Isle of Wight Biodiversity Action Plan
Maritime Cliffs and Slopes Habitat Action Plan

Second Review December 2007

1 Introduction

Maritime cliffs and slopes have been identified as a priority habitat in the UK Biodiversity Action Plan. They comprise sloping to vertical surfaces on the coastline where a break of slope is formed by slippage and/or coastal erosion. There appears to be no generally accepted definition of the minimum height or angle of slope which constitutes a cliff, but the zone defined as cliff top should extend landward to at least the limit of maritime influence (i.e. limit of salt spray deposition). On the seaward side, the plan extends to the limit of the supralittoral zone and so includes the splash zone lichens and other species of this habitat.

They can broadly be classified as hard cliffs or soft cliffs, though there are intermediate types. Hard cliffs are vertical or steeply sloping, with crevices or ledges where plants can establish themselves and birds can find nest sites. They are formed of rocks which are relatively resistant to weathering, such as chalk. Soft cliffs are formed in less resistant rocks such as shales or in unconsolidated materials such as boulder clay. They are characterised by less steep slopes that gradually become vegetated. They are subject to frequent slumping and landslips, particularly where water percolates into the rock and reduces its effective shear strength.

Most cliffs form at the junction of land and sea, where groundwater-driven land slippage and/or erosion by the sea have created a break in slope, but on the Isle of Wight there is also an extensive landslip zone between St Catherine's Point and Bonchurch which has an inner cliff 500m inland rising to 140m above sea level.

This HAP relates to the objectives and targets of the national HAP for maritime cliffs and slopes and places them in a local context. Nationally, maritime cliffs and slopes extend to around 4,060km but of this, as little as 400km is soft cliff. The cliffs and slopes on the south coast of the Isle of Wight form one of the longest lengths of naturally-developing soft cliffs on the British coastline (DEFRA SE Environment website). The south-facing cliffs and slopes are particularly important for their specialised and rich invertebrate fauna.

National targets for this habitat include

- Increase the extent of maritime cliff and slope unaffected by coastal engineering/coast protection from 250km to 275km by 2015.
- Increase the area of cliff-top semi-natural habitats by at least 500 ha (minimum) by 2015.
- Achieve favourable or recovering condition for 1,500 km/30% of maritime cliff and

slope including cliff-top vegetation, by 2010.

Restoration is taken to involve the removal of coastal protection structures to allow natural coastal processes to be reinstated and establishment of cliff top semi-natural habitat to provide a buffer zone for agricultural activities.

The local context

Maritime cliffs are some of the most dramatic and widely appreciated landscape features of the Isle of Wight. They are home to a rich and highly adapted diversity of wildlife, and provide unique opportunities to view extensive and spectacular geological exposures. They are a rich scientific and educational resource of national and international importance.

Maritime cliffs provide a constantly changing habitat depending on the degree of maritime exposure, substrate type, degree of slope and the time since the last cliff fall or slippage. Associated with this changing habitat is a huge diversity of plant and animal communities: pioneer plant communities colonising bare rock, communities of rock crevices and ledges, an amazing variety of grassland types, ponds, reed beds and other wetlands, scrub and woodland and, in places, even cliff face heathland and sand dunes.

The south coast of the Isle of Wight also contains extensive areas of undercliff, the more sheltered environment that develops between the outer sea-washed cliffs and an inner cliff line which forms the rear wall of this landslipped zone. It stretches between Blackgang and Bonchurch. Here, the habitat is extensive, partially urbanised and in parts dominated by secondary sycamore woodland. It has a distinctive sheltered, almost Mediterranean, climate. In most places, a maritime influence is apparent but may be reduced, particularly where the undercliff is wide.

All the maritime soft and hard rock cliffs of the Island and maritime influenced and actively slumping habitats of the undercliffs are considered in this Action Plan This plan does not include inland cliffs, such as those at Gatcliff, or artificial cliff habitats created by quarries.

2 Current Status

Physical Features of the Island's maritime cliffs and slopes

Wealden and Lower Greensand Series rocks, their fossils and environments
Cliffs on the southwest and southeast coast of the Island display internationally important exposures of these rocks. They are rich in dinosaur and other fossils. The Isle of Wight is the most important location in Europe for dinosaur fossils. These rocks and their fossils provide an unrivalled opportunity to study the environment of the Isle of Wight as it was 120 million years ago.

