



MAU COMPLEX UNDER SIEGE

Continuous destruction of Kenya's largest forest

A presentation by:

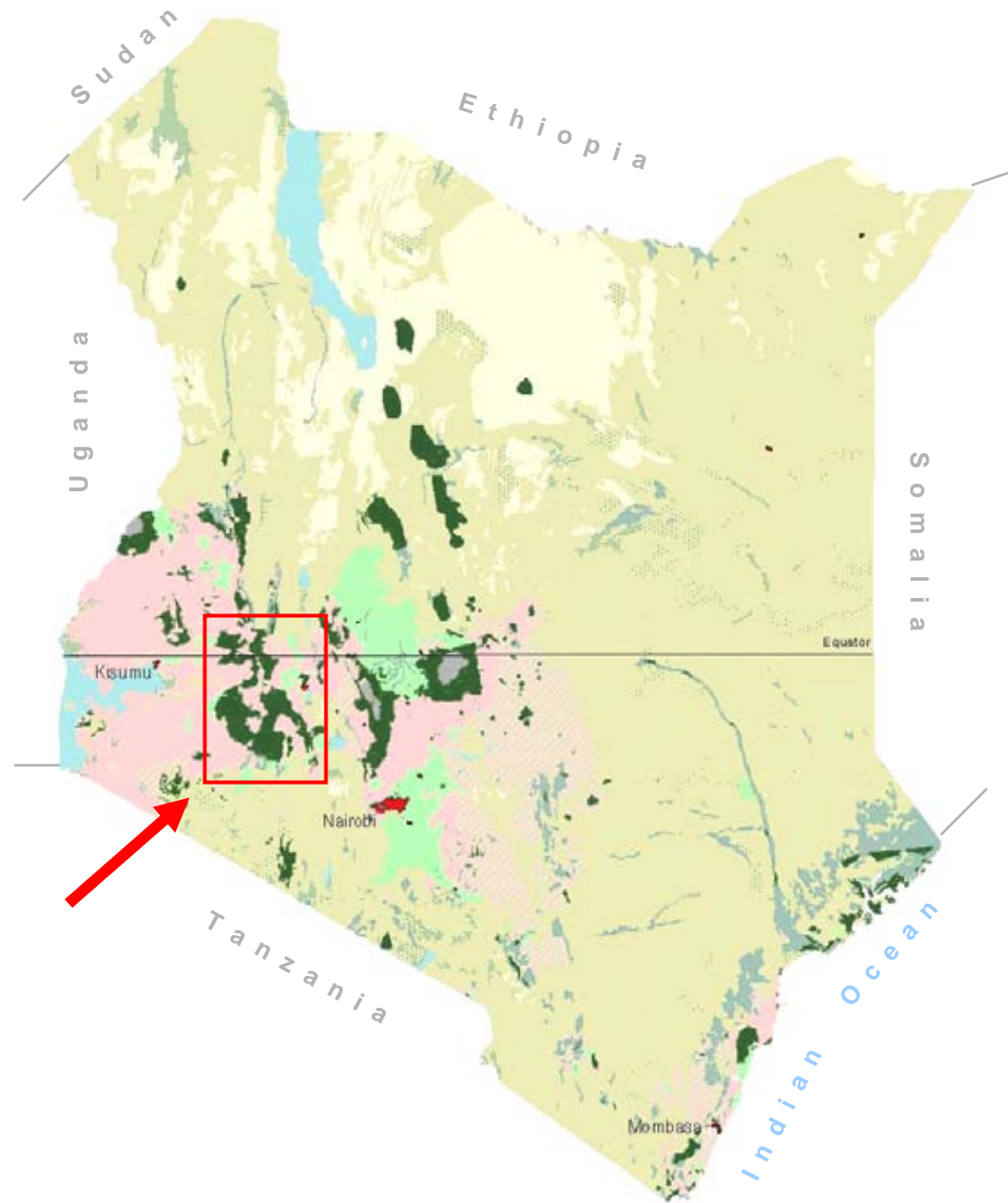
UNITED NATIONS ENVIRONMENT PROGRAMME

KENYA WILDLIFE SERVICE

KENYA FORESTS WORKING GROUP

June 2005

Location and extent of the Mau Complex



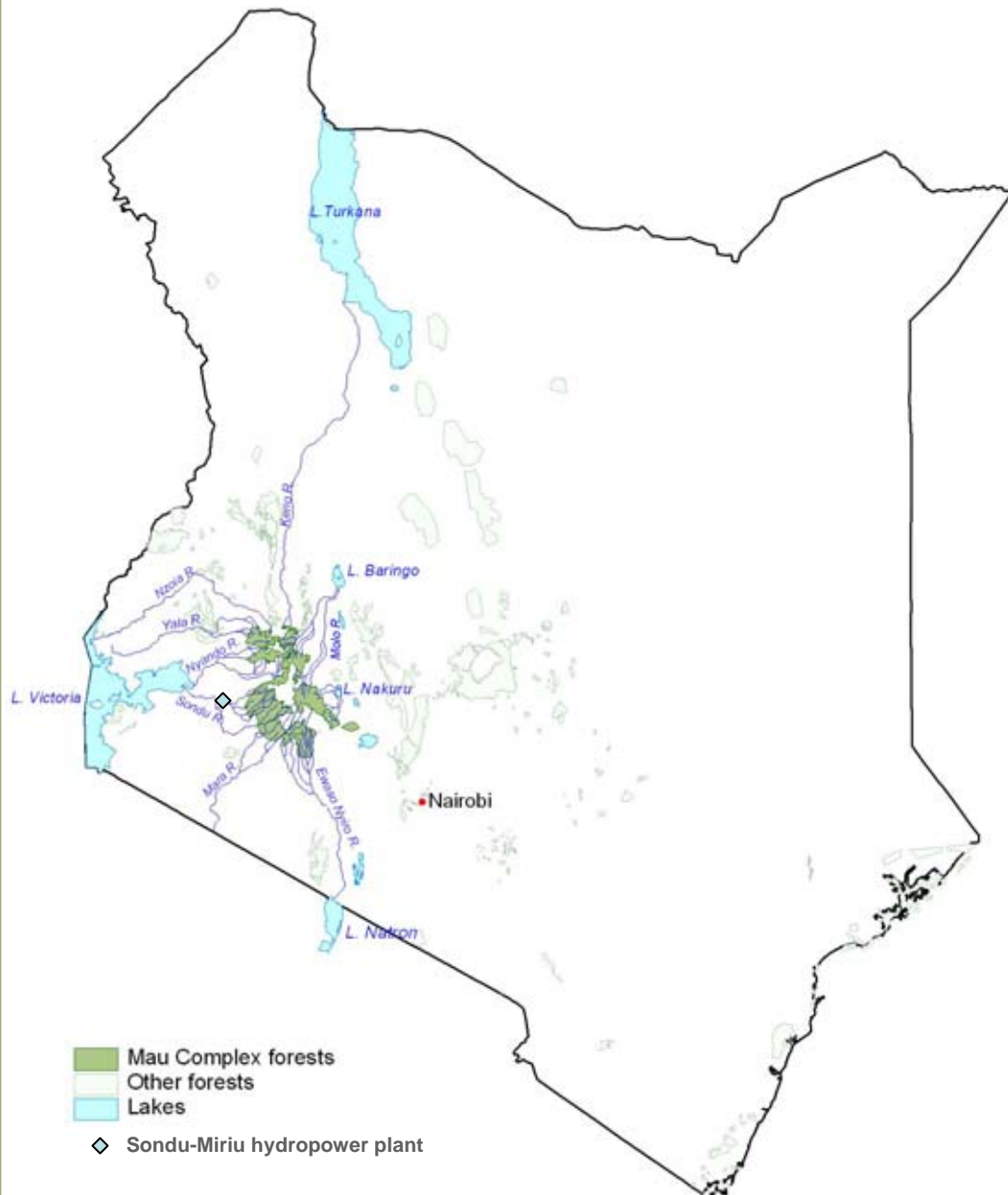
The Mau Complex covers some 400,000 ha, as large as Mt. Kenya and the Aberdares combined.

It is the largest forest of Kenya.

As a montane forest, it is one of the five main “water towers” of Kenya, with Mt. Kenya, the Aberdare Range, Mt. Elgon and the Cherangani Hills.



