



Sumatran Tiger Conservation Under Changing Landscape

[Satyawan Pudyatmoko](#)

email:spudyatmoko@ugm.ac.id





Structure of the Presentation

- Introduction-background
- Small tiger population: study case in Duri Steam Field (DSF)
- Management strategy of tiger population in DSF
- Conclusion





Indonesia:

key country for tiger conservation

1. Host of 12% tiger in the world
2. Key country among 13 tiger range nations
3. Tiger is flagship species in biodiversity conservation
4. Sumatran tiger is critically endangered

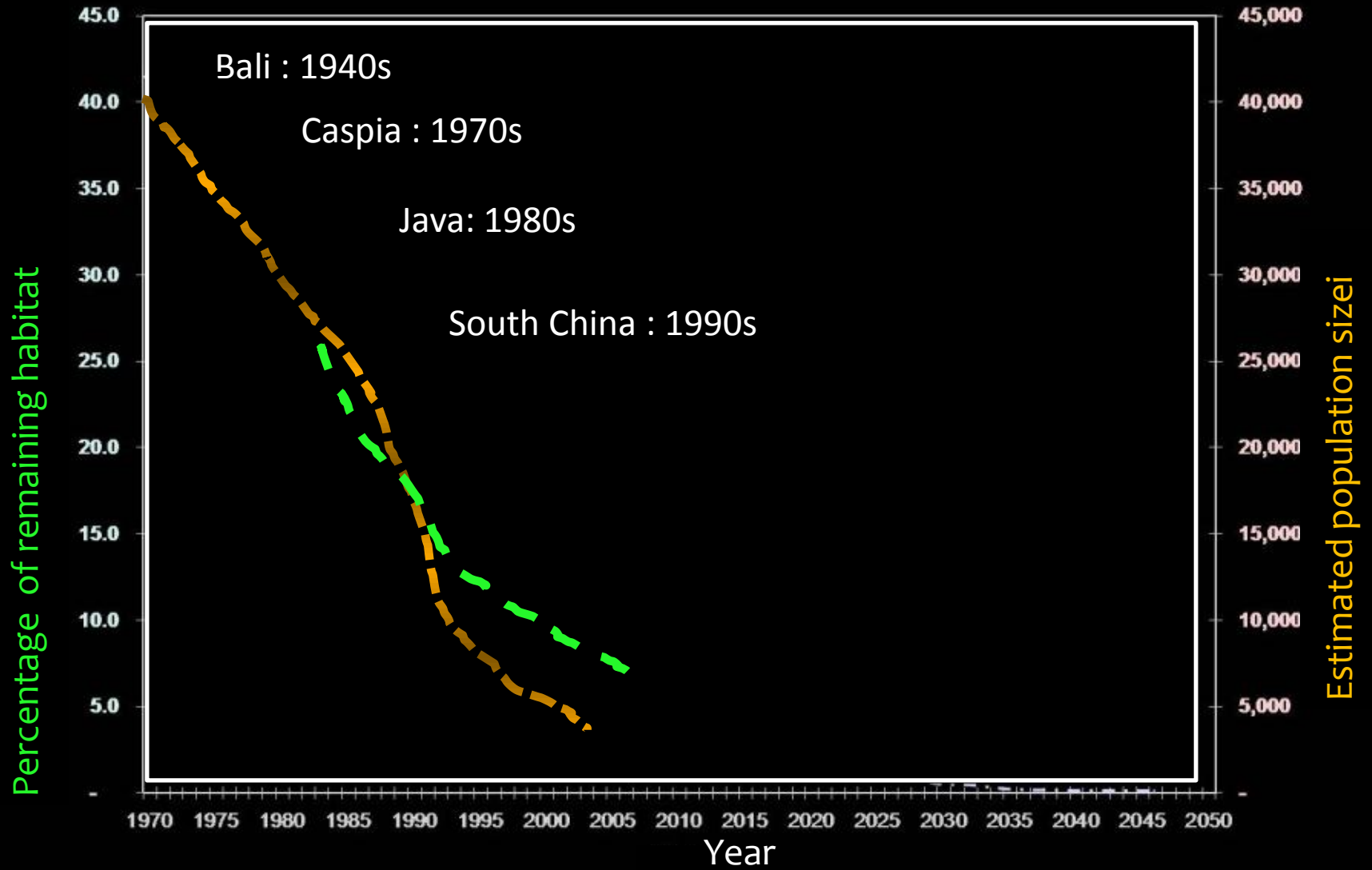


How many tiger we have? Where are they occur?