Chalk rocks The chalk cliffs at Culver and between Compton Bay and the Needles are of

national importance for the study of the geological period in which the calcium- rich remains of microscopic marine plants were laid down on the floor of a deepening sea between 100 and 65 million years ago.

Tertiary rocks and their environments

The younger rocks to the north of the Island's central chalk ridge are of international importance. They are best exposed in quarries and soft eroding cliffs, such as those at Hamstead and Bouldnor. These rock exposures provide an opportunity to understand the environment of the Island some 60-30 million years ago. The fossils found in these rocks are also of great interest and include those of mammals, reptiles, plants and insects.

The Landslip zone

The Undercliff landslide complex is a wide slumped skirt of land stretching for nearly 10km along the coast from Luccombe in thee east to Blackgang in the west and it is sheltered to the north by an inner cliff. It was activated as a consequence of aggressive coastal erosion following a rise in sea levels after the last Ice Age about 10000 years ago. It is south facing with a warm, humid environment. Historically it was a largely open grazed landscape interspersed with tumbled rocks and wooden pockets. The soils are complex being a jumble of calcareous soils and more acidic greensand and chert. Springs emerging from the greensand/gault boundary give rise to interesting streams. The mild climate provides suitable conditions for many alien species to become established. Buddleia has been an invasive species for many years and is threatening the open ground habitats at St Catherine's Point, and the Downs above Ventnor have an extensive area of holm oak woodland.

Coastal processes

The ways in which the sea shapes the coastline (its geomorphology) can be studied more comprehensively in the Isle of Wight than in virtually any other part of England. Nowhere else is there such a range of coastal processes acting in such a comparatively small area. Geomorphology is notified SSSI feature for the coastline between Compton Chine and St Catherine's Point. On the north of the Island are slumping cliffs, platforms cut in the beaches by fossil seas and more recent features such as estuaries, spits, shingle bars and reefs. On the south of the Island are landscape features such as the Isle of Wight monocline (the huge fold that buckled the Isle of Wight). On the south coast is the Undercliff (the largest urban landslide complex in northwest Europe) and smaller scale features such as the south coast 'chines', sea cliffs, caves and stacks.

Wildlife of the Island's maritime cliffs and slopes

Maritime cliffs are a challenging environment for plants and animals; exposure to gale-force winds and salt spray, steep slopes with thin soils, frequent erosion and landslides, all shape unique and characteristic wildlife habitats. This exacting environment supports a number of species that have been identified as being of national or local importance to

biodiversity. Appendix 1 gives details of these species. Action proposed in this Plan will be the principal means of conserving most of these species. In some cases additional action plans and programmes will also contribute to conserving priority species: for example, UK Species Action Plans (UK SAP).

The habitats, which develop on the cliffs and slopes, are particularly varied. This variety can be partially explained by the very varied geology and hydrology of the Isle of Wight coast. Exposures range from acidic sands, through neutral clays and silt, to calcareous marls, limestones and chalk.

In places, water arises from cliff face springs and flushes but in most instances, it is the poorly draining impermeable clay and marl substrate and uneven surface of the slumping cliffs which traps surface water to form seasonally waterlogged conditions. At the other extreme, there are examples of strongly parched conditions on both sand and chalk substrates.

Further diversity is created by the differences in maritime exposure. In general, the south coast of the Island is subject to far greater degrees of maritime exposure, producing a range of typical maritime cliff grassland communities. By contrast, the more sheltered and much wider cliff zones found on the north of the Island often show very little maritime influence and extensive areas of woodland and scrub have developed on the most mature and stabilised coastal slopes.

The south-facing seacliffs and slopes frequently support rich and specialised plant and animal communities, many at the northern limit of their range. The combination of friable soils, hot substrates and open conditions maintained by cliff slippages offer a continuity of otherwise very restricted micro-habitats and these support many rare invertebrates which are confined to such sites. Water seeping out of the cliff face as springs and pools provide the wet muds required by many species of solitary bees and wasps for nest building, and also provide suitable conditions for a rich assemblage of other invertebrates and rare plants.

A survey of the soft cliff vegetation of the Island undertaken in 1996 and 1997 identified a total of 44 different vegetation communities. This total includes seven pioneer communities, several of which have yet to be described by the National Vegetation Classification (NVC), together with eight maritime vegetation communities, including maritime grassland and sand dune communities. Heathland and mire communities were also recorded locally. A wide diversity of more terrestrial grassland types was also identified, ranging from acid through neutral to calcareous communities. The survey also revealed the presence of a range of swamp and fen vegetation types and at least two open water aquatic communities in ponds. Woodland and scrub vegetation was also found to be very varied and include examples ranging from early successional scrub communities to ancient semi-natural woodland. Further vegetation surveys of some stretches of maritime cliff have been commissioned by English Nature (2002) and Isle of Wight Council (2000 onwards).

