

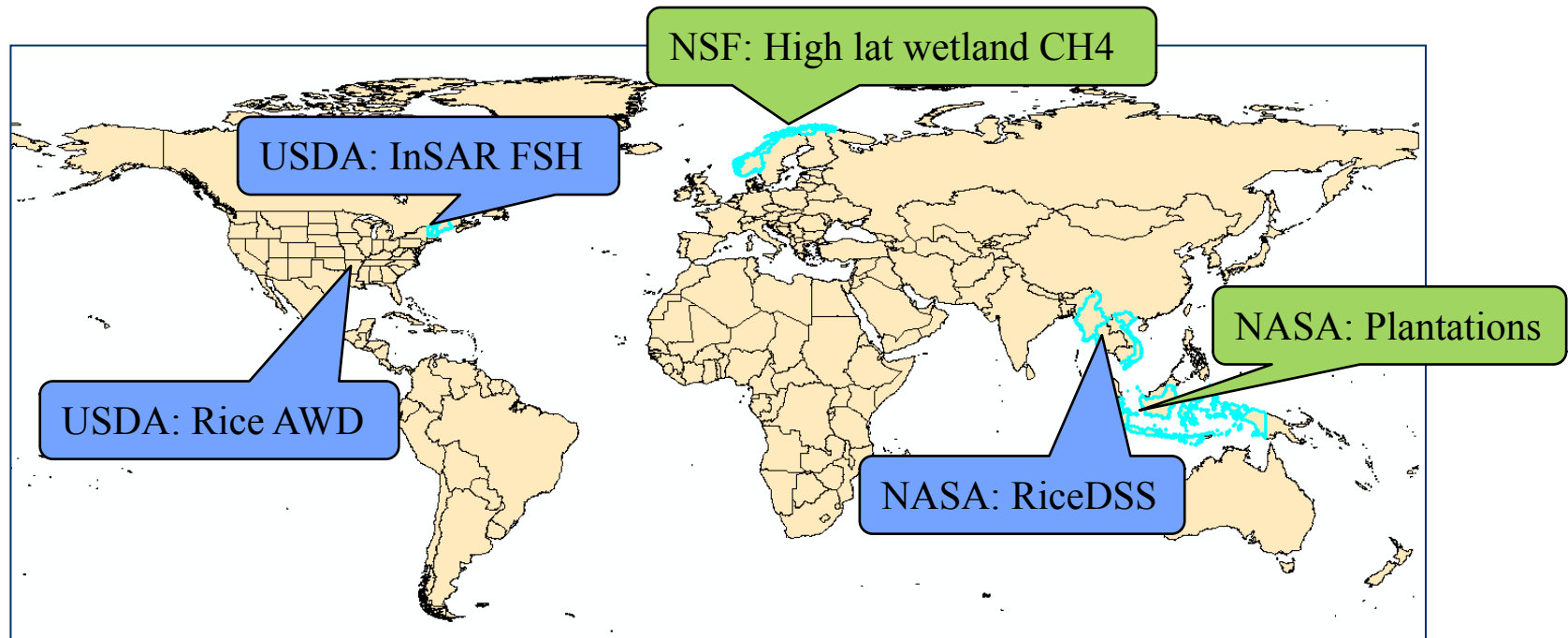
K&C Phase 4 – Status report

*Operational rice mapping and forest structure assessment
to support the 3Cs*

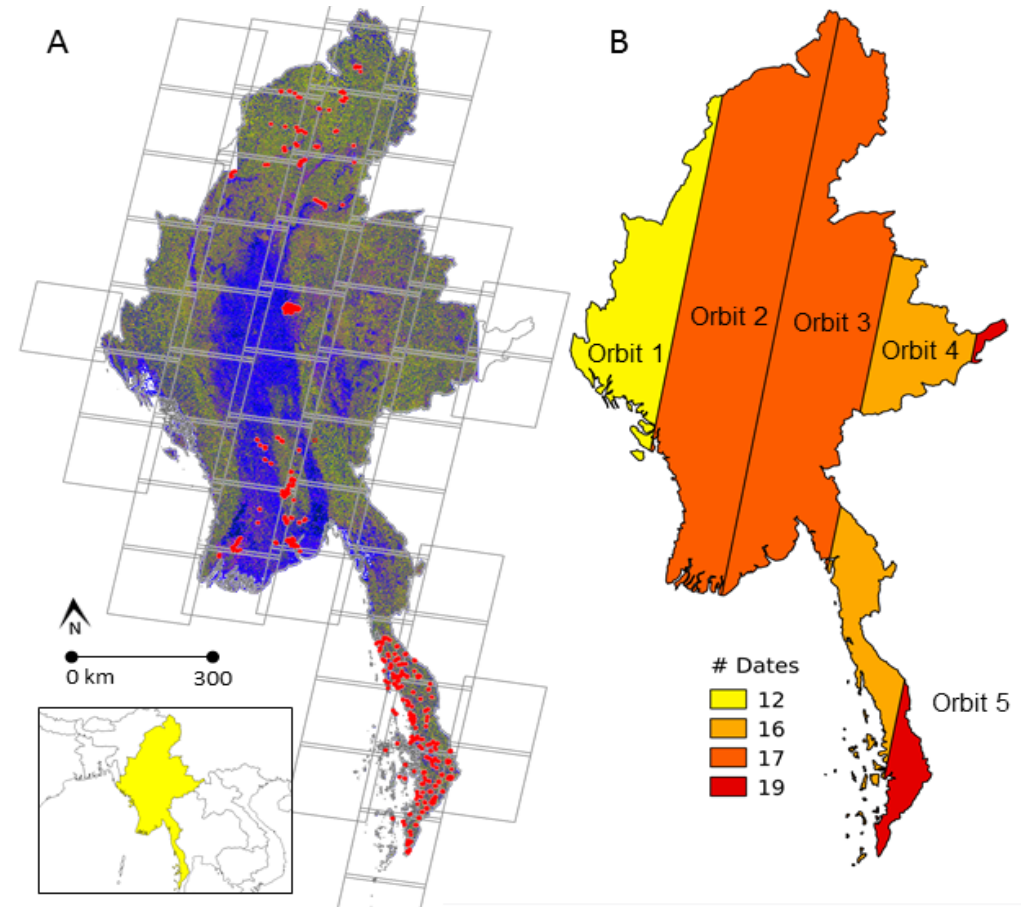
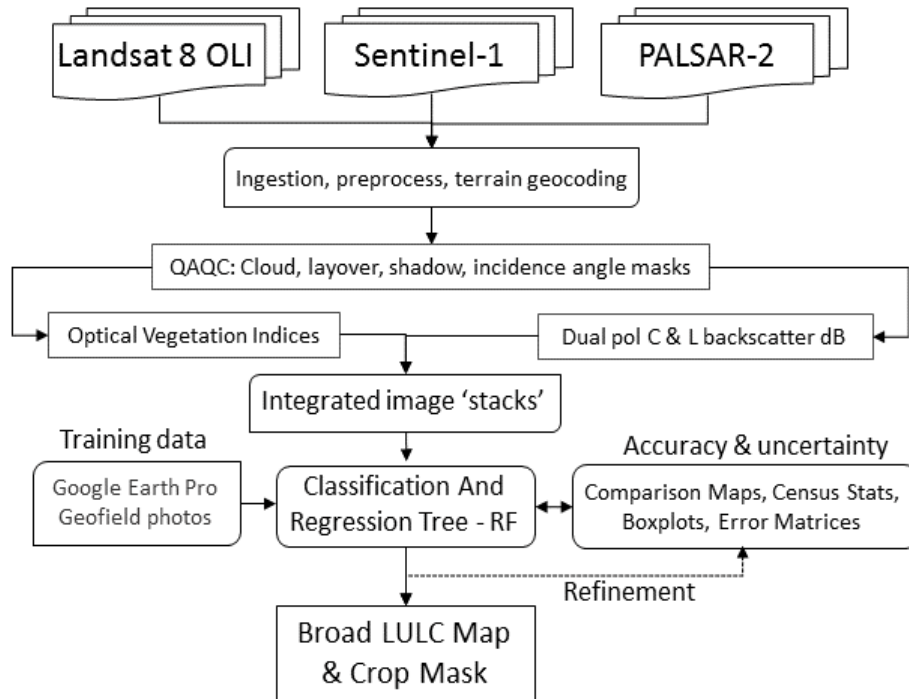
