

Coastal Vegetated Shingle

I. Habitat Definition

Shingle (accumulations of pebbles ranging from 2 to 200mm diameter) is characteristic of high energy environments - Sussex shingle is mainly composed of flint pebbles derived by marine erosion of the Cretaceous chalk and Tertiary deposits, or by erosion of ice during glacial times. In Sussex, shingle is mainly carried eastwards along the coast by longshore drift due to prevailing southwesterly winds - however from Selsey Bill in West Sussex it travels westwards. The shingle is deposited either as fringing beaches running along the coastline, or as cusped forelands - the most extensive in this region being at The Crumbles near Eastbourne and at Rye and Dungeness on the East Sussex/Kent border. The shingle in these sites is aligned in sub-parallel ridges of differing ages, the oldest ridges generally being the furthest from the present shoreline. Communities on shingle range from the pioneer plant communities on fringing shingle beaches through a lichen-rich turf to gorse scrub on disturbed or marginal areas, bramble on damper patches and where grazed to a species-rich turf. Shingle also supports other habitats; in some natural hollows wetland communities include reed swamp, fen and carr. These wetland communities can also develop as a result of damaging excavations. The full range of communities is seen at Rye Harbour and Dungeness. Also saline lagoons can develop behind shingle barriers, for example at Widewater in Sussex. The shingle vegetation assemblage varies depending upon the distance from the sea, the size of the shingle pebbles and the availability of water. At Pagham Harbour the shingle has developed a classic shingle spit landform with a series of sub-parallel ridges and recurves, marking different phases of extension and frontal accretion. On the fringing shingle beaches, vegetation typically develops in the shelter of the main bank. In Sussex, both natural and maintained shingle barriers play a very important role in coastal defence.

For the purposes of this Habitat Action Plan, the term vegetated shingle applies to all vegetated or potentially vegetated shingle i.e. that identified as shingle at the surface on geological maps. However it should be recognised that not all shingle studies/surveys/HAPs use the same criteria for measurement, as the nature of shingle dictates that some may be regarded as agricultural land, whereas some may be regarded as a mobile resource to be used for sea defences. If the broadest interpretation is used as in this document, then the losses due to other uses are more



readily apparent.

2. Current Status and Distribution

Vegetated shingle is a nationally rare habitat type and is listed on Annex 1 of the EC Habitats Directive as a habitat of international conservation importance. Japan and New Zealand are the other most important global locations for vegetated shingle habitats. Sussex has approximately 1000 hectares of vegetated shingle altogether with the large areas of shingle at Rye Harbour and at Dungeness providing the bulk of the cusped foreland shingle resource. The shingle in West Sussex consists of fringing beaches along much of the coast (Shoreham Beach, Climping Beach, Bognor Regis and Pagham) along with a smaller area of ridges at Pagham. Much of the vegetated shingle resource in Sussex is covered by either SSSI or SNCI designation, however a large area at Rye Harbour has no protection (197 hectares) along with other areas along the Sussex coast - see Table 1 for a list of known designated sites. Small areas of vegetated shingle also occur at a number of other sites including Littlehampton, Kingston, Worthing, Lancing Beach, Newhaven (West) and Galley Hill.

