

Conserving High Carbon Stock Forests

Presentation at RSPO GHG WG2 on 8 Apr 2011



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7 Apr 2011

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Content

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GAR Forest Conservation Policy

- Golden Agri Resources (GAR) announced Forest Conservation Policy (FCP) on 9 Feb 2011, that it wants to ensure a no deforestation footprint in its palm oil operations by:
 - not developing on high carbon stock forests
 - not developing on high conservation value forest areas
 - not developing on peat lands regardless of depth
- GAR continues to:
 - ensure free, prior and informed consent for indigenous and local communities
 - comply with all relevant laws and National Interpretation of RSPO Principles and Criteria
- The FCP applies to all the plantations that GAR owns, manages or invests in regardless of the stake
- TFT is assisting GAR in implementing this policy

Conserving HCS forests

- GAR will conduct fieldwork in collaboration with TFT and other stakeholders in the first half of 2011
- During fieldwork, a provisional definition of exceeding 35 tC/ha will be used as HCS forest definition
- The provisional 35 tC/ha definition may change as applicable to the industry, and as a result of the fieldwork and after consultations with stakeholders
- GAR will share the results of this fieldwork when finalised
- GAR commits to leading the investigation and to promoting the adoption of this new HCS concept across the palm oil industry

Requirements for successful forest conservation

GAR recognises that to conserve HCS:

- the Government of Indonesia plays a critical role particularly with respect to adopting new regulations and enacting relevant legislation so as to enable the transformation of the palm oil industry (including establishing and implementing a land swap process)
- key players in the Indonesian palm oil industry should address the conservation policy with respect to HCS
- civil society organisations, local and indigenous communities and other stakeholders must engage in the process to transform the palm oil industry

Objectives and scope

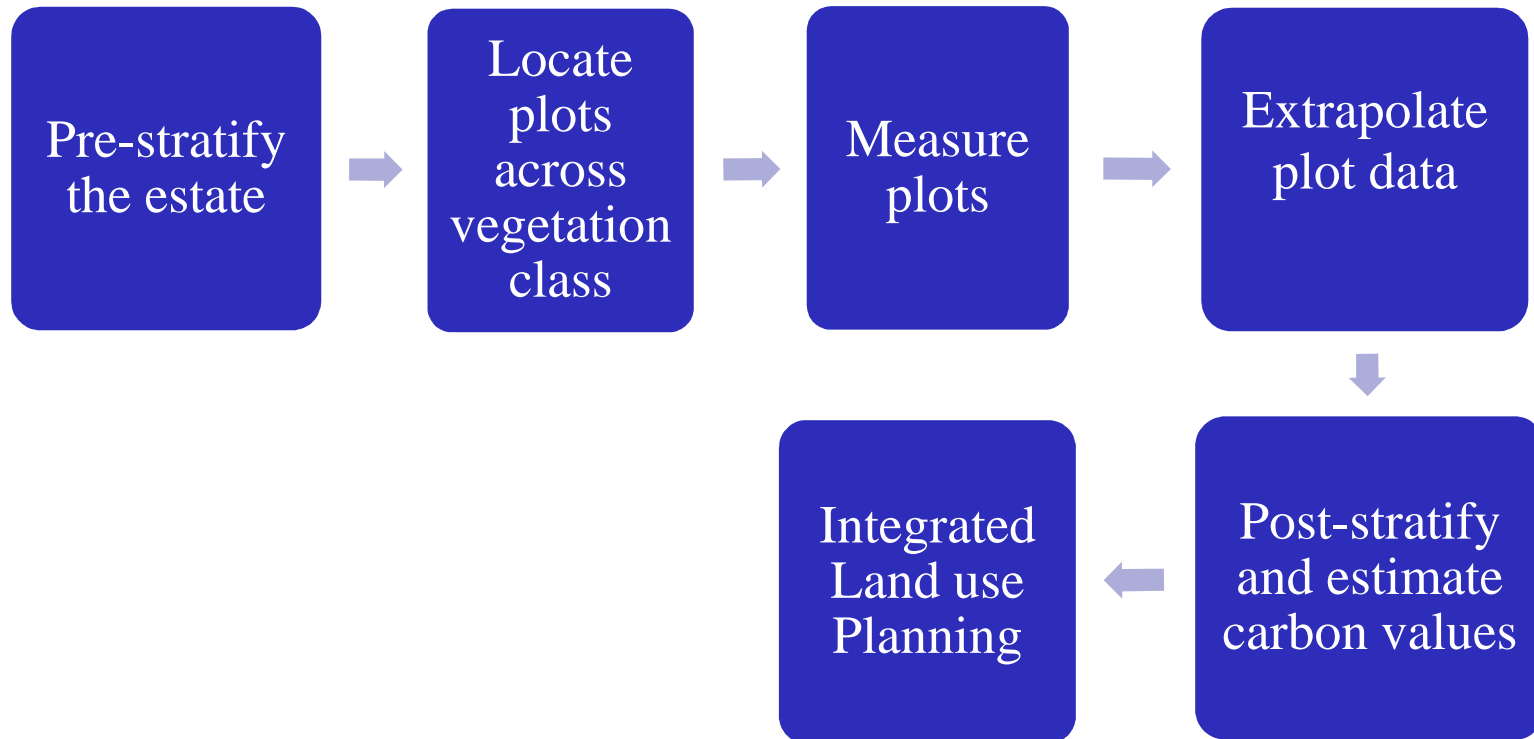
- To introduce a threshold for forest conservation that is:
 1. logical and comprehensible
 2. measurable
 3. implementable
- Ultimately, the conserved HCS area can revert to its natural ecological function as a forest
- HCS provisionally defined as 35 tC/ha
 - accounts for carbon in trees with diameter at breast height (DBH) greater than 5cm
 - excludes planted forests