*Nathan Torbick, William Salas
Applied GeoSolutions*



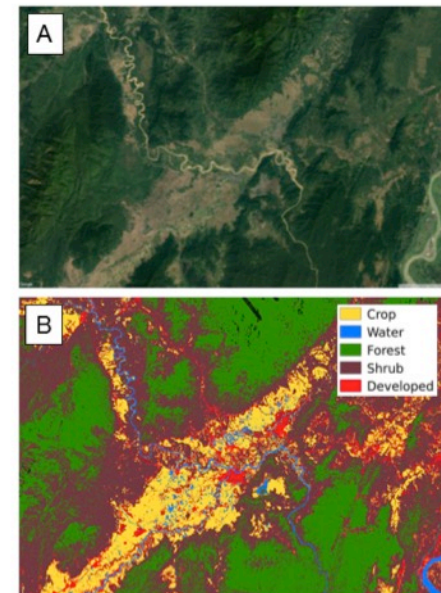
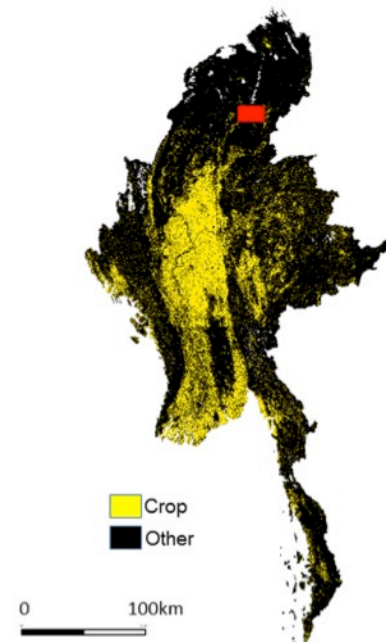
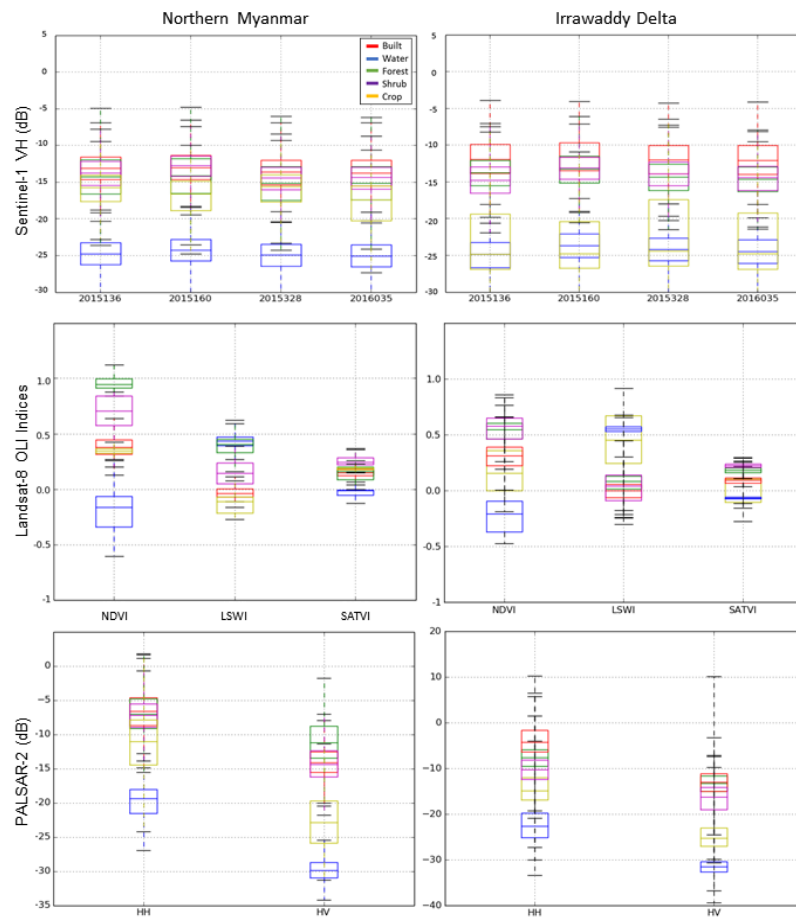
Map of ongoing projects leveraging PALSAR-2 & supporting K&C



