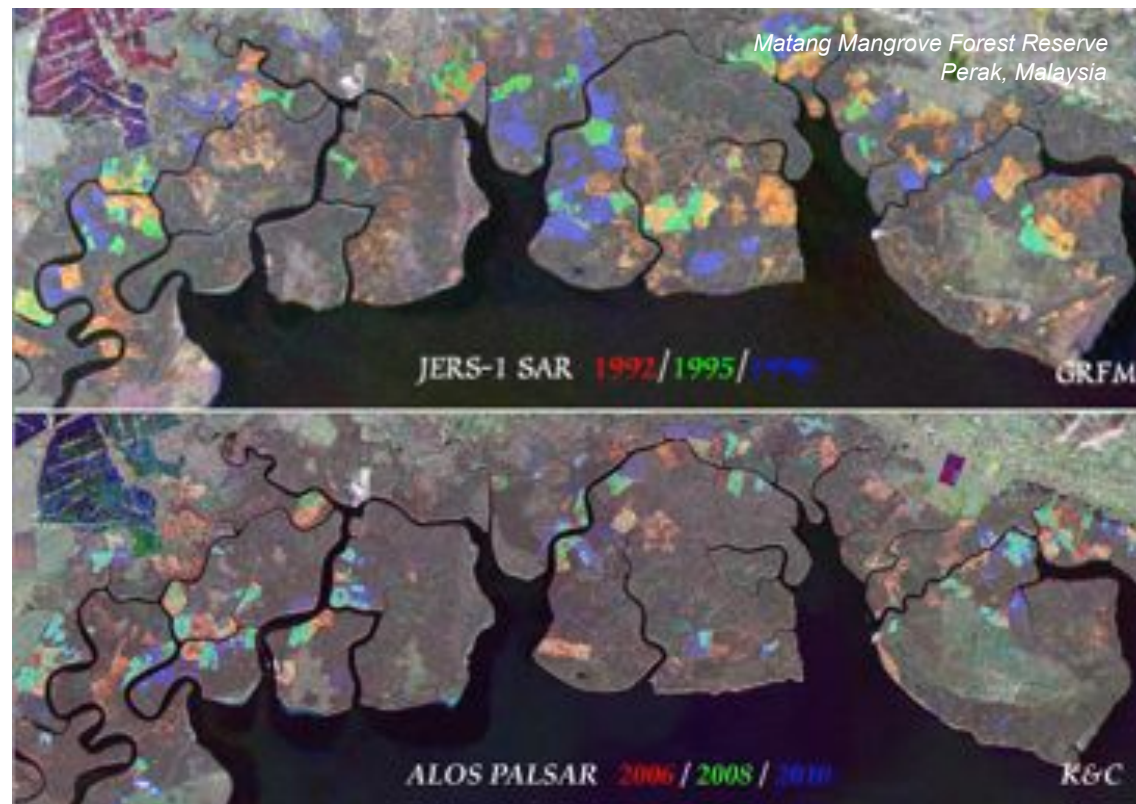
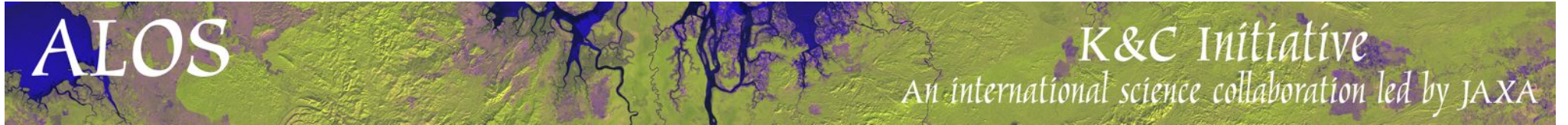


K&C Global Mangrove Watch Work Session

RESTEC HQ, Oct. 21, 2011





K&C Global Mangrove Watch (GMW)

Special Work Session

Objectives:

- Establishment of "K&C Mangrove Watch team"
- Discussions on technical/practical issues
- Development of a draft work plan / actions

K&C members (@KC#16) wishing to contribute to GMW

- Ake Rosenqvist - coordination
- Richard Lucas – technical lead
- Khali Hamzah – Peninsular Malaysia
- Dirk Hoekman – Borneo, Papua
- Enrico Paringit – Philippines
- Humberto de Mesquita – Brazilian coast
- Kyle McDonald – global coastal inundation
- Marc Simard & Lola Fatyinbo – Americas and Africa
- Lisa Rebelo – East Africa coast
- JAXA EORC team – Sumatra & other potential areas
- Bill Salas – Mekong delta
- Peter Scarth – Australia
- (other members?)

