Part C

NATURAL ENVIRONMENT

In carrying out the SMP it is important to understand the relationship between the areas of value to nature conservation and coastal processes, and understand how coastal defence can alter the coastal processes and therefore have an impact on the natural environment.

Coastal defence may also have an impact on the landscape of an area, depending on the type of defence used, and the significance of this may depend upon the importance placed upon a particular landscape.

This section clearly outlines those areas of importance and those issues that may jeopardise the integrity of the natural environment within Poole and Christchurch Bays.

NATURAL ENVIRONMENT

CONTENTS

1 INTRODUCTION

1.1 General

In recognition of the wildlife, geology and landscape importance of many parts of the UK coastline many coasts have been designated as conservation areas, or otherwise identified under a variety of domestic and international regulations, both statutory and non-statutory. Some are designated specifically for nature conservation, whilst others are designated for geology landscape, amenity and other purposes, and it is common for several designations to overlap.

The protection of the natural environment in the UK currently depends on a mixture of statutory designations and other legislation/regulations as well as voluntary management agreements. Much of the current approach to conservation in Britain is site-based, but coastal environments needs a wider approach for their future safeguard. Land-use on environmentally sensitive areas of the coast is controlled by a great variety of designation types, which are based upon international, national and more recently, European legislation.

The coast of Hampshire and Dorset contains many sites of international and national nature conservation, geological and landscape importance. This is reflected in the high proportion of shoreline with statutory and non-statutory designations.

1.2 Overview of Conservation Interests

The coast within the Study Area has a very rich natural environment, much of which is recognised for its international or national value to nature conservation. This coastline includes the following areas of international importance:

- The Solent;
- Poole Harbour;
- Dorset Heaths;
- Isle of Purbeck.

There are also extensive stretches of the coast that are of national nature conservation interest, mainly for their ecology and/or geology. Large areas of intertidal mud and sandflats of high nature conservation interest occur in Poole and Christchurch Harbours, which provide important feeding grounds for large populations of waders and waterfowl.

Studland is an area of international importance for its dune system and heathland, and has been designated a Biogenetic Reserve. This is one of only five coastal Biogenetic Reserves in Great Britain.

The subtidal environment contains a great variety of marine habitats and communities, including some of international and national importance. The relative warm waters of the Gulf Stream give a distinctive character to many of the marine communities, particularly as this area is on the edge of the Gulf Stream and species occur at the limit of their geographical distribution, for example Ross Coral (*Penapora foliacea*). Much of the coastline within the scope of the SMP has been designated an Sensitive Marine Area (SMA) (Poole Bay and the Isle of Purbeck and Solent and Isle of Wight) and the cliffs and sea from Peveril Point to Anvil Point has also been designated a Voluntary Marine Nature Reserve (VMNR).

Geologically much of the coastline is of national and international importance, including important exposures at Durlston of early Cretaceous geology. The coast, west from Durlston Head, has been put forward as a possible World Heritage site for its Jurasic geological interest.

1.3 Format of this Report

The stretch covered by this SMP includes the coast between Hurst Spit in the east to Durlston Head in the west, and includes Poole and Christchurch Harbours. The study area has been divided into five separate >Areas=. This division has been made to allow a `modular= approach to be taken to shoreline management, enabling future changes to an area to be incorporated easily into the Shoreline Management Plan.

Following an introductory explanation of legislation and designation types (Section 2), protected sites within each area are described and the interactions with coastal dynamics and coastal structures discussed (Section 3). Appendix 2 gives detailed information on the sites, including citation sheets. Any reference numbers given are related to the site=s citation sheet, given in the relevant appendix at the end of this chapter.

2 CONSERVATION LEGISLATION AND DESIGNATIONS

2.1 Relevant Treaties and Legislation

The UK Government is party to a number of international agreements in which Britain has agreed to identify internationally important areas for the conservation of birds and their habitats, particularly wetlands. The most important of these agreements include:

- **The Convention on Wetlands of International Importance especially as Waterfowl Habitats**, known as the Ramsar Convention. Under this agreement the UK Government is required to take appropriate legislative measures to ensure the conservation of wetlands and waterfowl;

- **The Convention on the Conservation of Migratory Species of Wild Animals, known as the Bonn Convention.** This provides for strict protection of endangered animals listed in its Appendix I, and the framework for agreement between signatory states for the conservation and management of species in its Appendix II;

- **The Council of Europe Convention on the Conservation of European Wildlife and Natural Habitats,** known as the Berne Convention. This requires each party to take necessary measures to ensure the conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I (rare plants) and II (animals);

As well as these international agreements there is European Community (EC) legislation which is aimed at protecting conservation sites. These include:

- **The EC Directive on the Conservation of Wild Birds (Directive 79/409/EEC)** which requires member states to protect the habitats of rare or vulnerable species (listed in Annex I of the Directive) and of regularly occurring migrating birds. This is achieved, in the UK, through the designation of Special Protection Areas (SPA) by the Department of the Environment in consultation with the Joint Nature Conservation Committee.

- **The EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Directive 92/43/EEC)**, known as the Habitats and Species Directive. This is incorporated in the UK law through the Conservation (Natural Habitats &c.) Regulations 1994. Sites designated under this legislation are known as Special Areas of Conservation (SAC). The Directive also protects species and their habitats outside designated sites.

The SACs and SPAs together form part of the Natura 2000 network, which is a coherent European ecological network. The Habitat Directive states that AMember states shall take appropriate steps to avoid, in the Special Areas of Conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated≅. Damage to these areas is only permissible for imperative reasons of overriding public interest. Where a development is allowed to go ahead the Secretary of State must ensure that all compensatory measures are taken to ensure the overall coherence of

Natura 2000 is protected, and must inform the European Commission of the compensatory measures adopted.

Present British conservation measures, not covered by the Conservation (Natural Habitats Sc) Regulation mentioned above, derive from the Wildlife and Countryside Act 1981 and its amendments.

- **Wildlife and Countryside Act 1981**. This act is one of the most comprehensive wildlife law ever introduced in Britain. It provides legal protection for a wide range of plants and animals and arrangements for the protection of habitats. It includes a list of Schedule 1 (birds), Schedule 5 (animals) and Schedule 8 (plants) species which are specially protected under the Act.

2.2 Summary of Designations

2.2.1 Introduction

The European and British legislation has led to the designation of various >levels= of nature conservation sites, some being of international importance, others of national importance. As well as this there are sites designated locally, usually by the Local Planning Authority and/or the local Wildlife Trusts.

Table 2.1 summaries the nature conservation designation categories, although it should be noted that these designations do not always accurately denote the actual importance of a site. For example an area may meet criteria for designation as a Local Nature Reserve (LNR) or Site of Special Scientific Interest (SSSI), but without being designated as such.

The following is a summary of the natural environment designations in the area of this SMP, some of which have already been mentioned:

2.2.2 International Designations

- **Special Protection Areas** (SPA). These internationally important sites are being set up to establish a network of protected areas for birds. Within the study area there are four SPAs; these are Solent and Southampton Water, Avon Valley, Dorset Heathlands (proposed) and Poole Harbour (proposed);

- **Ramsar sites**. The objective of this designation is to stem the progressive encroachment onto, and loss of, wetlands. All the sites identified as SPAs above are also proposed or listed as Ramsar sites.

- **Candidate Special Areas of Conservation** (cSAC). This designation aims to protect habitats or species of European importance. There are five cSAC; these include the Solent Maritime, Dorset Heaths, Dorset Heaths (Purbeck and Wareham) and Studland Dunes, Isle of Portland to Studland Cliffs and St Albans Head to Durlston Head. These cSACs have been identified as they contain habitats which are afforded particular protection under Annex 1 of the Habitats and Species Directive;

- **Biogenetic Reserve.** In 1973 the European Ministerial conference as the Environment recommended that a European network of reserves to conserve representative examples of European flora, fauna and natural areas be established. There are three Biogenetic reserves in the Study Area, which are Arne, Hartland Moor and Studland Heath. Altogether there are five Biogenetic Reserves in the UK, all of which are heathland sites.

The location of those internationally designated sites within the study area are shown on Figure 2.1, with details provided in Appendix A. Further information on the SPA and SAC, and planning guidance in relation to these is also given in Appendix A.

All SPA, SAC and Ramsar sites are SSSIs, except those in the marine environment below Mean Low Water. SACs are still to be confirmed by the EC and as such are at present referred to as candidate sites, as stated on the citation sheets in Appendix A. A SAC is 'possible' before it has been forwarded to the EC. Once accepted by the EC it is then fully designated, but before then it is given the same protection as a designated site by UK planning policy.

2.2.3 National Designations

- **Sites of Special Scientific Interest** (SSSI). These sites, notified by English Nature, represent some of the best examples of Britain=s natural features including flora, fauna, geology or physiography. Planning authorities must consult English Nature before granting permission for the development of land in or around or likely to affect a SSSI. Much of the coastline within the study area has been designated SSSI;

- **National Nature Reserves** (NNR). These represent some of the most important natural and semi-natural ecosystems in Great Britain, and are managed to protect the conservation value of the habitats that occur on these sites. The study area for the SMP contains four NNR, which are Arne reedbeds, Holton Heath, Hartland Moor, Studland Heath and Godlingston Heath;

- **Voluntary Marine Nature Reserves** (VMNR) These are set up by representatives of the users of a subtidal area in order to initiate management of that area. Management may have a variety of purposes from conservation of a marine biologically important area, to use for educational purposes. The area between Peveril Point and Anvil Point has been designated a VMNR;

- **Sensitive Marine Areas** (SMA). Under the Sensitive Marine Areas initiative, English Nature has identified 27 such sites along the whole of the English Coast. Much of the coastline within the SMP has been recognised as SMA (Poole Bay and the Isle of Purbeck and Solent and Isle of Wight). Whilst the focus is on the subtidal component of these sites, the objective of the initiative is to raise awareness of the importance of the marine environment and work towards developing integrated management for whole marine areas;

- **Areas of Outstanding Natural Beauty** (AONB). The purpose of the designation is the conservation and enhancement of the natural beauty of an area. This includes protecting its flora, fauna, geological and landscape features. In achieving this, consideration is given to local socio-economic needs of the community and in particular to the traditional land uses and practices that are intrinsic elements of the landscape to be conserved. There is one AONB within the Study Area, which is Dorset;

The location of nationally designated sites are shown on Figure 2.2. Details on these are provided in Appendix B.

2.2.4 Local Designations

- **Local Nature Reserves** (LNR). These are established by local authorities in consultation with English Nature. These sites are generally of local significance and provide important opportunities for environmental eduction and public enjoyment of nature. However, LNRs are often also SSSIs, and therefore can be of national importance. There are four LNRs within the study area for the SMP on, or near, the coast. These sites are managed by or in agreement with the local authority;

- **Sites of Interest for Nature Conservation** (or SINC) **or Sites of Nature Conservation Interest** (SNCI). These sites are defined as being of County importance for nature conservation. These are not statutory but form an integral part of the formulation of planning policies relating to nature conservation issues. Some of these sites may be of equal quality to SSSIs and can support protected species. Hampshire County Council designate SINC, whereas Dorset County Council designate SNCI. They are an equivalent designation.

- **Regionally Important Geological Sites** (RIGS). These are sites designated for their importance to geological conservation.

Sites with local designations are shown on Figure 2.3, with details provided in Appendix C.

2.2.5 Non-Designated Areas and Protected Species

- Although designations are a very important method of identifying areas of significance to nature conservation they are not the only method. Animals are unlikely to restrict themselves to designated boundaries. Rare plants and insects also occur outside of designated sites. Care must be taken not to consider an area unimportant just because it is not within an SAC, SPA or SSSI.

Table 2.1: Designation Types and their Relevance (Source: DOE PPG9, 1994)

Importance	Site Designation and Explanation	UK Statutory Designations
Sites of International Importance	**Ramsar Sites** listed under the Convention on Wetlands of International Importance	SSSI, Ramsar site
	Special Protection Areas (SPAs) classified under the EC Directive on the conservation of Wild Birds	SSSI, SPA
	Special Areas of Conservation (SACs) designated under the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)	SSSI; SAC (Marine SAC below LWM are not SSSI)
Sites of National Importance	**National Nature Reserves (NNRs)** declared under Section 19 of the National Parks and Access to the Countryside Act 1949 or Section 35 of the Wildlife and Countryside Act 1981	SSSI, NNR
	Sites of Special Scientific Interest (SSSIs) notified under Section 28 of the Wildlife and Countryside Act 1981	SSSI
Sites of Regional/ Local Importance	**Local Nature Reserves (LNRs)** designated by local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949	LNR
	Non-Statutory Nature Reserves established and managed by a variety of public and private bodies eg county wildlife trusts, Royal Society for the Protection of Birds	
	Sites of Importance for Nature Conservation (SINC) or Sites of Nature Conservation Interest (SNCI). These are usually adopted by local authorities for planning purposes.	

3 ASSESSMENT OF THE NATURAL ENVIRONMENT

3.1 Area 5F-1, Hurst Spit to Hengistbury Head Long Groyne

3.1.1 Landscape

Hurst Spit consists of a narrow shingle embankment extending seawards by approximately 2.5km with a castle and lighthouse at the tip. Water occurs on both sides of the Spit, with open sea to the south and saltmarsh creeks to the north. This is an area with a special sense of remoteness, being accessible only by foot or boat, and is of great natural beauty.

The landscape from Milford on Sea to Highcliffe consists of low-lying slumped cliffs behind a sand and shingle beach. Numerous beach huts occur at various locations at the base of the cliffs. From Highcliffe to Mudeford Quay there is a narrow beach consisting of sand and shingle divided by timber and rock groynes with some concrete seawalls and shingle recharge in places for protection from erosion. Residential properties, partially screened by mature trees, are situated on the flat land behind the beach. There is cliff top development at Milford on Sea, Barton on Sea and Highcliffe although these settlements are generally set back from the cliff edge. Hurst Spit is considered to be of high landscape importance and is therefore contained within the South Hampshire Coast AONB. The remainder of the coastline is not covered by any national landscape designations, though Mudeford Quay provides a scenic hamlet of old houses.

3.1.2 Coastal Habitats

Hurst Spit is covered by three international nature conservation designations. It is a pSPA, Ramsar site and a cSAC. Most of the remainder of the coastline is either SSSI, SINC or SNCI. The coast is therefore of very high importance for its nature conservation.

The coastal cliffs that form much of this Area are vegetated in places and form a habitat-type associated with soft cliffs. This includes species such as willow (*Salix spp.*), reeds (*Phragmites austalis*), reedmace (*Typha spp.*) and coltsfoot (*Tussilago farfara*). In other areas the cliffs are actively eroding and are devoid of vegetation. The vegetated and open cliffs provide habitats for a range of invertebrates.

The beach at Hurst Spit is mainly composed of shingle which supports little vegetation. However, the shingle ridges at Hurst Spit, support an important flora which is dependent on the substrate. Intertidal mudflats, cord-grass (*Spartina anglica*) marshes and level mixed saltmarsh occurs to the north of Hurst Spit and around Sowley Pond. These areas support large breeding and over-wintering populations of wildfowl and other birds.

Mudeford Quay and Mudeford Sandbank are both designated as SNCIs for their flora and Hengistbury Head is a LNR. Barton Common and Beckton Bunny are designated SINCs for their heathland vegetation. Studland Common is a SINC for its unimproved grassland and Sturt Pond is a SINC for its semi-natural coastal habitat.

3.1.3 Marine Environment

East of Hengistbury Head, an ironstone reef stretches 5 km out into Christchurch Bay forming the Christchurch Ledges. The Ledges provide a solid substrate in an area dominated by mobile sandy sediments, which support diverse assemblages of kelp and other algae, along with a variety of animals including nationally rare fish (gobies), bryozoans, sponges and anemones. Hengistbury Head is included in the western limit of the Solent and Isle of White SMA (JNCC Coasts and Seas of the UK, Region 9 Southern England 1996), for its nationally important marine plant and animal communities.

Offshore of Hurst Spit is the deepest area of the Solent reaching 60 metres in depth with an unusual tidal regime, and the area encompasses a diverse range of habitats and communities. The subtidal marine life represents a transition between the warm temperate (Lusitanian) and cold temperate (Boreal) marine biogeographic provinces, resulting in a rich variety of organisms including representatives of both provinces. The seabed is composed of sandy sediment, which supports a variety of organisms including the dominant slipper limpet (*Crepidula fornicata*), which is an alien species, burrowing polychaete worms and molluscs. The coastal marine environment acts as a spawning and nursery area for several species of commercially important fish including Dover sole, cod, and bass.

3.1.4 Geological and Geomorphological Conservation

There is no recognised system for designation of sites for international geological importance. However the cliffs between Highcliffe and Milford on Sea are considered to be of at least national importance, and possibly internationally significant. Important sites include:

- The cliffs between Highcliffe and Barton on Sea;
- The coastal section from Friars Cliff to Milford on Sea;
- Hordle Cliff.

The cliffs between Highcliffe and Milford on Sea provide access to the standard succession of the fossil rich Barton and Headon Beds. The coastal section from Friars Cliff to Milford on Sea is the type locality for the Barton Beds and is also the best exposure of the Lower Headon Beds.

Chewton Bunny is the only site to yield fossil plants from the Lower Barton Beds and is an internationally important site, whilst the Barton Cliffs are important for early Tertiary reptiles, particularly turtles. Paddy's Gap is a famous fossil plant locality with abundant fossil fruit remains.

Hordle cliff is a key site for fossil birds, mammals, reptiles and plants. Seven genera of fossil plants found here are limited to this site in Britain and many species are unique in Tertiary deposits worldwide. Associations of plant fossil with faunal remains make this a valuable site for palaeoenvironmental analysis. This is a critical site for European Tertiary palaeobotany and palaeoecology. The whole coastline between Highcliffe and Milford on Sea is designated a SSSI for its geology.

Table 3.1 Designated Conservation Areas for Area 5F-1

Type	Name of area	Main Reason for designation
International designations		
SAC - candidate	The Solent Maritime	Ecology - Atlantic salt meadows, vegetated sea cliffs, cordgrass swards
SPA - proposed	Solent and Southampton Water	Ecology - bird populations
Ramsar site – proposed	Solent and Southampton Water	Ecology - wetland habitat
National designations		
SSSI	Hurst Castle and Lymington River Estuary	Ecology and geomorphology
	Highcliffe to Milford Cliffs	Geology – fossils and bed exposures. Key site for European Tertiary palaeobotany and palaeoecology
AONB	South Hampshire Coast	Landscape
GCR	Barton	Geology
	Highcliffe	Geology
	Friars Cliff	Geology
	Paddy=s Gap	Geology
Other designations		
LNR	Hengistbury Head	Ecology – heathland
SNCI	Barton Common	Ecology – heathland
	Beckton Bunny	Ecology – heathland
	Studland Common	Ecology - unimproved grassland
	Sturt Pond	Ecology - semi-natural coastal habitats
	Chewton Bunny	Ecology - decidious woodland
	Hengistbury Head	Ecology – sand dunes, gravel, shingle foreshore
	Mudeford Quay	Ecology – dry ruderal grassland

3.1.5 Relationship between Nature Conservation, Coastal Dynamics and Coastal Structures

The high geological importance of Barton and Milford Cliffs is dependent upon the continued exposure of the site. This is maintained through ensuring that the cliffs are not covered by accreting material such as soil or vegetation, and therefore continued erosion is an important process. In areas where the slope of the cliffs has been reduced, drainage carried out and sea defences built, erosion has slowed down and allowed vegetation to grow. Material has also been imported to these cliffs as part of a cliff stabilisation scheme. This has resulted in the loss of significant areas of geological exposure and therefore reduction in the earth heritage value of these sites. This is likely to continue in the future in areas where the cliff is stabilised. The interests of nature conservation, especially geology, and those of coast protection, are in conflict in this area.

According to English Nature the condition of Highcliffe to Milford SSSI represents a great disaster for earth science conservation. English Nature are seeking a strategy for management of the site, with the relevant Local Authorities, to allow permanent exposure of the geology (Coastal Defence and Earth Science Conservation, 1998). However, this is likely to be resisted by local residents who are concerned of the risks to their properties.

Hurst Spit is intrinsically important as a geomorphological feature and is vital in protecting large areas of saltmarsh from wave action between the Spit and Pylewell Point. The development of the Spit is inextricably linked to the process within Christchurch Bay. Here considerable human interference with the natural processes has taken place over the last 300 years in the form of mineral exploitation and the construction of coast protection work. In 1938 a long groyne at Hengistbury Head was built, effectively stopping the movement of shingle from Poole Bay into Christchurch Bay, and increasing the rate of erosion between Hengistbury Head and Barton on Sea. This prompted a series of protection works at Mudeford, Highcliffe, Barton and Milford which began in 1944. The most extensive works, constructed between 1964 and 1969 at Highcliffe and Barton, enormously reduced the eastward movement of shingle past Barton on Sea. Reinforcement of the Becton Bunny sewage outfall in 1970 created another major obstacle to shingle movement.

These activities have significantly reduced the volume of sand and gravel eroding from the soft cliffs and have disrupted the natural eastward movement of this material onto Hurst Spit. This has resulted in a steady decline in the volume of the shingle bank that forms the Spit. Severe damage to the Spit occurred during the storms of late 1989 and 1990 and overtopping occurred. Artificial shingle recharge has been carried out to secure the spit.

The saltmarshes to the north of Hurst Spit depend upon various factors for their development, including the existence of an area of intertidal mudflat and low energy inputs to allow for the settlement of sediments which stabilises the mud banks and enables the colonisation by vegetation. Hurst Spit provides a barrier to the prevailing wind and wave direction (the south-west), and therefore ensures a low wave energy environment for the saltmarshes that lie to its north-east. The saltmarshes are already exhibiting extensive die-back and are also receding through wave attack. The existence of the Spit is vital to the continued protection of the existing saltmarshes and mudflats.

A long-term sustainable approach could involve un-doing the damage done by previous coastal defence decisions, and removing some of the hard defences which currently prevent littoral drift. However, this is likely to be an un-acceptable option for the Local Planning Authorities due to the existence of development on the cliff-top, and therefore coastal defence will continue to be required.

Alternatives include the continuing artificial recharge of Hurst Spit, the removal of material from sites of geological importance to ensure their continued exposure, and the re-design of defences to reduce, rather than completely halt, erosion. Bray and Hooke (1995) cite the use of dredged material from Shingles Bank as a geomorphologically compatible solution to provide recharge material for Hurst Spit. They argue that the offshore bank forms the natural deposition point of material removed from the Spit. From here the material, under natural processes, moves back across the bay and recharges the coastline along Christchurch Bay, which then feeds Hurst Spit. The moving of material directly from the bank to the Spit would constitute the recycling of material within a limited part of a single process system. Wider impacts should be minimal (Bray *et al*, 1995).

Mudeford Sandbank is currently being eroded by the sea and, due to its strategic importance in defending Christchurch, the Local Authority are planning a coastal defence scheme to improve the standard of defence (subject to MAFF approval). The sandbank is a SNCI and provides a habitat for at least one RDB species, Sea Knotgrass (*Polygonum maritimum*). This is a pioneer community that requires storm damage to maintain its interest. Stabilisation for this community is not beneficial. However, it should be noted that an increased area of upper beach over the last ten years has resulted in the growth of marram grass on Mudeford Sandbanks. Currently further surveys are being carried out on the flora and fauna of the area, and the Local Authority are designing the defences to minimise damage to the nature conservation interests of the area. Mitigation measures are likely to include avoiding areas for recharge which provide a habitat for important species, and ensuring sediments taken from other sources are compatible with the existing sand and shingle of the sandbank.

The majority of the marine environmental interests in this process unit, including warm and cold temperate transitional species, are unlikely to be affected by coastal developments, as they are located offshore, and the area does not support any particularly sensitive marine communities.

3.1.6 Environmental Requirements and Opportunities for Enhancements

Parts of the coast of Christchurch Bay are of national and possibly international geological and ecological importance. Hurst Spit is also of high landscape importance. The following measures are required to ensure the protection of the area:

- Encourage and restore the natural processes of erosion and littoral drift to ensure both the geological exposures and the natural accretion of shingle to the geomorphologically important Hurst Spit;
- Maintain Hurst Spit to ensure the protection of saltmarsh to the north;
- Protect shingle habitats on Hurst Spit;
- Prevent physical damage to the delicate ecology of Mudeford Sandbank;

- Ensure sediments used in beach recharge operations are chemically and biologically compatible with the existing environment:
- Maintain sediment supply around Hengistbury Head to stabilise the rare eel grass beds;
- Maintain the high landscape appeal of the area by minimising coastal defence works, and using 'soft' engineering defences where possible. This is particularly important at Hurst Spit.

3.2 Area 5F-2, Christchurch Harbour

3.2.1 Landscape

Christchurch Harbour is a natural harbour sheltered to the south by the higher ground of Hengistbury Head. The estuary, surrounding marshes, heath and woodland present a natural landscape creating a distinct character considered to be attractive. The Rivers Stour and Avon drain into Christchurch Harbour, and their alluvial deposits have created a flat flood plain to the west of the Harbour. The town of Christchurch lies adjacent to the Harbour on the west and north side. The area is not covered by any national landscape designations, although the local authorities recognise the beauty of the area and seek to protect it through local policies.

3.2.2 Coastal Habitats

Christchurch Harbour contains a wide range of habitats including shallow mudflats, saltmarsh, reed beds, ditches, wet meadows, sand dunes, dry and neutral grassland, heath, woodland and scrub. These habitats support diverse plant and animal communities, and the site is of great ornithological importance. The whole Harbour, including Hengistbury Head and the grazing land and marshes on the eastern side, are all designated for their national nature conservation importance and form Christchurch Harbour SSSI. Stanpit Marsh is also a LNR and supports a rare flora and also serves as an essential food source for wildfowl and wading birds.

The River Avon is an ecologically important chalk river that drains into Christchurch Harbour. The Avon Valley shows a greater range of habitats and a more diverse flora and fauna than any other chalk river in Britain. It has therefore been designated as a SSSI and is proposed as an SPA/Ramsar site.

3.2.3 Marine Environment

Christchurch Harbour is included in the Poole Bay SMA and the Christchurch Harbour SSSI (Important Areas of Marine Wildlife around England, EN 1994, JNCC Coasts and Seas of the UK, Region 9 Southern England 1996, EN citation sheets) for its nationally important marine and lagoon plant and animal life.

The Harbour's narrow entrance reduces the level of flushing creating an internationally rare habitat of brackish lagoon conditions, consisting of relatively low species abundance but with large populations of intertidal and subtidal marine invertebrates. Extensive areas of shallow intertidal mudflats support dense populations of burrowing organisms, which provide an important food source for the internationally important bird life that frequents the Harbour. Rare brackish water species include the nationally rare amphipod *Gammarus insens* and tentacled lagoon worm *Alkmena romijni.*

The Harbour also acts as an important nursery ground for several commercial species of fish, including bass, Dover sole, thick-lipped mullet, thin lipped mullet, pollack and flounder. The estuaries that form the Harbour are important salmon and eel fisheries and recreational angling occurs throughout the year.

3.2.4 Geology/Geomorphology

There are no sites of high geological or geomorphological interest in Christchurch Harbour.

Table 3.2 Designated Conservation Areas for Area 5F-2

Type	Name of area	Main Reason for designation
International designations		
SPA - proposed	Dorset Heathlands	Ecology - wet heathland
	Avon Valley	Ecology – chalk river
Ramsar - proposed	Avon Valley	Ecology – chalk river
National designations		
SSSI	Christchurch Harbour	Ecology Saltmarsh Geology
	Avon River	Ecology
Sensitive Marine Area	Poole Bay and Isle of Purbeck	Marine and lagoon ecology
Other designations		
LNR	Stanpit Marsh	Ecology – grazing marsh
SNCI	Stanpit	Ecology – semi-improved grassland and fern
	Stony Lane Drain	Ecology – wet grassland and ditch
	Milham=s Mead	Ecology – wet tall herb

3.2.5 Relationship between Nature Conservation, Coastal dynamics and Coastal Structures

Stanpit Marsh is suffering erosion on its weather side and, as a result of sea level rise, is becoming inundated more frequently. It is likely that, over the long term, the area will suffer from coastal squeeze, and will initially change in character from grazing marsh to saltmarsh, but may eventually be totally inundated by the sea.

Managed retreat of Stanpit Marsh is, in theory, possible and this would retain the high nature conservation interests of the Marsh by allowing the marsh to develop inland. However the land to the north of the Marsh is a dis-used semi-toxic landfill site. The area is now used as a golf course and playing field and it is also an important part of Christchurch=s Green Belt. If the Marsh were to erode back to the landfill site the area would either require coastal defences to prevent waste and toxins being washed into the Harbour or the removal of the waste. This is an area that will require further consideration in the future.

The saltmarsh to the north of Warren Hill is also vulnerable to sea level rise, but is protected from erosion by Hengistbury Head. Again sea level rise is likely to lead to coastal squeeze and the eventual loss of saltmarsh.

The marine nature conservation importance of the Harbour is mainly due to the intertidal mudflats and its lagoonal nature. The supply of sediment from the rivers and freshwater needs to be maintained in order to stabilise the mudflats and to maintain the lagoonal characteristics. Continuation of dredging at its current rate is required to prevent siltation and keep the variety of habitats suitable for nursery and spawning areas.

3.2.6 Environmental Requirements and Opportunities for Enhancements

Christchurch Harbour is an ecologically sensitive area and is locally important for its landscape. This area requires a number of measures to ensure its long-term protection. These include:

- Protection of the high landscape appeal of Christchurch Harbour through the use of appropriate materials in defence design (where required);
- Consideration of managed retreat at Stanpit Marsh. In the long-term consideration may have to be given to the removal or protection of the landfill site north of the Marsh;
- Maintaining natural processes, especially the supply of sediments from the Rivers Avon and Stour to ensure the ecologically important mudflats in the Harbour;
- Maintain channels and harbour bathymetry variety to protect nursery and spawning habitats;
- Plan for managed retreat to mitigate loss of areas as a result of sea level rise;
- Minimise disturbance to birds.

3.3 Area 5F-3, Hengistbury Head Long Groyne to Sandbanks Ferry Slipway

3.3.1 Landscape

Hengistbury Head is a dramatic promontory forming the eastern most point of Poole Bay, and the southern flank of Christchurch Harbour. The two mile long headland consists of a partly wooded ridge, with mudflats on the north sides, within Christchurch Harbour, and a sandy/shingly beach to the south. Within a small area there is a mixture of heath, woodland, meadow, saltmarsh, dune and a shingle/rocky shore. The cliffs of Hengistbury Head are undergoing constant erosion.

