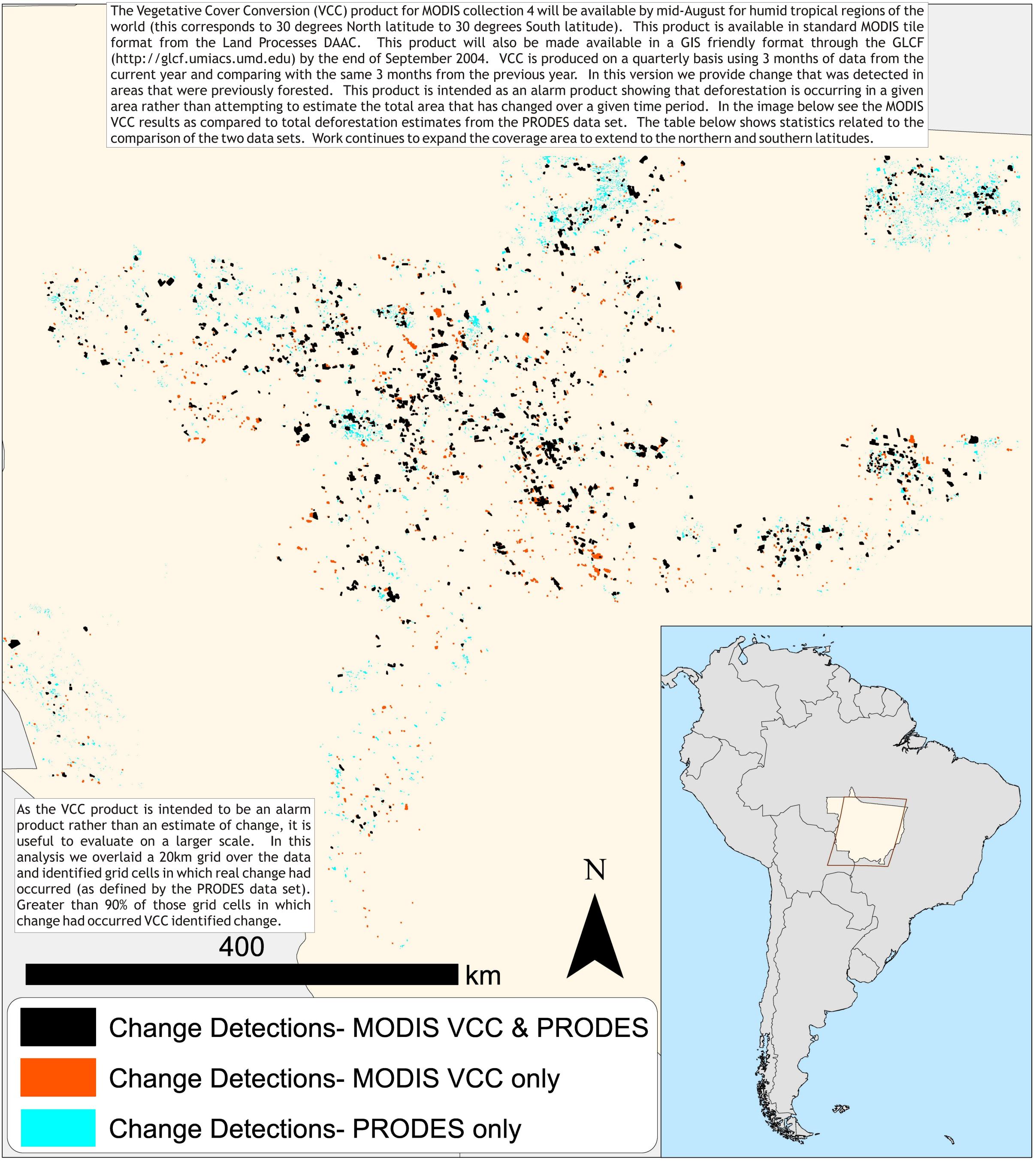




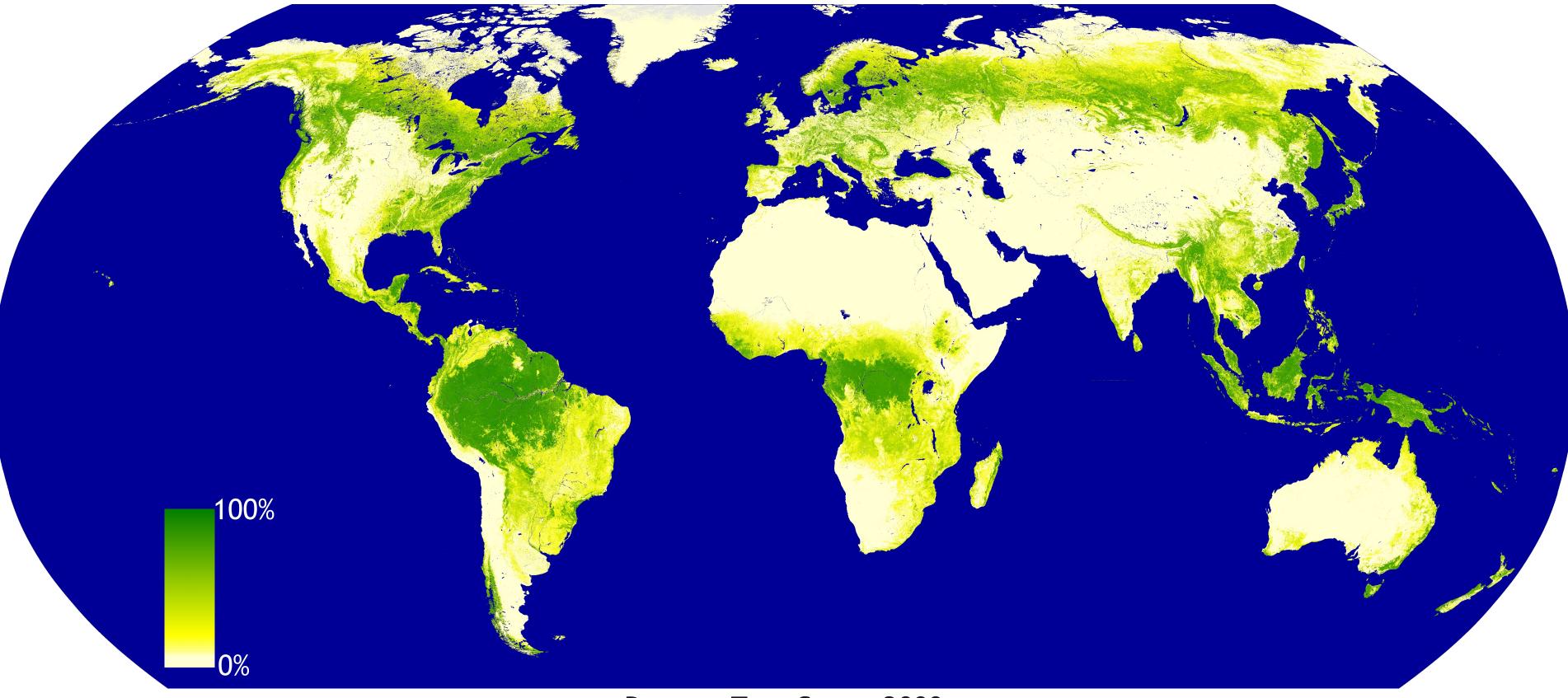
MOD44A Vegetative Cover Conversion (VCC) A comparison of VCC and the PRODES deforestation dataset in Mato Grosso, Bazil



