

## OFFALY - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Ballyduff Esker</b>
Other names used for site	The Ballyduff Esker-Rahugh Ridge, The Tullamore Esker, The Murphy's Bridge Esker
<b>IGH THEME</b>	<b>IGH7 Quaternary</b>
<b>TOWNLAND(S)</b>	<b>Cornalaur, Ballincloghan, Cappaloughan, Goldsmithslot, Mountarmstrong, Aghadonagh, Tullybeg, Tullymorerahan, Aghalusky, Ballynasrah, Ballykilmurry, Ballyduff, Muiniagh, Ardan, Bracklin Big, Ballynasrah or Tinnycross, Rosnagowloge or Tirinchinan, Cartron East, Bracklin Little</b>
<b>NEAREST TOWN/VILLAGE</b>	<b>Tullamore</b>
<b>SIX INCH MAP NUMBER</b>	<b>3, 10, 16, 17</b>
<b>ITM CO-ORDINATES</b>	<b>630860E 727560N (centre of esker, at Ballykilmurry)</b>
<b>1:50,000 O.S. SHEET NUMBER</b>	<b>48</b>
<b>GSI BEDROCK 1:100,000 SHEET NO.</b>	<b>15</b>

### Outline Site Description

The Ballyduff Esker and surrounding sands and gravels includes an exceptionally large accumulation of sands and gravels deposited both under the ice sheet and at its margin as the ice withdrew westwards across Offaly at the end of the last Ice Age.

The esker forms part of the larger Ballyduff Esker-Rahugh Ridge Esker System, which extends into County Westmeath to the northeast.

### Geological System/Age and Primary Rock Type

The Ballyduff Esker and surrounding sands and gravels are formed entirely on Lower Carboniferous limestone rocks, across the lowlands of Central Offaly. The eskers themselves are Quaternary in age, having been deposited either under or at the edge of the westward-retreating ice sheet in deglaciation, approximately 14,000 years ago.

### Main Geological or Geomorphological Interest

The esker ridges are striking features, standing proud of the flat landscape of till (boulder clay) upon which they were deposited. In many places the eskers have been surrounded by post-glacial alluvium or peat deposits in the Holocene, since the Ice Age. High, quarried portions visible from the N80 between Tullamore and Clara are especially impressive. Here, the eskers are comprised of a singular ridge of coarse gravels poking through hummocky topography of more haphazard arrangement.

The esker feature is important in that it records faithfully the ice movement across this area of Offaly during the final phase of deglaciation. Wide belts of associated sands and gravels north of Tullamore, flanking the esker beads themselves, have long been studied and are part of associated ice marginal fan and delta systems. The sands and gravels within the esker are comprised chiefly of limestone clasts.

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

This system comprises a well-defined landform sequence and should be listed as a County Geological Site. The feature is a haphazardly arranged, high, striking example of a dry sand and gravel ridge, and stands proud of the surrounding landscape. This esker and its associated sands and gravels in the locality are a good example of a deglacial, meltwater-deposited complex, with portions deposited under the ice, and portions at the ice margin.

### Management/promotion issues

The Ballyduff Esker, Ballyduff Wood and Murphy's Bridge Esker pNHAs straddle the esker (sitecodes 000885, 001777 and 001775 respectively) and the entirety of these areas, as well as many adjacent, are proposed here as the County Geological Site. Many of the esker ridge segments themselves are worthy of pNHA status geologically and geomorphologically. A signboard about the esker along the N52 near the sculptures might prove worthwhile.



The main segment of the Ballyduff Esker on the N52 by-pass of Tullamore.



Exposure into the deltaic sediments overlying the esker in the huge pit at Ballykilmurry.

