Suplementary Materials

Table A.1a. Presence-absence data for rinuak

|  |  |  |
| --- | --- | --- |
| Long | Lat | Presence=1/ Absence=0 |
| 100.1575 | -0.27947 | 1 |
| 100.1588 | -0.27964 | 1 |
| 100.1603 | -0.65267 | 1 |
| 100.161 | -0.27747 | 1 |
| 100.1629 | -0.27333 | 1 |
| 100.1613 | -0.28631 | 1 |
| 100.1678 | -0.27219 | 1 |
| 100.1633 | -0.29089 | 1 |
| 100.1706 | -0.26308 | 1 |
| 100.1863 | -0.25492 | 1 |
| 100.1896 | -0.25917 | 1 |
| 100.209 | -0.26281 | 1 |
| 100.2257 | -0.29392 | 1 |
| 100.2237 | -0.30147 | 1 |
| 100.2251 | -0.31125 | 1 |
| 100.2255 | -0.31125 | 1 |
| 100.2241 | -0.31956 | 1 |
| 100.2241 | -0.32603 | 1 |
| 100.2178 | -0.33319 | 1 |
| 100.1596 | -0.28472 | 1 |
| 100.1558 | -0.28481 | 1 |
| 100.1643 | -0.29983 | 1 |
| 100.1659 | -0.30856 | 1 |
| 100.1665 | -0.32233 | 1 |
| 100.1652 | -0.33172 | 1 |
| 100.1652 | -0.3445 | 1 |
| 100.1797 | -0.35136 | 1 |
| 100.1834 | -0.35569 | 1 |
| 100.1746 | -0.35967 | 1 |
| 100.1694 | -0.37956 | 1 |
| 100.1659 | -0.38611 | 1 |
| 100.1862 | -0.4006 | 0 |
| 100.1912 | -0.33169 | 0 |
| 100.1878 | -0.3445 | 0 |
| 100.1935 | -0.35342 | 0 |
| 100.1905 | -0.37 | 0 |

Table A.1b. Presence-absence data for bada

|  |  |  |
| --- | --- | --- |
| Long | Lat | Presence=1; Absence=0 |
| 100.1655 | -0.32767 | 1 |
| 100.1538 | -0.29108 | 1 |
| 100.1819 | -0.25942 | 1 |
| 100.1911 | -0.25458 | 1 |
| 100.2111 | -0.26339 | 1 |
| 100.1665 | -0.32233 | 1 |
| 100.1659 | -0.30856 | 1 |
| 100.1797 | -0.35136 | 1 |
| 100.209 | -0.26281 | 1 |
| 100.2255 | -0.31125 | 1 |
| 100.1706 | -0.26308 | 1 |
| 100.1575 | -0.27947 | 1 |
| 100.1652 | -0.33172 | 1 |
| 100.1628 | -0.29753 | 1 |
| 100.1638 | -0.30436 | 1 |
| 100.1638 | -0.31325 | 1 |
| 100.1713 | -0.29028 | 1 |
| 100.1755 | -0.30594 | 1 |
| 100.1686 | -0.30986 | 1 |
| 100.1678 | -0.33364 | 1 |
| 100.1734 | -0.32247 | 1 |
| 100.1633 | -0.29089 | 1 |
| 100.2257 | -0.29392 | 1 |
| 100.2255 | -0.31125 | 1 |
| 100.1613 | -0.28631 | 1 |

