**S1 Table**. Best models, number of localities, training AUC, Mean AUC ratio, Mean Partial AUC, Mean Partial AUC in the Random model, significance of P-value for the Partial-ROC (\*\*\*<0.001) and presence of species in future models for each of the 32 species analysed.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Best model #** | **# of Localities** | **Training AUC** | **Test omission** | **MeanAUCratio** | **MeanPartialAUC** | **MeanPartialAUCRandom** | **Pvalue p-ROC (\*\*\*<0.001)** | **In ACCESS models** | **In HGE models** |
| *Andigena nigrirostris*  | 3 | 1063 | 0.9642 | 0.0733 | 1.930 | 0.965 | 0.5 | \*\*\* | - | X |
| *Bejaria zamorae* | 1 | 10 | 0.9639 | 0 | 1.922 | 0.961 | 0.5 | \*\*\* | X | X |
| *Blakea spruceana* | 3 | 50 | 0.941 | 0 | 1.272 | 0.636 | 0.5 | 0.01 | X | X |
| *Centrolene bacatum* | 0 | 10 | 0.7829 | 0 | 1.728 | 0.864 | 0.5 | \*\*\* | X | X |
| *Centrolene pipilatum* | 1 | 12 | 0.9737 | 0 | 1.958 | 0.979 | 0.5 | \*\*\* | - | - |
| *Ceradenia meridensis* | 4 | 49 | 0.9903 | 0.125 | 1.457 | 0.728 | 0.5 | \*\*\* | - | - |
| *Chamaeza mollissima* | 4 | 294 | 0.9822 | 0.0938 | 1.965 | 0.982 | 0.5 | \*\*\* | - | - |
| *Cinchona parabolica* | 2 | 54 | 0.9745 | 0 | 1.860 | 0.930 | 0.5 | \*\*\* | X | X |
| *Cinnycerthia olivascens* | 1 | 811 | 0.9631 | 0.0721 | 1.925 | 0.963 | 0.5 | \*\*\* | - | - |
| *Clethra pedicellaris* | 1 | 57 | 0.9828 | 0 | 1.968 | 0.984 | 0.5 | \*\*\* | X | X |
| *Conopophaga castaneiceps* | 0 | 321 | 0.9615 | 0.0698 | 1.917 | 0.958 | 0.5 | \*\*\* | X | X |
| *Cyathea peladensis* | 2 | 21 | 0.9835 | 0 | 1.880 | 0.940 | 0.5 | \*\*\* | X | X |
| *Grallaria hypoleuca* | 1 | 394 | 0.9637 | 0.1 | 1.922 | 0.961 | 0.5 | \*\*\* | X | X |
| *Grallaria ridgelyi* | 1 | 57 | 0.9913 | 0 | 1.985 | 0.992 | 0.5 | \*\*\* | - | - |
| *Grallaricula peruviana* | 0 | 30 | 0.9864 | 0 | 1.976 | 0.988 | 0.5 | \*\*\* | X | X |
| *Guzmania killipiana* | 2 | 26 | 0.9805 | 1 | 1.966 | 0.983 | 0.5 | \*\*\* | X | X |
| *Hemitriccus rufigularis*  | 2 | 156 | 0.9463 | 0 | 1.405 | 0.701 | 0.5 | \*\*\* | X | - |
| *Hyalinobatrachium pellucidum* | 0 | 40 | 0.9428 | 0 | 1.762 | 0.881 | 0.5 | \*\*\* | X | X |
| *Hyospathe macrorhachis* | 2 | 15 | 0.915 | 0 | 1.899 | 0.949 | 0.5 | \*\*\* | X | X |
| *Ilex maasiana* | 1 | 10 | 0.9753 | 0 | 1.961 | 0.980 | 0.5 | \*\*\* | X | X |
| *Inga extra-nodis*  | 2 | 48 | 0.9903 | 0 | 1.983 | 0.992 | 0.5 | \*\*\* | X | - |
| *Mandevilla congesta* | 2 | 18 | 0.9729 | 0 | 1.947 | 0.973 | 0.5 | \*\*\* | X | X |
| *Mecocerculus minor* | 1 | 250 | 0.9552 | 0.0263 | 1.773 | 0.886 | 0.5 | \*\*\* | - | - |
| *Miconia manicata* | 2 | 11 | 0.9552 | 0 | 1.919 | 0.959 | 0.5 | \*\*\* | X | X |
| *Osornophryne guacamayo* | 2 | 58 | 0.9811 | 0.125 | 1.961 | 0.981 | 0.5 | \*\*\* | X | X |
| *Persea cuneata* | 3 | 112 | 0.9642 | 0.1111 | 1.924 | 0.962 | 0.5 | \*\*\* | - | - |
| *Phyllomedusa ecuatoriana* | 1 | 18 | 0.9142 | 0 | 1.847 | 0.924 | 0.5 | \*\*\* | X | X |
| *Piper pubinervulum* | 0 | 17 | 0.9228 | 0 | 1.588 | 0.794 | 0.5 | \*\*\* | X | X |
| *Pipreola lubomirskii* | 0 | 117 | 0.9813 | 0 | 1.961 | 0.981 | 0.5 | \*\*\* | - | - |
| *Thibaudia harlingii* | 1 | 25 | 0.9777 | 0 | 1.941 | 0.970 | 0.5 | \*\*\* | X | X |
| *Vismia mandurr* | 4 | 38 | 0.9747 | 0 | 1.945 | 0.972 | 0.5 | \*\*\* | - | - |
| *Wettinia aequatorialis* | 0 | 24 | 0.9079 | 0 | 1.844 | 0.922 | 0.5 | \*\*\* | X | X |
| **Total/Average** |   | **4216** | **0.9582** | **0.0561** | **1.853** | **0.926** | **0.5** | **---** | **22** | **21** |