peter Wass as secretary. Several technical working groups are being formed and a comprehensive landscape plan will be prepared. The Netherlands Government has made a substantial donation towards the construction of a purpose-built visitor information centre. Serena Hotels have financed an attractive colour brochure prepared by FONA and in the near future it is hoped to start raising income through visitor fees.



Mount Kenya Under Threat

Story by Louisa Lockwood with photos by R. Bussmann

71% of energy consumed annually in Kenya comes from wood, and a large amount of that wood comes from Mount Kenya.

MOUNT KENYA HAS ONE OF THE LARGEST NATURAL forest areas in Kenya (over 210,000 hectares which accounts for 16% of the country's total indigenous forests) which in turn provides water for 50% of the country's population. The forests reach up to 3,400 metres on the southern slopes and 3,000 metres on the northern slopes, at which points there is a clear line where the forest cover ends and the lower alpine zone begins - consisting of heather and moorland vegetation. At present agriculture and agroforestry extend up to the 1,800 metre contour to the south, to the 2,400 metre contour to the west and east and nearly to the 2,900 metre contour to the north. On all sides of Mount Kenya its forests are completely surrounded by densely populated farmland areas which have recently extended even into the forest reserve areas.

The Role of Plantations

As long ago as 1915 exotic plantations were established at Naro Moru to replace the cutting of indigenous trees with faster growing softwoods. The exotic plantations are vital to Kenya to offset the demand on the indigenous forests and to supply wood - the vast majority of which is consumed within the country. Other benefits include the creation of employment and potential foreign exchange.

The majority of Kenya's plantations have been established by the shamba system of agroforestry, which is a very useful tool for the good establishment of plantations, but only when well-managed. The concept is that ex-forestry employees and/or neighbouring communities are given a certain area of plantation land for three years which they can use for their own agricultural purposes, at the same time as planting and nurturing a number of exotic plantation trees on that land. When the trees have matured to the point where there is too much shade for agricultural cultivation, the 'farmer' is expected to leave the allocated plot for trees to continue growing on their own, he may be considered for another new allocation; in theory. Unfortunately, in practice

1932 - Mount Kenya Forest Reserve gazetted, 2,000 kilometres square. Since then about 2% of the reserve area has been excised for farming, and within the reserve there have been extensive plantations of fast-growing softwoods, especially on the western slopes.

1949 - Mount Kenya National Park gazetted, comprising all land above the 11,000 foot contour (3,300 metres).

1967-68 - Mount Kenya National Park boundary moved downwards to the 10,500 foot contour (3,150 metres) to embrace parts of the upper forest, it also included two corridors at Naro Moru and Sirimon. It now covers 715 kilometres square.

1984 - Nyayo Tea Zone created in the lower parts of the forest reserve area as a girdle in the south to grow cash crops and to prevent settlers from moving further into the forest.

Above; The shamba system that is eating away at the indigenous forest on the slopes of Mount Kenya.

Left; A view from the Hobley Valley of Mount Kenya's peaks that rise 2,000 metres and more above the forests.

CREDIT: K.Richards

the shamba system has become overstretched to the detriment of biodiversity as indigenous trees have been encroached upon, critical catchment areas reduced and plantation growth delayed.

In the early 1970s the loss of biodiversity due to the huge destruction of the forests was realised. From 1970 to 1986 there were a series of Presidential Decrees that banned selective logging of valuable timber trees (cedar, Meru oak, olive and camphor) and revoked grazing licences. In 1987 there was official total closure of all forests, in 1988 the shamba system was severely restricted and in the following year all forest workers (17,500 people) residing deep inside the forests were directed to move from forest stations and seek residence outside. This last move has greatly hindered effective related management since those people now have to travel very far distances.

However, the trend has now swung the other way. By late 1993 and early 1994, a further series of Decrees allowed the return of the banned shamba system and new squatters have moved into the forests to slash and burn and cultivate the land.

Logging

Mount Kenya's forests have suffered from extensive and selective logging for decades. Forestry began in 1912 with the establishment of the Nyeri Forest Office and the Castle Forest Station. Only three years later the first cedar, cypress and eucalyptus plantations were established around Naro Moru, mainly to meet the demand for timber and firewood which increased dramatically after the construction of the Uganda Railway. The first sawmill was operating in 1912, 20 years before the forests were gazetted.

In 1991 there were 40 sawmills in the Mount Kenya area, all well-equipped with high-tech logging and sawing tools. When compared to the poorly-equipped forest stations, whose staff have no means of transport, no fuel, no functioning communication system and no equipment, it is not surprising that the armed, illegal loggers consistently obtain any wood they want.

Indigenous Trees

Forests of the East African camphor, *Ocotea usambarensis*, are cut for their hardwood which, like the cedar, *Juniperus procera*, is very resistant to termites. Camphor contributes to a broad-leaved mixed forest and never forms pure stands, so numerous main logging roads and a myriad of small tracks have been established just for access to the trees - these result in the destruction of larger forest areas. In 1990 old *Ocotea* trees were still frequent, such as along the Chogoria route, but within two years only a few were found along the broadened roadside. The Presidential Decree of 1986 still allowed the collection of dead wood, so many *Ocotea* trees were dug out around the roots to allow 'naturally fallen' material tc be collected later. The loss is compounded by the fact that this method destroys all saplings originating from old roots and no regeneration of camphor is then possible.

After 1992, large scale logging began in earnest in the south-eastern Chuka region with large new access roads allowing the removal of nearly all the camphor trees in some parts, leaving vast stands of devastated forest. So far no legal action has been taken to protect these trees and thus the last *Ocotea* forests in Kenya are very endangered.

Marijuana Plantations

On the south-eastern slopes of the mountain there is also a very serious threat from the cultivation of

continued on following page

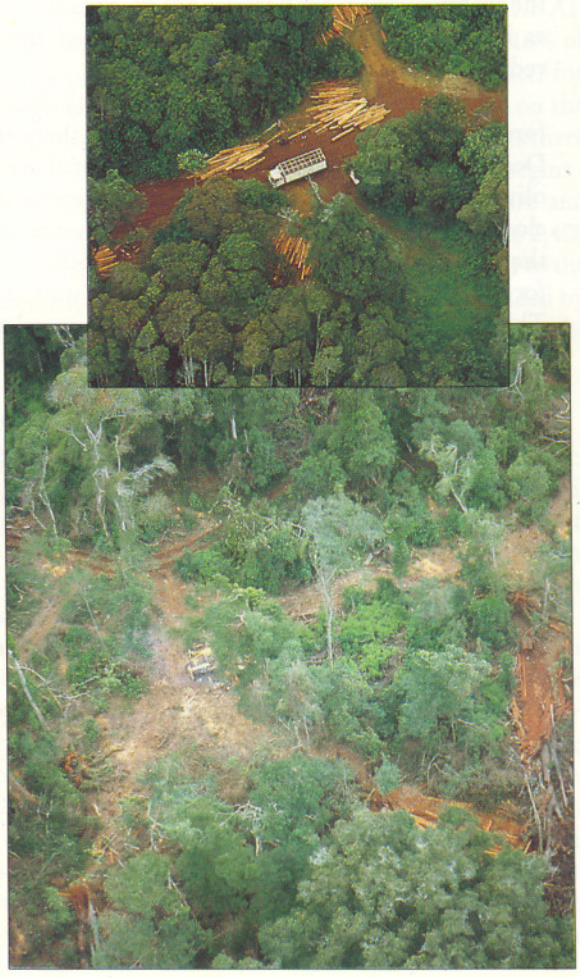
illegal marijuana, (*Cannabis sativa,* or locally *bhangi*). By the slash and burn method many *bhangi* shambas of all sizes, amounting to around 1,500 hectares, have been established quite deep within the forest. Harvested crops are dried in the forest or even in the Nyayo Tea Zone.

Cedar Forests

The submontane and montane cedar forests have been and still are suffering most heavily from human activities. In many original cedar forest areas plantations of fast growing softwoods have been established and heavy logging has left large parts of the area devastated. Moreover, vast forest areas are still used for livestock grazing, leaving no natural herbal vegetation behind. In late 1993, after clearfelling, some plantations of *Cupressus lusitanica*

continued opposite

From dense indigenous cover (left) a forest can quickly be changed to bhangi plantations (below left), shamba systems (previous page) and clearings caused by logging (below right).



and *Pinus radiata* in the Naro Moru and Sirimon regions were re-opened to temporary shamba system use by Presidential Decree. Now shambas are extending almost to the Naro Moru Gate of Mount Kenya National Park and the remaining forests are subject to extreme pressure by squatters felling more trees for timber and firewood.

Cedar forests are also heavily impacted by the mountain's game population - especially buffalo - which feed on seedlings and young trees. In the dry season the forest floor is partly bare of vegetation as all is eaten or trampled.

