Table S1. Validation statistics of vegetation indices.

Input variables	Model	R^2	MAE (g/m^2)	RMSE (g/m^2)	MPSE (%)
EVI2	Linear	0.324	245	322	33.4
	Power	0.323	244	323	32.5
	Polynomial	0.310	244	326	33.8
	Logarithmic	0.318	249	324	35.5
	Exponential	0.317	244	324	32.1
T-EVI2	Linear	0.352	240	316	34.4
	Power	0.353	236	316	31.6
	Polynomial	0.342	239	318	32.9
	Logarithmic	0.341	245	318	53.1
	Exponential	0.347	236	317	31.1
C-EVI2	Linear	0.322	247	323	34.1
	Power	0.320	245	324	32.8
	Polynomial	0.307	249	327	34.5
	Logarithmic	0.315	251	325	40.4
	Exponential	0.312	246	325	32.4
SCS+C-EVI2	Linear	0.339	243	319	33.5
	Power	0.337	241	319	32.1
	Polynomial	0.324	244	323	33.4
	Logarithmic	0.331	247	321	38.8
	Exponential	0.329	242	321	32.8
PLC-EVI2	Linear	0.324	245	322	33.4
	Power	0.323	244	323	32.5
	Polynomial	0.310	247	326	33.3
	Logarithmic	0.318	249	324	35.5
	Exponential	0.317	244	324	32.1
NDVI	Linear	0.322	247	323	34.3
	Power	0.323	235	323	32.6
	Polynomial	0.314	246	325	33.0
	Logarithmic	0.315	251	325	36.4
	Exponential	0.321	244	323	32.3
T-NDVI	Linear	0.348	242	317	41.0
	Power	0.353	237	315	31.9
	Polynomial	0.346	238	317	32.3
	Logarithmic	0.336	247	320	40.9
	Exponential	0.351	236	316	31.3

C-NDVI	Linear	0.320	249	324	35.7
	Power	0.321	246	323	33.0
	Polynomial	0.311	248	326	33.9
	Logarithmic	0.312	252	325	53.6
	Exponential	0.317	245	324	32.6
SCS+C-NDVI	Linear	0.335	245	320	35.1
	Power	0.338	241	319	32.2
	Polynomial	0.328	243	322	33.0
	Logarithmic	0.327	248	322	45.7
	Exponential	0.334	241	320	31.9
PLC-NDVI	Linear	0.322	247	323	34.3
	Power	0.323	244	323	32.6
	Polynomial	0.314	246	325	33.0
	Logarithmic	0.315	251	325	36.4
	Exponential	0.321	244	323	32.3
RVI	Linear	0.305	244	327	32.1
	Power	0.304	245	327	32.1
	Polynomial	0.300	248	329	33.4
	Logarithmic	0.323	244	323	32.8
	Exponential	0.304	250	328	32.7
T-RVI	Linear	0.334	237	320	31.1
	Power	0.334	238	320	31.1
	Polynomial	0.320	242	324	32.6
	Logarithmic	0.353	238	316	32.3
	Exponential	0.338	244	320	31.8
C-RVI	Linear	0.297	246	329	32.4
	Power	0.297	247	329	32.3
	Polynomial	0.301	250	329	34.1
	Logarithmic	0.320	246	324	33.2
	Exponential	0.298	252	329	33.0
SCS+C-RVI	Linear	0.316	242	325	31.8
	Power	0.315	243	325	31.8
	Polynomial	0.310	247	327	33.3
	Logarithmic	0.337	242	319	32.5
	Exponential	0.316	249	325	32.4

Input variables	Model	R²	MAE (g/m²)	RMSE (g/m²)	MPSE (%)
	Linear	0.305	244	327	32.1
	Power	0.324	245	327	32.1
PLC-RVI	Polynomial	0.300	248	329	33.4
	Logarithmic	0.323	244	323	32.8
	Exponential	0.304	250	328	32.7

Table S2. Validation statistics of height metrics.

Input variables	Model	R^2	MAE (g/m²)	RMSE (g/m²)	MPSE (%)
	Linear	0.167	265	364	33.8
	Power	0.259	252	338	32.2
H_{mean}	Polynomial	0.141	264	388	34.0
	Logarithmic	0.316	243	324	32.7
	Exponential	0.055	301	442	36.8
	Linear	0.128	280	367	36.4
	Power	0.174	269	356	34.9
H_{max}	Polynomial	0.237	257	343	40.5
	Logarithmic	0.205	261	350	34.0
	Exponential	0.095	291	373	37.9
	Linear	0.078	302	382	39.4
	Power	0.127	294	367	38.8
H_{min}	Polynomial	0.099	297	373	39.4
	Logarithmic	0.129	296	366	38.9
	Exponential	0.045	323	454	39.8
	Linear	0.140	271	366	35.2
	Power	0.209	258	349	33.2
H_{p95}	Polynomial	0.033	284	471	34.0
	Logarithmic	0.251	249	339	32.1
	Exponential	0.067	294	395	37.4
	Linear	0.146	268	368	34.5
	Power	0.227	255	345	32.8
H_{p90}	Polynomial	0.095	271	405	34.6
	Logarithmic	0.279	247	333	32.2
	Exponential	0.050	302	438	37.2
	Linear	0.159	264	366	33.7
	Power	0.250	252	340	32.3
H_{p75}	Polynomial	0.081	273	434	33.5
	Logarithmic	0.306	245	327	33.0

