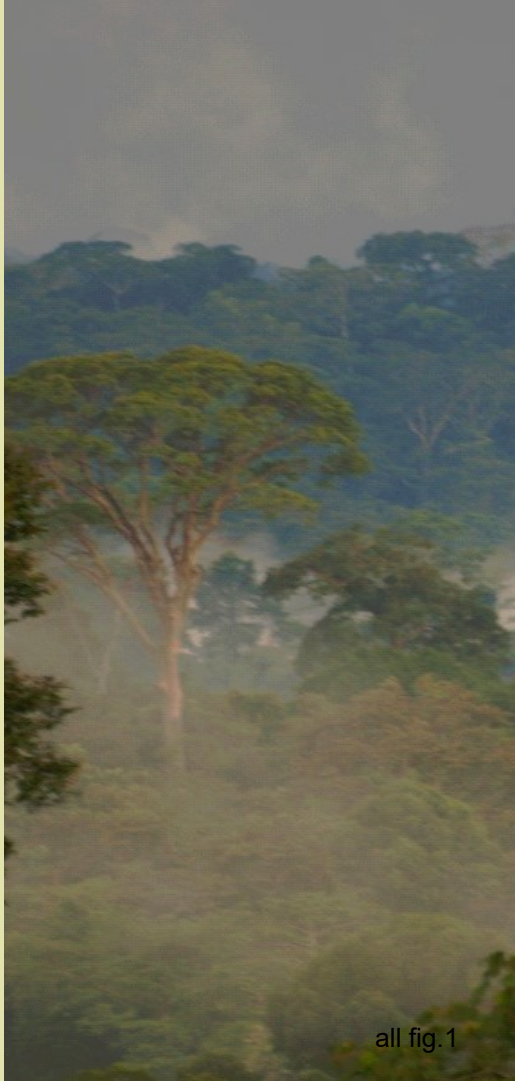
Proposal to acquire and restore crucial plantation land for habitat connectivity in Sabah / Borneo

March 2023

Reset for Nature



all fig.1

About the Rhino and Forest Fund e.V.

The Rhino and Forest Fund e.V. (RFF) was founded in Kehl, Germany, in 2009

Approach

Combining species conservation with habitat protection and ecosystem restoration on a landscape level

Purpose

Nature Conservation

Main activities

- **Forest protection**
- **Forest restoration**
- **Establishment of wildlife corridors**

all fig.2

About the Rhino and Forest Fund e.V.

RFF Project Areas

fig.3

About the Rhino and Forest Fund e.V.

SABAH FORESTRY DEPARTMENT

WILDLIFE DEPARTMENT SABAH

Collaborating partners, who are working with us to protect the rainforest.

FORUM KONSERVASI LEUSER

ZOO LEIPZIG

DANAU GIRANG • FIELD CENTRE •

BOS BORNEO ORANGUTAN SURVIVAL

About the Rhino and Forest Fund e.V.

What have we achieved so far?

2,000+

hectares of forests protected in Borneo

25,000+

trees planted

1,000,000+

tons of CO2 emissions prevented

Background

fig.4

Background

- **Tree cover loss with >75% canopy density (2001 - 2018)**
- **Tree cover with >75% canopy density (2010)**

Borneo is among the top three biodiversity hotspots worldwide in terms of conservation priority.
(Myers et al. 2000)

