Monitoring Orangutan Habitat

Tanjung Puting National Park, Central Kalimantan, Indonesia

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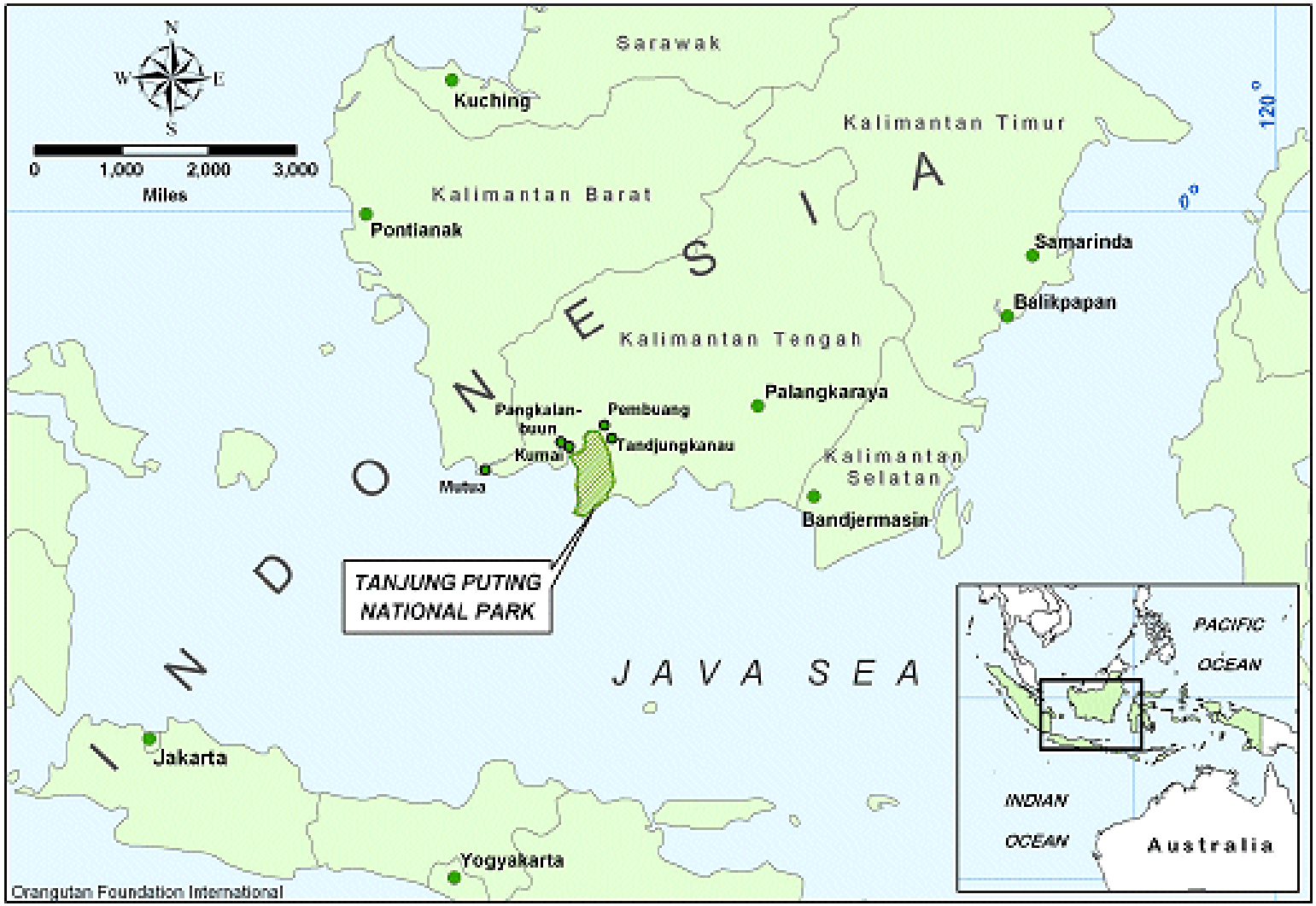
ESRI ECP Conservation Grant

Tanjung Puting National Park, Kalimantan Indonesia



Tanjung Puting National Park

- Game Reserve est. 1922
- National Park est. 1984
- 4,000 km^2 (~1 million acres)
- Low-lying swamp forest

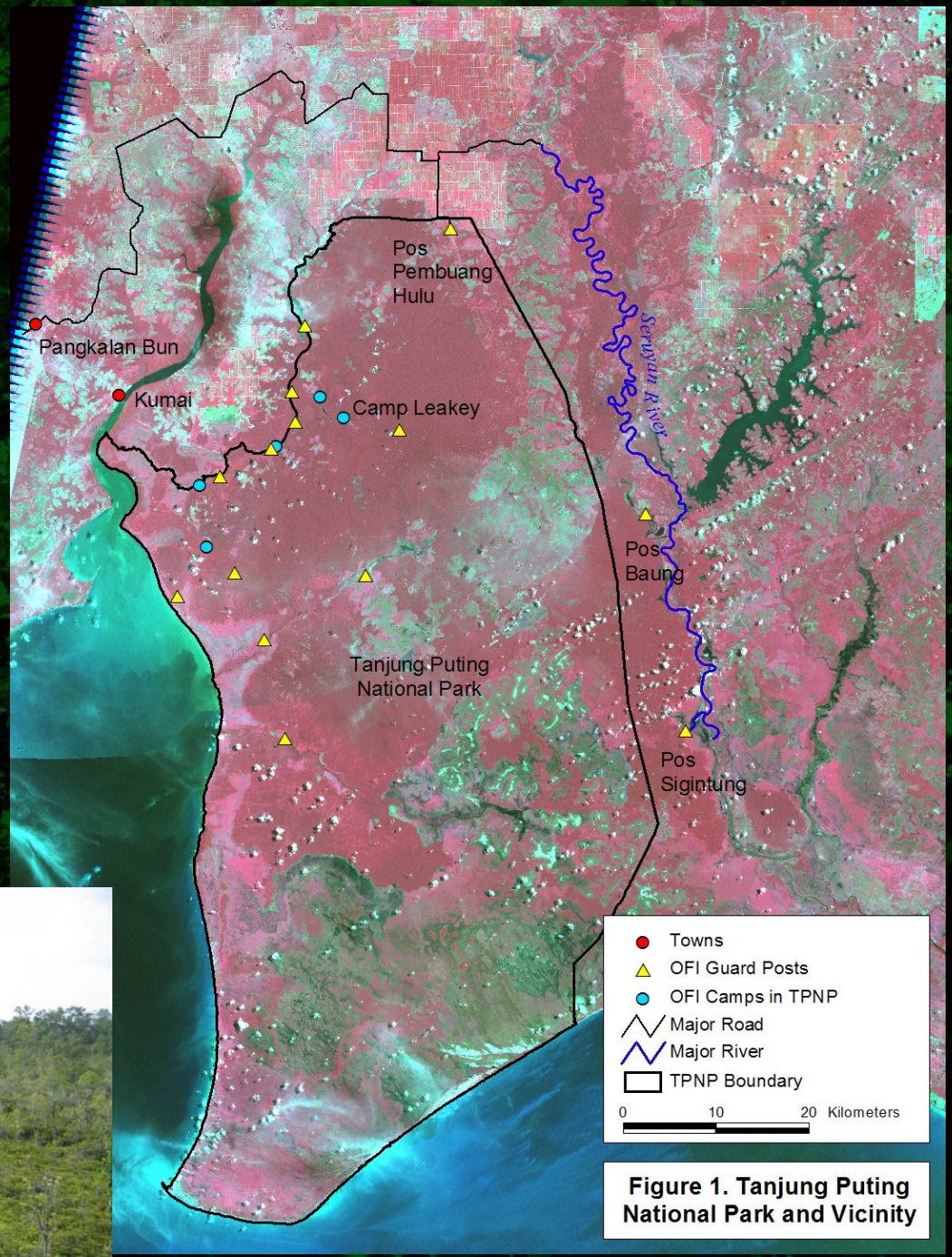
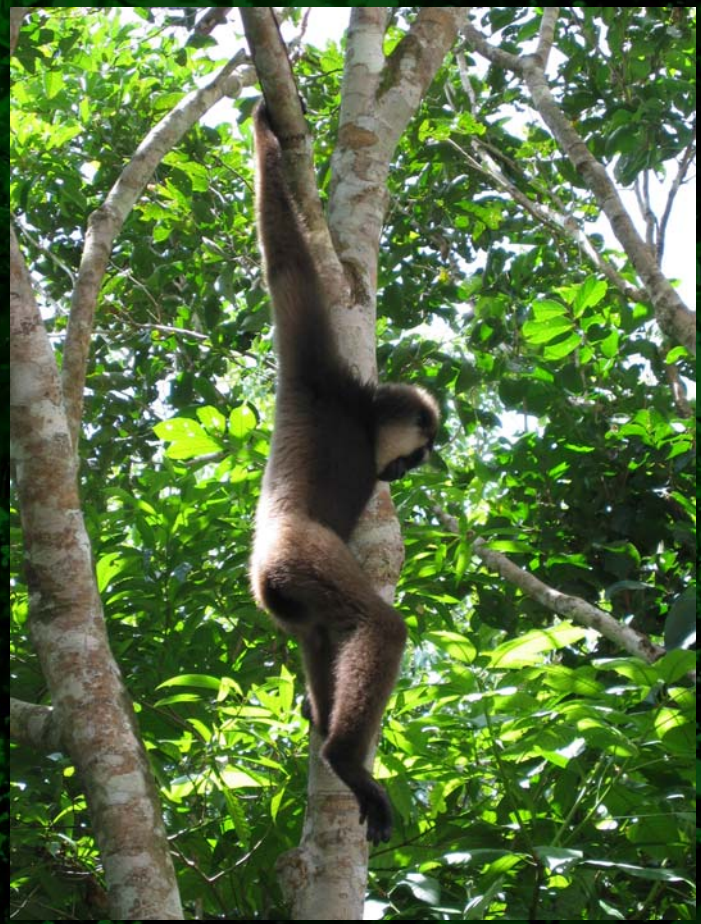


