The Geological Heritage of County Laois

An audit of County Geological Sites in County Laois

Section 2 – Site Reports

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An Chomhairle Oidhreachta
The Heritage Council

Geological Survey
Suirbhéireacht Gheolaíochta
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This report is an action of the County Laois Heritage Plan 2014 – 2019

Section 2 - Site Reports

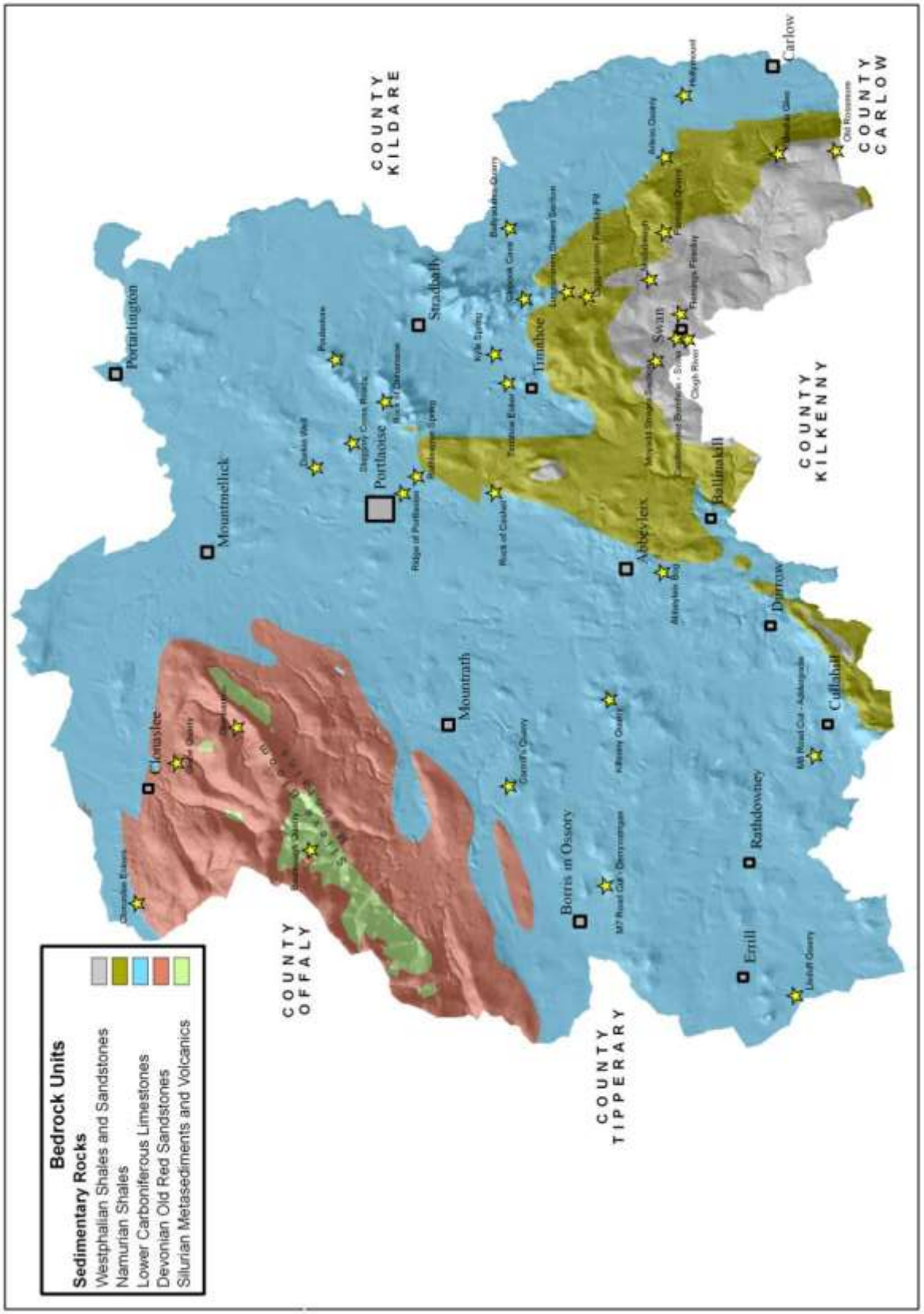
Site reports – general points
The following site reports are brief non-technical summaries of the proposed County Geological Sites for County Laois. These have been specially prepared for this Report in order to make the information accessible to planners and others without geological training. For some sites more detailed reports and information files are held in the IGH Programme in the Geological Survey of Ireland. These are available for consultation if required. Each site report has primary location information, a mention of the main rock types and their age, and a short description of the key aspects of scientific interest. A section outlining any particular management or other issues specific to the site is included, along with several low resolution photographs exemplifying the site. Grid references are given for a central point in the site generated from the GIS mapping (a shapefile) of the site boundary. They are only indicative of the location, but the site extent is best shown on the included maps.

Coordinate Projection System – IRENET95 ITM
Irish Transverse Mercator (ITM) is the geographic projection co-ordinate system now in use for Ireland, and has been applied to all site localities in the site reports. It is the standard co-ordinate system for Osi maps, including the new Discovery map series, but a coordinate conversion tool is available on the Osi website at:
http://www.osi.ie/calculators/converter_index.asp?alias=/services/gps-services/co-ordinate-converter#results.

A series of maps are provided with an outline of the site boundary. It is important to note that these boundaries have no legal or definitive basis. They are indicative only of the limits of exposure or of geological interest, and not based on detailed field and boundary surveys, which were outside the scope of this contract. Boundaries are drawn to include the geological or geomorphological interest of the site, but are extended to the nearest mappable boundary, such as a field boundary, stream, road or edge of forestry. On a few sites, such as in open mountain terrain, it is impractical to find a boundary within a reasonable distance and an arbitrary line may be defined. If any such site is fully assessed for NHA status in the future, such a boundary may require small revisions.

For sites that have been recommended or which will be recommended for NHA designation, detailed site boundary maps will become available to the Local Authority through NPWS as the designation process is undertaken. Some areas may already be available if they are proposed NHAs (pNHA), under the Wildlife (Amendment) Act 2000. Areas which have been designated as Special Areas of Conservation (SAC) under European Habitats Directives will also have statutory boundaries already determined. The geological interest may be included within these wider areas of nature conservation.

In terms of any geological heritage site designation as NHA, due process of site reporting, boundary survey and very importantly, consultation with landowners, will take place before GSI finalises recommendations with NPWS on the most important sites to be designated. Any landowner with concerns over any site is encouraged to contact Sarah Gatley, Head of the Geoheritage Programme, in the Geological Survey of Ireland, Beggars Bush, Haddington Road, Dublin 4. Phone 01-6782837. Email: sarah.gatley@gsi.ie



Simplified Geological Map of County Laois with County Geological Site locations indicated, also outlining the main geological units.

The County Geological Sites

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Abbeyleix Bog**
Other names used for site	Killamuck Bog, Collin's Bog
IGH THEME	**IGH7 Quaternary, IGH16 Hydrogeology**
TOWNLAND(S)	**Tullyroe, Abbeyleix Demesne, Killamuck, Clonkeen, Granafallow,Ballymullen, Knocknamoe**
NEAREST TOWN/VILLAGE	**Abbeyleix**
SIX INCH MAP NUMBER	**23, 29**
ITM CO-ORDINATES	**643300E 682700N (centre of bog)**
1:50,000 O.S. SHEET NUMBER	**60 GSI BEDROCK 1:100,000 SHEET NO. 15, 18**

Outline Site Description
Abbeyleix Bog comprises an extensive area of peatland extending in a low-lying hollow, north to south, for approximately 3 kilometres south of Abbeyleix Town.

Geological System/Age and Primary Rock Type
Abbeyleix Bog is situated within an area dominated by bedrock of Lower Carboniferous limestone. The bog peat is Quaternary in age, having formed in marshy conditions as an extensive envelope of the landscape in the area since deglaciation, and mostly from about 7,000-10,000 years ago.

Main Geological or Geomorphological Interest
While today a generally flat and open landscape, the locality of Abbeyleix Bog was covered by bog, marsh, quicksand, and ponds thousands of years ago as the bog formed. At that time the marshy ground would have been surrounded by dense woodlands of birch, willow, hazel and alder. Today, the bog is also surrounded around its perimeter by broadleaf forestry, recently planted after the peat was cut.

The bog itself comprises partially decomposed vegetation, which sank into marshland within the wide, wet basin. This material was laid layer upon layer for thousands of years, as the fibrous peat formed and eventually decayed into amorphous organic material over time.

The locality was therefore gradually covered by the rising bogland, which formed a dome-shaped, 'raised' bog. The site has had a boardwalk built across it recently, as a number of walks have been developed across the site. Other features of peat interest are included within the site boundary, such as intact and drained peat, small pockets of industrially-cutover peat, peat cut by locals, wetlands, and recovering peat.

Site Importance – County Geological Site
As the various forms of peat are all accessible within a small locality, and as the bog and its amenity walks exist due to the geological and hydrogeological process of peat growth, the locality is ranked as a County Geological Site.

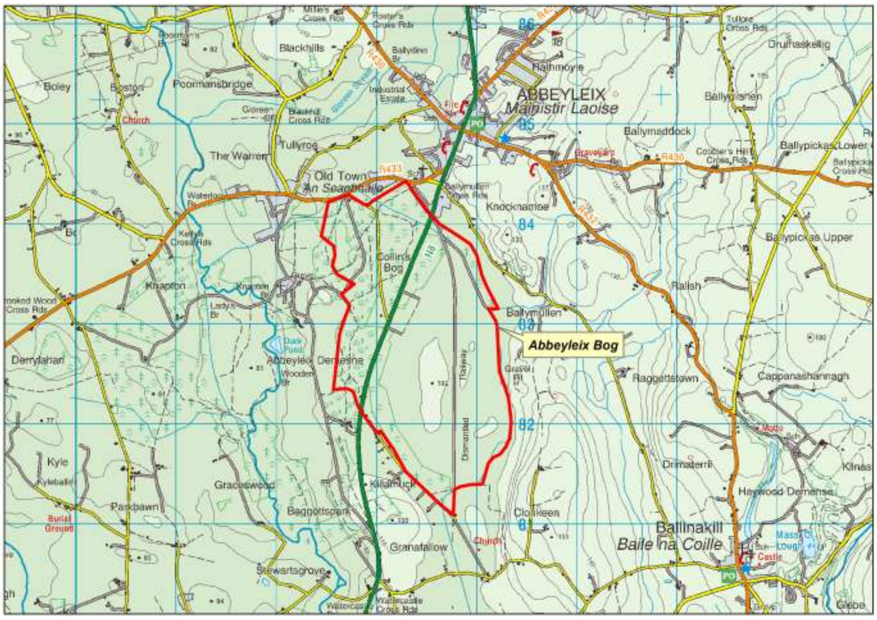
Management/promotion issues
Abbeyleix Bog has a number of walkways within, which were developed by local interests in conjunction with Bord na Móna. The geological aspects of the feature could be highlighted more in some of the promotional material.

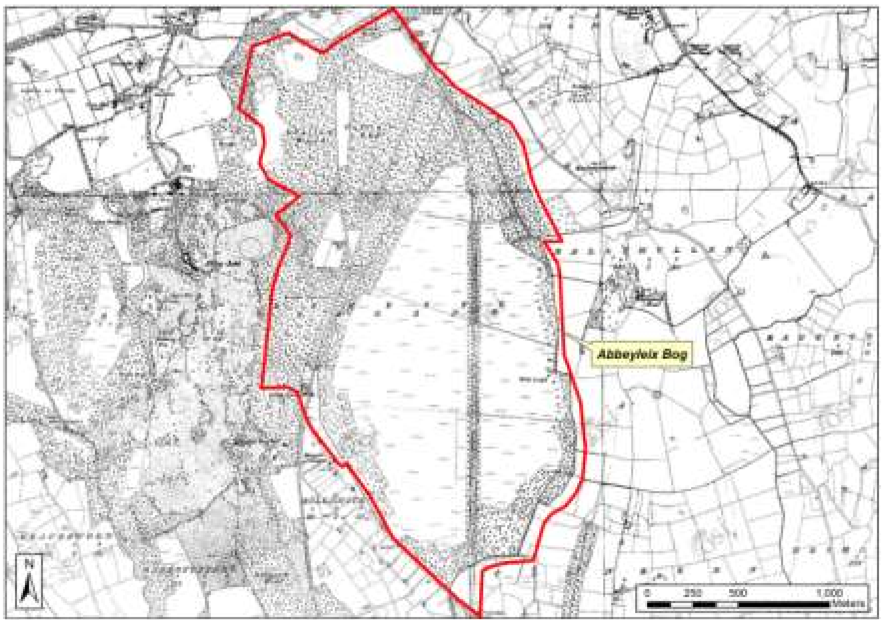
The main dome of Abbeyleix Bog, with the boardwalk across the feature also visible.

One of the drainage channels exiting the northern side of the bog.

A signboard detailing the flora and fauna of the bogland.

Some of the narrow borardwalk through birch woodland at the edge of the feature.


ABBEYLEIX
Mainistir Laoise
Abbeyleix Bog
Old Town
Blackhills
Poormansbridge
The Warren
Tullyroe
Knapton
Derrylahan
Abbeyleix Demesne
Collins Bog
Knocknamoe
Ballymullen
Rathmoyle
Ballymaddock
Ballypickas Upper
Ralish
Raggettstown
Cappanashannagh
Drimaterril
Haywood Demense
Ballinakill
Baile na Coille
Closkeen
Granafallow
Baggottspark
Graceswood
Kilamuck
Stewartsgrove
Kyle
Parkbawn
Boley
Boston
Drumaskellig
Dismantled
Church

Abbeyleix Bog
N
0 250 500 1,000
Meters

Abbeyleix Bog
N
0 250 500 1,000
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Arless Quarry**
Other names used for site	Arless Contact, Arless, Arles Quarry
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Ballynagall**
NEAREST TOWN/VILLAGE	**Ballickmoyler**
SIX INCH MAP NUMBER	**32**
ITM CO-ORDINATES	**666480E 682575N (centre of quarry)**
1:50,000 O.S. SHEET NUMBER	**61 GSI Bedrock 1:100,000 Sheet No.** 16

Outline Site Description
A small, disused quarry with a restricted area of bedrock outcrop.

Geological System/Age and Primary Rock Type
The quarry is excavated into bedrock where the contact between the Upper Carboniferous (Namurian) age shale of the Luggacurren Shale Formation and the Lower Carboniferous limestone of the Clogrenan Formation can be seen. The Upper Carboniferous shale overlies the limestone in the quarry, and is stratigraphically younger in age.

Main Geological or Geomorphological Interest
The quarry itself is a nice feature, at the base of the slope scarp at the eastern end of the Castlecomer Plateau, and picked out by mature whitethorn trees. The quarry has not been used for some time, and the faces are somewhat overgrown by the surrounding trees.

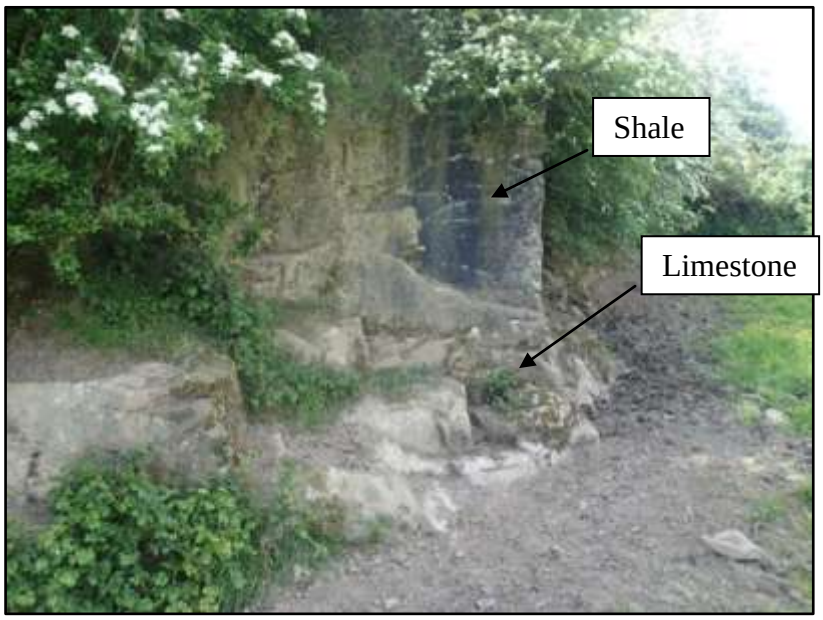
This is a good site for observing two rock types separated within the stratigraphic column as they are of two different ages, but the younger bedrock sits on top of the older bedrock here in a small, disused quarry outcrop within a restricted area only a few metres across.

The shale at the top of the rock face is black and massive, while the underlying grey limestone is grey and karstified, with fissures enlarged by dissolution of the rock. Both the colour and structure of the two rock types therefore differ in an easily observable manner.

Site Importance – County Geological Site
This is a good representative site for a significant part of Laois' geology and the contact between the bedrocks of two ages is not well displayed in many localities.

Management/promotion issues
The inclusion of this quarry as a County Geological Site has absolutely no implications for the normal permitted operation of the land around the quarry. It is hoped that the owner will continue to allow specialist research visits by geological groups by arrangement. It is not suited to general promotion as the quarry is on private land. Health and safety rules must be followed by any geologists visiting with the permission of the owner.

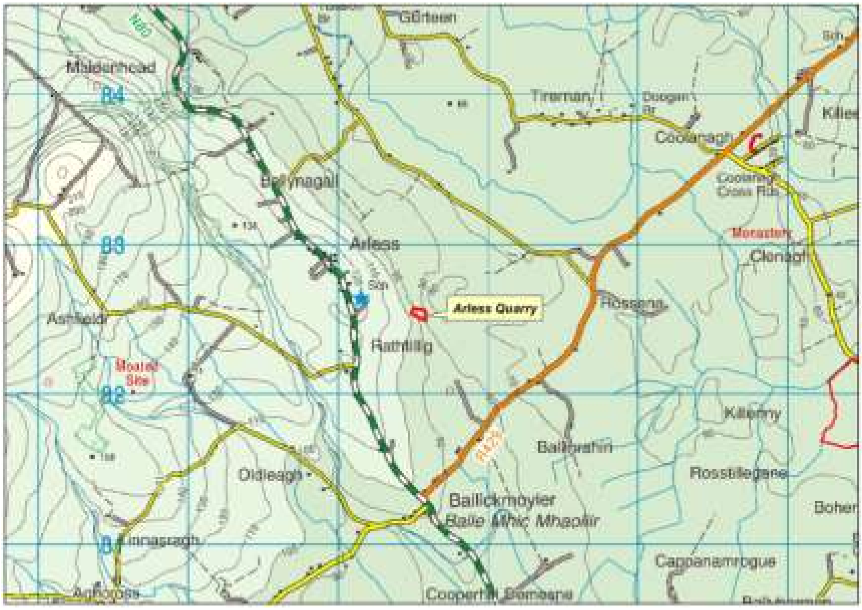
Arless Quarry, looking east.



Looking northwards across the outcrop; the contrast between the black, massive shale and the underlying bedded limestone is clearly seen.

A view of the limited extent of bedrock outcrop at Arless Quarry.

Solutionally enlarged fissures in the limestone at the base of the exposure.


Arless Quarry
Arless
Rathtillig
Ballickmoyler
Balle Mhic Mhaoilir


Arless Quarry
N
0 25 50 100 150 Meters


School
Grave Yard
R.C.Church
Parochial Ho.
Arless Quarry
R A T H T I L L
N
0 25 50 100 150 Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Ballyadams Quarry**
Other names used for site	
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Ballyadams**
NEAREST TOWN/VILLAGE	**Athy**
SIX INCH MAP NUMBER	**19**
ITM CO-ORDINATES	**662179E 691626N**
1:50,000 O.S. SHEET NUMBER	**55 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
This site is a large working quarry.

Geological System/Age and Primary Rock Type
The quarry works a limestone formation named after this place – the Ballyadams Formation, which is of Holkerian to Asbian age within the Viséan Carboniferous Limestone succession.

Main Geological or Geomorphological Interest
This site is a good representative of the thick sequence of shelf limestones (formed in shallow marine seas) in the Stradbally district. The formation as a whole may be up to 700m thick and the height of the quarry face exposes a large section of this. Cyclical deposition is evident in the face, with several major discontinuities visible. These are clay wayboards marking a volcanic ash eruption which may have created a clay rich horizon or a 'fossil' soil. They may also be karstic surfaces where there is some karstic solution due to exposure or emergence above the sea water for a period.

The quarry faces also show the lateral continuity of the limestone beds which are consistently developed over large areas, and in this region, are largely unbroken by faulting. There are also some very fossiliferous beds (mostly recorded in borehole cores), particularly brachiopod shells and corals.

Site Importance – County Geological Site; may be recommended for Geological NHA
This site may be considered for NHA status under the IGH8 Lower Carboniferous theme when all sites are reviewed on a national basis but it is certainly a robust County Geological Site as a representative site for the Carboniferous Limestone of the south east of the county.

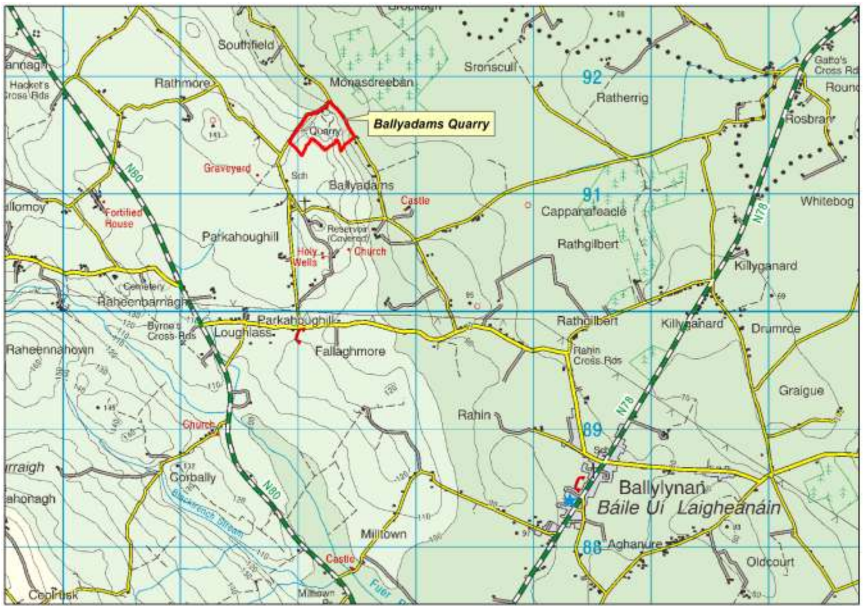
Management/promotion issues
The working quarry is unsuitable for promotion without some a specific arrangement supported and agreed by the Roadstone management, as it is a potentially dangerous workplace environment.

Panorama view of Ballyadams Quarry from the lower, northern side.

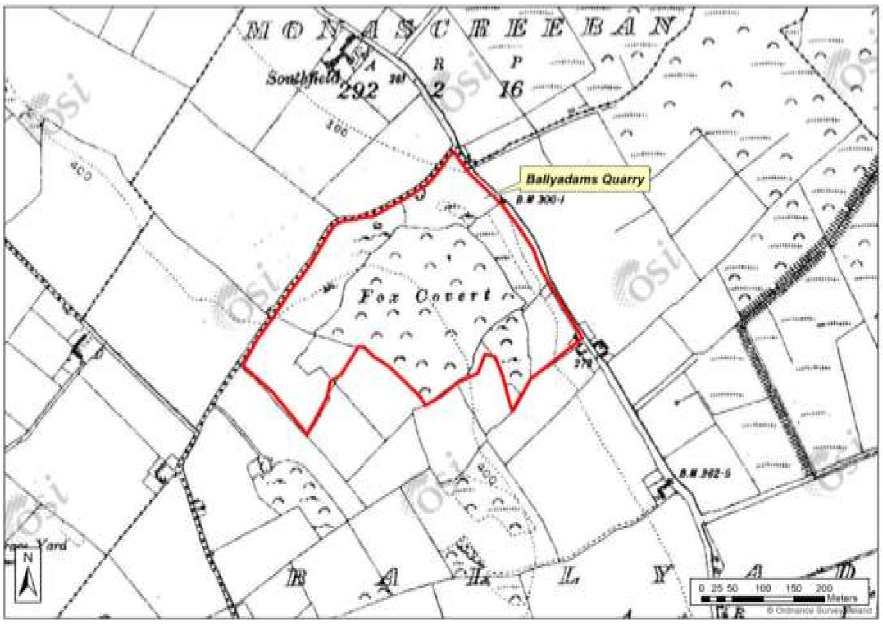
The main quarry faces shows several marked discontinuities which are clay wayboards representing periods of emergence or volcanic ash falls.

A clay wayboard is seen at the top of the massive beds, with thin beds above it, in an older section on the western quarry margin.

Panorama view of the quarry face from the quarry floor.


Ballyadams Quarry
Southfield
Monasdreeban
Rathmore
Sronscull
Ratherrig
Quarry
Graveyard
Ballyadams
Castle
Cappanafeacle
Rathgilbert
Parkahoughill
Holy Wells
Church
Fortified House
Raheenbarnagh
Loughlass
Fallaghmore
Byrne's Cross Rds
Raheennahown
Killyganard
Drumroe
Rahin Cross Rds
Rahin
Graigue
Church
Corbally
Ballylynan
Báile Uí Laigheanáin
Milltown
Castle
Aghanure
Oldcourt
Whitebog
Rosbran
N80
N78


Ballyadams Quarry
N
0 25 50 100 150 200
Meters


MONASCREEBAN
Southfield
A R P
292 2 16
Ballyadams Quarry
Fox Covert
B.M 300-1
B.M 302-5
BALLYAD
N
0 25 50 100 150 200
Meters
© Ordnance Survey Ireland

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Baunreagh Quarry**
Other names used for site	
IGH THEME	**IGH4 Cambrian-Sliurian**
TOWNLAND(S)	**Baunreagh**
NEAREST TOWN/VILLAGE	**Mountrath**
SIX INCH MAP NUMBER	**11**
ITM CO-ORDINATES	**628170E 702615N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
Small roadside quarry in two sections, heavily overgrown with vegetation.

Geological System/Age and Primary Rock Type
The siltstone rocks exposed are of the Silurian Capard Formation, found throughout the Slieve Bloom inlier (inlier = older rocks surrounded by younger strata).

