

Case Study Area 3 - LAJ 1 Planted Rubber Areas, Jambi, Sumatra

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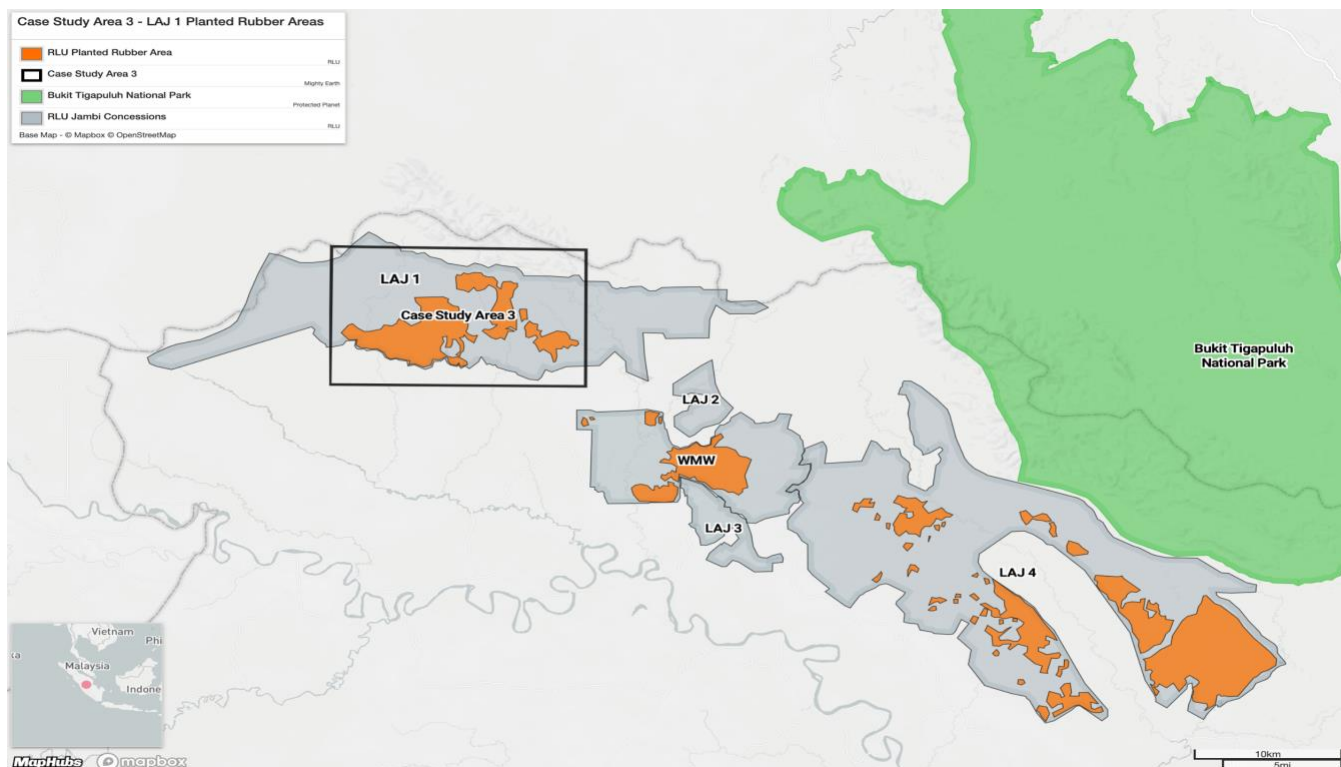
Date: February 27, 2021

Introduction

Case Study Area 3 focuses on industrial deforestation inside LAJ 1, prior to the formation of the RLU Joint Venture. To identify industrial deforestation in LAJ 1, we focused on RLU Planted Rubber Areas - four polygons totalling approximately 4,000 ha (see Figure 1). The polygons were digitized from the RLU Landscape Protection Plan (2019), using a map of planted rubber tree locations.¹ LAJ 1's Planted Rubber Areas are located 15km northwest of Bukit Tigapuluh National Park (see Figure 1).

On November 22, 2009, LAJ 1's centre was previously logged over but still intact lowland rainforest. The Planted Rubber Areas are located in the middle of the forest block. In 2009, critically endangered Sumatran Tiger were sighted to the east of the RLU Planted Rubber Areas (see Figure 2).² The western and eastern ends held remnants of forest interspersed with smallholder agriculture.