The **flowering plants** of the Island's cliffs abound in rare species including the Early

Gentian, Oxtongue Broomrape, Field Cow-wheat, Hoary Stock, Nottingham Catchfly and Curved Hard-grass.

Although often less conspicuous, the **mosses, liverworts and lichens** of the cliffs also include many rare and uncommon species of high biodiversity importance including the Triangular Pygmy Moss *Acaulon triquetum*, the Hemisphaeric Liverwort *Reboulia hemisphaerica* and the Scrambled Egg Lichen *Fulgensia fulgens*.

A survey of invertebrate life by Buglife in 2006 reached the conclusion that the Island's maritime cliffs and slopes rank second in importance for their invertebrate assemblage to the West Dorset soft cliffs. Most of the cliffs in the UK are in the north and west where rock types and climatic conditions are very different from those found on the Isle of Wight and less able to support a wide variety of invertebrates

One of the most important groups of insects on the Island's coast is the **bees and wasps**. Included in this group are nationally rare species such as the Large Mason Bee *Osmia xanthomelana* (although this species is now thought to be extinct on the Island), the mining bee *Lasioglossum angusticeps*, the Potter Flower Bee *Anthophora retusa*, the digger wasp *Mimumesa atratina,* the Black-headed Mason Wasp *Odynerus melanocephalus* and the Nomad Bee *Nomada conjugens*.

The **beetle fauna** of the cliffs is nationally important and includes such species as the Cliff Tiger Beetle *Cylindera germanica*, the ground beetle *Drypta dentata*, the rove beetle *Bledius crassicollis*, Chestnut Click Beetle *Anostirus castaneus,* and the weevils *Baris analis, Mononychus punctumalbum* and *Cathormiocerus cocius*.

The **butterfly and moth fauna** is also very rich and includes the Island's own Glanville Fritillary *Melitaea cinxia*, a species found not naturally elsewhere in Britain. In addition the Island's cliffs are home to several important moths including the Isle of Wight Wave *Idaea humiliata*, Six-belted Clearwing *Bembecia scopigera*, Dew Moth *Setina irrorella*, Square-spot Dart *Euxoa obelisca grisea*, Crescent Dart *Agrotis trux lunigera* and Beautiful Gothic *Leucochlaena oditis*.

Important populations of **cliff nesting birds** including Peregrine Falcon, Herring Gull, Cormorant, Shelduck, Guillemot, Raven and Shag are found on the chalk cliffs at the eastern and western extremities of the Island. Ponds, which can be transient in nature, are important for breeding amphibians such as the Great Crested Newt.

Current Extent

The Isle of Wight cliffs are a significant biological resource. The estimate of the total significantly 'cliffed' coastline around the Island is 62.4 km, of which 10.7 km is chalk cliff and 51.7km is soft cliff. However, those sites with the highest biodiversity of cliff-dependent species are restricted to southerly facing soft cliff slopes. More survey is needed to measure the extent of individual maritime vegetation types associated with the Island's cliffs but estimates suggest they support some 34ha of maritime grassland and a

total of 172 ha of coastal scrub.

Current Site Protection

Most of the Island's undefended coastline has been notified as Sites of Special Scientific Interest (SSSI) for its national geological and ecological significance of the chalk cliffs and landslips. A large proportion of these were included in the South Wight Maritime Special Area of Conservation (SAC), designated in accordance with the EU Habitats Directive. It is one of 15 examples of vegetated sea cliff selected for inclusion in the Natura 2000 network in the UK, and one of only six lengths of coastline identified as being of European importance for their representation of soft rock cliffs.

In 2004 the Hanvover Point to St Catherine's Point SSSI was extended and renotified to form the Compton Chine to Steephill Cove SSSI, which resulted in a further 6km of sea-level maritime cliffs and slopes and 3km of inner maritime-influenced cliff being protected by SSSI designation.

There are also important stretches of maritime cliff that have been identified as Sites of Importance for Nature Conservation (SINC) by the Isle of Wight Council. The cliffs between Luccombe and Shanklin Chine have been identified by Natural England as further candidate SSSI.

