Supplementary Material

Supplementary Table 1: Estimated species richness and SE for all plots, 2020-2099.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Estimated Plot Species Richness | | | | | | | | | | | | | | | |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Wet Model, RCP 4.5 | | | |  | Wet Model, RCP 8.5 | | |  | Dry Model, RCP 4.5 | | |  | Dry Model, RCP 8.5 | | |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Year |  | | Mean |  | SE |  | Mean |  | SE |  | Mean |  | SE |  | Mean |  | SE |
| 2020 |  | 24.92 | |  | 3.90 |  | 25.00 |  | 3.91 |  | 24.46 |  | 3.91 |  | 24.22 |  | 3.89 |
| 2021 |  | 24.42 | |  | 3.90 |  | 24.27 |  | 3.88 |  | 24.53 |  | 3.90 |  | 24.03 |  | 3.88 |
| 2022 |  | 24.46 | |  | 3.90 |  | 24.73 |  | 3.87 |  | 24.17 |  | 3.89 |  | 23.76 |  | 3.86 |
| 2023 |  | 24.54 | |  | 3.89 |  | 24.32 |  | 3.87 |  | 24.03 |  | 3.88 |  | 23.62 |  | 3.86 |
| 2024 |  | 24.74 | |  | 3.89 |  | 23.93 |  | 3.87 |  | 24.08 |  | 3.88 |  | 23.93 |  | 3.87 |
| 2025 |  | 24.50 | |  | 3.89 |  | 24.09 |  | 3.86 |  | 23.94 |  | 3.87 |  | 24.04 |  | 3.87 |
| 2026 |  | 24.58 | |  | 3.87 |  | 24.10 |  | 3.84 |  | 23.86 |  | 3.87 |  | 23.63 |  | 3.84 |
| 2027 |  | 24.25 | |  | 3.87 |  | 23.78 |  | 3.84 |  | 23.97 |  | 3.88 |  | 23.49 |  | 3.85 |
| 2028 |  | 24.79 | |  | 3.87 |  | 24.23 |  | 3.84 |  | 23.51 |  | 3.85 |  | 23.00 |  | 3.81 |
| 2029 |  | 24.48 | |  | 3.88 |  | 23.91 |  | 3.83 |  | 23.92 |  | 3.87 |  | 23.04 |  | 3.82 |
| 2030 |  | 24.58 | |  | 3.87 |  | 23.84 |  | 3.83 |  | 23.90 |  | 3.87 |  | 23.33 |  | 3.83 |
| 2031 |  | 24.59 | |  | 3.86 |  | 23.62 |  | 3.83 |  | 23.50 |  | 3.85 |  | 23.13 |  | 3.82 |
| 2032 |  | 24.19 | |  | 3.85 |  | 23.33 |  | 3.82 |  | 23.50 |  | 3.85 |  | 23.12 |  | 3.82 |
| 2033 |  | 23.64 | |  | 3.85 |  | 23.47 |  | 3.81 |  | 23.41 |  | 3.84 |  | 22.79 |  | 3.80 |
| 2034 |  | 23.93 | |  | 3.86 |  | 23.55 |  | 3.80 |  | 23.30 |  | 3.84 |  | 22.59 |  | 3.79 |
| 2035 |  | 24.01 | |  | 3.86 |  | 23.46 |  | 3.81 |  | 23.49 |  | 3.85 |  | 22.74 |  | 3.79 |
| 2036 |  | 23.83 | |  | 3.86 |  | 23.09 |  | 3.79 |  | 23.33 |  | 3.84 |  | 22.40 |  | 3.78 |
| 2037 |  | 23.79 | |  | 3.82 |  | 23.59 |  | 3.80 |  | 23.10 |  | 3.83 |  | 22.92 |  | 3.80 |
| 2038 |  | 23.67 | |  | 3.83 |  | 23.30 |  | 3.80 |  | 23.07 |  | 3.82 |  | 22.58 |  | 3.79 |