Table 1 List of Known Designated Sites containing Significant Vegetated Shingle

Site Name	Details/Quality	Status	Grid Ref	Area (ha)
Chichester Harbour	Pilsey Is., Horse Pond & Ellanore Spit, S Thorney Beach, East Head, Snowhill	SSSI. cSAC some LNR	SU 7 0	2-3
Bracklesham Bay	Much destroyed	SSSI	SZ 81 96	
West Wittering Beach	Botanical interest	SNCI	SZ 775975	
Selsey	Tiny amount, poor quality	SSSI	SZ 86 92 – 87 94	0.5
Pagham Harbour	Some excellent, some disturbed fringing beach	SSSI, SPA	SZ 87 94 – 895 975	12.8
Bognor Reef	Variable quality fringing beach	SSSI	SZ 895 975 – 920983?	4.4
Climping Beach	Thin strip of vegetation, high visitor pressure	SSSI/SNCI/part LNR	TQ 008008 – 015011	1.8
Widewater	Good quality	SNCI/LNR	TQ 195040	1.6
Shoreham Beach	Fringing Beach, subject to disturbance	Proposed LNR SNCI	TQ 217044	11.2/9.1
Basin Road South	Fringing beach, subject to disturbance	Proposed SNCI	TQ 264045	1.0
Black Rock	Stable back beach area to W of Marina	SNCI	TQ 334032	0.2
Newhaven Tide Mills	Variable quality?	SNCI	TQ 455005	11.6?
Cuckmere Haven	Sparse but representative vegetation	Country Park/part LNR/SSSI	TV 518977	4.8
Sovereign Park	Good quality	SNCI	TQ 636007	
The Crumbles	Much destroyed through development	part SNCI	TQ 634024	?
Pevensey Bay	?	SSSI/SNCI	TQ 651030	3.1
Norman's Bay	?	SSSI/SNCI	TQ 674050 – 690057	12.8/4.5
Bulverhythe Shingle Beach	?	SNCI	TQ 775084	<10.93
Rock-a-nore Shingle	?	SNCI	TQ 827094	2.11
Pett Level Shore to Dog's Hill	Generally poor, but sea pea extensive	SSSI, SNCI	TQ 892135 – 918160	27.6
Rye Harbour	Large expanse, much damaged, some excellent	part SSSI, cSAC, LNR	TQ 918160 – 950178	375.6

Northpoint and Camber	Much damaged, some good	part SSSI	TQ 929200 – 956189	65
Money Penny	Much damaged, some good	part SSSI	TQ 937222 – 951208	17
Broomhill and Midrips	Large expanse, some damaged, some excellent	part SSSI	TQ 975183 – TR 015187	309.7



3. Importance of the Habitat

a) Biological Importance

Vegetated shingle is important both for the unusual assemblages of plants (including lichens and bryophytes) and animals which it supports. Pioneer shingle vegetation generally consists of species such as sea kale, sea pea, etc. Some sites where vegetation is sparse or absent are of international importance as high tide wader roosts and similarly for the wintering wildfowl which occur on the many gravel pits created by gravel extraction. Different bird species prefer different areas of coastal shingle, which emphasises the importance of preserving the resource county-wide. The vegetated shingle habitat is important for ground nesting birds such as little tern and ringed plover. Vegetated shingle also commonly borders and protects other important natural habitats, such as sandy beaches, salt marshes or saline lagoons.

Coastal shingle is of high importance for terrestrial invertebrates where the shingle extends above the normal tidal limit and is at least partly vegetated. The best invertebrate faunas occur in the largest shingle expanses with the most varied structure and vegetation, however some of the rarest and most specialised shingle invertebrates occur on sparsely vegetated shingle and are unique to the habitat.

In most of Sussex, very little is known about the use of vegetated shingle by reptiles other than anecdotal reports of adders and viviparous lizards using the habitat. However it is unlikely that the habitat is an important one for the conservation of these species, but is instead used by reptiles as part of their annual cycles, probably for feeding. It is therefore likely that the reptiles found on a site will depend on suitability of the adjacent habitats. Dungeness, however, is heavily used by grass snakes and common lizards, the latter benefiting from the shingle vegetation and the former benefiting from ponds and to some extent the cover provided by shingle scrub. Rye Harbour Nature Reserve also is well populated with grass snakes and viviparous lizards.

See Appendix 1 for a comprehensive breakdown of species which are important in the context of Sussex shingle including species of international, national, regional and local importance.

b) Geological and Geomorphological Importance

Shingle spits and cusped forelands are formed as a result of deposition due to longshore drift and can be closely linked with the archaeological history of the coastal region. Dungeness is a GCR (Geological Conservation Review) site with a very important old ridge structure. Heavily ridged shingle deposits represent old shorelines and the Rye Harbour shingle deposits are also designated as a RIGS site (Regionally Important Geological Site) by the RIGS group of the Sussex Wildlife Trust. Further RIGS shingle sites are likely to be designated along the Sussex coast in the future. Although RIGS are recognized in the planning process, greater protection can be afforded by SSSI status.

of the shingle. Ridge formation therefore has biological as well as geomorphological significance.