Implementation process



- Highly variable vegetation cover
- What is the carbon value for these areas?

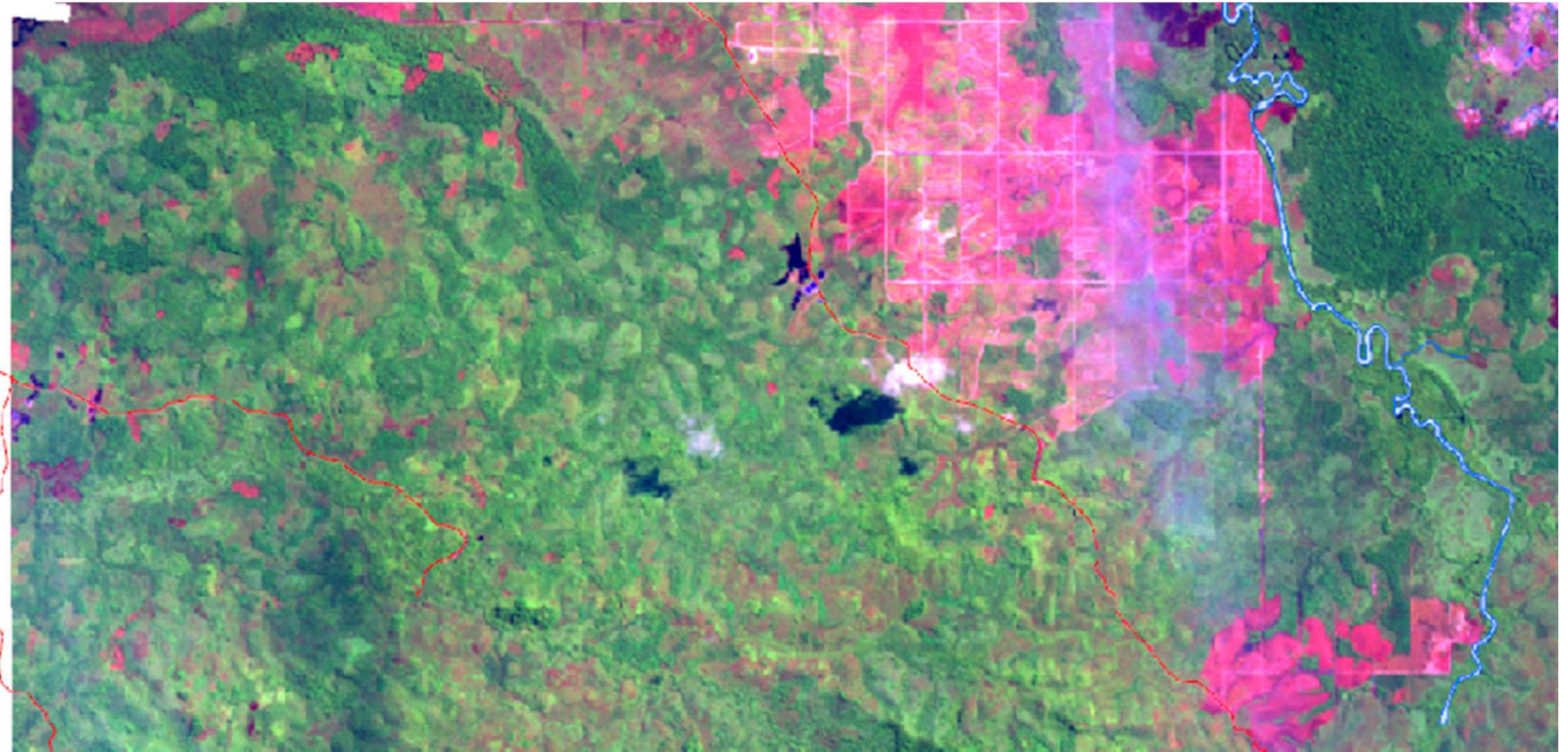
Steps to identify areas of HCS



Pre-stratification

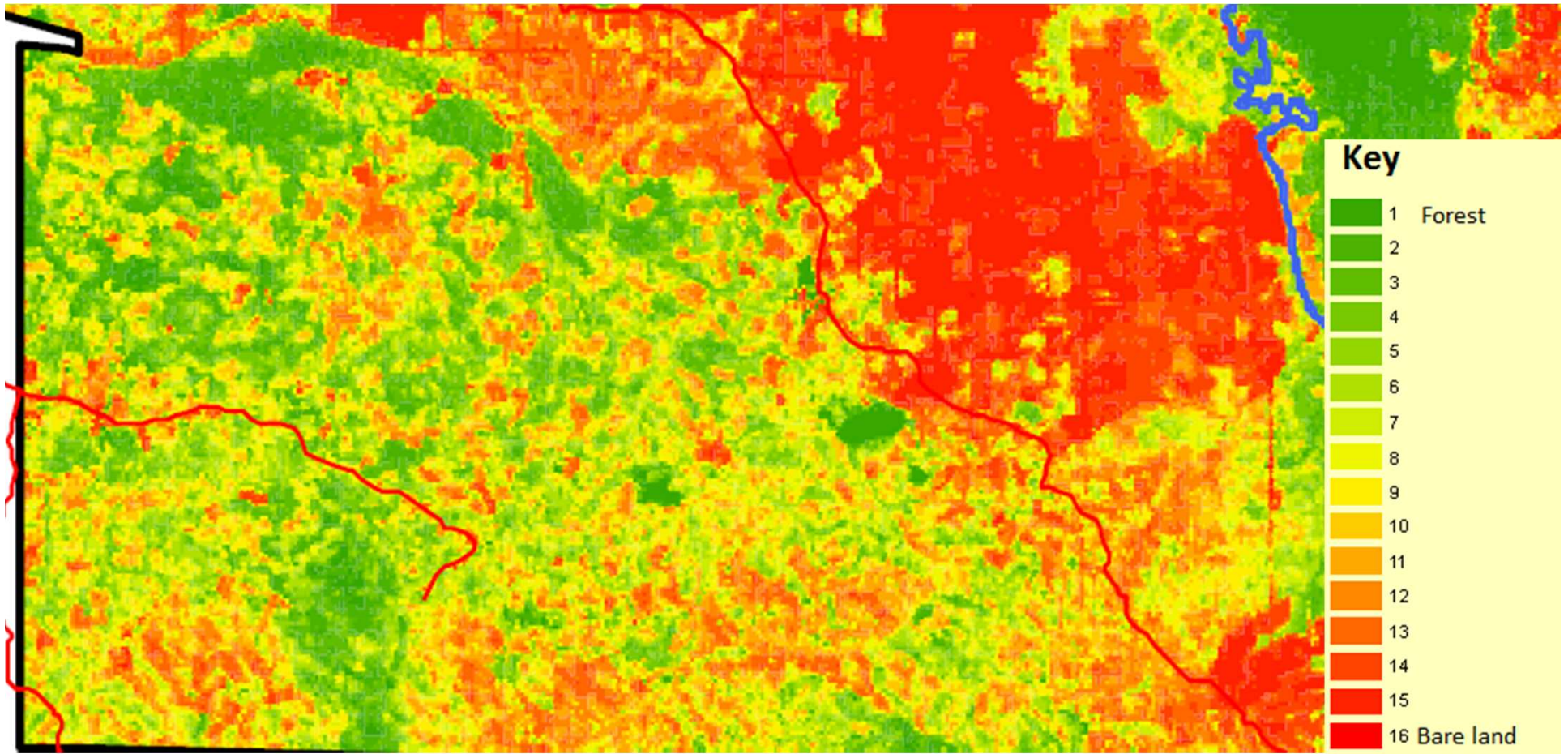
- Fieldwork conducted in PT KPC, West Kalimantan, total 20,000ha
- Stratified by:
 - satellite Image
 - * Spot 5 data (bands 1,3 and 4)
 - * July 2009
 - unsupervised classification into 16 classes (anticipate post-stratification to result in 5 – 10 strata)
- Developing a model to identify HCS areas using data from PT KPC that will be tested in other GAR concessions