Mau Complex: a key catchment area



The Mau Complex forms the upper catchments of all (but one) main rivers west of the Rift Valley, including:

- Nzoia River (→ Lake Victoria)
- Yala River (→ Lake Victoria)
- Nyando River (→ Lake Victoria)
- Sondu River (→ Lake Victoria)
- Mara River (→ Lake Victoria)
- Kerio River (→ Lake Turkana)
- Molo River (→ Lake Baringo)
- Ewaso Nyiro River (→ Lake Natron)
- Njoro River (→ Lake Nakuru)
- Nderit River (→ Lake Nakuru)
- Makalia River (→ Lake Nakuru)
- Naishi River (→ Lake Nakuru)

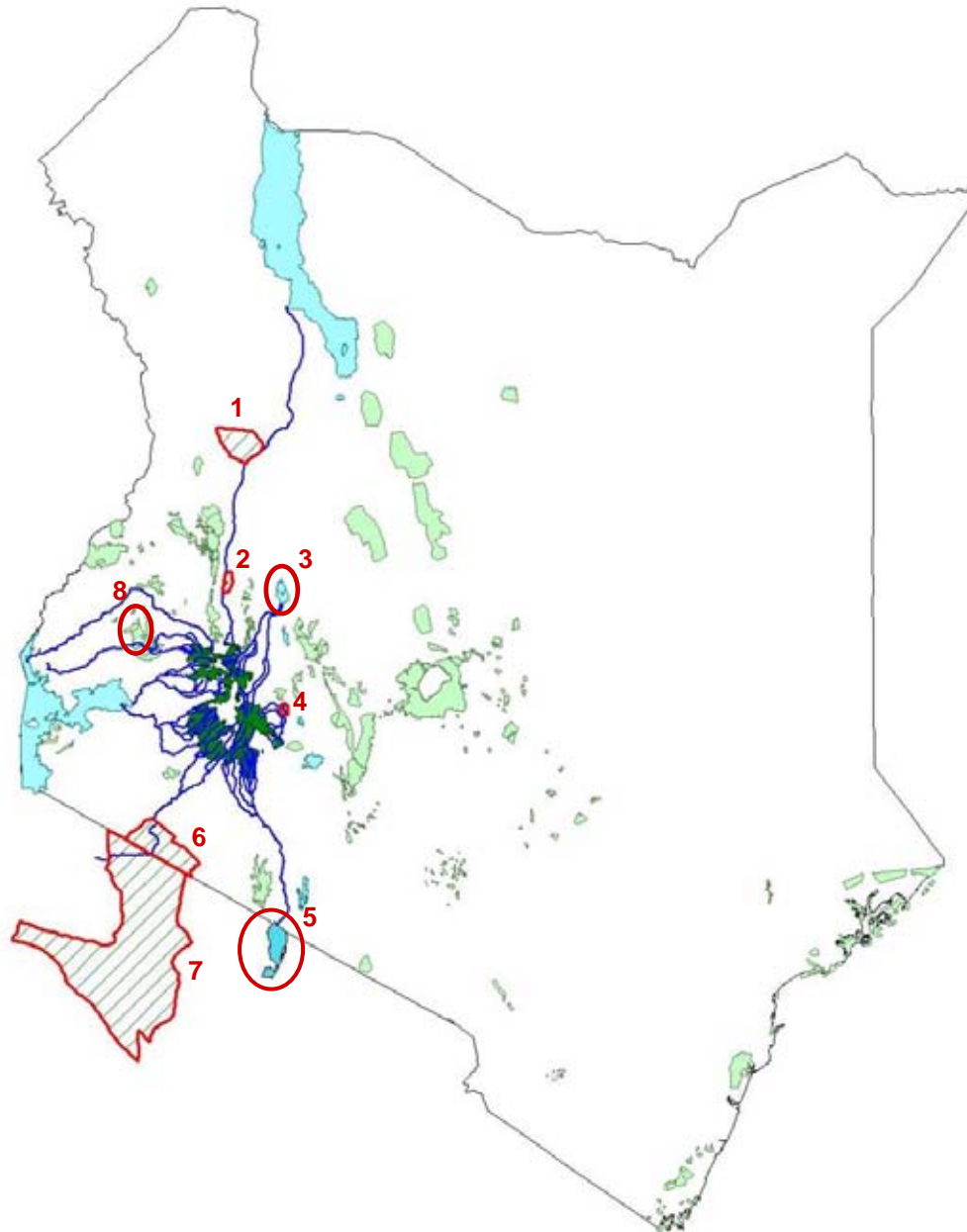
It feeds major lakes, including:

- Lake Victoria
- Lake Turkana
- Lake Baringo
- Lake Nakuru
- Lake Natron

of which three are cross-boundary:

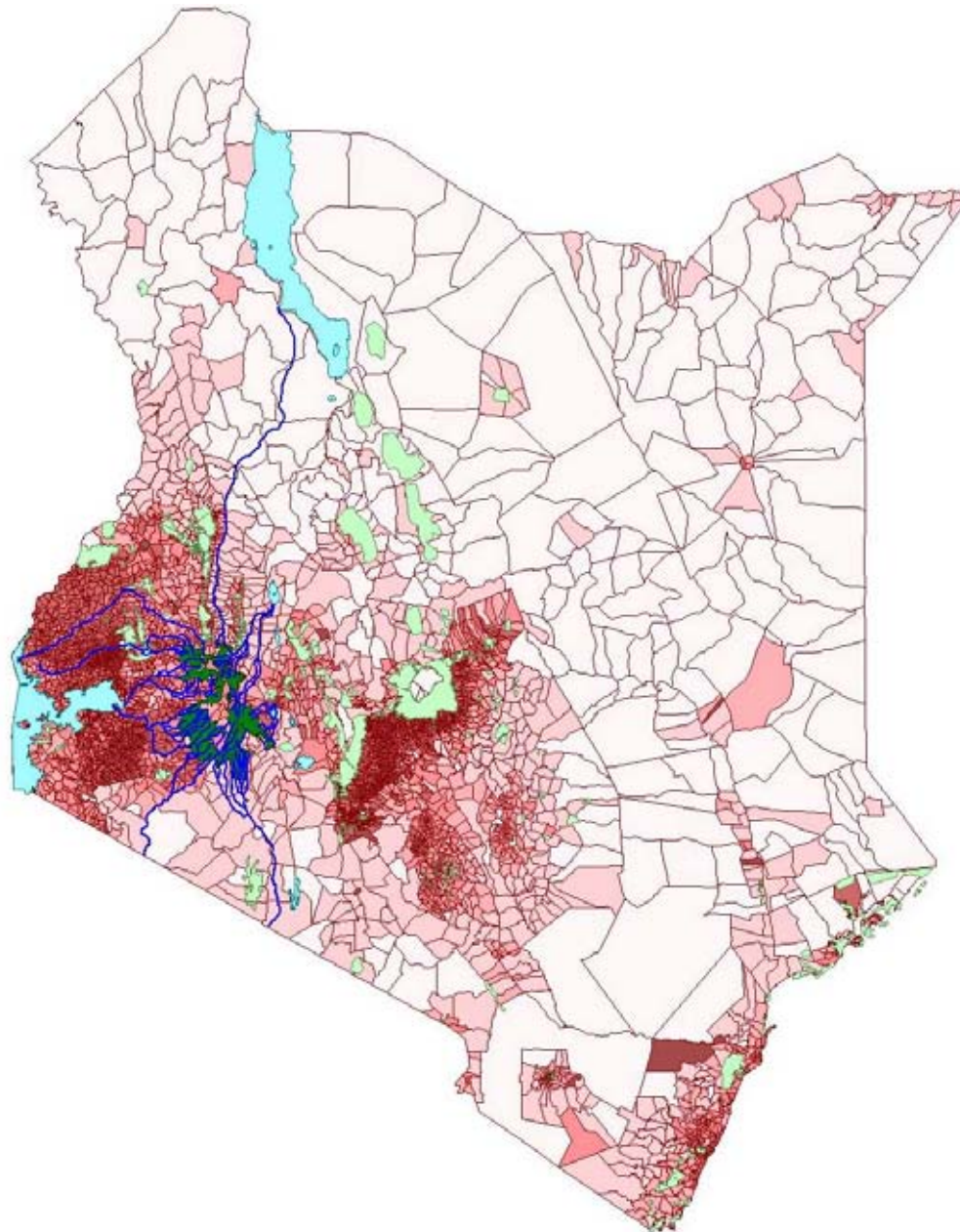
- Lake Victoria (Nile River Basin)
- Lake Turkana (Kenya / Ethiopia)
- Lake Natron (Tanzania / Kenya)

Mau Complex: key to major conservation areas



- 1 South Turkana National Reserve**
 - Scenic landscape. Wildlife plentiful
- 2 Kerio Valley National Reserve
Kamnarok National Reserve**
- 3 Lake Baringo**
 - Important Bird Area (over 470 species)
- 4 Lake Nakuru National Park**
 - Second most visited protected area
 - Ramsar Site (1990)
 - Important Bird Area (over 450 species)
- 5 Lake Natron**
 - Main breeding area for the flamingoes in the Rift Valley
- 6 Maasai Mara National Reserve**
 - World famous for big game and great migration
 - Important Bird Area (over 450 species)
- 7 Serengeti National Park**
 - World Heritage Site
 - World famous for big game and great migration
 - Important Bird Area (over 540 species)
- 8 Kakamega Forest National Reserve**
 - Only remnant in Kenya of the Guineo-Congolian forest ecosystem
 - High biodiversity (birds, butterflies, plants...)

People's dependence on the Mau Complex



A large majority of Kenya's population lives in Lake Victoria basin. This region is crossed by major rivers flowing from the Mau Complex. Over 3 million people live in the sub-locations crossed by these rivers.

In addition the Mau Complex provides environmental services essential to crop production (continuous river flow, favourable micro-climate conditions) as well as many products (medicinal plants, firewood and grazing).