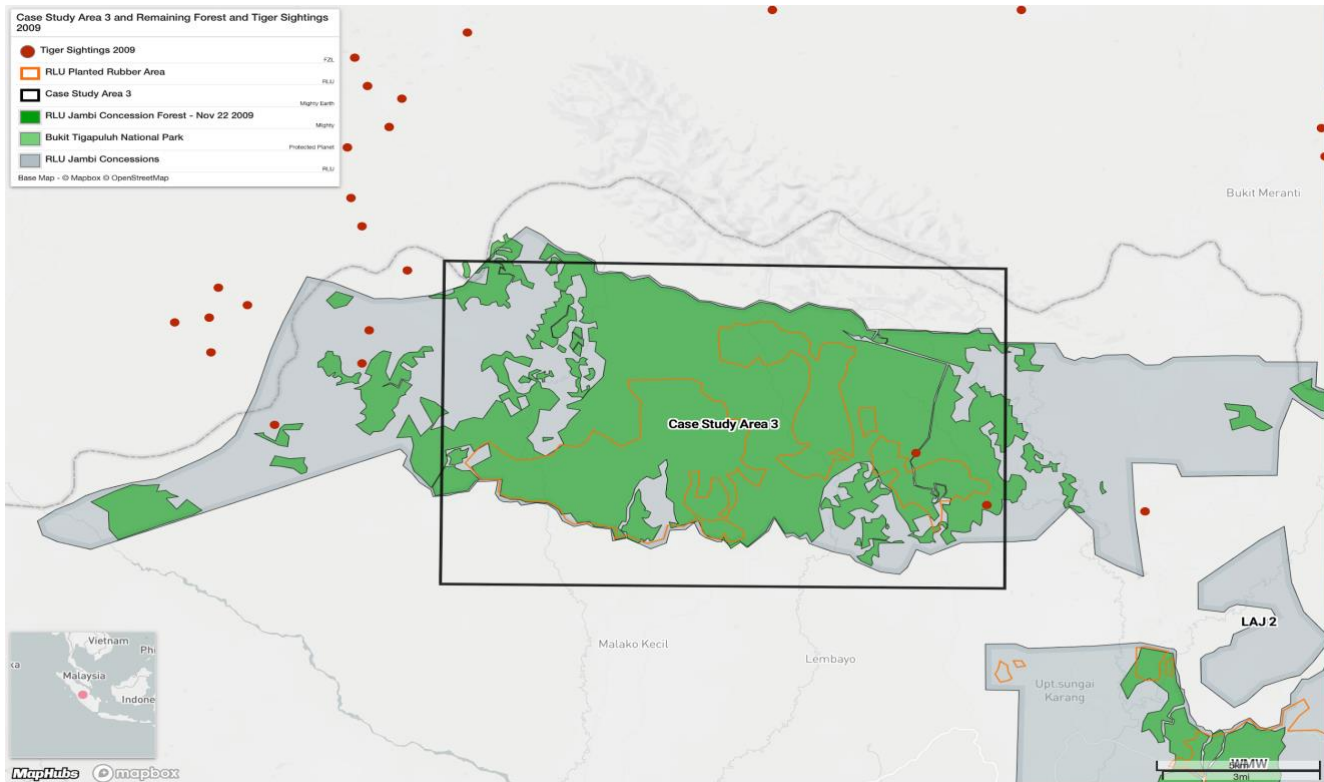
Figure 1. LAJ 1 Case Study Area 3, Jambi, Sumatra, Indonesia



¹ PT Royal Lestari Utama (2019) *PT Royal Lestari Landscape Protection Plan*, February 19, 2019, RLU: Jakarta, Indonesia

² KKI Warsi/Frankfurt Zoological Society/Eyes on the Forest/WWF- Indonesia (2010) *Last Chance to Save Bukit Tigapuluh, Sumatran tigers, elephants, orangutans and indigenous tribes face local extinction, along with forest*, KKI Warsi/FZS/Eyes on the Forest/ WWF-Indonesia: Jambi/Frankfurt/Riau/Jakarta

Figure 2. LAJ 1 Case Study Area 3, Tiger sightings, November 2009



Methodology

To analyze deforestation inside LAJ 1's Planted Rubber Areas, a similar methodology was used for Case Studies 1 and 2 in Mighty Earth's report on Michelin and the RLU project. Due to the lack of availability of high resolution satellite imagery for the Case Study Area 3, Landsat 7 and 8 scenes were used to map remaining forest and deforestation between 2009 and 2014 with 0.5-1.5m high resolution satellite imagery used for verification and identifying rubber monocultures. A November 22, 2009 Landsat 7 scene (30m) was used to map remaining forest cover and a January 25, 2008 50cm Panchromatic WorldView scene was then used to assess the forest canopy. The WorldView scene provided sufficient resolution to determine that the forest inside the Planted Rubber Areas was previously logged over but still intact lowland rainforest. Industrial deforestation was then mapped using a Landsat 7 scene from April 12, 2012, a 1.5m resolution SPOT scene from June 18, 2013, and a Landsat 8 November 12, 2014 scene. Additional SPOT scenes from July 15, 2015 and November 22, 2019 were used to identify planted rubber monoculture. Imagery was used to date and quantify both forest loss and attribute deforestation to either industrial and non-Industrial methods.