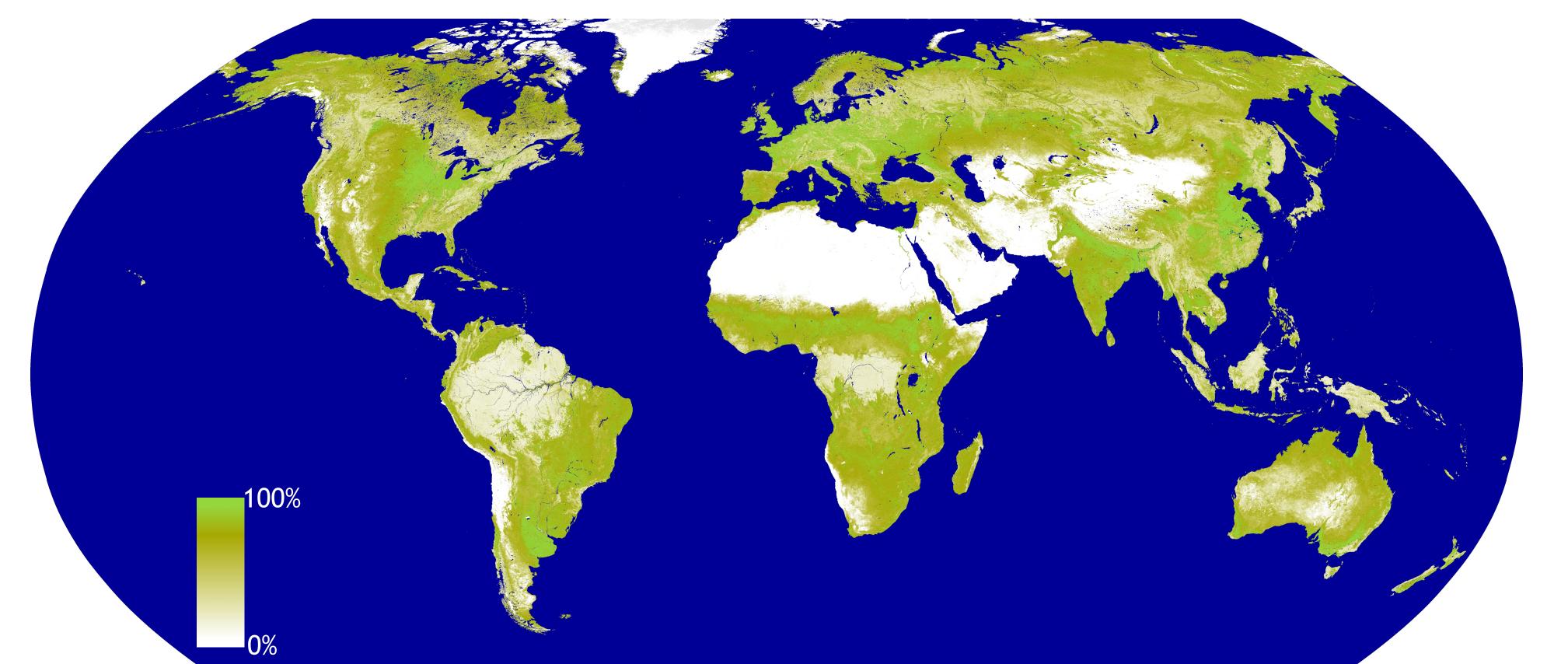
Enhanced Land Cover and Land Cover Change Products from MODIS John Townshend^{1,2,3} Matthew Hansen¹, Robert Sohlberg¹, Ruth DeFries^{1,2} Mark Carroll¹, Charlene DiMiceli¹, James Tedrick¹

1. Department of Geography, 2. Institute for Advanced Computing Studies, 3. Earth Systems Science Interdisciplinary Center University of Maryland

