Analysis Results - Random Forest

importance_mean
regression
-0.12768413731507633
0.4305633887340777
3.4207478991858395
0.8237893259092313
The model may be learning field position rather than biological signal; interpret with care or exclude coordinates.', 'Mean cross-validated R²
AUG', 'COVER_SHANNON_AUG', 'PC_SHOOTMASS', 'PC_LITTERMASS', 'PC_HEIGHT', 'ENV_AIRTEMP', 'GH_COUNT', 'PASTURE_TC
34, 0.9470416666666666, 0.10600000000000001, 0.4553500000000001, 0.23571666666666663, 0.5382583333333334, 2.272283333333
0.20528142850909017
0.07345324326964693
0.061634330149209576
0.05473633300608859
0.053676508511567224
0.053159804936089794
0.04321842312688708
0.030643988554661484
0.02967069786636622
0.02737921402855409
0.026442647287000885
0.026183751203439912
0.02556035995337529
0.022372019895575246
0.02223109773504195
0.019373342413905134
0.017175296124019763
0.01670090135747093
0.016662147023212923
0.01643232321429146
0.01620349826864738
0.015938095765883113
0.015900418336765684

0.015594836724662534
0.015113026069536392
0.014354444080166853
0.013410661481153293
0.011391419369940344
0.00981088325712877
0.008288367441625083
0.008161534970578102
0.007325554941304745
0.006519400574287309

Pre-Modeling Statistics

Feature	Pearson r	Pearson FDR	Spearman rho	Spearman FDR	ANOVA F	ANOVA FDR	Sig?
PLOT	-0.2171	0.0001	-0.1240	0.0460	19.3401	0.0001	Yes
ENV_SOILNH4	0.0039	0.9386	0.0896	0.1380	0.0059	0.9386	No
ENV_SOILNO3	-0.0257	0.6728	-0.0559	0.3171	0.2583	0.6728	No
ENV_SOILP	-0.0515	0.3912	-0.0874	0.1380	1.0409	0.3912	No
ENV_SOILOC	0.1615	0.0032	0.0991	0.1168	10.4775	0.0032	Yes
ENV_SOILTN	0.1422	0.0087	0.0735	0.2008	8.0717	0.0087	Yes
ENV_SOILTC	0.1457	0.0078	0.0825	0.1610	8.4802	0.0078	Yes
ENV_PH	0.0094	0.8787	-0.0366	0.4841	0.0348	0.8787	No
ENV_SOILCLAY	0.2271	0.0000	0.1408	0.0244	21.2587	0.0000	Yes
ENV_SOILSILT	0.2150	0.0001	0.0509	0.3451	18.9547	0.0001	Yes
ENV_SOILSAND	-0.2302	0.0000	-0.0880	0.1380	21.8812	0.0000	Yes
ENV_SOILMOIS	0.1291	0.0181	0.0542	0.3232	6.6268	0.0181	Yes
COVER_RICHNESS_JUN	0.1442	0.0081	0.0971	0.1197	8.3044	0.0081	Yes
COVER_TOTAL_JUN	0.1628	0.0032	0.1310	0.0343	10.6422	0.0032	Yes
COVER_SHANNON_JUN	0.1117	0.0442	0.0739	0.2008	4.9404	0.0442	Yes
COVER_RICHNESS_JUL	0.0419	0.4977	0.0408	0.4474	0.6884	0.4977	No
COVER_TOTAL_JUL	0.0337	0.5746	0.1353	0.0298	0.4453	0.5746	Yes
COVER_SHANNON_JUL	0.0583	0.3288	0.0620	0.2791	1.3323	0.3288	No
COVER_RICHNESS_AUG	0.1616	0.0032	0.1809	0.0021	10.4780	0.0032	Yes
COVER_TOTAL_AUG	0.0338	0.5746	0.0749	0.2008	0.4465	0.5746	No

