**Supplementary Table 1. Uncorrected p-distances within and among groups of *Polemon*, which were calculated from cyt *b*, ND4, 16S, c-mos, and RAG1 data sets. See Portillo et al. (2018) for locality information of samples.**

**cyt *b***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 *P. collaris* UTEP 21612 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 *P. collaris* UTEP 21614 | 0.028 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 *P. collaris* UTEP 21613 | 0.020 | 0.025 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 *P. collaris* PEM R19893 | 0.044 | 0.050 | 0.051 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 *P. collaris* KG 523 | 0.028 | 0.013 | 0.028 | 0.041 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 *P. collaris* MSNS\_REPT\_110 | 0.030 | 0.042 | 0.030 | 0.050 | 0.039 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 *P.* cf*. robustus* UTEP 21617 | 0.159 | 0.164 | 0.157 | 0.162 | 0.153 | 0.163 |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 *P. robustus* UTEP 21616 | 0.155 | 0.159 | 0.153 | 0.158 | 0.149 | 0.159 | 0.010 |  |  |  |  |  |  |  |  |  |  |  |
| 9 *P. graueri* EBG 2294 | 0.173 | 0.158 | 0.181 | 0.183 | 0.157 | 0.185 | 0.191 | 0.187 |  |  |  |  |  |  |  |  |  |  |
| 10 *P. graueri* CRT 4007 | 0.175 | 0.160 | 0.184 | 0.185 | 0.160 | 0.188 | 0.194 | 0.189 | 0.003 |  |  |  |  |  |  |  |  |  |
| 11 *P. graueri* UTEP 21611 | 0.178 | 0.163 | 0.187 | 0.188 | 0.163 | 0.191 | 0.197 | 0.190 | 0.008 | 0.005 |  |  |  |  |  |  |  |  |
| 12 *P. graueri* UTEP 21610 | 0.175 | 0.160 | 0.183 | 0.185 | 0.160 | 0.187 | 0.194 | 0.189 | 0.003 | 0.003 | 0.008 |  |  |  |  |  |  |  |
| 13 *P. graueri* MTSN 7378 | 0.173 | 0.158 | 0.181 | 0.183 | 0.157 | 0.185 | 0.191 | 0.187 | 0.002 | 0.002 | 0.007 | 0.002 |  |  |  |  |  |  |
| 14 *P. fulvicollis laurenti* UTEP 21615 | 0.183 | 0.191 | 0.189 | 0.192 | 0.185 | 0.200 | 0.200 | 0.200 | 0.156 | 0.158 | 0.161 | 0.154 | 0.156 |  |  |  |  |  |
| 15 *P*. *ater* PEM R17452 | 0.025 | 0.030 | 0.032 | 0.053 | 0.030 | 0.042 | 0.159 | 0.154 | 0.170 | 0.173 | 0.176 | 0.173 | 0.170 | 0.180 |  |  |  |  |
| 16 *P*. *ater* PEM R20734 | 0.025 | 0.030 | 0.032 | 0.053 | 0.030 | 0.042 | 0.159 | 0.154 | 0.170 | 0.173 | 0.176 | 0.173 | 0.170 | 0.180 | 0.000 |  |  |  |
| 17 *P. christyi* UTEP 21618 | 0.142 | 0.134 | 0.136 | 0.151 | 0.132 | 0.154 | 0.106 | 0.106 | 0.163 | 0.166 | 0.168 | 0.166 | 0.163 | 0.175 | 0.140 | 0.140 |  |  |
| 18 *P. acanthias* PLI\_12\_053 | 0.190 | 0.187 | 0.179 | 0.180 | 0.179 | 0.190 | 0.189 | 0.187 | 0.188 | 0.190 | 0.193 | 0.190 | 0.188 | 0.166 | 0.177 | 0.177 | 0.176 |  |
| 19 *P. acanthias* PLI\_12\_208 | 0.188 | 0.184 | 0.177 | 0.178 | 0.177 | 0.188 | 0.187 | 0.184 | 0.185 | 0.188 | 0.191 | 0.188 | 0.185 | 0.164 | 0.175 | 0.175 | 0.173 | 0.002 |