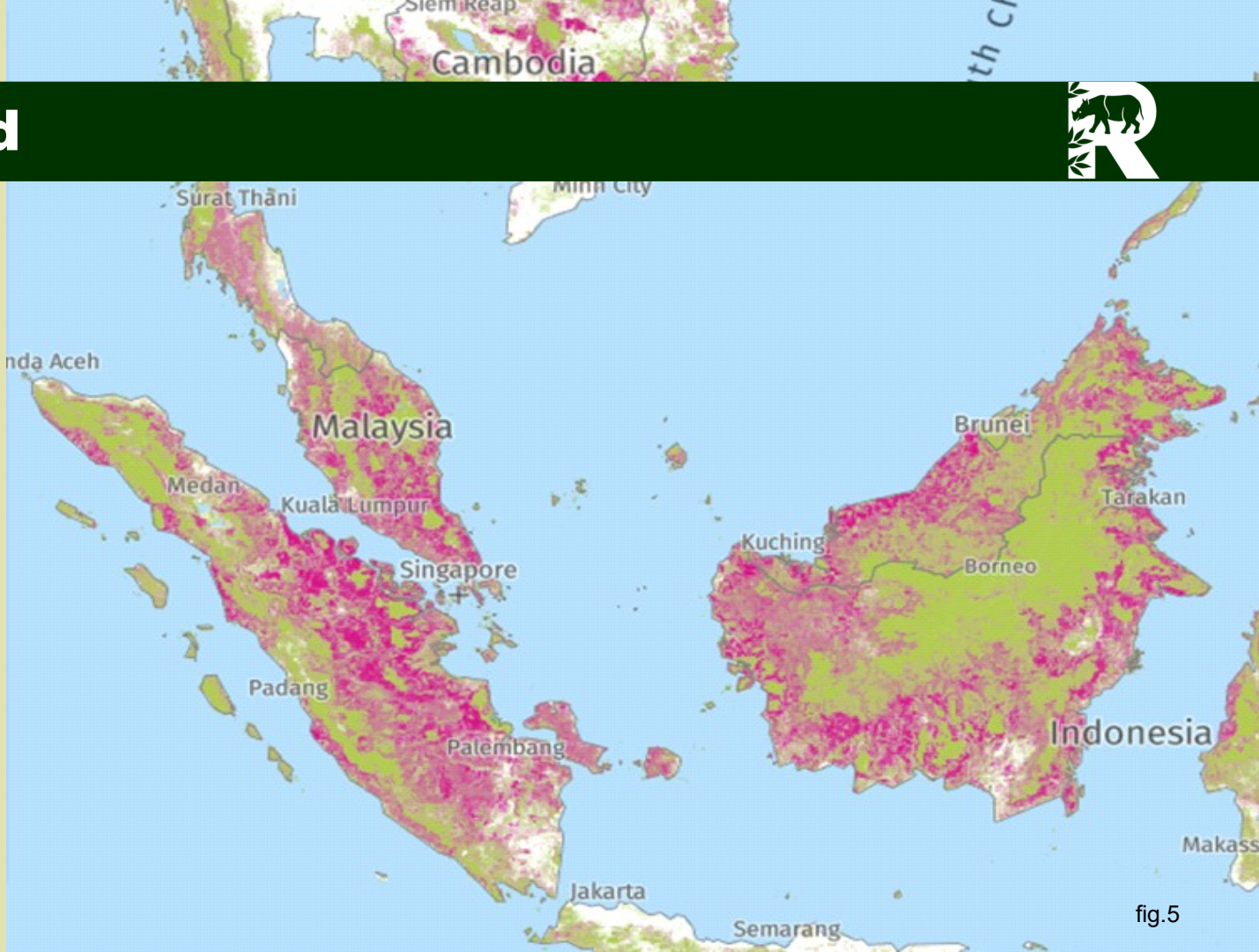


fig.5

Background

Map of Sabah indicating the *fragmented* totally protected areas in green.

The predicted number of extinct species increases by:

Habitat isolation
Habitat reduction
(MacArthur & Wilson 1967; Primack 2014)

