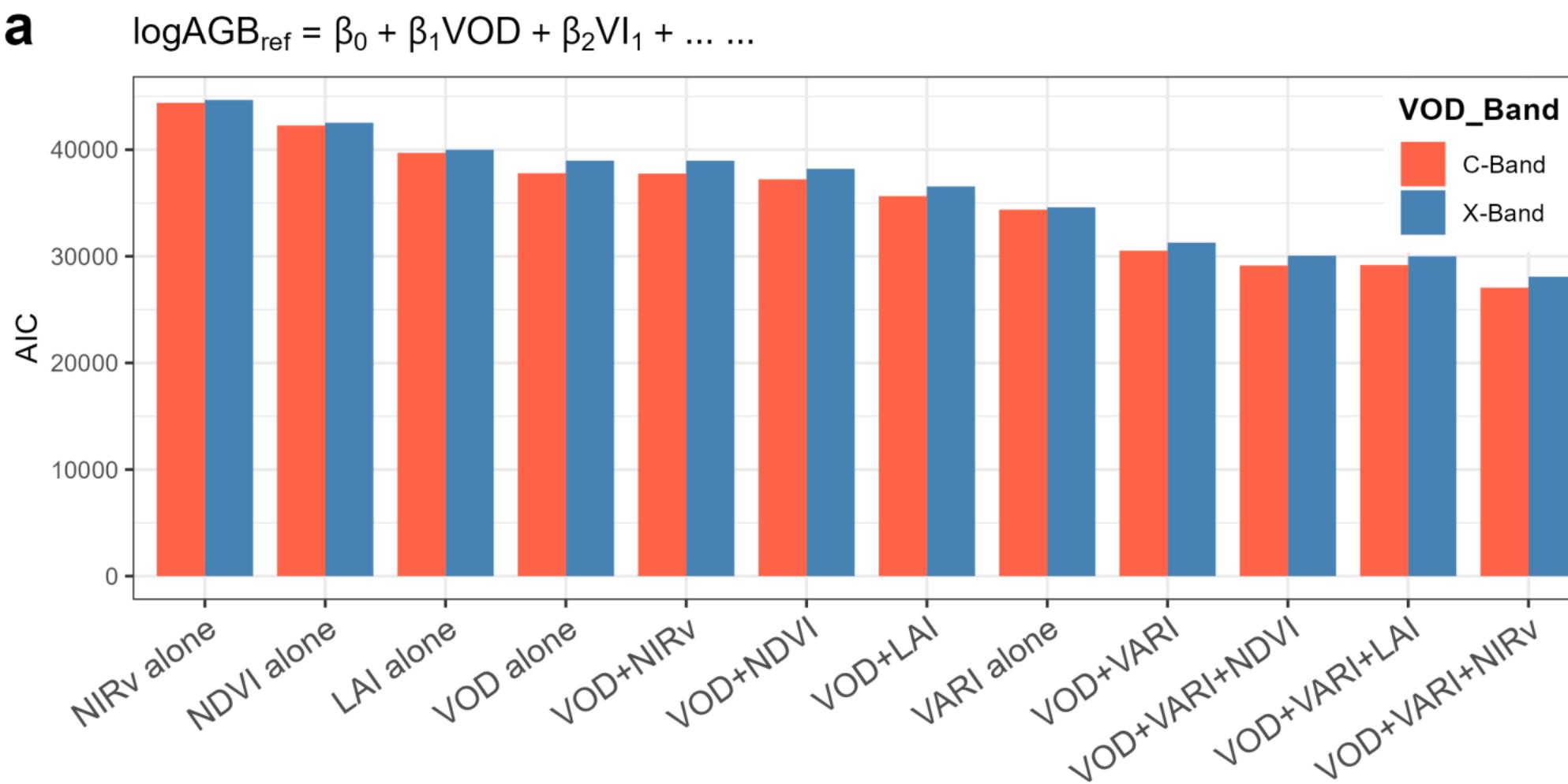
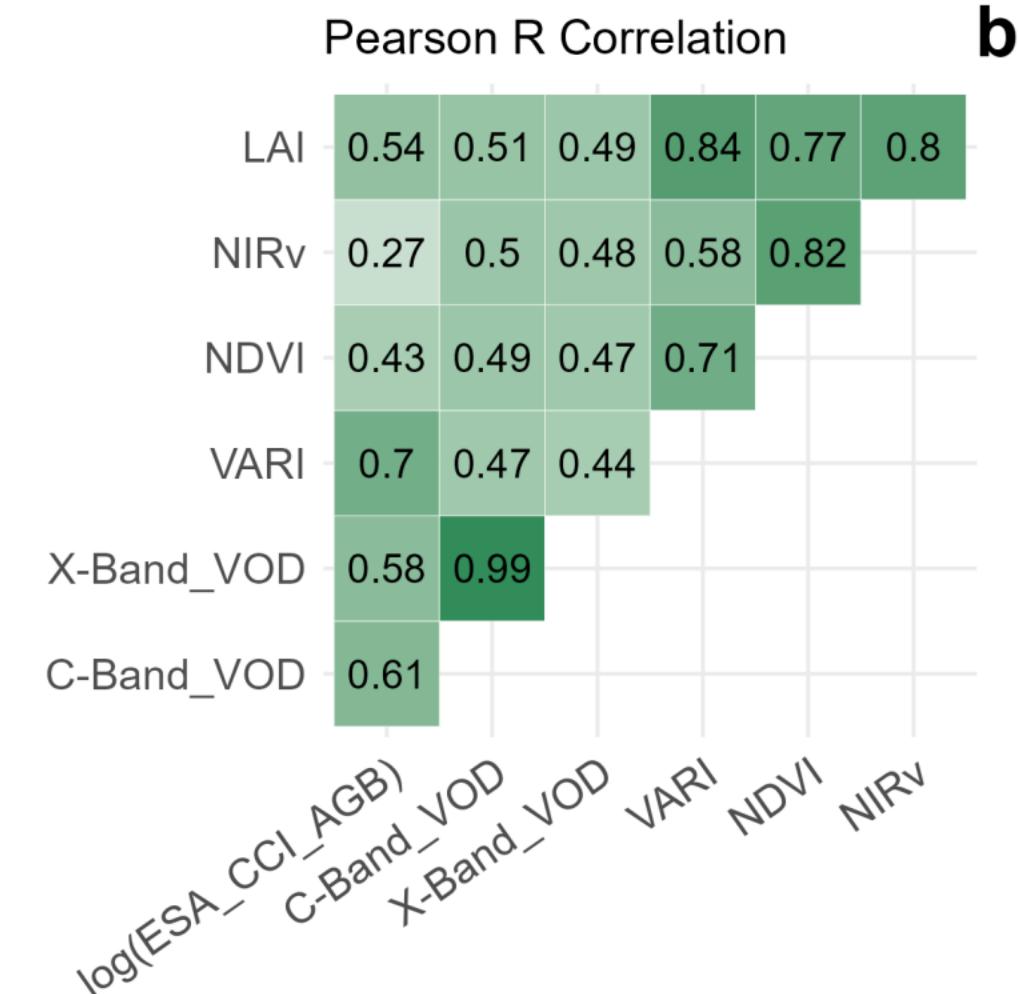
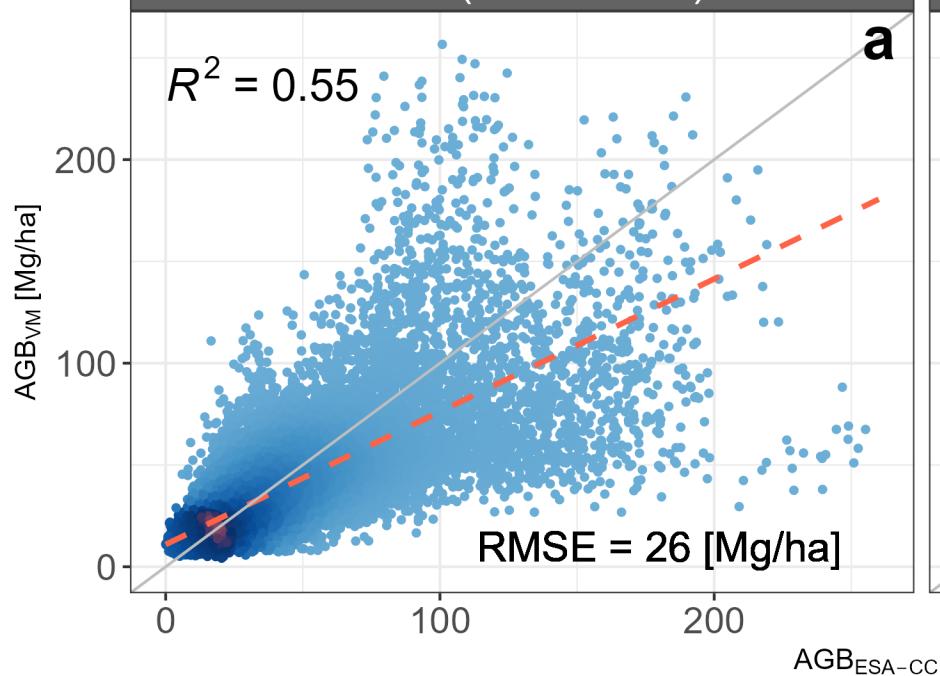
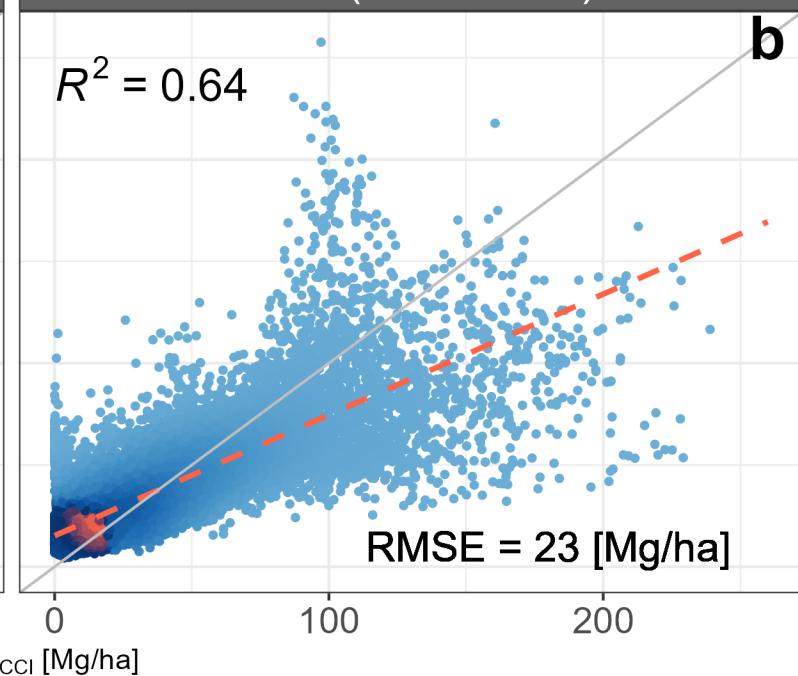
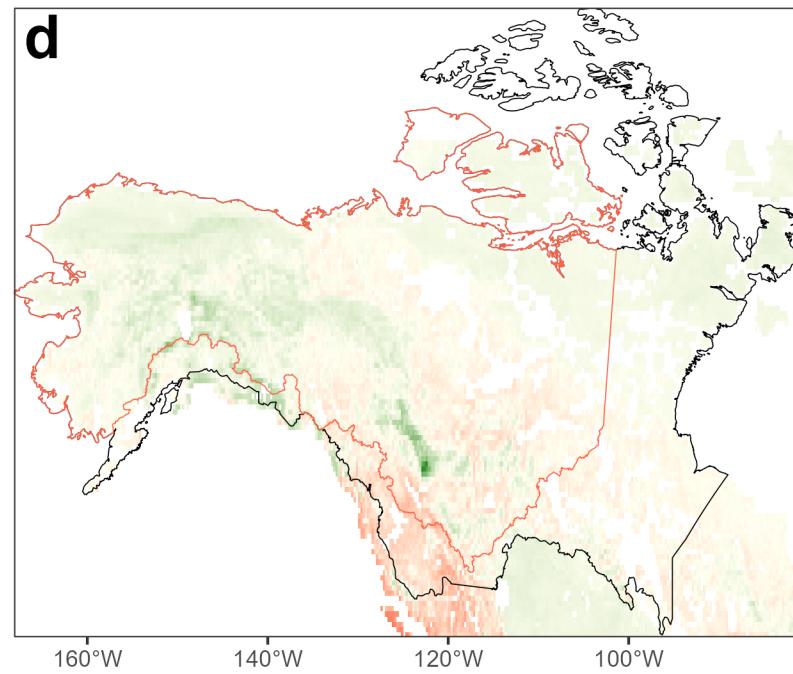
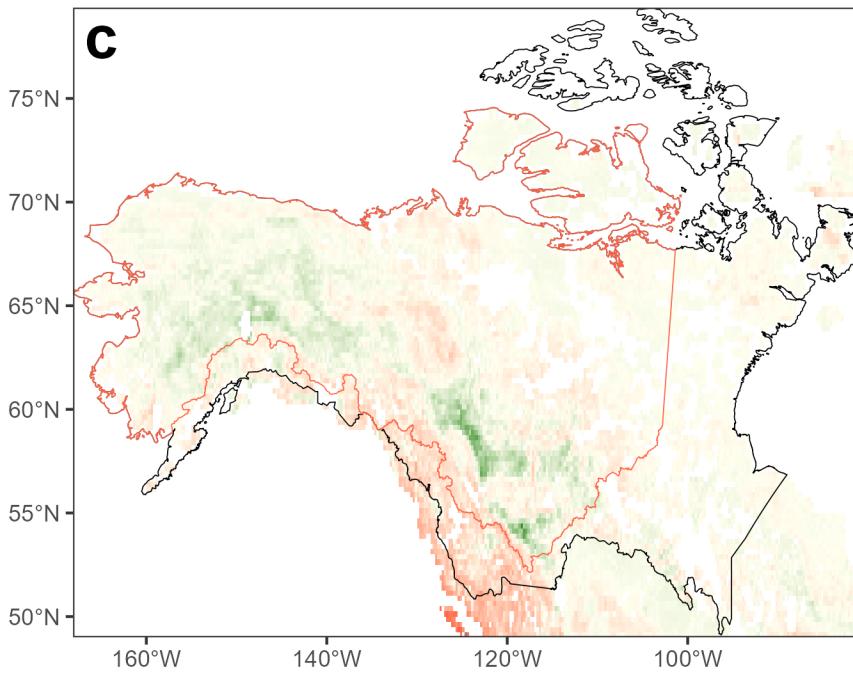