Main Geological or Geomorphological Interest
The rocks exposed are of the Silurian Capard Formation, which underlies all of Slieve Bloom. The nature of these rocks and their geological history means that they are very rarely exposed naturally, except in some river beds which can be very difficult to access. So the few man-made exposures are important additions to the understanding and mapping of the rocks, especially as they can provide a much more three dimensional picture of the nature of the rocks. This quarry provides one of the largest exposures available, although it is now much obscured by moss and grass and some saplings.

The rock is a generally uniform siltstone with a poorly developed ‘slaty’ cleavage, meaning it weathers and breaks into smallish pieces in natural circumstances and does not remain as a rock face. The breakdown of the rock into fragments helps soils form and exposures disappear. A horizontal trace across the quarry face is now obscured but was interpreted as a fault gouge – ground up paste of rock from the movements along a small fault.

The few fossils recovered from these siltstones rocks are of Wenlock age, within the Silurian Period. The occurrence of a particular ‘floating’ crinoid called *Actinocrinus wynnei* helps indicate that these were deposited in a deep water environment and they are very similar to same age rocks across Slieve Phelim, Knockshigowna, Slieve Arra, and other uplands of Silurian rocks in the south Midlands.

Site Importance – County Geological Site
Baunreagh Quarry is a good representative example of the Silurian rocks which are otherwise very poorly exposed within the large area where they outcrop in Slieve Bloom. It therefore deserves CGS status.

Management/promotion issues
The quarry has previously been the site of some dumping and small pockets of refuse remain on the floor of the quarry which has a coating of tarmacadam chippings from previous use as a road surfacing resource. The creation of a roadside drainage cut and a berm of material has stopped any vehicles pulling up beside the quarry and all of the floor and walls of the quarry are now heavily vegetated with moss, grass and tree saplings. The geological heritage would benefit greatly from a selected vegetation clearance project.

The highly vegetated face of the larger main quarry at Baunreagh.

The main face is largely obscured by moss.

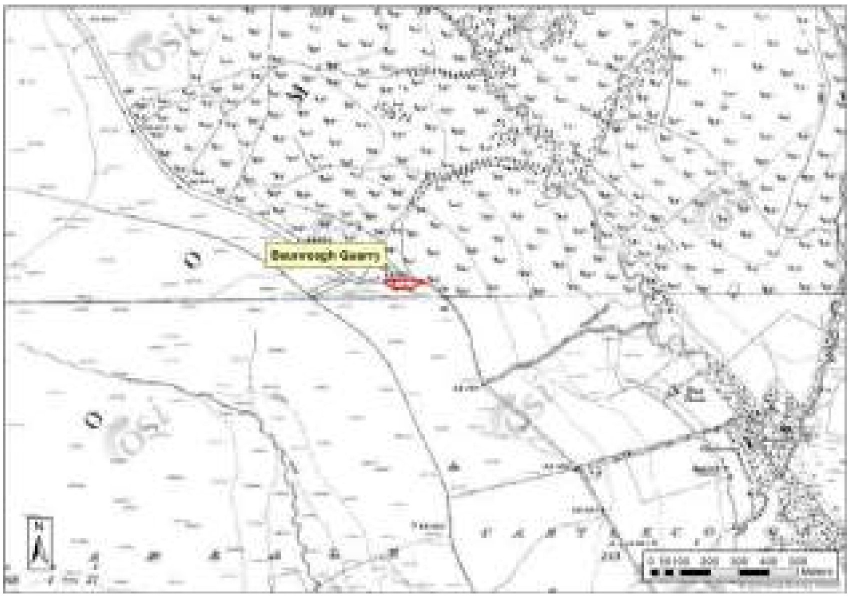
Baunreagh Quarry is easily missed when driving by.

The smaller quarry on the eastern side is small and similarly overgrown.

The higher face is not well exposed due to vegetation growth.


Baunreagh Quarry
SLIEVE BLOOM
Sliabh Bladhma
MOUN
Barna
Stillbrook Hill


Baunreagh Quarry
N
0 50100 200 300 400 500 Meters


Baunreagh Quarry
N
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Carroll's Quarry**
Other names used for site	Knockacoller Quarry
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Knockacoller**
NEAREST TOWN/VILLAGE	**Castletown**
SIX INCH MAP NUMBER	**16**
ITM CO-ORDINATES	**652950E 698200N**
1:50,000 O.S. SHEET NUMBER	**54, 55 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A small but prominent, steep-sided limestone hill capped by the ruins of a Norman castle fortress, dating back to the early 12th century.

Geological System/Age and Primary Rock Type
Bedrock comprises Lower Carboniferous (Mississippian, Courceyan) fossil-rich Ballysteen Limestone Formation, deposited in open fully marine depositional conditions.

Main Geological or Geomorphological Interest
The Ballysteen Limestone Formation rocks are typically highly fossiliferous, dark grey, well bedded, muddy limestones, with bands of calcareous shales between the limestone beds. The strata dip gently 5°-15° south, and the quarry faces (east, south, west) exhibit excellent exposures of strata.

This site has hosted a quarry, on the southeast side of Bilberry Hill for at least 170 years. A quarry is illustrated on early on OSI six-inch maps dating from the mid-1800s. Early GSI one inch scale sheets (Sheet 127) from the late 1800's show that the site was recognised as an important fossil locality.

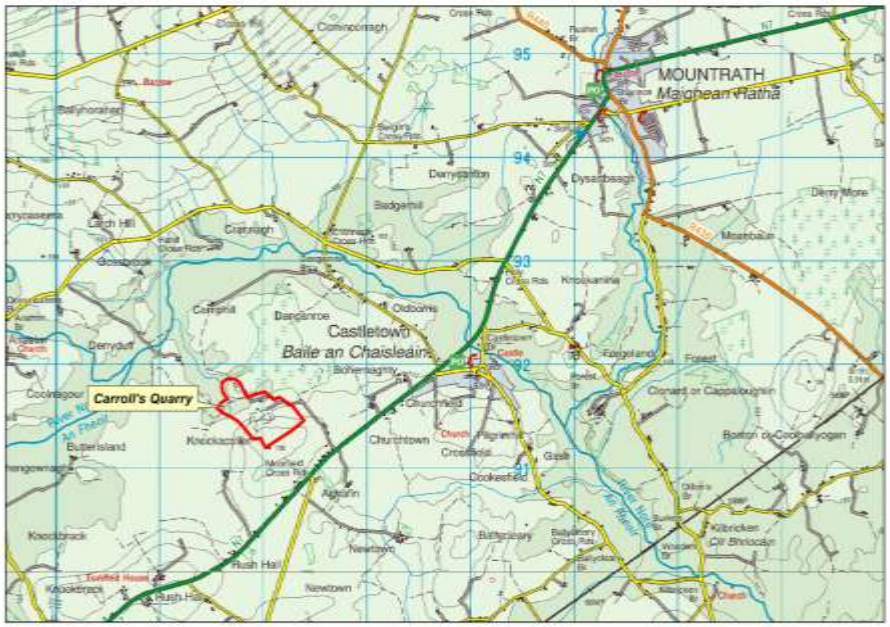
The quarry has produced stone for aggregates, chippings, railway ballast, lime dust, screenings, and drainage stone. Limestones of the Ballysteen Limestone Formation are worked for aggregate in several quarries in the region.

Site Importance – County Geological Site
This County Geological Site is an important representative site exhibiting fresh and extensive exposures of Ballysteen Limestone Formation. The site is adjacent to the NE quarter of Knockacoller Bog SAC (002233).

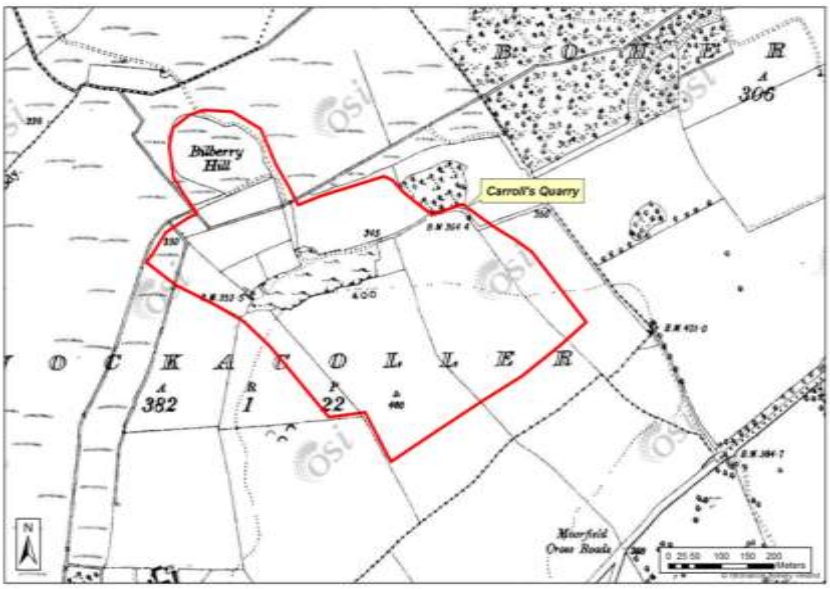
Management/promotion issues
As a working quarry, the listing as a County Geological Site has no implications for the normal operation of the quarry, subject to standard permissions and conditions under planning and environmental legislation. In the event of any future changes in quarrying operations, it would be desirable to consider retaining representative faces for geological purposes. As an operating quarry, the site is not suitable for any general promotion. Any correspondence can be made to the owner and operators Carroll Quarries, Knockacoller, Castletown, Co. Laois.

Limestone quarry faces at northwest part end of quarry.

South quarry face.


MOUNTRATH
Maigh nEalla
Castletown
Baile an Chaisleáin
Carroll's Quarry


Carroll's Quarry


Carroll's Quarry
Philberry Hill

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Castlecomer Borehole - Swan**
Other names used for site	Swan Artesian borehole
IGH THEME	**IGH16 Hydrogeology**
TOWNLAND(S)	**Moyadd**
NEAREST TOWN/VILLAGE	**Wolfhill**
SIX INCH MAP NUMBER	**31**
ITM CO-ORDINATES	**656310E 682460N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
An artesian borehole.

Geological System/Age and Primary Rock Type
The borehole is drilled through Upper Carboniferous (Pennsylvanian) bedrock of the Westphalian Coolbaun Formation shales into the fine-grained Swan Sandstone Formation. The catchment area of the Swan borehole lies at the northern end of the Castlecomer Plateau.

Main Geological or Geomorphological Interest
Located beside Swan Bridge, this artesian well consists of a pump house (elevation 170m OD) housing a borehole (Production Well LS 31/1) drilled to a depth of 39m, tapping a confined aquifer of Swan Sandstone, about 10m thick. The static water level (the level to which the confined aquifer water would normally level off) is around 174m OD.

An artesian well is one that is drilled into a confined groundwater aquifer, in this case sandstone overlain by low permeability shales. The confined aquifer is recharged by rainfall falling on the unconfined, outcropping portion of the sandstone aquifer around the perimeter of the Castlecomer plateau.

At least one major phase of folding around 300 million years ago (Variscan Orogeny) caused considerable fracturing in the underlying Clay Gall Sandstone Formation (lower) and Swan Sandstone Member (upper), but did not affect as severely the surrounding and overlying impermeable shales.

Carbon isotope dating of water from the well carried out in 1976 yielded an age of around 1,440 years, indicating that water moves very slowly through the aquifer.

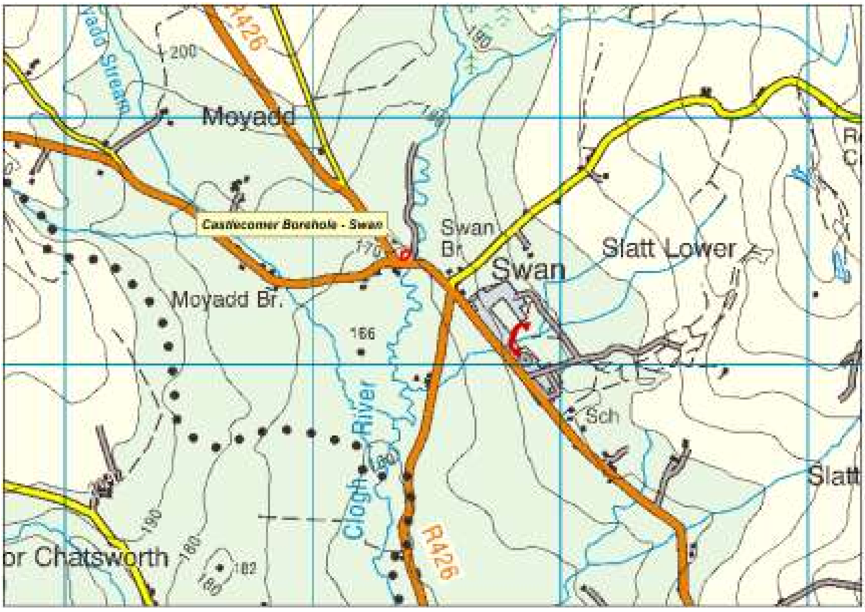
The well operates at a pumping rate of 916m^3 per day (8,400 gallons per hour) and provides an abstract rate of 590 m^3 per day (130,000 gallons per day).

Site Importance – County Geological Site
This is an important hydrogeological phenomenon of artesian well and confined aquifer behaviour in this part of County Laois and is a good example of an artesian well that serves a public water supply (GSI Well ID 2317NE W07). It is therefore a very important County Geological Site considering its value to the local Swan Water Supply Scheme. The aquifer is categorised as: Locally Important (Lm), generally moderately productive, fractured sandstone aquifer.

Management/promotion issues
The Swan Water Supply Scheme groundwater source is deemed to be relatively protected from contamination by its confined aquifer condition and its distance from the surface recharge area, located around 1km up-gradient to the north and northwest. Contamination at the recharge area would be unlikely to affect the source for many hundreds of years.

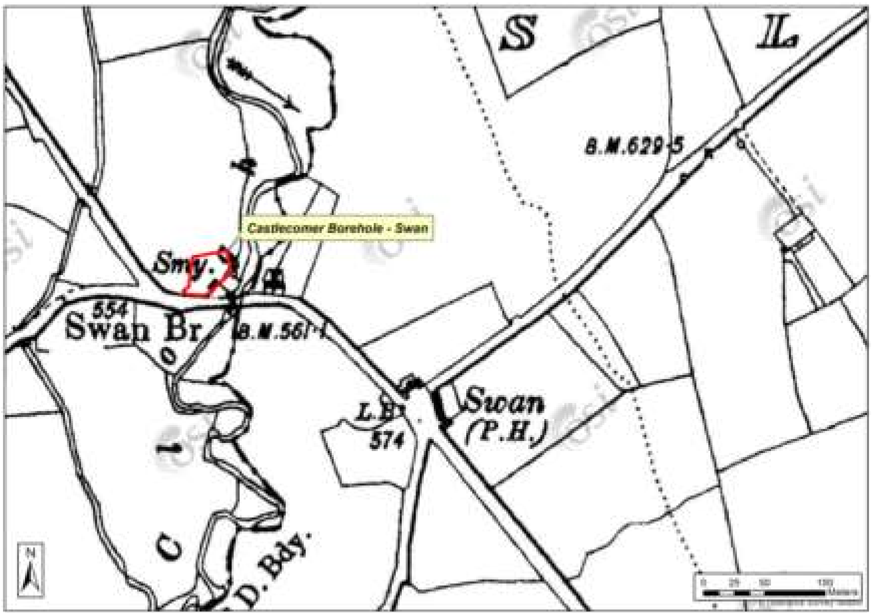
Pumphouse and works at Swan Public Water Supply Scheme. Clogh River to right near trees.

Swan Public Water Supply Scheme viewed from Swan Bridge.



Moyadd
Moyadd Stream
R426
Castlecomer Borehole - Swan
Swan Br
Swan
Slatt Lower
Moyadd Br.
Sch
Clogh River
Slatt
or Chatsworth

Castlecomer Borehole - Swan
Meters



Castlecomer Borehole - Swan
Smy.
Swan Br
B.M.629·5
B.M.561·1
554
Swan (P.H.)
L.B. 574
D. Bdy.
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Clogh River**
Other names used for site	
IGH THEME	**IGH14 *Fluvial* and Lacustrine Geomorphology**
TOWNLAND(S)	**Moyadd, Slatt Lower, Aughatubbrid or Chatsworth,**
NEAREST TOWN/VILLAGE	**Swan**
SIX INCH MAP NUMBER	**31**
ITM CO-ORDINATES	**656270E 681270N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A meandering river with braided channels.

Geological System/Age and Primary Rock Type
The river is a post-glacial landform, developing its present form in the past 10,000 years (Holocene). The river is underlain by Pennsylvanian (Carboniferous) age shallow marine shale and siltstone.

Main Geological or Geomorphological Interest
The feature exhibits well developed meanders and braided channels along an approximately 2.5km stretch of the river course on either side (north and south) of the Swan Bridge. The features occur as far as and south of the Laois-Kilkenny border.

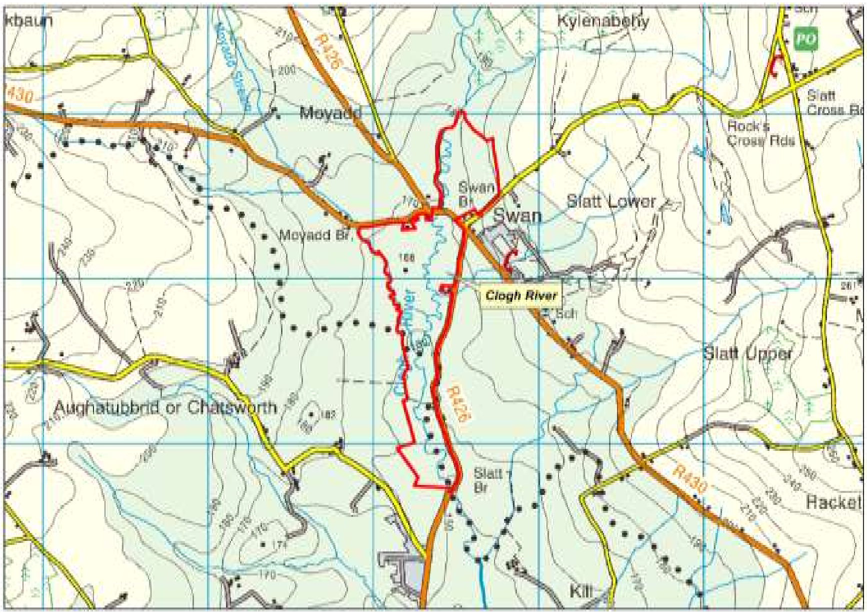
Site Importance – County Geological Site
This is an important County Geological Site in terms of fluvial geomorphology. The physical response of, and subsequent changes to, the river course as a result of flash and prolonged flooding events, will be of interest in the future.

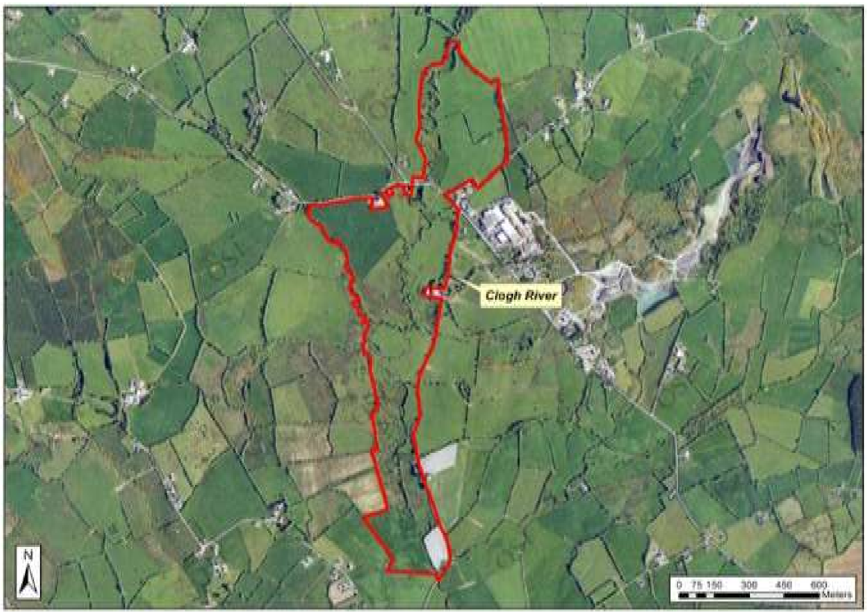
Management/promotion issues
The site traverses the Laois-Kilkenny county boundary, and is primarily bounded by private land. A limited number of narrow bridges afford a view of the site. However, as these locations are on busy public roads, the site is not deemed suitable for public promotion. The site may be of education and research interest, and interested groups should seek landowner permission to access the river course.

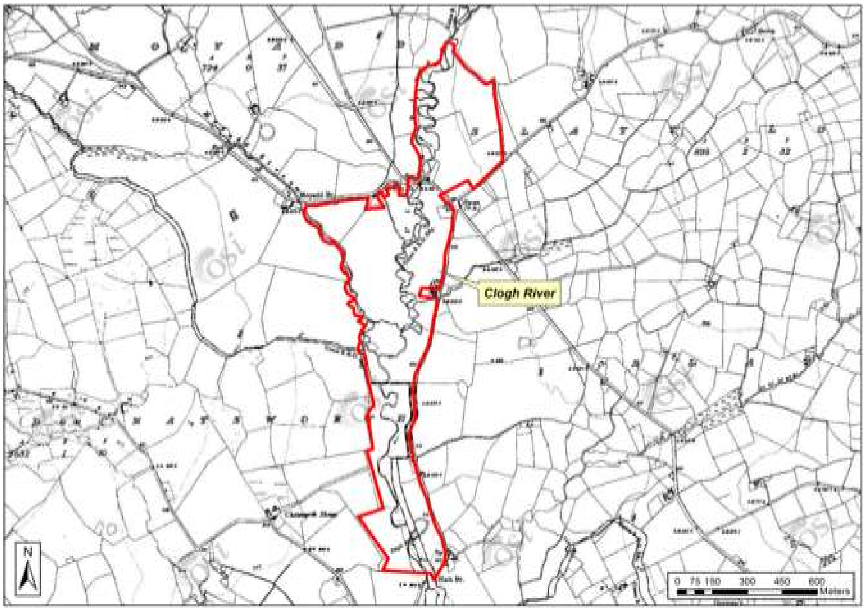
Point bar and cut bank in river channel, viewed looking downstream towards Slatt Bridge.

Close up of cut channel and point bar displayed in image above. Looking downstream, south.

Clogh River viewed from Slatt Bridge, looking northwest.


Kylenabehy
Moyadd
Swan
Swan Br
Slatt Lower
Rock's Cross Rds
Moyadd Br.
Clogh River
Slatt Upper
Aughatubbrid or Chatsworth
R426
R430
Slatt Br
Kill
Racket


Clogh River
0 75 150 300 450 600 Meters


Clogh River
0 75 150 300 450 600 Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Clonaslee Eskers**
Other names used for site	The Clonaslee Esker, The Kinnitty-Clonaslee Eskers
IGH THEME	**IGH7 Quaternary**
TOWNLAND(S)	**Clonlyon, Coolagh, Garryhedder, Castlecuffe**
NEAREST TOWN/VILLAGE	**Clonaslee**
SIX INCH MAP NUMBER	**2**
ITM CO-ORDINATES	**625300E 711500N (centre of main esker segment)**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
The Clonaslee Eskers and surrounding deposits include a large accumulation of sands and gravels deposited both under the ice sheet and at its margin as the ice withdrew westwards across north Laois, north of Slieve Bloom, at the end of the last Ice Age.

Geological System/Age and Primary Rock Type
The Clonaslee Eskers and surrounding sands and gravels are formed along the line of suture between the Devonian Old Red Sandstones of the Slieve Bloom Mountains, and the Lower Carboniferous limestones of the lowlands surrounding them.

The eskers themselves are Quaternary in age, having been deposited either under or at the edge of the westward-retreating ice sheet during deglaciation, approximately 14,000 years ago.

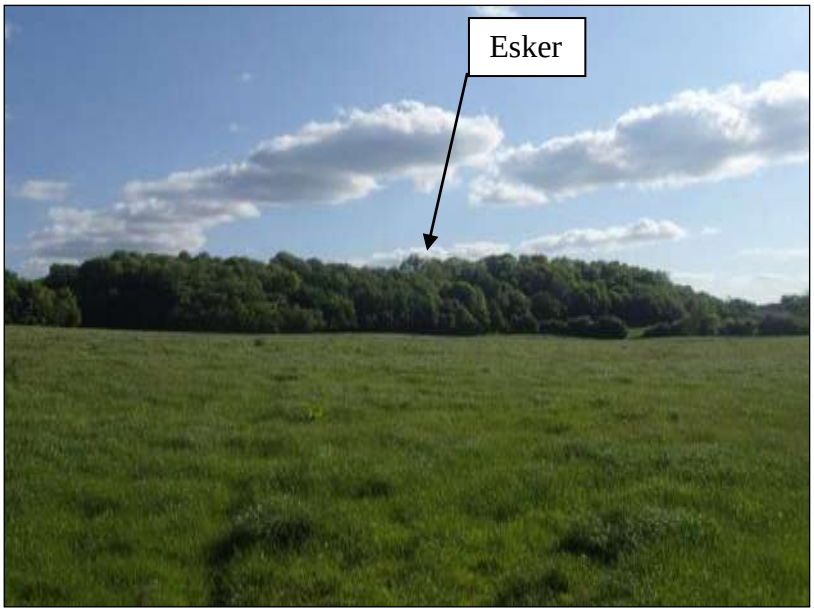
Main Geological or Geomorphological Interest
Where present the esker ridges are striking features, standing proud of the flat landscape of till (boulder clay) upon which it was deposited. Intact portions just north of the main R421 road west of Clonaslee, and within Coolagh Townland, are especially impressive. In both localities the esker is comprised of a haphazard arrangement of raised, elevated ridges of sands and gravels. Some of the hollows between the ridges are remarkably deep and wide.

The esker feature is important in that it records faithfully the ice movement across this area of northwest Laois, where the ice flow swept around the Slieve Bloom Mountains. As the glacier retreated across the area north of the mountains, the margin began to break up and the irregular, hummocky topography of these eskers records this ‘dead ice’ environment. Associated sands and gravels in Garryhedder and Coolagh Townlands, flanking the esker, are probably part of associated ice marginal fans. The sands and gravels within the feature are comprised chiefly of limestone clasts, but with significant portions of shale and sandstone also.

Site Importance – County Geological Site
The features are haphazardly arranged, high, striking examples of dry sand and gravel ridges, and stand proud of the surrounding landscape. These eskers and their 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
This system comprises a well-defined landform sequence and should be listed as a County Geological Site. The eskers and their adjacent area across Derry Bog have been designated a pNHA and SAC (sitecode 000859) and all of this area, including the portion of Derry Bog, is proposed here as a County Geological Site. The esker ridge segments themselves, and the bog, are not worthy of pNHA status geologically or geomorphologically.