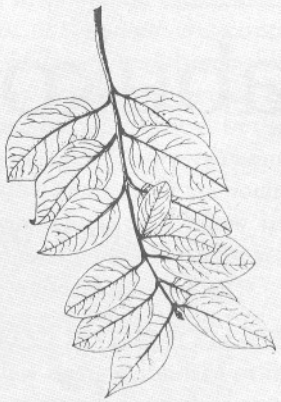
Excisions

Excisions, the setting aside of gazetted land for other land use, occurs in Kenya by Presidential, public or individual request. Under current stated policy, excisions are made by public demand or to settle people, but as forest land is the only land left the pressure is enormous and the resulting excisions rarely benefit those in whose name they are made. Schools may not appear and genuine needy squatters never see cleared land. On the drier northern slopes of the mountain some areas of the Forest Reserve were excised for farmland in the 1970s. The remaining forests of *Juniperus procera* are heavily affected by legal and illegal logging for timber, especially for fence poles. Even the forests along the Sirimon route, part of the National Park, have been badly affected by logging which continues today.

The practical difficulties for the Forest Department and Kenya Wildlife Service in the monitoring of the forests are huge, without the task of actually preventing illegal activities. In 1991 a Memorandum of Understanding (MoU) was drawn up between the two organisations that established the joint management of selected forests. This is seen as a very positive move as the problems each encounters are part and parcel of the conservation of the whole ecosystem.

For example, the shamba system has greatly increased the number of poachers within the National Park. People invade the upper forests with large packs of dogs to bay up the bongo, the buffalo and eland before they are speared. Poachers are also mainly responsible for the moorland fires that encourage the growth of green shoots; one or two weeks after a fire the plains game animals cover the open moorlands making the poachers' task easier.

As a starting point a workshop was held under the authority of the MoU at which a task force was set up for the mountain's forests. The task force comprises six District Forest Officers, three District Wardens, the Senior Warden of the National Park, a KWS Research Officer, and two Provincial Forest Officers from Eastern and Central Provinces. They are divided into three sub-groups responsible for the management of three different forest areas, including forest protection and problem animal control. A strengthening of the community aspect of the FD-KWS work has come in the form of COMIFOR, (Community Participation in Indigenous Forest Conservation) funded by the European Union, which has been operating on Mount Kenya since the beginning of this year. Its stated goal is to 'contribute to the conservation and sustainable use of the indigenous forest of Mount Kenya (and the mangroves of Lamu)'.



Ocotea usambarensis

Left; The leaves of the East African camphor wood, Ocotea usambarensis. *This indigenous evergreen timber tree is now rare everywhere.*

CREDIT: Ann Birnie, *Trees of Kenya.*

Despite both the FD and KWS being heavily overstretched, the Senior Warden of the Park sends out two patrols each month partly in support of the FD, which lacks adequate men and equipment. Even so KWS has to 'borrow' men from surrounding stations for the four or five days of a patrol. The Senior Warden, Bongo Woodley, asserts that their efforts would be transformed with 10 more rangers on the mountain.

'There has been a strengthening of the community aspect of management'

Another factor that should make a huge difference is a proposed fence from the Park HQ to Ragati Forest Station in the south-west of the mountain. An environmental impact assessment is currently underway for a fence alignment that will exclude the shamba system, its potential exotic plantations and existing plantations. The fence will protect crops and trees from game damage and still give people access to the forests, as with the Aberdares Fencing Project this access will be regulated and should greatly deter illegal logging and poaching and help in community/wildlife 'conflict resolution'.

The loggers and marijuana growers are fully aware that their activities are illegal, but as most cases of arrest never even get to the courts, and of those that do the fines are minimal, on balance there are huge gains to be had. Some run and hide from aircraft, but the only effect of such surveillance (provided by KWS for the Forestry Department) is to halt their work for a few hours.

This situation has occurred because the license fees for timber extraction remain at the same low levels as in the 1970s; fines for illegal cutting are very low and the forest administration is either overstrained, helpless or corrupt.

Arabuko Again . . .

Story by Leon Bennun

Arabuko Sokoke Forest is over 372 kilometres square, and it is partly due to its size that it is the second most important forest for bird conservation in Africa.

AS ONE DRIVES ALONG THE COAST road from Kilifi to Malindi, a green wall of forest three times rushes up almost to the roadside, then as rapidly retreats again. This is the eastern edge of Arabuko Sokoke, out of which settlement schemes have taken three big bites. Splendid, spreading trees, notably *Afzelia quanzensis* ('mbambakofi') and *Brachystegia spiciformis*, raise their branches to the sky, and the speeding observer may catch a glimpse of monkeys leaping through the canopy or hornbills basking on a branch. Very few of these passers-by, hurrying to Malindi or Watamu on business or pleasure, spare a second thought for the forest behind - yet it is one of Kenya's most fascinating and unusual places.

Until only a few hundred years ago, much of the moist coastal strip of Kenya and Tanzania was covered with a mosaic of grassland and forest. Over the last two million years or so, as the climate veered from cold (and usually dry) to warm (and wetter again), African forests alternatively retreated and expanded, in many places disappearing completely during the cold, dry spells. These ancient coastal forests, facing the warm Indian Ocean, appear to have survived, at least in places, throughout these climatic ups and downs. The age, stability and relative isolation of the East African coastal forests is reflected in the very high proportion of endemic species that they contain - animals and plants that are found nowhere else in the world, and that are sometimes confined to a single forest. The relationships of many of their species also point, intriguingly, to former connections with the forests of western Africa.

Sadly, this reservoir of unique biodiversity has been greatly depleted. The coastal forests of eastern Africa are now a mere scattering of fragments, many of them tiny, all of them under threat. Scarcely any substantial patches remain. Of those that do, the largest by far - and thus of immense importance in supporting viable populations of scarce fauna and flora - is Arabuko Sokoke.

Sokoke's size is its most significant feature, but it also contains an extraordinary array of rare and endemic species. No fewer than six birds in the forest are listed as globally threatened - in immediate danger of extinction unless, in this case, their habitats are conserved. These are the Sokoke Scops owl *Otus ireneae*, spotted ground thrush *Zoothera guttata*, East Coast akalat *Sheppardia gunningi*, Sokoke pipit *Anthus sokokensis*, Amani sunbird *Anthreptes pallidigaster* and Clarke's weaver *Ploceus golandi*. Clarke's weaver is known only from Arabuko Sokoke, apart from a recent sighting in *Brachystegia* woodland north of the forest. The Sokoke Scops owl, also thought to be confined to this forest, has now also been recorded from a few small forests in the East Usambaras of Tanzania. (*Swara* May/June 1995 Vol.18 No.3) The remaining species occur at a few other sites, but for all of them Sokoke is likely to hold the world's largest existing populations.

Around 115 other forest and woodland birds have been recorded altogether in Arabuko Sokoke. Many of these are confined to the coastal forests of eastern Africa, and Arabuko Sokoke forms a major population centre for them. It is not surprising that Arabuko Sokoke has been ranked (in a study by BirdLife International) as the second most important forest for bird conservation in Africa.

Arabuko Sokoke is also home to three extremely rare and local mammals. Ader's duiker *Cephalophus adersi*, known only from here and Zanzibar, was sighted again recently for the first time since 1991 (by MSc student Erustus Kanga, who has the difficult task of studying this shy, scarce, nocturnal creature). There is an important population of the distinctive Sokoke bushy-tailed mongoose, *Bdeogale crassicauda omnivora*. The golden-rumped elephant shrew *Rhynchocyon chrysopygus*, a charming long-snouted, rabbit-sized animal, is also almost entirely confined to the forest, but seems to be standing up to the pressures of hunting and habitat change better than the duiker; as it is active by day and relatively noisy, it is also much more likely to be spotted by the casual visitor. Many rare and unusual species also occur in other groups, such as butterflies (the endemic *Charaxes lasti*, for example), reptiles and amphibians.

The forest plants are richly varied. The National Museums' Coast Forest Survey collected 511 species in only nine days, of which 42 were classed in the highest category of rarity and/or endemism. (Other coastal forests, such as those on the Shimba Hills, are even richer in plants, but Sokoke's bulk again lends it special importance. It is interesting, though, to note a finding that complicates biodiversity conservation: patterns of species richness and rarity in different groups may not always coincide.)

But there is still more to the forest than this. Arabuko Sokoke is really several distinct forests in

one. There are three very different main habitat types, and each has its own special fauna and flora. Along the eastern side, closest to the coast, runs a band of mixed semi-deciduous forest on nutrient-poor grey sandy soil. This habitat spreads over about 6,600 hectares, and in many places *Afzelia* trees are conspicuous. Beyond the mixed forest is a belt of open woodland with a grassy floor, dominated by beautiful large *Brachystegia* trees. This unusual habitat, covering some 7,700 hectares, is on white sand, even less fertile than the grey soil occupied by the mixed forest. Further west the soil changes abruptly and dramatically, along a clearly visible line, to brick-red Magarini Sands. Here the forest is dense, low, tangled, and dominated by *Cynometra* trees. About 9,900 hectares of the *Cynometra* area is occupied by what could be called forest; the remainder is even lower and scrubbier, becoming an impenetrable thicket in the dry north-west.