Mau Complex
Other forests

Population density
(inhabitants / km²)

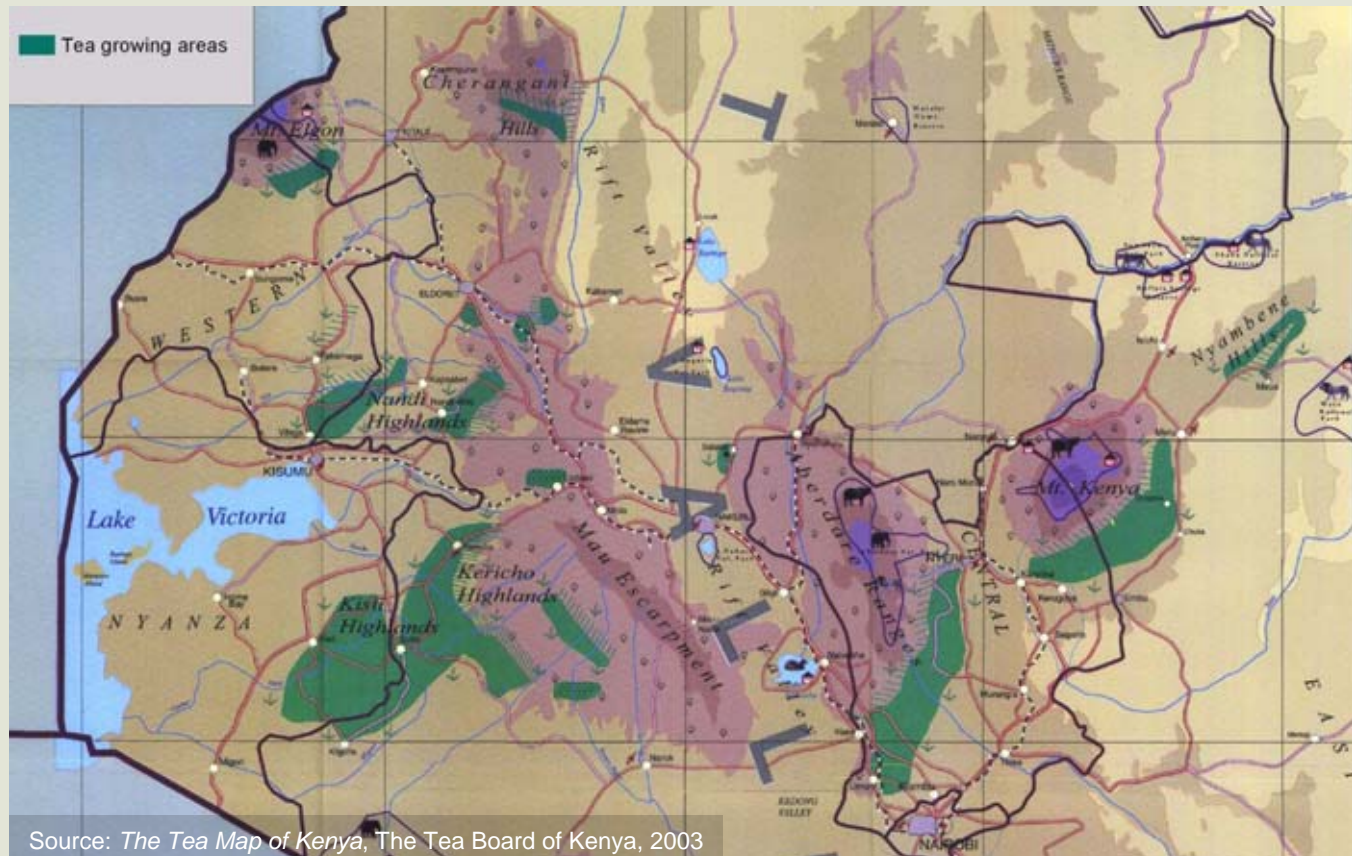
No data / protected areas
0 - 5
5 - 50
50 - 100
100 - 200
200 - 500
> 500

Mau Complex: key micro-climate regulator for crops

Tea growing areas are located near montane forests where conditions for optimum tea production are met:

- Constant moisture
- Soil temperature between 16 and 25 °C
- Air temperature between 10 and 30 °C

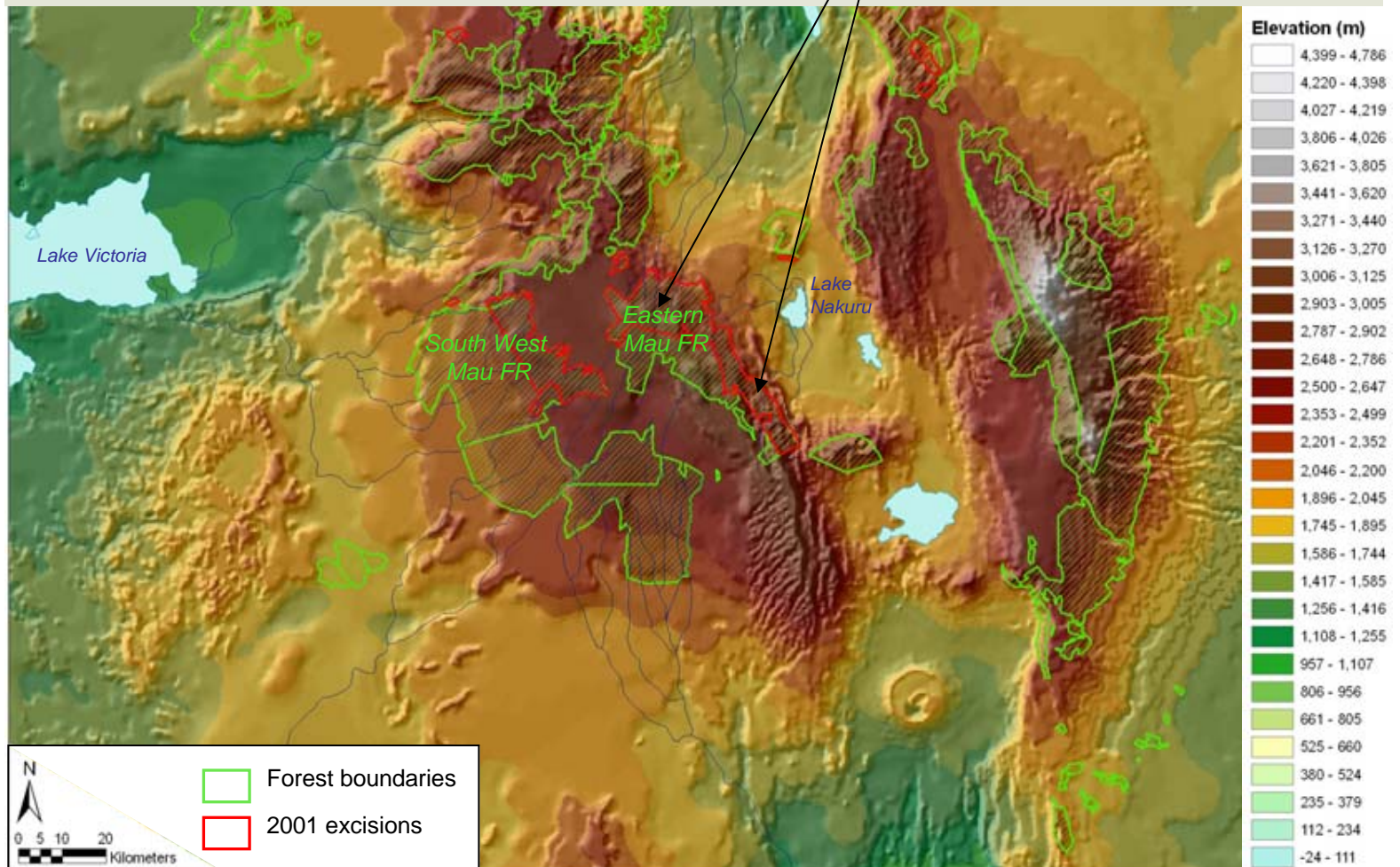
The largest tea growing areas in Kenya are near the Mau Complex, in particular South West Mau forest (Kericho), Tinderet and Northern Tinderet forests .



Source: *The Tea Map of Kenya*, The Tea Board of Kenya, 2003

Forest excisions: a major threat in the Mau Complex

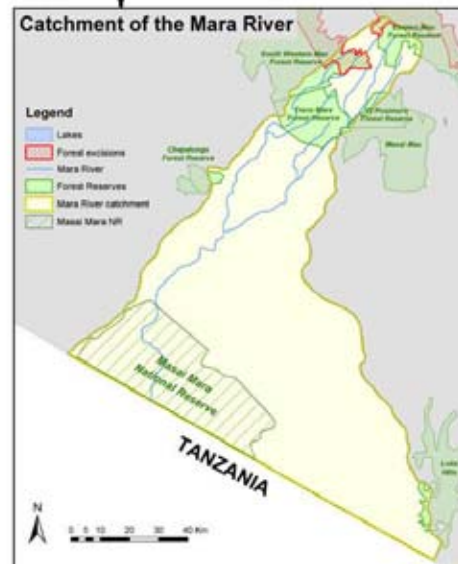
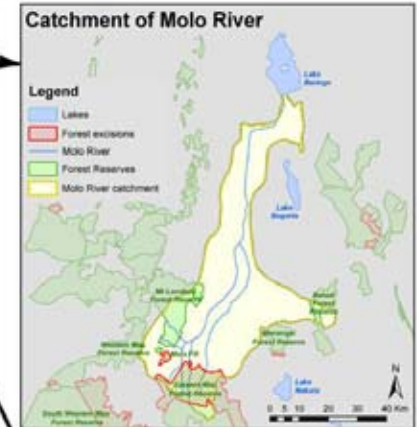
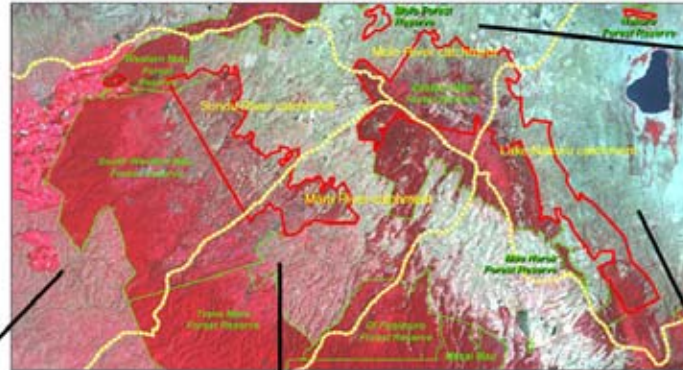
In 2001, the Government excised over 67,000 hectares of forest reserve land, mainly in the Mau Complex. The largest excised area extends over the top of the Mau escarpment (Eastern Mau FR), impacting tremendously on water resources: drying boreholes (Egerton University), drying rivers (Njoro). Settlements in such location are unsustainable, as water resources are declining very fast.

