Supplementary material:

**Figure S1.** SAR backscatter (gamma-naught) as a function of LiDAR derived fractional woody cover (FWC) for HH (left) and HV (right) polarizations of ALOS PALSAR data (N = 75,282). Colors indicate data point density (blue = low, red = high).

**Figure S2.** Fractional woody cover (FWC) derived from LiDAR training data as a function of mean annual precipitation (MAP) in the training data set of northern Namibia (N = 75,282). Colors indicate data point density (dark blue = low, light blue = high).
Figure S3. Changes in fractional woody cover between 2010 and 2009 for each vegetation structural class. Changes of less than 0.15 fractional woody cover were excluded as this was less than the average change uncertainty, σFWCΔ.
Figure S4. Changes in fractional woody cover between 2016 and 2015 for each vegetation structural class. Changes of less than 0.15 fractional woody cover were excluded as this was less than the average change uncertainty, $\sigma_{FWC \Delta}$. 