## Supplementary Table S1. *Univariable negative binomial regression model outputs for the association between mosquito counts and monthly Ross River virus notifications in the Mildura local government area, Victoria, Australia, July 2000–June 2011*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Variable*** | ***Laga*** | ***Levels (n)*** | ***IRR*** | ***95% CI*** | ***P-value*** |
|  |  |  |  |  |  |
| *Culex annulirostris*  (mean count) | 1 month | ≥1000 (3)  100–999 (5)  10–99 (21)  1–9 (35)  0 (68) | 182.4  12.05  5.20  2.69  1.00 | 59.4, 560.4  4.49, 32.3  2.72, 9.95  1.46, 4.96  (reference) | <0.001 |
|  |  |  |  |  |  |
| *Culex australicus*  (mean count) | 1 month | ≥100 (1)  10–99 (9)  1–9 (53)  0 (69) | 81.64  49.45  3.47  1.00 | 5.33, 1250  17.9, 136.7  1.84, 6.55  (reference) | <0.001 |
|  |  |  |  |  |  |
| *Culex globicoxitus*  *(mean count)* | 2 months | ≥1 (20)  0 (158) | 5.17  1.00 | 1.72, 15.58  (reference) | 0.004 |
|  |  |  |  |  |  |
| *Aedes camptorhynchus* (mean count) | 2 months | ≥100 (3)  10–99 (7)  1–9 (23)  0 (99) | 76.57  17.02  2.53  1.00 | 15.97, 367.1  5.80, 49.93  1.23, 5.20  (reference) | <0.001 |
|  |  |  |  |  |  |
| *Aedes notoscriptus*  (mean count) | 1 months | ≥10 (1)  1–9 (55)  0 (76) | 13.13  10.36  1.00 | 0.32, 535.8  5.07, 21.14  (reference) | <0.001 |
|  |  |  |  |  |  |
| *Coquillettidia linealis*  (mean count) | 1 months | ≥10 (10)  1–9 (78)  0 (90) | 4.67  13.65  1.00 | 1.24, 17.53  6.47, 28.81  (reference) | <0.001 |
|  |  |  |  |  |  |

IRR = Incidence rate ratio; SE = standard error of IRR; CI = Confidence Interval.

a Estimates are presented for the lag with the strongest statistical association with monthly counts of Ross River virus.

## Supplementary Table S2. *Univariable negative binomial regression model outputs for the association between climatic and environmental variables and monthly Ross River virus notifications in the Mildura local government area, Victoria, Australia, July 2000–June 2012*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Variable (units)*** | ***Laga*** | ***Levels*** | ***IRR*** | ***95% CI*** | ***P-value*** |
|  |  |  |  |  |  |
| SOI (per 10 units) | 6 months |  | 2.71 | 2.00, 3.67 | <0.001 |
|  |  |  |  |  |  |
| log2(RAIN) (mm) | 4 months |  | 1.95 | 1.62, 2.35 | <0.001 |
| RAINDAYS (days) | 6 months |  | 1.68 | 1.43, 1.97 | <0.001 |
|  |  |  |  |  |  |
| TMAX (°C) | 7 months |  | 0.84 | 0.81, 0.88 | <0.001 |
| TMIN (°C) | 1 months |  | 1.35 | 1.25, 1.46 | <0.001 |
| TDMEAN (°C) | 1 months |  | 1.27 | 1.19, 1.36 | 0.001 |
| TDMAX (°C) | 7 months |  | 0.80 | 0.76, 0.85 | <0.001 |
| TDMIN (°C) | 1 months |  | 1.33 | 1.24, 1.43 | <0.001 |
|  |  |  |  |  |  |
| HUM (hPA) | 8 months |  | 1.06 | 1.04, 1.08 | <0.001 |
| log2(VAP) (hPA) | 1 months |  | 41.9 | 19.1, 91.8 | <0.001 |
| log2(VAPS) (hPA) | 7 months |  | 0.12 | 0.07, 0.20 | <0.001 |
|  |  |  |  |  |  |
| SST >26.8 °C (°C) | 2 months |  | 0.09 |  | <0.001 |
| SSTA (°C) | 5 months |  | 11.5 | 5.00, 26.4 | <0.001 |
| SEALVLmin (m) | 7 months |  | 13.8 | 6.35, 29.9 | <0.001 |
| SEALVLmax (m) | 7 months | ≥3.31  [3.12, 3.31)  <3.12 | 24.62  2.73  1.00 | 9.75, 62.2  1.3, 5.75  (reference) | <0.001 |
|  |  |  |  |  |  |
| SEALVLmean (m) | 7 months | ≥1.72  [1.68, 1.72)  [1.63, 1.68)  <1.63 | 15.4  18.6  2.69  1.00 | 6.07, 39.3  7.17, 48.5  1.04, 6.96  (reference) | <0.001 |
|  |  |  |  |  |  |
| RIVER (M) | 3 months |  | 20.0 | 8.73, 45.6 | <0.001 |
|  |  |  |  |  |  |

IRR = Incidence rate ratio; SE = standard error of IRR; CI = Confidence Interval. See Table 1 in the main paper for expansion of all variable name abbreviations.

a Estimates are presented for the lag with the strongest statistical association with monthly counts of Ross River virus.