

Biodiversity and ecosystem services assessment in Southeast Cameroon tropical forests

PhD student: LHOEST SIMON

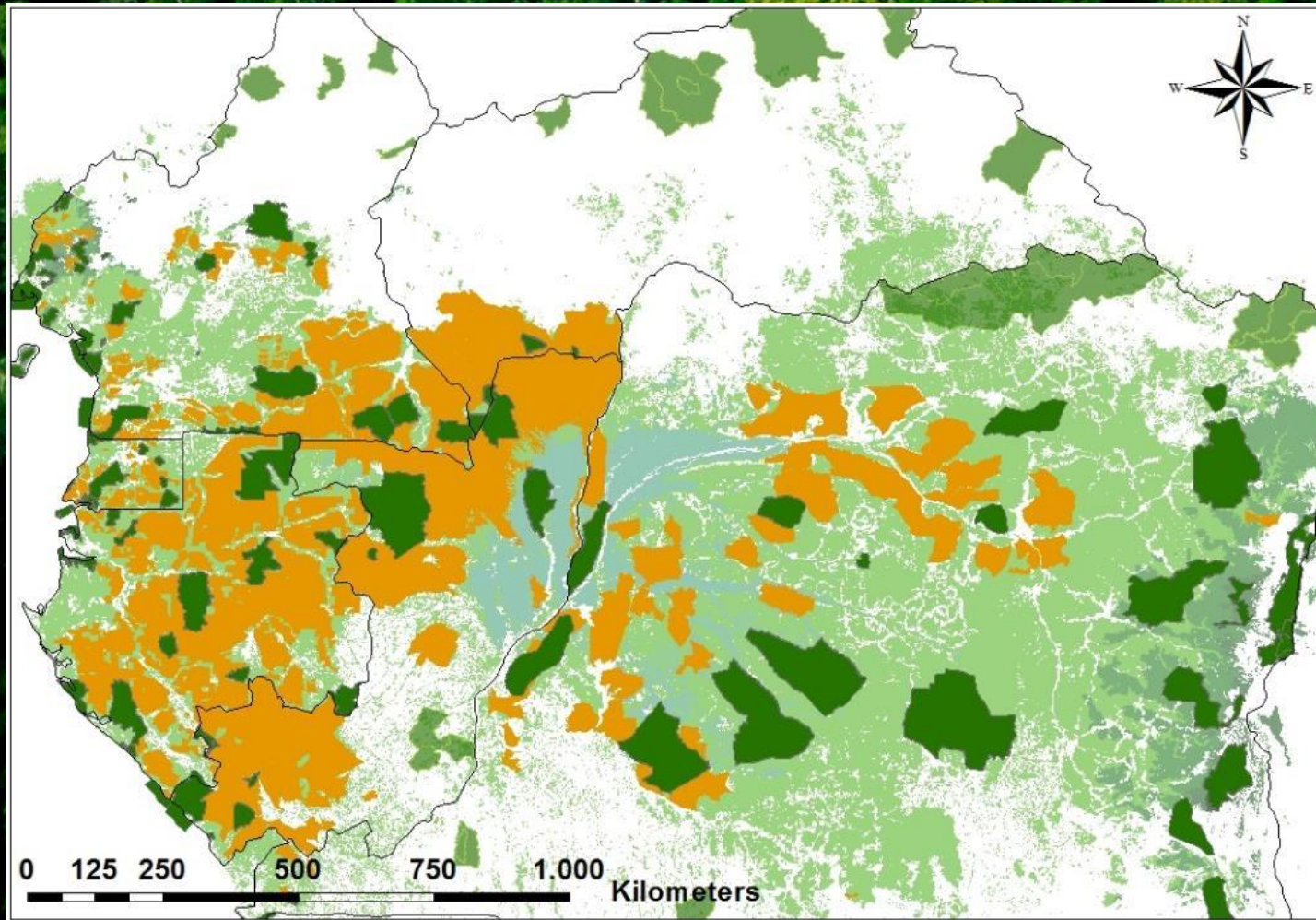
Supervisors: FAYOLLE ADELINÉ, DUFRÊNE MARC

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Production forests

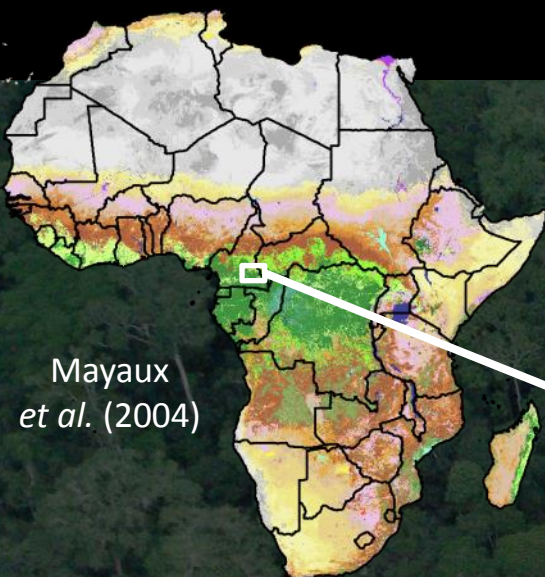
55 millions hectares
(<10 % certified for sustainable
management)



