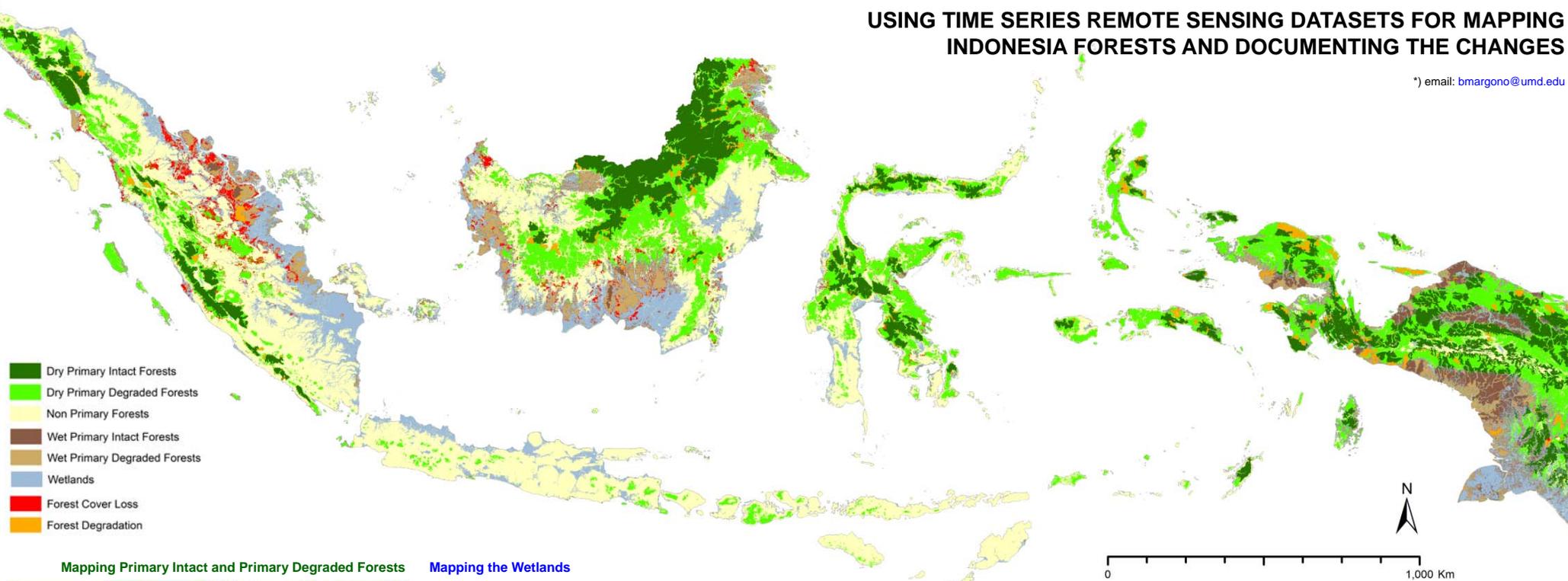


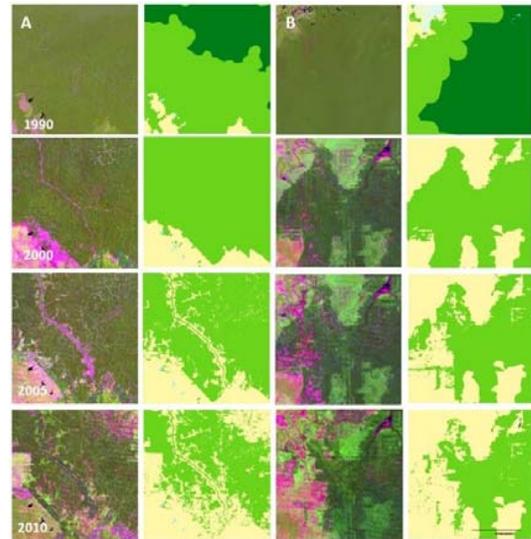
USING TIME SERIES REMOTE SENSING DATASETS FOR MAPPING INDONESIA FORESTS AND DOCUMENTING THE CHANGES

