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Supplementary information

An unexpectedly large count of trees in the West African Sahara and Sahel

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An unexpectedly large count of trees in the West African Sahara and Sahel

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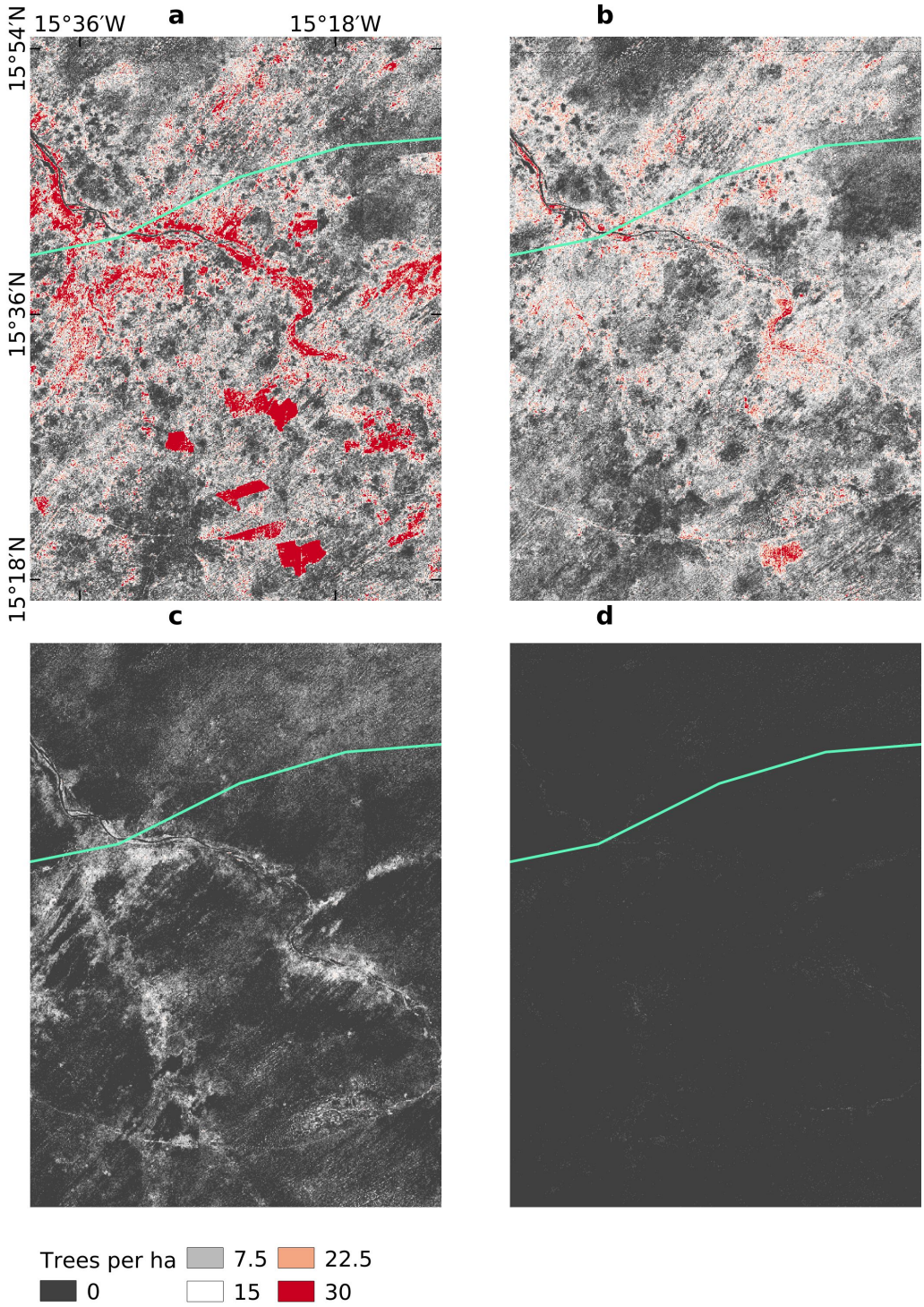
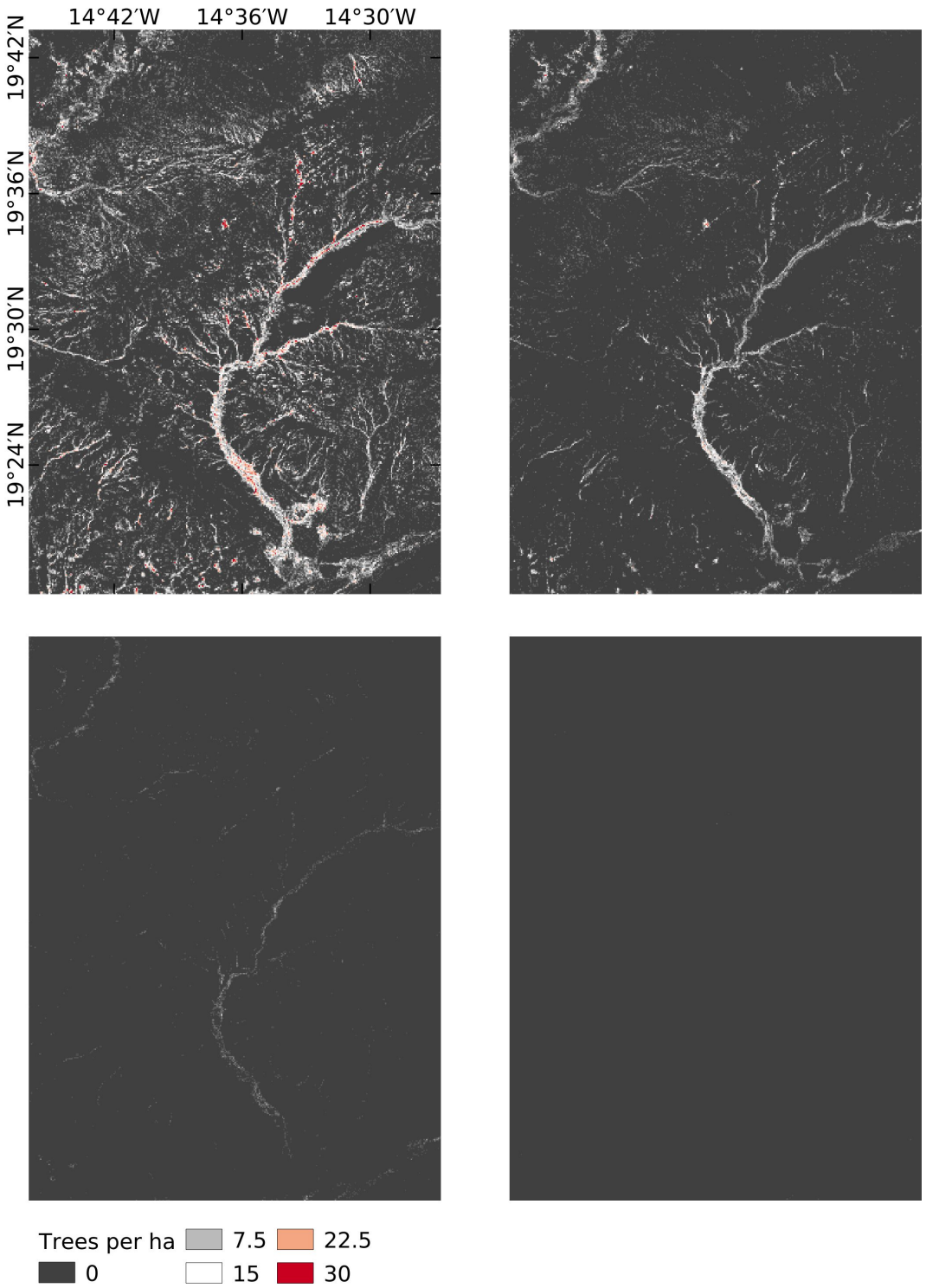
Supplementary Figures 1-4