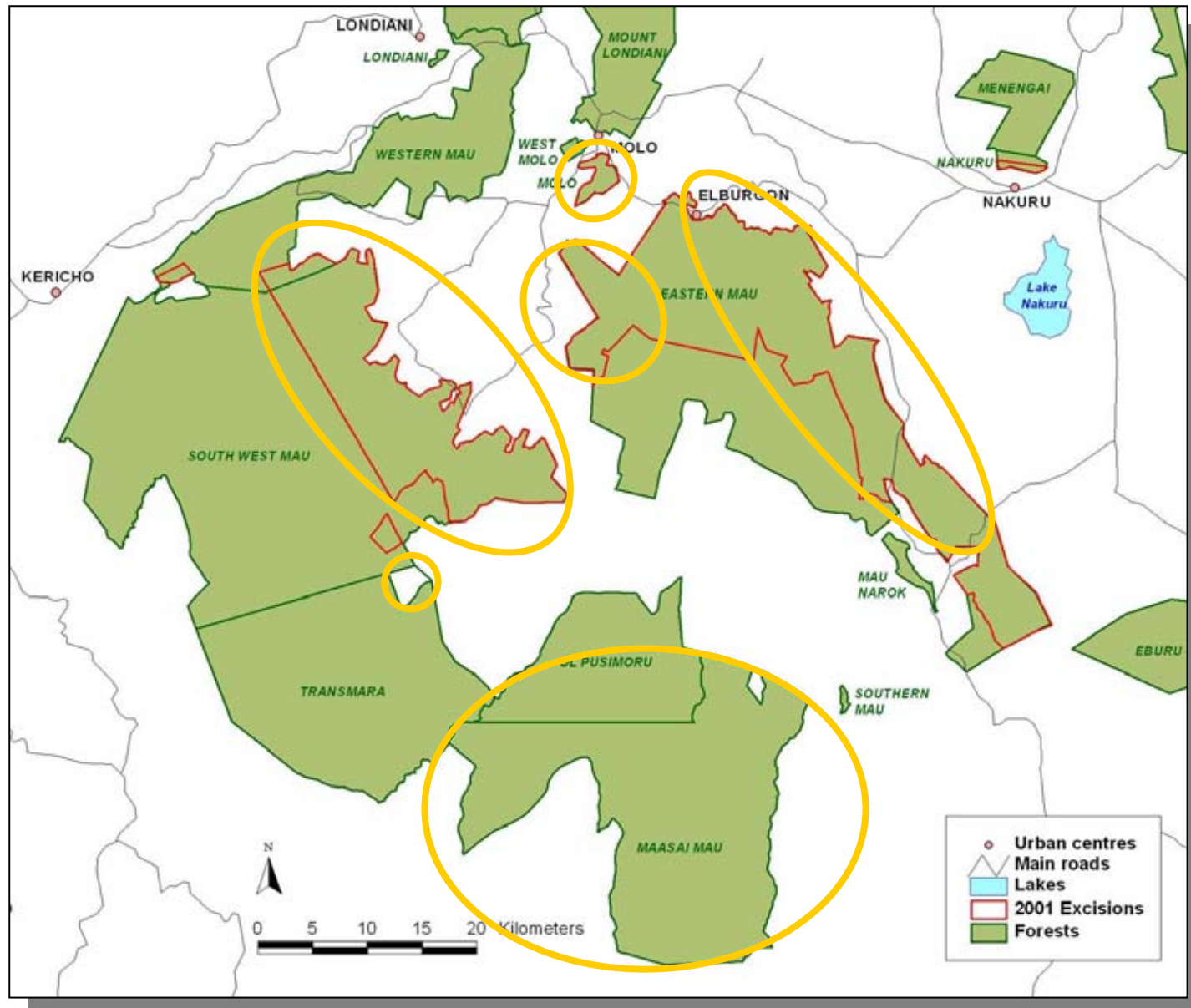


Forest excisions: a major threat in the Mau Complex

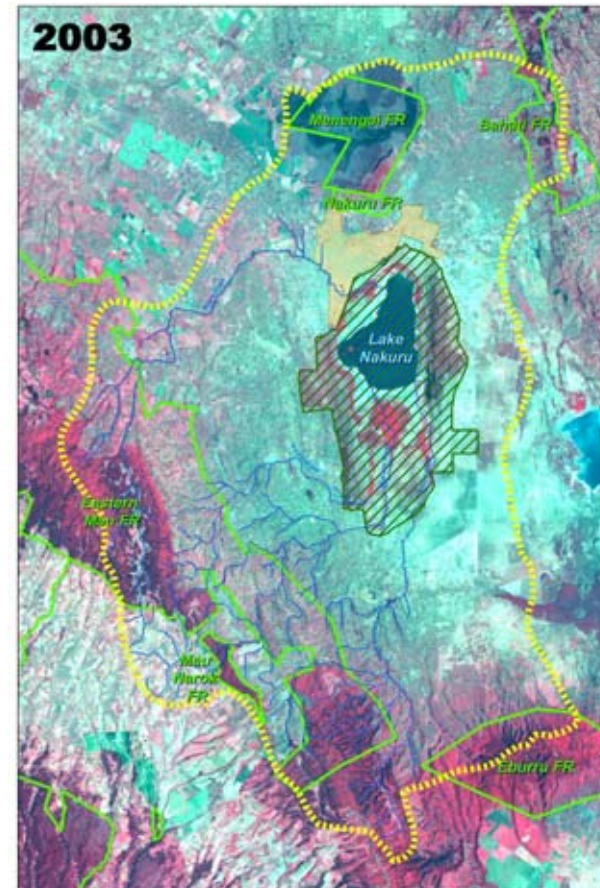
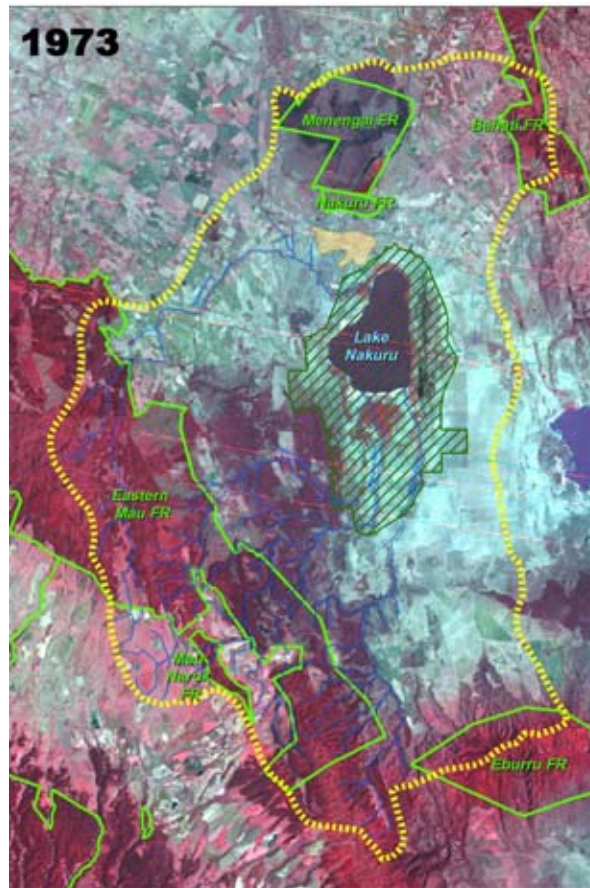
The forest excisions of October 2001 will impact on four main water catchments in the Mau complex: Sondu River, Mara River, Lake Nakuru and Molo River. These catchments are critical to key economic sectors, including:

- Power generation (60 MW Sondu-Miriu hydro-power plant)
- Tea sector (main tea estates at Kericho)
- Tourism and wildlife (Lake Nakuru National Park, Masai Mara National Reserve and Lake Baringo)





Eastern Mau Forest: impact of destruction on Lake Nakuru



Loss of dense vegetation cover between 1973 – 2003

Inside forest reserves: 15,820 hectares

Outside forest reserves: 20,960 hectares

Total: 36,780 hectares

representing 49 % of the dense vegetation cover in the catchment of Lake Nakuru

Legend

- Forest Reserves
- - - Lake Nakuru catchment
- Lake Nakuru National Park

Sources

- Landsat MSS and ETM images. False colour composition
- Forest boundaries: KIFCON project, Forest Department

Molo Forest



Molo Forest (902 hectares) is located in the centre of the upper catchments of the Molo River, one of the two main tributaries of Lake Baringo. The forest has been clear cut and excised in 2001. However, it is only sparsely settled and could be replanted with trees.

