

The ALOS logo is displayed in white text on a dark blue rectangular background. The background features a satellite image of a forested area with rivers, rendered in shades of green and blue.

K&C Initiative
An international science collaboration led by JAXA

Product Delivery Report for K&C Phase 2

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INPE - Brazilian National Institute for Space Research

Science Team meeting #15
JAXA TKSC/RESTEC HQ, Tsukuba/Tokyo, January 24-28, 2011

K&C deliverables

Papers and Reports

1. Published

- K&C Phase-1 and Phase 2 reports
- 1 contributions to K&C Booklet
- ALMEIDA-FILHO, R.; SHIMABUKURO, Y.E. ; ROSENQVIST, A. ; SANCHEZ, G. A. Using dual-polarized ALOS PALSAR data for detecting new fronts of deforestation in the Brazilian Amazonia. *International Journal of Remote Sensing.* v. 30, p. 3735-3743, 2009.
- ABOUT-NETA, S. R. ; Freitas, C.C.; DUTRA, L. V. . Uso de imagens ALOS/Palsar multipolarizadas para detecção de incremento de desflorestamento na Amazônia. *RBC. Revista Brasileira de Cartografia (Online)*, v. 62, p. 417-431, 2010.
- R. ALMEIDA-FILHO, Y. E. SHIMABUKURO, A. ROSENQVIST, AND G. A. SANCHEZ, "Using dual-polarized ALOS PALSAR data for detecting new fronts of deforestation in the Brazilian Amazonia," *International Journal of Remote Sensing*, vol. 30, pp. 3735-3743, 2009.
- DUTRA, L. V. ; SCOFIELD, G. B. ; ABOUT-NETA, S. R. ; NEGRI, R. G. FREITAS, C.C. ; ANDRADE, D. . Land Cover Classification in Amazon using Alos Palsar Full Polarimetric Data. In: XIV Simpósio Brasileiro de Sensoriamento Remoto, 2009, NATAL, RN. Anais. São José dos Campos : INPE, 2009. v. 1. p. 7259-7264.
- AMARAL, S. ; VALERIANO, D. M. ; GILDARDO, A. S. XIMENES, A.C. ; SOUZA, A. F. . Imagens ALOS/PALSAR Kyoto & Carbon no programa de monitoramento da Floresta Amazônica Brasileira por satélite. In: XIV SIMPÓSIO BRASILEIRO DE SENSORIAMENTO REMOTO, 2009, Natal, 2009. p. 5065-5072.

K&C deliverables

Papers and Reports

2. Submitted/in preparation

- S. AMARAL, F. HOLECZ, D. M. VALERIANO, (submitted) “ALOS PALSAR K&C ScanSAR in support of the Brazilian Forest Monitoring Program”, submitted to *Remote Sensing of Environment*.
- SÁNCHEZ, G.A.; SHIMABUKURO, Y.E.; VALERIANO, D.M.; AMARAL, S. Processamento digital de imagens de dupla-polarização ALOS/PALSAR para a detecção de áreas desmatadas na floresta amazônica. Accepted to oral presentation at the XV Brazilian Symposium on Remote Sensing, Curitiba, April 2011.

K&C deliverables

Data sets and Thematic products (mosaics, classification maps etc.)

1. Completed and Delivered to JAXA

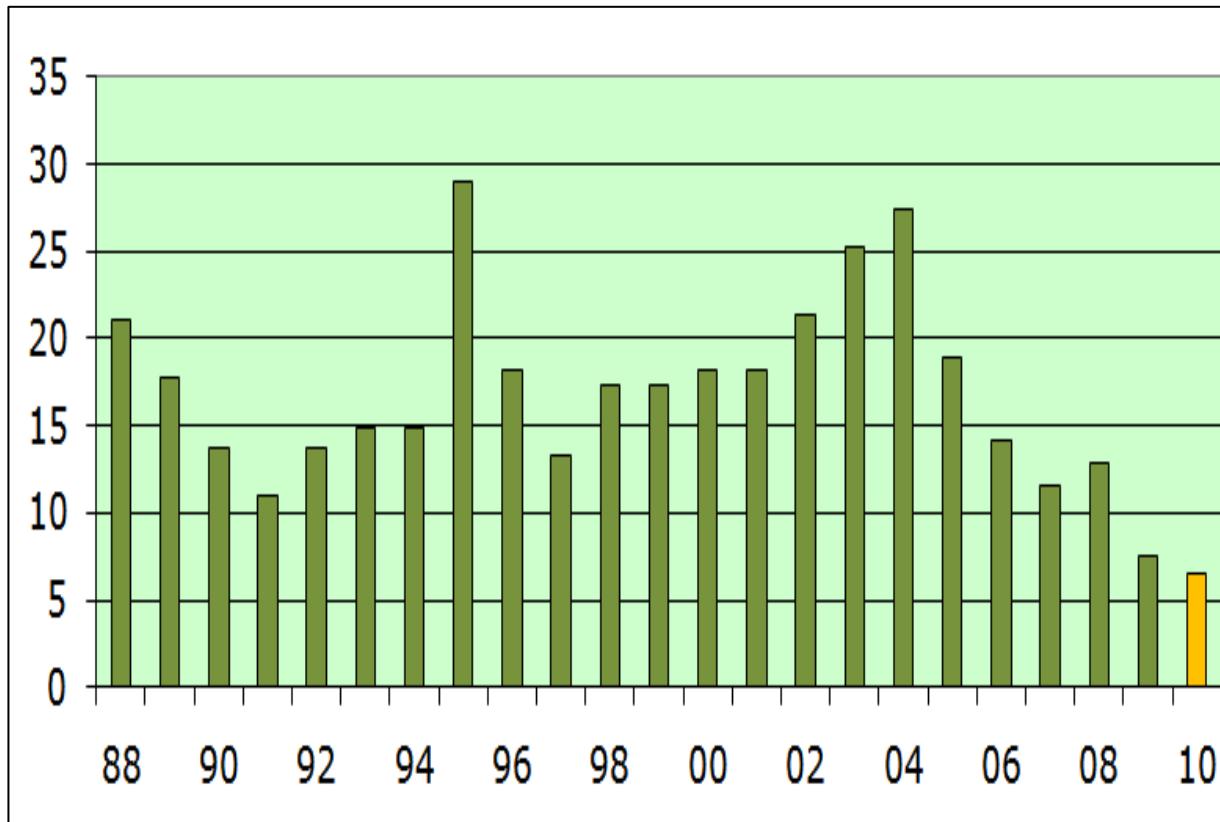
- *JAXA_INPE MOU to receive PALSAR Scansar data through direct downlink to Cuiabá receiving station*

2. Completed, but not yet delivered

- *Methodology to assimilate K&C PALSAR data into INPE's rapid response deforestation monitoring to aid government deforestation control program (PPCDAm)*
- *Dedicated fundings to image processing and interpretation*

Results from PPCDAm

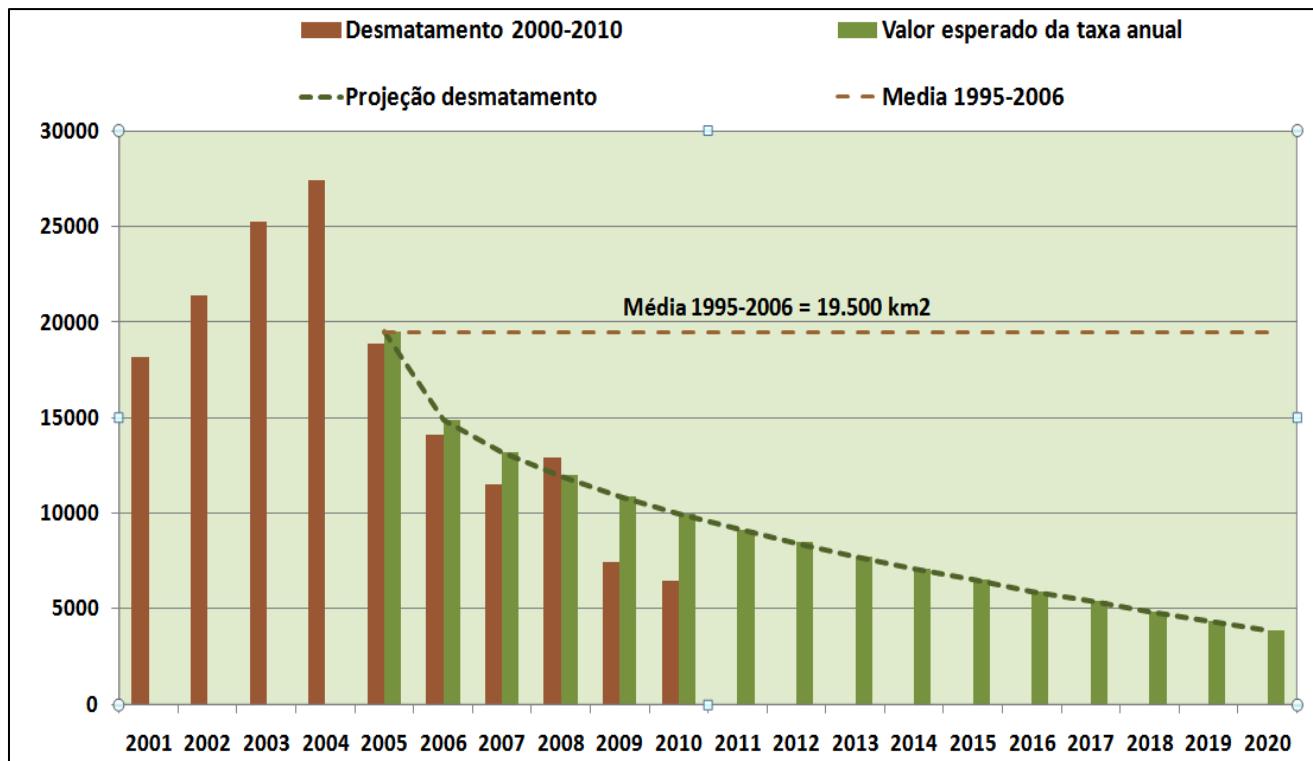
(Plan implementation in 2004)