Table A2.a. Abundance data of rinuak

|  |  |  |  |
| --- | --- | --- | --- |
| Location | Repetition | Relative abundance (fish/m2) | Type of habitat |
| S 0.2847 E 100.1596 | 1 | 176.30 | Cage area |
| 2 | 40.60 | Cage area |
| 3 | 78.50 | Cage area |
| S 0.2998 E 100.1643 | 1 | 456.00 | Cage area |
| 2 | 69.20 | Cage area |
| 3 | 64.60 | Cage area |
| S 0.3445 E 100.1652 | 1 | 61.80 | Cage area |
| 2 | 60.00 | Cage area |
| 3 | 86.80 | Cage area |
| S 0.3861 E 100.1659 | 1 | 46.20 | Cage area |
| 2 | 21.20 | Cage area |
| 3 | 27.70 | Cage area |
| S 0.3858 E 100.1842 | 1 | 97.80 | Cage area |
| 2 | 325.80 | Cage area |
| 3 | 90.50 | Cage area |
| S 0.2981 E 100.1558 | 1 | 97.04 | Littoral zone |
| 2 | 28.40 | Littoral zone |
| 3 | 56.80 | Littoral zone |
| S 0.3086 E 100.1659 | 1 | 39.23 | Littoral zone |
| 2 | 96.92 | Littoral zone |
| 3 | 56.92 | Littoral zone |
| S 0.4984 E 100.1652 | 1 | 69.23 | Littoral zone |
| 2 | 21.54 | Littoral zone |
| 3 | 43.08 | Littoral zone |
| S 0.3317 E 100.1652 | 1 | 150.77 | Littoral zone |
| 2 | 87.69 | Littoral zone |
| 3 | 212.31 | Littoral zone |
| S 0.3534 E 100.1839 | 1 | 16.92 | Littoral zone |
| 2 | 27.69 | Littoral zone |
| 3 | 55.38 | Littoral zone |
| S 0.2859 E 100.1880 | 1 | 0.00 | Open waters |
| 2 | 0.00 | Open waters |
| 3 | 0.00 | Open waters |
| S 100.1917 E 0.3329 | 1 | 0.00 | Open waters |
| 2 | 0.00 | Open waters |
| 3 | 0.00 | Open waters |
| S 0.3348 E100.1889 | 1 | 0.00 | Open waters |
| 2 | 0.00 | Open waters |
| 3 | 0.00 | Open waters |
| S 0.3564 E 100 1935 | 1 | 0.00 | Open waters |
| 2 | 0.00 | Open waters |
| 3 | 0.00 | Open waters |
| S 0.3716 E 100.1917 | 1 | 0.00 | Open waters |
| 2 | 0.00 | Open waters |
| 3 | 0.00 | Open waters |

Table A2.b. Relative abundance data of bada

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No | Location | Repetition | Relative abundance (fish/m2) | | |
| Cage culture area | Littoral zone | Open waters |
| 1 | S 00 15.116' E 100 11.759' | 1 (26-02-19) | 0.08 | 0.05 | No data |
| 2 (27-02-19) | 0.05 | 0.11 | 0.99 |
| 3 (2-02-19) | 0.10 | 1.10 | 0.25 |
| 2 | S 00 18.603' E 100 09.901' | 1 (27/2/2019) | 0.15 | 0.81 | 0.36 |
| 2 (27-02-19) | 0.57 | 0.36 | 0.55 |
| 3 (1-02-1019) | 0.64 | 0.56 | 0.23 |
| 3 | S 00 19.729' E 100 09.894' | 1(28-02-2019) | 0.56 | 0.94 | 1.78 |
| 2(1-3-2019) | 0.47 | 0.19 | 0.85 |
| 3(1-3-2019) | 0.56 | 0.38 | 1.69 |
| 4 | S 00 15.778' E 100 12.608' | 1 (14-3-2019) | 0.40 | 0.68 | 0.18 |
| 2 (15-3-2019) | 0.71 | 0.57 | 0.39 |
| 3 (16-3-2019) | 1.63 | 1.12 | 1.47 |

Table A.3a. Expected and observed presence and absence for field data validation of rinuak