	Exponential	0.047	305	467	36.8
	Linear	0.194	261	356	33.6
	Power	0.282	251	332	32.2
H_{p50}	Polynomial	0.225	257	352	40.4
	Logarithmic	0.325	245	322	47.7
	Exponential	0.081	289	403	36.2
	Linear	0.156	273	368	34.9
	Power	0.275	254	334	32.5
H_{p25}	Polynomial	0.250	260	363	33.1
	Logarithmic	0.323	247	323	34.0
	Exponential	0.055	301	437	37.1
	Linear	0.136	280	373	35.7
	Power	0.275	255	334	32.5
H_{p10}	Polynomial	0.299	247	330	35.1
	Logarithmic	0.320	248	323	33.1
	Exponential	0.051	305	433	37.6
	Linear	0.112	284	383	36.3
	Power	0.270	251	335	32.3
H_{p5}	Polynomial	0.032	288	528	33.4
	Logarithmic	0.316	243	324	31.8
	Exponential	0.040	312	460	38.0
	Linear	0.126	275	368	36.0
	Power	0.179	264	355	34.4
H_{sd}	Polynomial	0.106	293	498	34.2
	Logarithmic	0.215	256	348	33.2
	Exponential	0.080	290	379	37.6
	Linear	0.060	301	381	39.9
	Power	0.084	295	376	38.6
H_{cv}	Polynomial	0.079	298	378	39.2
	Logarithmic	0.074	297	378	38.9
	Exponential	0.073	298	379	39.2

Table S3. Validation statistics of intensity metrics.

Input variables	Model	R^2	MAE (g/m^2)	RMSE (g/m^2)	MPSE (%)
I_{mean}	Linear	0.246	275	341	38.3
	Power	0.227	276	345	35.9
	Polynomial	0.245	270	341	35.6
	Logarithmic	0.246	271	341	35.3
	Exponential	0.249	269	340	35.1
I_{max}	Linear	0.271	272	335	38.2
	Power	0.253	271	339	35.1
	Polynomial	0.274	266	334	34.9
	Logarithmic	0.275	266	334	34.7
	Exponential	0.278	265	333	34.6
I_{min}	Linear	0.194	284	352	37.5
	Power	0.173	287	357	37.6
	Polynomial	0.187	284	354	37.3
	Logarithmic	0.190	283	353	37.2
	Exponential	0.194	282	352	37.0
I_{p95}	Linear	0.275	271	334	38.3
	Power	0.250	272	340	35.2
	Polynomial	0.275	266	334	35.0
	Logarithmic	0.274	266	334	34.6
	Exponential	0.278	265	333	34.5
I_{p90}	Linear	0.267	272	336	38.3
	Power	0.242	272	341	35.2
	Polynomial	0.266	267	336	35.2
	Logarithmic	0.265	267	336	34.7
	Exponential	0.269	266	335	34.6
I_{p75}	Linear	0.248	274	340	40.3
	Power	0.224	276	345	35.8
	Polynomial	0.245	271	341	35.9
	Logarithmic	0.245	271	341	35.4
	Exponential	0.249	270	340	35.2
I_{p50}	Linear	0.239	275	342	41.0
	Power	0.226	275	345	35.9
	Polynomial	0.240	271	342	35.7
	Logarithmic	0.242	271	342	35.5
	Exponential	0.244	270	341	35.3

I_{p25}	Linear	0.231	278	344	37.6
	Power	0.217	278	347	36.5
	Polynomial	0.228	274	345	36.2
	Logarithmic	0.232	274	344	35.9
	Exponential	0.234	273	343	35.8
I_{p10}	Linear	0.226	279	345	37.8
	Power	0.214	279	348	36.6
	Polynomial	0.224	275	346	36.3
	Logarithmic	0.228	275	345	36.1
	Exponential	0.229	274	344	36.0
I_{p5}	Linear	0.224	280	346	37.9
	Power	0.214	279	348	36.7
	Polynomial	0.223	276	346	36.4
	Logarithmic	0.227	275	345	36.1
	Exponential	0.228	275	345	36.0
I_{sd}	Linear	0.234	284	343	37.3
	Power	0.210	285	349	36.7
	Polynomial	0.226	284	345	37.1
	Logarithmic	0.231	282	344	36.7
	Exponential	0.236	282	343	36.8
I_{cv}	Linear	0.024	312	389	41.2
	Power	0.027	313	388	41.5
	Polynomial	0.021	317	393	42.7
	Logarithmic	0.026	314	388	41.7
	Exponential	0.021	312	389	41.1