a**b**

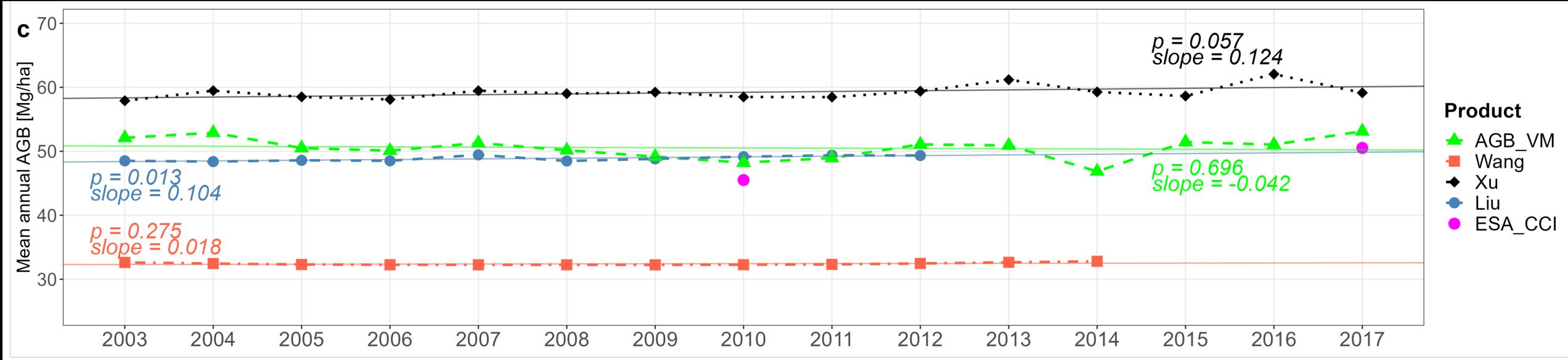
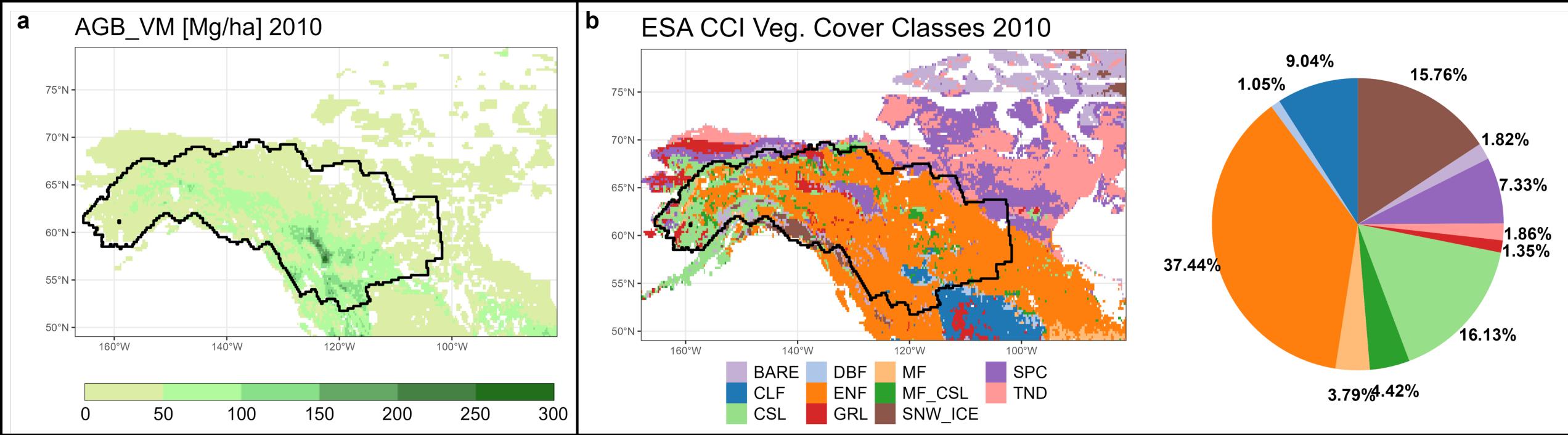
2017 (calibration)