Protected forests

27 millions hectares

Study area: Southeast Cameroon



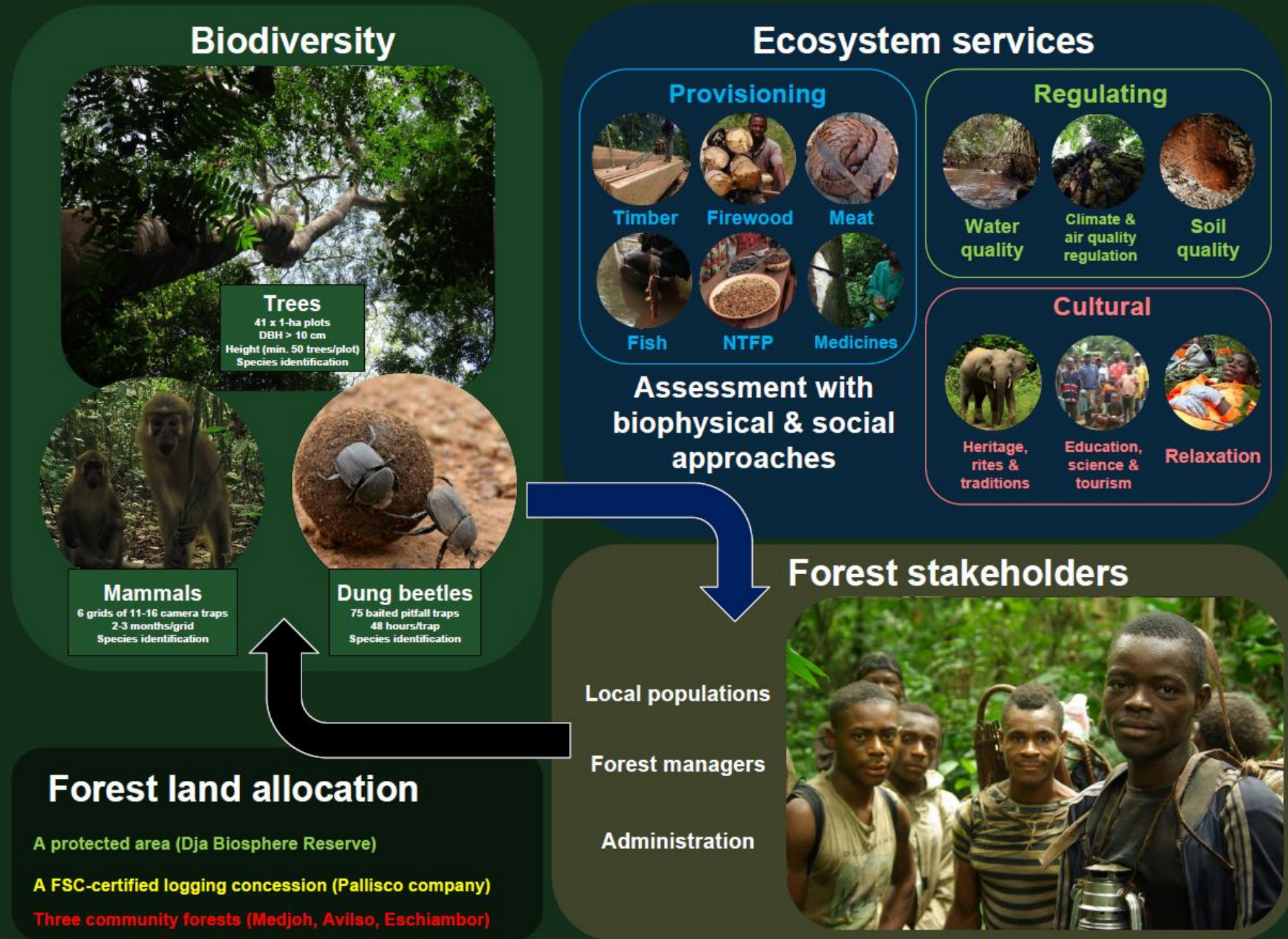
Local populations:

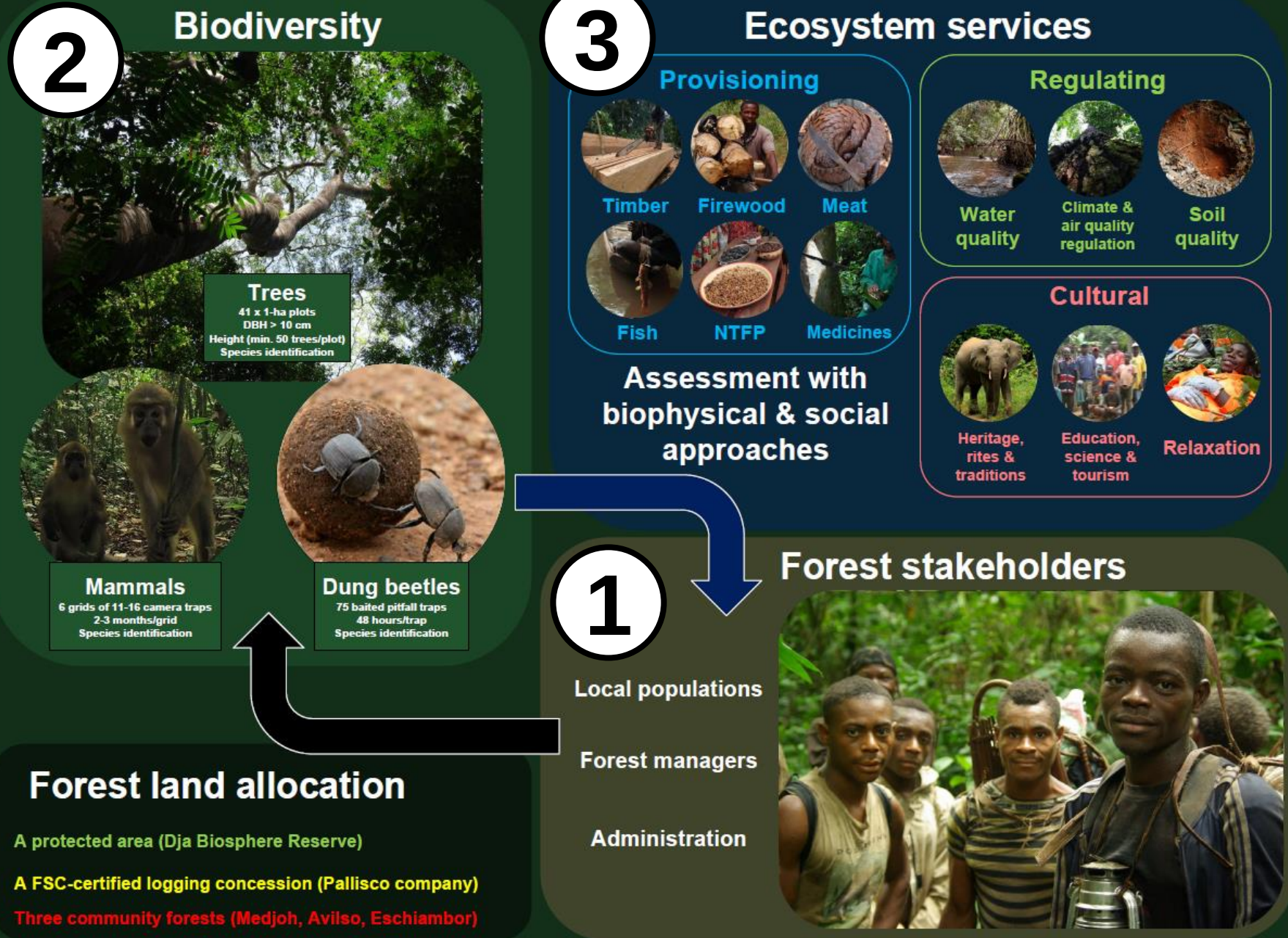
Bantu and Baka Pygmies

Widely dependent on the forest for their daily activities
(hunting, fishing, gathering of forest products, extensive agriculture)

