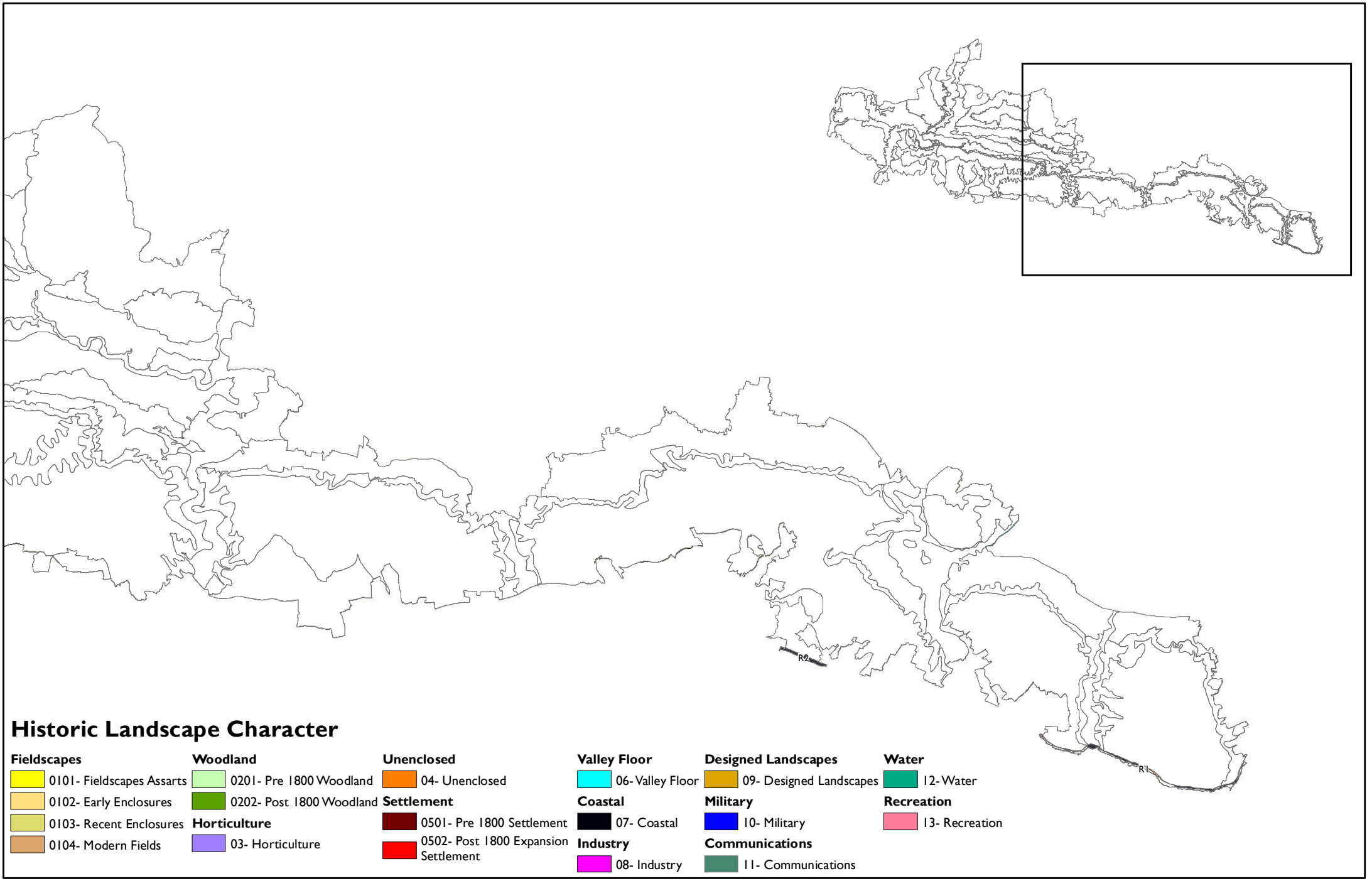
Landscape Character Areas
R1 : Seaford to Beachy Head Shoreline
R2: Brighton to Rottingdean

R: Shoreline



Historic Landscape Character

Fieldscapes
- 0101- Fieldscapes Assarts
- 0102- Early Enclosures
- 0103- Recent Enclosures
- 0104- Modern Fields

