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## Spireslack Locality 15: Calmy Limestone

NGR: [275406 630674] [NS 75406 30674]

Key category of interest		Rarity	Quality
1. Stratigraphy	3		5
2. Sedimentary rocks	3		3

**Access:** Good access to exposure, easily accessible from roadway.

**Current safety:** Potential for falling blocks at margins of outcrop extent and marshy ground/potential for flooding underfoot at base of exposure.

**Measures to enhance site:** Create viewing platform and rope off edges of exposure

Key categories in order of interest (1 = primary interest); Rarity, 5 = only example in Spireslack, 1 = many examples in Spireslack; Quality 5 = exceptional preservation in Spireslack, easy access/viewing potential 1 = average preservation in Spireslack, difficult access/viewing potential

### Photograph overview with polygon boundary

(Overview of Locality 15). Site boundary includes key rock exposures, immediate access to site and viewpoints to the site. Photo taken looking south toward eastern edge of the scarp.

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## Site description

### Geology

The Calmy Limestone, belonging to the Upper Limestone Formation, is a laterally persistent marine limestone correlatable across the Central Belt of Scotland. At this locality it is exposed in a 15 m high section at the eastern edge of the Spireslack void. The Calmy Limestone, overlying the Gill Coal at this location, is composed of an interbedded sequence of 1.5–2 m thick marine limestones and mudstones. The limestones were deposited in warm, shallow clear waters during maximum flooding events associated with sea level fluctuations at the time. This locality provides an excellent section through the Calmy Limestone sequence, composed of 3 key beds of pale grey, fossil poor, fine-grained, massive limestones. The underlying Gill Coal contains nodules of pyrite throughout, formed in oxygen starved conditions whilst the coal was forming.

### Access and enhancement suggestions

Access is good, but potential for loose blocks falling from above prevents any close approach. The base of the area is liable to flooding, therefore flood prevention measures or a raised walkway would allow easier access to the limestones.

### Site photographs

(Spireslack\_15 P1): The Calmy Limestone beds looking to the west. The Calmy Limestone is composed of three individual thick 'leaves', separated by marine mudstones. The Calmy Limestone here sits above the Gill Coal. © BGS, NERC.

(Spireslack\_15 P2): Pyrite nodules are present in the upper half of the Gill Coal. The presence of pyrite (iron and sulphur rich) in the Gill Coal indicates oxygen starved conditions at time of deposition, and potentially within a more marine

influenced environment (coals produced in fresh water environments contain less pyrite than those formed in marine). © BGS, NERC.

## References



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*(Spireslack\_15 P1) The Calmy Limestone beds looking to the west. The Calmy Limestone is composed of three individual thick 'leaves', separated by marine mudstones. The Calmy Limestone here sits above the Gill Coal. © BGS, NERC.*



*(Spireslack\_15 P2) Pyrite nodules are present in the upper half of the Gill Coal. The presence of pyrite (iron and sulphur rich) in the Gill Coal indicates oxygen starved conditions at time of deposition, and potentially within a more marine influenced environment (coals produced in fresh water environments contain less pyrite than those formed in marine). © BGS, NERC.*