Key sites for maritime cliff habitats on the Isle of Wight include:

Site	Status	Interest	Type	Defended/ undefended	Length km
Gurnard to Newtown	SSSI	Biological and geological	Sands and clays: soft and slumping	Undefended	4.36
Bouldnor and Hamstead Cliffs	SSSI	Geological	Sands and clays: soft and slumping	Undefended	3.826
Fort Victoria Colwell and Totland	SSSI	Geological	Sands and clays: soft and slumping	Undefended Defended	1.66 1.94
Headon Warren	SSSI, SAC	Biological and geological	Sands and clays: soft and slumping	Undefended	2.33
Alum Bay	SSSI, SAC	Geological	Sands and clays; mostly vertical but some soft and slumping	Undefended	1.20
West High Down and the Needles to Freshwater Bay The Needles	SSSI, SAC	Biological and geological	Chalk cliffs: hard, vertical	Undefended Defended Undefended	8.94 0.10 0.26
Compton to Blackgang	SSSI, part in SAC	Biological and geological	Sands and clays: soft and slumping with many seepages	Undefended	17.57
Western Undercliff	SSSI and SINC	Biological and geological	Landslip debris; some vertical, others soft and slumping	Undefended Defended	5.21 1.89

Eastern Undercliff	SINC	Biological and geological	Landslip debris, mostly vertical some soft and slumping	Defended	1.22
Bonchurch Landslip	SSSI and SAC	Biological and geological	Landslip debris: some vertical, others soft and slumping	Undefended	0.99
Luccombe Chine and ledges to Shanklin Chine	SINC	Biological and geological	Sand and clays: some vertical others soft and slumping with many seepages	Undefended	1.75
Shanklin to Lake	part is SINC	Biological and geological	Vertical sandstone	Defended	3.53
Yaverland to Redcliff	SSSI and SAC	Biological and geological	Sands and clays: mostly soft and slumping but Redcliff is vertical	Undefended	1.53
Culver Cliff	SSSI and SAC	Biological and geological	Chalk cliffs: hard and vertical	Undefended	1.42
Whitecliff Bay to Bembridge	SSSI	Biological and geological	Soft and slumping	Undefended Defended	2.65 0.03

3 Current factors influencing the habitat

The biodiversity of the Island's cliffs is under increasing threat from a number of natural and human induced factors. There is a need to ensure effective management of the Island's maritime cliffs in order to maintain and enhance their biodiversity value, and balance this with the requirements of coastal protection, agriculture and recreation and tourism.

Coastal protection

Since Victorian times, much of the Island's development has been concentrated on the coast. This has lead to coast protection schemes being constructed to protect property. Such schemes interrupt natural coastal processes of erosion and slumping, sediment transport and deposition which are important for maintaining maritime cliff habitats. Many of the unique maritime habitats and species of the coast are dependent upon such processes, and soon decline once the cliff face becomes stabilised, as do the important geological exposures.

Many of the most rare and threatened plants and animals of maritime cliffs have a precarious existence, as the cycle of cliff fall followed by cliff stabilisation creates the mix of vegetation and bare rock they require. For these specialist cliff dwellers to survive they must have sufficiently large areas of cliff in suitable condition at any one time and in close enough proximity to each other for them to recolonise cliffs following a cliff fall. Isolation of colonies either through coastal stabilisation or increased rates of erosion may lead to range contraction or local extinction of species.

Although some coastal habitats may persist behind coast defence schemes, the coastal processes that naturally sustain them have been removed. In some cases, coastal protection works can also result in increased rates of erosion on adjacent unprotected coastlines. This can further damage the delicate balance between rate of erosion and colonisation on which the ecology of the cliffs depends. The impact of coast protection schemes on the natural structure and function of the coast must therefore be considered, as this can have a significant effect on the nature conservation value of maritime cliffs. The challenge is to develop coast protection schemes that are economically justifiable, technically sound and environmentally sustainable.

Recreation and tourism

Tourism is vital to the Island's economy. However, visitor pressure and recreation can also affect cliff vegetation through trampling and cause disturbance to nesting birds. Trampling can cause loss of plant species diversity, and new access paths can increase erosion or lead to demands for additional stabilisation works. It is important that these impacts are managed to maintain coastal habitats in good condition. Because this habitat exists as a relatively narrow strip of land and because very many people use it for recreation, it is subjected to a high concentration of use, which can damage biodiversity. Fossil collection can also cause damage if collectors climb on the cliffs and use hammers to collect material.