Stratification



PT KPC satellite image Jul 2009

Stratification



PT KPC satellite image Jul 2009 after unsupervised classification process

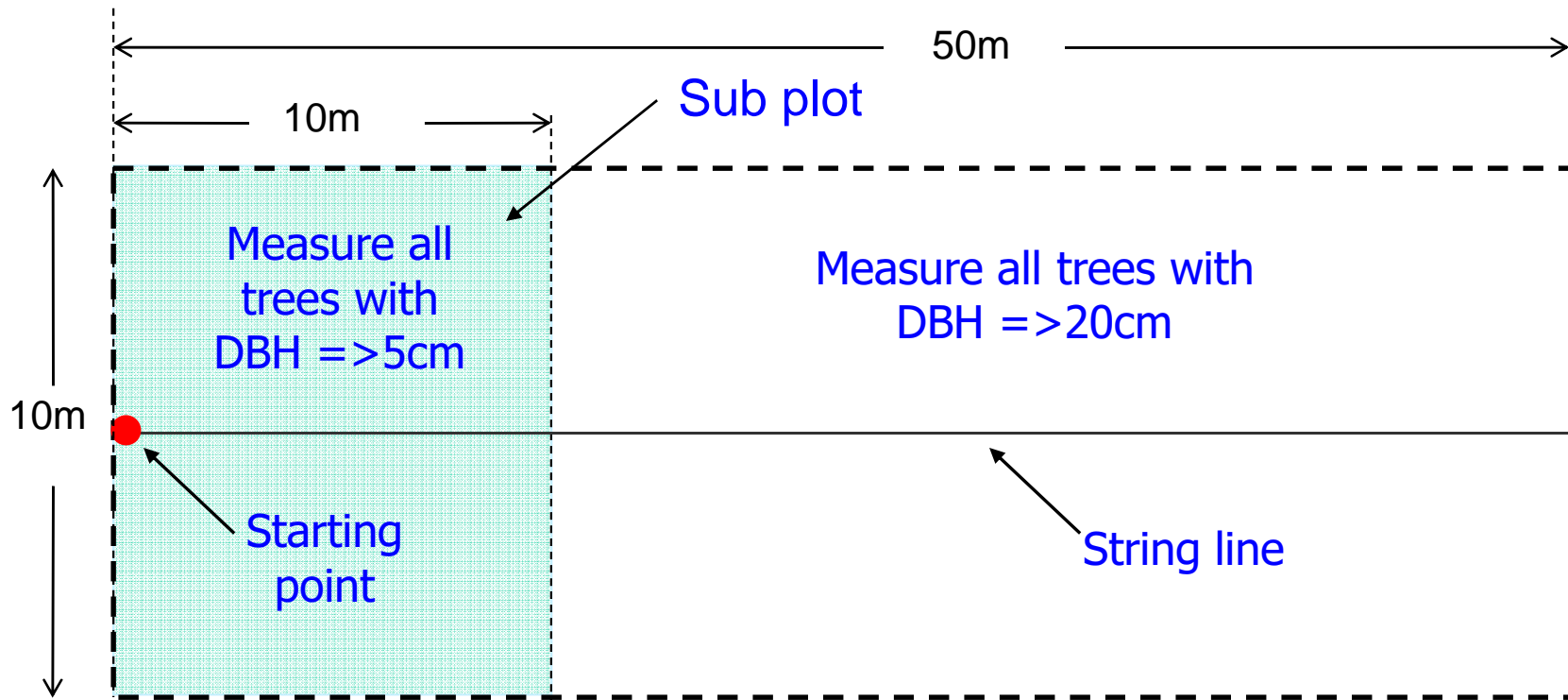
Plot location

- Transect lines placed across the concession
 - plots located every 200m
- Random plots
 - placed within each of the strata
- Number of plots
 - 254 plots measured over 16 strata



Nested rectangular plot designs

- A pole is placed at the start of the plot. A 50m string line is extended from the pole
- For the first 10m (sub plot), all trees within 5m of the string line with diameter $>5\text{cm}$ are measured
- For the entire 50m, all trees within 5m of the string line with diameter $>20\text{cm}$ are measured



