quaternary

MDPI

Supplementary information:

Mid–late Quaternary fluvial archives near the margin of MIS 12 glaciation in southern East Anglia, UK: amalgamation of multi-disciplinary and citizen-science data sources.

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SUPPLEMENTARY FILE – ADDITIONAL DATA TABLES

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Table S1. 16–32 mm Clast-lithological data from the unglaciated periphery of southern East Anglia.

	flint				chert			quartz/			*Non*[2]	
Locality & no.	nodular	rounded[1]	broken	total	Gsd	Carb	*Rhaxella*	qtzite	igneous	other	*durables*	TOTAL
Post-Anglian river gravels (Essex rivers - B = Blackwater[3]; Co = Colne; H = Holland Brook; M = Mill River; S = Stour)												
E.Mersea 1 **B**	12.7	35.4	3.1	85.2	7.6	0.3	0.3	6.6			*0.5*	393
Restaurant 2 **B**	12.9	42.2	3.3	83.7	6.2	1.1	0.2	8.0	0.2	0.8	*0.6*	630
Tollesbury 1A **B**	12.9	37.8	+	83.6		1.6	0.1	12.9	0.6	1.1		805
Brightlingsea 1 **Co**	12.9	26.4	4.7	80.5	0.3	1.9		19.2		0.3		364
U. Dovercourt 1 **S**	14.5	29.5	4.6	80.2	0.7	1.5	0.2	16.9	0.5	0.2		414
U. Dovercourt 2 **S**	12.1	30.3	7.4	79.2	2.1	1.6		14.5	1.1	1.1		379
Daking's Pit 1 **H**[4]	17.1	25.8	4.0	82.5	1.1	1.8		13.1	0.7	0.7		275
Daking's Pit 2 **H**[4]	16.3	21.1	7.3	81.9	0.9	2.1	0.6	12.1	0.6	0.6		331
Foxhall Rd **M**	10.7	27.6	7.7	73.3		0.8	0.3	24.4		1.1		373
Post-diversion Thames–Medway: Wigborough Gravel (including Clacton Channel Gravel)												
Butlins Section B	13.3	47.3	4.1	88.8	6.5	0.7		3.7		0.3	*3.4*	294
Clacton Nelson Rd 1	12.1	25.2	4.0	76.0	23.4	0.3						321
West Cliff 4A	10.5	45.0	4.0	89.1	8.1	0.7		1.8		0.3		742
West Cliff 4B	8.1	41.0	2.7	83.8	13.4	1.3		1.3		0.9		456
West Cliff 4C[5]	15.2	33.9	4.6	81.3	8.4	1.2	0.7	7.6		0.7		433
West Cliff 4D[5]	12.6	38.7	4.5	81.5	5.3	2.0	0.3	9.2	0.3	1.7	0.3	357
Lion Point 1	+	28.2	+	79.2	17.8	0.3		2.7			3.5	259
Lion Point 2	9.8	42.3	+	86.9	8.9	0.3		3.4		0.7	4.6	305
Anglian glacial gravels												
Denham Castle 1	34.3	0.4	26.7	93.2		0.9	0.4	3.8	0.9	0.9	*103.0*	236
Ingham 1	37.5	2.3	18.9	90.9		0.8	0.4	5.7	0.4	1.9	*33.7*	264
Fingringhoe 1A[6]	13.0	15.4	8.4	80.8	2.4	4.1	1.4	8.4	0.8	1.6		369
Fingringhoe 1B	13.7	15.9	6.6	81.7	0.7	1.3	1.1	12.6	0.9	1.8		453
Valley Farm	+	16.7	+	70.7	0.7	1.3	0.2	17.1	0.7	3.7	2.2	461
Ipswich Airport	+	20.5	+	77.6	0.4	2.5	0.6	15.4	0.4	3.5	1.9	513
Kesgrave	+	18.7	+	66.6	0.6	0.2	0.2	31.2	0.2	1.4		491
Tuddenham	+	14.8	+	68.6		0.8	0.8	18.6	0.8	10.8	9.7	370
Upper Holland Gravel												
Holland-on-Sea 1	9.7	15.5	+	70.7	24.5	1.5	0.5	2.4		0.5	*1.2*	413
Holland-on-Sea 2A	9.0	15.7	4.9	68.9	25.1	0.7		3.7	0.4	1.1		267
Holland-on-Sea 2B[7]	13.5	23.7	5.2	71.3	15.9	1.4	0.2	10.0		1.2	*0.5*	422
Pre-diversion Thames–Medway: Lower Holland Gravel												
St Osyth 6	16.0	29.5	4.7	81.2	2.5	1.3		14.4		0.3		319
Bush Paddock	10.5	43.3	+	83.9	5.0	0.8		9.6	0.3	0.5		647
Holland-on-Sea 2C	11.9	32.8	3.6	80.6	2.2	1.0		15.5	0.2	0.5		412
Holland-on-Sea 2D	13.9	26.7	6.7	81.5	2.0	1.1		14.8	0.3	0.3	*0.2*	655
Pre-diversion Thames–Medway: Cooks Green Gravel												
Cooks Green 1A	+	21.3	+	83.8	3.2	1.0		13.0	0.5	1.3		625
Cooks Green 1B	14.4	27.2	+	84.2	2.0	2.8		13.8		0.4		492
Cooks Green 2	12.7	29.4	+	83.0	3.3	0.3		13.5	0.3	0.8		394
Great Holland 1	19.1	25.5	+	84.0	1.7	0.7		14.3		1.0		419
Weeley Heath 1	12.6	28.8	6.0	82.1	10.6	1.0		5.6	0.3	0.3		302
Weeley Heath 2A	18.5	27.2	5.5	79.1	1.3	2.4		14.9	0.8	1.6		383
Weeley Heath 2B	14.5	27.3	5.2	77.3	18.0			2.3		1.7	42.4	172
Weeley Heath 3	13.8	49.1	3.5	83.6	14.3					1.7	68.1	116