| 2039 |  | 23.87 | |  | 3.83 |  | 22.80 |  | 3.78 |  | 23.10 |  | 3.82 |  | 22.62 |  | 3.77 |
| 2040 |  | 23.69 | |  | 3.83 |  | 23.18 |  | 3.77 |  | 23.21 |  | 3.83 |  | 22.26 |  | 3.76 |
| 2041 |  | 23.63 | |  | 3.82 |  | 22.92 |  | 3.76 |  | 23.38 |  | 3.83 |  | 22.35 |  | 3.76 |
| 2042 |  | 23.78 | |  | 3.81 |  | 22.68 |  | 3.75 |  | 23.36 |  | 3.83 |  | 21.91 |  | 3.73 |
| 2043 |  | 23.74 | |  | 3.80 |  | 22.58 |  | 3.73 |  | 22.86 |  | 3.80 |  | 21.80 |  | 3.72 |
| 2044 |  | 23.68 | |  | 3.80 |  | 22.84 |  | 3.72 |  | 22.75 |  | 3.79 |  | 21.62 |  | 3.71 |
| 2045 |  | 23.72 | |  | 3.82 |  | 22.40 |  | 3.73 |  | 22.86 |  | 3.81 |  | 21.87 |  | 3.73 |
| 2046 |  | 23.41 | |  | 3.83 |  | 22.83 |  | 3.72 |  | 23.30 |  | 3.83 |  | 21.90 |  | 3.73 |
| 2047 |  | 23.37 | |  | 3.80 |  | 22.62 |  | 3.71 |  | 22.62 |  | 3.79 |  | 21.77 |  | 3.70 |
| 2048 |  | 23.55 | |  | 3.80 |  | 22.62 |  | 3.70 |  | 22.91 |  | 3.81 |  | 21.56 |  | 3.69 |
| 2049 |  | 22.96 | |  | 3.79 |  | 22.31 |  | 3.70 |  | 22.42 |  | 3.77 |  | 21.40 |  | 3.69 |
| 2050 |  | 23.42 | |  | 3.78 |  | 22.33 |  | 3.68 |  | 22.57 |  | 3.78 |  | 21.27 |  | 3.68 |
| 2051 |  | 23.30 | |  | 3.78 |  | 22.29 |  | 3.67 |  | 22.59 |  | 3.79 |  | 21.22 |  | 3.68 |
| 2052 |  | 23.16 | |  | 3.76 |  | 22.00 |  | 3.67 |  | 22.50 |  | 3.77 |  | 21.28 |  | 3.68 |
| 2053 |  | 22.85 | |  | 3.76 |  | 21.86 |  | 3.65 |  | 22.38 |  | 3.76 |  | 21.04 |  | 3.66 |
| 2054 |  | 23.75 | |  | 3.78 |  | 21.77 |  | 3.64 |  | 22.39 |  | 3.77 |  | 20.86 |  | 3.64 |
| 2055 |  | 23.08 | |  | 3.75 |  | 21.55 |  | 3.63 |  | 21.98 |  | 3.74 |  | 21.07 |  | 3.64 |
| 2056 |  | 23.21 | |  | 3.78 |  | 22.38 |  | 3.65 |  | 22.56 |  | 3.78 |  | 21.02 |  | 3.65 |
| 2057 |  | 23.55 | |  | 3.80 |  | 22.40 |  | 3.63 |  | 22.81 |  | 3.80 |  | 20.81 |  | 3.62 |
| 2058 |  | 23.07 | |  | 3.76 |  | 21.52 |  | 3.62 |  | 22.25 |  | 3.76 |  | 20.61 |  | 3.62 |
| 2059 |  | 22.69 | |  | 3.74 |  | 21.62 |  | 3.62 |  | 22.14 |  | 3.75 |  | 20.85 |  | 3.63 |
| 2060 |  | 23.14 | |  | 3.74 |  | 21.56 |  | 3.61 |  | 21.76 |  | 3.73 |  | 20.69 |  | 3.62 |
| 2061 |  | 23.23 | |  | 3.75 |  | 20.99 |  | 3.59 |  | 21.97 |  | 3.74 |  | 20.45 |  | 3.60 |
| 2062 |  | 22.54 | |  | 3.73 |  | 21.02 |  | 3.59 |  | 21.93 |  | 3.74 |  | 20.44 |  | 3.60 |