Deforestation rate down to 6.500 km²
After reaching over 20.000 for previous three years before plan implementation

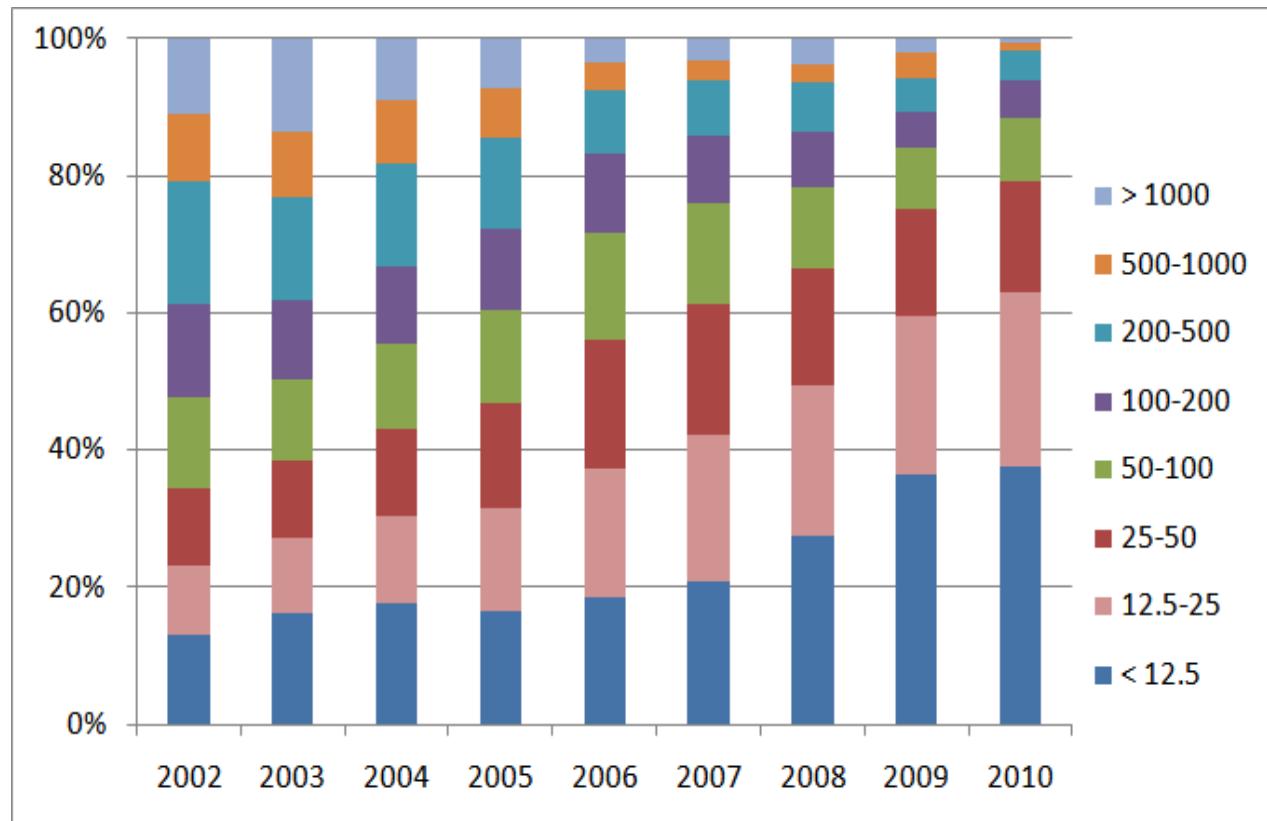
Present status of deforestation rate in relation to Brazilian voluntary targets for GHG emmission:

**Reduction of 80% in Amazonian deforestation rate by 2020 in
relation to 1996-2005 baseline**



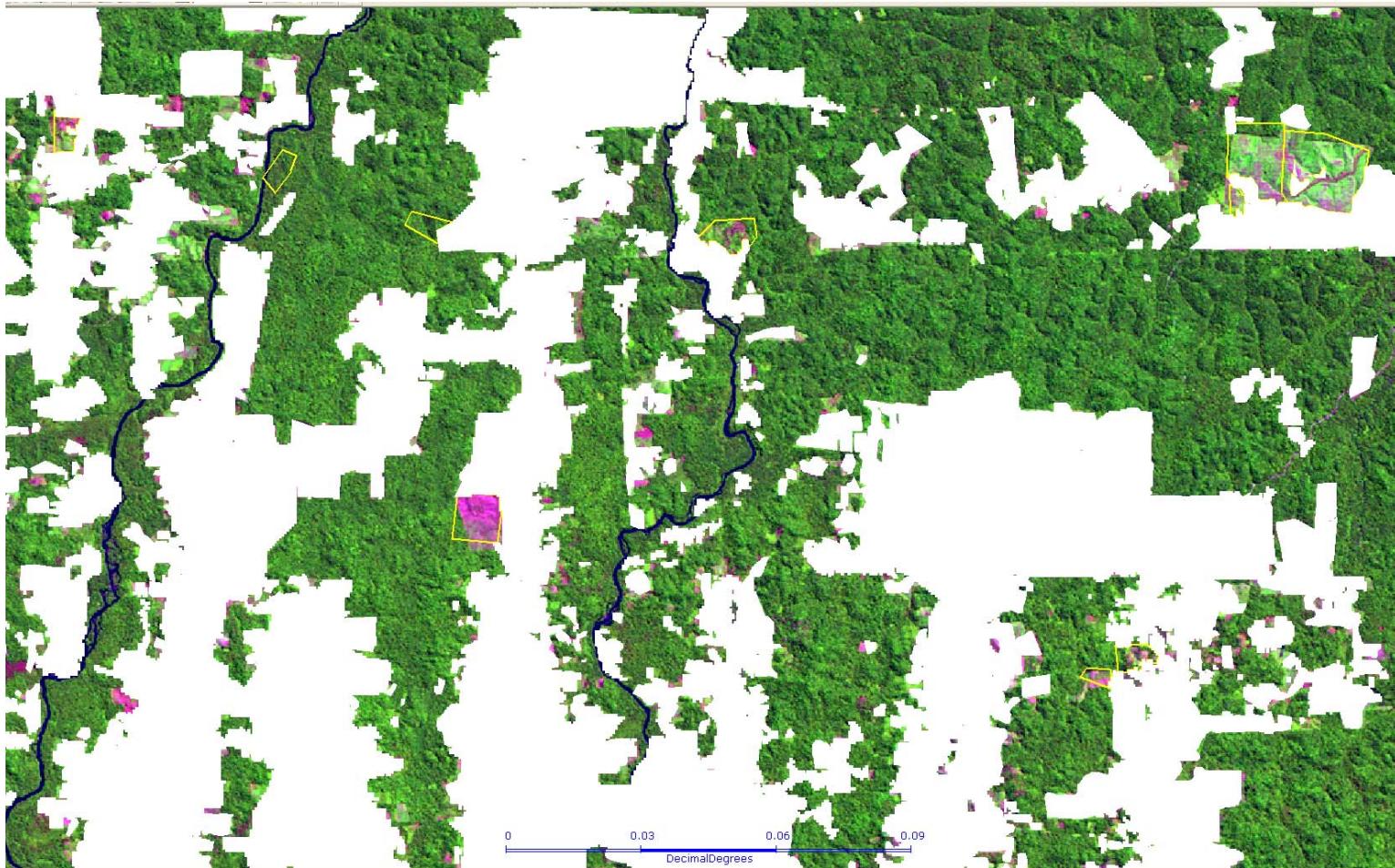
Challenges to further deforestation control:

Dominance of small deforestation events

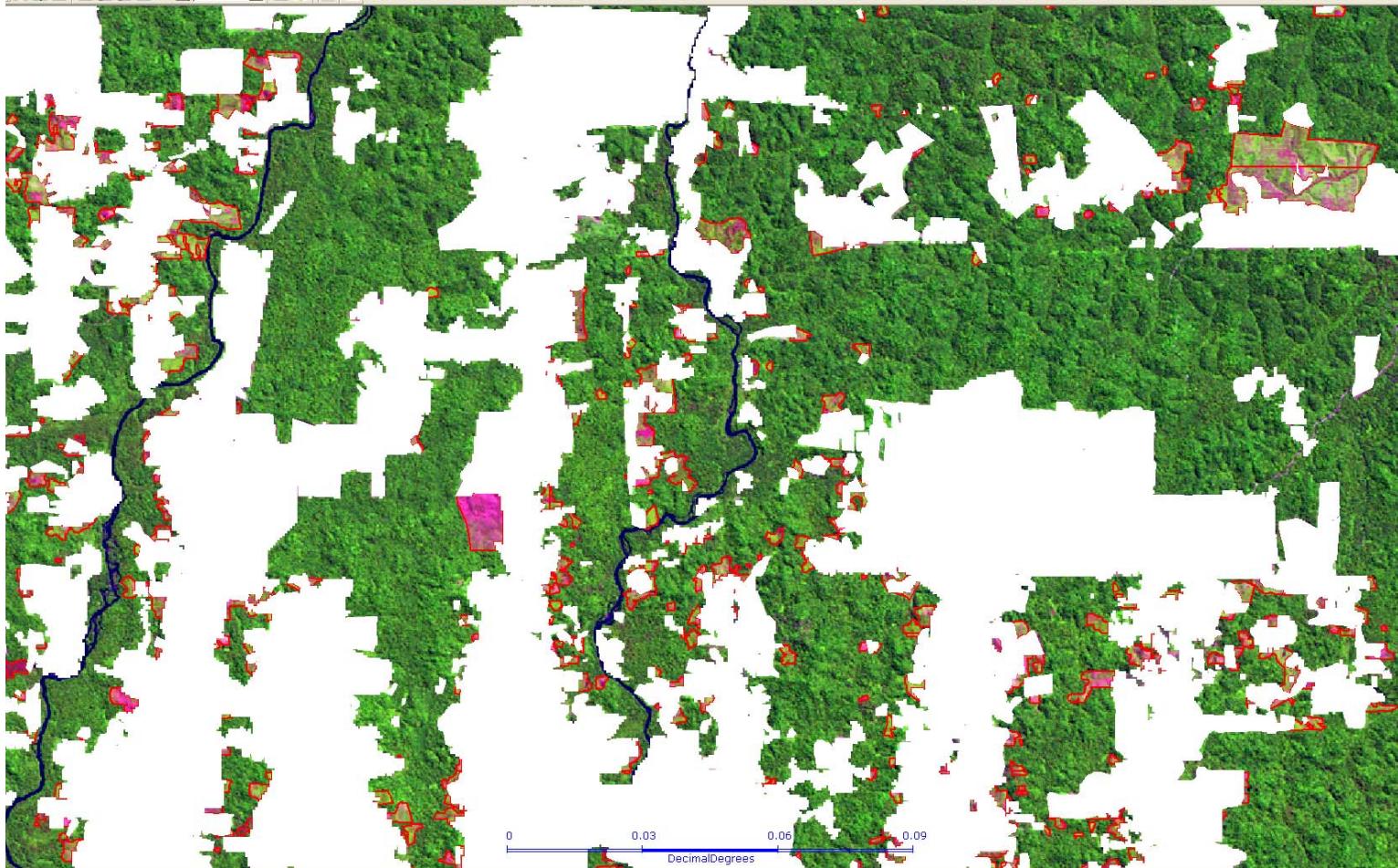


Dynamics of percentual contribution to total deforestation rate by size classe

Example of dominance of small deforestations:

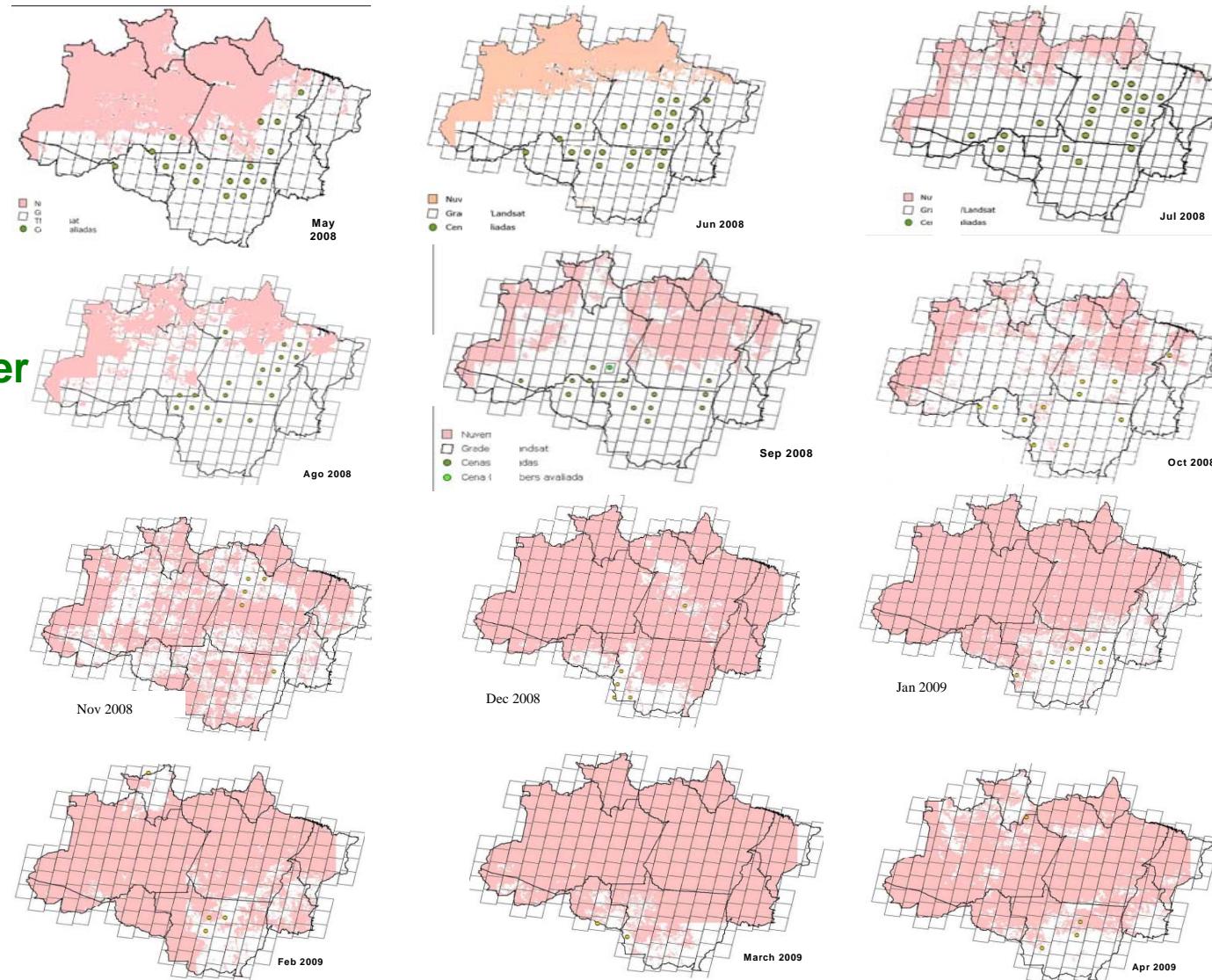


Example of dominance of small deforestations:



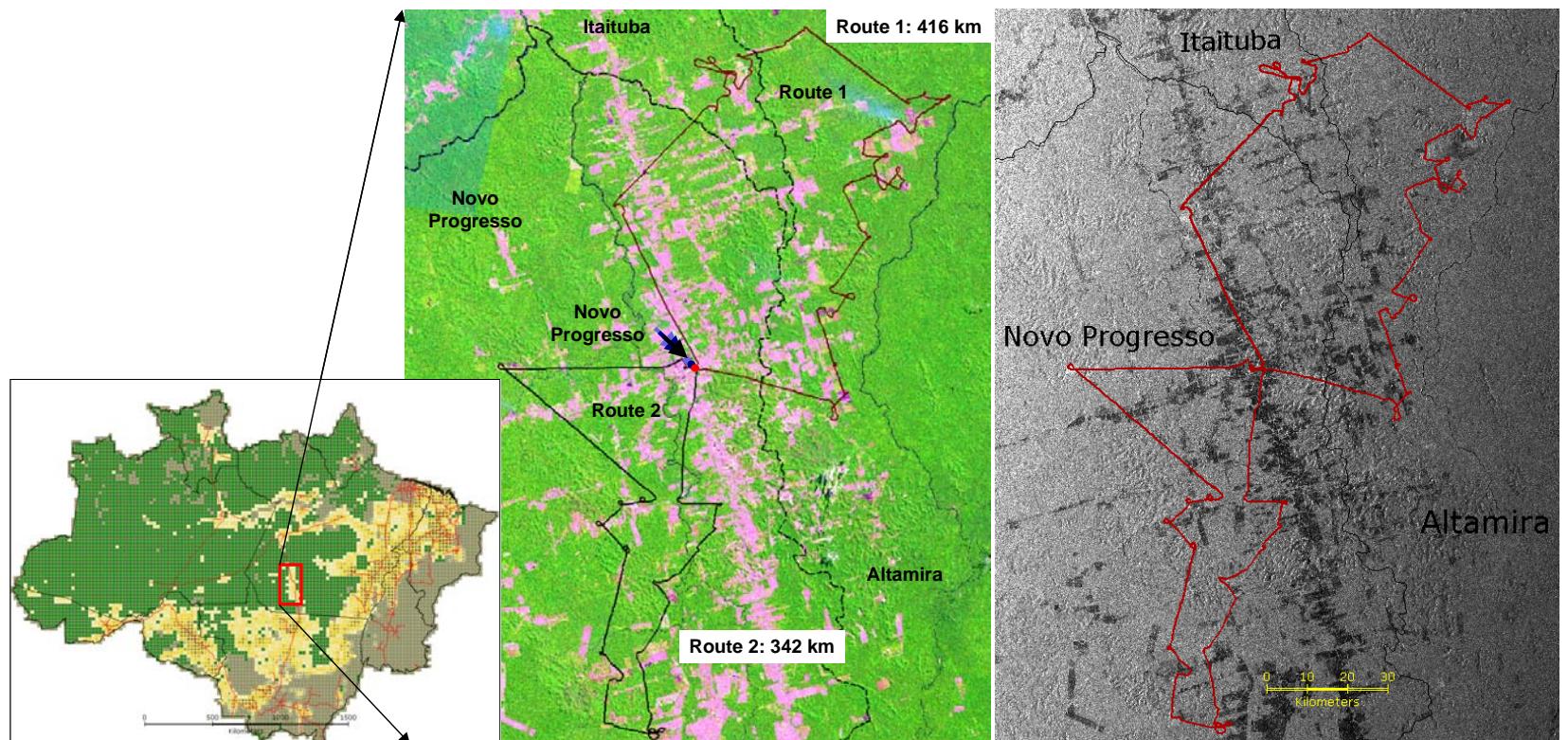
Limiting issue in deforestation control

Cloud Cover
(2008-2009)



