Photo: Dee Christensen

Coastal Vegetated Shingle Habitat Action Plan

Last Updated: February 2010

National Lead Organisation: Scottish Natural Heritage

1. Habitat Description

Shingle is an accumulation of pebbles with a diameter between 2-200 mm. In Sussex it is composed mainly of flint pebbles derived by marine or glacial erosion of Cretaceous chalk and Tertiary deposits. Shingle closest to the sea is most mobile, due to the influence of wave action. As conditions stabilise further from the shore, mixed communities of flowering plants, grasses, mosses and lichens develop, with some appearing to be specific to shingle.

Shingle structures include spits, barriers or barrier islands resulting from longshore drift, or cuspate forelands where a series of parallel ridges pile up against the coastline. These structures may support breeding birds including Little Tern and Ringed Plover, and diverse invertebrate communities. Shingle features provide an important protective function for other habitats such as sand dunes, saltmarshes and saline lagoons.

In the past shingle has been excavated for use in the building industry and for sea defences. The building industry application is in decline and shingle is now dredged from offshore for coastal defences. The main use for shingle today is for recreation, with the resulting water-filled gravel pits attracting bird watchers.

2. Associated Species

The following UK Biodiversity Action Plan species associated with coastal vegetated shingle have been recorded in Sussex:

- Divided Sedge
- Grass Rivulet
- Least Lettuce
- Long-spined Ant
- Red Hemp Nettle
- Small-flowered Catchfly
- Stinking Hawk's-beard
- Whelk-shell Jumping Spider
- White Spot

3. National Status

Coastal vegetated shingle is an internationally rare habitat occurring mainly in northern Europe, Japan and New Zealand. Whilst shingle beaches are widely distributed around the UK coastline, structures sufficiently stable to support perennial vegetation are comparatively rare, with around 5800 hectares of vegetated shingle nationally. Dungeness is by far the largest site with over 2000 hectares of shingle, and there are only five other structures over 100 hectares in extent in the UK.

4. Local Status

Sussex has almost 400 hectares of vegetated shingle. This is mainly carried eastwards by longshore drift, however from Selsey Bill in West Sussex it travels westwards. Shingle is deposited either as fringing beaches along the coastline or as cuspate forelands - the most extensive in this region being at The Crumbles near Eastbourne, and at Rye and Dungeness on the Sussex/Kent border.

Several uncommon plant species can be found on shingle in Sussex including Childing Pink, Sea Pea and Sea Kale. There are a large number of invertebrates including the rare Toadflax Brocade moth, and monitoring at Rye Harbour has resulted in the discovery of a Phorid fly new to science deep in the shingle.

5. Biodiversity Opportunity Areas

Coastal vegetated shingle may be a priority habitat in the following Biodiversity Opportunity Areas:

- 01 Chichester Coastal Plain
- 02 Chichester Harbour
- 19 Climping to Houghton
- 28 Shoreham Estuary and Beach
- 32 Brighton and Hove Urban Green Network
- 43 East Brighton Downs
- 44 Lewes Brooks and the Ouse Valley
- 45 Seaford to Eastbourne Downs
- 52 Eastbourne Marshes
- 53 Pevensey Levels
- 57 Romney Marsh Area
- 61 Lower Cuckmere Reaches

6. Current Factors affecting Coastal Vegetated Shingle

- Coastal defence structures and offshore aggregate extraction pose a long-term threat to vegetated shingle as they can change the recharge rate. Shingle losses may also ensue from coastal realignment.

- Enrichment of shingle can result in botanical changes and an overall loss of biodiversity. This may be caused by increased nutrients in seawater, atmospheric nitrogen deposition and dog fouling. Oil pollution is also a potential problem on shingle.

- Lack of awareness of the value of vegetated shingle may exacerbate the negative effects of activities that can adversely affect ecological integrity. This includes trampling and disturbance, introduction of exotic species and garden escapes, and dumping of waste.

- The threat of sea level rise and increased storminess resulting from climate change could present a risk to areas of vegetated shingle particularly where it exists in narrow fringes.

- Building on shingle has lead to destruction of vegetation and ridge morphology in some areas.

- Invasive species and scrub have become a problem at many of our vegetated shingle sites in Sussex.

- At Dungeness water abstraction from the groundwater has produced some evidence of drought stress on the vegetation.

7. Current Action/Strategies

- Vegetated shingle is listed as a habitat type under Annex I of the EC Habitats Directive (*Perennial vegetation of stony banks*).

- Much of the vegetated shingle in Sussex is designated as Special Protection Area, Site of Special Scientific Interest or Site of Nature Conservation Importance.

- Site safeguard and enhancement action in Sussex has included restoration of the tern island at Pagham Harbour. At Longbrook Park, Felpham tonnes of shingle have been introduced and planted with native plants to expand the area of vegetated shingle.

- The East Sussex County Council Vegetated Shingle Management Plan provides guidance on the management, protection and restoration of shingle sites in East Sussex.

- Potential exists for reclaiming some of the urban shingle affected by urban-related pressures. There is also potential for recreating shingle banks in and around new developments with natural shingle gardens encouraged on the coastal strip.

- At Rye Harbour there are plans to restore large areas of shingle damaged by arable farming.

8. Action Plan Objectives and Targets

- Maintain and where possible improve the ecological integrity of coastal vegetated shingle in Sussex.
- Maintain and expand the range of coastal vegetated shingle in Sussex.

9. Action Plan Targets

A Maintain the total extent of coastal vegetated shingle habitat in Sussex with no net loss, and the structures, sediment and coastal processes that support them.
B Achieve favourable or recovering condition by appropriate management of 353 ha of coastal vegetated shingle systems currently in unfavourable condition by 2015.
C Initiate restoration of shingle communities on arable land at Rye and Dungeness over shingle deposits by 2015.
D Create 5 ha of vegetated shingle in the urban environment by 2015 through new development or small-scale habitat creation schemes.

10. Monitoring and Review

This Action Plan will be monitored annually, including an assessment of actions carried out against the targets set and reviewing whether objectives remain appropriate as circumstances change or in the light of new information.