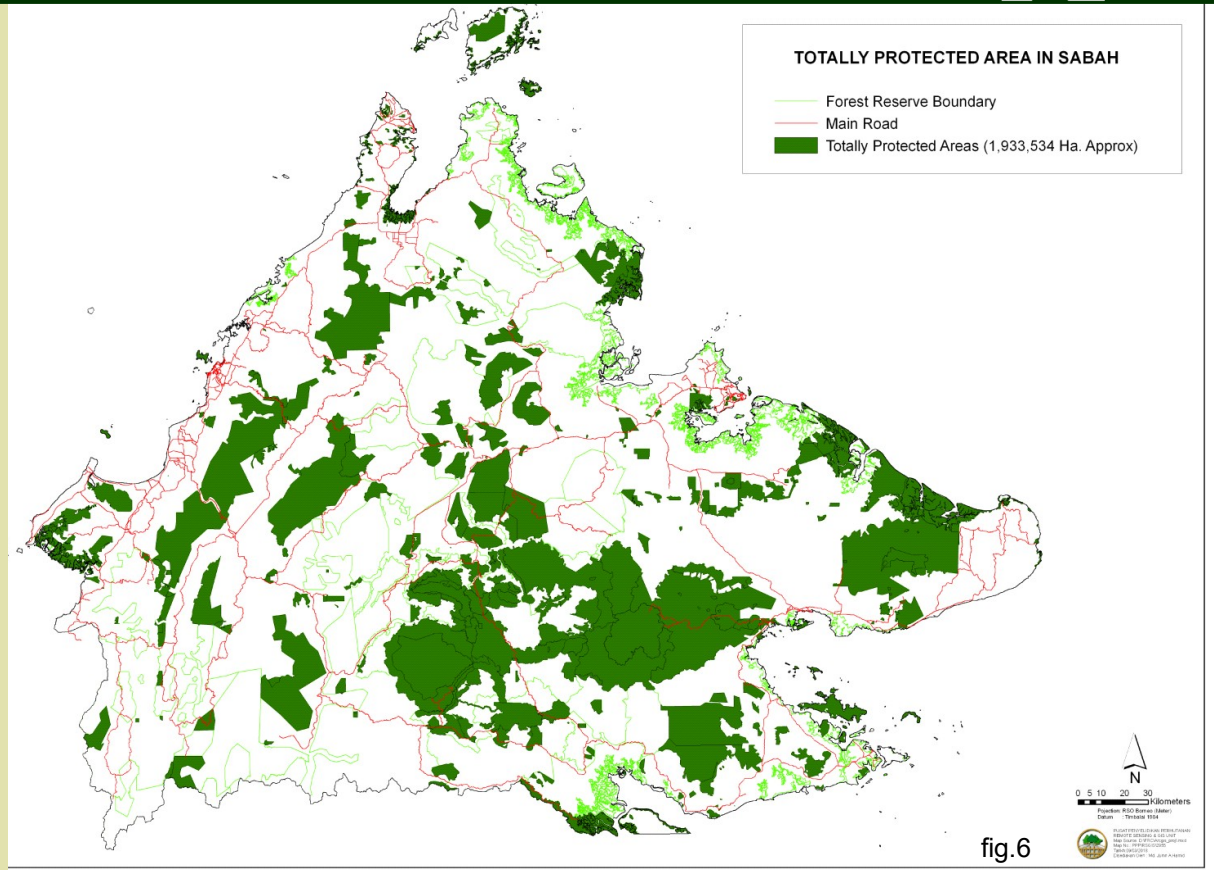


fig.6

Background

Why is habitat fragmentation a problem?

- ***Habitat fragmentation*** **leads to isolated populations of animals e.g. in islands of forest surrounded by uninhabitable monoculture.**
- **The longer an isolated area is disconnected the more species it will lose over time.**
- **The smaller it is, the less species it can support.**
- **This loss primarily occurs due to small population sizes and a poor gene pool e.g. due to inbreeding that eventually leads to extinction (*extinction vortex*).**
- **Limited habitat can only provide limited food sources, which can lead to the collapse of a growing isolated population (*exceeding carrying capacity*).**
- **Smaller areas are more vulnerable to external influences e.g. can't maintain the micro climate (*edge effects*) and are more prone to destructive human activities e.g. hunting or fire.**

Background

How to tackle the habitat problem?

1. PROTECT

The *protection* of remaining habitats needs to be improved to control threats such as poaching, encroachment, destructive infrastructure development, and environmental pollution.

2. CONNECT

Isolated habitats need to be connected with *wildlife corridors* to reach an area of a sufficient size and quality to support enough individuals to keep a species alive (*minimum viable population size*). Wildlife corridors are essential for animals to migrate and mate with different populations to increase genetic diversity. (Jamieson, Ian G., Allendorf, Fred W. 2012)

3. ENHANCE

Degraded habitats need to be enhanced to produce more food for wildlife (*enhancing the carrying capacity*).

4. RESTORE

Lost habitats need to be restored to stabilize the climate and to preserve biodiversity and ecosystem services (*ecosystem restoration*).

Background

At least in Sabah there is still hope...

The Government pledged to extend Sabah's totally protected areas to 30% of Sabah by 2025 (currently 26%) and collaborates with conservation NGOs.
(Sabah Forest Policy 2018)

fig.7

Projects by RFF in Sabah

all fig.8

RFF projects in Sabah

Projects by RFF in Sabah

The RFF wants to connect and more effectively protect all remaining wilderness areas in east Sabah. The goal is to secure a habitat network of a sufficient size and quality to preserve as much of Borneo's threatened flora and fauna as possible.