A landscape assessment of Poole Bay conurbation, carried out for BP in 1991, divided the coast into the following character zones, which are described in more detail below:

- Southbourne
- Boscombe;
- Bournemouth;

- Canford Cliffs;
- Sandbanks.

An access road and promenade runs along the base of the cliff throughout most of this coastline. The buildings of Southbourne are set back from the cliff top and consist mainly of Edwardian and 1930s detached properties. The cliffs are gently sloping and are vegetated with heath and grass. Boscombe has a denser provision of large properties in the Coastal Zone, mainly hotels or high rise apartment blocks. Bournemouth Pier, originally constructed in 1861 but re-constructed in 1979/1981, and Boscombe Pier are prominent features on the coastal frontage. Central Bournemouth is an area of extensive built up development, characteristic of the commercial area of a large town.

Canford Cliffs is characterised by steep sandstone cliffs, in places cut by chines (steep-sided valleys). Some of the chines have public gardens and provide access to the beach. Cliff top development consists of large detached suburban houses, converted into flats, on pine-clad slopes. The beach is very popular and busy, particularly in summer, and beach huts line parts of the coast. This area contains important heathland habitats, which although not fully developed in some areas, currently supports good reptile populations of which the Sand Lizards are of note.

Sandbanks is a natural spit which extends across the mouth of Poole Harbour from the north. It has been extensively developed for housing and tourism, with the resultant loss of most of the original sand dunes, though some have regenerated. The houses here are generally detached, however, a group of buildings are situated at the point where the chain ferry leaves for Studland. Large car parks are also located on the narrow neck of the spit.

This Area has no national landscape designations.

3.3.2 Coastal Habitats

Hengistbury Head, along with Christchurch Harbour, is an area of outstanding interest for its bird life. The headland is a natural point of arrival and departure for migrating birds. The area also has a wide range of habitats in a small area including recently formed sand dunes west of Hengistbury Long Groyne, and lowland grass, scrub and woodland, which occupies most of the headland. The grassland includes scarce and rare species of flora and the rare Natterjack toad (*Bufo calamita*) occurs over a wide part of the area.

Other habitats on the headland include ericaceous heathland, semi-natural woodland and freshwater ponds. Hengistbury Head supports over 500 plant species, including a Schedule 8 species, Sea Knotgrass *(Polygonum maritimum)*, which is a nationally rare species, 14 scarce species and 39 locally rare species. More than 300 bird species have been recorded, as well as many insect and reptile species, including the rare Natterjack toad. The cliffs beneath Warren Hill have a regionally important colony of Sand Martins *(Riparia riparia)*.

The heathland on Hengistbury Head is covered by the Dorset Heaths candidate SAC and the headland is a proposed SPA for its important bird populations. Hengistbury Head has also been designated an LNR due to the various habitats and its importance for the appreciation and study of wildlife.

The cliffs fronting Poole Bay provide a narrow strip of natural habitat between the town and the wide seafront promenade. Parts of the cliff are of high ecological as well as geological importance and are designated SSSI or SNCI. Sections of the

cliff support populations of the rare and declining sand lizard *(Lacerta agilis).* There are also local seepage features which provide a habitat for specialised invertebrate fauna, including the fly *Cephalops chlorinae* which is recorded from only one other locality in Britain.

The sandy shores of Poole Bay are not of ecological interest, due to the presence of concrete seawalls and the high mobility of the sand along the coast, except for a residual area of sand dune at Sandbanks and Canford Cliffs which have sand lizards.

3.3.3 Marine Environment

The subtidal zone is within the Poole Bay and Isle of Purbeck SMA designated for its important marine wildlife. The process unit consists of a gently shelving seabed with examples of all five major sediment types (mud, muddy sand, sand, muddy gravel and gravel) being represented (Important Areas of Marine Wildlife around England, EN 1994). The diversity of sediment types results in a varied marine benthic fauna (animals that live on the seabed). Burrowing bivalve molluscs are the dominant animals present in the sediment with the alien slipper limpet (*Crepidula fornicata*) dominating the surface of the seabed. Bournemouth Rocks make up the majority of hard substrate in the process unit, which supports a rich assemblage of algae and encrusting organisms.

Poole Bay supports a number of commercial species including the rare native oyster (*Ostrea edulis*). The population of native oysters is the largest in the UK and is probably the largest in Northern Europe (JNCC Coasts and seas of the UK, Region 9 1996). Poole Bay supports commercial fishing for bass, sand eels, Dover sole, sprats, cuttlefish, oysters, whelks, scallops, edible crabs, spider crabs and lobsters. Recreational angling from the beaches and from boats also occurs throughout the year.

3.3.4 Geology

Hengistbury Head lies in the western part of the Hampshire basin, and the strata, exposed in the cliffs of Warren Hill, summarise the nature of this part of the basin. They have alternating deposits of Tertiary sands, loams and clays, capped at different levels with Pleistocene river gravels and alluvium (Hengistbury Head Management Plan, 1988). Hengistbury Head is a strategically important bridging exposure, and has therefore been designated a SSSI.

Poole Bay frontage is of considerable geological interest. The discontinuous cliffs extend along almost all of the Poole Bay frontage and are composed of Branksome Sand topped with fluvio-glacial gravels. Erosion of these cliffs has historically contributed large quantities of sediment to the littoral zone. East Bournemouth Cliffs and West Bournemouth Cliffs have both been designated as GCR sites and lie within Poole Bay Cliffs SSSI.

The western cliffs present sections in the Bournemouth Freshwater Beds which provide an unparalled opportunity for the sedimentologist to study the point-bar and channel-plug deposits of large meandering river systems. The beds have also yielded a diverse fossil flora of the mid-Eocene age. The eastern cliffs show unique exposures of the Bournemouth marine beds and of the Boscombe Sands. These formations display probably the best examples of meso-tidal estuarine sedimentation in the British Eocene. The eastern cliffs contain freshwater geology, that is visible for study by sedimentologists.

Table 3.3 Designated Conservation Areas for Area 5F-3

Type	Name of area	Main Reason for designation
International designations		
SAC - candidate	Dorset Heaths	Ecology - heathland
SPA - proposed	Dorset Heathlands	Ecology- wet heathland/birds
National designations		
SSSI	Poole Bay Cliffs	Geology - sedimentation and fossils Ecology - sand lizard, invertebrates
	Christchurch Harbour	Ecology - varied habitats Geology - Stratigraphy and sediments
GCR	Hengistbury	Geology - sediments
	East Bournemouth Cliffs	Geology - sediments
	West Bournemouth Cliffs	Geology - sediments and fossils
Sensitive Marine Area	Poole Bay to Isle of Purbeck	Varied marine benthic fauna
Other designations		
LNR	Hengistbury Head	Range of habitats
SNCI	Sandbanks	Ecology - dunes, grassland and reptiles
	Boscombe-Southbourne Cliffs	Ecology - cliff grassland
	Alum Chine	Ecology - woodland
	Flaghead Chine	Ecology - heathy cliffs and reptiles
	Branksome Cliffs	Ecology - grassland and heathland habitats

3.3.5 Relationship between Marine Environment, Coastal Dynamics and Structures

The geological exposures below the highest part of Warren Hill are best maintained by allowing active erosion. However, due to the other interests in the area, coastal protection work is a compromise between the scientific requirements to maintain the exposure and the necessity to protect the coast. Currently English Nature and Bournemouth Borough Council fund the removal of eroded and fallen cliff material from the foot of part of the cliffs, where coast protection works have been carried out. This cannot be considered a long-term sustainable solution, but appears to fulfil the current requirements.

The natural loss of land to the sea was accelerated by iron ore mining at Hengistbury Head during the 19th Century. The building of the Long Groyne in 1937/38 partially checked the coastal erosion to the west, while increasing erosion to the east. Future coastal erosion and predicted sea level rise is likely to result in land of high ecological value being lost and zones of vegetation becoming condensed. In particular Warren Hill will diminish if coastal protection works are not maintained (Hengistbury Head LNR - Draft Management Plan, 1996).

The geological sites along Bournemouth cliffs have been isolated from the erosive forces of the sea, being set back behind the promenade. Residual erosion is now due to weathering and water within the cliffs. There is also a reduction of erosion along the cliffs as a result of stabilisation and consequent colonisation by vegetation. However any activity that covered the site would be damaging. In places there is potential conflict between permitting ongoing erosion which is necessary to maintain good exposures and human development requirements.

It is important that areas of healthy sandy dune habitats and other herbaceous vegetation types are maintained in an open condition to provide a continued habitat for the rare sand lizard. The sand dunes at Sandbanks, which were created from blown sand, have suffered from erosion problems over the last few years as a result of both wind and storm damage and high public pressure. The coastal defence works of 1995/96 included regeneration of sand dunes.

It is also necessary to protect the hydrology of wetland areas, such as cliff seepages and reed beds, for their rare invertebrate species. Artificial cliff drainage could possibly detrimentally affect the ecology of the cliffs.

The supply of sediment along the coast prevents the erosion of the eel grass beds off Hengistbury Head.

3.3.6 Environmental Requirements and Opportunities for Enhancements

The coastline in this Area includes sections that are of high ecological, geological and landscape importance. These can be maintained by ensuring the following:

- Protect the high landscape quality of Hengistbury Head by ensuring coastal protection works are in keeping with the area;
- Allow cliffs below Warren Hill to erode, though not necessarily at an unmanaged rate, thereby maintaining their geological exposures and providing sediments to Christchurch Bay;
- In contradiction to the above, Warren Hill requires protection to maintain the extent of various habitats;
- Artificial cliff drainage could damage the ecology and therefore care should be taken where it is planned;
- Maintain sand dune and herbaceous vegetation habitats in an open condition to provide suitable habitat for the rare sand lizard and coastal rare plants;
- Prevent damage and vegetational colonisation to geological exposures along the Bournemouth coast front;
- Maintain the supply of sediments around the coast to prevent erosion of the eel grass beds off Hengistbury Head;

- Maintain and enhance the heathland habitat along Canford Cliffs and provide suitable habitat for Sand Lizards and other reptile species;

Coastal structures may provide additional hard substrate in the process unit, which would increase the diversity of marine and intertidal habitats in an area dominated by soft sediments. Hard substrate can result in the colonisation of the area by rich marine communities, such as those colonising the artificial reefs in Poole Bay, on Bournemouth and Boscombe Piers and on the rock groynes at Sandbanks.

3.4 Area 5F-4, Poole Harbour

3.4.1 Landscape

Poole Harbour comprises a wide expanse of water punctuated by wooded islands, creeks and mudflats with development on its northern and eastern side. Brownsea Island is a large island in the Harbour, and is predominantly wooded, but has an enclosed man-made lagoon on its eastern side. Low-lying meadows flank the western margins of the Harbour and the southern shores are fringed with mudflats and marsh rising up to heathland and coniferous plantations. The quiet waters and islands are a haven for wildlife, which forms a contrast to the bustling ferry port and the conurbation of Poole which lies to the north. The onshore oil well at Furzey is screened from view by conifer plantations. The southern shore of Poole Harbour is designated both Heritage Coast and AONB.

3.4.2 Coastal Habitats

Poole Harbour is considered to be one of the best and largest examples of an enclosed, lagoonal harbour in Britain. It formed when the sea invaded a broad area of low-lying land from Poole Bay. The Harbour is mostly shallow and contains a high proportion of intertidal salt marshes and mudflats. These give way to fresh water marshes, reed beds and wet grassland. Heathland occurs on the higher sandy areas. Poole Harbour is a particularly extensive and diverse area of wildlife habitat, and as a consequence, the area is of outstanding nature conservation interest.

The Harbour and surrounding areas support a very large number of wintering birds, including many individual species which occur in numbers of national or international importance. The Harbour is also important as a feeding stop for birds on migration and for breeding birds. Black-tailed Godwit (*Limosa limosa*) and Shelduck (*Tadorna tadorna*) occur at internationally significant levels. Intertidal feeding areas and adjoining grasslands, notably at Keysworth and in the Lower Frome Valley, are important as feeding sites and high water roosts. Areas of heathland support rare and uncommon birds and invertebrates and also rare reptiles. Pine woodlands on the islands are important habitats for one of England's last surviving populations of red squirrel (*Sciurus vulgaris*).

Poole Harbour is a proposed SPA and Ramsar site for the bird populations and species which visit the area. The heaths and downs surrounding the Harbour support nationally important breeding populations of the following species:

- Nightjar (Caprimulgus europeaus);
- Woodlark (*Lullula arborea*); and
- Dartford warbler (*Sylvia undata*).

The site also has over-wintering populations of the hen harrier (*Circus cyaneus*) and the merlin (*Falco Columbaris*). The area qualifies under the Ramsar convention as it supports particularly good examples of wet heathland habitats and an appreciable assemblage of rare plants and animals.

Parts of the area around the Harbour are a candidate SAC for the heathland which fringes the southern shore, including the following habitats/species:-

- Wet heathland with Dorset Heath (*Erica ciliaris*) and cross-leaved heath (*Erica tetralix*). The cSAC is one of only 2 outstanding sites in the UK and contains more than 40% of the UK resource of this type of heathland.
- Coastal dune heathland. This is considered to be one of the best areas in the UK for coastal dune heathland;
- Wet heathland with cross-leaved heath;
- Dry heaths;
- Southern damselfly (*Coenagrion mercuriale*);
- Depressions on peat substrates;
- Shifting dunes;
- Shifting dunes with marram grass.

Wet heathland with Dorset heath and cross-leaved heath and coastal dune heathland are priority habitats, and therefore are recognised as being particularly rare within the European context. The remainder of the habitats listed above and the southern damselfly are also considered to be rare or threatened within the European context.

The entire Harbour foreshore has been designed a SSSI for its varied habitats and associated flora and fauna. The Arne reedbeds have been designated a NNR, as have the shores of Holton Heath and Studland Heath. The north shore, at Ham Common and Luscombe Valley, have been designated LNRs as well as SSSIs. The Arne peninsula is a RSPB reserve. There are also a number of SNCIs. The large number of designations that cover the Harbour are shown in Table 3.4.

Ham Common has wet and dry heath with a rich associated flora and fauna. The area includes two Schedule 5 (protected) reptiles, the sand lizard and the smooth snake (*Coronella austririaea*), as well as the rare Dartford warbler (*Sylvia undata*). Luscombe Valley supports a range of important habitats including heath, acid grassland and mire communities within areas of pine woodland. The valley supports the rare sand lizard as well as a notable variety of rare and scarce moth species.

Brownsea island is owned by the National Trust and is partly managed by the Dorset Wildlife Trust. The island supports rare insects and bird life as well as the red squirrel mentioned above. The island has the largest colony of nesting Grey Heron (*Ardea cinerea*) in Dorset with up to 100 pairs present.

3.4.3 Marine Environment

Part of Poole Harbour is included in the Poole Bay and Isle of Purbeck SMA and has been designated as a SSSI, in part, for the extensive intertidal mudflats and associated marine animals.

The Harbour possesses subtidal channels maintained by natural scour and dredging, which provide an important nursery ground for a number of commercial species of fish including mullet, bass, flounder, Dover sole, eel and plaice. It is also an important estuary for salmon and sea trout. Extensive intertidal mudflats support dense populations of marine invertebrates, which are a critical food source for internationally important bird life. The fine sands of the central Harbour support rich communities dominated by beds of the peacock worm (*Sabella pavonia)*, which represents a unique habitat (Oil Pollution Research Unit 1993). The Harbour is also noted as supporting several rare and restricted organisms including the sponge (*Suberites massa*), species of sea mats (*bryozoans*) and sea squirts (*ascidians*).

The Harbour is fished commercially for bass, flounder, Dover sole, eels, salmon, sea trout and plaice (BP Exploration, Understanding Poole Bay: 1991), and supports aquaculture of the Pacific oyster, native oyster, manila clams, hard shelled clams and mussels. Oyster diseases have been noted though the cause is uncertain. Bait digging is also undertaken on the intertidal flats for ragworms and lugworms, which occur in dense populations (JNCC Coasts and Seas of the UK Region 9, 1996). Bait dragging also occurs.

3.4.4 Geology/Geomorphology

Ham Common is an area of national geological importance and is designated a SSSI. This is one of the two sites yielding fossil plants from the Dorset Pipe Clays of lower Eocene age. Over seventy fossil species have been recorded here of which thirty species and three genera are restricted to this site in British Tertiary floras, whilst many are unique in the World's Tertiary deposits. The site is also the type locality for forty-four species and four genera of flora and is critical for studies of European Tertiary palaeobotany and palaeoecology.

Brownsea Island and Shipstal Point at Arne are both designated RIGS and the Arne exposure is a GCR. The cliffs on the southern side of Brownsea Island and a cliff near Pottery Pier show sections through the Branksome Sand and Parkstone Clay and the junction between them. Shipstal Point, at Arne, consists of a cliff exposure demonstrating the Poole Formation.

Table 3.4 Designated Conservation Areas for Area 5F-4

Type	Name of area	Main Reason for designation
International designations		
Biogenetic Reserve	Studland Heath	Ecology
	Hartland Moor	Ecology
	Arne	Ecology
SAC – candidate	Dorset Heaths	Ecology – heathland
	Dorset Heaths (Purbeck and Wareham) and Studland Dunes	Ecology - heathland, dunes and damselfly
SPA – proposed	Dorset Heathlands	Ecology - bird species
	Poole Harbour	Ecology - bird species
Ramsar site – proposed	Dorset Heathlands	Ecology - wetland habitat
	Poole Harbour	Ecology - wetland habitat
National designations		
SSSI	Arne	Ecology
	Poole Harbour	Ecology - varied habitats and rare species
	Ham Common	Ecology/Geology – heathland and reptile/fossils
	Luscombe Valley	Ecology - varied habitats and sand lizard
	Studland + Godlingston Heaths	Geomorphology – coastal Ecology - heathland and dunes
NNR	Arne reedbeds	Ecology – wetlands
	Holton Heath	Ecology – heathland
	Hartland Moor	Ecology – heathland
	Studland and Godlingston Heath	Ecology - heathland, dunes and reptiles
AONB	Dorset	Landscape
GCR	Arne	Geology
Heritage Coast	Purbeck	Landscape
SMA	Poole Bay and Isle of Purbeck	Marine Ecology

Other designations		
LNR	Ham Common	Ecology/geology
	Luscombe Valley	Ecology - varied habitats and reptiles
	Parkstone Bay	Birds
SNCI	Greenland	Ecology - acid grassland
	Sandbanks	Ecology - dunes and grassland
	Fitzworth	Ecology - semi-improved grassland and saltmarsh
	Purbeck Forest	Ecology - remnant heath, bog and grassland
	Ham Hill Copse	Ecology - dry heath and scrub
	Brooks Pit	Ecology - reptile interest
	Holes Bay Relief Road	Ecology – grassland
	Harkwood Saltmarsh	Ecology – saltmarsh
	Lytchett Bay Meadows	Ecology - grassland and wetland
RIGS	Brownsea Island	Geology
	Shipstal Point, Arne	Geology
	Whitecliff	Geology
	Parkstone Bay	Geology
Other Reserves	Brownsea Island (DWT)	Bird populations
	Arne Nature Reserve (RSPB)	Bird populations
	Bestwall (RSPB)	Bird populations
	Ridge Farm (RSPB)	Bird populations

3.4.5 Relationship Between Nature Conservation, Coastal Dynamics and Structures

The flora and fauna present in Poole Harbour are much influenced by the physical and chemical composition of the sand and mudflats, the extent of mudflats, and the marked variation in transitional vegetation zones. The irregular and greatly indented coastline, and the freedom from disturbance along the southern shores, all contribute to the exceptional wildlife quality of the Harbour (Poole Harbour Management Policies 1998).

Since the construction of the railway line across Lytchett Bay in the early 1900s, the bay is believed to be silting up, as a result of sediments entering via the

Sherford River and not being able to disperse easily. Lychett Bay is likely to continue to silt up, with a resultant change to its ecology from mudflats to saltmarsh and possibly grazing marsh. Whether this is damaging to conservation interests has yet to be ascertained and would require further research.

At Ham Common the ecological and geological interests are best maintained by allowing further erosion and therefore coastal defences would potentially be damaging. However the impact of a breach on the lake at Ham Common is not known.

Seawalls partly protect the grazing marshes and farmland on the western and northern side of Poole Harbour, and maintain them in a freshwater state. The Moors, a large area of grazing on the south-west side of Poole Harbour, has had two accidental tidal inundations, when a tide flap failed. These caused extensive die-back.

Poole Harbour is of considerable marine environmental importance. Coastal developments need to ensure the maintenance of the extensive intertidal mudflats and associated fauna and the supply of freshwater as well as saltwater, to stabilise the lagoonal characteristics and associated rare species. The dredging of channels needs to be maintained at its current rate to ensure a gradation of depths and to prevent siltation. This will protect the variety of habitats which provide nursery and spawning areas.

Certain areas are likely to suffer coastal squeeze as a result of sea level rise and also erosion. Areas of saltmarsh which cannot progress inland due to the existence of development are likely to reduce in area as the sea level rises. Vulnerable areas are likely to include Holes Bay, parts of Lytchett Bay, Keysworth and the north western side of Poole Harbour adjacent to the railway line.

Discharge of sediments from the industrial works on the south-eastern shore of Holes Bay has contaminated sediments on the bed of the Back Water Channel and in Holes Bay although the extent has not been determined. Although the emission of these pollutants has ceased, the contamination remains (Poole Borough Coastal Strategy, 1995) and further study is required. Dredging, piling or other work that disturbs and releases any contaminated sediments may be damaging to the ecology of Poole Harbour and therefore care needs to be taken when planning such work.

Holes Bay, which is ecologically sensitive, has been much affected by land reclamation as well as the spread and subsequent decline of *spartina* saltmarsh. The long-term extent of saltmarsh vegetation is impossible to predict (Poole Borough Coastal Strategy Study 1995). The poor flushing characteristics, combined with discharges from the sewage treatment works at Creekmoor have given rise to particular concerns about the level of pollution in the northern part of Holes Bay, which may be affecting the ecological interests of the area. However the treatment works have recently been re-built and the impact of the discharges is currently unknown.

The landscape quality of the Harbour is an important part of its attraction and should be protected against inappropriate coastal defences, particularly the unspoilt southern shore. Generally the northern shore is more developed and in places the landscape is highly industrialised.

3.4.6 Environmental Requirements and Opportunities for Enhancements

Poole Harbour is, ecologically, a very important area that would be easily damaged by inappropriate coastal defences. The requirements for the area include:

- Maintenance of the physical and chemical composition and natural processes of the Harbour to ensure high ecological interest of the area;
- Maintain extensive inter-tidal mudflats and saltmarshes in Poole Harbour to ensure continuation of high ecological interest;
- A need to address the present end of structure (gabions) erosion fronting Rockley Park and the implications for conservation of this SSSI;
- Maintain channels and harbour bathymetry variety to protect nursery and spawning areas;
- Minimise disturbance to contaminated sediment in Back Water Channel and Holes Bay where identified;

Seawalls or banks currently protect low level marshes, and maintain them in a freshwater state. Managed retreat may be possible in a number of locations around Poole Harbour, in particular in a south-westerly direction. Suitable areas include Brands Bay, Newtons Bay, Ower Bay, Grip Heath, Keysworth Marsh and parts of Lytchett Bay (Coastal Research Groups, 1993). Further investigation is required to determine which sites are most suitable. Sherford River is another area which is potentially suitable for managed retreat, as is Ham Common. This would preserve the extent of the inter-tidal areas with sea level rise.

3.5 Area 5F-5 to Area 5F-7, South Haven Point to Durlston Head

For the purposes of this section process units 5F-5-7 have been grouped together and specific issues concerning management of the coastline in these areas will be considered separately during the strategy development stage.

3.5.1 Landscape

Studland Bay, forms a long, sandy beach, backed by dunes, heathland and pine woodland. At its southern end the beach narrows and low cliffs occur. The village of Studland has a quiet, unspoilt character with many winding lanes and footpaths leading to the excellent sandy beaches. The village is situated behind the dense cliff-top vegetation. At the Bay=s southern end the land rises up to Ballard Down, a high downland ridge that terminates in the dramatic chalk cliffs that include Old Harry and a series of natural chalk arches and pinnacles. Swanage Bay, to the south, has a narrow, sandy and shingle beach backed by the residential and tourist town of Swanage which lies next to the seafront.

Peveril Point and Durlston Head are headlands that lie to the south of Swanage. High wooded cliffs occur between the two headlands. The landscape inland is rolling downland with grassland and farmland, criss-crossed by drystone walls and hedgerows. Durlston Castle, which is also located on Durlston Head, is a fine Victorian folly built of stone, quarried locally.

The entire coastline between South Haven Point and Durlston Head is considered to be of national landscape importance and has been designated AONB. All of the coast, except Swanage, is also designated Heritage coast. The coastline was awarded the coveted Diploma for landscape, awarded by the Council of Europe, in 1984.

3.5.2 Coastal Habitats

Much of the coastline between South Haven Point and Durlston Head is designated for its nationally and internationally important habitats. The coast from Studland Cliffs to Durlston Head (and beyond) is a candidate SAC (Isle of Portland to Studland Cliffs SAC) due to the occurrence of vegetated sea cliffs and early gentian *(Gentianella anglica)*, both of which are rare or threatened within a European context and for which this is considered to be one of the best areas in the United Kingdom.

The area of Studland and Godlingston Heaths is within the Dorset Heaths (Purbeck and Wareham) and Studland Dunes candidate SAC. This area includes:

- wet heathland with Dorset heath and cross-leaved heath;
- coastal dune heathland.

These are priority habitats under the European Habitats Directive, and therefore are given special protection. Other habitats and species for which the area has been internationally designated include:

- wet heathland with cross-leaved heath;
- dry heaths;
- southern damselfly;
- depressions on peat substrates;
- shifting dunes;
- shifting dunes with marram grass.

This area has also been designated a Biogenetic Reserve for its heathland habitats. This is one of only five Biogenetic Reserves found in the UK.

The coast is part of the Dorset Heathland proposed SPA and Ramsar site. This covers a number of sites in southern Dorset, and includes Studland and Godlingston Heaths. This area has been proposed as a Ramsar site for its wet heathland habitats and contains one of the best developed and most significant tracts of the habitat in the lowlands. The heathland supports appreciable assemblages of rare plants and animals. The Dorset Heathland qualifies as a SPA by supporting nationally important breeding populations of three rare species, which are nightjar, woodlark and the Dartford warbler.

Studland and Godlingston Heaths is designated as a SSSI for its range of habitats, as described above. The site also includes all six British reptiles including strong populations of the rare sand lizard and smooth snake (*coronella austriaca*).

Studland Cliffs includes a strip of maritime cliff-top grassland and adjoining hazel woodland. The cliffs are important for birds, including being one of only three sites in Dorset where cormorants (*Phalocrocorex carbo*) nest, and have therefore been designated a SSSI. Purbeck Ridge (East) is also a SSSI and contains an important area of chalk grassland with a great diversity of plants and substantial populations of insects. Ballard Down is one of the top three sites in England for Chalk Cliff algae.

3.5.3 Marine Environment

The subtidal area from South Haven Point to Durlston Head is contained in the Poole Bay to the Isle of Purbeck SMA for its marine ecology which includes important algal communities and rare eel grass beds (*Zostera* sp.) in Studland Bay. An unusual community of calcareous algae, known as maerl, occurs offshore of Handfast Point which represents the eastern limit of its known distribution. The process unit is important for other species including Ross coral and certain species of polychaete worms and amphipods, which are also at the eastern limit of their distributions. The limestone outcrops of the Ballard Ledges and softer chalk platforms at Handfast Point add to the diversity of substrates, increasing the diversity of encrusting organisms. The man-made structure of Swanage Pier support rich assemblages of encrusting marine life which are noted as being of particular nature conservation importance (JNCC Coasts and seas of the UK, Region 9 1996). The offshore sediments are composed of mixed sand, shingle and maerl, some areas of which are dominated by the slipper limpet. Experimental artificial reefs have been constructed off Studland. There were approximately two hundred species on or around them two years after their establishment (BP Exploration Understanding Poole Bay 1991).

The subtidal zone of Durlston Bay (Peveril Point to Durlston Head) is part of a VMNR, which has been designated due to the presence of diverse marine communities and relatively common cetacean sitings, particularly of bottle-nosed dolphins (*Tursiops truncatus*). Limestone reefs and mussel beds occur off Durlston Head.

The process unit is a spawning site for Dover sole and cod, and a nursery for Dover sole. A variety of fish species, edible crabs, spider crabs, lobsters, whelks and Pacific oysters are fished commercially.

3.5.4 Geology/Geomorphology

Studland is a key site for coastal geomorphology. There are few seaward advancing (prograding) sand beaches in southern Britain and South Haven Peninsula is a key member of the national network of soft coastal sites. However the beach is eroding at its southern end.

Studland Cliffs are an outstanding stratigraphic and structural site of national significance and are also an important location for palaeontological studies. Ballard Down is a key site for coastal geomorphology, best known for the stacks, arches and caves at Handfast Point. The area is designated a SSSI and is also part of the proposed World Heritage Site for its important Jurassic exposures. An important section through sediments of the lower Greensand occurs at Punfield Cove, and the area has been designated a SSSI (Purbeck Ridge East). This SSSI is proposed to be extended in the future by English Nature to include all sections of Wealden Clays exposed in the cliff line in Swanage Bay.

The coastal cliffs around Durlston Head are of international geological importance. Much of the rock is very fossiliferous and the area is of international significance. The Purbeck Beds at Durlston Head have yielded one of the most important collections of Mesozoic mammals found anywhere in the world. Durlston is also the most important late Jurassic-Early Cretaceous fossil insect site in Europe. Due to its high importance for geological conservation the area has been designated a SSSI and is part of a possible World Heritage Site for Jurassic Geology.