Field checked demonstration of the feasibility of PALSAR Scansar data to detect new deforestation:

s



September / 2008

INPE/IBAMA

Itaituba

Novo Progresso

Altamira



FotoTeca 2008

Coordenação-Geral de Observação da Terra - OBT

Mosaico LandSat 2007 (AMZ)/Divisão Política/Nenhuma

Recompor | Imagens Satélite | Base Cartográfica | Mapas Temáticos | Tamanho da Tela

Consulta pelo mapa

Selecionar estado: TODOS

Selecionar Missão: 2008 - Deter/Novo Progresso

Opcional: Orbita Ponto Consultar

Consulta por foto

Norte: 8.0 | Oeste: -75.0 | Leste: -44.0 | Sul: -18.5

Procurar

Consulta por município

Nome:

Estado: Todos

Procurar

Qualquer problema, dúvida ou sugestão, por favor, entre em contato: prodes@dpi.inpe.br

FotoTeca Inpe/OBT - Windows Internet Explorer

Fotos de campo

Clique para ver a foto 9501 no mapa

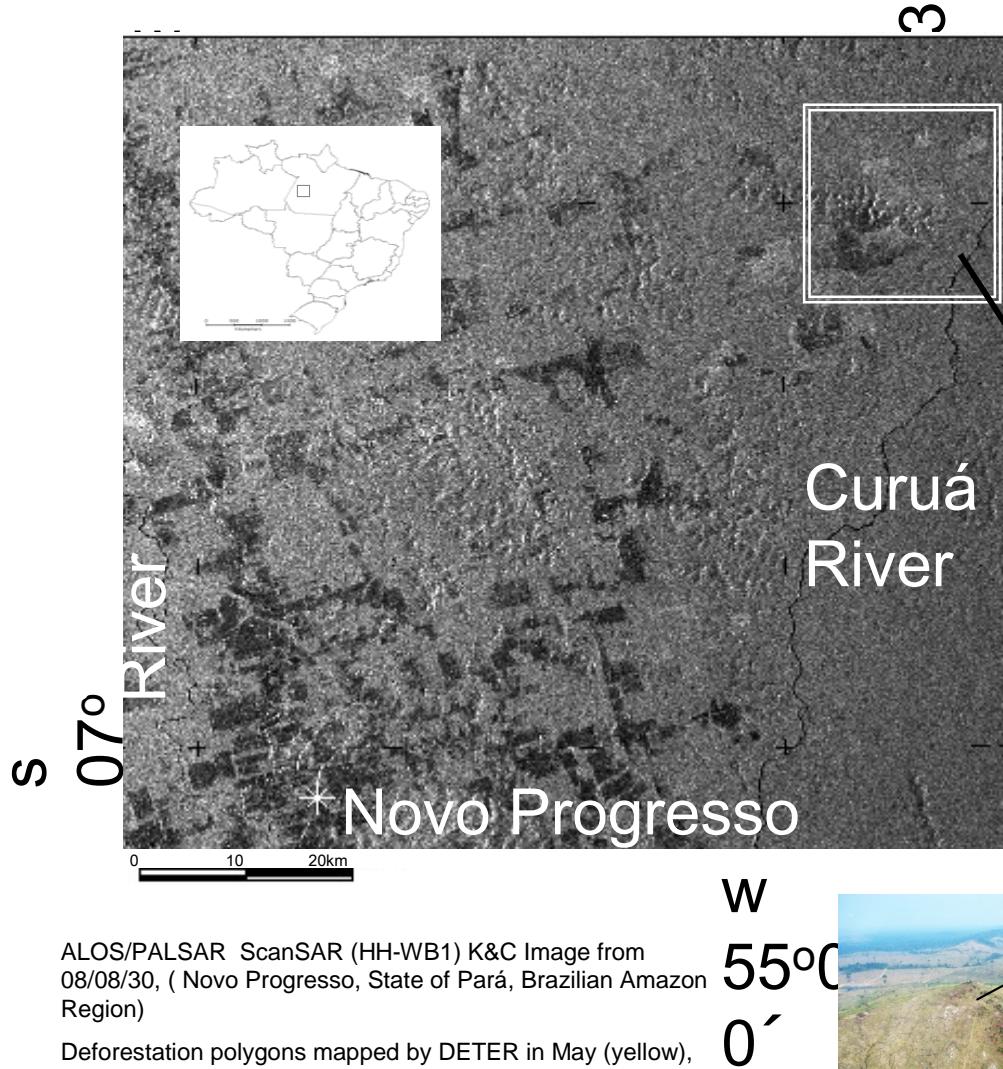
Orbita / Ponto Landsat 227/165
Orbita / Ponto CBERS 167/108
Lat: -7.258368
Long: -55.554752
Data da foto: 2008-09-18
Município/UF: Novo Progresso/PA
Projeto: DETER

Concluído

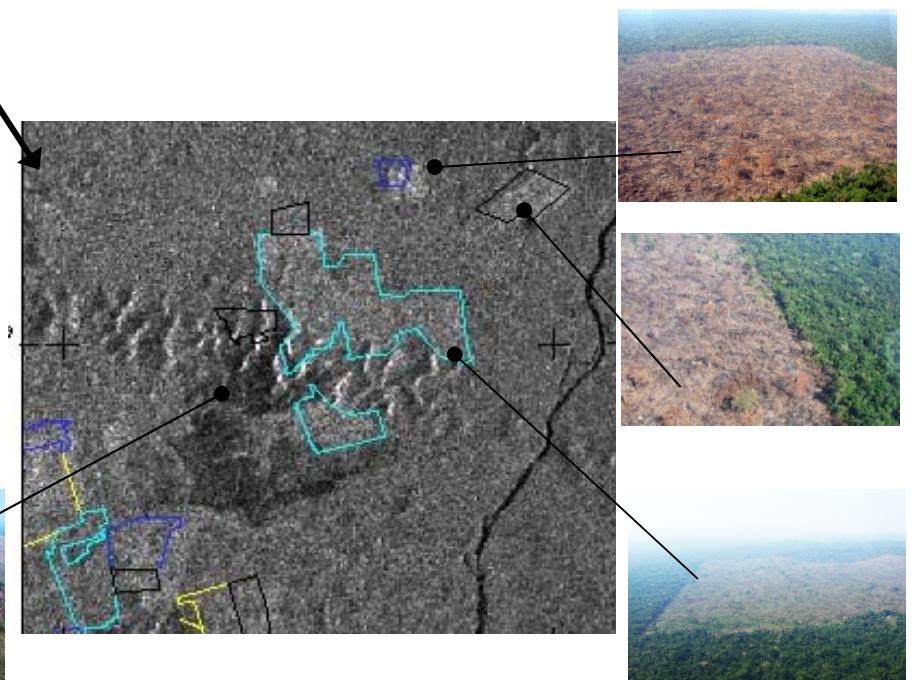
A screenshot of the INPE/OBT Photo Library (FotoTeca) interface. The main window shows a satellite map of the Amazon region with numerous black camera icons indicating photo acquisition points. A specific location in Novo Progresso, PA is highlighted. Below the map is a thumbnail image of a deforested area. To the left of the map are three search/filter panels: 'Consulta pelo mapa', 'Consulta por foto', and 'Consulta por município'. At the bottom left is a smaller window showing a close-up photograph of a deforested landscape. The URL http://www.obt.inpe.br/fototeca/fototeca.html is visible at the bottom right.