Results and significant rice findings thus far

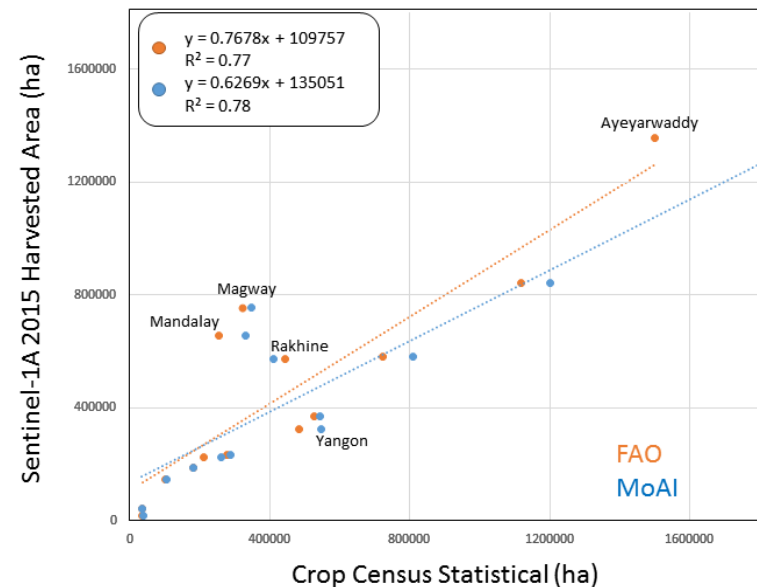
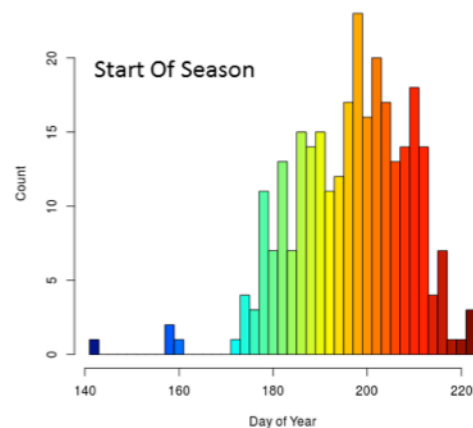
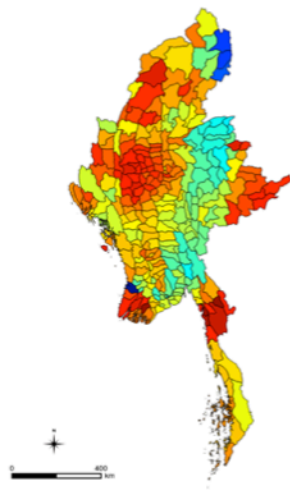
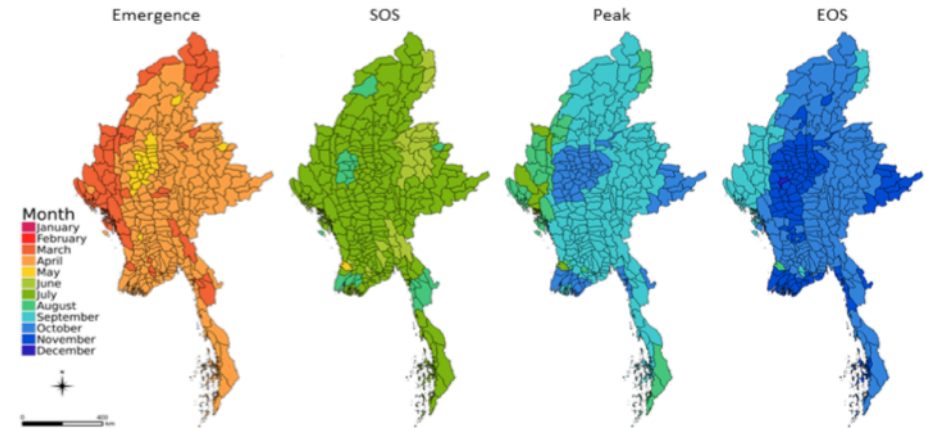
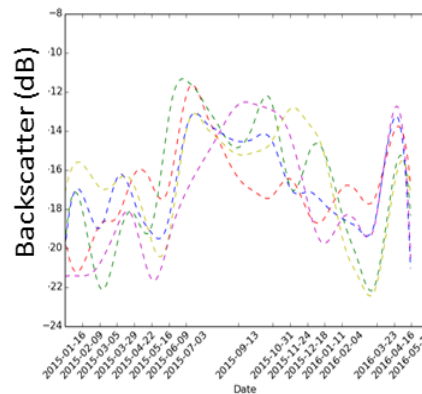
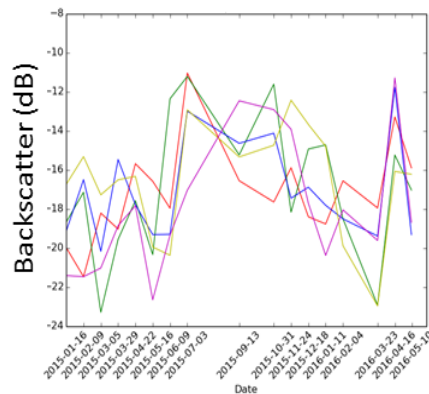