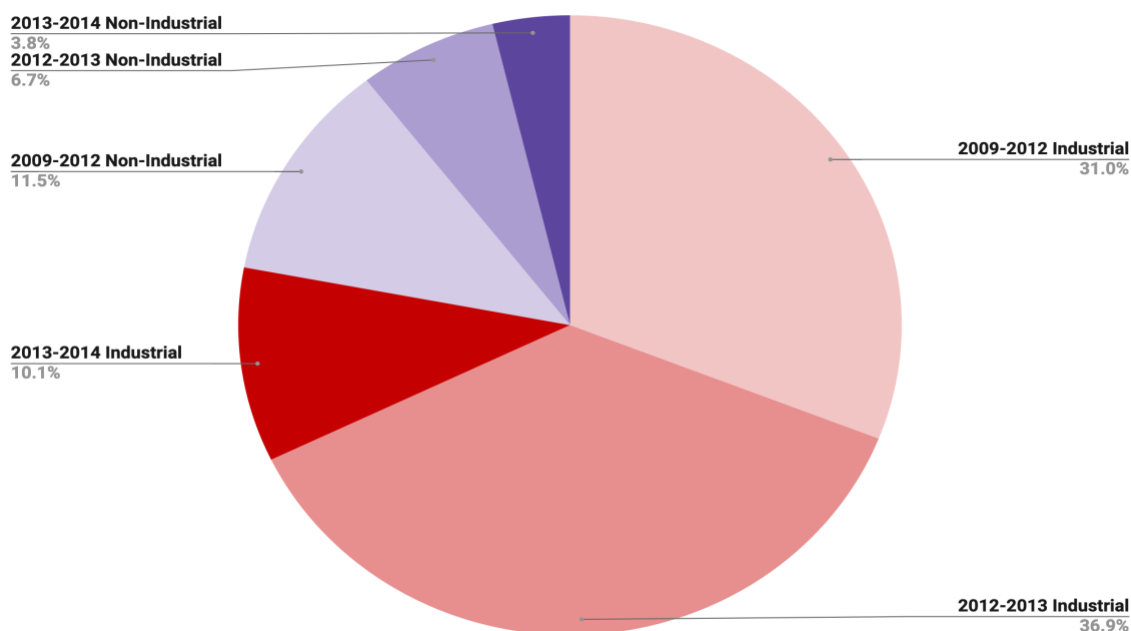
For further documentation of the methods, refer to pages 20-21 of the Mighty Earth report: [*Complicit: An Investigation into Deforestation at Michelin's Royal Lestari Utama Project in Sumatra, Indonesia*](#) (2020).

Table 1: Forest Cover inside LAJ 1 Case Study Area 3, November 22, 2009 - November 12, 2014

| Forest inside LAJ 1 Planted Rubber Areas | Nov 22, 2009 | April 12, 2012 | June 18, 2013 | Nov 12, 2014 |
|--|--------------|----------------|---------------|--------------|
| Area of forest cover, ha | 3,720 (93%) | 2,160 ha (54%) | 520 ha (13%) | 0 ha (0%) |

In November 22, 2009, 93% of LAJ 1 Planted Rubber Areas were still forest and occupied the central section of the forest block. Between November 22, 2009 and April 12, 2012 forest declined by 1,560 ha within the Planted Rubber Areas. Between April 12, 2012 and June 18, 2013, a further 1,640 ha of forest was lost, declining to 13% of the total Planted Rubber Area. By November 12, 2014 there was no natural forest visible inside the RLU Planted Rubber Area in LAJ 1.

Figure 3. Industrial and Non-Industrial Deforestation inside RLU Planted Rubber Areas in LAJ 1, Nov 2009- Nov 2014



Using the same methodology for the LAJ 4 Case Studies 1 and 2, high resolution satellite images were analyzed to determine and quantify the type of deforestation inside the LAJ 1 RLU Planted Rubber Areas. Imagery analysis identified that between November 2009 and April 2012, Industrial and non-Industrial deforestation methods cleared 1,512 ha and 428 ha, respectively. Between April 12 2012 and June 18 2013, 1,372 ha were cleared industrially and 251 ha were cleared non-Industrially and between June 18 2013 - November 12 2014, non-Industrial methods cleared 140 ha and Industrial, 377 ha. In total, Industrial deforestation methods were responsible for clearing 2,901 ha of natural forest between November 2009 and January 2015. This is 78% of the remaining forest inside the RLU Planted Rubber Area in LAJ 1.

