K&C Phase 3 – Brief project essentials

Conserving forest and wetlands in Northern Andes and South Central America

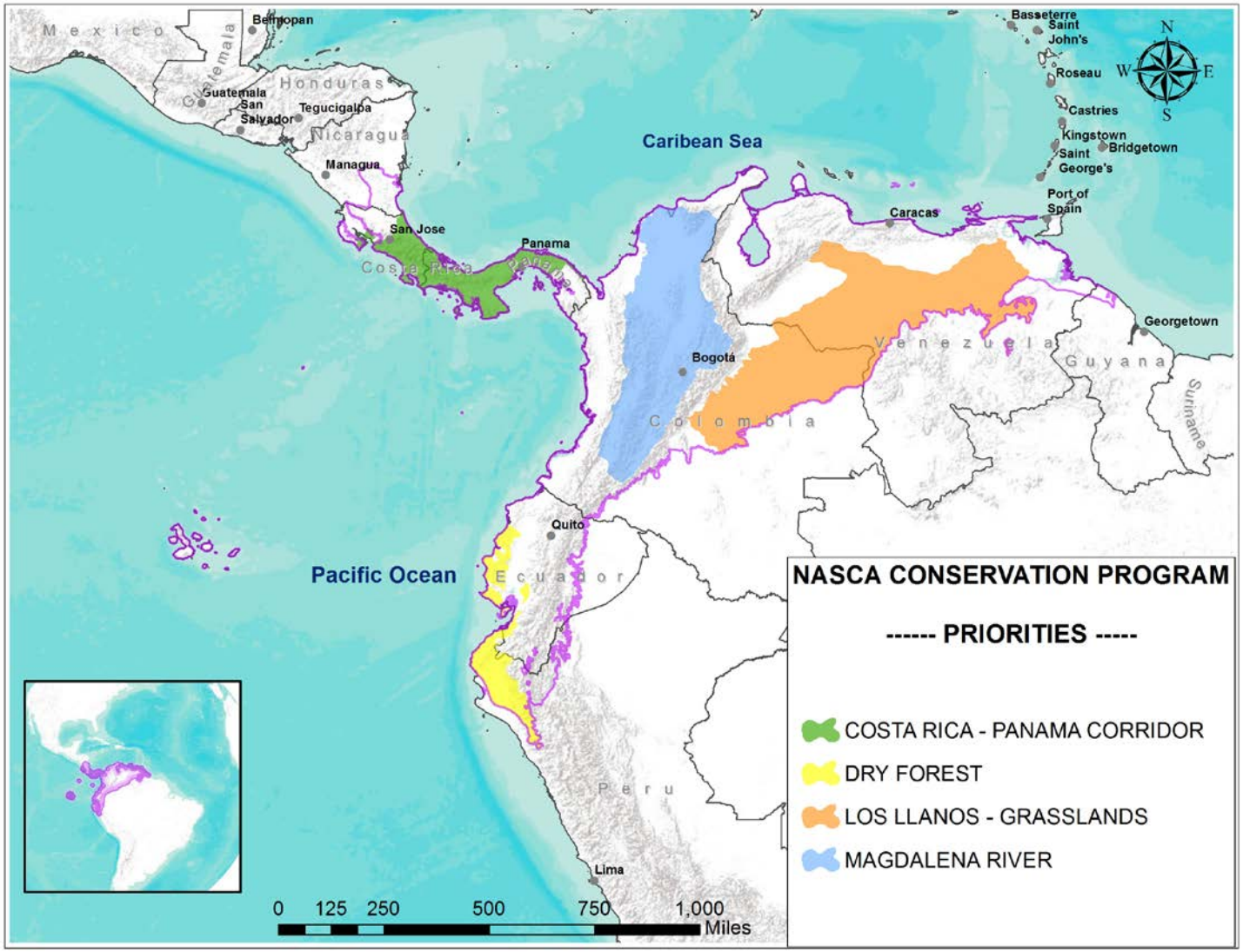
Carlos Pedraza
GIS Data Specialist – The Nature Conservancy – NASCA Program

Marcela Quiñones
Project Engineer SARVISION

Science Team meeting #19 – Phase 3 Kick-off
JAXA TKSC/RESTEC HQ, Tsukuba/Tokyo, April 8-12, 2012

Where We Work

- 6 Countries
  - Costa Rica
  - Panama
  - Colombia
  - Venezuela
  - Ecuador
  - Peru



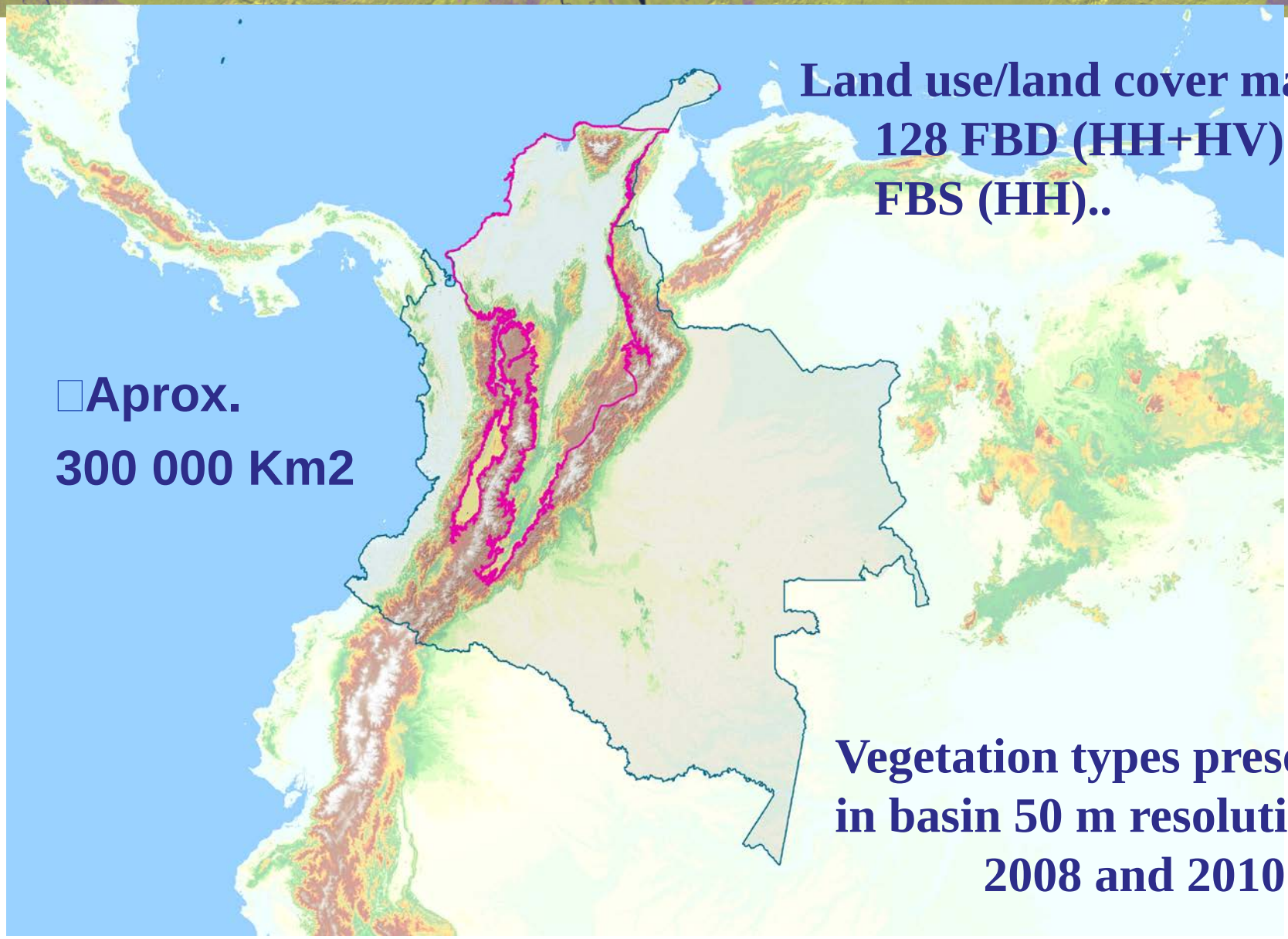
Magdalena Basin

Project objectives and schedule

- Land use/land cover mapping
  - 128 FBD (HH+HV or VV+VH) + 128 FBS (HH). Vegetation types present in 50 m resolution 2008 and 2010.
- Determine the spatial and temporal pattern of flooding in the Magdalena-Cauca basin.
  - 256 Wide Beam, HH polarization. One mosaic every 2 months (32 mosaics). Flooding areas in 100 m resolution.

