|  |  |
| --- | --- |
| ­A red circle with a white letterDescription automatically generated | Supplementary material for Arthur, N., J. Sidell & H. Bonney. 2025.**Human remains from the River Thames: new dating evidence.** *Antiquity* 99.Author for correspondence ✉ n.arthur@nhm.ac.uk |

Table S1. Full data for the River Thames human remains temporal dataset. Unless otherwise specified in the “Note” column, all conventional radiocarbon ages (14C yr BP) (or fraction modern values (F14C) where conventional age was not available) have been calibrated using the IntCAL20 atmospheric calibration curve (Reimer *et al*. 2020) and OxCAL v4.4.1 (Bronk Ramsey 2009) and are quoted at the 95.4% confidence level. Following the recommendations of Mook (1986) and Bayliss *et al*. (2008), the end points of the calibrated date ranges were rounded outwards to five years, unless the error was greater than ±25 years in which case they were rounded out to ten years. An asterisk (\*) next to SK ID indicates it was created for this project because an official curating repository identifier was not available. N.B. SK IDs for all remains with the Natural History Museum as the curating repository (indicated with ~) are prefixed with "NHMUK PA". Samples in this programme which underwent an additional processing step following Brock *et al*. (2010) are indicated with a cross (+). In the “Element type” column: SSE is a single skeletal element, AE is articulated elements (defined as a maximum of two separate, refitting skeletal elements belonging to the same individual), and AS is an articulated skeleton (defined as more than two refitting skeletal elements belonging to the same individual). Dates with a source of either Bradley and Gordon (1988), Edwards *et al*. (2009) or Schulting and Bradley (2013) were categorised as dates from previous Thames research projects. Dates not produced in these studies, or in the new programme of AMS radiocarbon dating presented here, were categorised as ad hoc dates.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SK ID** | **Recovery location** | **Location zone** | **Material dated** | **Element type** | **Period assigned** | **Lab code** | **14C yr BP** | **F14C** | **cal BC/AD (95.4%)** | **%C** | **%N** | **C:N** | **δ13C** | **δ15N** | **Date source** | **Note** |
| Yabsley 1\* | Yabsley Street, Blackwall | G | Burial context | AS | Neolithic | KIA20157 | 5252±28 | X | -4230 | -3980 | X | X | X | -22.39±0.17 | x | Coles *et al*. 2008 | X |
| SK 1515~  | Battersea Bridge | E | Cranium | SSE | Neolithic | OxA-1199 | 4880±80 | X | -3950 | -3380 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| 2019.8 | Putney | D | Frontal bone | SSE | Neolithic | SUERC-82512 | X | 0.5507±0.0015 | -3640 | -3520 | X | X | 3.3 | -21.3 | 10.6 | Unpublished, Cook 2018a report (Museum of London) | X |
| SK 19~ | Crossness | H | Calvarium | SSE | Neolithic | GrM-16893 | 4795±25 | 0.5506±0.0018 | -3640 | -3525 | 44.2 | 15.2 | 3.4 | -20.91±0.05 | 10.26±0.10 | This 14C dating programme | X |
| FKN01 Femur1\* | Chelsea | E | Left femur | SSE | Neolithic | OxA-20589 | 4243±30 | X | -2920 | -2700 | X | X | 3.4 | -22 | 9.2 | Unpublished (Historic England) | X |
| SK 4162~ | Northfleet | H | Calvarium | SSE | Neolithic | GrM-16906 | 4115±20 | 0.5992±0.0015 | -2860 | -2575 | 44.1 | 15.7 | 3.3 | -22.25±0.17 | 10.45±0.10 | This 14C dating programme | X |
