

## TIPPERARY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Little Brosna Callows
Other names used for site	
IGH THEME	IGH14 Fluvial and Lacustrine Geomorphology, IGH7 Quaternary
TOWNLAND(S)	Annagh, Clongowna, Balloughter, Coolross, Ballyea, Redwood
NEAREST TOWN/VILLAGE	Banagher
SIX INCH MAP NUMBER	1, 2
ITM CO-ORDINATES	601645E 709050N
1:50,000 O.S. SHEET NUMBER 53	GSI BEDROCK 1:100,000 SHEET NO. 15

### Outline Site Description

The Little Brosna callows consist of seasonally flooded, semi-natural, lowland wet grasslands along the river from its confluence with the River Shannon near Victoria Lock to New Bridge on the R438.

### Geological System/Age and Primary Rock Type

The Little Brosna River flows across land underlain by Lower Carboniferous (Mississippian) limestone and calcareous bedrock. The callows are Quaternary in age, having formed in marshy conditions as part of the floodplain of the river in the region since deglaciation. Macrofossils and pollen assemblages identified in clays and white marls underlying the callows indicate a post-glacial (the last 14,000 years) landscape.

### Main Geological or Geomorphological Interest

From west of Roscrea, the Little Brosna River flows northwestwards to the Tipperary-Offaly county boundary. The river flows north along the boundary towards Birr, and continuing northwest, demarcating the county boundary for c.20 km, reaching the River Shannon near Victoria Lock.

At the end of the last Ice Age, this region of north Tipperary was occupied by a deep lake, into which great quantities of silt and clay were washed. Clay and marl layers up to 13 m thick were measured beneath the River Brosna callows. Pollen dated from the base of shell marl deposits indicates climatic change occurred around 11,500 years ago, when a temperate climate encouraged the emergence of continuous vegetation cover, reduced erosion, and the spread of pine forest. Marl lakes prevailed for several millennia, until the onset of fen development around 5,200 years ago. Thereafter, raised bogs began to cover the hitherto lacustrine landscape. Present-day vegetation on the callows is influenced by the seasonal flooding regime and the peaty composition of the soil.

### Site Importance – County Geological Site

As the callows developed due to the geomorphological and hydrogeological process of repeated fluvial flooding, the locality is considered as a County Geological Site. The subsurface sediments recorded at the site are important to supporting our understanding of climatic and environmental changes since the end of the last Ice Age. The site is an internationally important site for wintering waterfowl, and has been designated a proposed NHA (0002564) and SPA (004086).

### Management/promotion issues

Listing the callows as a County Geological Site gives recognition to the geomorphological and hydrogeological foundation of this biodiversity-rich habitat. As it is dynamic system, controlling flooding is neither easy nor advisable. As with any geomorphological process based site, it must be remembered that these are dynamic environments and the flooding is a natural and unpredictable development.



Callow pastures on south bank of Little Brosna.



Drainage channels in callows. Ballea and Coolross townland boundary.



Little Brosna viewed looking west from New Bridge R438. County Tipperary on south bank (left).