Preprocessing

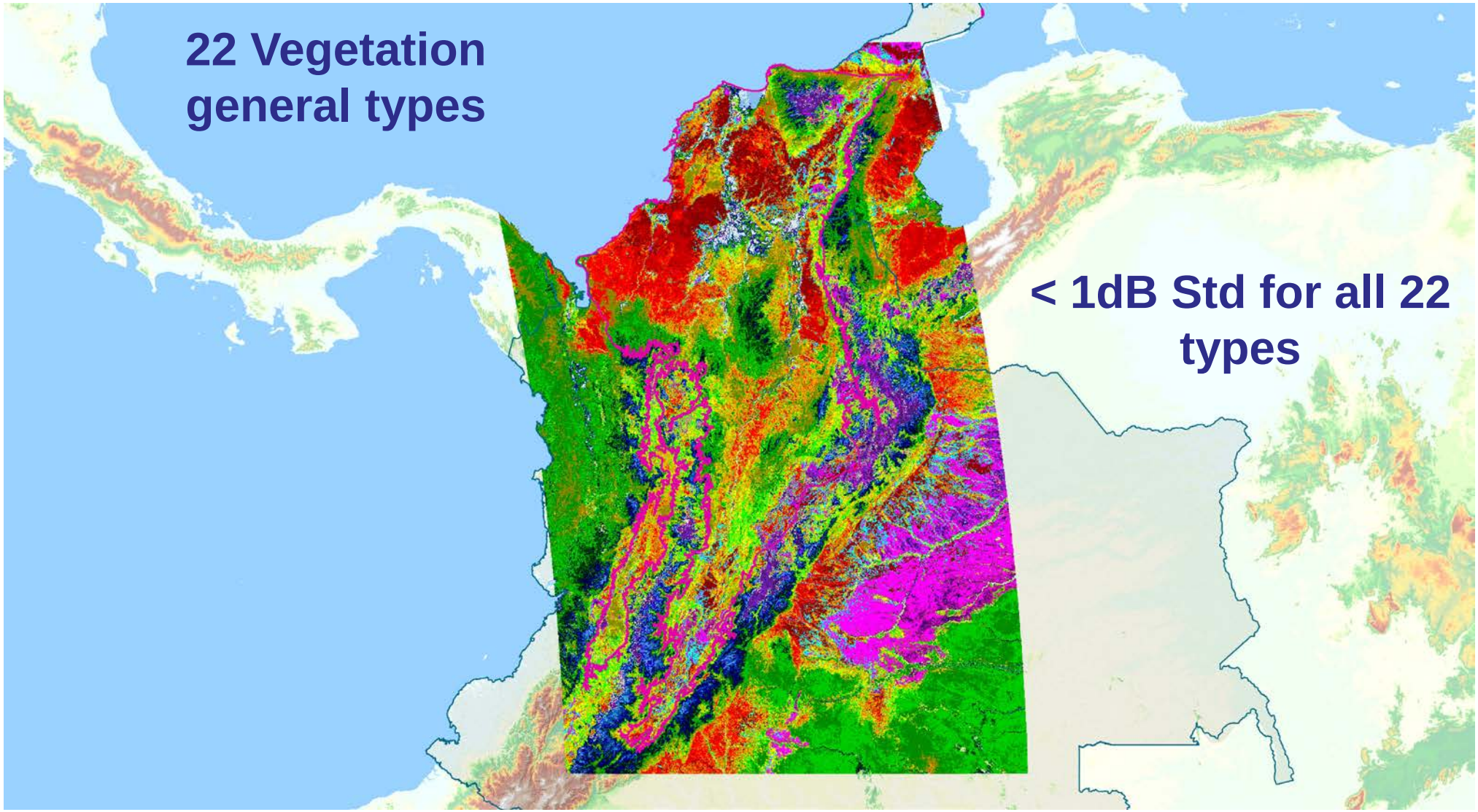
- Geometric and slope correction (gamma naugh values)
- Radiometric correction
- Intercalibration
- Mosaic
- Segmentation
- Classification



Land use/land cover mapping
128 FBD (HH+HV) + 128 FBS (HH)..

Aprox.
300 000 Km2

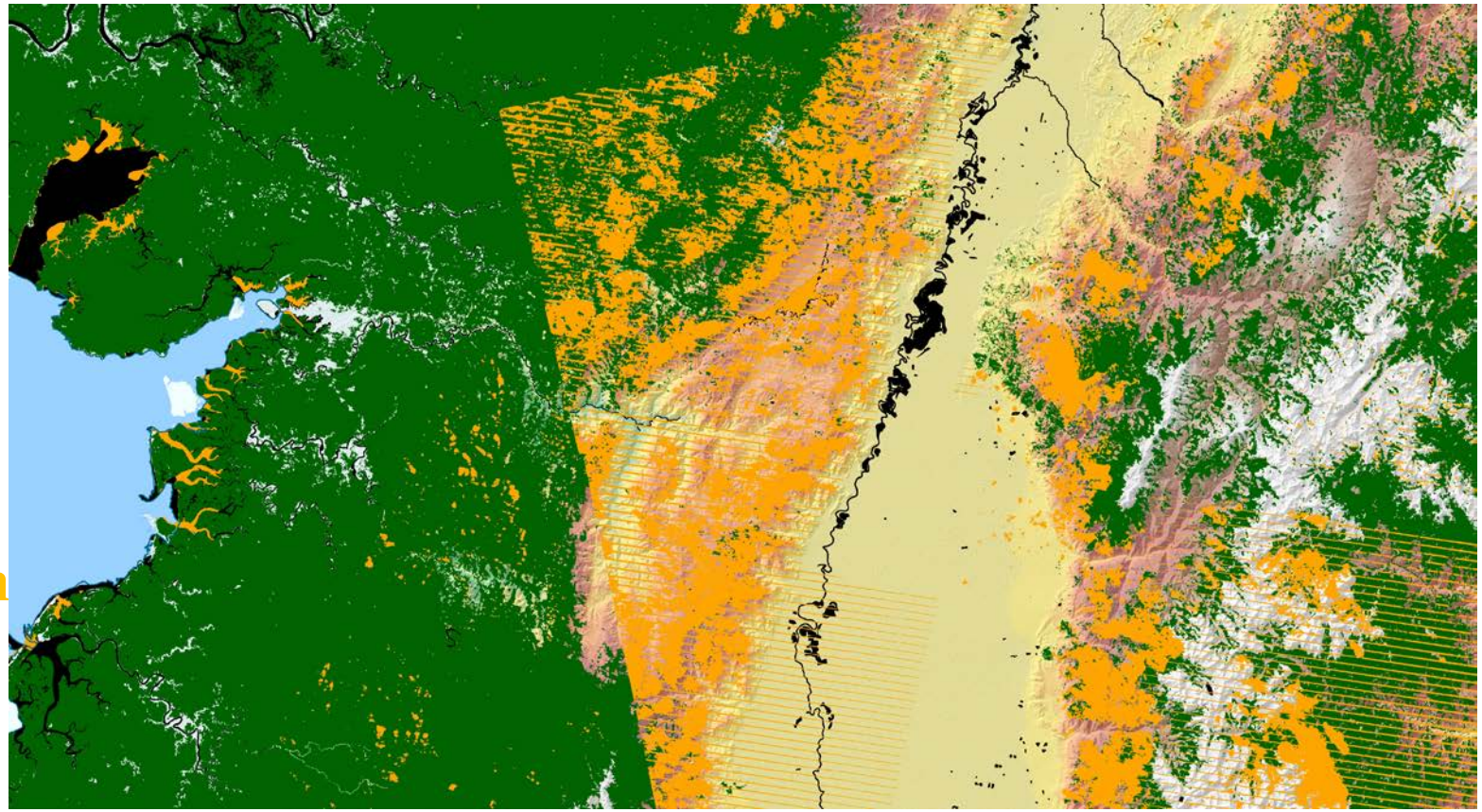
Vegetation types present in basin 50 m resolution
2008 and 2010