A signboard along the R421 road west of Clonaslee, where the features can be well seen, might help promote the features.



The main Clonaslee Esker, looking north, across Coolagh Townland.

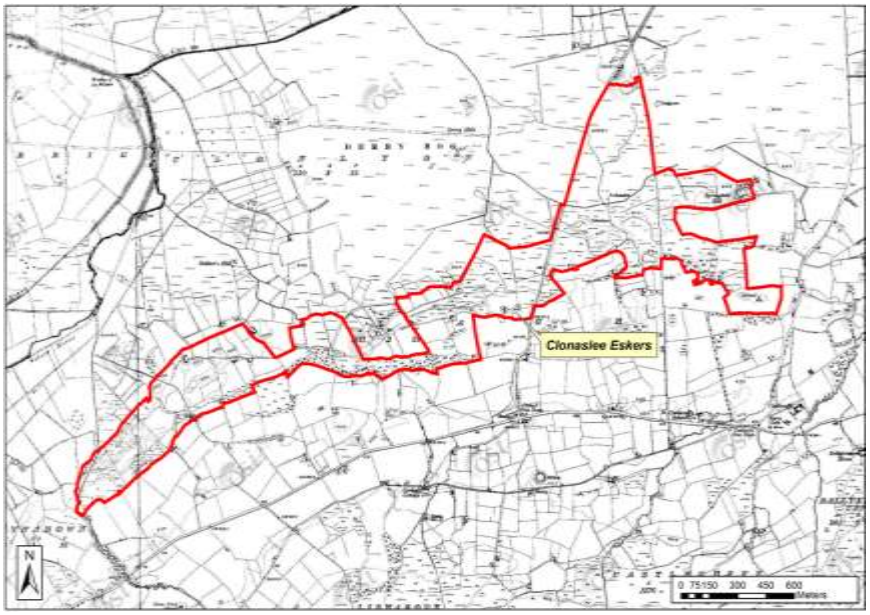
Looking north across haphazard esker topography and the flanking Derry Bog, in Coolagh.

Some of the hummocky terrain where the esker and fans meet, in Garryhedder.

An exposure into the main esker ridge in Coolagh.


Clonaslee Eskers


Clonaslee Eskers
N
0 75150 300 450 600
Meters


Clonaslee Eskers
N
0 75150 300 450 600
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Clopook Cave**
Other names used for site	
IGH THEME	**IGH1 Karst**
TOWNLAND(S)	**Clopook**
NEAREST TOWN/VILLAGE	**Stradbally**
SIX INCH MAP NUMBER	**19**
ITM CO-ORDINATES	**658300E 690770N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
A small cave is situated in the side of a possible relict karst tower.

Geological System/Age and Primary Rock Type
The cave is in Carboniferous Limestone rock, in the Clogrenan Formation which is the youngest part of the limestone sequence. The age of the cave is unknown but may be older than the immediate post glacial period of the last 10,000 years (Holocene).

Main Geological or Geomorphological Interest
This cave is neither long nor remarkable but is a relict of the broader landscape evolution of the Stradbally area. This is one of very few caves in Laois, despite the widespread bedrock of Carboniferous limestone. It is found on the flank of Clopook Hill, which is one of many hills in the area between Portlaoise and Stradbally that are widely believed to be tower hums. Hums is a term for remnant or degraded tower karst, of the type found today in China and SE Asia. The Ice Age would have removed most evidence of this, leaving only remnant hills such as Clopook Hill. The cave could date back to an interglacial period or even older. There is no active stream flow, so it formed under an entirely different hydrogeological regime and is now a 'fossil' or inactive cave. The shape of the open passage suggests that it was originally a large phreatic (i.e. water filled) cave passage, perhaps 5-10m wide. It is filled today, nearly to the roof, with earth and sediment. There is some potential for evidence preserved in this sedimentary infill that would give clues about the landscape that has disappeared from above.

Site Importance – County Geological Site
This site is one of only three caves known in Laois and is important as a County Geological Site for its association with a hum, and potential landscape development information.

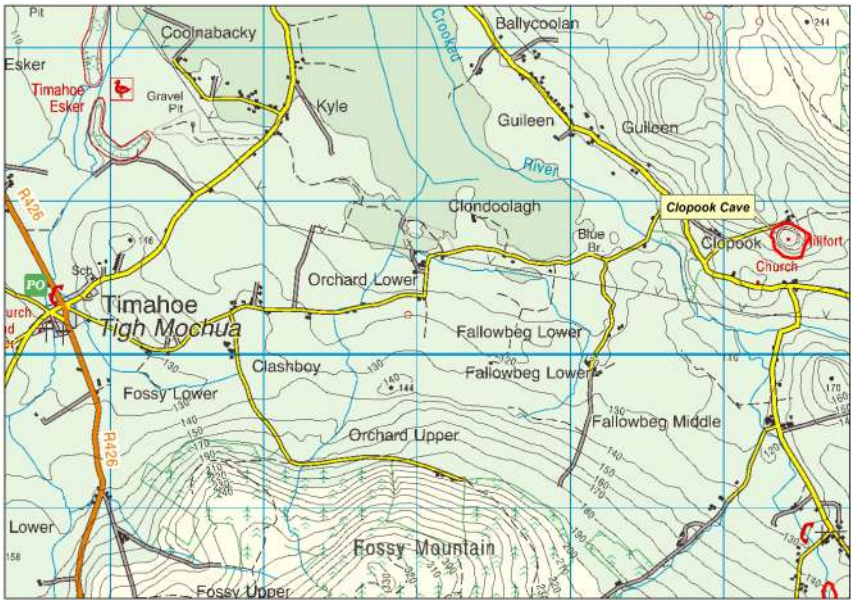
Management/promotion issues
The cave is on private farmland and should not be visited without the permission of the landowner. It is of no interest to sport cavers, being so short and inactive. It is not suited to promotion as it is low and muddy, without stalactites or stalagmites and is possibly home to some mammals.

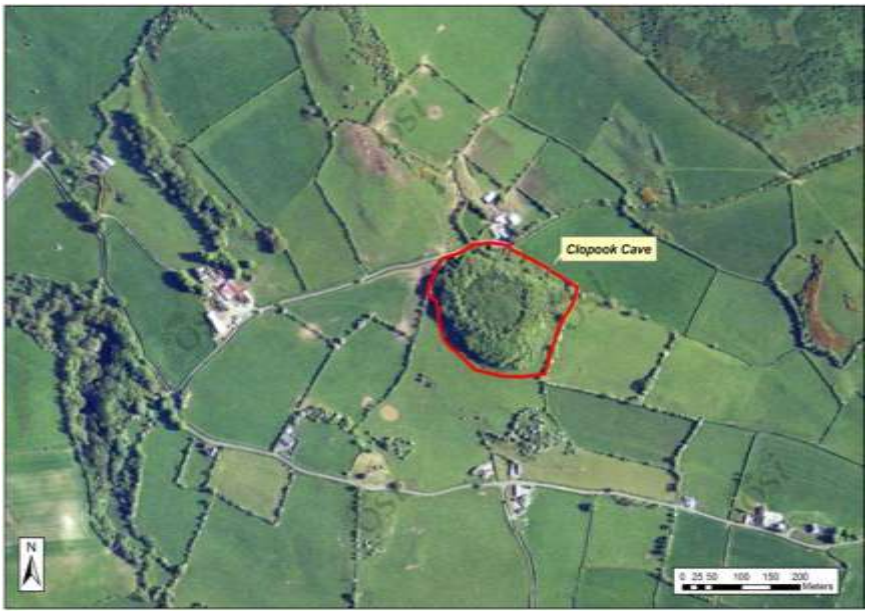
The entrance to Clopook Cave.

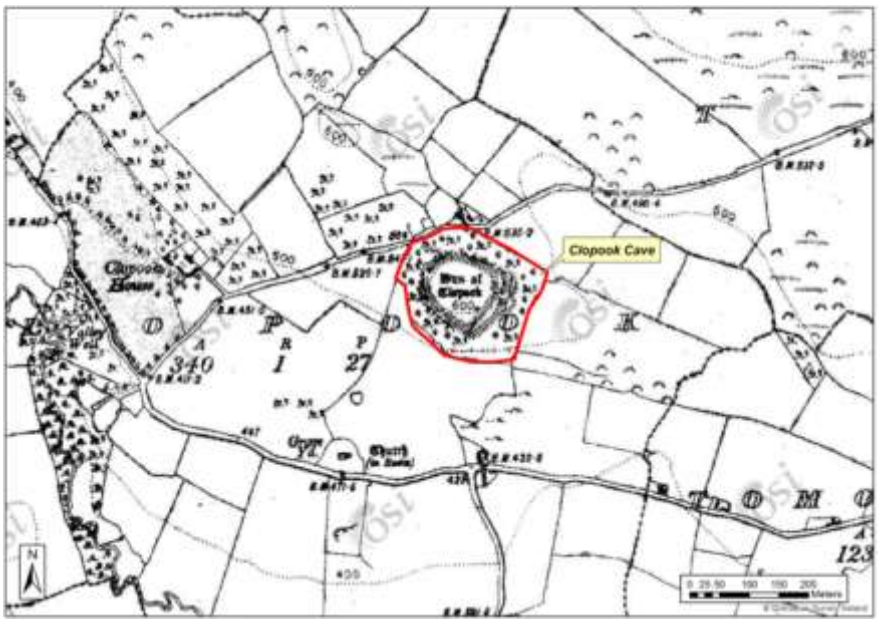
Animal burrows in the floor of the cave earth.

The entrance to Clopook Cave viewed from the inside looking out.

The limestone hill of Clopook, with the woods hiding the steep cliff or escarpment around the whole hill.

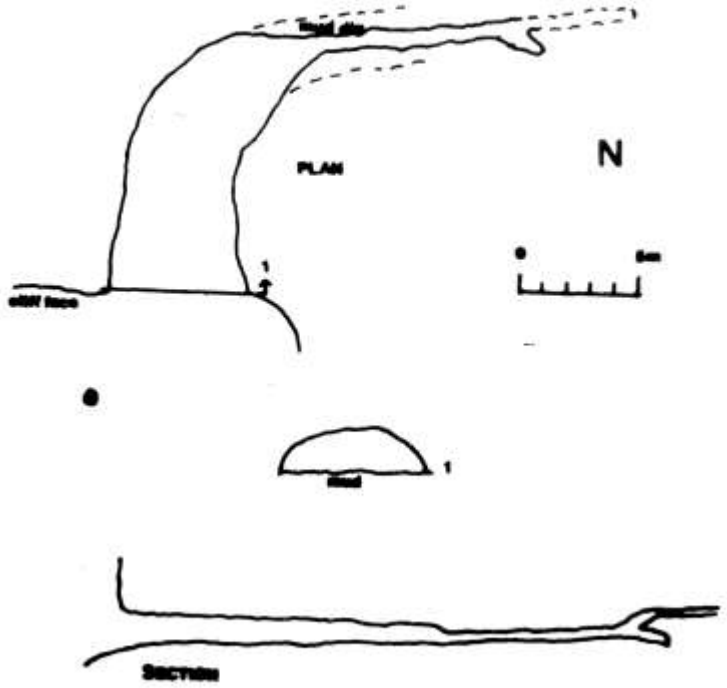

Coolnabacky
Ballycoolan
Esker
Timahoe Esker
Gravel Pit
Kyle
Guileen
Guileen
River
Clondoolagh
Clopook Cave
Blue Br.
Clopook
Church
Orchard Lower
Timahoe
Tigh Mochua
Fallowbeg Lower
Clashboy
Fallowbeg Lower
Fossy Lower
Fallowbeg Middle
Orchard Upper
Lower
Fossy Mountain
Fossy Upper
R426
R426


Clopook Cave


Clopook Cave

Clopook Cave, Co. Laois.

Survey: J. Dowds, S. Dowds, S. Mossop.



Irish Speleology 23

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Darkin Well**
Other names used for site	Darken Well
IGH THEME	**IGH1 Karst, IGH16 Hydrogeology**
TOWNLAND(S)	**Straboe**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**13**
ITM CO-ORDINATES	**649286E 702000N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
This site comprises a significant spring rising within a fenced compound.

Geological System/Age and Primary Rock Type
The feature is a hydrogeological and karstic geology spring that is post-glacial in age, but which flows through pure bedded Lower Carboniferous limestone of the Allenwood Formation, which is interpreted as being buried a few metres below the land surface at the site. The spring may be related to a fault, which passes through the site along a northeast-southwest plane.

Main Geological or Geomorphological Interest
Water which sinks at the Sluggory Cross Roads swallow hole, which is approximately 2.5 kilometres to the southeast of the Darkin Well, is reputed to emerge at the spring, though no karst dye tracing has ever been conducted. The supposition comes from the fact that the spring well became contaminated with silt in 1998 when the M7 Motorway works were working at Sluggory Cross Roads. The spring becomes very silty the day after heavy rainfall.

The spring is contained in a galvanised steel hut and was used as a water supply for a period of 2 months in 2007, but this was only as an emergency stopgap as it is considered too risky to use it continuously, given the flashy nature of the silt content in the emerging water. From estimates of water usage during this time, the spring overflow is considered to be approximately 80 m^3 per hour during high flow conditions. The spring has also been known to go dry in hot, dry periods.

Site Importance – County Geological Site
The site is of County Geological Site importance, as a complement to the Sluggory Cross Roads swallow hole site, and as part of a suite of karstic features within the limestone terrain surrounding Portlaoise Town.

Management/promotion issues
Given the wider issue of protecting groundwater quality, the site is managed by Laois County Council, but promoting it would not be advisable without active partnership of the Council and local landowners, especially those adjacent to the Sluggory Cross Roads swallow hole.

The Darkin Well compound, taken from the road at its entrance.

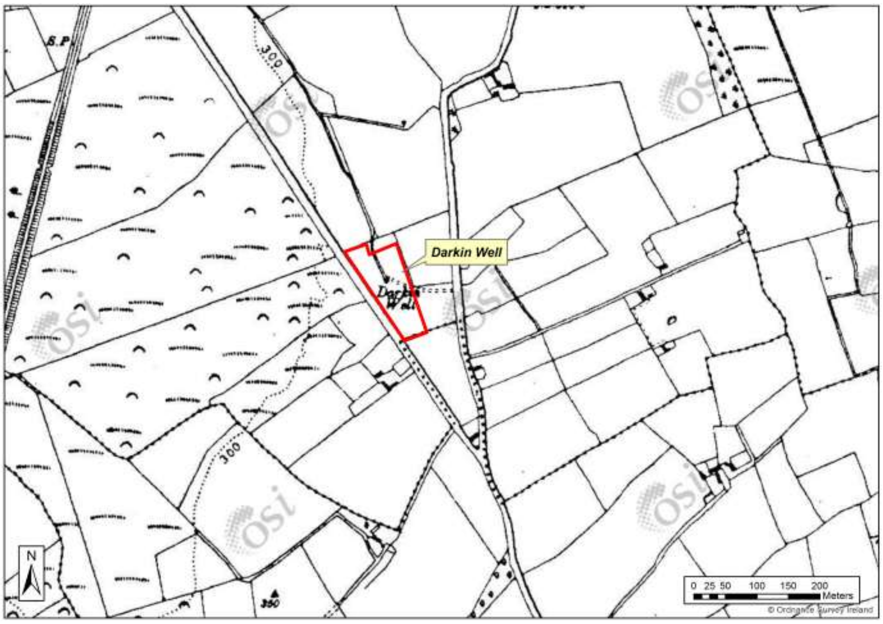
Looking northwards from the entrance to the spring hut.

The spring emerging at surface, flowing across a 90 degree weir.

A view inside the galvanised steel hut, where a gangway leads across the spring water.


Darkin Well
PORTLAOISE
Port Laoise
Knocknagroagh
Rathnamanagh
Derrygarran
Borris Great
Ballytegan
Rathoven
Shaen
Rossleaghan
Clonreher
Cooltoran
Corlean


Darkin Well
N
0 25 50 100 150 200
Meters


Darkin Well
300
350
N
0 25 50 100 150 200
Meters
© Ordnance Survey Ireland

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Farnans Quarry**
Other names used for site	Drimsallagh quarry
IGH THEME	**IGH9 Upper Carboniferous and Permian** **IGH15 Economic Geology**
TOWNLAND(S)	**Farnans**
NEAREST TOWN/VILLAGE	**Swan**
SIX INCH MAP NUMBER	**31**
ITM CO-ORDINATES	**660435E 681780N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 15, 16**

Outline Site Description
A working quarry.

Geological System/Age and Primary Rock Type
The quarry extracts sandstone flags from the Coolbaun Coal Formation of Westphalian age.

Main Geological or Geomorphological Interest
This site is a working quarry, for paving slabs, building stone and cladding. The rock splits relatively easily into varied thicknesses and can remain in large slabs. Hand working of the past has been superseded by mechanical diggers, but the rock is readily lifted. It often displays ripple marks and other sedimentary features that give texture and variety to the slabs.

The site comprises only the workings for slabs. Immediately adjacent, and on the opposite side of the road are some quarries, operated by different owners, which have opened up more recently and where blasting has occurred. The rock is not visible in useful ways due to the different style of working, and these are not part of the site.

Site Importance – County Geological Site; may be recommended for Geological NHA
This is a good County Geological Site, but may be considered for an NHA in the future to represent the Upper Carboniferous Coolbaun Coal Formation, due to the relative scarcity of exposure of these coalfield rocks.

Management/promotion issues
The geological heritage interest relies on continued working of the quarry as a place to see the strata that it exposes and access for geologists is important. However, it is not suitable for promotion to the public as it is a private business and a working environment. Should the quarry cease to operate in the future, then some negotiated access to the site should be sought.

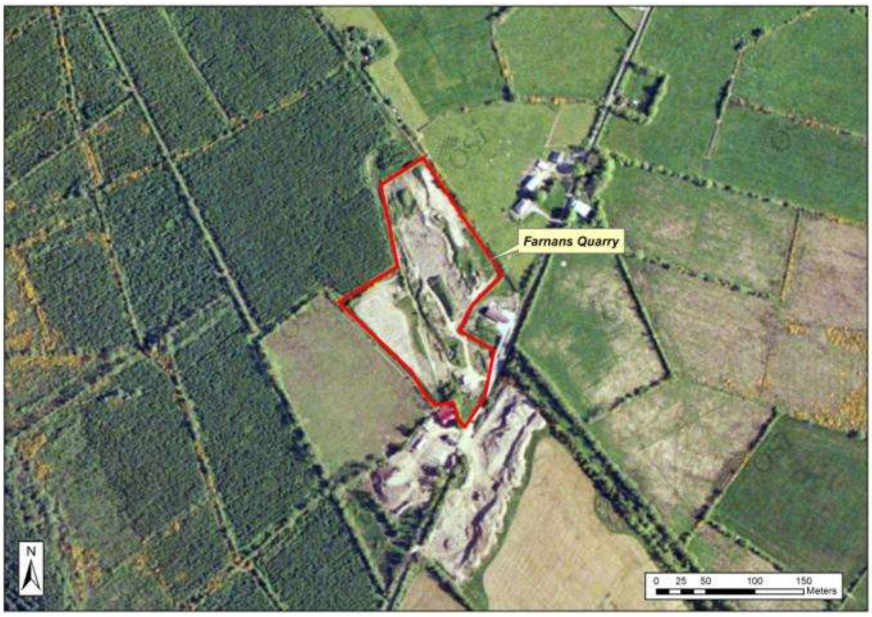
A view of Farnans Quarry.

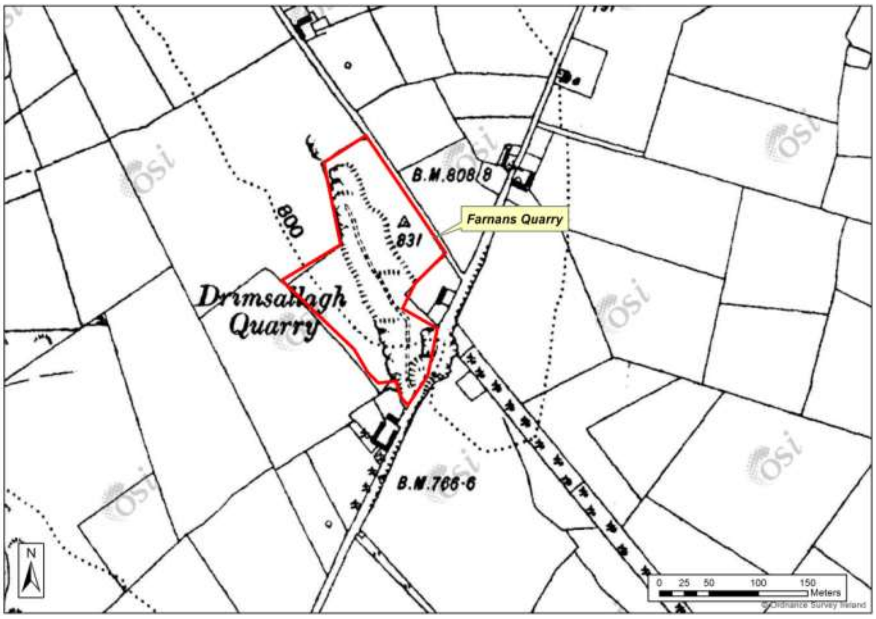
A view of Farnans Quarry, looking north.

A view of Farnans Quarry, looking south.

Very large slabs put aside in Farnans Quarry, beside the entrance.


Wolfhill
Cnocán na Mactíre
Farnans Quarry
Swan
Slatt Lower
Slatt Upper
Mearagh
Hacketts Hill
Newtown
Doonane
Clogh
An Chloch
Toortane
Coolnaleen
Moated Site
Rushes
Turra Hill


Farnans Quarry
N
0 25 50 100 150
Meters


B.M.808·8
Farnans Quarry
B31
800
Drimsallagh Quarry
B.M.766·6
N
0 25 50 100 150
Meters
©Ordnance Survey Ireland

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Flemings Fireclay Quarries**
Other names used for site	Lagan Brick Ltd
IGH THEME	**IGH9 Upper Carboniferous and Permian**
TOWNLAND(S)	**Slatt Lower**
NEAREST TOWN/VILLAGE	**Swan**
SIX INCH MAP NUMBER	**31**
ITM CO-ORDINATES	**657200E 682020N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 15, 16**

Outline Site Description
Extensive quarries worked for fireclay since 1935.

Geological System/Age and Primary Rock Type
The quarries at Swan work the strata around a Double Fireclay within the Coolbaun Coal Formation, part of the Westphalian (Coal Measures of historical usage, or Pennsylvanian in modern terminology) in the Carboniferous Period.

Main Geological or Geomorphological Interest
This series of quarries has been worked as Flemings Fireclays since 1935, but probably local working may have occurred previously. The Double Fireclays are the seat earths of coal seams although here there is no coal seam associated with them. They are interbedded with shales and mudstones. The Double Fireclay Member is widespread throughout the Leinster Coalfield and provided a marker horizon in the stratigraphy in boreholes and coal exploitation in the numerous mines that existed.

Present working is limited to one face and the most northerly section is flooded and largely inaccessible. The fireclay can be used to make refractory bricks but the general quarry output is used to make bricks, chimney liners and tiles etc as the demand requires.

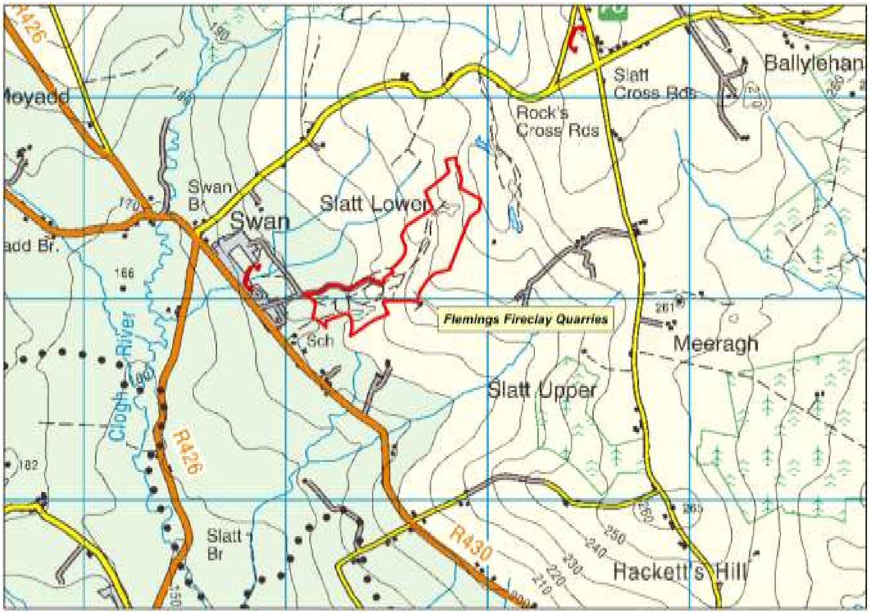
Site Importance – County Geological Site; may be recommended for Geological NHA
This is a site that is a good representative of part of the Westphalian succession of the Leinster coalfield, and as such may be considered as a candidate for NHA status.

Management/promotion issues
The site is a working quarry and unsuitable for promotion, unless there was a specific arrangement with the owners and operators, Lagan Brick Ltd. Whilst faces are obscured by flooding, an upsurge in demand for products could see the water pumped out and working recommenced, so access for geologists could easily be restored in different parts of the quarry.

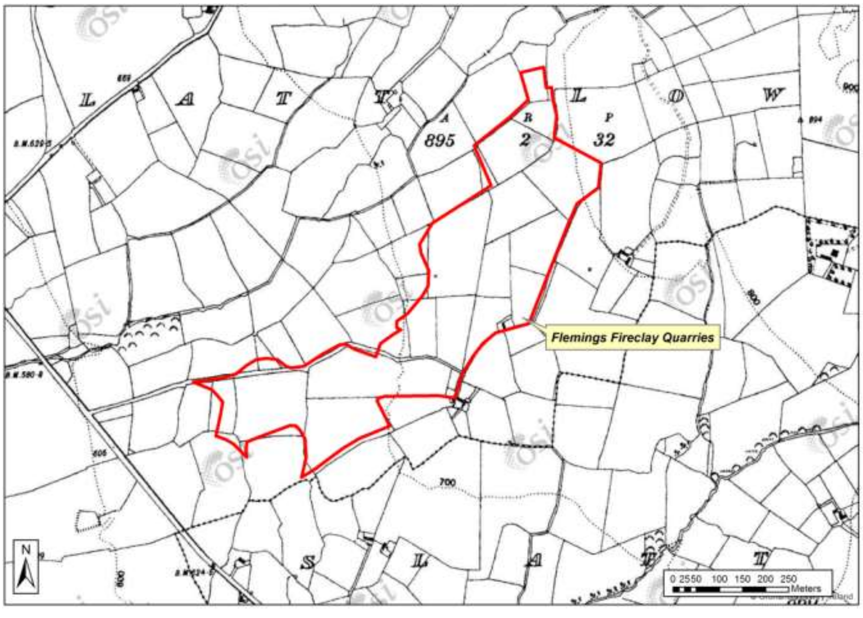
The main working face in the quarry in 2016, looking east.