Table 3.5 Designated Conservation Areas for Area 5F-5

Type	Name of area	Reason for designation
International designations		
World Heritage Site (proposed)	Orcombe Point to Old Harry	Geology – Jurassic
Biogenetic Reserve	Studland Heath	Ecology – heathland
SAC – candidate	Isle of Portland to Studland Cliffs	Ecology - vegetated sea cliff, early gentian and orchid populations
	St. Albans to Durlston Head	Ecology – chalk grassland and vegetated sea cliffs
	Dorset Heaths (Purbeck & Wareham) & Studland Dunes	Ecology - heathland and southern damselfly
SPA – proposed	Dorset Heathlands	Ecology - bird species
Ramsar site – proposed	Dorset Heathlands	Ecology - wet heathland
National designations		
SSSI	South Dorset Coast	Ecology, geology and geomorphology
	Studland & Godlingston Heaths	Geomorphology Coastal ecology – heathland & reptiles
	Studland Cliffs	Geology, Geomorphology and Ecology – grassland and breeding birds
	Purbeck Ridge (East)	Geology Ecology - chalk and acid grasslands and insects
NNR	Studland & Godlingston Heath	Ecology – heathland

GCR	Peveril Point to Furzey Cliff	Geology & Geomorphology
	Ballard Point to Studland Bay	Geology
	Ballard Down	Geomorphology
	South Haven Peninsula	Geomorphology
	Handfast Point to Ballard Point	Geology
	Studland Bay	Geology
	Swanage	Geology
	Punfield Cove	Geology
	Durlston Bay	Geology
AONB	Dorset	Landscape
Heritage Coast	Purbeck	Landscape
Sensitive Marine Area	Poole Bay and Isle of Purbeck	Marine ecology
Other Designations		
Voluntary Marine Conservation Areas	Durlston Marine Research Area	Marine ecology/research and education
SNCI	Studland Hill	Ecology - scrub and calcareous grassland

3.5.5 Relationship between Nature Conservation, Coastal Dynamics and Structures

Studland Bay is an area that naturally advances and retreats, but in the long-term is generally advancing, although the south end is retreating. However, defences in the southern sector would affect the movement of sediments northwards and would therefore be damaging to the sand dunes at Studland. The National Trust, who have parking facilities on an eroding part of the coast, are now taking the long-term, strategic and long-sighted approach of moving their car park, rather than erecting new defences. They have previously erected gabions and timber defences near the root of the spit.

The supply of sediment and the sheltered nature of Studland Bay needs to be maintained to ensure the continued stability of the nationally important eel grass beds. Artificial structures can enhance the richness and diversity of marine life by providing hard substrates in an area dominated by soft sediments. The limestone outcrops of the Ballard Ledges and chalk platforms at Handfast Point should be maintained in order to protect the diversity of marine habitats.

Sea defences can be damaging to the geological interests of the coast. English Nature currently recommend the investigation of drainage of cliffs along the Swanage frontage rather than hard or soft defences, to maintain their conservation interests. At Durlston Bay extensive cliff stabilisation works have obscured the base of the Purbeck beds, as well as creating an unsightly scar.

3.5.6 Requirements and Opportunities for Environmental Enhancements

The coastline in Area 5F-5 is of national and international ecological and geological importance and the landscape is of high intrinsic quality. Requirements for the coast are as follows:

- Loss of the internationally important dune and heathland habitat would not be acceptable, particularly as it is a priority habitat under the EC Habitats Directive and therefore afforded special protection;
- Maintain the supply of sediments and the sheltered nature of Studland Bay to maintain the eel grass beds. However, over-sedimentation would be detrimental to the eel grass;
- The limestone outcrops of the Ballard Ledges and chalk platforms at Handfast Point should be maintained to protect their important marine habitats;
- Hard coastal defence structures may impinge on the high landscape quality of the coast and should therefore be avoided. Soft defence options may also be damaging, particularly for the sandy landscape of Swanage Bay. Where necessary, for other reasons coastal defences should be designed to be in keeping with the landscape;
- Areas of high geological importance require active erosion to maintain the exposures. Hard defences which stop the erosion should be avoided. Important sites include Studland Cliffs, Ballard Down Cliffs and Durlston Bay;

The geological exposure below the flats in Durlston Bay could be enhanced by removing the coastal protection placed on the cliff. However, the safety of residents in the flats is paramount at this location.

Artificial structures can provide an opportunity for enhancing the diversity of marine life, the long term impacts are not known. However, hard defences may not provide a suitable habitat due to scouring, and use of inappropriate materials could result in pollution of the marine environment.

4 SUMMARY OF KEY ISSUES FOR MANAGEMENT OF THE SHORELINE

Landscape

Large stretches of the coast are of high scenic beauty and have been designated either AONB, Heritage Coast or both. Areas of particular importance include:

- Hurst Spit;
- Christchurch Harbour;
- Hengistbury Head;
- The southern side of Poole Harbour;
- Studland Bay to Swanage Bay;
- Peveril Point to Durlston Head

Where areas are of intrinsic beauty it is generally preferable not to have coastal defence structures. However, where they are essential for the protection of life or property the defences should be compatible with the existing environment, and generally soft defences are visually preferable to hard defences. The design of defences should include consideration of such issues as the colour of material used, its placement in a >natural= shape and its position in relation to the coast.

Coastal Habitat

The coastline of Christchurch Bay and Poole Bay and Harbour has some extremely rich coastal and inter-tidal habitats, although due to extensive urbanisation some parts are not of great interest. In the east of the study area Hurst Spit not only provides a suitable habitat for shingle vegetation, but is essential in protecting the saltmarsh to its north. Coastal defences erected around Christchurch Bay have seriously affected the littoral drift of material towards Hurst Spit, with consequent increased erosion. This has resulted in an increased likelihood of over-topping (which has already occurred). A major shingle recharge has taken place and will need to be repeated in the future. A long-term sustainable solution is likely to include the removal or re-design of existing coastal defences, and other structures, to ensure the continued supply of material to the Spit. However, due to areas of high economic value on the cliff tops this is unlikely, in the short-term, to be an acceptable option. A temporary measure, which is proving acceptable, is the recharge of the Spit.

Christchurch Harbour is an area of high ecological importance which includes areas of saltmarsh, grazing marsh and intertidal mudflats. Shingle habitats occur on Mudeford Sandbank. Maintenance of natural dynamic systems in the Harbour is important to keep the ecological interests. The spit at the mouth of the Harbour protects the mud and saltmarsh from erosion and therefore should be maintained. However the spit contains intrinsically important habitats and rare species which could be damaged by in appropriate coastal defence works.

Stanpit Marsh is suffering erosion and may become more inundated as the sea level rises. Managed retreat is a possibility, but would require the landfill site to its north to be either protected or removed. Sea level rise is predicted to occur along the whole seafront, and certain areas are more sensitive to its impacts than others. Where sensitive areas (such as saltmarsh) back onto hard defences sea

level rise will result in coastal squeeze, where habitats will be lost. This is likely to become an issue in both Poole and Christchurch Harbours.

Due to the urbanization of the seafront at Poole Bay areas of ecological interest are small, and have been cut off from coastal processes by coastal defences. However the little remaining habitats, including the chines, should be maintained and this will require remedial management to compensate against the loss of coastal processes. In particular wet flushes provide small niches for particular flora and fauna, and these would be damaged by cliff drainage.

Poole Harbour is an extensive area of international nature conservation importance, with saltmarsh, mudflats and grazing marsh habitats providing a very important area for birds, and due to the lack of development, coastal defence is generally not an issue. There are a number of opportunities for managed retreat around Poole Harbour, though further research is required to ensure its appropriate implementation. This would mitigate the problems of coastal squeeze, outlined above.

Studland and Godlingston Heaths are areas of international importance for their heathland and dune habitats. The dunes are maintained by a supply of sediment from the beach. Coastal defence works on this stretch of coast could be highly damaging to the continued supply of sediments, and therefore should be avoided. This has been recognised by the National Trust who now have a policy of not erecting coastal defences in the area, but are moving their facilities away from the coast.

Marine Environment

The marine environment is of high interest and parts are included in two Sensitive Marine Areas. The area offshore of Hengistbury Head is nationally important for its marine plant and animal communities. Christchurch Harbour is also nationally important for its marine and lagoon plant and animal life. Coastal defences that affect the sediment supply around Hengistbury Head or in Christchurch Harbour could affect the ecology of these areas.

Poole Bay and Harbour are also recognised as a Sensitive Marine Area. The diversity of sediments on the seabed result in a highly varied marine benthic fauna, and Poole Bay has the largest UK population of native oysters. Extensive sand and mudflats support dense populations of marine invertebrates. Poole Harbour supports several rare organisms including sponges, sea mats and sea squirts. Coastal development needs to maintain the supply of freshwater as well as saltwater to stabilise the lagoonal characteristics.

Swanage and Studland Bays are also part of the Sensitive Marine Area and include important algal communities and nationally important eel grass beds (in Studland Bay). An unusual community of calcareous algae, known as maerl, occurs offshore of Handfast Point. The man-made structure of Swanage Pier supports rich assemblages of marine life which are of particular nature conservation importance. The supply of sediment and the sheltered nature of Studland Bay needs to be maintained to ensure the continued stability of the nationally important eel grass beds. The limestone outcrops of the Ballards Ledges and chalk platforms at Handfast Point should be maintained in a natural state to ensure their high marine interests.

Geology/Geomorphology

Geological and geomorphological conservation is a key issue for Poole and Christchurch Bays, with a number of areas that are of national and international importance. These include:

- Hurst Spit;
- Highcliffe to Milford;
- Poole Harbour;
- Old Harry to Durlston.

According to Leafe (1998) ACoastal defence threats to Earth Heritage sites fall into three categories; obscured exposures, sterilisation of soft cliff environments and interfence with sediments dynamics≅. Actual and potential examples of all three are to be found in the exposures around Christchurch and Poole Bays.

Highcliffe to Milford Coastal cliffs consist of soft exposures which are, in places, actively eroding. Coastal defences have had a high impact on the whole area, including the internationally important exposures at Barton on Sea. This is a location where human environment requirements conflict with the conservation of geology. The defences constructed along this coastline are damaging, not only to the geology of the immediate area, but also to the coastal geomorphology further east, particularly Hurst Spit. To restore the natural balance to the area would require, not only the prevention of further defences being constructed, but the removal of existing impediments to littoral drift. Meanwhile, other solutions are being sought, including beach recharge at Hurst Spit and coastal defence measures at Barton on Sea, to ensure the protection of public interests.

The coast between Old Harry and Durlston Head is richly fossiliferous of the Jurassic age and is part of a proposed World Heritage Site. As with the Barton exposures, coastal defence works may conflict with the geological conservation. Damage has already occurred to the cliffs below Durlston flats, and potential further damage to exposures may occur at Swanage. The future management of this area requires the continued exposure of site of high geological interest.

Although it is usually preferable to leave coasts of high geological importance un-protected, a compromise solution can often be found, usually involving >soft= defences. Consultation with English Nature can assist in identifying an acceptable compromise from both a conservation and a coastal defence viewpoint.

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Appendix A

EU Directive 79/409 on the Conservation of Wild Birds: Special Protection Area

SOLENT AND SOUTHAMPTON WATER (HAMPSHIRE, ISLE OF WIGHT)

The proposed Special Protection Area extends from Hurst Spit to Lee-on-the-Solent along the south coast of Hampshire and along the north coast of the Isle of Wight. The site comprises a series of estuaries and adjacent coastal habitats important for breeding gulls and terns and wintering waterfowl. The diversity of habitats within the pSPA includes intertidal flats, shingle beaches, saltmarsh, reedbeds, saline lagoons, grazing marsh and other coastal grassland.

The pSPA includes the following Sites of Special Scientific Interest (SSSI), notified under the Wildlife and Countryside Act, 1981: Lymington River Reedbeds, Sowley Pond, Hythe to Calshot Marshes, Eling and Bury Marshes, Lower Test Valley, Lincegrove and Hacketts Marshes, Titchfield Haven and Yar Estuary. Parts of the following SSSIs are also included within the pSPA: Hurst Castle and Lymington River Estuary, North Solent, Lee-on-the-Solent to Itchen Estuary, Upper Hamble Estuary and Woods, Newtown Harbour, Thorness Bay, Medina Estuary, King's Quay Shore, Ryde Sands, Brading Marshes to St Helen's Ledges, Whitecliff Bay and Bembridge Ledges; areas of woodland, cliffs, buildings, some fields, some waterbodies and upper reaches of rivers have been excluded.

The site qualifies under Article 4.1 of the EU Birds Directive by regularly supporting nationally important breeding populations of the following Annex 1 species (figures are from a comprehensive survey in 1991): 40 pairs of little tern *Sterna albifrons* (1.6% of the British population), 162 pairs of Sandwich tern *S. sandvicensis* (1.2% of British population) and 262 pairs of common tern *S. hirundo* (2.0% of British population). An average of four pairs (3.6% of British population) of roseate tern *Sterna dougalli* bred on the site from 1990 to 1993.

The site qualifies under Article 4.2 of the Directive as a wetland of international importance by regularly supporting over 20,000 waterfowl in winter. The five year winter peak mean for the period 1988/89 to 1992/93 was 35,910 birds, comprising an average of 17,960 waders and 17,950 wildfowl. The site further qualifies under Article 4.2 by regularly supporting internationally important numbers of the following species of wintering migratory waterfowl (figures are five year peak means for the period 1988/89 to 1992/93): 7,208 dark-bellied brent geese *Branta bernicla bernicla* (7.2% of British population and 2.9% of north-west European population), and 704 black-tailed godwit *Limosa limosa* (9.4% of British and 1.0% of east Atlantic flyway population). Notable also are nationally important numbers of wintering shelduck *Tadorna tadorna* (1,339 birds, 1.8% of British population), wigeon *Anas penelope* (4,164 birds, 1.5% British), teal *A. crecca* (3,786 birds, 2.7% of British), shoveler *A. clypeata* (134 birds, 1.3% British), gadwall *A. strepera* (86 birds, 1.1% of British), ringed plover *Charadrius hiaticula* (469 birds, 1.6% of British), grey plover *Pluvialis squatarola* (994 birds, 2.3% British), dunlin *Calidris alpina* (8,599 birds, 1.6% British), curlew *Numenius arquata* (1,366 birds, 1.1% British) and redshank *Tringa totanus* (1,100 birds, 1.0% British). Black-headed gulls *Larus ridibundus* breed on the site in numbers approaching international importance (14,985 pairs in 1991; 10% British, 0.9% international population).

An outstanding assemblage of wintering and passage birds are dependent on wetland habitats within the site, including the following species not mentioned above: red-throated diver *Gavia stellata*, black-throated diver *G. arctica* and great northern diver *G. immer* (all listed on Annex 1 of the Directive), Slavonian grebe *Podiceps auritus* (Annex 1), red-necked grebe *P. grisegena*, black-necked grebe *P. nigricollis*, great crested grebe *P. cristatus* (nationally important numbers), little grebe *Tachybaptus ruficollis* (nationally important numbers), red-breasted merganser *Mergus serrator*, cormorant *Phalacrocorax carbo* (nationally important numbers), little egret *Egretta garzetta* (Annex 1), hen harrier *Circus cyaneus* (Annex 1), marsh harrier *C. aeruginosus* (Annex 1), merlin *Falco columbarius* (Annex 1), peregrine *F. peregrinus* (Annex 1), short-eared owl *Asio flammeus* (Annex 1), greenshank *Tringa nebulosa*, spotted redshank *T. erythropus*, turnstone *Arenaria interpres*, and sanderling *Calidris alba*.

SPA Citation
ICC/JB
March 1995

Ramsar Convention on Wetlands of International Importance
Especially as Waterfowl Habitat

SOLENT AND SOUTHAMPTON WATER (HAMPSHIRE, ISLE OF WIGHT)

The proposed Ramsar site extends from Hurst Spit to Gilkicker Point along the south coast of Hampshire and along the north coast of the Isle of Wight. The site comprises a series of estuaries and adjacent coastal habitats including intertidal flats, saline lagoons, shingle beaches, saltmarsh, reedbeds, damp woodland, and grazing marsh. The diversity of habitats support internationally important numbers of wintering waterfowl, important breeding gull and tern populations and an important assemblage of rare invertebrates and plants.

The proposed Ramsar site includes the following Sites of Special Scientific Interest (SSSI), notified under the Wildlife and Countryside Act, 1981: Lymington River Reedbeds, Sowley Pond, Hythe to Calshot Marshes, Eling & Bury Marshes, Lower Test Valley, Lincegrove and Hackett's Marshes, Titchfield Haven, Gilkicker Lagoon, Yar Estuary and King's Quay Shore. Part of the following SSSIs are also included within the site: Hurst Castle and Lymington River Estuary, North Solent, Lee-on-the-Solent to Itchen Estuary, Upper Hamble Estuary and Woods, Newtown Harbour, Thorness Bay, Medina Estuary, Ryde Sands, Brading Marshes to St Helen's Ledges, Whitecliff Bay and Bembridge Ledges; areas of dry woodland, cliffs, buildings, dry grassland and some waterbodies have been excluded.

The site qualifies under Criterion 1a of the Ramsar Convention as it one of very few major sheltered channels between a substantial island and mainland in European waters exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. The site contains many good and representative examples of wetland habitats characteristic of the biogeographical region including saline lagoons, saltmarshes, estuaries, and reefs.

The site qualifies under Criterion 2a as it supports an important assemblage of rare plants and invertebrates. Thirty nine Red Data Book (RDB) invertebrates have been recorded including the following Endangered species: the micro-moth *Elachista littoricola*, the ground beetle *Drypta dentata*, the rove beetle *Staphylinus ceasareus*, and the water beetles *Gyrinus natator* and *Paracymus aeneus*. The following eight RDB plants have also been recorded on the site: dwarf spike-rush *Eleocharis parvula*, little robin *Geranium purpureum forsteri*, slender birdsfoot trefoil *Lotus angustissimus*, Hampshire purslane *Ludwigia palustris*, yarrow broomrape *Orobanche purpurea*, smooth cord-grass *Spartina alterniflora* and foxtail stonewort *Lamprothamnium papulosum*.

The site qualifies under Criterion 2c as an important staging area for migratory waterfowl. Internationally important numbers of black-tailed godwit *Limosa limosa* are present in the spring and autumn of some years.

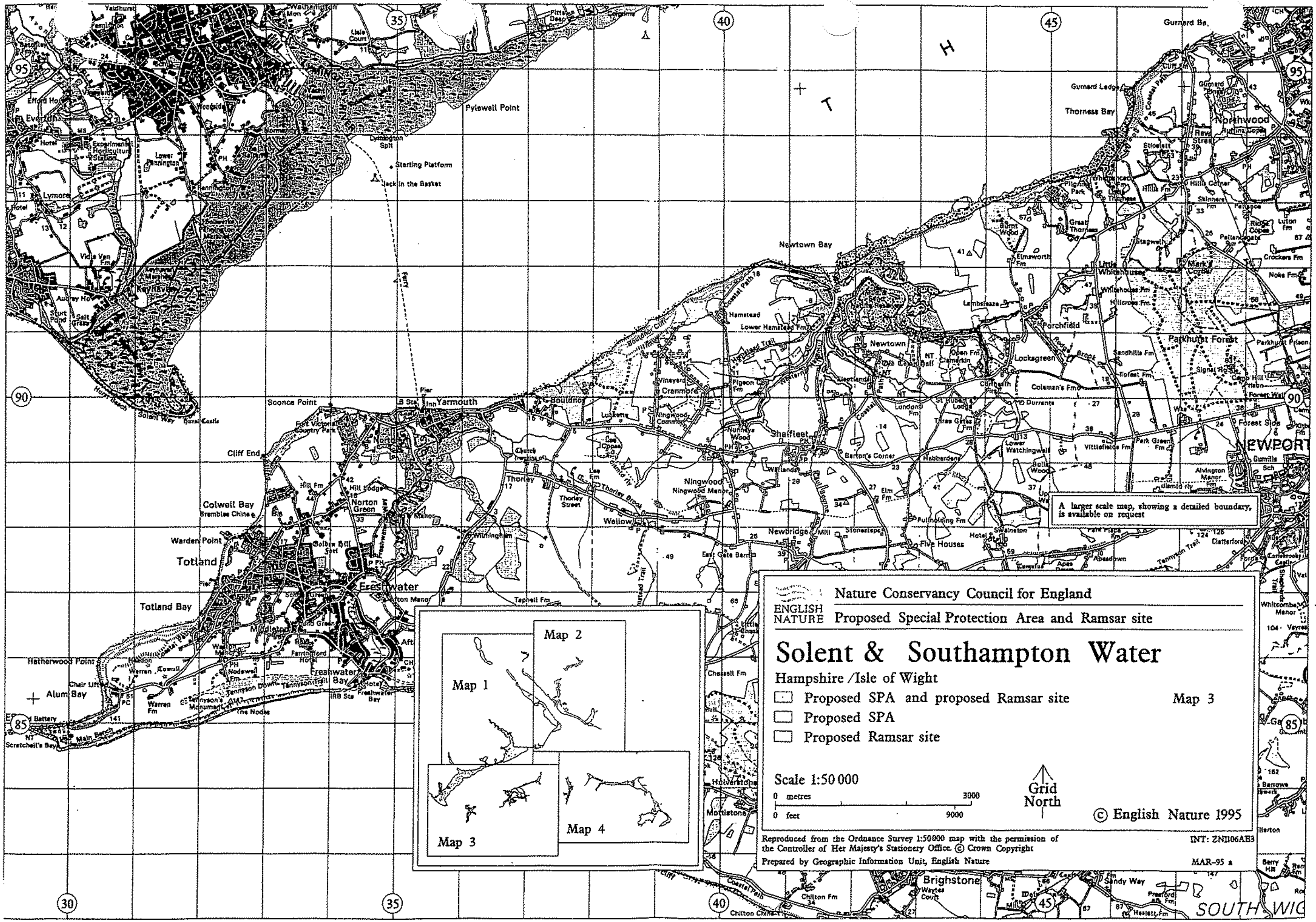
The site qualifies under Criterion 3a of the Convention by regularly supporting over 20,000 waterfowl in winter. The five year peak mean for the period 1988/89 to 1992/93 was 35,910 birds, comprising an average of 17,960 waders and 17,950 wildfowl.

The site qualifies under Criterion 3c by regularly supporting internationally important wintering numbers of the following species of waterfowl (figures are five year peak means for the period 1988/89 to 1992/93): 7,208 dark-bellied brent geese *Branta bernicla bernicla* (7.2% of British population and 2.9% of north-west European population) and 704 black-tailed godwit *Limosa limosa* (9.4% of British and 1.0% of east Atlantic flyway population).

The site also supports nationally important numbers of the following wintering species: shelduck *Tadorna tadorna* (1,334 birds, 1.8% British population), wigeon *Anas penelope* (4,164 birds, 1.5% British), teal *A. crecca* (3,786 birds, 2.7% of British), shoveler *A. clypeata* (134 birds, 1.3% British), gadwall *A. strepera (86 birds 1.1% of British)*, ringed plover *Charadrius hiaticula* (469 birds, 1.6% of British), grey plover *Pluvialis squatarola* (994 birds, 2.3% British), dunlin *Calidris alpina* (8,599 birds, 1.6% British), curlew *Numenius arquata* (1,366 birds, 1.1% British) and redshank *Tringa totanus* (1,100 birds, 1.0% British). Notable also are nationally important numbers of the following breeding species (figures are from a comprehensive survey in 1991): 14,985 pairs of black-headed gulls *Larus ridibundus* (10% British, 0.9% international population), 40 pairs of little tern *Sterna albifrons* (1.6% of the British population), 162 pairs of Sandwich tern *S. sandvicensis* (1.2% of British population) and 262 pairs of common tern *S. hirundo* (2.1% of British population). An average of 4 pairs (3.6% British) of roseate tern *Sterna dougalli* bred on the site between 1990 and 1993.

An outstanding assemblage of wintering and passage birds are dependent on wetland habitats within the site, including the following species not mentioned above: red-throated diver *Gavia stellata*, black-throated diver *G. arctica* and great northern diver *G. immer*, Slavonian grebe *Podiceps auritus*, red-necked grebe *P. grisegena*, black-necked grebe *P. nigricollis*, great crested grebe *P. cristatus* (nationally important numbers), little grebe *Tachybaptus ruficollis (nationally important numbers)*, red-breasted merganser *Mergus serrator*, cormorant *Phalacrocorax carbo* (nationally important numbers), little egret *Egretta garzetta*, hen harrier *Circus cyaneus*, marsh harrier *C. aeruginosus*, merlin *Falco columbarius*, peregrine *F. peregrinus*, short-eared owl *Asio flammeus*, greenshank *Tringa nebulosa*, spotted redshank *T. erythropus*, turnstone *Arenaria interpres*, and sanderling *Calidris alba.*

Ramsar Citation
ICC/JB
March 1995



ENGLISH NATURE
Nature Conservancy Council for England
Proposed Special Protection Area and Ramsar site
Solent & Southampton Water
Hampshire /Isle of Wight
Proposed SPA and proposed Ramsar site
Proposed SPA
Proposed Ramsar site
Map 3
Scale 1:50 000
0 metres 3000
0 feet 9000
Grid North
© English Nature 1995
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Prepared by Geographic Information Unit, English Nature
INT: ZNI106AB3
MAR-95 a
A larger scale map, showing a detailed boundary, is available on request
Map 1
Map 2
Map 3
Map 4
Pylewell Point
Newtown Bay
Yarmouth
Totland
Totland Bay
Colwell Bay
Freshwater
Newport
Brightstone
Northwood
Thorness Bay
Gurnard Ledge
Parkhurst Forest
Newtown
Shalfleet
Alum Bay
Hatherwood Point
Sconce Point
Cliff End
Warden Point

EC Directive 79/409 on the Conservation of Wild Birds:
Special Protection Area

AVON VALLEY - BICKTON TO CHRISTCHURCH (HAMPSHIRE & DORSET)

The proposed Avon Valley - Bickton to Christchurch Special Protection Area encompasses the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. The site follows the boundaries of the Avon Valley SSSI, notified in 1993 (an amalgamation of three previously notified SSSIs, with extensions and deletions), except for the exclusion of several small blocks to the east of the river and a small area to the west of the river notified as SSSI on botanical grounds.

The Avon Valley shows a greater range of habitats and a more diverse flora and fauna than any other chalk river in Britain, and includes one of the largest expanses of unimproved floodplain grassland in Britain. The proposed Special Protection Area also includes a series of gravel pits known as Blashford Lakes.

The site supports a nationally important assemblage of breeding wetland birds and is especially important for breeding waders associated with lowland wet grassland. The floodplain grassland and the gravel pits provide feeding and roosting areas for nationally or internationally important populations of five species of wintering wildfowl.

The site qualifies under Article 4.1 of the EC Birds Directive by regularly supporting nationally important numbers of an Annex 1 species. In the five year period 1988/89 to 1992/93 an average of 156 Bewick's swans *Cygnus columbianus bewickii* were recorded on the site in winter, representing 2.2% of the British population.

The site qualifies under Article 4.2 of the Directive by regularly supporting an internationally important wintering population of gadwall *Anas strepera*, a migratory species. The five year peak mean for the period 1988/89 to 1992/93 was 418, representing 3.5% of the north-west European population and 8.4% of the British population. Notable also are nationally important wintering populations of the following migratory species: 170 European white-fronted geese *Anser albifrons albifrons*, representing 2.8% of the British population; 507 pochard *Aythya ferina*, representing 1% of the British population; 1,465 coot *Fulica atra*, representing 1.5% of the British population.

The site also supports a nationally important assemblage of breeding birds, associated with lowland open water and it's margins. Species breeding regularly include great crested grebe *Podiceps cristatus*, grey heron *Ardea cineria*, mute swan *Cygnus olor*, tufted duck *Aythya fuligula*, water rail *Rallus aquaticus*, little ringed plover *Charadrius dubius*, common tern *Sterna hirundo*, kingfisher *Alcedo atthis* and Cetti's warbler *Cettia cettia*. The site includes one of the eight most important areas in Britain for breeding waders of lowland wet grassland, supporting high numbers of lapwing *Vanellus vanellus*, snipe *Gallinago gallinago* and redshank *Tringa totanus*.

SPA Citation
ICC
December 1993

Ramsar Convention on Wetlands of International Importance
Especially as Waterfowl Habitat

AVON VALLEY - BICKTON TO CHRISTCHURCH (HAMPSHIRE & DORSET)

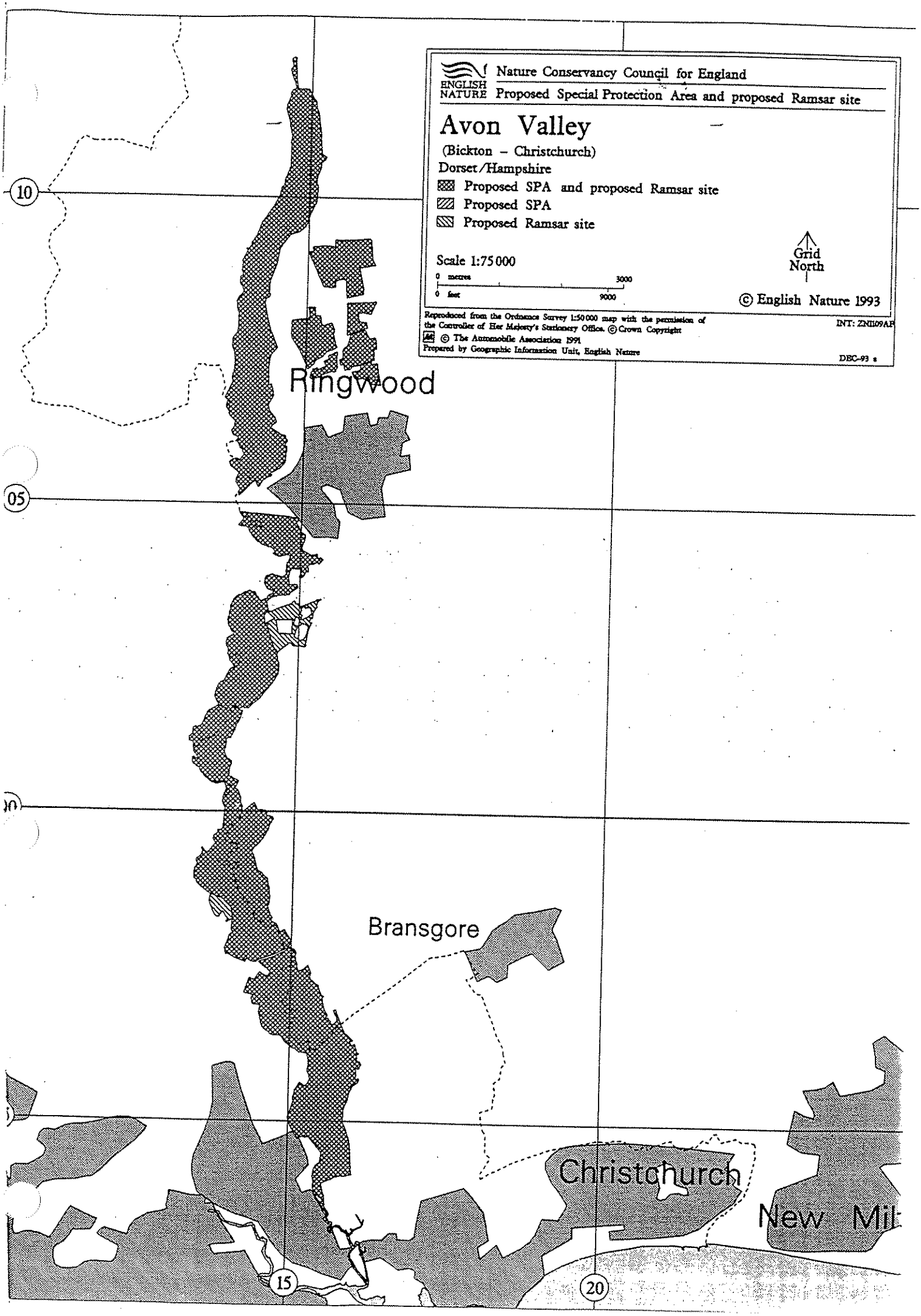
The proposed Avon Valley - Bickton to Christchurch Ramsar site encompasses the lower reaches of the River Avon and its floodplain between Bickton and Christchurch. The site follows the boundaries of the Avon Valley SSSI, notified in 1993 (an amalgamation of three previously notified SSSIs, with extensions and deletions), except for two small blocks to the east of the river notified on botanical grounds which are excluded.