4. Importance for the People, Local Community and Cultural Significance

The shingle beaches in Sussex provide a place for quiet recreation and enjoyment of the seaside. Shingle is appreciated aesthetically however its physical qualities limit the amenity uses. Around Rye the water-filled gravel pits attract a range of bird species and are a haven for birdwatchers and naturalists, but some are used for waterborne recreation (e.g. sailing, windsurfing) the disturbance thus limiting the bird interest. Some areas of vegetated shingle at Rye and Dungeness are grazed and some continue to be cultivated for arable crops. Historically the extraction industry had a major impact on the oldest shingle ridges. It is used as a natural material for sea defences, for military training at Dungeness, for car parking, sunbathing in Brighton etc. People also live on or adjacent to shingle - notably, housing was built recently on shingle at The Crumbles near Eastbourne. In the past, specially selected shingle was used in the 'blue boulder' industry at Rye, providing materials for the pottery industry.

Historical aspects of shingle:

- Camber Castle dates back to the time of King Henry VIII (1530), the Sussex coast has a number of Martello towers (1807) built on shingle in preparation for a Napoleonic invasion and there are a number of World War II blockhouses, for example at Cuckmere Haven.
- The historical formation of the shingle spit at Shoreham and at other shingle sites has been well documented.
- Shingle vegetation is cited in folklore, and some species have remedial and culinary properties.

5. Benefits to Local Economy

Historically, shingle for use in the building industry was obtained from the ridges at Rye Harbour and at Camber, the Crumbles near Eastbourne and from Dungeness. Extraction is still quite extensive at Dungeness, but declining. Little other coastal shingle is currently extracted but the possibility exists for the future, as old minerals permissions are in the process of being reviewed. The Environment Agency and Local Authorities use shingle dredged from offshore in coastal defence works with a small proportion redistributed for routine coastal defence works (the Environment Agency uses 30,000 m per year at Rye Harbour).

6. Trends and Threats

Trends

The loss of shingle habitat in this area has not been well documented. Currently it is likely that in West Sussex shingle replenishment from offshore prevents any net loss of the resource but damage to the biodiversity does occur and has occurred in many ways. There is a net loss of

shingle in East Sussex. There is a trend towards the urbanisation of shingle, particularly on the coastal strip (tidying/creating a sterile environment) leading to a decline in biological condition. (Survey information is available for Pagham Harbour shingle to demonstrate trends.) There is less gravel extraction currently than earlier this century.

There is more building on shingle now, and in the last decade a large amount of shingle habitat has been lost as a potential vegetated resource at The Crumbles near Eastbourne where the development of a marina and a large amount of associated housing has destroyed most of the interest. Also since World War II there has been a trend towards arable rather than pastoral use of landward shingle in the Rye Harbour area. If there is a trend toward stable sea defences, there may be a loss of those pioneer species which are dependent on mobile shingle.

In recent years there has been an awakening of awareness of the biological importance of shingle among scientific circles in particular and this has led to an increase in the amount of shingle that is protected by both statutory and non-statutory designation.

Threats

The main long-term threats to vegetated shingle in Sussex are as a result of interference with natural coastal processes, with coast protection work changing the recharge rate of shingle to coastal areas. Drainage to reduce flooding on adjacent alluvial land, military training at Dungeness, the threat of future gravel extraction, particularly at Rye and the damage of shingle by agriculture all pose substantial threats to species dependent upon shingle.

The threat of sea level rise is very real, squeezing the vegetated shingle strip on fringing beaches (relative sea level rise is currently estimated to be greater than 6 mm per year along this stretch of coast but this estimate may be pessimistic). In addition to this it is likely that global warming and climate change may have other implications for the future of shingle habitats. This will depend on the tolerance and adaptability of the plant and animal species, as well as the speed at which changes occur. As yet this is poorly researched. Linked to this concept is the effect that atmospheric nitrogen deposition may be having through enrichment of the shingle. Increased storminess also poses risks to many areas of vegetated/potentially vegetated shingle in the county, particularly since much of it exists in the form of narrow fringes.