Focus:
the TABIN LANDSCAPE

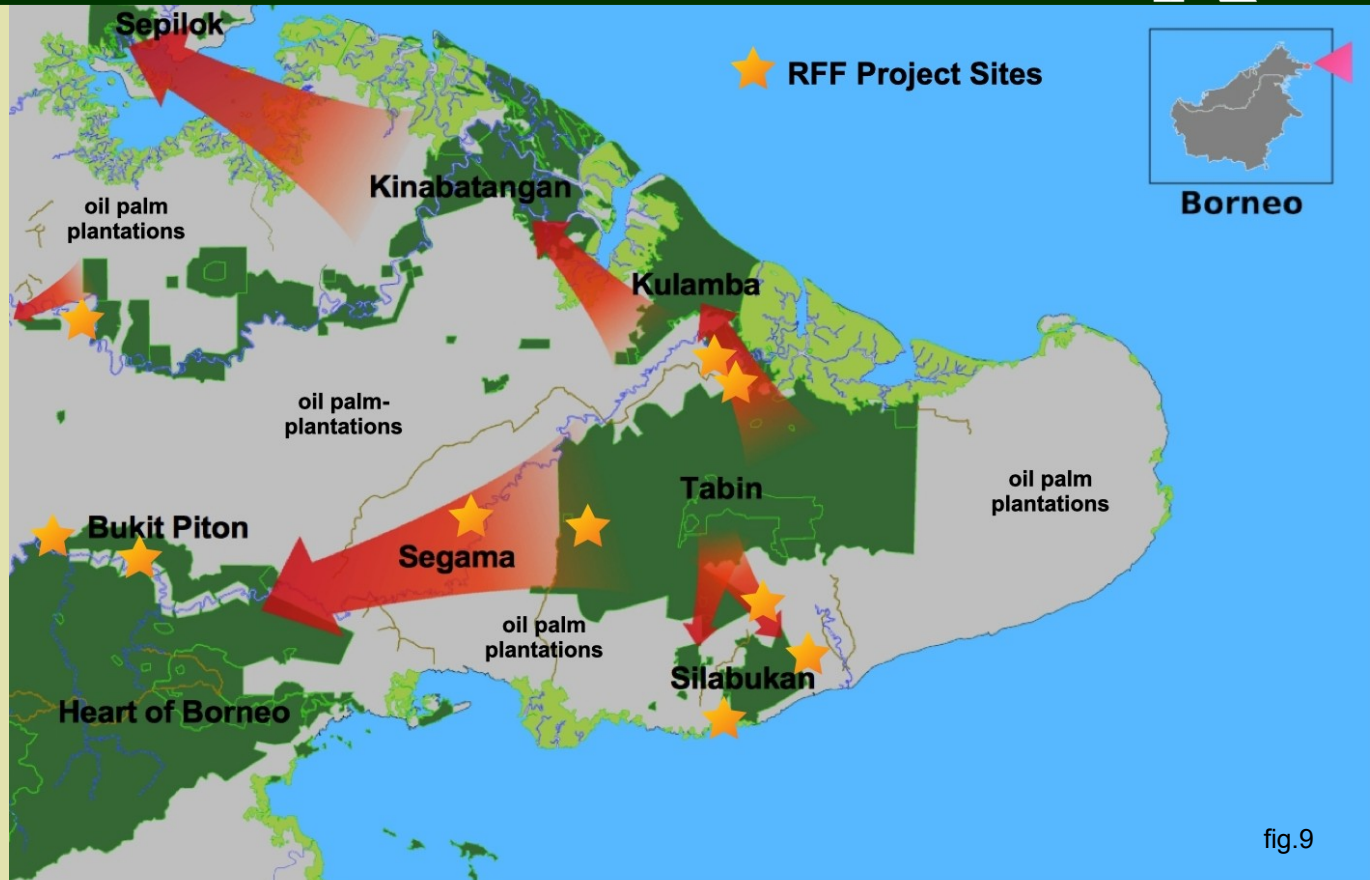


fig.9

Wildlife in the Tabin Landscape

fig.10

Wildlife in the Tabin Landscape

Northeast Bornean Orangutan

(***Pongo pygmaeus morio***)

Critically endangered

(IUCN Red List)

Population:
Up to 1,200 individuals live in Tabin and c. 480 in Kulamba.
The total population of this subspecies is below 14,000 individuals.
Orangutan Action Plan for Sabah: Connect Tabin and Kulamba!
(Sabah Wildlife Department 2020)

fig. 11

Wildlife in the Tabin Landscape

Proboscis Monkey

(*Nasalis larvatus*)

Endangered

(IUCN Red List)

Proboscis Monkeys can only be found in Borneo and are even more endangered than orangutans. They are threatened by habitat fragmentation.

(Sabah Wildlife Department 2019)

fig.12

Wildlife in the Tabin Landscape

Eastern Grey Gibbon

(*Hylobates funereus*)

Endangered

(IUCN Red List)

Gibbons depend on a closed canopy and don't cross oil palm plantations.

fig.13

Wildlife in the Tabin Landscape

Bornean Elephant

(***Elephas maximus borneensis***)

Endangered

(IUCN Red List)

These unique elephants only exist in Sabah and are threatened by habitat fragmentation, poachers and farmers.

Right: elephant born in front of RFF camera trap in Tabin.

fig.14

Wildlife in the Tabin Landscape

Bornean Elephant

(***Elephas maximus borneensis***)

The project area covers traditional elephant migration routes. Tabin is a refuge for up to 500 pygmy elephants.
Global population:
c. 1,000 – 1,500.
Bornean Elephant Action Plan for Sabah:
Connect Tabin and Kulamba!
(Sabah Wildlife Department 2019)

fig.15

Wildlife in the Tabin Landscape

Flat-headed Cat

(***Prionailurus planiceps***)

Endangered

(IUCN Red List)

One of the most endangered cat species of the planet with just a few records in recent times.

fig.16

Wildlife in the Tabin Landscape

Sunda Clouded Leopard

(***Neofelis diardi borneensis***)

Vulnerable

(IUCN Red List)

Since 2006 regarded as a distinct species with only a few thousand remaining individuals in the wild, it is still present in the project area.

Sunda Clouded Leopard Action Plan for Sabah: Connect Tabin and Kulamba!