High Resolution Satellite Scenes of Industrial Deforestation inside LAJ 1 Case Study Area 3 (Figures 4 to 7) (-0.993106, 102.054347)

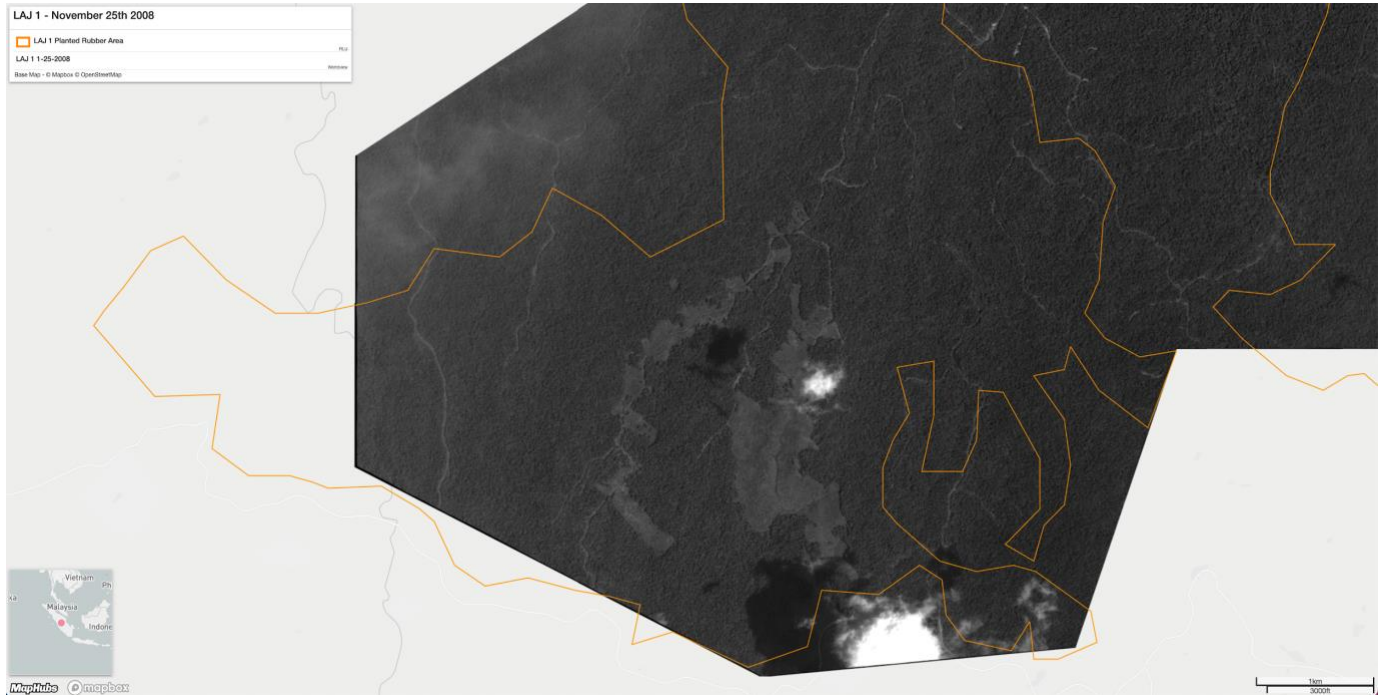


Figure 4. LAJ 1, Case Study Area 3, January 25, 2008 (WorldView) - Previously logged lowland rainforest was present in 93% of the LAJ 1 Planted Rubber Area ³



Figure 5. LAJ 1, Case Study Area 3, June 13, 2013 - Industrial deforestation was present throughout LAJ 1 Planted Rubber Area

³ November 25, 2008 was the earliest available high resolution scene and only available in monochrome (black and white). Forest cover was still present in November 2009, verified with a November 12, 2009 Landsat 7 scenes