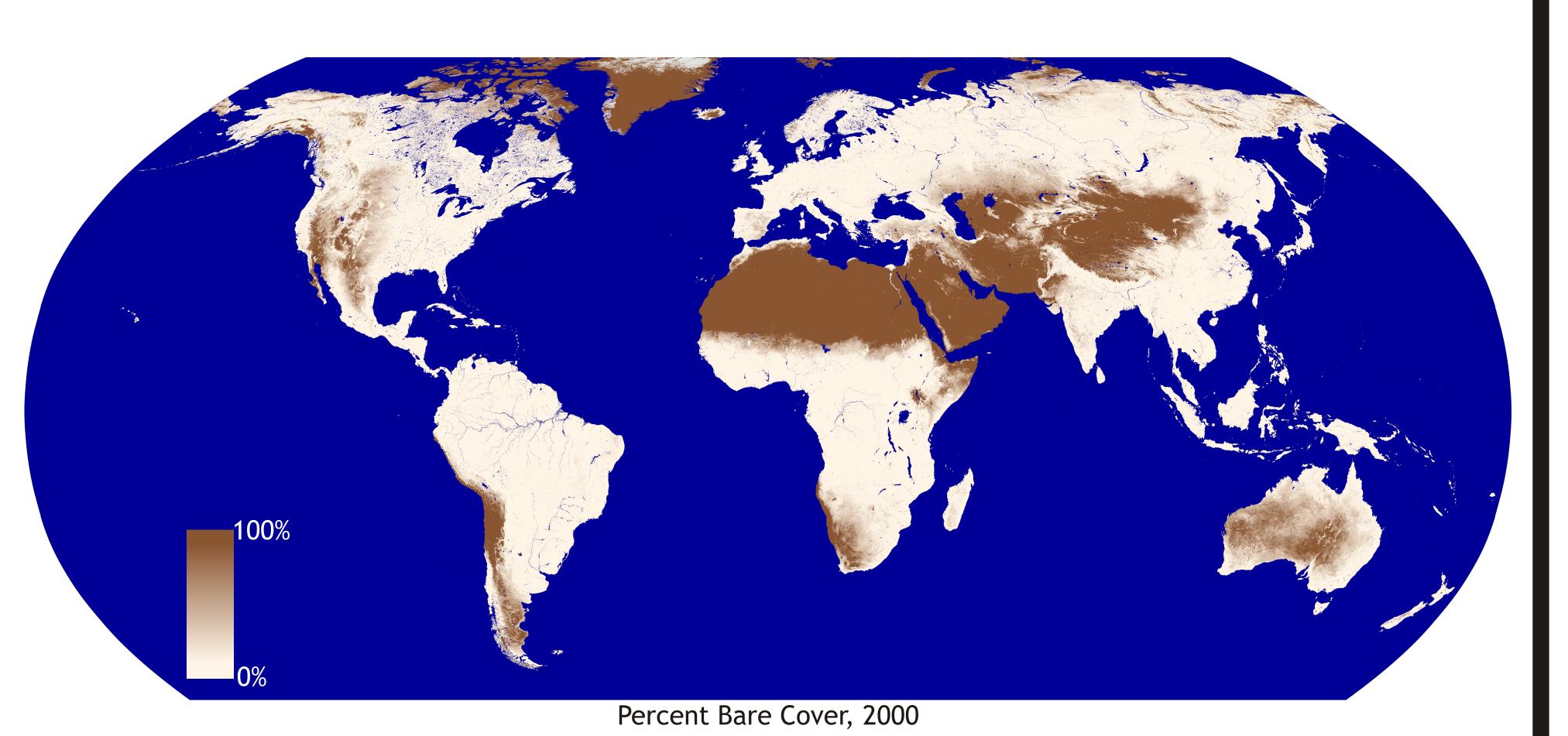
MOD44B **Vegetation Continuous Fields (VCF)**



Percent Tree Cover, 2000



The first release of the MODIS Vegetation Continuous Fields product is now available for download. This version contains only the percent tree cover layer with the other layers to follow in a later release. This product was generated from monthly composites of 500 meter resolution MODIS data. The MOD09A1 Surface Reflectance 8 day composites were used as inputs to the 32 day composites. Compositing was based on the second darkest albedo to remove clouds and cloud shadow. All 7 500m bands were used to derive metrics for the calculation of the percent tree cover.



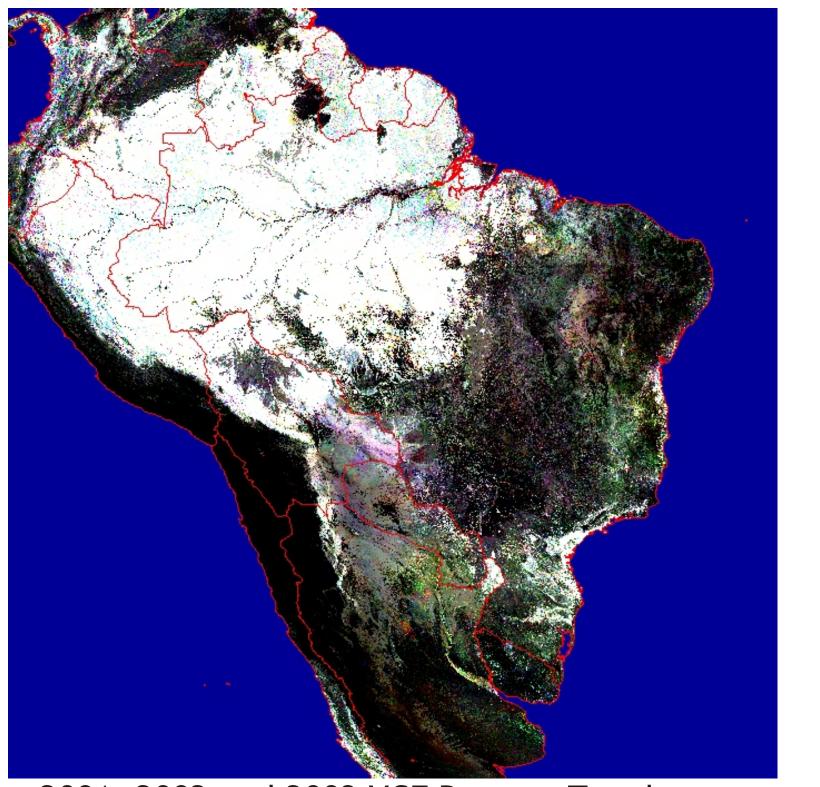
Proportional estimates of cover model is then used to estimate aerial proportions of:

. life form (proportion of woody vegetation, herbaceous vegetation, or bare ground)

2. leaf type (proportion of woody vegetation that i needleleaf or broadleaf)

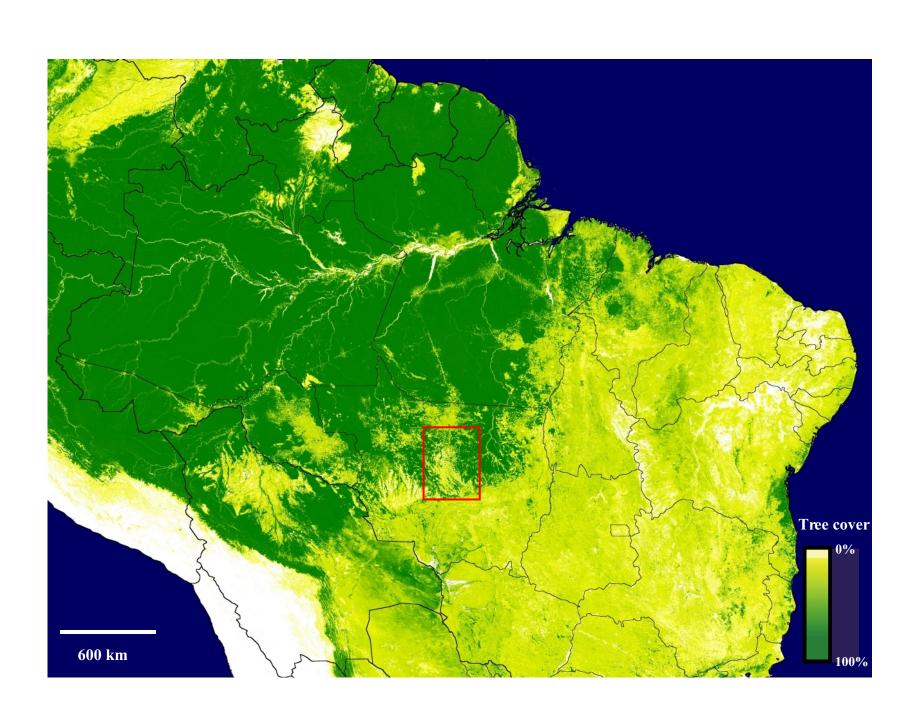
3. leaf longevity (proportion of woody vegetation that is evergreen or deciduous)

Inter - Annual Land Cover Change

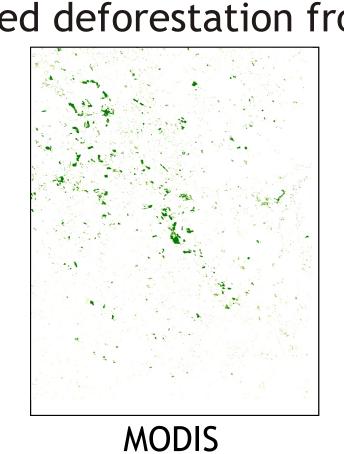


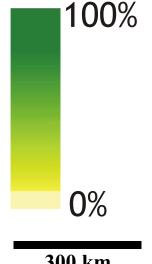
2001, 2002 and 2003 VCF Percent Tree layers