(Sabah Wildlife Department 2019)

fig.17

Wildlife in the Tabin Landscape

Borneo Sun Bear

(***Helarctos malayanus eurypsilus***)

Vulnerable

(IUCN red list)

The project area is a refuge for a higher number of sun bears.

fig.18

Wildlife in the Tabin Landscape

Hairy-Nosed Otter

(*Lutra sumatrana*)

Endangered

(IUCN Red List)

The extremely rare hairy-nosed otter was discovered in the project area in April 2016. It might be the last viable population of the planet.

fig.19

Wildlife in the Tabin Landscape

Otter Civet

(*Cynogale bennettii*)

Endangered

(IUCN Red List)

The rarely recorded and elusive otter civet has been confirmed in the project area in July 2017 by RFF.

fig.20

Wildlife in the Tabin Landscape

Bornean Banteng

(***Bos javanicus lowi***)

Endangered

(IUCN Red List)

Only a few hundred individuals are left with the most important sub-populations in Kulamba and Tabin.

fig.21

Wildlife in the Tabin Landscape

The Tabin-Kulamba Wildlife Corridor is crucial to prevent the extinction of the Bornean banteng:

- **Around 100 individuals are estimated for Kulamba.**
- **Tabin has at least 50 individuals.**
- **Once united both sub-populations could form a viable population.**

Bornean Banteng Action Plan for Sabah: Connect Tabin and Kulamba!
(Sabah Wildlife Department 2019)

[fig.22]

The Tabin Landscape is a global hotspot of bird diversity


fig. 24


fig. 25


fig. 26


fig. 27


fig. 23


fig. 28

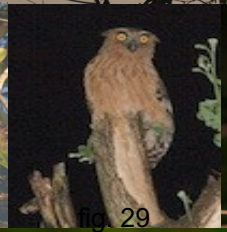


fig. 29

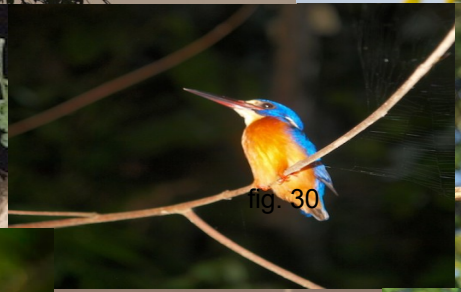

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fig. 31

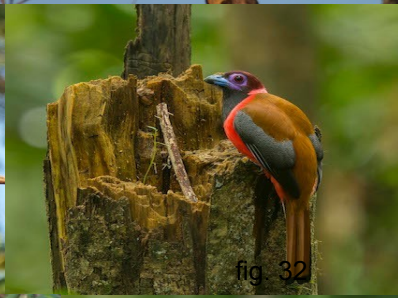
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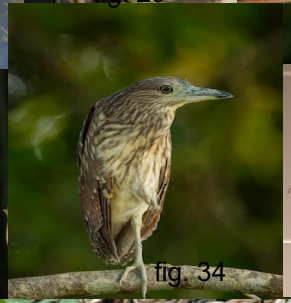
fig. 33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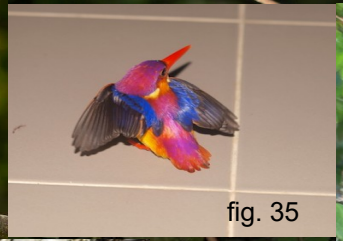
fig. 35


fig. 36


fig. 37


fig. 38


fig. 39


fig. 40


fig. 41


fig. 42

Wildlife in the Tabin Landscape

Storm's Stork

(*Ciconia stormi*)

Endangered

(IUCN Red List)

The project area might be the most important refuge of the endangered Storm's stork with less than 500 individuals worldwide.

fig.43

Wildlife in the Tabin Landscape

Lesser Adjutant

(*Leptoptilos javanicus*)

Vulnerable

(IUCN Red List)

The project area might be a refuge of the most important sub-population in Malaysia (c. 300 individuals estimated for the whole country and less than 15,000 individuals worldwide).

fig 44

Wildlife in the Tabin Landscape

Helmeted Hornbill

(***Rhinoplax vigil***)

Critically endangered

(IUCN Red List)

Disappeared from most landscapes in recent years, it is still present in the project area.

fig.45

The Tabin-Kulamba Wildlife Corridor

fig.46

The Tabin-Kulamba Wildlife Corridor

OBJECTIVE

Connecting Malaysia's largest Ramsar site (Lower Kinabatangan and Segama Wetlands) with Malaysia's largest wildlife reserve (Tabin Wildlife Reserve) to preserve Borneo's threatened flora and fauna.

TILL TODAY

- 2,300 ha of endangered forest have been saved.
- 65 ha of private land have been acquired.
- 65 ha are under restoration.

The Tabin-Kulamba Wildlife Corridor

The *isolated* Tabin - and Kulamba Wildlife Reserves are under the highest internationally accepted IUCN protected area category 1a comprising various rare ecosystems and many endangered species.