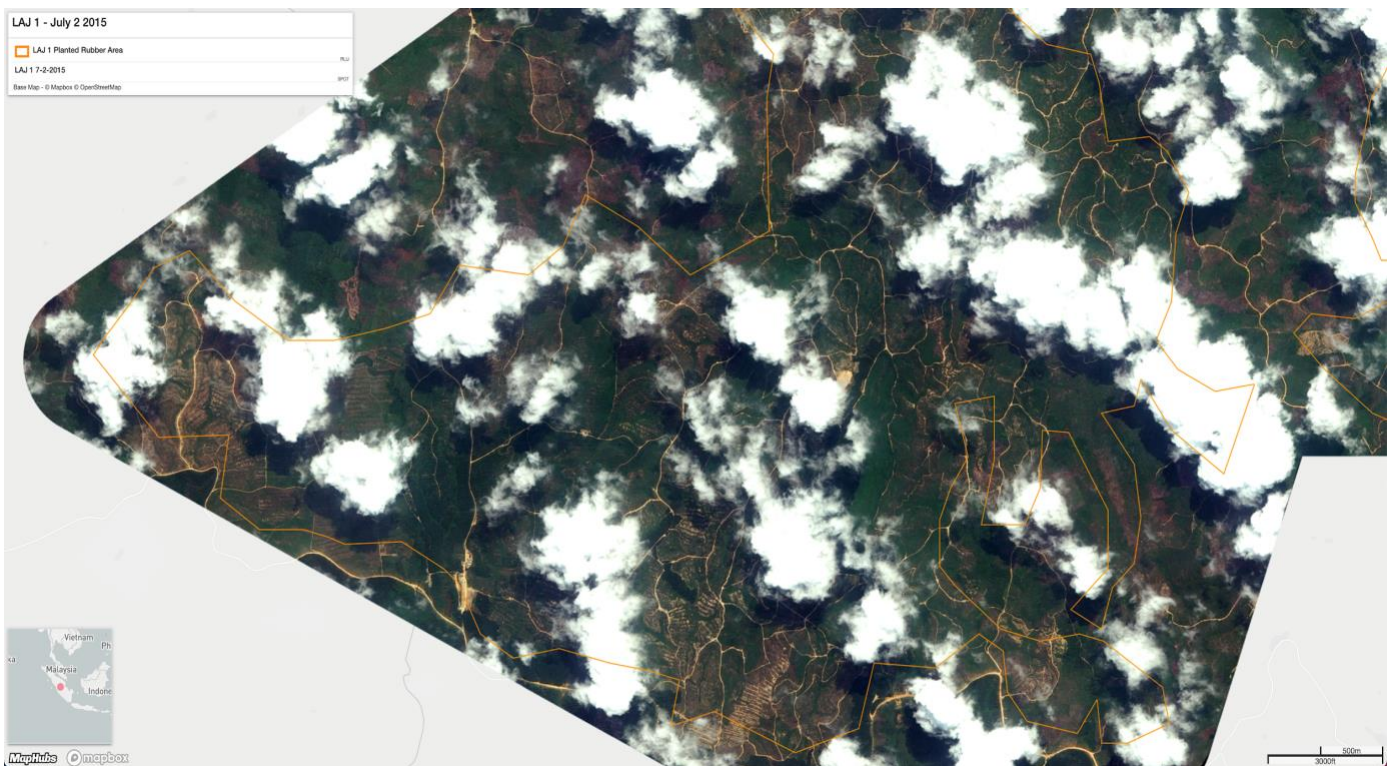


Figure 6. LAJ 1, Case Study Area 3, July 2, 2015 - All forest has been cleared inside the Rubber Planted Areas and immature rubber trees are evident

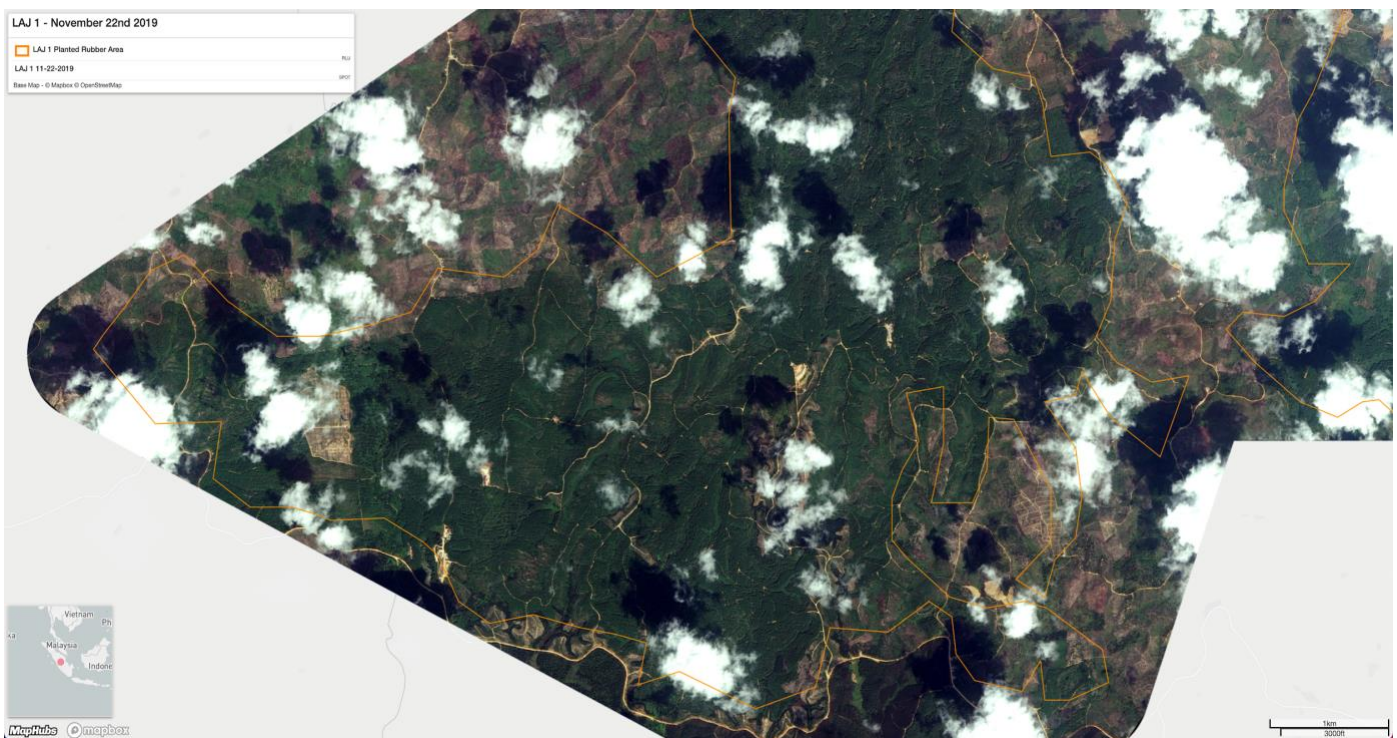


Figure 7. LAJ 1, Case Study Area 3, November 22, 2019 - Forest areas cleared using industrial deforestation methods are now immature rubber monocultures

