Analysis Results - Random Forest

importance_mean
classification
1.0
0.0
1.0
0.0
3
[[6, 0, 0], [0, 138, 0], [0, 0, 156]]
URE_TOTALAREA" is almost perfectly correlated with the target "RANCH" (r = 0.920) — likely data leakage or a duplicate measurement; c
_SHANNON_JUN', 'COVER_RICHNESS_JUL', 'COVER_TOTAL_JUL', 'COVER_SHANNON_JUL', 'COVER_RICHNESS_AUG', 'COVER_
['', 'KINSELLA', 'MATTHEIS']
0.2022273284450206
0.16758272188316595
0.10308081638232501
0.08971738843529531
0.07375191078277517
0.060747272875994095
0.06067291764566599
0.05253964315788504
0.05221645266230277
0.036152732436493085
0.033258696470544434
0.017101348848724173
0.015560563007121594
0.014678801141409166
0.006638587490864044
0.005863716502708764
0.004832478840538145
0.0008478813974284509
0.0004886886670009272
0.00046572487651888074
0.00025478807652590854

0.00021804728348382603
0.00019518348053655717
0.00017028163193725672
0.0001415928201961742
0.0001355268029768846
9.937492552141969e-05
9.665341182435797e-05
6.306155632666517e-05
5.904190468147818e-05
5.6568764990722716e-05
3.8833744971030034e-05
2.4151111504912837e-05
2.1222534741149497e-05
0.0
0.0
0.0
0.0
0.0
0.0
0.0

Pre-Modeling Statistics

Feature	Pearson r	Pearson FDR	Spearman rho	Spearman FDR	ANOVA F	ANOVA FDR	Sig?
PLOT	-0.3566	0.0000	-0.2676	0.0000	57.9998	0.0000	Yes
LAT	0.3911	0.0000	0.2634	0.0000	71.8502	0.0000	Yes
LONG	0.3848	0.0000	0.2388	0.0000	69.1789	0.0000	Yes
ENV_SOILNH4	0.0824	0.1208	0.1870	0.0002	2.7239	0.1208	Yes
ENV_SOILNO3	0.0367	0.5015	0.0933	0.0691	0.5376	0.5015	No
ENV_SOILP	0.2028	0.0001	0.1271	0.0133	17.0726	0.0001	Yes
ENV_SOILOC	0.4830	0.0000	0.4605	0.0000	121.1279	0.0000	Yes
ENV_SOILTN	0.4801	0.0000	0.4567	0.0000	119.2385	0.0000	Yes
ENV_SOILTC	0.4829	0.0000	0.4597	0.0000	121.0029	0.0000	Yes
ENV_PH	-0.0157	0.7540	-0.0332	0.5344	0.0983	0.7540	No

ENV_SOILCLAY	0.3541	0.0000	0.3538	0.0000	57.0470	0.0000	Yes
ENV_SOILSILT	0.4306	0.0000	0.4009	0.0000	90.5771	0.0000	Yes
ENV_SOILSAND	-0.4124	0.0000	-0.3838	0.0000	81.5668	0.0000	Yes
ENV_SOILMOIS	0.4614	0.0000	0.4451	0.0000	107.6683	0.0000	Yes
RC_SHOOTMASS	0.5332	0.0000	0.6073	0.0000	158.0640	0.0000	Yes
RC_WOODMASS	0.1152	0.0283	0.1585	0.0019	5.3525	0.0283	Yes
RC_LITTERMASS	0.4564	0.0000	0.3922	0.0000	104.7397	0.0000	Yes
RC_LITTERWMASS	0.0591	0.2724	0.1293	0.0120	1.3947	0.2724	Yes
PC_WOODMASS	0.2348	0.0000	0.2313	0.0000	23.2218	0.0000	Yes
PC_LITTERMASS	0.4327	0.0000	0.4261	0.0000	91.6693	0.0000	Yes
PC_LITTERWMASS	0.1439	0.0058	0.1252	0.0144	8.4115	0.0058	Yes
PC_ROOTMASS	0.1007	0.0571	0.2809	0.0000	4.0741	0.0571	Yes
PC_HEIGHT	0.4465	0.0000	0.4329	0.0000	99.0837	0.0000	Yes
GH_COUNT	-0.2974	0.0000	-0.2940	0.0000	38.6160	0.0000	Yes
ENV_AIRTEMP	0.0247	0.6379	-0.0142	0.7971	0.2435	0.6379	No
COVER_RICHNESS_JUN	-0.1236	0.0185	-0.2189	0.0000	6.1702	0.0185	Yes
COVER_TOTAL_JUN	0.3239	0.0000	0.3605	0.0000	46.6550	0.0000	Yes
COVER_SHANNON_JUN	-0.1286	0.0143	-0.2196	0.0000	6.6913	0.0143	Yes
COVER_RICHNESS_JUL	-0.0938	0.0761	-0.1713	0.0008	3.5336	0.0761	Yes
COVER_TOTAL_JUL	0.3024	0.0000	0.4263	0.0000	40.0461	0.0000	Yes
COVER_SHANNON_JUL	-0.0286	0.5981	-0.1044	0.0421	0.3263	0.5981	Yes
COVER_RICHNESS_AUG	-0.1785	0.0005	-0.2616	0.0000	13.0987	0.0005	Yes
COVER_TOTAL_AUG	0.3798	0.0000	0.4245	0.0000	67.0752	0.0000	Yes
COVER_SHANNON_AUG	-0.1615	0.0018	-0.2277	0.0000	10.6585	0.0018	Yes
PASTURE_TOTALAREA	-0.3966	0.0000	-0.3771	0.0000	74.3077	0.0000	Yes
SUBPASTURE_TOTALAREA	-0.3128	0.0000	-0.3020	0.0000	43.1698	0.0000	Yes
PASTURE_FORESTAREA	0.2953	0.0000	0.2456	0.0000	38.0232	0.0000	Yes
PASTURE_WETLANDAREA	-0.0716	0.1802	0.0093	0.8533	2.0486	0.1802	No
SUBPASTURE_FORESTAREA	0.2507	0.0000	0.2206	0.0000	26.6878	0.0000	Yes
SUBPASTURE_WETLANDAREA	0.0440	0.4219	0.0704	0.1730	0.7734	0.4219	No