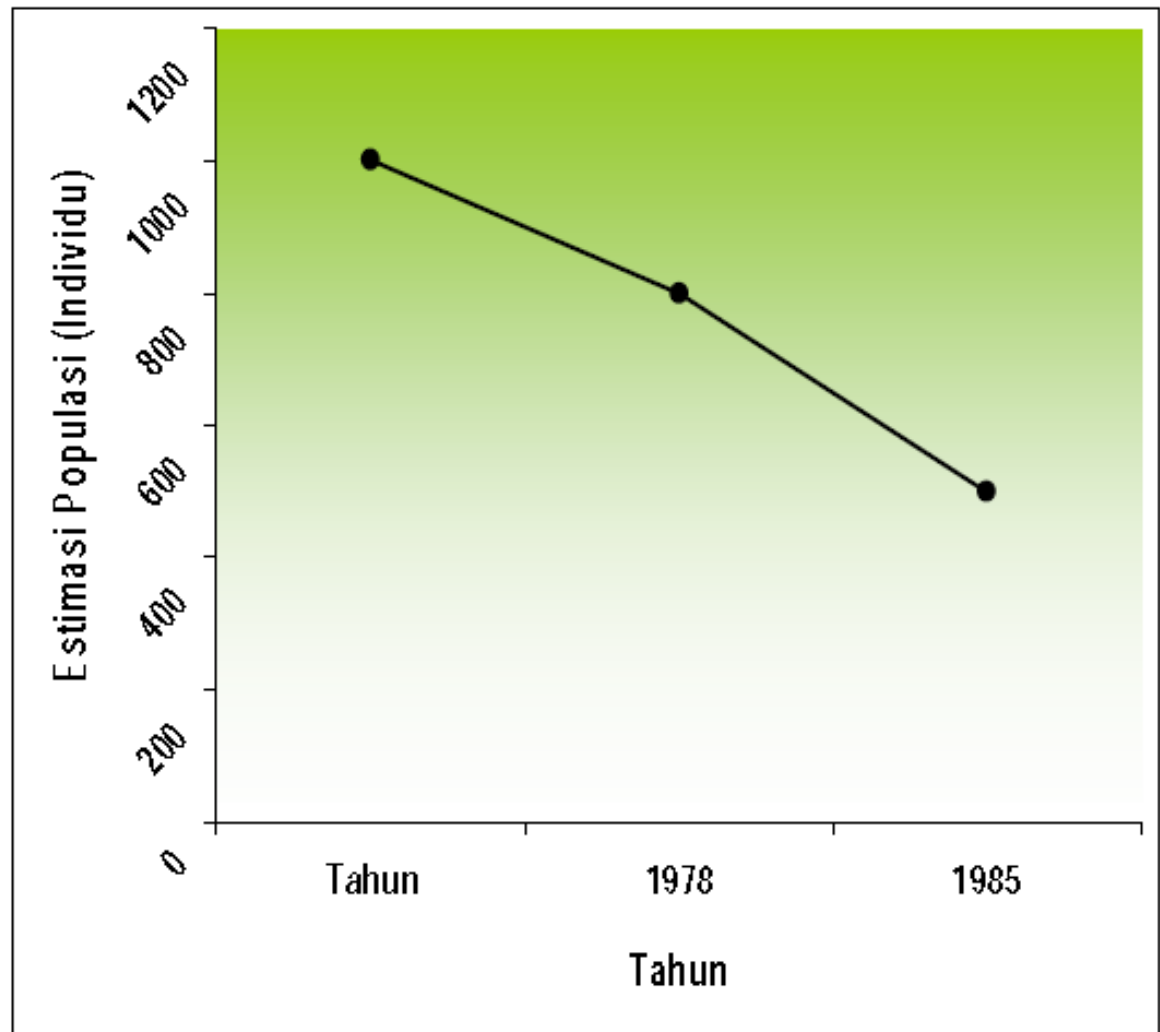
- 
- A tiger is walking through a shallow stream in a dense forest. The water is dark and reflects the surrounding greenery. The tiger's orange and black stripes are clearly visible. The background is filled with tall trees and thick foliage.
- Currently, the estimated number of this animal in the wild was about 342 to 509 individuals.
 - Tigers occur in about 58,321 km² of forested habitat in Sumatra



What are the
problems?



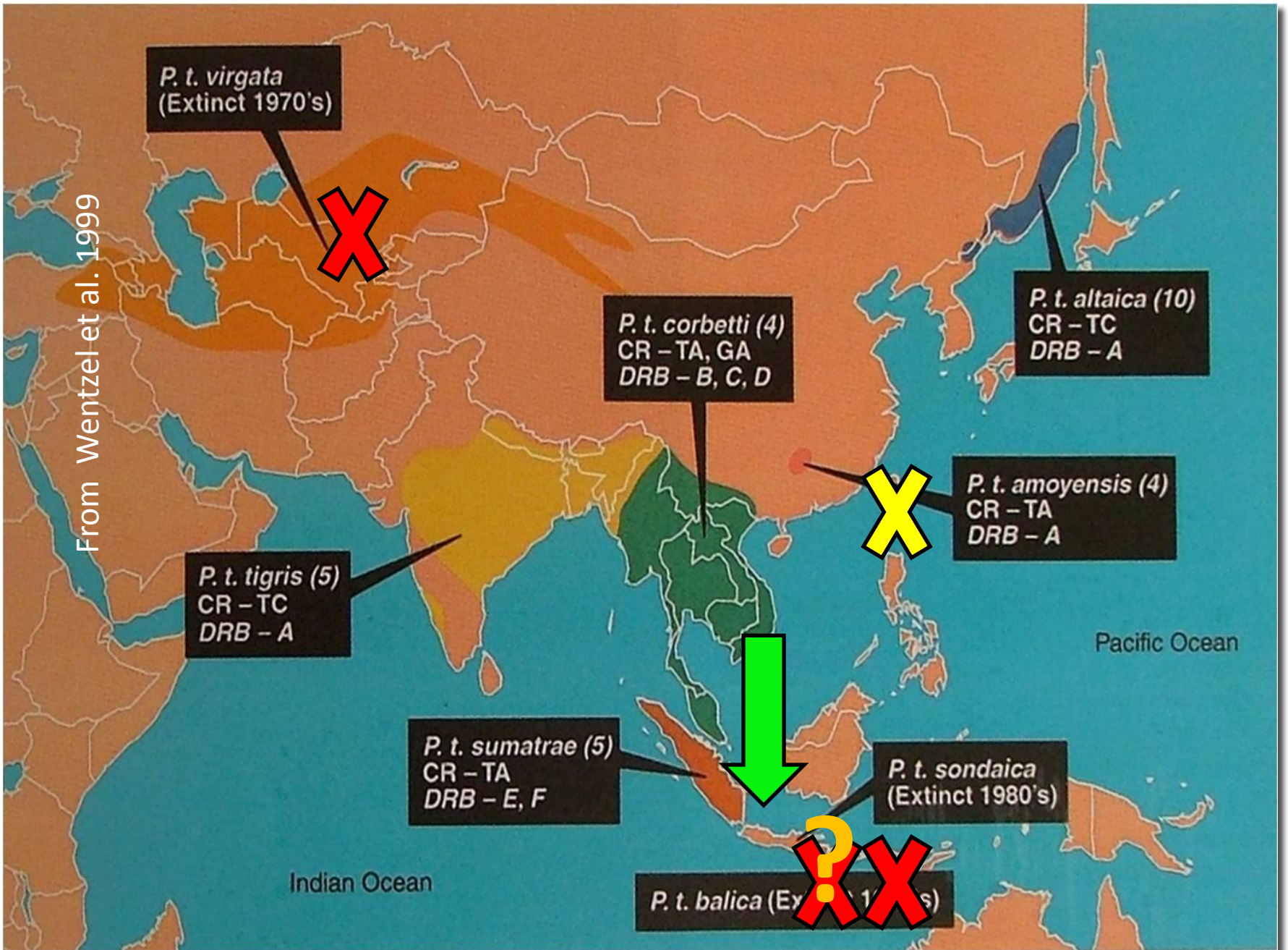
Population and habitat decline (Source; wwf)