Figures 8 to 12 - LAJ 1 Case Study 3 Sample Area - transition from lowland rainforest to rubber monoculture

Figure 8. LAJ 1 Sample Area

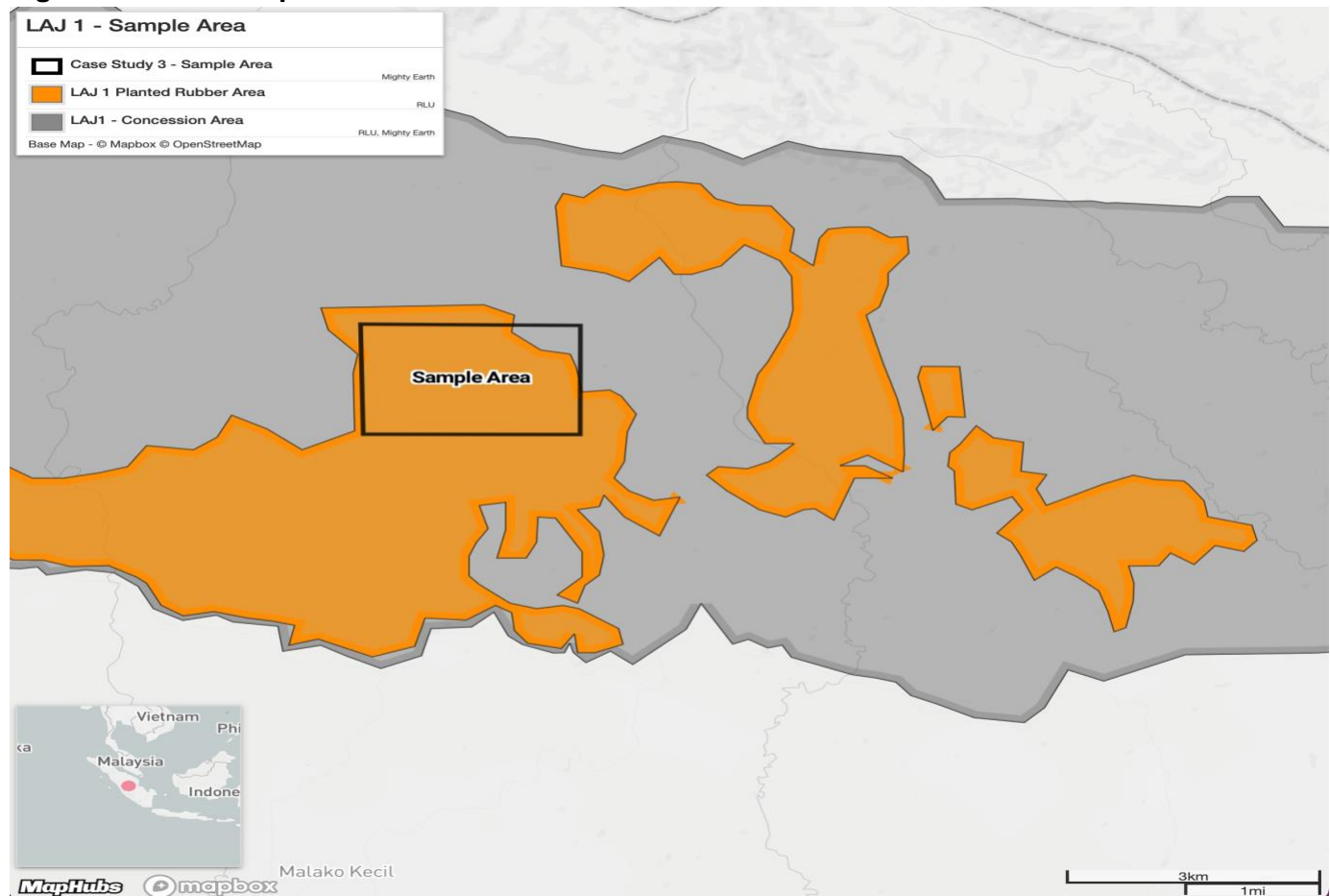


Figure 9. LAJ 1 Sample Area inside LAJ 1 RLU Planted Rubber Area, January 25, 2008 - Previously logged lowland rainforest inside the RLU Planted Rubber Area, (-0.961524, 102.032265)