Figure 1. Tanjung Puting National Park and Vicinity

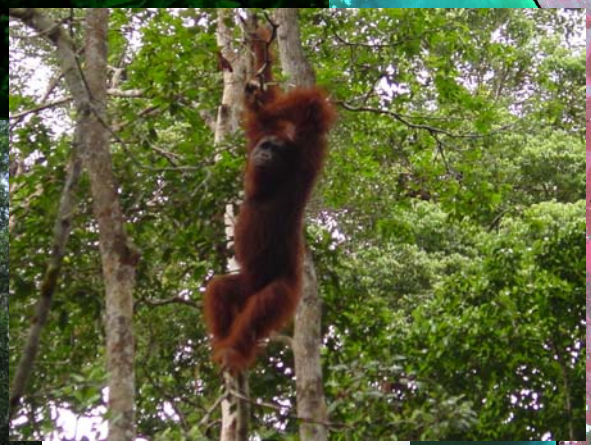
Globally Important Conservation Area

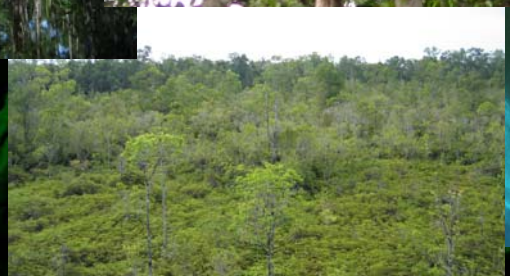
- Biodiversity “hotspot” of global importance
- 13 primate species
- > 100 mammals
- > 200 birds
- > 1500 plant species



Critical Orangutan Habitat

- 10% of world's remaining orangutan population
- Orangutans are 90% arboreal, they cannot survive without forest
- Borneo's forests are disappearing fast





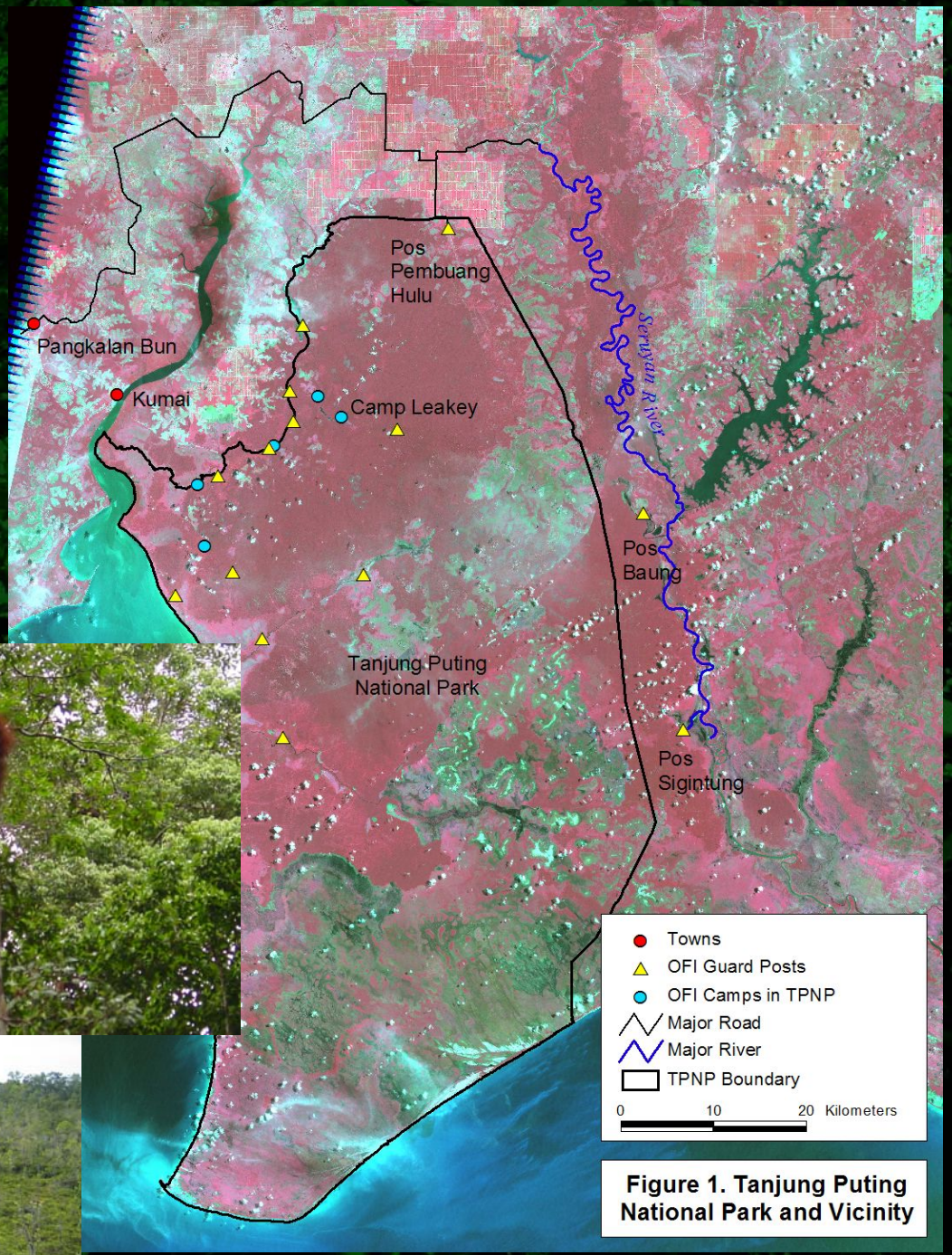
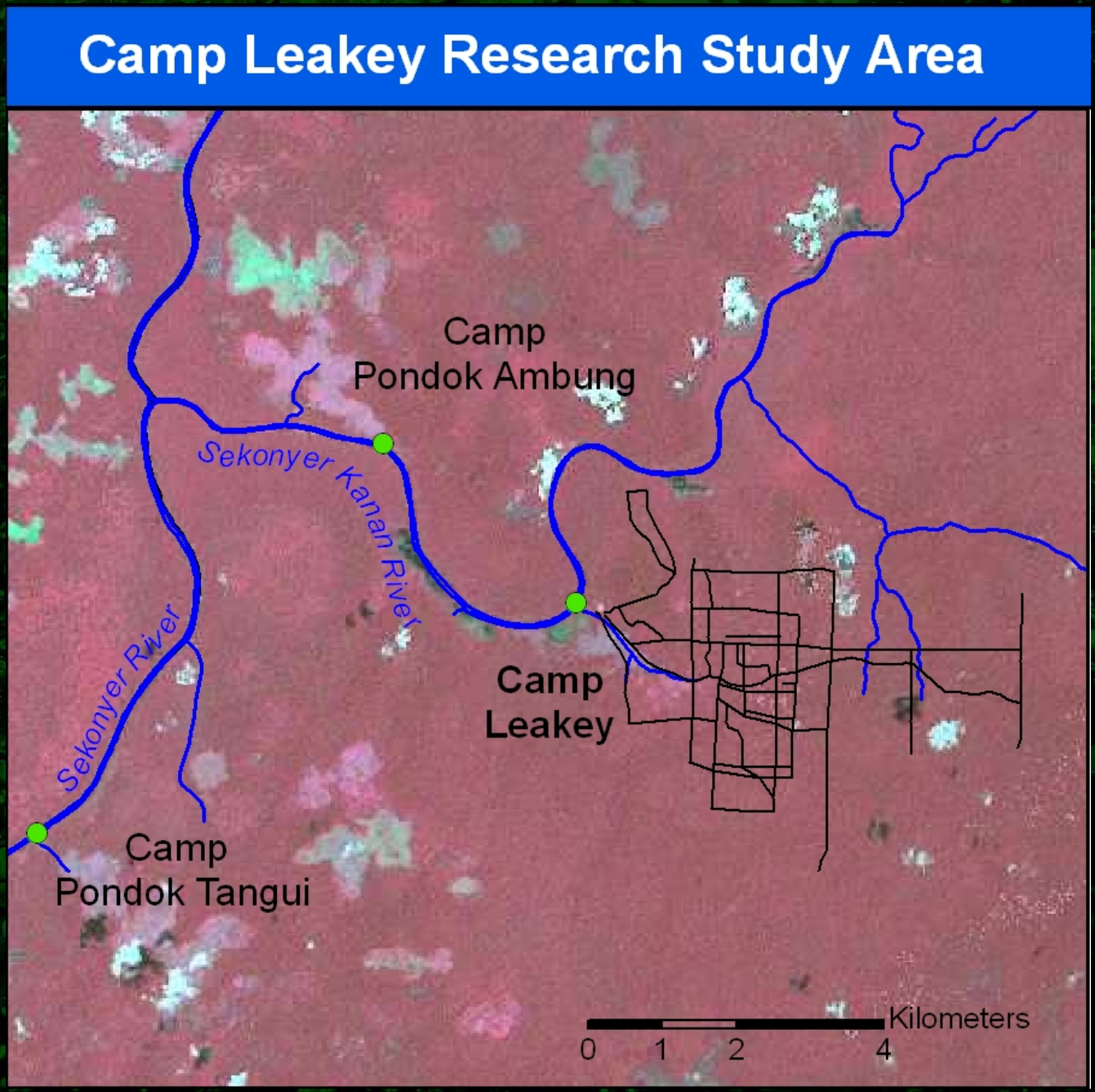