Location map



Molo Forest Reserve has an area of approximately 901.62 hectares. It was mainly covered by forest plantations (80 percent), the remaining being under indigenous forest. The forest is part of the upper catchment of Molo River.

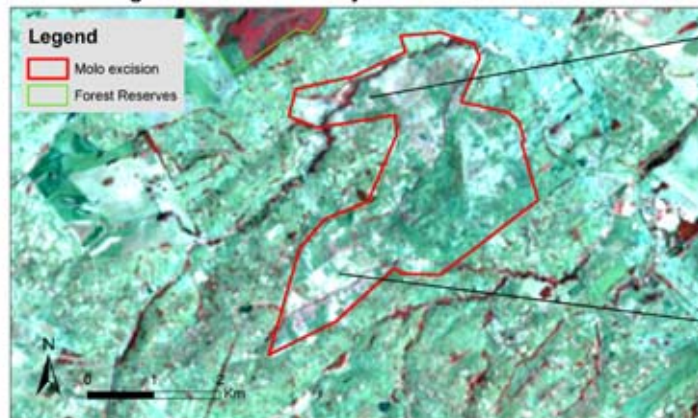
Molo Forest Reserve has been entirely excised by Legal Notice 145 of 19 October 2001.

Based on satellite image and aerial survey, it appears that all plantations have been harvested and not replanted with tree seedlings. The indigenous forest has been clear cut. Nevertheless, the forest has not been settled to date.

Aerial view taken on 2 February 2002



Satellite image taken on 12 February 2000



Aerial view taken on 2 February 2002



Poster prepared by
Kenya Forests Working Group
with support from
Friend of Mau Watershed (FOMAWA)
February 2002

Data sources:
- Landsat TM 2 image taken on 12 February 2000
- UNEP GRID/GIS/PFA
- Forest Reserve boundaries based on KPCON project,
Forest Department (1981-1984)
- Forest excision boundaries based on information provided
by the Kenya Forests Working Group
- Field ground cover based on "Forests of Kenya - Kenia
sheet", scale 1:250,000, revised on 3 March 1987
- Topomap at scale 1:250,000