Different land allocation types with different
customary rights for rural populations











**Climate
regulation**

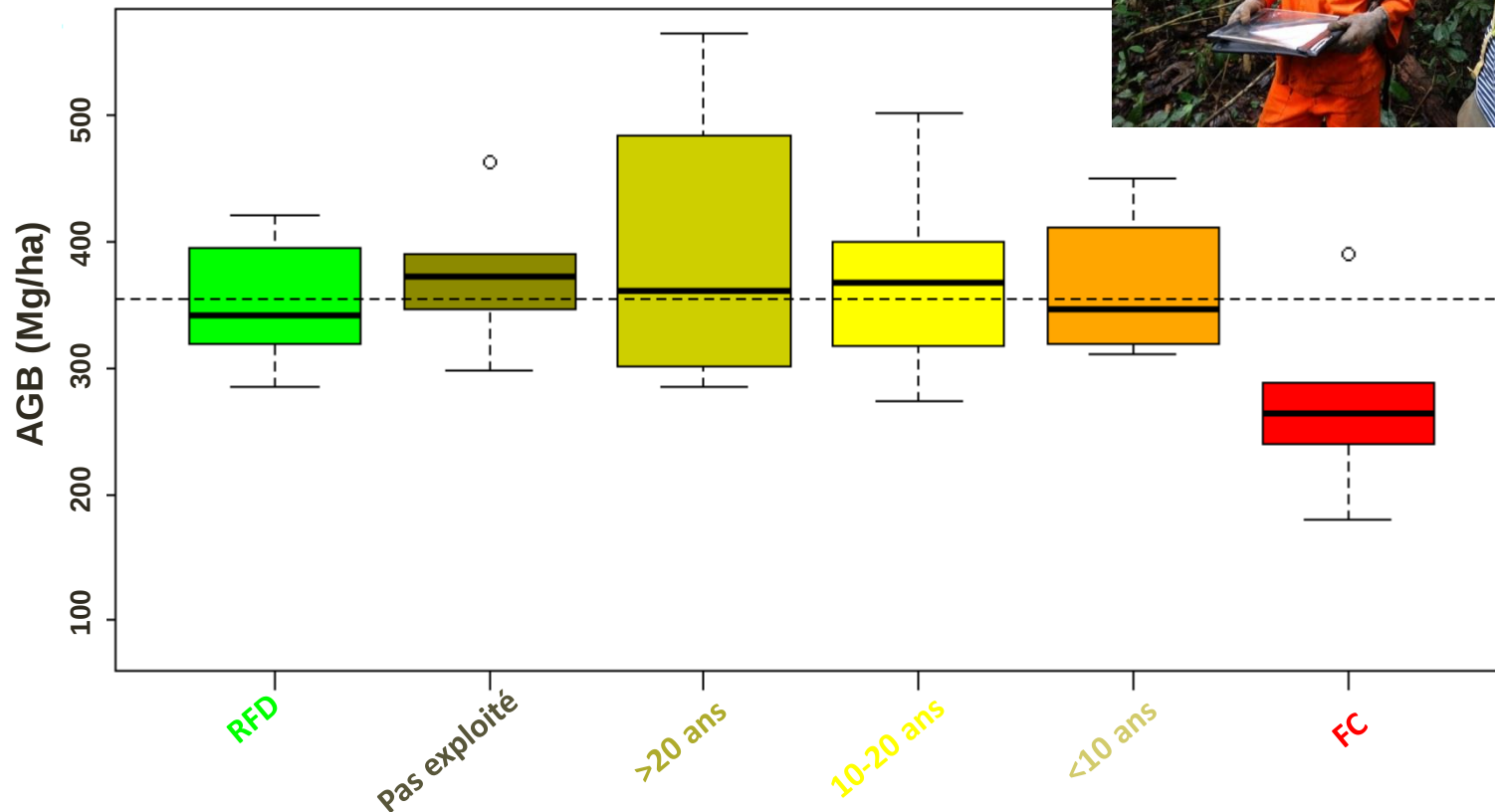




Climate regulation

In 36 x 1-ha plots, measure of:

- Diameter of 17 370 trees (10 – 239 cm)
- Height of 2 274 trees (up to 51.6 m)



		Stumps	Tracks	Roads	Parks
n = 25	Field visits	✓	✓	✓	✓
n = 9	Logging mapping	✓	✓	✓	✓
n = 25	Satellite images	✗	✗	✓	Confirmation

3 methods:

1. Field visit
2. Logging mapping data
3. Photo-interpretation of satellite images

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4 types of logging damages identified inside + around plots :

1. Logging gaps (stumps)
2. Skidding tracks
3. Logging roads
4. Logging parks / lucas-mill / fields

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➔ *In fine*, 3 measures of disturbance for each plot:

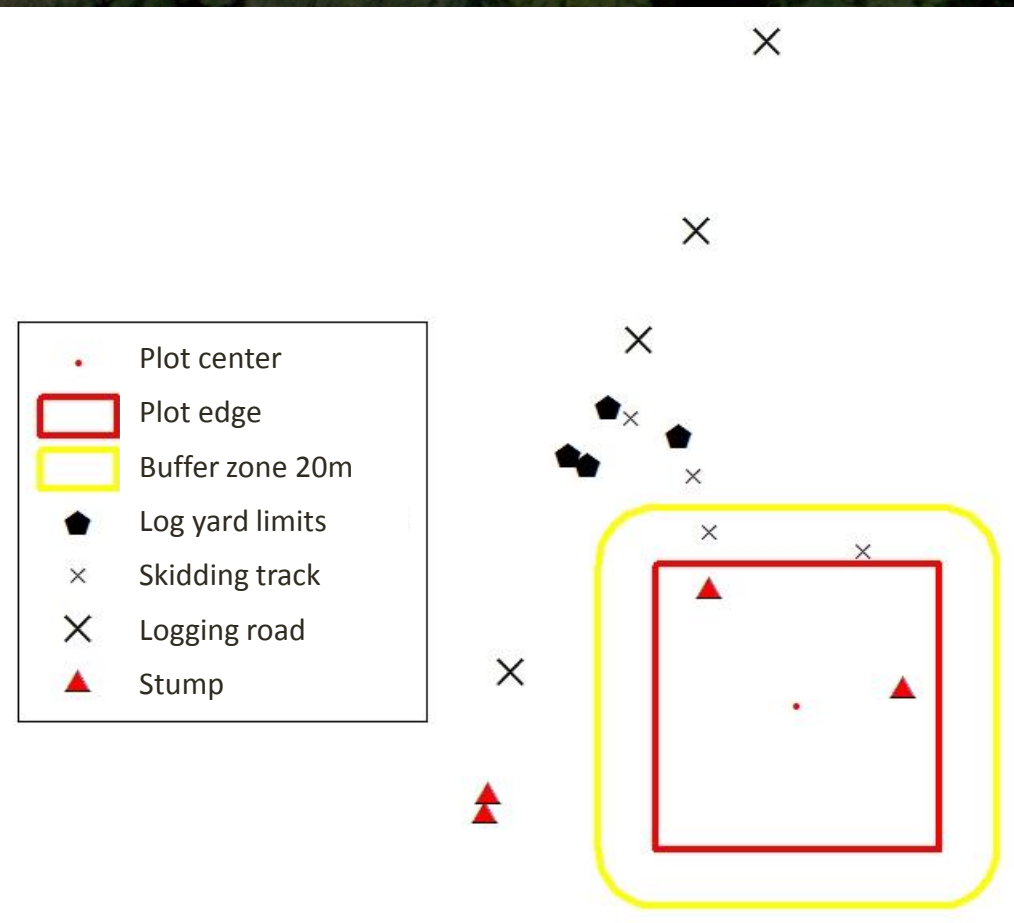
1. Time since logging
2. Number of stumps
3. Distance to the nearest logging damage

Logging damages

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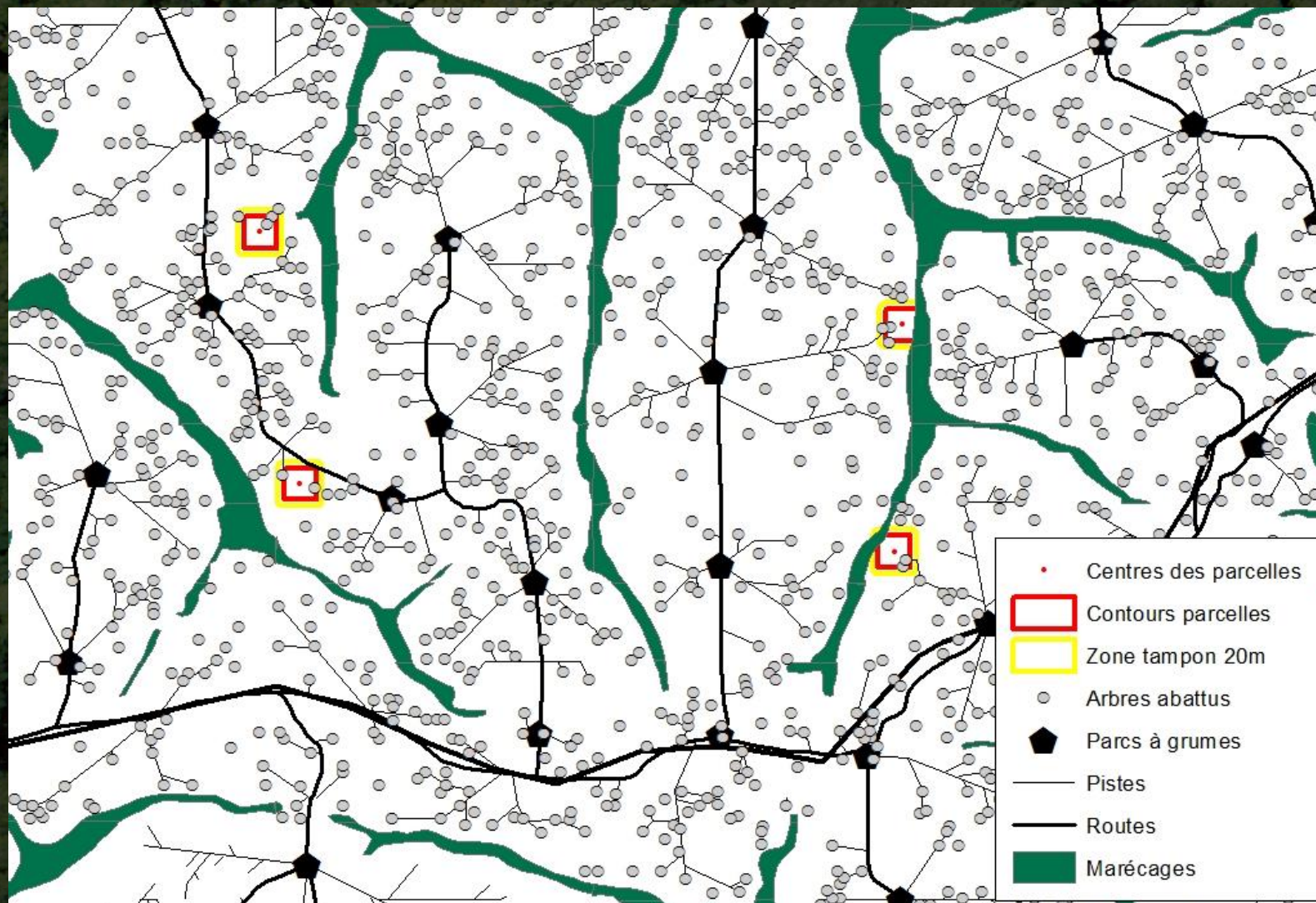
Example