Another threat comes from a lack of public awareness of the value of the shingle habitat. Along the coastal fringing beaches in particular, urban-related damage to shingle (development, introduction of exotic species, vegetation stripping, trampling, dumping, burning, dog fouling and other forms of enrichment) as well as pollution from dumping at sea are relevant. Oil pollution is a particular problem on shingle.

7. The Role of the Environment Agency and Local Authorities

Shingle banks form a natural sea defence but require replenishment in the most vulnerable stretches of the Sussex coast in order to maintain the bank crest height and



width. These activities are largely the responsibility of the Environment Agency but some sites come under the auspices of local authorities. The Environment Agency redistribute shingle at a number of sites such as Pagham Harbour, Climping, Shoreham Beach and Seaford as well as at Rye Harbour to reinforce vulnerable shingle banks which are liable to breach in storm conditions. The Agency has a programme of ongoing routine redistribution of shingle to counteract the natural process of longshore drift, and in addition uses dredged shingle for replenishment after storm events. Generally the Agency retains a clear working strip where vegetated shingle occurs, with tape used as a visual barrier to restrict access to the sensitive areas. The Environment Agency flood defence team ensure that the direct works unit are briefed before commencing any work on shingle that could have a detrimental effect on the habitat. At times, in the interests of protecting people and property, it may be necessary to move machinery over areas of vegetated shingle.

8. Potential

At Rye Harbour and Dungeness, agriculturally damaged areas could quickly and easily be restored to vegetated shingle with significant wildlife value, by ceasing annual cultivation, halting the application of pesticide and fertiliser and reinstating grazing at a low intensity in selected areas. The potential exists for 'reclaiming' some of the urban shingle which has been affected by the urban-related pressures mentioned above, particularly along the strip from Shoreham Beach to Bognor Regis/Pagham. There is also potential for recreating shingle banks/vegetation in and around new developments (e.g. Shoreham Power Station). Also natural shingle gardens with native local species could be encouraged on the coastal strip. A limiting factor along the coastal strip will always be sea level, as the fringing beaches are mainly artificially defended to the landward side and cannot retreat naturally as the shoreline retreats. New coastal defence schemes which utilise dredged shingle could provide valuable habitat potential.

The idea of developing demonstration vegetated shingle areas with restricted access should be explored with local authorities/business/parish councils. These would fulfil an educational role as well as actually expanding the vegetated shingle resource. Shingle education packs could provide schools with a valuable opportunity to examine the questions of colonisation and succession with reference to a natural local habitat and also the problems of coastal erosion, defence and sea level rise.

A large expanse of shingle at The Crumbles is currently under development and a further area is subject to an existing planning consent for development. Further liaison with developers may prove fruitful in highlighting the importance of the shingle habitat which is being built on and urging them to promote demonstration shingle habitats in their show home gardens. A simple leaflet on shingle habitats should be made available to all new homeowners in the area. A small area of vegetated shingle between The Crumbles and Eastbourne has however been protected by Eastbourne Borough Council as a wildlife refuge.

Sea level rise may have a serendipitous beneficial effect upon the availability of shingle habitat. In the long term, some coastal areas currently not under threat, may in the future be at risk from marine

flooding. Where urban development prevents the natural landward roll-back of existing shingle banks, it is likely that economic interests will promote further shingle sea defences, thus

extending the resource. Liaison with the relevant agency is essential in order to maximise potential for recreating stable shingle habitat. It is also important that existing habitats are protected and researched in the short term. The effect of extracting offshore shingle to create new habitat should be modelled. Is shingle dredging increasing the effect of storm damage and speeding up erosion?

9. Current Action

Site Protection:

Much of the shingle in Sussex is SSSI or SNCI, however 197 hectares at Rye does not have any legal protection. Pagham Harbour, Pilsey Island, West Beach at Climping, Widewater Lagoon and some of the Rye Harbour shingle are within Local Nature Reserves and subject to bylaws which can be used to help protect the shingle. At Shoreham Harbour the Shoreham Beach Conservation Liaison Group has been set up to safeguard the interests of local vegetated shingle which is soon to be designated a Local Nature Reserve. Some shingle is included in Special Protection Area (SPA) boundaries (e.g. at Pagham Harbour, Pilsey Island and proposed at Rye Harbour) and therefore has further protection under the UK Habitats Regulations 1994 where the shingle can be shown to be the habitat of birds for which the SPA is notified. Rye Harbour shingle is also included in the Dungeness candidate Special Area of Conservation (cSAC). This site is being notified for its 'Coastal shingle vegetation outside the reach of waves' and 'Annual vegetation of drift lines' habitats listed in Annex 1 of the EC Habitats Directive; thus the vegetated shingle is specifically targeted for protection.