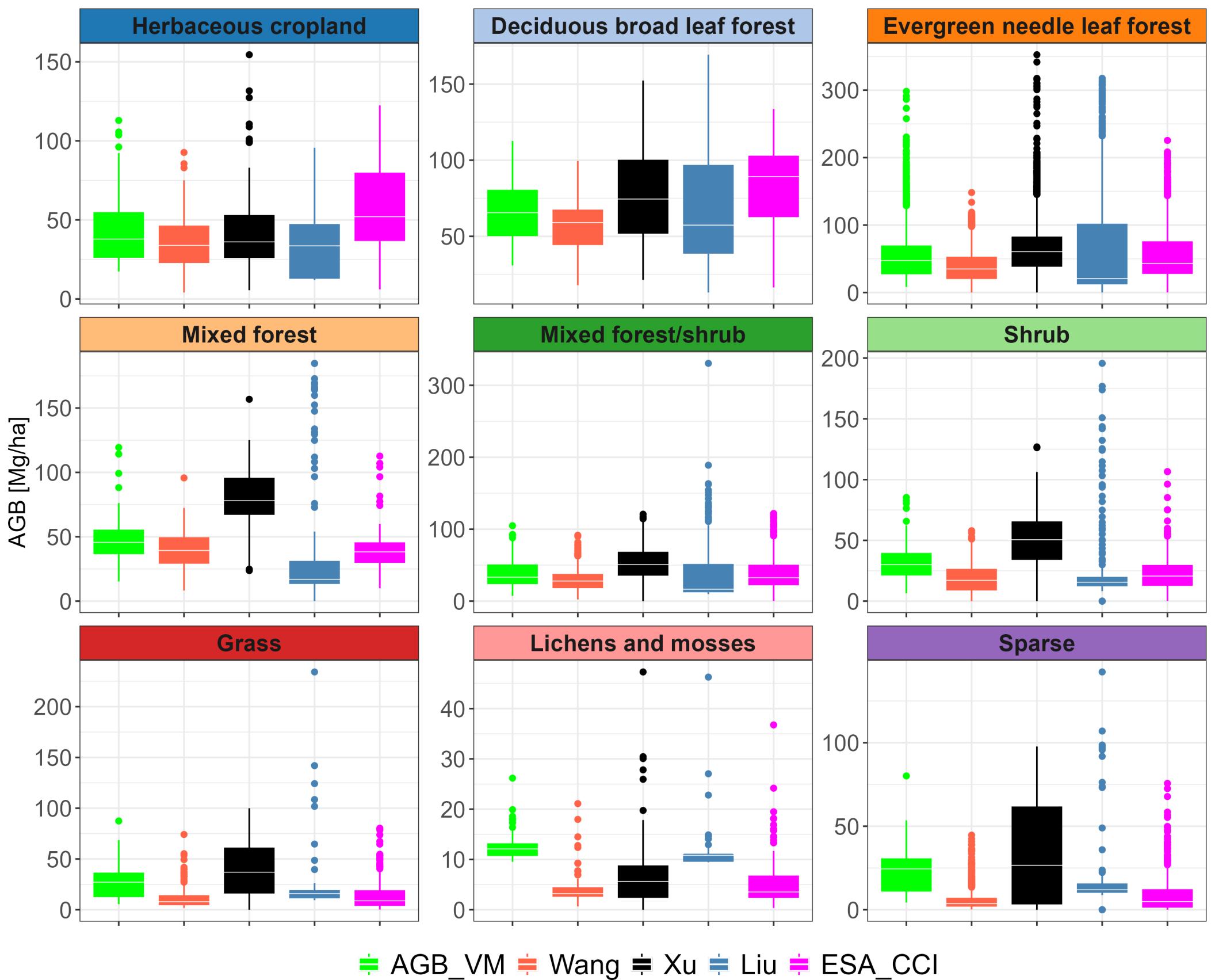


2010 (evaluation)

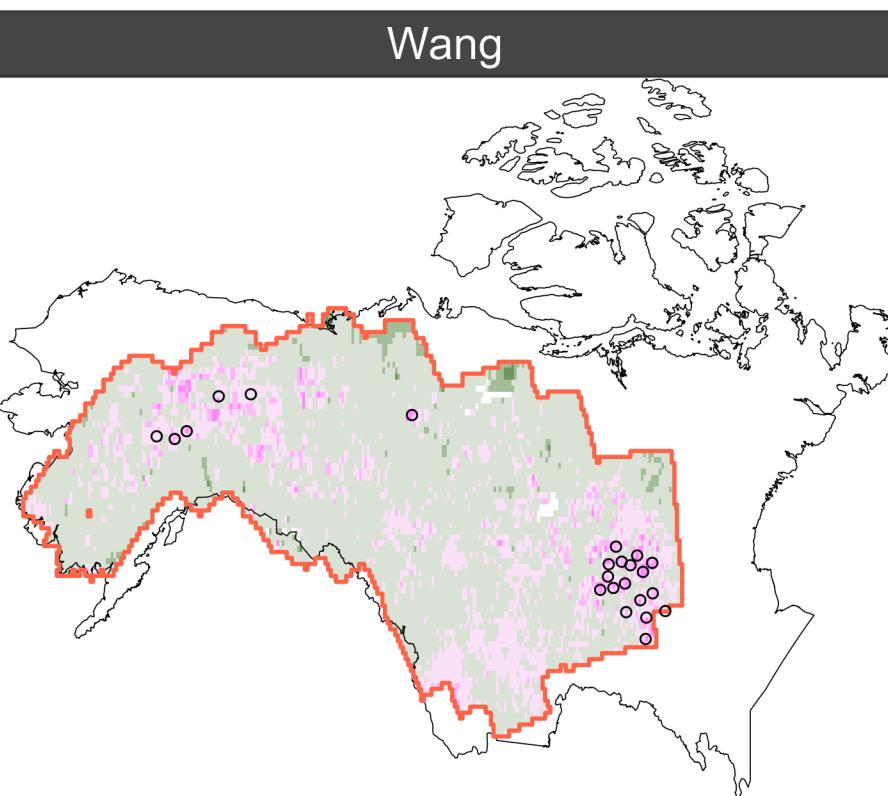
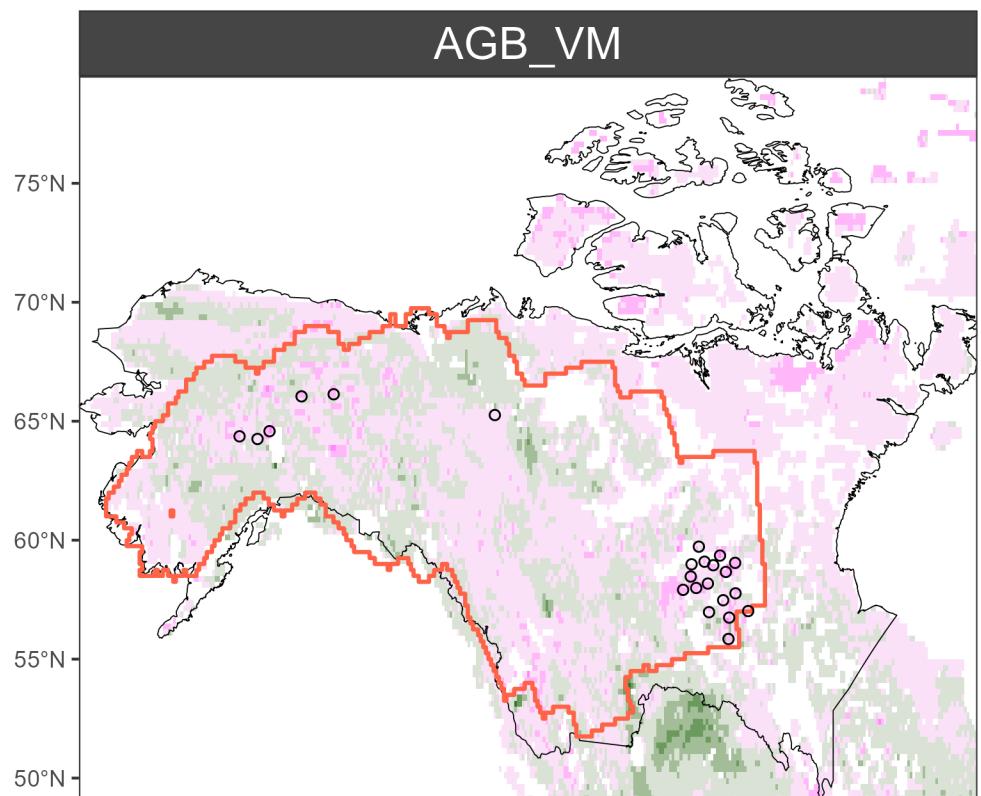
AGB_{VM} minus AGB_{ESA-CCI}

AGB diff. [Mg/ha]