| 2063 |  | 22.32 | |  | 3.73 |  | 20.78 |  | 3.56 |  | 22.07 |  | 3.74 |  | 20.39 |  | 3.58 |
| 2064 |  | 22.10 | |  | 3.74 |  | 21.68 |  | 3.58 |  | 22.02 |  | 3.74 |  | 20.17 |  | 3.57 |
| 2065 |  | 22.79 | |  | 3.73 |  | 21.22 |  | 3.57 |  | 21.75 |  | 3.72 |  | 20.44 |  | 3.59 |
| 2066 |  | 22.69 | |  | 3.73 |  | 20.70 |  | 3.54 |  | 21.88 |  | 3.73 |  | 20.07 |  | 3.55 |
| 2067 |  | 22.51 | |  | 3.74 |  | 20.82 |  | 3.54 |  | 21.76 |  | 3.73 |  | 20.03 |  | 3.55 |
| 2068 |  | 22.44 | |  | 3.74 |  | 20.35 |  | 3.53 |  | 21.94 |  | 3.74 |  | 20.14 |  | 3.55 |
| 2069 |  | 22.70 | |  | 3.73 |  | 20.32 |  | 3.51 |  | 21.83 |  | 3.73 |  | 19.65 |  | 3.52 |
| 2070 |  | 22.49 | |  | 3.71 |  | 20.76 |  | 3.52 |  | 21.86 |  | 3.73 |  | 19.74 |  | 3.53 |
| 2071 |  | 22.89 | |  | 3.71 |  | 20.67 |  | 3.50 |  | 21.58 |  | 3.71 |  | 19.83 |  | 3.51 |
| 2072 |  | 22.86 | |  | 3.72 |  | 20.51 |  | 3.49 |  | 21.61 |  | 3.71 |  | 19.58 |  | 3.50 |
| 2073 |  | 22.66 | |  | 3.71 |  | 20.62 |  | 3.47 |  | 21.66 |  | 3.72 |  | 19.52 |  | 3.49 |
| 2074 |  | 22.02 | |  | 3.70 |  | 20.02 |  | 3.45 |  | 21.60 |  | 3.71 |  | 19.46 |  | 3.50 |
| 2075 |  | 22.13 | |  | 3.71 |  | 20.26 |  | 3.47 |  | 21.65 |  | 3.71 |  | 19.57 |  | 3.48 |
| 2076 |  | 22.24 | |  | 3.71 |  | 20.31 |  | 3.46 |  | 21.85 |  | 3.72 |  | 19.49 |  | 3.46 |
| 2077 |  | 22.61 | |  | 3.71 |  | 20.63 |  | 3.47 |  | 21.53 |  | 3.70 |  | 19.21 |  | 3.47 |
| 2078 |  | 22.22 | |  | 3.70 |  | 19.87 |  | 3.43 |  | 21.37 |  | 3.69 |  | 19.15 |  | 3.45 |
| 2079 |  | 22.29 | |  | 3.70 |  | 19.71 |  | 3.41 |  | 21.51 |  | 3.70 |  | 19.22 |  | 3.45 |
| 2080 |  | 22.38 | |  | 3.69 |  | 19.69 |  | 3.42 |  | 21.52 |  | 3.69 |  | 19.16 |  | 3.42 |
| 2081 |  | 22.22 | |  | 3.68 |  | 19.77 |  | 3.41 |  | 21.23 |  | 3.68 |  | 19.17 |  | 3.42 |
| 2082 |  | 22.21 | |  | 3.70 |  | 19.87 |  | 3.41 |  | 21.50 |  | 3.70 |  | 19.13 |  | 3.43 |
| 2083 |  | 22.61 | |  | 3.71 |  | 19.88 |  | 3.41 |  | 21.58 |  | 3.71 |  | 19.16 |  | 3.43 |
| 2084 |  | 22.98 | |  | 3.71 |  | 19.71 |  | 3.39 |  | 21.48 |  | 3.70 |  | 18.83 |  | 3.40 |
| 2085 |  | 22.43 | |  | 3.70 |  | 19.18 |  | 3.38 |  | 21.52 |  | 3.70 |  | 18.87 |  | 3.43 |
| 2086 |  | 22.01 | |  | 3.69 |  | 19.16 |  | 3.37 |  | 21.44 |  | 3.70 |  | 18.73 |  | 3.41 |