Each of these forest types is distinctive and different. The Sokoke Scops owl makes its home only in the *Cynometra* forest, less than a quarter of the total forest area. The mixed forest shelters the highest densities of shade-loving bird species, and is especially important for East Coast akalat and spotted ground thrush. However, it is perhaps the *Brachystegia* woodlands that are the most unusual and important overall. Two of the threatened birds - Amani sunbird and Clarke's weaver - are largely confined to this habitat, and it holds a sizeable population of the Sokoke pipit.

Arabuko Sokoke is a forest much written about. *Swara* readers will recall a number of articles, including a detailed and thought-provoking piece by Peter Wass in the May/June issue of 1994. Peter's article outlined the major conservation problems facing the forest and some of the possible solutions - and, though it ended on an upbeat note, it was clear that long term conservation of the forest was a real challenge, requiring funding and support both locally and abroad.

A year later, Sokoke's future is anything but secure. A major conservation and development project remains on ice, awaiting donor funding. Members of the Arabuko Sokoke Forest Management Team, a group that brings together the Forest Department, Kenya Wildlife Service, the National Museums of Kenya, and other institutions involved in forest management and research, are working hard to maintain the momentum for conservation. A bridging grant from the UK Overseas Development Agency is helping, as is the presence of small-scale initiatives such as the Kipepeo butterfly farming project. But the pressures are becoming harder to control.

On 20 March 1995, the Kilifi District Development Committee met and approved a request that 3,000 acres (approximately 1,200 hectares) of the Kararacha section of the forest be degazetted 'for settlement'. The area, in the south-east part of the forest, is about three-quarters *Brachystegia* woodland and a quarter mixed forest. As it happens, this sector of the forest also contains some of the best remaining areas of these habitats. Research carried out by John Fanshawe of BirdLife International shows that the densities of the threatened birds are highest, and their populations most stable, in these less-disturbed areas. If such an excision caused populations to dip below their minimum viable size, the knock-on effects would be even greater. The minimum area of habitat needed to support viable populations is known for few, if any, species, but best guesses for many forest birds are around 10,000 hectares. Thus all the main habitat types within Arabuko Sokoke may *already* be around the minimum size needed to sustain viable populations.

'All the main habitat types within Arabuko Sokoke may *already* be around the minimum size needed to sustain viable populations of threatened birds, (ie; Probably around 10,000 hectares for many forest birds)'

Fortunately, after protests from the East African Wild Life Society and East Africa Natural History Society, amongst others, the threat of degazettement appears to have receded - at least for now. But the land pressures behind the move have not disappeared. The irony is that the direct returns from leaving the forest in its present state could be much greater, and potentially provide much more benefit to local communities, than conversion to agricultural land. The forest soils are in fact extremely poor for agriculture. Other, sustainable uses are possible, many of which were outlined in last year's *Swara* article. They include butterfly-farming, bee-keeping and ecotourism. These all have great promise, but the challenge comes in trying to make this promise real. Large numbers of people living next to the forest - more than 80,000 - already gain a substantial part of their livelihood directly from it. But for many of these people, the problems of crop raiding by baboons, monkeys and elephants, and the difficulty of scratching out a living on small patches of infertile land, outweigh any benefits they see the forest producing.

To the average holiday-maker on Watamu's beaches, the attractions of Arabuko Sokoke may seem elusive - and this is a major (if not insurmountable) challenge for ecotourism development. Apart from the central raised ridge, offering views across to the ocean, it lacks any grand sweep of scenery. The towering trees and swarming primates of Kakamega Forest are scaled down in size, and number. Even dedicated birdwatchers are likely to wilt during the middle hours of the day, when the forest can seem hot, oppressive and birdless. Yet to the initiated it has enormous charm: a place of immense tranquillity and endless fascination.

When you next visit the coast, make a simple decision that will, in itself, be a tangible contribution to forest conservation - see Sokoke for yourself.

Visiting Sokoke

There is a Visitor's Centre at Gede Forest Station, near Gede town, where you can obtain guidance on where to go and what to see. A system of nature trails has been developed to allow easy birdwatching and butterfly spotting. Walks with trained forest guides can be booked at Gede and at some hotels in Watamu.

The Timber Trade

Story by Nina T. Marshall

KENYAN FORESTS ARE THE SOURCE of a variety of useful and beautiful timbers. These timbers are highly valued, in particular in the furniture, flooring, construction and joinery industries. For years, forests throughout Kenya have served as sources not only of timber, but also of fuelwood, medicine, food, fruit, resin, latex, fodder, fibres and a myriad other items. Natural forests in Kenya are also critical for the provision of essential services such as water catchment and soil conservation. Awareness about the importance of natural forests is rising in Kenya. People now not only think about the goods and services that forests provide, but they are also becoming increasingly cognizant of the value of the biological diversity found within these forests. At the same time, pressure to exploit Kenyan forests is escalating. Kenyan demand for agricultural land, grazing areas, and harvestable products has contributed to a decrease in the nation's forest cover. Demand for timber is a significant cause of pressure on natural forests, and in many forest areas over-exploitation has led to either a reduction in the population of certain species, or an overall decrease in the quality and diversity of the forest. (See COMMENT page 5.)

Harvest of selected timber species has in some of the most severe cases resulted in depletion from certain areas. This is the case in particular with mpingo (*Dalbergia melanoxylon*) and mvule (*Milicia excelsa*), two species which have been so heavily exploited that much of the wood used today is imported from neighbouring countries. For other valued species, there is strong evidence that stocks of mature individuals are declining, and if measures aren't taken soon, forests will be irreparably damaged and the industries that rely on these species will face an uncertain future.

In 1994, the Forestry Department with the support of the ODA, the Kenya Wildlife Service's Forest Conservation Programme, and IUCN-The World Conservation Union, recognized that in order to manage resources effectively and sustainably, the dynamics of the timber trade must be understood. To this end, with the advice of the above-mentioned institutions, TRAFFIC East/Southern Africa carried out a study to collect information on the internal and international trade in indigenous timber in Kenya. This article presents a very brief summary of the results of this research.

Sources of Timber

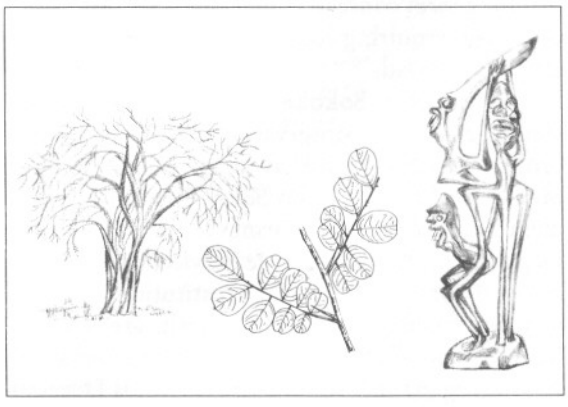
The most significant source area for indigenous timber is Mount Kenya, because of its central location. Timber from Mount Kenya ends up in markets in Nakuru, Nanyuki, Meru, Embu, Moyale, Mandera, Mombasa, and Malindi

Species in Trade

Kenya's forests have in the past supplied a wide variety of species for use in the construction, flooring, furniture and joinery industries. The most popular species have been valued for their grain and colour, as well as their durability and woodworking qualities. Some of Kenya's most heavily traded hardwood species include:

- Elgon teak (*Olea welwitschii*), favoured for parquet flooring because of its durable nature and beautiful light and dark streaks;
- Meru oak (*Vitex keniensis*), a light coloured wood valued in the furniture industry;
- Camphor (*Ocotea usambarensis*), a dark reddish wood resembling mahogany, used for furniture, construction and joinery;
- Cedar (*Juniperus procera*), used extensively for flooring and fencing because of its durability and resistance to insects.

Mvule (*Milicia excelsa*) and mahogany are also in demand in Kenya, however these woods are largely imported as stocks are no longer present in the country. African mahogany is the common name for species occurring in the genera *Entandrophragma* and *Khaya*, both of which are famous for their red, close-grained wood. Mahogany in particular is imported in large quantities from Zaire and Uganda.



Above; Illustration of mpingo or African blackwood, Dalbergia melanoxylon. *This species takes many decades to mature and is in great demand for carving due to its beautiful purplish black heartwood and its very hard and durable qualities.*

CREDIT: Anne Birnie, Trees of Kenya.

although Nairobi is the largest market. The Aberdare Forest is a key source area for cedar, and this forest has been the focus of a recent investigation by the Forestry Department and the Kenya Wildlife Service (KWS) into illegal extraction for posts. The Kakamega, Nandi and Mount Elgon Forests in western Kenya are exploited for their Elgon teak and to a certain extent rosewood (*Hagenia abyssinica*). These forests are also the sources of a variety of lesser-known hardwoods used locally. The coastal forests, Arabuko Sokoke, Lamu, and Shimba Hills, are famous not only for their biodiversity, but also for several popular hardwood species. Best known are mbambakofi (*Afzelia quanzensis*), an orange-coloured timber favoured by the wood carvers of Lamu for furniture, and muhuhu (*Brachylaena huillensis*), a species used extensively in the carving of wood curios. The coastal mangrove forests also serve as a key source of poles used in building construction. In addition, the South-West Mau and Trans-Mara Forests are significant sources of timber for local markets as well as Nairobi, and are also exploited as sources of charcoal.

