Analysis Results - Random Forest

importance_mean
regression
0.534494574739012
0.020216320107519847
40.12499616988912
3.3553600213505828
bookkeeping fields; high importance for them usually reflects row ordering, not biology. Consider excluding them.']
HANNON_JUN', 'COVER_RICHNESS_JUL', 'COVER_TOTAL_JUL', 'COVER_SHANNON_JUL', 'COVER_RICHNESS_AUG', 'COVER_TO
6666662, 17.894650000000002, 15.91435, 18.365150000000003, 7.961233333333332, 18.805725000000002, 23.75636666666667, 9.41
0.25503443361819733
0.15090072931464796
0.05048036521107154
0.05023325261974054
0.04358132619482009
0.04187700863622846
0.040449065749501655
0.03055968460684456
0.027793761388432564
0.020594608461053897
0.015148248475883933
0.014219460533637283
0.013911770814660362
0.013906297446595259
0.01355262928765674
0.012891541582362777
0.012522933290158633
0.012340994678548468
0.01228573123676103
0.012128280107560447
0.012046727868032894
0.011515416841898074
0.011511123619284058

0.011069483463590574
0.009880255154336175
0.009712795141299461
0.009102423378350996
0.0090054783553939
0.008211916974574362
0.008136335563370409
0.008126366032850328
0.00805072750539548
0.0072341918988373
0.006006798623047299
0.005987158165515365
0.00469928531159386
0.004193072767256907
0.003844336508111244
0.003800644553954513
0.0034533390189432724

Pre-Modeling Statistics

Feature	Pearson r	Pearson FDR	Spearman rho	Spearman FDR	ANOVA F	ANOVA FDR	Sig?
PLOT	-0.3593	0.0000	-0.2718	0.0000	58.9790	0.0000	Yes
LAT	0.3916	0.0000	0.2627	0.0000	72.0838	0.0000	Yes
LONG	0.3854	0.0000	0.2373	0.0000	69.4476	0.0000	Yes
ENV_SOILNH4	0.0877	0.0999	0.2005	0.0001	3.0819	0.0999	Yes
ENV_SOILNO3	0.0442	0.4319	0.1284	0.0122	0.7792	0.4319	Yes
ENV_SOILP	0.2016	0.0001	0.1183	0.0205	16.8693	0.0001	Yes
ENV_SOILOC	0.4862	0.0000	0.4628	0.0000	123.2109	0.0000	Yes
ENV_SOILTN	0.4798	0.0000	0.4546	0.0000	119.0503	0.0000	Yes
ENV_SOILTC	0.4826	0.0000	0.4582	0.0000	120.8380	0.0000	Yes
ENV_PH	-0.0157	0.7730	-0.0374	0.4929	0.0986	0.7730	No
ENV_SOILCLAY	0.3541	0.0000	0.3535	0.0000	57.0702	0.0000	Yes
ENV_SOILSILT	0.4308	0.0000	0.4012	0.0000	90.7079	0.0000	Yes
ENV_SOILSAND	-0.4124	0.0000	-0.3844	0.0000	81.5798	0.0000	Yes

ENV_SOILMOIS	0.4611	0.0000	0.4451	0.0000	107.4460	0.0000	Yes
RC_SHOOTMASS	0.5347	0.0000	0.6115	0.0000	159.3405	0.0000	Yes
RC_WOODMASS	0.1176	0.0248	0.1649	0.0012	5.5852	0.0248	Yes
RC_LITTERMASS	0.4583	0.0000	0.3950	0.0000	105.8490	0.0000	Yes
RC_LITTERWMASS	0.0613	0.2603	0.1522	0.0028	1.5011	0.2603	Yes
PC_WOODMASS	0.2357	0.0000	0.2247	0.0000	23.4100	0.0000	Yes
PC_LITTERMASS	0.4340	0.0000	0.4289	0.0000	92.3853	0.0000	Yes
PC_LITTERWMASS	0.1460	0.0051	0.1280	0.0122	8.6697	0.0051	Yes
PC_ROOTMASS	0.0048	0.9231	0.1531	0.0028	0.0093	0.9231	Yes
PC_HEIGHT	0.4422	0.0000	0.4293	0.0000	96.7659	0.0000	Yes
GH_COUNT	-0.3024	0.0000	-0.3168	0.0000	40.0569	0.0000	Yes
ENV_AIRTEMP	0.0273	0.6343	-0.0049	0.9216	0.2959	0.6343	No
COVER_RICHNESS_JUN	-0.1231	0.0189	-0.2223	0.0000	6.1274	0.0189	Yes
COVER_TOTAL_JUN	0.3254	0.0000	0.3623	0.0000	47.1195	0.0000	Yes
COVER_SHANNON_JUN	-0.1282	0.0147	-0.2210	0.0000	6.6513	0.0147	Yes
COVER_RICHNESS_JUL	-0.0954	0.0729	-0.1762	0.0005	3.6584	0.0729	Yes
COVER_TOTAL_JUL	0.3014	0.0000	0.4242	0.0000	39.7734	0.0000	Yes
COVER_SHANNON_JUL	-0.0303	0.6066	-0.1093	0.0320	0.3653	0.6066	Yes
COVER_RICHNESS_AUG	-0.1786	0.0005	-0.2620	0.0000	13.1200	0.0005	Yes
COVER_TOTAL_AUG	0.3808	0.0000	0.4256	0.0000	67.5107	0.0000	Yes
COVER_SHANNON_AUG	-0.1613	0.0019	-0.2300	0.0000	10.6297	0.0019	Yes
PASTURE_TOTALAREA	-0.3969	0.0000	-0.3752	0.0000	74.4068	0.0000	Yes
SUBPASTURE_TOTALAREA	-0.3135	0.0000	-0.3011	0.0000	43.3739	0.0000	Yes
PASTURE_FORESTAREA	0.2967	0.0000	0.2472	0.0000	38.4232	0.0000	Yes
PASTURE_WETLANDAREA	-0.0709	0.1903	0.0080	0.9185	2.0109	0.1903	No
SUBPASTURE_FORESTAREA	0.2538	0.0000	0.2108	0.0000	27.3930	0.0000	Yes
SUBPASTURE_WETLANDAREA	0.0247	0.6549	0.0052	0.9216	0.2432	0.6549	No

