

Update on forest monitoring using ALOS sensors for REDD

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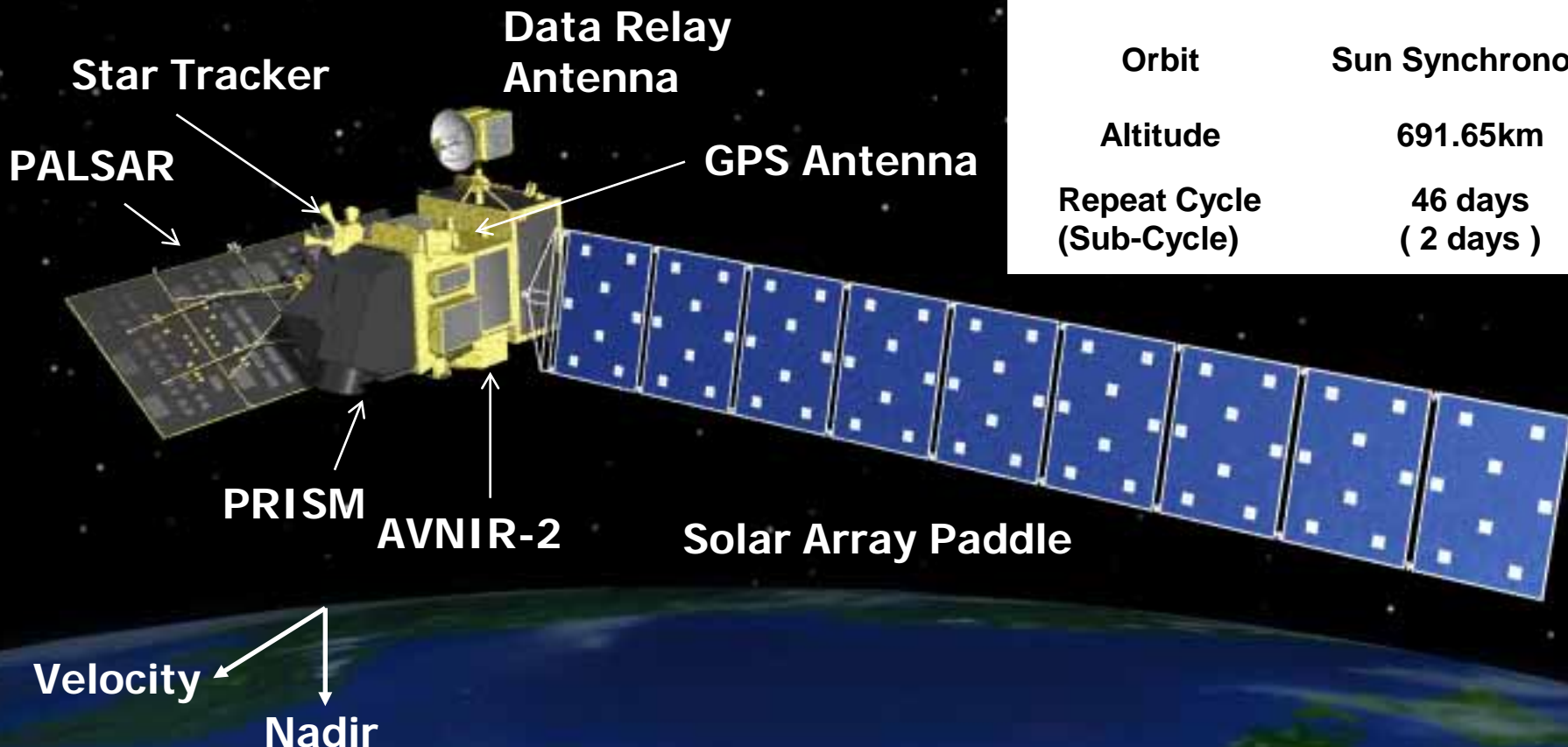
March 11 2010

Contents of talks

1. Introduction
2. ALOS status
3. Ortho-rectification and the slope correction
4. Classification
5. Mosaicking of the continent scale SAR dataset
6. SAR images under the several resolutions
7. Future trials
8. Summary

ALOS Satellite System

Launch Date	Jan. 24 2006
Launch Vehicle	H-IIA
Spacecraft Mass	about 4,000kg
Generated Elec. Power	about 7kW at EOL
Orbit	Sun Synchronous
Altitude	691.65km
Repeat Cycle (Sub-Cycle)	46 days (2 days)



PRISM : Panchromatic Remote-sensing Instrument for Stereo Mapping

AVNIR-2: Advanced Visible and Near Infrared Radiometer type 2

PALSAR: Phased Array type L-band Synthetic Aperture Radar

Mission Planning Status

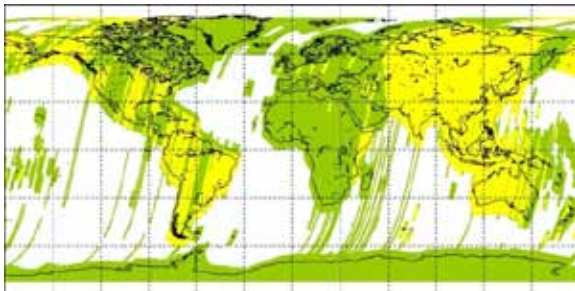
<Observation Result>

(May 16, 2006 – Sep. 30, 2009)

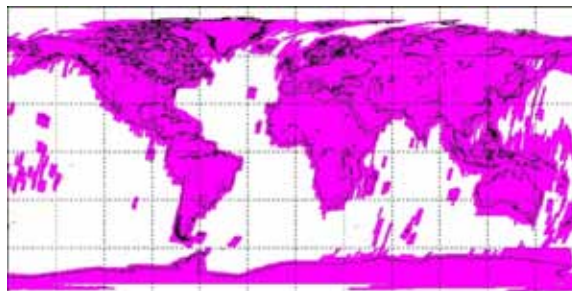
PRISM: 1,850,000 scenes (450k scenes increased from the prev. report)

AVNIR-2: 840,000 scenes (210k scenes increased from the prev. report)

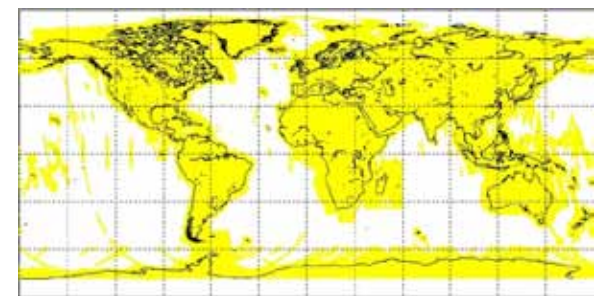
PALSAR: 1,380,000 scenes (280k scenes increased from the prev. report)