Logging damages

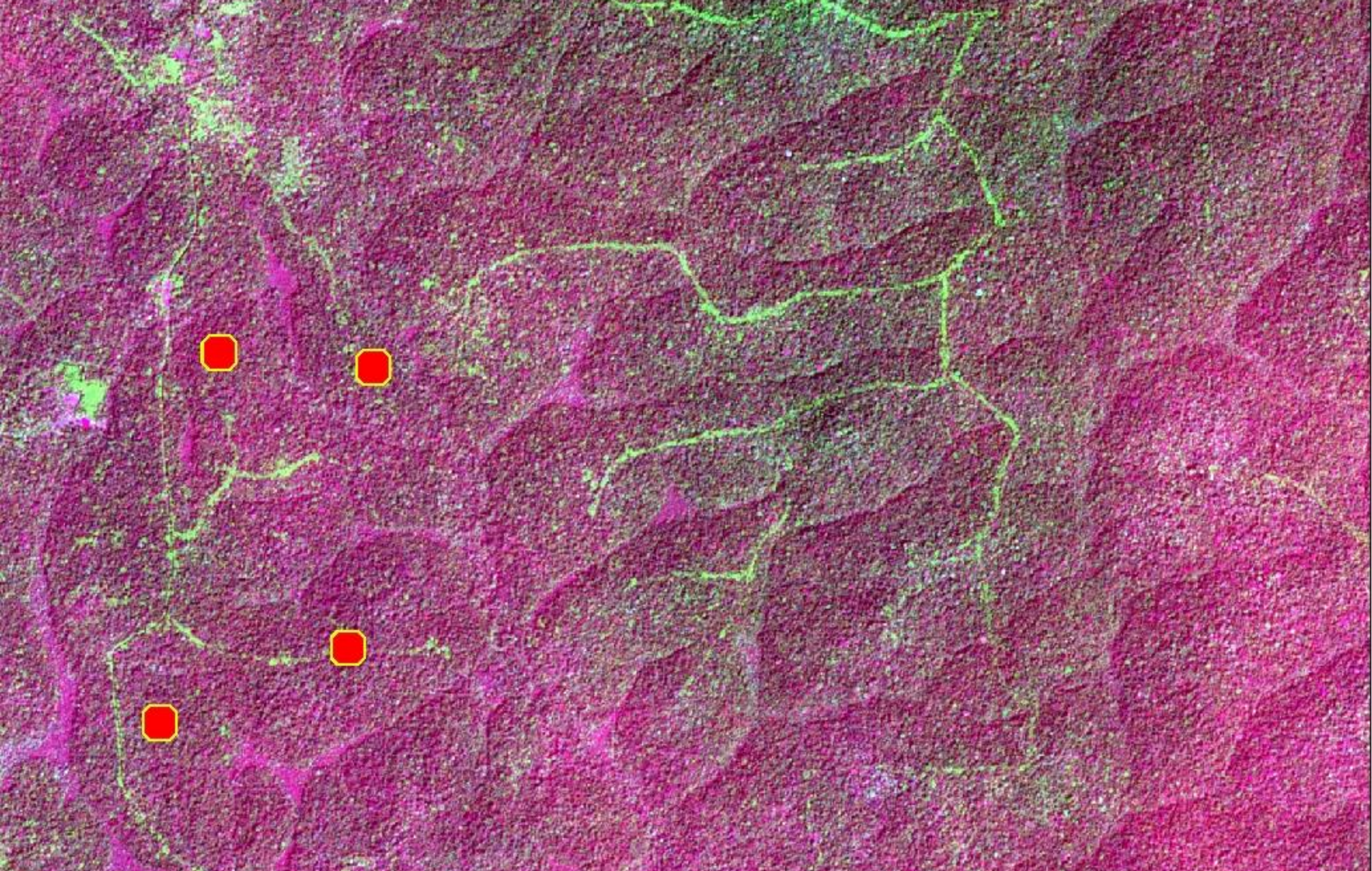
20

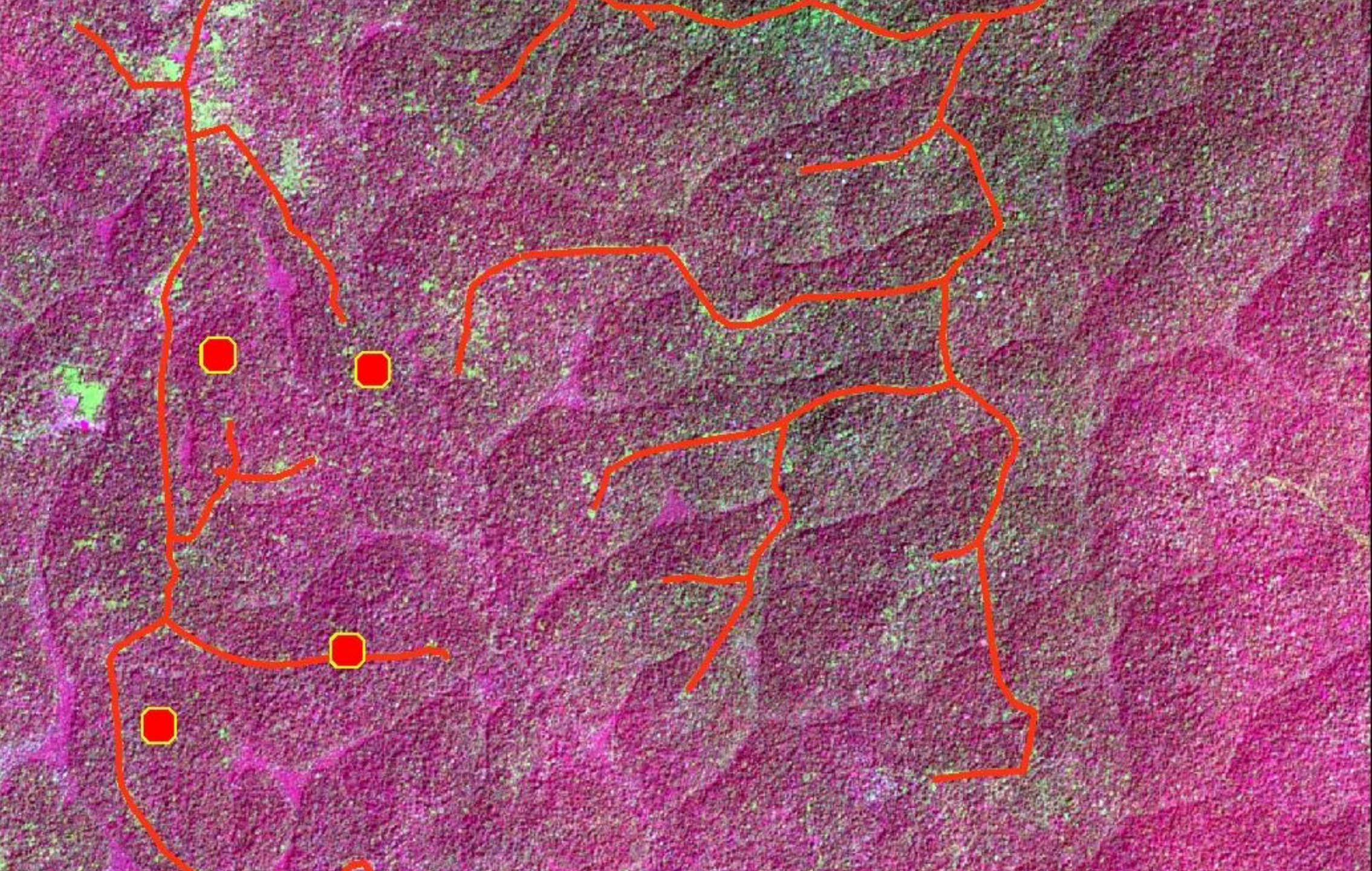