The site qualifies under Criterion 1a of the Ramsar Convention as it shows a greater range of habitats than any other chalk river in Britain, including fens and mires, lowland wet grassland and small areas of woodland dominated by pedunculate oak *Quercus robur*, birch *Betula pendula*, alder *Alnus glutinosa* and willow *Salix spp.* The site includes one of the largest expanses of unimproved floodplain grassland in Britain, including extensive areas managed traditionally as hay meadow. The site also includes a series of gravel pits known as Blashford Lakes. The diversity of habitats supports a notable assemblage of breeding wetland birds including great crested grebe *Podiceps cristatus*, grey heron *Ardea cineria*, mute swan *Cygnus olor*, tufted duck *Aythya fuligula*, water rail *Rallus aquaticus*, little ringed plover *Charadrius dubius*, common tern *Sterna hirundo*, kingfisher *Alcedo atthis*, and Cetti's warbler *Cettia cettia*. The site includes one of the eight most important areas for breeding waders of lowland wet grassland in Britain supporting high numbers of lapwing *Vanellus vanellus*, snipe *Gallinago gallinago* and redshank *Tringa totanus*. The site also provides roosting and feeding areas for an important assemblage of wintering wildfowl.

The site qualifies under Criterion 2a of the Ramsar Convention by supporting a diverse assemblage of wetland plants and animals, including several nationally rare species. The site supports populations of two wetland Red Data Book plants, brown galingale *Cyperus fuscus* and small fleabane *Pulicaria vulgaris*, and the following wetland Red Data Book invertebrate species: The rare, scarce chaser *Libellula fulva*, a vulnerable water snail *Valvata macrostoma*, a rare snail *Vertigo moulinsiana* and a rare pea mussel *Pisidium tenuilineatum.*

The site qualifies under Criterion 3c by supporting internationally important numbers of wintering gadwall *Anas strepera*. The five year peak mean for the period 1988/89 to 1992/93 was 418, representing 3.5% of the north-west European and 8.4% of the British population. Notable also are nationally important numbers of the following species of wintering wildfowl: 156 Bewick's swans *Cygnus columbianus bewickii* (2.2% of the British population); 170 European white-fronted geese *Anser albifrons albifrons* (2.8% of British population); 507 pochard *Aythya ferina* (1% of British population), and 1,465 coot *Fulica atra* (1.5% of British population).

Ramsar Citation
ICC
December 1993


Nature Conservancy Council for England
ENGLISH NATURE
Proposed Special Protection Area and proposed Ramsar site
Avon Valley
(Bickton – Christchurch)
Dorset/Hampshire
Proposed SPA and proposed Ramsar site
Proposed SPA
Proposed Ramsar site
Scale 1:75000
0 metres 3000
0 feet 9000
Grid North
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INT: 2NII09AP
DEC-93
Ringwood
Bransgore
Christchurch
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EC Directive 79/409 on the Conservation of Wild Birds : Special Protection Area

Dorset Heathlands (Dorset, Hampshire)

The Dorset heathlands have developed on mainly acidic, sand, gravel and clay soils derived from deposits of the Tertiary era in an area of south east Dorset forming part of the Hampshire Basin. Centred on the large estuary of Poole Harbour, the heaths extend to the Avon Valley in the east, are bordered by the Wessex Downs to the north and west, and by the Purbeck chalk ridge to the south. Both Poole Harbour and the Avon Valley are potential Special Protection Areas. The close proximity of these areas to the Dorset heathlands significantly enhances the biodiversity and ecological variation of this part of Britain for wild birds.

The Dorset Heathlands Special Protection Area comprises the fragmented remains of a once continuous tract of heath which covered much of south east Dorset. An estimated 75% of the heath has been lost in the past 100 years. Since most of this loss has been sustained relatively recently, the remnants still show a high degree of ecological continuity and cohesion, and clear ecological trends can be discerned.

The vegetation of this area comprises extensive areas of dry heath, wet heath and valley mire. These habitats are representative of the Atlantic climate lowland heaths of Britain and north west Europe and are highly important in this context for their range, extent and composition. Within this broad type, heathland in Dorset occupies a position in character midway between the highly oceanic heaths of the far south west of England and the more continental examples of south east and eastern England.

The Dorset Heathlands qualify under Article 4.1 of the EC Birds Directive by supporting nationally important breeding populations of three species listed on Annex 1 of the Directive. Surveys and records indicate that, in summer, between 1988 and 1994 the site supported at lease 436 pairs of nightjar *Caprimulgus europeaus* (representing approx 13% of the British breeding population), 56 pairs of woodlark *Lullula arborea* (approx 16% of the British breeding population), and 606 pairs of Dartford warbler *Sylvia undata* (approx 38% of the British breeding population). The breeding populations of these species in Britain change from year to year, and can fluctuate considerably in the case of Dartford warbler which is particularly vulnerable to cold winters. All of these species are restricted in Britain and Europe owing to habitat loss and degradation. The site thus has an important role in maintaining the breeding range of these species in Britain.

The Dorset Heathlands also qualify under Article 4.1 by supporting, in winter, during the period 1991 to 1994, up to 20 hen harrier *Circus cyaneus* and 15 merlin *Falco columbaris* (approx 2% and 1% respectively of the British wintering populations), both Annex 1 species.

Potential SPA Citation

Component SSSIs : see page 2 for details

August 1996

Ramsar Convention On Wetlands Of International Importance, Especially As Waterfowl Habitat

Dorset Heathlands (Dorset, Hampshire)

The Dorset Heathlands have developed on mainly acid, sandy soils derived from deposits of the Tertiary era in an area of south east Dorset forming part of the Hampshire Basin. Centred on the large estuary of Poole Harbour, the heaths extend to the Avon Valley in the east and are bordered by the Wessex Downs to the north and west and by the Purbeck chalk ridge to the south. Both Poole Harbour and the Avon Valley are potential Ramsar sites. The close proximity of these two wetlands with those of the Dorset Heathlands significantly enhances the biodiversity and ecological variation of this part of Britain.

Past losses of the Dorset Heathlands (an estimated 75% over the past century) have left the remaining area in a highly fragmented state. Most of the remaining heathland has now been notified as Sites of Special Scientific Interest. The Dorset Heathlands Ramsar Site comprises numerous of these heathland fragments. Despite this fragmented state, the relatively recent history of fragmentation means that there is a significant degree of ecological continuity and cohesion between the remaining heathlands and clear ecological trends and patterns can be discerned between them.

The vegetation of the Ramsar Site comprises extensive areas of valley mire and adjacent wet heathland. The water feeding these wetlands is derived from a variety of sources including base poor waters, emanating from the acid soils of the Tertiary deposits and base enriched waters from the chalk downlands that border the Ramsar Site. This range of base status, combined with variations in the height and fluctuation in ground water levels, has produced an extraordinary variety of mire and associated fen vegetation types, including some unique transitions between wetland communities.

The Dorset Heathlands qualify under criterion 1a of the Ramsar Convention in supporting particularly good examples of wet heathland habitats which are characteristic of the heathlands of the Atlantic biogeographical region of western Europe.

Wet heaths with cross-leaved heath *Erica tetralix* and bog mosses *Sphagnum* spp are the most ubiquitous of these habitats covered by the Ramsar Site. In many continental parts of the region wet heaths occur patchily within more extensive dry heath, but in Britain they occur widely in both lowland and upland situations. The Dorset Heathlands contain one of the best developed and most significant tracts of the habitat in the lowlands.

Typically the Dorset wet heaths occupy areas of impeded drainage on the lower valley sides and areas of less steeply sloping ground over more impermeable soils. In character they are transitional between the more oceanic heathlands of the south-west and the semi-continental heathlands of eastern England, and differ from the typical wet heaths of upland Britain. The vegetation community is mostly of the cross-leaved heath *Erica tetralix* - bog moss *Sphagnum compactum* type, locally characterised by sundews *Drosera* spp and beak-sedges *Rhynchospora* spp.

In almost all instances the wet heath community gives way to examples of other wetland vegetation types in the valley bottoms. Typically these are base poor, acid mire communities which include areas dominated by purple moor-grass *Molinia caerulea* heath, and where there is a constantly high water table, in valley bottoms and spring lines on valley sides, the more floristically rich white beak-sedge *Rhynchospora alba* habitat. The *Rhynchosporion* contains three main vegetation communities. The bog asphodel *Narthecium ossifragum* - bog moss *Sphagnum papillosum* community often dominates, with extensive carpets of bog mosses *Sphagnum* spp. These are typically punctuated by bog pool communities, characterised by the presence of bog moss *Sphagnum auriculatum*. Where there is an appreciable lateral water flow, soakaways form within the mire and these open water areas support the marsh St John's wort *Hypericum elodes* - bog pondweed *Potamogeton polygonifolius* community. In lowland Britain this classic suite of mire communities is very rare and restricted to the remaining heaths.

The occurrence of these communities and the transitions with other wet heath types are well represented on the Dorset Heathlands and the adjacent New Forest Ramsar site.

The Dorset Heathlands meet criterion 1d of the Ramsar Convention in also containing examples of wet heath characterised by the presence of Dorset heath *Erica ciliaris* and cross-leaved heath *E.tetralix*. This type of wet heath is rare and unusual within the heathlands of the Atlantic biogeographical region of western Europe.

Dorset heath *Erica ciliaris* is primarily a plant of the western fringe of Europe. In Britain, heathland with this species has a very restricted occurrence, being confined to a few locations in the south-west with warm oceanic conditions. The Dorset Heathlands are its principle location. South of Poole Harbour, Dorset heath *Erica ciliaris* occurs extensively and often in abundance, growing on moist soils ranging from valley mire through wet and humid heath situations. There are also outlying stands in parts of the Ramsar site to the north and west.

The wetland interest of the Ramsar site is enhanced by the presence of several other vegetation types associated with the heathlands that have a more localised occurrence in the site. Principal among these are rich fens. They comprise a variety of vegetation communities that have developed in response to the effects of base enriched water, particularly from the aquifer of the Purbeck chalk ridge.

Two distinct vegetation communities occur that are characterised by the presence of black bog-rush *Schoenus nigricans*. The Dorset Heathlands contain some of the largest areas of these two communities in Britain. To the north of the Purbeck chalk ridge, spring fed water flushes the base poor heathland valley mires. This base enrichment gives rise to the development of the black bog rush *Schoenus nigricans* - bog asphodel *Narthecium ossifragum* community. Well developed examples occur on Hartland Moor and Stoborough and Creech Heaths. Where the influence of the base poor valley mires is reduced, a more strongly base enriched fen vegetation community develops, defined as the black bog-rush *Schoenus nigricans* - blunt-flowered rush *Juncus subnodulosus* mire community. This is best developed around the edges of Poole Harbour where it is associated with the transition from bog asphodel *Narthecium ossifragum* - bog moss *Sphagnum papillosum* valley mire, thorough areas of common reed *Phragmites australis* tall fen to the coastal saltmarshes and mudflats of Poole Harbour. These transitions from heathland to coastal wetland communities are very rare in Britain.

A second group of calcium influenced fens and mires is found in the south of the Ramsar Site below the Purbeck chalk ridge. Here the influence of calcareous water, derived from the chalk, creates an unusual wetland transition from base enriched to base poor communities. Nearest to the chalk, and associated with an outcrop of London Clay, are a series of species rich calcareous grasslands. These conform to the purple moor-grass *Molinia caerulea* - meadow thistle *Cirsium dissectum* fen meadow community. Further to the north, the fen meadow grassland merges into the heathlands. This transition is best displayed on the southern side of Povington and Grange Heaths. Nationally this fen meadow community has a scattered distribution within the lowlands of southern Britain.

The River Frome flows eastward into the Hampshire Basin from the Wessex Downs to Poole Harbour. This gives rise to the development of a transition in wetland plant communities from the base poor heathland mires to areas of base enriched flood plain fen and fen meadow. Two communities are associated with this transition. Both of these are characterised by the presence of bottle sedge *Carex rostrata*. Within the grazed grasslands of the flood plain the bottle sedge *Carex rostrata* - moss *Calliergon cuspidatum* mire has developed whilst in ditches and areas with a permanently high water table areas of bottle sedge *Carex rostrata* - marsh cinquefoil *Potentilla palustris* swamp occur. Examples of these communities are found at Warmwell Heath, Winfrith Heath and East Holme Meadows.

The Ramsar Site also contains one area of the rare and internationally important saw sedge *Cladium mariscus* fen. This is associated with the transition from base poor valley mire to alkaline tall fen, dominated by common reed *Phragmites australis*, that is found on the southern side of Poole Harbour.

Saw sedge *Cladium mariscus* vegetation is most widespread in the Mediterranean region. The fen beds in the Atlantic region have a distinct relic distribution and the habitat is in grave decline throughout its range.

The Dorset Heathlands meet criterion 2a of the Ramsar Convention in supporting appreciable assemblages of rare plants and animals. In addition to the nationally rare Dorset heath *Erica ciliaris,* the Dorset Heathlands support populations of 12 nationally scarce wetland plant species; yellow centaury *Cicendia filiformis*, marsh gentian *Gentiana pneumonanthe* bog orchid *Hammarbya paludosa*, coral necklace *Illecebrum verticillatum*, brown beak-sedge *Rhynchospora fusca*, elongated sedge *Carex elongata*, bog hair-grass *Deschampsia setacea*, six-stamened water-wort *Elatine hexandra*, spring quillwort *Isoetes echinosporum*, pillwort *Pilularia golobulifera*, marsh clubmoss *Lycopodiella inundata* and the bog moss *Sphagnum pulchrum*. The Dorset Heathlands contain the most extensive populations of *Rhynchospora fusca* and *Gentiana pneumonanthe* in Britain. *Sphagnum pulchrum* is also a widespread and characteristic feature of the Dorset valley mires. This species is apparently absent from the closely related valley mires of the New Forest, being confined largely to the uplands of Britain. Its abundance within the Dorset Heathlands is a distinctive and important feature of this wetland system.

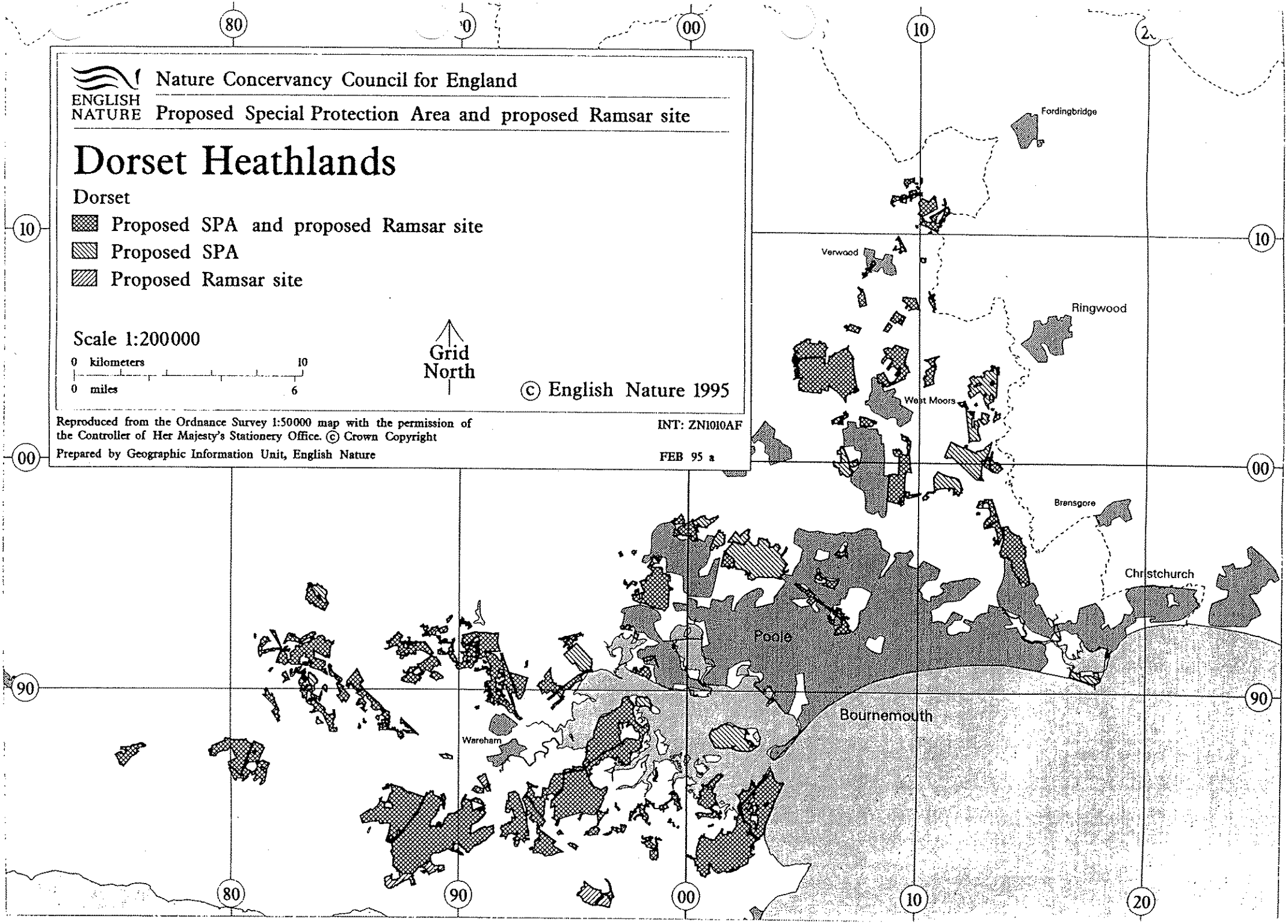
The invertebrate fauna of the valley mires and associated wetlands is particularly rich, reflecting the diversity and extent of the wetland habitats. At least 27 wetland species listed in the British Red Data Book have been recorded. This includes the following listed as endangered: the beetles *Bidessus unistriatus* and *Longitarsus nigerrimus*, the horsefly *Chrysops sepulchralis* and the ant *Formica transkaucasica*; the following listed as vulnerable: the beetles *Cryptocephalus biguttatus*, *Donacia bicolora*, *Graptodytes flavipes* and *Stenus kiesenwetteri*, the flies *Parhelophilus consimilis* and *Sphaerophoria loewi*, the moths *Phragmataecia castaneae* and *Stenoptilia graphodactyla* and the large marsh grasshopper *Stethophyma grossum*; and the following listed as rare: the moths *Buckleria paludum*, *Crambus silvella*, *Cyclophora pendularia* and *Heliothis maritima*, the beetles *Graphoderus cinereus* and *Hydroporus cantabricus*, the bugs *Nabis brevis* and *Pachybrachius luridus*, the flies *Plecocera tricincta* and *Tipula marginata,* the scarce chaser damselfly *Libellula fulva* and southern damselfly *Coenagrion mercuriale* and the spider *Zora armillata*.

Some of these species such as the horsefly *Chrysops sepulchralis* are virtually confined to the Dorset Heathlands in Britain. Others, such as the southern damselfly *Coenagrion mercuriale* are internationally rare and have one of their major British strongholds on the Dorset Heathlands, whilst the large marsh grasshopper *Stethophyma grossum* is virtually confined to the valley mires of the New Forest and Dorset in Britain, where it can be locally abundant.

The Dorset Heathlands also meet criterion 2b of the Ramsar Convention because of the species richness and high ecological diversity of the mire communities and their associated transition zones. In addition the invertebrate and plant fauna and flora contains important concentrations of rare and scarce species. This complex of semi-natural habitats and their associated fauna and flora is essential to the maintenance of the biodiversity of south east Dorset, which is one of the most biologically rich areas of Britain.

Potential Ramsar Site Citation (Montreaux 1990 Criteria)

Component SSSIs : see page 4 for details
August 1996


Nature Concervancy Council for England
ENGLISH NATURE
Proposed Special Protection Area and proposed Ramsar site
Dorset Heathlands
Dorset
Proposed SPA and proposed Ramsar site
Proposed SPA
Proposed Ramsar site
Scale 1:200000
0 kilometers 10
0 miles 6
Grid North
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Prepared by Geographic Information Unit, English Nature
INT: ZN1010AF
FEB 95 a
Fordingbridge
Verwood
Ringwood
West Moors
Brensgore
Christchurch
Poole
Bournemouth
Wareham
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EC Directive 79/409 on the Conservation of Wild Birds:
Special Protection Area

Poole Harbour, Dorset.

Poole Harbour proposed Special Protection Area (pSPA) is a large natural harbour on the south coast of England comprising extensive tidal mudflats and saltmarshes together with associated reedbeds, freshwater marshes and wet grasslands. The range of habitats present supports an important assemblage of breeding, passage and wintering birds.

The pSPA covers the shores and intertidal areas of the Poole Harbour SSSI as well as wetland habitats within the adjoining Arne, Morden Bog and Holton Heath SSSIs. The site also includes flood plain grasslands of the rivers Frome and Piddle within the Wareham Meadows and The Moors SSSIs, and the freshwater mere 'Littlesea' in the Studland and Godlingston Heaths SSSI. The tidal boundary of the site is the Mean Low Water mark (MLW) whilst the inland boundaries are the limits of the important wetland and bird habitats, and so vary from Mean High Water mark in some places to ditches or hedgelines in others. Sections of the site's wetland margins adjoin the Dorset Heathlands pSPA.

Poole Harbour qualifies under Article 4.1 of the EC Birds Directive by regularly supporting nationally important numbers of two Annex 1 species: peak numbers of wintering avocet *Recurvirostra avosetta* recorded over the five winter period ending 1992/93 averaged 160, representing 32% of the British wintering population, and over the four summers from 1990 to 1993 an average of 4 pairs of Mediterranean gull *Larus melanocephalus* nested on the site, representing 25% of the British total. Further Annex 1 species regularly use the site, some in notable numbers. These include wintering black-throated diver *Gavia arctica*, red-throated diver *G.stellata*, great northern diver *G.immer*, Slavonian grebe *Podiceps auritus* (5 year peak mean of 8 birds, representing 2.1% of British total), Bewick's swan *Cygnus columbianus bewickii* (part of a nationally important wintering population), marsh harrier *Circus aeruginosus*, hen harrier *C. cyaneus*, ruff *Philomachus pugnax*, short-eared owl *Asio flammeus* and kingfisher *Alcedo atthis*. Peregrines *Falco peregrinus* hunt over the site throughout the year. Annex 1 species breeding on the site include common tern *Sterna hirundo* (numbers at times reach 130 pairs; - 1% of British breeding population) and Sandwich tern *S.sandvicensis*.

Poole Harbour qualifies under Article 4.2 of the EC Birds Directive as a wetland of international importance. The site regularly supports over 20,000 waterfowl, with peak totals over the five years up to 1992/93 averaging 22,521 birds, comprising 8,406 wildfowl and 14,115 waders.

Poole Harbour also qualifies under Article 4.2 by regulary supporting internationally important numbers of two migratory waterfowl species. Over the five winters from 1988/89 to 1992/93, peak numbers of wintering black-tailed godwit *Limosa limosa (islandica* race) averaged 1,298 birds, representing 27% of the British total, and 1.9% of the east Atlantic flyway population. Over the same period, peak numbers of wintering shelduck *Tadorna tadorna* averaged 2,580 birds, representing 3.4% of the British total, and 1% of the north-west European population.

The site further supports nationally important wintering numbers of other migratory species (mean peak numbers for the five winters ending in 1992/93 and the percentages of the British totals that these represent are given in

brackets): black-necked grebe *Podiceps nigricollis* (10; 10%); dark-bellied brent goose *Branta bernicla bernicla* (1,188; 1.3%); pochard *Aythya ferina* (1,021; 2%); goldeneye *Bucephala clangula* (174; 1.2%); red-breasted merganser *Mergus serrator* (359; 3.5%); grey plover *Pluvialis squatarola* (273; 1.3%); dunlin *Calidris alpina* (4,711; 1.1%); curlew *Numenius arquata* (1,615; 1.8%); spotted redshank *Tringa erythropus* (4; 2%); redshank *Tringa totanus* (1,376; 1.8%) and greenshank *Tringa nebularia* (10; 2.5%). In addition, the five year peak mean of 179 whimbrel *Numenius phaeops* occuring in spring represents 3.6% of the British passage total, and nationally important numbers of aquatic warbler *Acrocephalus paludicola* (a globally threatened species) have been recorded in late summer.

Poole Harbour also supports nationally important numbers of resident bird species including wintering cormorant *Phalacrocorax carbo* and breeding black-headed gull *Larus ridibundus*, Cetti's warbler *Cettia cettia* and bearded tit *Panurus biarmicus*.

Special Protection Area Citation (EC Birds Directive)
JCD January 1994

The Ramsar Convention on Wetlands of International Importance, especially as waterfowl habitat.

Poole Harbour, Dorset.

The Poole Harbour proposed Ramsar site is a large natural harbour on the south coast of England comprising extensive tidal mudflats, lagoons and saltmarshes, with associated reedbeds, freshwater marshes and wet grasslands. Its margins include fen meadows, wet pasture with ditches and transitions to peatland mires. The range of habitats present supports an important assemblage of breeding, passage and wintering birds.

The core of the site comprises the Poole Harbour SSSI and the tidal boundary is set at the Mean Low Water mark. The site encompasses parts of the adjoining Arne, Holton Heath, Morden Bog, The Moors and Wareham Meadows SSSIs. The proposed designation also includes the freshwater mere Littlesea in the Studland and Godlingston Heaths SSSI.

Poole Harbour qualifies as a wetland of international importance under Criterion 1b of the Ramsar Convention as it is a particularly good and representative example of a wetland type which is common to more than one biogeographical region: it is considered the best and largest example of the 'natural harbour' type of coastal lagoon/estuary in Britain. It also qualifies under Criterion 1d as an example of this specific type of wetland which, because of the tidal conditions of the north-east Atlantic, is rare in our biogeographic region. The Harbour's 'coastal lagoon' charater is most strongly expressed in the small embayments of its northern shore where specialist lagoonal species have been recorded.

The site qualifies under Criterion 2a by supporting the only known British populations of two nationally rare (Red Data Book; 'RDB') species of plant and one of invertebrate. The plants are vipers grass *Scorzonera humilis* and a hybrid *(P.x sudermanicus)* of sharp-leaved pondweed *Potamogeton acutifolius*, which also occurs in the site and is itself nationally rare (RDB). The invertebrate is the shore bug *Saldula setulosa*, which has only been found in this country on certain sandy shores in Poole Harbour. The site also supports other nationally rare (RDB) fauna and flora: the bug *Piesma quadratum* and crane fly *Limonia bezzii* occur on saltmarsh and the alga *Nitellopsis obtusa* in Littlesea.

The site also qualifies under Criterion 2b; The floral and faunal communities of the Harbour's various habitats are highly representative and as well as rarities they support a number of nationally scarce plant species: bulbous foxtail *Alopercurus bulbosus,* narrow leaved water-dropwort *Oenanthe silaifolia*, mousetail *Myosurus minimus*, shrubby sea-blite *Suaeda vera*, narrow leaved eelgrass *Zostera angustifolia* and dwarf eelgrass *Z.noltii.* In Littlesea spring quillwort *Isoetes echinospora* and six-stemmed waterwort *Elatine hexandra* occur. The common cord-grass *Spartina anglica* saltmarshes are thought to be some of the oldest and most extensive in the country, and amongst the many wetland vegetation communities present those comprising the localised and declining greater fen-sedge *Cladium mariscus* are considered to be of particular importance. The Harbour's margins present transitions through wetland communities from saltmarsh to woodland, grassland and heathland, and those which occur through to peatland mires are of exceptional conservation importance as few such examples remain in Britain.

Poole Harbour also qualifies under Criterion 2c as it is an important staging area for migratory birds. The site supports nationally important numbers of

whimbrel *Numenius phaeops* in spring (the five year peak mean up to 1992 of 179 birds represents 3.6% of the British passage total), and nationally important numbers of aquatic warbler *Acrocephalus paludicola* (a globally threatened species) occur in late summer.

Poole Harbour qualifies under Criterion 3a as a wetland of international importance by regularly supporting more than 20,000 wintering waterfowl; peak totals over the five winters up to 1992/93 averaged 22,521 birds, comprising 8,406 wildfowl and 14,115 waders.

The site also qualifies under Criterion 3c by supporting internationally important numbers of two species of migratory waterfowl. Peak numbers of wintering black-tailed godwit *Limosa limosa* (*islandica* race) over the five years up to 1992/93 averaged 1,298 birds, representing 1.9% of the east Atlantic flyway population, and over the same period, peak numbers of wintering shelduck *Tadorna tadorna* averaged 2,580 birds, which exceeds 1% of the north-west European population.

