

## CORK - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Black Ball Head Trachyte</b>		
Other names used for site	Black Ball Head		
<b>IGH THEME</b>	<b>IGH11 Igneous Intrusions, IGH8 Lower Carboniferous</b>		
<b>TOWNLAND(S)</b>	<b>Canalough</b>		
<b>NEAREST TOWN/VILLAGE</b>	<b>Allihies</b>		
<b>SIX INCH MAP NUMBER</b>	<b>127</b>		
<b>ITM CO-ORDINATES</b>	<b>458700E 539450N</b>		
<b>1:50,000 O.S. SHEET NUMBER</b>	<b>84</b>	<b>GSI BEDROCK 1:100,000 SHEET NO.</b>	<b>24</b>
<b>GIS CODE</b>	<b>CK024</b>		

### Outline Site Description

Large cliff-top outcrops around 19<sup>th</sup>-century watch tower.

### Geological System/Age and Primary Rock Type

The Black Ball Head trachyte is an alkaline pyroclastic rock intruded into the Lower Carboniferous (Mississippian) Reenydonagan Formation. The intrusion is considered to be Upper-Carboniferous in age, emplaced just before or during the Variscan (Hercynian) orogeny around 300 million years ago.

### Main Geological or Geomorphological Interest

Igneous rocks are not a major component of the bedrock geology of the Munster Basin, typically consisting of (i) thin bands of extrusive tuffs found over a wide area and (ii) dykes and other small intrusive bodies of very limited extent. On the Beara peninsula, the intrusive rocks are generally sub-divided into a northern province, cropping out along the northern coast of the peninsula, and a southern province, found along the southern coast and on Bere Island. They are intruded into Upper Devonian and Lower Carboniferous rocks and are typically alkaline in composition. Their occurrence has been linked to the development of the Munster Basin, the magma resulting from melting of the mantle under conditions of crustal extension along pre-existing zones of weakness (faults) in the Caledonide crust.

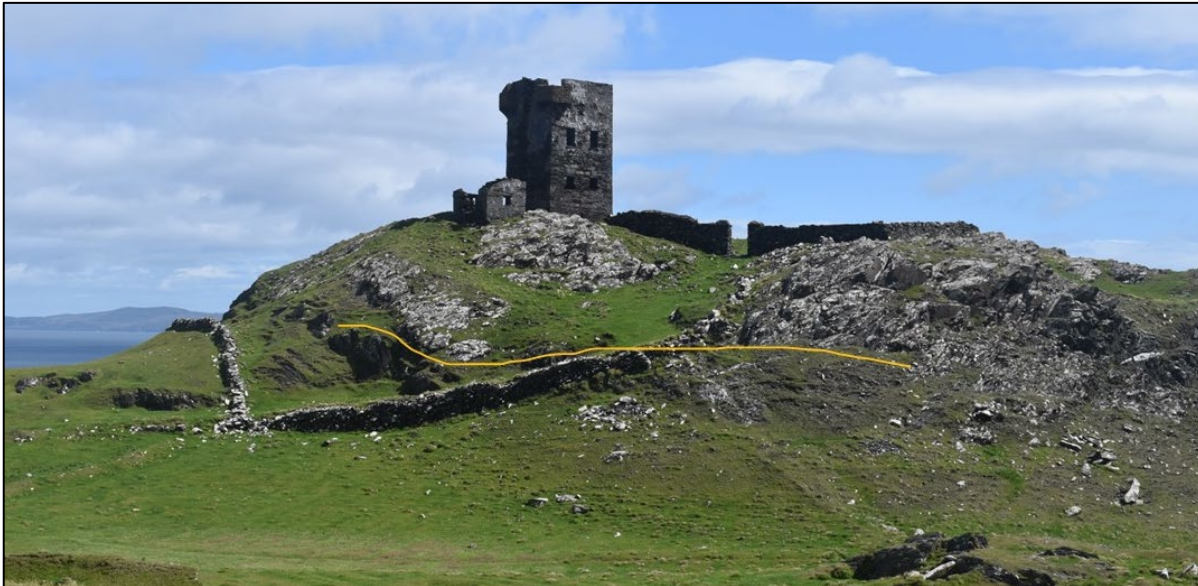
The rocks of the southern province range from alkali basalt to trachyte in composition. The intrusion on the southern side of Black Ball Head is a well-exposed example of a trachyte, a sub-volcanic intrusion of intermediate composition, i.e. containing more silica and less mafic material than basalt. The trachyte intrudes the Lower Carboniferous Reenydonagan Formation, which at this locality comprises dark grey calcareous mudstone beds with abundant fossils. The contact between the trachyte and mudstone is well exposed below the signal tower where the cross-cutting, intrusive nature of the trachyte is evident.

### Site Importance – County Geological Site

This is an excellent exposure of trachyte in contact with Lower Carboniferous fossiliferous mudstone. It is a good example of the intrusive rocks in the southern province of the Beara peninsula, part of the suite of alkaline igneous intrusive rocks emplaced into the sedimentary succession during development of the Munster Basin.

### Management/promotion issues

The site is within the Beara Peninsula SPA. It is located on commonage around an old signal tower that attracts sightseers while the steep cliff formed by the trachyte has in the past attracted rock climbers. The site is not located on a formal walking route and access is not easy – an old path to the tower from Canalough village is cut by a farm fence several hundred metres east of the tower. Further promotion is not warranted.



Black Ball Head signal tower on top of trachyte bedrock. Bedded sediments of the Reenydonagan Formation in contact with trachyte are visible below the yellow line marking the contact.



Fossiliferous calcareous mudstone of the Reenydonagan Formation. Fossils include crinoid ossicles (e.g. to right of coin) and brachiopods (e.g. centre-right).



Bedded and cleaved mudstone of Reenydonagan Formation (dark grey, left) and trachyte (immediately below hammer head) at Black Ball Head. Hammer overlies contact zone.



View of trachyte outcrop on south side of Black Ball Head.