	flint				chert			quartz/			*Non*[2]	
Locality & no.	nodular	rounded[1]	broken	total	Gsd	Carb	*Rhaxella*	qtzite	igneous	other	*durables*	TOTAL
Pre-diversion Thames–Medway: Oakley Gravel												
Little Oakley KA	15.5	30.3	5.2	80.2	2.0	0.6	0.2	15.8	0.3	0.9		653
Dovercourt DA	12.1	30.3	7.4	79.2	2.1	1.6		14.5	1.1	1.6		379
Pre-diversion Thames: Lower St Osyth Gravel												
Fingringhoe 1C	12.5	31.4	3.5	85.1		2.1		12.8				376
Big Wapping Hill[8] 3	13.1	31.8	3.0	77.5	0.6	1.3		19.2	0.7	0.7		994
St Osyth 1A	+	35.4	+	77.1	0.5	2.0		18.8	0.2	1.6		559
St Osyth 1B	+	30.6	+	79.8	1.6	1.3		15.5	0.7	1.3	0.5	748
Pre-diversion Thames: Wivenhoe Gravel												
Wivenhoe 1B	17.8	25.1	3.0	80.1	0.8	2.7		15.1	0.3	1.1		371
Wivenhoe 2A	14.1	30.4	4.6	74.6	0.7	1.4		22.6	0.4	0.4		283
Arlesford 2	16.6	21.2	3.4	81.4	0.9	1.4		27.6	0.6	1.7		349
Pre-diversion Thames: Ardleigh Gravel												
Ardleigh 1	15.4	26.8	3.2	75.6	0.7	0.8		19.3	1.5	2.2		590
Ardleigh 2	19.2	23.7	4.7	80.0	1.5	2.0		14.6		1.1		615
Ardleigh 4A	12.7	33.3	2.2	72.0	0.4	1.1		25.3	0.9	0.2		553
Ardleigh 4B	13.0	29.3	2.5	75.4	1.3	1.1		19.2	1.1	1.6		447
Pre-diversion Thames: Waldringfield Gravel												
Mistley Heath 1	13.7	26.3	+	82.7	1.6	1.6		18.6				365
Ipswich Airport	+	17.2	+	86.3	0.9	0.9		9.3	0.4	2.2		226
Kesgrave	+	24.5	+	84.1	1.3	1.3		11.9				151
Foxhall Heath	+	15.9	+	78.9	1.3	1.1		18.0		0.8		473
Waldringfield Upper	+	21.6	+	80.6	1.4	1.2		16.3	0.2	0.4		509
Waldringfield Lower	+	17.7		77.9	1.6	1.5		18.0	0.2	0.8		611
Trimley	+	33.7		86.1	1.0	0.2	0.2	11.5	0.2	0.8		504
Kirton	+	28.6		84.6	2.1	1.3		10.3	0.4	1.3		234

Notes:

+ - not separately recorded

1 - In most samples rounded flint is derived entirely from the Palaeogene of the London Basin

2 - Non durables (chalk, limestones, calcareous fossils, claystone, soft ironstones and sandstones) are excluded from totals and expressed as % total durable material

3 - Blackwater, East Mersea Restaurant Gravel samples: No.1 is from the Restaurant Site, No.2 is from the Hippopotamus Site (see Bridgland, 1994)

4 - Also possible that this is Cooks Green Formation

5 - Samples from below the feather-edge of the Clacton Channel Deposits. Could also be Lower Holland Gravel (see Bridgland et al., 1988)

6 - The gravel at Fingringhoe is interpreted as distal outwash, with material introduced from non-glacial sources by tributary rivers (see Bridgland, 1994)

7 - Sample transitional between Lower Holland Gravel and Upper Holland Gravel (see Bridgland et al., 1988; Bridgland, 1994)

8 - Also called 'Moverons'

Abbreviations: Gsd = Greensand (chert + other lithologies; Carb. = Carboniferous chert; *Rhaxella* = *Rhaxella* chert (Portlandian/Oxfordian); qtzite = quartzites (sedimentary and metamorphic)

Table S2. Fossil material recovered during deep piling of the Clacton Channel Deposits at Victory Court, Nelson Rd, in 2006 (compiled by J. Whittaker). .

SAMPLE	**1**	**2**	**3**	**4**	**5**	**6**
Piling depth (m.)	**1.0**	**2.0**	**3.0**	**4.0**	**5.0**	**10.0**
Height O.D.	**+10.0**	**+9.0**	**+8.0**	**+7.0**	**6.0**	**+1.0**
Brackish foraminifera:						
Ammonia sp.	xxx		xx	xxx	xxx	xx
Haynesina germanica	x					o
Brackish ostracods:						
Cyprideis torosa	x			x	x	x
Cytheromorpha fuscata				x	xx	x
Loxoconcha elliptica						x
Freshwater ostracods:						
Cytherissa lacustris		o			o	
Candona sp. (juveniles)		o			o	
Darwinula stevensoni				x	o	x
Ilyocypris sp.					o	x
Scottia browniana						x
Molluscs		x		x	x	x
Bithynia opercula						x
Plant debris			x	x	x	x
Azolla	*x*					
Chara oogonia						x
Small mammal teeth					x	
Fish remains					x	x
Rhizoliths	x		x			