**ND4**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 1 *P. collaris* UTEP 21612 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 *P. collaris* UTEP 21614 | 0.024 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 *P. collaris* UTEP 21613 | 0.006 | 0.022 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 *P. collaris* UAC 62 | 0.019 | 0.017 | 0.017 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 *P. collaris* PEM R19893 | 0.028 | 0.034 | 0.026 | 0.032 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 *P. collaris* KG 523 | 0.022 | 0.017 | 0.021 | 0.004 | 0.028 |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 *P.* cf*. robustus* UTEP 21617 | 0.147 | 0.147 | 0.145 | 0.145 | 0.155 | 0.150 |  |  |  |  |  |  |  |  |  |  |  |
| 8 *P. robustus* UTEP 21616 | 0.146 | 0.148 | 0.143 | 0.141 | 0.144 | 0.146 | 0.183 |  |  |  |  |  |  |  |  |  |  |
| 9 *P. graueri* CRT 4007 | 0.149 | 0.147 | 0.147 | 0.144 | 0.157 | 0.149 | 0.013 | 0.188 |  |  |  |  |  |  |  |  |  |
| 10 *P. graueri* UTEP 21611 | 0.149 | 0.149 | 0.147 | 0.147 | 0.157 | 0.152 | 0.011 | 0.189 | 0.002 |  |  |  |  |  |  |  |  |
| 11 *P. fulvicollis laurenti* UTEP 21615 | 0.120 | 0.120 | 0.118 | 0.120 | 0.125 | 0.122 | 0.145 | 0.159 | 0.147 | 0.148 |  |  |  |  |  |  |  |
| 12 *P. notatus* 29395 | 0.185 | 0.181 | 0.188 | 0.185 | 0.186 | 0.188 | 0.168 | 0.195 | 0.166 | 0.169 | 0.155 |  |  |  |  |  |  |
| 13 *P*. *ater* PEM R17452 | 0.026 | 0.036 | 0.024 | 0.030 | 0.036 | 0.034 | 0.147 | 0.150 | 0.149 | 0.149 | 0.118 | 0.194 |  |  |  |  |  |
| 14 *P*. *ater* PEM R20734 | 0.026 | 0.036 | 0.024 | 0.030 | 0.036 | 0.034 | 0.147 | 0.150 | 0.149 | 0.149 | 0.118 | 0.194 | 0.000 |  |  |  |  |
| 15 *P. christyi* UTEP 21618 | 0.135 | 0.133 | 0.133 | 0.131 | 0.147 | 0.135 | 0.169 | 0.100 | 0.171 | 0.174 | 0.147 | 0.191 | 0.141 | 0.141 |  |  |  |
| 16 *P. acanthias* PLI\_12\_053 | 0.157 | 0.160 | 0.160 | 0.162 | 0.170 | 0.167 | 0.154 | 0.187 | 0.164 | 0.162 | 0.157 | 0.190 | 0.177 | 0.177 | 0.174 |  |  |
| 17 *P. acanthias* PLI\_12\_208 | 0.159 | 0.162 | 0.162 | 0.164 | 0.172 | 0.169 | 0.156 | 0.189 | 0.167 | 0.164 | 0.155 | 0.193 | 0.179 | 0.179 | 0.172 | 0.002 |  |
| 18 *P. acanthias* T266 | 0.164 | 0.162 | 0.167 | 0.169 | 0.172 | 0.174 | 0.154 | 0.198 | 0.167 | 0.164 | 0.156 | 0.174 | 0.179 | 0.179 | 0.174 | 0.066 | 0.068 |

**16S**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1 *P. collaris* UTEP 21612 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 *P. collaris* UTEP 21614 | 0.002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 *P. collaris* UTEP 21613 | 0.000 | 0.002 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 *P. collaris* PEM R19893 | 0.004 | 0.007 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 *P. collaris* MBUR 03862 | 0.004 | 0.007 | 0.004 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 *P. collaris* UAC 62 | 0.002 | 0.004 | 0.002 | 0.002 | 0.007 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 *P. collaris* MSNS\_REPT110 | 0.004 | 0.007 | 0.004 | 0.004 | 0.000 | 0.007 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 *P. notatus* 29395 | 0.013 | 0.016 | 0.013 | 0.013 | 0.018 | 0.011 | 0.018 |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 *P.