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SUPPLEMENTARY MATERIAL

For the Article:

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Supplementary material description:

The following supplementary material contains eight tables and four figures. In the main text they are referred to as “Tab./Fig. S##”.

Vaglio Laurin G, Hawthorne W, Chiti T, Di Paola A, Cazzolla Gatti R, Noce S, Grieco E, Marconi S, Pirotti F, Valentini R (2016).

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Table S1 - Recent plots information. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

PLOT NAME	PLOT SIZE (M²)	NUMBER OF PLOTS	YEAR	AREA	MIN. DBH (PLOTS #, AREA PER PLOT)
ANP	10000	3	2011	3.00 ha	10 cm
ANP	500	34	2012	1.70 ha	10 cm
DFR	1600	20	2012-13	3.2 ha (20 cm) 1.84 ha (10 cm)	20 cm (20 plots, 1600 m ²) 10 cm (46 subplots, 400 m ²)
BRR	500	3	2012-13	0.15 ha	10 cm
BRR	400	10	2012-13	0.40 ha	10 cm
BRR	1600	8	2012-13	1.28 ha (20 cm) 0.32 ha (10 cm)	20 cm (8 plots, 1600 m ²) 10 cm (8 subplots, 400 m ²)
BNP	500	2	2012-13	0.10 ha	10 cm
BNP	400	5	2012-13	0.20 ha	10 cm
BNP	1600	11	2012-13	1.76 ha (20 cm) 0.80 ha (10 cm)	20 cm (11 plots, 1600, m ²) 10 cm (20 subplots, 400 m ²)

Vaglio Laurin G, Hawthorne W, Chiti T, Di Paola A, Cazzolla Gatti R, Noce S, Grieco E, Marconi S, Pirotti F, Valentini R (2016).

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Table S2 - Total area sampled and number of trees in recent data. DBH = diameter at breast height. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

PLOT NAME	Sampled area for DBH>20 cm (ha)	N. of trees DBH>20 cm	Sampled area for 10<DBH<20 cm (ha)	N. of trees 10<DBH<20 cm
ANP	4.70	899	4.70	1356
DFR	3.20	345	1.84	221
BRR	1.83	235	0.87	207
BNP	2.06	340	1.10	204

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Table S3 - Total area sampled and number of trees used for richness and diversity analysis; data are from subplots of 500 m² for Ankasa, and 400 m² for the other areas. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

PLOT NAME	Sampled area	N. of trees	Sampled area for	N. of trees
	for DBH>20 cm (ha)	for DBH>20 cm	DBH>10 cm (ha)	for DBH>10 cm
ANP	1.70	357	1.70	841
DFR	3.20	345	1.84	402
BRR	1.68	253	0.72	290
BNP	1.96	352	1.00	335

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Table S4 - Nonmetric Multidimensional Scaling (NMS) ordination of data in eight subcategories. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

Initial Class	
(vegnum)	Description
1	Wet Evergreen forest, swampier ANP plots.
2	Wet Evergreen forest, ANP plots, intermediate between 1 and 3.
3	Wet Evergreen forest, ANP plots, well-drained areas in the upper parts of landscape
4	Moist Evergreen forest, 6 DFR swampier plots.
5	Moist Evergreen forest, 4 DFR plots, intermediate between class 4 and 6, 1 plot from BRR.
6	Damper Moist Semideciduous, borderline ME/MS forest, 7 plots from BRR and 8 from DFR.
7	Moist Semideciduous forest (intermediate between 6 and 8), 13 BRR plots, slightly wetter and more disturbed than class 8, 2 plots from DFR.
8	Moist Semideciduous forest (drier end of the spectrum), including all plots from BNP

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Table S5 - Statistics of mean tree height, diameter at breast height (DBH), and wood density parameters per DBH class, 2012-13 data. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park. St.Dev = standard deviation; Min. = minimum; Max.= maximum.