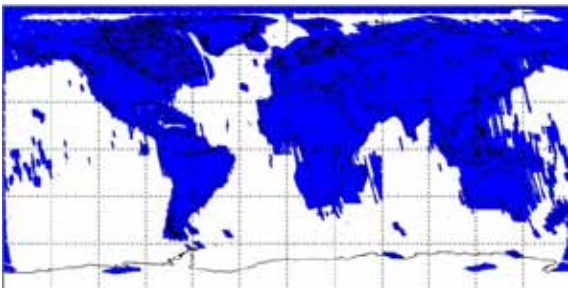
PRISM



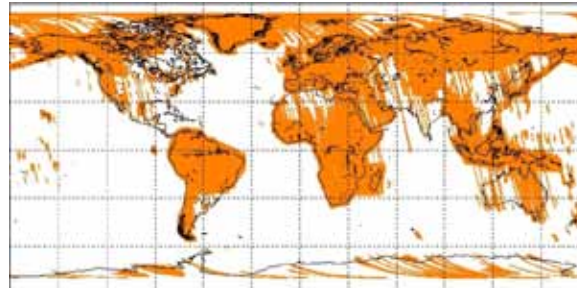
AVNIR-2



PALSAR(FBS)



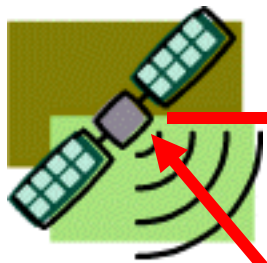
PALSAR(FBD)



PALSAR(PLR)



PALSAR(WB1/WB2)



Within 24hrs
Raw data



Earth Observation
Center/JAXA

Within 24hrs
Raw data



Earth Observation
Research Center/JAXA

Within 3~5days:
SCANSAR browse

IBAMA

The Brazilian Institute of Environment and
Renewable Natural Resources

ALOS



DRTS

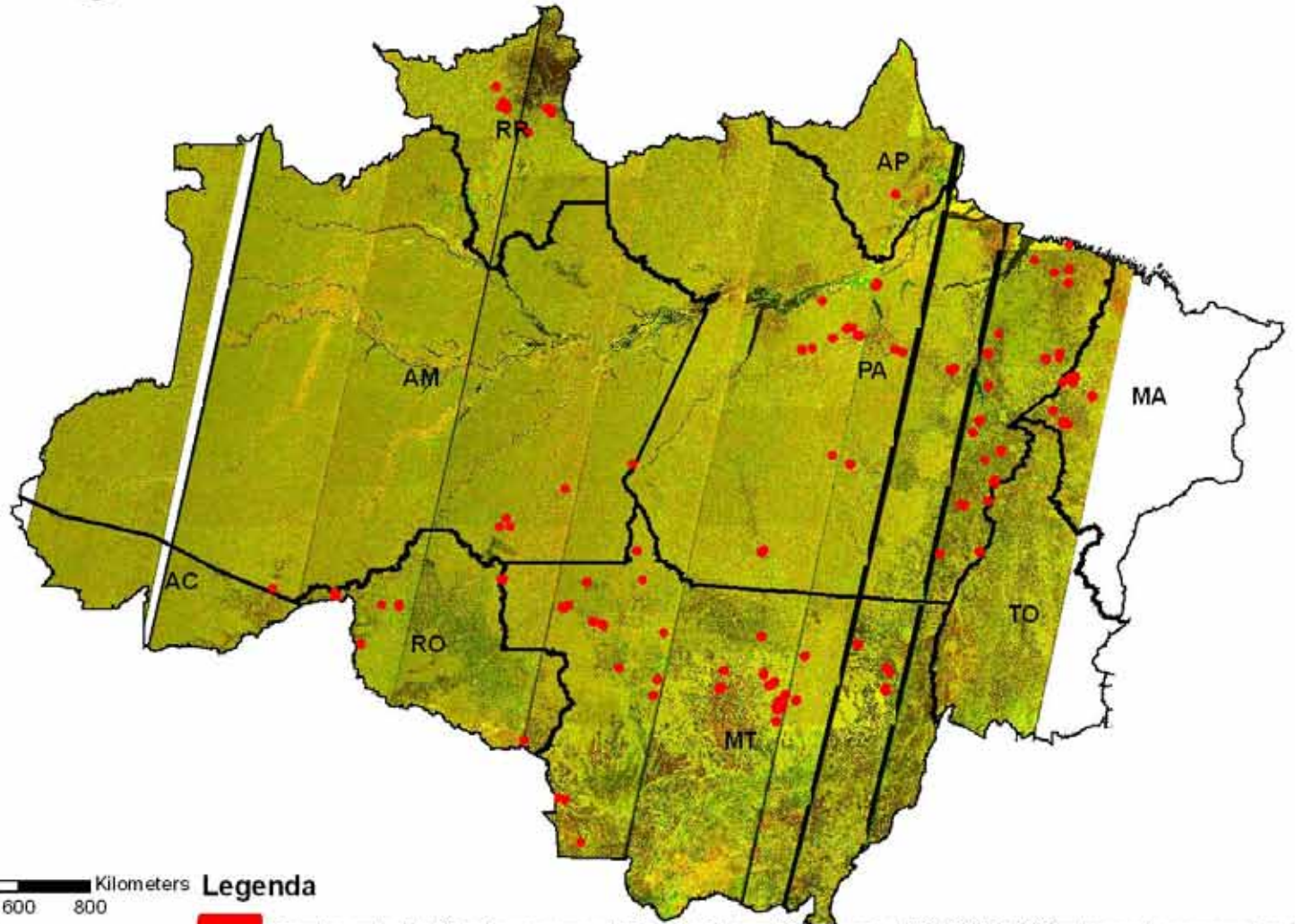
PALSAR
Acquisition:3.5
hrs/day
350GB/day

110M scenes/
3 years

Quick Forest Observation Chain

Deforestation Detection by using PALSAR ScanSAR

INDICAR Ciclo 28 e 30 Agosto 2009 a Novembro 2009



0 100 200 400 600 800 Kilometers
1:16.000.000

Legenda



Desmtamento identificado por composições coloridas multitemporais do PALSAR ALOS entre agosto e novembro de 2009

Forest monitoring from Space: 1988~

Annual deforestation at Brazil

Deforestation area :

1 9 0 0 0 km² (1 9 9 6 年 ~ 2 0 0 5 年)

1 2 0 0 0 km² (2 0 0 7 / 8 ~ 2 0 0 8 / 7)

