



## Objectives

This Newsletter and Applied Science Report is issued quarterly from the NASA-CASA Forest Carbon team at Ames Research Center.

It is intended to update interested program officials in the areas of applied Earth sciences, tropical forest carbon, land cover and land use change, and partnerships with other agency partners in the U.S. Federal Silvacarbon program.

**SilvaCarbon**, named after the Latin word for forest, is the United States Government contribution to the GEO Forest Carbon Tracking task, a component of the Global Earth Observation System of Systems (GEOSS), which provides data and information about a variety of Earth observations to users around the world.

For more background information, go to: <http://swp.gmu.edu/silvacarbon/>



Aerial photograph land cover change in Gabon, West Africa

## In this issue

- Report of SilvaCarbon Tech Team **P.1**
- Latest Applied Science Results **P.2**
- Innovations in Forest Carbon **P.2**
- New and Pending Publications **P.2**
- CASA Outreach and Partnerships **P.3**
- Upcoming Events **P.3**

## Report from SilvaCarbon Technical Team

Highlights from Nov-Dec 2013 included:

### **Andes** Update on regional work plan implementation (Sylvia Wilson)

- Next GFOI workshop in Columbia in the first week in Jan on biomass mapping with a fieldwork component in cooperation with Finland.
- Convening a large GFOI capacity building meeting in Colombia in March.

### **Gabon** Update on work plan implementation (John Poulsen)

- LIDAR proposal under review.
- Close to 100 field measurement plots established currently.

### **Vietnam** Update on work plan (Darcy Nelson, Doug Muchoney)

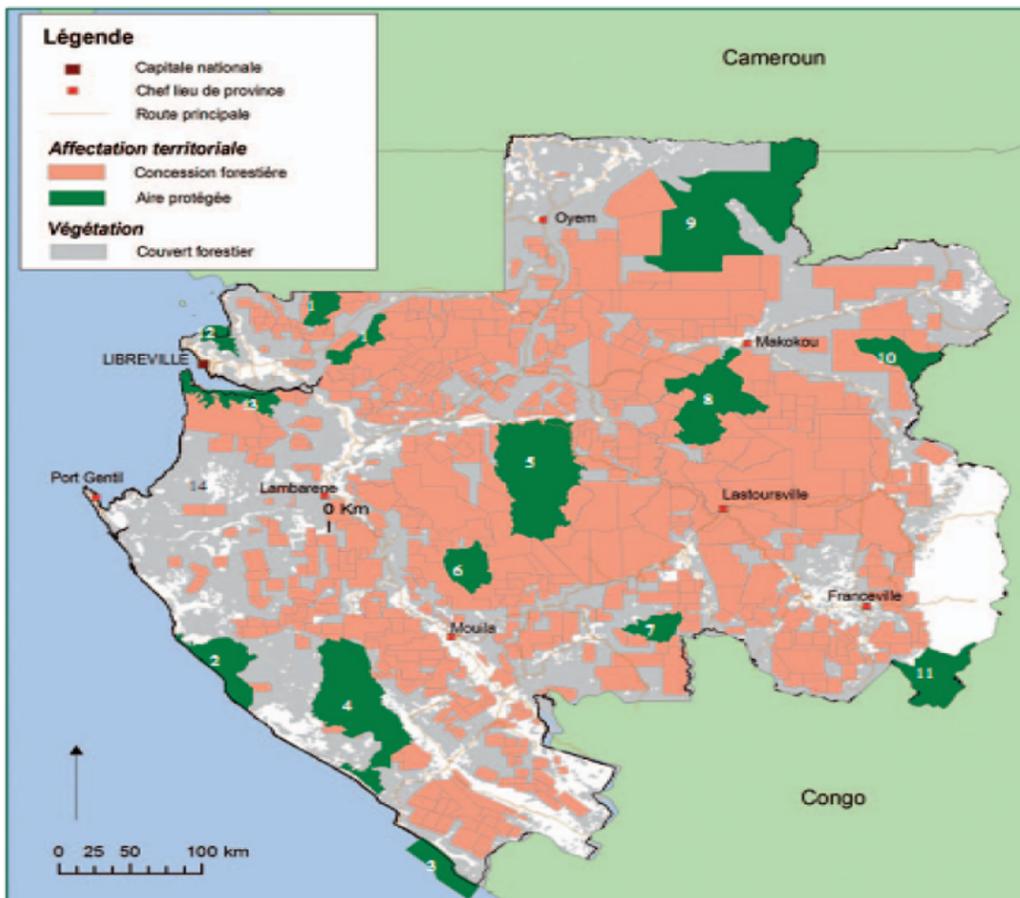
- A team of three forest inventory detailers currently in country conducting a training on forest carbon measurement and QA/QC
- In January Chip Scott will be in Vietnam to do training on sampling design.

