



Scottish Natural Heritage

**WESTERN GAILES
SITE OF SPECIAL SCIENTIFIC INTEREST**

19 Wellington Square
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SITE MANAGEMENT STATEMENT

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Site code: 1618

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 and does not remove the need to apply for consent for operations requiring consent.

We welcome your views on this statement.

Description of the site

Western Gales, located 1 km south of Irvine, comprises a section of foreshore backed by a line of high fixed dunes (dunes with a surface stabilised by vegetation) which together support a diverse invertebrate assemblage.

A range of characteristic sand dune plant species are present, including sea sandwort and lyme grass on the dune strand, and mayweeds, sedges and marram grass on the seaward dunes. The sand dunes inland have been modified to form a golf course. The Western Gales golf course was founded over 100 years ago and therefore it predates notification. It was during this time that many areas of the fixed dune were covered with close-mown amenity grassland in the form of greens and fairways. The semi-natural habitat remaining (dry dune heath in mosaic with grassland and occasional scrub) makes up the 'rough' areas. Strandline vegetation is present in scattered patches among debris collected at the high tide line. Such vegetation includes typical species such as sea rocket and sea couch grass which often constitute the pioneer community of embryo dunes. The uncommon sand dune plant, shepherd's cress is found between the foredunes and railway line together with the Nationally Scarce Isle of Man cabbage.

The sand dune feature, which comprises: dry dune heath; strand, embryo and mobile dune; and fixed dune, was considered to be in unfavourable condition. The dry dune heath and fixed dune failed some targets for vegetation structure, composition and negative indicator species. The strand, embryo and mobile dune failed as a result of mechanical beach cleaning, visitor damage (numerous paths worn into the dune

system and litter) and as negative indicator species were present. Visitor damage was also a factor affecting the fixed dune. The main activity affecting this site is the recreational use of the dunes as a links golf course. Management practices in the past such as mechanical beach cleaning to clear the strandline have also limited the dune system's potential to develop and regenerate naturally. Strandline vegetation is an essential component of embryo dune formation, binding sand and providing nitrogen for plant growth.

The foreshore and dune system support a diverse invertebrate assemblage. Of particular importance are beetles and flies with Nationally Scarce species from each group being present on site, including the following: the bee fly *Phthiria pulicaria*; hoverfly *Eumerus sabulonum*; the clown beetle *Hypocaccus rugiceps*; the seed weevil beetle *Diplapion stolidum* which feeds on ox-eye daisy; the ground beetle *Amara praetermissa* and the hairy-horned beetle *Orthocerus clavicornis*. A number of species present here are close to the northern limits of their range.

The invertebrate assemblage has not been formally monitored as such but had previously been monitored as two separate features consisting of beetle and fly assemblages. The beetle assemblage was in a favourable condition due to the high species diversity found: 108 beetle species from 18 families.



The nationally scarce
Isle of Man cabbage.

Unfortunately the fly assemblage was deemed to be in unfavourable condition due to the removal, in the past, of their vital strandline habitat during beach cleaning practices. This habitat is also vital to many of the beetle species, particularly *Anthicus scoticus* which requires decaying seaweed on the strandline and *Typhaeus typhoeus* associated with dung and carrion. Beach cleaning involving the collection of all materials from the strandline and depositing it in the dune fronts (to act as a form of defence for the dunes against erosion) constrained the natural development and maintenance of foreshore habitats and led to a scarcity of vital strandline habitat. This mechanical beach cleaning practice has now been discontinued. Strandline and foredunes are desirable as they are generally the coastal habitats which support the greatest diversity of invertebrates. The richest invertebrate zones are those where clumps of stabilised vegetation occur in close proximity to areas of unstable open sand. The canalisation of burns within the site have also resulted in the loss of marginal and aquatic vegetation which is also valuable habitat for flies as well as for the pill beetle *Morychus aeneus* which requires streamside vegetation.

The combination of bare sands interspersed with vegetated dunes is well represented at the site, providing important habitat for invertebrates by allowing species nesting in open soils to feed from flowers of tall vegetation. Other invertebrates found at this site include the day-flying six-spot burnet moth, the cinnabar moth, the locally uncommon grayling butterfly and several locally uncommon species of spider.

Natural features of Western Gailes SSSI	Condition of feature (date monitored)
Sand dune	Unfavourable, no change (June 2009)
Invertebrate assemblage	Not yet formally monitored as previously monitored as two separate features (Beetle assemblage: Favourable maintained: June 2003; Fly assemblage: Unfavourable no change: June 2003)

Past and present management

The once extensive heaths within the site have been fragmented and reduced in extent by development pressure. The north of the site was formerly used as a rifle range by the Ministry of Defence.

