

WICKLOW - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Upper River Liffey
Other names used for site	Coronation Plantation
IGH THEME	IGH7 Quaternary, IGH14 Fluvial/Lacustrine
	Geomorphology
TOWNLAND(S)	Ballynabrocky, Powerscourt Mountain, Ballinastoe, Kippure
NEAREST TOWN/VILLAGE	Blessington
SIX INCH MAP NUMBER	6
ITM CO-ORDINATES	709450E 713210N (bridge at Coronation Plantation)
1:50,000 O.S. SHEET NUMBER	56 GSI BEDROCK 1:100,000 SHEET NO. 16

Outline Site Description

A wide river floodplain in the upper Liffey catchment, northwest Wicklow Mountains, where the young stages of the River Liffey flow northwest through a series of older alluvial terraces.

Geological System/Age and Primary Rock Type

Radiocarbon dating, dendrochronology (tree-ring dating), and pollen analysis have all contributed to give ages for the river terraces (repeated layers of sandy alluvium with layers of soil) in the upper Liffey floodplains. The oldest floodplain terrace (mid-Holocene) formed between 8000 and 3000 years ago. The younger Holocene terrace accumulated between 2000 and 500 years ago. Modern floodplain sediments accumulated between 1650 AD and 1850 AD.

Main Geological or Geomorphological Interest

Three sub-basins in the upper River Liffey catchment (100km²) have been described in literature pertaining to this area, one of which is known as the Coronation Plantation basin, in which this site is located. The other two are the Ballydonnell and the Athdown-Ballysmutton basins. In the Coronation Plantation reach, the river has formed a sequence of alluvial floodplain terraces. Two Holocene (post-glacial) river terraces flank the modern floodplain. River landforms and sediments in the upper Liffey catchment reveal past river behaviour (erosion, incision, migration, sediment deposition) over the last 8000 years. In addition, pollen analysis of the peats and soils on the terraces provide insights into past vegetation cover in the valley (forest, 9000-4000 years ago; blanket peat, 4000 years ago; blanket peat, less than 4000 years ago; vegetation similar to today without conifer plantations, less than 2500). Today, blanket peat covers the ridges and valley sides, with farmland and coniferous forests in the lower, gentler sloped valley. In the valley floor, two Holocene alluvial terraces have been identified flanking the current floodplain. The river channel contains Holocene (post-glacial) alluvial sediments inherited from erosion of weathered granite and glaciofluvial deposits further upstream and on the mountain slopes. The stream bed comprises granite boulders, cobble/gravel bars, and coarse/fine sand bars.

Site Importance – County Geological Site

This area of the upper Liffey catchment is very important to the understanding of the past environmental changes in Wicklow since the end of the last ice (i.e. the last 15,000 years). This site is located in Wicklow Mountains National Park, and in the Wicklow Mountains SAC (002122) and SPA (004040).

Management/promotion issues

This site is easily accessed and is an excellent teaching site. The Coronation Plantation was named to mark the coronation of King William IV in 1831. Scots Pine was reintroduced here in the 19th century (after it had died out around 2000 years ago).



View of site looking W from R759 between of Sraghoe Brook bridge and Liffey bridge. Sorrel Hill in distance.



View upstream (SE) towards terraces from bridge to Gamekeeper's Lodge, Coronation Plantation.



Upper River Liffey – looking SE upstream towards Game Keeper's Lodge bridge.



Boulder/cobble bar on east bank. Wasting on west bank. Looking SE upstream from beside National Park track.



