CITATION

GARRON POINT
SITE OF SPECIAL SCIENTIFIC INTEREST
Aberdeenshire

Site code: 674

NATIONAL GRID REFERENCE	:	NO 887874
OS 1: 50 000 SHEET NO	:	Landranger Series 45
1: 25 000 SHEET NO	:	Explorer Series 396
AREA	:	71.28 hectares

NOTIFIED NATURAL FEATURES

Geological	:	Structural and metamorphic geology	:	Dalradian
	:	Igneous petrology	:	Ordovician Igneous
	:	Stratigraphy	:	Non-marine Devonian
	:	Palaeontology	:	Silurian-Devonian Chordata

Biological	:	Coastlands	:	Maritime cliff
	:	Invertebrates	:	Narrow-mouthed whorl snail *Vertigo angustior*
	:	Butterflies	:	Northern brown argus butterfly *Aricia artaxerxes*

DESCRIPTION

Garron Point is a rocky coastal promontory with cliffs and coastal grassland, located 15 km south of Aberdeen and just north of Stonehaven.

Geology

<u>Dalradian</u>

This section contains the coastal outcrop of the Highland Boundary Fault, which marks the southern geological boundary of the Scottish Highlands. Within the site the fault juxtaposes deformed and metamorphosed Precambrian sedimentary rock belonging to the Southern Highland Group of the Dalradian Supergroup, with younger rock. The younger rock is predominantly igneous rock of Ordovician age belonging to the Highland Border Complex, which is unconformably overlain by sandstone of late Silurian age, assigned to the Stonehaven Group within the Lower Old Red Sandstone.

The Dalradian, Highland Border Complex and Old Red Sandstone are major subdivisions in the geological history of the British Isles. Without doubt this site is of national and international importance for elucidating the structural relationship between these subdivisions.

Ordovician Igneous

The section between Garron Point and Slug Head provides one of the most extensive outcrops of igneous rocks in the Highland Border Complex. The rocks are chiefly metamorphosed pillow lavas with layers of cherts, siltstones and mudstones. There are also gabbroic and doleritic intrusions and a carbonated and silicified serpentinite. Geochemical analysis indicates the lavas are of mid-ocean ridge type.

The fault-bounded exposures of the Highland Border Complex crop out intermittently along the Highland Boundary Fault Zone between Arran and Stonehaven. Ultramafic and mafic rocks of the complex are interpreted as incomplete fragments of a greatly dismembered ophiolite. Understanding of the Highland Border Complex is an essential part of any tectonic interpretation of the Caledonian Orogeny in Scotland.

Non-marine Devonian

South of the Ordovician Igneous rock, 'Old Red Sandstone' occurs. 'Old Red Sandstone' rock is predominantly of Devonian age (416-359 million years old), and formed in a terrestrial (i.e. non-marine) environment, therefore it is all classed as 'Non-marine Devonian'. However, it can range in age from late Silurian (422-416 million years ago) to early Carboniferous (359-345 million years ago). The 'Old Red Sandstone' at Garron Point is late or even mid-Silurian in age (around 422 million years old), and is important as some of the earliest Old Red Sandstone in Britain. The rocks are part of the Cowie Sandstone Formation and the Carron Sandstone Formation. Both these rock formations formed from sediment deposited by rivers, with the exception of the top part of the Cowie Sandstone Formation, which is known as the 'Cowie Harbour Siltstone Member' The Cowie Harbour Siltstone Member' formed from sediment, such as silt and mud, deposited in a lake environment, and contains fossils within a thin mudstone layer known as the 'Cowie Harbour Fish Bed'. The site is internationally important for fossil freshwater fish (see below); but also for fossil arthropods and fossil terrestrial millipedes, including a new air-breathing species, *Pneumodesmus newmani*. This is the oldest record anywhere in the world of a fully land-based, air-breathing animal.

Silurian-Devonian Chordata

At The Toutties, part of the mid- to late-Silurian age Old Red Sandstone sedimentary rock sequence, known as the 'Cowie Harbour Siltstone Member of the 'Cowie Sandstone Formation', includes a grey-coloured, fossil fish-bearing mudstone called the Cowie Harbour Fish Bed. This fossil fish site is unique as being the only one of its age, not only in Scotland, but anywhere in the Scottish-Baltic fish province.

The site is also internationally important for having yielded a unique fauna of cephalaspids and heterostracans (*Birkenia* species, *Hemiteleaspis heintzi* and *Traquairaspis cambelli*), the entirely new and unique fish genus *Hemiteleaspis*, and a new fish species of the genus *Traquairaspis*.

Biology

Maritime cliff habitat

The area around Skatie Shore, Garron Point and Craigeven Bay has one of the richest coastal floras in Aberdeenshire. Cliff grassland predominates but small areas of sand dune, salt marsh and shingle, uncommon habitats within Aberdeenshire, are also found.

The cliff grassland is dominated by species typical of the habitat including false oat-grass *Arrhenatherum elatius*, red fescue *Festuca rubra* and Yorkshire fog *Holcus lanatus*, with locally frequent thrift *Armeria maritima*, sea plantain *Plantago maritima*, sea campion *Silene uniflora* and common scurvygrass *Cochlearia officinalis*. The grassland is locally rich in herbs including a number that are uncommon in Aberdeenshire. These are purple milk-vetch *Astragalus danicus*, meadow saxifrage *Saxifraga granulata*, carline thistle *Carlina vulgaris* and bloody crane's-bill *Geranium sanguineum*. The last two species are associated with base-rich soils, which contribute to the floral diversity of the area. Other species associated with the base-rich soils include common rock-rose *Helianthemum nummularium* and kidney vetch *Anthyllis vulneraria*. Sea spleenwort *Asplenium marinum* occurs in rock crevices.

Invertebrates

The cliff grasslands are the habitat of an important population of a rare whorl snail and a rare species of butterfly.

The rare narrow-mouthed whorl snail *Vertigo angustior* is found in two small areas near the base of the cliffs, with an estimated population of tens of thousands. This is the northernmost population in the UK and one of two in Scotland.

The rare northern brown argus butterfly *Aricia artaxerxes* is found in the cliff grassland.

NOTIFICATION HISTORY

First notified under the 1949 Act: 1956 (18.2 ha).
Re-notified under the 1981 Act: 23 March 1989, with a 41.6 ha increase in area.
Extended under the 2004 Act: 13 October 2005, with a 10.7 ha increase in area.
Notification reviewed under the 2004 Act: 26 June 2009 and
15 March 2017 (citation only).

REMARKS

Measured area of site corrected (from 71.22 ha).

Part of Garron Point SSSI is designated as Garron Point Special Area of Conservation (SAC) for the following European species:

Narrow-mouthed whorl snail *Vertigo angustior*