(https://www.protectedplanet.net)

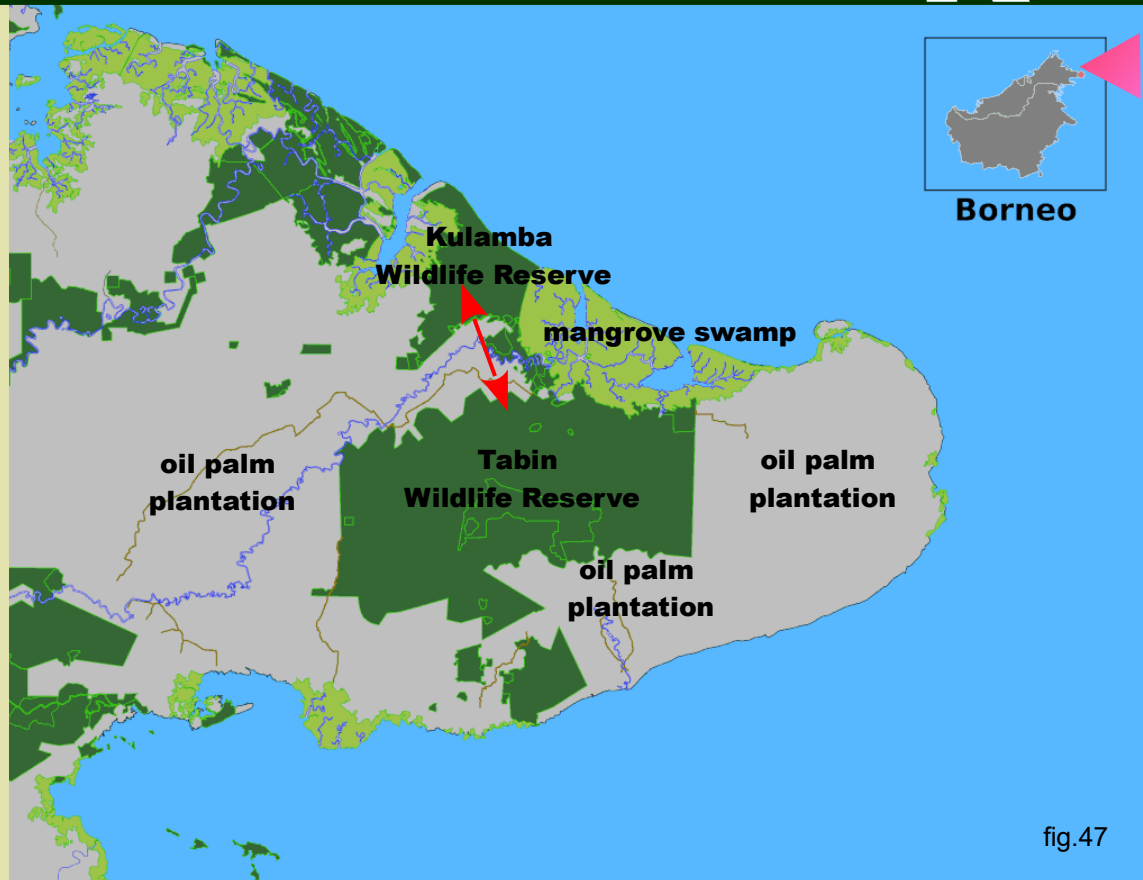

fig.47

The Tabin-Kulamba Wildlife Corridor

Since 2011 RFF in collaboration with local authorities has already saved more than 2,300 ha of crucial forest land that have been gazetted as totally protected areas (red areas).
The acquisition and restoration of the orange areas are essential to complete an effective connectivity between Tabin and Kulamba.