PLOT NAME	10-20 cm DBH class				> 20 cm DBH class			
	Mean	St. Dev.	Min.	Max.	Mean	St. Dev.	Min.	Max.
<i>Height in meters</i>								
ANP	13.95	3.77	4.10	25.80	22.35	6.30	4.00	42.60
DFR	9.57	3.12	2.70	24.80	17.28	6.28	5.00	34.80
BRR	9.74	3.24	2.50	22.60	16.00	6.80	3.00	39.00
BNP	9.66	3.50	4.00	22.00	18.62	7.57	3.80	49.00
<i>Diameter in cm</i>								
ANP	13.59	2.62	10.00	19.90	38.49	18.06	20.00	150.00
DFR	14.48	2.84	10.00	19.70	36.60	21.49	20.00	130.00
BRR	13.52	2.67	10.00	19.90	36.89	22.68	20.00	137.50
BNP	13.76	2.77	10.00	19.80	44.72	28.30	20.00	190.00
<i>Wood Density in 10³ kg/m³</i>								
ANP	0.67	0.13	0.10	0.98	0.67	0.12	0.31	0.97
DFR	0.61	0.14	0.21	0.99	0.59	0.16	0.21	0.99
BRR	0.60	0.14	0.28	0.84	0.56	0.14	0.21	0.88
BNP	0.58	0.13	0.10	0.98	0.55	0.14	0.21	0.99

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Table S6 - Basal area and above ground biomass (AGB) values, 2012-13 data. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

PLOT NAME	Basal Area (m² ha⁻¹) per Ha		
	<i>10-20 cm DBH</i>	<i>>20 cm DBH</i>	<i>Total</i>
ANP	4.34	27.15	31.49
DFR	2.05	15.24	17.29
BRR	3.54	18.89	22.43
BNP	2.86	36.26	39.12
	AGB (Mg ha⁻¹) per Ha		
	<i>10-20 cm DBH</i>	<i>>20 cm DBH</i>	<i>Total</i>
ANP	27.83	307.62	335.45
DFR	8.37	129.29	137.66
BRR	14.19	146.44	160.63
BNP	11.06	292.32	303.38

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Table S7 - Percentage of guilds per diameter at breast height (DBH) class, recent data. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park. NPLD = Non Pioneer Light Demanding.

	10-20 cm DBH			
	%Pioneer	%NPLD	%Shade-bearer	%Swamp
ANP	2.46	16.01	79.45	2.08
DFR	6.91	30.41	60.83	1.84
BRR	12.87	27.32	57.73	2.06
BNP	10.20	38.27	51.53	0.00
	> 20 cm DBH			
	%Pioneer	%NPLD	%Shade-bearer	%Swamp
ANP	2.50	31.70	62.38	3.40
DFR	14.24	33.72	51.16	0.87
BRR	17.6	40.77	38.20	3.43
BNP	17.46	46.45	36.09	0.00

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Table S8 - Historical basal area and guilds data for DFR and BRR. DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; NPLD = Non Pioneer Light Demanding.

	BA m²/ha (10-30 cm DBH) (>30 cm DBH)	% Pioneer	% NPLD	% Shade- bearer	% Swamp
DFR	(10-30) 5.74	5.00	18.00	74.00	0.10
1991	(>30)10.22	12.92	43.33	39.38	4.33
BRR	(10-30) 7.48	17.61	43.29	38.65	0.44
1987	(>30) 16.34	20.22	52.81	26.31	0.64