22 Vegetation general types
< 1dB Std for all 22 types

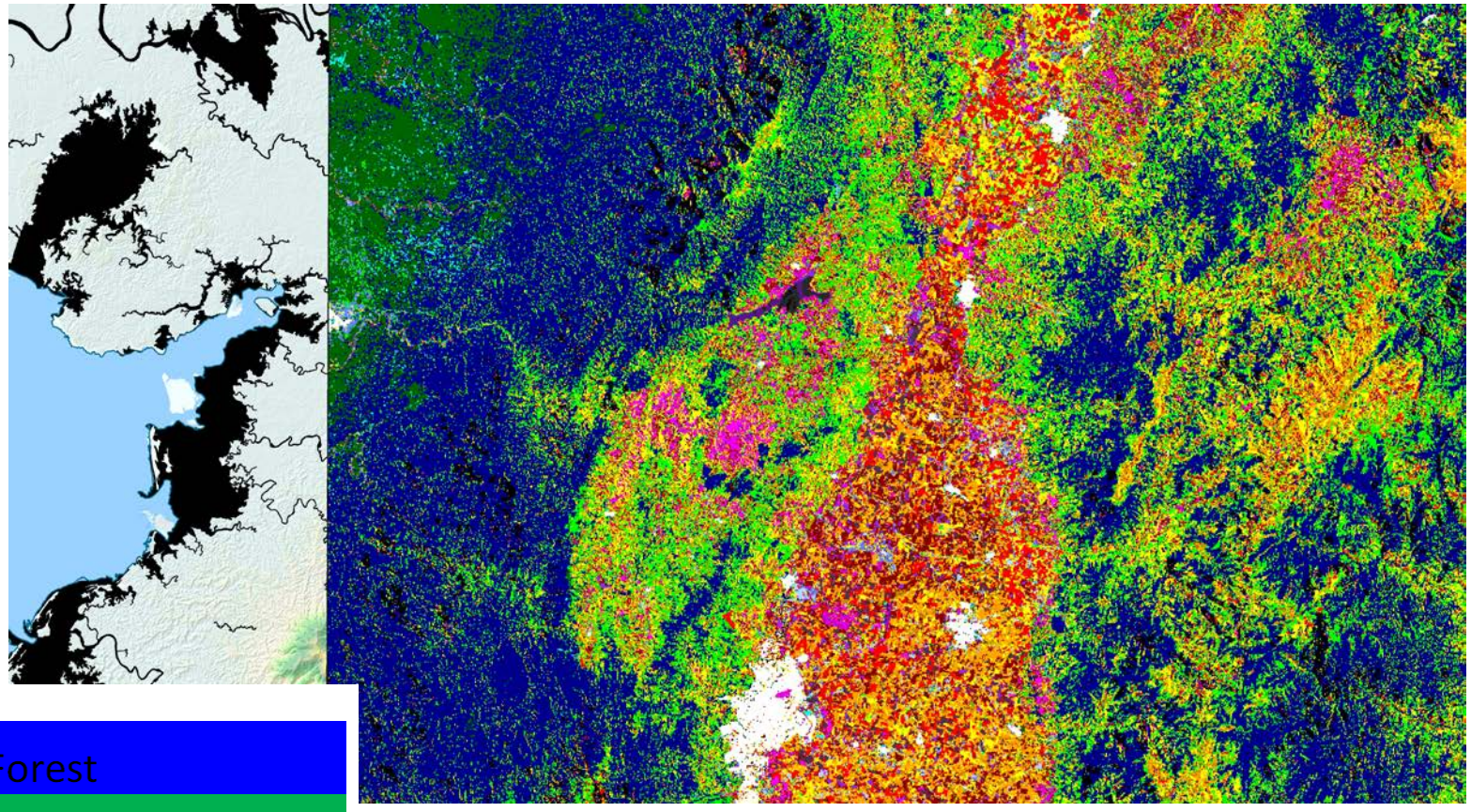
Forest/non forest (IDEAM 2011)
Optic Products
Affected by clouds

Forest

NoData



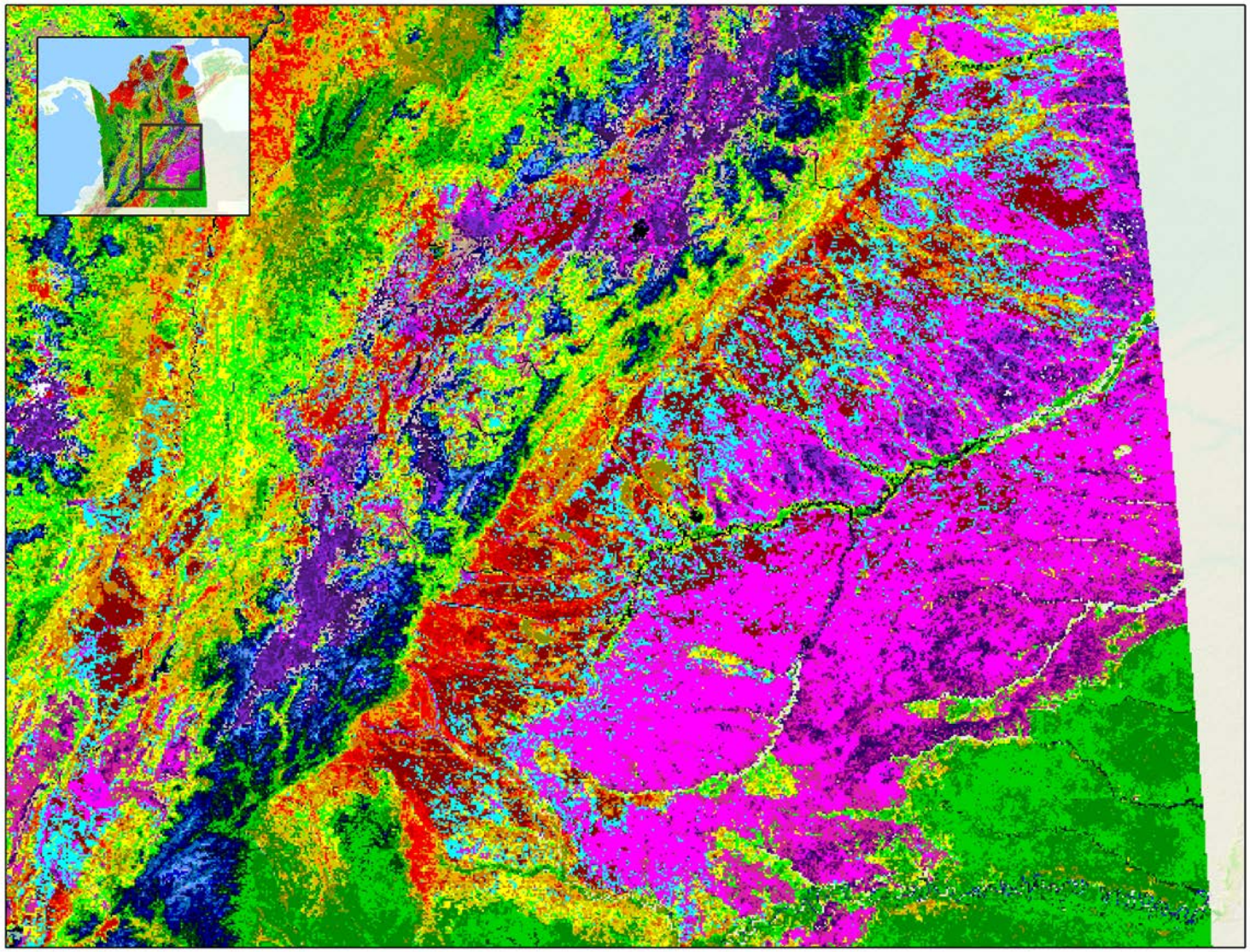
ALOS-1 FBD (HH+HV) and FBS (HH)