Volume of Timber used in Kenya

Without question the vast majority of timber used in Kenya is plantation-grown pine (*Pinus* spp.) and cypress (*Cupressus lusitanica*). Approximately 80-90% of Kenya's industrial timber needs are met by these softwoods. Even so, there is significant demand for hardwoods. It has been estimated that the quantity of camphor appearing in trade in Kenya is approximately 10,000m^3 to 18,000m^3 per year. For imported mahogany the figure is less, and is estimated at 3,500m^3 to 4,700m^3. Annual use of mvule is between 800m^3 to 1,100m^3; Elgon teak is between 700m^3 and 950m^3; and use of Meru oak, largely from plantation stock, is thought to be between 350m^3 and 450m^3.

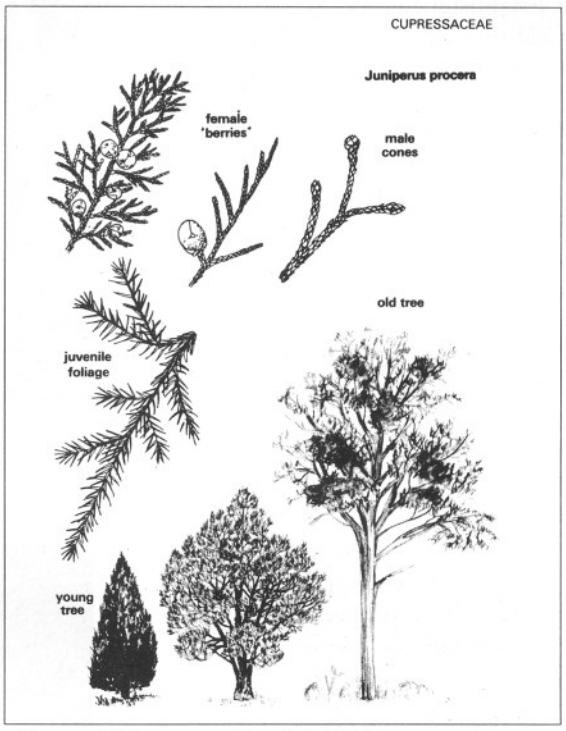
Of the species mentioned above, with the exception of Meru oak, almost all timber is harvested from natural forests in Kenya, Tanzania, Uganda, and Zaire. While some plantations have been established in Kenya (most notably for Meru oak and cedar), these plantations are insufficient to supply demand, and in many cases are not of harvestable age. For the most heavily traded indigenous species, camphor, no plantations have yet been established.

Legality of Timber on the Market

Harvest of timber in Kenya is regulated by the Forestry Department through the Forests Act, and the vast majority of legal indigenous timber appearing in trade is extracted under license as dead or fallen timber. Small quantities of timber are also extracted from private land and selected Forest Reserves where harvest of live trees is permitted on a minor scale. Regulation of timber extraction suffers however, from poor law enforcement, and as such the proportion of illegally extracted timber on the market is substantial. Illegal timber harvest can occur by numerous means, including extraction without a permit, harvesting more than the authorized quantity, removal of bark from live trees (causing the tree to die and thus faciliting harvest under license as 'dead' wood, document forgery or duplication, or 'legalizing' illicit timber by forging hammer marks (the Forestry Department marks timber to indicate that it has been legally harvested under license). As the demand for hardwood increases, pressure on natural forests will also increase, as will the likelihood of illegal harvest.

Supply and Demand

Current research points to an increasing scarcity of indigenous hardwoods in Kenya. While supply of good quality timber has generally not been a major problem for timber users, most realize that stocks are becoming depleted and that in the future availability of certain species will be irregular. This is particularly the case with camphor, which has become subject to stricter Forestry Department controls, and mvule, Elgon teak and cedar, for which legal supplies are limited. Meru oak, largely from plantations, is also of limited availability, and many timber users report that the timber is cut at too young an age.



Above; African pencil cedar, Juniperus procera. *A fairly slow-growing indigenous tree and an excellent plantation species.*
CREDIT: Ann Birnie, Trees of Kenya.

At the same time, demand for hardwoods is increasing. The furniture industry reports steady demand, and other sectors are growing and will require increased supplies. This is especially true of the hotel industry, where existing structures require routine replacement of timber, (in particular mangrove poles in coastal hotels). Numerous new hotels are also under construction.

Forest Conservation and the Timber Industry

In recent years Kenya has taken significant strides in forest conservation and management. These efforts are manifested by the completion in 1994 of the *Kenya Forestry Master Plan* and the development of a new Forest Policy, which is currently being finalized by the Government. These policies stress the need for conservation of unique forest habitats and their biodiversity, as well as the sustainable management of plantations and natural forests for timber production. Also of note is a Memorandum of Understanding between the Forestry Department and KWS to cooperate and collaborate in the management and protection of selected forest areas.

These broad policies set a course for conservation and forest management in Kenya. Action must however, be taken on the ground level. Areas of particular relevance include law enforcement, forest management, and improvements within the timber industry.

Law Enforcement: While legislation pertaining to forest resources provides a good framework for regulation within Kenya, it is evident that much illegally harvested timber enters the market. In order to conserve forests and ensure future timber supply, efforts must be made to reduce illegal extraction. Specific actions that could be taken include: training in enforcement and team-

building for Forest Guards; increasing the penalties for illegal activities and improving the Forestry Department's record of conviction through training in prosecution; review of the permitting system to eliminate forgery or tampering of licenses; improvement in monitoring and control of timber once it has left the forest; and clarification of the Presidential Ban on logging of indigenous species by publication in the *Kenya Gazette*.

Forest Management: Plantations would benefit from more intensive management in Kenya. Softwood plantations in particular require increased attention, both in establishment of new stands and maintenance of existing ones. Establishment of hardwood plantations should also be a priority, as hardwood species form the backbone of the furniture, joinery and flooring sectors. Establishment of camphor plantations is a top priority. In addition, efforts should be made to improve establishment and management of plantations of certain alternative species, such as Australian blackwood (*Acacia melanoxylon*), a viable and popular option for flooring. Furthermore, as the Forestry Department has insufficient resources to manage all Kenyan forests, thought should be given to privatization of certain forest areas to ensure sustainable harvest.

Improvement within the Timber Industry: Changes in the timber industry must go hand in hand with those in forest management and law enforcement. The three most important areas are exploration of the use of alternative species, reduction of wastage, and improvement in the drying and treatment of timber. Development and promotion of alternative species such as mango (*Mangifera indica*), Australian blackwood, grevillea (*Grevillea robusta*) and neem (*Azadirachta indica*), would be especially useful as all of these species have potential in the furniture, joinery and carving industries. Australian blackwood is already the top species used in flooring and potential exists to promote this species in other sectors, although this would have to be coupled with increased planting.

As regards wastage, many techniques have been developed to produce wood products comprised of what would otherwise be considered waste substances. Products such as fibreboard and blockboard can be manufactured with such substances, but in general these technologies are outside the experience of most Kenyan manufacturers. Efforts should be made to introduce these technologies into Kenya.

The other area of concern involves the quality of timber available to manufacturers. Many sawmills supply timber that has been improperly dried, which after several months inevitably warps or splits. This results in poor products, and in wastage if timber has to be discarded. This problem could be rectified by training at the sawmill level, with specialized courses in treatment, preservation, production, and equipment maintenance.

Finally, if Kenya's forests are to be a steady source of indigenous timber in the future, there is an urgent need to allow these natural forests to recover. A marked recovery, combined with improved management of both natural forests and plantations, increased law enforcement and technological advancement in the timber industry, will help to ensure that the inter-related goals of forest conservation and sustainable forest management are met. Only then will we be assured of a solid future for Kenya's timber-based industries.

AFRICA
from Amboseli to Zanzibar

Whether you're following vast elephant herds on the Amboseli plains or exploring the Sultan's palace on Zanzibar, Wildlife Safari has thousands of safari combinations to Kenya, Tanzania, Zimbabwe, Botswana, South Africa, Namibia, Egypt, Seychelles and Mauritius.

Wildlife Safari

Nairobi Hilton Hotel
P.O. Box 56803
Nairobi
KENYA
Telephone: 254 (2) 340 319
Facsimile: 254 (2) 338 972

THE EAST AFRICAN WILD LIFE SOCIETY

Albatros
TRAVEL & SAFARIS

Your safari partner in East Africa

- Regular lodge and tented safari departures
- Tailor made safaris for individuals, groups, families & incentive groups
- Mountain climbing, camel safaris and gorilla tracking
- Beach holidays - incl. Seychelles

Get in touch with us, and we will mail you our full colour East Africa brochure

P.O. Box 49322 - NAIROBI - KENYA
TEL: (254-2) 243387/8, 242615/6 - FAX: (254-2) 226192
----------OR----------
KULTORVET 11 - 1175 - COPENHAGEN K - DENMARK
TEL: (45) 33322488 - FAX: (45) 33320780

The East African Wild Life Society

Christmas Cards & 1996 Calendars for Sale

Bulk orders delivered to you. Overprinting also done.
Call or visit either of our shops at the Hilton Arcade,
Tel: 214758, 221780, 331888.
or the Museum Hill Centre. Ample Parking!
Tel: 748170/1/2/3, Fax: 746868.

