

**Site Name**

**River Ivel, Biggleswade**

**BEDFORDSHIRE LOCAL GEOLOGICAL SITE DESIGNATION FORM**

**SITE LOCATION, ACCESS, OWNERSHIP, STATUS & SUITABILITY**

(1) **Name of site:** River Ivel, Biggleswade, Bedfordshire

(2) **National grid reference:** TL 186 463

(3) **Unitary authority:** Central Bedfordshire

**(4) Site access and local amenities**

The site is accessed from the A1 off the northern roundabout near Biggleswade. Turn towards Biggleswade, past Sainsburys, across the bridge and over the River Ivel, turn immediately left into the Dan Albone car park. Keeping the River Ivel on your left, walk adjacent to the river along the Kingfisher Way (other footpaths diverge across Biggleswade Common from here.) This is a muddy path that becomes more gravelly later on. Take care with the wooden walkways which are slippery when wet. There are no amenities on the site.

The lake at the end of the walk forms part of the Warren Villas Nature Reserve that is owned by the Wildlife Trust. The other nearby lakes are part of the Manor Farm Fisheries.

(5) **Site ownership:** Lord of the Manor and managed by Fen Reeves.

(6) **Mineral rights ownership:** N/A

(7) **Is permission needed to access the site?**

a. No ✓

b. Yes

(8) **Site status:** Active

Disused

Historical

Managed ✓

Restored

New

Other

(9) **Suitable for visits by:**

a. General public ✓

b. Small parties ✓

c. Large parties ✓

d. Primary school ✓

e. National Curriculum ✓

f. AS/A-Level ✓

g. Adult ✓

h. Undergraduate teaching

i. Research

(10) **Site suitable for frequent visits by parties?**

a. No

b. Yes ✓

(11) **Should collecting and hammering be encouraged at the site?**

a. No ✓

b. Yes

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<b>SITE DESCRIPTION</b>		
(12) <b>Exposure type:</b>	a. Inland natural outcrop ✓	b. Road cutting
	c. Railway cutting	d. Active quarry/pit
	e. Disused quarry/pit	f. Old mine workings
	g. Mine dump	h. Active mine
(13) <b>Dimensions of area of interest:</b> The network of paths allows several walks of 3-4km length.		
(14) <b>Main interest(s):</b>	a. Structural	b. Geomorphological ✓
	c. Mineralogical	d. Palaeontological
	e. Petrological	f. Stratigraphical
(15) <b>Summary description and reason for designation</b> An accessible site suitable for observing and explaining modern river processes and comparing them with those that would have formed the ancestral River Ivel during the latter stages of the Ice Age. Hand specimens of river gravel can occasionally be seen in the eroded bank and terraces.		
(16) <b>What threats exist for the site?</b> None evident.		
(17) <b>What additional work is required to enhance the site?</b> If an interpretation board is required this could be placed on the river bank near the Warren Villas lake, where there is a bench situated. There is one interpretation board already in place, but this is nearer the car park and explains the medieval connection to Biggleswade Common.		
(18) <b>Published/unpublished references to the site and wider area</b> Friend, P. 2008. <i>Southern Britain</i> . HarperCollins Publishers. 414 pages. Gao, C. <i>et al.</i> 1998. Middle Devensian deposits of the Ivel valley at Sandy, Bedfordshire, England. <i>Proceedings of the Geologists' Association</i> , <b>109</b> , 127-137. Moorlock, B.S.P. <i>et al.</i> 2003. Geology of the Biggleswade district – a brief explanation of the geological map Sheet 204 Biggleswade. Keyworth, Nottingham: British Geological Survey. <i>Ice Age sand and gravel – the basics</i> . B&LGG information leaflet. www.bedsrigns.org.uk <i>Ice Age gravels – Ivel Walk, Biggleswade</i> . B&LGG information leaflet. www.bedsrigns.org.uk		

<b>SCIENTIFIC SIGNIFICANCE</b>		
(19) <b>Does the site exhibit features of local/regional importance?</b>	a. No	b. Yes ✓
(20) <b>Is the site already a designated SSSI?</b>	a. No ✓	b. Yes
(21) <b>Collector interest:</b>	a. Rare species	b. Common species
	c. Local significance	d. Regional significance
	e. National significance	
(22) <b>List of confirmed fossils, minerals, etc:</b> N/A		

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<b>HISTORICAL/AESTHETIC VALUE</b>		
<b>(23) Does the site have important historical associations?</b>	a. No	b. Yes ✓ (for archaeology)
<b>(24) Does the site form a key part of an attractive or evocative landscape?</b>	a. No	b. Yes ✓
<b>(25) Full description of site and its significance</b> The geology of the Ivel Valley between Biggleswade and Sandy is dominated by up to 5m of Quaternary river terrace deposits and alluvium (silt, sand and gravel), overlying till (chalky, sandy, stony clay). All three superficial deposits were deposited on the Cretaceous bedrock which is Gault Clay (near Biggleswade) and Woburn Sands (near Sandy). The ancestral River Ivel was very different to that of today's gentle meandering river. During the Ice Age the river (as all British rivers) had a braided form. Braided rivers have a much wider, shallow bed and they flow torrentially at one time of year, slowing to a trickle at other times. This produces characteristic high energy deposits of cobbles, gravels and sands, with very little silt or mud. These gravel deposits are exposed intermittently in the river terrace – sometimes they are coarse, angular and dominated by flints, whilst there are also abundant rounded pebbles of brown sandstone and quartz. These differences in rock type and angularity suggest that the ancestral Ivel drained at least two different areas of land in the past. In contrast, the modern River Ivel has a meandering form and it flows throughout the year at a gentle pace. Its bank is predominantly composed of sands, silts and abundant mud. The river typically erodes one bank and, at the same time, deposits fine-grained sediment on the opposite bank – hence the river channel migrates (meanders) sideways over time. However, the form of the river is not just a result of natural processes. Virtually all British rivers have been subjected to human management in historical times – often as early as the Iron Age! The Ivel was substantially altered in 1758 between Tempsford (north of Sandy) and Biggleswade in order to transport goods by horse-drawn barge. Looking along the river bank it is clear to see where earth and gravel has been moved to afford an easy path, reinforce the river bank or generally straighten the sinuous parts. Biggleswade Common is developed on a river terrace that is a couple of metres higher than the current, alluvium-filled river channel. Rivers cut down through their older terraces when sea-level falls as a result of water being locked up as ice during a glacial phase. For example, Gao <i>et al.</i> (1998) have described palaeontological remains from braided river deposits preserved in the lowest Ivel terrace near Sandy that indicate a harsh tundra climate and a Devensian age. Large rivers like the Thames have as many as ten terraces, whilst smaller rivers such as those in Bedfordshire commonly have three or four.		

<b>RECORDER'S DETAILS</b>	
<b>(26) Name:</b> Dr Jill Eyers	<b>(27) Organisation:</b> Consultant geologist working on behalf of B&LGG.
<b>(28) Date of designation:</b> August 2005	

<b>CURRENT SITE CONDITION</b>
<b>(29) Site condition at March 2009 is GOOD; assessed by Martin Whiteley.</b>

<b>NOTES</b>
<b>(30) Form revised and updated by Dr Martin Whiteley, B&amp;LGG Local Geological Site Manager, November 2009. For further details contact Anne Williams: <a href="mailto:annew36@hotmail.com">annew36@hotmail.com</a></b>