| 2087 |  | 22.12 | |  | 3.69 |  | 19.36 |  | 3.35 |  | 21.68 |  | 3.71 |  | 18.64 |  | 3.38 |
| 2088 |  | 22.91 | |  | 3.70 |  | 19.27 |  | 3.35 |  | 21.55 |  | 3.70 |  | 18.56 |  | 3.37 |
| 2089 |  | 22.17 | |  | 3.68 |  | 19.30 |  | 3.36 |  | 21.57 |  | 3.69 |  | 18.70 |  | 3.38 |
| 2090 |  | 22.16 | |  | 3.69 |  | 19.61 |  | 3.35 |  | 21.30 |  | 3.69 |  | 18.52 |  | 3.37 |
| 2091 |  | 22.23 | |  | 3.69 |  | 19.68 |  | 3.34 |  | 21.42 |  | 3.69 |  | 18.24 |  | 3.35 |
| 2092 |  | 21.72 | |  | 3.68 |  | 19.66 |  | 3.34 |  | 21.20 |  | 3.68 |  | 18.55 |  | 3.34 |
| 2093 |  | 22.06 | |  | 3.70 |  | 19.42 |  | 3.33 |  | 21.61 |  | 3.70 |  | 18.60 |  | 3.38 |
| 2094 |  | 22.25 | |  | 3.71 |  | 19.25 |  | 3.33 |  | 21.70 |  | 3.71 |  | 18.59 |  | 3.37 |
| 2095 |  | 22.80 | |  | 3.71 |  | 19.48 |  | 3.33 |  | 21.58 |  | 3.71 |  | 18.39 |  | 3.36 |
| 2096 |  | 22.43 | |  | 3.68 |  | 19.05 |  | 3.30 |  | 21.26 |  | 3.68 |  | 18.42 |  | 3.33 |
| 2097 |  | 22.20 | |  | 3.70 |  | 19.30 |  | 3.30 |  | 21.49 |  | 3.70 |  | 18.21 |  | 3.34 |
| 2098 |  | 22.12 | |  | 3.69 |  | 19.31 |  | 3.30 |  | 21.41 |  | 3.69 |  | 18.52 |  | 3.35 |
| 2099 |  | 22.34 | |  | 3.67 |  | 19.15 |  | 3.30 |  | 21.29 |  | 3.68 |  | 18.26 |  | 3.31 |

Supplementary Table 2: Predicted plot species richness in 2020 and 2099, as well as net change and standard error.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Net Change in Species Richness | | | | | | |
|  |  |  |  |  |  |  |  |  |
| Forest Type |  | 2020 |  | 2099 |  | change |  | SE |
|  |  |  |  |  |  |  |  |  |
|  |  | Dry Model, RCP 8.5 | | | | | | |
| Savanna |  | 25.66 |  | 18.81 |  | -6.85 |  | 3.38 |
| Coastal |  | 24.49 |  | 18.24 |  | -6.25 |  | 3.32 |
| Aucoumea |  | 24.43 |  | 18.24 |  | -6.19 |  | 3.31 |
| Congolian |  | 23.97 |  | 18.18 |  | -5.79 |  | 3.29 |
|  |  |  |  |  |  |  |  |  |
|  |  | Dry Model, RCP 4.5 | | | | | | |
| Savanna |  | 25.56 |  | 22.33 |  | -3.23 |  | 3.75 |
| Coastal |  | 24.33 |  | 21.18 |  | -3.16 |  | 3.67 |
| Aucoumea |  | 24.46 |  | 21.20 |  | -3.26 |  | 3.67 |
| Congolian |  | 24.09 |  | 21.15 |  | -2.94 |  | 3.66 |
|  |  |  |  |  |  |  |  |  |
|  |  | Wet Model, RCP 8.5 | | | | | | |
| Savanna |  | 26.24 |  | 19.69 |  | -6.54 |  | 3.38 |
| Coastal |  | 25.07 |  | 19.14 |  | -5.93 |  | 3.32 |
| Aucoumea |  | 25.01 |  | 19.10 |  | -5.91 |  | 3.29 |