Sumatran Tiger Decline Since 1978

(rencana aksi harimau 2007)

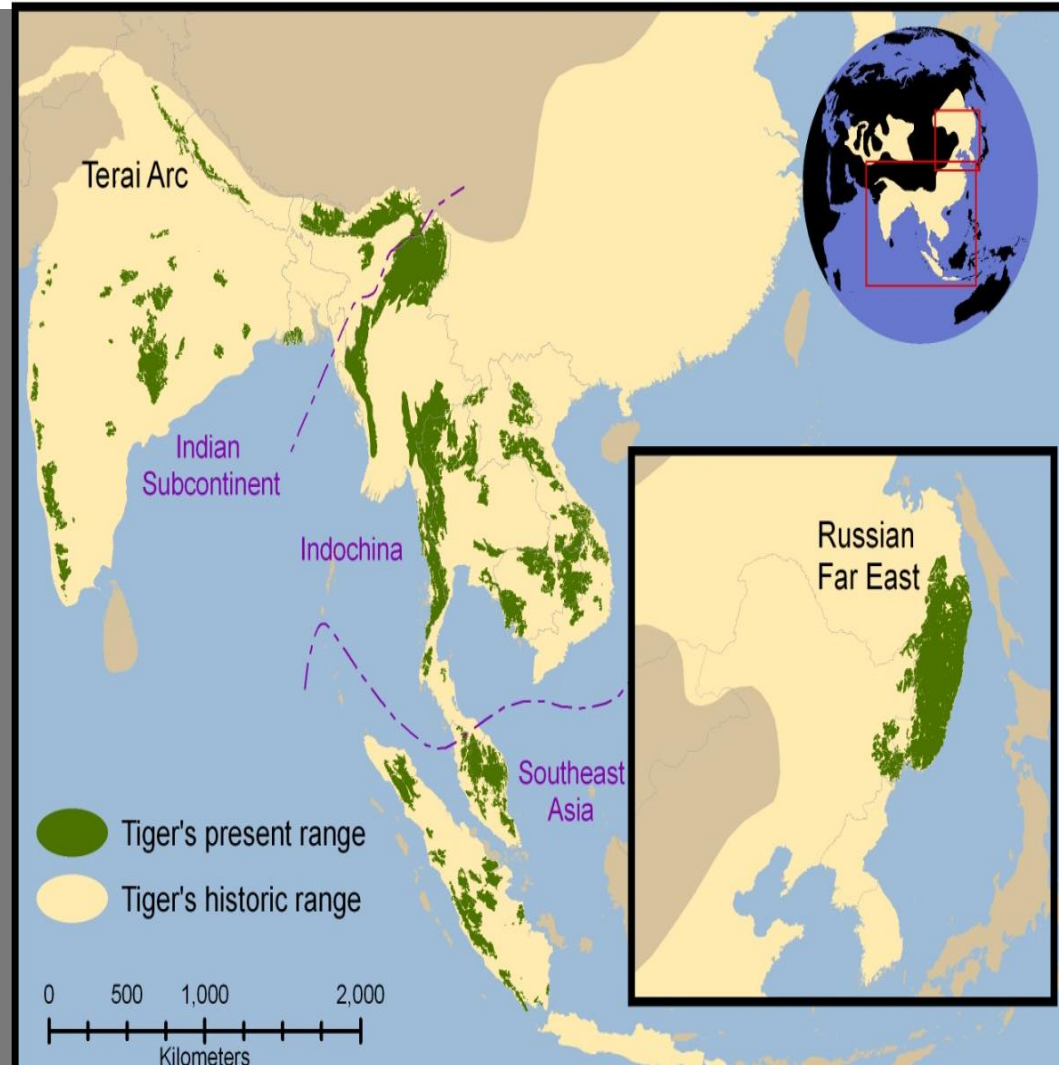




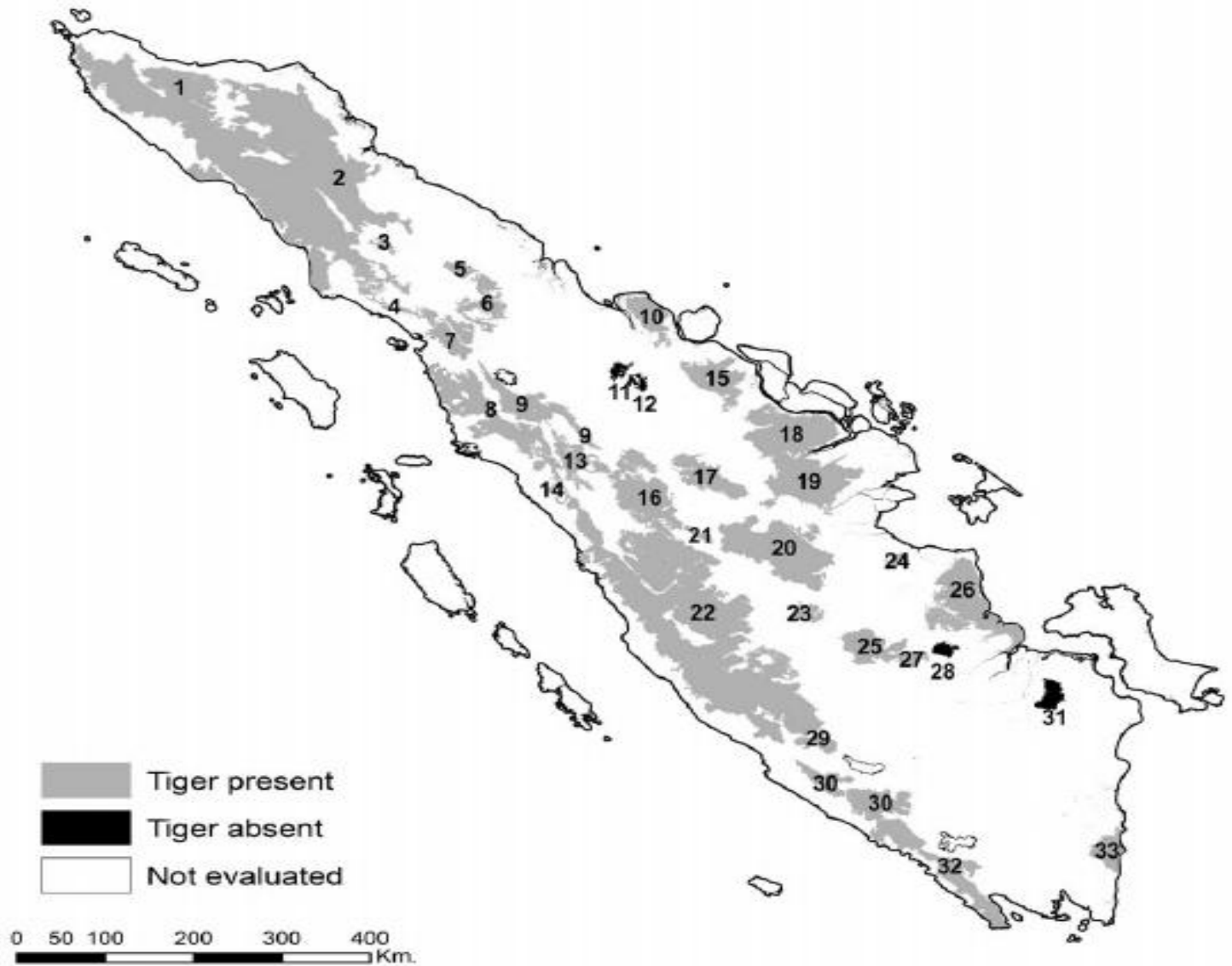
Historic and present range

Habitat types:

- Boreal and conifer forest in Rusia
- Subtropical forest India, Nepal, China
- Mangrove (India, Indonesia)
- Savannah (India)
- Tropical rainforest (Malaysia, Indonesia)



Source: IUCN, <http://www.iucnredlist.org/>

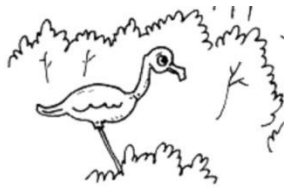


Map of Tiger Occurrence in Sumatra
 (Wibisono et al, 2010)



Deforestation Threatened The Future of Tiger

- Between 1985 and 2009 Sumatra has lost nearly 13 million hectares of its forest
- Riau Province has lost more than 60% of its forest cover during 1982 -2007
- Habitat of Tiger become smaller and fragmented
- Habitat can not maintain viable population
- Small and isolated population has high extinction risk