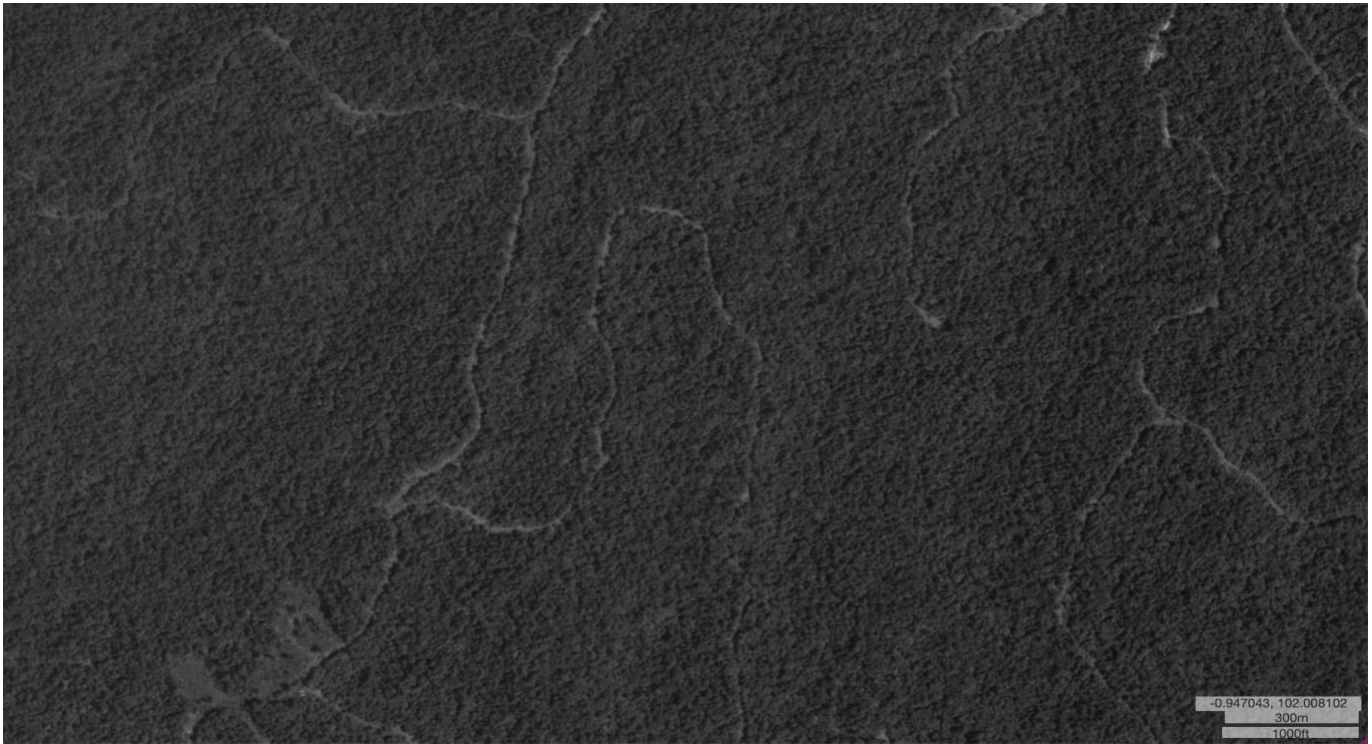


Figure 10. LAJ 1 Sample Area, June 13, 2013 (SPOT) - Industrial land preparation being undertaken inside the RLU Planted Rubber Area with newly opened logging roads and skid trails in the remaining forest in the top of the scene