Agriculture

Cultivation of cliff-top vegetation has truncated the natural zonation between maritime and terrestrial vegetation and resulted in a loss of diversity. In places, arable land or improved pasture is not far from the cliff edge, whilst other clifftop uses, such as housing development and infrastructure, increase the demand for coastal protection. On the southwest coast, an agreement between landowners and Natural England is attempting to establish a 20m strip of semi-natural clifftop grassland along the coastline, the width being maintained as the cliff recedes.

Fertilising, reseeding and silage production on fields bordering cliffs, and the planting of arable crops as close as possible to the cliff edge narrows the band of semi-natural cliff vegetation and reduces the ecological functioning of the grassland. Plant species diversity is reduced, which also damages invertebrate habitats by reducing the amount of nectar and pollen available and the availability of nesting and overwintering sites.

Water abstraction for irrigation may also have effects on the biodiversity of chines.

Colonisation by non-native plants

Encroachment by invasive plants such as holm oak, buddleia or sycamore reduces the naturalness of coastal woodland and scrub, and in many cases, smothers less competitive native plant species. Encroachment of buddleia at St Catherine's Point, for instance, threatens the survival of the Priority BAP liverwort, Green Blackwort *Southbya nigrella*.

4 Current Initiatives for Maritime Cliffs on the Isle of Wight

Shoreline Management Plan (SMP) and Coastal Defence Strategy Studies
Coastal Habitat Management Plans (ChAMPs)
SCOPAC studies and initiatives
IW Centre for the Coastal Environment (EU and government funded studies)
IW Rights of Way Strategy
Natural England Coastal Access Project
Natural England SSSI survey and notification programme
IW AONB Management Plan including Heritage Coast Plans

Annual survey of Glanville fritillary caterpillars by IWNHAS

Agri-Environment Scheme targets and incentives
Twenty metre wide uncultivated buffer strips are being negotiated as part of agri environment schemes along the coastline from Compton Chine to St Catherine's to lessen the impact of agriculture on the eroding cliff tops

National Trust management initiatives
As a trial, the National Trust car park at Shippard's Chine has been surfaced with new rubber crumb surface to provide additional car parking on grassed surfaces. This flexible and durable surface is inert and will not damage soil aeration pH or drainage.

Associated Plans within the Isle of Wight BAP

Associated Habitat Action Plans in the Isle of Wight BAP will include:

- Unimproved neutral grassland
- Acid grassland
- Calcareous grassland
- Lowland heath
- Wetlands(fens, swamps and marshes

Biodiversity Targets for Maritime Cliffs and Slopes on the Isle of Wight

A Maintain existing area of maritime cliff and slope habitat for its wildlife and earth science interest with no net loss, subject to natural change.
Ensure the natural processes of erosion and slumping, sediment movement and deposition continue to operate on all areas of conservation interest, with appropriate regard to essential coastal protection of settlements.
B Enhance and restore degraded or neglected areas into habitat and/or exposures of high wildlife and earth science value
C Establish buffer zone habitats between intensively-managed agricultural land and cliff and slope habitats.
D Improve the knowledge of the maritime cliff resource by survey, research and monitoring, including understanding the relationship between fluvial and coastal processes and maritime cliff and slope vegetation
E Increase public awareness and appreciation of maritime cliffs and slopes resulting in a more positive management of this habitat

Actions

		Lead	Reporting	2007	2008	2009	2010	2015	2020
A1	Maintain the existing 51 km of free functioning maritime cliff and slope resource (including cliff-top and slope habitat)	IWC	IWC	⇨					
A2	Ensure no overall net loss of cliff and slope functionality as a result of coast protection or engineering works.	IWC	IWC	⇨					
A3	Notify 8 km of maritime cliff meeting criteria for either biological or geological/geomorphological SSSI	NE	NE						◆
A4	Ensure LDF policies do not allow development in areas at direct risk of coastal processes.	IWC (planning)	IWC		◆				
A5	For developments at long term risk, introduce LDF planning policy for time limited consents or legal agreements to remove structures when the risk of loss through coastal processes becomes too great.	IWC (planning)	IWC		◆				
B1	Increase the extent of maritime cliff and slope unaffected by coastal engineering/ coast protection by 1km by 2015	IWC	IWC					◆	
B2	Permanently reduce the cover of buddleia on maritime cliffs and slope in the SSSI by 20%	National Trust						◆	
C1	Provide 20 m buffer zone on maritime cliffs and slopes on 16 km of MCS from St Catherine's to Compton (32ha of cliff top semi-natural habitat)	NE			◆				
D1	Monitor populations of the Glanville fritillary annually to determine extent and distribution.	IWNHAS	IWC	⇨					
D2	Ensure regular monitoring of BAP national priority invertebrates	NE	Buglife				➔		

