

WHERE IS CARBON LOCATED?

MAPPING LANDSCAPE CARBON STOCKS FOR REDD+ PLANNING

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November 2015



AGENDA

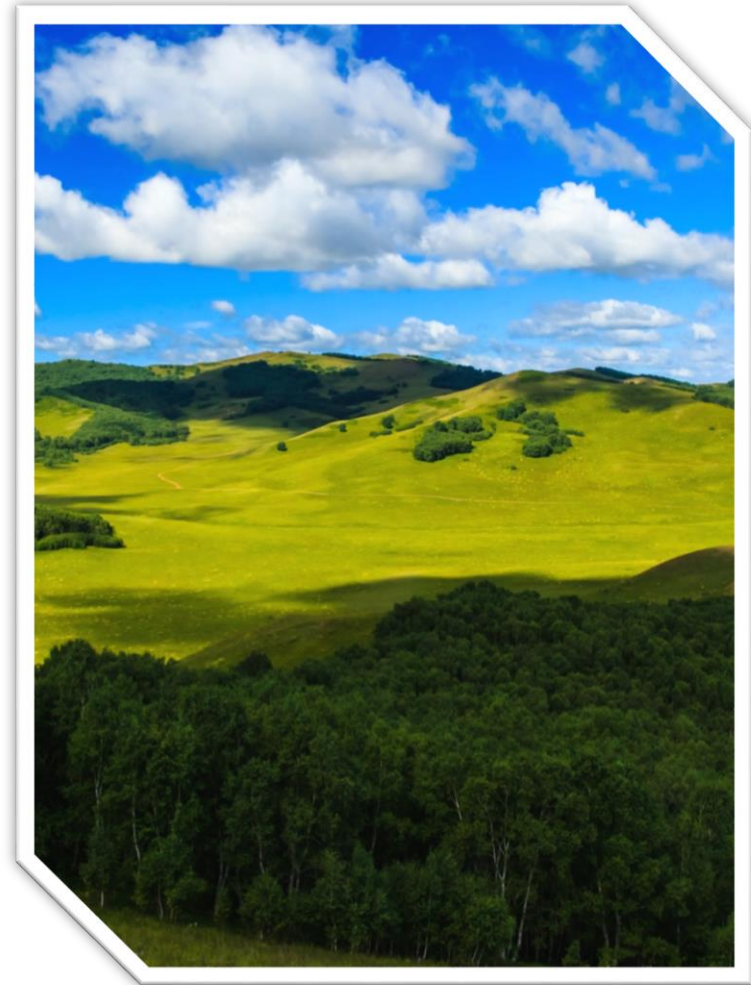
Why mapping Carbon?

Where is Carbon stored in forest lands?

Methods for Carbon Mapping

What existing maps are available?

Discussion



SOURCE: Asner et al (2012)

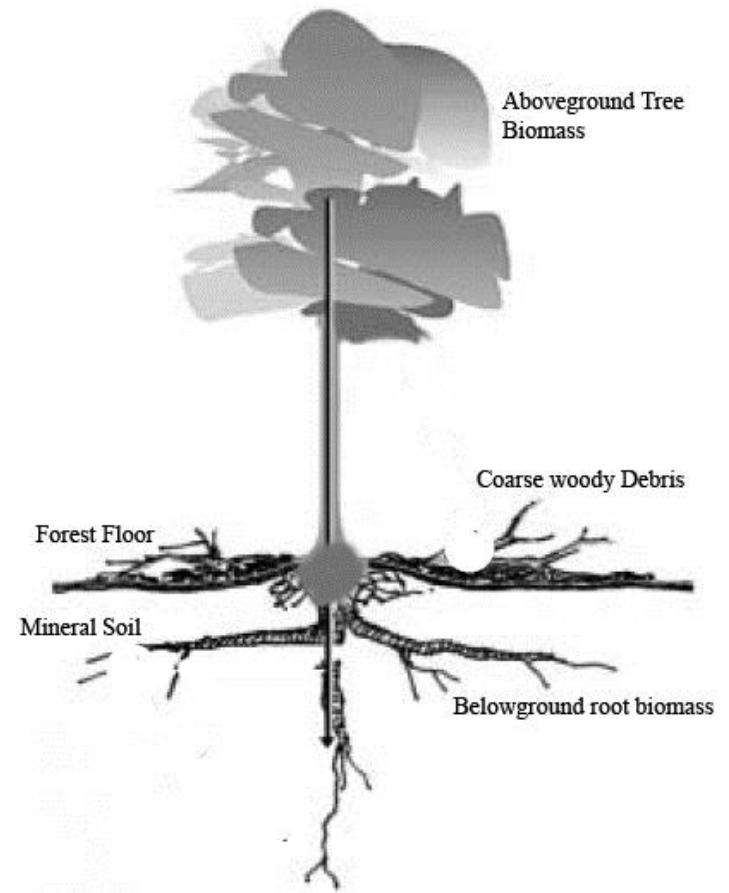
WHERE IS CARBON STORED? THE CARBON POOLS