<http://www.obt.inpe.br/fototeca/fototeca.html>

Feasibility of assimilation of PALSAR Scansar data into INPE's DETER system

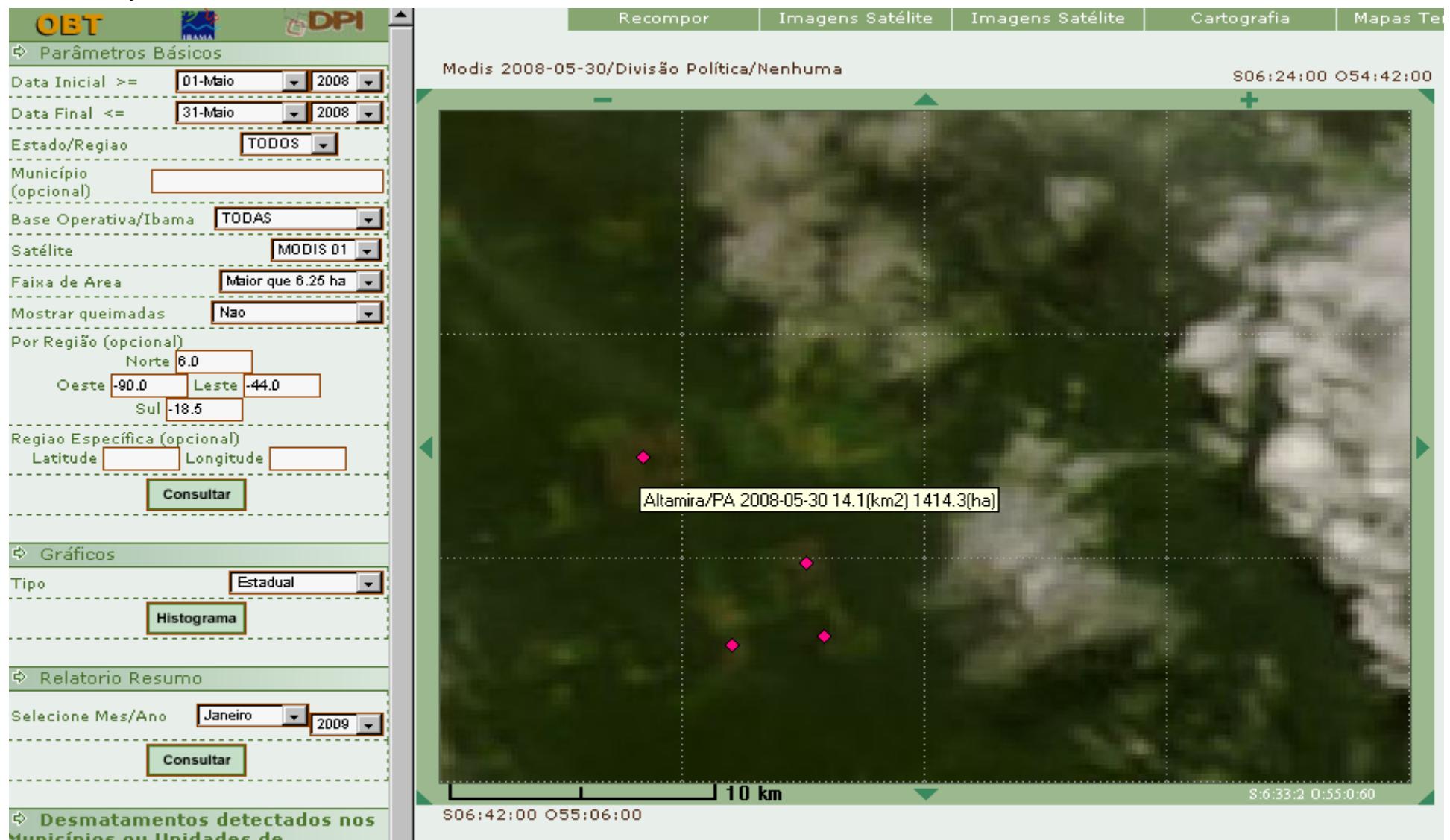


ALOS PALSAR K&C image, WB1 –
August,2008 and Deforestation
Polygons Deter (May-Aug/2008)