### **Asia Regional** Update on work (Darcy Nelson, Christa Anderson)

- Workshop in October with FAO went well; identified initial regional needs.
- Upcoming workshop in January for 6 countries including GFOI coordination in cooperation with FAO, Norway, Australia.



## Latest NASA-CASA Applied Science Results



### CASA-CQUEST Landsat Focus on Gabon, West Africa

The CASA team is working closely with John Poulson of Duke University to support SilvaCarbon work in the Central African nation of Gabon. Gabon's forests cover about 20 million ha (60-80 percent of the country) and serve as a large carbon reservoir, sequestering up to 5 Gigatons C. Until recently, Gabon's small population, combined with high revenues from oil production, has protected its forests from exploitation. With declining oil revenues, increased pressure has been placed upon the country's forest resources. J. Poulson has sent the CASA team at NASA Ames a data base of more than 100 locations across Gabon where his team is establishing inventory measurement plots. Landsat 8 imagery is being screened and collated for CASA model runs over selected plot locations to expand forest carbon inventories.

### **New and pending publications from the NASA CASA team**

Potter, C., S. Klooster, V. Genovese, C. Hiatt, 2013, Forest production predicted from satellite image analysis for the Southeast Asia region, *Carbon Balance and Management*, 8: 9.

Potter, C., S. Klooster, V. Genovese, C. Hiatt, S. Boriah, V. Kumar, V. Mithal, and A. Garg, 2012, Terrestrial ecosystem carbon fluxes predicted from MODIS satellite data and large-scale disturbance modeling, *International Journal of Geosciences*, doi:10.4236/ijg.2012.

Potter, C., S. Klooster, and V. Genovese, 2012, Net primary production of terrestrial ecosystems from 2000 to 2009, *Climatic Change*, doi:10.1007/s10584-012-0460-2.

The global map viewer for these data is publicly available at:  
<http://geo.arc.nasa.gov/sge/casa/cquestwebsite/>

### Innovations from the NASA-CASA Forest Carbon Team

- The CASA-CQUEST global map viewer has been translated into Spanish for our partners in Latin America. Spanish speakers from the Earth Systems Science and Policy Department at California State University Monterey Bay are assisting the NASA-CASA team with translation of background material, user guides, and map legends.
- Landsat 8 images are beginning to become available to the SilvaCarbon project. These new NASA products will greatly aid in overcoming the shortage of TM images in the Asia region and the scan-line interference problems experienced in ETM+ images for forest carbon change.
- The 2013 *CBM* publication from Potter et al. (first in list at left) was shared with Latin America colleagues who are interested in using the CASA model's annual change in forest carbon to conservatively define the upper limit for the amount of harvested wood products that can be removed and still avoid degradation.