D3	Instigate a research programme to assess the effectiveness of the 20m buffer strip in terms of conserving the nature conservation interest	NE	Buglife				◆		
D4	Monitor the effects of coast protection on biodiversity and nature conservation value	IWC (coastal)	IWC	⇨					
E1	Liaise with user groups (e.g. hang-glider/para glider groups, rock climbers, geologists/fossil hunters) to agree codes of conduct to ensure sustainable use of the maritime cliff environment including appropriate codes of conduct for geological field work	AONB	IWC	⇨					

◆ Complete by ⇨ Ongoing ➔start by

KEY TO ORGANISATIONS

AONB	Isle of Wight Area of Outstanding Natural Beauty Unit
IWNHAS	Isle of Wight Natural History and Archaeological Society
NE	Natural England
NT	National Trust
IWC	Isle of Wight Council Parks and Countryside Section
IWC (Planning)	Isle of Wight Council Planning Services
IWC (Coastal)	Isle of Wight Council Centre for the Coastal Environment

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5 Species associated with Maritime Cliffs and Slopes

Species associated with Maritime cliffs and slopes

Latin name	English name	BAP	Other habitat	Local abundance	Local population trend
BIRDS					
Alca torda	Razorbill	3		Localised	Decreasing
Larus argentatus	Herring gull	3	Built-up areas & gardens	Localised	Stable
Phalacrocorax aristotelis	Shag	3		Scarce	Increading
Tadorna tadorna	Shelduck	3	***Intertidal mudflats***	Localised	Decreasing
Uria aalge	Guillemot	3	Coastal waters	Scarce	Increasing
REPTILES					
Vipera berus	Adder	1	***Lowland dry acid grassland***	Localised	Unknown
ANTS, BEES & WASPS					
Andrena pilipes	A mining bee	3		Localised	Unknown
Anthophora retusa	Potter Flower Bee	1		Rare	Stable
Eucera longicornis	Long-horned Mining Bee	1		Scarce	Unknown
Lasioglossum angusticeps	A mining bee	1	***Lowland calcareous grassland***	Rare	Unknown
Mimumesa atratina	A solitary wasp	3	***Reedbeds***	Rare	Unknown
Mimumesa unicolor	A Solitary wasp	3	***Reedbeds***	Localised	Stable
Nomada conjungens	A nomad bee	3		Rare	Unknown
Odynerus melanocephalus	Black-headed Mason-wasp	1		Scarce	Unknown
Osmia xanthomelana	Large Mason Bee	1		Believed extinct	
Tachysphex unicolor sens.str.	A solitary wasp	3	***Lowland heathland***	Scarce	Unknown
BEETLES					
Agriotes sordidus	A click beetle	3	***Coastal vegetated shingle***	Rare	Stable
Anostirus castaneus	Chestnut click beetle	1		Rare	Unknown
Baris analis	A weevil	3		Rare	Unknown
Bembidion andreae	A ground beetle	3		Rare	Unknown
Bledius crassicollis	A rove beetle	3		Rare	Unknown
Cathormiocerus socius	A weevil	3		Scarce	Unknown
Cicindela germanica	Cliff tiger beetle	1		Localised	Stable
Dromius vectensis	A ground beetle	1	***Coastal vegetated shingle***	Rare	Unknown
Drypta dentata	Chine beetle	3		Rare	Unknown
Elaphrus uliginosus	A ground beetle	3		Rare	Unknown
Halobrecta princeps	A rove beetle	3	***Coastal vegetated shingle***	Scarce	Unknown
Heterocerus fusculus	A mud-dwelling beetle	3		Rare	Unknown
Lytta vesicatoria	Spanish Fly	3		Rare	Unknown
Medon pocofer	A rove beetle	3	***Coastal vegetated shingle***	Rare	Unknown
Meloe proscarabaeus	Black Oil-beetle	1	***Lowland calcareous grassland***	Localised	Unknown
Ophonus cordatus	A ground beetle	3	***Lowland calcareous***	Rare	Unknown

			grassland		
Ophonus parallelus	A ground beetle	3	***Lowland calcareous grassland***	Rare	Unknown
Otiorhynchus ligustici	A weevil	3		Rare	Unknown
Thinobius brevipennis	A rove beetle	3		Rare	Unknown

