ZURICH UNIVERSITY OF APPLIED SCIENCES
SCHOOL OF LIFE SCIENCES AND FACILITY MANAGEMENT
INSTITUTE OF NATURAL RESOURCE SCIENCES

Quantification of deforestation on Borneo in the last 20 years based on open source geodata

Bachelor Thesis

HS23

by

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Abstract

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Table 2.1: mycaption

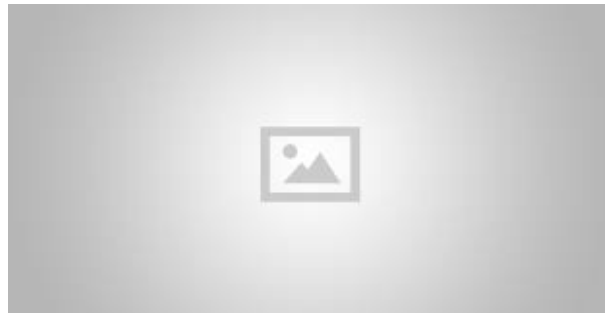| Car	MPG	Cylinders
Mazda RX4	21	6
Mazda RX4 Wag	21	6
Datsun 710	22.8	4
Hornet 4 Drive	21.4	6

Figure 2.1: Example Picture 2

(Chapman et al., 2020; Descals et al., 2021).

3 Method

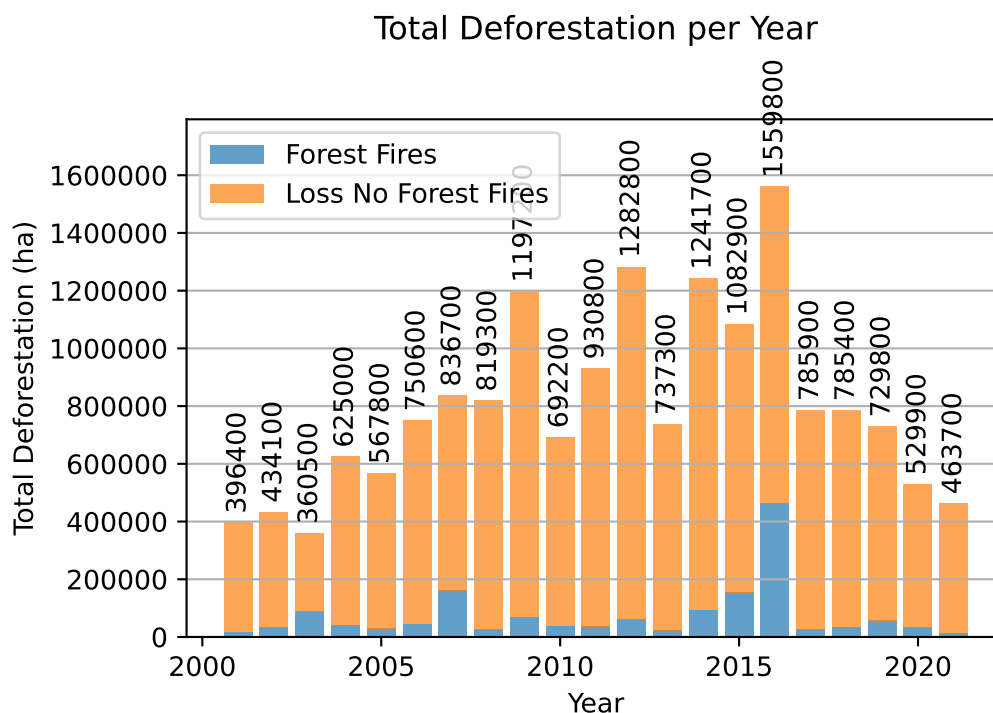For further analysis, a value of >50% tree cover was considered as forest (Hansen et al., 2013).

Total Deforestation per Year

Figure 3.1: mycaption

Table 3.1: Demonstration of pipe table syntax 1

Default	Left	Right	Center
12	12	12	12
123	123	123	123
1	1	1	Hansen et al., 2013

Table 3.2: mycaption

	Title
0	@hansenHighResolutionGlobalMaps2013
1	High-resolution global map of smallholder and industrial closed-canopy oil palm plantations
2	A map of the extent and year of detection of oil palm plantations in Indonesia, Malaysia and Thailand
3	Global forest watch
4	GRIP
5	GRIP
6	Global Roads Open Access Data Set (gROADS)
7	Farming the planet: 2. Geographic distribution of crop areas, yields, physiological types, and net primary
8	Global Spatially-Disaggregated Crop Production Statistics Data for 2010 Version 2.0