Figure 1. Tanjung Puting National Park and Vicinity

Orangutan Conservation

- Dr. Biruté Mary Galdikas began orangutan research at Camp Leakey in 1971
- Orangutan Foundation International (OFI) est. 1986
- Focus on park protection & orangutan conservation

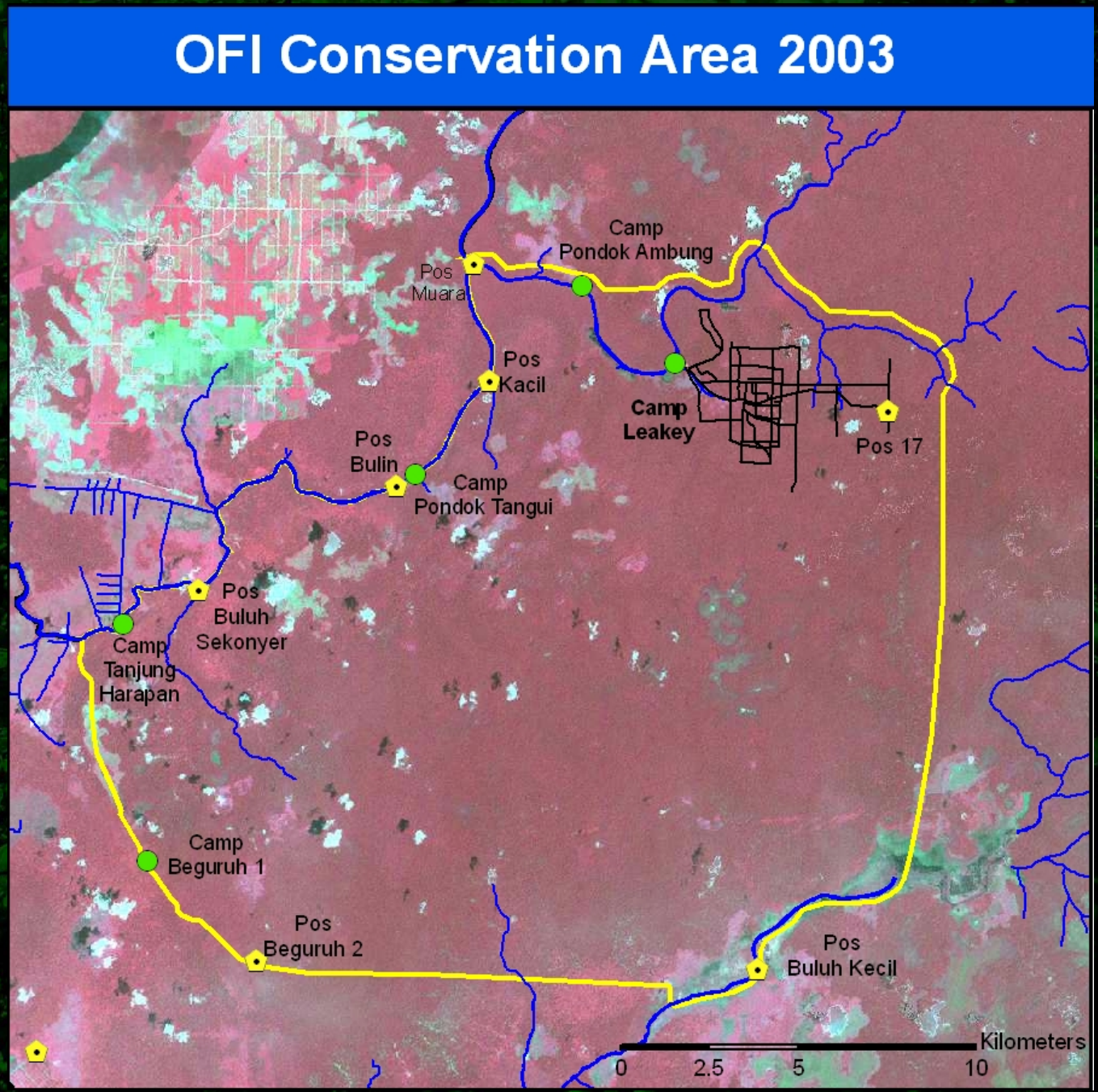
- Dr. Galdikas' research on orangutan behavior in the 1970's centered on Camp Leakey
- In the 1980's, other research camps were built along the Sekonyer River