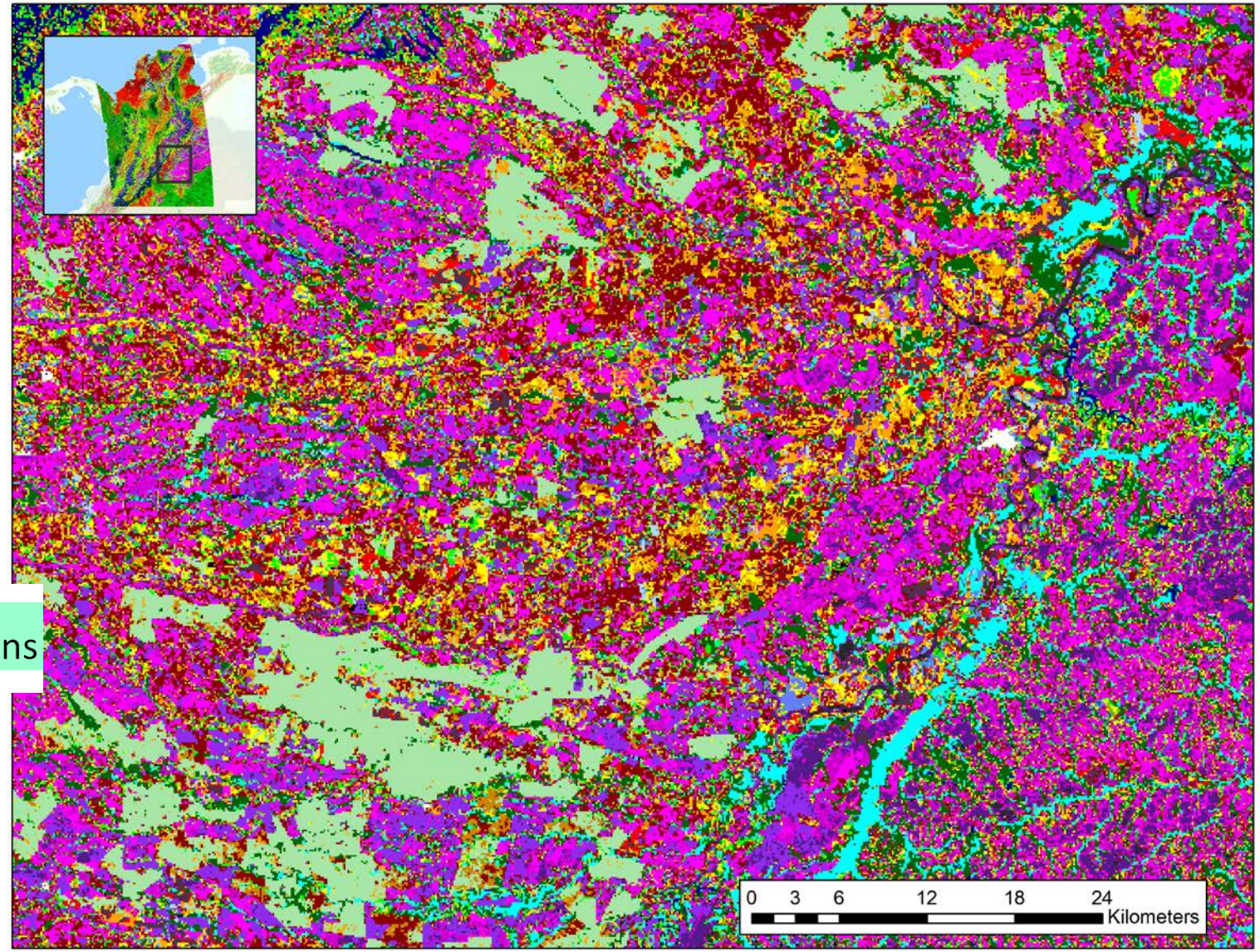
Montane Forest

Lowland Forest

Orinoco

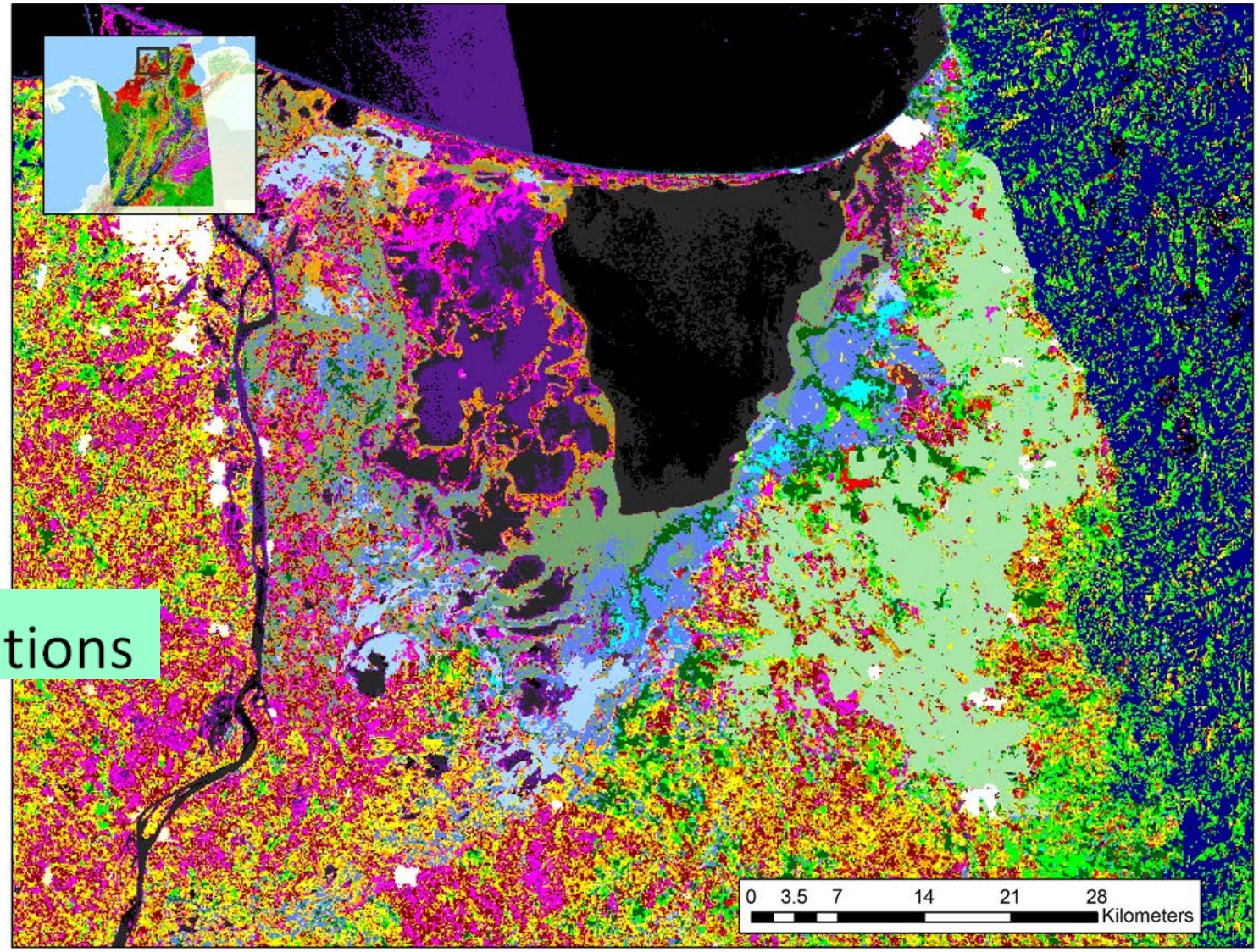


Oil Palm Plantations



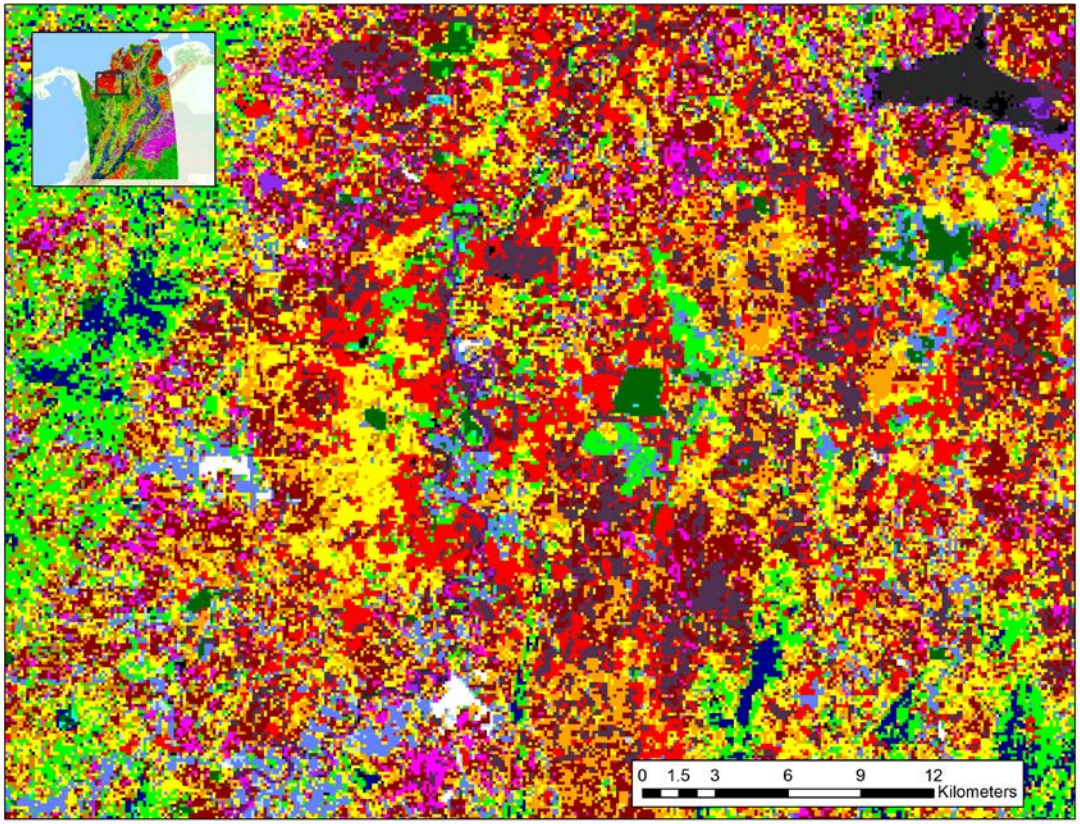
Oil Palm Plantations

Banana Plantations



Deforestation 2008-2010

- Very clear signature of Gamma naught HV dB Decrease
- -17 to -23 dB



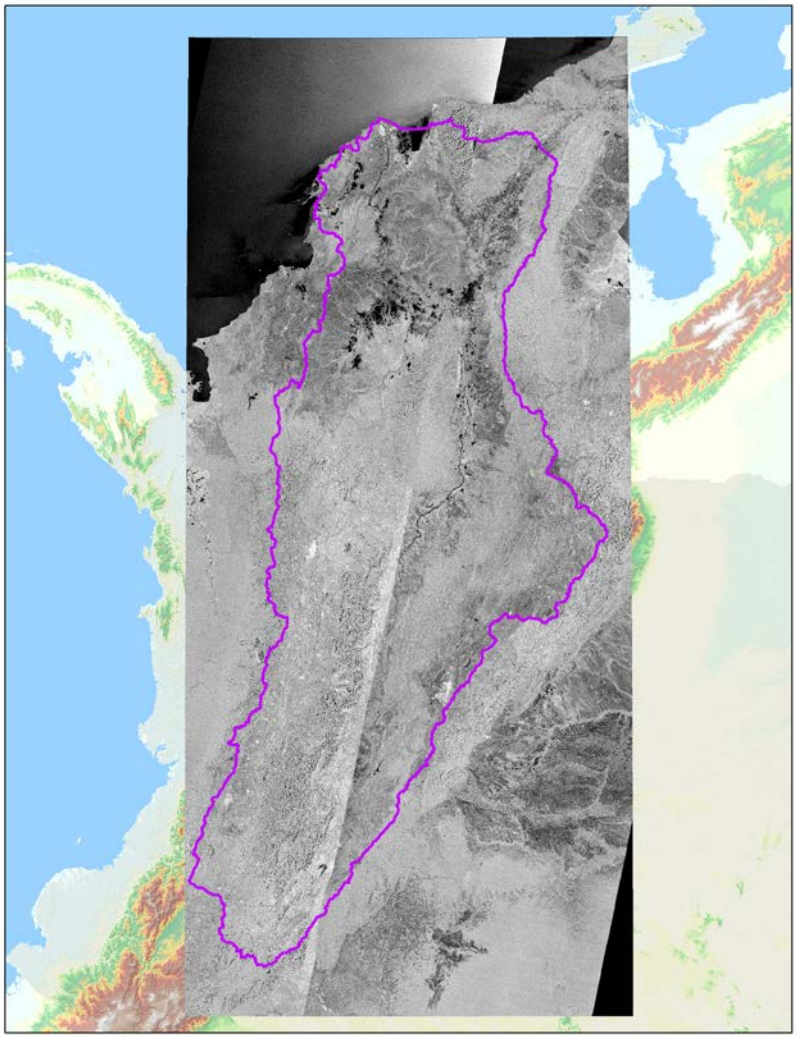
Milestones

- 125 locations of forest truth data (Done)