Call East African Wild Life Society NOW

Primates and Hydropower

Story and photograph by Tom Butynski

Left; The Tana River crested mangabey is one of the region's endemic and endangered subspecies, and one of the most endangered primates in the world.

The Forests of Kenya's Lower Tana River

KENYA'S LARGEST AND MOST important river, the Tana, claims 17% of Kenya's land area as its catchment. Originating from fast moving streams in the humid highlands of the Aberdare Mountains and Mount Kenya, this 1,000 kilometre long river becomes increasingly wide and sluggish as it flows over an arid floodplain, into the Tana Delta and, eventually, meets the Indian Ocean. All of the tributaries enter along its upper reaches. In fact, this river loses roughly half its water, through evaporation and seepage, along its middle and lower sections.

The Tana is the life-blood of the people, wildlife and forests of the vast arid region of north-eastern Kenya through which it flows. The 65 kilometre long stretch where the Tana River meanders wildly is known as 'the lower Tana River'. This section is marked by numerous oxbows and a one to six kilometre wide floodplain. When not in flood, the lower Tana averages about 60 metres in width but is 100 metres wide in some places.

Flooding is the result of heavy rains in the Aberdare and Mount Kenya watersheds, not local rains. Prior to the construction of five dams along the headwaters, the Tana flooded, on average, about once per year with a major flood every three years or so.

Vegetation of the Tana River

The main vegetation types along the Tana are grassland, bushland, deciduous woodland and lowland evergreen forest. There is general agreement that the evergreen riverine forests are dependent upon at least three factors; the level of the groundwater, frequent flooding and fertile alluvial sediments. Periodic disturbances through flooding and human activity have led to the creation and maintenance of a patchy distribution of isolated forests over a floodplain corridor that extends to about 0.5 kilometres on either side of the river. Before their near extirpation from the area, elephants probably also played a major role in the dynamics of these forests. The riverine vegetation of the lower Tana can be viewed as a dynamic patch mosaic of colonizing forests, young forests with low species diversity, mature forests of considerable diversity and stability, and dying or senescent forests. These are linked by stretches of woodland, bush and grass which grow on poorer, less permeable and more saline soils which are more subject to flooding.

Forest patches along the lower Tana are believed to be remnants of a vast tropical forest which extended from the east coast of Africa to the Congo Basin 13-25 million years ago. The remnant forests of the lower Tana River are the only true representatives in East Africa of a West African type of riverine forest. Although these forests now only cover a total area of roughly 37 kilometres square, they are considered among the most important habitats in eastern Africa for biodiversity conservation, as well as one of the region's most serious and challenging conservation problems.

The lower Tana holds a large number of plant and animal species. The carnivores present include lion, leopard, spotted hyena, golden jackal, bat-eared fox and serval. At least 16 species of ungulates are present. These include Natal red duiker, Kirk's dik-dik, gerenuk, Grant's gazelle, topi, lesser kudu, waterbuck, oryx, elephant, zebra, giraffe, warthog and bush pig. Hippopotamus, buffalo and crocodiles are among the more common large animals.

Important Lower Tana River Species

Most species of carnivores and ungulates are now greatly reduced in numbers and some, such as the black rhino, have been extirpated. This is a direct or indirect result of poaching and severe competition with livestock. It is also likely that the numbers of many species have declined due to a reduced availability of relatively nutritious floodplain forage during dry periods. This is the result of smaller and less frequent floods coupled with the heavy use of the floodplains by livestock. A good example is the Hunter's antelope, a grassland/woodland species which is probably dependent upon the Tana flood plain grasses during dry periods. Its numbers have plummeted many-fold in recent decades making it one of the most endangered ungulates in the world.

Many of the species of plants and animals in the Tana forests are endemic or have small distributions. As such, many are endangered or nearly so. At least five plant species have been identified as rare and a further three species are classified as endangered. Two species of birds are listed in the *Red Data Book* as rare. These are the East Coast akalat and spotted ground thrush. At least five other bird species of concern also occur. These are the southern banded snake eagle, Tana River cisticola, white-winged apalis, plain-backed sunbird and Uluguru violet-backed sunbird. Next to the Arabuko Sokoke Forest, the riverine forests of the lower Tana are the most important forests in Kenya for bird conservation.

Five species of monkeys and three species of bushbabies live long the lower Tana. No place in Kenya has as many species of primates. The Tana River red colobus and the Tana River crested mangabey are both endangered subspecies endemic to the lower Tana. These are two of Kenya's rarest mammals and among the most endangered primates in the world. Of additional concern is the conservation of the vulnerable Zanzibar galago

Today, the total number of forests along the lower Tana River is 71.

They range in size from 1 - 1,000 hectares.

which is known to occur in several of the Tana's forests. The conservation of the Tana's primates is the top priority for primate conservation in Kenya and one of the main primate conservation issues for Africa.

A comprehensive census in 1994 of the primates of the lower Tana found 86 groups of red colobus, totalling 1,100 - 1,300 animals, and 48 groups of crested mangabeys, totalling 1,000 - 1,200 individuals. Both populations appear to have declined by 10-30% since 1975. Red colobus were found in 34 forests and occupied an area of less than 13 kilometres square. Crested mangabeys were located in 27 forests and used an area of less than 26 kilometres square.

The Tana River Primate National Reserve (TRPNR) was established in 1976 to help protect the region's unique biodiversity, particularly the primates. The TRPNR extends for about 36 kilometres along the Tana at an altitude of about 30 metres above sea level. The total area covered by the 16 forests within this 171 kilometre square reserve is less than 17 kilometres square.

The TRPNR holds about 37% of the colobus groups and 56% of the mangabey groups. This means that a far greater portion of these two populations and of their habitats, occurs outside of the Reserve than previously estimated. Of the animals outside of TRPNR, about 19% of the colobus groups and 10% of the mangabey groups live in forests under the management of the Tana Delta Irrigation Project (TDIP) while the remainder are on Trust/Government Land.

Present Status of Lower Tana Biodiversity

During the census it was found that the condition of the forests of the lower Tana River varied greatly. Some forests, even those outside the Reserve, were in excellent condition, little utilized by people and probably expanding in size. Other forests, particularly those outside the Reserve and near villages, were being rapidly degraded, cut for farmland and lost. Due to the lack of security on the east bank of the Tana River, most forests on that side were in relatively good condition.

It appears that the greatest present threat to the forests of the lower Tana River is conversion to farmland. The other immediate important problems facing these forests are fire, felling of large trees for canoes, and pole cutting. Poaching occurs but appears to be at a low level within these forests.

Hydropower on the Tana

A serious new threat to these forests may be posed by the construction of two more hydropower dams at Mutonga and Lower Grand Falls. The Tana and Athi Rivers Development Authority (TARDA) and the Japan International Co-operation Agency (JICA) have signed an agreement for JICA to finance the planning and feasibility studies for these dams. Five hydropower projects are already established along the Tana River together with a number of irrigation projects. If approved, the two new dams would be completed in 2005 and 2009, and double or triple total reservoir storage capacity in the Tana basin.

Despite the high priority given to the development of hydropower, its impact on the environment should not be underestimated. Numerous examples from elsewhere in the world point to the potentially destructive impacts of hydropower development on the environment, and associated economic and productive systems. Fortunately, in the case of the proposed dams for the Tana River, there is considerable open discussion of the expected impact of these dams on downstream ecological systems, particularly upon the forests and the endangered primates.

According to the *Environmental Assessment Report* produced for the Mutonga/Grand Falls Hydropower Project by Nippon Koei Company, if the dams result in a sustained reduction in river discharge, accompanied by a reduction in silt deposition, then the long term survival of the riverine forest of the lower Tana, and the biodiversity therein, is in doubt. This loss would be brought about by a drop in groundwater and a decrease in flooding and sediment load. At this time, it appears that TARDA and JICA are giving serious consideration to some of the mitigation measures recommended in the Report, particularly the construction of the two dams with structures to release controlled bi-annual floods. This would replicate, to some degree, the River's natural flood cycle. Whether these, and other proposed mitigation measures, will be adequate to maintain the forests of the lower Tana River is still a topic which needs additional research, expert input and discussion.

'There is considerable open discussion of the expected impact on downstream ecological systems, particularly upon the forests and the endangered primates'

As the custodian of the flora and fauna of the nation, the Kenya Wildlife Service (KWS) is concerned about the impacts of this Project both on the protected and non-protected areas within the Tana River Basin. KWS has distributed a *Position Paper on Mutonga/Grand Falls Hydropower Project* in which it expresses a number of concerns and recommendations. The paper concludes by stating;

> 'The sustenance of the ecosystem downstream must be guaranteed before the implementation of the Project. There must be practical flood control measures geared towards the achievement of sustainable utilization of the ecosystem. Sight should not be lost of the fact that Kenya is a signatory to the Biodiversity Convention and the Ramsar Convention. The main objective of the two conventions is to conserve biodiversity. It is therefore important that all issues related to biodiversity conservation in this project be thoroughly examined before the implementation of the project can be contemplated'.