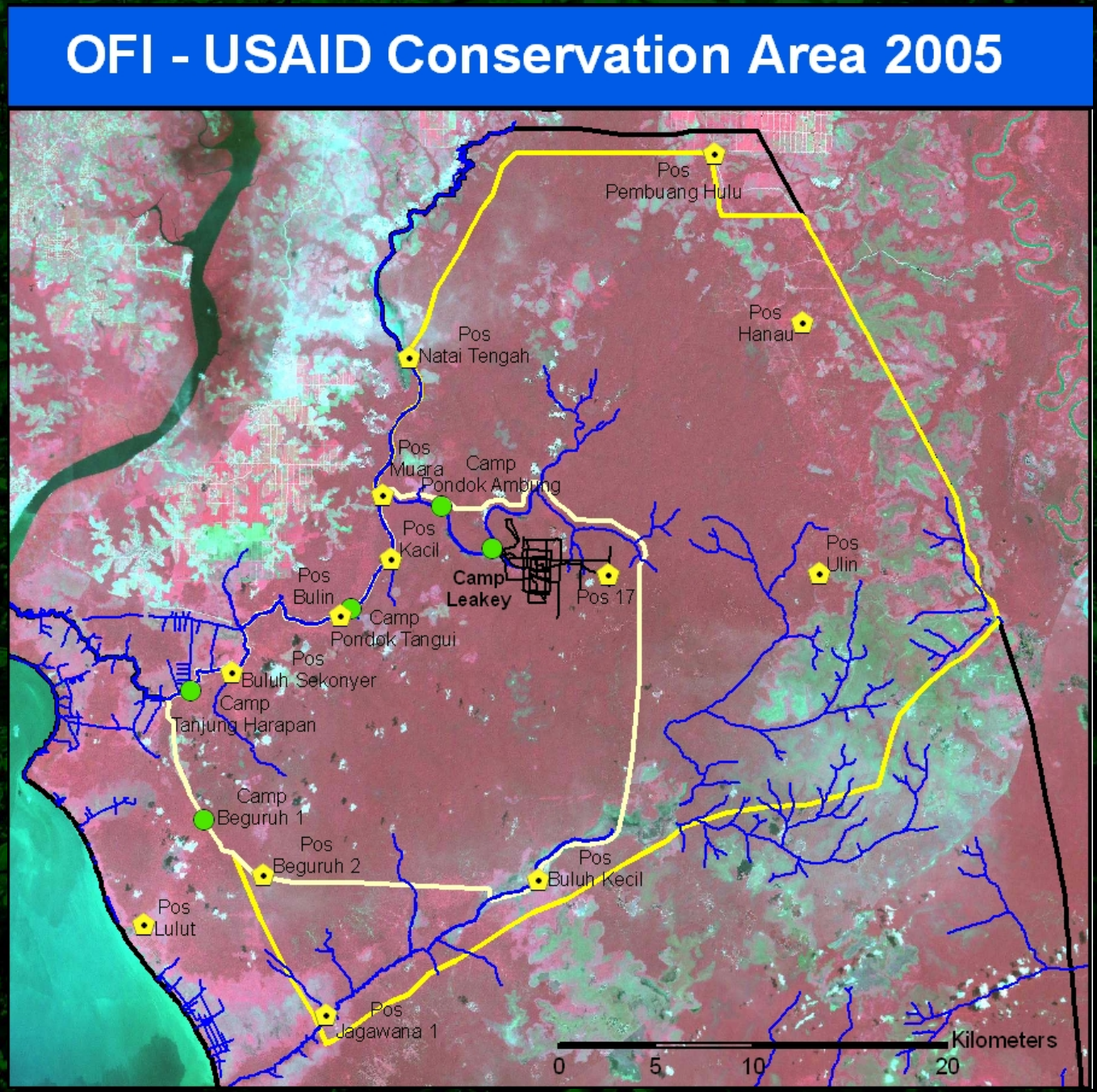
Illegal Logging inside the National Park

- In the 1990's illegal logging became widespread in the park
- OFI began building guard posts to monitor deforestation
- January 2003 Indonesian army removed illegal loggers from the Sekonyer River

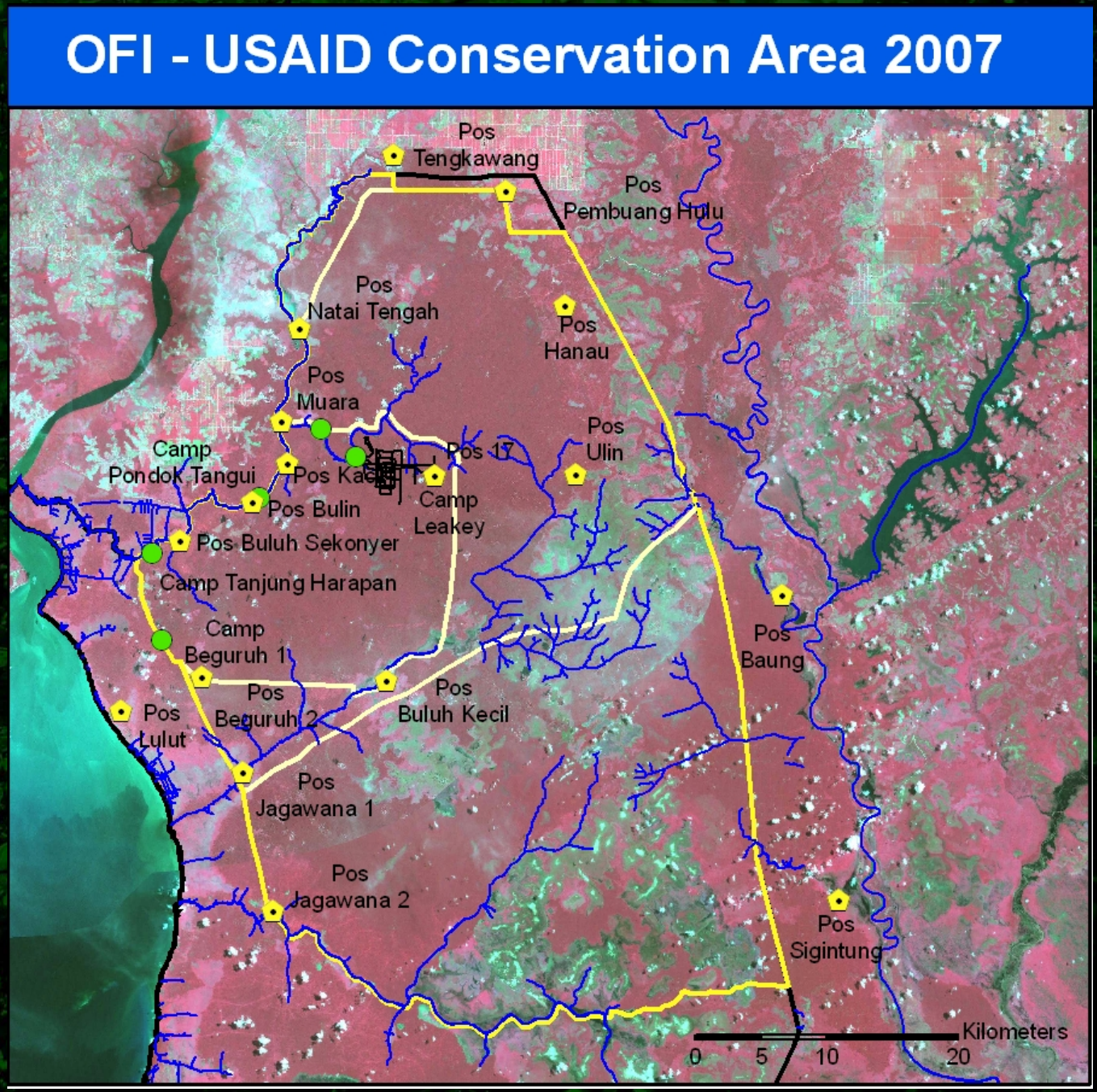
- By the end of 2003 OFI was operating 5 camps and 7 guard posts covering an area of 370 km^2



- OFI's USAID Conservation & Development Grant began in 2003
- Conservation monitoring was expanded to the north and east sides of the park
- By the end of Phase I in 2005, OFI was managing 5 camps,13 posts and an area of 714 km^2

