Analysis Results - Random Forest

importance_mean
regression
0.9356258239604106
0.0552549522073675
32.91370508730153
29.80425626539551
e measurement; consider excluding it.', 'Identifier-like column(s) used as features: PLOT. These are bookkeeping fields; high importance fo
R_TOTAL_JUL', 'COVER_SHANNON_JUL', 'SOIL_EC_uS_cm', 'SOIL_CO2_mg_per_g', 'BACTERIAL_NECROMASS_C', 'FUNGAL_NEC
6901961748664], 'predicted': [3.7983476754638064, 8.056698230109765, 3.7868648357569596, 4.382480599027488, 34.928942532121
0.9260496865054599
0.014016981758591042
0.013146433899477561
0.006765468244949315
0.006338279731378401
0.006007245448526704
0.004448948438135296
0.004342999059799561
0.00376541265625172
0.0036875357906816773
0.002390539151452585
0.0016418489606384098
0.001530241284844955
0.0013006927684277353
0.0012040183137461153
0.0009238774667319326
0.0009226991905331079
0.0006760821944783862
0.0003874036600411288
0.0003731234245009961
8.048205135340171e-05

Pre-Modeling Statistics

Feature	Pearson r	Pearson FDR	Spearman rho	Spearman FDR	ANOVA F	ANOVA FDR	Sig?
PLOT	-0.8094	0.0000	-0.7607	0.0000	178.5728	0.0000	Yes
ENV_SOILNH4	0.0826	0.4941	0.2660	0.0123	0.6462	0.4941	Yes
ENV_SOILNO3	0.0429	0.7492	-0.0032	0.9752	0.1737	0.7492	No
ENV_SOILP	0.1838	0.0902	0.1593	0.1412	3.2876	0.0902	No
ENV_SOILOC	0.8337	0.0000	0.8261	0.0000	214.2935	0.0000	Yes
ENV_SOILTN	0.8292	0.0000	0.8689	0.0000	206.9389	0.0000	Yes
ENV_SOILTC	0.8201	0.0000	0.8628	0.0000	193.0784	0.0000	Yes
ENV_PH	-0.1949	0.0798	-0.1089	0.3217	3.7128	0.0798	No
ENV_SOILCLAY	0.7880	0.0000	0.7779	0.0000	153.9446	0.0000	Yes
ENV_SOILSILT	0.8273	0.0000	0.8399	0.0000	203.9462	0.0000	Yes
ENV_SOILSAND	-0.8430	0.0000	-0.8509	0.0000	230.8978	0.0000	Yes
ENV_SOILMOIS	0.7658	0.0000	0.7992	0.0000	133.3222	0.0000	Yes
PC_SHOOTMASS	0.4026	0.0001	0.4904	0.0000	18.1837	0.0001	Yes
PC_ROOTMASS	0.0207	0.8414	0.1807	0.0964	0.0403	0.8414	No
PC_LITTERMASS	0.1888	0.0859	0.2578	0.0147	3.4742	0.0859	Yes
COVER_TOTAL_JUL	0.2255	0.0408	0.3868	0.0001	5.0362	0.0408	Yes
COVER_SHANNON_JUL	0.0272	0.8323	0.0335	0.7831	0.0695	0.8323	No
SOIL_EC_uS_cm	-0.5998	0.0000	-0.7424	0.0000	52.8183	0.0000	Yes
SOIL_CO2_mg_per_g	0.5712	0.0000	0.7227	0.0000	45.5107	0.0000	Yes
BACTERIAL_NECROMASS_C	0.8041	0.0000	0.8837	0.0000	172.0237	0.0000	Yes
FUNGAL_NECROMASS_C	0.9974	0.0000	0.9885	0.0000	17705.0452	0.0000	Yes

Permutation Importance

Feature	Mean	SD
FUNGAL_NECROMASS_C	1.4052	0.2257
ENV_SOILSAND	0.0032	0.0009
ENV_SOILTN	0.0023	0.0022
ENV_SOILCLAY	0.0020	0.0004
ENV_SOILMOIS	0.0020	0.0008
PLOT	0.0008	0.0013
ENV_SOILSILT	0.0007	0.0014

BACTERIAL_NECROMASS_C	0.0006	0.0011
ENV_SOILTC	0.0004	0.0002
SOIL_EC_uS_cm	0.0002	0.0004
COVER_TOTAL_JUL	0.0002	0.0002
COVER_SHANNON_JUL	0.0001	0.0002
ENV_SOILNO3	0.0001	0.0004
SOIL_CO2_mg_per_g	0.0001	0.0001
PC_SHOOTMASS	0.0001	0.0005
ENV_SOILOC	0.0000	0.0003
PC_ROOTMASS	0.0000	0.0000
ENV_PH	-0.0001	0.0002
PC_LITTERMASS	-0.0002	0.0000
ENV_SOILP	-0.0005	0.0008
ENV_SOILNH4	-0.0031	0.0041

SHAP Values

Feature	Mean |Abs|
FUNGAL_NECROMASS_C	16.6986
ENV_SOILSAND	0.7500
ENV_SOILCLAY	0.5589
ENV_SOILSILT	0.4159
ENV_SOILMOIS	0.3264
BACTERIAL_NECROMASS_C	0.2012
PLOT	0.1960
ENV_SOILTC	0.1860
ENV_SOILNH4	0.1098
ENV_SOILP	0.1009
ENV_SOILTN	0.0777
ENV_SOILNO3	0.0642
SOIL_EC_uS_cm	0.0606
PC_SHOOTMASS	0.0454
COVER_SHANNON_JUL	0.0260
PC_LITTERMASS	0.0259

COVER_TOTAL_JUL	0.0243
ENV_PH	0.0223
ENV_SOILOC	0.0173
SOIL_CO2_mg_per_g	0.0111
PC_ROOTMASS	0.0086

Per-Split Model Metrics

Split	R^2	MSE
	0.9906	3.0794
	0.8600	73.6160
	0.9562	22.0457
Mean ± SD	**0.9356 ± 0.0553**	**32.9137 ± 29.8043**