The site's assemblage of migratory waterfowl also includes nationally important numbers of the following wintering species: (mean peak numbers for the five winters ending in 1992/93 and the percentages of the totals in Britain that these represent are given in brackets): Slavonian grebe *Podiceps auritus* (8; 2.1%); black-necked grebe *Podiceps nigricollis* (10; 10%); dark-bellied brent goose *Branta bernicla bernicla* (1,188; 1.3%); pochard *Aythya ferina* (1,021; 2%); goldeneye *Bucephala clangula* (174; 1.2%); red-breasted merganser *Mergus serrator* (359; 3.5%); avocet *Recurvirostra avosetta* (160; 32%); grey plover *Pluvialis squatarola* (273; 1.3%); dunlin *Calidris alpina* (4,711; 1.1%); curlew *Numenius arquata* (1,615; 1.8%); spotted redshank *Tringa erythropus* (4; 2%); redshank *Tringa totanus* (1,376; 1.8%), and greenshank *Tringa nebularia* (10; 2.5%). The site also supports 25% of the British breeding population of the rare Mediterranean gull *Larus melanocephalus* (average of 4 pairs over 4 years to 1993), together with a colony of common tern *Sterna hirundo* which at times reaches 1% (130 pairs) of the British total. In addition the site supports nationally important resident populations of Cetti's warbler *Cettia cettia* and bearded tit *Panurus biarmicus*, both scarce breeding species in Britain, and nationally important numbers of wintering cormorant *Phalacrocorax carbo*.

Ramsar Citation (Montreaux 1990 Criteria)
JCD January 1994


POOLE
POOLE HARBOUR
Wareham Channel
Main Channel
VEHICLE FERRY
FROM POOLE TO
Cherbourg 6 hours
(summer only)
Guernsey 5-13 hours
Jersey 9-12 hours
Brownsea Island
Middlebere Heath
Studland Bay
SWANAGE
DURLSTON HEAD
Corfe Castle
Harman's Cross
Nature Conservancy Council for England
ENGLISH NATURE
Proposed Special Protection Area and Ramsar site
Poole Harbour
Dorset
Proposed SPA and proposed Ramsar site
Proposed SPA
Proposed Ramsar site
Scale 1:50 000
0 metres 3000
0 feet 9000
Grid North
A larger scale map, showing a detailed boundary, is available on request
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Prepared by Geographic Information Unit, English Nature
INT: ZNJ01IAE
JUN-95 a

Reasons for recommendation as a possible Special Area of Conservation

Area Name: Solent and Isle of Wight Maritime

County/District: Hampshire
Isle of Wight
West Sussex

Component SSSI: For details see page 3

This area is being considered as a possible Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been proposed as a possible SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area is considered to have a high diversity of habitats/species of European importance.

European interest(s):

1. Vegetated sea cliffs.*

- for which this is considered to be one of the best areas in the United Kingdom.

*Vegetated sea cliffs of the Atlantic and Baltic coasts: These are sea cliffs that are at least partially covered by vegetation, the nature of which varies considerably depending on cliff geology, erosion, geographical location and the degree of exposure to wind and salt spray. Plant species may include rock sea spurrey *Spergularia rupicola*, thrift *Armeria maritima*, in the south and west rock samphire *Crithmum maritimum*, or Scots lovage *Ligusticum scoticum* in the north. Many cliff sites support a number of rare or uncommon plant species. In some exposed areas the vegetation on the cliff tops grades into maritime heathland, grass and scrub which form an integral part of the cliff habitat.

2. Cordgrass swards.*

- for which this area is one of only 2 outstanding localities in the United Kingdom;
- for which the area contains more than 40% of the United Kingdom resource.

**Spartina* swards (Spartinion): Cordgrass *Spartina* spp. grows in saltmarshes around the coast and can occur at the lower reaches of saltmarshes or higher up the marsh. The native species, small cordgrass *S. maritima* and the introduced species, smooth cordgrass *S. alterniflora*, are very rare in the UK and only saltmarshes containing these species are proposed for conservation. Common

cordgrass *S. anglica* is widespread and is not considered to be of great conservation importance in the UK.

3. Atlantic salt meadows.†

- for which this is considered to be one of the best areas in the United Kingdom.

†Atlantic salt meadows (Glauco-Puccinellietalia): This habitat encompasses saltmarsh vegetation containing perennial flowering plants that are regularly inundated by the sea. The species found in these saltmarshes vary according to duration and frequency of flooding with seawater, geographical location and grazing intensity, but may include salt-tolerant species such as common saltmarsh grass *Puccinellia maritima*, sea aster *Aster tripolium* and sea arrowgrass *Triglochin maritima*.

4. Estuaries.†

- for which this is considered to be one of the best areas in the United Kingdom.

†Estuaries: These are semi-enclosed bodies of water which have a free connection with the open sea and within which the seawater is measurably diluted by freshwater from the surrounding land. They are large features which often contain a complex range of habitats that reflect the variations in tidal influence and substrate type.

5. Reefs.†

- for which this is considered to be one of the best areas in the United Kingdom.

†Reefs: These are areas of subtidal rock which may extend onto the shore, or some types of biological reefs. These form the habitat for a variety of biological communities such as those characterised by encrusting animals and attached seaweeds.

For agency use only:

Date compiled: 21 MAR 1995

Reference number or date of map: _____

MARINE ANNEX TYPES - FURTHER INFORMATION

Site name **Solent and Isle of Wight (maritime)**

Country England (West Sussex, Hampshire and Isle of Wight)

oundary See map. Lagoons are excluded, some of which form a separate SAC. The landward boundary is mean low water mark where the foreshore is not SSSI

Reasons for recommendation of site

The Solent and Isle of Wight is a complex site with a high habitat diversity which, in particular, is recommended for the range and quality of its estuaries (and estuarine habitats) and its reefs.

Marine habitats for which selected	Extent
Reefs	Extensive sublittoral reefs around the Isle of Wight, including 5% of European coastal chalk exposures, some of which extend into the littoral zone
Estuaries	The majority of the site is an estuarine complex with six coastal plain estuaries and four bar built estuaries centred around the Solent

Site description

The Solent is one of only a few major sheltered channels between a substantial island (the Isle of Wight) and the mainland in Europe. There is an unusual strong double tidal flow, with long periods of slack water at high and low tide. erall, the area contains good examples of a wide variety of marine sediment and reef habitats influenced by a range of ensity of tidal streams and wave action, from shallow sheltered harbours and estuaries to wave and tide-exposed headlands and shoals. These combine with many unusual features to provide a uniquely complex site.

The Solent has a wide range of estuaries/ harbours including Chichester and Langstone Harbours, Beaulieu River, and Newtown estuary (all bar built estuaries), part of Southampton Water, Wootton Creek and Ryde Sands, Bembridge Harbour, and Lymington, Medina and Yar estuaries (all coastal plain estuaries). Remarkably natural and undisturbed examples occur at Chichester and Langstone both of which form unusual tidal ecosystems. The intertidal in these, as with the many estuaries elsewhere on the site, is dominated by sediment habitats including mudflats with eelgrass (*Zostera*) beds and an extensive covering of the green alga *Enteromorpha*. These are fringed by extensive areas of saltmarsh and, in places, shingle and sand dune. The infaunal community of these areas is typically dominated by polychaetes with variation between different types of sediment. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete *Sabellaria spinulosa* on the steep eastern side of the entrance to Chichester harbour.

In the more open part of the Solent the seabed consists of a variety of habitats. In the extensive shallows bordering the northern shore of the west Solent sediments tend to be finer than on the southern shore. On the steeper and more current exposed southern side there are outcrops of soft clay extensively bored by piddock bivalves. Other hard substratum in the west Solent includes stable boulder slopes which extend into the intertidal and are characterised by a 'faunal turf' of roids, bryozoans and sponges. Large sandstone and limestone boulders supporting a similar 'faunal turf' occur rarely and the periphery of much of the Solent. In the shallower parts of the area there are mobile sandy sediments characterised by whelks and hermit crabs, whilst deeper areas contain more stable sands with a more diverse fauna.

The rocky southern half of the Isle of Wight includes a number of reefs of varying extent all of which extend into the intertidal zone. These include a large limestone reef off Bembridge and Whitecliff Bay where the range of horizontal and vertical faces and crevices leads to a high habitat diversity. The bedrock is extensively bored by bivalves and sponges whose activity adds further to habitat diversity. Both here and at other reef sites such as Horse Ledge near Shanklin intertidal pools support a diverse marine life including a number of rare or unusual seaweeds. To the west and south-west some of the most important subtidal British chalk reefs occur representing over 5% of Europe's coastal chalk exposures, including the extensive tide-exposed reef off the Needles, and examples at Culver Cliff and Freshwater Bay. These support a diverse range of species in both the subtidal and intertidal. Other reef habitats include areas of large boulders off the coast around Ventnor.

The Island represents a transition zone between warmer south-western and colder North Sea waters. Many south-western species reach their easterly limit in the Channel here, particularly at St Catherine's Point or on the extensive limestone reefs at Bembridge Ledges.

Component SSSI:

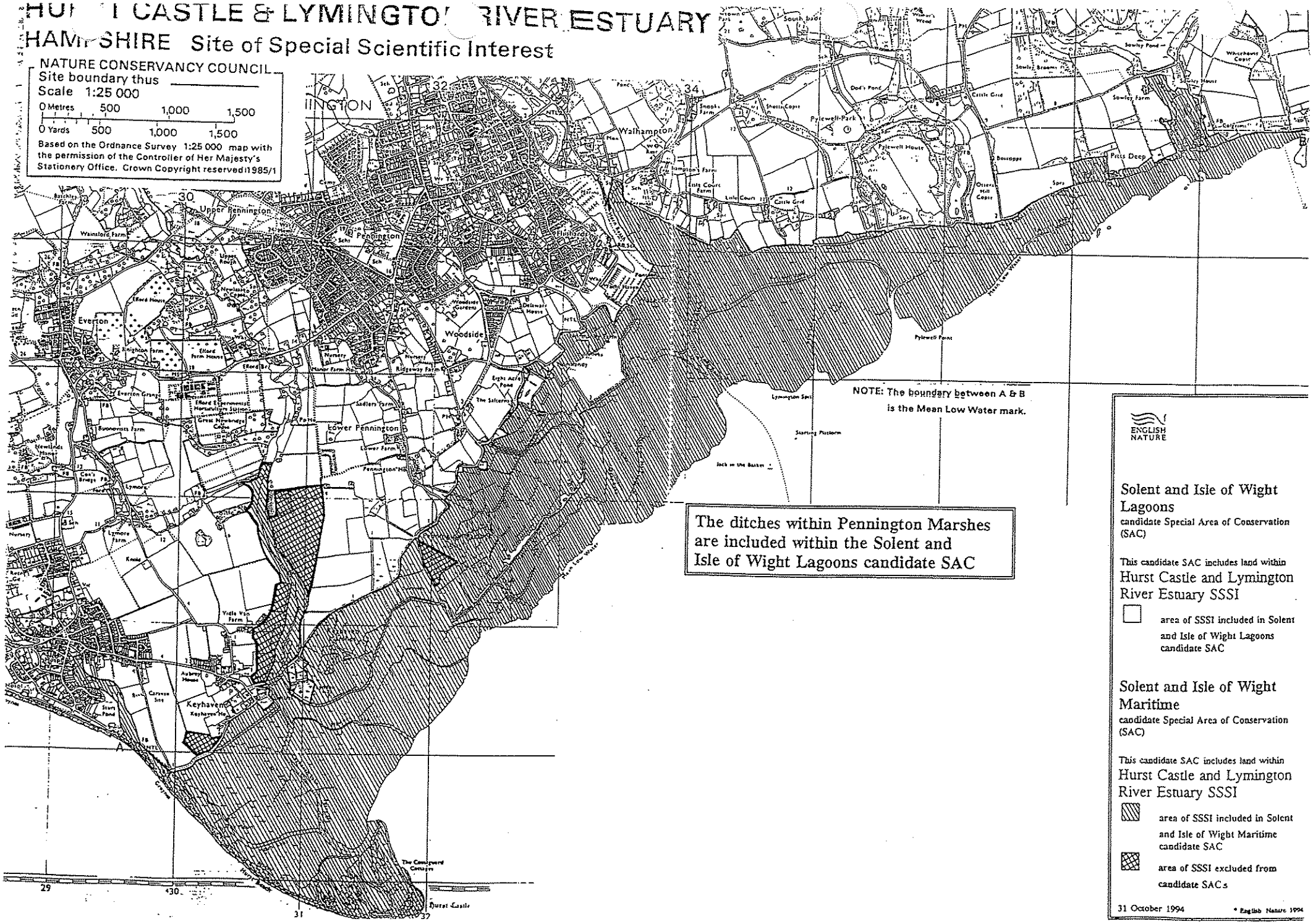
Bembridge Down
Bonchurch Landslips
Bouldnor and Hamstead Cliffs
Brading Marshes to St Helens Ledges
Chichester Harbour
Compton Down
Hanover Point to St Catherines Point
Headon Warren and West High Down
Hurst Castle and Lymington River Estuary
Hythe to Calshot Marshes
Kings Quay Shore
Langstone Harbour
Lee-on-the-Solent to Itchen Estuary
Lincegrove and Hackett's Marshes
Medina Estuary
Newtown Harbour
North Solent
Ryde Sands
Thorness Bay
Upper Hamble Estuary and Woods
Whitecliff Bay and Bembridge Ledges
Yar Estuary

HURST CASTLE & LYMINGTON RIVER ESTUARY
HAMPSHIRE Site of Special Scientific Interest

NATURE CONSERVANCY COUNCIL
Site boundary thus
Scale 1:25 000

0 Metres 500 1,000 1,500

0 Yards 500 1,000 1,500



NOTE: The boundary between A & B is the Mean Low Water mark.

The ditches within Pennington Marshes are included within the Solent and Isle of Wight Lagoons candidate SAC

ENGLISH NATURE

Solent and Isle of Wight Lagoons
candidate Special Area of Conservation (SAC)

This candidate SAC includes land within Hurst Castle and Lymington River Estuary SSSI

☐ area of SSSI included in Solent and Isle of Wight Lagoons candidate SAC

Solent and Isle of Wight Maritime
candidate Special Area of Conservation (SAC)

This candidate SAC includes land within Hurst Castle and Lymington River Estuary SSSI

▨ area of SSSI included in Solent and Isle of Wight Maritime candidate SAC

▨ area of SSSI excluded from candidate SACs

31 October 1994

Reasons for recommendation as a possible Special Area of Conservation

Area Name: **Dorset Heaths (Purbeck and Wareham) and Studland Dunes**

County/Unitary authority: **Dorset**

Component SSSI:
Arne
Blue Pool and Norden Heaths
Brenscombe Heath
Hartland Moor
Morden Bog and Hyde Heath
Norden
Poole Harbour
Rempstone Heaths
Sandford Heath
Stoborough and Creech Heaths
Studland and Godlingston Heaths
The Moors
Thrasher's Heath

This area is being considered as a possible Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been proposed as a possible SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area is considered to have a high diversity of habitats/species of European importance.

European priority interest(s):

1. **Wet heathland with Dorset heath and cross-leaved heath.†**

- **for which this area is one of only 2 outstanding localities in the United Kingdom;**
- **which is considered to be rare as its total extent in the United Kingdom is thought to be less than 1000 hectares;**
- **for which the area contains more than 40% of the United Kingdom resource.**

†Southern Atlantic wet heaths with *Erica ciliaris* and *Erica tetralix*: This is a rare form of heathland that occurs in a warm, oceanic climate on moist soils, where the vegetation includes both cross-leaved heath *Erica tetralix* and abundant Dorset heath *Erica ciliaris*. In the UK, this habitat type is only found in Dorset and Cornwall.

sedge *R. fusca*, oblong-leaved sundew *Drosera intermedia*, round-leaved sundew *D. rotundifolia* and marsh clubmoss *Lycopodiella inundata*. This vegetation can also occur on stripped areas of peat.

7. Shifting dunes.†

- **which is considered to be rare as its total extent in the United Kingdom is thought to be less than 1000 hectares.**

†Embryonic shifting dunes: These are low dunes that develop along the upper shore above the high tide line. Only a few plant species are able to survive in these conditions, such as sand couch *Elymus farctus*, lyme-grass *Leymus arenarius*, sea sandwort *Honckenya peploides* and sea rocket *Cakile maritima*.

8. Shifting dunes with marram grass.†

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes): These are actively building or growing dunes, found in areas receiving large quantities of blown sand. Continual burying by sand restricts the number of plants that can survive but provides ideal conditions for the growth of the sand-binding marram grass *Ammophila arenaria*. A small number of other specialised dune plants can also tolerate these conditions.

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Date compiled:_____

Reference number or date of map:_____

Reasons for recommendation as a possible Special Area of Conservation

Area Name: **Dorset Heaths**

County/Unitary authority: **Dorset, Hampshire**

Component SSSI: **For details see page 3**

This area is being considered as a possible Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been proposed as a possible SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area is considered to have a high diversity of habitats/species of European importance.

European interest(s):

1. **Wet heathland with cross-leaved heath.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Northern Atlantic wet heaths with *Erica tetralix*: These are heathlands of cool oceanic regions on mainly acidic, nutrient-poor, shallow peat or sandy soils with impeded drainage. They are often dominated by mixtures of cross-leaved heath *Erica tetralix*, grasses, sedges and *Sphagnum* bog-mosses. These heathlands are found in both lowland and upland parts of the UK although they are more extensive in the wetter north and west. The UK hosts the majority of this habitat in the European Union.

2. **Dry heaths.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Dry heaths (all subtypes): These are heaths found on freely-drained generally acidic soils such as sands or gravels which are poor in nutrients and occur both in the lowlands and the uplands. They are dominated by tall dwarf-shrubs of the heather family, most commonly ling heather *Calluna vulgaris*. There are several types of heath which are distinguished by the plants they support such as bell heather *Erica cinerea*, bilberry *Vaccinium myrtillus*, crowberry *Empetrum nigrum*, bearberry *Arctostaphylos uva-ursi* and western gorse *Ulex gallii*.

3. **Southern damselfly.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†*Coenagrion mercuriale*: The southern damselfly breeds in small heathland streams and seepages and in shallow channels next to chalk streams. It is restricted to a few localities in southern and western England and Wales. It is rare in the rest of Europe.

4. **Depressions on peat substrates.†**

- **for which this area is one of only 4 outstanding localities in the United Kingdom;**
- **which is considered to be rare as its total extent in the United Kingdom is thought to be less than 100 hectares;**
- **for which the area contains more than 10% of the United Kingdom resource.**

†Depressions on peat substrates (Rhynchosporion): This vegetation on exposed peat, or sometimes sand, occurs naturally on frost-eroded areas of heath and bogs, in flushes or on the edges of fluctuating pools on a sandy, peaty ground. The vegetation forms low-growing communities of sedges, mosses and herbs which may include the white beak-sedge *Rhynchospora alba*, brown beak-sedge *R. fusca*, oblong-leaved sundew *Drosera intermedia*, round-leaved sundew *D. rotundifolia* and marsh clubmoss *Lycopodiella inundata*. This vegetation can also occur on stripped areas of peat.

Component SSSI:

Arne
Black Hill Heath
Black Hill (Holton)
Bourne Valley
Canford Heath
Christchurch Harbour
Corfe and Barrow Hills
Corfe Common
Corfe Mullen Pastures
Cranborne Common
Ebblake Bog
Ferndown Common
Ham Common
Holt and West Moors Heaths
Holton Heath
Horton Common
Hurn Common
Morden Bog and Hyde Heath
Lions Hill
Matchams
Norden
Oakers Bog
Parley Common
Poole Harbour
Povington and Grange Heaths
Rempstone Heaths
Sandford Heath
Slop Bog and Uddens Heath
Stoborough and Creech Heaths
Stokeford Heaths
Town Common
Turbary and Kinson Commons
Turners Puddle Heath
Upton Heath
Verwood Heaths
Wareham Meadows
Warmwell Heath
Winfrith Heath
Worgret Heath

For agency use only:

Date compiled:_____

Reference number or date of map:_____

Reasons for recommendation as a possible Special Area of Conservation

Area Name: **Isle of Portland to Studland Cliffs**

County/District: **Devon**
Dorset

Component SSSI: **Isle of Portland**
Purbeck Ridge (East)
South Dorset Coast
Studland Cliffs

This area is being considered as a possible Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been proposed as a possible SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area supports the following interest(s).

European interest(s):

1. **Vegetated sea cliffs.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Vegetated sea cliffs of the Atlantic and Baltic coasts: These are sea cliffs that are at least partially covered by vegetation, the nature of which varies considerably depending on cliff geology, erosion, geographical location and the degree of exposure to wind and salt spray. Plant species may include rock sea spurrey *Spergularia rupicola*, thrift *Armeria maritima*, in the south and west rock samphire *Crithmum maritimum*, or Scots lovage *Ligusticum scoticum* in the north. Many cliff sites support a number of rare or uncommon plant species. In some exposed areas the vegetation on the cliff tops grades into maritime heathland, grass and scrub which form an integral part of the cliff habitat.

2. **Early gentian.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†*Gentianella anglica*: The early gentian is a flowering plant of dry chalk and limestone grasslands in the south of England. It flourishes in a short turf maintained by grazing by sheep or rabbits. Where

the sub-species Cornish gentian *G. anglica* subsp. *cornubiensis* occurs it is found on short cliff-top turf. The early gentian is found only in England.

For agency use only:	17 MAR 1995
Date compiled:	
Reference number or date of map:	

Reasons for recommendation as a possible Special Area of Conservation

Area Name: **St Albans Head to Durlston Head**

County/District **Dorset**

Component SSSI: **South Dorset Coast**
Townsend

This area is being considered as a possible Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been proposed as a possible SAC are listed below. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area supports the following interest(s).

European priority interest(s):

1. **A chalk-rich dry grassland, including important orchid sites.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) important orchid sites: These are grasslands on thin dry soils on chalk or limestone that are usually very rich in plants species, particularly herbs and grasses. Important orchid sites include areas which host a rich suite of orchids; an important population of at least one orchid species that is not very common in the UK; or one or more orchid species considered to be rare, very rare or exceptional in the UK.

European interest(s):

2. **Vegetated sea cliffs.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Vegetated sea cliffs of the Atlantic and Baltic coasts: These are sea cliffs that are at least partially covered by vegetation, the nature of which varies considerably depending on cliff geology, erosion,

geographical location and the degree of exposure to wind and salt spray. Plant species may include rock sea spurrey *Spergularia rupicola*, thrift *Armeria maritima*, in the south and west rock samphire *Crithmum maritimum*, or Scots lovage *Ligusticum scoticum* in the north. Many cliff sites support a number of rare or uncommon plant species. In some exposed areas the vegetation on the cliff tops grades into maritime heathland, grass and scrub which form an integral part of the cliff habitat.

For agency use only:

Date compiled:_____

Reference number or date of map:_____

Reasons for recommendation as a candidate Special Area of Conservation (incorporating possible amendments)

Area Name: **St Albans Head to Durlston Head**

County/Unitary authority: **Dorset**

Component SSSI: **South Dorset Coast**
Townsend

This area has been recommended as a candidate Special Area of Conservation (SAC) because it contains habitat types and/or species which are rare or threatened within a European context. In addition, an amendment to the candidate SAC is being considered based upon the habitat types and/or species present. The SSSI citation describes the special interests for which the site was notified in the British context. [NB Not for marine interests below mean low water mark]. The interests for which the site was selected as SSSI may differ from the interests selected in a European context.

The habitats and/or species for which this area has been recommended as a candidate SAC are listed below. Any amendments to the candidate SAC will be based upon habitat and/or species considerations. The reasons for their selection are listed, together with a brief description of the habitats and species as they typically occur across the UK. This area contains the interests described although it may not contain all the typical features. (Please see the accompanying Natura 2000 booklet for further information on the approach to site selection.)

The area supports the following interest(s).

European priority interest(s):

1. A chalk-rich dry grassland, including important orchid sites.†

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) important orchid sites: These are grasslands on thin dry soils on chalk or limestone that are usually very rich in plant species, particularly herbs and grasses. Important orchid sites include areas which host a rich suite of orchids; an important population of at least one orchid species that is not very common in the UK; or one or more orchid species considered to be rare, very rare or exceptional in the UK.

European interest(s):

2. Early gentian.†

- **for which this is considered to be one of the best areas in the United Kingdom.**

†*Gentianella anglica*: The early gentian is a flowering plant of dry chalk and limestone grasslands, cliff-tops and fixed dunes. This species is found only in England. *G. anglica* is found mainly in

southern England, it's most northerly populations occuring in Lincolnshire. It flourishes in a short turf maintained by grazing by sheep or rabbits.

3. **Vegetated sea cliffs.†**

- **for which this is considered to be one of the best areas in the United Kingdom.**

†Vegetated sea cliffs of the Atlantic and Baltic coasts: These are sea cliffs that are at least partially covered by vegetation, the nature of which varies considerably depending on cliff geology, erosion, geographical location and the degree of exposure to wind and salt spray. Plant species may include rock sea spurrey *Spergularia rupicola*, thrift *Armeria maritima*, in the south and west rock samphire *Crithmum maritimum*, or Scots lovage *Ligusticum scoticum* in the north. Many cliff sites support a number of rare or uncommon plant species. In some exposed areas the vegetation on the cliff tops grades into maritime heathland, grass and scrub which form an integral part of the cliff habitat.

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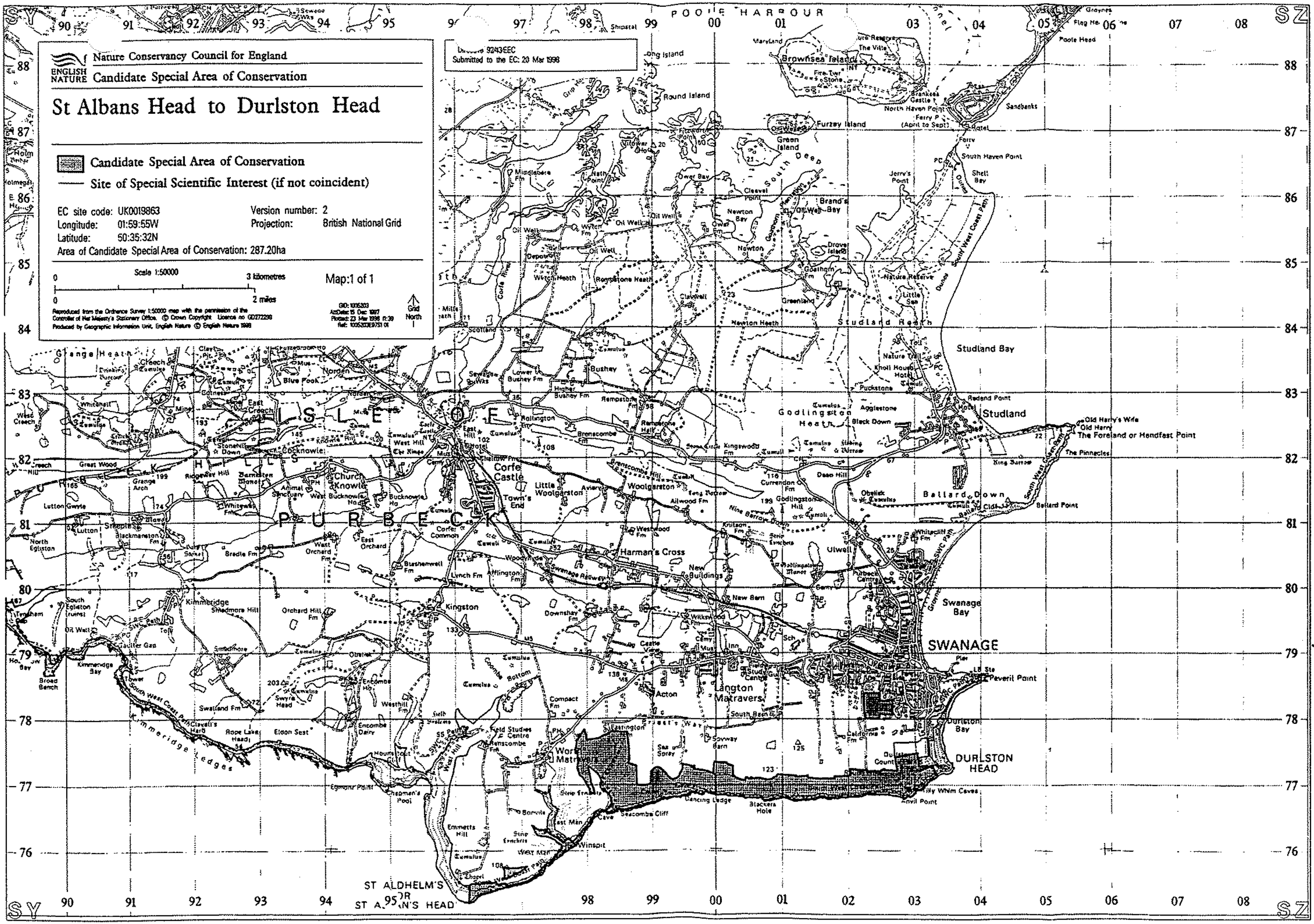
Date compiled:_____

Reference number or date of map:_____


Nature Conservancy Council for England
ENGLISH NATURE
Candidate Special Area of Conservation
St Albans Head to Durlston Head
Candidate Special Area of Conservation
Site of Special Scientific Interest (if not coincident)
EC site code: UK0019863
Longitude: 01:59:55W
Latitude: 50:35:32N
Area of Candidate Special Area of Conservation: 287.20ha
Version number: 2
Projection: British National Grid
Scale 1:50000
3 kilometres
2 miles
Map:1 of 1
Grid North
Submitted to the EC: 20 Mar 1998
POOLE HARBOUR
Brownsea Island
Furzey Island
Round Island
Studland Bay
Studland
Old Harry's Wife
Old Harry
The Foreland or Handfast Point
The Pinnacles
Ballard Point
Ballard Down
Swanage Bay
SWANAGE
Peveril Point
Durlston Bay
DURLSTON HEAD
Anvil Point
Dancing Ledge
Seacombe Cliff
Winspit
ST ALDHELM'S OR ST A..N'S HEAD
Chapman's Pool
Kimmeridge Ledges
Kimmeridge Bay
Kimmeridge
Kingston
Langton Matravers
Worth Matravers
Harman's Cross
Corfe Castle
Church Knowle
ISLE OF PURBECK
Godlingston Heath
Studland Heath
Sandbanks
South Haven Point
Shell Bay
Poole Head

HAM/SSSI/14

HAMPSHIRE

HURST CASTLE AND LYMINGTON RIVER ESTUARY SSSI

LOCAL PLANNING AUTHORITIES	: Hampshire County Council New Forest District Council	
NATIONAL GRID REFERENCE	: SZ 340940	
ORDNANCE SURVEY SHEETS	: 1:50,000: 196	1:25,000: SZ 38; SZ 39
AREA	: 1109.93 hectares	
DATE NOTIFIED (1949 ACT)	: 1961	LAST REVISION : 1979
DATE NOTIFIED (1981 ACT)	: 5/9/86(notified) 20/1/87(confirmed)	LAST REVISION : 2/3/95 **DATE CONFIRMED:** 29/11/95

OTHER INFORMATION: Much of the Site of Special Scientific Interest is owned and managed as a nature reserve by Hampshire County Council; part is leased by Hampshire Wildlife Trust as a nature reserve. This site adjoins the North Solent SSSI to its east.

