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**SUPPLEMENTAL MATERIAL**

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**Running Head:** Factors affecting brown bear recruitment

**Title:** Influence of maternal body size, condition, and age on recruitment of four brown bear populations

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**Supplemental Material**

**Table S1. Data table for adult female brown bears (*Ursus arctos*) with offspring (≥1 yr old) in the spring from 4 study populations in Alaska, USA (2014–2017). ‘BearNo” is the number that individual was assigned. ‘Offspring’ value of 1 means the individual had ≥1 offspring (≥1 yr old) with her at the time. ‘Body size’ is the combination of skull width and skull length (cm). ‘BMI’ is a body mass index (kg/m2). Age is in years. Missing values represent measurements not taken.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study area** | **BearNo** | **Year** | **Offspring** | **Body size** | **BMI** | **Age** |
| Gates | 14004 | 2014 | 1 | 50 |  | 11 |
| Gates | 14005 | 2014 | 1 | 54 | 32.174 | 10 |
| Gates | 14017 | 2014 | 1 | 52 | 34.155 | 11 |
| Gates | 14019 | 2014 | 1 | 58 | 36.200 | 16 |
| Gates | 14030 | 2014 | 1 | 50 | 29.065 | 14 |
| Gates | 14032 | 2015 | 1 | 50 | 29.284 | 17.5 |
| Gates | 14033 | 2014 | 1 | 51 | 32.402 | 25 |
| Gates | 16001 | 2016 | 1 | 51 | 34.452 | 20 |
| Gates | 16008 | 2016 | 1 | 52 | 37.483 | 11 |
| Gates | 14008 | 2015 | 0 | 51 | 36.698 | 18 |
| Gates | 14011 | 2015 | 0 | 51 | 28.727 | 9 |
| Gates | 14016 | 2014 | 0 | 50 | 30.273 | 8 |
| Gates | 14020 | 2016 | 0 | 49 | 33.945 | 8 |
| Gates | 14021 | 2015 | 0 | 55 | 46.149 | 20 |
| Gates | 14022 | 2014 | 0 | 48 | 30.525 | 10.5 |
| Gates | 14024 | 2014 | 0 | 53 | 34.991 | 13 |
| Gates | 14025 | 2014 | 0 | 54 | 46.510 | 20 |
| Gates | 14026 | 2016 | 0 | 51 | 30.034 | 11.5 |
| Gates | 14029 | 2014 | 0 | 50 | 30.551 | 8 |
| Gates | 14031 | 2014 | 0 | 51 | 30.457 | 9 |
| Gates | 14034 | 2015 | 0 | 51 | 31.742 | 12 |
| Gates | 14035 | 2015 | 0 |  |  | 13.5 |
| Gates | 15003 | 2015 | 0 | 49 | 31.394 | 15.5 |
| Gates | 15005 | 2015 | 0 | 48 | 32.318 | 24 |
| Gates | 15009 | 2015 | 0 | 48 | 31.663 | 10 |
| Gates | 16003 | 2016 | 0 | 51 | 32.812 | 10 |
| Katmai | 27 | 2017 | 1 | 66 | 44.650 | 24 |
| Katmai | 37 | 2017 | 1 | 60 | 43.253 | 9 |
| Katmai | 46 | 2016 | 1 | 60 | 50.188 | 15 |
| Katmai | 55 | 2015 | 1 | 60 | 45.267 | 16.5 |
| Katmai | 65 | 2015 | 1 | 64 | 44.298 | 18 |
| Katmai | 67 | 2017 | 1 | 53 | 41.859 | 18.5 |
| Katmai | 76 | 2016 | 1 | 57 | 46.602 | 13 |
| Katmai | 85 | 2015 | 1 | 65 | 52.225 | 18 |
| Katmai | 86 | 2016 | 1 | 59 | 53.757 | 20 |
| Katmai | 95 | 2015 | 1 | 58 | 38.875 | 17.5 |
| Katmai | 106 | 2016 | 1 | 58 | 50.623 | 14 |
| Katmai | 115 | 2015 | 1 | 72 | 47.033 | 20 |
| Katmai | 15 | 2015 | 0 | 55 | 50.795 | 10 |
| Katmai | 17 | 2017 | 0 | 58 | 42.640 | 9 |
| Katmai | 56 | 2016 | 0 | 64 | 50.905 | 17 |
| Katmai | 66 | 2016 | 0 | 53 | 44.577 | 12 |
| Katmai | 96 | 2016 | 0 | 58 | 57.312 | 16 |
| Kodiak | 532 | 2014 | 1 | 60 | 66.237 | 25 |
| Kodiak | 554 | 2014 | 1 | 60 | 41.668 | 20 |
| Kodiak | 576 | 2014 | 1 | 61 | 51.195 | 14 |
| Kodiak | 577 | 2014 | 1 | 65 |  | 17 |
| Kodiak | 578 | 2014 | 1 | 60 | 44.940 | 10 |
| Kodiak | 580 | 2014 | 1 | 57 | 52.882 | 14 |
| Kodiak | 583 | 2014 | 1 | 60 | 43.198 | 10 |
| Kodiak | 584 | 2014 | 1 | 61 | 47.587 | 14 |
| Kodiak | 585 | 2014 | 1 | 61 | 52.686 | 13 |
| Kodiak | 586 | 2014 | 1 | 62 | 49.206 | 16 |
| Kodiak | 574 | 2014 | 0 | 47 | 46.303 | 10 |
| Kodiak | 579 | 2014 | 0 | 61 | 46.478 | 13 |
| Kodiak | 581 | 2014 | 0 | 59 | 65.555 | 17 |
| Kodiak | 582 | 2014 | 0 | 59 | 52.793 | 8 |
| Kodiak | 588 | 2014 | 0 | 61 | 49.249 | 9 |
| Lake Clark | 405 | 2016 | 1 | 54 | 38.321 | 12 |
| Lake Clark | 509 | 2015 | 1 | 53 | 44.789 | 11 |
| Lake Clark | 410 | 2016 | 0 | 58 | 48.547 | 30 |
| Lake Clark | 416 | 2016 | 0 | 60 | 41.936 | 17.5 |
| Lake Clark | 423 | 2016 | 0 | 49 | 40.793 | 11 |
| Lake Clark | 424 | 2016 | 0 | 56 | 41.142 | 20 |
| Lake Clark | 501 | 2015 | 0 |  | 38.780 | 10 |
| Lake Clark | 502 | 2015 | 0 | 56 | 36.402 | 12 |
| Lake Clark | 503 | 2015 | 0 | 54 | 46.771 | 13.5 |
| Lake Clark | 513 | 2015 | 0 | 54 | 39.380 | 16.5 |