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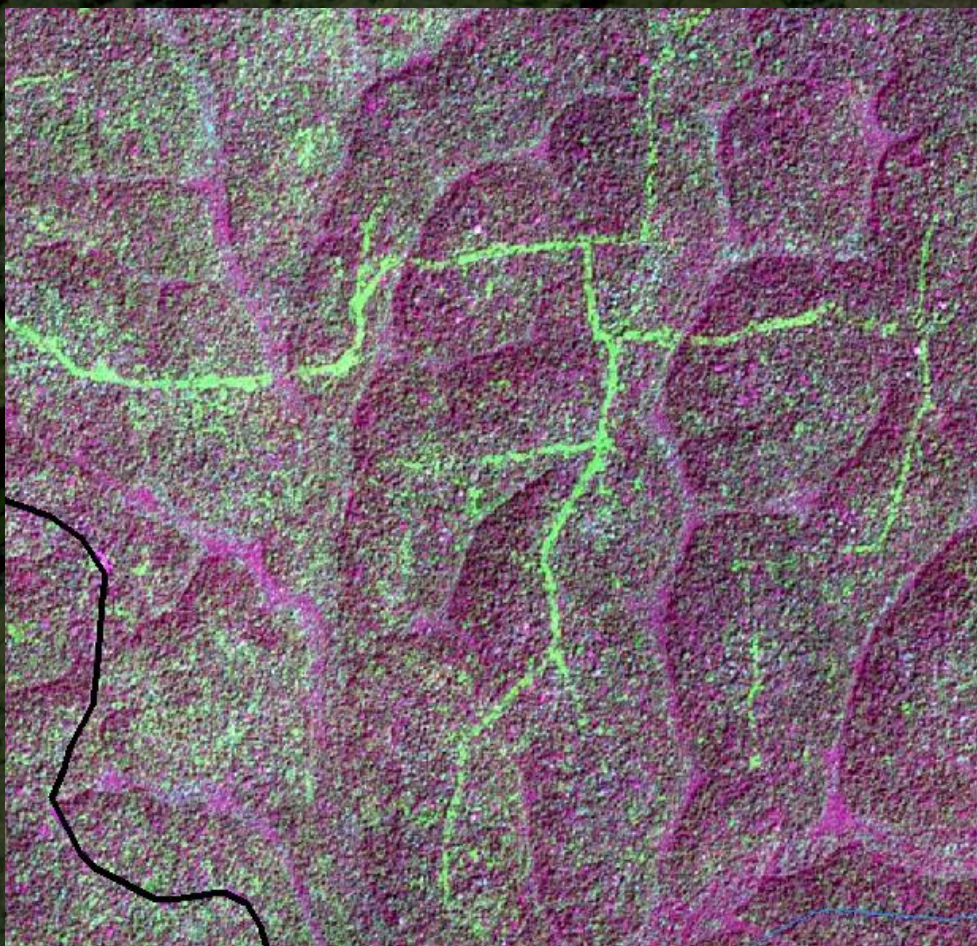