REASONS FOR NOTIFICATION

This site extends along nine kilometres of the north-west Solent shore and embraces a wide range of coastal habitats of limited distribution on the south coast which are of biological and geomorphological importance. The SSSI below the seawall comprises the estuaries of three substantial streams, intertidal muds, cord-grass *Spartina anglica* marshes and high level mixed saltmarsh whilst behind the sea wall is a belt of fresh and brackish marsh including a series of fresh to saline lagoons. These lagoons support an assemblage of rare invertebrates and plants of international importance. The south-west boundary of the site is formed by a well developed shingle spit known Hurst Spit which has terminal recurved shingle ridges. The outer margins of the *Spartina* marshes, which occupy much of the intertidal area, are marked by numerous further ridges of shells and small pebbles. These, together with the saltmarsh provide nesting sites for nationally important breeding populations of terns and black-headed gulls *Larus ridibundus*. The site is a very important component of The Solent estuarine system which supports internationally important over-wintering populations of wildfowl and waders. The rich invertebrate fauna includes 8 nationally rare and 13 nationally notable species.*

The *Spartina* marshes exhibit extensive die-back and are also receding through wave attack on the terminal cliffs. Towards their landward edge they grade to more mixed saltmarsh, but west of the Lymington River further gradation in community structure is terminated by sea walls. East of the river there is an interesting transition to grassland, scrub and oakwood, with freshwater flushes occurring at high water mark. The plant communities here have been strongly influenced by grazing by New Forest ponies.

The belt of brackish and fresh marsh on reclaimed tidal silt is one of the most extensive areas of this habitat on the south coast. The marshes were formerly salterns converted to grazing land with the decline of the salt industry in the early 19th century. They include saline, brackish and freshwater lagoons and ponds, saltmarsh, reed *Phragmites australis* beds, grassland dominated by creeping bent-grass *Agrostis stolonifera*, and areas of scrub. The invertebrate fauna is rich and includes large populations of the bush crickets *Conocephalus dorsalis* and *C. discolor*. The marshes are important feeding grounds for waders, ducks and dark-bellied Brent goose *Branta bernicla*.

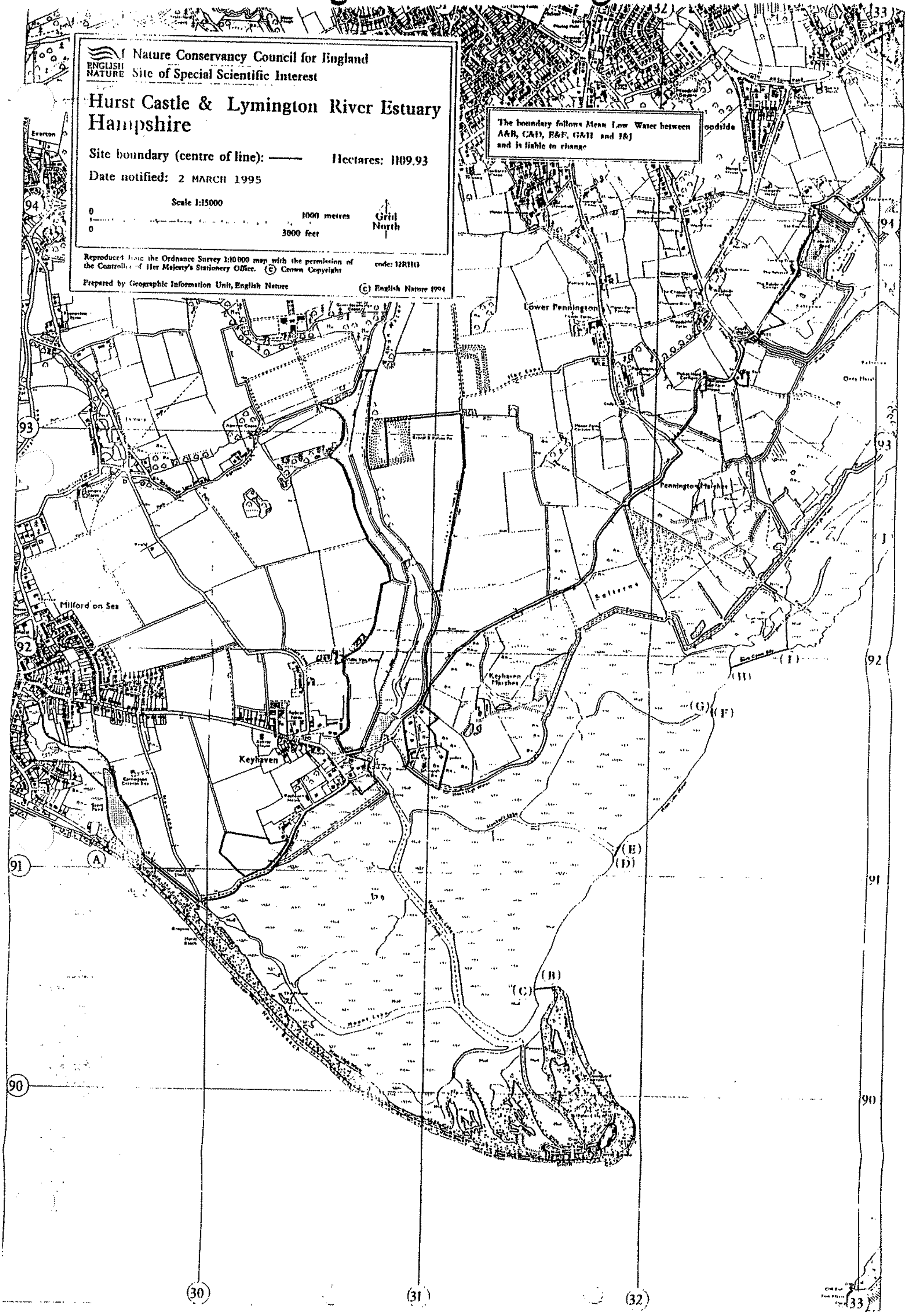
The series of lagoons immediately inland of the Lymington - Keyhaven sea walls are internationally important for the assemblage of brackish water organisms they support. This assemblage includes a large population of the vulnerable starlet sea anenome *Nematostella vectensis* (Red Data Book 3), which is otherwise restricted to five localities in Britain and a few in North America. Other nationally rare species include the polychaete worm *Armandia cirrhosa* (RDB) at its only known location in Britain, and the rare amphipod crustacean *Gammarus insensibilis* which is listed on Schedule 5 of the Wildlife and Countryside Act 1981. Both these species are here at the northern limits of their distributions. The nationally rare foxtail stonewort *Lamprothamnium papulosum*, otherwise known from only three sites in Britain, is also abundant. This group of species individually have very critical habitat tolerances and are thus highly vulnerable to changes in hydrological regime, salinity, and sediment disturbance.

The recurved shingle ridges of Hurst Spit are of particular botanical importance. Though partially obscured with shingle, the substrate is clay and the ridges and intervening lows support an especially rich saltmarsh community in which sea purslane *Halimione portulacoides*, glasswort *Salicornia* species, nationally scarce golden samphire *Inula crithmoides* and seablite *Suaeda maritima* are co-dominant. The golden samphire population is amongst the largest on the south coast and forms a continuous monospecific stand in some areas.

Hurst Castle to Lymington River Estuary SSSI forms an important component of The Solent estuarine system which has been identified as an internationally important site for over-wintering wildfowl and waders, supports nationally important breeding populations of black-headed gull and of three species of tern which are listed under Annex 1 of the EU Directive on the Conservation of Wild Birds. The range of estuarine habitats and adjacent meadows provide important feeding and roosting grounds for significant numbers of waterfowl including internationally important numbers of dark-bellied brent goose and nationally important numbers of black-tailed godwit *Limosa limosa*. Other species include wigeon *Anas penelope*, teal *A. cracca*, mallard *A. platyrhynchos*, dunlin *Calidris alpina*, turnstone *Arenaria interpres*, lapwing *Vanellus vanellus*, redshank *Tringa totanus*, golden plover *Pluvialis apricaria*, snipe *Gallinago gallinago*, and curlew *Numenius arquata*. The *Spartina* marshes and shell and shingle ridges support nationally important breeding populations of terns and black-headed gulls. Large numbers of oyster-catcher *Haematopus ostralegus* and ringed plover *Charadrius hiaticula* also nest here. Tern numbers fluctuate owing to local movements of colonies but the main Solent colony of little tern *Sterna albifrons* and sandwich tern *S. sandvicensis* sometimes breed within the SSSI together with a substantial population of common terns *S. hirundo*. Black-headed gull populations regularly represent between three to four percent of the British population. Breeding redshank and lapwing, species whose breeding habitat is rapidly declining in Britain also occur on the site.

Hurst Castle Spit is a key site for coastal geomorphology. It is the classic shingle spit upon which W V Lewis based his seminal paper outlining the relationship of beach alignment to the direction of approach of dominant waves. Although much weakened at its proximal end by the steady retreat of cliffs at Milford and their protection by walls and groynes, Hurst Spit still retains its characteristic form. The present interest of the beach lies in its classic form. The range of estuarine features within this site are of national geomorphological importance representing a good example of an estuary with minimum modification by man.

* Nationally rare species are equivalent to those listed in the British Red Data Book which includes those considered endangered, vulnerable or rare. Nationally notable/scarce species are estimated to occur in 16-100 10 km grid squares in Britain



ENGLISH NATURE
Nature Conservancy Council for England
Site of Special Scientific Interest
Hurst Castle & Lymington River Estuary
Hampshire
Site boundary (centre of line):
Hectares: 1109.93
Date notified: 2 MARCH 1995
Scale 1:15000
0 1000 metres
0 3000 feet
Grid North
Reproduced from the Ordnance Survey 1:10 000 map with the permission of the Controller of Her Majesty's Stationery Office. (c) Crown Copyright
code: 12RHO
Prepared by Geographic Information Unit, English Nature
(c) English Nature 1994
The boundary follows Mean Low Water between A&B, C&D, E&F, G&H and I&J and is liable to change
Everton
Milford on Sea
Keyhaven
Keyhaven Marshes
Lower Pennington
Pennington Marshes
Salterns
(A)
(B)
(C)
(D)
(E)
(F)
(G)
(H)
(I)
(J)
94
93
92
91
90
(30)
(31)
(32)
33

HAMPSHIRE/DORSET AVON VALLEY (BISTERNE-CHRISTCHURCH) SSSI

STATUS: SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI) NOTIFIED UNDER SECTION 28 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981

LOCAL PLANNING AUTHORITIES: Hampshire County Council/New Forest District Council
Dorset County Council /Christchurch Borough Council
East Dorset District Council

NATIONAL GRID REFERENCE : SU 150030 - SZ 143925

ORDNANCE SURVEY SHEETS : 1:50 000 195 1:10 000 SU 10 SE, SW
SZ 19 NE, NW, SE

HECTARES/ACRES : 605/1495 (Hampshire: 244.7/604.7; Dorset: 360.3/890.3)

DATE NOTIFIED (1949) ACT : 1977 DATE OF LAST REVISION:

DATE NOTIFIED (1981) ACT : 23 November 1989 DATE OF LAST REVISION:

CONFIRMED :

OTHER INFORMATION : Major revisions to boundary in 1989 with extensions to include areas of interest in Hampshire and deletions to exclude areas in Dorset.

REASONS FOR NOTIFICATION :

The Avon Valley (Bisterne-Christchurch) Site of Special Scientific Interest occupies eleven kilometres of the lower River Avon, its flood plain and some of the associated river terraces. In this, its lowest reach, the Avon Valley is a broad flood plain dissected by numerous dykes and rivulets and diversified by small woodlands and reed beds. To either side of the Avon Valley are the heathlands of southern Dorset and The New Forest. Locally these heaths are continuous with the flood plain of the river. The River Avon system shows a greater range of habitat diversity and a more diverse flora and fauna than any other chalk river in Britain. The flood plain within the SSSI comprises a variety of habitats ranging from herb-rich hay meadows and pastures to flood meadows, relic bog, riparian woods and the grassy heaths of river terraces. These habitats support nationally and internationally important assemblages of breeding and wintering birds. The invertebrate fauna reflects the diversity of habitat and includes many notable species, e.g. of dragonflies, grasshoppers and snails.

The River: The River Avon, although derived from a large chalk catchment, flows over acidic sands and clays between Bisterne and Christchurch. The chalk river water is supplemented by acid streams draining mainly from The New Forest heaths. The Avon's aquatic flora contains plants adapted to a variety of conditions. Sixty-six species of aquatic plants are known to occur in the river channels and associated dykes with over 30 species being recorded in monitored sections of river. Twenty-four species of fish are known from the river including barbel Barbus barbus and salmon Salmo salar. Molluscs are particularly abundant in the chalky water including the rare water snails Valvata macrostoma and Pisidium tenuilineatum. Although locally modified by dredging and other activities significant stretches of river survive which exhibit classic sluggish lowland river features such as meanders, gravel shallows and backwaters. Important populations of rare and threatened plants such as mudwort Limosella aquatica and frogbit Hydrocharis morsus-ranae occur here. A wide range of dragonflies are known from the river and dykes, including the scarce chaser Libellula fulva, which is nationally rare.

The Grasslands: The unimproved hay meadows and pastures of the valley are important both individually and collectively. Each of the grasslands exhibit a characteristic range of species dependent on specific management, soil and soil moisture conditions. Approximately half of the valley grasslands contain assemblages of plants indicative of long continuity of unintensive management with minimal inputs of artificial fertilisers and herbicides. The largest concentration of such meadows occurs on common land in the SSSI near Christchurch. Where the river regularly floods and enriches the soil with silt and lime the grasslands are typical of those found on other chalk rivers. The meadows are dominated by grasses such as the fescues Festuca pratensis and F. arundinacea, rye grass Lolium perenne (which hybridises to form x.festulolium lolialeum), Yorkshire fog Holcus lanatus and the lesser pond sedge Carex acutiformis. Other flowering plants within these meadows include the tubular water-dropwort Oenanthe fistulosa, meadow rue Thalictrum flavum, marsh marigold Caltha palustris and water avens Geum rivale.

On the acid sandy soils the flora is very different. Grasses such as purple moor-grass Molinia caerulea and mat grass Nardus stricta are found in abundance with sedges such as carnation sedge Carex panicea and oval sedge C. ovalis. The acid grassland supports extensive colonies of devils'-bit scabious Succisa pratensis, meadow thistle Cirsium dissectum and bog pimpernel Anagallis tenella. Where the sandy soils are relatively free from the influence of river water, heathland plants such as heather Calluna vulgaris, bell heather Erica cinerea and cross-leaved heath E. tetralix are found, with heath grass Danthonia decumbens and common yellow sedge Carex demissa.

These grassland types are not confined to discreet areas but frequently merge with one another, giving rise to situations in which remarkable assemblages of species associated with different habitats grow together. The interest is furthered by the presence of minor topographical changes and valley edge springs which create conditions suitable for unusual plant associations such as rush Juncus swamp with abundant marsh lousewort Pedicularis palustris. Areas of agriculturally 'improved' grassland are included in the SSSI where they are of importance to over-wintering and breeding birds. A small area of disturbed grassland is included because it supports a large population of the nationally endangered small fleabane Pulicaria vulgaris in one of its three British localities outside The New Forest.

Woodlands: Small woodlands and thickets are found scattered throughout the lower Avon Valley. The woodlands are of considerable variety reflecting the different influences on the vegetation of the valley. On dry, sandy soils, above the flood plain, oak Quercus robur and birch Betula species are the dominant trees. There are few shrubs in these woods and the ground layer is relatively poor and dominated by bracken Pteridium aquilinum with occasional red campion Silene dioica and the white climbing corydalis Corydalis claviculata. Where the sandy terraces meet the flood plain there are numerous springs. Here alder Alnus glutinosa woodlands occur. They are generally of recent origin and probably arose following local cessation of grazing and hay cutting. The alder woods include large populations of such species as royal fern Osmunda regalis, bog myrtle Myrica gale, lesser pond sedge and marsh marigolds. Numerous willow woods and thickets occur on the flood plain. Some are dominated by the osier Salix viminalis indicating that they derive from cultivated withy beds. Others contain a variety of willows including several unusual species and hybrids. Interesting willows include an abundance of the scarce purple willow Salix purpurea in the vicinity of Avon and Sopley.

The Grass Heaths: On terraces along the eastern edge of the flood plain lie a series of grass heaths. These heaths exhibit the characteristic form and vegetation of acid sand dunes, an extremely rare habitat in inland Britain. The turf is locally dominated by sand sedge Carex arenaria with heather, bell heather and sheep's-bit Jasione montana. Within the dry open turf there are a range of clovers including knotted clover Trifolium striatum, subterranean clover T. subterraneum and the nationally rare bird's-foot clover T. ornithopodioides. The dry heath is complemented by damp depressions supporting moist heath composed of purple moor-grass, cross-leaved heath with devils'-bit scabious and lousewort Pedicularis sylvatica. On trackways, and other areas of exposed sand within the dry heath, there is a flora adapted to periodic disturbance with mossy stonecrop Crassula tillaea, lesser quaking-grass Briza minor and sand spurrey Spergularia rubra. Many of these species are restricted to a few localities in inland Britain and are in decline due to the loss of this particularly unusual habitat. The heaths are diversified by numerous ponds and damp hollows. The margin of one pond contains the largest known British population of the endangered brown galingale Cyperus fuscus. Within the seasonally exposed muddy fringes of other ponds are colonies of water-purslane Lythrum portula, marsh St John's-wort Hypericum elodes, red goosefoot Chenopodium rubrum, the nationally rare small water-pepper Polygonum minus, and tasteless water-pepper Polygonum mite. Although concentrated on the eastern bank terraces, the grass heaths are not confined to this area. Isolated ridges and islands of sand within the flood plain between Avon Hams and Cowards Marsh support the sand sedge plant community in an unparalleled association of sand dunes within a broad river valley.

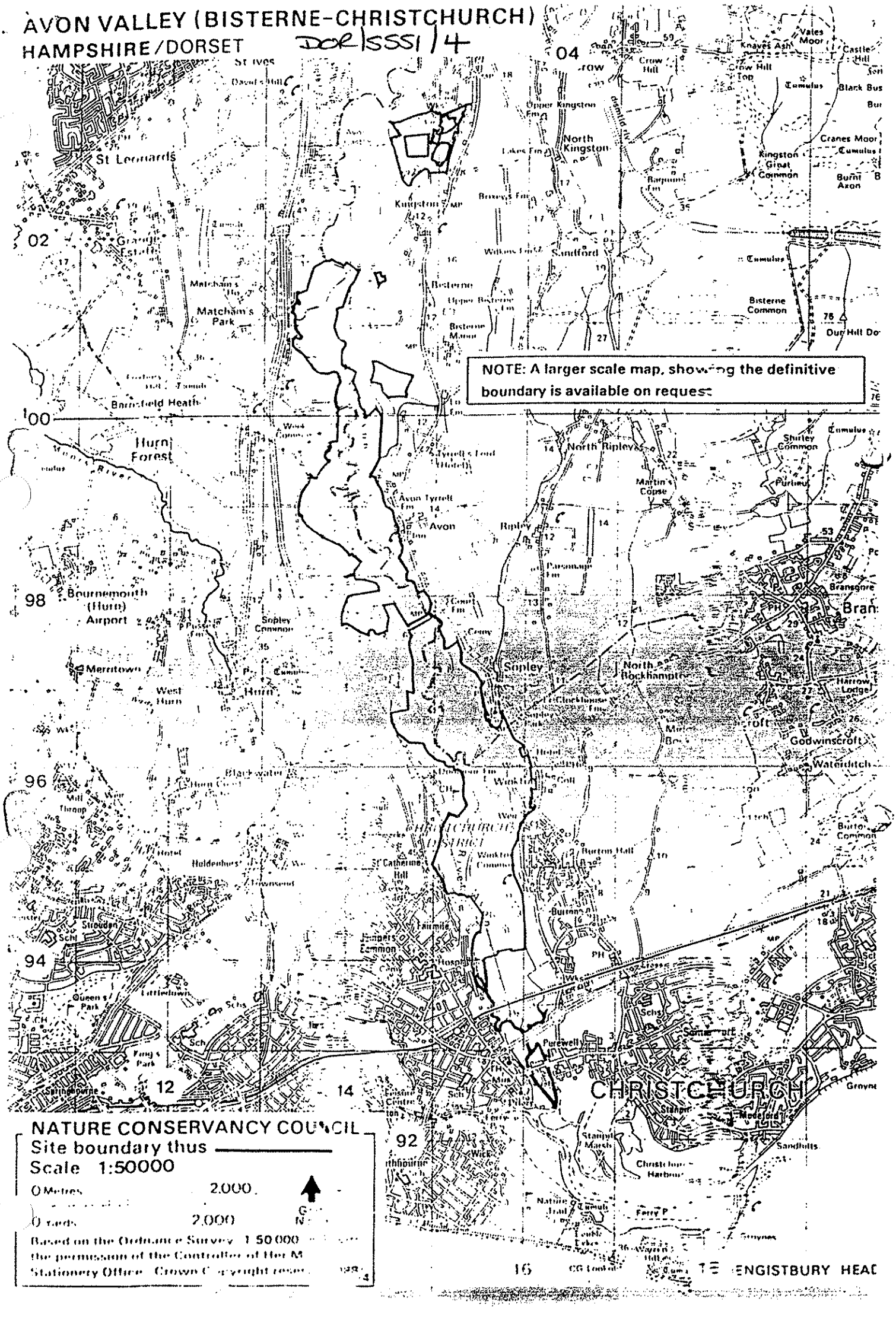
Ornithological Interest: The lower Avon valley grasslands are used as feeding grounds by large wintering flocks of white-fronted geese, Bewick's swans and black-tailed godwits. The Avon herd of 200 or more Bewick's swans represents in excess of one per cent of the species' known population. The valley regularly supports a winter flock of 500 or more white-fronted geese, which is approximately ten per cent of the UK winter population. The flood plain within the SSSI may at times hold up to eight per cent of the European population of black-tailed godwits, or approximately 400 birds. In addition very large flocks of ducks, mainly wigeon and teal, occur in the SSSI in winter, especially when the meadows are partially flooded.

In spring the valley is an important breeding ground for wetland birds, including yellow wagtails, redshank, snipe, lapwing, shelduck and great-crested grebes. The reed beds and willow thickets support breeding reed warblers, sedge warblers, Cetti's warblers and other fen species. The SSSI includes a small grey heronry.

AVON VALLEY (BISTERNE-CHRISTCHURCH)

HAMPSHIRE/DORSET

Dor 1551/4



NOTE: A larger scale map, showing the definitive boundary is available on request

NATURE CONSERVANCY COUNCIL

Site boundary thus

Scale 1:50000

0 Metres 2,000

0 Yards 2,000

Based on the Ordnance Survey 1:50 000 ... the permission of the Controller of Her M... Stationery Office. Crown C... reser...

HAM/SSSI/16

HAMPSHIRE/DORSET HIGHCLIFFE TO MILFORD CLIFFS SSSI

STATUS: SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI) NOTIFIED UNDER SECTION 28 OF THE WILDLIFE AND COUNTRYSIDE ACT 1981

LOCAL PLANNING AUTHORITIES: Hampshire County Council/Dorset County Council
New Forest District Council/Christchurch Borough Council

NATIONAL GRID REFERENCE : SZ 240928

ORDNANCE SURVEY SHEETS : 1:50 000 195 1:10 000 SZ 19 SE, SZ 29 SE & SW

HECTARES/ACRES : 110.8/273.7 (Hampshire: 83.82/207.1 Dorset: 26.98/66.6)

DATE NOTIFIED (1949) ACT : 1953 DATE OF LAST REVISION:

DATE NOTIFIED (1981) ACT : 21 March 1991 DATE OF LAST REVISION:

CONFIRMED : 10 December 1991

OTHER INFORMATION : Site extended westwards to Friars Cliff

REASONS FOR NOTIFICATION :

The Highcliffe to Milford Cliffs Site of Special Scientific Interest extends for some nine kilometres along the cliffs of Christchurch Bay. Its entire length comprises steep coastal slopes and cliffs which are locally dissected by deeply incised 'bunnies' or ravines.

This coastal site provides access to the standard succession of the fossil rich Barton Beds and Headon Beds. Various exposures within the Site are considered important both in a national and international context. The principal features of interest are described below. The oldest rocks are described first. These rocks lie in the western part of the site, younger rocks being found progressing eastward.

Friars Cliff, Dorset, is a key Tertiary Site providing an opportunity to study the marginal marine sediments deposited during the terminal, regressive phase of the Auversian (Upper Bracklesham) and the earliest, marine transgression phase of the Bartonian. The section provides a unique exposure of distributary mouth-bar sequences in the uppermost Bracklesham Beds, and, together with sections in Poole Bay, enable a good reconstruction of an ancient estuary to be made.

Within the sands of Friars Cliff and Highcliffe there is a particularly fine assemblage of plant fossils. These cliffs are the only known locality with a diverse flora from the Boscombe sands. Over fifty species have been recorded from these beds and this is the type locality for fourteen of these species and two genera; eleven species and three genera are unique to this site within the British Tertiary. Fruits, seeds, coniferous remains and fern pinnules found here represent wetland plants, but there are also lianas, herbaceous climbers, trees and shrubs. These are forms typical of early and early middle Eocene strata in Britain, but they were still surviving in late middle Eocene times at this site.

The coastal section from Friars Cliff to Milford on Sea is the type locality for the Barton Beds and is also the best exposure of the Lower Headon Beds. The Barton Beds yield the most diverse and best preserved fauna of the British Tertiary while the Lower Headon Beds, which were deposited during a phase of coastal

pro-gradation in late Eocene time, demonstrate very clearly the relationship between the changing salinity of the coastal environments and the fauna inhabiting them. One of Britain's most important stratigraphic and palaeontological sites.

The cliffs in the vicinity of Chewton Bunny are the only sites to yield fossil plants from Lower Barton Beds. At least twenty-eight plant species occur and, for five of these, this is the type locality. Finds have been made mainly in one horizon but also rarely in four others. Fossil fruits, seeds and cones represent wetland plants but there are also some warm climate shrubs or small trees. The make-up of the flora here reveals the first indications of the climatic cooling which affected Britain in later Tertiary times.

Lying between Chewton Bunny (Hampshire) and Beckton Bunny the Barton Beds of Barton Cliff are well known for their reptile remains. Turtles are particularly well represented (Argillochelys, Eochelone, Puppigerus, Trionyx), but snakes (Palaeophis) and lizards have also been found. Numerous specimens have been collected recently. An important early Tertiary reptile site.

To the east of Beckton Bunny lies Hordle Cliff which is a locality for the Headon Formation, strata containing a diverse fossil mammal fauna. Thirty species have been recorded from these Eocene Beds, equatable with the Headon deposit faunas of the Isle of Wight, but noteworthy for the preponderance of larger perissodactyls and artiodactyles in the fauna. A nationally significant locality proving the presence of ten orders of Mammalia in the Hampshire Basin in Ludian times.

Hordle Cliff is also a key site for fossil birds: so far 13 families (representing 8 orders) have been identified. Still more material remains to be described but already this is the type locality for 12 species. The site has yielded the earliest known diver, (Colymboides anglicus), and also includes Falconiformes, Anseriformes and Charadriiormes. Several species that occur are common to both the Upper Eocene and Lower Oligocene. An important palaeontological and evolutionary site.

In addition to birds and mammals Hordle Cliff is one of Britain's best known Tertiary reptile sites. The finds include numerous specimens of turtles (Alloeochelys, Ocadia, Trionyx), lizards (Iguana, Plesiolacerta), snakes (Palaeophis, Palaeryx), and crocodiles (Diplocynodon) from the Lower Headon Beds. The specimens are well preserved, and this site has provided type specimens of over 15 species. This is one of Britain's most important Tertiary reptile sites.

The fossiled animals are complemented by fossil plant remains. This is a key locality for palaeobotanical studies and it includes the most important locality for plants from the Lower Headon Beds. Fruit seeds, leaves and flowers, which are assignable to over eighty species, indicate the forest and woodland vegetation of the time. This is the type locality for forty-six species and six genera. Seven genera found here are limited to this site in Britain and many species found here are unique in Tertiary deposits world wide. In addition, coniferous trees which grew in swamps are preserved as in situ stumps, the only available exposure of this kind in the British Tertiary. Four other horizons in the Lower Headon Beds and one in the Upper Barton Beds all yield fossil plants; one contains the mineralised roots of an aquatic herb. At least eight horizons in the Lower Headon Beds yield charophytes, and this is the type locality for ten species which are of considerable value for biostratigraphic correlation between European Tertiary localities. Association of all these plant fossils with faunal remains, especially vertebrates, makes this a valuable site for palaeoenvironmental analyses. This is a critical site for European Tertiary palaeobotany and palaeoecology.

At the extreme east of the site lies Paddy's Gap at Rook Cliff. This site shows the thin Limnocarpus Band, within the Headon Beds, crowded with the fruits of an extinct pondweed relative, to the exclusion of almost all other plant fossils. This is the only site now exposing this horizon. This is a famous plant locality with abundant fossil fruit remains.

The Bartonian facies is not represented in some other parts of Europe because there is a hiatus at the top of the Bracklesham Beds caused by a drop in sea level at the end of the Eocene. At Barton there is a complete section with a continuation of marine rocks which contain a unique fish fauna. The nearest assemblage with similar fishes is in Georgia, North America. Like all these Eocene fish sites the faunal assemblage consists of great numbers of species, based on disarticulated remains of fish, particularly teeth and otoliths. However, these species are in the main unique to this site.