**Table S2. Estimated coefficients (in logit space) from the 4 top logistic regression models (ΔAIC*c* <2) for adult female brown bears (*Ursus arctos*), with presence of offspring (≥1 yr old) in the spring as the response, from 4 study populations in Alaska, USA (2014–2017). ‘Offspring’ is the number of offspring (≥1 yr old) with the female at the time, ‘Body’ is the combination of skull width and skull length, ‘BMI’ is a body mass index (kg/m2), and ‘Age’ is in years.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | ***K*** | **AIC*c*** | **Intercept** | | **Skull** | | **BMI** | | **Age** | |
| **β** | **SE** | **β** | **SE** | **β** | **SE** | **β** | **SE** |
| Offspring ~ Body | 2 | 81.01 | −10.41 | 3.36 | 0.19 | 0.06 | - | - | - | - |
| Offspring ~ Body + BMI | 3 | 81.31 | −12.6 | 3.96 | 0.27 | 0.09 | −0.06 | 0.04 | - | - |
| Offspring ~ Body + Age + BMI | 4 | 82.21 | −13.44 | 4.22 | 0.28 | 0.10 | −0.07 | 0.05 | 0.07 | 0.06 |
| Offspring ~ Body + Age | 3 | 82.41 | −10.57 | 3.41 | 0.17 | 0.06 | - | - | 0.05 | 0.06 |