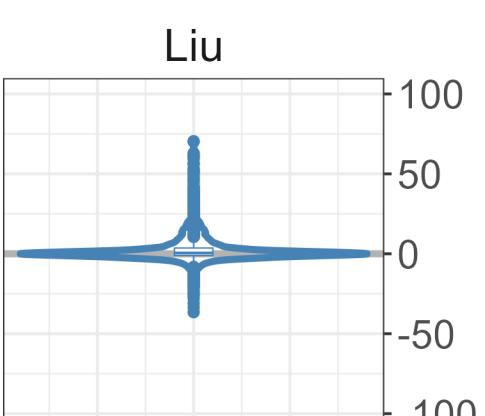
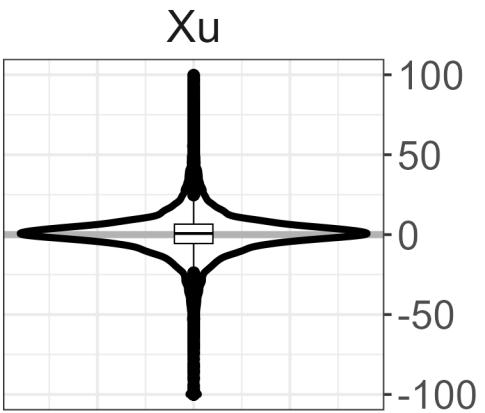
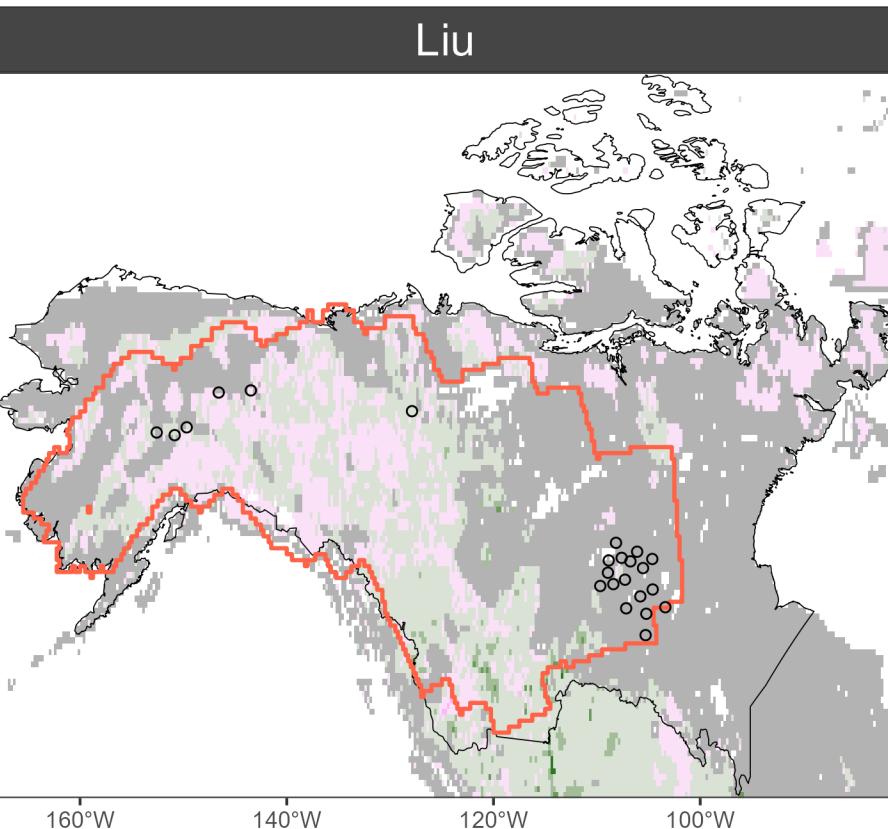
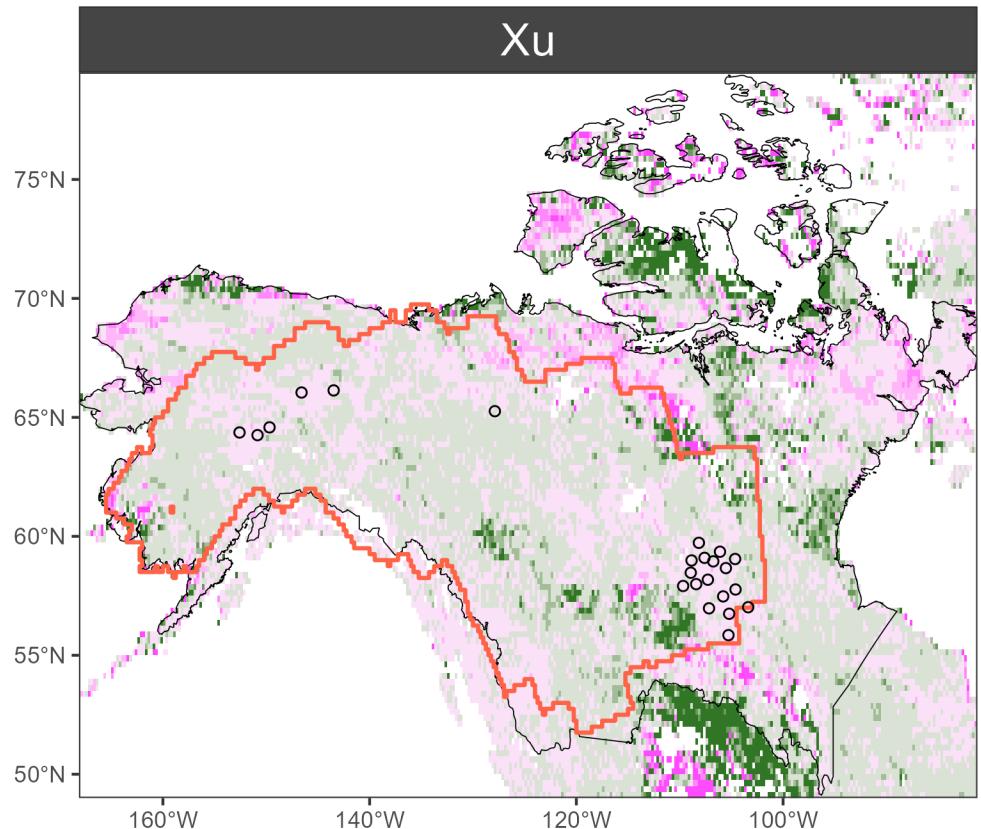
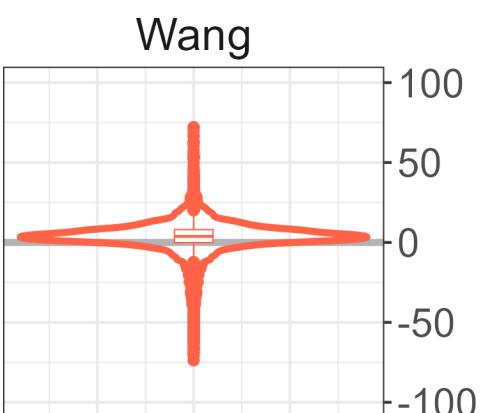
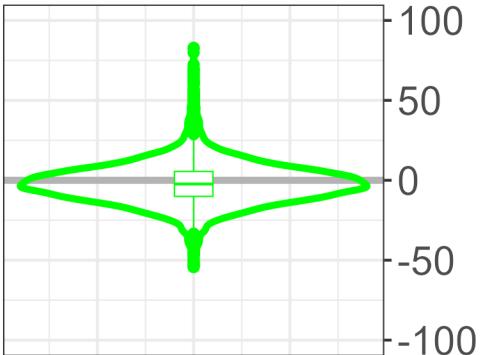