Woodland
- 0201- Pre 1800 Woodland
- 0202- Post 1800 Woodland

Horticulture
- 03- Horticulture

Unenclosed
- 04- Unenclosed

Settlement
- 0501- Pre 1800 Settlement
- 0502- Post 1800 Expansion Settlement

Valley Floor
- 06- Valley Floor

Coastal
- 07- Coastal

Industry
- 08- Industry

Designed Landscapes
- 09- Designed Landscapes

Military
- 10- Military

Communications
- 11- Communications

Water
- 12- Water

Recreation
- 13- Recreation

R: Shoreline

LANDSCAPE TYPE R: SHORELINE

R.1 The *Shoreline* landscape type comprises the narrow band of inter-tidal beach that occurs at the base of the steep chalk cliffs, and is defined between the high or the cliff top, and low water marks.

DESCRIPTION

Integrated Key Characteristics:

- Inter-tidal shoreline occurring at the base of the steep chalk cliffs where the South Downs meet the sea.
- Characterised by flint shingle beaches, formed from erosion of chalk to reveal flint nodules that are eroded into pebbles.
- Chalk rubble, resulting from cliff falls, forms spits of land that extend into the sea.
- A dynamic and continually changing landscape featuring constant erosion and re-stocking of the beaches.
- An exposed, wild landscape which is open to the elements and whose character is governed by the weather.
- Engineered solutions to coastal erosion, sometimes extensive, such as wooden or concrete groynes and concrete retaining structures.
- Coastal features such as lighthouses, associated with coastal navigation, and anti-invasion defences.
- Extensive views out across the sea to the horizon.

Physical Landscape

R.2 The shoreline is a rocky platform which gently slopes away from the base of the cliff. The platform has been eroded to a relatively level surface in places, although in detail it is irregular, with rock pools, steps and runnels into which the ebb and flow of the tide is channelled[29]. On this platform lies chalk rubble and flint shingle. As chalk falls from the cliff, it is eroded by the sea leaving the hard flint nodules which accumulate on the shoreline where wave action erodes the flints into rounded pebbles to form a shingle beach. This is a constantly changing environment as a result of geomorphological processes, including longshore drift which moves the shingle along the beach from west to east. Where the chalk cliff has been or is under threat from erosion by the sea, a number of sea defences have been introduced to control and prevent further retreat of the cliff.

[29] From http://www.sevensisters.org.uk/education/cliffs.html [September 2005]

Perceptual/Experiential Landscape

R.3 The character of the shoreline is highly dependent upon the weather. On a winter's day wind and waves buffet the shoreline resulting in an exposed, wild landscape which is open to the elements. On a warm summer's day the microclimate on the beach creates a still and hot environment. However, whatever the weather this is a remote landscape with a strong sense of wilderness and a sense of being close to nature, even along those areas close to urban settlement. There are long views along the coastline to the dramatic white chalk cliffs and even more extensive views out across the sea to the horizon.

Biodiversity

R.4 Features of ecological note include cliff nesting sea birds, such as fulmars and herring gulls, together with occasional patches of shingle vegetation that have colonised along the shoreline.

R.5 The plant communities range from open and sparsely vegetated shingle along the strandline, where characteristic species include yellow horned-poppy, sea kale, sea beet, curled dock and sea mayweed, to closed grassland swards, which occur further inshore and support a range of grass, herb and moss species.

Key Biodiversity Features	***Importance***
Coastal habitat	• Comprises areas of sea cliff and partly vegetated shingle which support cliff nesting birds and rare plant communities

Historic Character

R.6 This landscape differs from others in that stimulus large force of change has been natural in many cases rather than human in origin. The soft chalk cliffs forming the coastline have been subject in the past to erosion from natural forces, especially the sea. Although there are sections along the coastline which are today largely controlled by man made sea defences.

R.7 The shoreline retains little evidence for human exploitation, other than at harbours where coastal erosion defences and anti-invasion defences are features. Lighthouses and shipwrecks are also features of the shoreline.

Key Features of the Historic Environment	***Importance***
Coastal erosion defences	Reflects the exposed and changing nature of the coastline
Anti-invasion defences	Reflects vulnerable nature of the coastline in times of stress

Settlement Form and Built Character

R.8 This character area is too inhospitable for settlement, except for lighthouses.