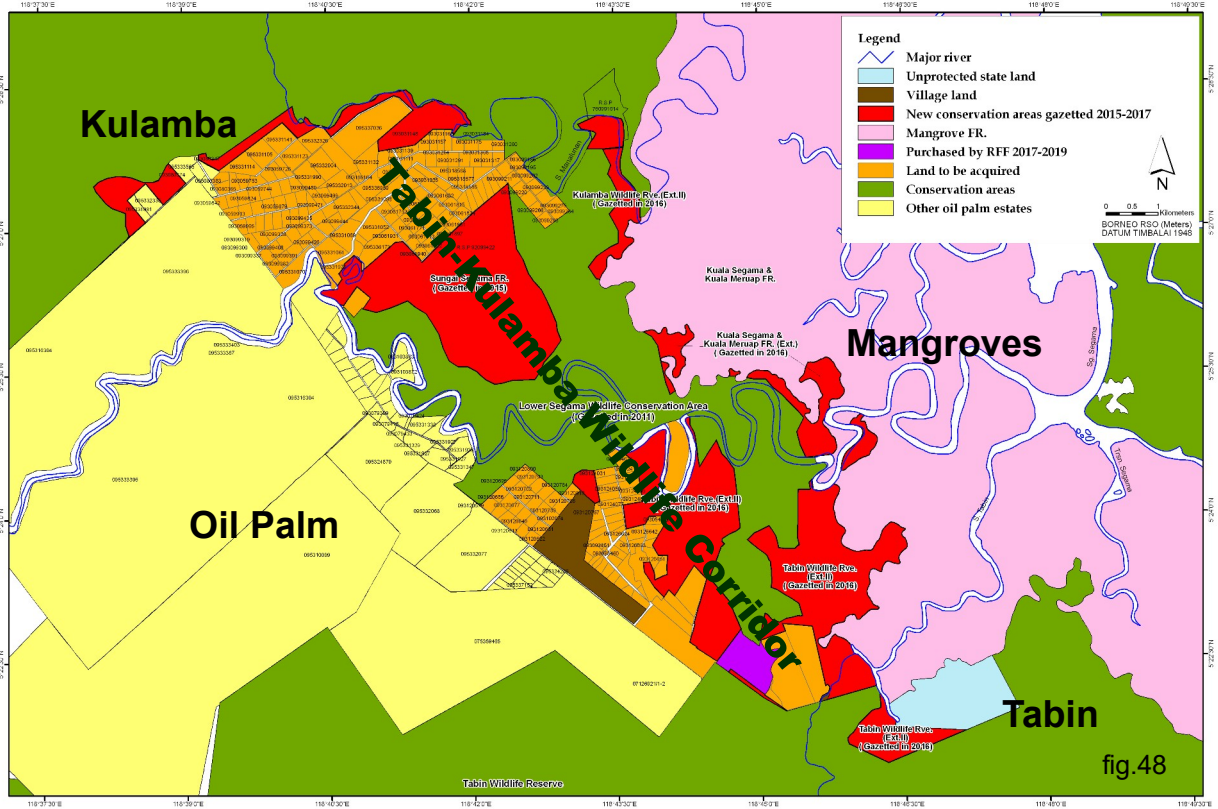

fig.48

The Tabin-Kulamba Wildlife Corridor

The RFF has already acquired
65 ha (red area)
linking c. 200.000 ha
of key biodiversity areas.

But the connectivity
is still <u>TOO NARROW</u>.

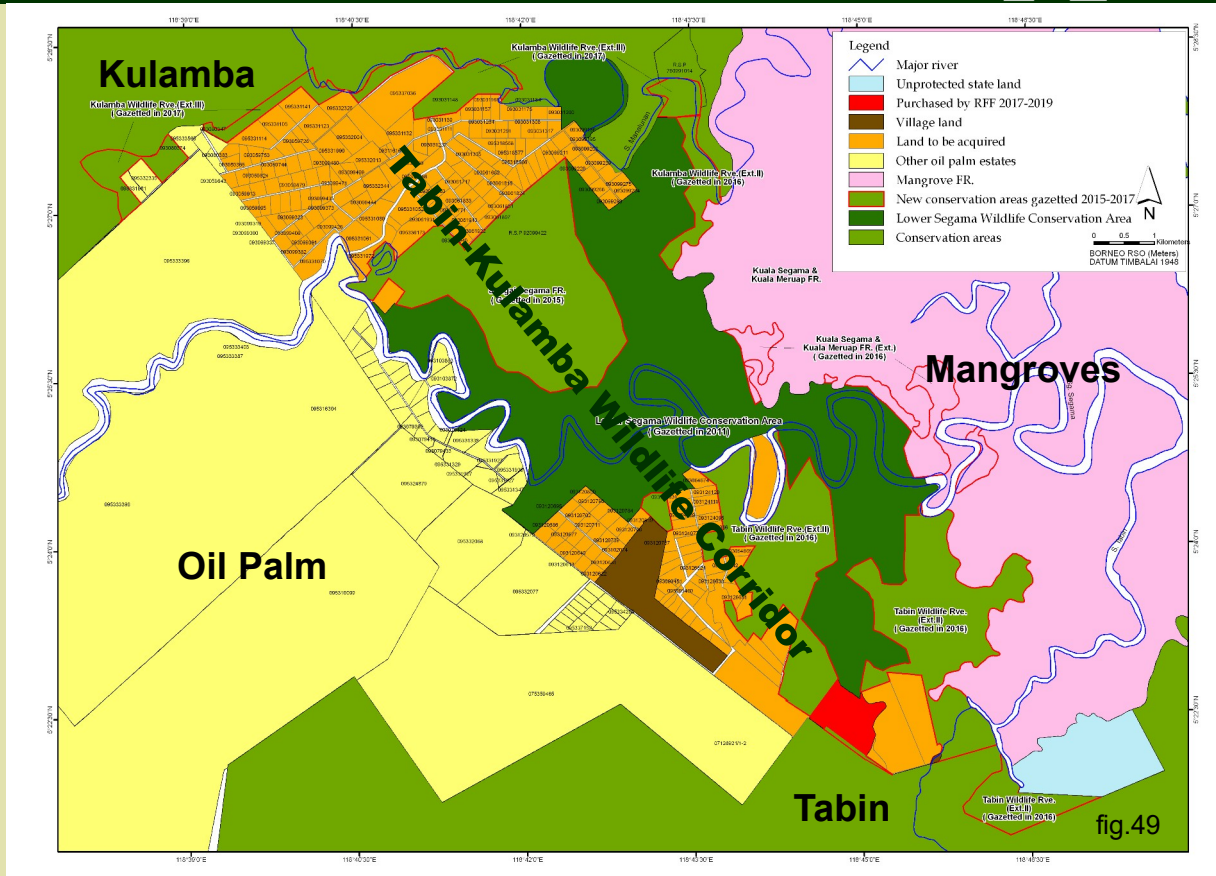

fig.49

The Tabin-Kulamba Wildlife Corridor

The RFF started working in the corridor area in 2011.