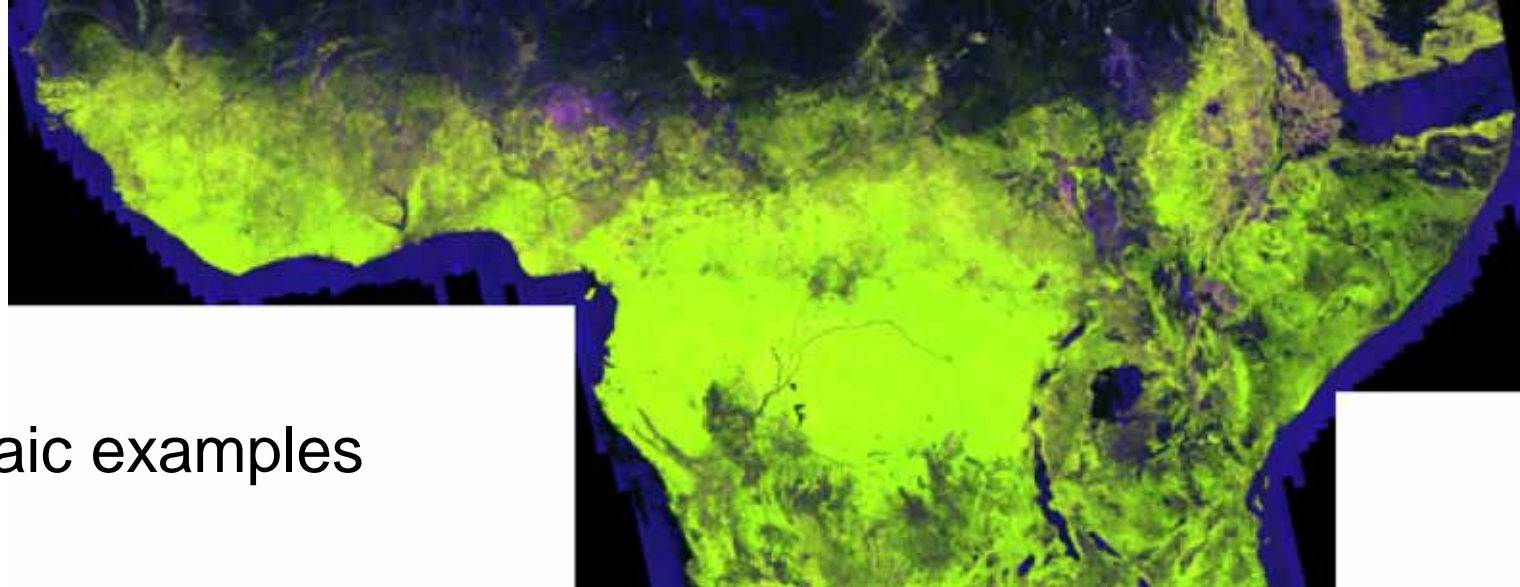
7 0 0 0 km² (2 0 0 8 / 8 ~ 2 0 0 9 / 7)

4 0 0 0 km² (2 0 2 0 年goal)

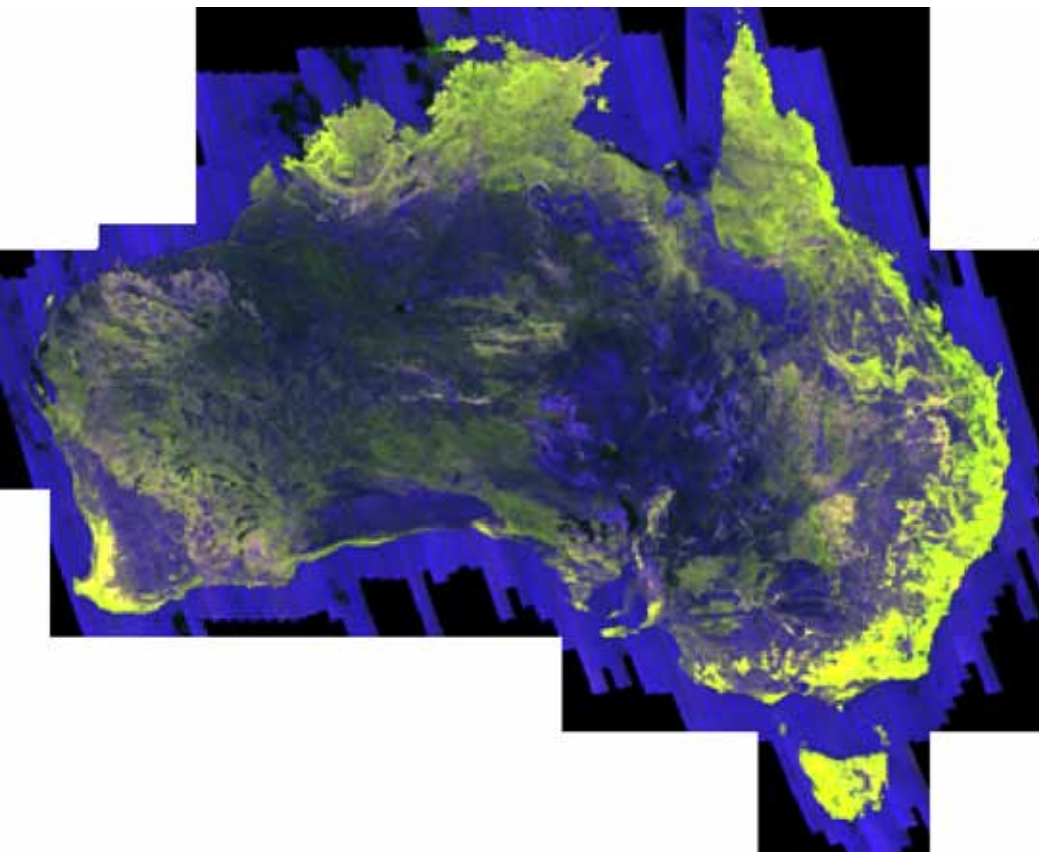
Environment Minister “Minc” said that the monitoring from space was very effective.