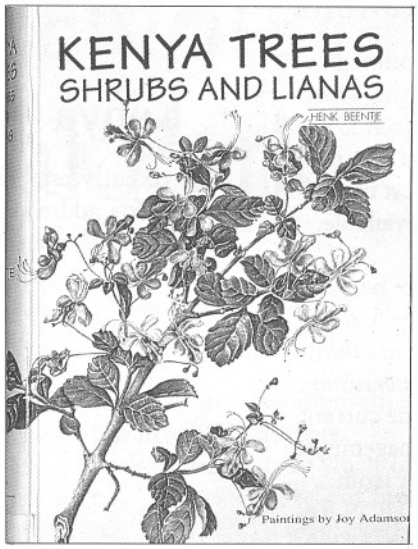
The East African Wild Life Society (EAWLS) has expressed many of the same concerns as KWS over development activities in the upper Tana River and their potential to negatively impact people and ecosystems downstream. At this time, TARDA, JICA, KWS, EAWLS and others in the national and international conservation community are working together to find ways to minimize the environmental impact of the proposed dams.

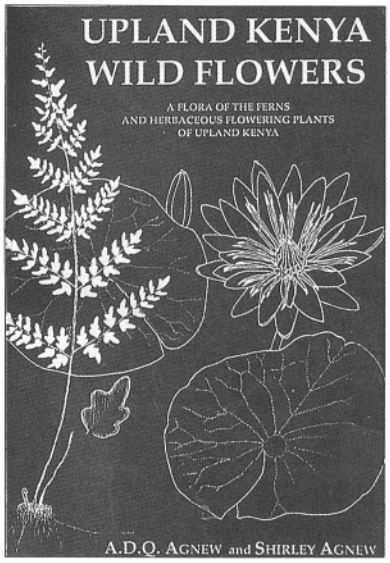
The considerable national and international concern for the conservation of the Tana forests is exemplified by a proposed US $6.2 million World Bank, Global Environmental Facility (GEF) grant to KWS. The overall objectives of the project are (1) to define those factors which threaten the integrity of the lower Tana ecosystem and (2) to establish management, research and monitoring programmes, and community activities, which help maintain the biodiversity of this region. This funding would be contingent upon protection, conservation and sustainable use of these valuable forests.

BOOK *reviews*

Kenya Trees Shrubs and Lianas
By Henk Beentje
Paintings by Joy Adamson
Published by National Museums of Kenya

Upland Kenya Wild Flowers
A Flora of the Ferns and Herbaceous Flowering Plants of Upland Kenya
By A.D.Q. Agnew and Shirley Agnew
Published by East Africa Natural History Society





The most comprehensive books on Kenya's flora to date.

AT LAST TWO BOOKS HAVE APPEARED in Kenya to assist in the identification of indigenous trees, shrubs, wild flowers and ferns. If you are looking for picture books on Kenyan plants then don't buy *Kenya Trees Shrubs and Lianas* by Henk Beentje or *Upland Kenya Wild Flowers* by A.D.Q. and Shirley Agnew, as both books are essentially keys. However, if you are a committed naturalist, botanist or an interested layperson who is prepared to come to grips with the anatomy of flowers in order to identify a plant, these books will be invaluable.

Kenya Trees Shrubs and Lianas (1994) deals with larger woody plants (those that can grow to two metres) and lianas in Kenya. Written to replace *Kenya Trees and Shrubs* (1961) by Dale and Greenway, hitherto the only book for use with Kenya's woody plants, Beentje has expanded the number of species covered from 1,000 to over 1,800. In addition, the keys have been simplified and modified to use mainly vegetative characteristics. However, there often comes a time when the floristic parts must be consulted and a strong light and a x10 or x20 magnifier are necessary for this.

The dichotomous main key leads the reader into ten plant groups where plants may be keyed to family or genus. Helpful diagrams of diagnostic features are found alongside the keys. From there the reader is lead into the text where a plant may be keyed to species. A brief description of each species includes habitat, altitude, peak flowering season, a distribution map, local names in major languages and conservation status. A strength of the key is that it does not require both fruits and flowers.

A comprehensive introduction describes the use of the keys and the distribution codes; the vegetation types are explained diagramatically. While good line drawings appear alongside many of the species descriptions, several lovely paintings by Joy Adamson are the only colour illustrations in the book.

The one drawback of the book is the lack of a comprehensive glossary. The end papers give a small illustrated glossary but this will not be enough for the novice. A definite plus is the listing of plants by local names, which can be a shortcut to identification.

Upland Kenya Wild Flowers (1994) deals with the ferns, fern allies and herbaceous flowering plants of Kenya occuring at altitudes of over 3,000 feet (915 metres). This is the second edition of this book, first published in 1974 and which rapidly became out of print. The second edition covers 3,000 species of which 1,000 are illustrated, a considerable improvement on the first edition.

As with *Kenya Trees Shrubs and Lianas*, the key has been simplified and modified to use mainly vegetative parts. In the introduction, the authors suggest that the reader try to match the plant to be identified with one of the illustrations. This will work to a point but the reader must be prepared to tackle the key, which is relatively simple and easy to use, if positive identification to species is required. The main key leads the reader to eight sub-keys where the plants may be keyed out to family or genus. Unfortunately, both fruit and flowers are needed in some instances, so the user should be careful when collecting specimens. Species descriptions are simple and accompanied by altitude range and distribution. This book is assisted by a competent glossary.

By Sally Crafter

Both of these books are available from the National Museums of Kenya and most good bookshops at approximately Ksh 2,000 (US $40.00) each.

Forest News

Kenya's Forests Publications

The Kenya Indigenous Forest Conservation Programme (KIFCON), financed by the British Overseas Development Administration, ran from 1991 - 1994. Several permanent products from the programme which are of great value for forest conservation can be obtained or will soon be available.

Forest Management Book. Shortly to be published by IUCN (the World Conservation Union) is a state-of-the-nation report entitled *Kenya's Indigenous Forests: Status, Management and Conservation,* which provides comprehensive data on the current situation and guidelines for improved management. Copies will be obtainable free on request from: The Forest Conservation Coordinator, IUCN Regional Office for East Africa, P.O. Box 68200, Nairobi. (Tel: +254 2 890605, Fax: +890615) or: The Publications Officer, IUCN, Rue Mauverney 28, Gland CH-1196, Switzerland. (Tel: +41 22 999 0001, Fax: +0010) or: The Librarian, Natural Resources Institute, Chatham Maritime, Kent ME4 4TB, UK (Tel: +44 1634 880088, Fax: +880066/77).

Forest Wall Map. A computer-generated map of Kenya at scale 1:1,000,000 showing forest types in colour has been prepared, based on a new field inventory, aerial photography and interpretation of satellite imagery. Multiple copies are being donated to the Forestry Department, and additional copies may be purchased at $25 per copy (or Kenya shillings equivalent) from: Acropolis Ltd, P.O. Box 46409, Nairobi. (Tel: +254 2 443346/44257, Fax: +442551).

Trainers Manual. A three-volume, loose-leaf manual with full details for running a two-week course in forest conservation and management is being donated to key forest management and training institutions in Kenya. Additional copies can be obtained (price on request) from: Centre for Rural Development and Training, University of Wolverhampton, Gorway Road, Walsall WSl 3BE, UK. (Tel:+44 1902 323219, Fax: +323212).

Children's Book. Following a nation-wide competition the Wildlife Clubs of Kenya (WCK) will shortly be publishing a book, illustrated with children's colour drawings, of stories and folklore about Kenya's indigenous trees. Copies will be available in leading bookshops, and advance information can be obtained from: Jacaranda Designs Ltd, P.O. Box 76691, Nairobi (Tel: +254 2 569736, Fax: +568353) or: WCK, P.O. Box 20184, Nairobi. (Tel: +254 2 891904, Fax: +891906).

Kenya Forests Working Group

The recently established Kenya Forests Working Group provides a forum for addressing forest issues and is attended by national and international, governmental and non-governmental organisations.

The working group started with the Kenya Energy Non-Governmental Organisation, KENGO, protesting at the proposed degazettement of 18.41 hectares of the Karura Forest in August 1994. Through press statements, a letter to the Minister of the Environment and Natural Resources and threats to other forests in Eldoret, Kisumu, Nyanza and especially Arabuko Sokoke, more policy makers became involved.

The 4th May 1995 saw the first working group meeting at which a task force was chosen to report on the proposed degazettment of 3,000 acres of Arabuko Sokoke. There are now about 20 organisations represented by the working group.

Currently information is available through KENGO:

Kenya Forests Working Group.
c/o KENGO,
P.O. Box 48197,
Nairobi.
Tel: +254 2 749747,
Fax: +254 2 749382.

Guidebooks. *Kakamega Forest: The Official Guide,* well-illustrated with colour photographs and line drawings by David Bygott, has already been published. Copies can be obtained from: The East Africa Natural History Society shop at the National Museum, P.O. Box 44486, Nairobi (Tel: +254 2 749957, Fax: +741049) or the Commercial Manager, Kenya Wildlife Service, P.O. Box 40241, Nairobi (Tel: +254 2 500909, Fax: +505866/501752) or The East African Wild Life Society gift shop at the Museum Hill Centre. A similar book *Arabuke Sokoke Forest: The Official Guide* will be published shortly.