The main working face in the quarry in 2016, looking southward.

The northern section of the site, with no pumping of water, and a face that is not being worked in 2016.


R426
Moyadd
Ballylehan
Slatt
Cross Rds
Rock's
Cross Rds
Swan
Br
Swan
Slatt Lower
add Br.
Flemings Fireclay Quarries
Sch
Meeragh
Clogh River
Slatt Upper
R426
Slatt
Br
R430
Hackett's Hill


Flemings Fireclay Quarries
N
0 2550 100 150 200 250
Meters


895
2
32
Flemings Fireclay Quarries
700
N
0 2550 100 150 200 250
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Glebe Quarry**
Other names used for site	
IGH THEME	**IGH10 Devonian, IGH15 Economic Geology**
TOWNLAND(S)	**Glebe**
NEAREST TOWN/VILLAGE	**Clonaslee**
SIX INCH MAP NUMBER	**6**
ITM CO-ORDINATES	**633000E 709245N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
An intermittently worked flagstone quarry.

Geological System/Age and Primary Rock Type
The quarry exposes Devonian rocks of the Clonaslee Member, comprising the upper part of the Cadamstown Formation.

Main Geological or Geomorphological Interest
The Devonian rocks which cover the Silurian rocks of the Slieve Bloom inlier are surprisingly poorly exposed in the hills and only the stream gorges and valleys such as the Silver River provide linear and narrow exposures of them. Therefore a larger expanse of well exposed rocks in three dimensions within a quarry is a valuable addition to the total picture of the Devonian rocks in Slieve Bloom.

The rocks exposed are sandstones of a coarse grained and flaggy nature, which makes them easy to quarry and flagstones are very useful for paving, walling and building. In the scale of exposure seen in a quarry like this, it is possible to see broader sedimentary structures that suggest these sediments formed in a levelled landscape under ephemeral flooding conditions. Their total thickness is estimated at between 65 and 105m. There are some conglomerates and some mud lenses within the sandstones.

Historical maps and references suggest that quarrying of flagstones has been a feature of the higher ground above Clonaslee for centuries, with many small excavations shown on the maps now overgrown.

Site Importance – County Geological Site
As a representative site for an important, but poorly exposed part of the geology of Slieve Bloom this quarry deserves to be a County Geological Site.

Management/promotion issues
As a quarry it is not suitable for general promotion and is private land, so not accessible. If it is inactive or disused it would quickly become overgrown, so a modest degree of working would help keep faces accessible for any geological groups visiting with the landowner's permission in the future.

Panorama view of Glebe Quarry, looking towards the back face.

View into Glebe Quarry.

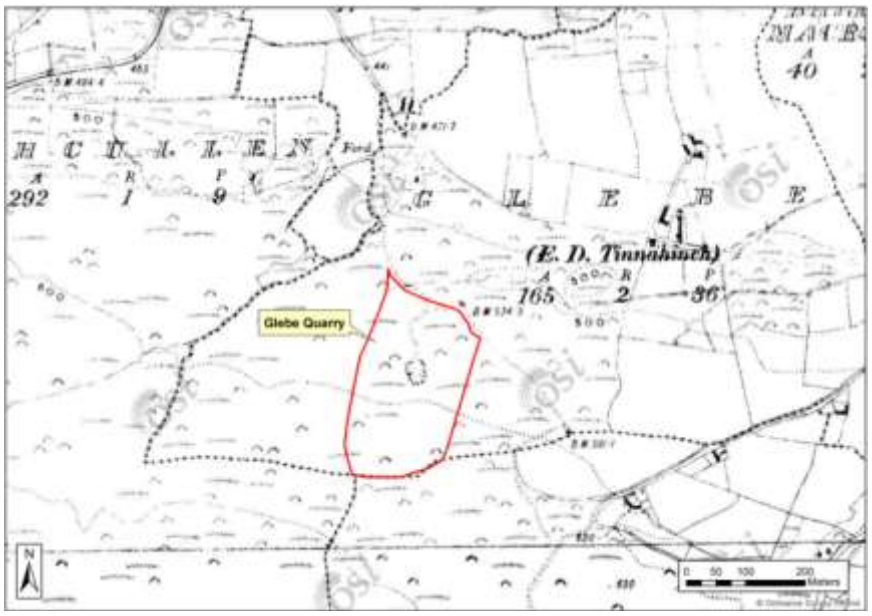
Inside Glebe Quarry.

Panorama view of Glebe Quarry, looking out from the back face.

A view of the back face of Glebe Quarry.


Cappusteen
Coolnabanch
Ballynakil
Graigue
Rathcoffey
Capparogan
Clonaslee
Cluain na Sli
Fortified House
Corbally
Brandutt Glebe
Britlas
Burial Ground
Bellair or Cappanapinion
Ashbrook or Aghamore
Glebe
Bunastick
Clarahill
Ballyfarrell
Boyle
Ballymacrory
Glebe
Glebe Quarry
Srahcullen
Bawn
Coolnamony Lower
Corragh Lower
Knockbawn
Ross
30
31
32
33
34
09
10


Glebe Quarry
N
0 50 100 200
Meters


(E. D. Tinnahinch)
Glebe Quarry
N
0 50 100 200
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Glenbarrow**
Other names used for site	
IGH THEME	**IGH10 Devonian, IGH7 Quaternary, IGH14 Fluvial and Lacustrine Geomorphology**
TOWNLAND(S)	**Glenbarrow, Tinnahinch**
NEAREST TOWN/VILLAGE	**Mountmellick**
SIX INCH MAP NUMBER	**7**
ITM CO-ORDINATES	**636250E 707933N (centre of valley)**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
A long section in the bed and banks of the river in Glenbarrow.

Geological System/Age and Primary Rock Type
The primary rocks are Devonian sandstones, but there are also landslides in glacial till of Quaternary age.

Main Geological or Geomorphological Interest
This is a good section exposing a variety of sandstones and mudstones of Devonian age in the bed and banks of the gorge of the Glenbarrow River. Large exposures of sandstone beds are seen in the river bed, and in some sections waterfalls over particularly thick beds have produced cliffs with good sections through the strata.

On the northern bank there is a long section of exposures in glacial till, where landslides occur periodically which get removed by the river, thus creating further instability and further landslides. These tills have been studied previously, and are comprised of units of both basal tills and melt-out tills. They are dominated by limestone, but erratics of Galway granite have also been found within them.

Site Importance – County Geological Site
This is a good representative site in Laois to see the Devonian rocks of Slieve Bloom which are otherwise quite poorly exposed.

Management/promotion issues
There is a public path in the woods surrounding the river, which follows its course through the site, and has signposts as part of the excellent walking route infrastructure in Laois and Offaly. There is no significant mention of geology in the signboards and trail leaflets available, and this could be remedied.

The waterfall in Glenbarrow, with mudstones exposed in the cliff beneath the thick sandstone bed which has caused the waterfall and plunge pool.

Cross bedding and channels are visible.

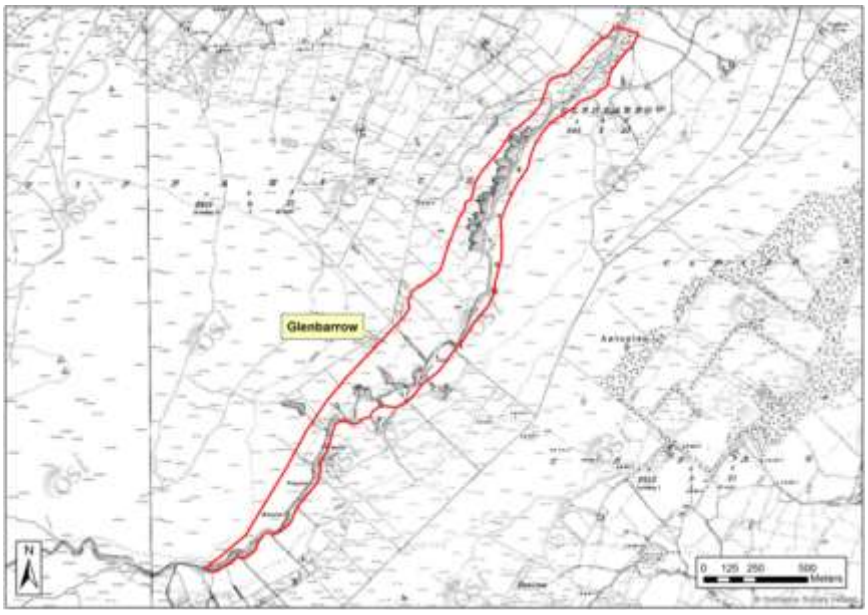
Large expanses of bedding planes are seen.

Glacial till with landslips on north bank.

Some signage at the car park.


Glenbarrow


Glenbarrow
N
0 125 250 500
Meters


Glenbarrow
N
0 125 250 500
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Hollymount**
Other names used for site	
IGH THEME	**IGH3 Carboniferous to Pliocene Palaeontology, IGH12 Mesozoic and Cenozoic**
TOWNLAND(S)	**Hollymount**
NEAREST TOWN/VILLAGE	**Carlow**
SIX INCH MAP NUMBER	**32**
ITM CO-ORDINATES	**669467E 681900N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A number of fields where a borehole was drilled in the early 1970s.

Geological System/Age and Primary Rock Type
The borehole was into Carboniferous Limestone bedrock, but samples from the borehole yielded pollen and spore material that are of Miocene-Pliocene (Neogene) age.

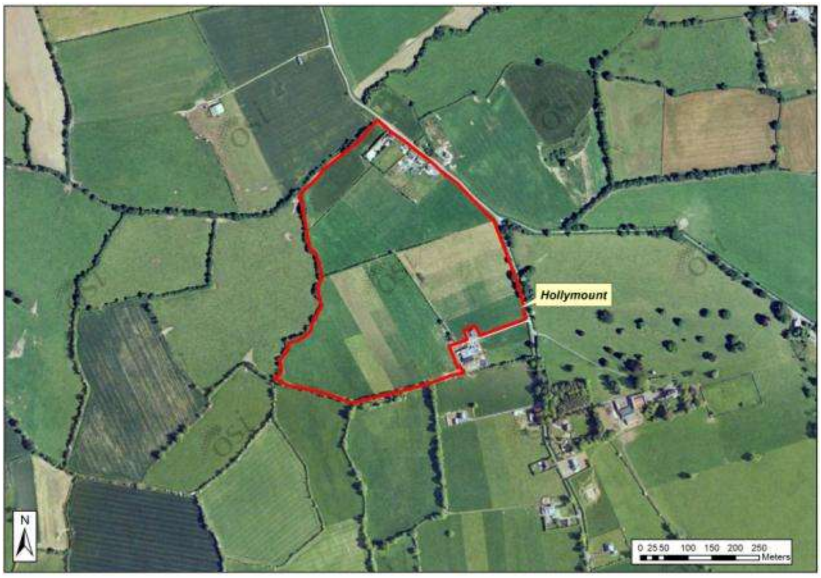
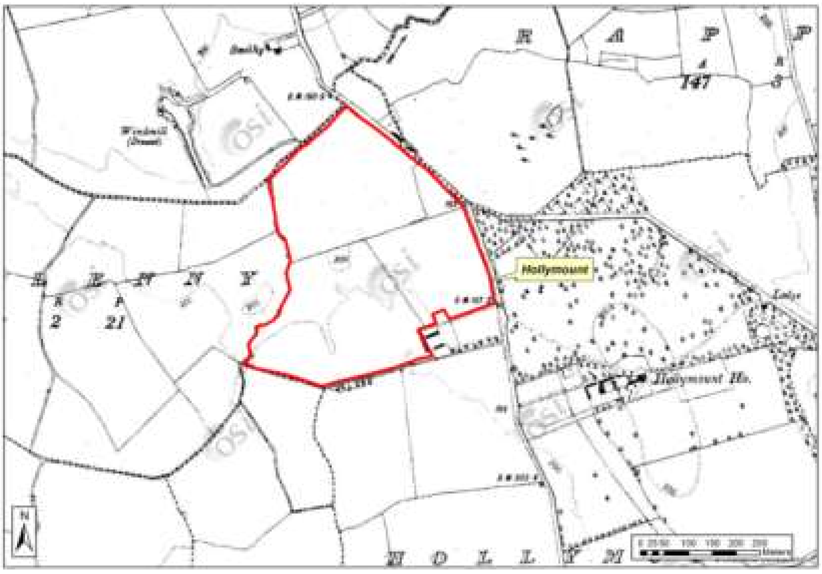
Main Geological or Geomorphological Interest
Samples from the site at Hollymount were extracted from a 46m deep borehole in a Carboniferous limestone region, and studied by a Trinity College Dublin student called Phyllis Burgess in 1973. Pollen and spore samples were located in a 36-44m deep part of the borehole. The assemblage is thought to represent woodland and heathland communities of plants of Miocene-Pliocene (Neogene) age. This deposit is covered by more recent till from the Ice Age. The extent or form of the Neogene deposit is unknown, but is assumed to be preserved in some kind of enclosed depression (doline) within the Carboniferous limestone. The borehole site location was selected based on three wells dug by the Land Commission that intersected clays at different depths. Disturbed samples from these wells indicated the presence of Tertiary clays, and the chosen drilling site was intended to gain a likely maximum depth. Geophysical survey also indicated this location (see map for precise locations).

Site Importance – County Geological Site; may be recommended for Geological NHA
This site is a deposit of Miocene-Pliocene (Neogene) age, which is exceedingly rare in the country as a whole, and it may be recommended for geological NHA status in the future as work on the IGH3 or IGH12 themes is considered in a national framework.

Management/promotion issues
The Hollymount site is unusual in that a single borehole does not really constitute a ‘site’ but the palaeontological importance and rarity of Hollymount is such that an area around where the borehole was drilled is considered as a site, to allow the possibility of repeating the borehole for research purposes or conducting other research to define or sample the geological interest.

The borehole was drilled on the far margin of the fields here.

An extract from the Geological Survey of Ireland drilling report that shows the location of the borehole, along with the three Land Commission wells that pointed to the presence of the Tertiary aged clays.


Hollymount
Rathfillig
Ballickmoyler
Baile Mhic Mhaoilir
Killerny
Rosstillegane
Bohernasear
Hollymount
Cappanamrogue
Ballyharmon
Cappanaboe
Rathduff
Shrule
Newgarden
Knockbeg
Coolrain
Cooperhill Demesne
Laagh
Shanvally
Lambstown
Harristown
Curragh
Killeshin
Cill Uisean
Clonmore
Derrymoyle
Ballykillen
Springhill
Lisbush
Monaclaudy
Graiguecullen
CARLOW
Ceatharlach
66
67
68
69
70
71
72
73
74
N80

Hollymount
N
0 25 50 100 150 200 250
Meters

Hollymount
Hollymount Ho.
Smithy
Lodge
N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Killeany Quarry**
Other names used for site	Kerwins Quarry
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Killeany**
NEAREST TOWN/VILLAGE	**Abbeyleix**
SIX INCH MAP NUMBER	**23**
ITM CO-ORDINATES	**637200E 686200N (centre of quarry)**
1:50,000 O.S. SHEET NUMBER	**60 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
A relatively small quarry cut into a small, but prominent, steep-sided limestone hill.

Geological System/Age and Primary Rock Type
Bedrock comprises Lower Carboniferous (Courceyan-Chadian) fossil-rich Waulsortian Limestone, deposited as a mudbank in open marine conditions.

Main Geological or Geomorphological Interest
The Waulsortian Limestone rocks are typically fossiliferous, pale grey, massive, unbedded wackestones, deposited below storm wave base in water more than 200m deep. The limestone in Killeany Quarry is heavily dolomitised, meaning dolomite has formed when magnesium ions replaced the calcium ions in the calcite within the rock. The dolomite is a brownish rock, with a sugary texture that weathers to fine sand.

The uppermost few metres of the quarry seem to have a well-developed layer of epikarst – enlarged fractures from dissolution of the limestone. Evidence of karstic cavities is also present in the lower part of the quarry. Folded beds can be seen in the northern face of the quarry.

This site has hosted a quarry since 2002 only, but a lime kiln has been present on the hill for over 100 years.

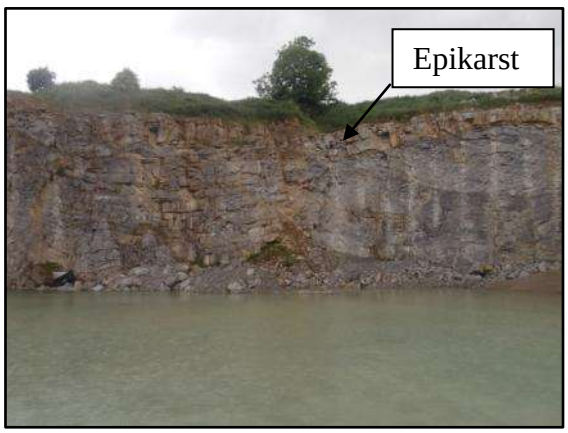
The quarry has produced stone for aggregates, chippings, railway ballast, lime dust, screenings, and drainage stone. Limestones of the Waulsortian Limestone are worked for aggregate in several quarries in the region.

Site Importance – County Geological Site
This County Geological Site is an important representative site exhibiting fresh and extensive exposures of Waulsortian Limestone.

Management/promotion issues
As a working quarry, the listing as a County Geological Site has no implications for the normal operation of the quarry, subject to standard permissions and conditions under planning and environmental legislation. In the event of any future changes in quarrying operations, it would be desirable to consider retaining representative faces for geological purposes. As an operating quarry, the site is not suitable for any general promotion. Any correspondence can be made to the owner and operator Kerwin Quarries, Killeany, Kilbricken, Mountrath, County Laois.

The back face of Killeany Quarry.

A fold within steeply dipping beds in Killeany Quarry.

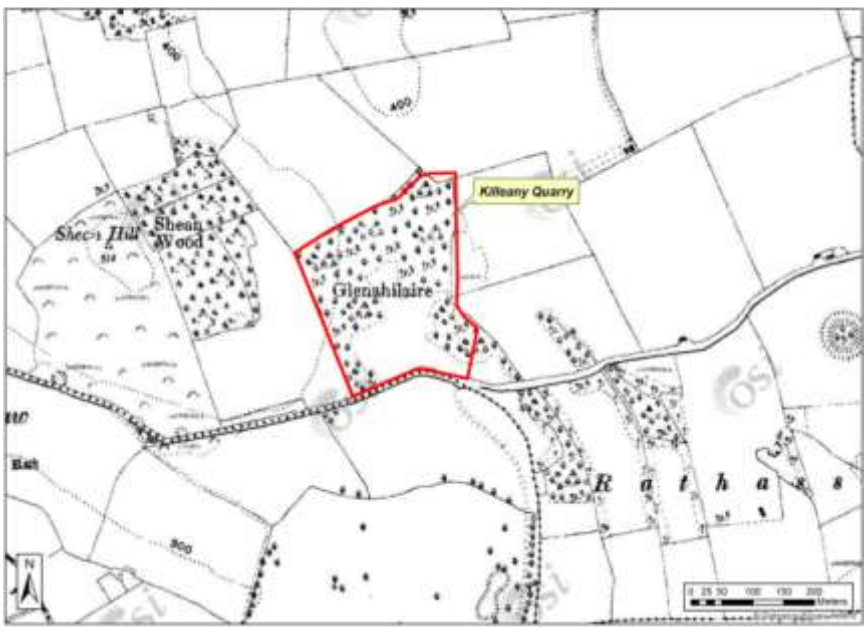


Epikarst in the uppermost portion of the exposed limestone.

Wide, dissolved fracutres and karstic cavities at depth within the rock face.


Killeany Quarry


Killeany Quarry
N


Killeany Quarry
Glenahilaire
Rathass
N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Killeshin Glen**
Other names used for site	
IGH THEME	**IGH3 Carboniferous to Pliocene Palaeontology, IGH9 Upper Carboniferous to Permian**
TOWNLAND(S)	**Coorlaghan, Keeloge**
NEAREST TOWN/VILLAGE	**Carlow**
SIX INCH MAP NUMBER	**32, 37**
ITM CO-ORDINATES	**666200E 676990N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A long section of rocks exposed in a deep gorge-like valley.

Geological System/Age and Primary Rock Type
The rocks exposed in Killeshin Glen are Namurian and Westphalian in age, comprising the Killeshin Siltstone Formation, followed upwards by the Bregaun Flagstone Formation, the Moyadd Coal Formation and the Clay Gall Sandstone Formation.

Main Geological or Geomorphological Interest
At Killeshin Glen a near continuous stream section through the Namurian and Westphalian rocks of the Carboniferous is found. The Killeshin Siltstone Formation has two marine bands in it. The Reticuloceras gracile Marine Band is found in the stream behind the old church and graveyard in the village of Killeshin. The other is in the main section above the reservoir (which has an interesting history as a water supply for Carlow Town from 1894 -1987). The section upstream from the reservoir park includes the Gastrioceras cancellatum Marine Band in the upper part of the Killeshin Siltstone Formation, the Bregaun Flagstone Formation, the No. 1 Coal at the base of the Moyadd Coal Formation and the Clay Gall Sandstone Formation. Within the Moyadd Coal Formation another Marine Band can be found, long known as the Fleck Rock, which has flecks of black shale in a siltstone. Access to all of this section is extremely difficult without appropriate ‘expedition’ attitude.

Site Importance – County Geological Site; may be recommended for Geological NHA
This section is an important reference section for Namurian and Westphalian strata in the Leinster Coalfield, and is likely to be promoted as a geological NHA once suitable review of sites nationally is undertaken.

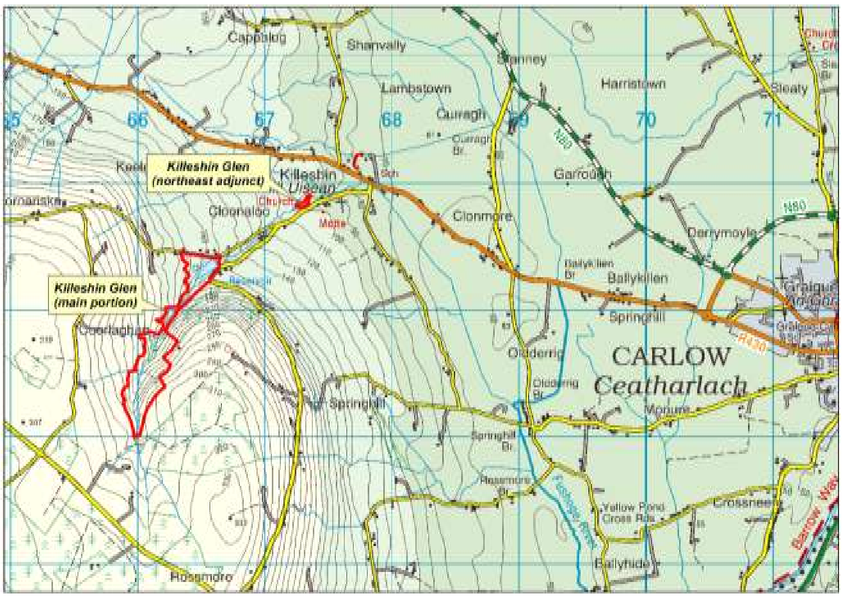
Management/promotion issues
The site is on forestry and private farmland and not suitable for general promotion. It is also very difficult to access due to deep vegetation even in summer when water levels are low in the stream. The stream is mostly within a deep and almost inaccessible gorge. The study of such a section is the protracted work of a highly committed geologist and is not undertaken on a casual basis. It remains as a good reference section for future study or re-appraisal with new tools or data, but it is not an inviting section.

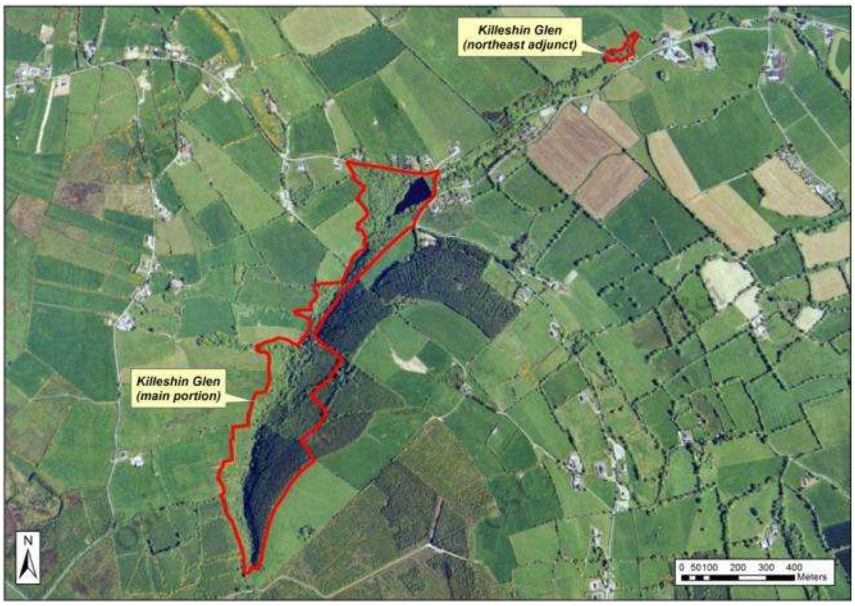
The deep ravine of Killeshin Glen is hidden when viewed from the plateau of the Castlecomer Coalfield, from the west.