Total deforestation of south america : 30000km²/year

Global deforestation:70000km²/year



Global Mosaic examples

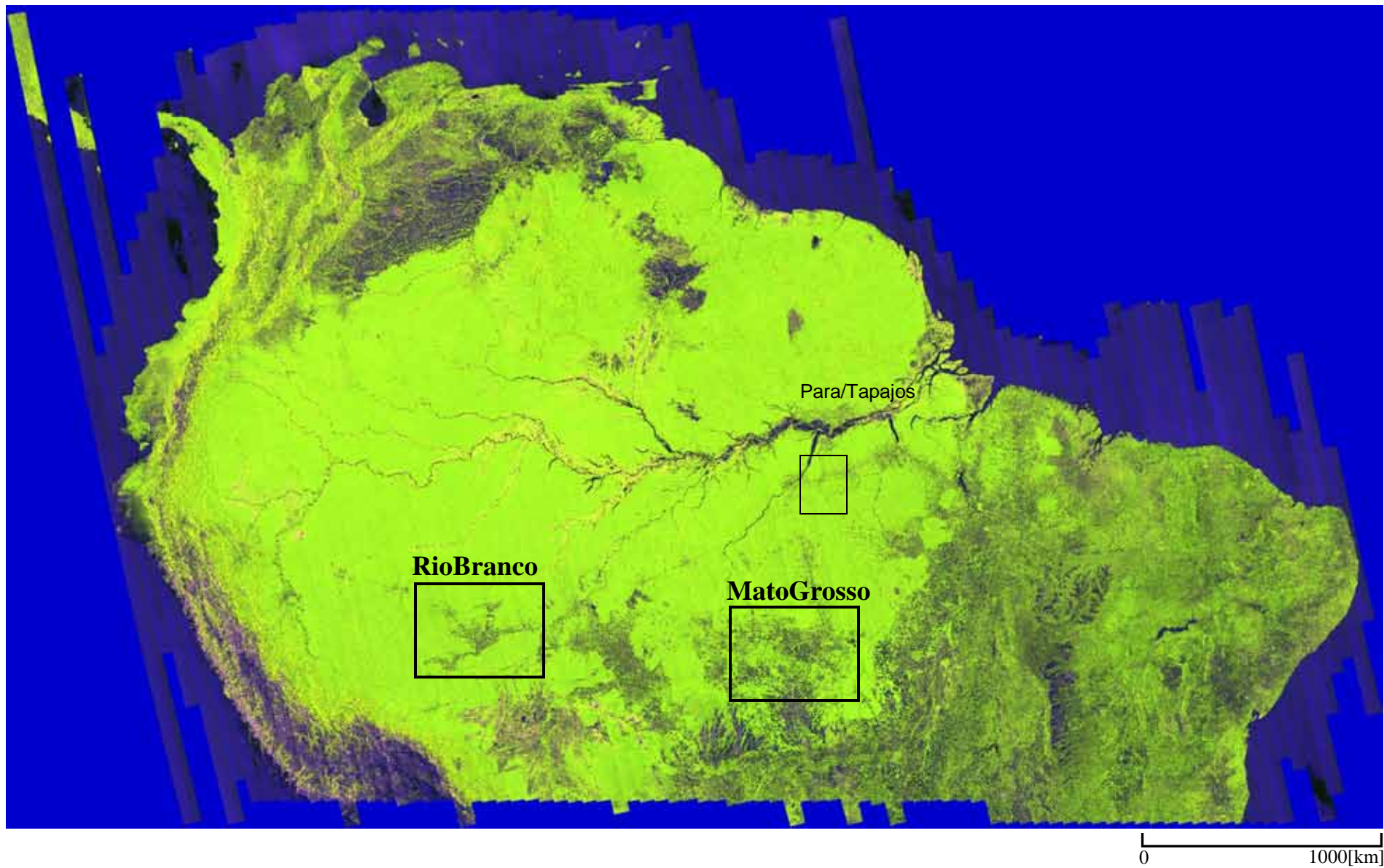


Summer of 2008

50m resolution

2. アマゾン地域の経年変化(Land cover change of Amazon for 14 years)

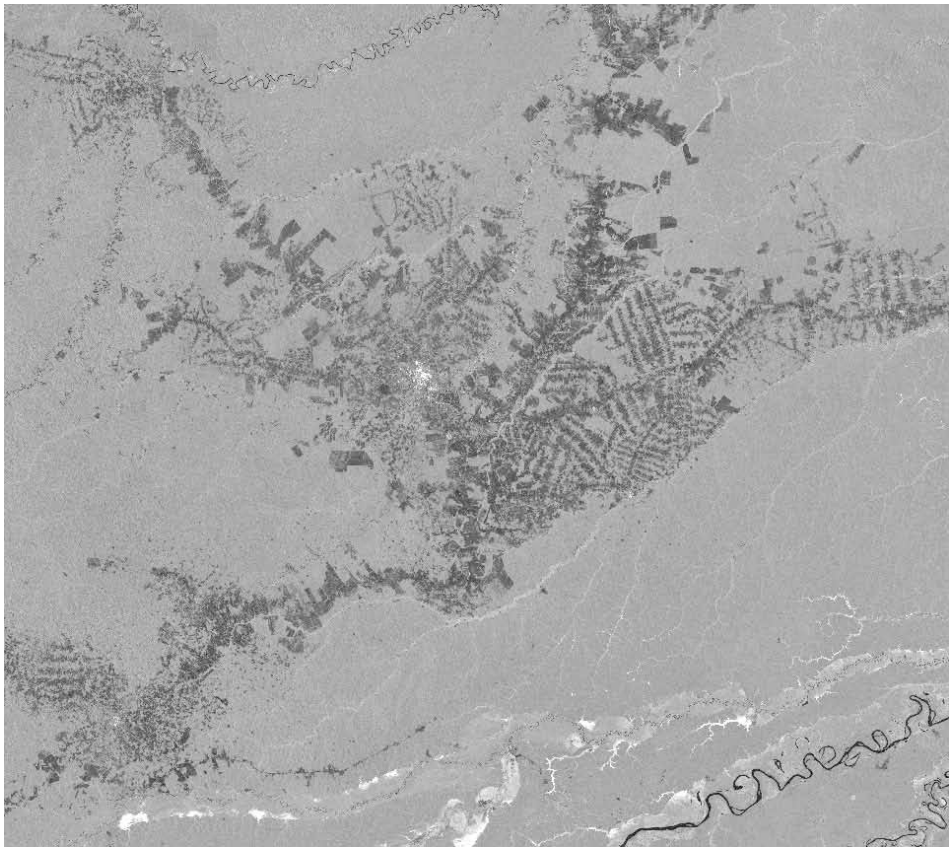
2.1 2009年アマゾンモザイク (FBD34.3[deg], Jun./July, 2009)