Results and significant rice findings thus far



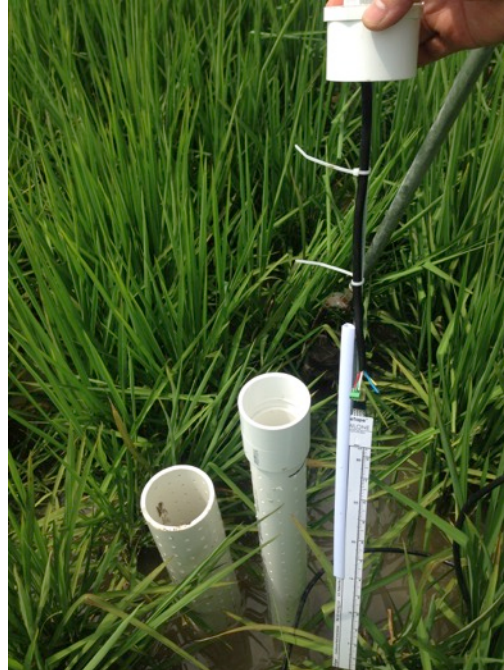
Landsat-8	0.94
Landsat-8, PALSAR-2	0.95
Landsat-8, Sentinel-1	0.94
Sentinel-1, PALSAR-2	0.71
Landsat-8, Sentinel-1, PALSAR-2	0.95

Results and significant rice findings thus far

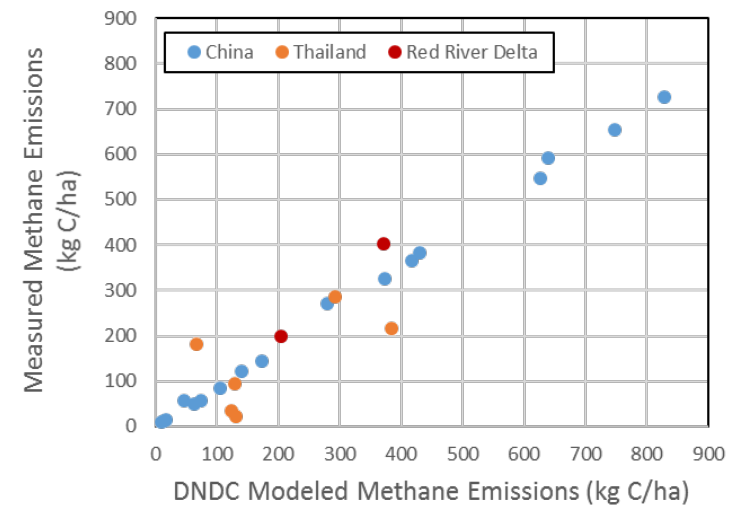
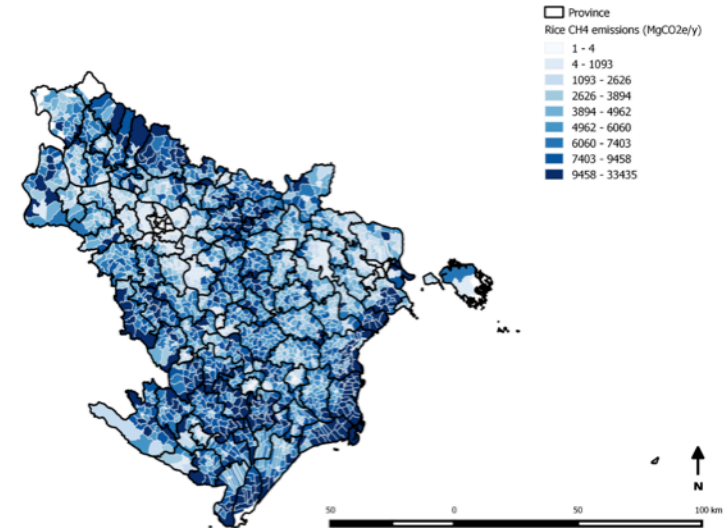
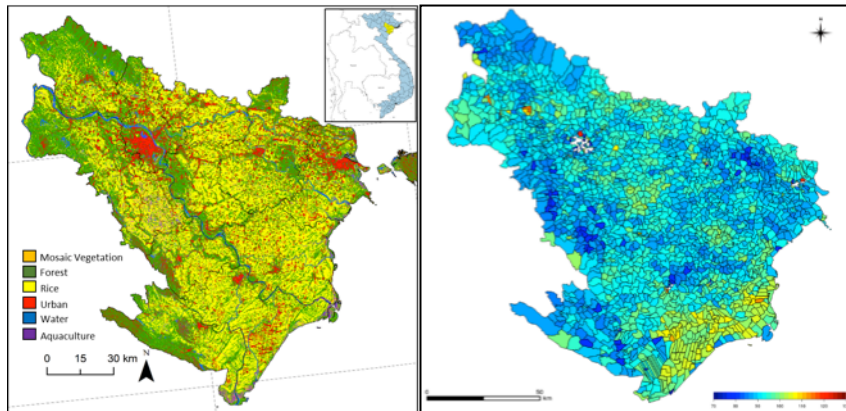


