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Predicting landscape-scale CO_2 flux at a pasture and rice paddy with long-term hyperspectral canopy reflectance measurements

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Site	Flux	NDVI cal	NDVI MODIS cal	NDVIg cal	NDVIre cal	PRI cal	NDVI pred	NDVI MODIS pred	NDVIg pred	NDVIre pred	PRI pred
All	GPP_inst	0.50	0.50	0.51	0.57	0.21	0.20	0.18	0.19	0.22	0.08
All	GPP_day	0.57	0.55	0.57	0.65	0.23	0.49	0.44	0.49	0.53	0.13
All	GPP_week	0.57	0.56	0.61	0.64	0.17	0.46	0.42	0.49	0.50	0.09
All	GPP_month	0.50	0.49	0.59	0.56	0.05	0.35	0.32	0.42	0.38	0.02
All	NEE_inst	0.50	0.49	0.48	0.57	0.23	0.50	0.50	0.50	0.57	0.21
All	NEE_day	0.47	0.45	0.44	0.54	0.26	0.51	0.51	0.50	0.58	0.22
All	NEE_week	0.50	0.48	0.48	0.56	0.22	0.53	0.53	0.54	0.59	0.19
All	NEE_month	0.53	0.53	0.58	0.58	0.07	0.54	0.54	0.58	0.59	0.07
Pasture	GPP_inst	0.30	0.29	0.44	0.38	0.17	0.10	0.09	0.15	0.13	0.06
Pasture	GPP_day	0.36	0.35	0.58	0.45	0.13	0.28	0.26	0.43	0.34	0.07
Pasture	GPP_week	0.30	0.29	0.53	0.38	0.08	0.24	0.22	0.41	0.30	0.04
Pasture	GPP_month	0.19	0.18	0.41	0.25	0.05	0.14	0.13	0.31	0.19	0.01
Pasture	NEE_inst	0.32	0.31	0.46	0.40	0.18	0.31	0.30	0.43	0.39	0.19
Pasture	NEE_day	0.32	0.31	0.52	0.41	0.16	0.27	0.26	0.44	0.35	0.15
Pasture	NEE_week	0.29	0.29	0.48	0.36	0.12	0.24	0.25	0.41	0.31	0.12
Pasture	NEE_month	0.20	0.20	0.39	0.25	0.06	0.17	0.17	0.36	0.22	0.04
Rice	GPP_inst	0.42	0.46	0.49	0.49	0.22	0.53	0.48	0.49	0.54	0.10
Rice	GPP_day	0.53	0.56	0.58	0.62	0.28	0.65	0.57	0.58	0.69	0.17
Rice	GPP_week	0.57	0.60	0.63	0.65	0.22	0.69	0.62	0.63	0.72	0.13
Rice	GPP_month	0.60	0.59	0.64	0.63	0.07	0.67	0.60	0.67	0.68	0.01
Rice	NEE_inst	0.44	0.47	0.49	0.52	0.25	0.48	0.49	0.52	0.56	0.18
Rice	NEE_day	0.47	0.49	0.50	0.55	0.32	0.51	0.51	0.53	0.60	0.23
Rice	NEE_week	0.51	0.54	0.56	0.58	0.25	0.57	0.56	0.59	0.64	0.19
Rice	NEE_month	0.61	0.60	0.64	0.64	0.09	0.65	0.63	0.67	0.69	0.04

Table S1. We analyzed the ability of a suite of commonly used standardized vegetation indices to predict GPP and NEE fluxes for the entire dataset (All), and with the Pasture and Rice data only, where here we present the calibration R2 fit (cal) and predictive R2 fit (val). Overall, NDVI indices achieved a relatively good fit, where red-edge NDVI (NDVIre) demonstrated the most skill at predicting GPP and NEE fluxes for the entire dataset in this study.