EVALUATION

Sensitivity

R.9 This naturalistic landscape has many sensitive natural, cultural and aesthetic/perceptual features that are vulnerable to change. Key landscape sensitivities include:

- The flint shingle beaches which are vulnerable to erosion.
- The steep chalk cliffs which are vulnerable to erosion, often resulting in large cliff falls which deposit chalk rubble on the beach.
- The exposed, wild character of the landscape which could be vulnerable to built development or insensitive engineering works.
- The shingle vegetation community which is susceptible to trampling.
- Geological interest associated with the chalk cliffs.
- Long, scenic views along the coastline to the dramatic white chalk cliffs and extensive views out across the sea to the horizon which could be vulnerable to inappropriate development along the shoreline, or the adjacent open downs or offshore.

R.10 The open nature of the shoreline makes this landscape particularly sensitive visually.

Change – Key Issues and Trends

Past Change

R.11 This is a constantly changing environment. Observable changes include:

- Introduction of sea and coastal erosion defences including groins and concrete retaining walls.
- Introduction of concrete anti-invasion defences by the military
- Cliff collapses.

Future Landscape Change

R.12 In the short term (5 years) change is likely to continue much as it has in recent years. There is likely to be continued erosion and restocking of the beaches and occasional major cliff falls onto the shoreline. Where these falls occur they protect the base of the cliffs from the sea and usually there are no falls in the same places for eight or nine years until the sea undercuts the cliffs again[30]. The greater recreational use of beaches may lead to trampling of the shingle vegetation community.

Climate Change: Recent studies of the seafloor in this area suggest that the prehistoric coastline was not dissimilar to the present one, and that the currently extensive erosion of the chalk cliffs is a recent phenomenon. Climate change could result in heavy winter rainfall, increased storms and rough seas, all of which could increase the rate of coastal erosion. In the longer term (20 years), change to the shoreline will be dependent upon the approach taken to coastal management.

Development: Although development is not envisaged, it could erode the wild and remote character of the shoreline.

[30] http://www.sevensisters.org.uk/whattodo/sisters.html [September 2005]

Broad Management Objective and Landscape Guidelines

R.13 **The overall management objective should be to conserve the exposed, wild character of the shoreline and protect it from built development and insensitive engineering works.**

Landscape Management Considerations

- Consider sensitive approaches to manage coastal erosion.
- Protect the shingle vegetation community from effects of trampling.

Development Considerations

- Maintain the largely undeveloped character of the shoreline.

Character Areas	
The *Shoreline* landscape type is represented by two character areas in the South Downs – this area occurs where the South Downs meet the sea at their south-eastern extremity.	
R1:	Seaford to Beachy Head Shoreline
R2	Brighton to Rottingdean Shoreline

R1: SEAFORD TO BEACHY HEAD

DESCRIPTION

Location and Boundaries

R1.1 The *Seaford to Beachy Head* coastline is the narrow band of inter-tidal shoreline that occurs at the base of the steep chalk cliffs between Seaford and Beachy Head. The northern boundary is defined by the base of the chalk cliffs (the high water mark) and the southern boundary is defined by the low water mark.

Integrated Key Characteristics:

- A narrow band of inter-tidal shoreline that occurs at the base of the steep chalk cliffs between Seaford and Beachy Head.
- Characterised by flint shingle beaches, formed from erosion of chalk to reveal flint nodules that are eroded into pebbles, supporting a vulnerable shingle vegetation community.
- Chalk rubble, resulting from cliff falls, forms spits of land that extend into the sea. Birds crowd the relatively few stable cliff ledges suitable for nesting.
- A dynamic and continually changing landscape featuring constant erosion and re-stocking of the beaches. Wooden groynes are a feature of the beaches.
- An exposed, wild landscape which is open to the elements and whose character is governed by the weather.
- Wooden and concrete retaining walls and concrete anti-invasion defences at Cuckmere Haven indicating the vulnerable nature of the coastline in times of stress.
- The distinctive red and white striped lighthouse off at Beachy Head is a prominent landmark and indicates the importance of coastline in navigation.
- Long views along the coastline to the dramatic white chalk cliffs and extensive views out across the sea to the horizon.