COVER_SHANNON_AUG	0.0876	0.1301	0.0909	0.1380	3.0248	0.1301	No
PC_SHOOTMASS	0.2348	0.0000	0.2260	0.0001	22.8134	0.0000	Yes
PC_LITTERMASS	0.0209	0.7238	0.0925	0.1380	0.1704	0.7238	No
PC_HEIGHT	0.1765	0.0014	0.2095	0.0003	12.5760	0.0014	Yes
ENV_AIRTEMP	0.0797	0.1645	0.0627	0.2791	2.5002	0.1645	No
GH_COUNT	-0.1493	0.0066	-0.1456	0.0210	8.9195	0.0066	Yes
PASTURE_TOTALAREA	-0.2354	0.0000	-0.2265	0.0001	22.9443	0.0000	Yes
PASTURE_FORESTAREA	0.0745	0.1933	-0.0040	0.9372	2.1804	0.1933	No
LAT	0.2170	0.0001	0.1140	0.0656	19.3290	0.0001	Yes
LONG	0.2208	0.0001	0.2006	0.0005	20.0362	0.0001	Yes
ENV_PROBEMOIS_AUG	0.1784	0.0014	0.1142	0.0656	12.8565	0.0014	Yes
ENV_PROBEMOIS_JUL	0.1609	0.0032	0.1075	0.0839	10.3931	0.0032	Yes
ENV_PROBEMOIS_JUN	0.0817	0.1588	0.0561	0.3171	2.6267	0.1588	No

Permutation Importance

Feature	Mean	SD
PC_SHOOTMASS	0.1094	0.0191
LONG	0.0555	0.0237
PASTURE_TOTALAREA	0.0305	0.0056
ENV_SOILCLAY	0.0289	0.0090
COVER_RICHNESS_AUG	0.0275	0.0168
COVER_RICHNESS_JUN	0.0209	0.0124
PLOT	0.0163	0.0039
ENV_SOILMOIS	0.0159	0.0160
ENV_PROBEMOIS_AUG	0.0120	0.0098
COVER_SHANNON_AUG	0.0119	0.0325
PC_HEIGHT	0.0108	0.0153
COVER_TOTAL_JUN	0.0101	0.0021
ENV_SOILSAND	0.0084	0.0108
ENV_SOILNO3	0.0080	0.0061
COVER_TOTAL_AUG	0.0074	0.0118
COVER_RICHNESS_JUL	0.0073	0.0073
COVER_SHANNON_JUN	0.0061	0.0059

LAT	0.0051	0.0129
ENV_PROBEMOIS_JUL	0.0049	0.0077
PASTURE_FORESTAREA	0.0048	0.0033
ENV_PH	0.0046	0.0082
ENV_SOILNH4	0.0041	0.0027
ENV_SOILP	0.0028	0.0034
ENV_PROBEMOIS_JUN	0.0027	0.0054
ENV_AIRTEMP	0.0021	0.0129
PC_LITTERMASS	0.0000	0.0131
COVER_SHANNON_JUL	-0.0002	0.0170
ENV_SOILTN	-0.0007	0.0039
COVER_TOTAL_JUL	-0.0024	0.0038
ENV_SOILSILT	-0.0034	0.0060
ENV_SOILOC	-0.0053	0.0034
ENV_SOILTC	-0.0059	0.0088
GH_COUNT	-0.0118	0.0085

SHAP Values

Feature	Mean |Abs|
PC_SHOOTMASS	0.1251
LONG	0.1244
ENV_SOILCLAY	0.1009
PASTURE_TOTALAREA	0.0856
PLOT	0.0708
PC_HEIGHT	0.0690
ENV_SOILSAND	0.0494
ENV_SOILSILT	0.0445
COVER_SHANNON_AUG	0.0349
ENV_AIRTEMP	0.0334
ENV_SOILNO3	0.0282
GH_COUNT	0.0276
COVER_TOTAL_JUN	0.0274
ENV_PH	0.0263

ENV_PROBEMOIS_AUG	0.0234
PC_LITTERMASS	0.0231
COVER_RICHNESS_JUN	0.0225
ENV_SOILMOIS	0.0212
ENV_SOILP	0.0207
ENV_SOILNH4	0.0195
ENV_PROBEMOIS_JUL	0.0182
COVER_RICHNESS_JUL	0.0175
LAT	0.0170
COVER_RICHNESS_AUG	0.0168
COVER_SHANNON_JUN	0.0143
COVER_TOTAL_AUG	0.0133
COVER_TOTAL_JUL	0.0122
COVER_SHANNON_JUL	0.0112
PASTURE_FORESTAREA	0.0105
ENV_PROBEMOIS_JUN	0.0104
ENV_SOILTC	0.0053
ENV_SOILOC	0.0050
ENV_SOILTN	0.0036

Per-Split Model Metrics

Split	R^2	MSE
	-0.7322	3.6984
	0.1112	4.2618
	0.2379	2.3021
Mean ± SD	**-0.1277 ± 0.4306**	**3.4207 ± 0.8238**