| Congolian |  | 24.76 |  | 18.98 |  | -5.78 |  | 3.27 |
|  |  |  |  |  |  |  |  |  |
|  |  | Wet Model, RCP 4.5 | | | | | | |
| Savanna |  | 26.25 |  | 23.91 |  | -2.34 |  | 3.77 |
| Coastal |  | 24.87 |  | 22.42 |  | -2.45 |  | 3.70 |
| Aucoumea |  | 25.11 |  | 22.52 |  | -2.58 |  | 3.68 |
| Congolian |  | 24.67 |  | 22.07 |  | -2.59 |  | 3.64 |

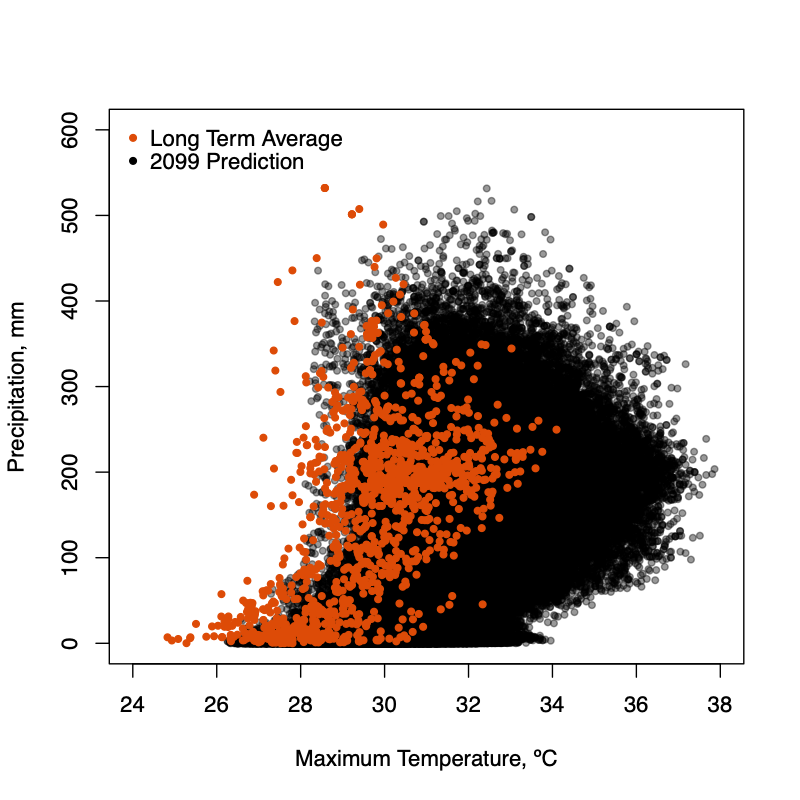
Supplementary Table 3: The models used in the climate prediction

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Precipitation** |  | **Maximium Temperature** |  | **Minimum Temperature** |  |
|  |  |  |  |  |  |
| NorESM1.M |  | CSIRO.Mk3.6.0 |  | CSIRO.Mk3.6.0 |  |
| MRI.ESM.MR |  | ACCESS1.0 |  | ACCESS1.0 |  |
| MPI.ESM.LR |  | CanESM2 |  | CanESM2 | **Highest Five Models** |
| MIROC5 |  | IPSL.CM5A.LR |  | IPSL.CM5A.LR |  |
| IPSL.CM5A.MR |  | IPSL.CM5A.MR |  | IPSL.CM5A.MR |  |
|  |  |  |  |  |  |
| MIROC.ESM |  | MIROC.ESM |  | MIROC.ESM |  |
| MIROC.ESM.CHEM |  | MIROC.ESM.CHEM |  | MIROC.ESM.CHEM |  |
| inmcm4 |  | inmcm4 |  | inmcm4 | **Lowest Five Models** |
| bcc.csm1.1 |  | MRI.CGCM3 |  | MRI.CGCM3 |  |
| CanESM2 |  | CNRM.CM5 |  | NorESM1.M |  |

Supplementary Table 4: Predicted change in species abundance per plot by end of century for both wet and dry models, as well as RCP 4.5, and RCP 8.5.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Estimated Species Abundance | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | Wet Model, RCP 4.5 | |  | Wet Model, RCP 8.5 | |  | Dry Model, RCP 4.5 | |  | Dry Model, RCP 8.5 | |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Species Name | Mean | SE |  | Mean | SE |  | Mean | SE |  | Mean | SE |
|  |  |  |  |  |  |  |  |  |  |  |  |
| *Diospyros spp.* | 5.38 | 1.41 |  | 21.82 | 2.09 |  | 8.18 | 1.92 |  | 24.45 | 1.92 |
| *Aucoumea klaineana* | 16.05 | 4.95 |  | 25.97 | 10.22 |  | 3.56 | 4.01 |  | 11.67 | 2.32 |
| *Staudtia gabonensis* | 4.3 | 1.03 |  | 10.32 | 2.15 |  | 2.59 | 0.89 |  | 9.44 | 0.85 |
| *Desbordesia glaucescens* | 1.67 | 0.64 |  | 5.57 | 1.13 |  | 1.33 | 0.56 |  | 5.31 | 0.8 |
| *Coula edulis* | 1.69 | 1.01 |  | 4.45 | 1.26 |  | 1.15 | 0.93 |  | 4.21 | 0.88 |
| *Strombosia spp.* | 1.65 | 0.62 |  | 4.55 | 1.41 |  | 0.7 | 0.51 |  | 3.79 | 0.93 |