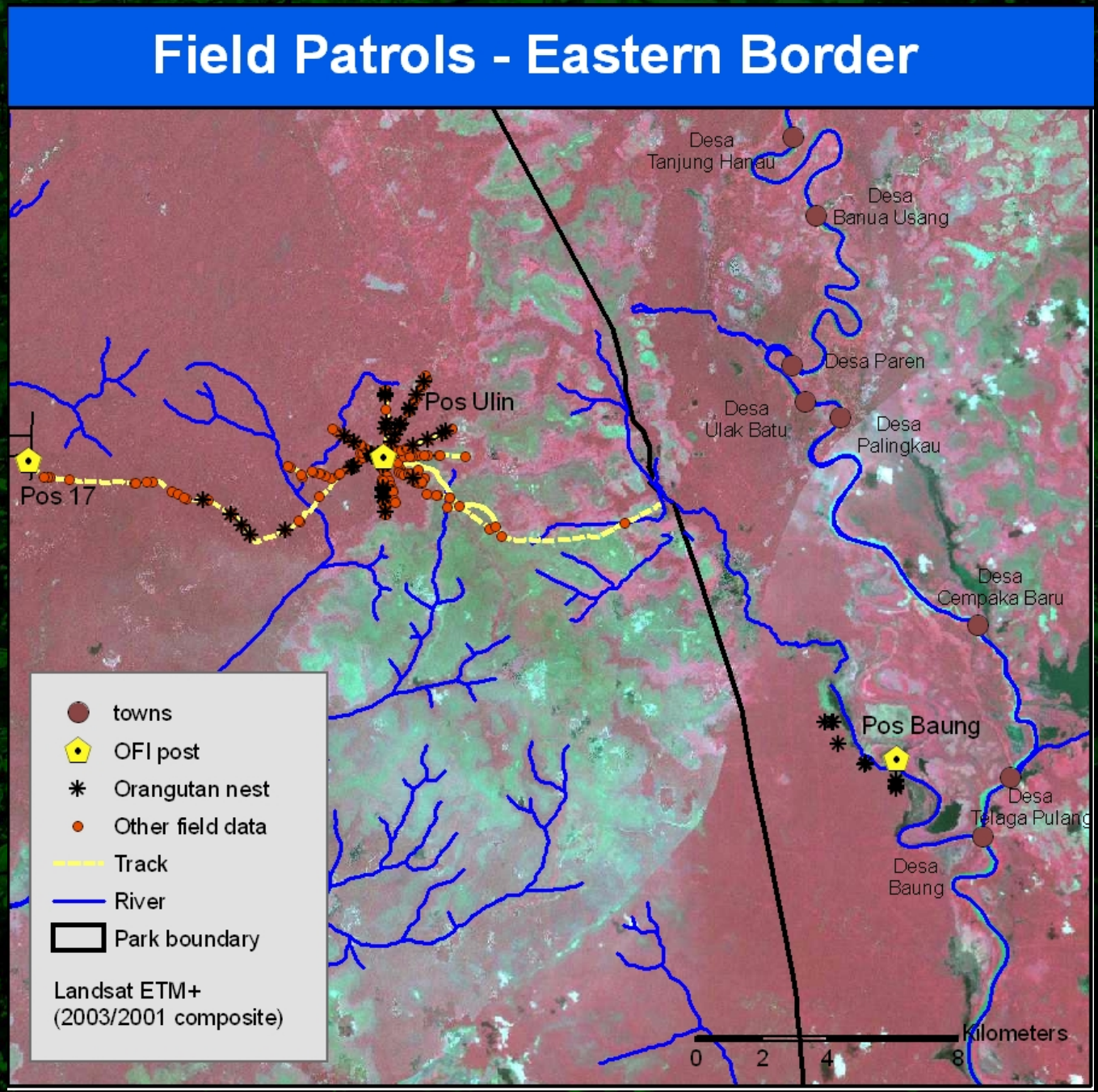


- OFI is currently in Phase II of the USAID grant 2005-2007
- Conservation monitoring includes 5 camps, 15 posts and an area of 1,031 km^2
- Focus now is on intensifying conservation & management in cooperation with National Parks and local communities in this large area



Habitat Monitoring Targets

- Regular field patrols collect GPS data on: orangutan nests, forest type, and past disturbance



Habitat Monitoring Targets

OFI patrols also document ongoing deforestation including timber removal, clearing and burning

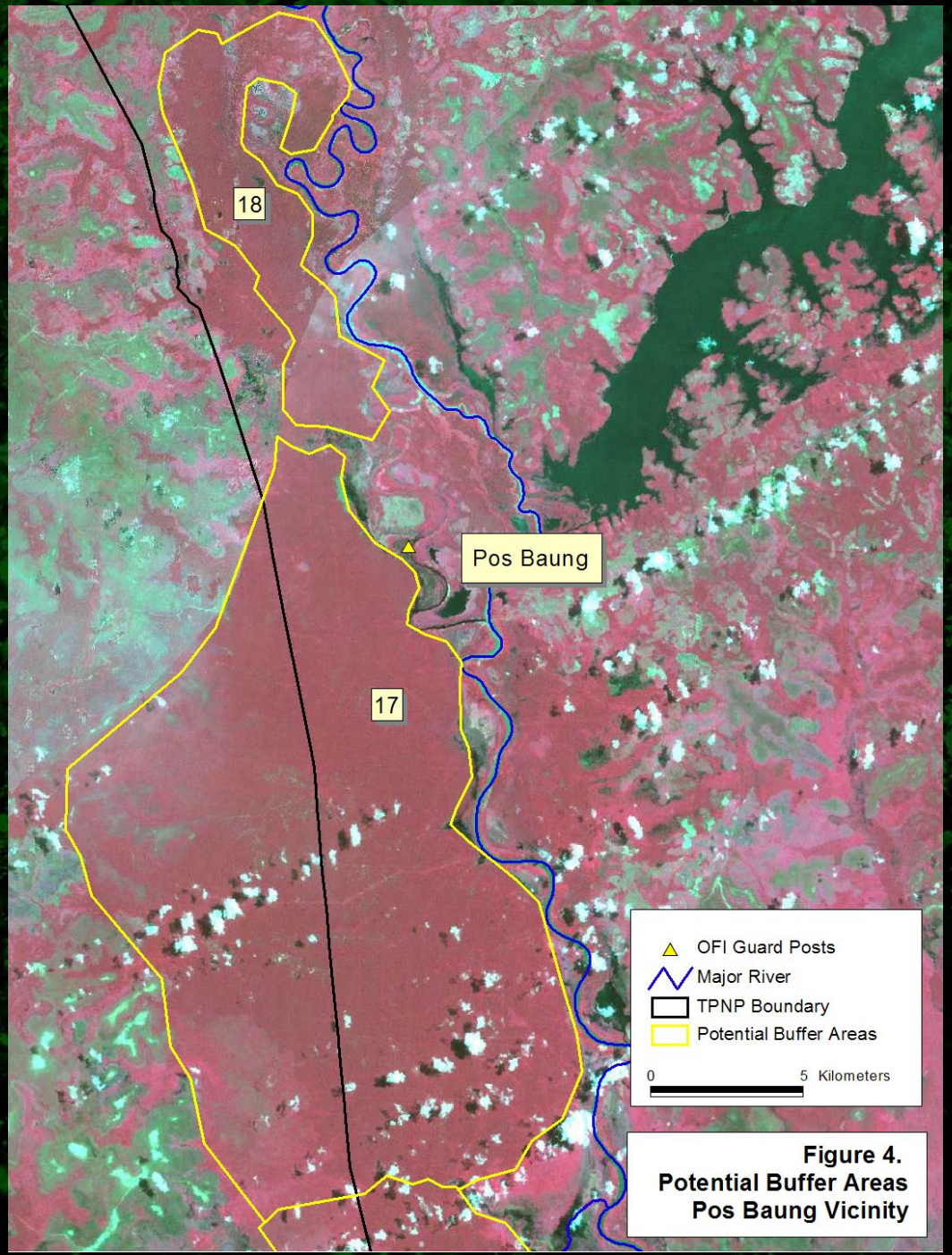


Figure 4.
Potential Buffer Areas
Pos Baung Vicinity

Accomplishing the Field Work

- OFI regular patrol staff
- US & European volunteer teams
- Partnerships with local NGOs
- Combining GPS and GIS technology with local field knowledge

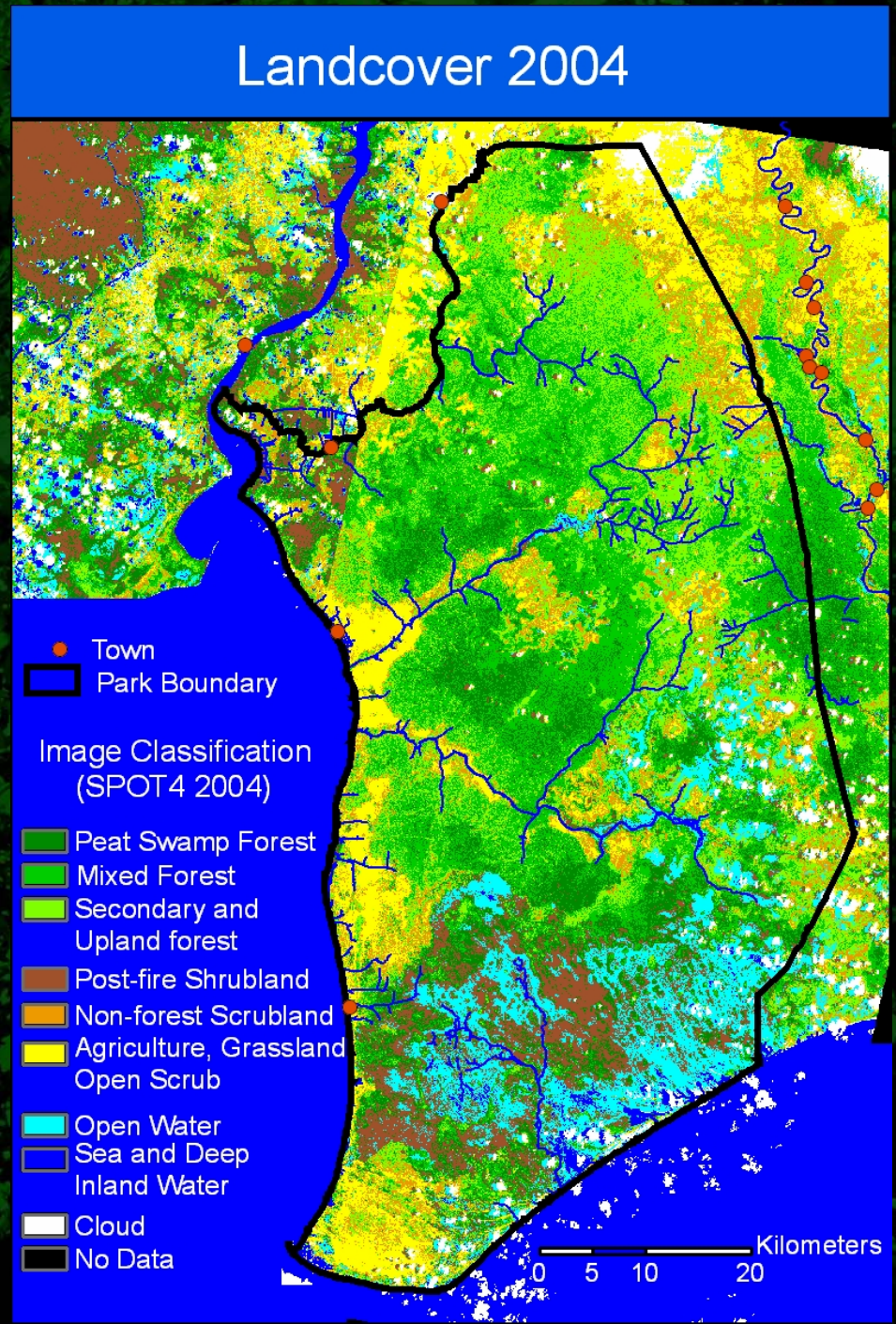
- Field data is used in land cover classification and other satellite image analysis

