Analysis Results - Random Forest

importance_mean
regression
0.8353353466678789
0.04352615166846566
0.7677096164477172
0.15890660282412197
', 'Identifier-like column(s) used as features: PLOT. These are bookkeeping fields; high importance for them usually reflects row ordering, n
AREA', 'PASTURE_FORESTAREA', 'LAT', 'LONG', 'SOIL_EC_uS_cm', 'SOIL_CO2_mg_per_g', 'BACTERIAL_NECROMASS_C', 'FUNGAL
964678529500015, 5.350363749200002, 1.2693076645, 0.6062628904999997, 0.7608246450500002, 5.643339178683334, 1.253511667
0.29093973574378307
0.19493312689278233
0.12952505757628027
0.05871112098922706
0.05548109068446685
0.0418999318280609
0.041616561352840524
0.03738435093031281
0.036462397433452386
0.035863850487215305
0.02510084233982964
0.005491119357236579
0.004648368528231097
0.003987569336037041
0.003912028169145501
0.0038902131150439587
0.0038313463546854436
0.003799130812530102
0.0033841523361383785
0.003036411651747563
0.0024222373355237015
0.0023998840850821663
0.0021556570755646306

0.0019853345909440355
0.0015827647123077913
0.0015077775429418764
0.0013562074619579581
0.0012262439562928046
0.0006510549904897366
0.00043649533150610177
0.00021667961738284074
0.00016125738095958887

Pre-Modeling Statistics

Feature	Pearson r	Pearson FDR	Spearman rho	Spearman FDR	ANOVA F	ANOVA FDR	Sig?
PLOT	-0.8324	0.0000	-0.7063	0.0000	850.8679	0.0000	Yes
ENV_SOILNH4	0.1119	0.0349	0.2807	0.0000	4.7799	0.0349	Yes
ENV_SOILNO3	0.1083	0.0401	0.2490	0.0000	4.4739	0.0401	Yes
ENV_SOILP	0.2322	0.0000	0.1698	0.0011	21.4913	0.0000	Yes
ENV_SOILTN	0.9158	0.0000	0.8935	0.0000	1960.6586	0.0000	Yes
ENV_SOILTC	0.9164	0.0000	0.8919	0.0000	1975.6368	0.0000	Yes
ENV_PH	-0.0959	0.0686	-0.0243	0.6372	3.4986	0.0686	No
ENV_SOILCLAY	0.7606	0.0000	0.7451	0.0000	517.3123	0.0000	Yes
ENV_SOILSILT	0.8564	0.0000	0.8749	0.0000	1037.4390	0.0000	Yes
ENV_SOILSAND	-0.8471	0.0000	-0.8524	0.0000	958.0954	0.0000	Yes
ENV_SOILMOIS	0.8774	0.0000	0.8593	0.0000	1261.3165	0.0000	Yes
PC_SHOOTMASS	0.4871	0.0000	0.4725	0.0000	117.3000	0.0000	Yes
PC_WOODMASS	0.1623	0.0020	0.1020	0.0521	10.1947	0.0020	Yes
PC_LITTERMASS	0.1241	0.0192	0.1238	0.0181	5.8986	0.0192	Yes
PC_ROOTMASS	0.0481	0.3734	0.3477	0.0000	0.8754	0.3734	Yes
RC_SHOOTMASS	0.4787	0.0000	0.5200	0.0000	112.0859	0.0000	Yes
RC_LITTERMASS	0.1792	0.0006	0.1452	0.0055	12.5133	0.0006	Yes
COVER_TOTAL_JUL	0.2802	0.0000	0.4157	0.0000	32.1096	0.0000	Yes
COVER_RICHNESS_JUL	-0.0405	0.4453	-0.0630	0.2278	0.6203	0.4453	No
COVER_SHANNON_JUL	-0.0281	0.5853	-0.0814	0.1211	0.2983	0.5853	No
PASTURE_TOTALAREA	-0.8406	0.0000	-0.7705	0.0000	907.7367	0.0000	Yes