- Vegetation maps (June 2013)
- F/NF maps (2008 and 2010) and deforestation analysis (June 2013)
- Bimensual flooding areas (2007-2011) (June 2013

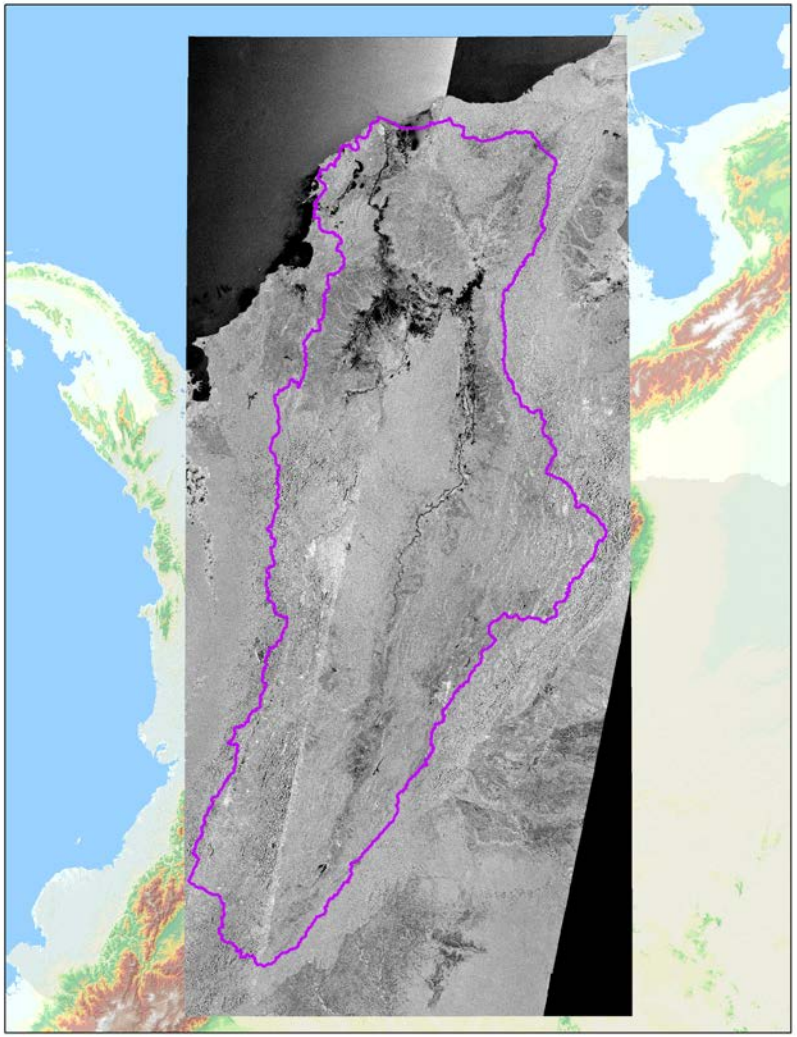
Flooding Patterns in the Magdalena-Cauca Basin 2007-2011

- Determine the spatial and temporal pattern of flooding in the Magdalena-Cauca basin.
  - 256 Wide Beam, HH polarization scenes. Mosaic every 60 days. Flooding areas in 100 m resolution.

