Spion Kop beach

Tees Valley Biodiversity Partnership

Sand dunes
Habitat Action Plan 2010-2014

Plan Lead Organisation	Hartlepool Borough Council
Plan Coordinator	Deborah Jefferson
Action Group	Wetland and coastal
Associated Plans	Coastal and calcareous grassland, maritime cliffs and slopes, mudflats and saltmarshes, purple milk vetch
Latest version	Jan 2010

Description

Sand dunes form on the coast where there is a sufficient supply of sand and a beach plain whose surface dries out between tides. Dry sand is blown landwards and deposited above the high water mark, where it is trapped by specialized dune building plants, which grow up through successive layers of deposited sand. A healthy dune system has clearly zoned successional habitats, ranging from embryo dunes to mobile and fixed dunes, dune grassland, slacks and heath. These vegetation zones are related to the time elapsed since the sand was deposited, the degree of stability which it has attained and the local hydrological conditions. The vegetation of mobile dunes is usually dominated by marram grass. Semi-fixed dunes are still dominated by bare sand with marram. If conditions remain stable, then red fescue and mosses will continue to cover the bare sand between the patches of marram. Fixed dune grasslands and dune slacks support a high floral diversity, especially calcareous systems. On dunes that have become acidified through leaching, acidic grassland or dune heath, develops. Sand dune systems support diverse invertebrate communities, especially butterflies and moths, burrowing bees and wasps.
The sand dune survey of Great Britain (Radley 1994) estimated that there were 56,000 ha of sand dunes in the UK, with 11,897 in England. Major dune systems are widely distributed within the UK, being found on all English Coasts except for the English Channel. Sand dunes are near -natural and complex systems which are naturally dynamic but also fragile. Very few sand dune systems are in overall equilibrium and the majority of those in the UK demonstrate erosion rather than accretion. Landward movement of mobile dunes often entails loss of fixed dunes and dune heath habitat if the landward retreat is artificially constrained.

Current factors causing loss and decline

- High levels of access, by a wide range of recreational users, creates pressures in the form of erosion, fires, fly tipping/litter and camping activities, which can result in the loss of plant, animal and bird species.
- Development can result in erosion, deterioration and loss of habitat through the expansion of golf courses, car parks and other recreational facilities.
- Coastal defences and artificial stabilization measures usually reduce the biodiversity inherent in the natural dynamics of dune systems.
- Coastal squeeze by road construction, agriculture and other land uses, can constrain the natural process of sand dunes to retreat inland.

- Invasion by non native species and native scrub such as sea buckthorn.
- Increases in sea-levels may increase the rate of erosion at the base of sand dunes and can reduce the amount of material available for sand dune formation.

Conservation Status

Coastal sand dunes are a priority habitat listed in Annex 1 of the EC Habitats and Species Directive
Sand dunes are a UK priority habitat in the UK Biodiversity Action Plan

The Habitat in the Tees Valley

There are estimated to be around 490 ha of sand dune habitat in the Tees Valley, with 158 ha in the Hartlepool Borough Council area and 325 ha in Redcar and Cleveland (Brodin, 2001). The four primary sand dune systems in the Tees Valley are Hart Warren dunes, Seaton dunes and the North and South Gare dunes that flank the Tees Estuary. Small, partial examples of sand dune systems also occur between Redcar and Marske and at Skinningrove. The four primary sand dunes and related habitats have some level of conservation designation, namely:
Hart Warren Dunes – SSSI, LNR
Seaton Dunes – SSSI, LNR, SPA, Important Bird Area
North Gare – NNR, Ramsar, SPA, SSSI, Important Bird Area
South Gare – SSSI, SPA

Hart Warren dunes are the only calcareous dune system of any significance in the British Isles. They form part of the Durham Coast SSSI and are managed as a Local Nature Reserve by Hartlepool Borough Council. The dune system and golf course roughs behind it supports many species characteristic of both northern and southern British dune flora. The fixed dunes flora includes the nationally scarce rush-leaved fescue, sea barley, spring cinquefoil and the regionally scarce burnt-tip orchid. The dunes also support a breeding colony of the rare northern brown argus butterfly which feeds on the common rock found there. Little tern successfully nest at Crimdon Denemouth on the Durham/Hartlepool boundary adjacent to Hart Warren Dunes.

Seaton dunes cover approximately 32 ha and is the largest sand dune system between Lindisfarne to the north and the Humber to the south. The dunes display typical dune zonation and plant succession; the foredunes are dominated by marram grass, sand couch and lyme grass communities, and the fixed dunes by red fescue communities. Nationally important rush-leaved fescue also occurs (JNCC, 1995). Short eared owls hunt the dunes and slacks, while birds of passage such as fieldfare, redwing and snow bunting, sometimes winter among the sea buckthorn which forms the boundary with Seaton golf course. The buckthorn also attracts smaller migrants, especially in the spring.