a Pixel-wise % AGB change 2003 vs. 2012



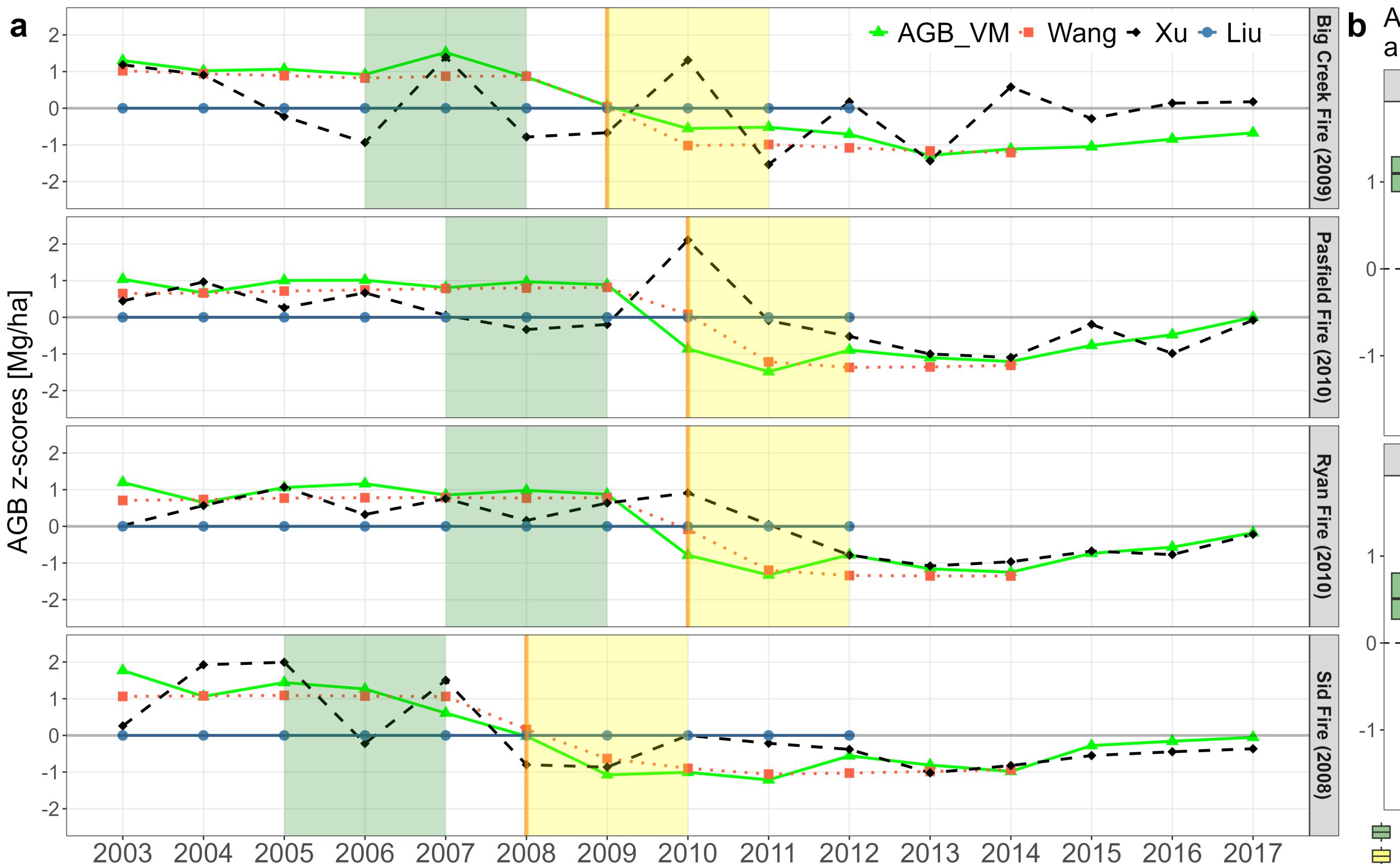
b AGB_VM



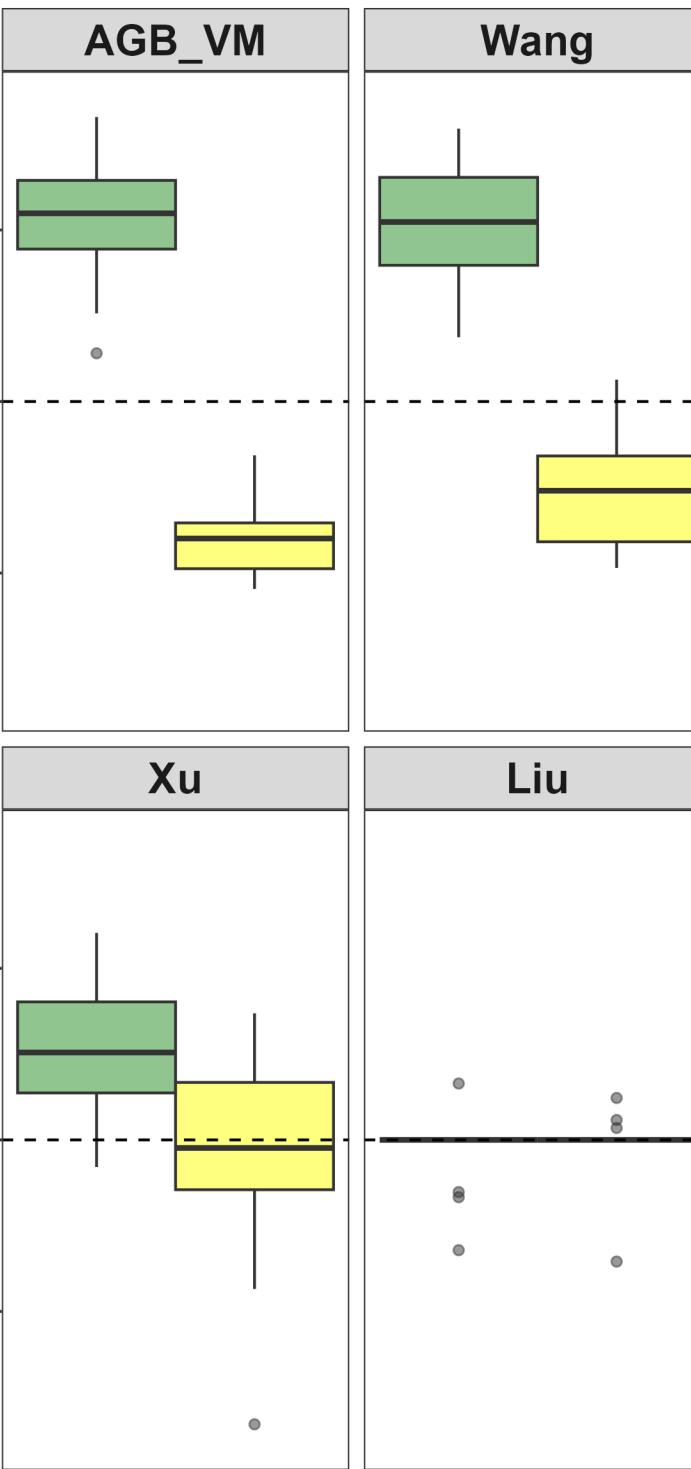
-100 -75 -50 -25 0 25 50 75 100

% AGB change per pixel (grey = no change)

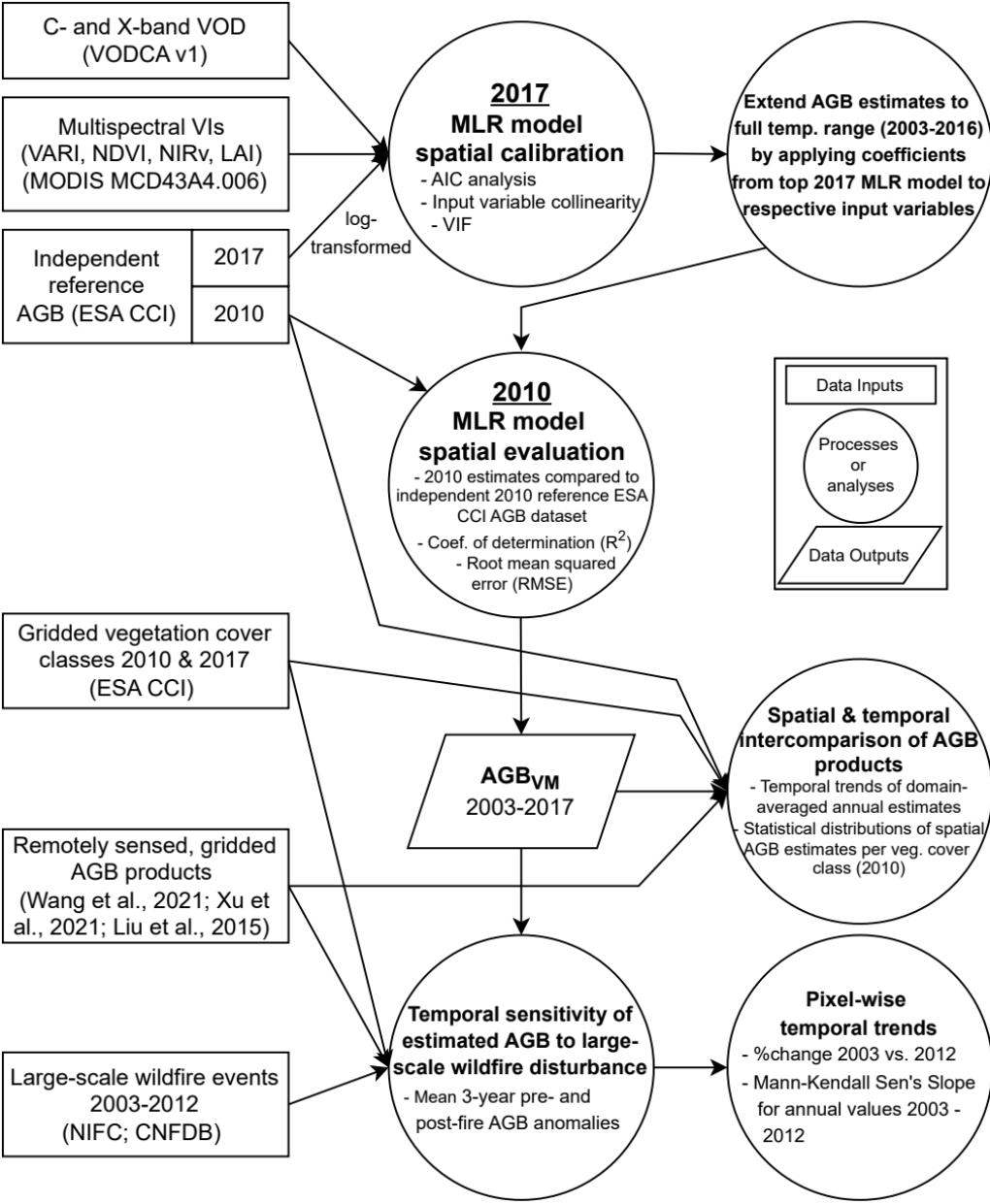
All values masked to extent of Wang product (panel a, red polygon)



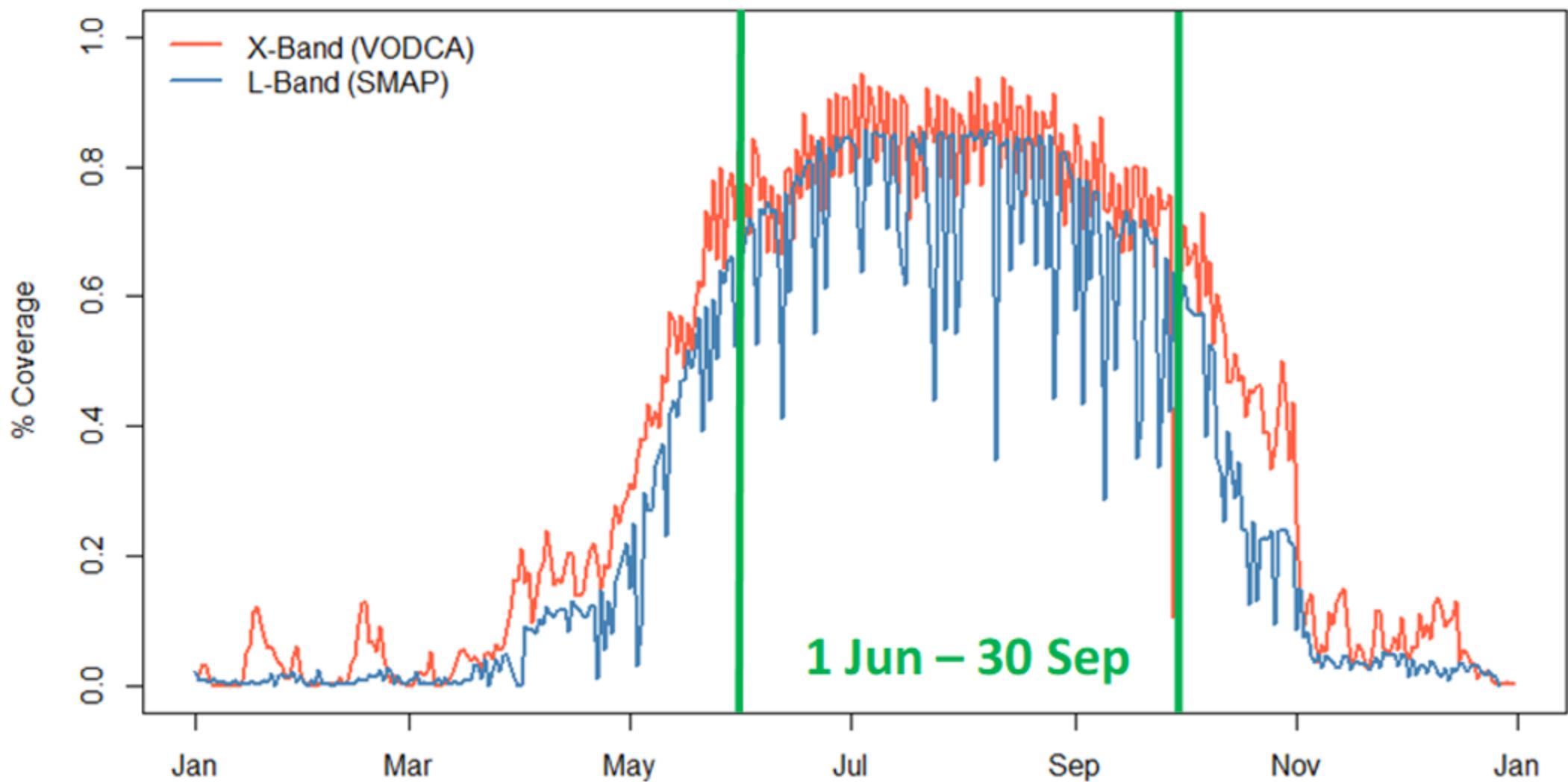
b Aggregated for 23 wildfire areas (years 2006-2010)