Video. *Partners in Time,* a 35-minute film highlighting issues of forest conservation in Kenya, was received enthusiatically by a Kenyan audience and by the Commonwealth Forestry Conference, Kuala Lumpur, respectively at its first national and international screenings. Copies are available (free to bona fide development or educational organisations, Ksh 1,000 to general public) from the Agricultural Information Centre, P.O. Box 14733, Nairobi (Tel: +254 2 442240/446467, Fax: +446467) or the International Television Trust for the Environment, Postbus 7, AA Zeist 3700, Netherlands (Fax: +31 3404 22484).

Mount Elgon National Park

By Henk Hoefsloot and Gershom Onyango

Mount Elgon is a solitary extinct volcano on the border between Uganda and Kenya.

The highest peak of the mountain, Wagagai, is at 4,321 metres above sea level.

THE PROTECTED AREA OF MOUNT Elgon, gazetted as a Central Forest Reserve in 1937 and made a National Park in 1993, has a long history of forest use as well as abuse. When in 1988 the Government of Uganda restated its commitment to conservation, it requested IUCN (for technical support) and NORAD (for financial support) to assist in the rehabilitation of the then Mount Elgon Forest Reserve and to assist in the development of a strategy for the long term conservation of the forest. The reserve had been heavily encroached upon and the surveyed boundary of 1964 had to be resurveyed and demarcated. At the same time, there was a growing recognition of the need to involve the communities that live in areas bordering the protected area in its management and conservation.

The Area

Based on a land unit map, which combines information about the vegetation, soil and land use of the area and which was prepared with assistance of the project, the following zones can be identified on the mountain:

- Starting from the summit, we first encounter the *Afro-alpine and Ericaceous (or Heather) Zone*, which includes the caldera, which is the long extinct crater of the volcano, and the upper volcanic slopes of the mountain. The vegetation comprises predominantly of dwarf shrubs, grassland, heather and moorland. Several plant species, which are endemic to Mount Elgon, and species that only occur on the mountains of East Africa are found in this zone, including groundsels and *Lobelias*. The caldera, although containing some very fragile bogs, is not seriously disturbed by human activity. The present vegetation of the upper slopes is greatly influenced by burning at irregular intervals, most likely by wildlife poachers.
- The *forest* is found below 3,200 metres and includes bamboo stands (between 2,400 and 3,000 metres) and dense and medium dense stands of trees like *Hagenia* and *Podocarpus*, among others. On the lower and wetter slopes, species rich rain forest communities include *Macaranga* trees and many others.

Much of the remaining forests show varying levels of human influence, but they are generally fairly well-conserved except where intensive pitsawing or high levels of grazing have occurred or do occur.

About 20% of the vegetation of the park, mostly on the lower slopes, has been degraded and deforested due to former encroachment by cultivators. Part of this area is now being reforested, the rest is slowly regenerating naturally.

144 bird species have been observed on Mount Elgon, for some of which the mountain is of special importance, including a subspecies of the white-starred forest robin (*Pogonocichla stellata elgonensis*), which can only be found on the mountain.

The boundary of the Mount Elgon National Park is mostly situated at an altitude of about 2,000 metres.

The Project

The *Mount Elgon Conservation and Development Project* attempts to reconcile the conservation objectives for the Mount Elgon protected area with the development needs and aspirations of the people living around the forest. It is therefore called an *Integrated Conservation and Development Project*. It is implemented under the Ministry of Natural Resources in partnership with Uganda National Parks and works through the district departments of the Ministry of Agriculture, Animal Industries and Fisheries. Technical assistance is received from IUCN and financial support from NORAD.

The project has gone through several stages. To some extent these stages reflect the changes in conservation strategies which have taken place and are still evolving in East Africa. So far, three somewhat overlapping stages can be distinguished in the history of the project:

- The starting phase
- The transition phase
- The Collaborative Management phase.

Starting Phase

During the starting up phase, from 1988 to 1991, the project concentrated on providing assistance to the Forestry Department for the necessary protection of the reserve and for boundary work. The main pressure from the surrounding area on the forest originated from the need to expand the area for agriculture to compensate for decreasing crop production, due to declining soil fertility, and to compensate for the increase in population density. The approach taken was to conserve the forest through improved protection on the one hand and to alleviate pressure on the forest through increased agricultural production in the neighbouring areas on the other hand. Furthermore, raising environmental awareness amongst local people would make people respect the forest. By and large, this approach reflected conventional forest conservation strategies.

The main activity components of the starting phase and well into the following transition phase, were:

- Gathering of information for management planning purposes
- Forest protection and boundary work
- Environmental awareness raising
- Sustainable agricultural development.

Transition Phase

A transition took place during 1992 and 1993, sparked by two factors.

Firstly, the situation on Mount Elgon changed from one of conflict with the local people, due to the eradication of agriculture inside the boundary of the protected area, to the present situation, where people have largely accepted that the National Park area is not for cultivation.

The other gradual transition that has taken place during the last five years is the growing recognition within conservation circles, that for the long term conservation of protected areas, the lasting support of the people living around these areas needs to be obtained. Therefore, conventional protection activities need to be complemented by activities which give people a **stake** in conservation. For forested mountains with high population densities, like Mount Elgon, this means that people need to be given access to some of the forest products inside the protected area.

Within the project, a similar transition took place and the overall approach shifted towards emphasizing the need for linkages between conservation and development. In fact, the project came to realize that it had failed to recognize that people around Mount Elgon had been dependent on the forest for a long time, that in many instances people had strong cultural ties with the forest and that there was a long history of probably sustainable use of forest resources. The project realised that these relationships between the people and the forest could form the basis for involving communities bordering the protected area and that, moreover, it could form the basis for developing new approaches to conservation.

As a result of these changes, the managing authorities and the project agreed to initiate pilot Collaborative Management activities between Uganda National Parks and the local communities in a few selected areas.

Collaborative Management Phase

The use of the forest by local people

In 1993 and 1994, an assessment was carried out of the use of the forest by local communities. This assessment would form the basis for the pilot Collaborative Management activities. The assessment included interviews with the people living around the forest, combined with visits to the forest with the users of forest products.

The assessment showed that the forest is important for a large and fairly well-defined group of forest users, which comprises households in the villages directly bordering the National Park. These people may spend as much as 20% of their productive labour time on collecting products from the Park. The economic value of these products was estimated at US $60 to $100 per household per year. People living further away from the protected area are less dependent on the forest.

Furthermore the study revealed that the use of forest products by local people has continued up to this day, notwithstanding restricting laws and law enforcement activities. It seems difficult to curtail the use of forest products by communities living around such a large national park.

Most forest products are harvested from the outer zone of about 30% of the protected area. Bamboo and medicinal plants are harvested from areas deeper inside the park, making the total area used by local people 60%. The collection of bamboo shoots, and its smoking, is such a popular and culturally important activity in Mbale District that even people from far away villages come to the forest to collect bamboo. Even though high volumes of bamboo shoots are collected from the forest, levels for use are generally believed to be below the maximum sustainable harvest and much of the bamboo can be found in inaccessible places, making the bamboo areas the best conserved zones on Mount Elgon. The problem is, however, that as people go deep into the National Park to harvest bamboo, it is difficult to monitor that they do not involve in other harmful activities, like hunting.

During the study, it became clear that the perception of what are destructive activities for the forest is largely the same for the local communities and for the staff of the National Park. People usually pointed out that the main threats to the forests are pitsawing, hunting, harvesting of polewood, charcoal burning and cattle grazing to some extent. Many other uses of forest products are probably sustainable.

Another important management issue is the grazing of cattle on the grasslands and in the forests on the northern slopes in the Mount Elgon National Park. Much of their grazing is traditional and has a long history, but it has been compounded by insecurity in the lower plains, which has forced people to herd their cattle higher up the mountain, where the park is. Grazing is at present affecting the regeneration of parts of the forest.

Prospects for Collaborative Management

Since September 1994, the project, together with National Park staff, has conducted extensive discussions with communities in two areas to pilot Collaborative Management approaches. The approach has been to develop Forest Use Agreements with the users of the forest living in the villages bordering the National Park. These users are best situated to monitor and control access to the forest, as they are very regular visitors to the National Park and know exactly who is doing what. So far, the discussions and negotiations have centred mainly on controlling the real threats to the forest, while allowing those uses which have been identified to have minimal impact on the ecosystem of Mount Elgon.

The discussions with the two pilot communities indicate that if these people are allowed to sustainably use forest products, they are prepared to take responsibility for the control of destructive

uses. The crucial question is, 'who controls what?'. Unfortunately there are no local (community) forest management systems in place, and therefore, forest use management committees were elected in the pilot areas as part of the process to establish Collaborative Management. Yet, what control can these committees exercise over the forest use by the local communities? And how will the committees relate to Uganda National Parks, who will need to retain overall authority of the management? The end result of the present discussions and pilot activities will probably be that different degrees of control over the use of forest products will be applied to different types of products.