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- Dry Primary Intact Forests
- Dry Primary Degraded Forests
- Non Primary Forests
- Wet Primary Intact Forests
- Wet Primary Degraded Forests
- Wetlands
- Forest Cover Loss
- Forest Degradation

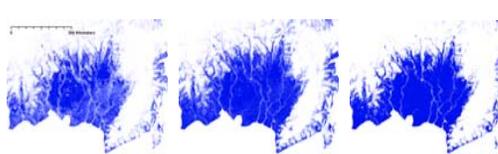
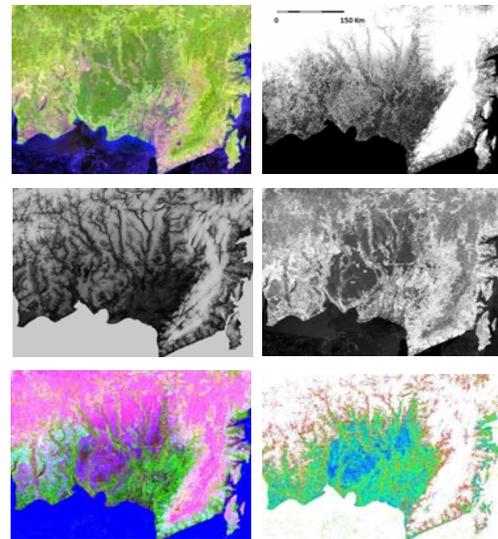
Mapping Primary Intact and Primary Degraded Forests



Primary intact forest (IFL) is an unbroken expanse of primary forest absent signs of significant human activity and having an area of at least 500 km² (Potapov et al, 2008);

Primary degraded forest is a primary forest which has been fragmented or affected by forest utilization or wood and/or non-wood forest products harvesting so that the forest canopy cover, structure and ecosystem processes have been altered (ITTO, 2002)

Mapping the Wetlands



Rationale

The work presented (i) a hybrid approach to quantify the extent and change of primary forest in Indonesia using a per-pixel supervised classification mapping followed by a GIS-based fragmentation analysis; (ii) Mapping of Indonesia's wetland cover as a single thematic class, including peatlands, other freshwater wetlands and mangroves is required to meet the need of monitoring forest resources objectives, and (iii) analyzing the results for 10 years (2000-2010).

Wetlands

A broad ecosystem characterized by water/hydrology, substrate (physicochemical features)/soils, and biota/vegetation (NAS 1995, Cowardin et al. 1979). Water supports the development of characteristic biota (hydrophytic vegetation) and substrate (hydric soil) more than otherwise and make water the most vital criterion for wetlands presence. Two main attributes of wetlands: the landform shape and water permanence (hydroperiod) (Semeniuk and Semeniuk 1995)

Forest cover loss defined as an area having experienced a stand-replacement disturbance;
Forest degradation is an area having experienced a transition from primary intact forest to primary degraded forest

Data sources and data validation

Landsat data, downloaded from GLOVIS (<http://glovis.usgs.gov/>) and GLS (<http://gls.umd.edu/>) for all Indonesia scene with cloud cover less than 50% and resampled to 60 m x 60 m spatial resolution.

LIDAR (light detection and ranging) data from the GLAS (Geoscience Laser Altimetry System) instrument onboard the IceSat-1 satellite, release 28 (L1A Global Altimetry Data and the L2 Global Land Surface Altimetry Data) downloaded from the National Snow and Ice Data Center (NSIDC, <http://nsidc.org/data/icesat/>).

DEM was derived from Shuttle Radar Topography Mission (SRTM), flown on board of shuttle Endeavour, derived from single pass interferometric synthetic aperture radar (InSAR) acquired in C-band at spatial resolution level of 3 arc sec

The 50 m orthorectified Phased array L-band synthetic aperture radar (PALSAR) on board of the advanced land observing satellite (ALOS) fine-beam (FB) mode in the single HH and dual HH+HV polarization



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