Specific Characteristics Unique to the Seaford to Beachy Head Shoreline

R1.2 The *Seaford to Beachy Head* character area is typical of the landscape type, comprising a rocky platform supporting chalk rubble and flint shingle which supports plant communities and cliff nesting sea birds. This narrow area of shoreline and associated steep chalk cliffs is recognised for its habitats and the floral and faunal communities they support through designation as part of the Seaford to Beachy Head SSSI.

R1.3 While the coastline west of Brighton has been subject to massive change in the last 10 millennia, this area has not. Recent studies of the seafloor in this area suggest

that the prehistoric coastline was not dissimilar to the present one, and that the currently extensive erosion of the chalk cliffs is a recent phenomenon.

R1.4 The mouth of the Cuckmere forms part of the shoreline of this character area - human modification of the river mouth is evident in the wooden and concrete retaining walls, wooden groynes on the beach and concrete anti-invasion defences.

R1.5 This character area is also notable for the lighthouse at Beachy Head, built at sea level to combat fog and replacing an earlier 19th century structure that still exists (as a private dwelling) on the cliff above. This red and white striped lighthouse, constructed from Cornish granite, is a distinctive landmark of the coastline and the light is visible for 25 sea miles[31].

Sensitivities Specific to the Seaford to Beachy Head Shoreline

R1.6 All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific to this character area are:

- The anti-invasion defences at Cuckmere Haven which are of historic/archaeological interest.
- The distinctive red and white striped lighthouse off at Beachy Head which forms a prominent, and distinctive, landmark.
- The visibility of this landscape from popular viewing areas at Beachy Head, Belle Tout, Birling Gap and Cuckmere Haven.

Change Specific to the Seaford to Beachy Head Shoreline

R1.7 Past change specific to this area includes:

- The construction of Beachy Head lighthouse, in 1902, at the foot of the chalk cliff.
- Introduction of concrete anti-invasion defences at Cuckmere Haven.
- Building of timber-training walls at the mouth of the River Cuckmere to prevent diversion of the river mouth eastwards.
- A particularly large collapse of the cliffs in 1999 which deposited thousands of tons of chalk rubble onto the shoreline to form a new spit of land reaching almost up to the base of the lighthouse[32].

R1.8 Future change is likely to be as set out in the landscape type evaluation.

[31] http://www.lanternroom.com/lighthouses/england/eng24.htm [September 2005]
[32] http://www.solarnavigator.net/history/beachy_head_lighthouse.htm [September 2005]

Landscape Management/Development Considerations Specific to the Seaford to Beachy Head Shoreline

R1.9 In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- Conserve the anti-invasion defences at Cuckmere Haven which are of historic/ archaeological interest.
- Conserve the distinctive red and white striped lighthouse off at Beachy Head which forms a prominent, and distinctive, landmark.

R1.10 The following development considerations are specific to this character area:

- Consider views from popular viewing areas at Beachy Head, Belle Tout, Birling Gap and Cuckmere Haven when planning any change.

The lighthouse at Beachy Head is a landmark.

The shoreline is backed by spectacular white chalk cliffs.

Wooden groynes are a feature of the shoreline.

Shingle beaches are formed from flint nodules which have been eroded into pebbles.

Birling Gap.

A very exposed landscape. The character is highly dependent on the weather conditions.

R2: BRIGHTON TO ROTTINGDEAN

DESCRIPTION

Location and Boundaries

R1.1 The *Brighton to Rottingdean* coastline is the narrow band of inter-tidal shoreline and concrete walkways that occur at the bottom of the steep chalk cliffs between Brighton Marina in the west and Rottingdean in the east. The northern boundary is defined by the top of the chalk cliffs and the southern boundary is defined by the low water mark.

Integrated Key Characteristics:

- A narrow band of inter-tidal shoreline and concrete walkways that occur at the bottom of the steep chalk cliffs between Brighton and Rottingdean.
- The steep chalk cliff runs the length of this area, and the beaches have been formed by the retreating cliffline, which has left a wave cut platform.
- Along the foot of the cliff a seawall and concrete walkway protects the cliff and also provide access along this stretch of beach. Large rocks also line the edge of this walkway adding further protection.
- Shingle and sand characterise the small beaches located between large concrete or rock groynes.
- Forms part of the Brighton to Newhaven SSSI, largely due to its exposure of important chronological fossils, from the Upper Santonian and Lower Campanian[33], and is a nationally important reference section for the Upper Cretaceous[34].
- The cliff face provides habitats for a number of uncommon plants and supports colonies of breeding seabirds and colonies of beetles (forms part of the Brighton to Newhaven SSSI). Gullies and ridges also support a variety of invertebrates and algea.
- A dynamic and changing landscape featuring erosion and re-stocking of the beaches, however heavily controlled by sea defences.
- An exposed landscape which is open to the elements and whose character is often controlled by the weather, however a significant urban and man made elements influnce this coastline.
- Long views along the coastline and extensive views out across the sea to the horizon. Views towards Brighton Marina in the west.