Carbon is distributed into several different pools within a forest:

- Aboveground biomass
- Belowground biomass
- Coarse woody debris
- Litter
- Mineral soil

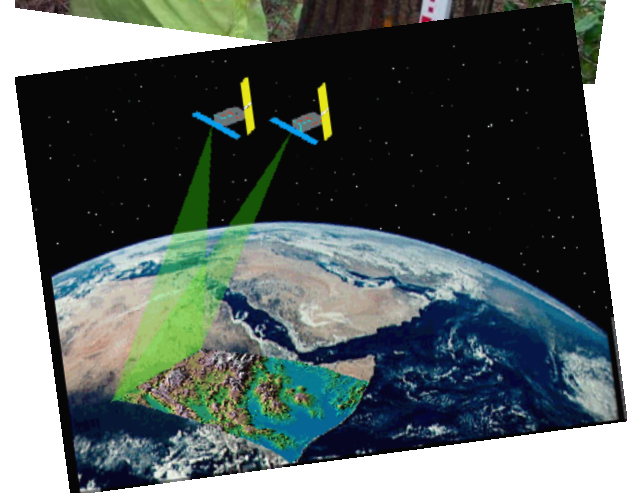
Certain pools are more difficult to assess than others.

The type of pools considered by different maps vary



METHODS FOR LARGE AREA CARBON ESTIMATION

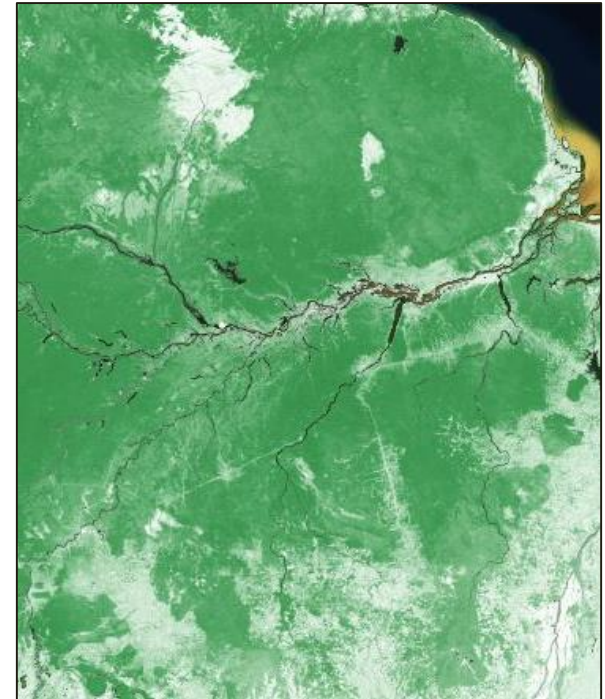
- **Field inventories** are the only accurate way to estimate biomass carbon of a forest, but are costly.
- **Remote sensing** allows the whole landscape to be sampled equally, with little cost to the user, but only provide indirect estimates.
- Many countries lack the necessary data and resources to carry out such work



METHODS FOR CARBON MAPPING

THE USE OF GLOBAL DATASETS

- A number of global carbon density maps have been produced in the last years
- These maps have been produced using different methods so estimations vary greatly in certain areas.
- It is important to assess that these estimates are more or less accurate for the area of interest.
- The first part of the activity will be to evaluate these datasets together and assess its suitability for Mongolia.



