

**TABLE S2.** Ranked scores of bottlenose dolphin abundance models in program MARK for each season and survey area using a quasi-likelihood adjusted Akaike's Information Criterion adjusted for small sample sizes (QAIC<sub>c</sub>). Datasets are parsed encounter histories. The Bay dataset included all distinctive individuals observed in the bay or Gulf pass to the bay in  $\geq 1$  season. The Selective dataset included all individuals in the Bay dataset, and additionally included individuals observed in coastal waters during both summer and winter seasons but excluded dolphins found to use more than one survey area (inter-bay matches).  $M_o$  = constant capture probability,  $M_b$  = capture probability influenced by behavioral response to initial capture,  $M_t$  = time variable capture probability.

| Model and Dataset | QAIC <sub>c</sub> | Delta QAIC <sub>c</sub> | AICc Weights | Model Likelihood | Num. Par | QDeviance | -2log(L) |
|-------------------|-------------------|-------------------------|--------------|------------------|----------|-----------|----------|
| West Bay          |                   |                         |              |                  |          |           |          |
| Winter Bay        |                   |                         |              |                  |          |           |          |
| $M_t$             | 71.7868           | 0                       | 0.99909      | 1                | 3        | 117.6165  | 98.3012  |
| $M_o$             | 85.7812           | 13.9944                 | 0.00091      | 0.0009           | 1        | 135.8223  | 125.6099 |
| Summer Bay        |                   |                         |              |                  |          |           |          |
| $M_t$             | 52.9289           | 0                       | 1            | 1                | 3        | 109.3061  | 74.682   |
| $M_b$             | 78.0887           | 25.1598                 | 0            | 0                | 2        | 136.5935  | 118.3419 |
| $M_o$             | 81.5707           | 28.6418                 | 0            | 0                | 1        | 142.1592  | 127.2471 |
| Winter Selective  |                   |                         |              |                  |          |           |          |
| $M_t$             | 77.5422           | 0                       | 0.99565      | 1                | 3        | 111.9626  | 85.4766  |
| $M_o$             | 88.4105           | 10.8683                 | 0.00435      | 0.0044           | 1        | 127.0919  | 103.6318 |
| Summer Selective  |                   |                         |              |                  |          |           |          |
| $M_t$             | 43.2952           | 0                       | 0.99996      | 1                | 3        | 90.2632   | 66.6459  |
| $M_b$             | 64.0414           | 20.7462                 | 0.00003      | 0                | 2        | 113.1457  | 107.8345 |
| $M_o$             | 67.856            | 24.5608                 | 0            | 0                | 1        | 119.0496  | 118.4616 |
| Galveston Bay     |                   |                         |              |                  |          |           |          |
| Winter Bay        |                   |                         |              |                  |          |           |          |
| $M_t$             | 767.4044          | 0                       | 0.98486      | 1                | 4        | 1787.261  | 1214.994 |
| $M_b$             | 776.8969          | 9.4925                  | 0.00855      | 0.0087           | 2        | 1800.777  | 1236.619 |
| $M_o$             | 777.4181          | 10.0137                 | 0.00659      | 0.0067           | 1        | 1803.305  | 1240.664 |
| Summer Bay        |                   |                         |              |                  |          |           |          |
| $M_o$             | 1572.314          | 0                       | 0.55426      | 1                | 1        | 4780.352  | 1570.311 |
| $M_b$             | 1573.649          | 1.3351                  | 0.28432      | 0.513            | 2        | 4779.681  | 1569.641 |
| $M_t$             | 1574.782          | 2.4673                  | 0.16142      | 0.2912           | 3        | 4778.805  | 1568.764 |
| Winter Selective  |                   |                         |              |                  |          |           |          |
| $M_t$             | 810.3918          | 0                       | 0.90393      | 1                | 4        | 1859.106  | 1283.775 |
| $M_o$             | 815.5445          | 5.1527                  | 0.06874      | 0.076            | 1        | 1870.288  | 1301.666 |
| $M_b$             | 817.3896          | 6.9978                  | 0.02733      | 0.0302           | 2        | 1870.127  | 1301.408 |
| Summer Selective  |                   |                         |              |                  |          |           |          |
| $M_o$             | 1495.573          | 0                       | 0.57239      | 1                | 1        | 4452.293  | 1493.57  |
| $M_b$             | 1497.133          | 1.5594                  | 0.26247      | 0.4585           | 2        | 4451.846  | 1493.124 |

|                  |       |          |        |         |        |   |          |          |
|------------------|-------|----------|--------|---------|--------|---|----------|----------|
|                  | $M_t$ | 1498.06  | 2.4861 | 0.16514 | 0.2885 | 3 | 4450.764 | 1492.041 |
| Sabine Lake      |       |          |        |         |        |   |          |          |
| Winter Bay       |       |          |        |         |        |   |          |          |
|                  | $M_o$ | 48.556   | 0      | 0.56324 | 1      | 1 | 62.3538  | 69.7305  |
|                  | $M_t$ | 50.2646  | 1.7086 | 0.23971 | 0.4256 | 3 | 59.7027  | 65.754   |
|                  | $M_b$ | 50.6565  | 2.1005 | 0.19705 | 0.3498 | 2 | 62.3127  | 69.669   |
| Summer Bay       |       |          |        |         |        |   |          |          |
|                  | $M_t$ | 140.355  | 0      | 0.93937 | 1      | 3 | 261.5224 | 187.8993 |
|                  | $M_o$ | 145.8357 | 5.4807 | 0.06063 | 0.0645 | 1 | 271.121  | 201.3374 |
| Winter Selective |       |          |        |         |        |   |          |          |
|                  | $M_t$ | 72.2151  | 0      | 0.68594 | 1      | 3 | 123.0651 | 138.658  |
|                  | $M_o$ | 73.7775  | 1.5624 | 0.31406 | 0.4579 | 1 | 128.7843 | 150.6682 |
| Summer Selective |       |          |        |         |        |   |          |          |
|                  | $M_t$ | 141.3499 | 0      | 0.96412 | 1      | 3 | 295.5189 | 249.517  |
|                  | $M_o$ | 147.9318 | 6.5819 | 0.03588 | 0.0372 | 1 | 306.1868 | 269.1982 |

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