[33] Santonian and Campanian are subdivisions of the Upper Cretaceous.
[34] The Cretacous Period dates from 144 million years ago to 65 million years ago, and is divided into the Lower and Upper Cretaceous Series.

Specific Characteristics Unique to the Brighton to Rottingdean Shoreline

R1.2 The *Brighton to Rottingdean* character area and associated cliffs are recognised particularly for their geological interest and are designated a Site of Special Scientific Interest (SSSI), a Regionally Important Geological Site (RIGS) and a Geological Conservation Review site (GCR). Although the main interest is geological, the cliff face provides important habitats for a number of uncommon plant species, breeding sea birds and diverse communities of beetles. Gullies and ridges also support a variety of invertebrates and algea. These cliffs (which form part of the Brighton to Newhaven SSSI), provides the best and most extensive exposures of the *Offaster pilula* Zone in England (a small and important zone fossil[35] used in the Early Campanian). It is an important site for faunas of the upper Santonian and lower Campanian and is a nationally important reference section for the upper Cretaceous[36].

R1.3 This stretch of coastline is largely controlled by concrete sea defences, which were first built in 1907 and have been progressively renewed over the past 15 years. In the 1930s, The Undercliff Walk was developed, a scheme to enhance sea defences whilst also introducing an undercliff road/walk. A number of stabilisation and reprofiling schemes along the cliff have been recently completed along this section of coastline. However the cliffs continue to experience periods of instability linked largely to the weather, and occasionally sections of the Undercliff Walk are closed.

R1.4 Although shingle and sand are located on small beaches between groynes, due to the effect of the Marina and the changes in water depth around this area very little shingle comes onto this section of coast, and some areas of beach have been created from imported material.

Sensitivities Specific to the Brighton to Rottingdean Shoreline

R1.5 All of the landscape and visual sensitivities listed in the landscape type evaluation apply to this character area. Specific to this character area are:

- The cliffs which provide the best and most extensive exposure of *Offaster pilula,* which is particularly important for biostratigraphy.
- The cliff face which provide habitats for a number of uncommon plant species, breeding seabirds and diverse communities of beetles.
- The limited shingle and sand beaches which are vulnerable to further loss.

Change Specific to the Brighton to Rottingdean Shoreline

R1.7 Past change specific to this area includes:

[35] A fossil which lived in a particular geologic age, and used to identify or date the rock/rock layer in which it is found.
[36] Information taken from Natural England Sites of Special Scientific Interest Information 2011 [http://www.english-nature.org.uk/citation/citation_photo/1003033.pdf]

- Introduction of concrete sea defences, originally in 1907 and continuously until today.

- Indroducton of the Undercliff Walk in the 1930s as further cliff protection and to create a access along the shoreline.

- The development of Brighton Marina at the base of the cliffs to the west of *Brighton to Rottingdean* character area. It was created in the 1970's and is now a visual influence on the character of this strech of coastline.

R1.8 Future change is likely to be as set out in the landscape type evaluation.

Landscape Management/Development Considerations Specific to the Brighton to Rottingdean Shoreline

R1.9 In addition to the generic landscape management and development considerations for this landscape type, the following landscape management considerations are specific to this character area:

- Conserve the gelogocal and ecological interest of the chalk cliffs.

- Conserve the Undercliff Walk, which serves to protect the cliffs from erosion and provide access along the foot of the cliff.

R1.10 The following development considerations are specific to this character area:

- Consider views from the shoreline when planning any change onshore or offshore.

View east from Brighton Marina towards Rottingdean, across the foreshore.

Rock and sand beach at Ovingdean Beach, with concrete groynes and boulder sea defences.

The Undercliff Walk, providing easy access along the base of the cliff and acting as a sea defence.

Cliff sea defences.

Looking westwards from Rottingdean towards Brighton and Brighton Marina in distance.