Scottish Natural Heritage

SKEO TAING TO CLUGAN
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1437

Northern Isles Area
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Purpose

This is a public statement prepared by SNH for owners and occupiers of the SSSI. It outlines the reasons it is designated as an SSSI and provides guidance on how its special natural features should be conserved or enhanced. This Statement does not affect or form part of the statutory notification.

We welcome your views on this statement.

Natural features of Skeo Taing to Clugan SSSI	Condition of feature (date monitored)
Igneous petrology: Ordovician Igneous	Favourable, maintained (August 2009)

Description of the site

Skeo Taing to Clugan SSSI comprises coastal rock exposures on the east coast of Unst to the south of Balta Sound. The site represents parts of a slice of the Earth's crust from beneath the ocean floor. Such structures, known as ophiolites, are rarely seen on land because ocean crust is not usually found lying on top of the continental crust. The site provides a rare glimpse into the ocean floor and the processes of plate tectonics that first produced it at a mid-ocean ridge and later caused it to override the continental crust in a process known as obduction.

Around 400 million years ago, the ancient Iapetus Ocean between North America and Europe was shrinking due to plate tectonics. When the ocean finally closed, the continents collided, creating a range of fold mountains whose eroded remains now form the Highlands of Scotland. As the ocean was closing, most of the oceanic crust beneath it disappeared beneath the continents into the Earth's mantle but in the final phase of closure, fragments of it were thrust onto the continents as ophiolites. The Shetland ophiolite, which makes up the eastern side of Unst and much of Fetlar, is the largest of these fragments in Britain.

Ocean crust has a distinct sequence of layers which reflect its production at a mid-ocean ridge where tectonic plates are being dragged apart. In Unst the ophiolite sequence is not complete as the top layers - pillow lavas and sediments – are missing, probably as a result of erosion during obduction. Skeo Taing to Clugan is one of 6 SSSIs in Unst and Fetlar that fully represent the Shetland ophiolite, the others being Ham Ness, Qui Ness to Punds Stack, Punds to Wick of Hagdale , Tressa Ness to Colbinstoft, and Virva.

Skeo Taing to Clugan contains a representative section through the middle-upper part of the

ophiolite present on Unst. In the north of the site most of the rock was originally dunite, which formed in the lower part of the magma chamber. Dunite is made up of the mineral olivine, although this has been altered to serpentinite by reaction with hot water circulating through the rock shortly after it formed. Above this in the ophiolite sequence are wehrlite, made up of the minerals olivine and clinopyroxene, and pyroxenite, made of clinopyroxene alone. Both of these rocks can be found between Skeo Taing and Swarta Skerry but the contacts between them and the serpentinised dunite are very complex and often marked by geological faults, so that they don't form a simple sequence. Because the wehrlite and pyroxenite are harder than the surrounding olivine they form low ridges and small headlands.

South of Swarta Skerry, the rock changes to metagabbro or "greenstone", a rock made up mainly of pyroxene and feldspar which is recognisable by its greenish coloration with white speckles. The rock often has a rhythmic banding of alternating lighter and darker layers caused by the minerals crystallising out at different temperatures in the upper part of the magma chamber. Heat and pressure at the time the ophiolite was obducted have altered the rock, in some places giving it a "fabric" as a result of the crystals being aligned parallel to each other. Where this occurs the rock is known as greenschist.

Past and present management

The northern end of the site was developed as one of the many herring stations that operated in Balta Sound in the late 19th century. The land behind the shore was levelled for temporary buildings or to provide a working area and rock to construct jetties and breastworks. This created the small cliff like exposures set back from the coast which form the interest around Skeo Taing. There is also a small roadside quarry of unknown origin in the westernmost section of the site. These parts of the site are in an area of semi improved grassland and mire that is grazed by sheep and cattle.

The remainder of the site comprises coastal slopes and rocky shores which adjoin croft land and rough grazings. Some sections of the coastal slope are fenced off from the adjoining land but it is likely that sheep will be able to break in at least occasionally so they, like the unfenced sections will be grazed.

Objectives for Management (and key factors influencing the condition of natural features)

We wish to work with the owners and occupiers to protect the site and to maintain and where necessary enhance its features of special interest. SNH aims to carry out site survey, monitoring and research as appropriate, to increase our knowledge and understanding of the site and its natural features.

1. **To maintain the physical and visual integrity of the rock exposures**

The interests of the site are the rock exposures along the coast and foreshore and the artificial rock faces around Skeo Taing and in the roadside quarry. Any developments or activities which would damage or obscure these exposures, such as tipping or storage of material, would be damaging and should be avoided. Some features of the rocks are most clearly seen in weathered surfaces so that quarrying, although it would create fresh exposures, would make the features less visible.

Date last reviewed: 17 March 2011