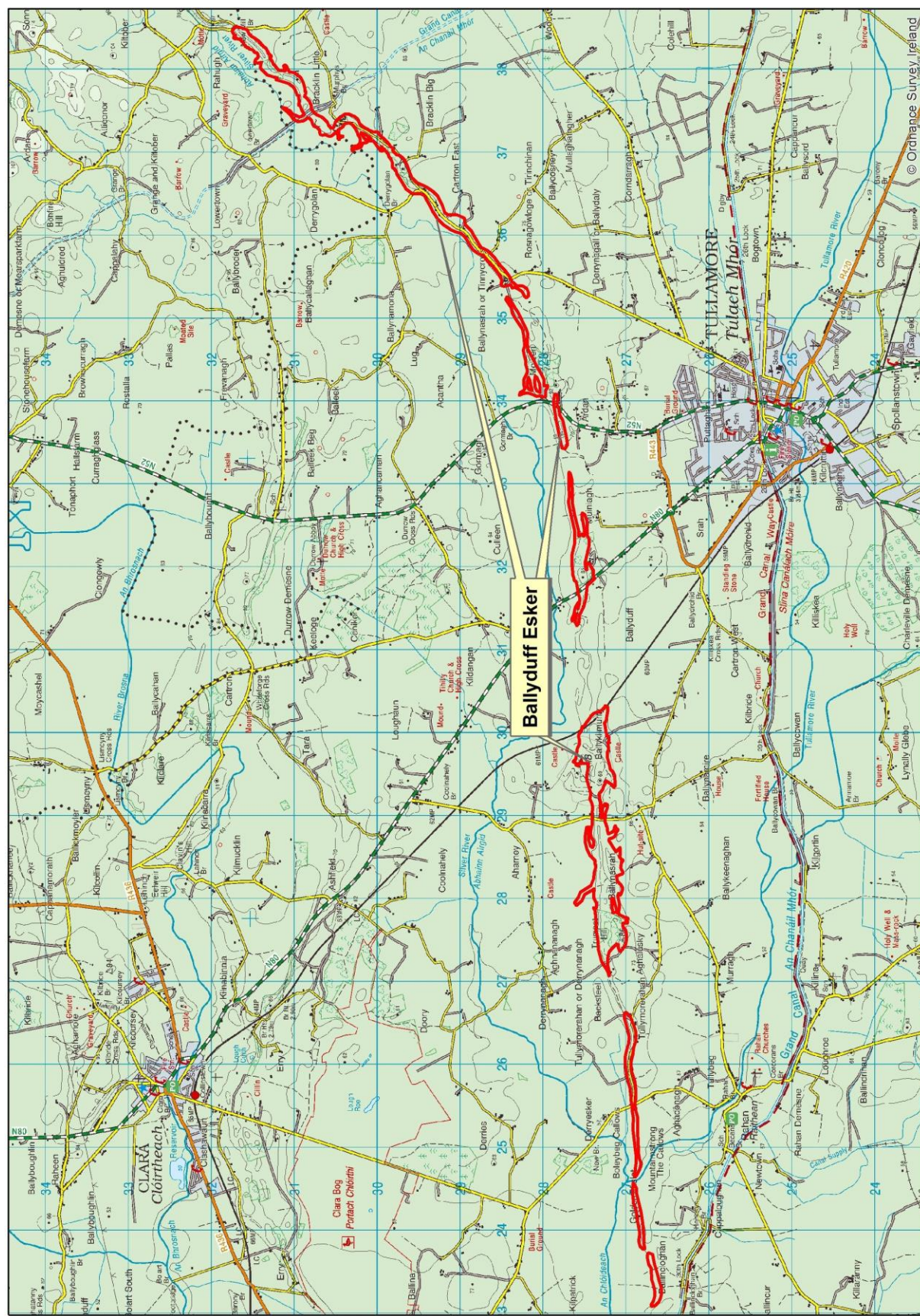


Cross section through the esker just north of Tullamore, in the small industrial unit there.