1982

Tutupan hutan: 78%

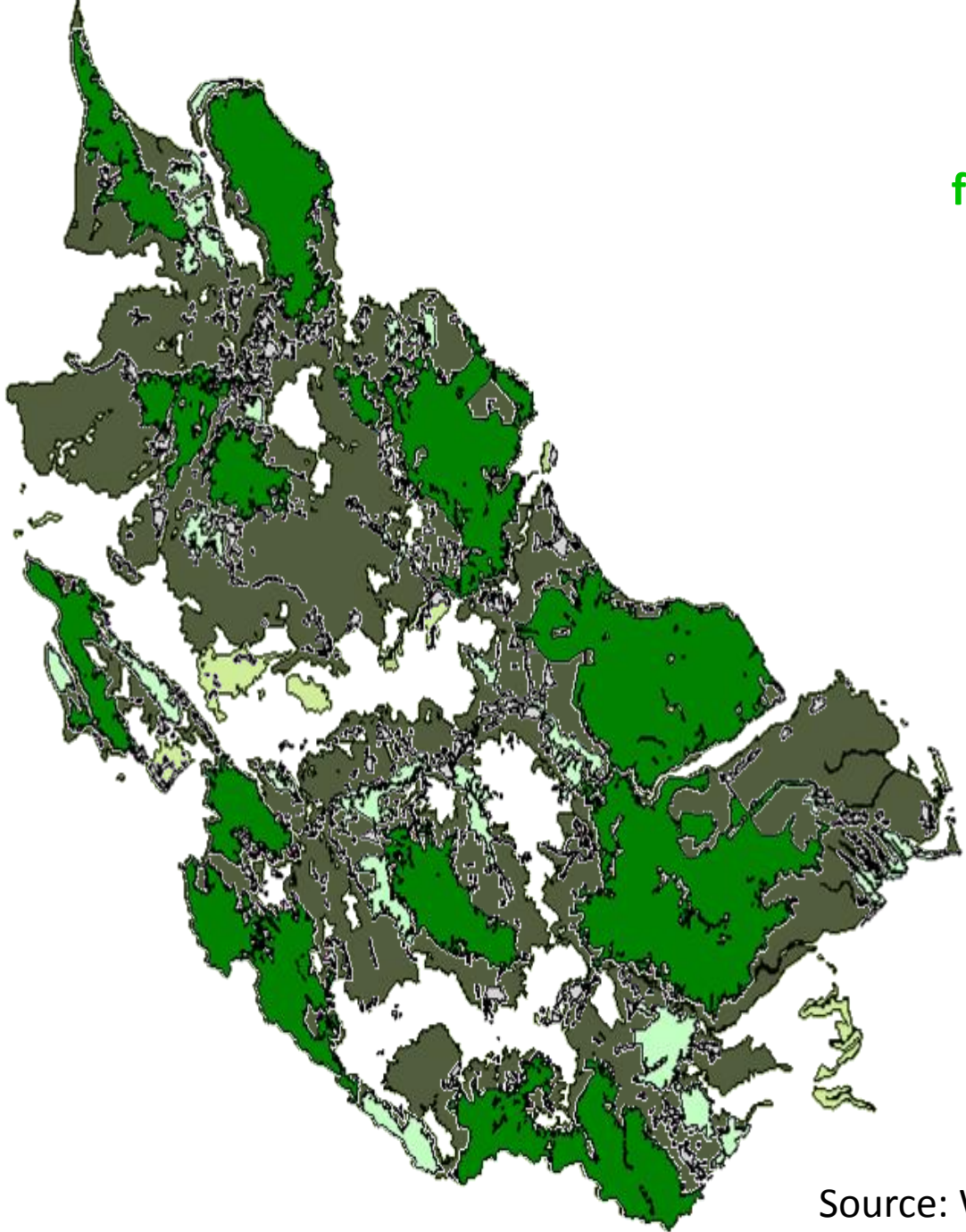
Hutan hilang: 0%



Source: WWF

2004

forest cover: 36%
forest loss: 54%

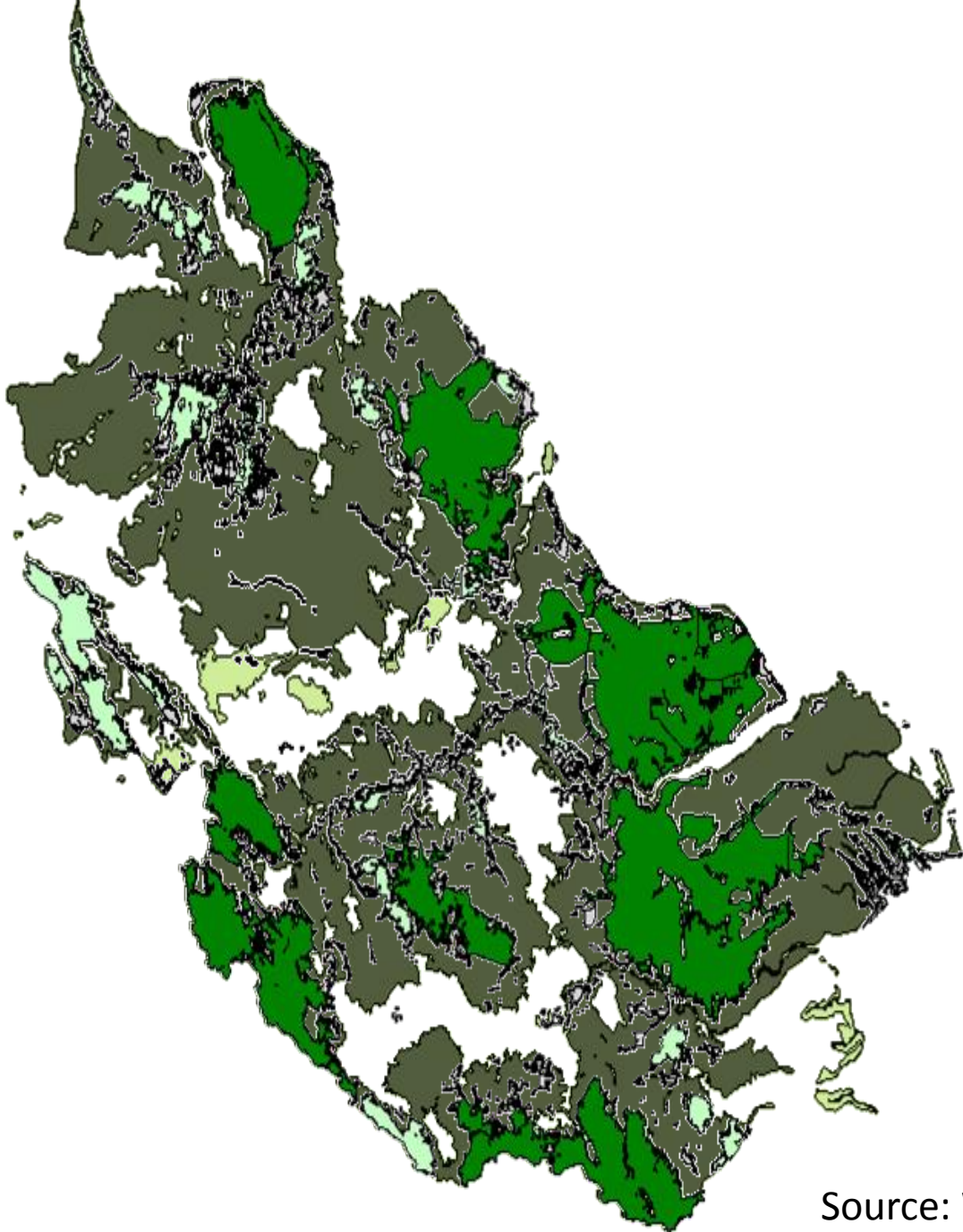


Source: WWF

2007

forest cover: ...%

forest loss: ...%



Source: WWF

Prerequisites for long term tiger persistence

1. Large habitat size
2. Adequate quantity of prey
3. Low human disturbance
4. High genetic diversity



Tiger need a large habitat

Size of Home Range:

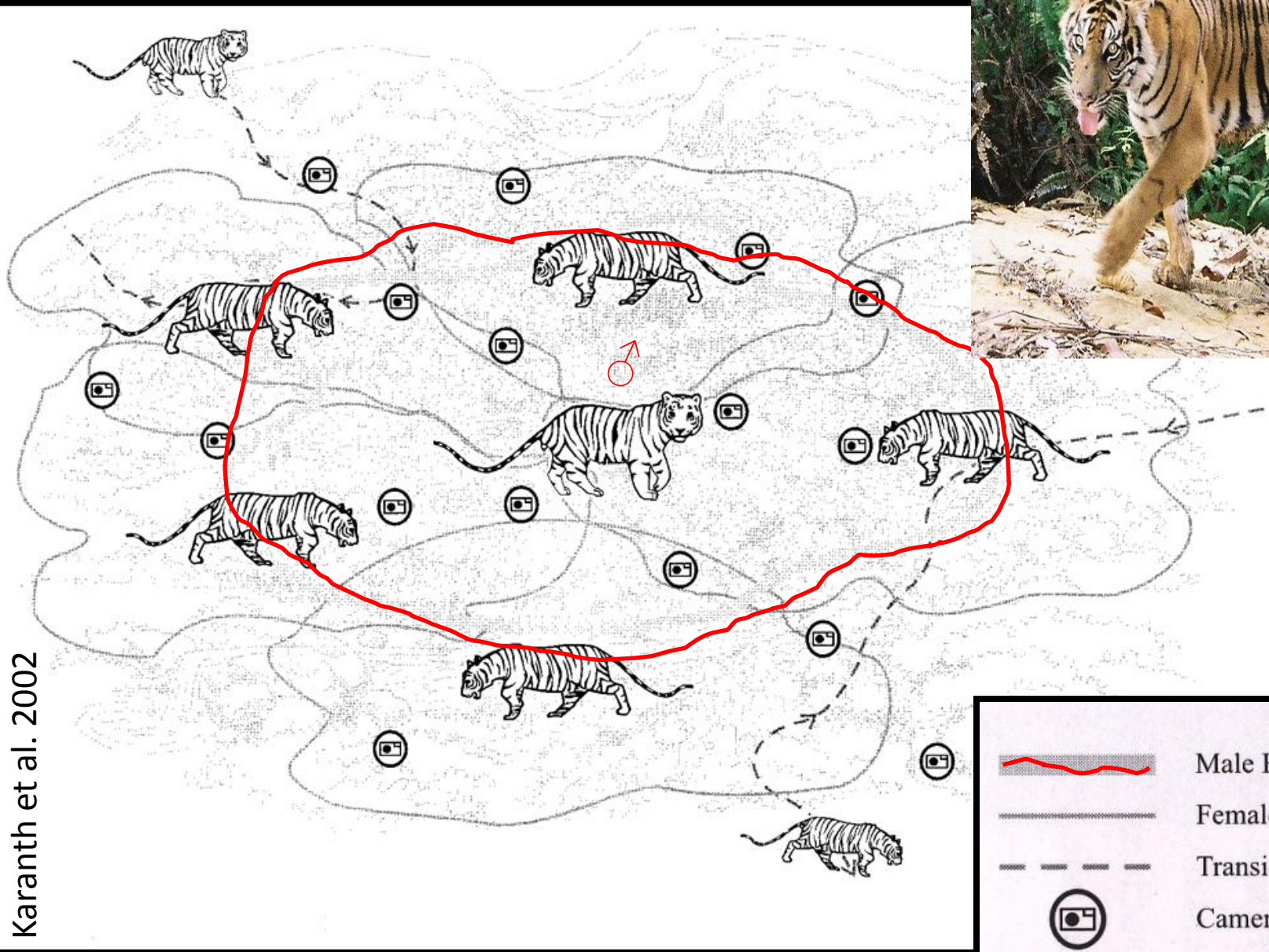
- In savannah India: 10-20 km²
- In Boreal Forest Rusia: 200-400 km²
- In tropical forest Sumatra:
 - Male: ~ 100 km²
 - Female: ~ 50 km²
- Distance of dayly movement fore resident tiger: 10-15 km/day

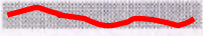
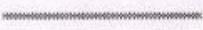
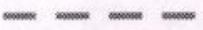

Low density of animal

- 0.3-5.5 adult animals per 100 km² for Sumatran Tiger

(source: wwf)