Throughout the SSSI the Cliffs are capped with a flight of Pleistocene terrace gravels. At the cliff tops these gravels are exposed in cross section. Opinions are divided as to the number of separate terraces represented, most authors claiming three or four, decreasing in height and age from west to east. The site enables studies such as gravel sedimentology to be combined with a wider geomorphological consideration of the terraces themselves. The cliffs around The Solent are the only place in Britain where large continuous exposures of Pleistocene terrace gravels are available for study. Furthermore, the gravel at Barton is one of the richest sources of Palaeolithic (Old Stone Age) artifacts in the Hampshire Basin.

In addition to the geological interest the cliffs and coastal slopes of this site are of comtemporary biological interest. Within the coastal slopes and broad cliff terraces there are runnels and pools partially vegetated by plants such as willow Salix species, reed mace Typha latifolia, coltsfoot Tussilago farfara and cross leaved heath Erica tetralix. These areas of open vegetation are the habitat of a range of invertebrates strongly associated with soft cliffs. There is a particularly rich assemblage of beetles including Drypta dentata and Colon serripes. The rare cranefly Eonomvia conoviensis is also present within the undercliff vegetation.

HIGHCLIFFE TO MILFORD CLIFFS
HAMPSHIRE / DORSET

Nature Conservancy Council for England
ENGLISH NATURE

Site of Special Scientific Interest boundary thus ——

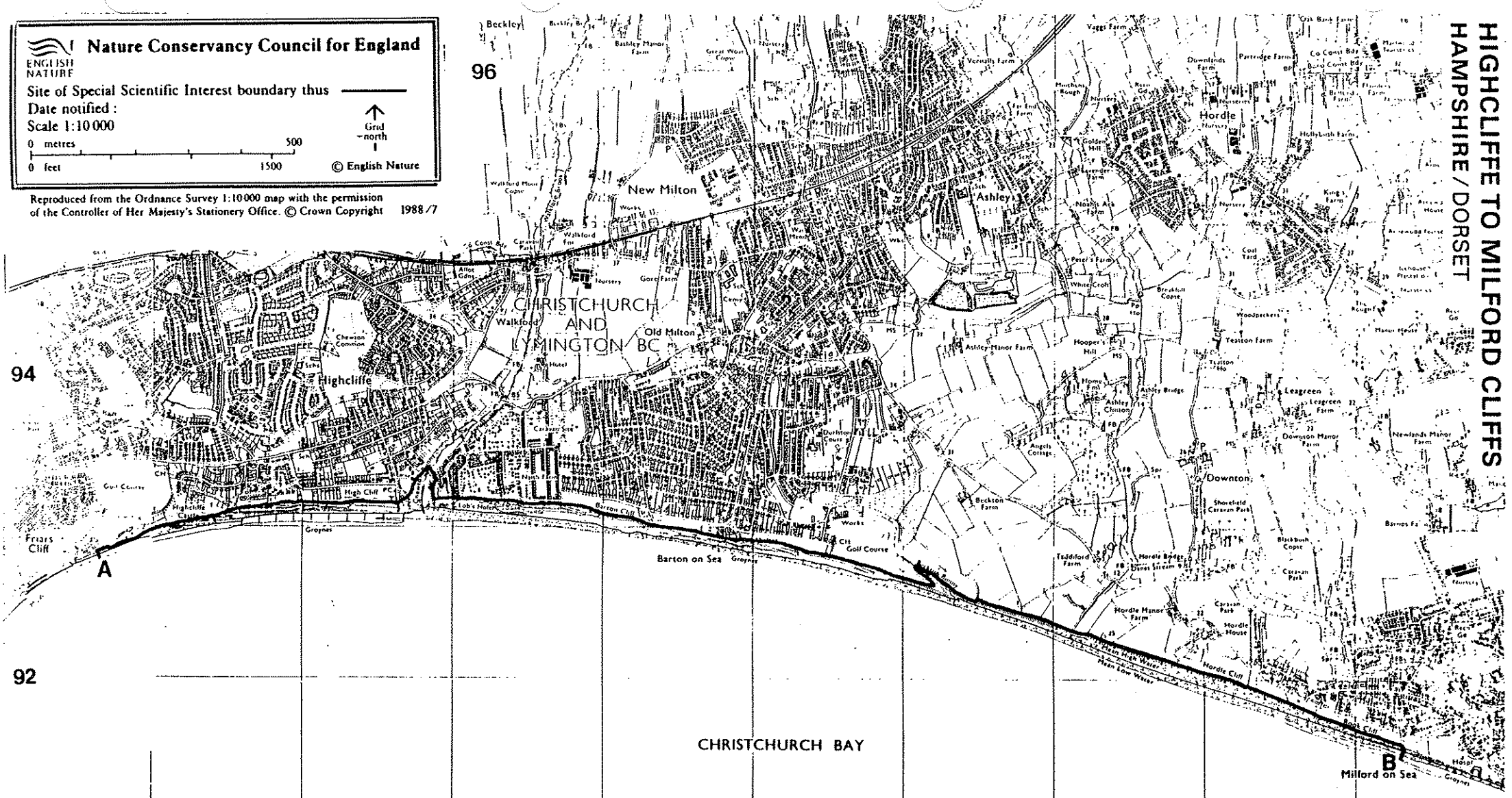
Date notified :

Scale 1:10 000

0 metres 500

0 feet 1500

Grid north



NOTE: A larger scale map, showing the definitive boundary is available on request

NOTE : The coastline is eroding. The seaward boundary of the SSSI is Mean Low Water mark. The landward boundary is the inland extremity of the cliff or landslip, except where clearly shown otherwise.

CITATION SHEET

COUNTY: DORSET SITE NAME: CHRISTCHURCH HARBOUR

DISTRICT: CHRISTCHURCH AND BOURNEMOUTH

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Dorset County Council, Christchurch Borough Council, Bournemouth Borough Council

National Grid Reference: SZ 175915 Area: 353.2 (ha) 872.8 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 19 SE

Date Notified (Under 1949 Act): 1964 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information:

Site previously known as Christchurch Harbour, Solent Meads and Hengistbury Head. Site amended by addition and deletion and now includes Stanpit Marsh LNR.

Description and Reasons for Notification:

The site comprises the drowned estuary of the rivers Stour and Avon and the peninsula of Hengistbury Head. The varied habitats include saltmarsh, wet meadows, drier grassland, heath, sand dune, woodland and scrub and the site is of great ornithological interest.

Hengistbury is a stratigraphically important bridging exposure, linking the Tertiary formations outcropping around Poole and Christchurch Bays. It will also provide an important comparative locality in the eventual correlation of the Eocene sediments of St. Catherines Hill. The Boscombe Sands, exposed at the base of the cliff are important not only in the environmental and geographical reconstruction of very late Auversian (Upper Bracklesham) time, but also contain a unique type of bituminous sand. The upper part of the cliff exposes an unusual, 'marginal' variety of the Barton Beds.

Christchurch Harbour contains substantial areas of saltmarsh, some of which has recolonised old saltpans, forming a complex pattern of low and high level salt marsh communities. The low level saltmarsh, whilst locally containing small amounts of Cord-grass Spartina anglica, is dominated by Salt Marsh Grass Puccinellia maritima with abundant Sea Aster Aster tripolium, Sea Lavender Limonium vulgare, Sea Arrow-grass Triglochin maritima, Sea Plantain Plantago maritima and Mud Rush Juncus gerardii. Higher level marsh is dominated by Sea Couch Elymus pycnanthus, Sea Rush Juncus maritimus and Red Fescue Festuca rubra. Reed Phragmites australis locally forms extensive beds and Sea Club-rush Scirpus maritimus is present in large patches on the edges of the creeks and within the salt marsh. Eleocharis parvula, a rare Spike-rush, occurs in a small area of mud below the saltmarsh.

On the banks of the River Stour grazed fields with varying amounts of saline influence, dominated by Creeping Bent Agrostis stolonifera, have interesting communities of marsh plants. These include Marsh Marigold Caltha palustris, Yellow Flag Iris pseudacorus, Ragged Robin Lychnis flos-cuculi, Tubular Water Dropwort Oenanthe fistulosa and occasional plants of the saltmarsh such as Parsley Water Dropwort O. lachenalii, Sea Arrow-grass and Sea Plantain. The drains hold Reed, Reed Sweet-grass Glyceria maxima and Greater Pond Sedge Carex riparia as well as the uncommon and attractive Flowering Rush Butomus umbellatus.

Dry heathy grassland occurs on Hengistbury Head. The dominant grasses are bents, Agrostis spp. but patches are dominated by Fine-leaved Sheep's-fescue Festuca tenuifolia, Ling Calluna vulgaris and Bell Heather Erica cinerea with the mosses Pseudoscleropodium purum and Dicranum scoparium and the lichens Cladonia portentosa and Hypogymnia physodes. The flatter ground of Hengistbury Head supports dry heath dominated by Ling with Dwarf Gorse Ulex minor or wetter heath with Cross-leaved Heath Erica tetralix and Purple Moor-grass Molinia caerulea.

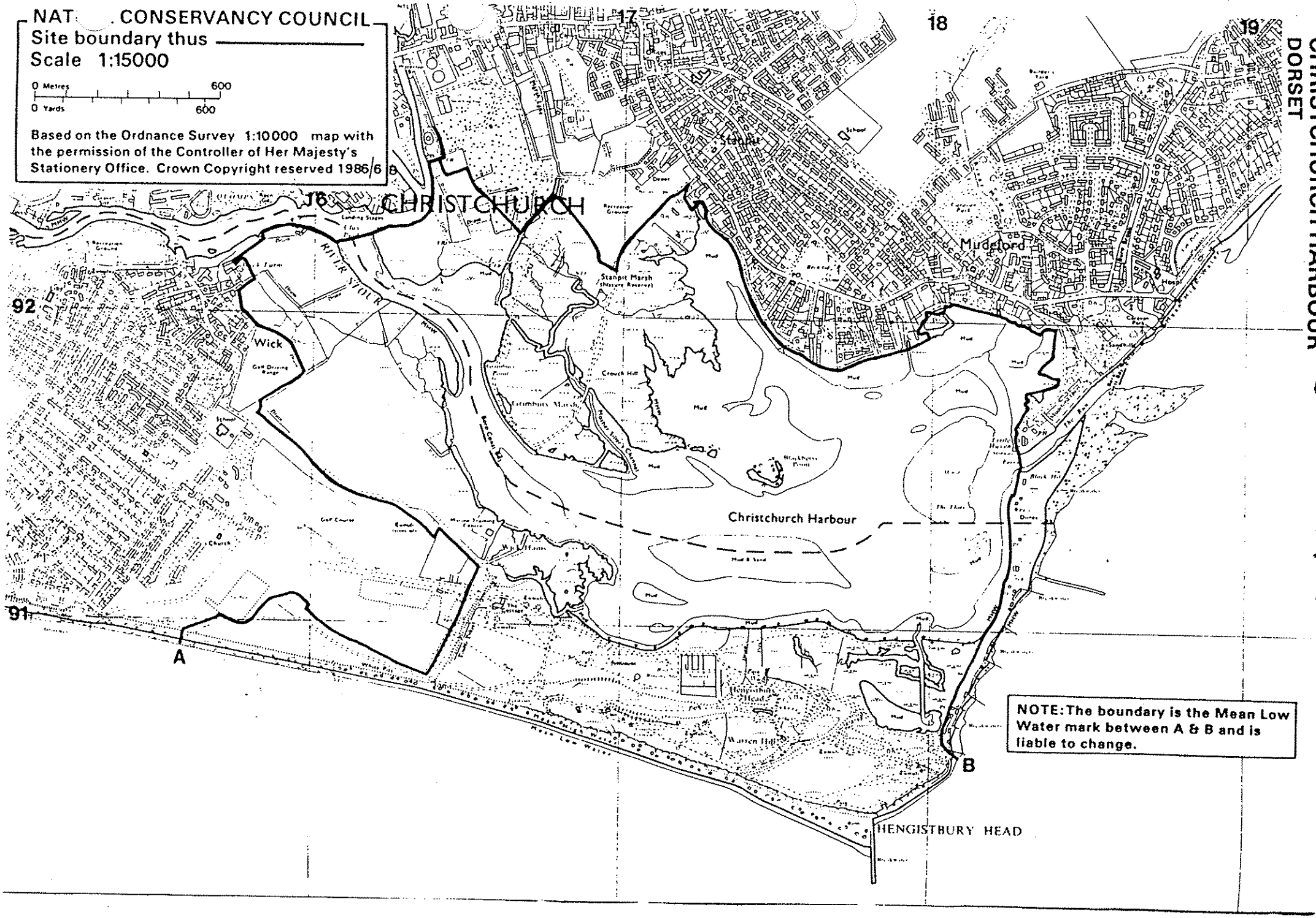
Dunes, dominated by Marram Ammophila arenaria have developed at the foot of the cliff behind the Hengistbury Head breakwater. With the Marram are other species including Lyme Grass Elymus arenarius, Sand Sedge Carex arenaria, Sea Rocket Cakile maritima, Sea Sandwort Honkenya peploides and Sea Bindweed Calystegia soldanella. Smaller patches of Marram dominated dunes occur on the face and top of the cliff top and quite extensive areas of dune grassland also occur on Warren Hill and Whitepits Rough. This unusual cliff-top grassland is dominated by Sand Sedge with varying amounts of Bracken Pteridium aquilinum and Ling. Mixed woodland and scrub occurs on the north side of Warren Hill. It contains Pedunculate Oak Quercus robur, birch Betula spp and Common Sallow Salix cinerea.

The Foraminiferida (zooplankton) of the Harbour have been the subect of detailed study and the Harbour waters are believed to be important as a breeding and nursery area for several fish including Bass Dicentrarchus labrax, thick-lipped Mullet Mugil labrosus and thin-lipped Mullet M. capito, and Pollack Pollachius pollachius.

This is a rich site for invertebrates. About 260 species of beetle have been recorded, several of which are local or rare. There are at least 4 nationally rare hoverflies and 14 breeding species of dragonfly. Other well represented groups include spiders, grasshoppers and bush crickets, and moths.

The birds of Christchurch Harbour are well recorded and there is an impressive list of species. Rare breeding birds include Cetti's Warbler Cettia cetti and Bearded Tit Panurus biarmicus, and spotted ake Porgana porgana is frequently recorded. Jack Snipe Hymnocryptes minimus is regularly present in winter with the commoner wintering species which include good numbers of Shelduck Tadorna tadorna. The site is very important for bird migration, frequently holding large numbers of migrants with Wheatear Oenanthe oenanthe, Whinchat Saxicola rubetra and Firecrest Regulus ignicapillus particularly well represented. Osprey Pandion haliaetus is also a regular visitor on passage.

SITE NOTIFIED TO SECRETARY OF STATE ON 8 OCTOBER 1986


NAT CONSERVANCY COUNCIL
Site boundary thus
Scale 1:15000
0 Metres 600
0 Yards 600
Based on the Ordnance Survey 1:10000 map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved 1986/6
17
18
19
16
CHRISTCHURCH
Stanpit
Mudeford
Stanpit Marsh (Nature Reserve)
RIVER STOUR
92
Wick
Crouch Hill
Christchurch Harbour
91
A
B
NOTE: The boundary is the Mean Low Water mark between A & B and is liable to change.
HENGISTBURY HEAD
CHRISTCHURCH HARBOUR
DORSET
DOR 1551 12

CITATION SHEET

DOR/555/15

COUNTY: DORSET

SITE NAME: **POOLE BAY CLIFFS**

DISTRICT: POOLE AND BOURNEMOUTH

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Dorset County Council, Poole Borough, Bournemouth Borough

National Grid Reference: SZ 058891 to SZ 138913 Area: 11.48 (ha) 28.35 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 19 SW, SX 09 SE, SZ 08 NE

Date Notified (Under 1949 Act): Date of Last Revision:

Date Notified (Under 1981 Act): 1989 Date of last Revision:

Other Information: New site. A Geological Conservation Review site.

Description and Reasons for Notification:

The western cliffs present sections in the Bournemouth Freshwater Beds which provide an unparalleled opportunity for the sedimentologist to study the point-bar and channel-plug deposits of large meandering river systems. The beds are of early to mid-Eocene age and have yielded a diverse fossil flora. Eastwards they pass laterally into the very different shallow marine and offshore sediments of the Isle of Wight, and are therefore important in the palaeographic reconstruction of the Hampshire Basin.

The lateral passage from the Bournemouth Freshwater Beds to the Bournemouth Marine Beds involves a highly deformed channel bank-collapse complex.

The eastern cliffs show unique exposures of the Bournemouth Marine Beds and of the Boscombe Sands of mid-Eocene age. These formations display probably the best examples of meso-tidal estuarine sedimentation in the British Eocene, and contain numerous features of interest to the sedimentologist. In the past they have yielded a very diverse fossil tropical flora.

Sections of the cliffs support heath vegetation with Heather Calluna vulgaris, Bell Heather Erica cinerea, Bristle Bent Agrostis curtisii and Dwarf Gorse Ulex minor. Some areas of exposed sands support dune-like vegetation with Marram Ammophila arenaria, Lyme-grass Leymus arenarius and other characteristic species. The site supports at least 2 important populations of the rare and declining Sand Lizard (Lacerta agilis)*, these being associated with certain areas of suitable habitat.

There are also local seepage features, in places supporting Common Reed Phragmites australis and Purple Moor Grass Molinia caerulea. The specialised invertebrate fauna of these seepages includes several rare species such as the shore bug Saldula arenicola and the fly Cephalops chlorinae the latter being recorded from only one other locality in Britain.

* This species is listed on Schedule 5 of the Wildlife and Countryside Act 1981.

EXPLANATORY GEOLOGICAL NOTE

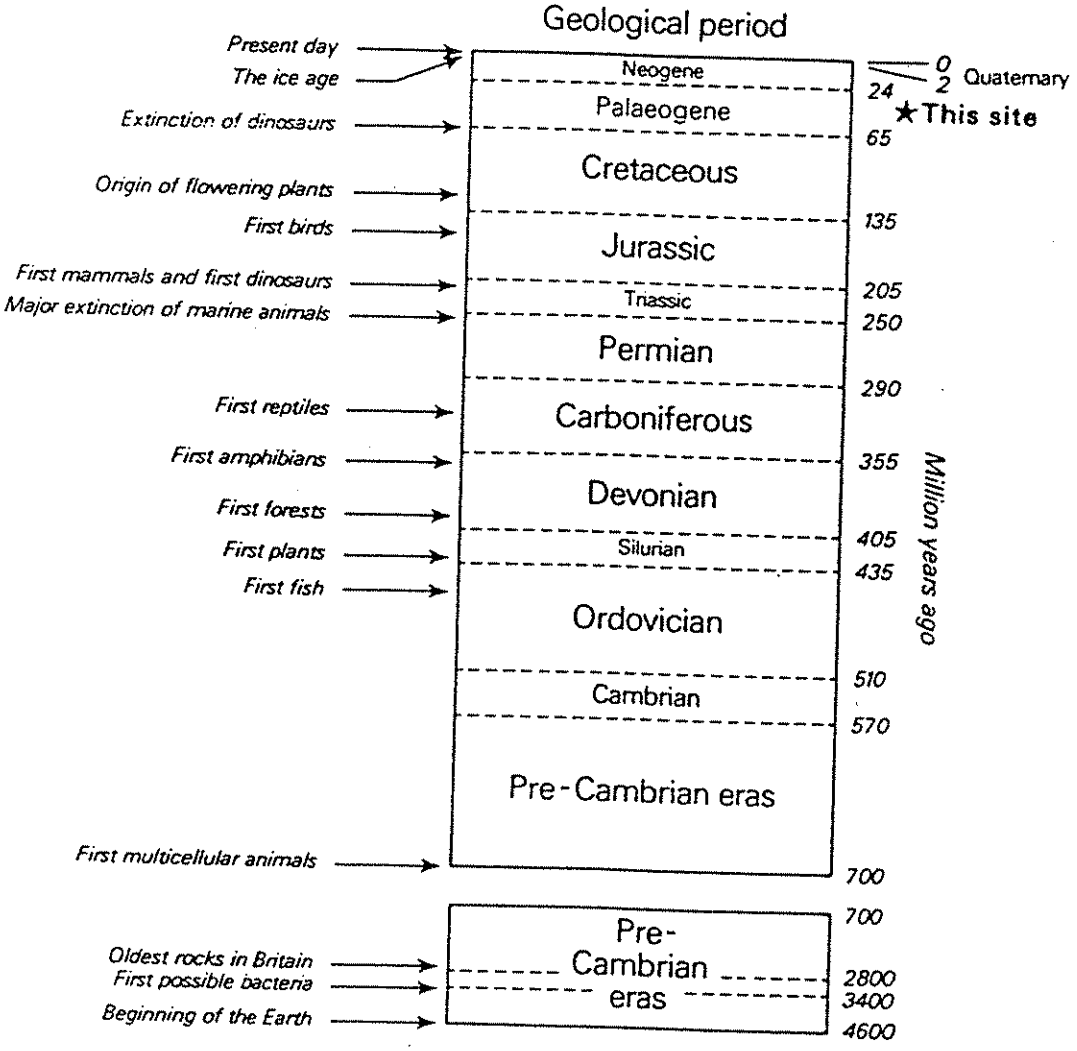
The purpose of this note is to describe the nature and importance of the site, avoiding specialist terms, for the site owner and/or occupier. This note does not form part of the formal notification documents.

POOLE BAY CLIFFS

This site consists of rock exposures in the seacliffs of Poole Bay between Canford Cliffs and Southbourne.

The rocks exposed consist of sandstones which were thought to have been formed some 45 million years ago during the Palaeogene Period. Near Poole the rocks (the Bournemouth Freshwater Beds) are thought to have been formed in a large freshwater river, while near Boscombe and Southbourne the rocks (Bournemouth Marine Beds and Boscombe Sands) preserve different features which show they were formed in an ancient river estuary. All these rocks contain many fossil tropical plants.

This site is of special scientific interest because it enables geologists to study the development of ancient rivers and the climate in this period of the Earth's history.



Geological timescale

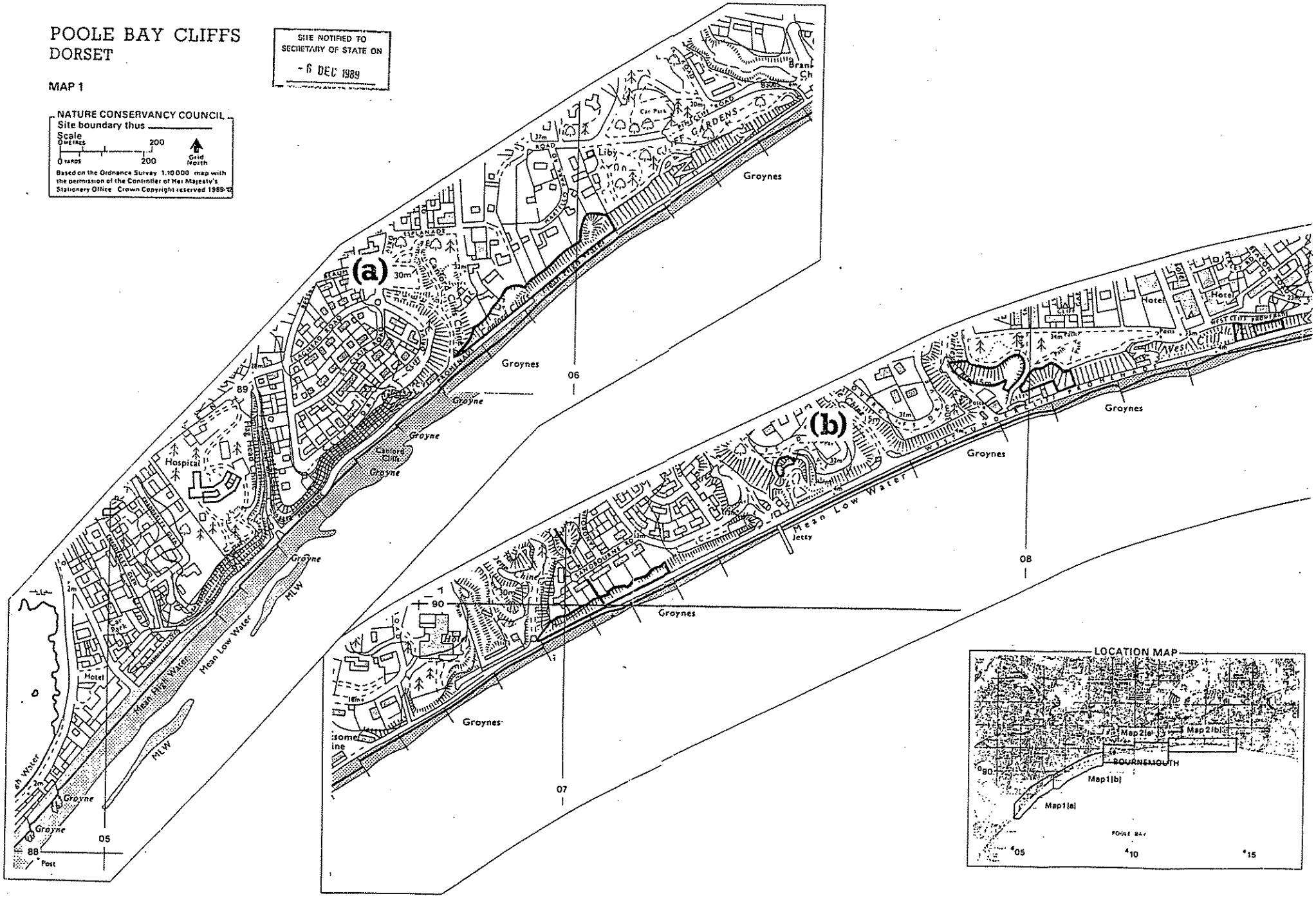
This chart shows the time of formation of features at the site in relation to major events in the Earths history

POOLE BAY CLIFFS
DORSET

MAP 1

SITE NOTIFIED TO SECRETARY OF STATE ON
- 6 DEC 1989

NATURE CONSERVANCY COUNCIL
Site boundary thus
Scale
METRES 200
YARDS 200
Grid North

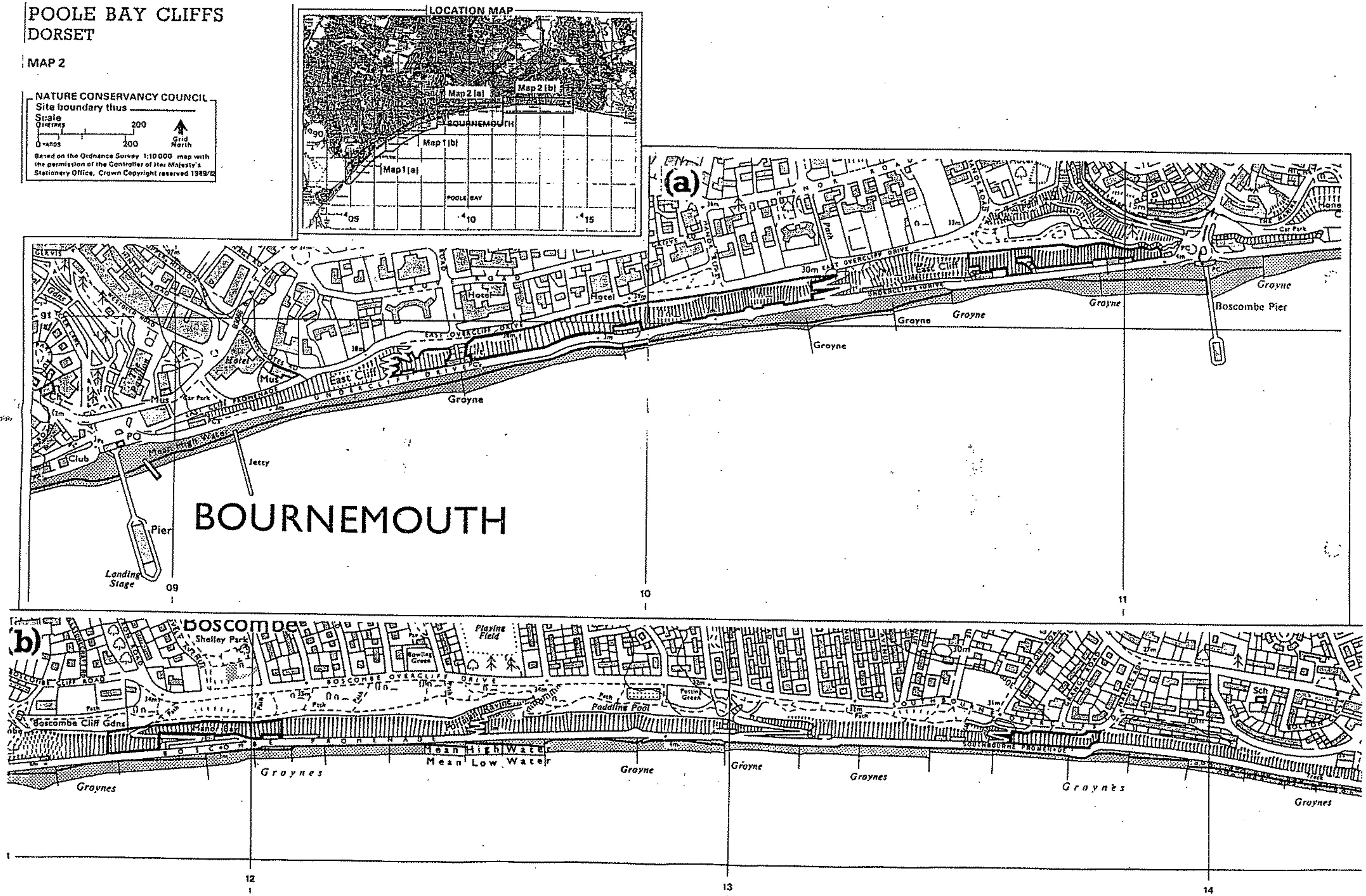


LOCATION MAP

POOLE BAY CLIFFS
DORSET

MAP 2

NATURE CONSERVANCY COUNCIL
Site boundary thus
Scale



COUNTY: DORSET SITE NAME: POOLE HARBOUR

DISTRICT: POOLE, PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended). Parts of the site are National Nature Reserve (NNR) declared under Section 19 of the National Parks and Access to the Countryside Act 1949.