* cf*. robustus* UTEP 21617 | 0.011 | 0.013 | 0.011 | 0.016 | 0.016 | 0.013 | 0.016 | 0.025 |  |  |  |  |  |  |  |  |  |  |  |
| 10 *P. robustus* UTEP 21616 | 0.014 | 0.016 | 0.014 | 0.018 | 0.018 | 0.016 | 0.018 | 0.027 | 0.002 |  |  |  |  |  |  |  |  |  |  |
| 11 *P. graueri* EBG 2294 | 0.009 | 0.011 | 0.009 | 0.013 | 0.013 | 0.011 | 0.013 | 0.013 | 0.016 | 0.018 |  |  |  |  |  |  |  |  |  |
| 12 *P. graueri* UTEP 21611 | 0.009 | 0.011 | 0.009 | 0.013 | 0.013 | 0.011 | 0.013 | 0.013 | 0.016 | 0.018 | 0.000 |  |  |  |  |  |  |  |  |
| 13 *P. graueri* UTEP 21610 | 0.009 | 0.011 | 0.009 | 0.013 | 0.013 | 0.011 | 0.013 | 0.013 | 0.016 | 0.018 | 0.000 | 0.000 |  |  |  |  |  |  |  |
| 14 *P. graueri* MTSN 7378 | 0.009 | 0.011 | 0.009 | 0.013 | 0.013 | 0.011 | 0.013 | 0.013 | 0.016 | 0.018 | 0.000 | 0.000 | 0.000 |  |  |  |  |  |  |
| 15 *P. fulvicollis laurenti* UTEP 21615 | 0.020 | 0.023 | 0.020 | 0.025 | 0.025 | 0.023 | 0.025 | 0.030 | 0.023 | 0.025 | 0.020 | 0.020 | 0.020 | 0.020 |  |  |  |  |  |
| 16 *P*. *ater* PEM R17452 | 0.000 | 0.002 | 0.000 | 0.004 | 0.004 | 0.002 | 0.004 | 0.013 | 0.011 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.020 |  |  |  |  |
| 17 *P*. *ater* PEM R20734 | 0.000 | 0.002 | 0.000 | 0.004 | 0.004 | 0.002 | 0.004 | 0.013 | 0.011 | 0.014 | 0.009 | 0.009 | 0.009 | 0.009 | 0.020 | 0.000 |  |  |  |
| 18 *P. christyi* UTEP 21618 | 0.004 | 0.007 | 0.004 | 0.009 | 0.009 | 0.007 | 0.009 | 0.018 | 0.011 | 0.014 | 0.013 | 0.013 | 0.013 | 0.013 | 0.020 | 0.004 | 0.004 |  |  |
| 19 *P. acanthias* PLI\_12\_208 | 0.016 | 0.013 | 0.016 | 0.016 | 0.020 | 0.013 | 0.020 | 0.011 | 0.027 | 0.030 | 0.011 | 0.011 | 0.011 | 0.011 | 0.027 | 0.016 | 0.016 | 0.020 |  |
| 20 *P. acanthias* T266 | 0.016 | 0.013 | 0.016 | 0.016 | 0.020 | 0.013 | 0.020 | 0.011 | 0.027 | 0.030 | 0.011 | 0.011 | 0.011 | 0.011 | 0.027 | 0.016 | 0.016 | 0.020 | 0.000 |

**c-mos**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 *P. collaris* UTEP 21612 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 *P. collaris* UTEP 21614 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 *P. collaris* UTEP 21613 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 *P. collaris* UAC62 | 0.000 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 *P. collaris* PEM R19893 | 0.006 | 0.006 | 0.006 | 0.006 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 *P. collaris* KG 523 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 *P.* cf*. robustus* UTEP 21617 | 0.004 | 0.004 | 0.004 | 0.004 | 0.010 | 0.004 |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 *P. robustus* UTEP 21616 | 0.004 | 0.004 | 0.004 | 0.004 | 0.010 | 0.004 | 0.000 |  |  |  |  |  |  |  |  |  |  |  |
| 9 *P. graueri* EBG 2294 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 |  |  |  |  |  |  |  |  |  |  |