| GEN01 52 | Syon Reach | B | Calvarium | SSE | Bronze Age | OxA-14728 | 3819±33 | X | -2460 | -2140 | X | X | 3.3 | -21.2 | 10.8 | Edwards *et al*. 2009 | X |
| GEN01 27 | Mortlake | C | Cranium | SSE | Bronze Age | OxA-14731 | 3485±33 | X | -1900 | -1690 | X | X | 3.3 | -21 | 10.8 | Edwards *et al*. 2009 | X |
| GEN01 59 | Chelsea | E | Calotte | SSE | Bronze Age | OxA-11087 | 3412±40 | X | -1880 | -1560 | X | X | X | -20.4 | 11.5 | Edwards *et al*. 2009 | X |
| OxA-11086 | 3373±39 | X | -1750 | -1530 | X | X | X | -20.3 | 11.3 | X |
| OxA-11086 + 11087 (R\_ Combine) | 3392±28 | X | -1870 | -1610 | X | X | X | X | X | X | X |
| FKN01 Femur2\* | Chelsea | E | Left femur | SSE | Bronze Age | OxA-20511 | 3253±30 | X | -1620 | -1440 | X | X | 3.3 | -20.5 | 10.2 | Unpublished (Historic England) | X |
| SK 4167~ | Battersea | E | Calvarium | SSE | Bronze Age | GrM-16891 | 3040±20 | 0.6851±0.0019 | -1395 | -1220 | 43.6 | 15.6 | 3.3 | -20.81±0.05 | 10.43±0.10 | This 14C dating programme | X |
| SK 1521~ | Battersea/Vauxhall Bridge | E | Cranium | SSE | Bronze Age | OxA-1198 | 2950±60 | X | -1390 | -990 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| SK 1522~ | Battersea | E | Cranium | SSE | Bronze Age | GrM-16904 | 2985±20 | 0.6898±0.0019 | -1280 | -1120 | 43.8 | 15.7 | 3.3 | -20.34±0.05 | 9.79±0.10 | This 14C dating programme | X |
| SK 4105~ | Mortlake | C | Mandible | SSE | Bronze Age | GrM-16903 | 2980±20 | 0.6900±0.0017 | -1275 | -1120 | 44.2 | 15.6 | 3.3 | -20.46±0.05 | 10.52±0.10 | This 14C dating programme | X |
| GEN01 29 | Mortlake | C | Cranium | SSE | Bronze Age | OxA-14765 | 2904±33 | X | -1220 | -1000 | X | X | 3.2 | -20.6 | 10.5 | Edwards *et al*. 2009 | X |
| SK 4062~ + | Kew | B | Cranium | SSE | Bronze Age | GrM-16998 | 2920±25 | 0.6953±0.0022 | -1215 | -1015 | 44.0 | 15.8 | 3.2 | -20.94±0.20 | 10.02±0.10 | This 14C dating programme | X |
| OxA-1197 | 2910±60 | X | -1280 | -920 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| UNREG 1414~ | Battersea | E | Cranium | SSE | Bronze Age | GrM-16838 | 2905±20 | 0.6963±0.0015 | -1200 | -1010 | 44.4 | 16.3 | 3.2 | -20.66±0.05 | 10.17±0.10 | This 14C dating programme | X |
| SK 4067~ + | Kew | B | Cranium | SSE | Bronze Age | GrM-16911 | 2895±20 | 0.6973±0.0016 | -1195 | -1005 | 43.4 | 15.5 | 3.3 | -20.15±0.17 | 10.54±0.10 | This 14C dating programme | X |
| SK 4070~ | Mortlake | C | Calvarium | SSE | Bronze Age | OxA-1196 | 2750±80 | X | -1120 | -790 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| SK 1507~ | Mortlake Reach | C | Cranium | SSE | Bronze Age | GrM-16851 | 2795±20 | 0.706±0.0016 | -1015 | -860 | 43.6 | 15.7 | 3.2 | -19.64±0.05 | 9.82±0.10 | This 14C dating programme | X |
| OxA-1195 | 2740±60 | X | -1050 | -790 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| SK 4084~ | Mortlake | C | Calotte | SSE | Bronze Age | GrM-16909 | 2760±20 | 0.7092±0.0017 | -980 | -830 | 43.8 | 15.6 | 3.3 | -20.34±0.17 | 11.81±0.10 | This 14C dating programme | X |
| SK 4073~ + | Mortlake | C | Calvarium | SSE | Bronze Age | GrM-16850 | 2750±20 | 0.7101±0.0018 | -970 | -825 | 43.5 | 15.8 | 3.2 | -19.88±0.05 | 10.72±0.10 | This 14C dating programme | X |
| SK 1520~ | Battersea Bridge | E | Cranium | SSE | Iron Age | OxA-18775 | 2477±29 | X | -770 | -420 | X | X | X | -19.9 | X | Schulting & Bradley 2013 | X |
| SK 1529~ | River Thames | N/A | Cranium | SSE | Iron Age | OxA-18777 | 2468±29 | X | -770 | -420 | X | X | X | -20.2 | X | Schulting & Bradley 2013 | X |