The sand dunes at North Gare fall within the Teesmouth National Nature Reserve (NNR) which cover a range of habitats including sandy, muddy and rocky foreshore, dunes, dune slacks and dune grassland. Marram grass dominates the main dunes with large populations of sea lyme grass, sand couch and sea rocket on their seaward side. The dune flora is particularly rich and includes the nationally rare rush-leaved fescue and sea couch along its northern extent, as well as purple milk vetch, blue fleabane and yellow wort, which have a limited distribution and are associated with the lime-rich slag of the dune covered sea walls (JNCC, 1995). On the landward side are areas of dune slack, supporting large populations of common spotted and northern marsh orchids, as well as their hybrids, including several locally rare forms. Invertebrates found at the site include the common blue butterfly, burnet moth and the rare lyme grass moth.

The South Gare and Coatham dunes are dominated by marram grass, but also support one of the largest continuous stands of lyme grass in Britain. Sea couch-grass is present at the northern limit of its range. The dune slacks support large populations of northern marsh orchid, early marsh orchid and fragrant orchid. Other plants of particular interest are yellow wort, lesser centaury, knotted hedge parsley, carline thistle, strawberry clover and the nationally rare grass; rush-leaved fescue. These are associated with lime-rich areas of tipped slag. The invertebrate fauna of South Gare includes several species of butterfly, several uncommon beetles, and a number of rare spiders.

A thin, fragmented, narrow strip of sand dune occurs along the coast between Redcar and Marske (the Stray); however the dune habitats are restricted inland by amenity grassland and the Coast Road. Although species diversity is poor, small isolated patches of purple milk vetch grow on the dune grassland along the Stray. A small area of sand dune habitat is located under the cliffs at Skinningrove.

Current Activity in the Tees Valley

Hartlepool Council's Countryside Warden Team manage the sea buckthorn boundary between the dunes and Seaton Golf Course. This dense stand has historically displaced dune grassland communities. However, management has reversed its advance and now management concentrates primarily on the control of re-growth. There is no sand dune

management South of the Tees, other than litter clearance. Recent changes to mechanical beach cleaning operations are assisting embryo dune formation.

Shoreline Management Plans have been adopted by HBC and R&CBC to identify areas at risk from erosion. A policy of 'no active intervention' is proposed at Hart Warren dunes, Seaton dunes, North Gare dunes and Coatham sands. A policy of 'hold the line' is proposed at Redcar East with the potential loss of sand foreshore. No policy is given for the area between Redcar East and Marske.

Further Information

Radley, G.P. 1994. Sand dune vegetation survey of Great Britain: a national inventory. Part 1: England. Peterborough: JNCC
Joint Nature Conservation Committee (1995) Information sheet on Ramsar Wetlands – Teesmouth and Cleveland Coast. Peterborough: JNCC
Brodin, N (2001) A Biodiversity Audit of the North East. North East Biodiversity Forum
Sand Dune and Shingle Network hosted by Liverpool Hope University and coordinated by Paul Rooney and John

Vision Statement

To protect the existing sand dune habitat from damage through active management, promotion of public understanding and liaison with local enforcement agencies.

Targets

No targets have been set for this habitat in the Tees Valley due to the dynamic nature of the habitat.

Actions

Code	Action	Organisational lead	Action contact	Partners	End date
SD.A1	Encourage local authorities to reduce and control dog fouling through dog control orders.	Tees Valley Wildlife Trust	Sue Antrobus	HBC R&CBC	2010 and ongoing
SD.A2	Raise public awareness and understanding of dynamic dune processes.	Hartlepool Borough Council	Deborah Jefferson	R&CBC	Ongoing
SD.A3	Promote best conservation management practice between staff at nature reserves, golf courses and Natural England.	Hartlepool Borough Council	Deborah Jefferson	Natural England	2010
SD.A4	Implement monitoring programmes.	Northumbrian Water	Alan Snape		2010 and ongoing
SD.A5	Identify and agree where minimal beach cleansing should occur to conserve priority habitat areas.	Redcar and Cleveland Borough Council	Keith Ferry		Ongoing
SD.A6	Establish ownership of areas covered by sand dunes.	Hartlepool Borough Council	Deborah Jefferson	INCA	2010
SD.A7	Encourage natural movement and development of dune systems and control natural succession to scrub and sea buckthorn where necessary.	Hartlepool Borough Council	Deborah Jefferson		Ongoing
SD.A8	Protect the existing sand dune habitat from damage caused by anti social behaviour (littering, off-road vehicle damage) through active management, promotion of public understanding and liaison with local enforcement agencies.	Hartlepool Borough Council	Deborah Jefferson	R&CBC TVWT	Ongoing