Visit <https://carbonmaps.ourecosystem.com>

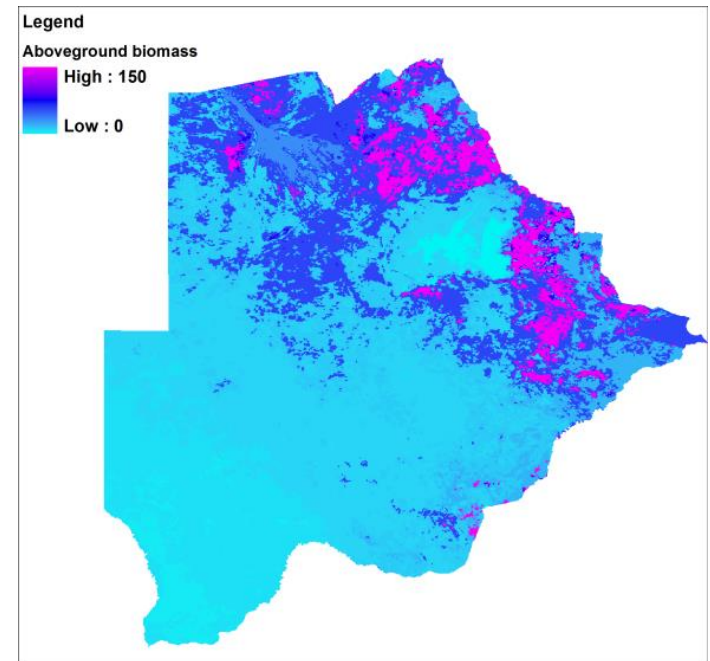
METHODS FOR CARBON MAPPING

CREATION OF MAPS FROM LAND COVER CLASSIFICATIONS

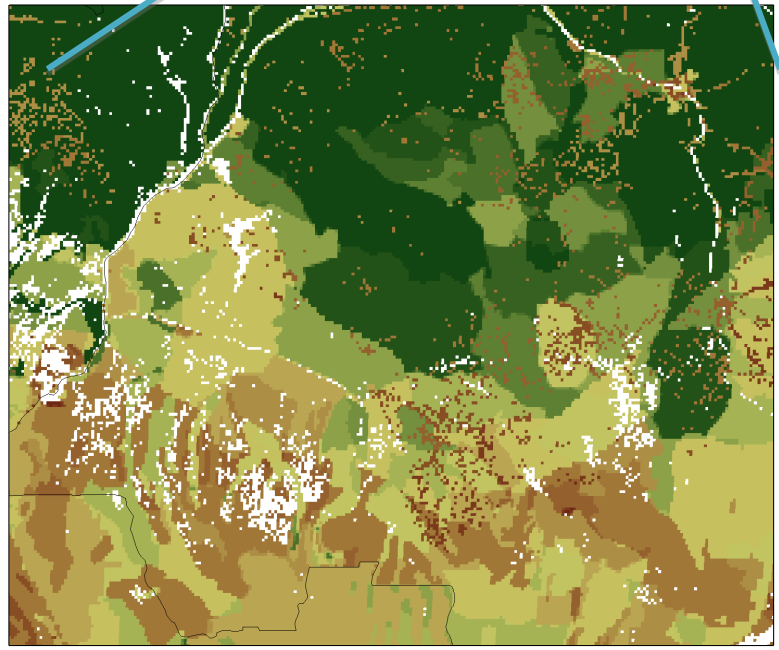
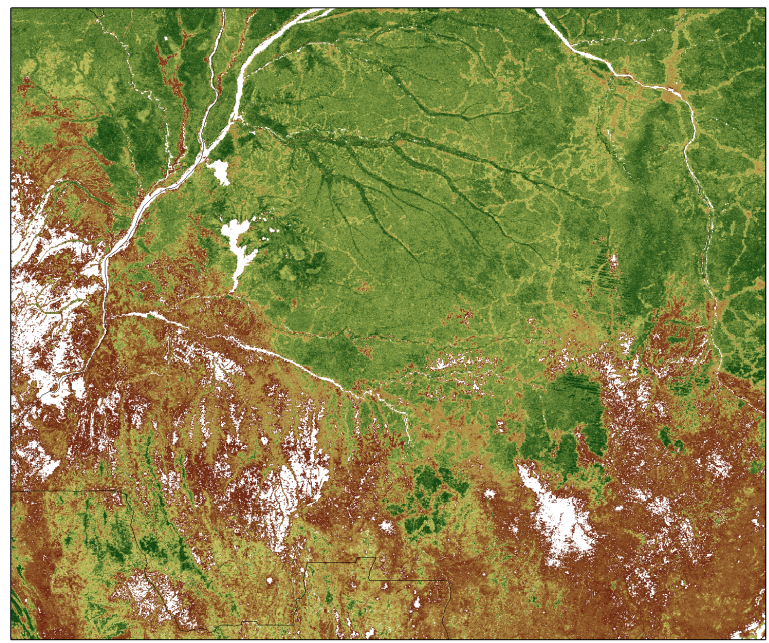