| SK 1516~ | Battersea Bridge | E | Cranium | SSE | Iron Age | GrM-16899 | 2460±20 | 0.736±0.0016 | -755 | -420 | 43.6 | 15.7 | 3.2 | -20.14±0.05 | 11.01±.10 | This 14C dating programme | X |
| SK 4069~ | Mortlake | C | Cranium | SSE | Iron Age | OxA-18778 | 2415±29 | X | -750 | -400 | X | X | X | -20.2 | X | Schulting & Bradley 2013 | X |
| Putney 1\* | Putney | D | Mandible | SSE | Iron Age | SUERC-82794 | X | 0.7398±0.0023 | -750 | -400 | X | X | 3.6 | -21.7 | 9.8 | Unpublished, Cook 2018b report (C. McKibbin) | X |
| SK 1506~ | Mortlake Reach | C | Calvarium | SSE | Iron Age | GrM-16905 | 2420±20 | 0.7398±0.0018 | -730 | -405 | 44.0 | 15.8 | 3.3 | -20.28±0.17 | 11.14±0.10 | This 14C dating programme | X |
| SK 4092~ | Mortlake | C | Mandible | SSE | Iron Age | GrM-16898 | 2375±20 | 0.7443±0.0021 | -520 | -390 | 44.0 | 15.6 | 3.3 | -20.80±0.05 | 11.39±0.10 | This 14C dating programme | X |
| SK 4168~ | Battersea | E | Calotte | SSE | Iron Age | OxA-18776 | 2289±28 | X | -410 | -210 | X | X | X | -19.9 | X | Schulting & Bradley 2013 | X |
| SK 1514~ | Chelsea Bridge | E | Cranium | SSE | Iron Age | GrM-16846 | 2285±20 | 0.7523±0.0017 | -400 | -230 | 43.3 | 15.7 | 3.2 | -20.02±0.05 | 8.67±0.10 | This 14C dating programme | X |
| GEN01 4856 | Putney | D | Frontal bone | SSE | Iron Age | SUERC-54048 | X | 0.7548±0.0029 | -400 | -200 | X | X | 3.3 | -21 | 11.7 | Unpublished (Museum of London) | X |
| SK 4074~ | Mortlake | C | Calvarium | SSE | Iron Age | OxA-18779 | 2270±28 | X | -400 | -200 | X | X | X | -20.2 | X | Schulting & Bradley 2013 | X |
| GEN01 51 | Putney | D | Calotte | SSE | Iron Age | OxA-14730 | 2232±29 | X | -390 | -200 | X | X | 3.3 | -20.5 | 11.9 | Edwards *et al*. 2009 | X |
| SK 1526~ | Northfleet | H | Mandible  | AE | Iron Age | GrM-16841 | 2050±20 | 0.7748±0.0019 | -150 | 25 | 43.8 | 15.9 | 3.2 | -19.77±0.05 | 11.80±0.10 | This 14C dating programme | X |
| SK 4055~ + | Kew | B | Cranium | SSE | Iron Age | GrM-16997 | 2045±25 | 0.7752±0.0024 | -150 | 55 | 43.4 | 15.6 | 3.3 | -20.91±0.20 | 12.09±0.10 | This 14C dating programme | X |
| SK 1558~ | Waterloo | F | Cranium | SSE | Iron Age | GrM-16843 | 2015±20 | 0.7781±0.0019 | -50 | 65 | 44.0 | 16.0 | 3.2 | -19.99±0.05 | 11.46±0.10 | This 14C dating programme | X |
| SK 4120~ | Wandsworth | D | Calvarium | SSE | Roman | OxA-18780 | 1961±28 | X | -40 | 130 | X | X | X | -20.0 | X | Schulting & Bradley 2013 | X |
| SK 4130~ | Robiamors Dry Dock, Limehouse | G | Cranium | SSE | Roman | GrM-16894 | 1935±20 | 0.7857±0.0018 | 20 | 205 | 43.9 | 15.7 | 3.3 | -18.78±0.05 | 11.14±0.10 | This 14C dating programme | X |
| SK 1518~ | Battersea Bridge | E | Cranium | SSE | Roman | GrM-16849 | 1915±20 | 0.7877±0.0018 | 65 | 210 | 42.8 | 15.6 | 3.2 | -19.62±0.05 | 8.94±0.10 | This 14C dating programme | X |
| SK 4137~ | Deptford | G | Calvarium | SSE | Roman | GrM-16890 | 1895±20 | 0.7897±0.0018 | 80 | 215 | 44.1 | 15.7 | 3.3 | -19.19±0.05 | 12.89±0.10 | This 14C dating programme | X |
| Putney 2\* | Putney | D | Mandible | SSE | Roman | Beta-393427 | 1830 ±30 | X | 127 | 320 | X | X | X | -19.4 | X | Unpublished, Tamers & Hood 2014 report (Museum of London Archaeology) | X |
| UNREG 6828~ | Battersea | E | Cranium | SSE | medieval | OxA-1191 | 1320±60 | X | 600 | 880 | X | X | X | X | X | Bradley & Gordon 1988 | X |
