

1 **Table S1.** Boosted regression tree model statistics

Group	# predictor variables	lr	TC	Bag-fraction	# of trees	Mean total deviance	Residual deviance	CV deviance (SE)	CV correlation	Training data correlation
Total Biomass	5	0.005	2	0.75	1050	0.522	0.281	0.32 (0.021)	0.638	0.683
Parrotfish	7	0.005	3	0.5	1800	0.606	0.334	0.448 (0.028)	0.511	0.679
<i>Naso</i> spp.	5	0.005	5	0.5	1250	0.926	0.440	0.625 (0.029)	0.574	0.732
Lethrinus & Lutjanus	5	0.001	5	0.5	2550	1.044	0.523	0.632 (0.024)	0.63	0.715
<i>Plectropomus</i> spp.	5	0.01	5	0.5	800	0.863	0.344	0.533 (0.043)	0.617	0.781

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