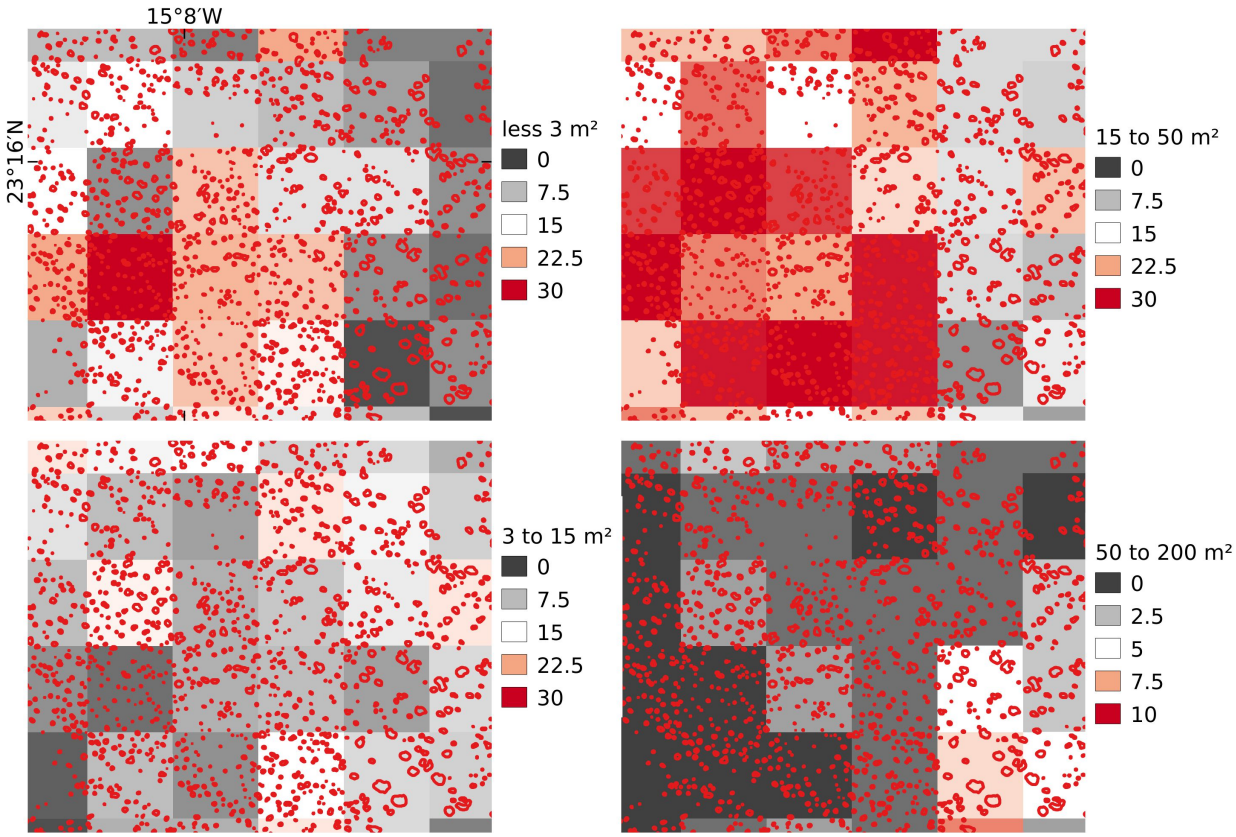
Supplementary Table 1



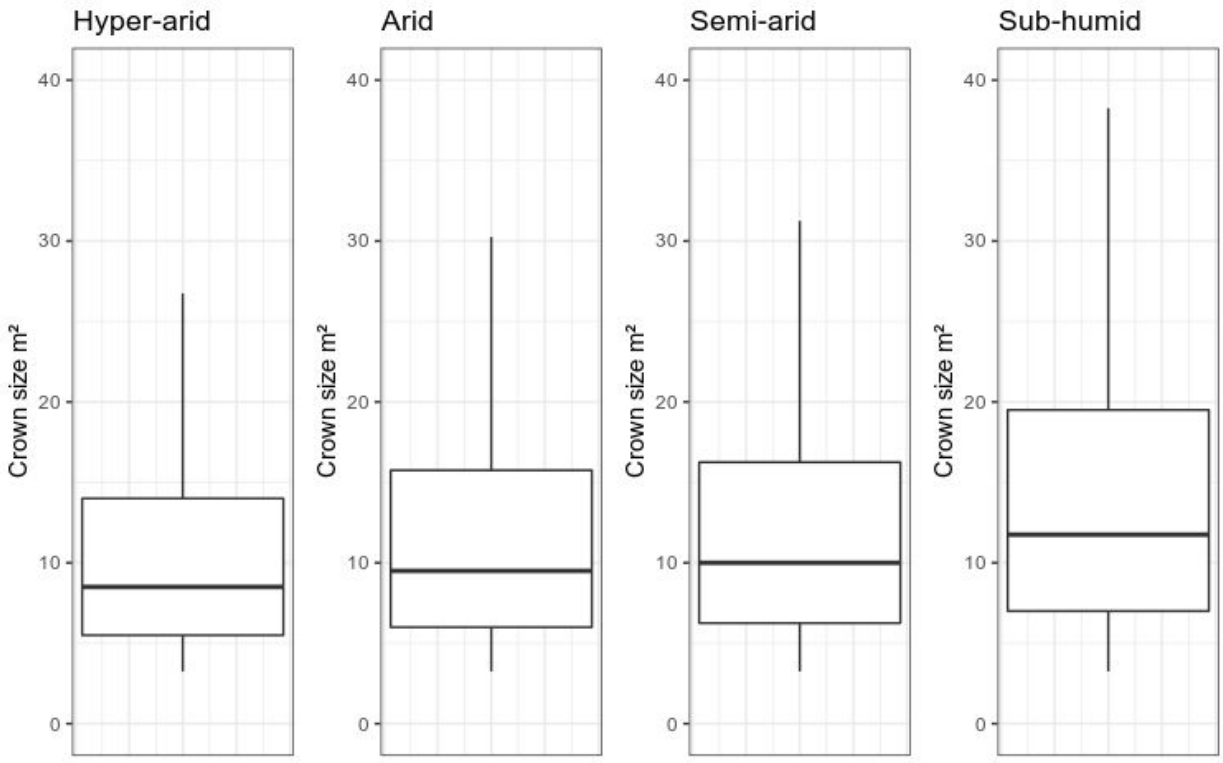
Supplementary Fig. 1 | Examples tree density Dahra. a, 3-15 m² crown size, **b,** 15-50 m², **c,** 50-200 m², **d**, >200 m². *Acacia senegal* plantations appear as red clusters with a high density of small trees. Tree density is also high along the river flowing from NW to SE.



Supplementary Fig. 2 | Examples tree density Sahara. a, 3-15 m² crown size, **b,** 15-50 m², **c,** 50-200 m², **d**, >200 m². Trees and shrubs are concentrated along ancient river valleys.



Supplementary Fig. 3 | Illustration on how trees are counted per ha for different crown sizes. Note that trees with a crown size <3 m^2 were not included in the final assessment.



Supplementary Fig. 4 | Crown size distribution of woody plants (3-200 m² crown size) for each rainfall zone (a random sample of 1 million was taken for each zone). The boxplots lines from top to bottom represent the maximum, third quartile, median, first quartile and minimum values.

Supplementary Table 1 | The spatial resolutions, CE90, and locational accuracy root mean square error for the four different multi-spectral satellites we used in our analysis. Because we are using composite imagery in our mosaics from the four types of satellites below, we estimate our locational accuracy to be approximately ±11 m.

QuickBird	GeoEye-1	WorldView-2	WorldView-3
65 cm resolution	41 cm resolution	46 cm resolution	31 cm resolution
23 m CE90	4.0 m CE90	5.0 m CE90	3.7 m CE90
10.8 m RMSE	2.7 m RMSE	3.0 m RMSE	2.5 m RMSE