| SK 1551~ | Whitehall Steps | F | Cranium | AE | medieval | GrM-16837 | 1290±20 | 0.8518±0.0023 | 665 | 775 | 44.5 | 16.2 | 3.2 | -20.29±0.05 | 10.34±0.10 | This 14C dating programme | X |
| Burial 1 | Bull Wharf | F | Burial context | AS | medieval | Beta-104819-20, 105483-4 | X | X | 680 | 810 | X | X | X | X | X | Ayre & Wroe-Brown 2015 | Calibrated date is that presented in Ayre & Wroe-Brown 2015. It was calculated from the weighted mean of four radiocarbon dates for wood from Burial 1 and is quoted at 95% confidence. Burials 1 and 2 are considered contemporaneous. |
| Burial 2 | Bull Wharf | F | Burial context | AS | medieval | X | X | X | 680 | 810 | X | X | X | X | X |
| GEN01 31 | Kew | B | Cranium | SSE | medieval | OxA-14729 | 1070±29 | X | 890 | 1030 | X | X | 3.3 | -19 | 10.9 | Edwards *et al*. 2009 | X |
| SK 139~ | Millbank | F | Cranium  | AS | medieval | GrM-16842 | 1114±19 | 0.8705±0.0020 | 890 | 995 | 43.9 | 16.0 | 3.2 | -19.58 | 8.78 | This 14C dating programme | X |
| E 213~ | Hampton | A | Calvarium | SSE | medieval | GrM-16892 | 912±19 | 0.8927±0.0022 | 1040 | 1210 | 44.2 | 15.9 | 3.2 | -20.09 | 12.45 | This 14C dating programme | X |
| BATT30 1 | Battersea Power Station | E | Cranium | SSE | medieval | SUERC-52875 | 873±28 | X | 1040 | 1260 | X | X | 3.3 | -19.1 | 12.9 | Unpublished (Museum of London) | X |
| GEN01 43 | Barn Elms | C | Cranium | SSE | medieval | OxA-14727 | 768±27 | X | 1220 | 1280 | X | X | 3.2 | -18.9 | 12.3 | Edwards *et al*. 2009 | X |
| SK 4179~ | Waterloo Bridge | F | Mandible | SSE | medieval | GrM-16847 | 402±19 | 0.9512±0.0023 | 1440 | 1615 | 43.9 | 15.9 | 3.2 | -18.99 | 12.69 | This 14C dating programme | X |
| SK 4119~ + | Pimlico | F | Cranium | SSE | medieval | GrM-16897 | 277±18 | 0.9661±0.0021 | 1520 | 1665 | 44.5 | 16.0 | 3.2 | -20.14 | 10.75 | This 14C dating programme | X |
| Chambers 2\* | Chambers Wharf | F | Scapula  | AS | post-medieval | OxA-11141–2 | 418±23 | X | 1640 | 1955 | X | X | X | -16.9 | 12.5 | Bayliss *et al*. 2004 | Calibrated date is that presented in Bayliss et al. 2004. It was calculated from the weighted mean of two dates and quoted at 95% confidence. |
| SK 4178~ | Greenwich | G | Cranium  | AS | post-medieval | GrM-16908 | 249±19 | 0.9695±0.0023 | 1530 | 1800 | 44.4 | 15.8 | 3.3 | -19.71 | 10.91 | This 14C dating programme | X |
| SK 1549~ | Poplar | G | Cranium | SSE | post-medieval | GrM-16845 | 242±19 | 0.9704±0.0023 | 1635 | 1800 | 43.9 | 16 | 3.2 | -18.08 | 13.11 | This 14C dating programme | X |
| SK 1524~ | Tower of London | F | Calotte | SSE | post-medieval | GrM-16844 | 235±20 | 0.9713±0.0025 | 1635 | 1800 | 42.8 | 15.7 | 3.2 | -19.27 | 12.37 | This 14C dating programme | X |
| SK 1563A~ | Blackwall Tunnel | G | Mandible | SSE | post-medieval | GrM-16896 | 151±18 | 0.9814±0.0022 | 1665 | 1910 | 43.6 | 15.7 | 3.2 | -19.21 | 11.35 | This 14C dating programme | X |
| Burrells 1\* | Burrells Wharf | G | Cranium  | AS | post-medieval | OxA-21181-2 | 193±26 | X | 1650 | 1920 | X | X | X | X | X | Cohen *et al*. 2013 | X |
| Chambers 1\* | Chambers Wharf | F | Relative date  | AS | post-medieval | X | X | X | X | X | X | X | X | X | X | MOLA Headland 2018 | Relative date of late C15th-early C16th AD assigned from associated footwear. |
| CC188 | Cyclops Wharf | G | Relative date | AS | post-medieval | X | X | X | X | X | X | X | X | X | X | Williams 1988 | Relative date of late C17th-early C18th AD assigned from associated footwear. |