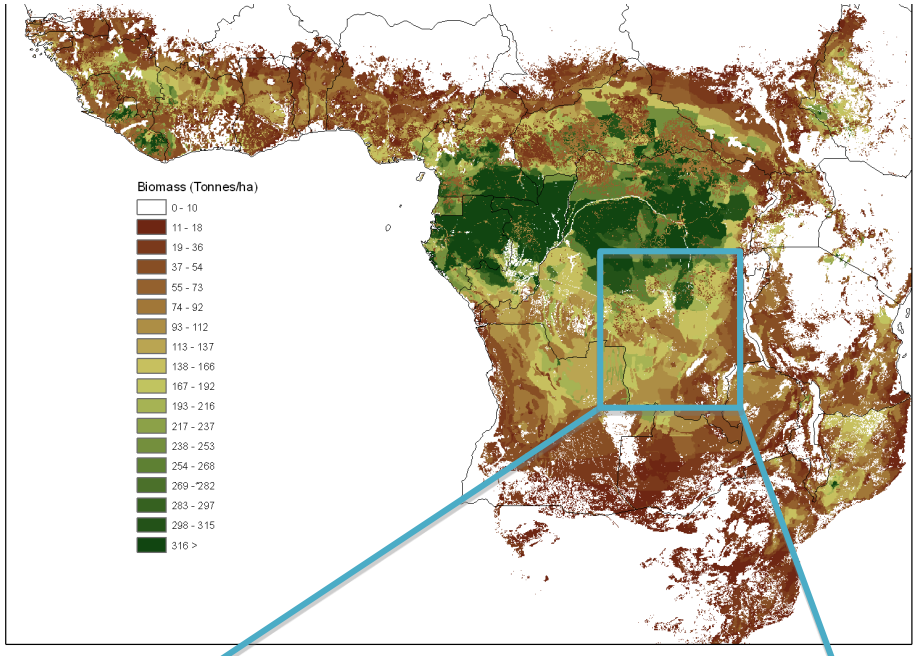
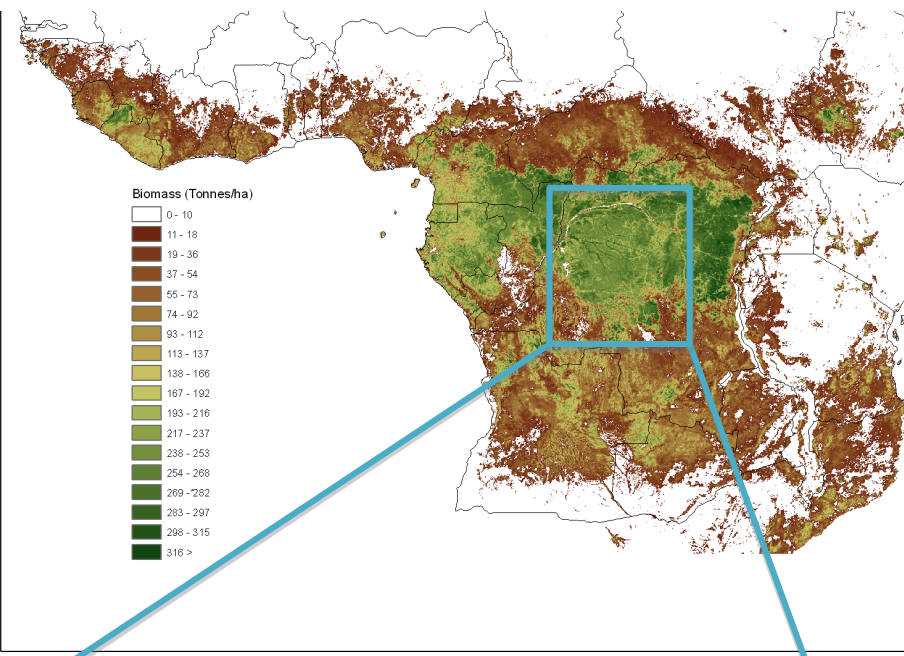
If global datasets are not accurate to our area of interest, an alternative solution is to build our own carbon map by assigning carbon values to the different land cover classes.