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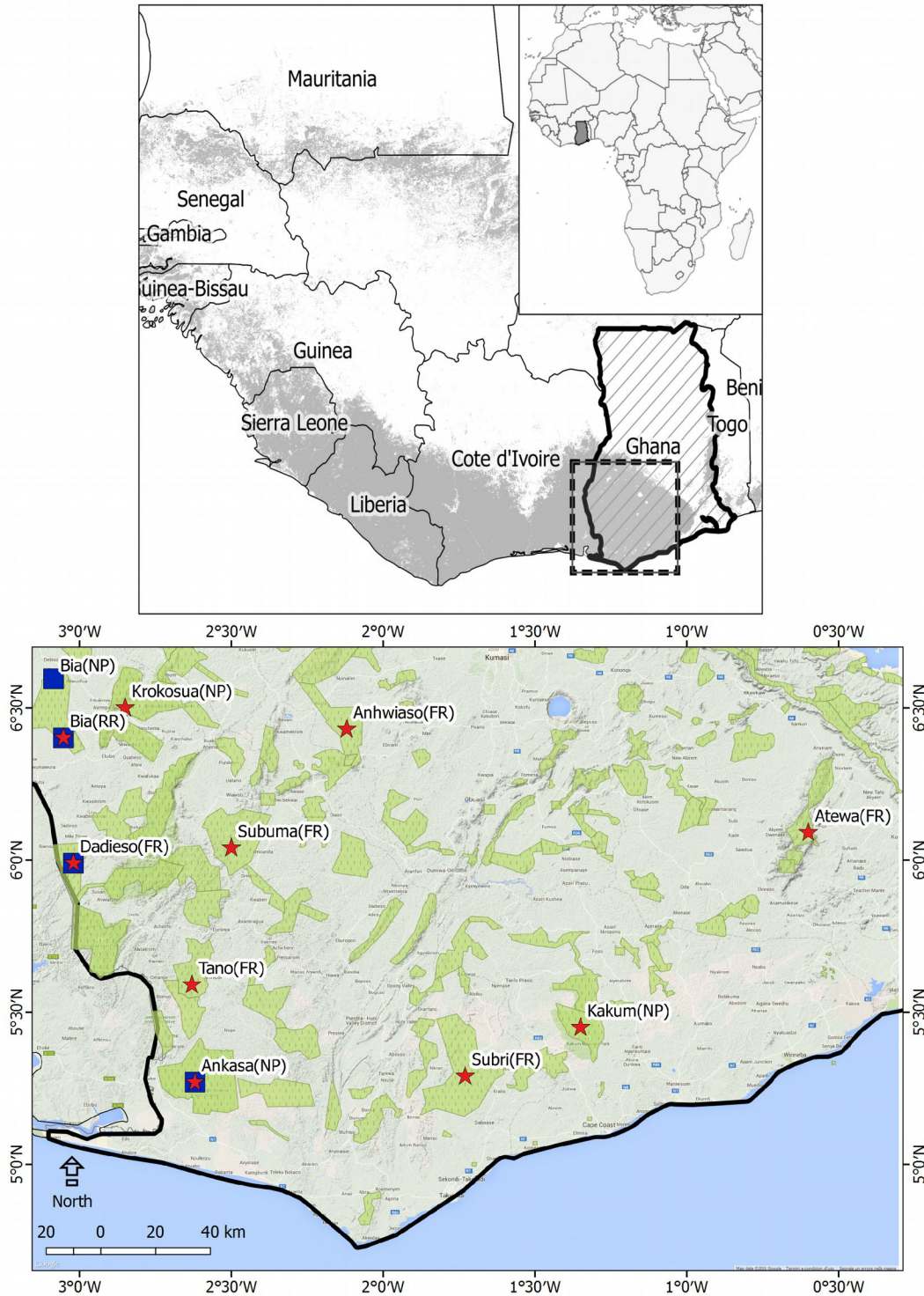


Figure S1 - The study areas. Includes sites with field data (four blue squares), and sites where remote sensing data (ten red stars) were used.

Vaglio Laurin G, Hawthorne W, Chiti T, Di Paola A, Cazzolla Gatti R, Noce S, Grieco E, Marconi S, Pirotti F, Valentini R (2016).

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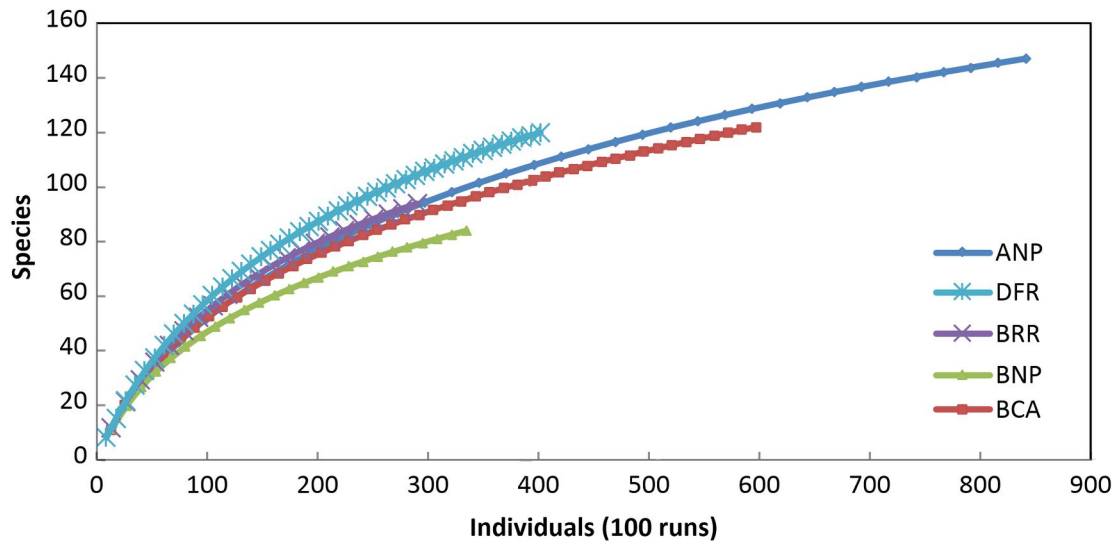


Figure S2 - Coleman rarefaction curve. ANP = Ankasa National Park; DFR = Dadieso Forest Reserve; BRR = Bia Resource Reserve; BNP = Bia National Park.

