

## WICKLOW - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Upper Lockstown Delta and Kings River</b>		
Other names used for site	Lockstown Delta, Kings River Delta		
<b>IGH THEME</b>	<b>IGH7 Quaternary, IGH14 Fluvial and Lacustrine Geomorphology</b>		
<b>TOWNLAND(S)</b>	<b>Lockstown Upper, Granmore</b>		
<b>NEAREST TOWN/VILLAGE</b>	<b>Hollywood, Donard</b>		
<b>SIX INCH MAP NUMBER</b>	<b>16</b>		
<b>ITM CO-ORDINATES</b>	<b>6983300E 702570N (centre of feature)</b>		
<b>1:50,000 O.S. SHEET NUMBER</b>	<b>56</b>	<b>GSi BEDROCK 1:100,000 SHEET NO.</b>	<b>16</b>

### Outline Site Description

The Upper Lockstown Delta includes a large accumulation of sands and gravels, which has been quarried extensively, in the Kings River valley.

### Geological System/Age and Primary Rock Type

The 'delta' is comprised of deep glaciofluvial and glaciolacustrine sediments and bedrock is at depth throughout the area of the feature. This bedrock is of fine to coarse-grained granite. The 'delta' is Quaternary in age, having been deposited at the edge of the westward-retreating ice sheet during deglaciation after the last Ice Age. The river features in the valley are of Holocene age, formed within the last 10,000 years.

### Main Geological or Geomorphological Interest

The delta is a striking feature, a large sand and gravel accumulation deposited into Glacial Lake Blessington by meltwaters flowing from ice of the large ice dome covering the Irish Midlands at the end of the last ice age, while its margin lay to the west of the valley between Slievecorragh and Corriebracks Mountain. The delta was built out from this location into the lake, the surface of which was at about 211m above present sea level at that time. The delta surface here is therefore much lower than at Blessington and Athdown, and relates to a lowering of the lake level following a shift in the location of the ice margin (probably related to the downcutting of Hollywood Glen). The delta at this level can be viewed superbly from the R756 road at Lockstown Upper, in the lay-by at the junction with the R758.

The delta is about 2.5 kilometres long and up to 1 kilometre wide. The sands and gravels are comprised largely of granite from the Wicklow Mountains. The sediments are arranged in the typical delta sequence: topset gravels composed of up to 2m depth of horizontally bedded gravels on top; foreset gravels which are steeply dipping and well bedded, deposited at the front of the delta; and bottomset, finer sediments of sands and silts, usually underlying the foresets and representing sediment that was originally deposited beyond the steep delta front on the lake floor.

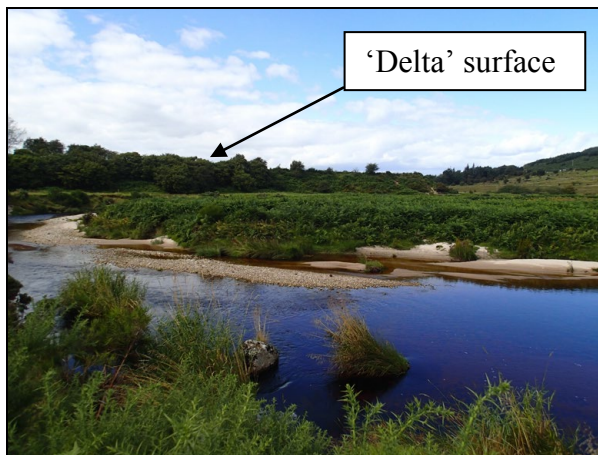
The modern day Kings River is eroding the delta feature, resulting in some prominent scarps on the side of the feature, as well as superb meanders, ox-bow lakes, point bars, freshly-cut banks, and a perfect example of a Holocene floodplain.

### Site Importance – County Geological Site; recommended for Geological NHA

The feature is a high, striking example of a dry sand and gravel ridge, and stands proud of the surrounding landscape. This is an excellent example of a deglacial, ice marginal, meltwater-deposited feature. The glacial history coupled with the superb alluvial depositional features makes this a marvellous teaching site for second or third level students of geography and geology.

### Management/promotion issues

A sizeable portion of the delta has been removed by quarrying, and access to surrounding fields is by permission of the owners or operators, and safety protocols must be followed.



'Delta' surface



Left: View across the Kings River towards the delta surface. Right: Scarp along the delta edge caused by erosion of the Kings River.



Point bar of coarse sand at a meander edge within the Kings River.



Left: Delta topsets exposed in sand pit. Right: View across sand pit, on northern edge of delta feature.