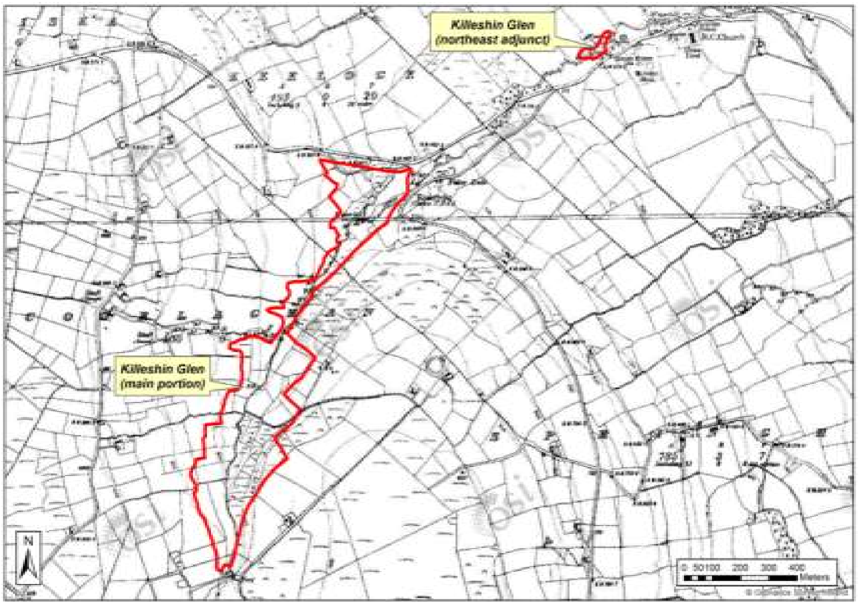
Most of the section is in a gorge.

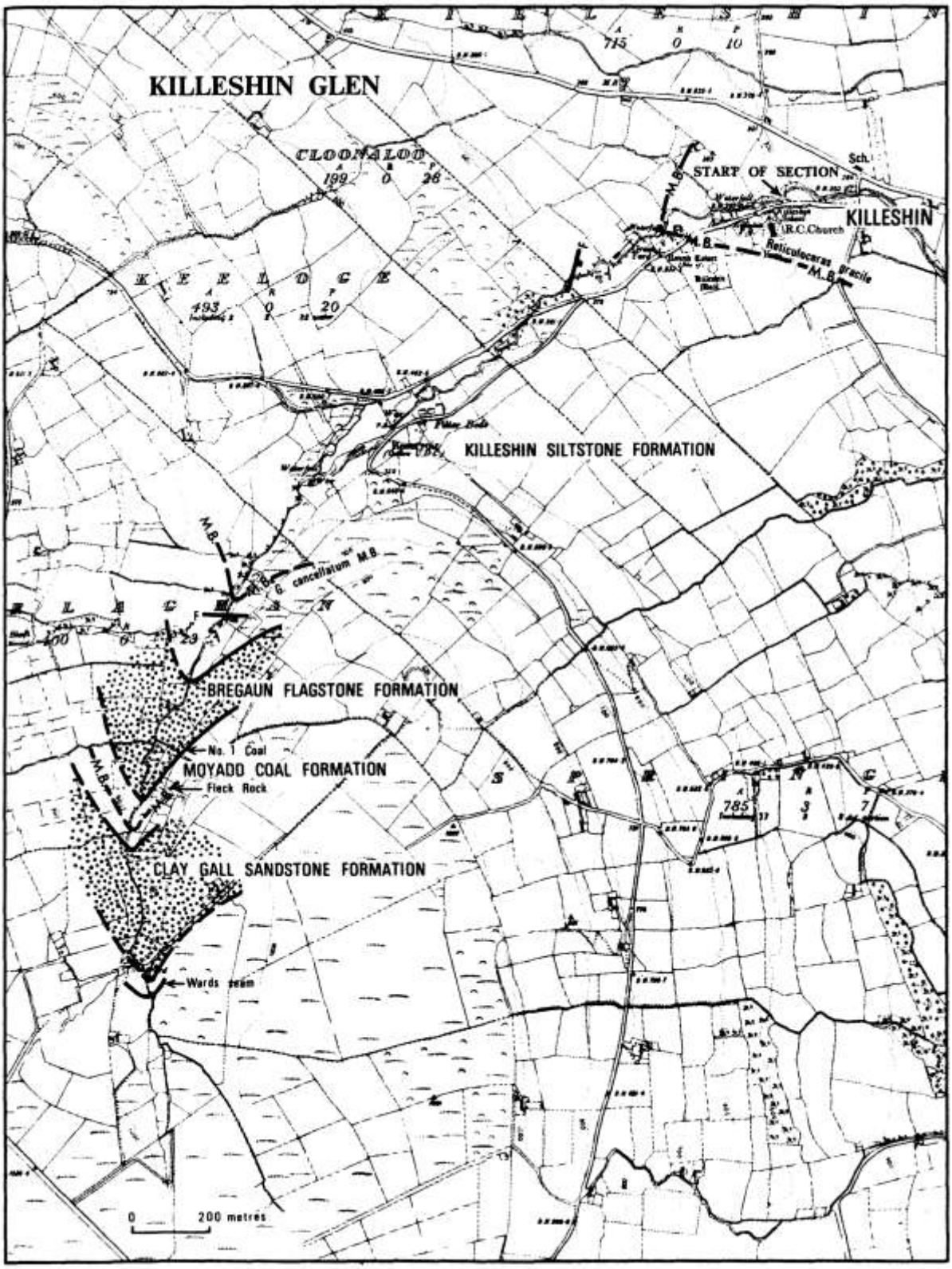
Waterfalls often occur where harder bands of rock create a barrier to erosion.

The Killeshin Glen section is in the ravine below the plantation forestry.


Killeshin Glen
(northeast adjunct)
Killeshin Glen
(main portion)
CARLOW
Ceatharlach


Killeshin Glen
(northeast adjunct)
Killeshin Glen
(main portion)
N
0 50100 200 300 400
Meters


Killeshin Glen
(northeast adjunct)
Killeshin Glen
(main portion)
N
0 50100 200 300 400
Meters



Map from Feehan, J. 2013. The Geology of Laois and Offaly. Offaly County Council.

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Kyle Spring**
Other names used for site	Toberading
IGH THEME	**IGH16 Hydrogeology**
TOWNLAND(S)	**Moyadd**
NEAREST TOWN/VILLAGE	**Wolfhill**
SIX INCH MAP NUMBER	**31**
ITM CO-ORDINATES	**656310E 682460N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A natural freshwater spring that is a source of water for the local public water supply system.

Geological System/Age and Primary Rock Type
The spring issues from alluvial gravels underlain by the generally karstified Upper Carboniferous (Pennsylvanian) Ballyadams Limestone Formation. The gravels are alluvial, and Holocene in age, but also overlie glaciofluvial sands and gravels of Pleistocene age.

Main Geological or Geomorphological Interest
Located approximately 2.5km northeast of Timahoe, Kyle Spring is a high yielding spring issuing from a regionally important karstified limestone aquifer, overlain by a locally important gravel aquifer. The Ballyadams Limestone Formation is generally karstified, and therefore Kyle Spring can be classed as a karst spring. The relatively consistent flow rate and hydrochemistry however are more characteristic of a gravel spring than of a karst spring, suggesting that the groundwater flows up from the limestone, through the gravel, before emerging at the spring.

At an elevation of 9mOD, the spring operates at a pumping rate of 2,182m^3 per day (480,000 gallons per day) and provides an abstraction rate of 1,591m^3 per day (35,000 gallons per day). The spring-water is categorised as 'hard', falling within a range of 251-350 milligrams per litre $CaCO^3$.

Situated in a broad alluvial flat, Kyle Spring discharges eastwards into a small stream which runs into the Crooked River (Timogue River) about 1 km north of the spring. Kyle Spring is classed as a tepid spring. Water temperature values (recorded in 1983) were 11.45°C.

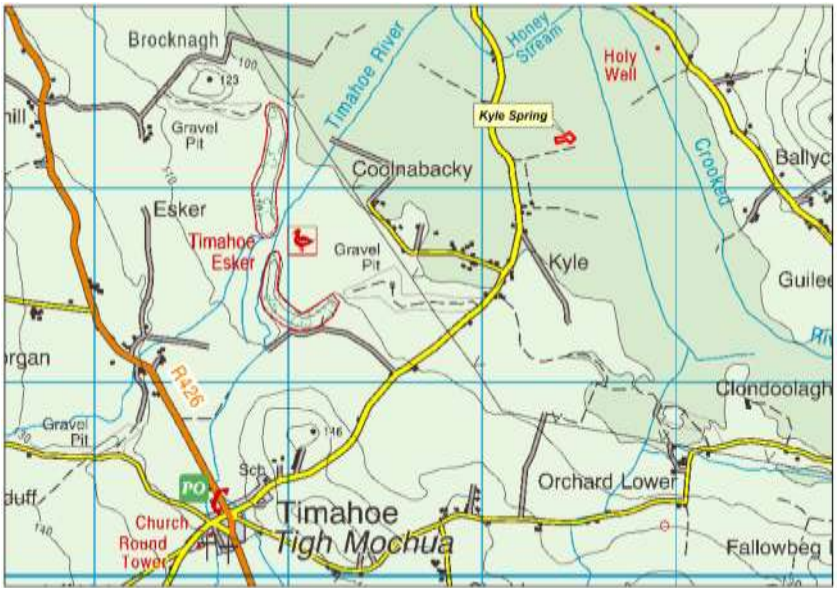
Site Importance – County Geological Site
This is a very important County Geological Site considering it is used as a public water supply, supplying Stradbally, Ballylynan and Timahoe. It is a high yielding spring issuing from a regionally important karstified limestone aquifer, overlain by a locally important gravel aquifer.

Management/promotion issues
The well is owned by Laois County Council (GSI Number 23/19SE W146). The spring and overflow area is fenced off. As a public water supply and a site accessed through private property, the site is not suitable for promotion. Kyle Spring has a Zone of Contribution of 4.75km^2. The Zone of Contribution is deemed 'highly' vulnerable to contamination.

View of the spring and overflow, looking west towards Timahoe-Stradbally road.

Kyle Spring overflow (all fenced off).

Entrance gate to Kyle Spring pump house and works, looking east.


Brocknagh
Timahoe River
Honey Stream
Holy Well
Kyle Spring
Gravel Pit
Codlnabacky
Esker
Timahoe Esker
Gravel Pit
Kyle
Crooked
Ballyc
Guilec
R426
Clondoolagh
Gravel Pit
Orchard Lower
Church
Round Tower
Timahoe
Tigh Mochua
Fallowbeg


Kyle Spring
N
0 25 50 100
Meters


Kyle Spring
Toberading
N
0 25 50 100
Meters
© Ordnance Survey Ireland

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Lisduff Quarry**
Other names used for site	
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Lisduff, Knockahaw**
NEAREST TOWN/VILLAGE	**Rathdowney**
SIX INCH MAP NUMBER	**27**
ITM CO-ORDINATES	**619400E 677600N**
1:50,000 O.S. SHEET NUMBER	**60 GSI BEDROCK 1:100,000 SHEET NO. 18**

Outline Site Description
A large, active limestone quarry located 8km west of Rathdowney.

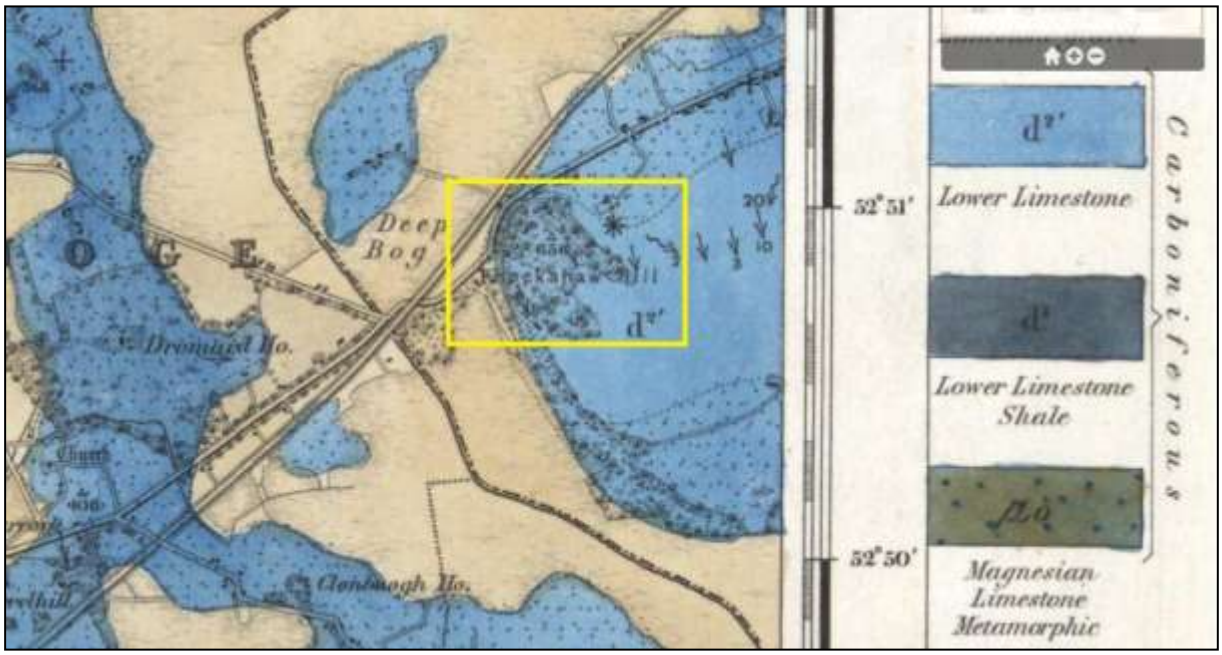
Geological System/Age and Primary Rock Type
Lisduff Oolite Member (Ballysteen Formation) bedrock comprising thick bedded, pale blue-grey, cross-bedded, well-jointed oolite of Lower Carboniferous (Mississippian) age.

Main Geological or Geomorphological Interest
The site hosts clean and fresh quarry faces of Ballysteen Formation limestone. The strata dip gently 2°-10° south. Early GSI 1 inch scale sheets (Sheet 135) from the late 1800's show that the site, Knockahaw Hill, was recognised as an important fossil locality.

Site Importance – County Geological Site
This is an important County Geological Site, and is an important representative site with extensive exposures of Ballysteen Limestone Formation.

Management/promotion issues
The site is a large working quarry, producing lime for chemical uses, and some limestone for aggregates and other uses. No management issues arise, except if the quarry were to close; then maintaining access for geologists would be desirable. As a working quarry it is not suitable for promotion to general visitors other than at the instigation of the operators. Contact: Dowling Quarries Ltd, Lisduff Quarry, Errill, Rathdowney, Co. Laois (Telephone: 0505 44210).

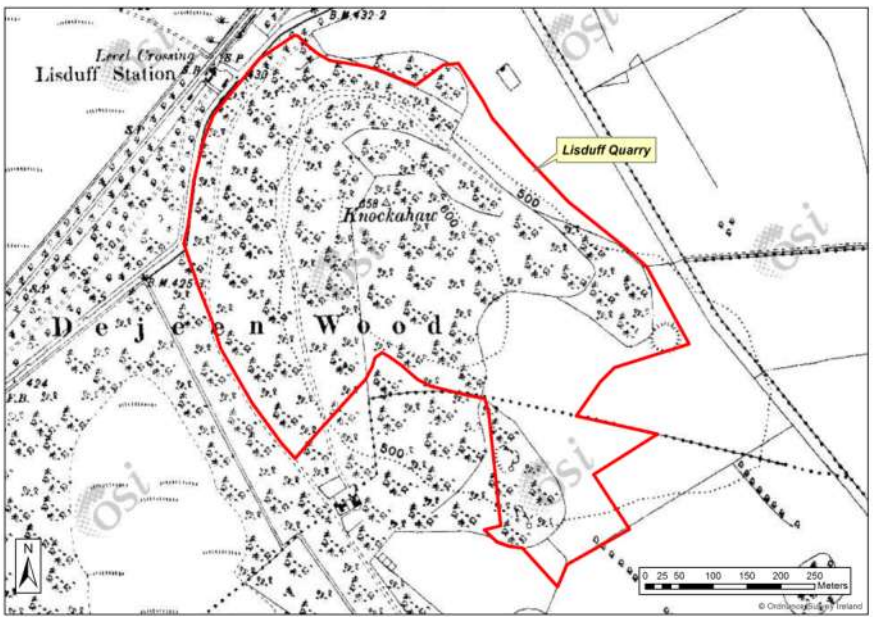
Entrance to Lisduff Quarry.



Knockahaw Hill on GSI Sheet 135 1-inch scale map, published 1860. Location of present-day quarry is at Knockahaw Hill.


Lisduff Quarry
Rathdowney
Rath Domhnaigh


Lisduff Quarry
N
0 25 50 100 150 200 250
Meters


Level Crossing
Lisduff Station
Lisduff Quarry
Knockahaw
D e j e n W o o d
N
0 25 50 100 150 200 250
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Luggacurren Fireclay Pit**
Other names used for site	
IGH THEME	**IGH9 Upper Carboniferous and Permian**
TOWNLAND(S)	**Luggacurren**
NEAREST TOWN/VILLAGE	**Stradbally**
SIX INCH MAP NUMBER	**25**
ITM CO-ORDINATES	**658610E 687270N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
A farm borrow-pit.

Geological System/Age and Primary Rock Type
The site exposes Namurian rocks of part of the Killeshin Siltstone Formation.

Main Geological or Geomorphological Interest
Complementing the Luggacurren Stream section, this site is a farm borrow pit in the Killeshin Siltstone Formation, with a good fresh exposure. As the rock is shale, which fractures and decomposes very easily once exposed, natural exposures are almost non-existent, so small pits like this site are a valuable opportunity to see the character of the rock.

The shale is used for farm roads, as fill and occasionally used as a fireclay for mixing into the clay mix for making ceramic chimney liners.

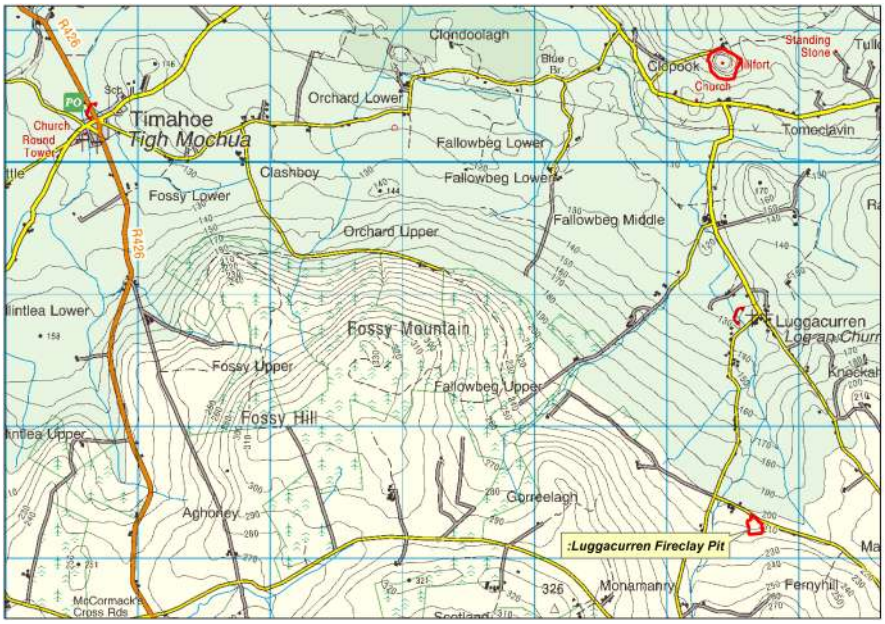
Site Importance – County Geological Site; may be recommended for Geological NHA
This is a small but good representative section of part of the Namurian rocks in the Leinster Coalfield and is a good County Geological Site, whilst it remains in occasional use, and does not become degraded and overgrown.

Management/promotion issues
The site is on private farmland and not suitable for general promotion.

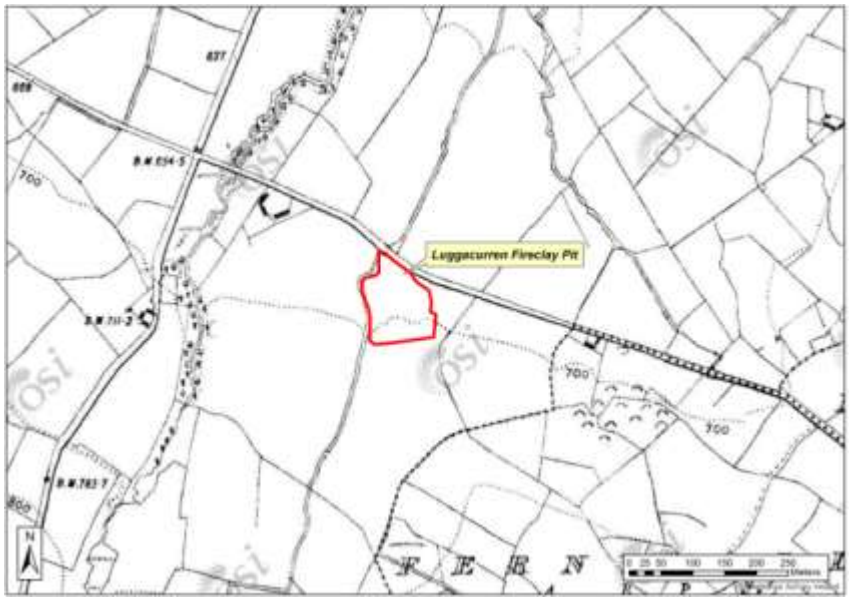
Luggacurren fireclay pit, looking eastward.

The entrance road into Luggacurren fireclay pit.

Luggacurren fireclay pit, looking west.


Clondoolagh
Standing Stone
Clopook
Church
Timahoe
Tigh Mochua
Orchard Lower
Fallowbeg Lower
Tomeclavin
Clashboy
Fossy Lower
Orchard Upper
Fallowbeg Middle
R426
Fossy Mountain
Luggacurren
Fossy Upper
Fallowbeg Upper
Fossy Hill
Aghoney
Correelagh
:Luggacurren Fireclay Pit
Monamanny
Fernyhill
McCormacks Cross Rds


:Luggacurren Fireclay Pit
N


Luggacurren Fireclay Pit
N
F E E N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Luggacurren Stream Section**
Other names used for site	The Crooked River
IGH THEME	**IGH3 Carboniferous to Pliocene Palaeontology, IGH9 Carboniferous and Permian**
TOWNLAND(S)	**Luggacurren**
NEAREST TOWN/VILLAGE	**Stradbally**
SIX INCH MAP NUMBER	**25**
ITM CO-ORDINATES	**658455E 688200N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
Two long stream sections with exposures in bed and banks of the Crooked River and a tributary, in a deep gorge.

Geological System/Age and Primary Rock Type
The site exposes Namurian rocks of the Luggacurren Shale Formation and the lower part of the Killeshin Siltstone Formation.

Main Geological or Geomorphological Interest
This section of rocks has been studied in detail by several geologists over the years since first surveyed in 1814, by Sir Richard Griffith. Most recently in the 1980s Ken Higgs, working for the Geological Survey of Ireland, established a detailed biostratigraphy based on goniatites and bivalve fossils, together with spores and pollen microfossils (palynomorphs). His fossil collections are housed in the Geological Survey of Ireland, along with some of the earlier collections. Higgs defined four members of the Luggacurren Shale Formation in the stream section, with only three of them exposed in the south eastern stream section.

Site Importance – County Geological Site; may be recommended for Geological NHA
This is a well-studied, reasonably exposed, good representative section of the Namurian rocks in the Leinster Coalfield and is likely to be proposed for NHA status when the IGH3 or IGH9 themes are fully assessed on a national basis.

Management/promotion issues
The site is on private farmland and not suitable for general promotion. It is also very difficult to access due to deep vegetation even in summer when water levels are low in the stream. The study of such a section is the protracted work of a highly committed geologist and is not undertaken on a casual basis. It remains as a good reference section for future study or re-appraisal with new tools or data, but it is not an inviting section.

Luggacurren stream exposures.

Luggacurren stream exposures.

Luggacurren stream exposures.

Luggacurren stream exposures.

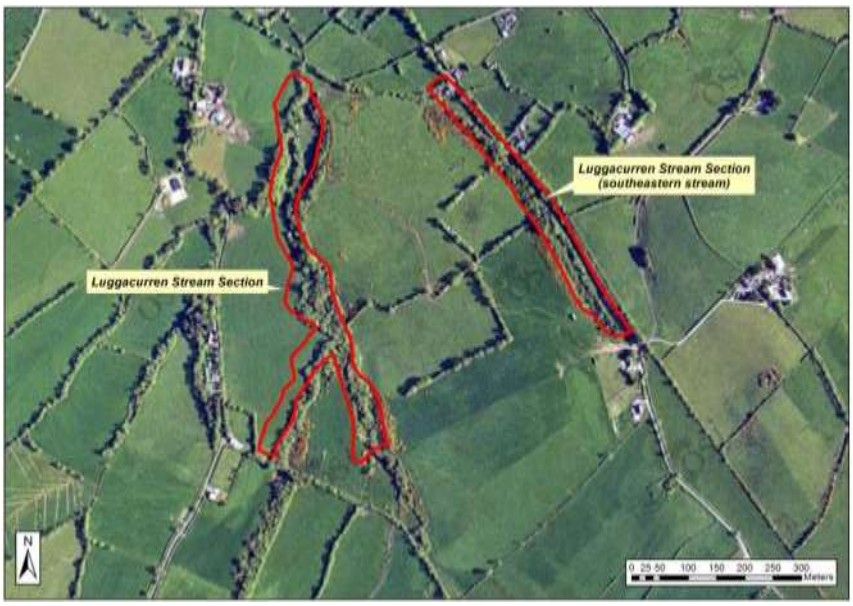
Luggacurren stream exposures.

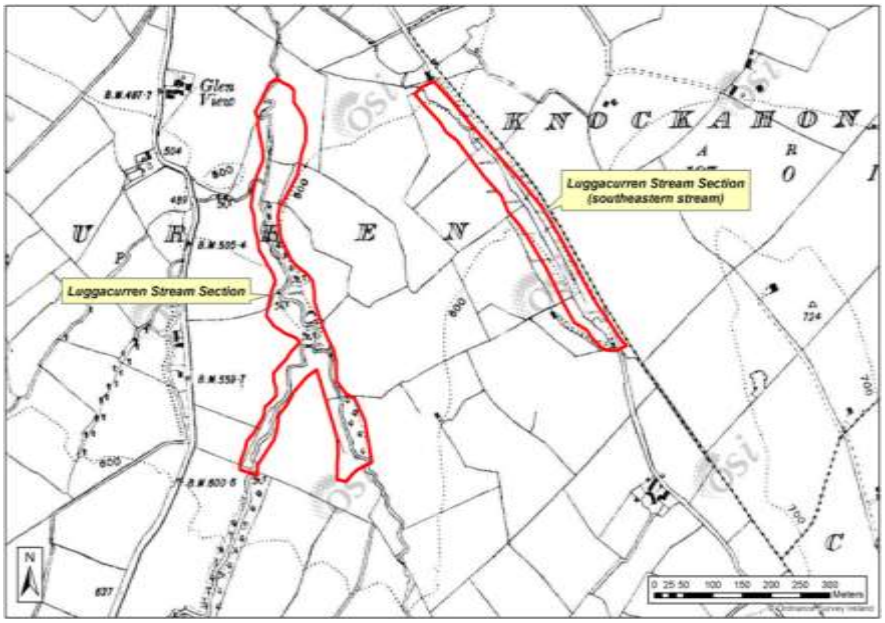
Luggacurren stream exposures.