ALOS

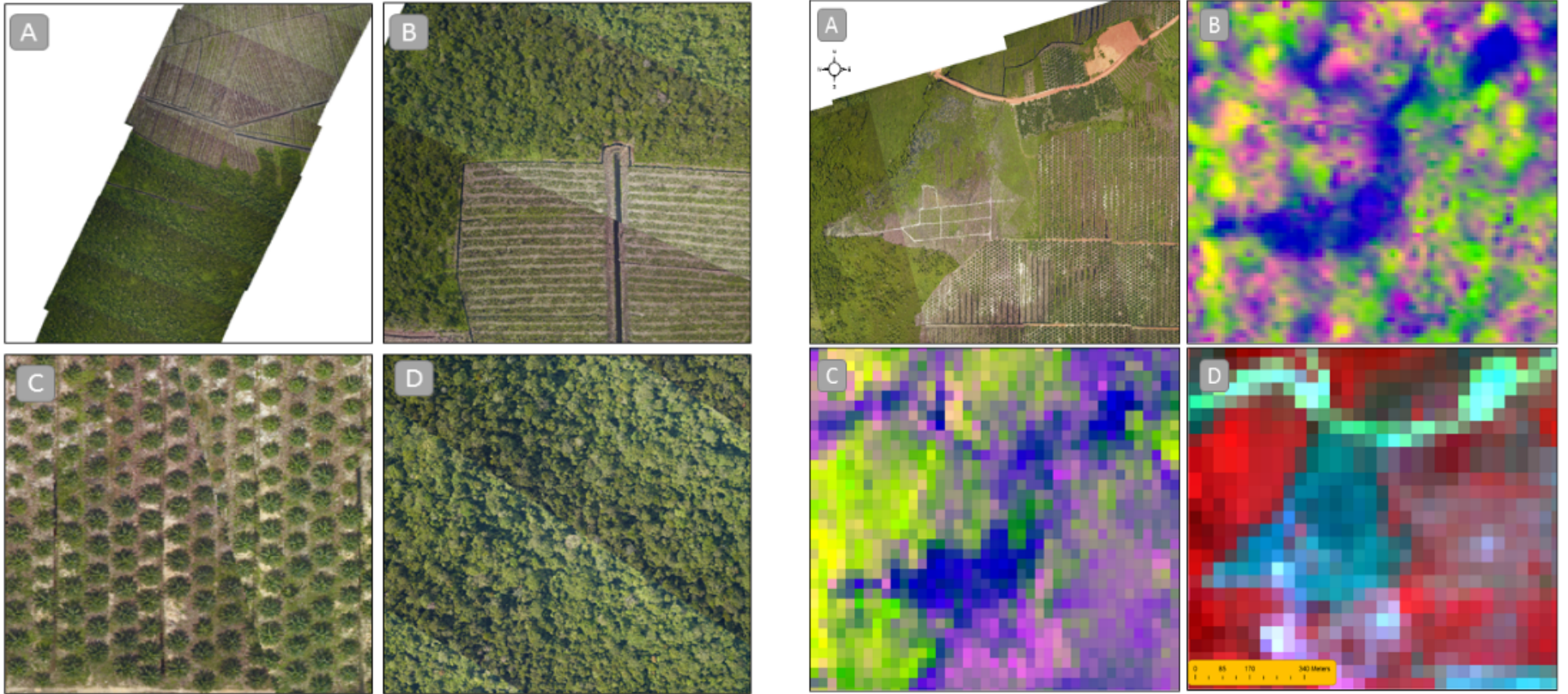
K&C Initiative
An international science collaboration led by JAXA