In 2012 RFF started to restore 2 km of the degraded river bank along the Tabin river. The river bank was for many years the last dry land connectivity to Tabin with a conservation status.

fig.50

The Tabin-Kulamba Wildlife Corridor

River bank restoration site at Tabin River (2019) adjacent to the 65 ha purchased by RFF.

fig.51

The Tabin-Kulamba Wildlife Corridor

Trees planted at Tabin river after 7 years.
The RFF started restoring 2km of the river bank in 2012 and has planted c. 4,000 trees on 14 ha.

fig.52

The Tabin-Kulamba Wildlife Corridor

Purchase of the last land parcels to extend The Wildlife Corridor in December 2019.

For the first time oil palm plantation land has been purchased for conservation by an NGO.

The Tabin-Kulamba Wildlife Corridor

Since 2020 50 ha of purchased oil palm plantation are under restoration by RFF combining enrichment planting and assisted natural regeneration methods under oil palm canopy.

fig.54

The Tabin-Kulamba Wildlife Corridor

Together with villagers from the adjacent community seeds and wildlings have been collected in the surrounding forest, raised in a nursery and planted under the oil palm canopy.

all fig. 55

The Tabin-Kulamba Wildlife Corridor

To enhance the carrying capacity for Wildlife, RFF created a first lake (1ha) on the purchased land near Tabin river in 2022.

fig.56

The Tabin-Kulamba Wildlife Corridor

Area prior to the lake creation in June 2022: 3.5 ha of *Mukuna bracteata*

fig.57

The Tabin-Kulamba Wildlife Corridor

Mukuna bracteata
is a very fast growing invasive species from North India used as a cover crop in oil palm estates preventing any trees to establish.

all fig.58

The Tabin-Kulamba Wildlife Corridor

During the lake creation we scratched and buried the mukuna carpet.

fig.59

The Tabin-Kulamba Wildlife Corridor

Only weeks later the whole open area turned into grass land providing pastures for herbivores.

fig.60

The Tabin-Kulamba Wildlife Corridor

Finished lake in October 2022

fig.61

The Tabin-Kulamba Wildlife Corridor

The new lake was quickly discovered by wildlife

Spawn
at the lake bank

Eel

Amboina box turtle
(*Cuora amboinensis*)

Endangered
(IUCN Red List)

all fig. 62

The Tabin-Kulamba Wildlife Corridor

Ficus fruits are a main food source for wildlife.
To enhance the carrying capacity for various species, ficus trees have been planted at the new lake.
(March 2023)

fig. 63

Urgent
Appeal for Donations

fig. 64

Urgent appeal for donations

Most of the orange area (map right) is an oil palm estate (approximately 540 ha). This crucial area is essential to complete the Tabin-Kulamba Wildlife Corridor, which would significantly decrease the extinction risk of several highly endangered species e.g. Bornean banteng and Bornean elephant.

The landowner wants to sell his estate as soon as possible. Should we not succeed to raise enough funds to start buying his estate by May 2023, he informed us that he will sell the land to an oil palm company.

We need at least <u>1 m Euros by May 2023</u> to prove that we are serious, to prevent a disaster and at the same time to write conservation history.

Total costs for the 540 ha: 5 m Euros

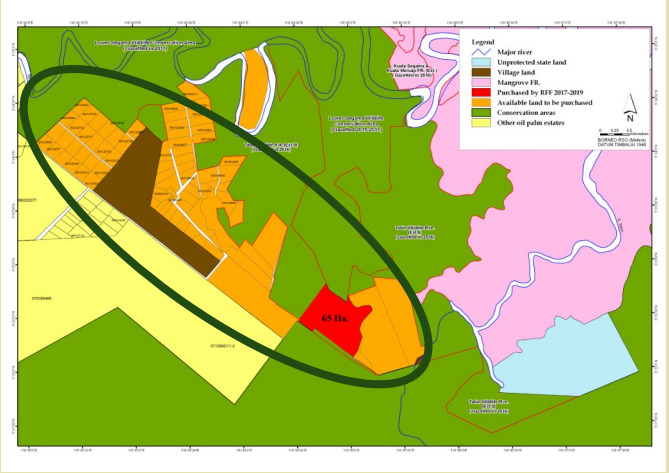

fig. 65

Oil palm estate to acquire (540 ha)

Help us to preserve this gift, before it's too late!

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Tel +49 (0)7851-6366281
Fax +49 (0)7851-6366282

fig. 66

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