**Supplementary Table 1** Radiocarbon ages acquired from lake and peat sediment cores recovered during this study.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sample  | Lab ID | org. s.depth (cm) | comp. s.depth (cm) | 14C age(yr BP)a | Calibrated age(cal yr BP)b | Dating materialc |
| Lake Richmond |  |  |  |  |  |  |
| R3-A | Wk39860 | 39.5 | 36.5 | 539±20 | 524±10 | ol |
| R3-B | Wk39861 | 126.5 | 118.5 | 1735±20 | 1609±46 | ol |
| R3-C | Wk39862 | 162.5 | 167.5 | 2393±20 | 2376±45 | ol |
| R1-D | Wk39863 | 210 | 210 | 3055±20 | 3207±59 | ol |
| R3-E | Wk39864 | 247.5 | 260 | 3641±20 | 3907±44 | ol |
| R3-F | Wk39865 | 284.5 | 303 | 3946±20 | 4339±51 | ol |
| R3-G | Wk39866 | 346.5 | 370 | 4875±21 | 5553±48 | ol |
| R3-H | Wk39867 | 377 | 404 | 6153±22 | 7002±72 | ol |
| R1-I | Wk39868 | 464 | 465 | 7678±24 | 8429±34 | ol |
| R3-J | Wk39869 | 460.5 | 522 | 9433±25 | 10,622±45 | ol |
| R3-K | Wk39870 | 506.5 | 568 | 10,846±32 | 12,714±17 | p |
| R3-L | Wk39871 | 608.5 | 670 | 12,494±35 | 14,587±180 | p |
| Tariki Swamp |  |  |  |  |  |  |
| T1-A | Wk39127 | 52 | 52 | 2038±26 | 1955±32 | p |
| T1-C | Wk39128 | 134.5 | 134.5 | 2639±26 | 2726±52 | p-os |
| T1-F | Wk39129 | 248 | 248 | 3262±26 | 3440±43 | p |
| T2-C | Wk39135 | 132.5 | 248 | 3263±26 | 3441±43 | os |
| T1-H | Wk39130 | 315.5 | 315.5 | 5372±28 | 6105±67 | os |
| T1-I | Wk39131 | 430.5 | 430.5 | 10,184±39 | 11,789±118 | p |
| T1-J | Wk39132 | 479.5 | 479.5 | 10,353±38 | 12,133±137 | p |
| T1-L | Wk39133 | 622.5 | 635 | 13,105±50 | 15,646±126 | p |
| T2-L | Wk39136 | 749 | 782.5 | 14,124±53 | 17,127±122 | os |
| T1-N | Wk39134 | 716.5 | 782.5 | 14,130±60 | 17,136±129 | os |
| T2-J | Wk39137 | 847 | 880.5 | 14,334±53 | 17,404±107 | os |
| Ngaere Swamp |  |  |  |  |  |  |
| N1-A | Wk39482 | 37.5 | 54.5 | 2449±25 | 2461±95 | p |
| N1-C | Wk39483 | 137.5 | 199.5 | 4680±25 | 5395±52 | p |
| N1-D | Wk39484 | 221 | 283 | 6069±29 | 6868±53 | p |
| N1-E | Wk39485 | 273.5 | 335.5 | 6315±28 | 7204±46 | p |
| N1-G | Wk39486 | 338.5 | 400.5 | 7331±29 | 8098±46 | p |
| N1-I | Wk39487 | 441.5 | 503.5 | 8592±49 | 9527±37 | p |
| N1-K | Wk39488 | 536 | 598 | 9434±37 | 10,621±57 | p |
| N1-N | Wk39489 | 638 | 700 | 10,453±37 | 12,249±111 | p |
| N1-P | Wk39490 | 689.5 | 751.5 | 11,131±40 | 12,949±71 | p |
| Eltham Swamp |  |  |  |  |  |  |
| E1-B | Wk41024 | 81.5 | 81.5 | 2248±20 | 2230±49 | p |
| E2-A | Wk41025 | 50.5 | 140.5 | 3406±22 | 3606±43 | p |
| E2-B | Wk41026 | 110.5 | 200.5 | 5658±26 | 6385±43 | p |
| E2-C | Wk41027 | 210.5 | 300.5 | 7412±27 | 8194±70 | p |
| E2-D | Wk41028 | 254.5 | 344.5 | 8728±27 | 9627±52 | p |
| E2-E | Wk41029 | 330.5 | 420.5 | 9432±28 | 10,620±48 | p |
| E2-F | Wk41030 | 428.5 | 518.5 | 10,390±33 | 12,198±118 | p |
| E2-G | Wk41031 | 508 | 598 | 11,610±35 | 13,396±48 | p |
| E2-H | Wk41032 | 588.5 | 678.5 | 12,763±38 | 15,152±84 | os |
| E2-I | Wk41033 | 764.5 | 854.5 | 21,152±97 | 25,454±129 | os |
| E2-J | Wk41034 | 893 | 983 | 23,294±125 | 27,507±110 | os |
| E2-K | Wk41035 | 983.5 | 1073.5 | 25,663±166 | 29,807±269 | os |

*a Conventional age (±1σ) based on the Libby half-life of 5568 yr with correction for isotopic fractionation.*

*b Mean calibrated age (±2σ) using Oxcal v4.2.4 (Bronk Ramsey, 2013) and the SHCal13 atmospheric curve (Hogg et al., 2013).*

*c p=peat, ol=organic rich lake sediment, os=organic rich sediment (i.e. soil, mud), w=wood*