Luggacurren stream exposures.

Luggacurren south eastern stream is in a gully to the left of this road.


Clondoolagh
Orchard Lower
Timahoe
Tigh Mochua
Fallowbeg Lower
Clashboy
Fallowbeg Lower
Fossy Lower
Fallowbeg Middle
Orchard Upper
Luggacurren Stream Section
(southeastern stream)
Fossy Mountain
Fossy Upper
Fallowbeg Upper
Fossy Hill
Luggacurren Stream Section
Agharney
Gowelagh


Luggacurren Stream Section
(southeastern stream)
Luggacurren Stream Section
N
0 25 50 100 150 200 250 300
Meters


Glen View
KNOCKAHON
Luggacurren Stream Section
(southeastern stream)
Luggacurren Stream Section
N
0 25 50 100 150 200 250 300
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**M7 Road Cut Derryvorrigan**
Other names used for site	
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Derryvorrigan**
NEAREST TOWN/VILLAGE	**Borris-in-Ossory**
SIX INCH MAP NUMBER	**22**
ITM CO-ORDINATES	**626500E 686150N**
1:50,000 O.S. SHEET NUMBER	**60 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
A 500m long road cut through limestone bedrock on the M7 Motorway.

Geological System/Age and Primary Rock Type
Bedrock is Lower Carboniferous (Mississippian) dark-coloured muddy limestone (Ballysteen Formation).

Main Geological or Geomorphological Interest
The limestones visible in the road cut exposures along this stretch of the M7 motorway provide a wonderful insight into the strata and structure of the bedrock in this region of County Laois.

Site Importance – County Geological Site
This is a good representative section for the Ballysteen Formation, and it is of County Geological Site importance.

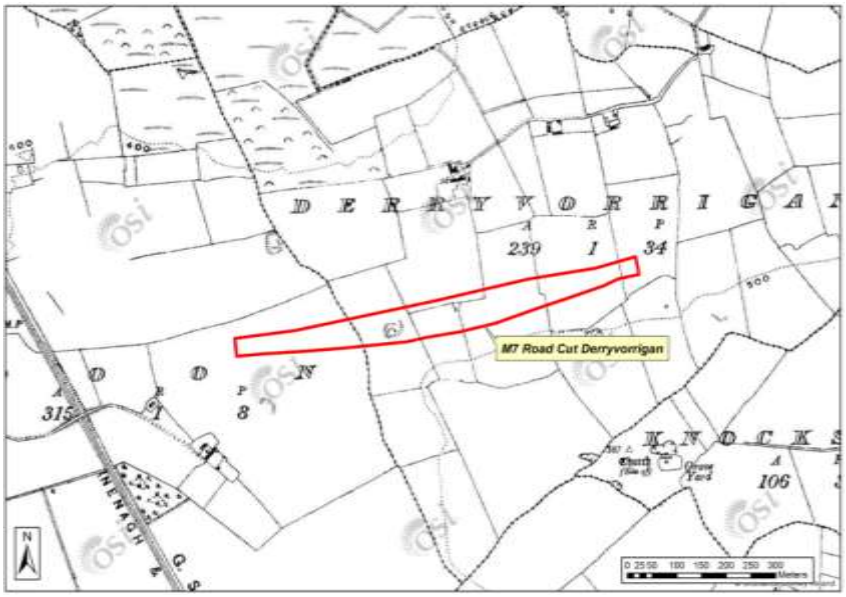
Management/promotion issues
The exposures are in road cutting on a long busy motorway, and are therefore not suitable for general promotion. The exposures provide hundreds of daily passing motorists with a rare ‘window’ into the limestone strata that underlie this part of County Laois, and much of the Irish countryside. Some localised management to keep the rock faces clear of vegetation would preserve this open ‘window’ into the limestone foundation in this region of County Laois.

M7 Road Cut viewed looking east, beside M7 Motorway road sign.

M7 Road Cut viewed looking east from top of southern embankment.


M7 Road Cut Derryvorrigan


M7 Road Cut Derryvorrigan
N


M7 Road Cut Derryvorrigan
N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**M8 Road Cut Addergoole**
Other names used for site	
IGH THEME	**IGH8 Lower Carboniferous**
TOWNLAND(S)	**Addergoole**
NEAREST TOWN/VILLAGE	**Rathdowney**
SIX INCH MAP NUMBER	**28**
ITM CO-ORDINATES	**633950E 674850N (centre of road cut section)**
1:50,000 O.S. SHEET NUMBER	**60 GSI BEDROCK 1:100,000 SHEET NO. 18**

Outline Site Description
An 800m long road cut through limestone bedrock on the M8 Motorway.

Geological System/Age and Primary Rock Type
Bedrock is Lower Carboniferous (Mississippian) shaly limestone (Durrow Formation).

Main Geological or Geomorphological Interest
Approaching the road cut from the north, the strata are inclined (dip) to the south at an angle of around 30°. The bedrock is exposed along a continuous section on the west side of the motorway, and is almost continuous on the east side, with vegetation covering one northeastern section. Immediately south of this vegetated section the strata can be seen to adopt a more horizontal orientation. The transition from dipping to near horizontal is marked by an obvious south-dipping fault.

Towards the southern end of the road cut, where the motorway is traversed by a bridge (local Rathdowney to Cullahill road), the limestone strata are not as clearly visible and loose rubble dominates the section.

Site Importance – County Geological Site
This is a good representative section for the Durrow Formation, and it is of County Geological Site importance.

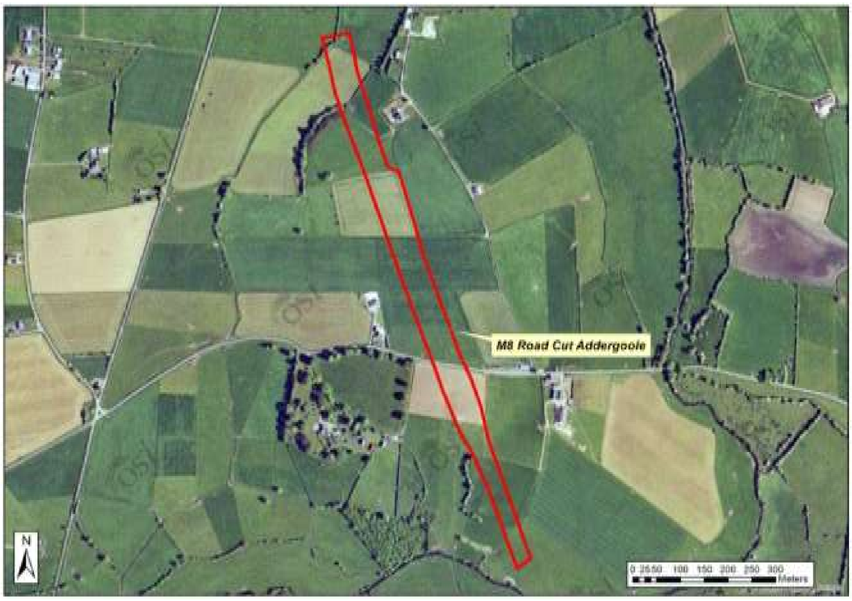
Management/promotion issues
The site is on a busy motorway, and is therefore not suitable for general promotion. However, the roadside exposures provide hundreds of daily passing motorists with a rare ‘window’ into the limestone strata that underlie this part of County Laois, and much of the Irish countryside. Over time, the rock faces will become covered with lichen, moss and other vegetation, obscuring the strata. Some localised management of this would preserve this open ‘window’ into the county’s limestone foundation, for example along the northern part of the section where strata are inclined.

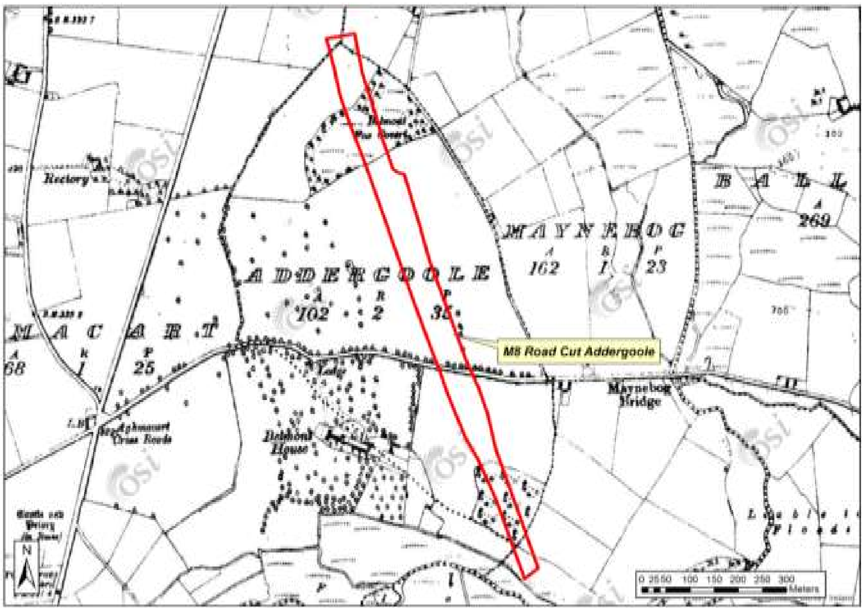
M8 Road cut viewed looking south from lay-by.

South-dipping limestone strata on the west side of M8 Road cut (northern part of road cut).

View looking south under bridge carrying local Rathdowney to Cullahill road over M8.


North
Kilnaseer
Braccas
Knockfin
Turfarney
Cannonswood
Gorteen
Nursery
Newtown
River Goul
An Ghabhail
Raheenleagh
Srah
Rapla
Maynebog
Ballynevin
Addergoole
Aghmacart
M8 Road Cut Addergoole
Graigueagarran
Priory
Galesquarter
Cullahill
An Chúlchoill
Ballydavin
Castle
Shanbally
Church
Parknahown
Barrackquarter or Ross
Castlequarter
Oldtown
Scrub and Glenmacolla
77
76
75
74
73


M8 Road Cut Addergoole
N
0 25 50 100 150 200 250 300
Meters


Rectory
MAYNEBOG
A 162 R 1 P 23
ADDERGOOLE
A 102 R 2 P 35
MACART
A 68 R 1 P 25
269
M8 Road Cut Addergoole
Maynebog Bridge
Belmont House
Aghmacart Cross Roads
Liable to Floods
N
0 25 50 100 150 200 250 300
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Modubeagh**
Other names used for site	Modubeagh Colliery
IGH THEME	**IGH16 Hydrogeology, IGH15 Economic Geology**
TOWNLAND(S)	**Modubeagh**
NEAREST TOWN/VILLAGE	**Wolfhill**
SIX INCH MAP NUMBER	**25**
NATIONAL GRID REFERENCE	**659500E 683900N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
Modubeagh is an abandoned coal mine site, largely overgrown but containing several extant surface features including the remains of mine buildings and a collapsed shaft.

Geological System/Age and Primary Rock Type
Bedrock at the site is part of the Carboniferous Pennsylvanian Coolbaun Formation but the underground mine exploited the Marine Band within the underlying Pennsylvanian Moyadd Coal Formation.

Main Geological or Geomorphological Interest
Modubeagh was noted for an unusual mine spring with a stepped structure, apparently sited at the southeastern corner of the field that bounds the site to the west. Old six-inch maps show a series of shafts running east-west along this field, crossing the field boundary at the southeastern corner. No trace remains of these shafts. A stream runs northeast along the field boundary here, its water turned red by mine drainage that enters the stream over 100 m upstream. A manhole in the centre of this field, 120 m northwest of the mine site boundary, is the only visible evidence for this apparent mine drainage system that may originally have emerged at the original site of the spring. Modubeagh mine was operated from the second half of the 19th century until 1925 by Wolfhill Collieries Ltd. The site is mainly of interest as an example of a largely 19th century coal mine site with several extant surface mine features including mine buildings, a reservoir and shafts. Buildings include the remains of housing for winding gear and a mine manager's house reduced to footprint level. The main shaft, marked by a 5m wide depression, is collapsed. It was one of the deepest in the coalfield, reaching a depth of 160 m.

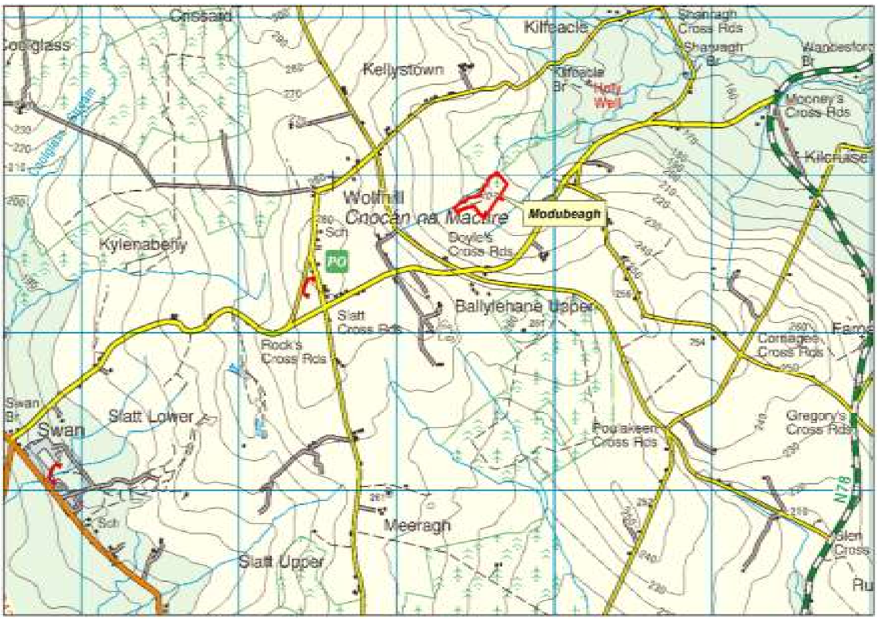
Site Importance – County Geological Site
There are not many surface traces of pre-20th century mining in the Leinster Coalfield, unlike the situation in the Slieve Ardagh coalfield to the southwest. Indeed, even many of the 20th century mines have little surface expression, the land having been reclaimed for farming and other uses. In this context, the Modubeagh site has considerable significance even if the extant surface features are largely overgrown.

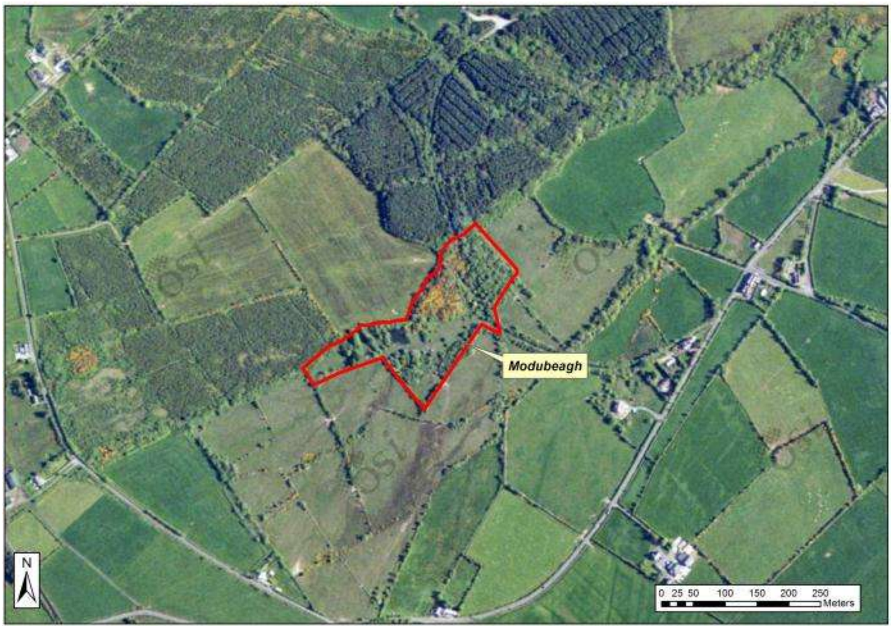
Management/promotion issues
The site, in its current overgrown state, is of interest mainly to students of mining history. The main shaft, although collapsed at the collar, is unfenced and constitutes a safety risk. The site is therefore not suitable for promotion to the general public.

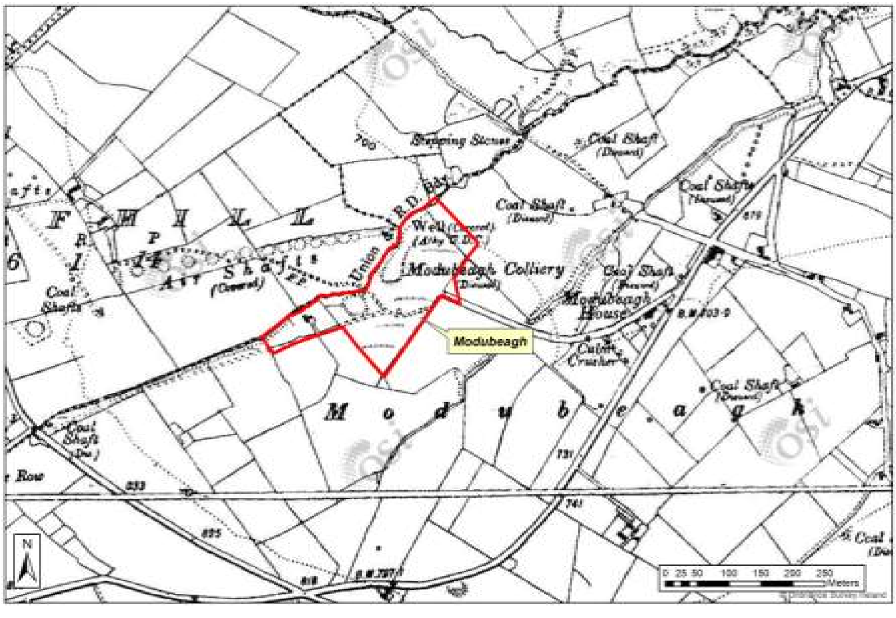
Remains of washing/screening plant at Modubeagh Mine.

Modubeagh Mine Reservoir.

Surface expression of Modubeagh Mine main shaft, c. 160 m deep.


Modubeagh
Wolfhill
Cnocán na Machaire
Kellystown
Kilfeacle
Kylenabehy
Ballylehane Upper
Slatt Lower
Swan
Slatt Upper
Meeragh
Doyle's Cross Rds
Slatt Cross Rds
Rock's Cross Rds
Poulakeen Cross Rds
Gregory's Cross Rds
Corrnagee Cross Rds
Mooney's Cross Rds
Holy Well
Crissard
Sch
PO
N78


Modubeagh
N
0 25 50 100 150 200 250
Meters


Modubeagh
Modubeagh Colliery
Modubeagh House
Stepping Stones
Coal Shaft
Air Shafts
Union & R.D. Bdy
Well
M o d u b e a g h
N
0 25 50 100 150 200 250
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Moyadd Stream**
Other names used for site	
IGH THEME	**IGH9 Upper Carboniferous and Permian**
TOWNLAND(S)	**Moyadd, Knockbaun**
NEAREST TOWN/VILLAGE	**Swan**
SIX INCH MAP NUMBER	**25, 31**
ITM CO-ORDINATES	**655120E 683460N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 15,16**

Outline Site Description
A small river channel has exposed bedrock in the bed and banks for approximately 1km.

Geological System/Age and Primary Rock Type
The site is the type section for the Moyadd Coal Formation which spans the boundary between the Namurian and Westphalian (in traditional stratigraphical usage in western Europe).

Main Geological or Geomorphological Interest
This stream section has been logged in detail by Professor Ken Higgs in his work for the Geological Survey of Ireland and at University College Cork. The Moyadd Coal Formation is defined with this stream exposure defined as the type section. The lowest coal seams, No. 1 and No. 2 of the coalfield are found within the section separated by two marine bands. The marine bands are critical markers in the stratigraphy representing short lived inundations of the coal swamps with marine environments and their characteristic fossils. Goniatites (small coiled cephalopods) are the characteristic fossils of these marine bands.

Above the Moyadd Coal Formation, the succeeding younger Clay Gall Sandstone Formation and the Coolbaun Coal Formation are found in the stream, moving southwards. The section has provided samples for palynology (spores and pollen microfossils), but nearby boreholes and other sections have also been used for correlating and sampling other formations than just in the Moyadd Coal Formation.

Site Importance – County Geological Site; may be recommended for Geological NHA
The lack of exposure generally across the Leinster coalfield means that the extensive exposures in this stream section are an important County Geological Site, but may also be recommended for geological NHA status when reviewed in a national context.

Management/promotion issues
The site is on private farmland and is unsuitable for promotion. It is also very vegetated and difficult to access without having the strong motivation of a field geologist to map or sample the bedrock.

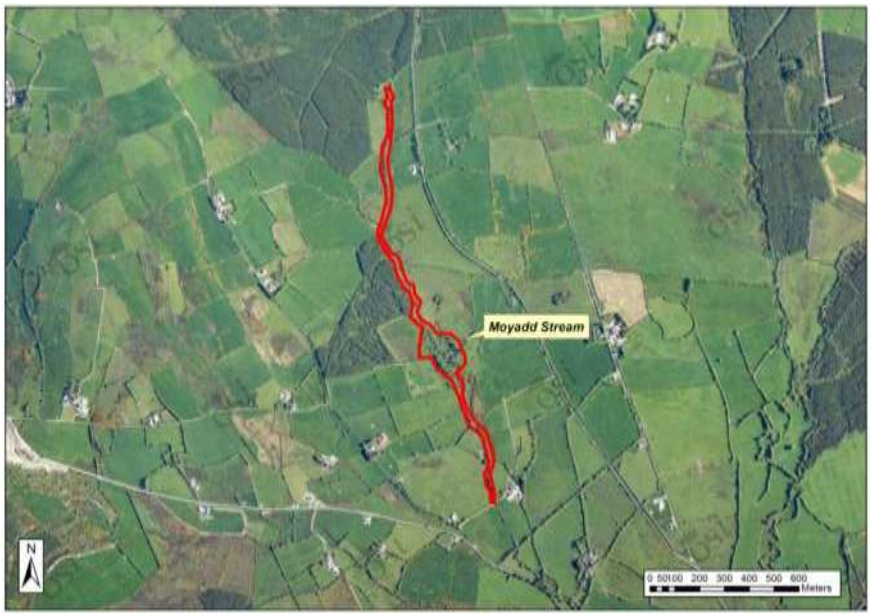
Panorama view of the Moyadd Stream site which runs along the edge of the forestry, flowing downstream to the left.

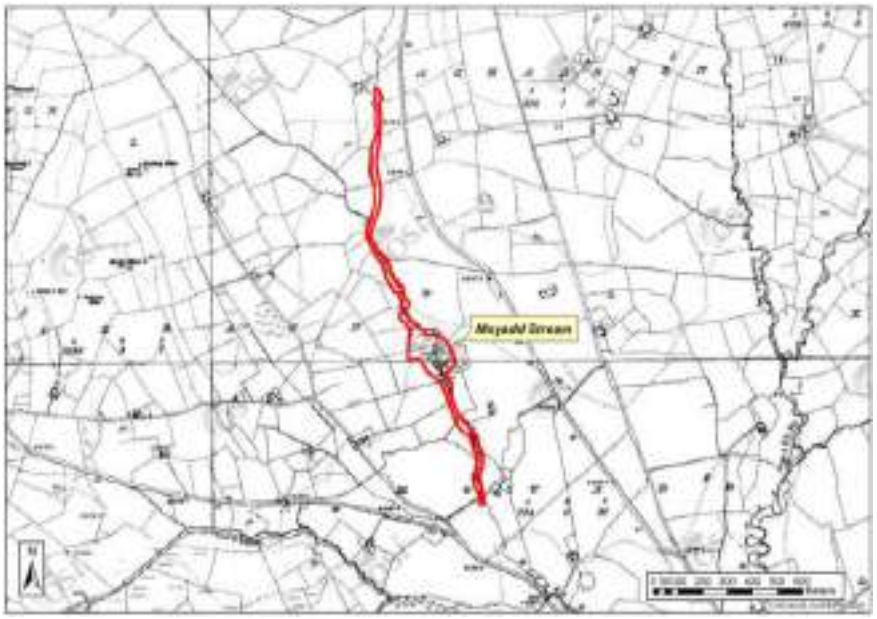
The stream bed and bank exposures are not extensive nor easy to access.

A typical example of the quality of exposure in the stream at Moyadd.

Disturbed ground, with many hollows and heaps, on the northern side in the middle of the site, may represent very old coal pits.


Knockacrin
Cleanagh
Aghadreen
Coolglass
Crissard
Knockbaun
Moyadd Stream
Moyadd
Kylenabehy
R430
Swan
Slatt Lower
Slatt Upper
Moyadd Br.
Clogh River


Moyadd Stream
N


Moyadd Stream

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Old Rossmore**
Other names used for site	
IGH THEME	**IGH6 Minerals, IGH9 Upper Carboniferous and Permian, IGH15 Economic Geology**
TOWNLAND(S)	**Rossmore**
NEAREST TOWN/VILLAGE	**Bilboa**
SIX INCH MAP NUMBER	**37**
NATIONAL GRID REFERENCE	**666440E 673820N**
1:50,000 O.S. SHEET NUMBER	**61 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
Old Rossmore is a large abandoned coal mine and sandstone quarry comprising several large open pits, extensive waste heaps, derelict processing plant and outcrops of coal.

Geological System/Age and Primary Rock Type
The bedrock consists of sandstone, shale and coal of the Carboniferous Pennsylvanian (Westphalian) Moyadd Coal Formation and overlying Clay Gall Sandstone Formation.