Percent Herbaceous Cover, 2000









300 km deforestation for 2003



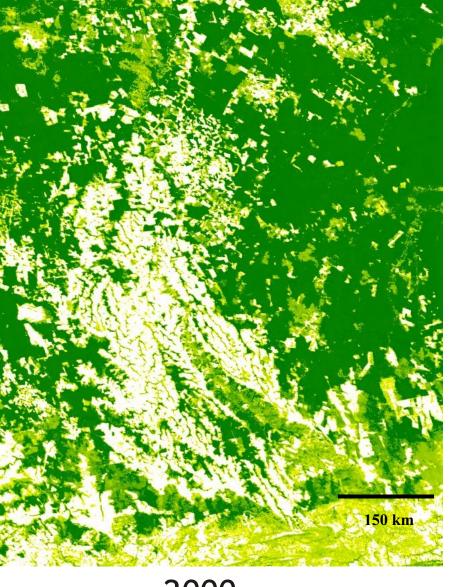
Successive vegetation continuous field depictions can be employed to detect land cover change. The continuous estimates can be used in a difference imaging approach to delineate pixels exhibiting an increase or decrease in cover. Early results show the clear identification of extensive forest and woodland clearing in South America and Indonesia, as well as the detection of forest fires at higher latitudes which result in a measurable loss of canopy cover. Additionally, new approaches to measuring crop cover in continuous form have shown promise in detecting continent-wide expansion of soybean farming in South America. Combining various thematic vegetation estimates through time allows for a detailed analysis of land cover and land use dynamics at regional, continental and global scales.

Inter-annual change in Mato Grosso, Brazil, 2000 - 2004

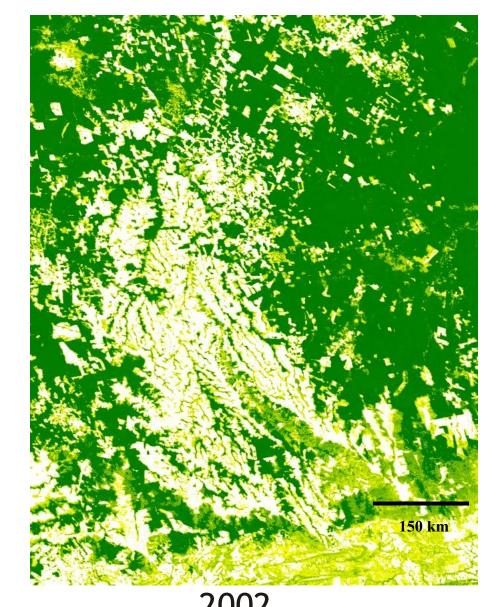
Comparison of Inter-annual Change detection with PRODES (observed deforestation from Landsat ETM+

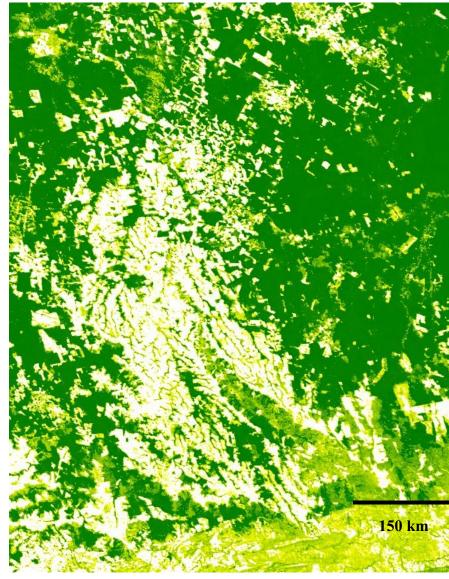
Red = MODIS, Cyan = ETM+ MODIS misses many smaller clearings and has

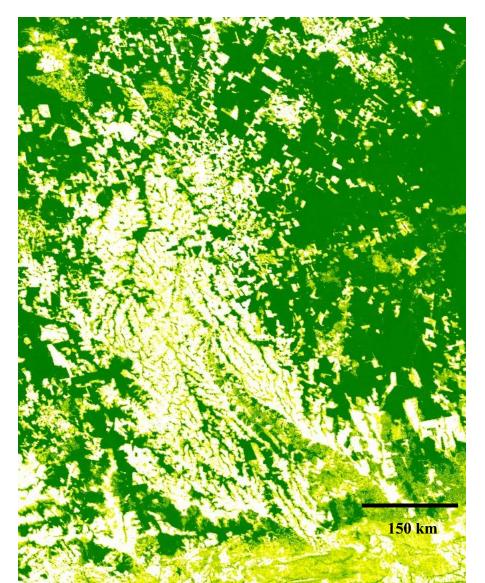
less spatial fidelity (blurry). Total change area of MODIS = 60% of ETM+ estimate MODIS estimates show doubling of clearing in Mato Grosso from 2001 to 2003, a nearly 2% rate of











Deforestation 2000 - 2003