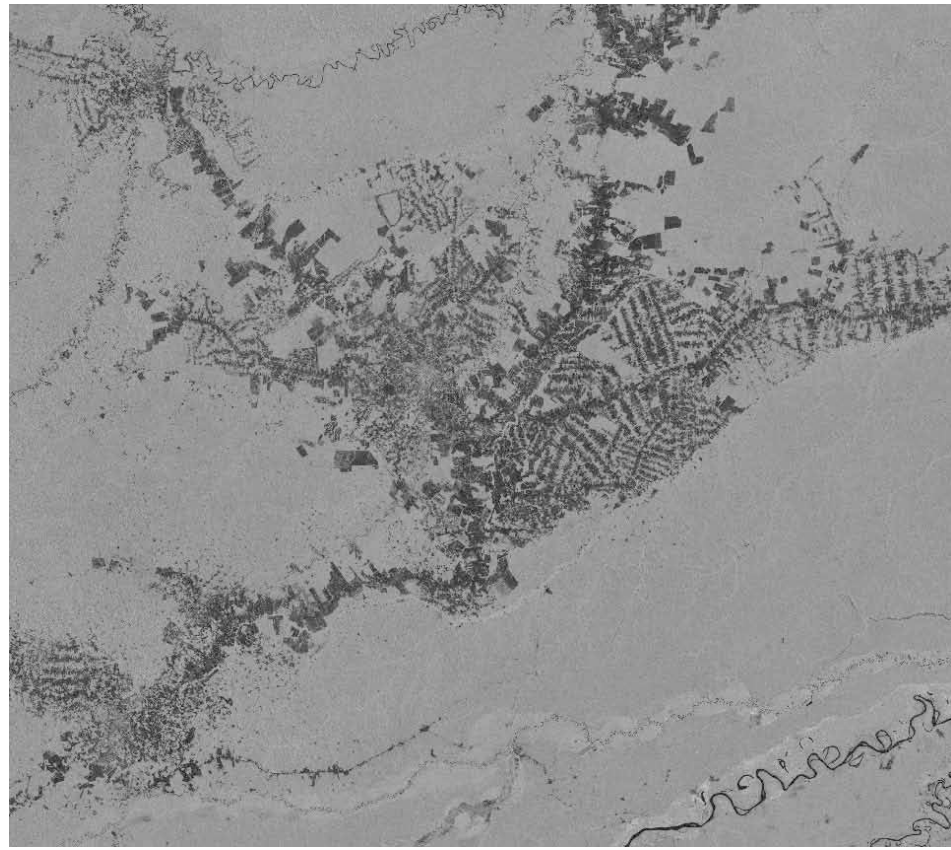
2009年アマゾンモザイクのRGB画像 (G:HH, G:HV, B:HH/HV)

2 . アマゾン地域の経年変化(Land cover change of Amazon for 14 years)

2 . 3 Rio Brancoの経年変化(PALSAR, 2009年、左画像HH: 右画像:HV)



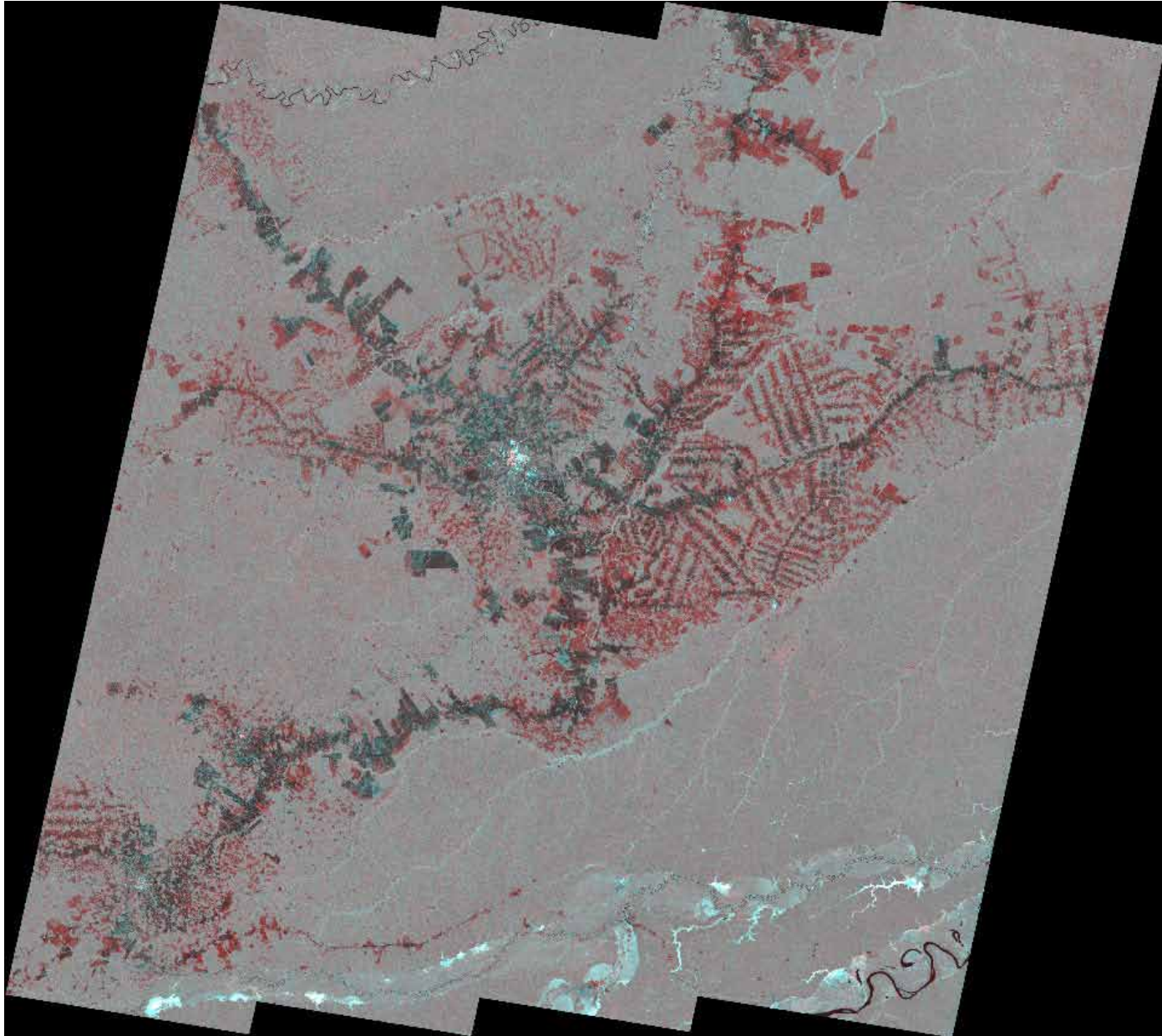
0 100[km]



0 100[km]