An important step in resolving some of the potential issues of conflict in collaborative management, as pointed out in this article, is to define the specific management objectives for a protected area like Mount Elgon and to identify what is required to achieve these objectives. Questions to be addressed include; What is the biodiversity value of the different vegetation zones on Mount Elgon? What is the watershed value? What are the values of the ecosystem at local, national and international level?, etc. The development of a detailed plan of zonation for the park is essential to determine the place and extent of forest use. This should be based on information about how much can be harvested in an ecologically sustainable way and it should take into account the feasibility of implementing mechanisms which control forest products.

All in all, the project feels that there are good opportunities to involve local people and to gain their active support for the conservation of the Mount Elgon Forests, thereby diffusing the conflict between park authorities and local communities. Some issues, however, require further discussion and exploration. The most important ones relate to the control over access to forest products and to the zonation of the forest in zones with specific management regimes. Furthermore, it remains uncertain how to resolve the issue of grazing and the access to bamboo shoots by mainly young men from far away villages.

There will be a need for both the local communities and the national park authorities to continue the discussion on these issues to give Collaborative Management a chance.

CONTRIBUTORS *information*

Theresa Aloo
page 5

Department of Natural Resources,
Egerton University,
Kenya.

Theresa Aloo is a lecturer at Egerton University.

Guido Broekhoven and Guideon Gathaara
page 12

IUCN - The World Conservation Union,
Eastern Africa Regional Office,
P.O. Box 68200,
Nairobi,
Kenya.
Tel: +254 2 890605.
Fax: +254 2 890615.
Telex: 25190 iucn e a

Kenya Wildlife Service,
P.O. Box 40241,
Nairobi,
Kenya.
Tel: +254 2 501081/2, 501618.

Guido Broekhoven is the Forest Conservation Coordinator in IUCN's Eastern Africa Regional Office in Nairobi. He has been with IUCN in Kenya for the last two years, previous to which he worked in Bolivia in non-timber forest products.

Guideon Gathaara is the Forest Conservation Coordinator for Kenya Wildlife Service where he been for almost three years. Before KWS he was a Forest Specialist in the Office of the President, and has also worked with the Ministry of Environment and Ministry of Energy.

Nina T. Marshall
page 25

TRAFFIC East/Southern Africa.
c/o IUCN - The World Conservation Union,
Eastern Africa Regional Office,
P.O. Box 68200,
Nairobi,
Kenya.
Tel: +254 2 890605.
Fax: +254 2 890615.
Telex: 25190 iucn e a

Nina Marshall is the Senior Programme Officer for TRAFFIC, based at IUCN, Nairobi. TRAFFIC is the wildlife trade monitoring programme run by IUCN and WWF. Nina has recently researched and written a monograph on the timber trade in East Africa.

Leon Bennun
page 22

Head of Department of Ornithology,
The National Museums of Kenya,
P.O. Box 40658,
Nairobi, Kenya.
Tel: +254 2 742161/31.
Fax: +741049.

Leon Bennun grew up in Kenya and went on to obtain his PhD in ornithology at Oxford University, UK. He has been at the National Museums of Kenya since 1990 as Head of Ornithology.

Henk Hoefsloot and Gersholm Onyango
page 33

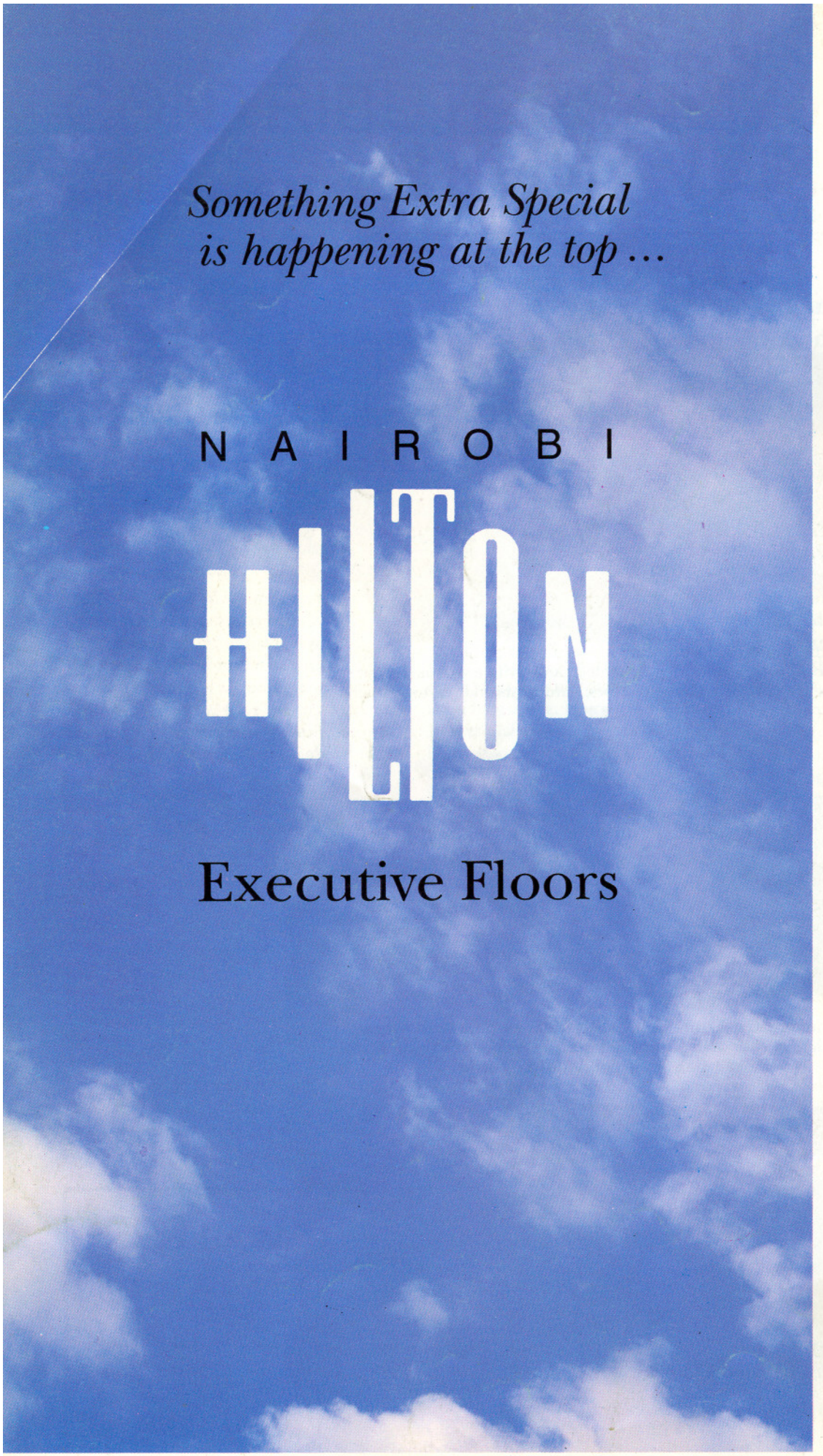
Mount Elgon Conservation and Development Project,
Department of Environment Protection,
Ministry of Water, Energy, Minerals and Environment Protection,
P.O. Box 2690,
Mbale, Uganda.
Tel: +045 3179

Henk Hoefsloot is the IUCN Chief Technical Advisor and Gersholm Onyango is the Project Manager of the Mount Elgon Conservation and Development Project.

Tom Butynski
page 28

Zoo Atlanta,
P.O. Box 24432,
Nairobi, Kenya.
Tel: + 254 2 745374.

Tom Butynski is the Senior Conservation Biologist with Zoo Atlanta. He obtained his PhD in Botswana researching spring hares. He is currently working on the Africa Biodiversity Conservation Programme in collaboration with the National Museums of Kenya, concentrating on natural forest conservation and primate research.



AT THE NAIROBI HILTON WE HAVE RESERVED OUR TOP FLOORS FOR OUR GUESTS WHO WISH TO ENJOY SPECIAL PRIVILEGES:

Deluxe appointed rooms

●

Private check-in/check-out facility

●

Fruit basket, fresh flowers, extra bathroom amenities, bathrobe, slippers

●

Complimentary Airport Shuttle Service

●

Fax and photocopy services

THE ***CLUB ROOM*** IS LOCATED ON THE 15TH FLOOR OF THE NAIROBI HILTON TOWER AND ITS SPECIAL COMPLIMENTARY FEATURES INCLUDE:

Breakfast is served daily from 6.30 am to 10.30 am

●

Snacks and refreshments are served all day

●

Canapes and drinks are offered during the Cocktail hour from 5.30 to 7.30 pm

●

Local and international newspapers, magazines, library and games are available throughout the day

●

Large screen stereo television for CNN and special video viewing.

NAIROBI
HILTON

FOR RESERVATIONS: CONTACT NAIROBI HILTON P.O. BOX 30624, NAIROBI, KENYA TEL: 334000 TELEX: 22252, FAX: 339462/226477
OR YOUR TRAVEL CONSULTANT