Non-statutory documents such as Shoreline Management Plans, Coastal Zone Management Plans and Coastal Strategies affect shingle by feeding into the planning process and informing the content of Development Plans (including Minerals Local Plans). They provide a regional view when assessing the requirements for sea defence and coast protection.

Site Management:

Positive conservation management is carried on some shingle sites through the implementation of LNR and other site plans. Bylaws of Local Nature Reserves can be used to deal with damaging activities. The Countryside Stewardship Scheme has helped to fund positive grazing management for conservation on areas of shingle at Rye Harbour. Documents called Site Management Statements which are produced for landowners by English Nature are also used to guide management. During Environment Agency and local authority works on shingle sea defences, areas of vegetated shingle are largely protected from damaging activities as described above in Section 7. Organisations such as the Shoreham Beach Conservation Liaison Group are useful in highlighting local interest and in addressing local problems.

Information Exchange:

- *Local*
English Nature sent letters in March 1998 to many Pagham residents and landowners adjacent to fringing shingle beaches highlighting the importance of vegetated shingle. Also discussions on the fragility of the habitat have already taken place between English Nature and Aldwick Parish Council. The



Environment Agency and local authorities liaise with their engineers and also conservation bodies before undertaking new major coastal protection works affecting vegetated shingle. Organisations such as the Sussex Botanical Recording Society hold data on shingle flora.

- *National*

The National Habitat Action Plan for Coastal Vegetated Shingle Structures has been prepared with a proposed publication date of June 1999. A national network for information exchange on shingle would be useful.

- *International*

Conferences on the ecology and geomorphology of coastal shingle (and associated lagoons) have taken place covering recent advances in the fields of coastal shingle ecology hydrology, geomorphology, sedimentology, conservation and management - for example the European Union for Coastal Conservation (EUCC) conference at Wye, Kent, in April 1999. The Two Bays Project which is based at Rye Bay in England and the Baie de Somme in France aims to develop a better knowledge of the different ways of protecting and enhancing shingle and other habitats in common. The Project, which commenced in 1998, is led by East Sussex County Council and part-funded by European money through INTERREG II. It has already produced two useful leaflets.

10. Existing Agri-environment Schemes

Countryside Stewardship is a MAFF grant scheme which is available throughout Sussex (primarily outside the South Downs ESA). It offers payments to farmers and other land managers to conserve and enhance the landscape and its associated wildlife and cultural history and to help people to enjoy the countryside. The scheme offers 10 year management agreements with annual management payments and a wide range of accompanying capital grants.

Of the four areas specifically targeted by the scheme in Sussex in 1999, two have the potential to encompass agreements of benefit to vegetated shingle: the South Coast Plain (including Chichester Harbour) and the High Weald. The key objectives for these target areas, which are the criteria against which the likely success of an application is measured, do not include any that are directly related to vegetated shingle. However, where shingle is grazed, where there are reedbeds, ponds and scrapes, or where wet grassland on shingle is managed to encourage wading and wetland birds the scheme would apply. In this way, the scheme is making a significant contribution to the conservation of vegetated shingle in East Sussex, with a large area at Rye Harbour under agreement. These objectives would not be applicable to fringing shingle beaches particularly along the West Sussex coast.

11. Objectives

a. The National HAP objectives for Vegetated Shingle are to

- Prevent further net loss of the existing vegetated shingle structures totalling about 5800ha. (However local gains and losses due to storm events occur sporadically

and should be accepted provided that the national and regional resources are maintained overall).