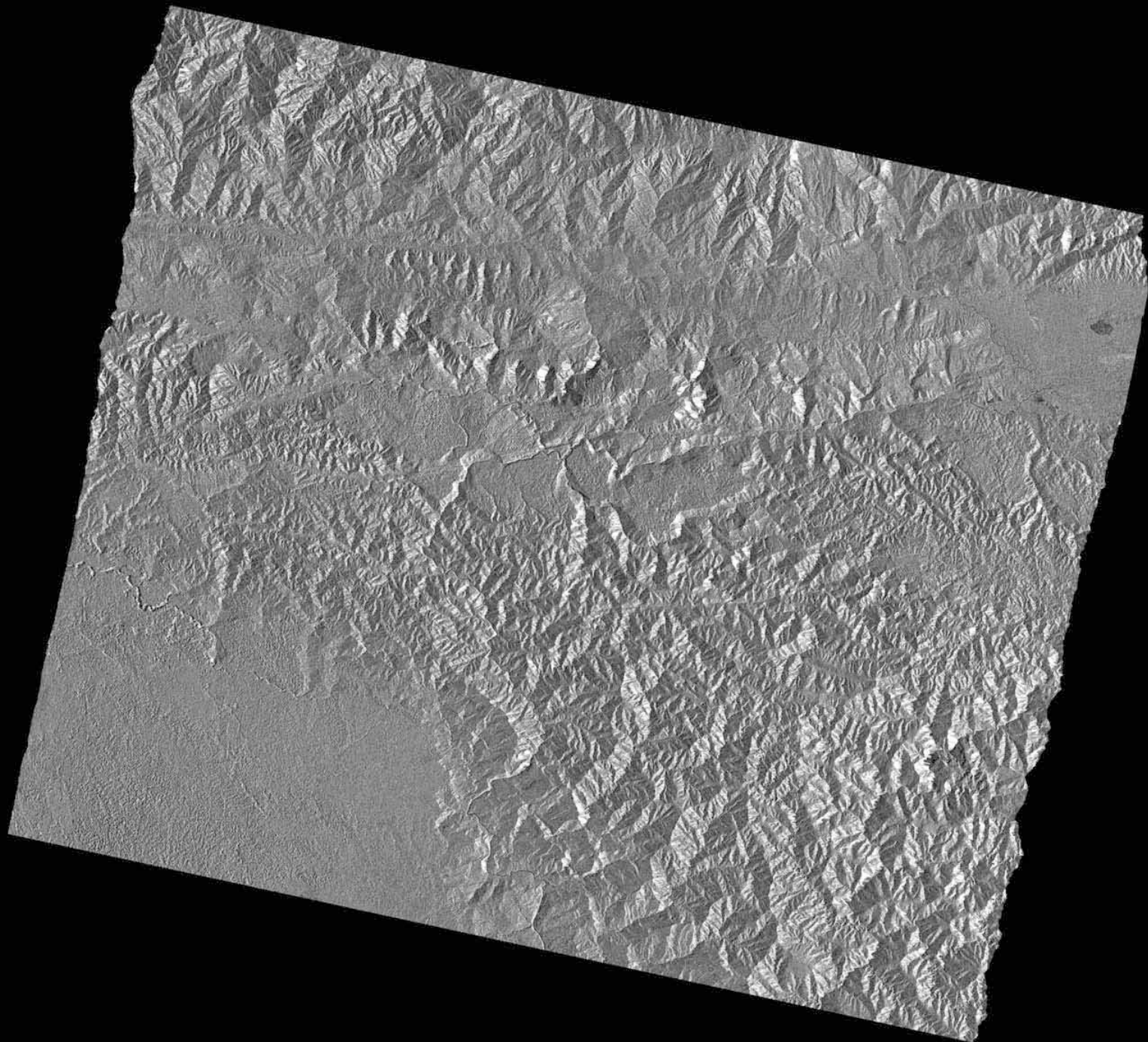
2. アマゾン地域の経年変化(Land cover change of Amazon for 14 years)

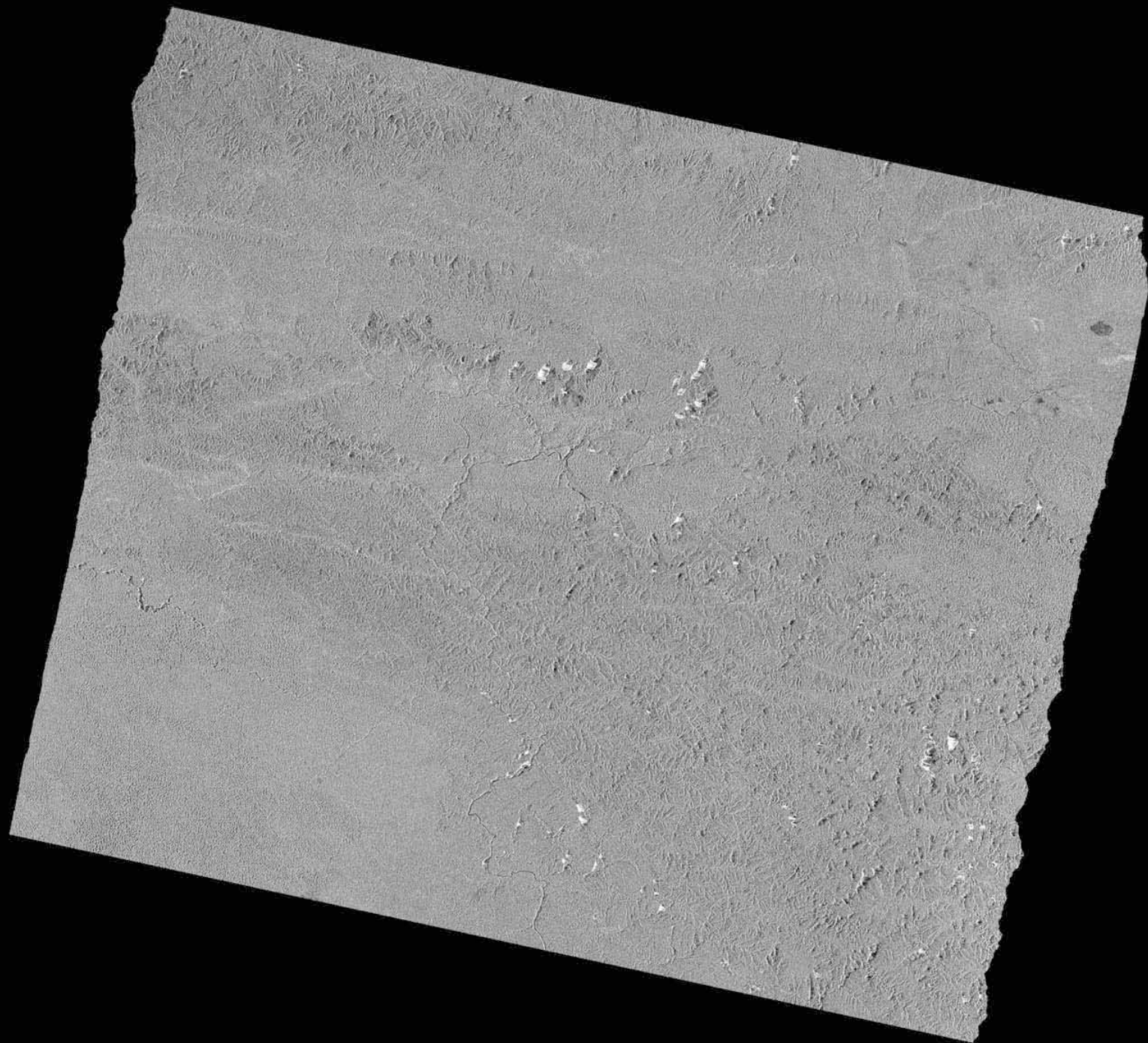
2.4 Rio Brancoの経年変化のRGB画像(R:JERS-1(1995年), G/B:PALSAR HH(2009年))