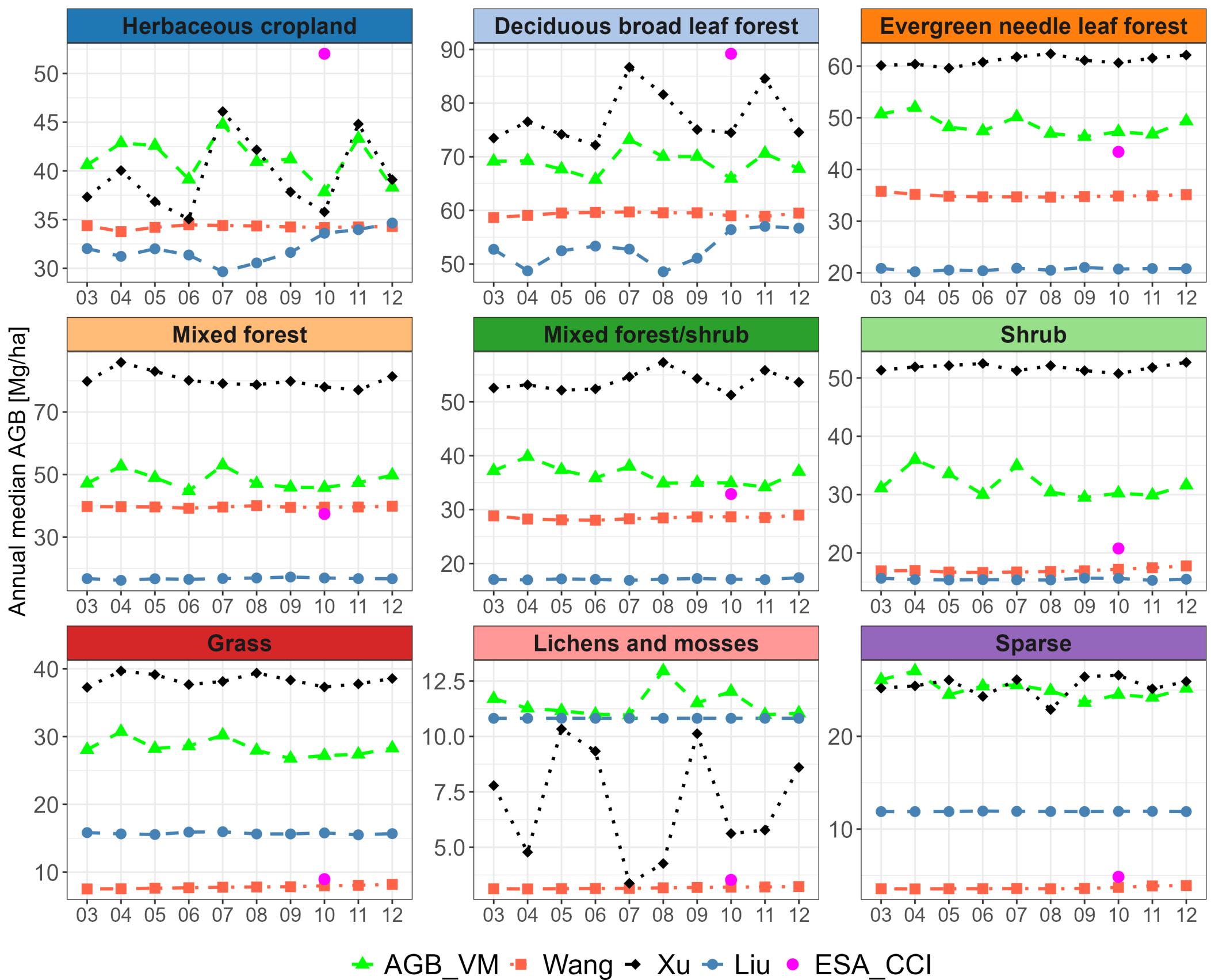


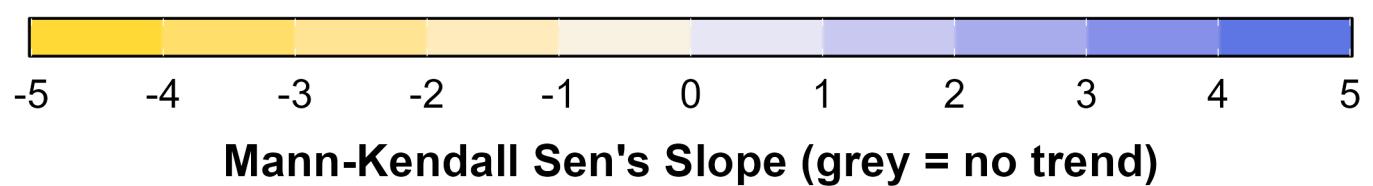
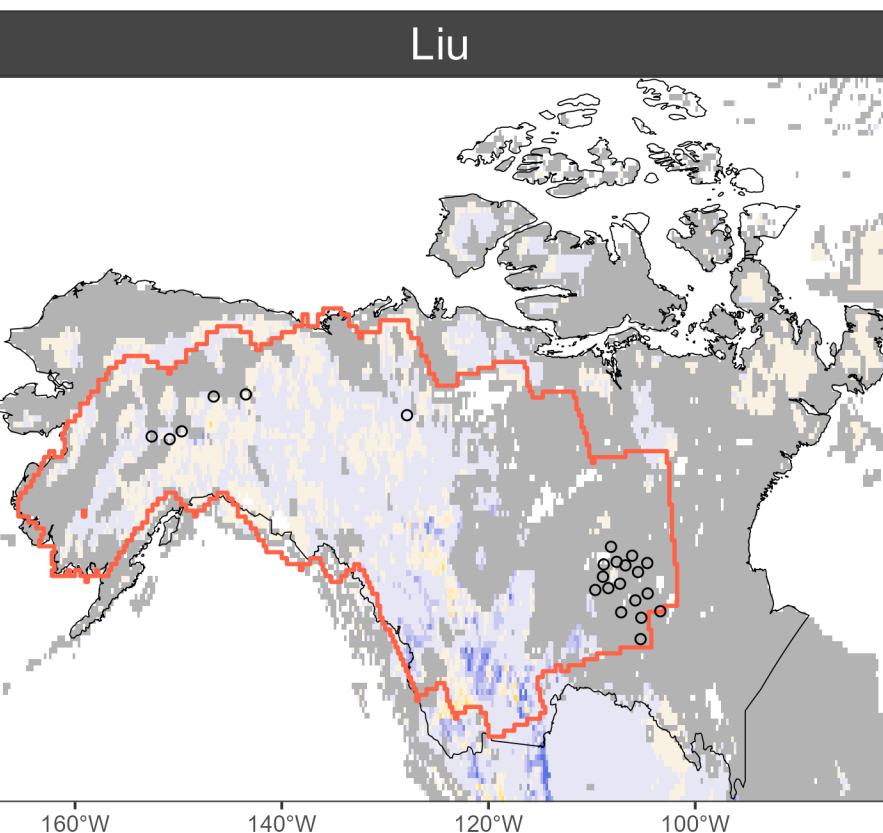
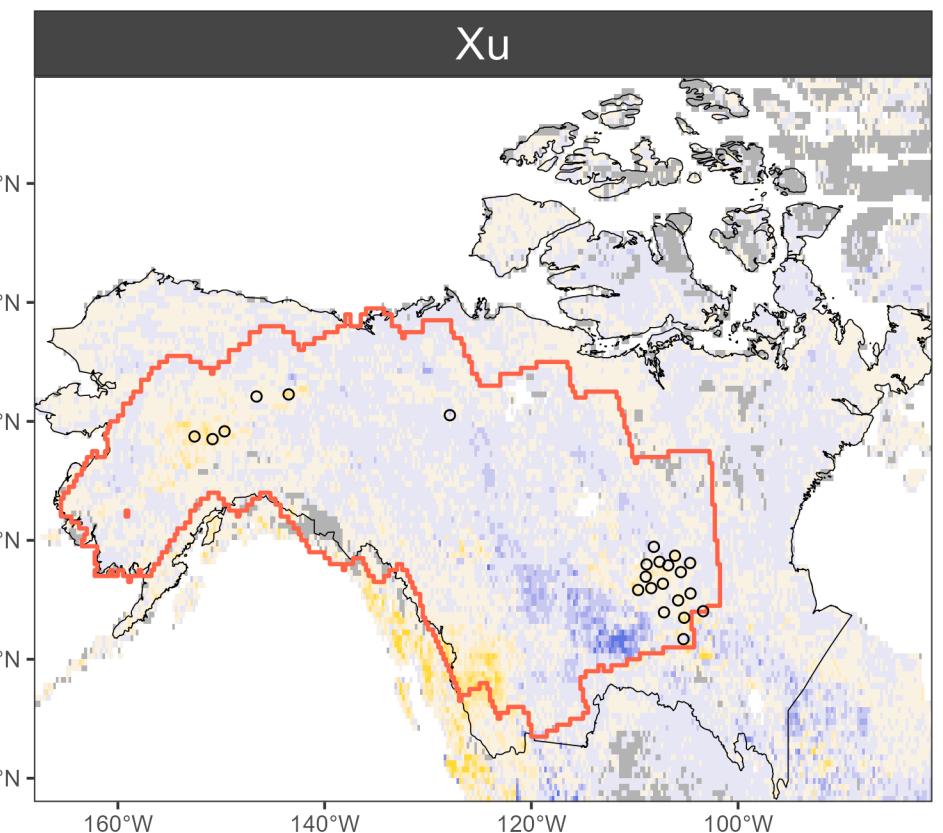
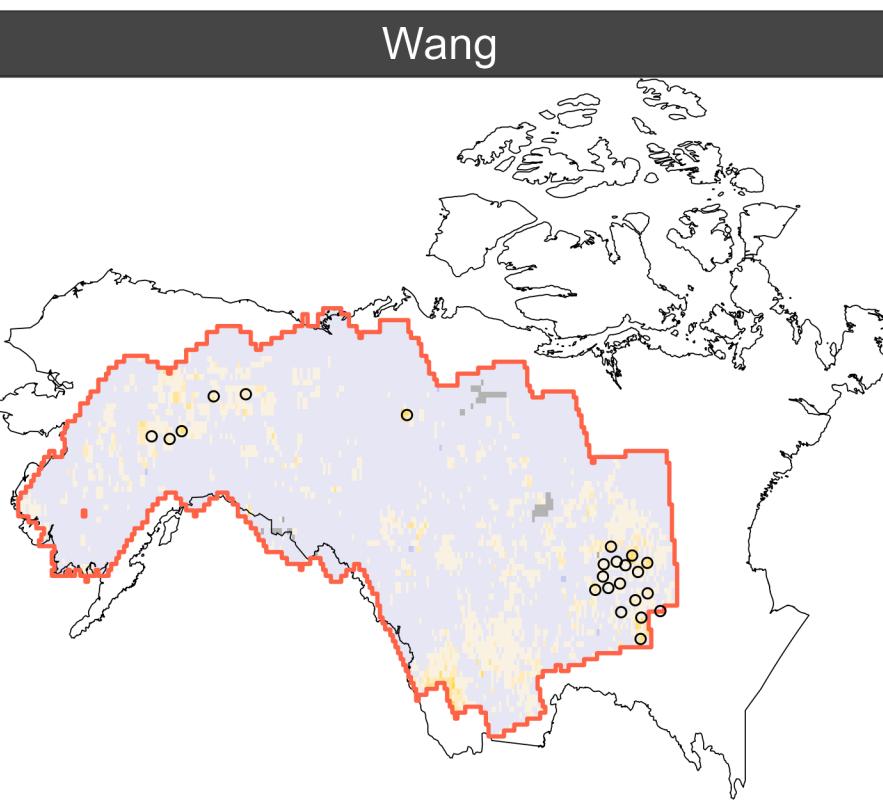
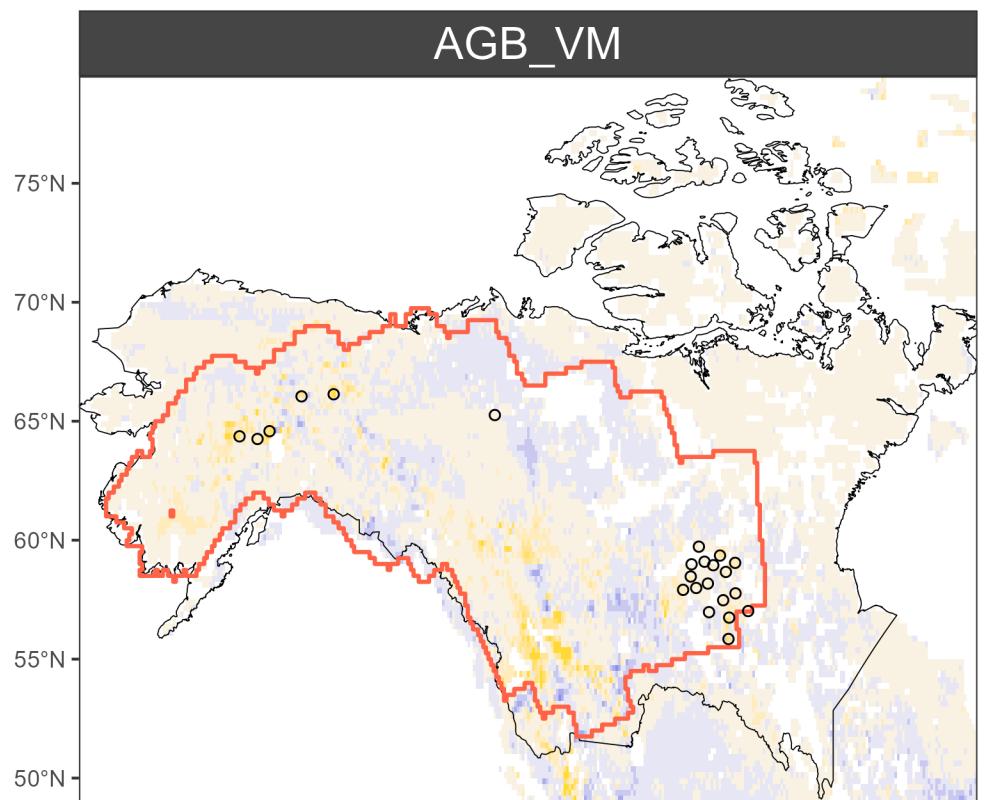
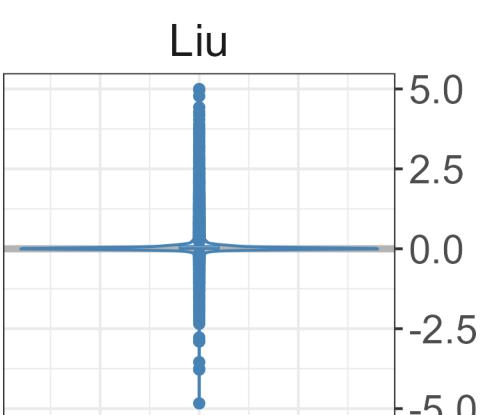
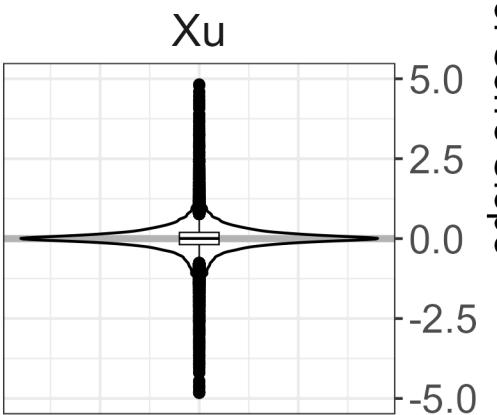
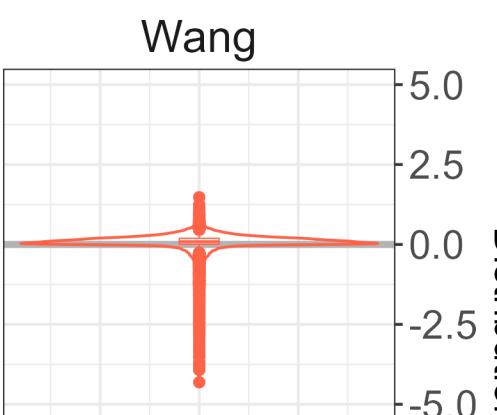
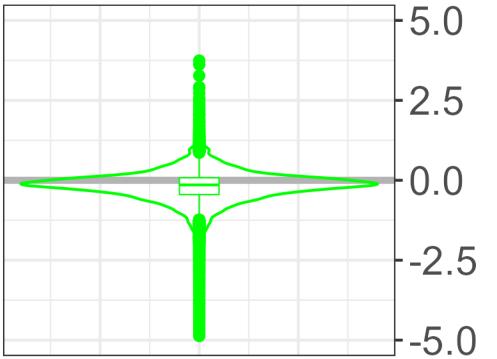
3-year pre-fire mean Z-score
3-year post-fire mean Z-score