Main Geological or Geomorphological Interest
Old Rossmore lies at the eastern edge of the Leinster Coalfield. Both the Moyadd Coal Formation and overlying Clay Gall Sandstone Formation are exposed within the two large quarries on the southern part of the site. A third large quarry to the north is flooded and no exposure of coal was visible during the site visit, while the large quarry to the south appears to have been exploited only for sandstone. A fifth pit, which appears on the 1:50,000 maps as a small lake, is present in the northern part of the old mine site – this area is not included in the Old Rossmore site defined for this audit as it contains no features of heritage interest. The western-most quarry (the Cheswell opencast) is actually located in County Carlow and is also outside the site boundary. Coal from the No. 2 seam or Marine band was mined in both the Cheswell quarry and the eastern quarry by opencast methods in the 1980s; subsequently sandstone was quarried. The Marine Band is 0.31 m thick and is the most widespread and economically important seam in the Leinster Coalfield. It is well exposed in both quarries, particularly in the eastern quarry. The coal, like all coal in the Leinster Coalfield, is anthracite, a high-grade coal with high calorific value. However, also like most coal seams in the coalfield, the Marine Band contains high concentrations of sulphur, evident in the fine-grained pyrite visible throughout the exposure. Coal was also mined here underground in the earlier part of the 20th century but few traces of underground mining remain.

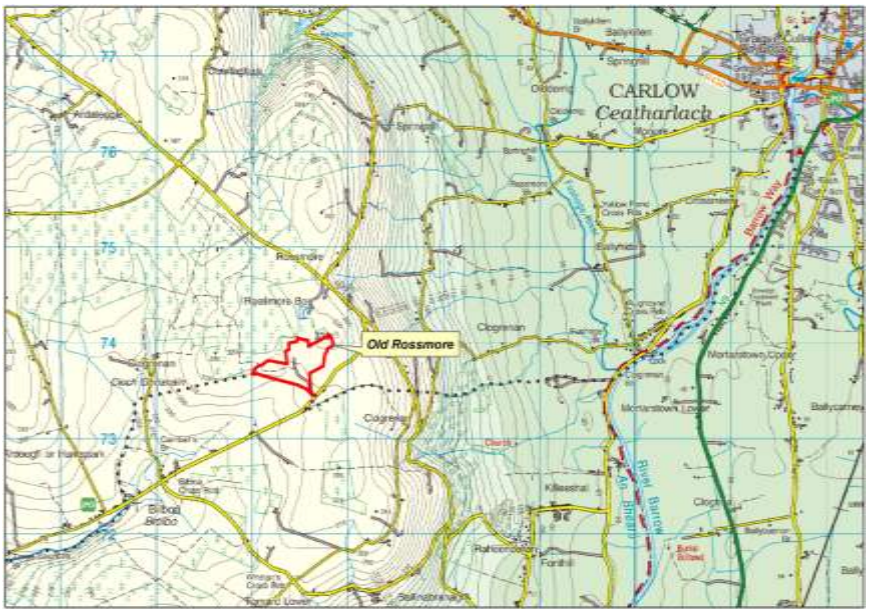
Site Importance – County Geological Site; recommended for Geological NHA
Good exposures of coal and coal-bearing strata are uncommon in the Leinster Coalfield, not least because so much mining took place underground. Old Rossmore is therefore of great significance in this context.

Management/promotion issues
The site is an abandoned mine site with significant safety concerns, including flooded quarries with steep, unfenced faces. Ongoing, very small-scale extraction has helped maintain exposure of the coal seam. It is of interest mainly to geologists and is not suitable for promotion to the general public in its current form.

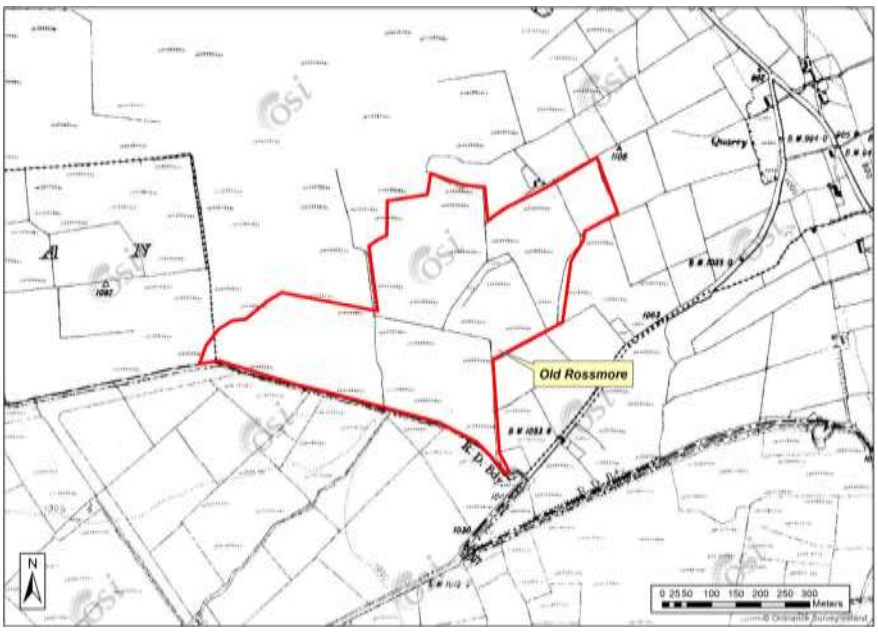
View from southwest of eastern quarry; coal exposures (dark grey) in background.

Marine Band coal seam (centre) with shale below and sandstone above.

Marine Band coal seam (close-up, A4 page for scale).


CARLOW
Ceatharlach
Old Rossmore


Old Rossmore
N


Old Rossmore
N
0 25 50 100 150 200 250 300
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Poulastore**
Other names used for site	Poulasthore, Poulastare
IGH THEME	**IGH1 Karst**
TOWNLAND(S)	**Killone, Kilmurry, Ballythomas**
NEAREST TOWN/VILLAGE	**Stradbally**
SIX INCH MAP NUMBER	**14**
ITM CO-ORDINATES	**655211E 700974N**
1:50,000 O.S. SHEET NUMBER	**55 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
A cave situated in the top of Killone Hill.

Geological System/Age and Primary Rock Type
The cave is in Carboniferous Limestone rock, in the Clogrenan Formation which is the youngest part of the limestone sequence. The age of the cave is unknown but may be older than the immediate post glacial period of the last 10,000 years (Holocene).

Main Geological or Geomorphological Interest
This is one of very few caves in Laois, despite the widespread bedrock of Carboniferous limestone. It is found almost at the top of Killone Hill, which is one on many hills in the area between Portlaoise and Stradbally that are widely believed to be tower hums. Hums is a term for remnant or degraded tower karst, of the type found today in China and SE Asia. The Ice Age would have removed most evidence of this, leaving only remnant hills such as Killone Hill. The cave could date back to an interglacial period or even older. There is no active stream flow, so it formed under an entirely different hydrogeological regime and is now a 'fossil' or inactive cave.

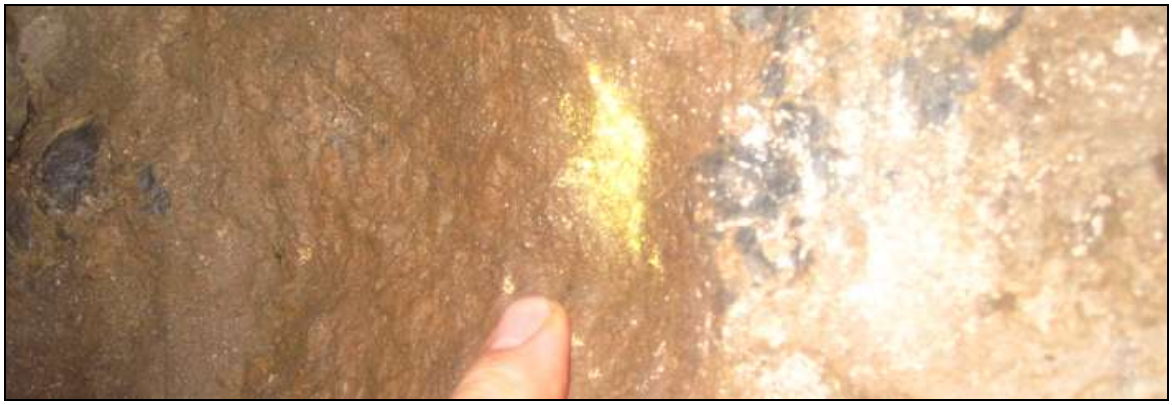
Early descriptions of this cave tend to strongly exaggerate the size and danger, but one from 1794 is interesting in describing "the most brilliant scene ever exhibited by nature, or described in fairy tale; the sides, roof and every pointed rock, are instantly covered with festoons and bouquets of pearls, diamonds, rubies, and every other precious stone, in full oriental splendour, caused by the drops of water issuing from the calcareous rocks; though there are no incrustations to be seen." The phenomenon is one that cavers will have seen in some caves where the drops of water combine with certain algae to give bright silver and other glistening reflections to their head torches. A 1965 description by Jack Coleman in his book 'The Caves of Ireland' also describes "fungoid structures" in the deepest chamber.

Site Importance – County Geological Site
This cave merits inclusion as a County Geological Site in Laois, simply from its rarity. It may have importance as evidence of ancient landscapes but has not been studied.

Management/promotion issues
The cave is on private farmland and unsuitable for promotion and there should be no access without landowner permission. The cave also provides its own restriction on access as after about 10m the further reaches are only accessible through a very tight muddy squeeze. Only experienced cavers in recognised groups should consider seeking landowner permission.

The entrance to Poulastore.

Killone Hill viewed from the north east side.



Gold coloured reflections from algae with water droplets.

Poulastore
Greatheath
Little Bog Lough
The Heath
An Fraoch Mór
Heathlodge
Killenny
Moated Site
Carrigeen
Ballythomas
Killeen
Moyanna
Raheenahown South
Raheen
Raheenahoran
Kilbetrick Cross Rds
Kylespiddoge
Kilrory
Ballyrider
Ballinlough
Ballymaddock
Bush Cross Rds
Ballynowlan
Ballyclider
Ballycarroll
Gravel Pit
Church
Kilteale
Ballymaddock Cross Rds
Aghnahily Bog
Park or Dunamase
Dunamase Castle
Deserted Settlement
Slievebaun
Rathmore
Park Upper
Park Lower
Barrow
Aghnahily
Knocknambraher
Newtown
Dysart
Castle
Grange Upper
Grange Lower
Hewson Hill
Loughakeo
Graveyard
Raheenduff
STRADBALLY
An tSráidbhaile
Brockley Park
Kylebeg
Church
51
53
54
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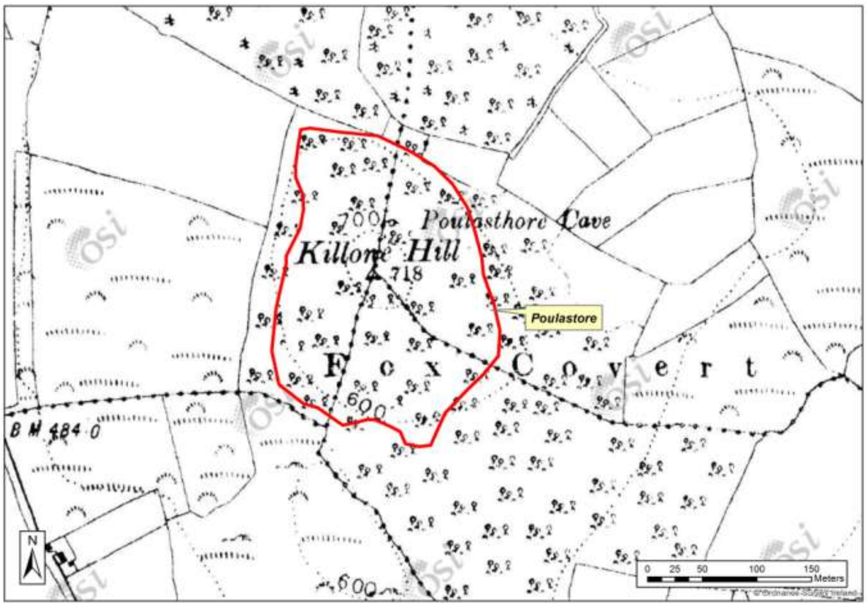
56
57
58
N80

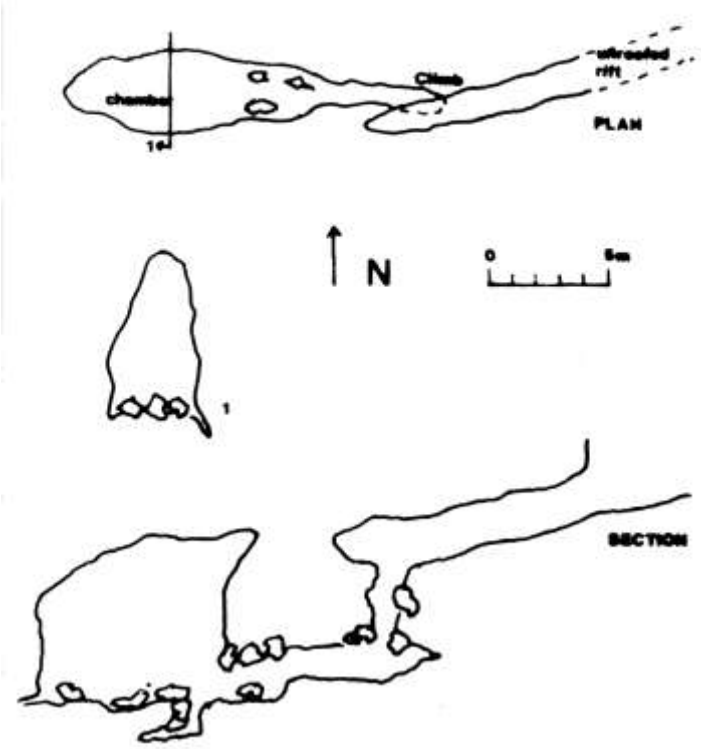
Poulastore
N
0 25 50 100 150 Meters



Poulasthore Cave
Killone Hill
718
700
600
Poulastore
F o x C o v e r t
B M 484 0
N
0 25 50 100 150 Meters

Poulastore, Co. Laois

Survey: J. Dowds, S. Dowds, S. Mossop.



LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Rathleague Spring**
Other names used for site	Rathleague Warm Spring
IGH THEME	**IGH16 Hydrogeology**
TOWNLAND(S)	**Rathleague**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**13**
ITM CO-ORDINATES	**648750E 696660N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15, 16**

Outline Site Description
A natural spring situated under tree cover, 2km southeast of Portlaoise alongside the R425 road.

Geological System/Age and Primary Rock Type
The spring emerges at the surface through pure-bedded Dinantian (Lower Carboniferous/ Mississippian) Allenwood Formation limestone bedrock.

Main Geological or Geomorphological Interest
Rathleague Spring is a karst feature, and is one of several in this region southeast of Portlaoise. (Other local karst features include springs, sinking streams, enclosed depressions). The spring emerges at an elevation of 110 mOD. Rathleague spring is recorded by GSI as a 'Warm' Spring, and was recorded on the early GSI six inch sheets to have a temperature of 14°C. It is situated close to a mapped fault, which lies around 700m to the east. At this fault contact, the Allenwood Formation lies in close proximity to Clogrenan Formation limestones and younger Namurian shales (Luggacurren Shale Formation; Killeshin Siltstone Formation).

Site Importance – County Geological Site
This site is an important County Geological Site. The spring is situated in a Regionally Important Aquifer – Karstified aquifer. This is an important hydrogeological phenomenon of a warm spring in this part of County Laois, and is possibly the county's only warm spring. (Tepid springs have been identified elsewhere, e.g. Kyle Spring). A 1986 paper on the energy potential of groundwater in Ireland listed Rathleague Spring among 17 warm springs (with a temperature >13.5°C) in Leinster, with a water temperature value of 14.5°C recorded on May 10th 1982. Warm spring temperature values are considered 2.5°-7°C above normal.

Management/promotion issues
The well is listed by the GSI as Well Number 23/19SE W148. The spring remains hidden beneath well-established deciduous tree cover and lower vegetation (brambles, ivy). Its situation in close proximity to the R425 road is benefited by this cover. Otherwise fly-tipping could be a greater threat. General 'blown-in' litter was not identified. However, the site requires regular monitoring to ensure these problems and subsequent pollution of the spring does not become an issue. The site is not suitable for general promotion owing to the difficulty of access, proximity to the busy road, and the general undramatic nature of this apparently still, pond of water.

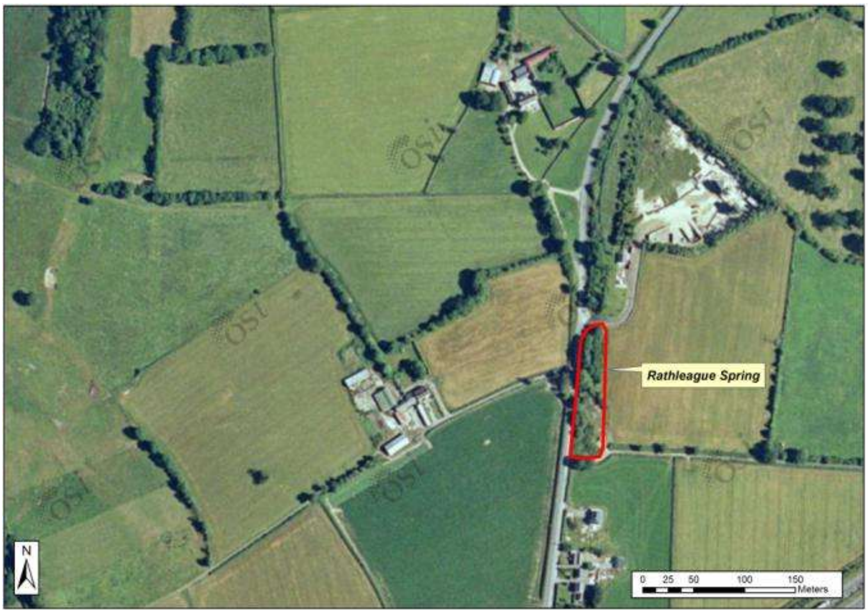
Location of Rathleague Spring hidden amid vegetation alongside R425. Looking northeast.

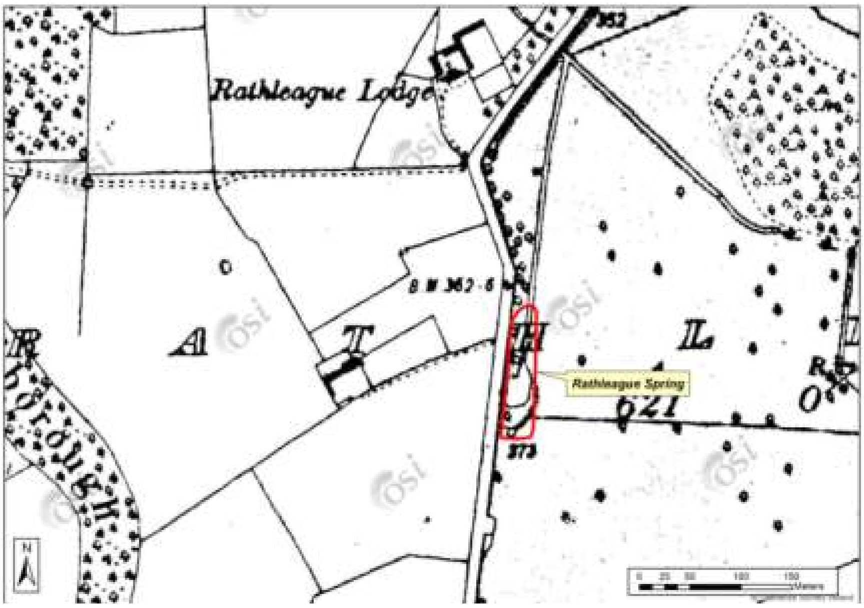
Entrance gate to *Kilsaran*. Spring to right of gate, beneath trees. Spring emerges and flows north (left) under entrance.

View of spring amid trees, brambles and other scrub. R425 to left. Looking north.

View of spring amid trees, ivy, brambles and other scrub. R425 to left. Looking northeast.


PORTLAOISE
Port Laoise
Borris Little
Ballyclider
Ballymooney
Summerhill or Aghnahama
Kylekiproe
Clonminam
Downs
Derry
Togher
Rathleague Spring
Rathleague


Rathleague Spring
N
0 25 50 100 150 Meters


Rathleague Lodge
Rathleague Spring
621
N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Ridge of Portlaoise**
Other names used for site	Portlaoise Esker, Ridge of Maryborough
IGH THEME	**IGH7 Quaternary**
TOWNLAND(S)	**Rathleague, Downs, Borris Little, Meelick, Maryborough, Ballytegan, Gorteen, Cooltoran, Knocknagroagh**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**13**
ITM CO-ORDINATES	**647290E 698630N (the Ridge Graveyard, on the feature in Portlaoise Town)**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
The Ridge of Portlaoise and its surrounding sands and gravels include a long, sinuous accumulation of sands and gravels deposited both under the ice sheet and at its margin as the ice withdrew northwards across central Laois at the end of the last Ice Age.

Geological System/Age and Primary Rock Type
The Ridge of Portlaoise is formed within an area dominated by bedrock of Lower Carboniferous limestones. The esker and flanking gravels themselves are Quaternary in age, having been deposited either under or at the edge of the northward-retreating ice sheet during deglaciation, approximately 14,000 years ago.

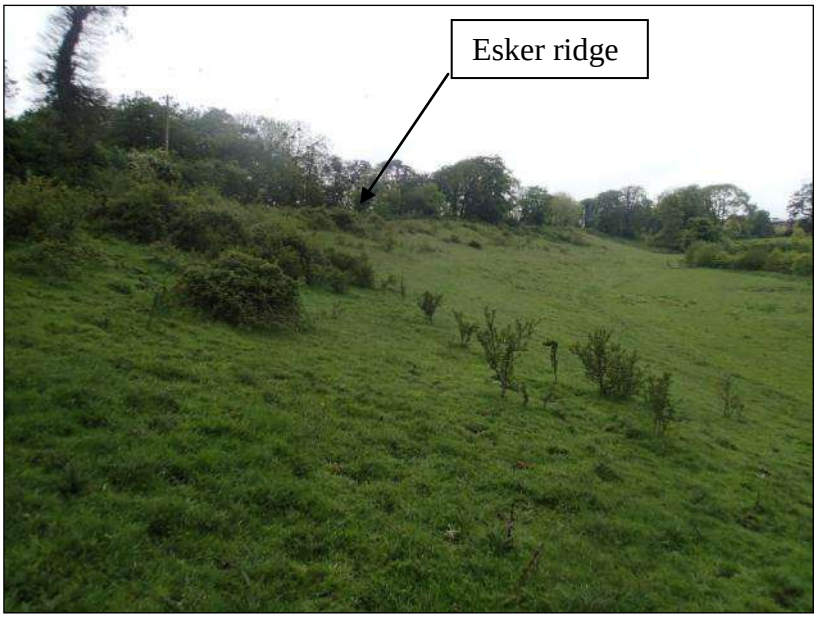
Main Geological or Geomorphological Interest
Where present the esker ridge is a striking feature, standing proud of the flat landscape of till (boulder clay) upon which it was deposited. Intact portions along Downs Road, southeast of the town, and within Portlaoise Town itself (particularly at the Ridge Graveyard), are especially impressive. In both localities the esker is comprised of a raised, steep-sided, elevated ridge of sands and gravels.

The esker feature is important in that it records faithfully the ice movement across this area of central Laois which is along its orientation, *i.e*. north to south. Associated sands and gravels in Downs, Cooltoran and Ballytegan Townlands, flanking the esker, are probably part of associated ice marginal fans. The sands and gravels within the feature are comprised chiefly of limestone clasts, but some sandstones are also present.

Site Importance – County Geological Site
What remains of the feature is still a high, striking example of a dry sand and gravel ridge, which stands proud of the surrounding landscape. This esker and the 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
This esker system comprises a well-defined landform sequence and should be listed as a County Geological Site. The esker ridge has been delisted as a pNHA (sitecode 000876) but all of this area is defined here as a County Geological Site, although the esker ridge segments themselves are not worthy of pNHA status geologically or geomorphologically.

Much of the feature has been destroyed by the development of Portlaoise to the south in recent years. It is important that the balance between development and conservation of this feature is examined in the future.

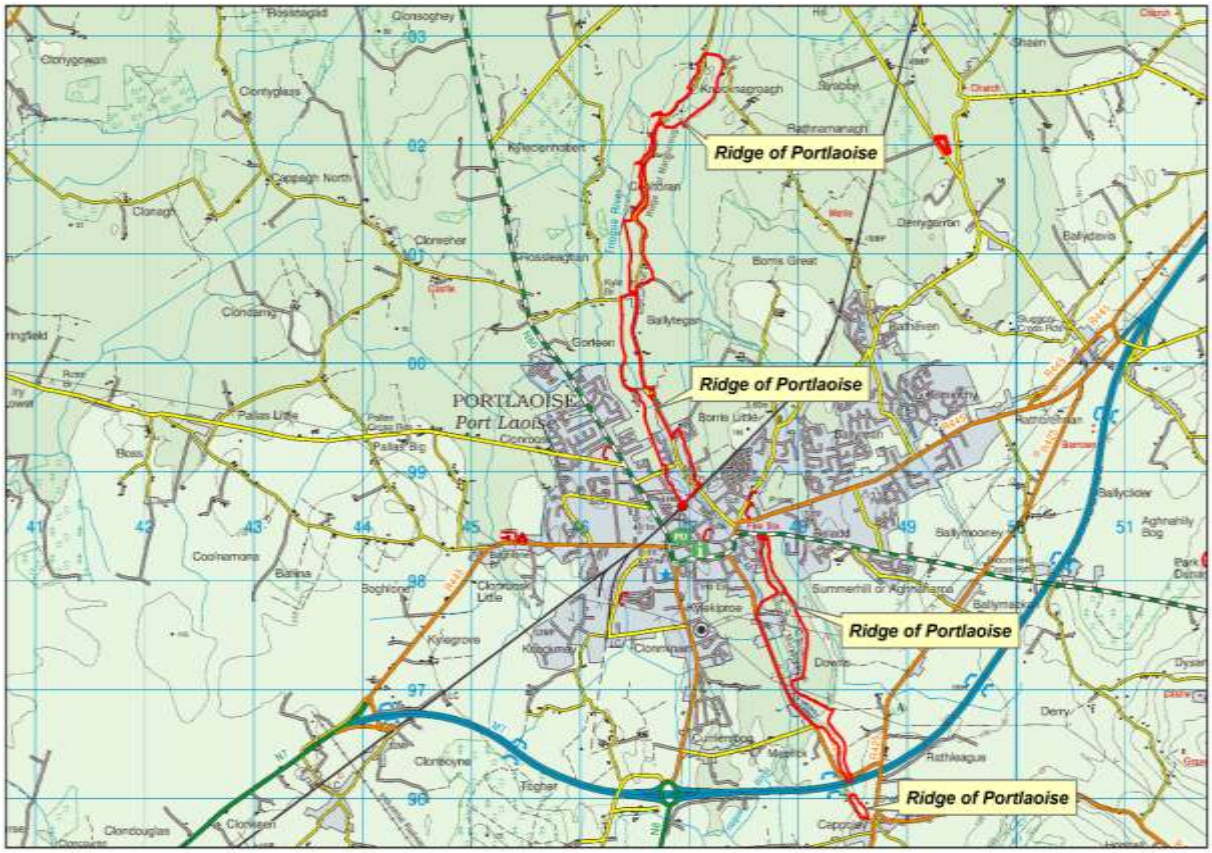


The Ridge of Portlaoise, looking north from the town boundary at Downs. Note the high, elevated nature of the ridge.