In order to create a biomass map from a land cover map you need adequate number of estimates of the biomass of each class. These are best obtained by locating a large number of field plots within each class and calculate an average for each of them.

Such maps are not as accurate as remotely sensed derived maps but can have its uses when no other data is available.



Biomass map from Botswana using
GLC2000 and IPPCC biomass values

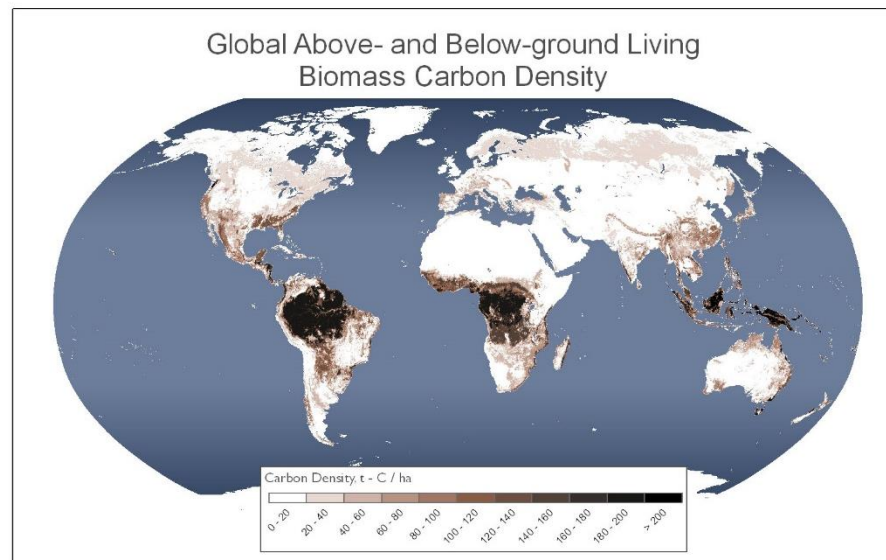


From Baccini et el. 2013

GLOBAL CARBON MAPS

Ruesch & Gibbs. 2008

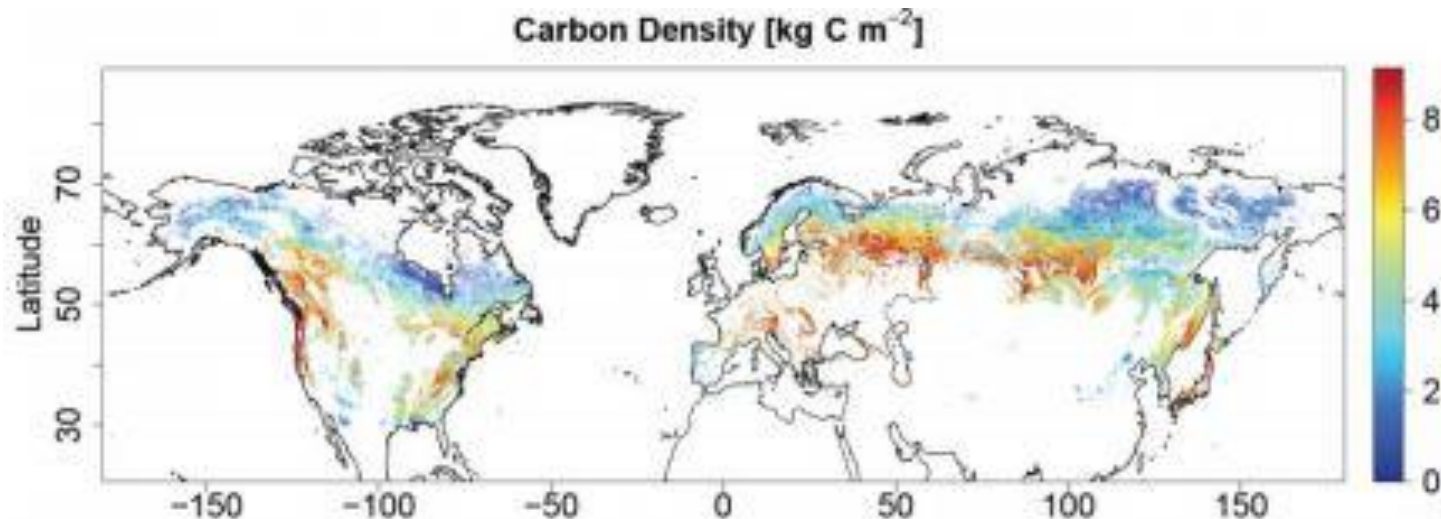
- Global Biomass Carbon Map For the Year 2000
- Above and belowground living vegetation for all land cover types.