| *Pausinystalia johimbe* | 0.98 | 0.53 |  | 2.74 | 0.77 |  | 0.69 | 0.45 |  | 2.43 | 0.6 |
| *Macaranga spp.* | -0.19 | 0.49 |  | 0.66 | 0.89 |  | 0.68 | 0.85 |  | 1.48 | 0.75 |
| *Mytragyna ciliata* | 0.87 | 0.52 |  | 2.34 | 0.67 |  | 0.56 | 0.59 |  | 1.41 | 0.6 |
| *Dialium pachyphyllum* | -0.57 | 0.53 |  | 0.22 | 0.71 |  | 0.53 | 0.79 |  | 0.69 | 0.71 |
| *Scytopetalum klaineanum* | 1.37 | 0.57 |  | 3.3 | 0.97 |  | 0.48 | 0.55 |  | 2.26 | 0.53 |
| *Xylopia aethiopica* | 2.31 | 0.94 |  | 4.06 | 1.69 |  | 0.42 | 0.66 |  | 1.97 | 0.64 |
| *Irvingia gabonensis* | 0.15 | 0.55 |  | 1.09 | 0.65 |  | 0.4 | 0.6 |  | 1.1 | 0.67 |
| *Nauclea diderrichii* | -0.12 | 0.37 |  | 1.1 | 0.66 |  | 0.28 | 0.58 |  | 1.07 | 0.53 |
| *Diogoa zenkeri* | 0.82 | 0.7 |  | 1.37 | 0.93 |  | 0.23 | 0.79 |  | 0.84 | 0.71 |
| *Polyalthia spp.* | -0.36 | 0.56 |  | -0.37 | 0.67 |  | 0.18 | 0.73 |  | 0.18 | 0.72 |
| *Trichoscypha acuminata* | -0.3 | 0.39 |  | 0.04 | 0.59 |  | 0.09 | 0.49 |  | 0.34 | 0.53 |
| *Zanthoxylum heitzii* | 0.52 | 0.44 |  | 1.4 | 0.61 |  | 0.09 | 0.34 |  | 0.67 | 0.38 |
| *Maprounea membranacea* | 0.65 | 0.59 |  | 0.9 | 0.75 |  | -0.05 | 0.43 |  | 0.26 | 0.4 |
| *Ongokea gore* | 0 | 0.42 |  | 0.48 | 0.48 |  | -0.06 | 0.39 |  | 0.26 | 0.45 |
| *Annickia chlorantha* | 0.73 | 0.51 |  | 0.8 | 0.65 |  | -0.08 | 0.36 |  | 0.05 | 0.31 |
| *Odyendyea gabonensis* | 0.11 | 0.38 |  | 0.12 | 0.55 |  | -0.08 | 0.41 |  | 0.04 | 0.42 |
| *Grewia coriacea* | 0.17 | 0.42 |  | 0.54 | 0.5 |  | -0.1 | 0.39 |  | 0.4 | 0.45 |
| *Baphia spp.* | -1.32 | 0.64 |  | -1.67 | 0.82 |  | -0.11 | 0.88 |  | -1.8 | 0.76 |
| *Xylopia spp.* | 0.13 | 0.31 |  | 0.1 | 0.37 |  | -0.17 | 0.3 |  | 0.07 | 0.24 |
| *Klainedoxa gabonensis* | 0.36 | 0.39 |  | -0.09 | 0.62 |  | -0.2 | 0.32 |  | -0.23 | 0.38 |
| *Klainedoxa spp.* | -0.47 | 0.4 |  | -0.54 | 0.46 |  | -0.26 | 0.53 |  | -0.57 | 0.49 |
| *Barteria fistulosa* | -0.15 | 0.43 |  | -0.71 | 0.57 |  | -0.3 | 0.48 |  | -1.06 | 0.49 |
| *Pycnanthus angolensis* | 1.38 | 0.83 |  | 0.97 | 1.34 |  | -0.3 | 0.72 |  | -0.24 | 0.55 |
| *Dacryodes buettneri* | -0.31 | 0.58 |  | -0.75 | 0.66 |  | -0.32 | 0.58 |  | -0.49 | 0.66 |
| *Dacryodes normandii* | -0.19 | 0.32 |  | -0.42 | 0.37 |  | -0.36 | 0.31 |  | -0.63 | 0.32 |
| *Dacryodes igaganga* | -0.52 | 0.36 |  | -0.79 | 0.45 |  | -0.39 | 0.38 |  | -0.84 | 0.56 |
