Table S2: The result of the neutral test using Etienne formula.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | *ID* | *J* | *S* |  ** |  | *Log(L0)* | *Log(L1)* | *q-value* | *p-value* |
| Control |  H01 | 1301 | 211 | 71.17  | 0.999925  | -125.45  | -66.16  | 118.587  | 0.0000  |
|  H02 | 1359 | 266 | 98.49  | 0.999949  | -103.57  | -62.06  | 83.030  | 0.0000  |
|  H03 | 1276 | 162 | 48.92  | 0.999972  | -103.54  | -70.12  | 66.832  | 0.0000  |
|  H04 | 1194 | 177 | 57.19  | 0.999947  | -113.93  | -65.12  | 97.605  | 0.0000  |
|  H05 | 1181 | 152 | 46.26  | 0.999893  | -108.68  | -67.76  | 81.830  | 0.0000  |
|  H06 | 1069 | 123 | 35.64  | 0.999966  | -103.33  | -66.23  | 74.208  | 0.0000  |
|  H07 | 1019 | 168 | 57.09  | 0.999984  | -89.10  | -58.83  | 60.523  | 0.0000  |
|  H08\* | 919 | 70 | 17.43  | 0.999233  | -64.21  | -62.47  | 3.496  | 0.0615  |
|  H09 | 570 | 104 | 36.97  | 0.999985  | -57.71  | -44.17  | 27.061  | 0.0000  |
|  H10 | 783 | 136 | 47.33  | 0.999992  | -72.42  | -51.71  | 41.406  | 0.0000  |
|  H11 | 1070 | 198 | 71.13  | 0.999987  | -96.10  | -57.63  | 76.951  | 0.0000  |
|  H12 | 933 | 158 | 54.35  | 0.999752  | -95.35  | -56.69  | 77.334  | 0.0000  |
|  H13 | 1117 | 259 | 105.58  | 0.999997  | -107.15  | -52.47  | 109.363  | 0.0000  |
|  H14 | 644 | 129 | 48.30  | 0.999994  | -72.59  | -45.10  | 54.971  | 0.0000  |
|  H15 | 905 | 124 | 38.67  | 0.999996  | -81.95  | -59.66  | 44.586  | 0.0000  |
|  H16 | 917 | 200 | 78.72  | 0.999734  | -94.82  | -50.89  | 87.860  | 0.0000  |
|  H18 | 1021 | 118 | 34.41  | 0.999889  | -80.35  | -64.74  | 31.228  | 0.0000  |
|  H19 | 725 | 131 | 46.48  | 0.999992  | -75.34  | -48.96  | 52.750  | 0.0000  |
|  H20 | 1242 | 159 | 48.29  | 0.999986  | -110.06  | -69.95  | 80.221  | 0.0000  |
|  H21 | 1056 | 186 | 65.26  | 0.999993  | -94.24  | -59.27  | 69.930  | 0.0000  |
|  H22 | 966 | 156 | 52.41  | 0.999949  | -90.70  | -57.51  | 66.390  | 0.0000  |
|  H23 | 1049 | 168 | 56.30  | 0.999991  | -99.34  | -60.45  | 77.771  | 0.0000  |
|  H24 | 1306 | 237 | 84.49  | 0.999845  | -119.23  | -63.23  | 111.983  | 0.0000  |
|  H25 | 1021 | 184 | 65.31  | 0.999989  | -98.84  | -57.33  | 83.017  | 0.0000  |
|  H26 | 1069 | 121 | 34.91  | 0.995582  | -92.64  | -66.12  | 53.044  | 0.0000  |
|  H27 | 979 | 223 | 89.88  | 0.999996  | -78.95  | -50.60  | 56.716  | 0.0000  |
|  H30 | 1084 | 156 | 49.64  | 0.999534  | -99.74  | -64.00  | 71.481  | 0.0000  |
|  H32 | 1099 | 233 | 90.15  | 0.999994  | -99.26  | -55.19  | 88.134  | 0.0000  |
|  H33 | 1059 | 173 | 58.47  | 0.999994  | -90.92  | -59.92  | 61.988  | 0.0000  |
|  H34 | 896 | 150 | 51.31  | 0.999994  | -83.65  | -55.73  | 55.829  | 0.0000  |
|  H35 | 1127 | 182 | 61.24  | 0.999983  | -95.89  | -61.87  | 68.052  | 0.0000  |
|  H36 | 1122 | 156 | 49.06  | 0.999894  | -104.42  | -64.53  | 79.777  | 0.0000  |
|  H37 | 1177 | 222 | 80.61  | 0.999721  | -100.48  | -59.56  | 81.829  | 0.0000  |