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Long | Lat | Expected | Observed |
| 1 | 100.2204 | -0.3017 | 0 | 1 |
| 2 | 100.2204 | -0.3017 | 0 | 1 |
| 3 | 110.2239 | -0.2812 | 0 | 0 |
| 4 | 110.2239 | -0.2812 | 0 | 0 |
| 5 | 100.2132 | -0.2741 | 0 | 0 |
| 6 | 100.2132 | -0.2741 | 0 | 0 |
| 7 | 100.1992 | -0.2605 | 0 | 1 |
| 8 | 100.1992 | -0.2605 | 0 | 1 |
| 9 | 100.1931 | -0.2597 | 1 | 0 |
| 10 | 100.1931 | -0.2597 | 1 | 0 |
| 11 | 100.1867 | -0.2596 | 0 | 0 |
| 12 | 100.1867 | -0.2596 | 0 | 0 |
| 13 | 100.1783 | -0.2668 | 0 | 0 |
| 14 | 100.1783 | -0.2668 | 0 | 0 |
| 15 | 100.1706 | -0.2652 | 1 | 0 |
| 16 | 100.1706 | -0.2652 | 1 | 0 |
| 17 | 100.1667 | -0.273 | 1 | 0 |
| 18 | 100.1667 | -0.273 | 1 | 0 |
| 19 | 100.1637 | -0.2921 | 0 | 0 |
| 20 | 100.1637 | -0.2921 | 0 | 0 |
| 21 | 100.1683 | -0.3017 | 0 | 0 |
| 22 | 100.1683 | -0.3017 | 0 | 0 |
| 23 | 100.1721 | -0.3035 | 0 | 0 |
| 24 | 100.1721 | -0.3035 | 0 | 0 |
| 25 | 100.1763 | -0.3058 | 0 | 0 |
| 26 | 100.1763 | -0.3058 | 0 | 0 |
| 27 | 100.1686 | -0.3227 | 1 | 0 |
| 28 | 100.1686 | -0.3227 | 1 | 0 |
| 29 | 100.1854 | -0.3565 | 0 | 0 |
| 30 | 100.1854 | -0.3565 | 0 | 0 |
| 31 | 100.1951 | -0.3983 | 0 | 0 |
| 32 | 100.1951 | -0.3983 | 0 | 0 |
| 33 | 100.1964 | -0.3979 | 0 | 0 |
| 34 | 100.1964 | -0.3979 | 0 | 0 |
| 35 | 100.1954 | -0.3918 | 0 | 0 |
| 36 | 100.1954 | -0.3918 | 0 | 0 |
| 37 | 100.2174 | -0.3405 | 0 | 0 |
| 38 | 100.2174 | -0.3405 | 0 | 0 |
| 39 | 100.2213 | -0.3213 | 0 | 0 |
| 40 | 100.2213 | -0.3213 | 0 | 0 |

Table A.3b. Expected and observed presence and absence for field data validation of rinuak

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Long | Lat | Expected | Observed |
| 1 | 100.2241 | -0.3028 | 1 | 1 |
| 2 | 100.2204 | -0.3017 | 1 | 1 |
| 3 | 100.2222 | -0.2997 | 1 | 1 |
| 4 | 100.2205 | -0.2973 | 1 | 1 |
| 5 | 110.2239 | -0.2812 | 1 | 1 |
| 6 | 100.2183 | -0.2801 | 0 | 1 |
| 7 | 100.2151 | -0.2789 | 0 | 0 |
| 8 | 100.2132 | -0.2741 | 0 | 0 |
| 9 | 100.2095 | -0.2719 | 0 | 0 |
| 10 | 100.1992 | -0.2605 | 0 | 1 |
| 11 | 100.1978 | -0.2611 | 1 | 1 |
| 12 | 100.1931 | -0.2597 | 1 | 1 |
| 13 | 100.1867 | -0.2596 | 1 | 1 |
| 14 | 100.183 | -0.2644 | 1 | 1 |
| 15 | 100.1783 | -0.2668 | 1 | 0 |
| 16 | 100.1706 | -0.2652 | 1 | 1 |
| 17 | 100.1667 | -0.273 | 0 | 0 |
| 18 | 100.176 | -0.2688 | 1 | 1 |
| 19 | 100.1637 | -0.2921 | 1 | 1 |
| 20 | 100.166 | -0.2991 | 1 | 1 |
| 21 | 100.1683 | -0.3017 | 1 | 1 |
| 22 | 100.1721 | -0.3035 | 1 | 1 |
| 23 | 100.1763 | -0.3058 | 1 | 1 |
| 24 | 100.1733 | -0.3119 | 1 | 1 |
| 25 | 100.1686 | -0.3227 | 1 | 1 |
| 26 | 100.1679 | -0.3309 | 1 | 1 |
| 27 | 100.1713 | -0.3336 | 1 | 1 |
| 28 | 100.1854 | -0.3565 | 1 | 0 |
| 29 | 100.1693 | -0.38 | 0 | 1 |
| 30 | 100.1695 | -0.3844 | 0 | 1 |
| 31 | 100.1729 | -0.3877 | 0 | 1 |
| 32 | 100.1815 | -0.3955 | 0 | 1 |
| 33 | 100.1881 | -0.3983 | 0 | 1 |
| 34 | 100.1951 | -0.3983 | 0 | 0 |
| 35 | 100.1964 | -0.3979 | 0 | 1 |
| 36 | 100.1954 | -0.3918 | 0 | 1 |
| 37 | 100.2174 | -0.3405 | 1 | 1 |
| 38 | 100.2196 | -0.3403 | 1 | 1 |
| 39 | 100.2213 | -0.3213 | 0 | 1 |
| 40 | 100.2255 | -0.3019 | 1 | 1 |