Work to stabilise the dunes has been undertaken by the golf course. In 1985 concrete pipes were inserted vertically - many of which have since collapsed. Other dune stabilisation measures have included paling fencing, wooden shuttering, gabions and concrete pipes topped with stone blocks. In 1988 existing culverts were replaced at the golf course and in 1997 two new outflows were installed. Periodically during the late 1980's beach cleaning by means of a tractor-mounted shovel took place and more recently unauthorised mechanical clearing of the strandline took place. Sand extraction from a small borrow pit also occurs to replenish the sand in the golf course bunkers.

The beach is subject to recreational use by the public. Well-trampled pathways along the crest of the dune ridge cut down towards the shore in places, causing erosion of vegetation. Within the golf course the greens, tees and fairways are regularly mown with herbicides and fertilisers applied to greens and tees.

The site was surveyed for SNH in 1998 as part of the 'Sand dune vegetation survey of Scotland'. A number of outfalls that pass through the site are inspected periodically throughout the year by West of Scotland Water.

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 and monitor the effectiveness of the management.

- 1. To maintain and enhance, where possible, the foreshore, sand dune and dune grassland habitats** by ensuring protection from damaging impacts, in particular ensuring only essential beach cleaning work is conducted. Beach cleaning should ideally be conducted by hand to remove only non-biodegradable materials washed ashore from the sea, allowing the strandline vegetation to remain in place where it will provide vital habitat for invertebrates and will contribute to the dune formation process.

Although the dunes at Western Gables are fairly stable, some areas are subject to natural erosion. Coastal erosion is fundamental to the natural functioning and evolution of a coastline.

The presence of the golf course brings pressures for dune stabilisation to prevent any loss of ground, restricting options for coastal management at this site. The use of hard engineering is both expensive and likely to be unsustainable in the long-term. Soft-engineering, such as encouraging a natural dune system, will be more sustainable but will not be able to guarantee the same level of protection to the greens and tees which have been constructed on the dune ridge. The natural dune system is based around a periodic cycle of building and erosion. In calm conditions sand is transported landward by the wind and accumulates into foredunes, these are then eroded in storm events and the sand is brought back onto the beach. Strandline algae are also an essential component of embryo dune formation, binding sand and providing nitrogen for plant growth. Advice from the Scottish Golf Course Wildlife Initiative could be sought when forming management prescriptions for the course.

2. To maintain, and where possible, enhance the foreshore and dune habitats to ensure robust populations of the invertebrate species are maintained.

This can be achieved by maintaining the natural sediment flow of the dune system, encouraging embryo dune formation and ensuring protection from damaging impacts, in particular ensuring only essential beach cleaning work is conducted and is undertaken by hand in a manner which will not be damaging to the habitat. Natural vegetation along watercourses within the site should also be maintained where possible.

The main threats to the dune system and its invertebrate interest are beach cleaning and human-induced erosion. The natural strandline supports an important invertebrate fauna dependent on decaying seaweed and habitat mosaics created through strandline processes. Careful management of beach cleaning activities is essential to ensure strandline materials and pioneer plant communities are not removed unnecessarily – in particular mechanical beach cleaning is not recommended for this site.

Sand dune habitats are very susceptible to damage through trampling and vehicular disturbance. Provided the level of recreational use of the beach does not increase substantially, current management practices are satisfactory. The effects of public use of the dunes can be ameliorated by erecting boardwalks with fenced margins that allow access to and from the beach while restricting access to vulnerable vegetated areas. This will allow the dune to recover its physical integrity.

One of the best treatments for blow-outs is initially to stop the gap with fencing or brush-wood. Fencing is effective but it must be regularly maintained and can only act to reduce the rate of dune erosion along the protected lengths. Fencing may also trap and act as collection points for the large amount of litter washed up on the site – for this reason regular maintenance is essential.

Natural vegetation along watercourses within the site should be maintained where possible as these areas serve as important sites for some invertebrate life-cycle stages. Where practicable on site, natural vegetation should be encouraged – particularly marram grass within the dunes.

Other factors affecting the natural features of the site

Beach profile

The best protection for any coast is a wide, high beach. The most that other measures can do is stabilise the present situation. Western Gailes is, however, a rather low beach in that there is no effective berm between the dunes and the beach. At high spring tide, especially under storm conditions the waves can undercut the dunes, further damaging them and reducing their effectiveness. In areas the dunes are cliffed to 5 meters in height, exposing rubble associated with WWII coastal defences and the use of the site as a military training area.

Outflows

A number of sewage outfalls and a sewage outfall inspection area present no immediate threats to the nature conservation interest. A deep sea outfall also extends beneath the SSSI in a tunnel in the bedrock. Outflows must be kept functioning properly to avoid flooding and erosion on the golf course and therefore avoid course damage that could occur particularly during repair works. In 1997 the Scottish Environment Protection Agency (SEPA) reported a pipeline spillage outside the site that spilled within the SSSI. The majority of the spillage went onto the beach and was washed away.

Front page photograph: view of the dune face at Western Gailes SSSI where *Phylan gibbus* was present.

Date last reviewed: 23 February 2011

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