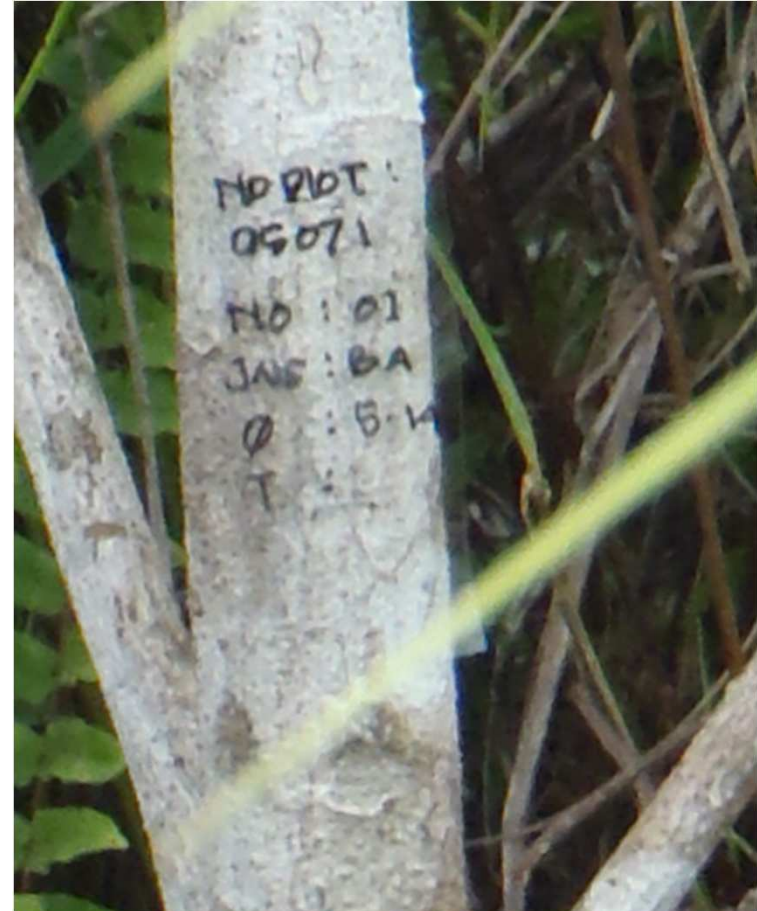
Plot measurement

- All trees within the plot (all 'in' trees):
 - DBH
 - Species
 - * Latin, or
 - * commercial Group, or
 - * common Name
- Height of 6 trees
 - first and last tree with $5\text{cm} < \text{DBH} < 20\text{cm}$
 - first two and last two trees with $\text{DBH} \geq 20\text{cm}$



Plot data extrapolation

- Appropriate wood density assigned to trees
 - by species (if known)
 - average commercial group (if known)
 - default value for unidentifiable species
- Allometrics (formulas, e.g. *Chave et al 2005*) used for extrapolating carbon
- Testing different allometrics