VOD Daily % Spatial Coverage of ABoVE Domain (2017)





a Pixel-wise Mann-Kendall Sen's Slope 2003-2012**b AGB_VM**

All values masked to
extent of Wang product
(panel a, red polygon)

Log transformation(s): target AGB						
Model Rank	Model Index	Model Name	# Parameters	AIC	Delta_AIC	Log-Likelihood
01	05	VOD+VARI+NDVI+NIRv+LAI	07	26,863.33	0.00000	-13,424.66
02	08	VOD+VARI+NIRv+LAI	06	26,883.11	19.78687	-13,435.56
03	04	VOD+VARI+NDVI+NIRv	06	27,040.93	177.60324	-13,514.47
04	07	VOD+VARI+NIRv	05	27,061.44	198.11280	-13,525.72
05	06	VOD+VARI+NDVI+LAI	06	28,507.28	1,643.95395	-14,247.64
06	03	VOD+VARI+NDVI	05	29,135.60	2,272.27600	-14,562.80
07	09	VOD+VARI+LAI	05	29,176.40	2,313.07034	-14,583.20
08	02	VOD+VARI	04	30,528.92	3,665.58864	-15,260.46
09	13	VOD+NDVI+NIRv+LAI	06	30,694.14	3,830.81344	-15,341.07
10	15	VOD+NIRv+LAI	05	31,680.49	4,817.16540	-15,835.25
11	20	VARI+NDVI+NIRv+LAI	06	33,275.43	6,412.09775	-16,631.71
12	22	VARI+NIRv+LAI	05	33,331.49	6,468.16654	-16,660.75
13	19	VARI+NDVI+NIRv	05	33,491.15	6,627.82534	-16,740.58
14	21	VARI+NIRv	04	33,544.32	6,680.98973	-16,768.16
15	31	VARI+NDVI+LAI	05	33,894.47	7,031.14358	-16,942.24
16	23	VARI+LAI	04	34,009.09	7,145.75750	-17,000.54
17	18	VARI+NDVI	04	34,122.03	7,258.69837	-17,057.01
18	17	VARI alone	03	34,374.83	7,511.49778	-17,184.41
19	11	VOD+NDVI+NIRv	05	35,562.41	8,699.07807	-17,776.20
20	12	VOD+NDVI+LAI	05	35,578.24	8,714.91632	-17,784.12
21	16	VOD+LAI	04	35,645.19	8,781.85799	-17,818.59
22	26	NDVI+NIRv+LAI	05	36,751.00	9,887.67034	-18,370.50
23	10	VOD+NDVI	04	37,223.89	10,360.55795	-18,607.94
24	14	VOD+NIRv	04	37,754.67	10,891.34574	-18,873.34
25	01	VOD alone	03	37,795.15	10,931.82055	-18,894.57
26	28	NIRv+LAI	04	37,892.63	11,029.30662	-18,942.32
27	30	NDVI+LAI	04	39,691.87	12,828.54621	-19,841.94
28	29	LAI alone	03	39,703.75	12,840.41968	-19,848.87
29	25	NDVI+NIRv	04	41,801.90	14,938.56930	-20,896.95
30	24	NDVI alone	03	42,269.65	15,406.32329	-21,131.83
31	27	NIRv alone	03	44,392.98	17,529.65542	-22,193.49

Variance Inflation Factor (VIF) for MLR model input variables

Model	VOD	VARI	NDVI	NIRv	LAI
VOD+VARI	1.278	1.278			
VOD+NDVI	1.323		1.323		
VOD+NIRv	1.331			1.331	
VOD+LAI	1.351				1.351
VARI+NDVI		1.968	1.968		
VARI+NIRv		1.484		1.484	
VARI+LAI		3.391			3.391
NDVI+NIRv			3.188	3.188	
NDVI+LAI			2.435		2.435
NIRv+LAI				2.780	2.780
VOD+VARI+NDVI	1.374	2.044	2.117		
VOD+VARI+NIRv	1.423	1.587		1.653	
VOD+VARI+LAI	1.359	3.796			3.187
VOD+NDVI+NIRv	1.369		3.279	3.299	
VOD+NDVI+LAI	1.397		2.519		2.579
VOD+NIRv+LAI	1.392			2.866	2.915
VARI+NDVI+NIRv		1.969	4.230	3.190	
VARI+NDVI+LAI		3.508	2.519		4.259
VARI+NIRv+LAI		3.721		3.051	6.925
NDVI+NIRv+LAI			3.471	3.964	3.094
VOD+VARI+NDVI+NIRv	1.427	2.052	4.240	3.312	
VOD+VARI+NDVI+LAI	1.400	3.516	2.595		4.358
VOD+VARI+NIRv+LAI	1.420	3.796		3.187	6.932
VOD+NDVI+NIRv+LAI	1.408		3.511	3.995	3.189
VARI+NDVI+NIRv+LAI		4.572	4.265	5.166	7.050
VOD+VARI+NDVI+NIRv+LAI	1.424	4.623	4.276	5.252	7.060