BUTTERFLIES

Cupido minimus	Small Blue	1	***Lowland calcareous grassland***	Scarce	Decreasing
Melitaea cinxia	Glanville Fritillary	1	***Lowland calcareous grassland***	Localised	Stable

CRICKETS & GRASSHOPPERS

Ectobius lapponicus	Dusky Cockroach	3	Mosaic	Scarce	Unknown
Ectobius pallidus	Tawny Cockroach	3	***Lowland calcareous grassland***	Occasional	Unknown
Ectobius panzeri	Lesser Cockroach	3	***Lowland heathland***	Scarce	Unknown
Forficula lesnei	Lesnes Earwig	3		Scarce	Unknown
Metrioptera roeselii	Roesel's Bush-cricket	3	***Saltmarsh***	Rare	Increading
Nemobius sylvestris	Wood Cricket	3	***Lowland mixed deciduous woodland***	Occasional	Stable
Platycleis albopunctata	Grey Bush-cricket	3	***Lowland calcareous grassland***	Occasional	Stable
Tetrix ceperoi	Ceperoi's Groundhopper	3		Occasional	Unknown
DRAGONFLIES & DAMSELFLIES					
Orthetrum coerulescens	Keeled Skimmer	3		Localised	Stable

FLIES

Bombylius discolor	A beefly	1	***Lowland mixed deciduous woodland***	Common	Stable
Dicranomyia goritiensis	A cranefly	3		Rare	Unknown
Dicranomyia lackschewitzi	A Cranefly	3		Rare	Unknown
Thereva strigata	A stilletto fly	3		Rare	Unknown

MILLIPEDES

Trachysphaera lobata	A Millipede	1	***Lowland mixed deciduous woodland***	Rare	Unknown

MOLLUSCS

Truncatellina callicratis	A Snail	3		Rare	Unknown

MOTHS

Agrotis trux	Crescent Dart	3		Occasional	Stable
Bembecia ichneumoniformis	Six-belted Clearwing	3	***Lowland calcareous grassland***	Localised	Stable
Cydia gemmiferana	A Micro-moth	3		Rare	Stable
Earias clorana	Cream-bordered Green Pea	3	Fen, marsh and swamp	Localised	Unknown

Eudonia lineola	Striped Grey	3	Boundary and linear features	Rare	Unknown
Eupithecia millefoliata	Yarrow Pug	3	***Lowland meadows***	Common	Increasing
Euxoa obelisca grisea	Square-spot Dart	3		Occasional	Unknown
Hadena albimacula	White-spot	1		Rare	Unknown
Leucochlaena oditis	Beautiful Gothic	3		Occasional	Unknown
Mecyna asinalis	Madder Pearl Pyralid	3		Occasional	Unknown
Metzneria littorella	A micro-moth	3		Localised	Unknown
Pempelia genistella	Gorse Knot-horn	3	***Lowland heathland***	Rare	Unknown
Setina irrorella	Dew Moth	3	***Lowland calcareous grassland***	Localised	Stable

SPIDERS					
Callilepis nocturna	A ground spider	3		Rare	Unknown
Episinus maculipes	A Spider	3	***Lowland mixed deciduous woodland***	Scarce	Unknown

TRUE BUGS					
Eurydema ornatum	Red & Black Shieldbug	3	Mosaic	Rare	Unknown
Saldula arenicola	Sandy Shorebug	3		Scarce	Unknown
Tuponia brevirostris	A Tamarisk bug	3		Rare	Unknown

LICHENS

Anaptychia runcinata	A Lichen	3		Rare	Decreasing
Fulgensia fulgens	"Scrambled-egg lichen"	1	***Lowland calcareous grassland***	Scarce	Stable

LIVERWORTS					
Anthoceros agrestis	'Field Hornwort'	3	Arable & horticultural	Rare	Decreasing
Anthoceros punctatus	A Hornwort	3		Rare	Unknown
Blasia pusilla	'Common Kettlewort'	3		Rare	Stable
Cephaloziella baumgartneri	'Chalk Threadwort'	1		Rare	Stable
Cephaloziella hampeana	'Hampe's Threadwort'	3	***Coastal sand dunes***	Rare	Unknown
Cololejeunea rossettiana	'Roussetti's Pouncewort'	3	***Lowland mixed deciduous woodland***	Rare	Decreasing
Marchesinia mackaii	'MacKay's Pouncewort'	3	***Lowland mixed deciduous woodland***	Rare	Decreasing
Phaeoceros laevis	'Smooth Hornwort'	3	***Lowland mixed deciduous woodland***	Rare	Stable
Porella obtusata	'Broad Scalewort'	3	***Lowland calcareous grassland***	Rare	Unknown
Reboulia hemisphaerica	'Hemisphaeric Liverwort'	3		Rare	Unknown
Southbya nigrella	Green Blackwort	1		Rare	Unknown