**References**

Ayre, J. & R. Wroe-Brown. 2015. The post-Roman foreshore and the origins of the late Anglo-Saxon waterfront and dock of Æthelred’s Hithe: excavations at Bull Wharf, City of London. *Archaeological Journal* 172: 121–94. https://doi.org/10.1080/00665983.2014.984534

Bayliss, A., P. Marshall & J. Sidell. 2004. A puzzling body from the River Thames in London. *Radiocarbon* 46: 285–91. https://doi.org/10.1017/S003382220003959X

Bayliss, A., C. Bronk Ramsey, G. Cook G, J. Van der Plicht & G. McCormac. 2008. *Radiocarbon dates from samples funded by English Heritage under the Aggregates Levy Sustainability fund 2004–7*. Liverpool: Liverpool University Press.

Bradley, R. & K. Gordon. 1988. Human skulls from the River Thames, their dating and significance. *Antiquity* 62: 503–509. https://doi.org/10.1017/S0003598X00074603

Brock, F., T. Higham, P. Ditchfield & C. Bronk Ramsey. 2010. Current pretreatment methods for AMS radiocarbon dating at the oxford radiocarbon accelerator unit (ORAU). *Radiocarbon* 52: 103–12. https://doi.org/10.1017/S0033822200045069

Bronk Ramsey, C. 2009. Bayesian analysis of radiocarbon dates. *Radiocarbon* 51: 337–60. https://doi.org/10.1017/S0033822200033865

Cohen, N., E. Wragg & L. Craddock-Bennett. 2013. Post-medieval archaeological remains recorded on the River Thames foreshore in Greater London: interim results of investigations into burial and ships’ timbers. *Post-Medieval Archaeology* 47: 378–83. https://doi.org/10.1179/0079423613Z.00000000040

Coles, S. *et al*. 2008. An Early Neolithic grave and occupation, and an Early Bronze Age Hearth on the Thames Foreshore at Yabsley Street, Blackwall, London. *Proceedings of the Prehistoric Society* 74: 215–33. https://doi.org/10.1017/S0079497X00000190

Cook, G.T. 2018a. Radiocarbon dating report for Alecto Forensic Services on a skull fragment. Report prepared for SUERC Radiocarbon Laboratory.

– 2018b. Radiocarbon dating report for Alecto Forensic Services on a human mandible fragment. Report prepared for SUERC Radiocarbon Laboratory.

Edwards, Y.H., A. Weisskopf & D. Hamilton. 2009. Age, taphonomic history and mode of deposition of human skulls in the River Thames. *Transactions of the London and Middlesex Archaeological Society* 60: 35–51. https://doi.org/10.5284/1086996

MOLAheadland. 2018. The medieval mystery of the booted man in the mud. Available at: https://molaheadland.com/the-medieval-mystery-of-the-booted-man-in-the-mud/ (accessed 21 December 2023).

Mook, W. 1986. Business meeting: recommendations/resolutions adopted by the twelfth International Radiocarbon Conference. *Radiocarbon* 28: 799. https://doi.org/10.1017/S0033822200008043

Reimer, P.J. *et al*. 2020. The IntCal20 Northern Hemisphere radiocarbon age calibration curve (0–55 cal kBP). *Radiocarbon* 62: 725–57. https://doi.org/10.1017/RDC.2020.41

Schulting, R.J. & R. Bradley. 2013. ‘Of human remains and weapons in the neighbourhood of London’: new AMS 14C dates on Thames ‘River Skulls’ and their European context. *Archaeological Journal* 170: 30–77. https://doi.org/10.1080/00665983.2013.11021001

Tamers, M.A. & D.G. Hood. 2014. Report of radiocarbon dating analysis. Report prepared for Beta Analytic Inc.

Williams, K. 1988. Report of the finding of human remains at Cyclops Wharf, Claude Street, Isle of Dogs, London E14. Report prepared for Museum of London Archaeology, London.