| *Scyphocephalium ochocoa* | 0.57 | 0.83 |  | -0.1 | 1.1 |  | -0.41 | 0.68 |  | -0.45 | 0.58 |
| *Dialium spp.* | -0.34 | 0.46 |  | -1.1 | 0.49 |  | -0.42 | 0.5 |  | -1.02 | 0.55 |
| *Distemonanthus benthamianus* | -0.67 | 0.38 |  | -1.05 | 0.52 |  | -0.44 | 0.4 |  | -1.02 | 0.53 |
| *Anonidium mannii* | -0.43 | 0.41 |  | -0.69 | 0.64 |  | -0.47 | 0.43 |  | -1.12 | 0.98 |
| *Trichilia spp.* | -0.73 | 0.49 |  | -0.85 | 0.68 |  | -0.5 | 0.7 |  | -0.78 | 0.64 |
| *Centroplacus glaucinus* | -0.58 | 0.4 |  | -0.86 | 0.49 |  | -0.5 | 0.49 |  | -0.71 | 0.51 |
| *Anthonotha spp.* | -0.59 | 0.37 |  | -0.95 | 0.46 |  | -0.51 | 0.45 |  | -0.77 | 0.53 |
| *Erismadelphus exsul* | -0.32 | 0.37 |  | -1.06 | 0.49 |  | -0.51 | 0.31 |  | -0.85 | 0.42 |
| *Chrysophyllum spp.* | -0.52 | 0.3 |  | -1.12 | 0.47 |  | -0.55 | 0.32 |  | -0.99 | 0.43 |
| *Piptadeniastrum africanum* | -0.21 | 0.38 |  | -0.9 | 0.48 |  | -0.56 | 0.4 |  | -0.82 | 0.38 |
| *Pterocarpus soyauxii* | -0.61 | 0.44 |  | -1.28 | 0.47 |  | -0.59 | 0.43 |  | -1.14 | 0.52 |
| *Pausinystalia macroceras* | -1.31 | 0.58 |  | -1.85 | 0.98 |  | -0.63 | 0.74 |  | -1.9 | 0.86 |
| *Afrostyrax lepidophyllus* | -0.77 | 0.34 |  | -1.03 | 0.48 |  | -0.65 | 0.49 |  | -1.62 | 0.73 |
| *Pseudospondias macrocarpa* | -0.68 | 0.4 |  | -1.34 | 0.52 |  | -0.7 | 0.4 |  | -1.36 | 0.54 |
| *Polyalthia suaveolens* | -0.17 | 0.5 |  | -1.07 | 0.63 |  | -0.72 | 0.5 |  | -1.14 | 0.46 |
| *Panda oleosa* | -0.97 | 0.35 |  | -1.44 | 0.61 |  | -0.73 | 0.55 |  | -2 | 0.83 |
| *Tetraberlinia bifoliolata* | -0.51 | 0.46 |  | -1.44 | 0.81 |  | -0.74 | 0.42 |  | -1.06 | 0.64 |
| *Xylopia staudtii* | -0.69 | 0.39 |  | -1.42 | 0.48 |  | -0.76 | 0.38 |  | -1.31 | 0.53 |
| *Symphonia globulifera* | -0.74 | 0.47 |  | -1.42 | 0.86 |  | -0.79 | 0.49 |  | -0.97 | 0.66 |
| *Beilschmiedia spp.* | -0.94 | 0.42 |  | -1.85 | 0.52 |  | -0.82 | 0.55 |  | -1.56 | 0.6 |
| *Dacryodes macrophylla* | -0.92 | 0.61 |  | -1.52 | 0.88 |  | -0.84 | 0.57 |  | -1.25 | 0.75 |
| *Erythrophleum ivorense* | -1.03 | 0.55 |  | -1.52 | 0.58 |  | -0.84 | 0.44 |  | -1.54 | 0.58 |
| *Duboscia macrocarpa* | -0.72 | 0.34 |  | -1.41 | 0.55 |  | -0.84 | 0.36 |  | -1.46 | 0.55 |
| *Strombosia pustulata* | -0.69 | 0.56 |  | -1.73 | 0.68 |  | -0.86 | 0.48 |  | -1.64 | 0.67 |