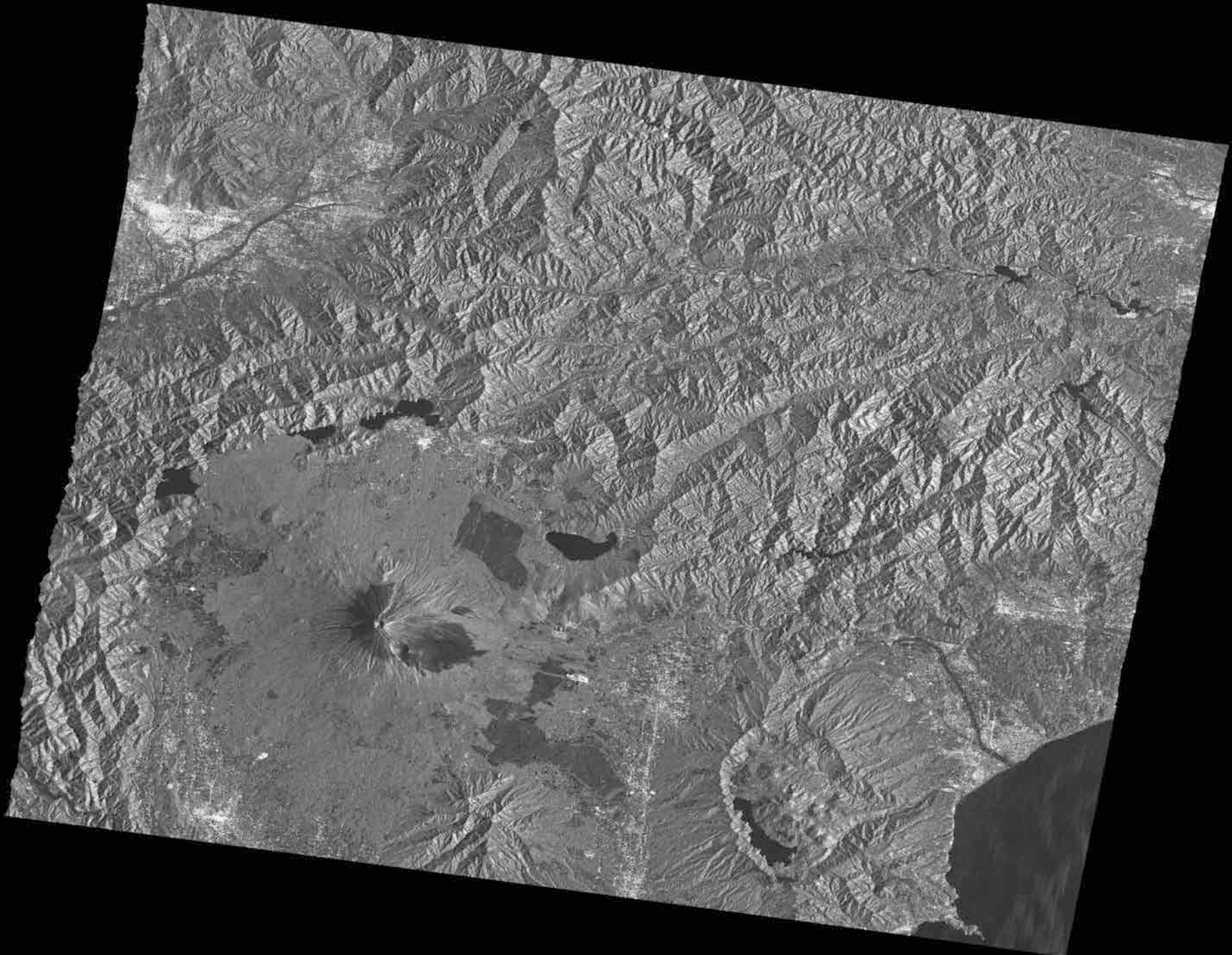


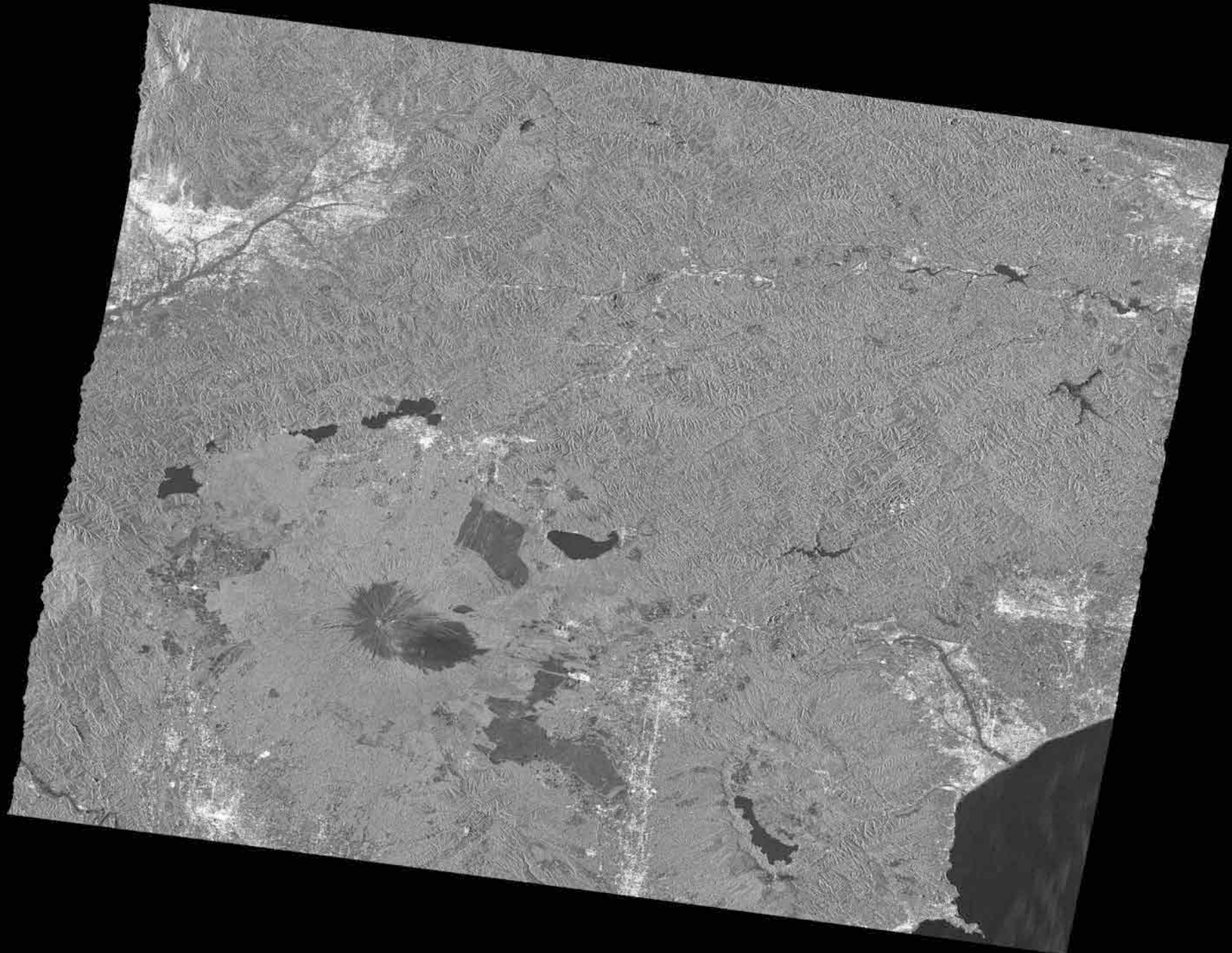
赤色の部分が
約14年間の変化領域
Red area shows the
change during 14 years

0 100[km]

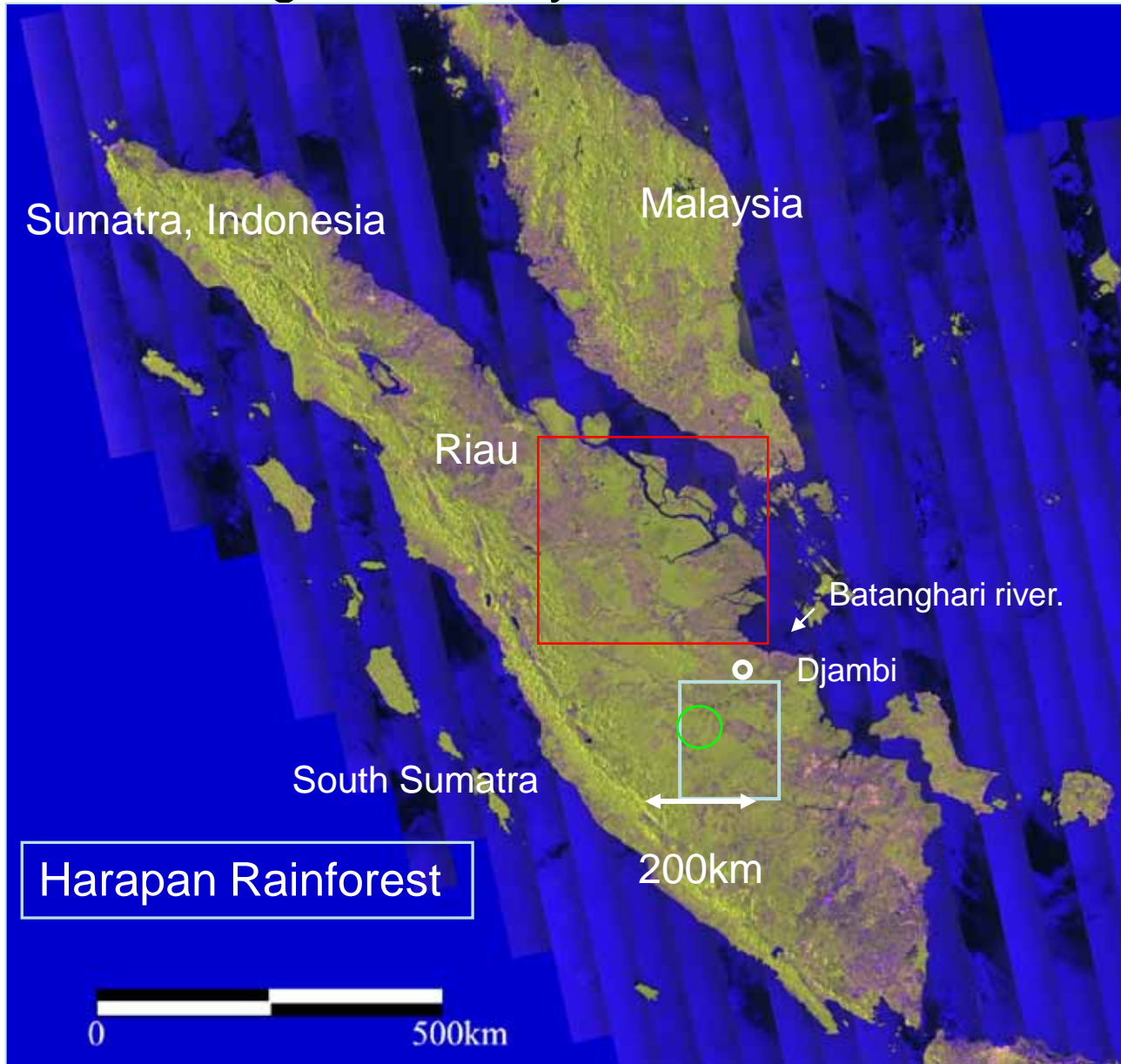








PALSAR Sumatra データ July, 2007 and change over 15 years



One season mosaic colored with three values, **HH**, **HV**, **HH/HV**.

Coverage: Malaysia and Sumatra

Green: forest
Purple: clear cut

PALSAR :
FBD(Fine beam dual, 10m resolution)