WB HH Mosaic for Dry-wet Season



WB HH Mosaic for Wet Season



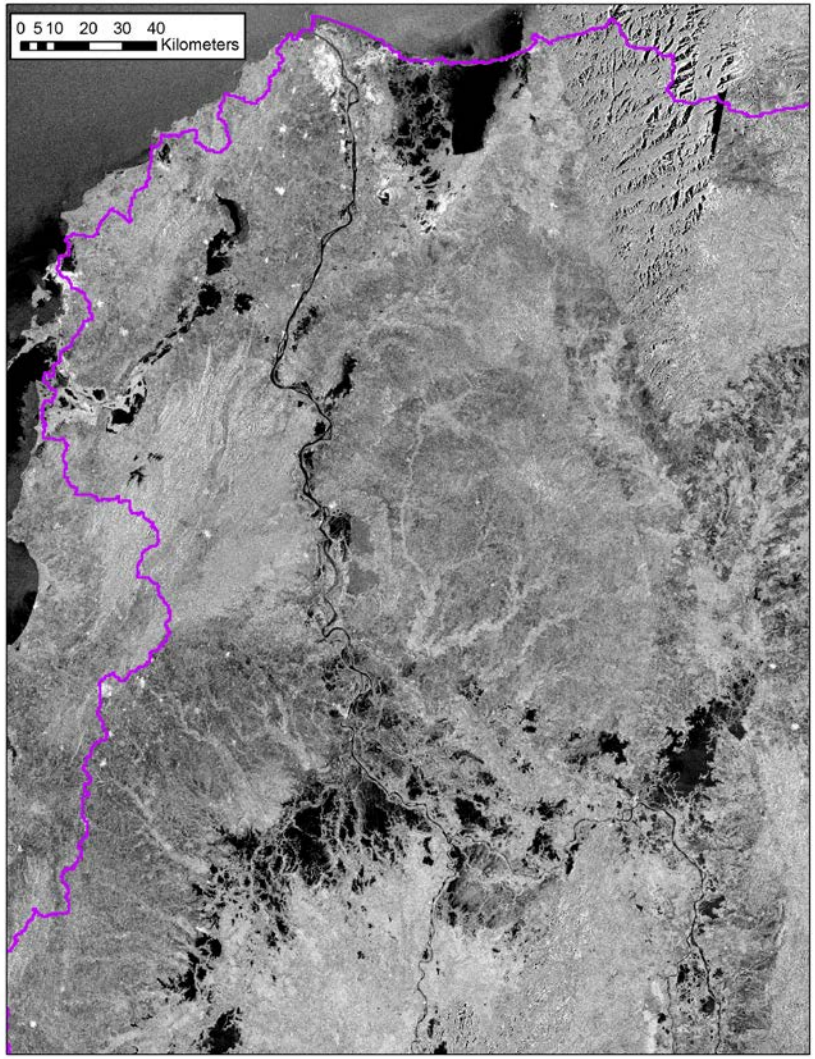
ALOS

K&C Initiative

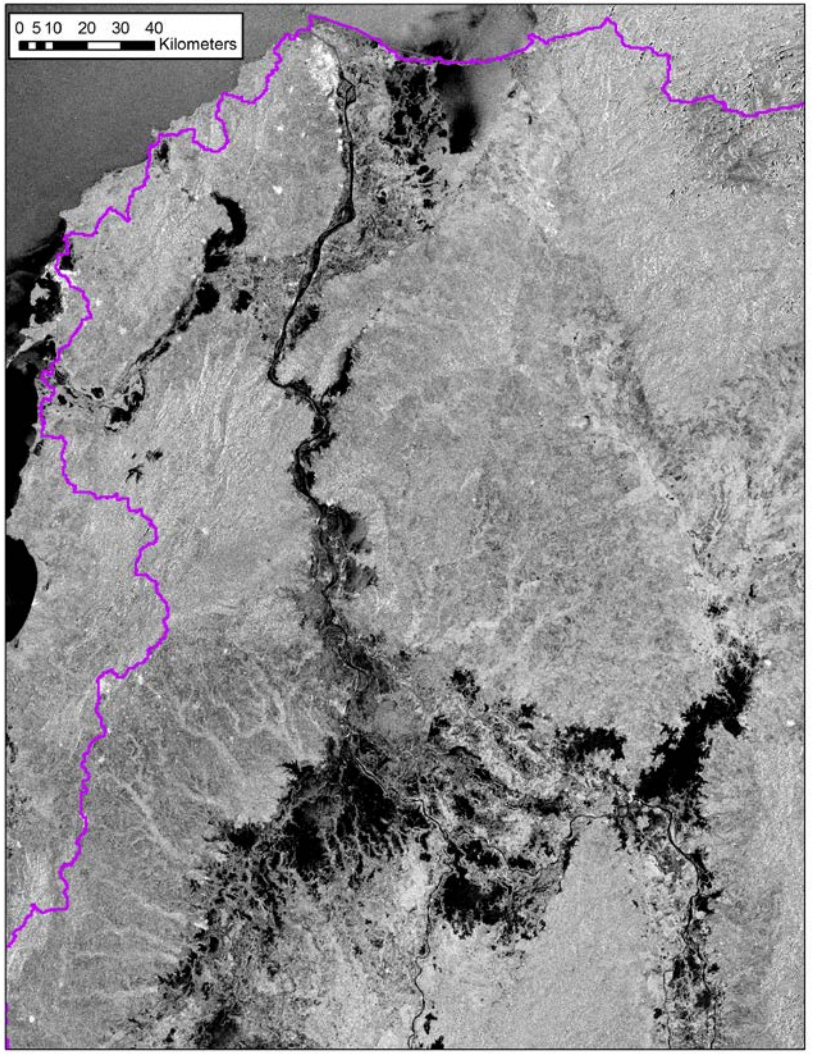
An international science collaboration led by JAXA

