

**Table 3.** Nonparametric multiplicative regression (NPMR) model summary for community composition (non-metric multidimensional scaling; NMS1 and NMS2) and each of 12 focal species. Potential predictors (Pred) for NMS1 and NMS2 included all variables in Table 1; for individual species, we restricted predictors to climate and hardwood basal area. The cross-validated  $R^2$  ( $xR^2$ ) represents the percent of the variation in species' abundance represented by the model using a leave-one-out jackknife approach.  $T$  represents the threshold strength (Lintz et al. 2011).  $N^*$  represents the average number of plots nearby in environmental space used to estimate the response. The p-value ( $p$ ) is generated separately for each model by examining the number of models with equal or higher  $xR^2$  in 100 randomizations. The tolerance (Tol) represents how broadly response estimates draw on abundances in plots nearby in environmental space. The sensitivity (Sens) represents a measure of effect size for each predictor.

| Response                         | $xR^2$ | $T$  | $N^*$ | $p$  | Pred   | Tol   | Sens | Pred | Tol   | Sens |
|----------------------------------|--------|------|-------|------|--------|-------|------|------|-------|------|
| NMS1                             | 0.73   | 0.71 | 41    | 0.01 | PCA1   | 1.157 | 0.46 |      |       |      |
| NMS2                             | 0.22   | 0.61 | 62    | 0.01 | Picsit | 0.260 | 0.19 |      |       |      |
| <i>Hypogymnia bitteri</i>        | 0.60   | 0.59 | 54    | 0.01 | PCA1   | 2.479 | 0.29 | PCA3 | 2.065 | 0.14 |
| <i>Hypogymnia duplicata</i>      | 0.35   | 0.69 | 53    | 0.01 | PCA1   | 2.809 | 0.34 | PCA4 | 1.099 | 0.25 |
| <i>Hypogymnia physodes</i>       | 0.69   | 0.75 | 41    | 0.01 | PCA1   | 1.157 | 0.51 |      |       |      |
| <i>Parmelia sulcata</i>          | 0.46   | 0.65 | 54    | 0.01 | PCA1   | 2.479 | 0.39 | PCA3 | 2.065 | 0.19 |
| <i>Parmeliopsis ambigua</i>      | 0.44   | 0.72 | 41    | 0.01 | PCA1   | 1.157 | 0.27 |      |       |      |
| <i>Ramalina dilacerata</i>       | 0.56   | 0.70 | 41    | 0.01 | PCA1   | 1.157 | 0.44 |      |       |      |
| <i>Ramalina farinacea</i>        | 0.45   | 0.65 | 71    | 0.01 | HwdBA  | 0.553 | 0.10 | PCA1 | 3.140 | 0.20 |
| <i>Ramalina roesleri</i>         | 0.45   | 0.70 | 41    | 0.01 | PCA1   | 1.157 | 0.57 |      |       |      |
| <i>Sphaerophorus globosus</i>    | 0.47   | 0.74 | 68    | 0.01 | PCA1   | 2.148 | 0.37 |      |       |      |
| <i>Tuckermannopsis sepincola</i> | 0.28   | 0.53 | 62    | 0.01 | PCA1   | 3.140 | 0.12 | PCA3 | 1.979 | 0.78 |
| <i>Vulpicida pinastri</i>        | 0.70   | 0.73 | 41    | 0.01 | PCA1   | 1.157 | 0.32 |      |       |      |
| <i>Xanthoria candelaria</i>      | 0.41   | 0.50 | 42    | 0.01 | PCA1   | 1.818 | 0.15 | PCA4 | 1.290 | 0.09 |