DONEGAL - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**St John's Point**
Other names used for site	St John's Peninsula
IGH THEME(S)	**IGH3 Palaeontology, IGH8 Lower Carboniferous, IGH12 Mesozoic/Cenozoic**
TOWNLAND(S)	**Point**
NEAREST TOWN/VILLAGE	**Dunkineely**
SIX INCH MAP NUMBER	**97A**
NATIONAL GRID REFERENCE	**571001E, 869668N**
1:50,000 O.S. SHEET NUMBER: 10	**GSI BEDROCK 1:100,000 SHEET NOs. 3, 4**
GIS Code DL044	

Outline Site Description

The site comprises over 5 km of exposures around the rocky shoreline and coastal cliffs at the end of St. John's Peninsula, south of Rabley Hill, and includes extensive coastal platforms. Grey limestone, shale and sandy limestone beds are all well exposed.

Geological System/Age and Primary Rock Type

The upper part of the Lower Carboniferous (c. 340 Ma) Ballyshannon Formation (alternating crinoidal or argillaceous limestones and richly fossiliferous calcareous shales) forms the bedrock along most of St. John's Peninsula. At St. John's Point, the Ballyshannon Limestone Formation is in faulted contact with the younger Muckros Sandstone Formation (calcareous sheet sandstones and oolites) which underlies the southern tip of the peninsula.

Main Geological or Geomorphological Interest

East of St. John's Point lighthouse, crinoidal limestones with thin shales are richly fossiliferous, with brachiopods (such as *Leptaena* and *Spirifer*), corals (such as *Michelinia* and *Syringopora*), polyzoans and molluscs. The more massive beds of sandy limestone on the western side of the Point form fault scarps. Some are coarsely bioclastic, with fragments of brachiopod and ostracod shells, foraminifera, crinoid ossicles and the algae *Konickopora*. Corals and brachiopods such as *Michelinia and Spirifer* have been recorded from the Muckros Sandstone Formation.

At the extremity of St John's Point, several small faults are exposed along the coast, causing minor displacements of adjacent limestone beds. Southeast of the lighthouse, gently synclinal strata are clearly ruptured by faulting. The fault plane is covered with fault gouge, a thin veneer of dark material containing fragments of wall rock, produced by crushing during fault movement. The same fault plane can be followed as a shallow escarpment for about 1500m until it emerges again on the shore.

Site Importance – County Geological Site, recommended for Geological NHA

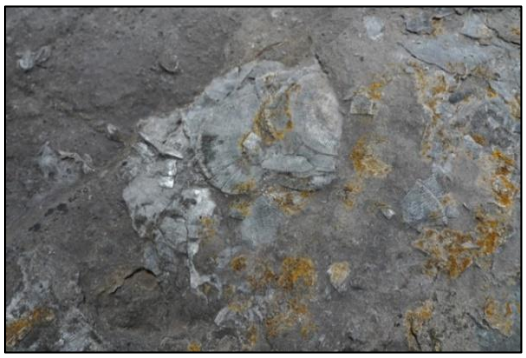
St John's Point is a nationally important fossil locality due to the quality of its exposure and faunal content. Several type specimens of brachiopod, coral and crinoid species are held in the National Museum of Ireland Griffith Collection. This site is also of local importance as it provides several excellent exposures of faults, including fault planes with associated fault gouge. The entire site is within an SAC and proposed NHA (00111, designated for ecological importance) that cover the southernmost 4 km of the St. John's Peninsula and include some of the surrounding marine waters.

Management/promotion issues

The area is accessible from the shore only during low tide, and the cliffs are difficult to access in many places, with high winds and sea-spray posing dangers. However, due to the relatively easy access to these important fossil bearing strata, there is always the risk of damage by unscrupulous collectors. To preserve the site for future generations, it would be beneficial to erect signage advising visitors that the use of hammers is not permitted but that photography of fossils is encouraged as a valid method of scientific recording.

McClure *et al.* 2019. Geological Survey Ireland.

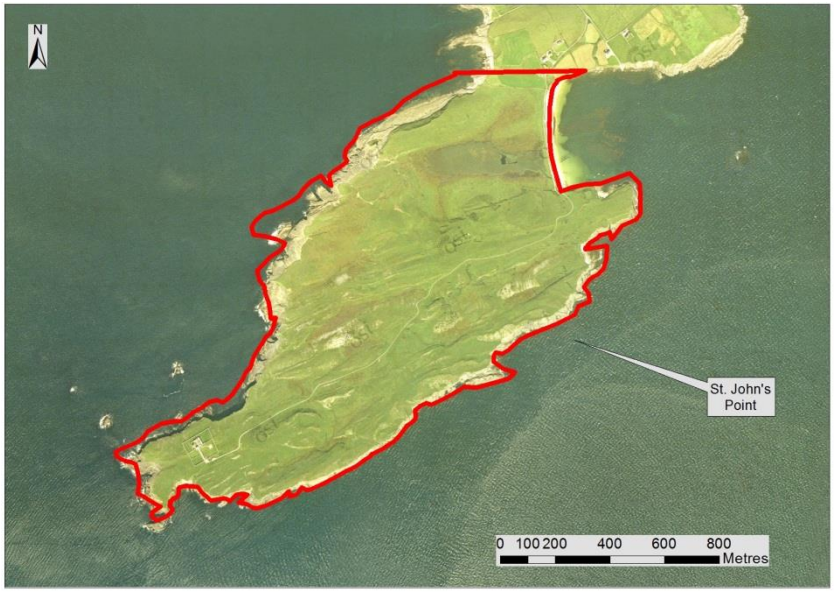
Crinoid fossils, east of St John's Point Lighthouse.

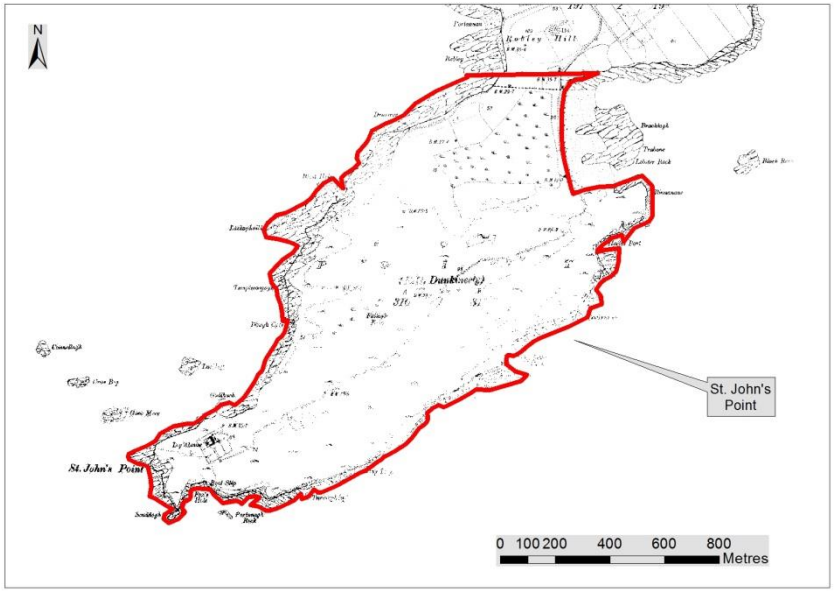


Brachiopod (Productid) fossil.

Colonial coral (Siphenodendron) fossil.

Steep fault cutting limestone-shale beds, St. John's Point.





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