Vaglio Laurin G, Hawthorne W, Chiti T, Di Paola A, Cazzolla Gatti R, Noce S, Grieco E, Marconi S, Pirotti F, Valentini R (2016).

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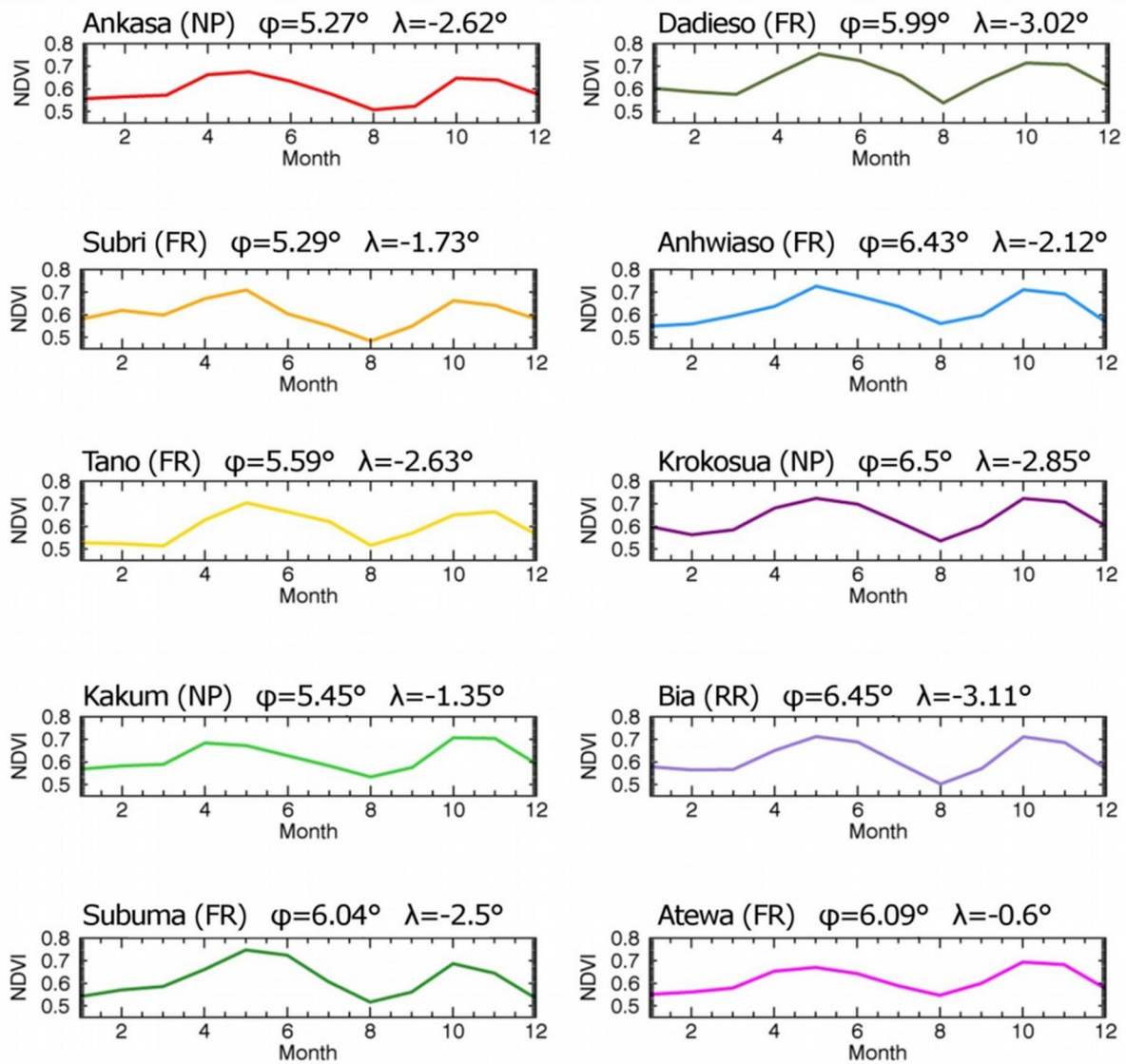


Figure S3 - 30-year averaged monthly NDVI values in 10 forested areas in Ghana. FR = Forest Reserve; NP = National Park; RR = Resource Reserve. ϕ = latitude; λ = longitude. NDVI = Normalized Difference Vegetation Index.