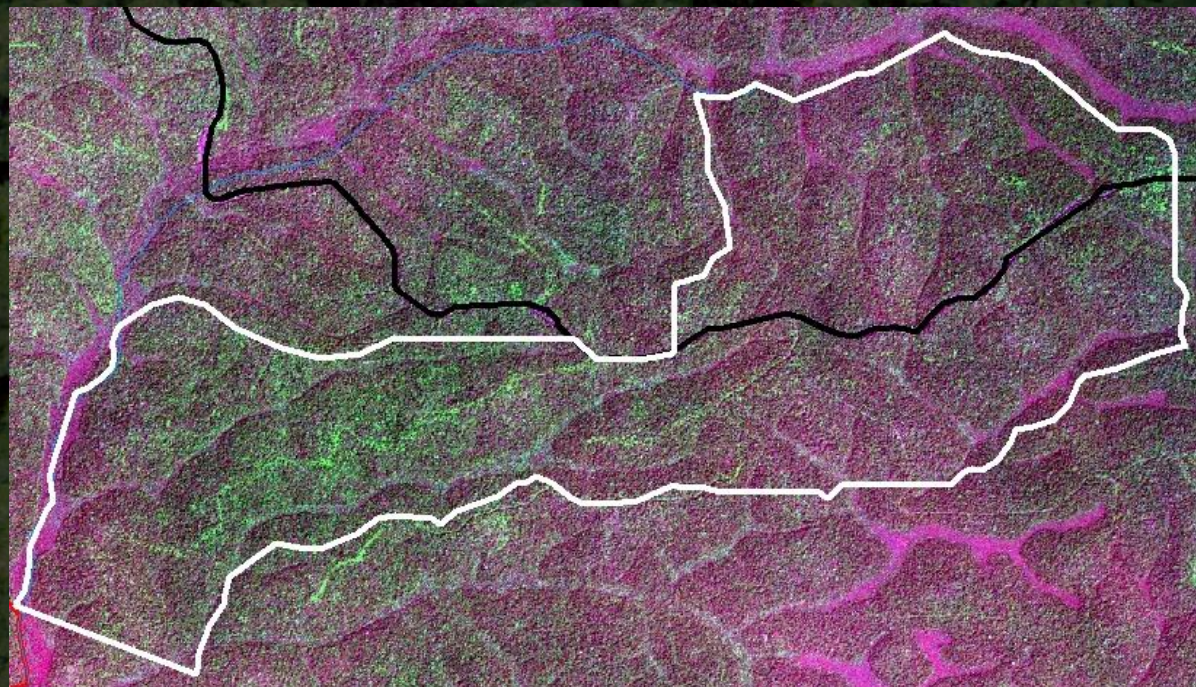
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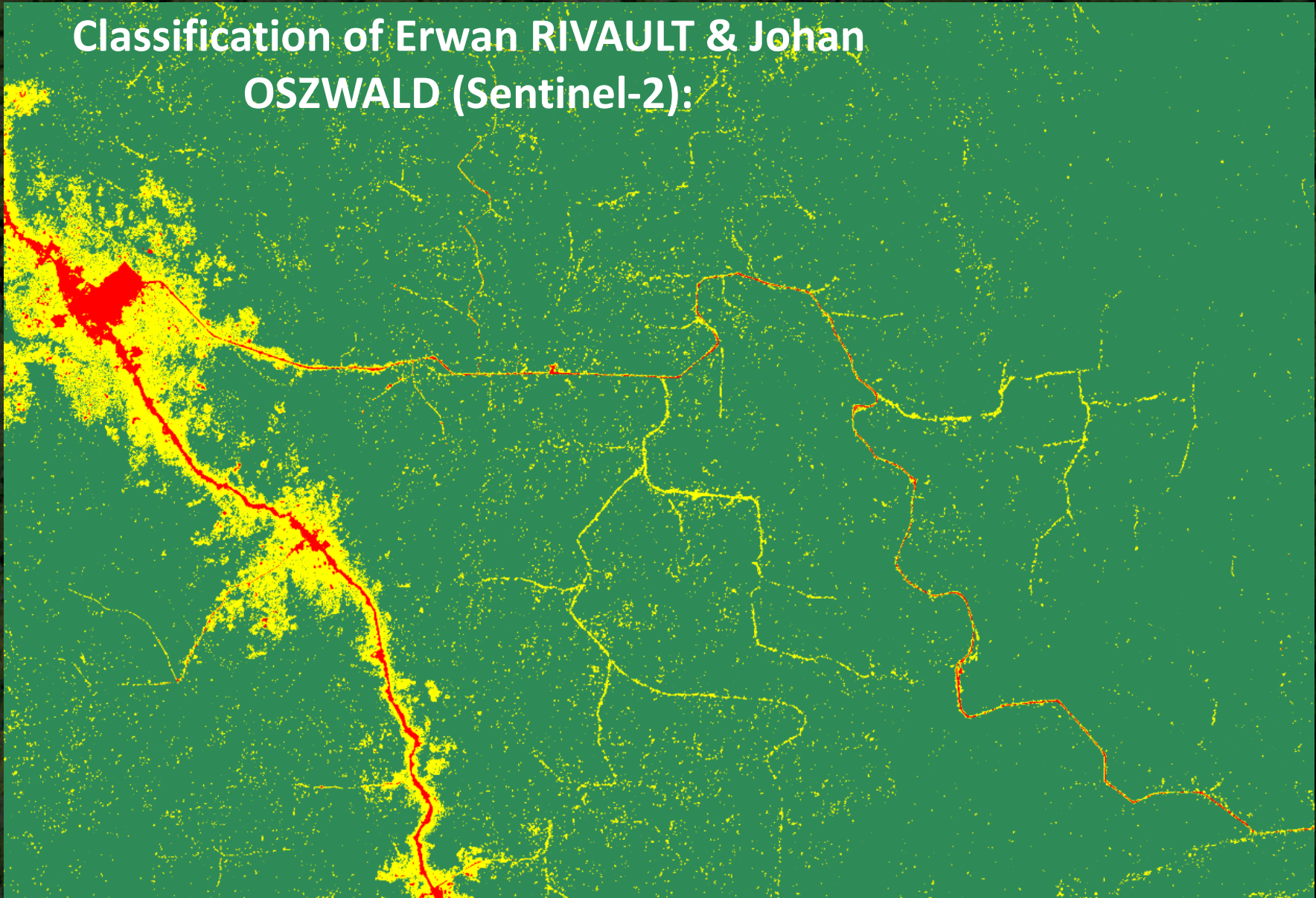
Logging roads:
Before certification (27 years)



Logging roads:
After certification (4 years!)