MOSSES					
Acaulon triquetrum	Triangular pygmy moss	1	***Lowland calcareous grassland***	Rare	Unknown
Bryum canariense	'Canary Thread-moss'	3		Rare	Unknown
Conardia compacta	'Compact Feather-moss'	3	***Lowland mixed deciduous woodland***	Believed extinct	
Hylocomium splendens	'Glittering Wood-moss'	3		Rare	Decreasing
Microbryum davallianum	'Smallest Pottia'	3	Arable & horticultural	Rare	Decreasing

Mnium stellare	'Starry Thyme-moss'	3	***Lowland mixed deciduous woodland***	Rare	Decreasing
Philonotis marchica	'Bog Apple-moss'	1		Rare	Decreasing
Scorpiurium circinatum	Curving feather-moss	3	***Lowland calcareous grassland***	Localised	Stable
Tortula viridifolia	'Bristly Pottia'	3		Rare	Decreasing

FERNS					
Asplenium marinum	Sea Spleenwort	3		Rare	Stable
Equisetum x wilmotii	Hybrid horsetail	3		Rare	Stable
Osmunda regalis	Royal Fern	3	***Lowland heathland***	Rare	Decreasing

FLOWERING PLANTS					
Artemisia absinthium	Wormwood	3		Rare	Stable
Astragalus glycyphyllos	Wild Liquorice	3	***Lowland calcareous grassland***	Rare	Decreasing
Berula erecta	Lesser Water-parsnip	3	***Fens***	Rare	Unknown
Brassica oleracea	Wild Cabbage	3	***Lowland calcareous grassland***	Rare	Stable
Centaurium erythraea var. *capitatum*	Tufted Centaury	3	***Lowland calcareous grassland***	Localised	Stable
Cochlearia officinalis	Common Scurvy-grass	3		Rare	Stable
Epipactis palustris	Marsh Helleborine	3	***Lowland heathland***	Rare	Decreasing
Euphorbia portlandica	Portland Spurge	3	***Lowland calcareous grassland***	Rare	Increasing
Gastridium ventricosum	Nit-grass	3	Arable & horticultural	Rare	Unknown
Gymnadenia conopsea subsp. *densiflora*	Marsh Fragrant Orchid	3	Fen, marsh and swamp	Rare	Decreasing
Isolepis cernua	Slender Club-rush	3	Fen, marsh and swamp	Rare	Unknown
Jasione montana	Sheepsbit Scabious	3	***Lowland dry acid grassland***	Rare	Unknown
Juncus subnodulosus	Blunt-flowered Rush	3	***Fens***	Rare	Unknown
Marrubium vulgare	White Horehound	3		Rare	Stable
Matthiola incana	Hoary Stock	3	***Lowland calcareous grassland***	Occasional	Stable
Melampyrum arvense	Field Cow-wheat	3	***Lowland calcareous grassland***	Rare	Stable
Orobanche artemisiae-campestris	Oxtongue Broomrape	1		Rare	Increasing
Parapholis incurva	Curved Hard-grass	3	***Saltmarsh***	Scarce	Increasing
Parentucellia viscosa	Yellow Bartsia	3	***Lowland meadows***	Rare	Decreasing
Pilosella peleteriana	A Hawkweed	3		Rare	Stable
Poa bulbosa	Bulbous Meadow-grass	3	***Coastal sand dunes***	Scarce	Increasing
Populus nigra subsp. *betulifolia*	Black Poplar (native)	3	Rivers	Rare	Stable
Salix repens	Creeping Willow	3	Fen, marsh and swamp	Rare	Decreasing
Silene nutans	Nottingham Catchfly	3		Rare	Stable
Silene uniflora	Sea Campion	3	***Coastal sand dunes***	Scarce	Stable
Valerianella eriocarpa	Hairy-fruited Cornsalad	3	***Lowland calcareous grassland***	Rare	Stable
Vicia parviflora	Slender Tare	3	***Lowland calcareous grassland***	Rare	Stable

1 = National BAP Priority
species
3 = Local BAP species
Habitats = National BAP Priority Habitat