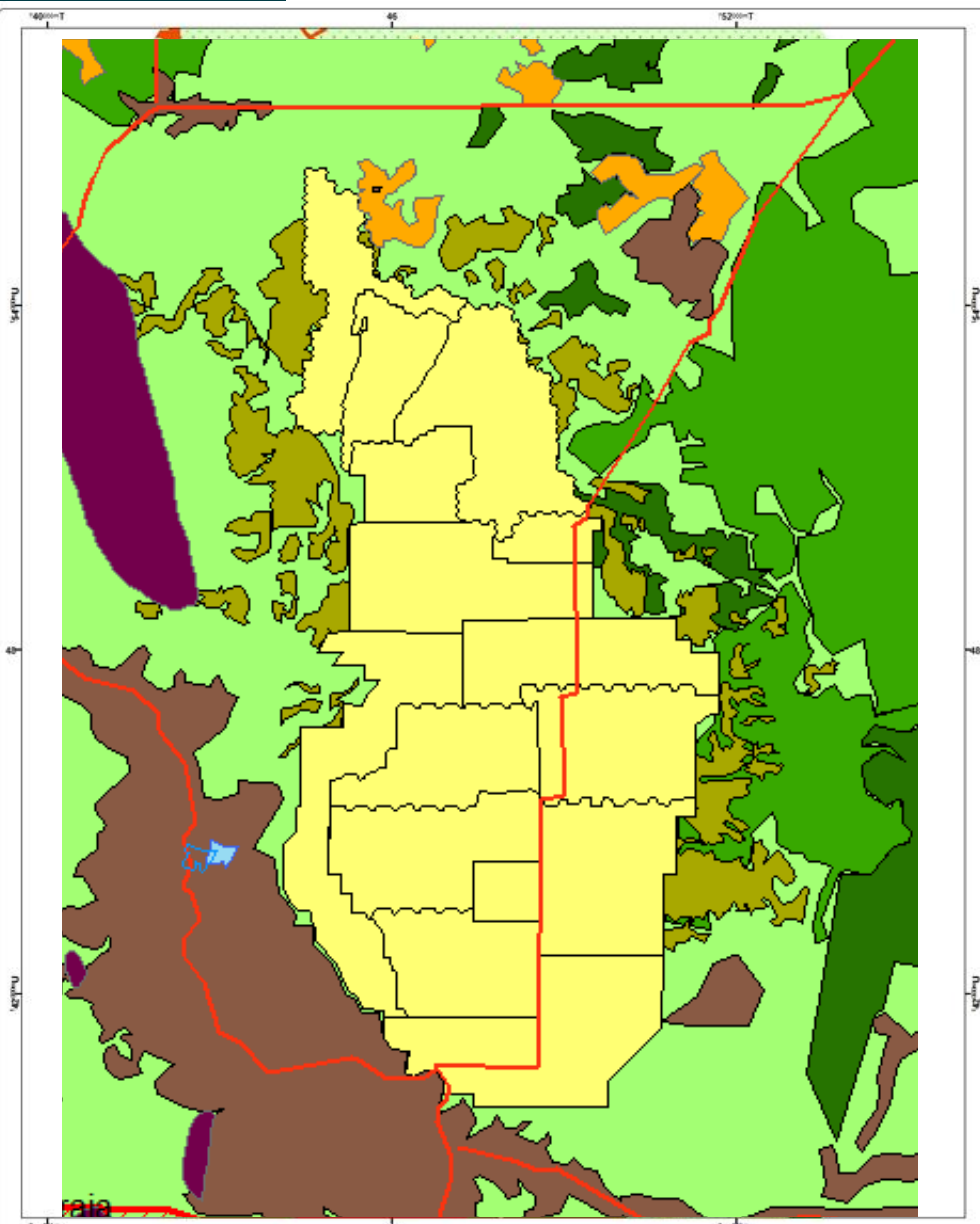




-  Male Home Range
-  Female Home Range
-  Transients and Floaters
-  Camera Trap Points

Small tiger population: study case in DSF



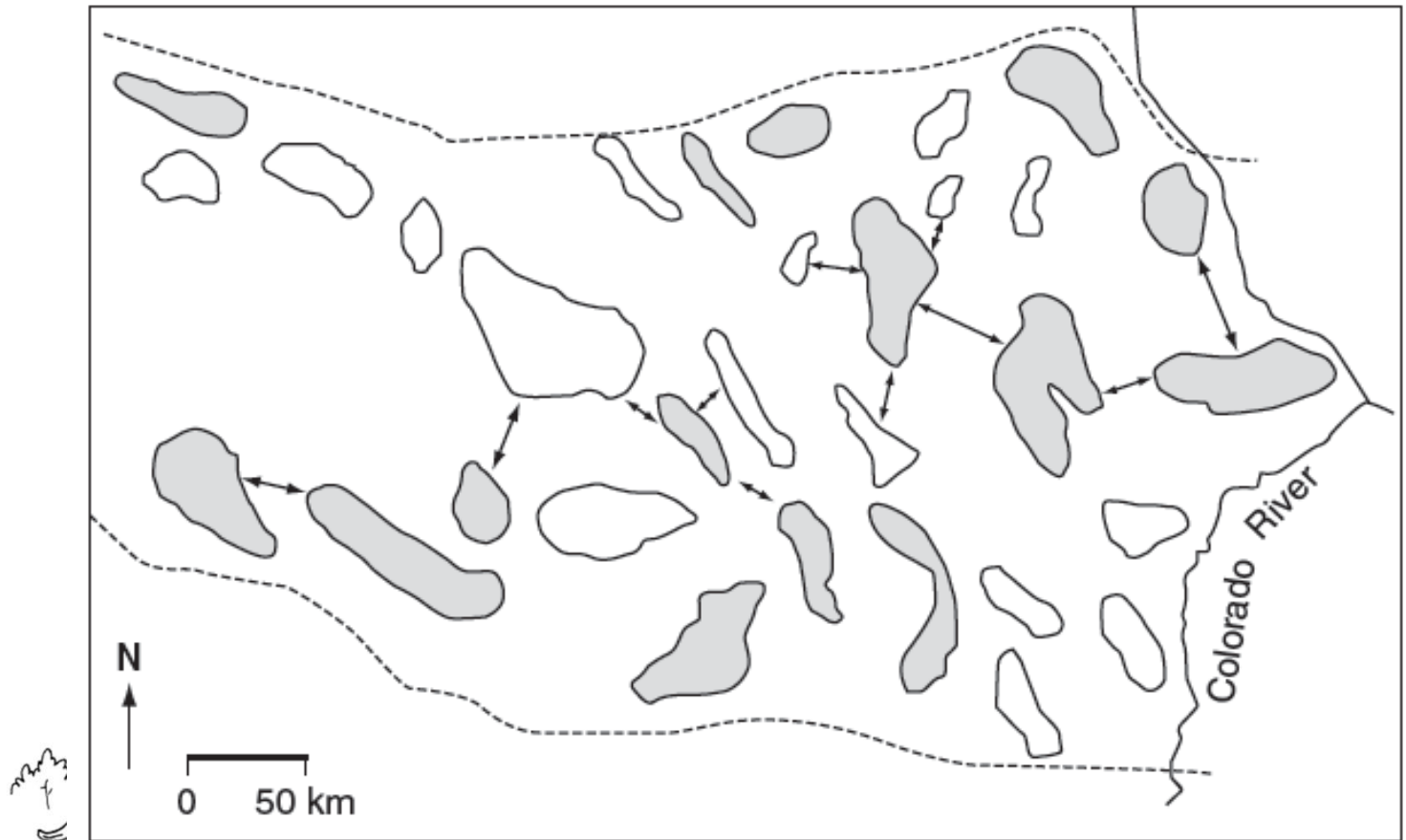


- The area of DSF is 12,800 hectares.
- Almost all the border were fenced
- It is highly modified habitat
- Prey and other resources are adequate
- Report: one female tiger with 2 cubs present here
- Concerns:
 - Staff security
 - Tiger conservation



Example: Picture of steam field (www.enery-pedia.com)