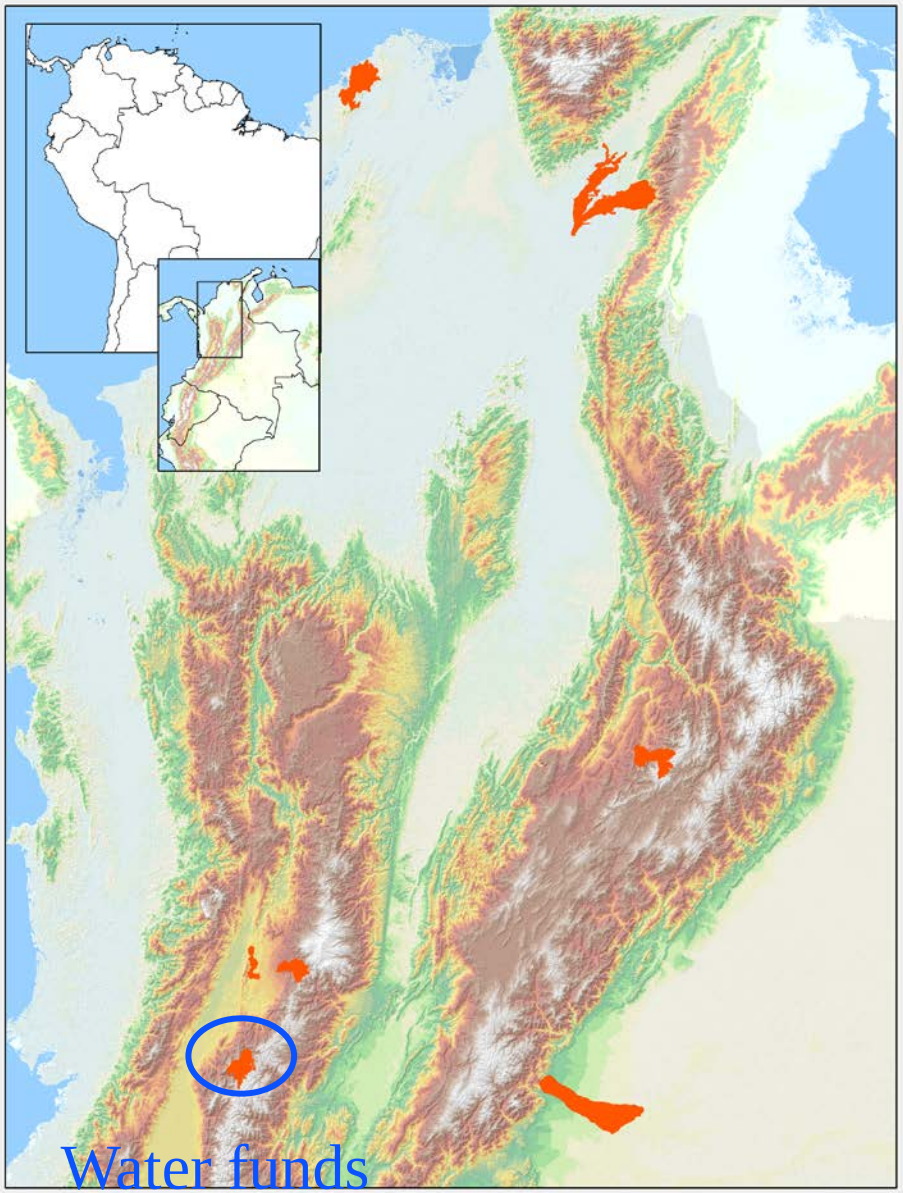
2007

Dry-wet Season



Wet Season





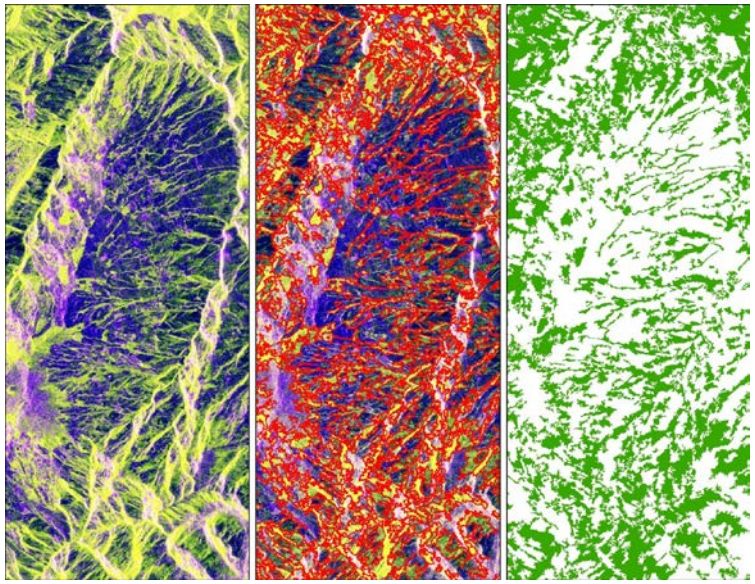
Sustainable Cattle Ranching and water funds projects

- 400 000 ha
- Land use conversion on private lands (PES)
- Caribean (dry forest) andes region (humid forest and dry forest) and orinoco foothills (humid forest)

Project objectives and schedule

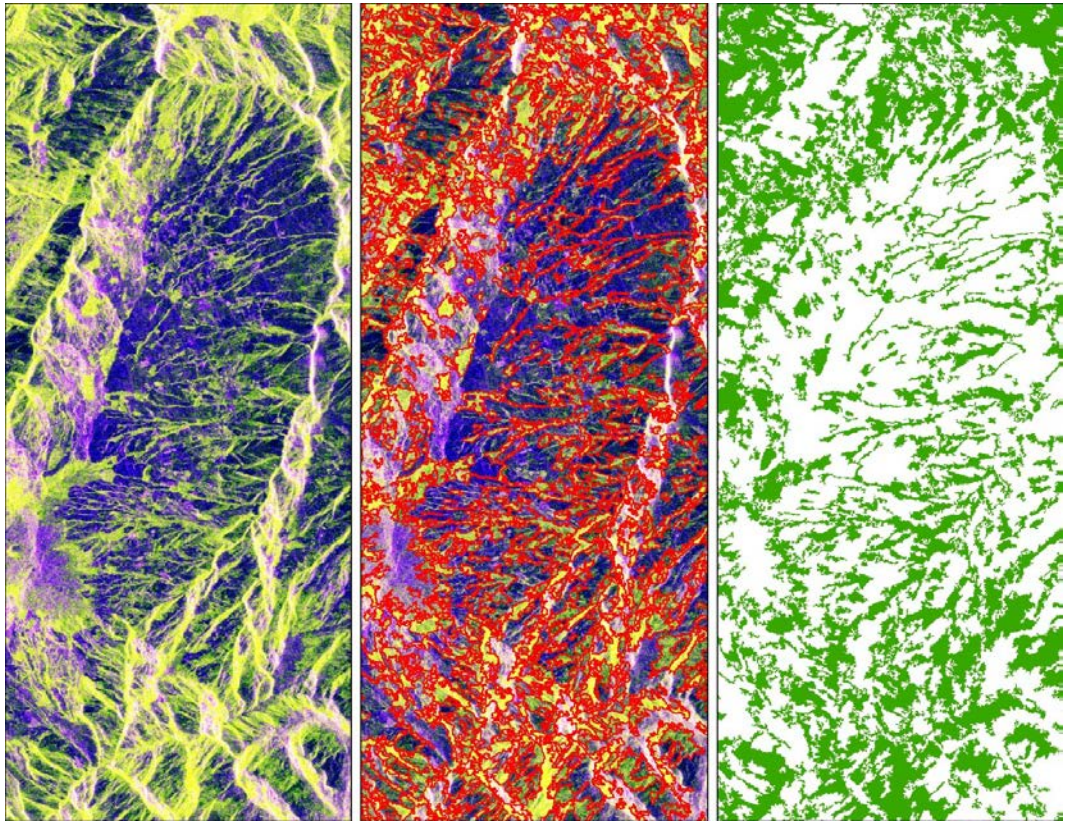
- Determine the spatial and temporal distribution of forest for deforestation analysis and corridor design. FBD HH+HV or VV+VH 25 m
- Valuation of environmental services. Land use/land cover maping -> Hydrological modelling. 128 FBD (HH+HV or VV+VH) + 128 FBS (HH).
- Biomass and forest structure estimations as indicators of land use conversion. FBD (HH+HV or VV+VH) FBS (HH)

Milestones



- Biomas and structure ground data 15 permanent plots (June 2013)
- Forest/non forest map (June 2013)
- Biomas and structure maps (Nov 2013)