Mature trees and semi-natural vegetation along the esker ridge in Downs.

The Ridge Cemetery in Portlaoise Town.

Some of the dug out esker adjacent to a retail park in Portlaoise.


Ridge of Portlaoise
Ridge of Portlaoise
Ridge of Portlaoise
Ridge of Portlaoise
PORTLAOISE
Port Laoise


Ridge of Portlaoise
Ridge of Portlaoise
Ridge of Portlaoise
Ridge of Portlaoise

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Rock of Cashel**
Other names used for site	
IGH THEME	**IGH3 Carboniferous to Pliocene Palaeontology, IGH8 Lower Carboniferous**
TOWNLAND(S)	**Cashel**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**18**
ITM CO-ORDINATES	**647810E 692375N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description
Disused quarry in a limestone hillock.

Geological System/Age and Primary Rock Type
The rock here is Carboniferous Limestone, part of the Clogrenan Formation, which is from the Brigantian Substage, the youngest part of the Viséan Stage.

Main Geological or Geomorphological Interest
This hillock has some natural exposures of rock, but the principal interest lies in two disused quarry faces, which display some of the character of the rock. The limestone was quarried by Laois County Council for use in making roads from 1906 to the 1950s. The faces show some beds full of productid brachiopods – effectively preserving the sea floor animal communities at the time of deposition of the limestone. Other fossils common here are crinoids, so call 'sea lilies', fragments of which can make up a large component of some limestone beds. There are some sedimentary features of the limestone beds which are interpreted as evidence of deposition by turbidity currents.

Site Importance – County Geological Site
This site was listed as an Area of Scientific Interest in the An Foras Forbartha Report of 1981. It is a good representative site for a particular formation within the Carboniferous Limestone stratigraphy in Laois.

Management/promotion issues
The Rock of Cashel is private farmland and is not suitable for promotion without negotiated arrangements in place with the landowner. The passing motorist can glimpse the quarry faces when driving south past the site. The site should not be confused with the more famous Rock of Cashel in Tipperary. The main section of quarry has had some infill on the southern side of the quarry floor with soil from elsewhere, but this has not obscured the faces at its current level.

The main section of quarry at the Rock of Cashel.

The smaller section of disused quarry at the Rock of Cashel.

A bed surface with numerous productid brachiopod fossils. Each lump on this surface is one shell, approx. 7 or 8 cm wide.

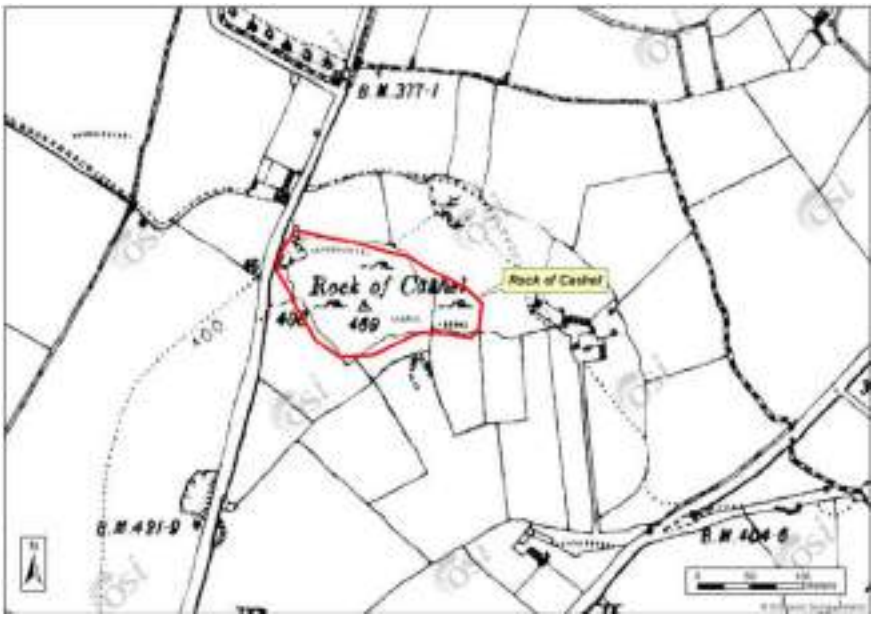
A palaokarstic surface in the quarry.

Soil fill on southern side of main quarry.

A view of the main quarry from the top of the hillock.


PORTLAOISE
Port Laoise
Rock of Cashel


Rock of Cashel
N


B.M. 317-1
Rock of Cashel
Rock of Cashel
489
B.M. 491-9
B.M. 404-6
N

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Rock of Dunamase**
Other names used for site	Dunamase Castle
IGH THEME	**IGH1 Karst, IGH8 Lower Carboniferous, IGH12 *Mesozoic* and Cenozoic**
TOWNLAND(S)	**Park or Dunamase**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**13**
ITM CO-ORDINATES	**652950E 698200N**
1:50,000 O.S. SHEET NUMBER	**54, 55 GSI BEDROCK 1:100,000 SHEET NO. 19**

Outline Site Description
A small but prominent, steep-sided limestone hill, capped by the ruins of a Norman castle fortress dating back to the early 12th century.

Geological System/Age and Primary Rock Type
The hill comprises Carboniferous (Mississippian) cherty limestone bedrock (Clogrenan Formation). The steep, rocky slopes of the hill are a typical example of Tertiary karst limestone landforms in the county.

Main Geological or Geomorphological Interest
The Rock of Dunamase is one of a series of small, prominent limestone hills, erosional features known as 'hums' that rise abruptly above a plain. The hills are eroded from medium- to coarse-grained, blue-grey coloured limestones. The limestone beds are regularly cherty, examples of which can be seen in the beds exposed 20m-30m east of the Keep on the hill summit.

The hill is a fine example of a relict karst landform. The hill (and those of similar form in the region) may have formed as isolated ‘towers’ (possibly comparable to present-day karst landforms in south-east Asia). Subsequent physical erosion by the ice during the Pleistocene glaciations most would have smoothed off sharp peaks, formed the stubby hills found in this part of the county today.

Site Importance – County Geological Site
The Rock of Dunamase is a representative site for the hills (hums) situated between Portlaoise and Stradbally, and is an important County Geological Site.

Management/promotion issues
The site and fortress ruins on the **Rock of Dunamase** are managed by the National Monument Service and are open to the public year round. A major conservation project on the masonary structures was completed in 2006. The strategic observational and defence advantages afforded by the natural limestone hum are evident in the presence of what was once a strongly fortified castle and ramparts. The site is an ideal location for visitors to be introduced to remnant landforms of the Tertiary, pre-Ice Age landscape of Ireland.

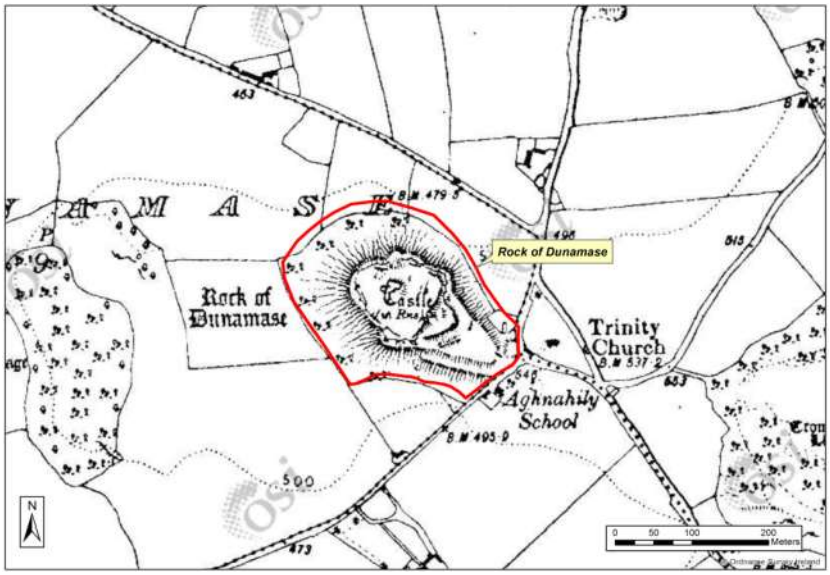
Southeast side of the Rock of Dunamase viewed from the approach road off N80.

Inclined limestone strata on near-vertical cliff on southeast side of the Rock.

Limestone (with cherty nodules) outcrops in the Lower Ward, east of the Keep (upper right).


PORTLAOISE
Port Laoise
Rock of Dunamase


Rock of Dunamase


Rock of Dunamase
Castle
Trinity Church
Aghnahily School
N
0 50 100 200
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Sluggory Cross Roads**
Other names used for site	The Sluggies, Sluggory Swallow Hole
IGH THEME	**IGH1 Karst, IGH16 Hydrogeology**
TOWNLAND(S)	**Ballydavis, Rathbrennan**
NEAREST TOWN/VILLAGE	**Portlaoise**
SIX INCH MAP NUMBER	**13**
ITM CO-ORDINATES	**650725E 700018N**
1:50,000 O.S. SHEET NUMBER	**54 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description

This site is a complex active sinkhole (swallow hole) in karstic limestone, northeast of Portlaoise.

Geological System/Age and Primary Rock Type

The sinkhole, drainage and cave development are probably all post-glacial in age, formed over the last 11,000 years. The karstified pure bedded limestone of the Allenwood Formation is of Lower Carboniferous age.

Main Geological or Geomorphological Interest

The site includes two individual stream sinks and the enclosed depression containing them. Two small streams flowing northeastward sink first (during high stream flow only) on the southwestern side of the enclosed depression and then (continuously) at the northern end. There is probably a significant cave beneath the site, though no entrance has currently been found.

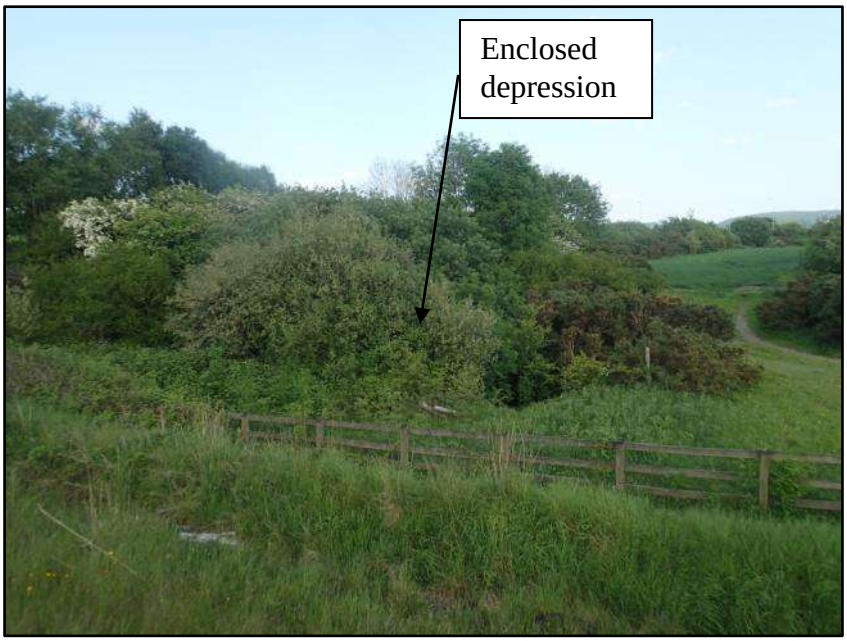
The entire sinkhole gets filled with water in times of heavy or prolonged rain and wells up within the base of the enclosed depression.

Site Importance – County Geological Site

This is one of a small number of active karst sites in the limestone district around Portlaoise and is of County Geological Site importance.

Management/promotion issues

The input of high volumes of water into active conduits in karstified limestone is recognised as a high-risk issue for groundwater supplies and the site should be protected from pollution of agricultural or road spills, or runoff. It is on private land and is not suitable for promotion. The site can be viewed from the Regional R445 public roadway, as a deep hollow filled with trees and channels entering it with flowing water, even in dry conditions.



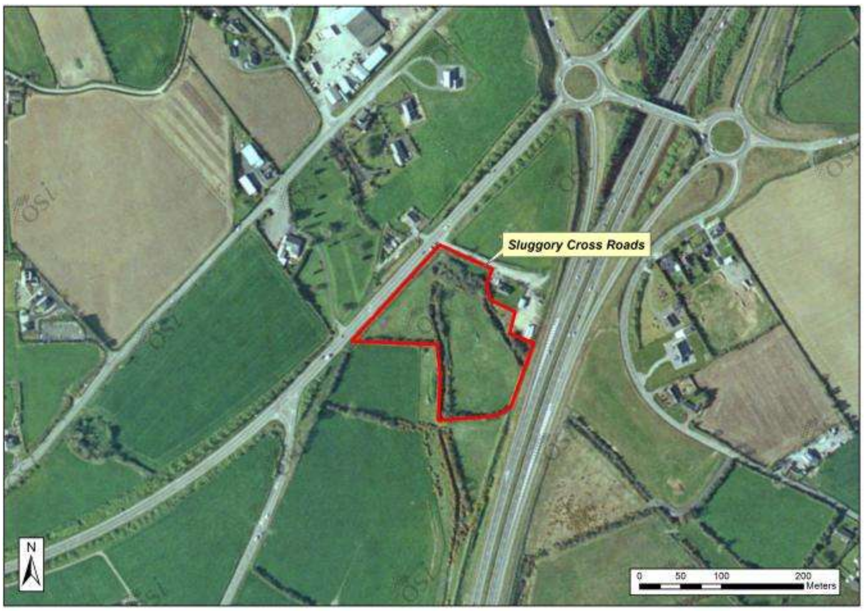
The view from the R445 road across the enclosed depression hosting the swallow holes.

Looking eastwards across the enclosed depression.

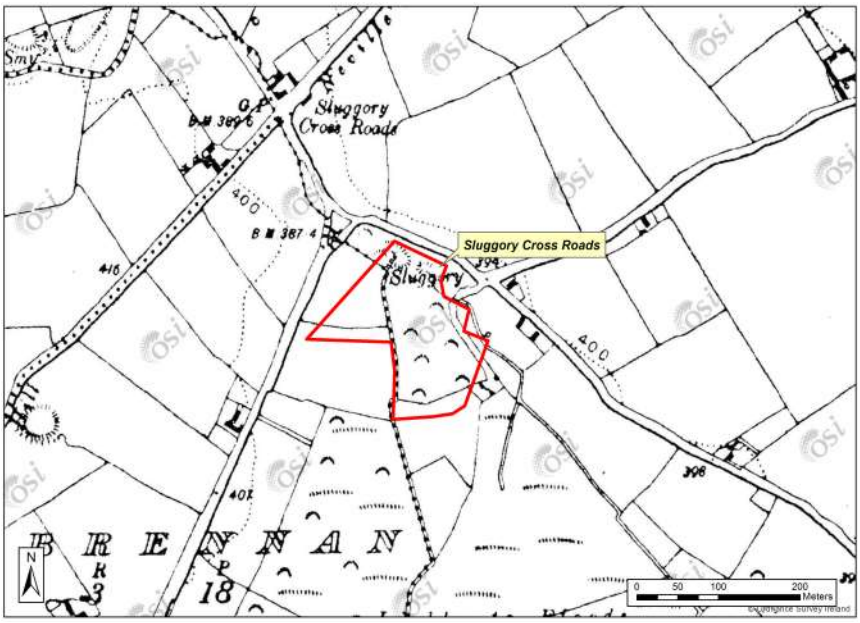
The stream sinking at the base of the depression.

The steep, tree-lined sides of the enclosed depression.

PORTLAOISE
Port Laoise
Sluggory Cross Roads
Rossleaghan
Borris Great
Ballytegan
Gorteen
Rathevan
Ballydavis
Derrygarran
Borris Little
Kilminchy
Rathbrennan
Ballyroan
Clonroosk
Belaod
Ballymooney
Summerhill or Aghnaharna
Ballymacken
Kyleklproe
Clonminam
Downs
Knockmay
Barrows



Sluggory Cross Roads
N
0 50 100 200
Meters



Sluggory Cross Roads
Sluggory Cross Roads
N
0 50 100 200
Meters

LAOIS - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Timahoe Esker**
Other names used for site	
IGH THEME	**IGH7 Quaternary**
TOWNLAND(S)	**Esker, Cloonnabacky**
NEAREST TOWN/VILLAGE	**Timahoe**
SIX INCH MAP NUMBER	**18**
ITM CO-ORDINATES	**653825E 691815N (centre of largest segment)**
1:50,000 O.S. SHEET NUMBER	**55 GSI BEDROCK 1:100,000 SHEET NO. 16**

Outline Site Description
The Timahoe Esker includes a number of high, sinuous ridge segments, which all form part of the same esker system, deposited both under the ice sheet and at its margin as the ice withdrew northwestwards across east Laois at the end of the last Ice Age.

Geological System/Age and Primary Rock Type
The Timahoe Esker is formed within an area dominated by bedrock of Lower Carboniferous limestones. The esker itself is Quaternary in age, having been deposited either under or at the edge of the northwestward-retreating ice sheet during deglaciation, approximately 14,000 years ago.

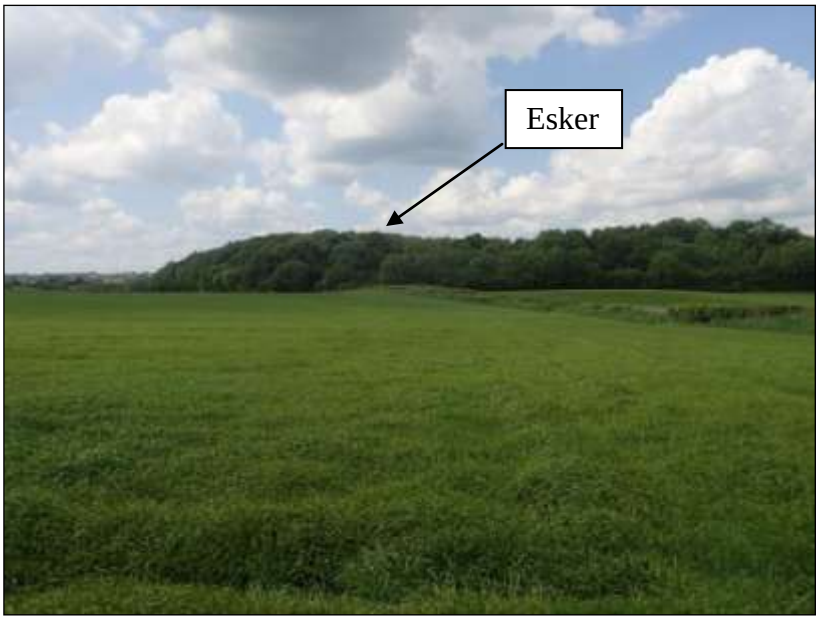
Main Geological or Geomorphological Interest
Where present the esker ridge is a striking feature, standing proud of the flat landscape of till (boulder clay) and sands and gravels within which it was deposited. Only three relatively intact portions remain, and although much of the feature has been quarried out in recent years, they are especially impressive. In all three localities the esker is comprised of a raised, elevated ridge of sands and gravels blanketed by broadleaf forestry.

The esker feature is important in that it records faithfully the ice movement across this area of east Laois which is along its orientation, *i.e*. northwest to southeast. Associated sands and gravels in Esker and Cloonabacky Townlands, as well as in Timahoe Townland itself, flank the esker and are probably part of an associated ice marginal fan. The sands and gravels within the esker feature itself are comprised chiefly of limestone clasts.

Site Importance – County Geological Site
What segments remain of the feature are still high, striking examples of a dry sand and gravel ridge, standing proud of the surrounding landscape. This esker and the 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
This system comprises a well-defined landform sequence and should be listed as a County Geological Site. Though four segments of the esker have been designated a pNHA (sitecode 000421), only three here are proposed for a County Geological Site as the fourth has been quarried out.

Furthermore, the three remaining esker segments themselves are not deemed worthy of pNHA status geologically or geomorphologically. A walking trail across one of the beads, and a signboard detailing the ecology of the feature, is an important local amenity resource. A new signboard (the existing one is faded beyond reading) including data on the ice sheet history in the locality would prove worthwhile.

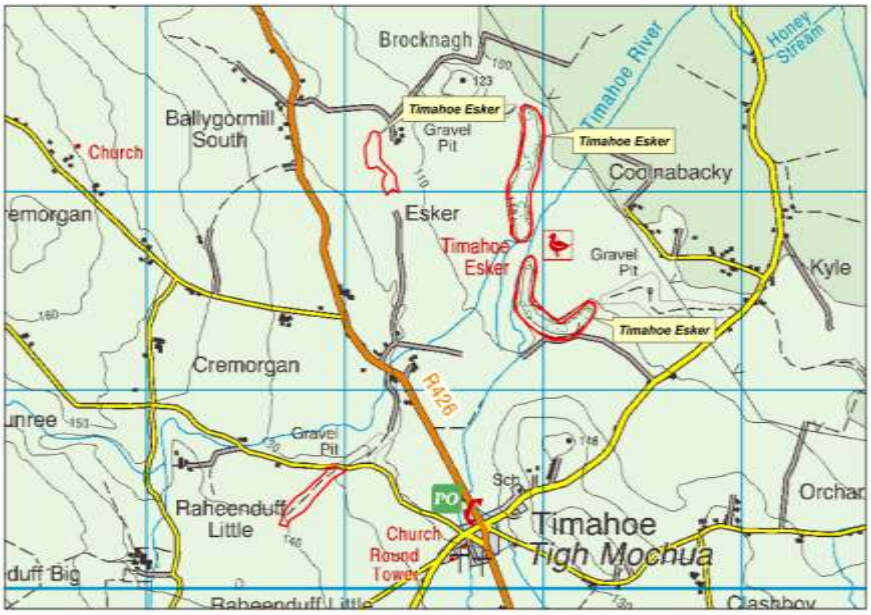


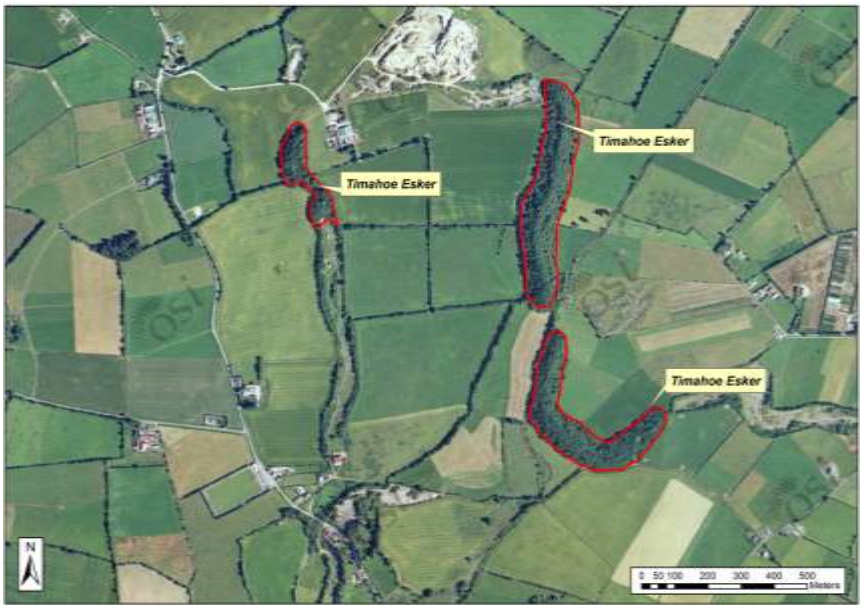
The Timahoe Esker, looking north. Note the high, elevated nature of the ridge.

Looking northwards across the walking trail on top of the Timahoe Esker.

One of the quarried out esker segments, southeast of Timahoe Village.

The faded signboard along the Timahoe Esker walking trail.


Brocknagh
Timahoe River
Honey Stream
Timahoe Esker
Gravel Pit
Timahoe Esker
Church
Ballygormill South
Coolnabacky
Esker
Timahoe Esker
Gravel Pit
Kyle
Timahoe Esker
Cremorgan
R426
Gravel Pit
Raheenduff Little
PO
Church
Round Tower
Timahoe
Tigh Mochua


Timahoe Esker
Timahoe Esker
Timahoe Esker
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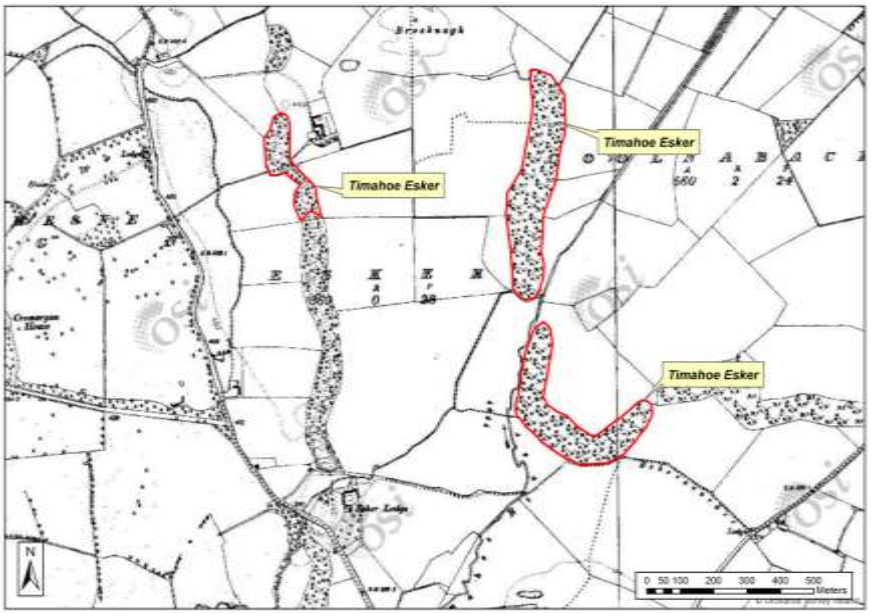
Timahoe Esker
Timahoe Esker
Timahoe Esker
N