<http://geo.arc.nasa.gov/sge/casa/>

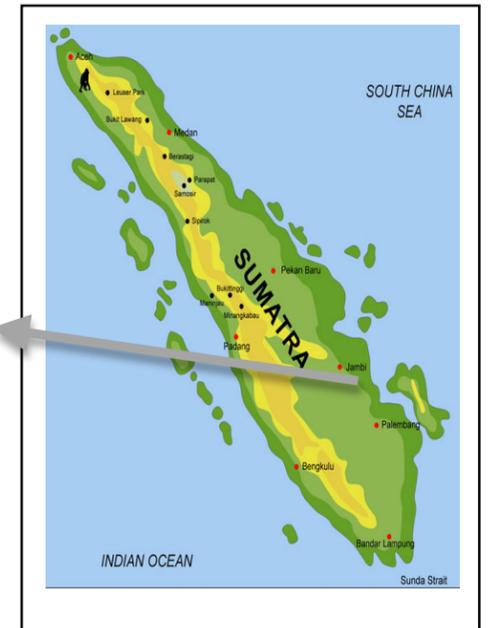
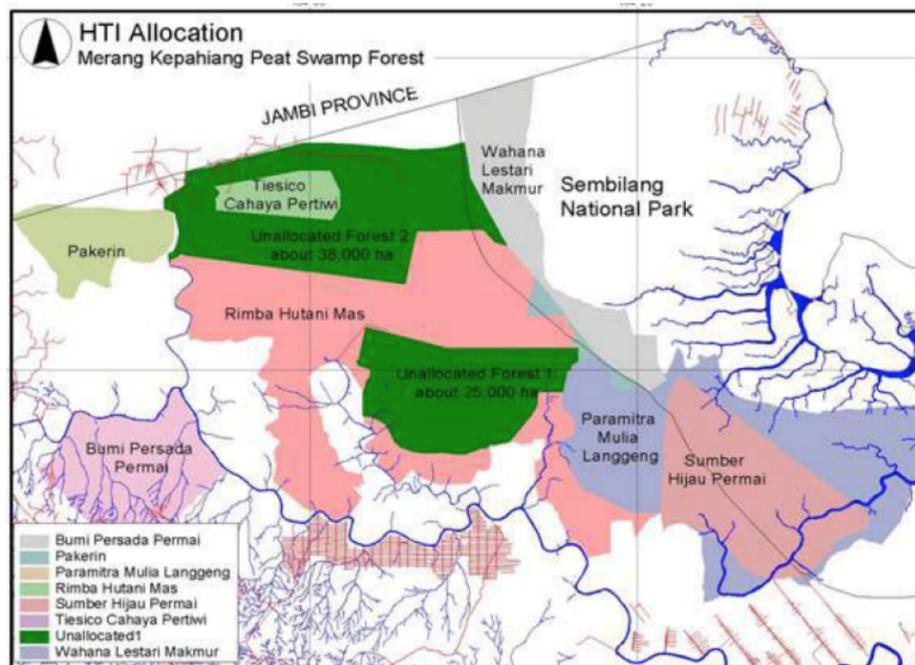
## CASA Outreach & Partnerships

- Lowering Emissions in Asia's Forests (LEAF) program
- USDA Forest Service, National Inventory and Monitoring Applications Center
- The Nature Conservancy, Climate Change Team
- Conservation International, Center for Applied Biodiversity Science
- World Resources Institute, Global Forest Watch
- Ministry of the Environment of Peru (MINAM)
- SNV – Netherlands Development Organisation
- PanEco/YEL, Indonesia
- Mongabay.com
- FORCLIME

### Contact for more information:

Christopher Potter  
Senior Research Scientist  
NASA Ames Research  
Center \* Mail Stop 232-21  
Moffett Field, CA 94035  
Tel. 650-604-6164  
EMAIL ADDRESS:  
Chris.Potter@nasa.gov

## Latest NASA-CASA Applied Science Results (continued)



### CASA-CQUEST Landsat Focus on Merang REDD Pilot Project South Sumatra, Indonesia

The CASA team is working closely with the FORCLIME Forests and Climate Change Programme in Indonesia to develop a baseline for measuring degradation in the inventory of stored forest carbon for the Merang REDD Pilot Project (MRPP). The Merang area is the last contiguous peat swamp forest in South Sumatra province. The project site covers approximately 24,000 ha within the Merang peat swamp forest area. The NASA Ames team has started to process Landsat 8 image data to create cloud-free forest carbon change maps, circa 2013-14, for the MRPP area. The MRPP is conducting a study on allometric equations in peat swamp forests to realize a higher level of precision in carbon calculations. The nearest forest type which has been studied for allometric equations is the Jambi lowland secondary forest.

### Upcoming Events

MGD presentation to GEO Plenary , January 2014

Forests Asia Conference CIFOR , Mar 20 - 21, 2014, Jakarta, Indonesia

International Conference – Forest Change 2014, IUFRO & others,  
April 02 - 04, 2014, Freising, Germany

<http://geo.arc.nasa.gov/sge/casa/>