Some initial discussion notes

- *K&C GMW very relevant support to Ramsar Convention (Ramsar-JAXA MoU)*
- *USGS (Chandra Giri et al.) global mangrove extent map key reference data set for K&C GMW. Base year 2000, derived from Landsat data from 1998-2000. Pixel spacing 30 m.*
- *Simard and Fatyinbo have generated mangrove (stand) height maps (Africa and Americas?) derived from SRTM DEM. Height accuracy approx 2 m.*
- *Simard: Rule of thumb – relationship between height vs biomass approx a factor 10 (i.e. 10 m height \approx 100 t/ha)*
- *Lisa: Important to note that all reductions in mangrove areas (within a given mask) do not necessarily indicate “loss” of mangrove, as natural migration of mangroves from one place to another are a common cause for change.*
- *Mangrove extent using only PALSAR not straight-forward. Mapping of new mangrove areas outside the USGS-2000 mask a challenge. Changes (migration) however expected to occur in the vicinity of existing mangroves and analysis in a buffer zone around the USGS mask should be considered.*
- *Enrico: Should Nipah palms be included in the mangrove class? (common in the Philippines) Needs to be verified.*

Foreseen GMW products

Quick demonstration product (demo at Ramsar COP 06/2012?)

- Annual mangrove change maps (2007/08, 08/09, 09/10) within the USGS-2000 mangrove mask

2012-2014 time frame

- Mangrove extent derived from PALSAR (update +/- of USGS-2000 mask) – base year 2007
- Change map USGS-2000 vs PALSAR-2007
- PALSAR mangrove extent 2008, 2009, 2010
- Change maps 2007/08, 08/09, 09/10
- Structural classification?

*Annual change maps (2007-2010) within the
USGS-2000 mangrove mask*

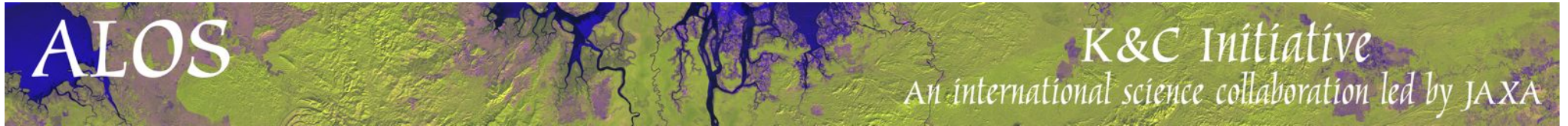
- It should be noted that new mangrove areas outside of the USGS-2000 mask are not included in this “quick” product – important to clearly state in the product description.*
- Mangrove expansion however only represent a small fraction of total mangrove change – and it is the decrease of mangrove however critical issue.*
- Aim to finish during first half of 2012. First version by next K&C Science Team meeting (KC#17, March 2012)*
- Suitable demonstration product for Ramsar COP meeting (Romania, June 2012). Lisa will investigate possibility of joint side-event with ESA GlobWetland.*

Mangrove extent 2007

- *Mangrove extent PALSAR vs USGS-2000 (including modification of USGS-2000 boundary)*
- *Suggested PALSAR base year: 2007 (initially)*
- *Need to consider a buffer zone around the USGS mask where possible expansion is expected to have occurred*

Change map USGS-2000 vs PALSAR-2007

- *PALSAR data layers: backscatter intensity (16-bits gamma-0), local incidence angle, acquisition date (days since ALOS launch), mask info (normal, ocean, shadow, layover, etc.)*
- *classification code based on LCCS*



Mangrove extent 2008, 2009, 2010

Change maps 2007/08, 08/09, 09/10

- *Same as previous products, but for the rest of the remaining PALSAR years*

Mangrove structure and biomass

- *Higher level products – generation still TBD*

Notes:

- *Proproots vs. non prop root mangroves (note different backscatter for mangroves with and without prop root systems (prop root mangroves show decrease in backscatter for stands with biomass above apperox 100-120 t/ha (TBC))*
- *Use stand height as a continous variable (available from SRTM)*
- *Important parameters: habitat type, species*

Work flow and action items for development of initial demo mangrove change product

- *GMW members to provide lat/long coordinates for 1-2 deg tiles over selected mangrove reference areas (1–10 sites/member) – email to Ake and Richard by 15 Nov, 2011.*
- *Based on input from GMW members, Ake to put together data request file and submit to JAXA for generation of 2007-2010 PALSAR mosaic tiles sequence. JAXA provides data to GMW members (after agreements have been signed)*
- *Richard to set up GMW page on the K&C Wiki (ID & paswd: ALOS-KC)*
- *Richard develops initial eCog rule-set for mangrove change classification, based on the member test site tiles*
- *Team evaluates classification results (iterative with Richard)*
- *v.1 rule set to be provided to JAXA to be applied when JAXA generates the next version of the global FNF map.*