Transmara Forest Reserve: private tea estates



Kiptagich Tea Estate

Location: Transmara Forest Reserve

Area: 937.7 hectares

Status: gazetted forest

Excision Gazette Notice: 3 March 1989

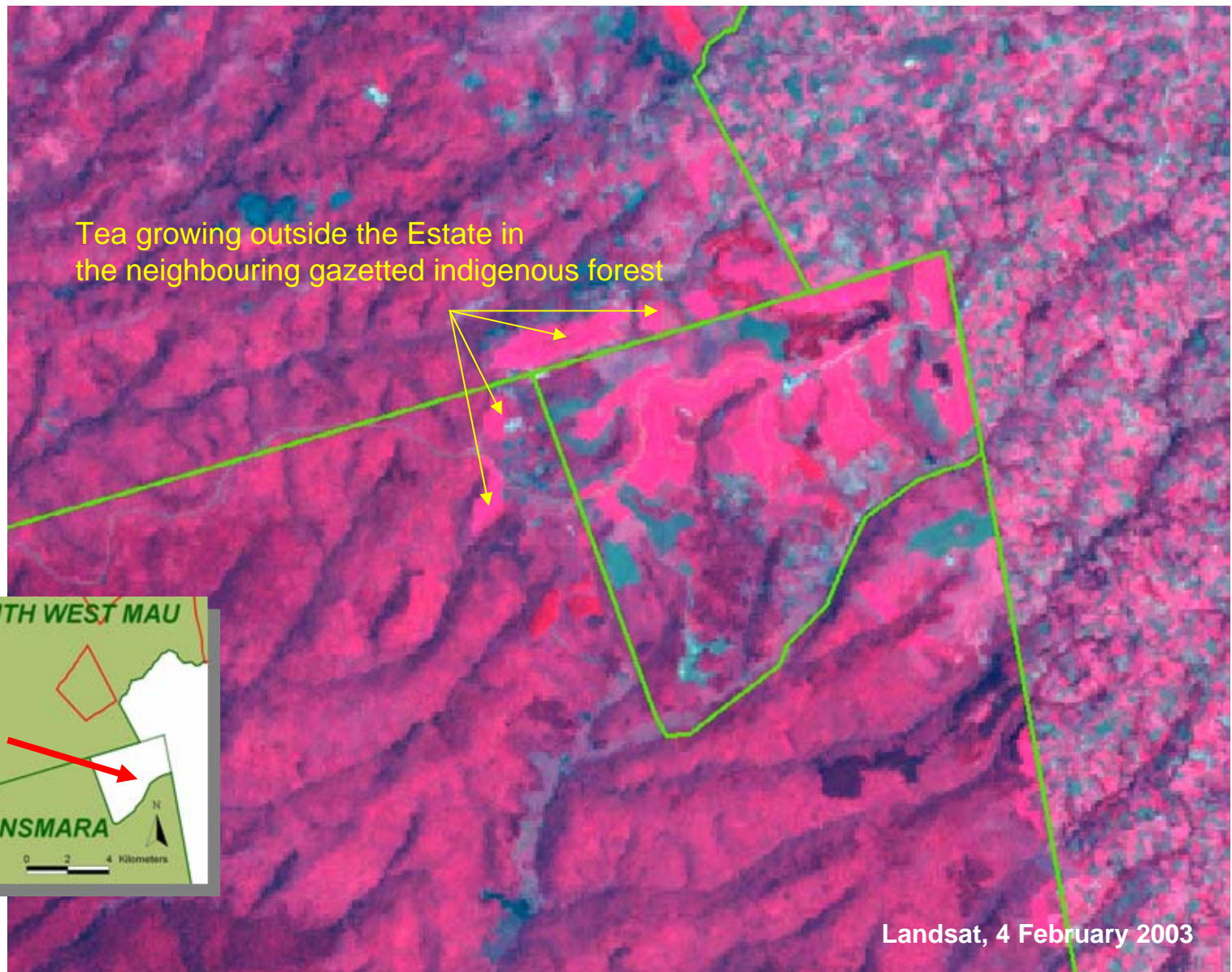
Excision Legal Notice: none

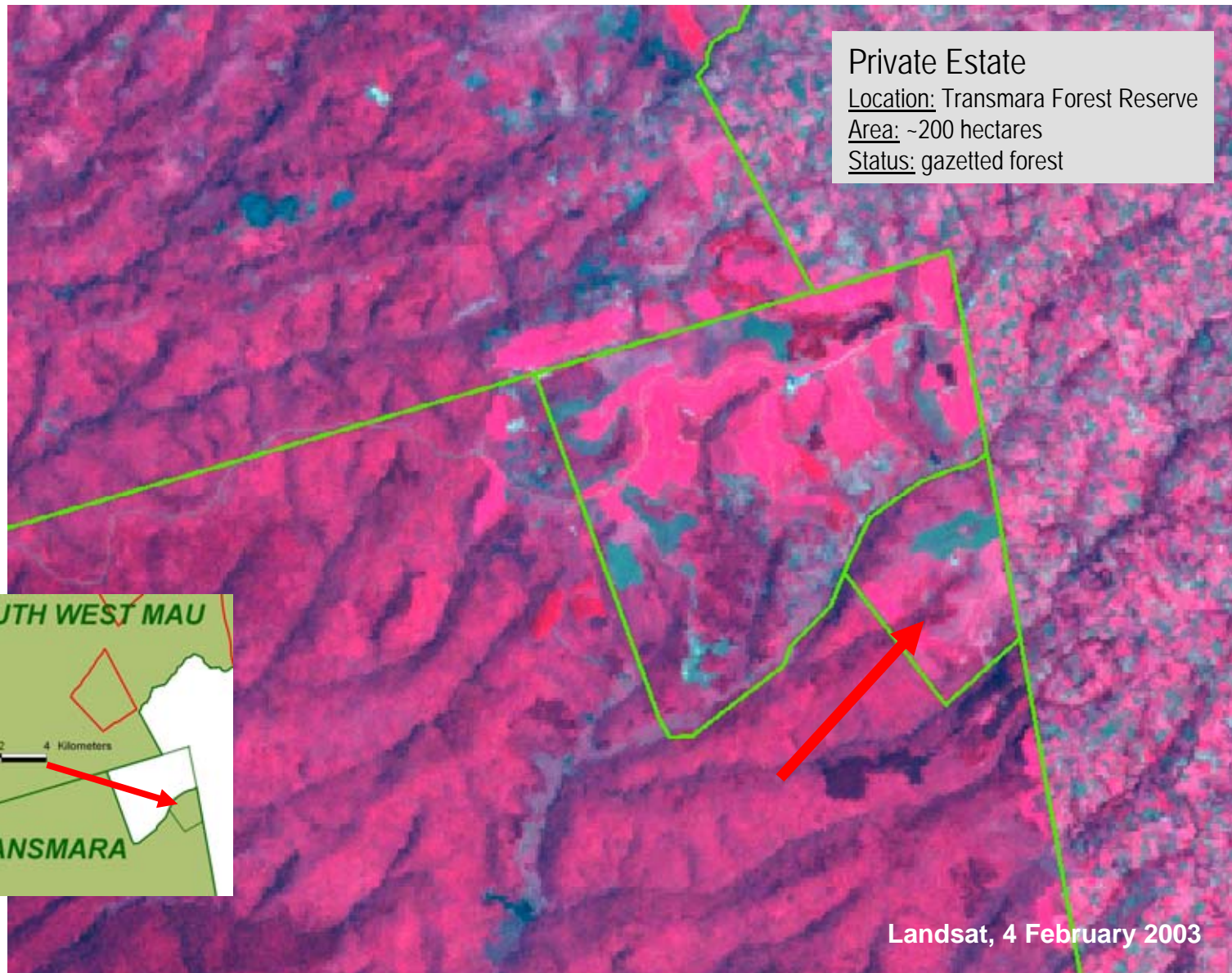


— Flight path ● Photographs — 2001 Excisions

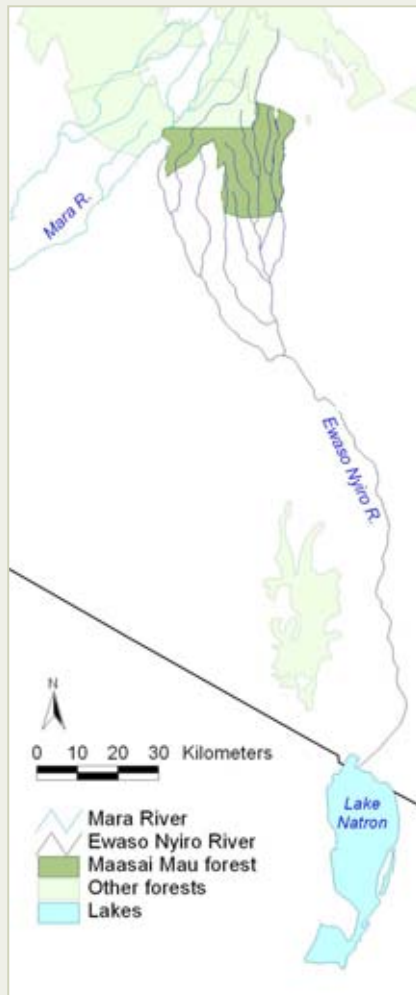
Photograph taken on 28 June 2004

Transmara Forest Reserve: private tea estates





The Maasai Mau forest (46,278 hectares) is comprised exclusively of indigenous forest. It is a critical natural assets, in terms of water catchment, micro-climate regulation, biological diversity and tourism development.



Water catchment value

The Maasai Mau forest is the main upper catchment of the Ewaso Nyiro River which provides the much needed water to pastoralist communities. The River is also the main tributary of Lake Natron, which is the breeding area for the flamingoes of the Rift Valley. To the west, the Maasai Mau forest is part of the upper catchment of the Mara River.

Wildlife and tourism development

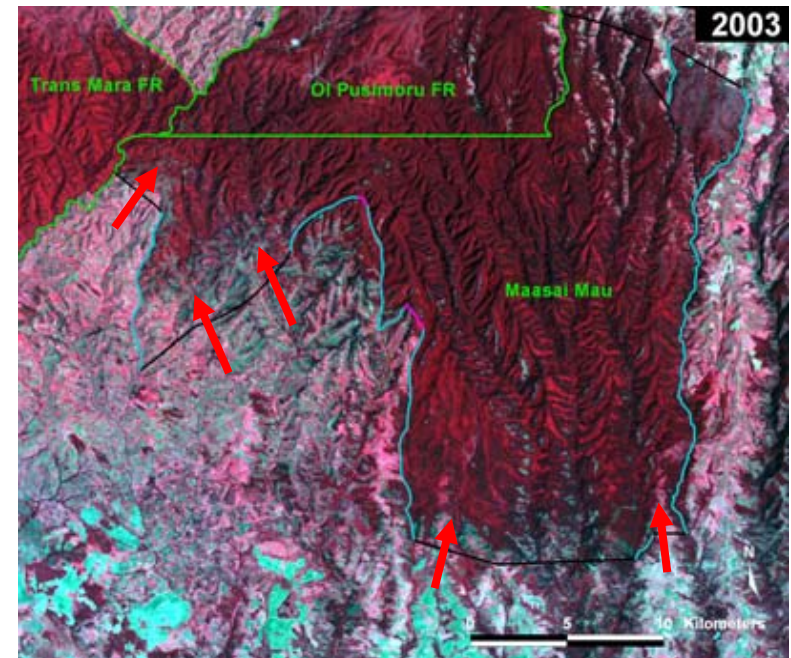
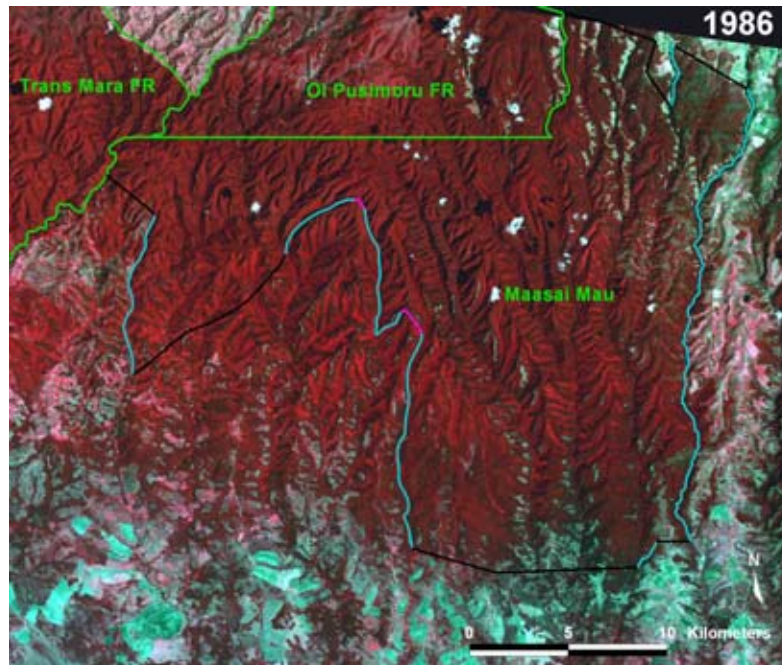
The southern forests of the Mau Complex are rich in biological diversity in terms fauna and flora. They host ungulates such as the Bongo and the yellow-backed Duiker; carnivores, including the Golden Cat and the Leopard; and the forest elephant. The forest of the Maasai Mau, in particular, comprises large stands of cedar and podocarpus forests with scattered natural glades.

The Maasai Mau forest is a major asset for tourism development. It could become a twin conservation areas with the Maasai Mara National Reserve



Maasai Mau: past forest destruction

The boundaries of the Maasai Mau Forest (46,278 hectares) were agreed upon in 1987, based on the work of the Ntutu Commission. Since the delineation, large tracks of forest were clear felled outside the boundaries. More recently, encroachments have taken place inside the forest boundaries.



Loss of forest cover between 1986 – 2003

Inside the boundaries: 3,382 hectares
 Outside the boundaries: 16,948 hectares
Total: 20,330 hectares
representing 30 % of the forest inside and outside the boundaries of the Maasai Mau

