Table S1. Model selection using QAICc for both populations. The notation for models follows Lebreton et al (1992), where *g* is group (sex) and *t* is time. The effect of body length (*body*) was included as an individual covariate in some models, sometimes as a quadratic effect (*body2*).

Shaded population, corrected for c-hat= 1.3770740

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | QAICc | Delta QAICc | AICc Weights | Model Likelihood | Num. Par | QDeviance |
| {Phi(g) p(.) PIM} | 419.7739 | 0 | 0.29038 | 1 | 3 | 413.6820 |
| {Phi(g+body) p(.)}-common intercept, different slope} | 420.4259 | 0.6520 | 0.20960 | 0.7218 | 4 | 412.2720 |
| {Phi(g+body) p(.)}-different intercept, common slope} | 420.7037 | 0.9298 | 0.18242 | 0.6282 | 4 | 412.5498 |
| {Phi(g) p(g) PIM} | 421.7765 | 2.0026 | 0.10669 | 0.3674 | 4 | 413.6227 |
| {Phi(g+body) p(.)}-different intercept, different slope} | 422.3411 | 2.5672 | 0.08045 | 0.2770 | 5 | 412.1095 |
| {Phi(g+body+body2) p(.)}-common intercept, different slope} | 422.4966 | 2.7227 | 0.07443 | 0.2563 | 5 | 412.2649 |
| {Phi(.) p(g) PIM} | 423.9434 | 4.1695 | 0.03611 | 0.1244 | 3 | 417.8514 |
| {Phi(.) p(.) PIM} | 425.9881 | 6.2142 | 0.01299 | 0.0447 | 2 | 421.9423 |
| {Phi(g) p(t) PIM} | 427.4811 | 7.7072 | 0.00616 | 0.0212 | 8 | 410.9186 |
| {Phi(.) p(t) PIM} | 433.7028 | 13.9289 | 0.00027 | 0.0009 | 7 | 419.2670 |
| {Phi(t) p(g) PIM} | 433.7476 | 13.9737 | 0.00027 | 0.0009 | 8 | 417.1850 |
| {Phi(t) p(.) PIM} | 436.0653 | 16.2914 | 0.00008 | 0.0003 | 7 | 421.6295 |
| {Phi(g\*t) p(.) PIM} | 436.4493 | 16.6754 | 0.00007 | 0.0002 | 12 | 411.2113 |
| {Phi(g) p(g\*t) PIM} | 437.5722 | 17.7983 | 0.00004 | 0.0001 | 14 | 407.8922 |
| {Phi(g\*t) p(g) PIM} | 438.6614 | 18.8875 | 0.00002 | 0.0001 | 13 | 411.2112 |
| {Phi(.) p(g\*t) PIM} | 438.7858 | 19.0119 | 0.00002 | 0.0001 | 13 | 411.3355 |
| {Phi(t) p(t) PIM} | 442.0300 | 22.2561 | 0 | 0 | 11 | 418.9865 |
| {Phi(g\*t) p(t) PIM} | 442.9547 | 23.1808 | 0 | 0 | 16 | 408.7611 |
| {Phi(t) p(g\*t) PIM} | 447.6168 | 27.8429 | 0 | 0 | 17 | 411.1390 |
| {Phi(g\*t) p(g\*t) PIM} | 447.6726 | 27.8987 | 0 | 0 | 19 | 406.5706 |

Sunny population, corrected for c-hat= 1.5331379

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | QAICc | Delta QAICc | AICc Weights | Model Likelihood | Num. Par | QDeviance |
| {Phi(t+body) p(g)} | 551.7357 | 0 | 0.57096 | 1 | 9 | 533.2063 |
| {Phi(t) p(g)} | 552.5349 | 0.7992 | 0.38288 | 0.6706 | 8 | 536.1126 |
| {Phi(t) p(.)} | 557.9750 | 6.2393 | 0.02522 | 0.0442 | 7 | 543.6475 |
| {Phi(t\*body) p(g)} | 560.5957 | 8.8600 | 0.00680 | 0.0119 | 14 | 531.3420 |
| {Phi(g\*t) p(g)} | 561.2758 | 9.5401 | 0.00484 | 0.0085 | 14 | 532.0221 |
| {Phi(t) p(g\*t)} | 561.5639 | 9.8282 | 0.00419 | 0.0073 | 17 | 525.7205 |
| {Phi(t) p(t)} | 564.0740 | 12.3383 | 0.00120 | 0.0021 | 11 | 541.2929 |
| {Phi(.) p(g)} | 564.1019 | 12.3662 | 0.00118 | 0.0021 | 3 | 558.0326 |
| {Phi(g) p(g)} | 564.3349 | 12.5992 | 0.00105 | 0.0018 | 4 | 556.2190 |
| {Phi(g\*t) p(.)} | 564.6933 | 12.9576 | 0.00088 | 0.0015 | 13 | 537.6100 |
| {Phi(t\*body+body2) p(g)} | 566.7926 | 15.0569 | 0.00031 | 0.0005 | 18 | 528.7261 |
| {Phi(.) p(.)} | 567.8201 | 16.0844 | 0.00018 | 0.0003 | 2 | 563.7855 |
| {Phi(g\*t) p(g\*t)} | 569.3220 | 17.5863 | 0.00009 | 0.0002 | 22 | 522.2272 |
| {Phi(g) p(.)} | 569.4234 | 17.6877 | 0.00008 | 0.0001 | 3 | 563.3541 |
| {Phi(.) p(g\*t)} | 570.4279 | 18.6922 | 0.00005 | 0.0001 | 13 | 543.3446 |
| {Phi(g) p(g\*t)} | 570.4812 | 18.7455 | 0.00005 | 0.0001 | 14 | 541.2275 |
| {Phi(g\*t) p(t)} | 571.4228 | 19.6871 | 0.00003 | 0.0001 | 17 | 535.5794 |
| {Phi(.) p(t)} | 572.6974 | 20.9617 | 0.00002 | 0 | 7 | 558.3699 |
| {Phi(g) p(t)} | 574.1732 | 22.4375 | 0.00001 | 0 | 8 | 557.7509 |