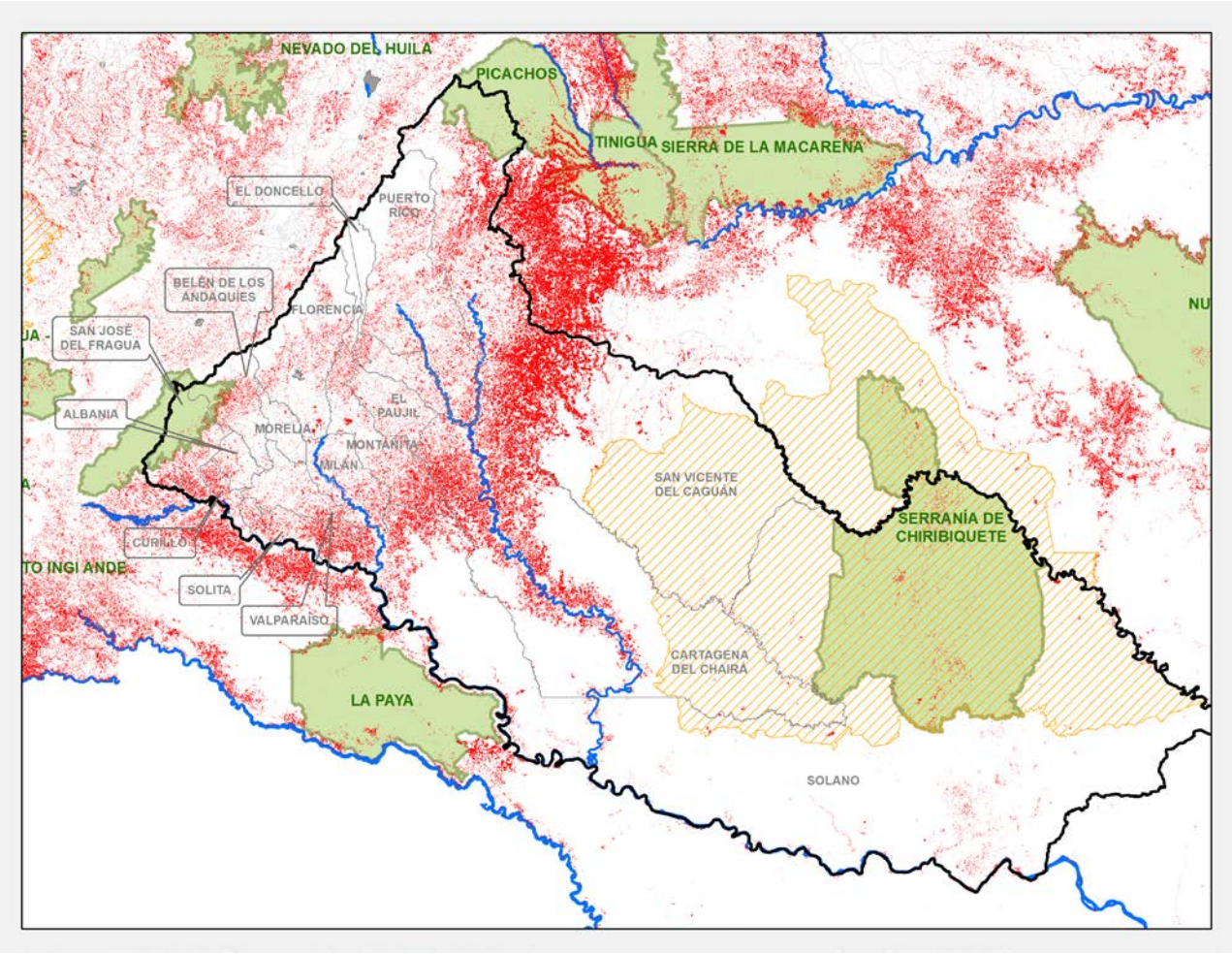
Supporting to JAXA's global forest mapping effort



The project will provide ground data about natural forest areas and biomass estimations.

Forest/non forest and biomass maps

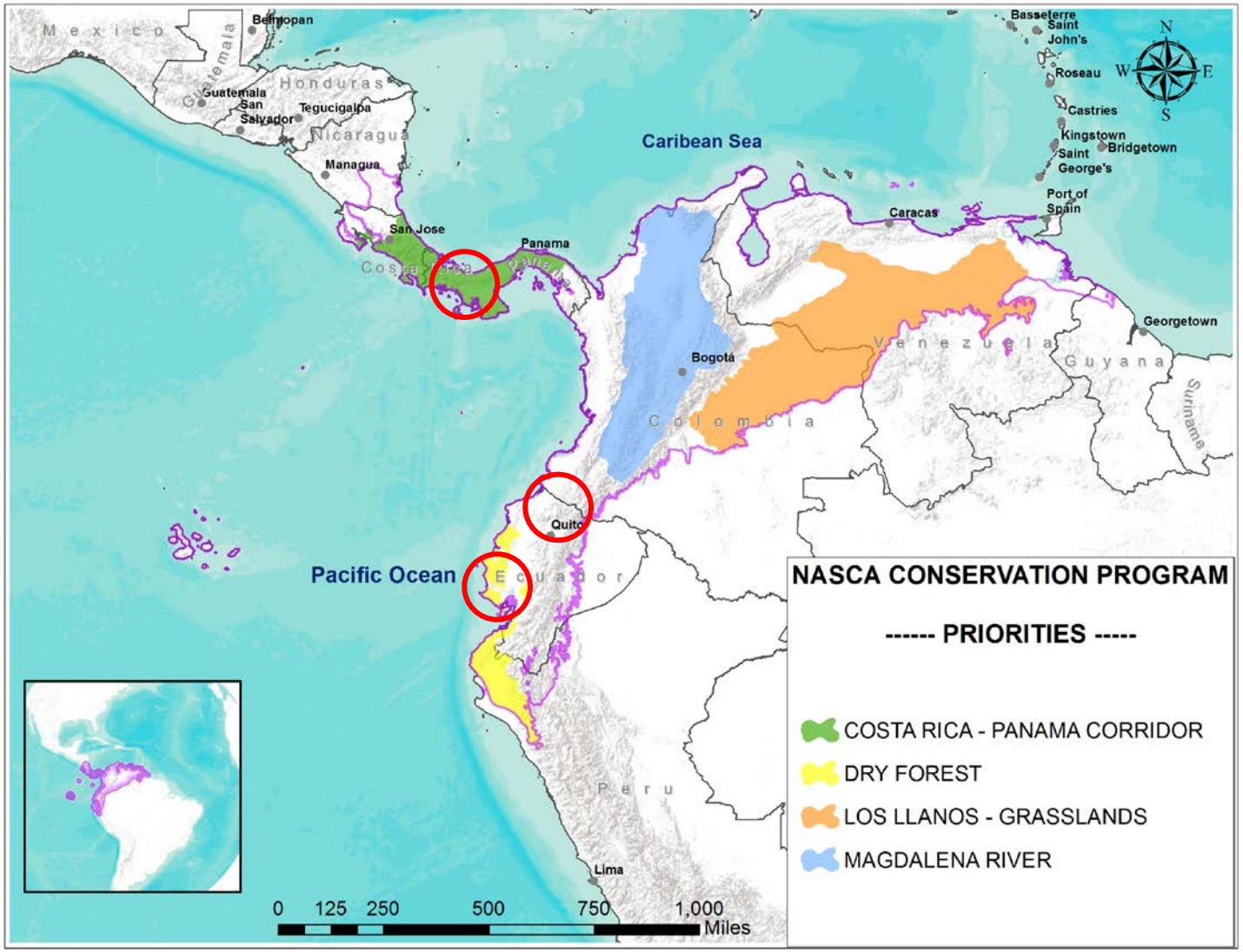
Caqueta a deforestation hotspot



698 561 ha

Project objectives and schedule

- Determine the spatial and temporal pattern of land use and land cover change inside an near to an protected area 2007-2009-2010.
  - ↓ 240 FBD and 240 FBS
- Applications of REDD+ for sustainability and conservation of indigenous territories
  - ↓ 20 FBD and 20 FBS. GLAS/LIDAR 2008.


Mexico
Belmopan
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Guatemala
San Salvador
Tegucigalpa
Nicaragua
Managua
San Jose
Costa Rica
Panama
Caribbean Sea
Basseterre
Saint John's
Roseau
Castries
Kingstown
Saint George's
Bridgetown
Port of Spain
Caracas
Georgetown
Venezuela
Guyana
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Thanks!!

cpedraza@TNC.ORG

Special thanks to Dalton Valeriano INPE