Vaglio Laurin G, Hawthorne W, Chiti T, Di Paola A, Cazzolla Gatti R, Noce S, Grieco E, Marconi S, Pirotti F, Valentini R (2016).

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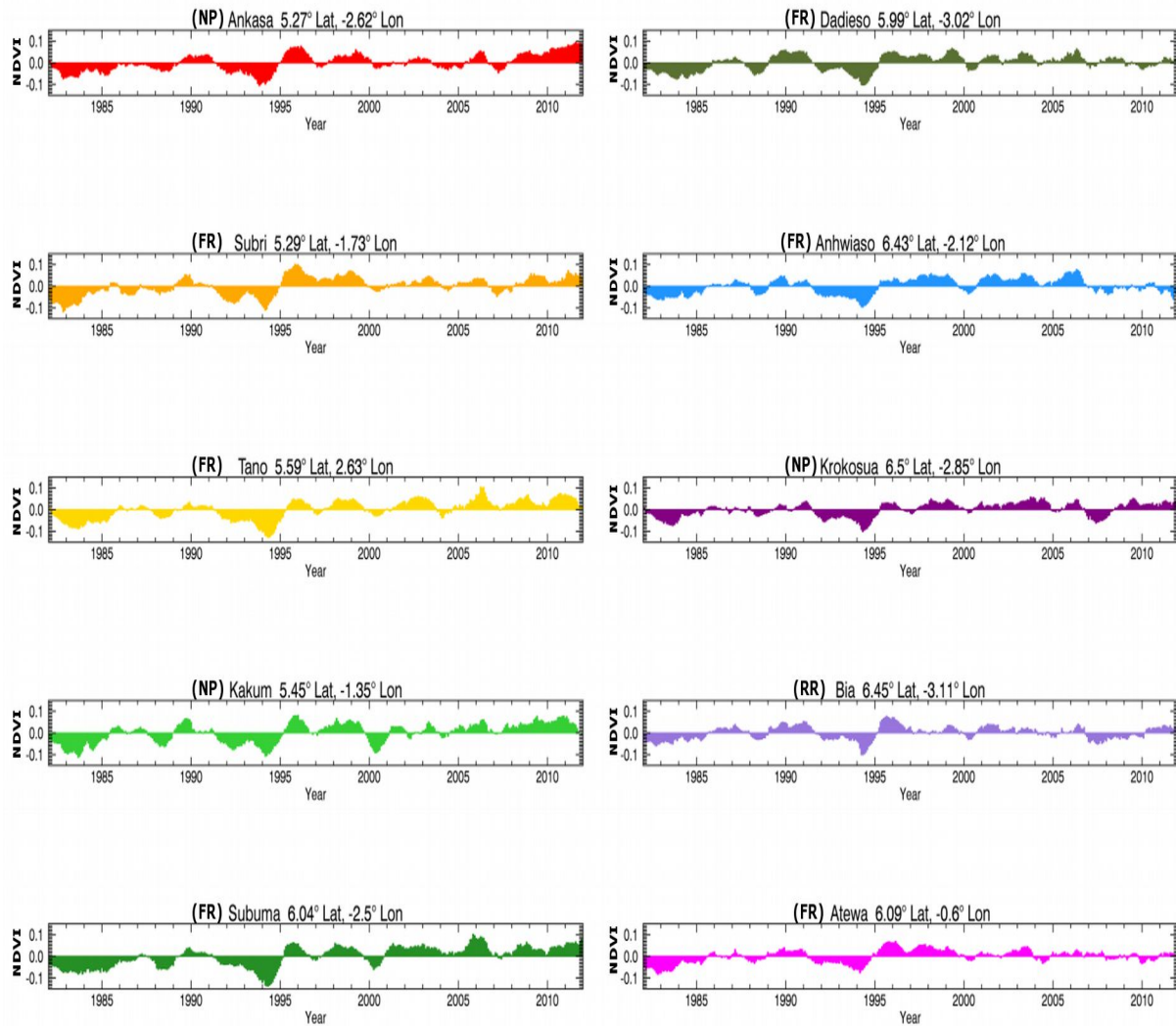


Figure S4 - Anomalies in 30-year NDVI time series for ten forests in Ghana. Sites are ordered according to increasing distance (from top left to bottom right) from the wet evergreen ecological center. FR = Forest Reserve; NP = National Park; RR = Resource Reserve; NDVI = Normalized Difference Vegetation Index.