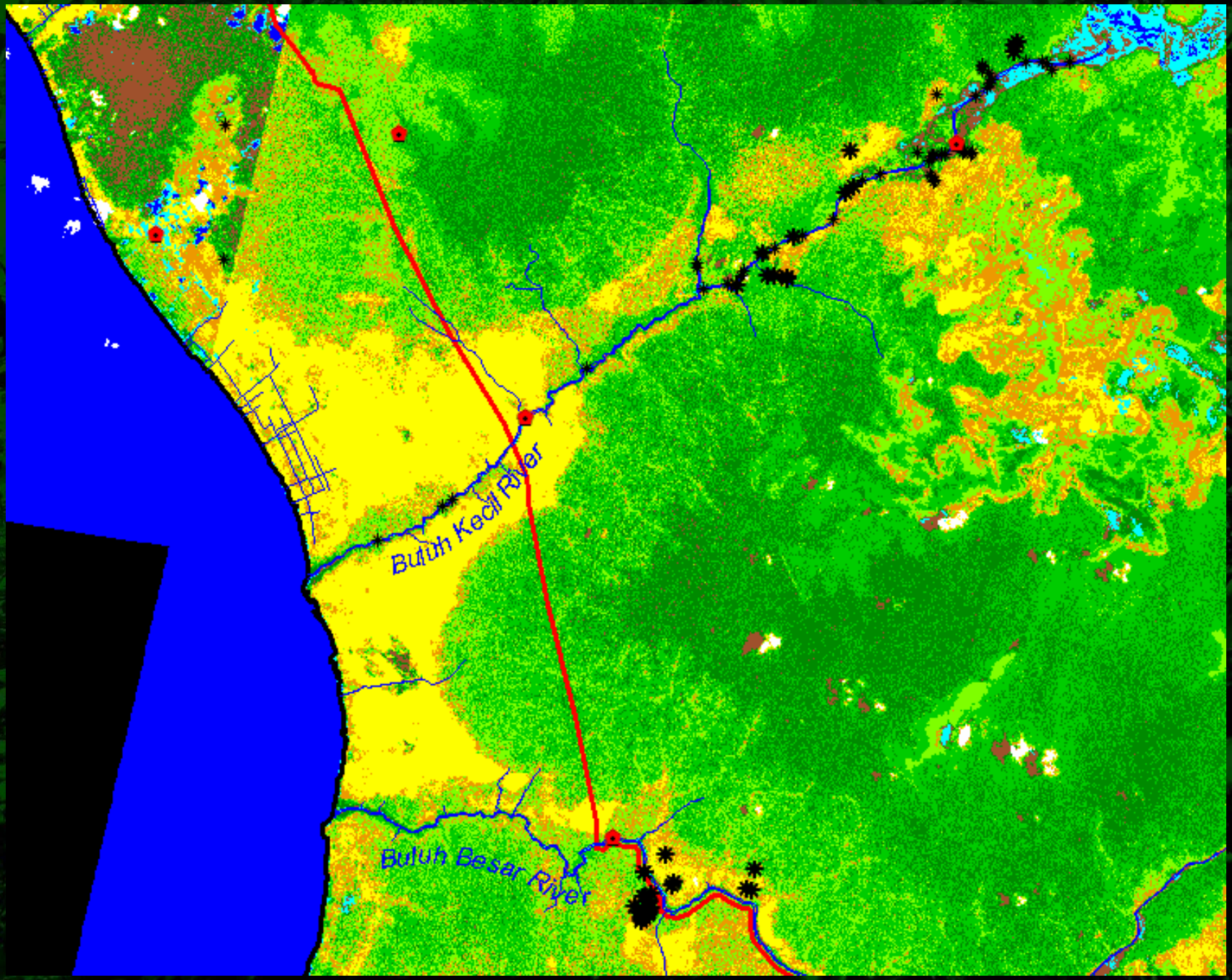
- 2370 km^2 of forest remains (60% of park)
- 1075 km^2 of non-forest (27%)
- 430 km^2 of water (11%)

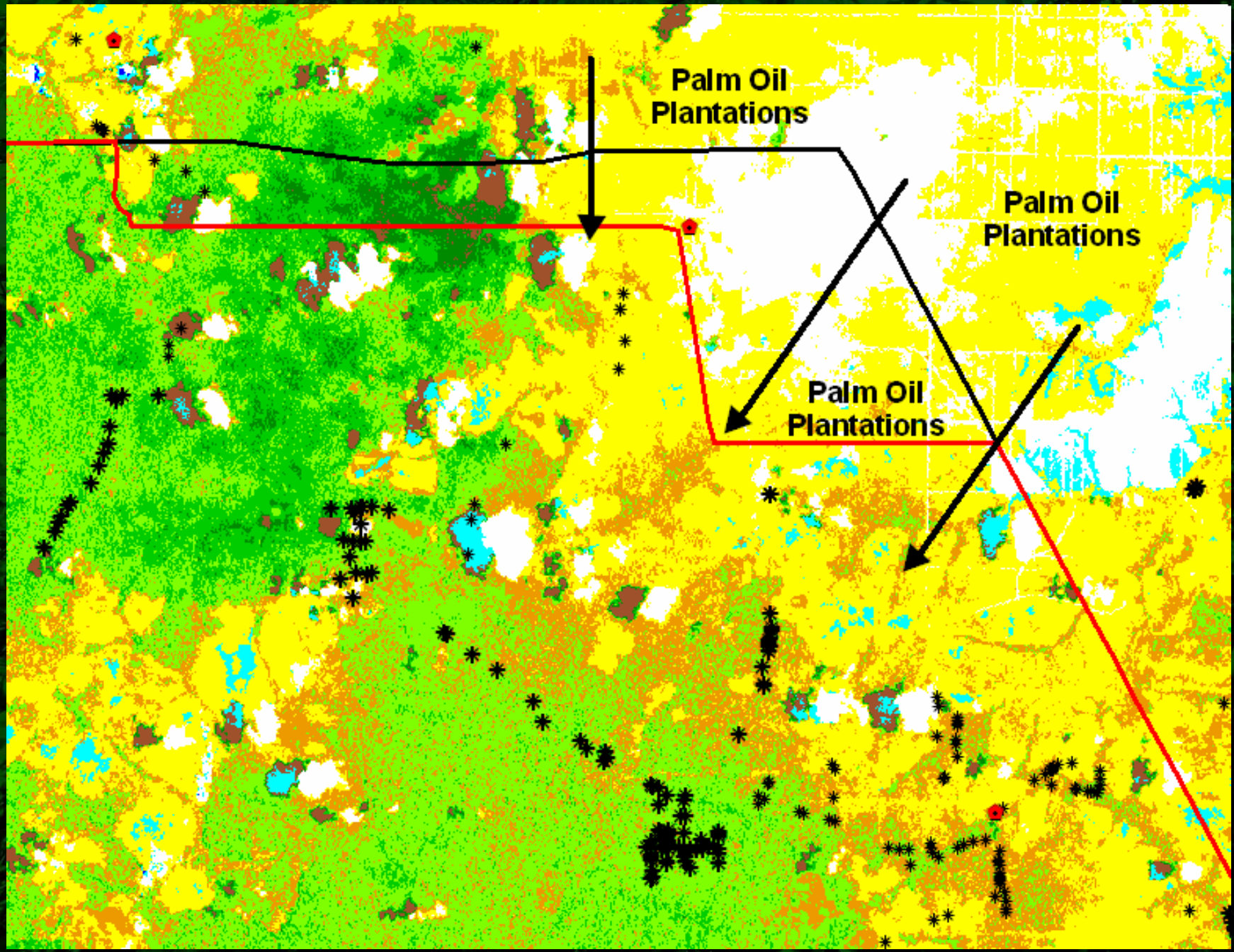
- Field data show non-forest is primarily post-fire vegetation