Management strategy of tiger population in DSF

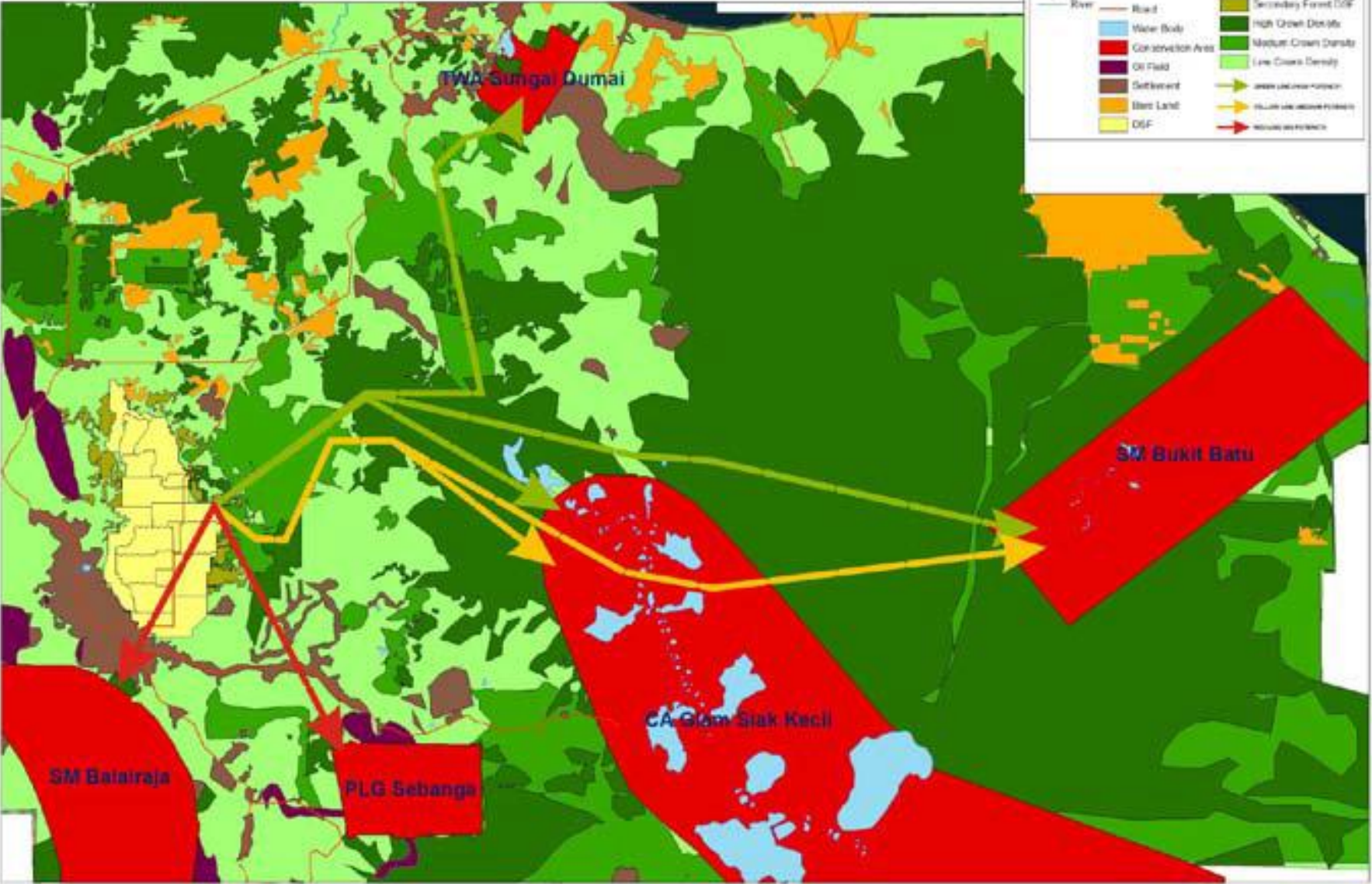


TIGER ACCESSIBILITY CORRIDOR FROM DURI STEAM FLOOD (DSF) TO CONSERVATION AREA



Legenda

River	Road	Secondary Forest DSF
Water Body	Construction Area	High Crown Density
Oil Field	Settlement	Medium Crown Density
Barren Land	DSF	Low Crown Density
	Access and Emission Pathway	
	High Use and Access Pathway	
	Medium Use Pathway	



Level of connectivity:

- Balairaja Wildlife Sanctuary. Heavily damaged. Only 218 ha remaining forest from originally 18,000 ha. Settlements, roads and fences prevent the further movement of Sumatran Tiger and its prey. **Tiger corridor is not possible.**
- Sungai Dumai Tourism Park. Good forest condition. The size of the area is 4,712.50 Ha. The distance from DSF is 28,256 km. Settlements, open areas, roads are occurred between Sungai Dumai Nature Tourism Park and DSF. **Tiger corridors possible.**



- Giam Siak Kecil Nature Reserve. Good forest cover. Size: 84,967 ha. **Two possible corridors were identified .**
- Bukit Batu Wildlife Sanctuary. Good habitat. Size: 21,500 Ha. **Two possible corridor options could be established.**
- Centre for Elephant Training of Sebang. It is 5,873 large. The distance from DSF is only 12.21 km. Massive anthropogenic barriers. **Corridor impossible.**



Tabel 1. Forest concession whose area identified as potential tiger corridor

Protected Area	Distance to DSF (km)	Forest Concession	
		Option 1	Option 2
Sungai Dumai TP	28.3	1. HTI PT Arara Abadi 2. PT Satria Perkasa Agung unit I	
Giam Siak Kecil NR	21.2	1. HTI PT Arara Abadi 2. PT Sekato Pratama Makmur 3. PT Satria Perkasa Agung Unit I	1. HTI PT Arara Abadi 2. PT Sekato Pratama Makmur 3. PT Satria Perkasa Agung Unit II
Bukit Batu WS	51.16	1. HTI PT Arara Abadi 2. PT Sekato Pratama Makmur 3. PT Satria Perkasa Agung Unit I 4. PT Dexter Timber Perkasa Indonesia 5. KH Wanajaya	1. HTI PT Arara Abadi 2. PT Sekato Pratama Makmur 3. PT Satria Perkasa Agung Unit II

Conclusion

- Conservation of Sumatran Tiger need a large area to maintain viable population.
- Developing habitat networking that connect some tiger populations is a realistic option
- commitmen of land owner is prerequisite for the establishmen of permanent and high quality corridor



Thank you very much.....