Results and significant findings thus far

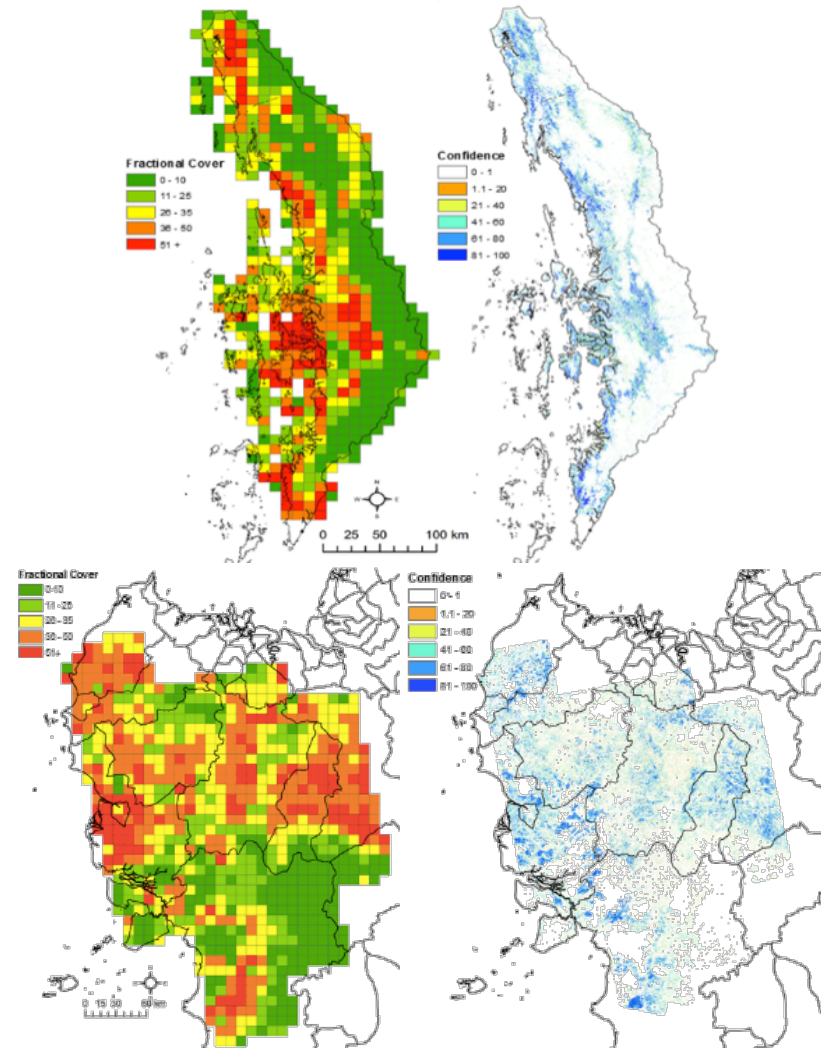
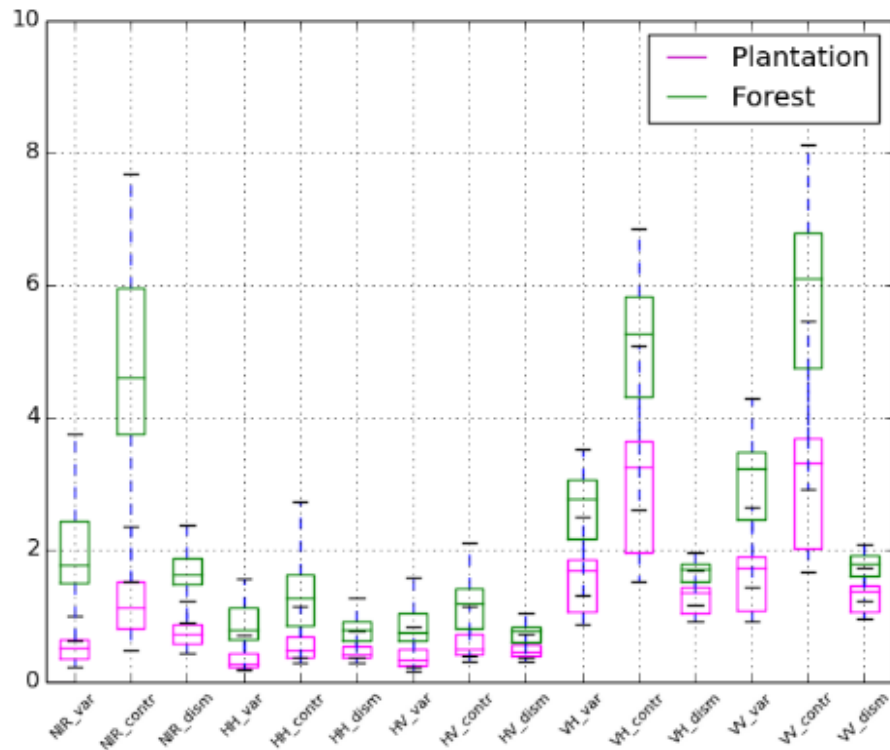


Results and significant plantations findings thus far

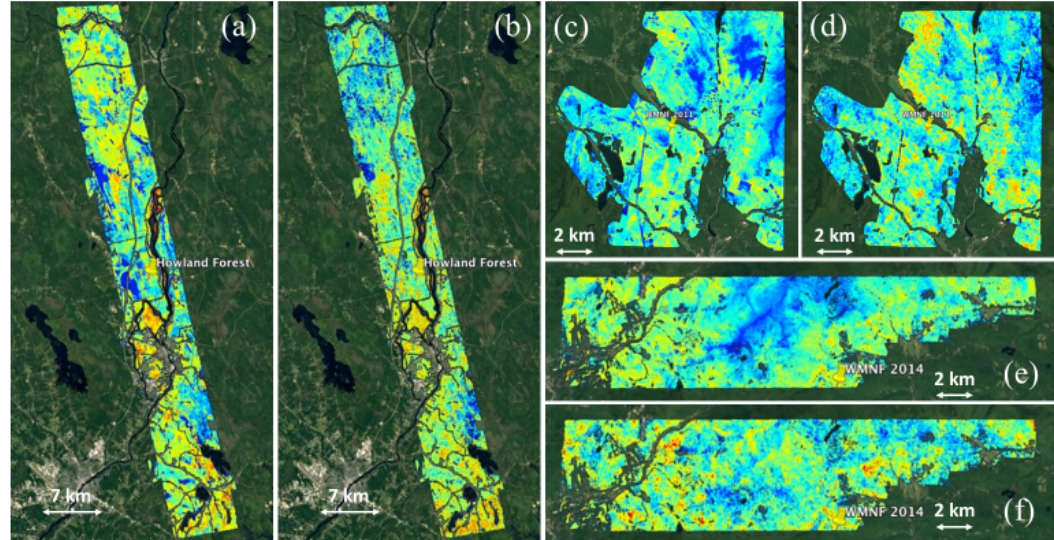
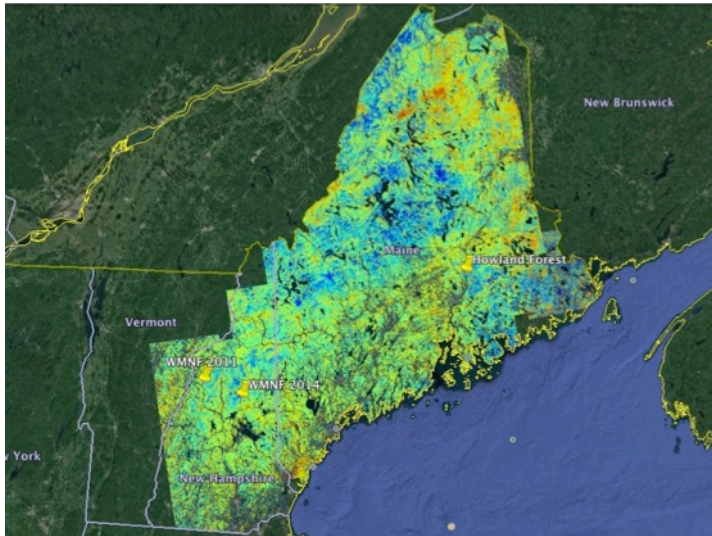