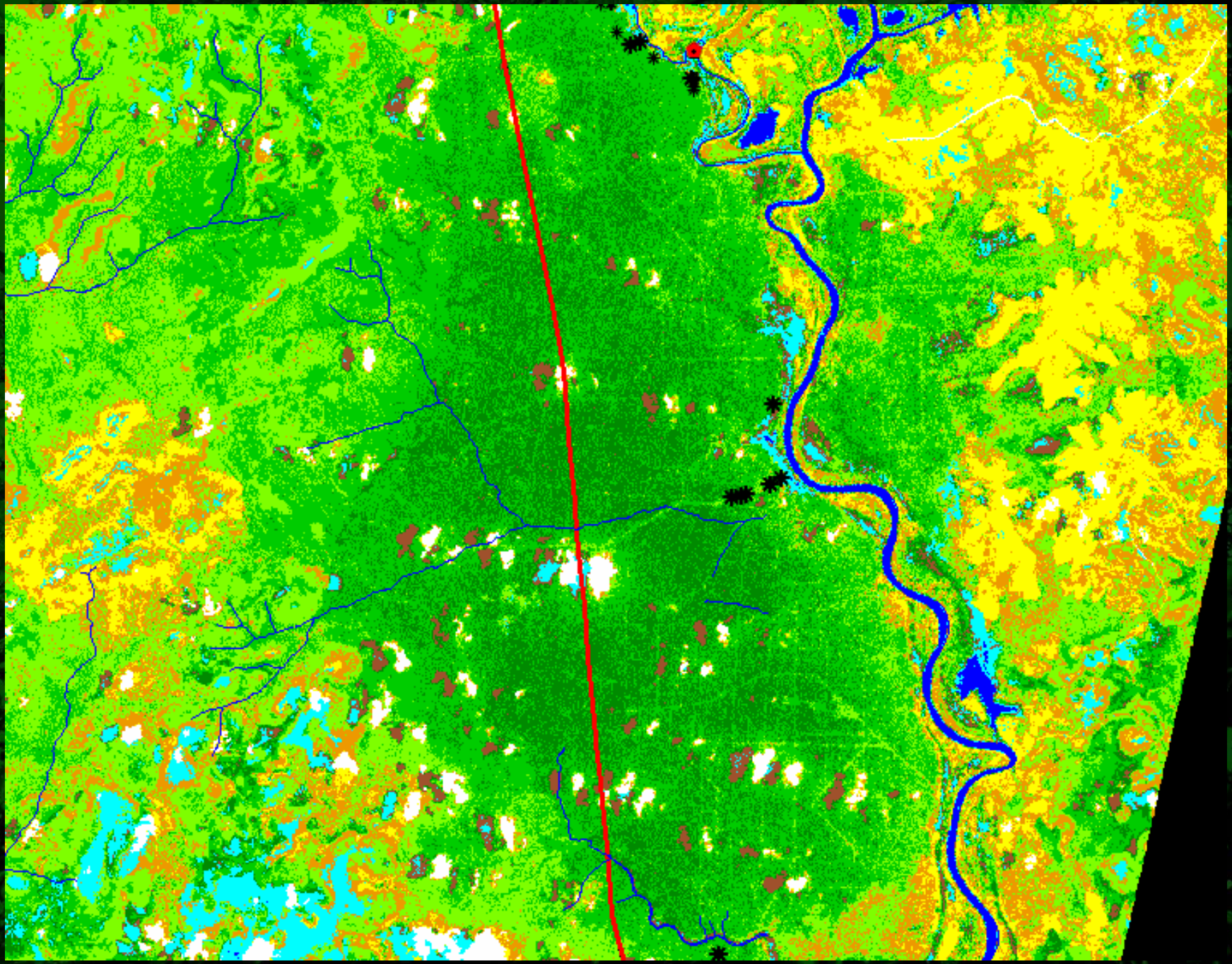
- Human-started fires (for rice farming, fishing and land clearing) account for the conversion of ¼ of the park's orangutan habitat

"Where there is forest, there are orangutans"