|  H38 | 1111 | 190 | 65.62  | 0.999987  | -95.70  | -60.20  | 71.001  | 0.0000  |
|  H39\* | 479 | 57 | 16.64  | 0.999990  | -44.19  | -44.19  | 0.003  | 0.9555  |
|  H40 | 1180 | 147 | 44.06  | 0.999989  | -86.29  | -68.70  | 35.193  | 0.0000  |
|  H41 | 976 | 187 | 68.42  | 0.999988  | -88.50  | -54.39  | 68.216  | 0.0000  |
|  H42 | 1211 | 135 | 38.73  | 0.999983  | -95.32  | -70.85  | 48.942  | 0.0000  |
|  H43 | 1364 | 251 | 90.03  | 0.999990  | -108.00  | -63.70  | 88.588  | 0.0000  |
|  H44 | 1347 | 195 | 62.35  | 0.999985  | -115.89  | -69.00  | 93.771  | 0.0000  |
|  H45 | 1159 | 183 | 60.87  | 0.999994  | -75.10  | -62.80  | 24.605  | 0.0000  |
|  H46 | 1044 | 183 | 64.00  | 0.999804  | -102.19  | -57.99  | 88.413  | 0.0000  |
|  H47 | 922 | 162 | 56.78  | 0.999898  | -99.35  | -55.41  | 87.874  | 0.0000  |
|  H48 | 980 | 169 | 58.62  | 0.999908  | -98.38  | -57.09  | 82.594  | 0.0000  |
|  H49 | 1146 | 156 | 48.46  | 0.999531  | -97.18  | -66.18  | 62.004  | 0.0000  |
|  H50 | 1042 | 162 | 53.57  | 0.999984  | -99.55  | -61.55  | 76.013  | 0.0000  |
|  H51 | 982 | 129 | 39.54  | 0.999995  | -83.35  | -62.06  | 42.582  | 0.0000  |
|  H52 | 981 | 74 | 18.38  | 0.999781  | -68.96  | -65.33  | 7.272  | 0.0070  |
|  H53 | 1184 | 183 | 60.29  | 0.999994  | -100.38  | -64.15  | 72.452  | 0.0000  |
|  H54 | 1349 | 182 | 56.35  | 0.999549  | -124.71  | -70.98  | 107.479  | 0.0000  |
|  H55 | 1140 | 189 | 64.34  | 0.999996  | -115.72  | -61.53  | 108.381  | 0.0000  |
|  H56 | 1344 | 239 | 84.33  | 0.999994  | -123.75  | -63.96  | 119.578  | 0.0000  |
|  H57 | 986 | 127 | 38.52  | 0.999989  | -76.06  | -62.21  | 27.705  | 0.0000  |
|  H58 | 1015 | 184 | 65.52  | 0.999994  | -96.55  | -56.86  | 79.388  | 0.0000  |
|  H59 | 963 | 145 | 47.14  | 0.999963  | -85.48  | -59.28  | 52.394  | 0.0000  |
|  H60 | 700 | 161 | 65.14  | 0.999926  | -75.00  | -43.87  | 62.256  | 0.0000  |
| CRC |  C01 | 1312 | 207 | 68.92  | 0.999994  | -105.85  | -66.67  | 78.355  | 0.0000  |
|  C03 | 825 | 84 | 23.22  | 0.999867  | -64.52  | -58.70  | 11.633  | 0.0006  |
|  C05 | 1460 | 186 | 56.35  | 0.999994  | -112.23  | -74.25  | 75.969  | 0.0000  |
|  C07 | 1006 | 150 | 48.60  | 0.999992  | -81.80  | -60.55  | 42.505  | 0.0000  |
|  C09 | 1153 | 149 | 45.53  | 0.999897  | -108.80  | -66.56  | 84.477  | 0.0000  |
|  C11 | 1078 | 121 | 34.83  | 0.999933  | -77.60  | -66.55  | 22.109  | 0.0000  |
|  C13 | 1166 | 175 | 56.89  | 0.999981  | -72.76  | -64.20  | 17.127  | 0.0000  |
|  C15 | 1118 | 143 | 43.26  | 0.999963  | -83.91  | -65.83  | 36.153  | 0.0000  |
|  C17 | 1027 | 166 | 55.87  | 0.999993  | -90.20  | -59.16  | 62.077  | 0.0000  |
|  C19 | 786 | 121 | 39.74  | 0.999993  | -75.14  | -53.93  | 42.428  | 0.0000  |
|  C23 | 848 | 139 | 47.07  | 0.999967  | -93.83  | -53.94  | 79.778  | 0.0000  |
|  C25 | 1893 | 259 | 80.91  | 0.999996  | -148.32  | -82.04  | 132.577  | 0.0000  |
|  C27 | 1208 | 165 | 51.36  | 0.999960  | -103.97  | -67.26  | 73.428  | 0.0000  |