Right) Co-located examples of (A) airborne imagery; (B) Sentinel-1 (R:VV,G:VH,B:VH2); (C) PALSAR-2 (R:HH,G:HV,B:HV2); and (D) Landsat-8 (R:5, G:4, B:3).

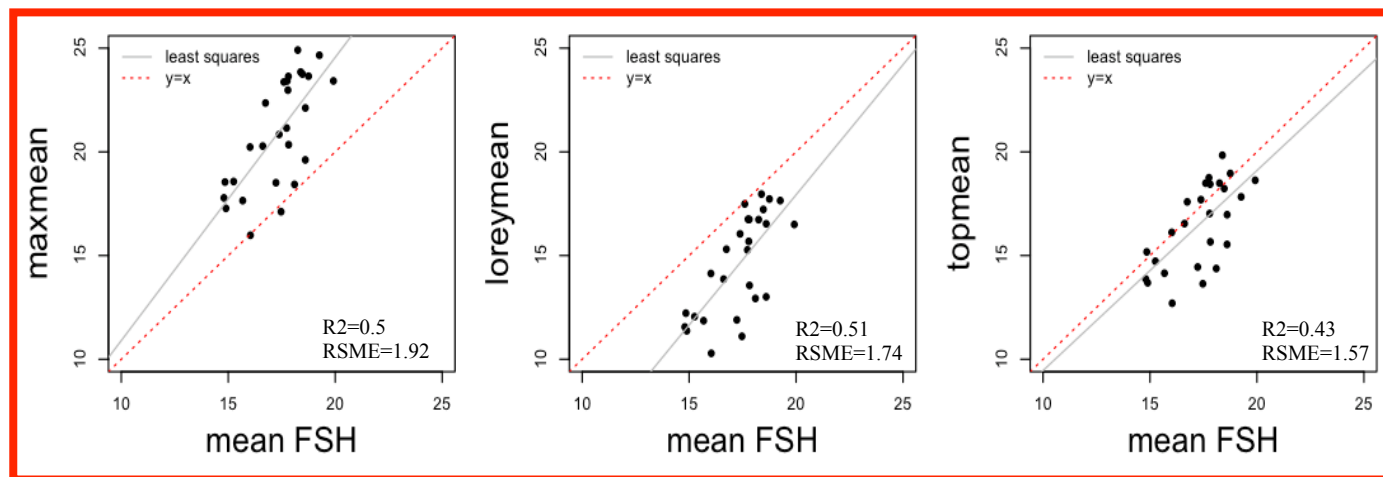
Results and significant plantations findings thus far



Results and significant PALSAR InSAR FSH findings thus far with UMASS (P. Siqueira) & JPL (Y. Lei, et al 2014/15/17)