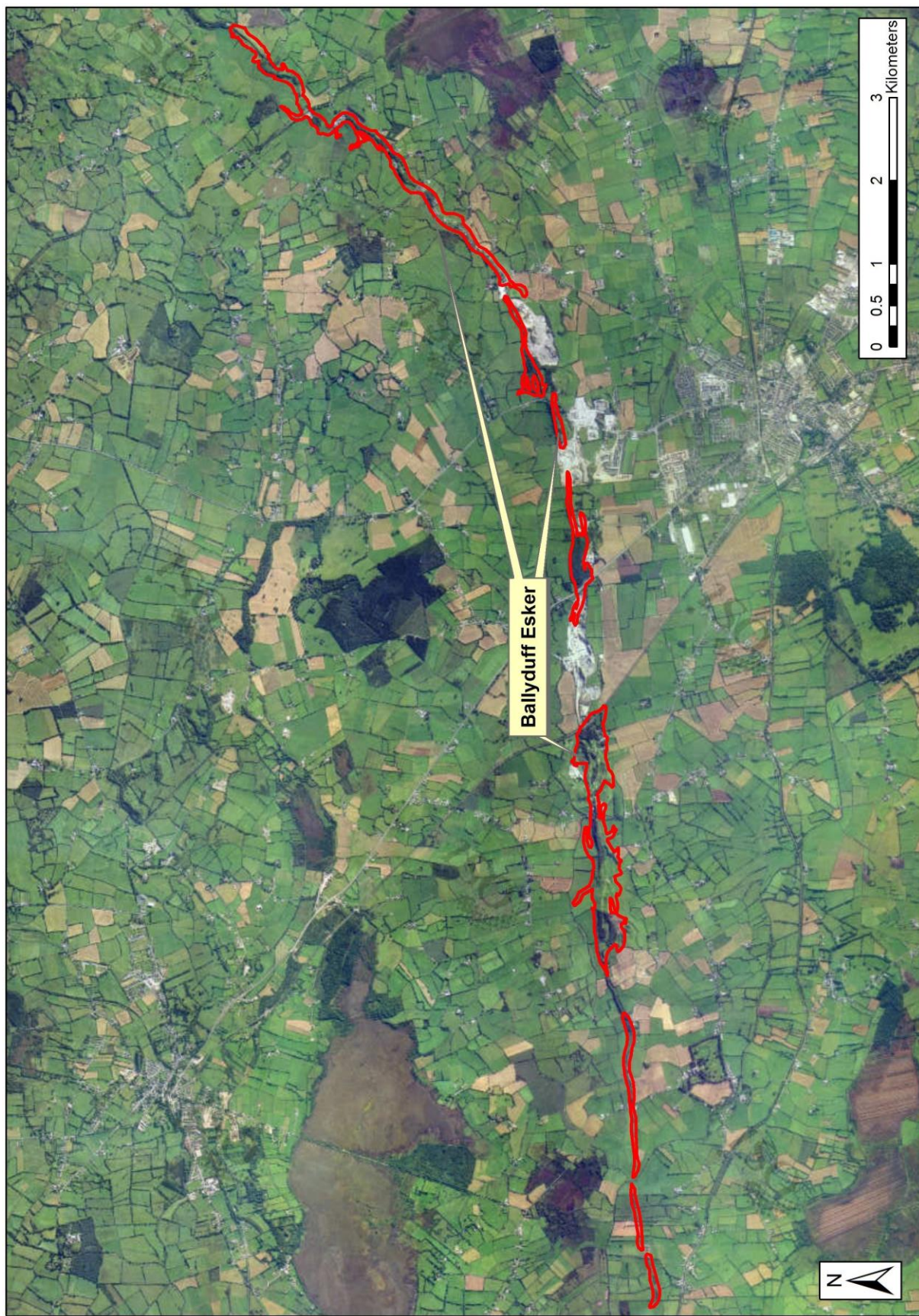


Roadstones Concrete Manufacturing Plant, within the esker pit, at Ballykilmurry.