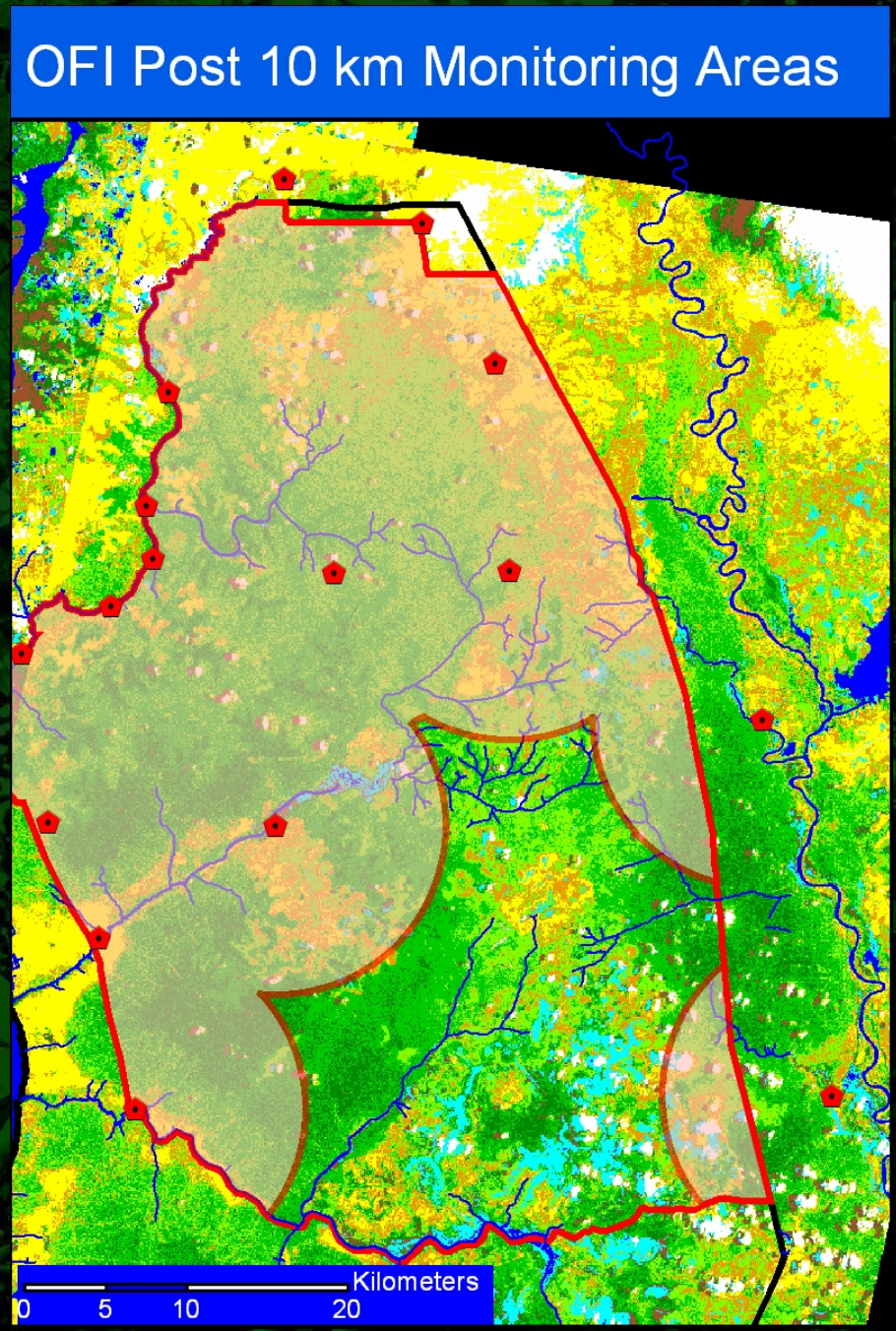


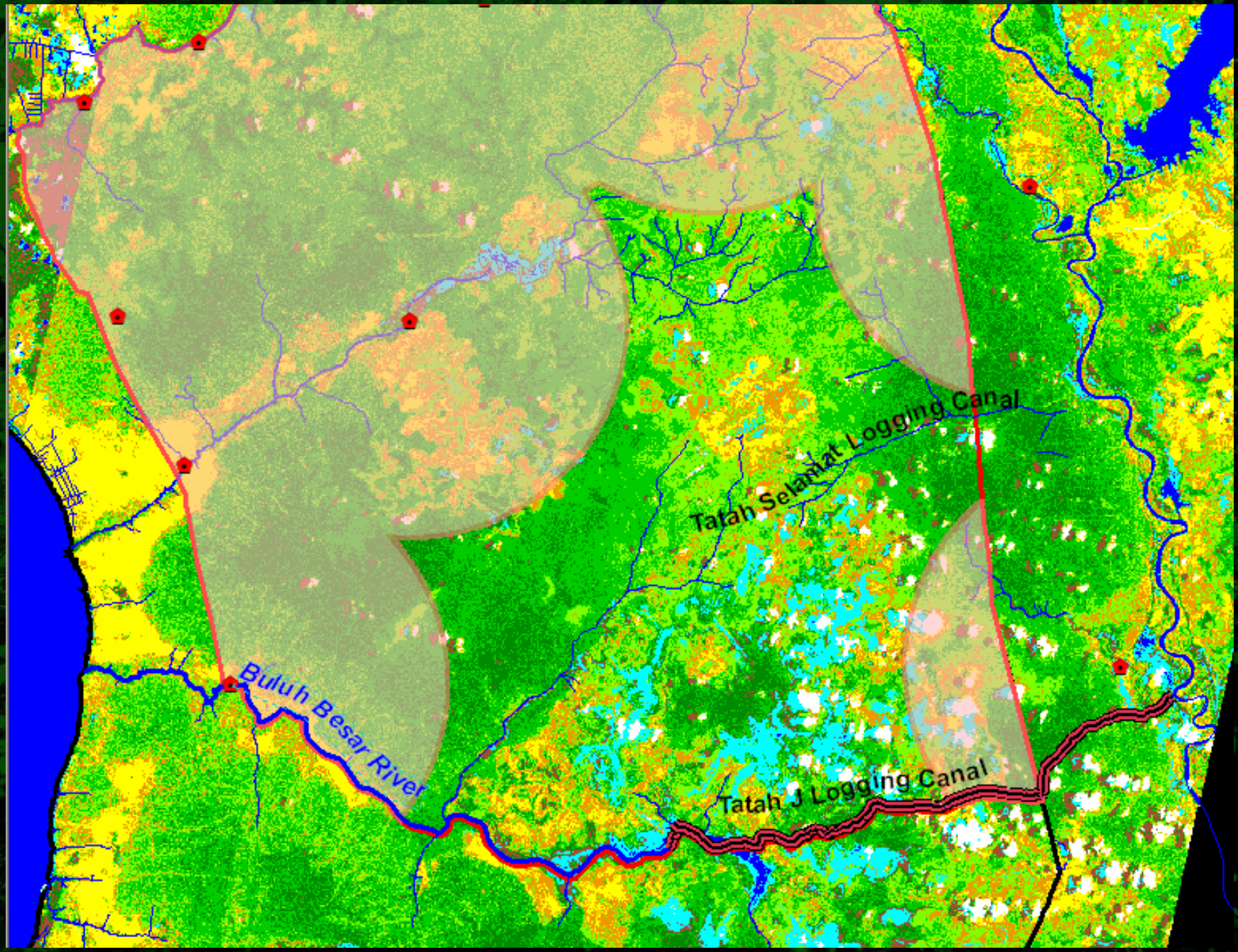

Buluh Kecil River
Buluh Besar River


Palm Oil
Plantations
Palm Oil
Plantations
Palm Oil
Plantations



- OFI field staff can regularly patrol 2-5 km distances from guard posts
- Longer “expeditions” must be undertaken within the 10 km post buffer zone
- This leaves many park areas unpatrolled on a regular basis
- OFI is working to locate and map all access points into the park
- Monitoring river and canal access is critical to preventing deforestation especially in the southeast where illegal logging is already underway



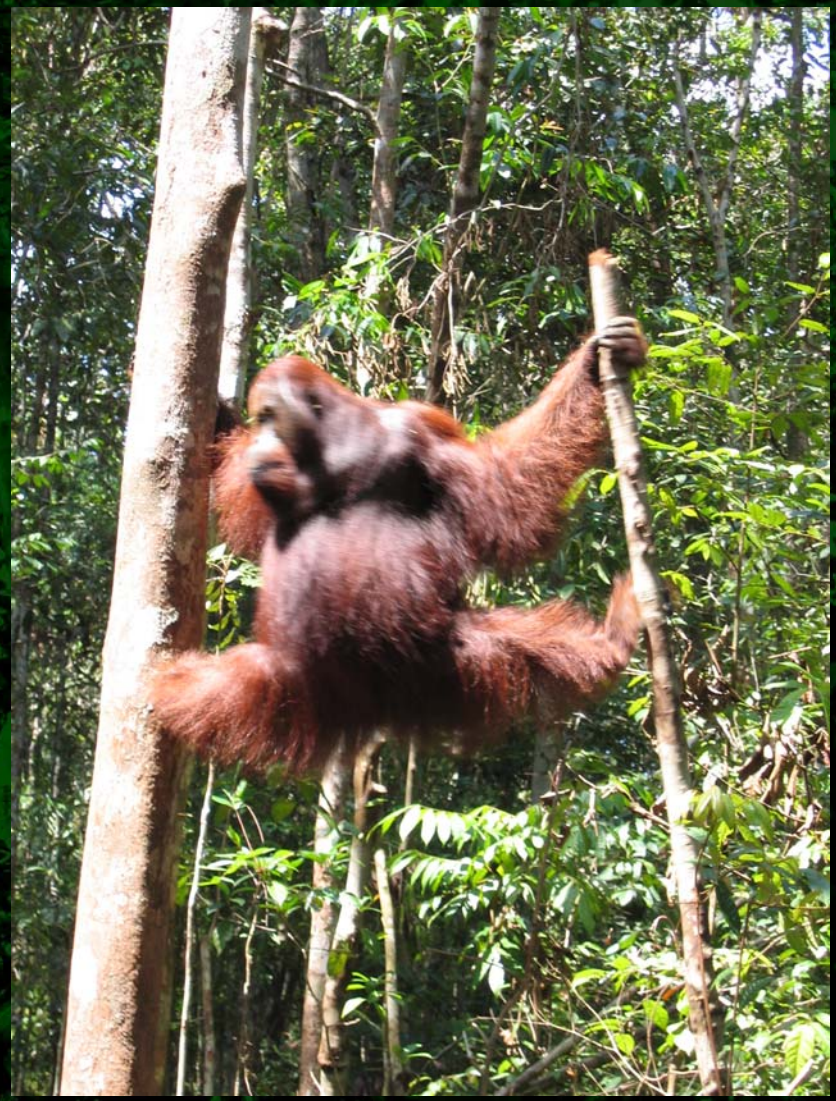

Tatah Selamat Logging Canal
Buluh Besar River
Tatah J Logging Canal

Summary

- GIS, GPS and Remote Sensing technology support OFI's orangutan habitat monitoring in Tanjung Puting National Park
- With a large park size and inaccessible swamps these tools are essential
- There are still many obstacles to achieving conservation
- Our hope is that these technologies will help us in our race to save the park's globally important orangutan population

Future Orangutan Habitat Monitoring Objectives

- Post patrols
  - regular monitoring using GPS
- Data management
  - new systems for data input to GIS
- Field mapping
  - river and canal access to the park
- Image analysis
  - stream and land cover updates
- Community work
  - shut down illegal logging canals



OFI plans to continue using GIS to help achieve our overall goal: to protect orangutans and their habitat in Tanjung Puting National Park

Thank You

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&

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