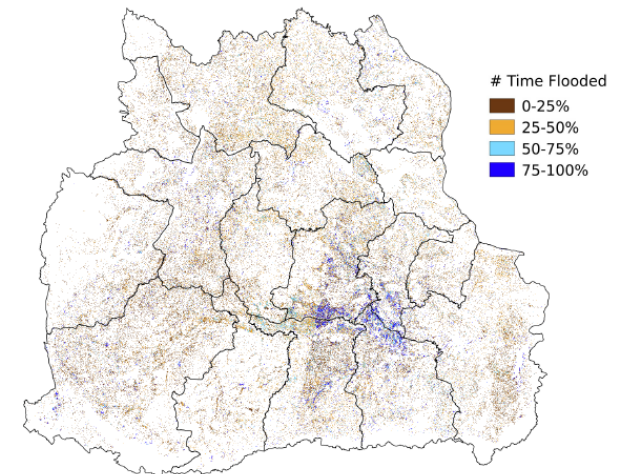
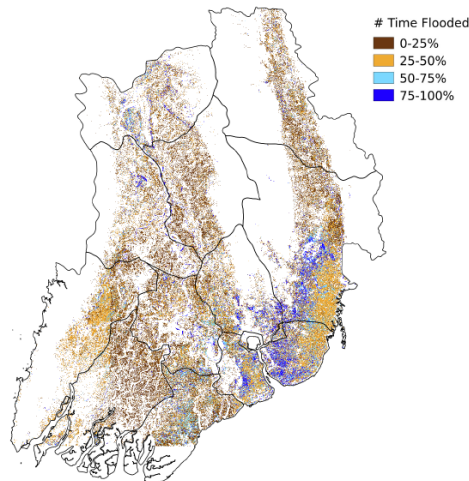
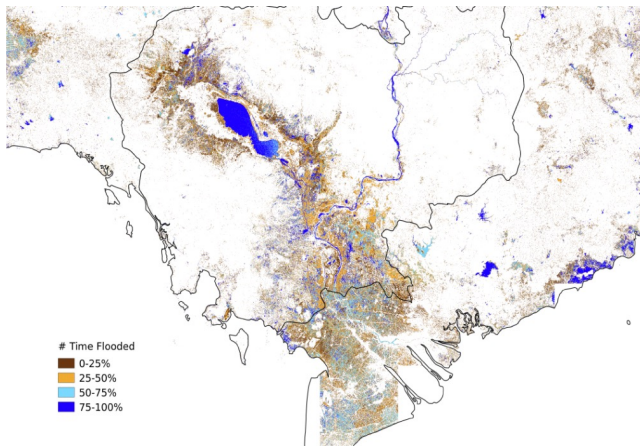
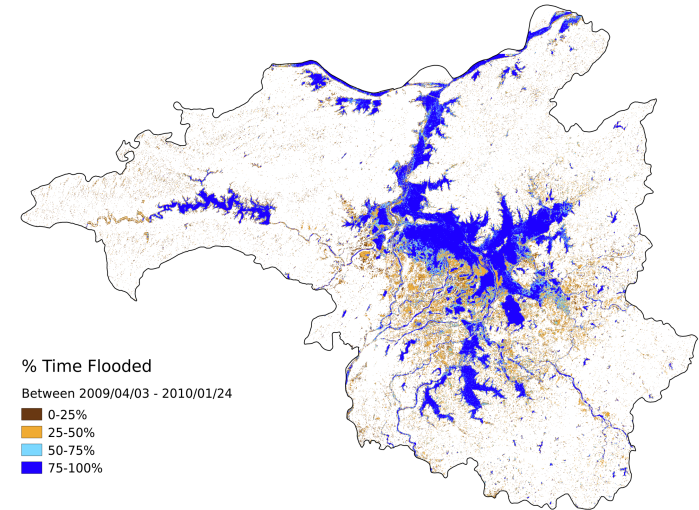
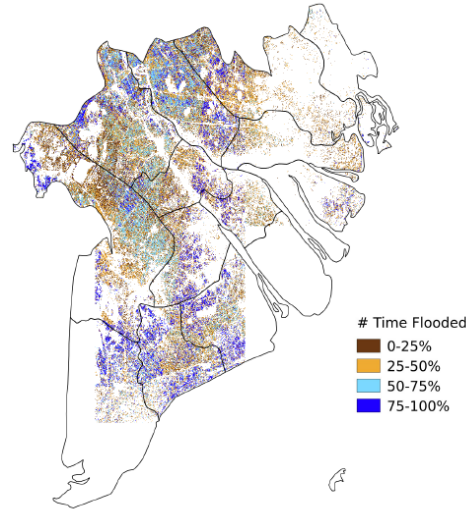
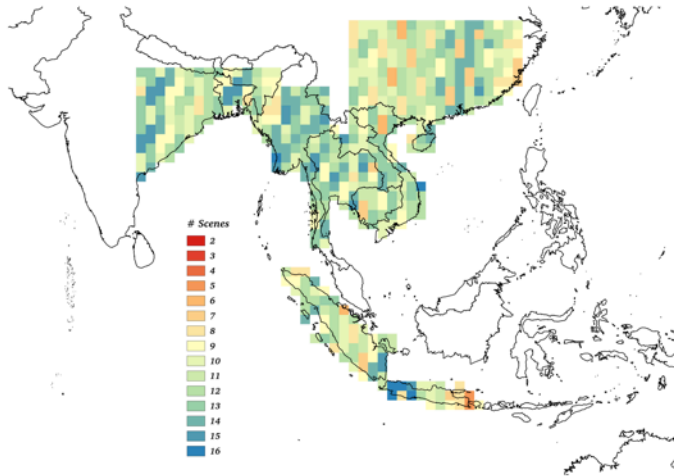


Open source
Python SW
& ISCE
plug-in



Results using PALSAR-1 ScanSAR findings thus far; PALSAR-2 ScanSAR ?

Density Map of Number of ScanSAR scenes over South East



Project milestones

List the project milestones until March 2018 (the end of Phase 4)

- Map of plantations and LCLUC in pilot regions (Cambodia, Myanmar, West Kalimantan)
- Assessment of regrowth (2007-2017), ABG, FSH, & CCC (northeast USA); co-collected UAS lidar, airborne S-band, space-borne SAR, TLS, field plots in 2017 (happy to share with K&C teaming)
- Assessment of AWD in Arkansas USA; maps of yield and soil moisture with multi-source SAR and optical fusion
- Continued rice monitoring and GHG assessment (Thai Binh)
- Emissions maps of Stordalen CH₄

Deliverables etc.

- K&CP4 v1 completed: forest biometrics, rice & high lat wetland GHG maps, geofield photos, rice maps for Myanmar, InSAR FSH maps
- Recent Publications (algorithms, indices, accuracy tables, etc...)
 - Torbick,...2017. Mapping rice greenhouse gas emissions in the Red River Delta Vietnam, Carbon Management
 - Torbick,...2016. Regional Mapping of Plantation Extent Using Multisensor Imagery, Remote Sensing
 - Torbick,...(submitted). Monitoring rice agriculture across Myanmar using time series Sentinel-1 assisted by Landsat-8 and PALSAR-2.
 - IGARSS 2016/17, AGU 12/2016 San Francisco, Yangon NASA LCLUC Workshop, Living Planet,...

PALSAR/PALSAR-2 data access

Please list the PALSAR/PALSAR-2 data you have

(1) Stamps / scenes via AUIG2 K&C4 allotment & Mosaics

Do you have sufficient data to complete your research (according to your K&C agreement)?

If not, which key data sets are missing?

- ScanSAR, StripMap

Upcoming 2017 field campaigns

- Rice temporal monitoring [plant height, AWD, yield, soil moisture, GHG] in RRD (w/ AsiaRice, IRRI) & Arkansas USA; and elsewhere?
- Forest biometrics [AGB, CC, FSH, TLS] in northeast USA (P. Siqueira)

Thanks!
ntorbick@ags.io