
Spireslack Locality 5: Shark spine fossil in McDonald Limestone Pavement

NGR: [274730 630539] [NS 74730 30539]

Key category of interest	Rarity	Quality
1. Palaeontology	5	5
2. Sedimentary rocks	1	5
3. Economic geology	5	5

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

Current safety: Little evidence of recent falling blocks observed on limestone pavement, uneven surfaces

Measures to enhance site: Protect area to preserve shark spine and level surface around the base of the site to allow easier access.

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

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(Overview of Locality 5). Site boundary includes key rock exposures (from the shark spine at the base of the pavement to the crescent shaped digger marks near the top), immediate access to site and viewpoints to the site. Photo taken from scarp looking south.

Site description

Geology

The McDonald Limestone pavement, comprising the entirety of the northern limit of the main Spireslack void, is rich in fossils allowing an insight into the fauna that existed during Carboniferous times. Fossilised shell fragments and trace fossils are the most common, with trilobites also known from the site (see locality 3). At this locality, a beautifully preserved 5 cm long shark spine is exposed at the base of the pavement — the only one recognised within the Spireslack site to date. This locality is ideal for palaeontological studies as well as providing hands on access to limestone. Higher up the limestone pavement are two crescent shape marks — these are not geological features, but grooves left by the giant machinery which would have worked the coal from the pit during mining activity.

Access and enhancement suggestions

The shark spine should be protected from erosion — the limestone pavement has a flaky surface and over time the shark spine may erode. Flattening the area of ground in front of the pavement to allow easier access and viewing is also recommended. A fossil hunt trail could be set up to explore the fauna that lived in Spireslack during the Carboniferous — this would be a key site for such a trail.

Site photographs

(Spireslack_5 P1): Fossilised shark spine preserved in the McDonald Limestone. This shows that during the Carboniferous in Spireslack, sharks were swimming in shallow, warm seas when Scotland was close to the equator. ©

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(Spireslack_5 P2): Crescent shaped 2 m wide markings (outlined in dashed green circle) are found on the limestone surface, created by machinery during coal extraction. © BGS, NERC.

(Spireslack_5 P3): Trace fossils litter the surface of the McDonald Limestone pavement. The dark branching structures in the photo are the fossilised traces of creatures which would have travelled the seabed surface of the pre-lithified limestone for food. These tracks can be up to 10 cm long — there are also mm- long tracks preserved on this surface. © BGS, NERC

[References](#)



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(Spireslack_5 P1) Fossilised shark spine preserved in the McDonald Limestone. This shows that during the Carboniferous in Spireslack, sharks were swimming in shallow, warm seas when Scotland was close to the equator. © BGS, NERC.



(Spireslack_5 P2) Crescent shaped 2 m wide markings (outlined in dashed green circle) are found on the limestone surface, created by machinery during coal extraction. © BGS, NERC.



(Spireslack_5 P3) Trace fossils litter the surface of the McDonald Limestone pavement. The dark branching structures in the photo are the fossilised traces of creatures which would have travelled the seabed surface of the pre-lithified limestone for food. These tracks can be up to 10 cm long — there are also mm- long tracks preserved on this surface. © BGS, NERC