- Prevent where possible further exploitation of or damage to existing vegetated shingle sites through human activities and maintain the quality of existing plant and invertebrate communities which are optimal in condition.
- Achieve the restoration, where possible, of degraded or damaged habitats of shingle structures, including landward transitions, where such damage has been extensive and natural recovery is not likely to be initiated by 2010. (Targets will depend on the results of research and testing).

b. The Sussex objectives reflect the National Objectives

- i Protect existing resource in Sussex in terms of both area and quality of vegetation.
- ii Recreate vegetated shingle habitat where possible and appropriate following guidelines.
- iii Make use of opportunities to restore previously damaged shingle.
- iv Increase public awareness and understanding of the shingle habitat for example by the creation of demonstration shingle habitat areas.
- v There should be no further net loss of shingle to development or agriculture.

12. Targets and Costs

This Habitat Action Plan is now archived

13. Action Plan

This Habitat Action Plan is now archived

14. Surveys and Monitoring

See Appendix 2 for a list of relevant surveys/documents.

All EA maintained sea defences have been surveyed.

Survey information for lower plants/lichens and invertebrates needs to be improved.

Surveys and Reports

- Vegetation survey of vegetated shingle in Eastbourne- held at Eastbourne Borough Council.
- Pagham Harbour shingle survey results held at Pagham Harbour Local Nature Reserve.
- Rye Harbour shingle survey results held at Rye Harbour Local Nature Reserve.



- Newhaven Tide Mills survey in Newhaven Port Development: Further Ecological Studies - Interim Draft Report. Posford Duvivier Environment August 1998.
- Vegetated Shingle Survey of the Sussex Coast. PR Williams and RJ Cooke 1993 English Nature Report, Wye.

15. Monitoring/Review

This Habitat Action Plan will be monitored annually by English Nature, Sussex and Surrey Team in conjunction with the Sussex Biodiversity Partnership, with a full review being carried out at 5-yearly intervals. Monitoring will involve checking up on the implementation by the relevant Lead Agency of the Action Points identified in the Action Table.

16. References

Folkestone to Selsey Bill Natural Area Profile, 1998 English Nature.

Williams P R and Cooke R J 1993, Vegetated Shingle Survey of the Sussex Coast. 24pp with maps. English Nature Report, Wye.

Sneddon, P., and Randall, R E (1993) Coastal vegetated shingle structures of Great Britain: main report. Publ. JNCC.

Sneddon, P., and Randall, R E (1994) Coastal vegetated shingle structures of Great Britain: Appendix 3. Shingle sites in England. Publ. JNCC.

Kent Biodiversity Action Plan - A framework for the future of Kent's wildlife. Produced by Kent County Council on behalf of the Kent Biodiversity Action Plan Steering Group, 1997.

Appendix I Species important in the context of Sussex shingle

Species name	Common name	BAP etc.	W&CA	NATIONAL STATUS	LOCAL STATUS
FLORA					
Flowering plants					
<i>Petrorhagia nanteuilii</i>	childing pink		Schedule 8 W&CA	Endangered	Very restricted; all of UK population
<i>Anisantha (Bromus) madritensis</i>	compact brome			Near threatened	
<i>Trifolium stellatum</i>	starry clover				Introduced; all of UK population
<i>Polygonum maritimum</i>	sea knotgrass		Schedule 8 W&CA		
<i>Lactuca saligna</i>	least lettuce		Schedule 8 W&CA	Endangered	Very rare
<i>Galaeopsis angustifolia</i>	red hemp nettle	BAP middle list		Nationally Scarce	
<i>Crambe maritima</i>	sea kale			Scarce Nb	Well distributed on all undisturbed banks
<i>Lathyrus japonicus</i>	sea pea			Nationally scarce	
<i>Lavatera arborea</i>	tree mallow			Nationally scarce	