- Based on IPCC Tier-1 methodology.



GLOBAL CARBON MAPS

Turner et al. 2014

- Carbon Density Map for Temperate and Boreal Forests of the world
- Above and belowground living vegetation, but only for forest habitats.
- Based on the combination of Radar remote sensing data and field measurements.



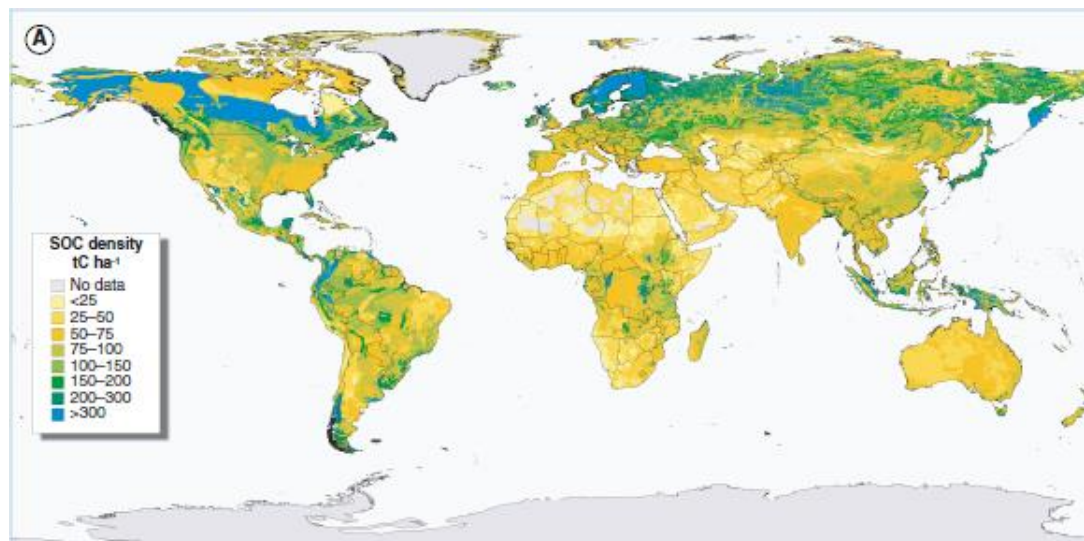
ANCILLIARY CARBON MAPS

Scharlemann et al. 2014

Based on the Harmonized Global Soil Database

Accuracy varies greatly between regions.

Most of the SOC is stored at northern latitudes, particularly in the northern permafrost regions



DISCUSSION

What carbon data is available for Mongolia?

Review global datasets and explore its spatial distribution among different land cover types.