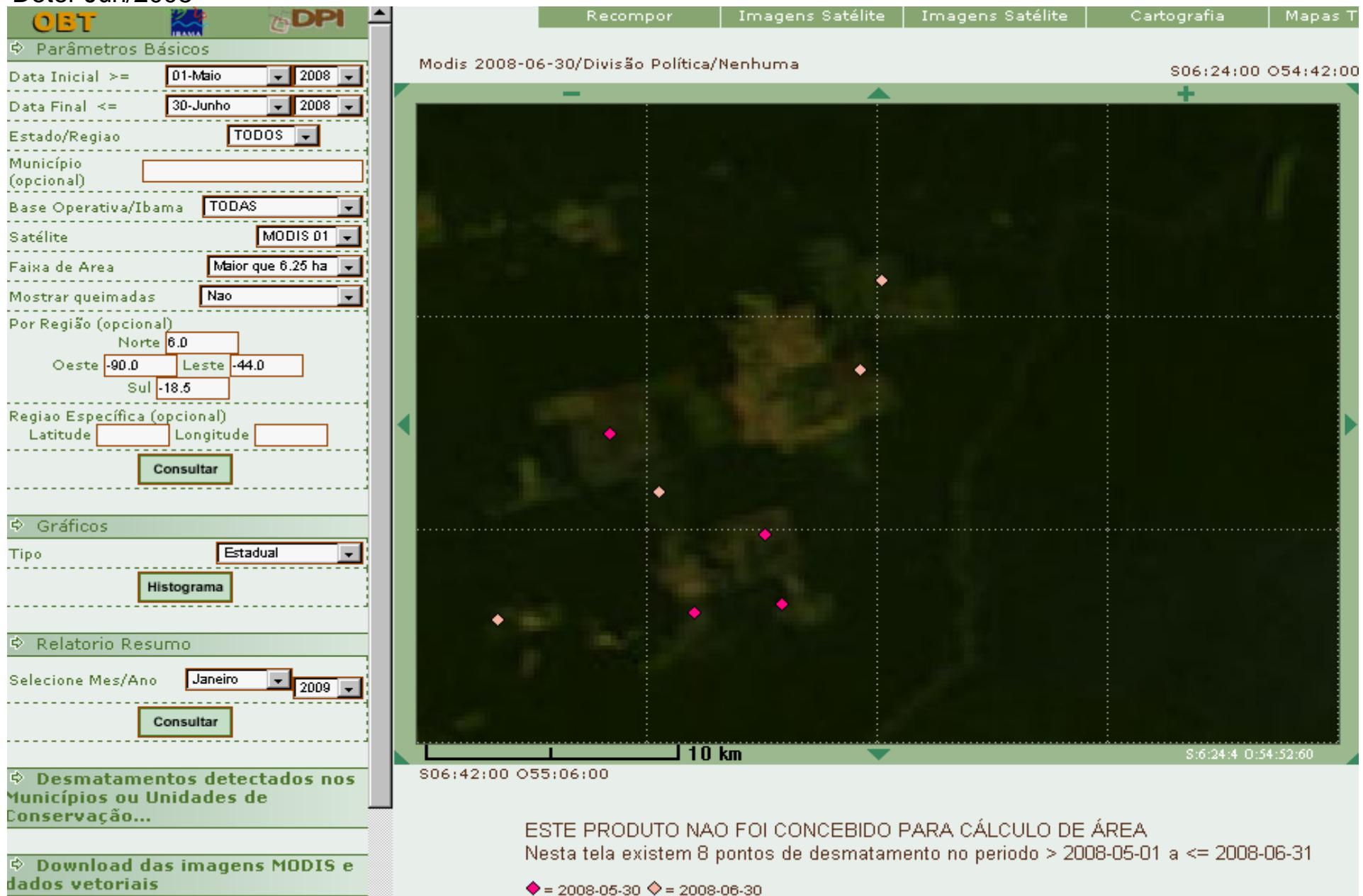
Sites detected in May 2008 by DETER

Deter May/2008



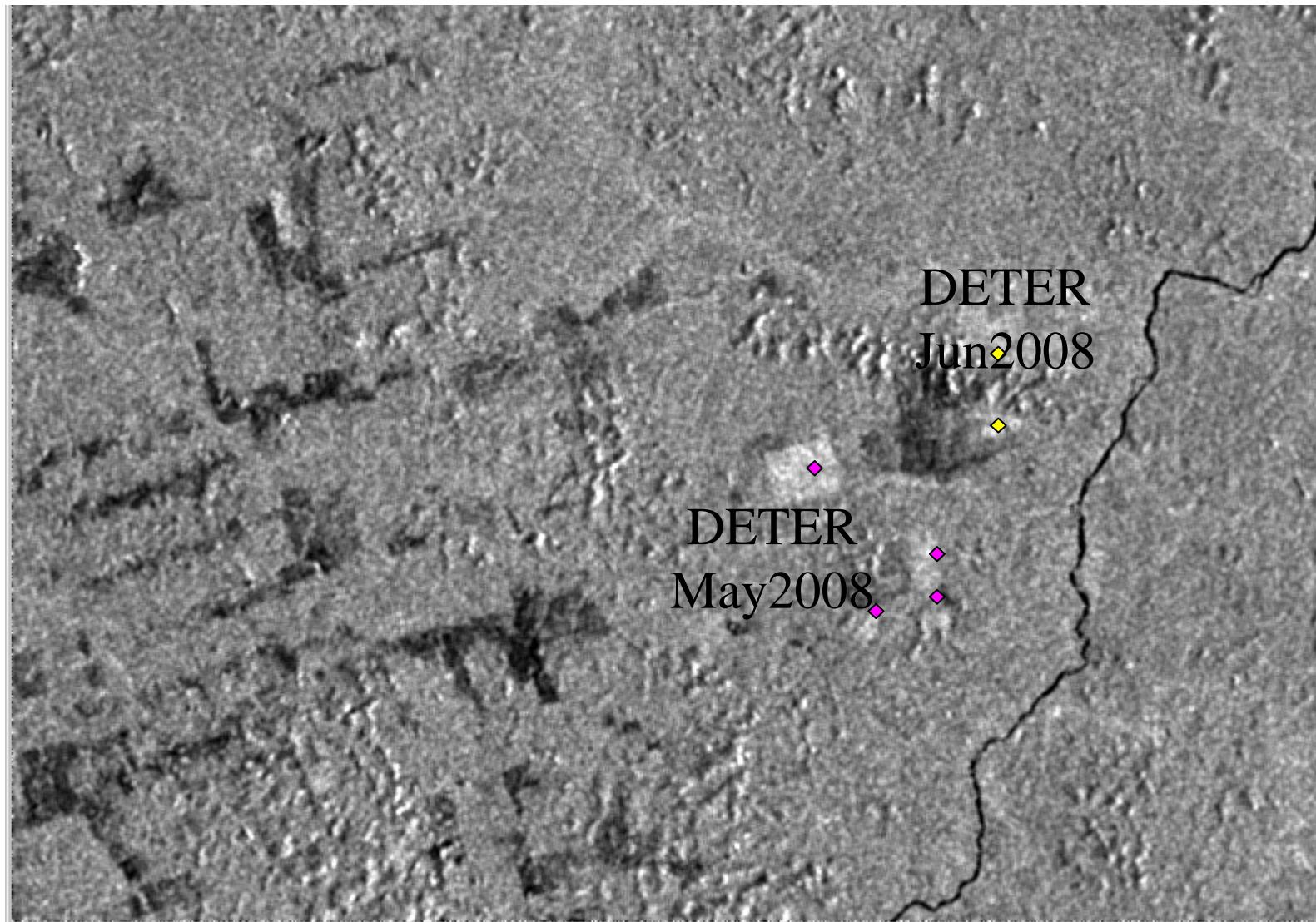
June 2008 new detections

Deter Jun/2008

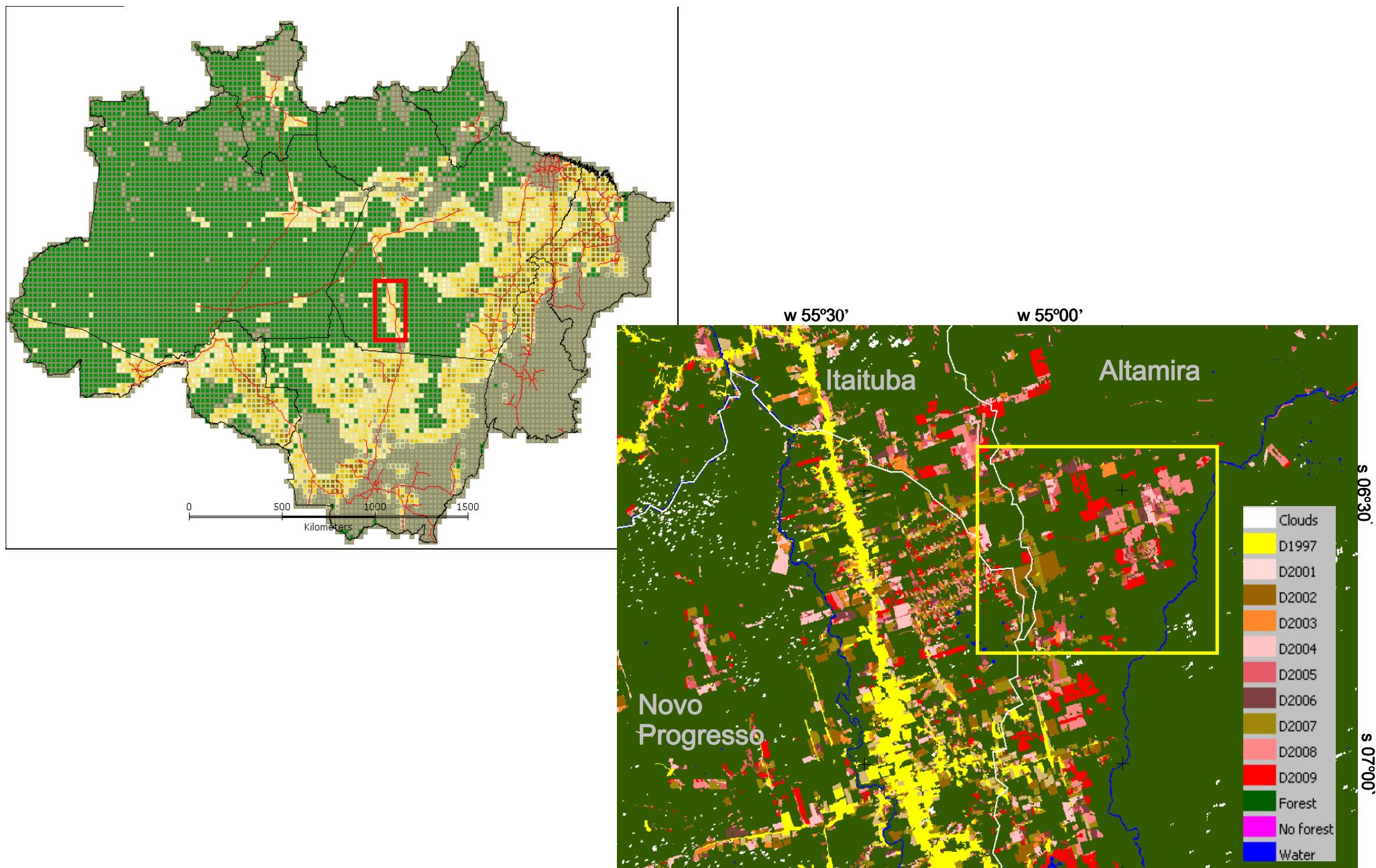


Potential application of Scansar to DETER

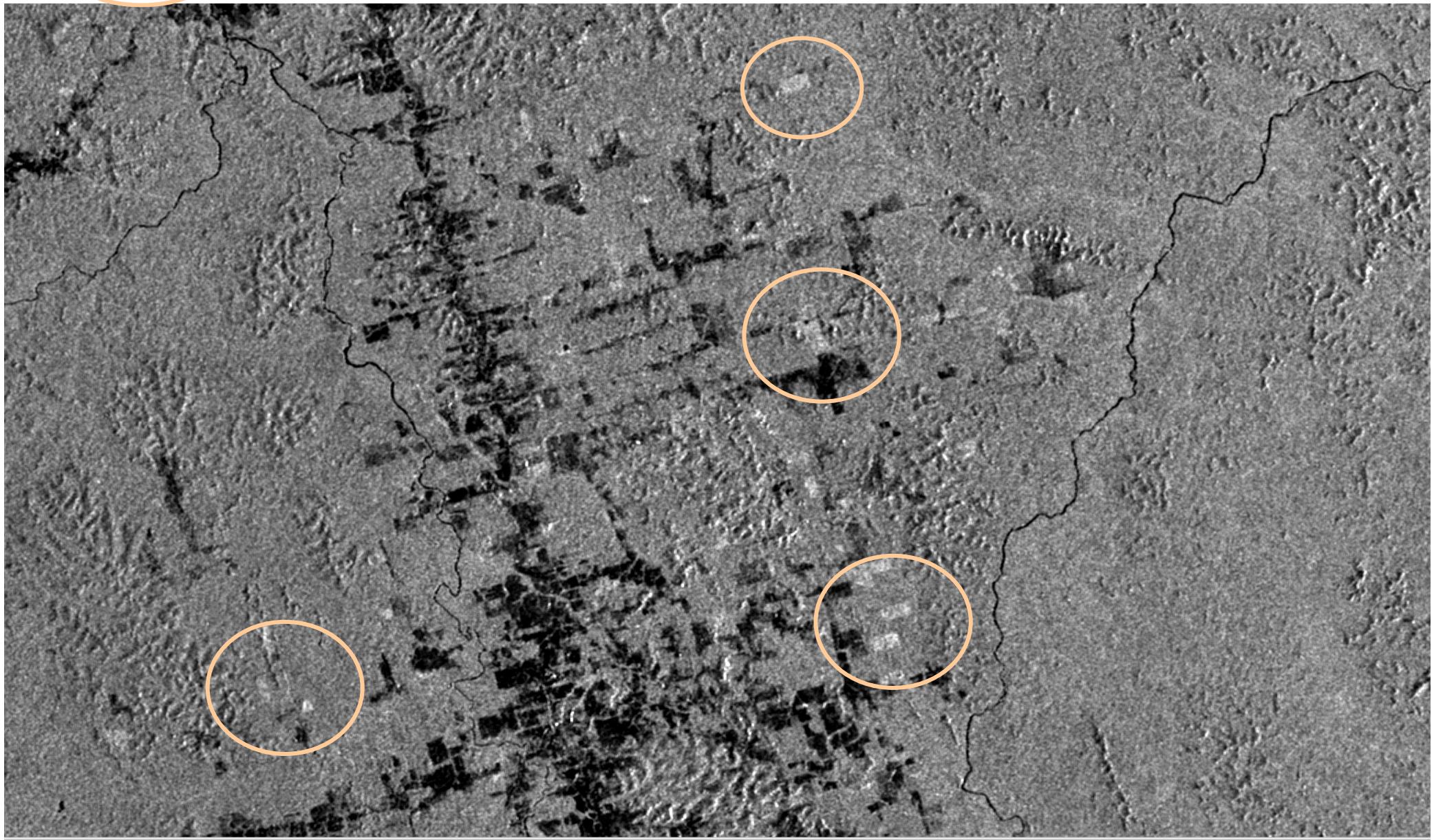
Palsar ScanSAR May/2008



Need for constant data provision: “Cloaking effect”