| 10 *P. graueri* CRT 4007 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 |  |  |  |  |  |  |  |  |  |
| 11 *P. graueri* UTEP 21611 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 | 0.000 |  |  |  |  |  |  |  |  |
| 12 *P. graueri* UTEP 21610 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 | 0.000 | 0.000 |  |  |  |  |  |  |  |
| 13 *P. fulvicollis laurenti* UTEP 21615 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.004 | 0.004 | 0.004 | 0.004 |  |  |  |  |  |  |
| 14 *P. notatus* 29395 | 0.008 | 0.008 | 0.008 | 0.008 | 0.014 | 0.008 | 0.012 | 0.012 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |  |  |  |  |  |
| 15 *P*. *ater* PEM R17452 | 0.002 | 0.002 | 0.002 | 0.002 | 0.008 | 0.002 | 0.006 | 0.006 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.010 |  |  |  |  |
| 16 *P*. *ater* PEM R20734 | 0.002 | 0.002 | 0.002 | 0.002 | 0.008 | 0.002 | 0.006 | 0.006 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.010 | 0.000 |  |  |  |
| 17 *P. acanthias* PLI\_12\_053 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.006 | 0.008 | 0.008 |  |  |
| 18 *P. acanthias* PLI\_12\_208 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.006 | 0.008 | 0.008 | 0.000 |  |
| 19 *P. acanthias* T266 | 0.006 | 0.006 | 0.006 | 0.006 | 0.012 | 0.006 | 0.010 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.006 | 0.008 | 0.008 | 0.000 | 0.000 |

**RAG1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1 *P. collaris* UTEP 21612 |  | |  |  |  |  |  |  |  |  |  |  |
| 2 *P. collaris* UTEP 21614 | 0.000 | |  |  |  |  |  |  |  |  |  |  |
| 3 *P. collaris* UTEP 21613 | 0.000 | | 0.000 |  |  |  |  |  |  |  |  |  |
| 4 *P.* cf*. robustus* UTEP 21617 | | 0.007 | 0.007 | 0.007 |  |  |  |  |  |  |  |  |
| 5 *P. robustus* UTEP 21616 | 0.010 | | 0.010 | 0.010 | 0.003 |  |  |  |  |  |  |  |
| 6 *P. graueri* CRT 4007 | 0.011 | | 0.011 | 0.011 | 0.011 | 0.015 |  |  |  |  |  |  |
| 7 *P. graueri* UTEP 21611 | 0.011 | | 0.011 | 0.011 | 0.011 | 0.015 | 0.000 |  |  |  |  |  |
| 8 *P. graueri* UTEP 21610 | 0.011 | | 0.011 | 0.011 | 0.011 | 0.015 | 0.000 | 0.000 |  |  |  |  |
| 9 *P*. *ater* PEM R17452 | 0.005 | | 0.005 | 0.005 | 0.002 | 0.005 | 0.010 | 0.010 | 0.010 |  |  |  |
| 10 *P*. *ater* PEM R20734 | 0.007 | | 0.007 | 0.007 | 0.003 | 0.007 | 0.011 | 0.011 | 0.011 | 0.002 |  |  |
| 11 *P. acanthias* PLI\_12\_053 | 0.008 | | 0.008 | 0.008 | 0.008 | 0.011 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 |  |
| 12 *P. acanthias* PLI\_12\_208 | 0.008 | | 0.008 | 0.008 | 0.008 | 0.011 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.000 |