Year	Fire ID	Name	Area [ha]	nPixels	Region	Data Source *	CentroidLAT	CentroidLON
2009	2009-AKFAS-911320	Minto Flats South	216,471.0	7	AK	NIFC	64.58073	-149.6858
2010	2010-AKTAD-000899	Toklat 2	76,407.6	2	AK	NIFC	64.25402	-150.8478
2009	2009-AKTAD-000420	Titna River	65,694.3	1	AK	NIFC	64.36498	-152.5880
2009	2009-AKUYD-000314	Little Black One	142,356.0	4	AK	NIFC	66.13354	-143.4804
2009	2009-AKUYD-000458	Big Creek	68,650.4	2	AK	NIFC	66.04521	-146.5884
2006	SK-2006-C65008	06LL-MURZIN	202,625.0	6	CA	CNFDB	57.91237	-109.6689
2006	SK-2006-C62017	06BN-DEBBIE	136,951.0	2	CA	CNFDB	57.99139	-108.4049
2006	SK-2006-L64009	06SR-SUPPER	81,021.0	3	CA	CNFDB	59.09560	-107.5989
2006	SK-2006-L64008	06SR-ROYAL	94,031.8	2	CA	CNFDB	58.98638	-108.8537
2007	SK-2007-C72012	07BN-ELMER	77,536.3	1	CA	CNFDB	57.47582	-105.7954
2008	SK-2008-C85015	08LL-SID	70,754.0	1	CA	CNFDB	58.47145	-108.9298
2008	SK-2008-L81012	08LA-ZBAR	63,172.1	2	CA	CNFDB	55.84726	-105.2839
2008	SK-2008-L84030	08SR-CREEK	131,602.0	4	CA	CNFDB	59.04734	-104.6394
2010	SK-2010-C101005	10LX-GIRARD02	117,742.0	3	CA	CNFDB	56.97425	-107.1637
2010	SK-2010-C102009	10BN-GARRET	108,394.0	2	CA	CNFDB	58.17699	-107.2756
2010	SK-2010-L104008	10SR-RYAN	197,680.0	5	CA	CNFDB	58.94820	-106.7523
2010	SK-2010-L101005	10LA-KAUN	109,348.0	3	CA	CNFDB	56.74565	-105.2148
2010	SK-2010-L104004	10SR-PASFIELD	469,631.0	13	CA	CNFDB	58.66476	-105.5346
2010	SK-2010-L103004	10SE-BOTHWELL2	109,163.0	3	CA	CNFDB	57.02061	-103.3768
2007	NT-2007-VQ001-07	NA	76,364.6	1	CA	CNFDB	65.26007	-127.8825
2008	L84013	08SR-VIKING	79,076.4	1	CA	CNFDB	59.72726	-108.1476
2006	L64004	06SR-NOEL	65,399.8	2	CA	CNFDB	59.35396	-106.1029
2008	L83011	08SE-WILLIS	65,858.1	1	CA	CNFDB	57.76586	-104.6000

*CNFDB: <https://cwfis.cfs.nrcan.gc.ca/ha/nfdb>, NIFC: <https://nifc.maps.arcgis.com/home/index.html>

Year	Product	Tot.	Mean	STD	Year	Product	Tot.	Mean	STD
		2003	Wang	298,445.2	32.63	2011	Wang	295,814.8	32.32
2003	Xu	537,177.6	57.90	34.08	Xu	540,963.6	58.47	33.43	
	Liu	416,498.8	48.51	53.86	Liu	423,251.7	49.38	54.83	
	AGB_VM	420,631.0	52.10	32.83	AGB_VM	395,382.7	48.95	31.35	
	ESA_CCI	-	-	-	ESA_CCI	-	-	-	
	Wang	296,612.2	32.45	23.54	2012	Wang	297,231.1	32.47	23.28
	Xu	550,840.0	59.47	36.34		Xu	550,431.7	59.39	34.80
	Liu	415,358.8	48.39	53.93		Liu	422,970.5	49.34	54.43
2004	AGB_VM	428,054.0	52.90	33.66		AGB_VM	404,376.1	51.08	33.09
	ESA_CCI	-	-	-		ESA_CCI	-	-	-
	Wang	295,146.0	32.31	23.48		Wang	298,933.8	32.65	23.34
	Xu	541,692.4	58.50	36.14		Xu	563,657.4	61.19	36.07
	Liu	417,102.6	48.59	53.96		Liu	-	-	-
2005	AGB_VM	407,052.9	50.51	31.89		AGB_VM	399,792.7	50.91	32.22
	ESA_CCI	-	-	-		ESA_CCI	-	-	-
	Wang	294,806.5	32.27	23.41	2014	Wang	300,415.4	32.81	23.37
	Xu	539,099.9	58.10	35.30		Xu	547,810.5	59.27	35.03
	Liu	416,476.2	48.52	53.93		Liu	-	-	-
2006	AGB_VM	403,486.9	50.10	31.63		AGB_VM	368,231.2	46.87	30.15
	ESA_CCI	-	-	-		ESA_CCI	-	-	-
	Wang	294,828.4	32.26	23.37		Wang	-	-	-
	Xu	550,006.7	59.47	34.02		Xu	543,759.9	58.64	36.00
	Liu	423,725.0	49.44	55.07		Liu	-	-	-
2007	AGB_VM	415,477.5	51.29	31.61		AGB_VM	404,895.8	51.44	32.89
	ESA_CCI	-	-	-		ESA_CCI	-	-	-
	Wang	294,908.6	32.26	23.35	2016	Wang	-	-	-
	Xu	544,624.2	59.01	33.69		Xu	575,023.6	62.06	37.59
	Liu	416,149.5	48.49	53.86		Liu	-	-	-
2008	AGB_VM	403,921.1	50.17	31.83		AGB_VM	400,667.5	51.04	32.76
	ESA_CCI	-	-	-		ESA_CCI	-	-	-
	Wang	294,926.5	32.25	23.30		Wang	-	-	-
	Xu	548,312.1	59.24	33.91		Xu	548,281.6	59.14	35.78
	Liu	418,998.2	48.82	54.23		Liu	-	-	-
2009	AGB_VM	395,578.9	49.17	31.51	2017	AGB_VM	415,784.5	53.13	36.31
	ESA_CCI	-	-	-		ESA_CCI	854,296.3	50.52	37.05
	Wang	295,190.2	32.27	23.26		Wang	-	-	-
	Xu	542,888.4	58.49	35.38		Xu	-	-	-
	Liu	421,644.3	49.16	54.30		Liu	-	-	-
2010	AGB_VM	390,098.8	48.22	30.48		AGB_VM	-	-	-
	ESA_CCI	407,011.5	45.50	34.11		ESA_CCI	-	-	-

% AGB change [Mg/ha] 2003 vs. 2012 per land cover class

Land Cover Class	AGB_VM			Wang			Xu			Liu		
	median	SE	p									
Herbaceous cropland	-4.86	1.17	< 0.001	0.03	0.68	0.108	1.80	0.91	< 0.001	3.21	0.68	< 0.001
Deciduous broad leaf forest	-0.38	1.65	0.182	0.32	0.58	0.004	1.55	0.59	< 0.001	1.56	1.22	< 0.001
Evergreen needle leaf forest	-1.84	0.18	< 0.001	2.61	0.07	< 0.001	1.46	0.11	< 0.001	0.00		
Mixed forest	4.22	1.57	< 0.001	4.90	0.55	< 0.001	2.43	0.83	< 0.001	0.00		
Mixed forest/shrub	5.60	0.62	< 0.001	5.61	0.54	< 0.001	2.38	0.50	< 0.001	0.00		
Shrub	-0.37	0.48	< 0.001	6.30	0.26	< 0.001	2.71	0.24	< 0.001	0.00		
Grass	-4.51	0.53	< 0.001	7.90	0.29	< 0.001	2.53	0.41	< 0.001	0.00		
Lichens and mosses	-5.08	0.72	< 0.001	4.17	0.40	< 0.001	5.19	4.25	< 0.001	0.00		
Sparse	-7.43	0.42	< 0.001	8.58	0.38	< 0.001	2.57	0.30	< 0.001	0.00		

Mann-Kendall Sen's Slope trends 2003-2012 per land cover class

Land Cover Class	AGB_VM			Wang			Xu			Liu		
	median	SE	p									
Herbaceous cropland	-0.29	0.05	< 0.001	-0.02	0.02	< 0.001	0.04	0.03	< 0.001	0.09	0.02	< 0.001
Deciduous broad leaf forest	-0.00	0.07	0.433	0.00	0.03	0.066	0.27	0.07	< 0.001	0.18	0.06	< 0.001
Evergreen needle leaf forest	-0.14	0.01	< 0.001	0.11	0.00	< 0.001	0.06	0.01	< 0.001	0.00		
Mixed forest	-0.18	0.08	< 0.001	0.21	0.02	< 0.001	-0.03	0.05	0.008	0.00		
Mixed forest/shrub	0.05	0.03	< 0.001	0.17	0.01	< 0.001	0.15	0.03	< 0.001	0.00		
Shrub	-0.35	0.01	< 0.001	0.10	0.00	< 0.001	0.00	0.01	0.084	0.00		
Grass	-0.27	0.03	< 0.001	0.06	0.00	< 0.001	0.03	0.01	< 0.001	0.00		
Lichens and mosses	-0.02	0.01	< 0.001	0.01	0.00	< 0.001	0.01	0.03	0.332	0.00		
Sparse	-0.17	0.01	< 0.001	0.03	0.00	< 0.001	0.03	0.01	< 0.001	0.00		