<i>Frankenia laevis</i>	sea heath			Nationally scarce	
Bryophytes					
<i>Tortella flavovirens</i>	a moss				rare in Sussex
Lichens					
<i>Cladonia convoluta</i>				Vulnerable	
<i>Cladonia gracilis</i>					rare in Sussex
<i>Cladonia humilis</i>					rare in Sussex
<i>Cyphelium notarisii</i>				Near threatened	
INVERTEBRATES					
Beetles					
<i>Dibolia cynoglossi</i>	a leaf beetle			RDB1	
<i>Omophron limbatum</i>	a ground beetle			RDB1	
<i>Agriotes sordidus</i>	a click beetle			pRDB3	
Species name	Common name	BAP etc.	W&CA	NATIONAL STATUS	LOCAL STATUS
Moths					
<i>Lasiocampa trifolii flava</i>	pale grass eggar			Na	
<i>Eilema pygmaeola (pallifrons?)</i>	pygmy footman			pRDB1	
<i>Ethmia terminella</i>	a micro-moth			pRDB2	
<i>Ethmia bipunctella</i>	a micro-moth			pRDB2	
<i>Coleophore galbulipennella</i>	a micro-moth			pRDB1	
<i>Platytes alpinella</i>	a pyralid moth			pRDB3	
<i>Melissoblastes zelleri</i>	a pyralid moth			pRDB3	
<i>Cynaeda dentalis</i>	a pyralid moth			pRDB3	
Slugs and Snails					
<i>Paludinella littorina</i>	lagoon snail		Schedule 5 W&CA		Uncertain record from Pilsey
<i>Truncatella subcylindrica</i>	the looping snail			RDB3	Populations in Chichester and Pagham Harbours are of regional and possibly national importance
Ants and Wasps					
<i>Leptothorax interruptus</i>	an ant			RDB3	
Spiders					
<i>Haplodrassus minor</i>	a ground spider			RDB3	
<i>Lathys stigmatisata</i>	a mesh-webbed spider			RDB3	
<i>Euophrys browningi</i> (=E. obsoleta)	a jumping spider			RDB3	
<i>Phlegra fasciata</i>	a jumping spider			RDB3	
Bugs					
<i>Calligypona reyi</i>	a planthopper			pRDB3	
Worms and Leeches					

<i>Hirudo medicinalis</i>	medicinal leech	BAP short list SRP	Schedule 5 W&CA	RDB3	
Birds					
<i>Charadrius hiaticula</i>	ringed plover	BAP long list		BoCC Amber	fairly common breeder
<i>Charadrius dubius</i>	little ringed plover	BAP long list	Schedule 1 W&CA		rare breeder
<i>Sterna albifrons</i>	little tern	BAP long list	Schedule 1 W&CA	BoCC Amber	scarce breeder
<i>Sterna hirundo</i>	common tern	BAP long list			scarce breeder
<i>Sterna sandvicensis</i>	sandwich tern	BAP long list		BoCC Amber	scarce breeder
<i>Larus ridibundus</i>	black-headed gull				locally irregular breeder
<i>Haematopus ostralegus</i>	oystercatcher			BoCC Amber	scarce breeder
<i>Oenanthe oenanthe</i>	wheatear	BAP longlist			very scarce breeder

17. Complementary UK Plans

National UK Action Plan for Coastal Vegetated Shingle Structures (EN lead).

National Species Action Plan for *Galeopsis angustifolia* red hemp nettle (Plantlife lead).

National Species Action Plan for *Hirudo medicinalis* medicinal leech (RSPB lead.)

National UK Habitat Action Plan for Saline Lagoons.

Sussex Habitat Action Plan for Saline Lagoons.

Glossary of terms

BAP Biodiversity Action Plan

Short list: highest priority species for Species Action Plans, selected from 'long list'

Medium list

Long list: 1250 key species: endemic, in rapid decline, internationally significant and/or protected by international legislation

BoCC Bird of Conservation Concern

Red: species of high conservation concern

Amber: species of medium conservation concern

Green: all other species which are of lower concern

Na/Nb Notable species

RDB Red Data Book - threat categories

RDB1: Endangered

RDB2: Vulnerable

RDB3: Rare

SRP Species Recovery Programme

W&CA Wildlife and Countryside Act 1981

Schedule 1 lists protected birds

Schedule 5 lists protected animals

Schedule 8 lists protected plants

19. Consultation

West Sussex County Council, East Sussex County Council, Rye Harbour LNR, Pagham Harbour LNR, Chichester Harbour Conservancy, Shoreham Beach Conservation Liaison Group, RSPB, Environment Agency, FRCA, independents.