3.1 Data Collection

3.1.1 Data Source

The data used in this analysis was obtained from the `mtcars.csv` file. This file contains data on various car models, including their miles per gallon (mpg), number of cylinders, horsepower, and other characteristics. (see Table 3.3)

Table 3.3: mycaption

Car	MPG	Cylinders
Mazda RX4	21	6
Mazda RX4 Wag	21	6
Datsun 710	22.8	4
Hornet 4 Drive	21.4	6

Table 3.4: mycaption

Car	MPG	Cylinders
Car1	20	Hansen et al., 2013
Car2	25	6
Car3	30	4
Car4	22	8

see Annex I

4 Results

4.0.0.1 Questions

4.0.0.2 General Forest loss

1. How much forest area was lost yearly and in total?
2. How much forest area was lost due to forest fires yearly and in total?
3. How much new build up areas was created on forest loss areas (2020 compared to 2000)?
4. How much new build up areas was created on forest-fire loss areas (2020 compared to 2000)?
5. How much forest gain (area) occured on forest fire areas (2001 - 2012)?
6. How much forest was lost in protected areas yearly? –> carry out all of them with primary forests as well

4.0.0.3 Oil Palm related

1. How much new oil palm plantation area occured yearly on forest fire areas?
2. How much new oil palm plantation area occured yearly on non-forest deforested areas?
3. How much new oil palm plantation area occured yearly on deforested areas?
4. How much new oil palm plantation area occured in protected ares?
5. How much new oil palm plantation areo occured on non-forest area? (compared to year 2000 forest cover)
6. How much new oil palm plantation area occured on previos cropland (and other way around)?
7. How much forest area was ganied on previous oil palm plantation area yearly (2000 - 2012)?
8. How much area was used for other crops prior to oil palm plantation, and which?
9. How much area was used for oil palm plantation prior to other crops, and which?

4.0.0.4 Build up areas

1. How much new build up area occured in forest covered area (2020 compared to 2000)?
2. How much new build up area occured in non-forest covered area (2020 compared to 2000)?
3. How much new build up area occured in forest fire area (2020 compared to 2000)?
4. How much new oil palm plantation area occured within 1, 2, 5, 10, and 20 km of newly buld up areas?
5. How much forest area was lost to forest fires within 1, 2, 5, 10, and 20 km of newly buld up areas?
6. How much forest area was lost to non-forest fires deforested areas within 1, 2, 5, 10, and 20 km of newly buld up areas?
7. How much forest area was lost to cropland areas within 1, 2, 5, 10, and 20 km of newly buld up areas?

4.0.0.5 RSPO

???

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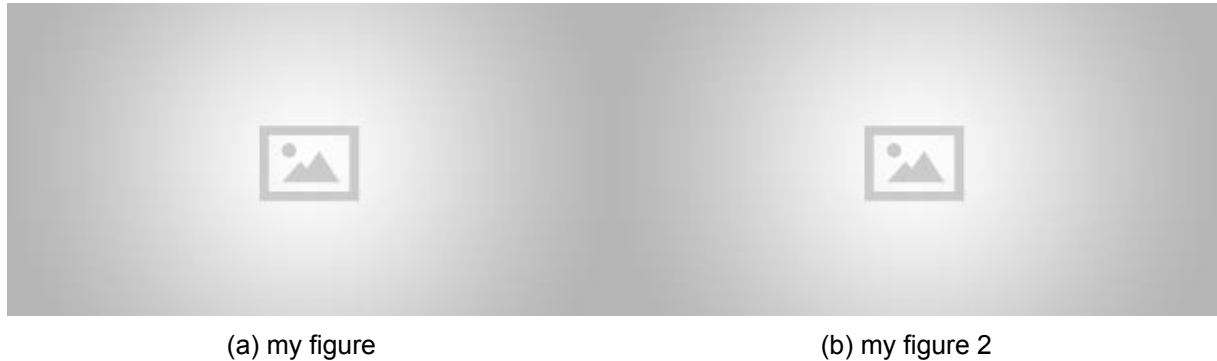(a) my figure   (b) my figure 2

Figure 4.1: Multiple pictures!

For more information, refer to the literature review (Chapman et al., 2020; Descals et al., 2021).

Table 4.1: mycaption

Car	MPG	Cylinders
Mazda RX4	21	6
Mazda RX4 Wag	21	6
Datsun 710	22.8	4
Hornet 4 Drive	21.4	6

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5 Discussion

However, the data showing forest gain in the span of 2001 - 2012 is inaccurate. Analysis showed that 32% of the alleged forest gain represents newly established palm oil plantations. Thus, all new palm oil cultivation areas established between 2001 and 2012 have been removed from the forest gain dataset.

6 References

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Annex

Annex I