Legend

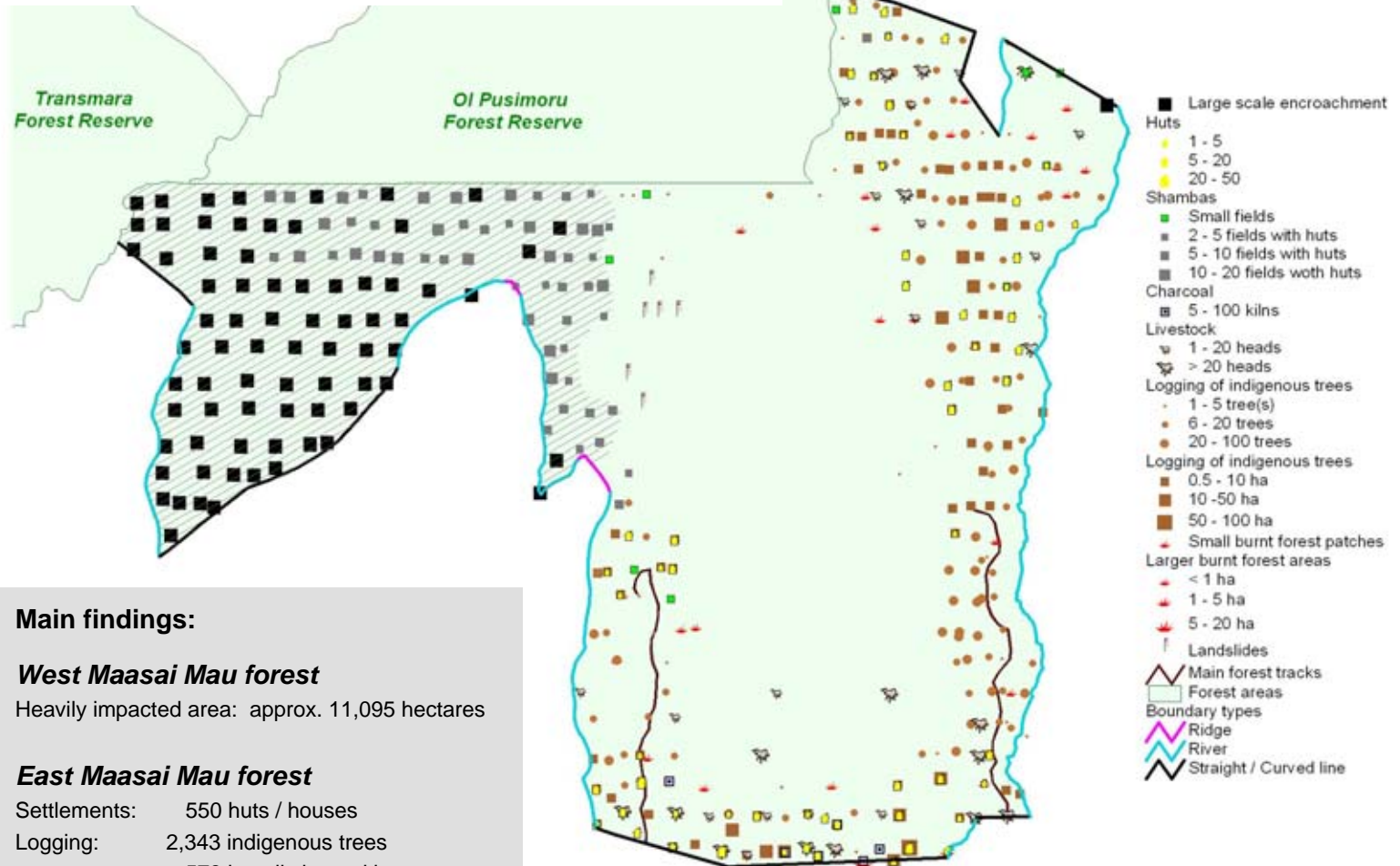
- River boundary
- Ridge boundary
- Straight line boundary
- Forest-forest boundary
- ➔ Main encroachment

Sources

- Landsat TM and ETM images. False colour composition
- Forest boundaries: KIFCON project, Forest Department

Encroachments continued further between 2003 and 2005 to cover the entire western part of the Maasai Mau forest, as revealed by an aerial survey carried out in February 2005.

Aerial survey, 16-21 February 2005: main findings



Main findings:

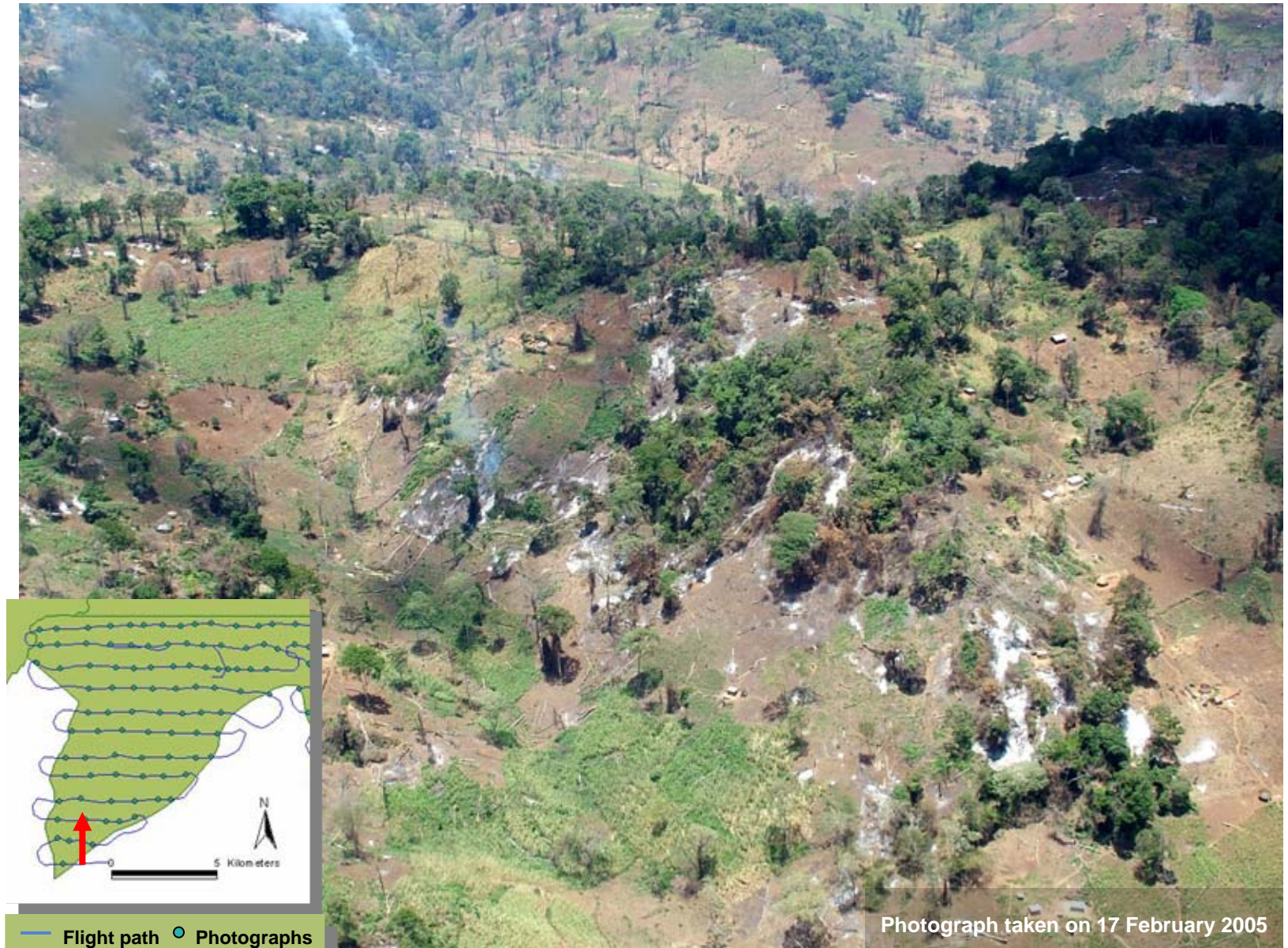
West Maasai Mau forest

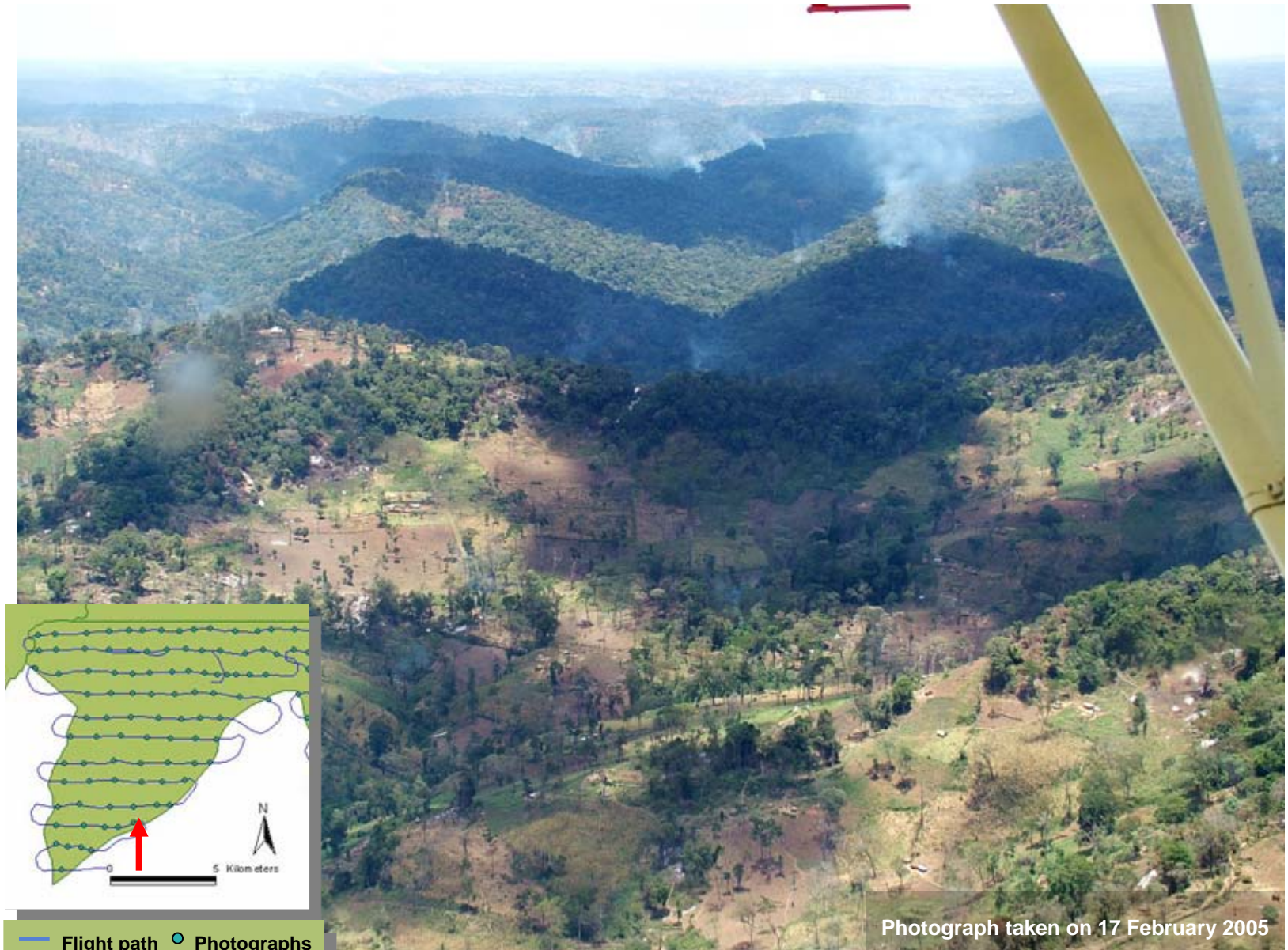
Heavily impacted area: approx. 11,095 hectares