PASTURE_FORESTAREA	0.6833	0.0000	0.6443	0.0000	330.1362	0.0000	Yes
LAT	0.8661	0.0000	0.6962	0.0000	1132.2787	0.0000	Yes
LONG	0.8638	0.0000	0.7128	0.0000	1107.8382	0.0000	Yes
SOIL_EC_uS_cm	-0.3277	0.0000	-0.3597	0.0000	45.3592	0.0000	Yes
SOIL_CO2_mg_per_g	0.3131	0.0000	0.3484	0.0000	40.9863	0.0000	Yes
BACTERIAL_NECROMASS_C	0.3851	0.0000	0.3578	0.0000	65.6436	0.0000	Yes
FUNGAL_NECROMASS_C	0.3834	0.0000	0.3671	0.0000	64.9804	0.0000	Yes
MICROBIAL_NECROMASS_C	0.3930	0.0000	0.3986	0.0000	68.8465	0.0000	Yes
ENV_PROBEMOIS_AUG	0.8261	0.0000	0.7813	0.0000	810.1030	0.0000	Yes
ENV_PROBEMOIS_JUL	0.7635	0.0000	0.7345	0.0000	526.8705	0.0000	Yes
ENV_PROBEMOIS_JUN	0.5300	0.0000	0.5856	0.0000	147.2532	0.0000	Yes

Permutation Importance

Feature	Mean	SD
ENV_SOILTC	0.1352	0.0127
ENV_SOILSILT	0.0739	0.0186
ENV_SOILTN	0.0645	0.0159
ENV_PROBEMOIS_AUG	0.0378	0.0345
LONG	0.0297	0.0190
ENV_SOILSAND	0.0225	0.0090
ENV_SOILMOIS	0.0119	0.0099
PLOT	0.0117	0.0180
LAT	0.0107	0.0076
PASTURE_TOTALAREA	0.0098	0.0053
ENV_PH	0.0028	0.0009
RC_SHOOTMASS	0.0022	0.0043
ENV_SOILNO3	0.0020	0.0008
ENV_SOILCLAY	0.0018	0.0042
COVER_RICHNESS_JUL	0.0009	0.0001
PASTURE_FORESTAREA	0.0003	0.0004
PC_ROOTMASS	0.0003	0.0007
PC_WOODMASS	0.0002	0.0009
BACTERIAL_NECROMASS_C	-0.0000	0.0002

FUNGAL_NECROMASS_C	-0.0001	0.0001
SOIL_EC_uS_cm	-0.0001	0.0001
COVER_SHANNON_JUL	-0.0001	0.0003
SOIL_CO2_mg_per_g	-0.0002	0.0002
PC_LITTERMASS	-0.0002	0.0006
MICROBIAL_NECROMASS_C	-0.0003	0.0004
ENV_PROBEMOIS_JUL	-0.0005	0.0007
PC_SHOOTMASS	-0.0005	0.0018
RC_LITTERMASS	-0.0005	0.0020
ENV_PROBEMOIS_JUN	-0.0009	0.0027
ENV_SOILP	-0.0018	0.0015
COVER_TOTAL_JUL	-0.0019	0.0032
ENV_SOILNH4	-0.0020	0.0034

SHAP Values

Feature	Mean |Abs|
ENV_SOILTC	0.7278
ENV_SOILTN	0.7022
LONG	0.2015
ENV_PROBEMOIS_AUG	0.1999
ENV_SOILSILT	0.1138
ENV_SOILSAND	0.0749
ENV_SOILMOIS	0.0484
ENV_SOILNH4	0.0214
ENV_PROBEMOIS_JUN	0.0193
ENV_PH	0.0185
PC_SHOOTMASS	0.0176
PASTURE_TOTALAREA	0.0169
PLOT	0.0168
RC_LITTERMASS	0.0151
LAT	0.0125
ENV_PROBEMOIS_JUL	0.0122
ENV_SOILCLAY	0.0121

COVER_TOTAL_JUL	0.0118
ENV_SOILNO3	0.0111
PC_LITTERMASS	0.0106
PC_WOODMASS	0.0102
ENV_SOILP	0.0091
PC_ROOTMASS	0.0081
RC_SHOOTMASS	0.0078
PASTURE_FORESTAREA	0.0069
COVER_SHANNON_JUL	0.0068
FUNGAL_NECROMASS_C	0.0040
MICROBIAL_NECROMASS_C	0.0036
COVER_RICHNESS_JUL	0.0027
BACTERIAL_NECROMASS_C	0.0015
SOIL_EC_uS_cm	0.0010
SOIL_CO2_mg_per_g	0.0006

Per-Split Model Metrics

Split	R^2	MSE
	0.8679	0.6967
	0.8642	0.6186
	0.7738	0.9879
Mean ± SD	**0.8353 ± 0.0435**	**0.7677 ± 0.1589**