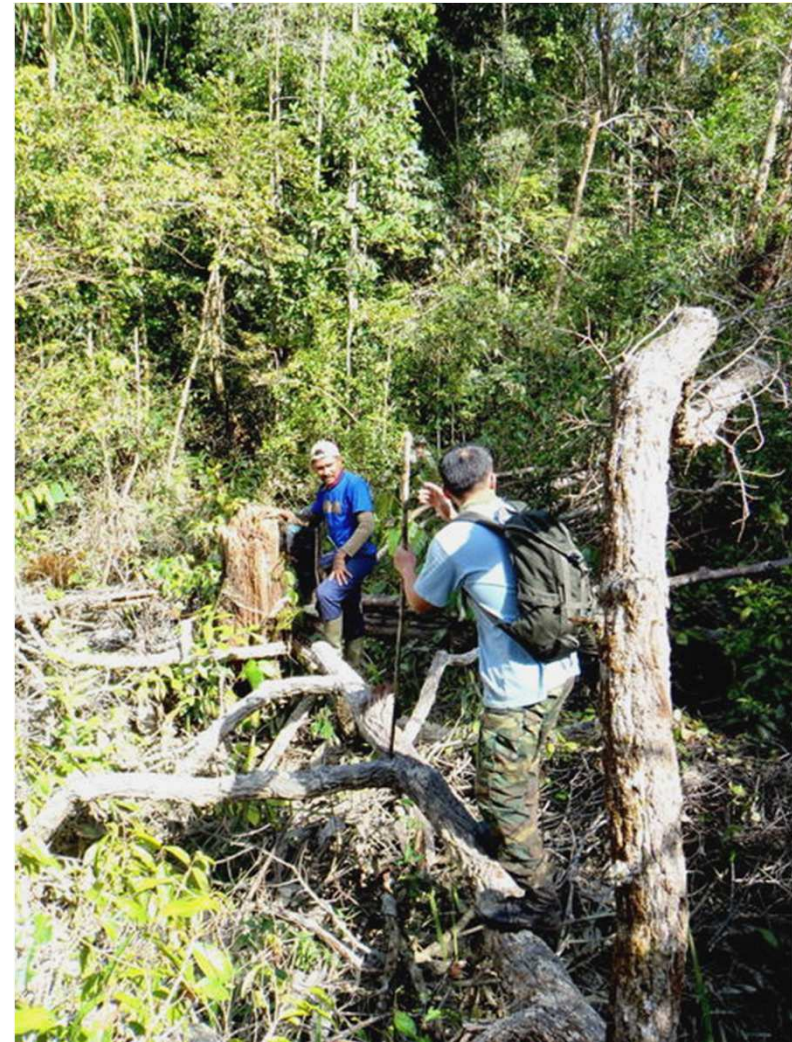
Data analysis

- Testing approaches
 - regression of carbon against Normalised Difference Vegetation Index (NDVI) and spectral signature of the Spot data
 - carbon allocation by re-grouped strata
- Identifying areas that have more than 35 tC/ha
- Results pending further analysis



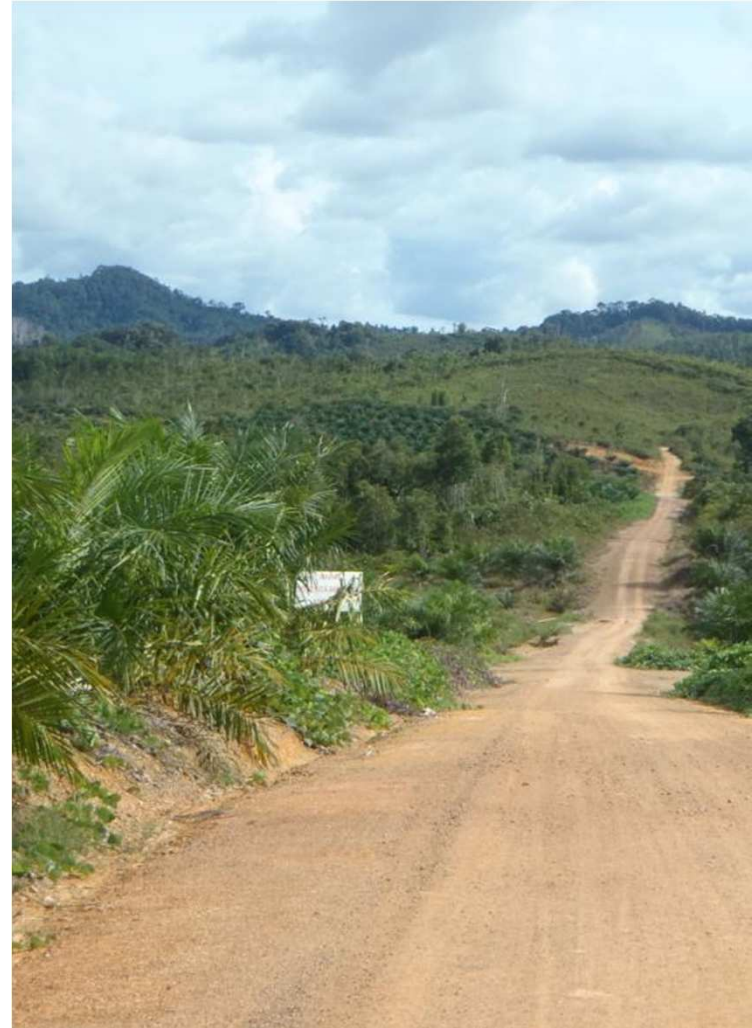
Issues identified

- Too many strata (as anticipated)
 - high variance of carbon values within low carbon strata
- Changes in forest cover since satellite image taken
- Access to measure all areas not possible
 - physical conditions
 - permission not granted by communities



Moving forward

- GAR will use findings from PT KPC to refine stratification of concessions into fewer classes
- GAR will continue to look for more current, high resolution satellite imagery
- There will be continued socialisation of the project
- Expansion of field work into more concessions to validate the HCS identification process
- Ongoing improvement of methodology



Thank you