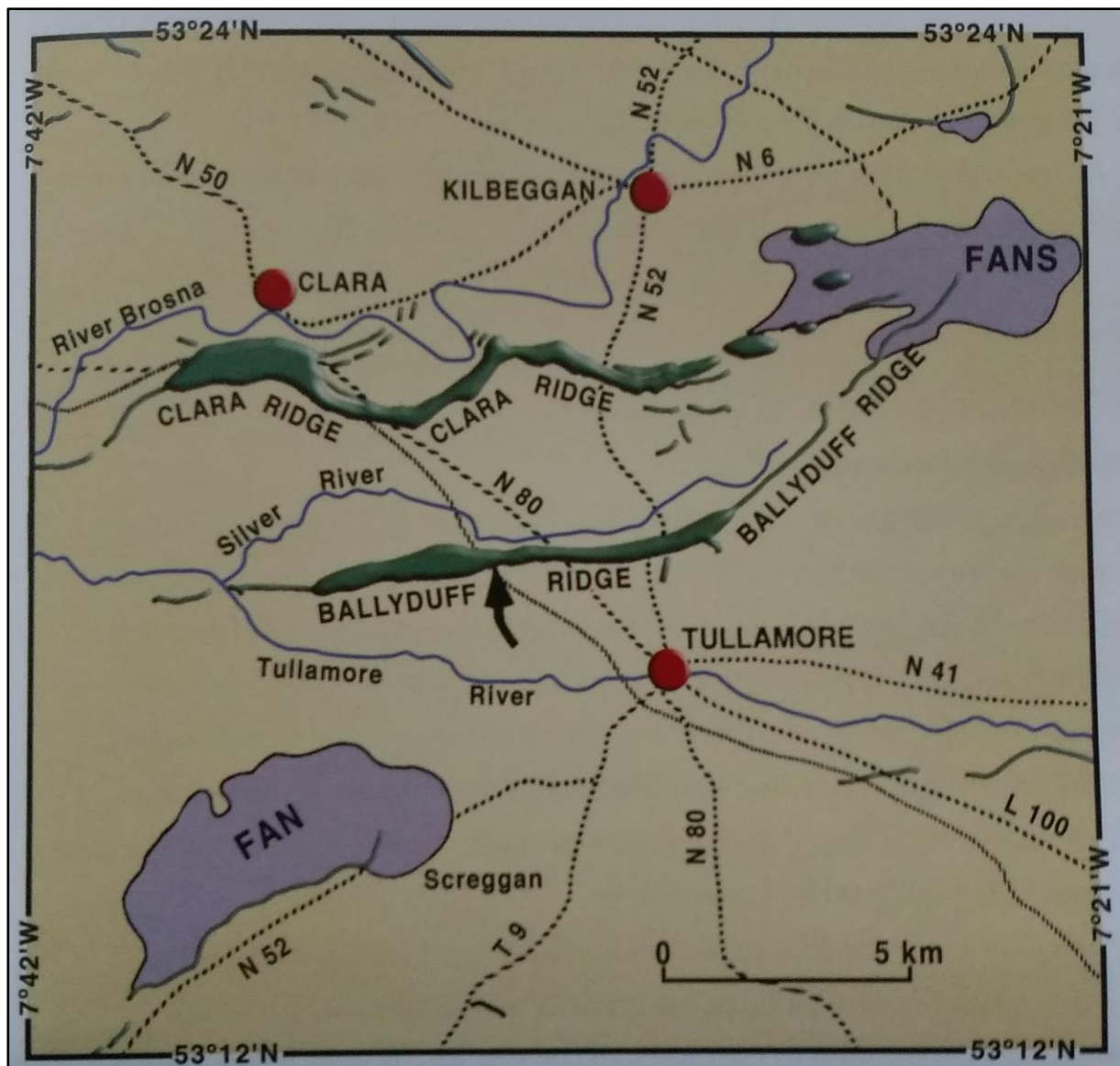












The schematic of deglaciation in the Tullamore District, from Farrington and Synge's (1970) paper on the area (see Appendix 3 for reference details, image reproduced here as in Feehan, 2013).