

Regularization				DNN-specific		
Enviro α_e , λ_e	nmental	Saptial α_s , λ_s	Biotic covariance α_b, λ_b^*	Hidden layers	Dropout rate	Learning rate
0 to 1,	step 0.2	0 to 1, step 0.25	0 to 1, step 0.1	50, 50, 10 25, 25, 10	0.1, 0.2	0.001, 0.002

^{*} α_b , λ_b were set to the same value for each run

Full Training Testing training validation training training validation Tuning training training validation validation training training validation training After full training testing tuning

D 1.0 + auc.valid * auc.train 0.9 0.8 AUC 0.7 0.6 0.5 AUC, correlation -26 -24 -22 -20 -18 log-likelihood (train)