

CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Shanballymore		
Other names used for site	Shanballymore Spring		
IGH THEME	IGH1 Karst, IGH16 Hydrogeology		
TOWNLAND(S)	Clogher Demesne		
NEAREST TOWN/VILLAGE	Doneraile, Kildorrery		
SIX INCH MAP NUMBER	18		
ITM CO-ORDINATES	566188E 607393N (emergence)		
1:50,000 O.S. SHEET NUMBER	73	GSI BEDROCK 1:100,000 SHEET NO.	22
GIS CODE	CK079		

Outline Site Description

This site comprises the water supply compound around a large karstic spring, emerging at the foot of a rock scarp on the north bank of the Awbeg River, approximately 50 m from river itself.

Geological System/Age and Primary Rock Type

The spring is of karstic origin, formed in pure bedded, undifferentiated Mississippian (Lower Carboniferous) limestones.

Main Geological or Geomorphological Interest

The limestone across a wide area in north Cork comprises well bedded, well-jointed, pale, clean, coarse-grained rock, with occasional thin shales. Rock outcrops are not common but are distributed throughout the area. A large spring was known historically at this locality in Clogher Demesne and it has been used as a water supply source for the last forty years. There are several other relatively large springs along the valley of the Awbeg, as well as along the nearby Funshion River.

At Shanballymore Spring, groundwater emerges from the bedrock, which is at the surface at the spring and close to the surface in the surrounding land. The landscape in the region around the spring is gently undulating and hosts many karst features; swallow holes, enclosed depressions, dry valleys, caves and solutionally-enlarged fractures on limestone rock outcrops. Depth to bedrock varies greatly and unsystematically throughout the region. In the Shanballymore area, the limestone aquifer is highly karstified, as illustrated by this high number of karst features.

Despite tracing tests conducted in 2009 and 2010 there are still uncertainties with regard to groundwater flow directions and the resultant zone of contribution to the spring. To delineate the true contributing area is difficult, particularly distinguishing a zone of contribution that may or may not be separate to zones of contribution to other springs. It is considered the most likely area is in the region of 8-10 km².

Continual monitoring of daily overflows has been undertaken by the EPA at Shanballymore since 2009. These data indicate an annual discharge of approximately 4.6 million cubic metres per year or a median daily discharge of just over 12,600 m³, with a maximum discharge (during wet winters) of c. 16,000 m³ per day.

Site Importance – County Geological Site

This spring is worthy of recognition as a County Geological Site owing to the very detailed mapping and modelling that led to the delineation of its potential zone of contribution and Source Protection Zones in the early-2000s. This is potentially one of the best-studied spring localities in the country.

Management/promotion issues

The site is securely fenced off within its own compound, and the spring is now almost completely covered over. Being a secure water supply vulnerable to contamination, the general promotion of the locality is not recommended. General education about the vulnerability of karst groundwater supplies to pollution from septic tanks, agricultural slurry spills and bad spreading practices is highly advisable.



The compound at Shanballymore Spring, somewhat overgrown, July 2021.



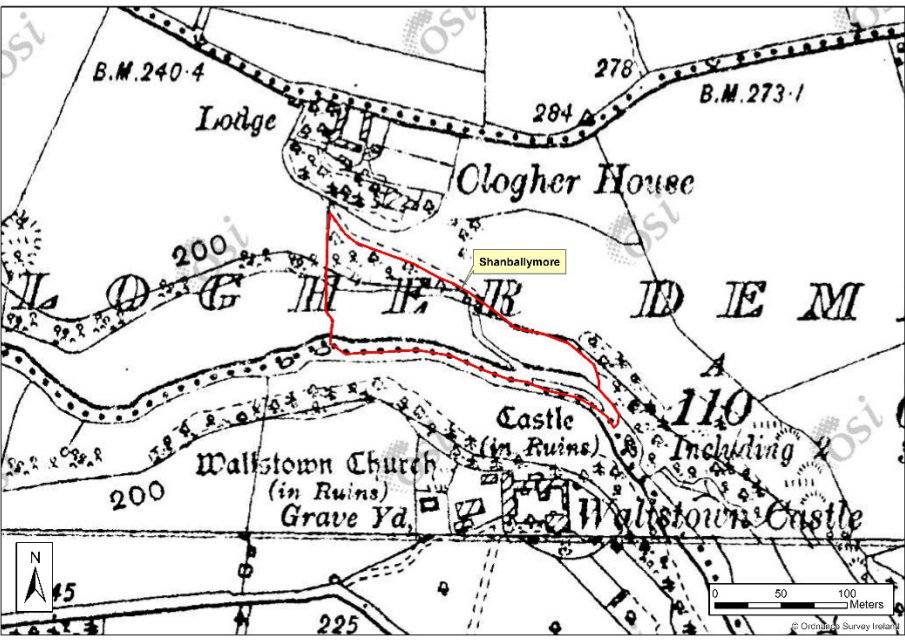
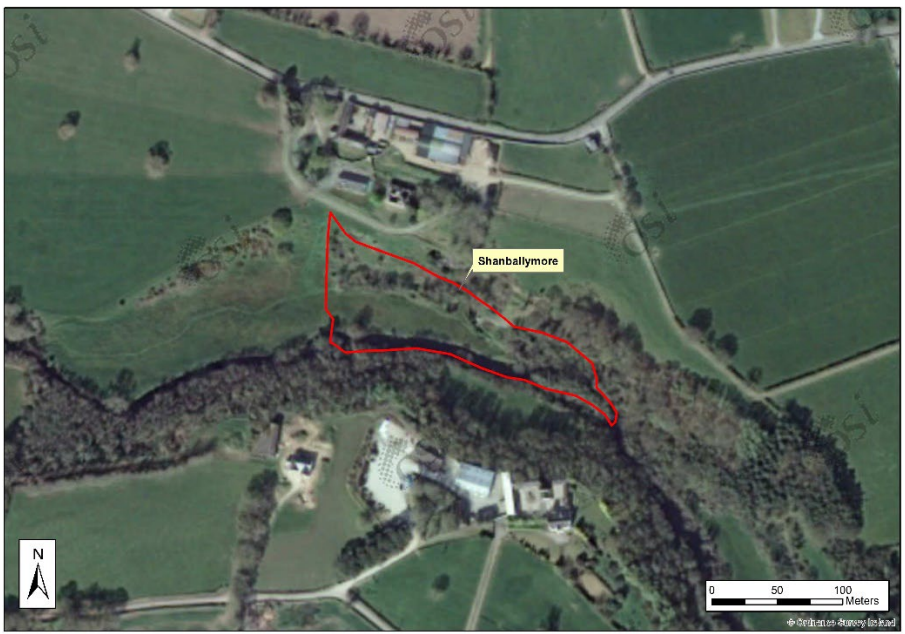
The weir at Shanballymore Spring, May 2009.



The sump between the spring and the weir.



Groundwater bubbling up from the bedrock at the spring source, and emerging at surface.



Hennessy et al., 2023. Geological Survey Ireland.