Permutation Importance

Feature	Mean	SD
RC_SHOOTMASS	0.1913	0.0390
RC_LITTERMASS	0.1174	0.0192
PC_LITTERMASS	0.0470	0.0129

PC_WOODMASS	0.0338	0.0126
COVER_TOTAL_JUL	0.0310	0.0106
ENV_SOILOC	0.0160	0.0066
ENV_SOILTN	0.0111	0.0122
SUBPASTURE_TOTALAREA	0.0080	0.0058
PASTURE_TOTALAREA	0.0053	0.0019
PC_HEIGHT	0.0042	0.0058
ENV_SOILSAND	0.0041	0.0036
PASTURE_FORESTAREA	0.0028	0.0022
ENV_SOILSILT	0.0028	0.0054
LONG	0.0027	0.0023
ENV_SOILCLAY	0.0026	0.0005
ENV_SOILNO3	0.0023	0.0035
ENV_SOILNH4	0.0021	0.0017
LAT	0.0018	0.0010
PASTURE_WETLANDAREA	0.0018	0.0017
COVER_SHANNON_JUL	0.0018	0.0006
COVER_SHANNON_JUN	0.0016	0.0017
ENV_SOILP	0.0016	0.0035
COVER_RICHNESS_JUN	0.0015	0.0055
COVER_RICHNESS_AUG	0.0013	0.0026
SUBPASTURE_WETLANDAREA	0.0013	0.0014
COVER_TOTAL_AUG	0.0013	0.0013
COVER_SHANNON_AUG	0.0011	0.0018
PLOT	0.0011	0.0017
COVER_TOTAL_JUN	0.0009	0.0007
SUBPASTURE_FORESTAREA	0.0005	0.0005
ENV_AIRTEMP	-0.0002	0.0015
RC_LITTERWMASS	-0.0002	0.0019
ENV_SOILTC	-0.0008	0.0062
PC_LITTERWMASS	-0.0008	0.0018
GH_COUNT	-0.0009	0.0008
RC_WOODMASS	-0.0019	0.0015
PC_ROOTMASS	-0.0026	0.0022
COVER_RICHNESS_JUL	-0.0027	0.0040

ENV_PH	-0.0028	0.0052
ENV_SOILMOIS	-0.0028	0.0018

SHAP Values

Feature	Mean |Abs|
RC_SHOOTMASS	3.3931
PC_LITTERMASS	0.8451
ENV_SOILTN	0.7347
COVER_TOTAL_JUL	0.7055
RC_LITTERMASS	0.6047
PC_WOODMASS	0.4848
COVER_TOTAL_AUG	0.3982
ENV_SOILTC	0.2403
ENV_SOILOC	0.2214
LAT	0.1991
PC_LITTERWMASS	0.1931
ENV_PH	0.1922
COVER_RICHNESS_AUG	0.1833
COVER_RICHNESS_JUN	0.1736
ENV_SOILMOIS	0.1376
SUBPASTURE_WETLANDAREA	0.1333
PC_HEIGHT	0.1311
COVER_SHANNON_AUG	0.1120
ENV_SOILNH4	0.1117
SUBPASTURE_TOTALAREA	0.1086
COVER_SHANNON_JUL	0.1069
SUBPASTURE_FORESTAREA	0.1042
PASTURE_TOTALAREA	0.1030
ENV_SOILSILT	0.0959
COVER_SHANNON_JUN	0.0942
PLOT	0.0926
COVER_TOTAL_JUN	0.0865
PASTURE_FORESTAREA	0.0805

ENV_SOILCLAY	0.0771
ENV_SOILP	0.0610
ENV_SOILSAND	0.0572
COVER_RICHNESS_JUL	0.0546
ENV_SOILNO3	0.0506
RC_WOODMASS	0.0480
LONG	0.0472
ENV_AIRTEMP	0.0402
PC_ROOTMASS	0.0305
PASTURE_WETLANDAREA	0.0301
GH_COUNT	0.0281
RC_LITTERWMASS	0.0257

Per-Split Model Metrics

Split	R^2	MSE
	0.5627	44.2704
	0.5164	40.0521
	0.5244	36.0524
Mean ± SD	**0.5345 ± 0.0202**	**40.1250 ± 3.3554**