|  C29 | 971 | 109 | 31.25  | 0.999889  | -76.57  | -63.64  | 25.860  | 0.0000  |
|  C31 | 923 | 128 | 40.20  | 0.999943  | -71.91  | -59.84  | 24.154  | 0.0000  |
|  C33 | 1526 | 204 | 63.13  | 0.999993  | -128.60  | -75.31  | 106.571  | 0.0000  |
|  C35 | 726 | 83 | 23.93  | 0.999978  | -64.30  | -54.58  | 19.435  | 0.0000  |
|  C37 | 444 | 63 | 19.83  | 0.999611  | -43.82  | -41.19  | 5.257  | 0.0219  |
|  C39\* | 777 | 66 | 17.05  | 0.999977  | -57.32  | -57.48  | 0.320  | 0.5717  |
|  C41 | 1387 | 231 | 78.93  | 0.999994  | -128.21  | -67.53  | 121.349  | 0.0000  |
|  C43 | 1386 | 192 | 60.30  | 0.999833  | -110.22  | -71.21  | 78.013  | 0.0000  |
|  C45 | 1187 | 114 | 30.85  | 0.999964  | -99.94  | -71.61  | 56.674  | 0.0000  |
|  C47 | 879 | 112 | 33.91  | 0.999941  | -76.40  | -58.71  | 35.380  | 0.0000  |
|  C49 | 1075 | 161 | 52.25  | 0.999794  | -81.97  | -62.30  | 39.356  | 0.0000  |
|  C51\* | 328 | 45 | 13.90  | 0.999658  | -34.17  | -35.41  | 2.475  | 0.1157  |
|  C53 | 1072 | 170 | 56.72  | 0.999993  | -103.03  | -61.19  | 83.679  | 0.0000  |
|  C55 | 846 | 123 | 39.39  | 0.999983  | -76.35  | -56.65  | 39.397  | 0.0000  |
|  C57 | 1147 | 171 | 55.37  | 0.999983  | -93.22  | -64.16  | 58.109  | 0.0000  |
|  C59 | 1343 | 155 | 45.25  | 0.999897  | -110.78  | -73.27  | 75.012  | 0.0000  |
|  C61 | 1115 | 169 | 55.07  | 0.999961  | -101.62  | -62.65  | 77.935  | 0.0000  |
|  C63 | 587 | 94 | 31.40  | 0.997604  | -57.03  | -46.21  | 21.636  | 0.0000  |
|  C65 | 1007 | 135 | 41.68  | 0.999968  | -82.27  | -62.28  | 39.976  | 0.0000  |
|  C67 | 488 | 110 | 43.89  | 0.999969  | -42.90  | -38.29  | 9.218  | 0.0024  |
|  C69 | 783 | 118 | 38.50  | 0.999866  | -75.14  | -54.00  | 42.280  | 0.0000  |
|  C71 | 592 | 86 | 27.47  | 0.999645  | -51.42  | -47.62  | 7.606  | 0.0058  |
|  C73 | 1215 | 150 | 44.72  | 0.999521  | -105.95  | -69.03  | 73.832  | 0.0000  |
|  C75 | 1206 | 114 | 30.76  | 0.999879  | -93.45  | -72.31  | 42.267  | 0.0000  |
|  C77 | 1070 | 102 | 27.50  | 0.994648  | -90.48  | -68.07  | 44.815  | 0.0000  |
|  C79 | 1288 | 206 | 69.07  | 0.999957  | -108.03  | -66.27  | 83.519  | 0.0000  |
|  C81 | 1270 | 146 | 42.31  | 0.999510  | -97.00  | -72.31  | 49.381  | 0.0000  |
|  C83 | 1048 | 140 | 43.18  | 0.999953  | -84.49  | -63.85  | 41.281  | 0.0000  |
|  C85 | 1277 | 97 | 24.25  | 0.999976  | -80.55  | -74.89  | 11.319  | 0.0008  |
|  C87 | 905 | 129 | 40.88  | 0.999978  | -69.92  | -58.62  | 22.605  | 0.0000  |
|  C89 | 951 | 147 | 48.43  | 0.999993  | -83.84  | -57.89  | 51.884  | 0.0000  |
|  C93 | 988 | 143 | 45.72  | 0.999981  | -78.27  | -60.43  | 35.675  | 0.0000  |

\* *p* > 0.05

J: the total number of reads in the sample, S: the number of species in the sample, θ: fundamental biodiversity, m: immigration probability, Log(L0) is the log-likelihood of the observed sample, Log(L1) is the log-likelihood predicted by the neutral model, and q-value and p-value are the values of the likelihood ratios.