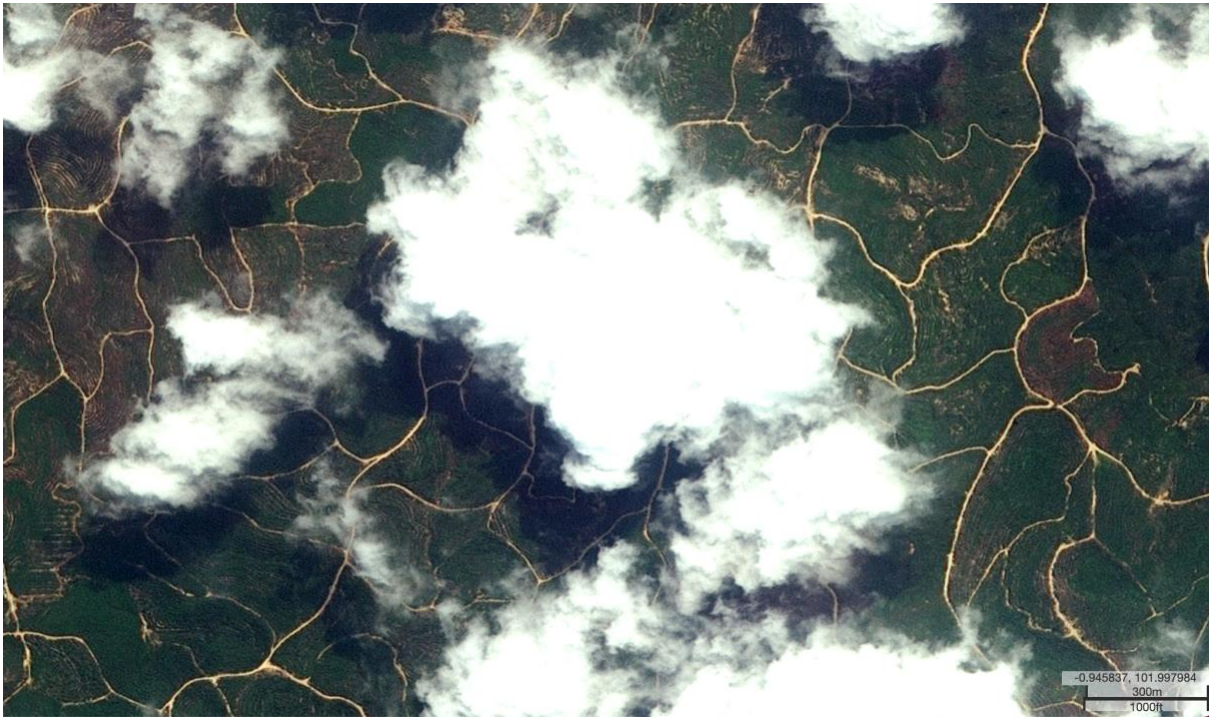


Figure 11.
LAJ 1 Sample
Area, July 2,
2015 (SPOT)
 Rubber tree
 saplings
 planted on
 cleared forest
 areas

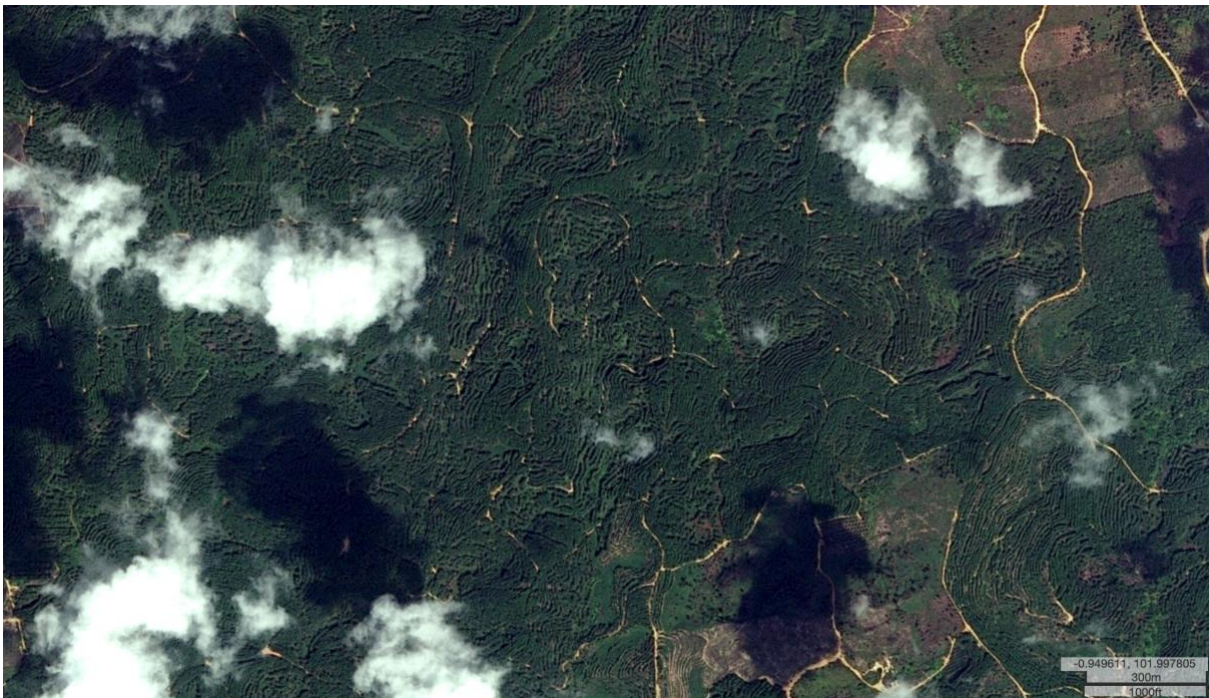


Figure 12.
LAJ 1 Sample
Area,
November 22,
2019 (SPOT)
 Immature
 rubber trees
 under
 cultivation

Conclusion:

Between November 2009 and January 2015, we found that the primary driver of natural forest loss inside the Planted Rubber Areas of LAJ 1 in Jambi was industrial deforestation for the purpose of logging and planting rubber monoculture.