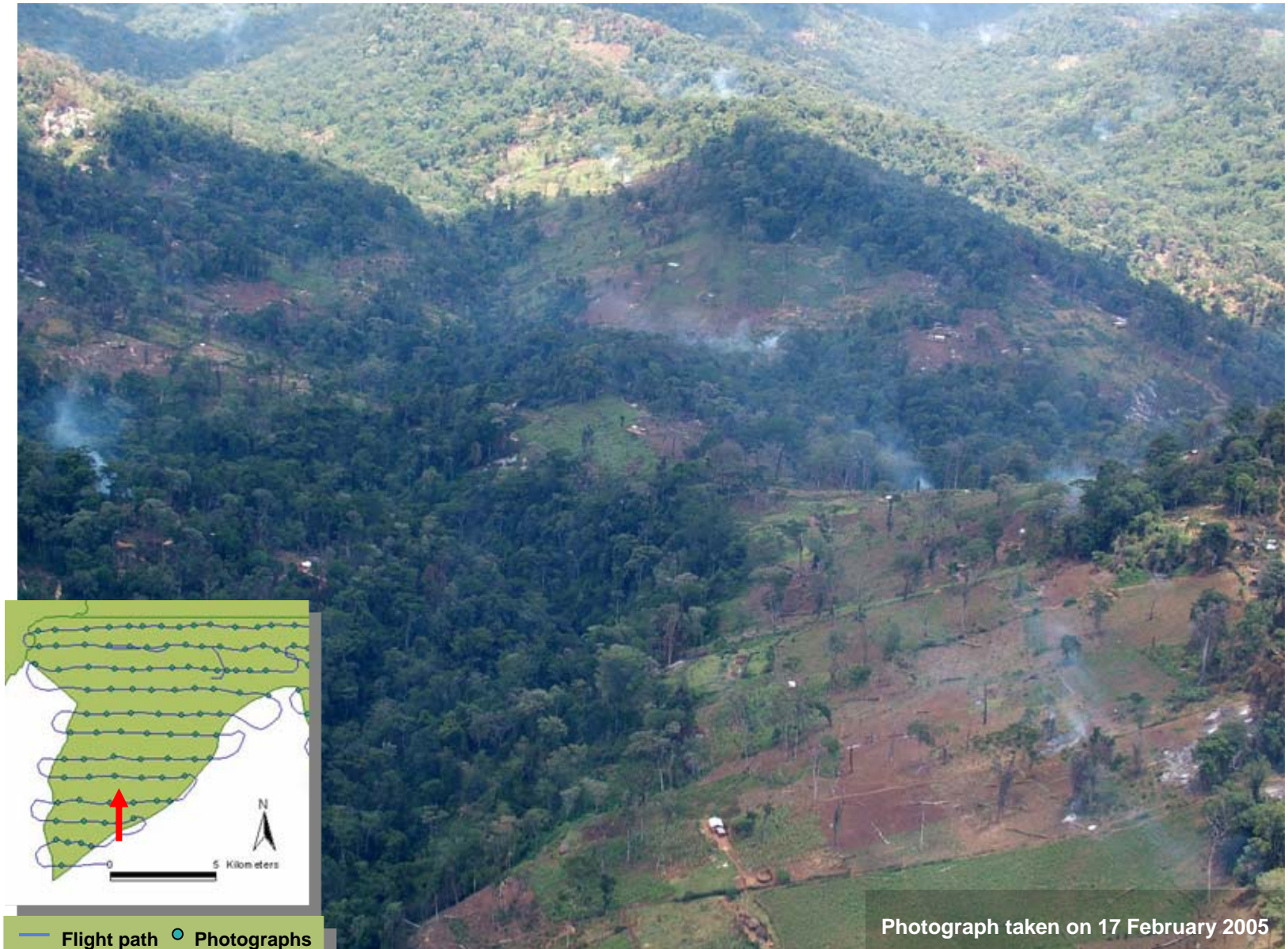
East Maasai Mau forest

Settlements: 550 huts / houses
 Logging: 2,343 indigenous trees
 578 heavily logged hectares
 Livestock: 1,055 head

Maasai Mau: current forest destruction

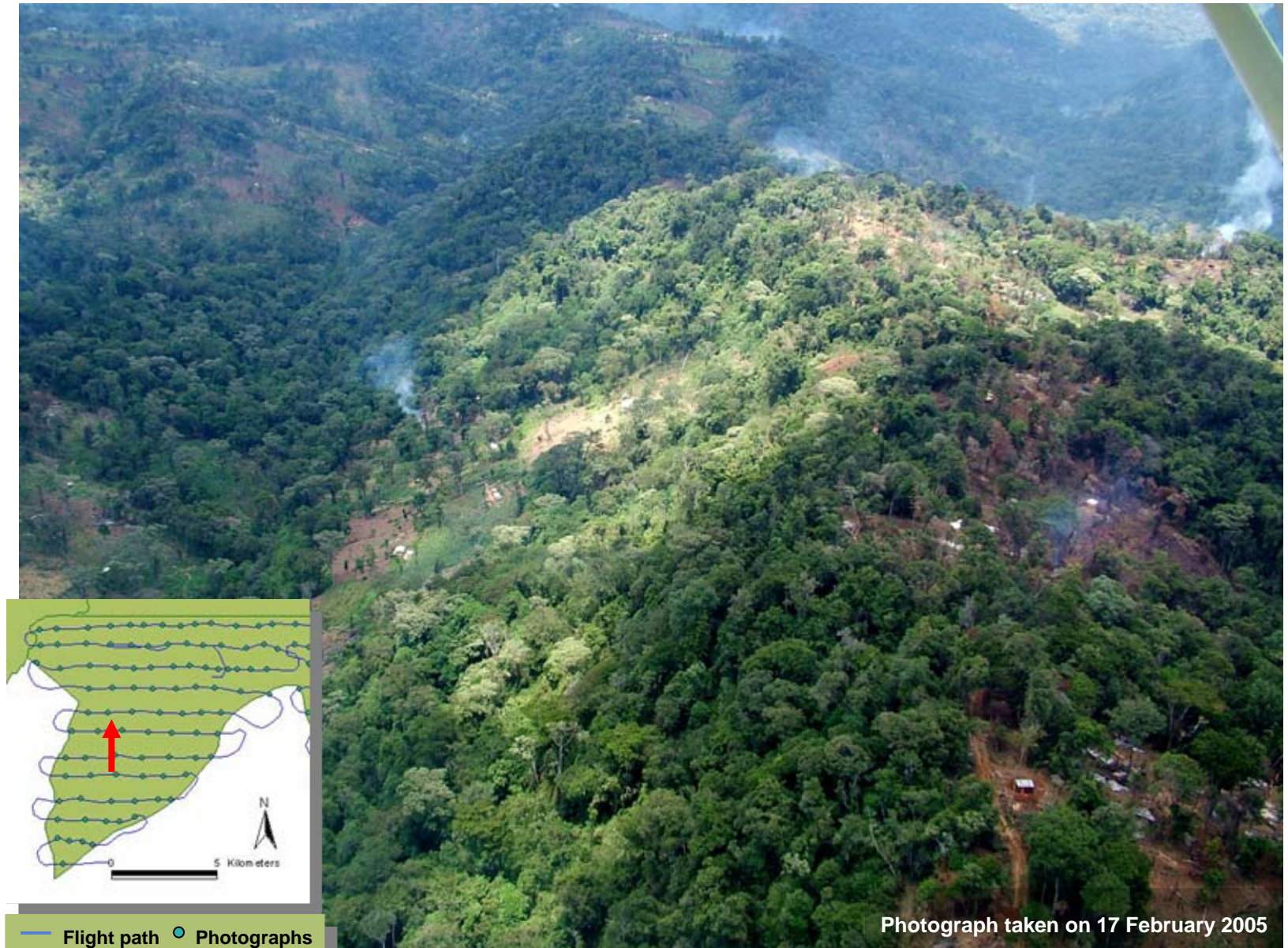






Photograph taken on 17 February 2005

Maasai Mau: current forest destruction



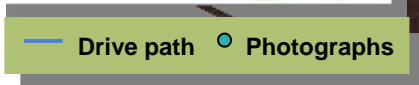
Maasai Mau: current forest destruction



Photograph taken on 21 April 2005

Maasai Mau: current forest destruction





Photograph taken on 21 April 2005

Maasai Mau: encroachment on Ol Pusimoru FR



Photograph taken on 21 April 2005



— Drive path ● Photographs