Permutation Importance

Feature	Mean	SD

LONG	0.0110	0.0050
ENV_SOILCLAY	0.0093	0.0066
PASTURE_TOTALAREA	0.0093	0.0132
SUBPASTURE_TOTALAREA	0.0093	0.0132
COVER_RICHNESS_AUG	0.0070	0.0099
ENV_SOILSAND	0.0050	0.0071
COVER_TOTAL_AUG	0.0050	0.0071
LAT	0.0047	0.0066
ENV_SOILOC	0.0047	0.0066
PC_ROOTMASS	0.0037	0.0052
PLOT	0.0000	0.0000
ENV_SOILNH4	0.0000	0.0000
ENV_SOILNO3	0.0000	0.0000
ENV_SOILP	0.0000	0.0000
ENV_SOILTN	0.0000	0.0000
ENV_SOILTC	0.0000	0.0000
ENV_PH	0.0000	0.0000
ENV_SOILSILT	0.0000	0.0000
ENV_SOILMOIS	0.0000	0.0000
RC_SHOOTMASS	0.0000	0.0000
RC_WOODMASS	0.0000	0.0000
RC_LITTERMASS	0.0000	0.0000
RC_LITTERWMASS	0.0000	0.0000
PC_SHOOTMASS	0.0000	0.0000
PC_WOODMASS	0.0000	0.0000
PC_LITTERMASS	0.0000	0.0000
PC_LITTERWMASS	0.0000	0.0000
PC_HEIGHT	0.0000	0.0000
GH_COUNT	0.0000	0.0000
ENV_AIRTEMP	0.0000	0.0000
COVER_RICHNESS_JUN	0.0000	0.0000
COVER_TOTAL_JUN	0.0000	0.0000
COVER_SHANNON_JUN	0.0000	0.0000
COVER_RICHNESS_JUL	0.0000	0.0000
COVER_TOTAL_JUL	0.0000	0.0000

COVER_SHANNON_JUL	0.0000	0.0000
COVER_SHANNON_AUG	0.0000	0.0000
PASTURE_FORESTAREA	0.0000	0.0000
PASTURE_WETLANDAREA	0.0000	0.0000
SUBPASTURE_FORESTAREA	0.0000	0.0000
SUBPASTURE_WETLANDAREA	0.0000	0.0000

SHAP Values

Feature	Mean |Abs|
LONG	0.0779
PLOT	0.0662
PASTURE_TOTALAREA	0.0505
ENV_SOILCLAY	0.0339
LAT	0.0263
SUBPASTURE_TOTALAREA	0.0197
ENV_SOILSAND	0.0195
ENV_SOILTN	0.0139
ENV_SOILOC	0.0134
ENV_SOILTC	0.0131
PASTURE_FORESTAREA	0.0130
PC_ROOTMASS	0.0054
ENV_SOILSILT	0.0052
ENV_SOILMOIS	0.0037
COVER_TOTAL_JUN	0.0021
PASTURE_WETLANDAREA	0.0018
GH_COUNT	0.0018
PC_SHOOTMASS	0.0007
COVER_TOTAL_AUG	0.0006
COVER_SHANNON_AUG	0.0006
COVER_RICHNESS_AUG	0.0005
COVER_RICHNESS_JUN	0.0004
SUBPASTURE_FORESTAREA	0.0003
ENV_SOILNO3	0.0003

SUBPASTURE_WETLANDAREA	0.0003
PC_LITTERWMASS	0.0003
PC_WOODMASS	0.0003
COVER_SHANNON_JUN	0.0003
RC_LITTERWMASS	0.0002
ENV_SOILNH4	0.0000
ENV_SOILP	0.0000
ENV_PH	0.0000
RC_SHOOTMASS	0.0000
RC_WOODMASS	0.0000
RC_LITTERMASS	0.0000
PC_LITTERMASS	0.0000
PC_HEIGHT	0.0000
ENV_AIRTEMP	0.0000
COVER_RICHNESS_JUL	0.0000
COVER_TOTAL_JUL	0.0000
COVER_SHANNON_JUL	0.0000

Per-Split Model Metrics

Split	R^2	MSE
	0.0000	0.0000
	0.0000	0.0000
	0.0000	0.0000
Mean ± SD	**0.0000 ± 0.0000**	**0.0000 ± 0.0000**