| *Carapa procera* | -0.79 | 0.49 |  | -1.87 | 0.58 |  | -0.89 | 0.52 |  | -1.69 | 0.64 |
| *Pentaclethra macrophylla* | -1.14 | 0.49 |  | -1.97 | 0.82 |  | -0.92 | 0.48 |  | -2.09 | 0.8 |
| *Pentaclethra eetveldeana* | -1.86 | 0.71 |  | -3.01 | 1.26 |  | -0.92 | 0.76 |  | -3.16 | 0.97 |
| *Drypetes spp.* | -0.62 | 0.47 |  | -1.85 | 0.66 |  | -0.99 | 0.45 |  | -1.69 | 0.65 |
| *Klaineanthus gaboniae* | -1.3 | 0.58 |  | -2.5 | 0.74 |  | -1.14 | 0.55 |  | -2.52 | 0.89 |
| *Garcinia spp.* | -0.81 | 0.82 |  | -2.57 | 1.55 |  | -1.16 | 0.72 |  | -1.59 | 1.01 |
| *Trichoscypha spp.* | -1.1 | 0.6 |  | -2.42 | 0.88 |  | -1.21 | 0.53 |  | -2.14 | 0.82 |
| *Celtis tessmannii* | -1.32 | 0.57 |  | -2.12 | 0.89 |  | -1.22 | 0.53 |  | -2.79 | 1.19 |
| *Uapaca spp.* | -1.01 | 0.68 |  | -2.33 | 1.02 |  | -1.29 | 0.71 |  | -1.82 | 0.87 |
| *Scorodolphloeus zenkeri* | -1.33 | 0.6 |  | -2.08 | 1.16 |  | -1.3 | 0.88 |  | -3.62 | 1.52 |
| *Strombosiopsis tetrandra* | -0.67 | 0.75 |  | -2.42 | 0.79 |  | -1.33 | 0.65 |  | -2.63 | 0.75 |
| *Hymenostegia pellegrinii* | -1.13 | 0.67 |  | -1.62 | 0.9 |  | -1.35 | 0.77 |  | -2.61 | 1.3 |
| *Dacryodes spp.* | -1.25 | 0.75 |  | -2.67 | 1.19 |  | -1.35 | 0.74 |  | -2.16 | 1.06 |
| *Cola spp.* | -1.15 | 0.71 |  | -3.11 | 0.85 |  | -1.44 | 0.62 |  | -2.96 | 0.82 |
| *Petersianthus macrocarpus* | -1.37 | 0.92 |  | -2.03 | 1.39 |  | -1.58 | 0.99 |  | -2.85 | 1.92 |
| *Heisteria parvifolia* | -1.56 | 0.7 |  | -3.76 | 1.57 |  | -1.87 | 0.89 |  | -2.96 | 1.3 |
| *Coelocaryon preussii* | -3.41 | 1.67 |  | -6.64 | 3.61 |  | -3.43 | 1.71 |  | -4.66 | 3.05 |
| *Dichostemma glaucescens* | -2.24 | 3.17 |  | -6.85 | 3.31 |  | -4.23 | 3.23 |  | -7.39 | 2.92 |
| *Plagiostyles africana* | -6.18 | 3.16 |  | -9.16 | 5.48 |  | -6.21 | 2.7 |  | -11.64 | 6.28 |
| *Santiria trimera* | -7.17 | 2.15 |  | -14.69 | 4.9 |  | -7.52 | 2.08 |  | -14.67 | 4.78 |

Supplementary Figure 1: A comparison of long-term average climate space for all 104 plots compared to predicted climate space in 2099 from all models (wet and dry) and both scenarios (RCP 4.5 and 8.5).



Supplementary Figure 2: A comparison of predicted vs. observed values discrete species abundance confirms model fit.

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Supplementary Figure 3: Posterior parameter chains show convergence.