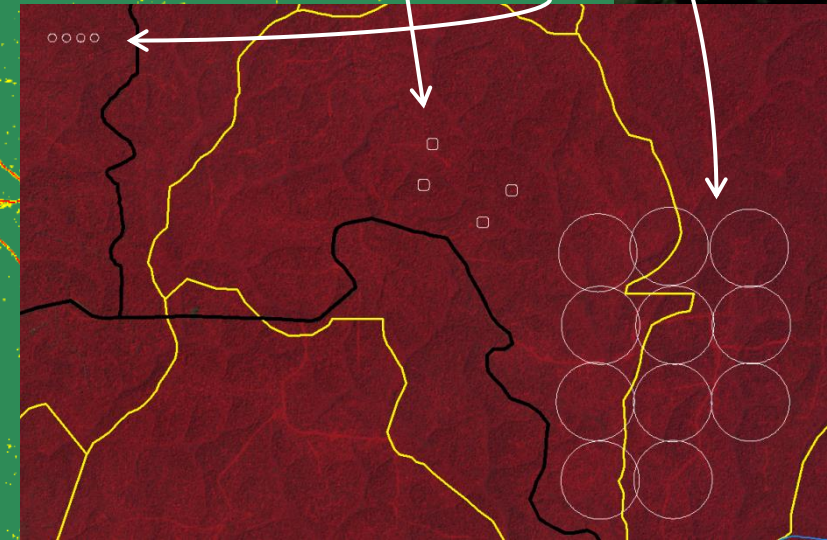
Classification of Erwan RIVAULT & Johan
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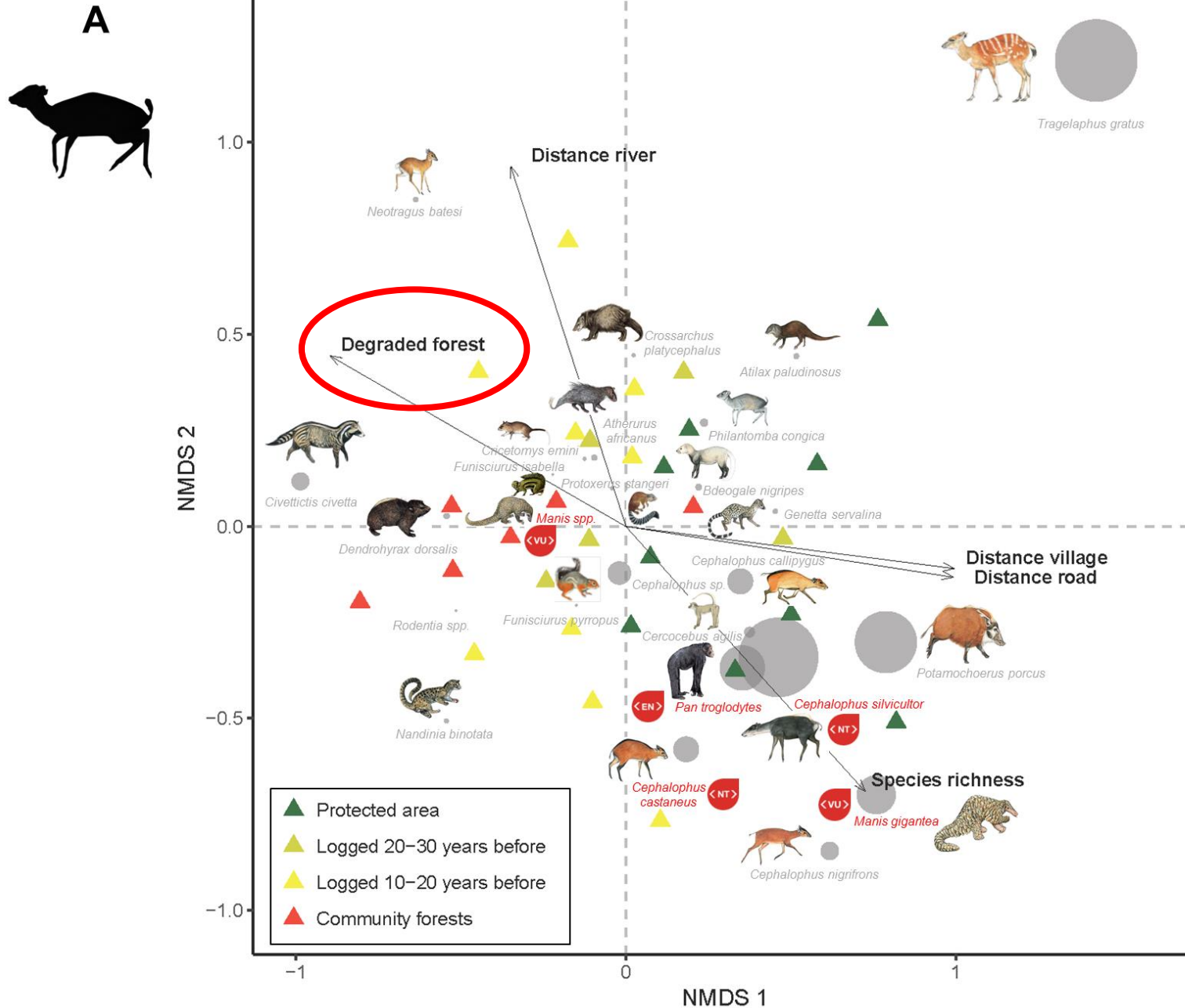
Definition of buffers:

- Trees: 50 m
- Mammals: 707 m
- Dung beetles: 75 m



Distribution of biodiversity sampling units
on a degradation gradient?

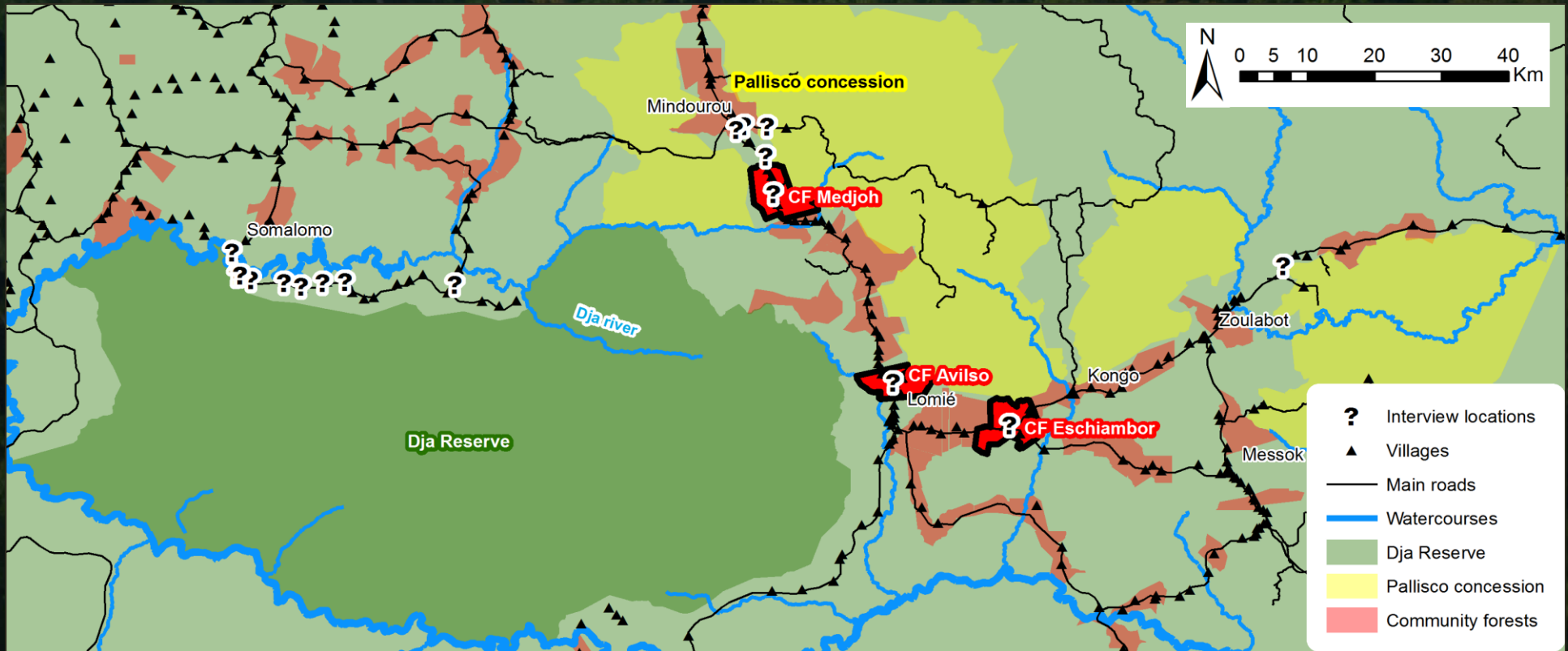
Forest degradation





Climate
regulation

Use of maps of carbon stocks at the scale of forest land allocation types?



Thanks for your attention!