**Appendix A**

**Table A.1.** Summary of the fixed, random effects and the goodness of fit for the three age class models of each important prey species (%PSIRI>5). Est: mean DML (mm); CI: confidence intervals; *σε2* and *σk2* the variance within and between sperm whales respectively. *P* valuesbelow 0.05 are shown in bold.

|  |  |  |  |
| --- | --- | --- | --- |
| **Fixed effects** | ***Histioteuthis bonnellii*** | ***Histioteuthis reversa*** | ***Octopoteuthis sicula*** |
| **Calves** | **Non-calves** | **Calves** | **Non-calves** | **Calves** | **Non-calves** |
| Est [95 %CI] | 85 [48-122] | 133 [120-145] | 88 [58-117] | 106 [96-116] | 163 [130-196] | 207 [196-217] |
| *p* | **0.004** | 0.06 | **0.004** |
| *σε2* | 13·102 | 206 | 634 |
| **Random effect (*σk2*)** |  |
| Est [95% CI] | 151 [39-579] | 101 [28-364] | 108 [24-487] |
| **Goodness of fit** |  |
| R(m)2 | 0.26 | 0.18 | 0.36 |
| R(c)2 | 0.34 | 0.45 | 0.45 |
| R(n)2 | 0.35 | 0.47 | 0.48 |

**Table A.2.** Summary of the fixed, random effects and the goodness of fit for the three season models of each important prey species (%PSIRI>5). Est: mean DML (mm); CI: confidence intervals; *σε2* and *σk2* the variance within and between sperm whales respectively. *P* valuesbelow 0.05 are shown in bold.

|  |  |  |  |
| --- | --- | --- | --- |
| **Fixed effects** | ***Histioteuthis bonnellii*** | ***Histioteuthis reversa*** | ***Octopoteuthis sicula*** |
| **Winter** | **Non-winter** | **Winter** | **Non-winter** | **Winter** | **Non-winter** |
| Est (95 %CI) | 134 [62-205] | 107 [83-130] | 105 [69-142] | 97 [85-109] | 209 [142-277] | 186 [164-208] |
| *p* | 0.22 | 0.41 | 0.26 |
| *σε2* | 1.4·103 | 206 | 629 |
| **Random effect (*σk2*)** |  |
| Est (95% CI) | 710 [227-2.2·103] | 184 [59-576] | 616 [195-1.9·103] |
| **Goodness of fit** |  |
| R(m)2 | 0.04 | 0.02 | 0.05 |
| R(c)2 | 0.36 | 0.48 | 0.52 |
| R(n)2 | 0.36 | 0.46 | 0.51 |
| **Fixed effects** | **Spring** | **Non-spring** | **Spring** | **Non-spring** | **Spring** | **Non-spring** |
| Est (95 %CI) | 85 [52-119] | 135 [124-146] | 87 [62-113] | 107 [99-115] | 163 [130-197] | 210 [200-221] |
| *p* | **0.001** | 0.03 | **0.002** |
| *σε2* | 1.3·103 | 206 | 629 |
| **Random effect (*σk2*)** |  |
| Est (95% CI) | 152 [43-531] | 89 [27-213] | 134 [36-530] |
| **Goodness of fit** |  |
| R(m)2 | 0.29 | 0.21 | 0.39 |
| R(c)2 | 0.36 | 0.45 | 0.50 |
| R(n)2 | 0.37 | 0.46 | 0.51 |
| **Fixed effects** | **Summer** | **Non-summer** | **Summer** | **Non-summer** | **Summer** | **Non-summer** |
| Est (95 %CI) | 131 [31-232] | 115 [93-137] | 103 [55-151] | 99 [89-110] | 203 [109-296] | 194 [173-215] |
| *p* | 0.62 | 0.82 | 0.77 |
| *σε2* | 1.3·103 | 206 | 629 |
| **Random effect (*σk2*)** |  |
| Est (95% CI) | 895 [286-2.8·103] | 205 [199-213] | 767 [587-2.4·103] |
| **Goodness of fit** |  |
| R(m)2 | 0.02 | 2·10-3 | 6·10-3 |
| R(c)2 | 0.40 | 0.50 | 0.55 |
| R(n)2 | 0.37 | 0.46 | 0.51 |
| **Fixed effects** | **Autumn** | **Non-autumn** | **Autumn** | **Non-autumn** | **Autumn** | **Non-autumn** |
| Est (95 %CI) | 145 [89-200] | 113 [52-241] | 116 [92-140] | 97 [41-154] | 224 [175-273] | 191 [76-241] |
| *p* | 0.33 | 0.20 | 0.26 |
| *σε2* | 1.3·103 | 206 | 629 |
| **Random effect (*σk2*)** |  |
| Est (95% CI) | 785 [249-2.4·103] | 153 [48-492] | 617 [193-1.9·103] |
| **Goodness of fit** |  |
| R(m)2 | 0.05 | 0.20 | 0.04 |
| R(c)2 | 0.40 | 0.54 | 0.52 |
| R(n)2 | 0.36 | 0.46 | 0.51 |