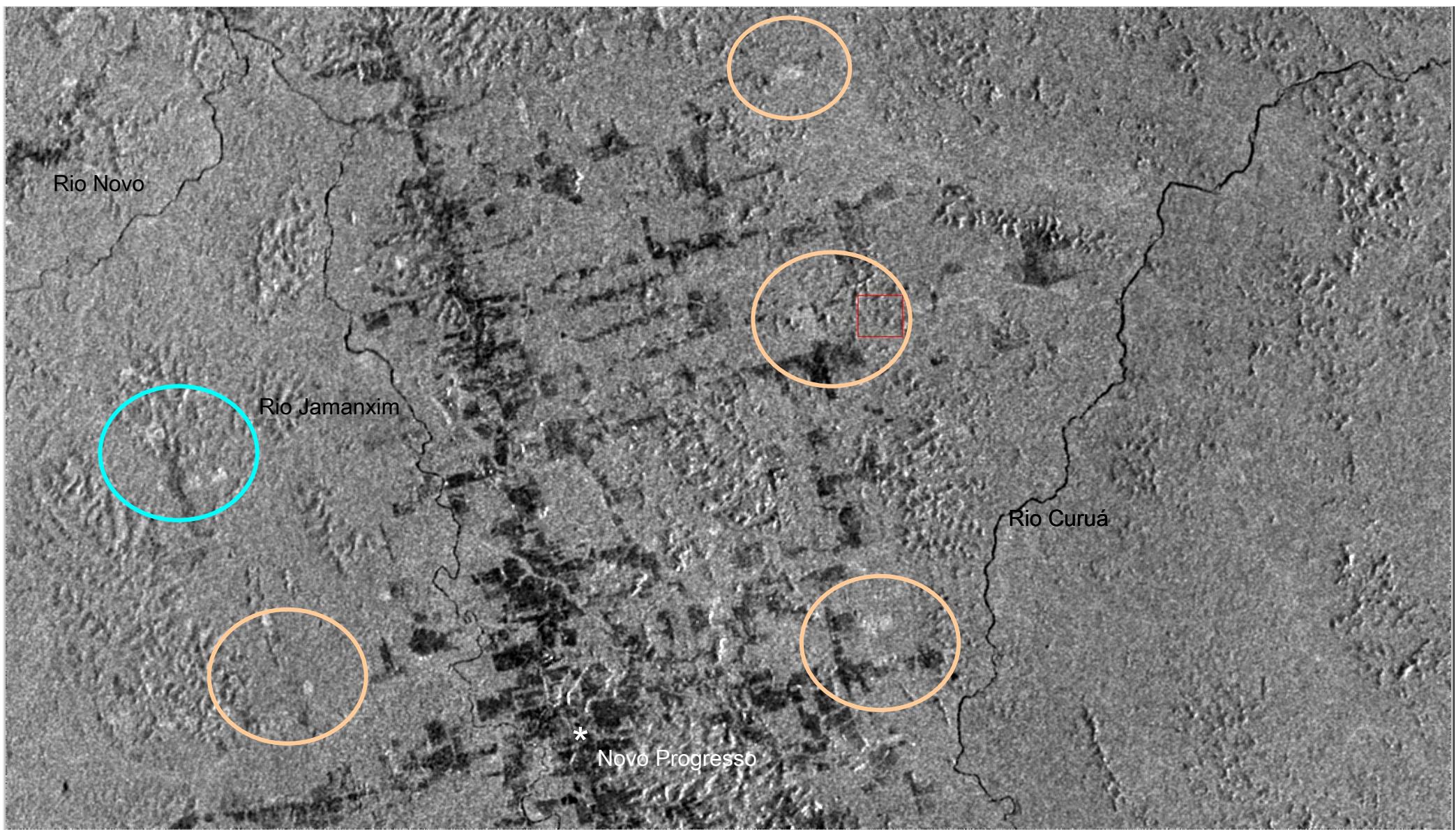


Out/2007



Out/2007

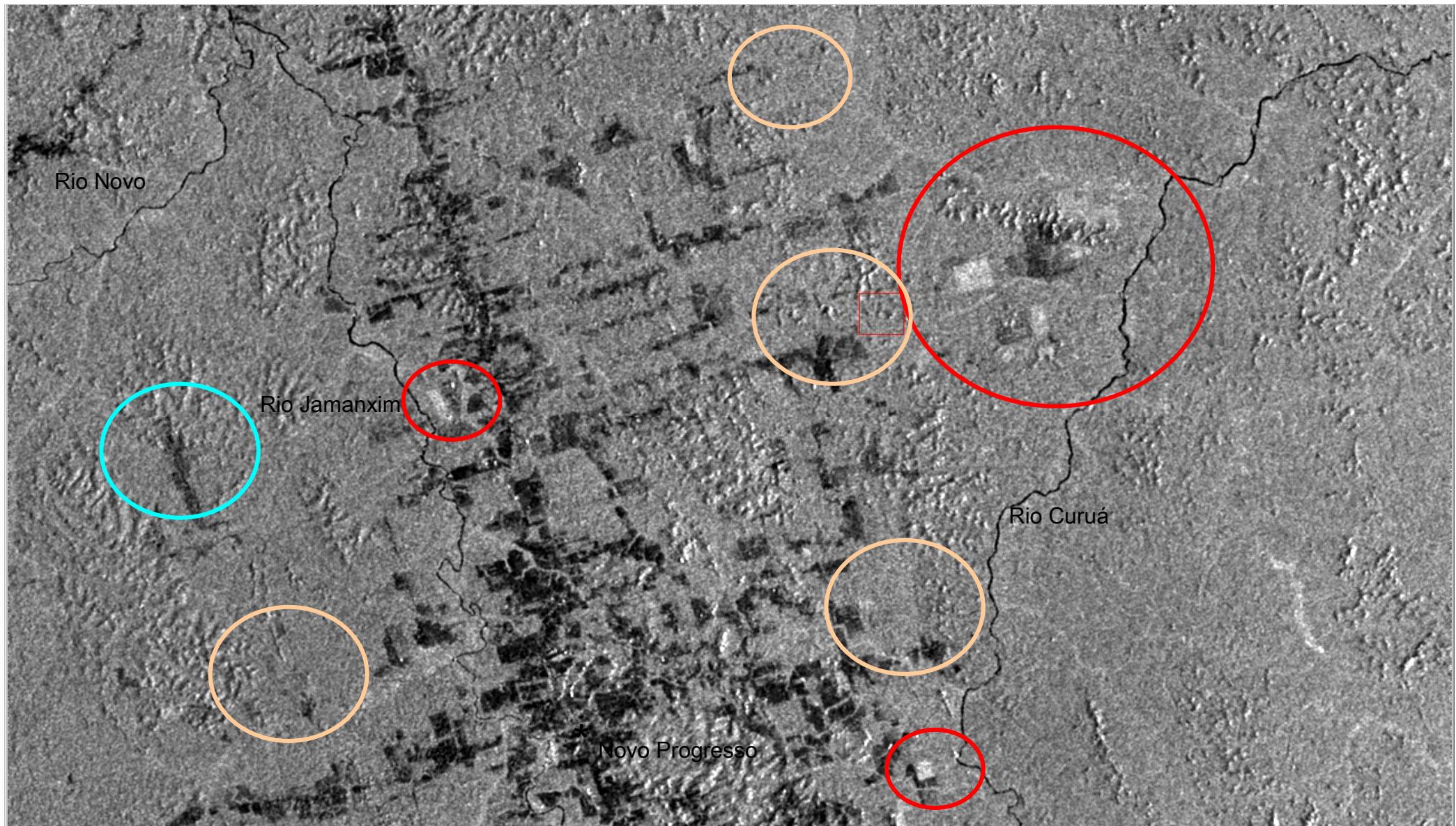
Jan/2008



Out/2007

Jan/2008

May/2008

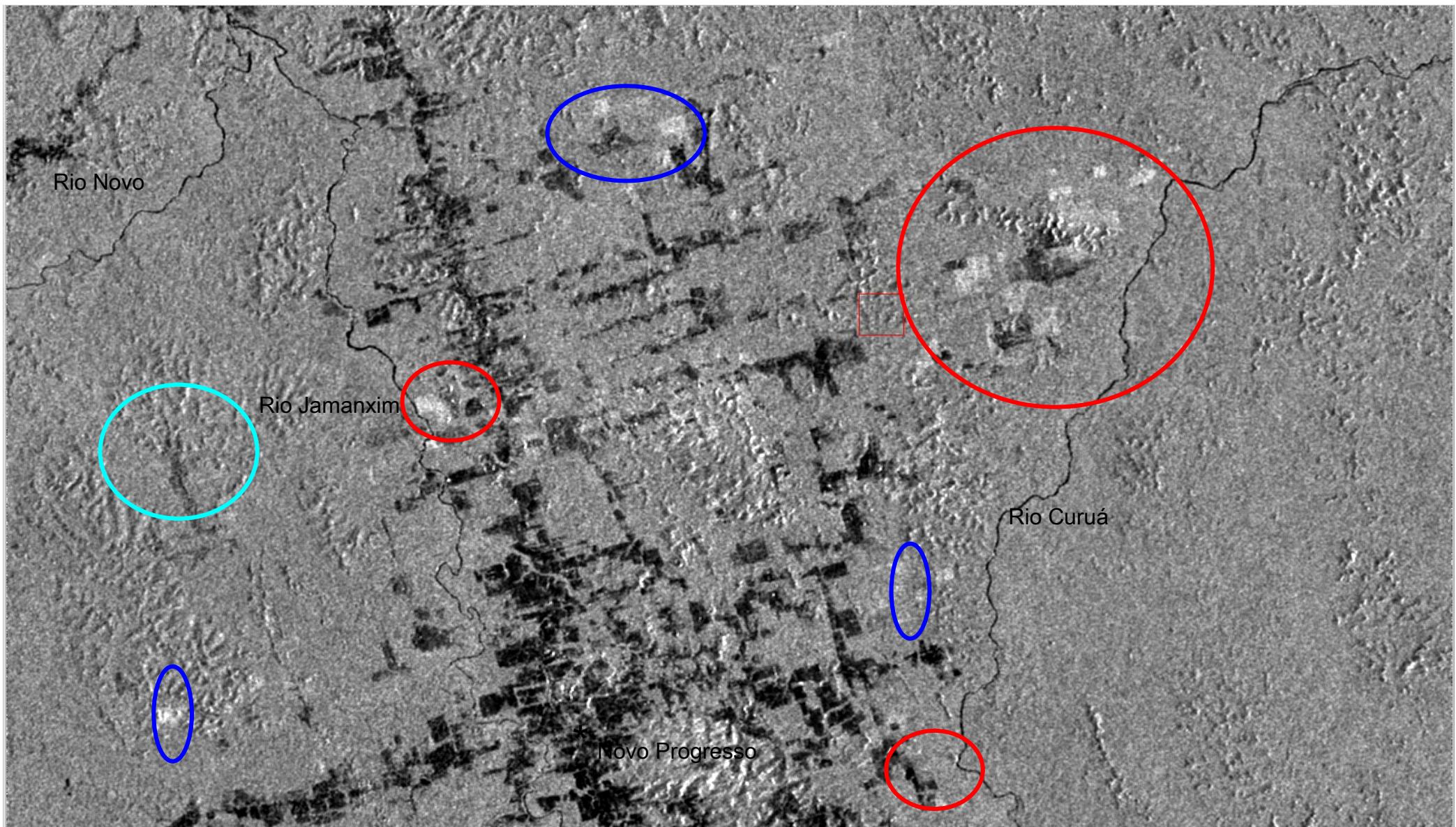


Out/2007

Jan/2008

May/2008

Aug/2008



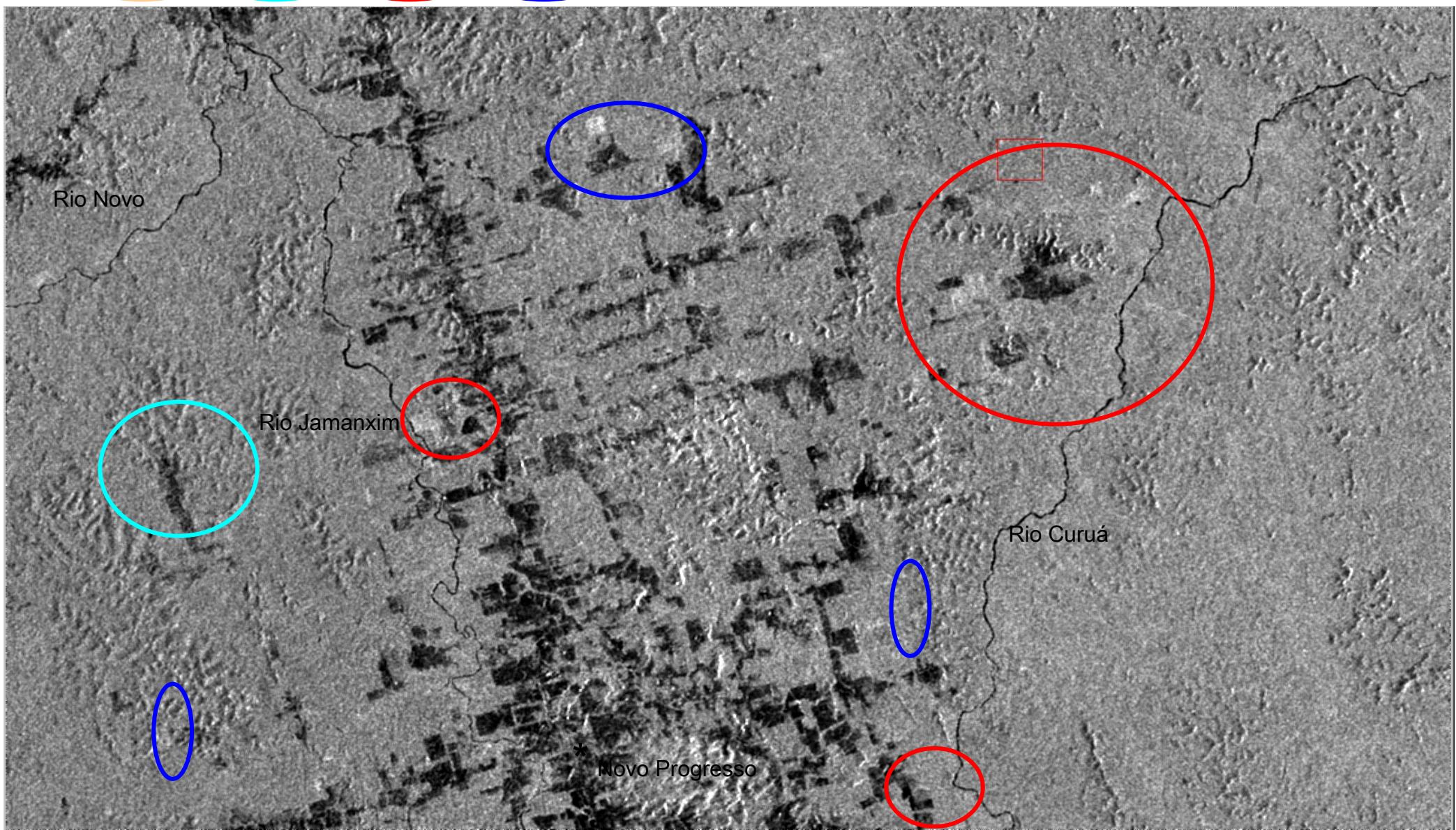
Out/2007

Jan/2008

May/2008

Aug/2008

Oct/2008



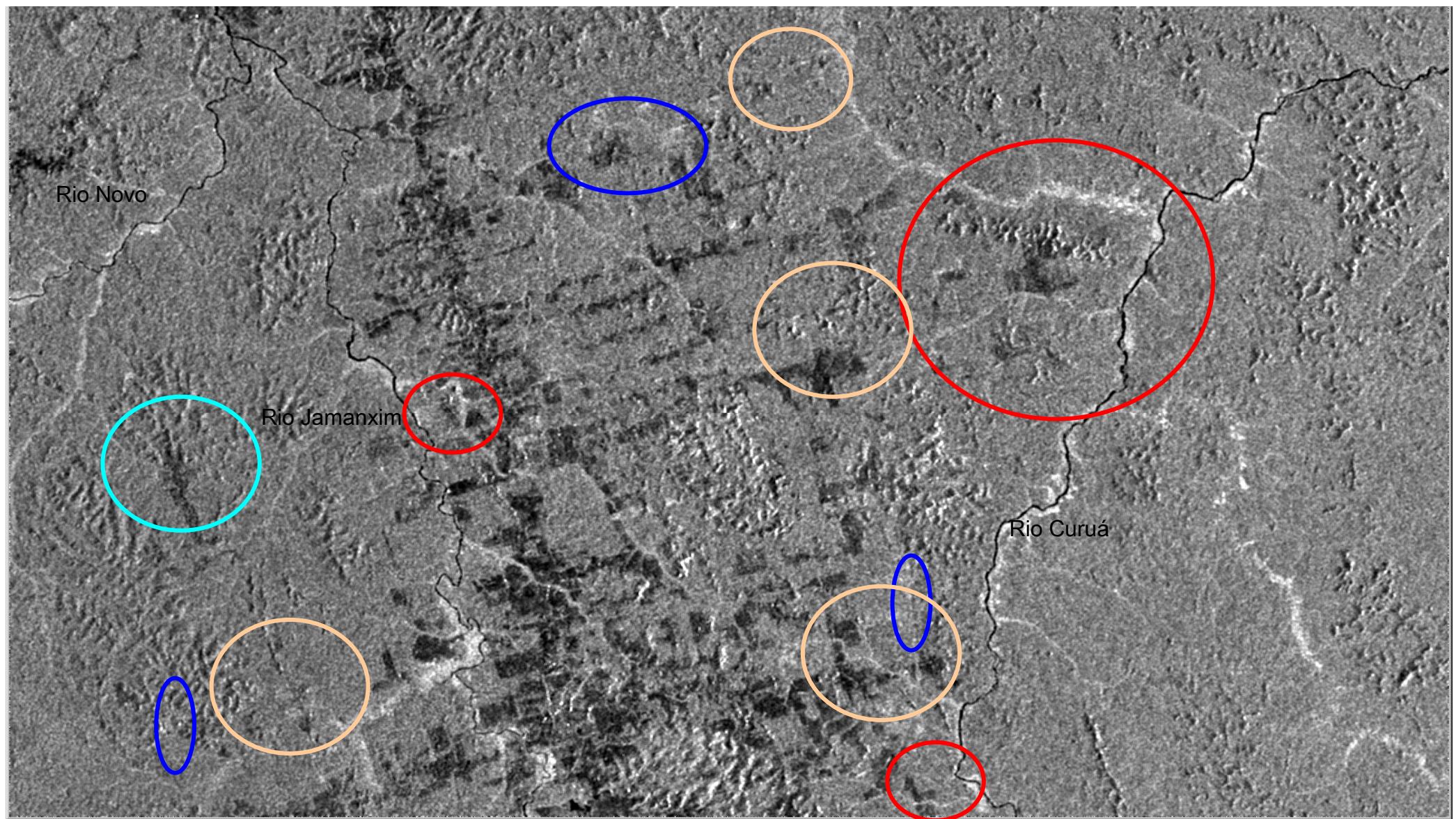
Out/2007

Jan/2008

May/2008

Aug/2008

Oct/2008 Apr/2009



Concluding Remarks

- *Need for constant and immediate data access to properly attend PPCDAm needs*
- *PALSAR Scansar data has full potential to improve Brazilian Amazon deforestation control program*
- *Further:*
- *PPCDAm has today na offspring: PPCerrado (3.5 million km²)*
- *Shall we dance, JAXA?*

ALOS

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Obrigado