Local Planning Authority: Purbeck District Council, Poole Borough Council, Dorset County Council

National Grid Reference: SZ 000890 Area: 4049 (ha) 10,006 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SY99SE, SW, 98NE, NW, SZ09SW, 08NW, SW

Date Notified (Under 1949 Act): 1964 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1990 Date of Last Revision:

Other Information: Formerly notified as Poole Harbour Marshes, Mudflats and Islands SSSI. Parts of this former site have been incorporated into adjoining SSSIs, with the boundary further amended by extension and deletion. The site is listed in "A Nature Conservation Review" Ed. D.A. Ratcliffe (Cambridge University Press 1977) and meets the criteria for designation as a Special Protection Area under the European Community Directive and as a wetland of international importance under the RAMSAR Convention. The site incorporates the Arne Reedbeds NNR and the shorelines of the Studland and Godlingston Heaths NNR, Holton Heath NNR and Arne RSPB nature reserve. Brownsea Island is owned by the National Trust and part is managed as a nature reserve by the Dorset Trust for Nature Conservation.

Description and Reasons for Notification:

Poole Harbour is one of the largest natural harbours in the world, a very high proportion of its area comprising intertidal marshes and mudflats. These, together with the permanent channels, support large numbers of wintering wildfowl and waders, for which Poole Harbour has national and international significance. Fringing habitats of heathland, grassland and the islands provide additional interests, in turn supporting further scarce and restricted flora and fauna. Several rare marine invertebrates also occur within the harbour.

Covering an area of nearly 4,000 ha, Poole Harbour occupies a shallow depression in the acidic, Tertiary deposits towards the south-western extremity of the Hampshire Basin and has been formed over the past 5,000 years by a rising sea level. The 4 main islands represent high ground between former river valleys and these now have fringing marshes and in places cliffs cut in the underlying sands and clays. A relatively low volume of freshwater from several small rivers enters the Harbour and this, together with a narrow entrance and shallow form, provide poor flushing characteristics, giving rise to extensive intertidal mudflats and saltmarshes. Tides are variable but of low vertical range and with a "double high" phenomenon causing water to be held at or above mean level for 16 out of 24 hours. The original heathland landscape in which the Harbour is set has been severely modified by human activity, particularly in the past 200 years, but some remaining natural transitions from saltmarsh to bog and heathland still occur. Grazing marshes and fragments of fen and carr woodland also persist, with extensive reedswamp fringes. The north-eastern shores are mostly urbanized to high water mark.

Deep water channels maintained by natural scour supplemented by dredging are restricted: some 80% of the Harbour area comprises inter-tidal, fine-grained mud, sandflats and marshes. The variety of inter-tidal and sub-tidal habitats reflects the range of substrate types and degree of exposure. Most marine invertebrate species are of widespread distribution but, especially in the case of the sheltered intertidal bays, often are in very large numbers. Associated with subtidal fine sands of the central Harbour are species-rich communities dominated by beds of the tube worm Sabella pavonina: such extensive beds represent a habitat not so well developed elsewhere. Whilst species diversity is generally low, Poole Harbour is notable in supporting several rare and restricted marine invertebrates. The sponge Suberites massa, rarely recorded in British waters, is locally abundant on suitable substrates together with an interesting community of Sea squirts, Ascidians and Sea mats, Bryozoans. Among these Anguinella palmata and Farella repens are also rare. The Starlet Sea Anemone Nematostella vectensis is a rare species found only in a few similar lagoonal situations and the mollusc Aeolidiella sanguinea is otherwise only recorded from western Ireland.

The mud and sandflats are mostly fringed on their landward sides by saltmarshes or stands of Common Reed Phragmites australis. Much of the saltmarsh is dominated by Common Cord Grass Spartina anglica which arose as a hybrid and rapidly colonized several south coast estuaries earlier this century. Some retreat or 'die-back' is now occurring across its range in southern Britain. The mid and higher level saltmarshes are characterised by more diverse communities with many typical saltmarsh species present. The local Shrubby Seablite Suaeda vera occurs in places, towards the western limit of its distribution in Britain.

These fringes of saltmarsh or reed are important for several nesting birds such as Bearded Tit Panurus biarmicus associated with reed stands and a particularly high density of nesting Redshank Tringa totanus on some of the marshes. The small colonies of Blackheaded Gulls Larus ridibundus mostly on the islands sometimes shelter a pair of Mediteranean Gulls L. melanocephalus and on Brownsea locally important colonies of Sandwich and Common Terns Sterna sandvicensis and S. hirundo. The expanse of intertidal flats with large populations of invertebrates is of great importance as a feeding resource for large numbers of wading birds and wildfowl in winter. These wintering birds have been recorded in Poole Harbour over the past 3 decades and at least 14 species regularly attain levels in excess of 1% of their British populations. Two species, Black-tailed Godwit Limosa limosa and Shelduck Tadorna tadorna, also regularly occur at internationally significant levels, with an excess of 1% of their western European populations present. In addition to the intertidal feeding areas, adjoining grasslands, notably at Keysworth and in the Lower Frome Valley, are important as feeding sites and high water roosts.

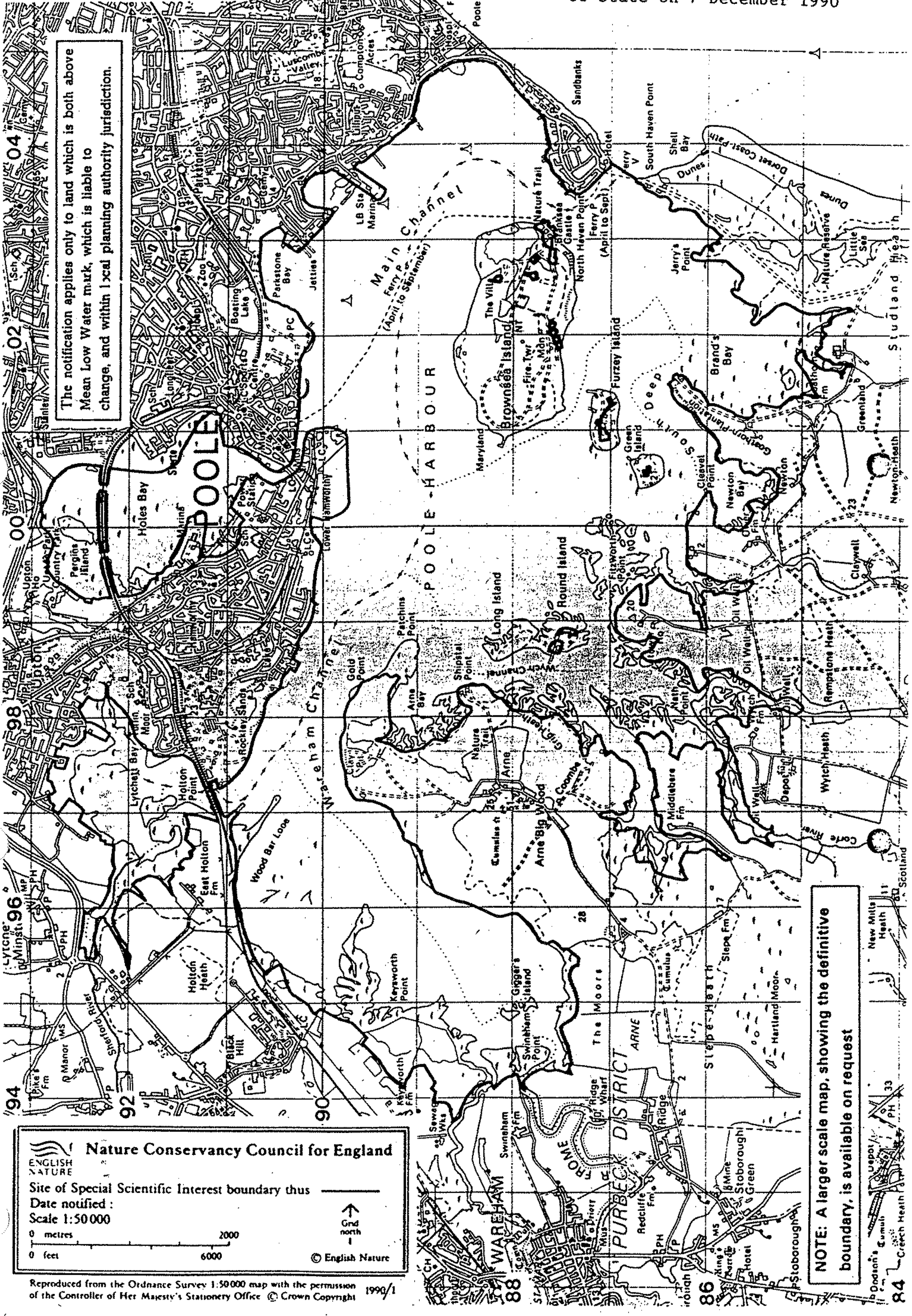
Poole Harbour SSSI adjoins a number of other SSSIs, notably heathland on its southern and western margins, but does include some areas of these fringing habitats, particularly at Lytchett Bay. The reedswamp merges with acidic bog communities which then grade into wet and dry heathland. There is also dry heathland of the Heather Calluna vulgaris / Western Gorse Ulex gallii type on the islands, though this has been reduced in extent through tree planting and invasion. The open dry heathland at Brownsea is particularly notable for its lichen assemblage which is of national importance. Some areas of heathland on the islands are regularly mown as lawns, modifying the vegetation to acidic grassland with heath species and a high moss content.

Wetter grasslands occur on the Harbour shores with neutral, herb-rich swards at Lytchett and more extensive brackish grazing marshes at Keysworth, the latter dominated by Creeping Bent Agrostis stolonifera, with frequent Strawberry Clover Trifolium fragiferum and Narrow-leaved Bird's-foot-trefoil Lotus tenuis. Wet woodlands of Birch and Sallow adjoin these areas, whilst particularly on the islands, stands of Scots and Maritime Pines Pinus sylvestris and P. maritima dominate the drier soils. Here there are populations of the rare and protected Red Squirrel Sciurus vulgaris and also on Brownsea the largest colony of nesting Grey Heron Ardea cinerea in Dorset with about 100 pairs present.

This range of habitats and their continuity with one another supports several scarce and restricted species. The nationally scarce Hairy Dragonfly Brachytron pratense and Small Red Damselfly Ceriagrion tenellum are recorded from heathland in the site, as is the Silver-studded Blue Butterfly Plebejus argus. The rare shore bug Saldula setulosa is recorded only from Poole Harbour, on sandy areas near high water mark and the rare and endangered ground beetle Drypta dentata occurs on Brownsea. Both of these insects are listed in the Red Data Book.

POOLE HARBOUR
DORSET

Site Notified to the Secretary of State on 7 December 1990



ENGLISH NATURE

Nature Conservancy Council for England

Site of Special Scientific Interest boundary thus

Date notified :

Scale 1:50 000

Grid north

0 metres 2000

0 feet 6000

© English Nature

 1990/1

COUNTY: **DORSET** SITE NAME: **LUSCOMBE VALLEY**

DISTRICT: **POOLE**

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended).

Part Local Nature Reserve (LNR) declared under Section 19 of the National Parks and Access to the Countryside Act 1949.

Local Planning Authority: Poole Borough Council, Dorset County Council.

National Grid Reference: SZ 042892, SZ 046895 Area: 58.07 (ha)

Ordnance Survey Sheet: 1:50,000 - No 195 1:10,000 SZ09SW, SZ09SE, SZ08NW, SZ08NE

Date Notified (Under 1981 Act): 12 March, 1996

Other Information: A new site. Part adjoins Poole Harbour SSSI.
The site includes all of Luscombe Valley LNR which is managed by Poole Borough Council.

Description and Reasons for Notification

Luscombe Valley SSSI is part of the complex of heathland sites which together comprise the Dorset Heathlands.This is one of the major lowland heathland areas in Britain, with the sites showing a high degree of ecological cohesion and clear ecological trends and patterns. The heathlands are important in a European and international context for their plant and animal communities.

The Luscombe Valley site lies in a narrow valley with an underlying geology of Branksome Sand, some river terrace deposits but mostly gravel head and alluvium.The site has been much altered, with its former heath and mire communities now fragmented and reduced in area. Such fragmentation has occurred throughout the Dorset heaths, with about 86% having been lost since the mid 18th century. Nonetheless this site still supports a range of important habitats with heath, acid grassland and mire communities within a matrix of pine woodland and the grassland of a close mown golf course. A small stream flows along the valley bottom and into Poole Harbour. Moving down the valley towards the harbour the habitats change from heathland and mire to freshwater reedbeds and finally to brackish habitats.

At Evening Hill the site slopes down to the Poole Harbour shoreline. It is largely semi-natural and heathy in character. Here there is a mosaic of dry heath, acid grassland and scrub with some Scots pine *Pinus sylvestris* and maritime pine *P. pinaster* woodland. A fringe of grassland adjacent to Poole Harbour supports maritime species such as lyme grass *Elymus arenarius*, sea-purslane *Halimione portulacoides*, sea beet *Beta vulgaris* and the nationally rare Bermuda-grass *Cynodon dactylon*.

Within Luscombe Valley there are extensive roughs and dry heath slopes on which heather *Calluna vulgaris* is widely dominant, with typical associated plants such as bell heather *Erica cinerea*, bristle bent *Agrostis curtisii*, common gorse *Ulex europaeus*. Western gorse *U. gallii* is also common, a distinctive feature of the Dorset heaths lying north of Poole Harbour. Much of the fairways are unimproved acid grassland with common bent *Agrostis capillaris*, bristle bent and heath-grass *Danthonia decumbens* which is locally frequent. Sheep's bit *Jasione montana*, common cat's ear *Hypochaeris radicata* and sheep's sorrel *Rumex acetosella* are also present. Scots pine and maritime pine with birch *Betula* sp. and bracken *Pteridium aquilinum* are the dominant species of the surrounding woodland.

On the valley floor there is an area of species rich mire vegetation. This is characterised by a variety of bog mosses including *Sphagnum magellanicum* and the nationally scarce *S. pulchrum*, and other plants such as bog asphodel *Narthecium ossifragum*, white beak-sedge *Rhynchospora alba*, common cotton grass *Eriophorum angustifolium* and oblong-leaved sundew *Drosera intermedia*.The mire vegetation grades into common reed *Phragmites australis* with stands of bog-myrtle *Myrica gale*. The lower part of the valley is varied with carr woodland and reedswamp. Kingfisher[1] *Alcedo atthis* is a resident on the several channels. The nationally scarce dotted sedge *Carex punctata* is present in one of its few locations in Dorset.

The site supports a characteristic heathland fauna. Of particular note are several populations of the endangered and specially protected sand lizard *Lacerta agilis*[2] which occur mostly on the dry heathland slopes. The mire communities support two species of nationally scarce bush-crickets, long-winged conehead *Conocephalus discolor* and bog bush-cricket *Metrioptera brachyptera*. A notable variety of rare and scarce moth species have been recorded including the Scarlet Tiger *Callimorpha dominula*, cream-boardered Green Pea *Earias chlorana*, Maple Pug *Eupithecia inturbata*, Horse Chestnut *Pachycnemia hippocastana*, obscure Wainscot *Mythimna obsoleta*, twin-spotted Wainscot *Archanara geminipunctata*, silky Wainscot *Chilodes maritimus*, *and* dingy Mocha *Cyclophora pendularia*.

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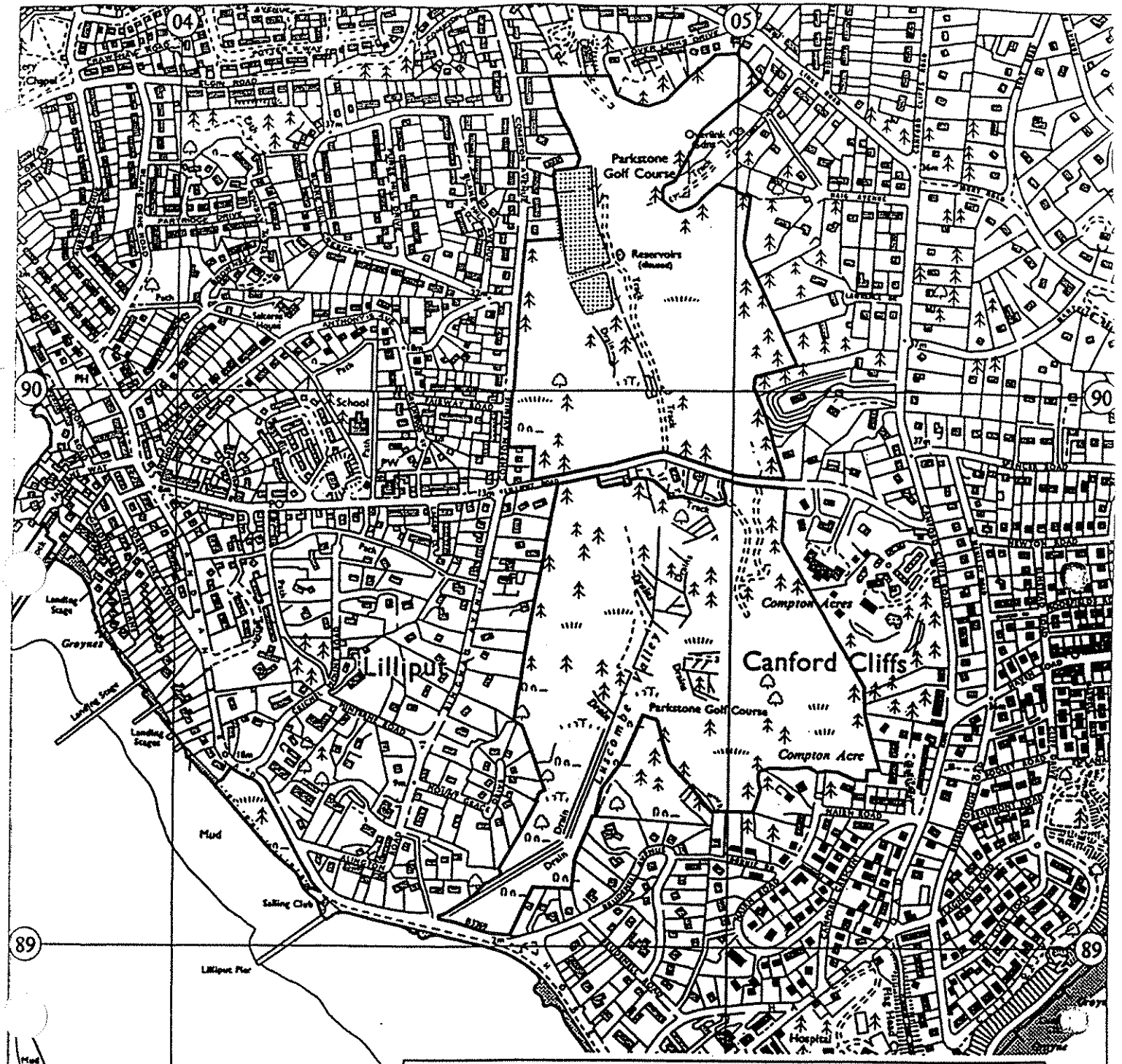
[1]Species listed in Annex 1 of the EC Birds Directive

[2] European protected species listed in Schedule 2 of Habitats Regulations 1994.



ENGLISH NATURE

Nature Conservancy Council for England

Site of Special Scientific Interest

Luscombe Valley
Dorset

Site boundary (centre of line): ——— Hectares: 58.07

Date notified: Notified to the Secretary of State 12 March 1996

Scale 1:10000

0 500 metres

0 1500 feet

Grid North

code: 13PTT

Prepared by Geographic Information Unit, English Nature

Site Notified to Secretary
of State on 11 November 1987

CITATION SHEET

COUNTY: DORSET SITE NAME: HAM COMMON

DISTRICT: POOLE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Poole Borough Council, Dorset County Council

National Grid Reference: SY 981907
983914

Area: 32.0 (ha) 79.0 (ac)

Ordnance Survey Sheet 1:50,000: 195

1:10,000: SY 99 SE

Date Notified (Under 1949 Act):

Date of Last Revision:

Date Notified (Under 1981 Act): 1987

Date of Last Revision:

Other Information: New site.
Lies adjacent to the Poole Harbour SSSI.

Description and Reasons for Notification:

This site, which includes a stretch of cliff along the north side of Poole Harbour of high geological interest, also holds dry and wet heath with a rich associated flora and fauna.

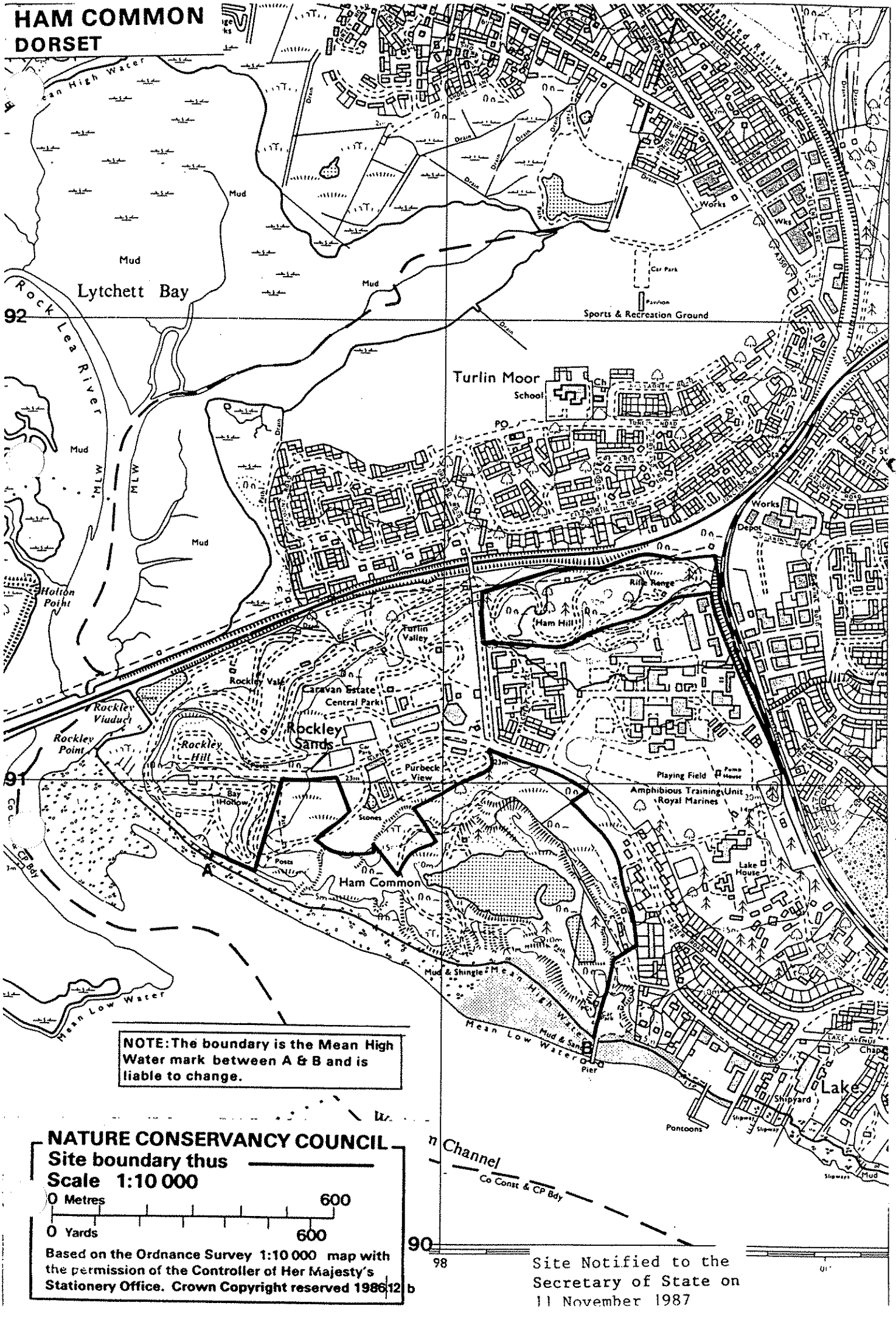
Included in the SSSI is one of only two sites yielding fossil plants from the Dorset Pipe Clays, of lower Eocene age. This is of considerable significance as these deposits are the probable fluviatile ('river-lain') facies equivalents of the marine London Clay with its world famous flora. Fossil plants occur here at several facies throughout the geological site. Foreshore exposures allow the observer to understand the geological context of the plant bearing strata, making this site a valuable one. The flora from the geological site consists mainly of angiosperm fruits and seeds, many of which represent tropical trees and lianas. Over seventy fossil species have been recorded here of which thirty species and three genera are restricted to this site in British Tertiary floras, whilst many are unique in the world's Tertiary deposits. It is also the type locality for four genera and forty-four species and is critical for studies of European Tertiary palaeobotany and palaeocology.

Dry heathland occurs on the higher ground, the railway embankment and slopes of old mineral workings. Dominated by Ling Calluna vulgaris and Western Gorse Ulex gallii, it is typical of the heathlands north of Poole Harbour. Other associated plants are Bell Heather Erica cinerea and Bristle Bent Agrostis curtisii and lichens of the genus Cladonia are frequent. Common Gorse Ulex europaeus and Bracken Pteridium aquilinum locally form dense stands.

In wetter areas on lower ground Purple Moor-Grass Molinia caerulea and Cross-leaved Heath Erica tetralix are the dominant plants, but where there is flushing by ground water from above, Common Cottongrass Eriophorum angustifolium, Bog Asphodel Narthecium ossifragum, Star Sedge Carex echinata, Marsh Lousewort Pedicularis palustris and Royal Fern Osmunda regalis occur. There are small quantities of the Bog-mosses Sphagnum tenellum and S. fimbriatum and, in places, the mosses Campylium stellatum and Drepanocladus fluitans. Other low-lying wet areas support Common Reed Phragmites communis, Common Sallow Salix cinerea and Downy Birch Betula pubescens.

The dry heathland supports strong populations of the rare Sand Lizard Lacerta agilis and Dartford Warbler Sylvia undata, a rare heathland bird, breeds here. The former clay workings now form a lake which is of general interest for birds and supports a number of dragonfly species including the scarce Small Red Damselfly Ceriagrion tenellum.

HAM COMMON
DORSET



NOTE: The boundary is the Mean High Water mark between A & B and is liable to change.

NATURE CONSERVANCY COUNCIL

Site boundary thus ——

Scale 1:10 000

0 Metres 600

0 Yards 600

Based on the Ordnance Survey 1:10 000 map with the permission of the Controller of Her Majesty's Stationery Office. Crown Copyright reserved 1986 12 b

Site Notified to the Secretary of State on 11 November 1987

COUNTY: DORSET SITE NAME: ARNE

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Purbeck District Council; Dorset County Council

National Grid Reference: SY 966880 Area: 563.4 (ha) 1392.2 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SY 98 NE, NW

Date Notified (Under 1949 Act): 1952 Date of Last Revision:

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information: A large part is a nature reserve owned and managed by the RSPB. Adjoins Poole Harbour, The Moors and Stoborough and Creech Heaths SSSIs, to which some areas have been transferred. Site further amended by deletion.

Description and Reasons for Notification:

The Arne Peninsula lies on the southern shore of Poole Harbour and holds an extensive area of lowland heathland on the Bagshot Beds with diverse plant and animal communities of dry heath, wet heath and bog, which show many characteristics typical of Purbeck heaths. There are fine transitions from heathland into saltmarsh, reed swamp, coniferous and deciduous woodland and the site contains a geological exposure of high fossil plant interest.

The geological exposure is one of only two sites yielding fossil plants from the Dorset Pipe Clays, of lower Eocene age. This is of considerable significance as these deposits are the probable fluviatile ('river-lain') facies equivalents of the marine London clay with its world famous flora. The flora here consists mainly of angiosperm fruits and seeds, many of which represent tropical trees and lianas. Thirty-nine species have been recorded, with ten species and one genus restricted to this site in the British Tertiary succession.

The dry heathland on the higher and sloping ground is largely dominated by Ling Calluna vulgaris with Bell Heather Erica cinerea, Bristle Bent Agrostis curtisii, Dwarf Gorse Ulex minor and scattered patches of Common Gorse U. europaeus. In places Bracken Pteridium aquilinum dominates and there are stands of Scots pine Pinus sylvestris, Maritime Pine P. pinaster and Silver and Downy Birches Betula pendula and B. pubescens. Where the heath becomes wetter on lower ground and where there is impeded drainage, Cross-leaved Heath Erica tetralix and the rare Dorset Heath Erica ciliaris, Ling and Purple Moor-grass Molinia caerulea are the dominant species, the last forming deep tussocks in some areas. Typical mosses of the wet heath are Sphagnum compactum and S. tenellum and in the south of the site there are strong populations of the very scarce Marsh Gentian Gentiana pneumonanthe. Lichens of the genus Cladonia are abundant, especially in damp and wet heathland. Locally, where the water table is permanently high, mire communities have developed and, particularly in the south of the site, there are extensive areas of reed swamp. Where mire and wet heath give way to reed swamp or saltmarsh, Black Bog-rush Schoenus nigricans and Blunt-flowered Rush Juncus subnodulosus are frequent.

Wet woodland is dominated by Downy Birch and Common Sallow Salix cinerea, the latter frequently with a luxurient covering of epiphytic lichens. The bog moss Sphagnum fimbriatum covers large areas of wet ground and in places the uncommon Royal Fern Osmunda regalis occur. Drier woodland is dominated by Silver Birch and Pedunculate Oak Quercus robur locally with Hazel Corylus avellana, and occasionally the invasive Rhododendron ponticum. There is a good epiphytic lichen flora which includes several species normally characteristic of ancient woodland.

Included in this and the two adjacent SSSI's are road verges with exceptionally high botanical interest. Some of their plants; such as Dorset Heath and Marsh Gentian, are those of the adjoining heaths, but the use of calcareous material in road construction - at a time when nearby grassland was still 'unimproved' - has produced neutral and moderately calcareous conditions. This, together with annual cutting, has given rise to rich 'hay meadow' communities. In addition to a great variety of grasses and flowering plants, the uncommon Adders-tongue Fern Ophioglossum vulgatum is locally frequent and the related but scarcer Moonwort Botrychium lunaria is also recorded. Orchids are a prominent and attractive feature of the verges in early summer with large numbers of Marsh and Spotted Orchids Dactylorhiza praetermissa, D. maculata and D. fuchsii occurring with their hybrids. There are also fine stands of the local Marsh Helleborine Epipactis palustris.

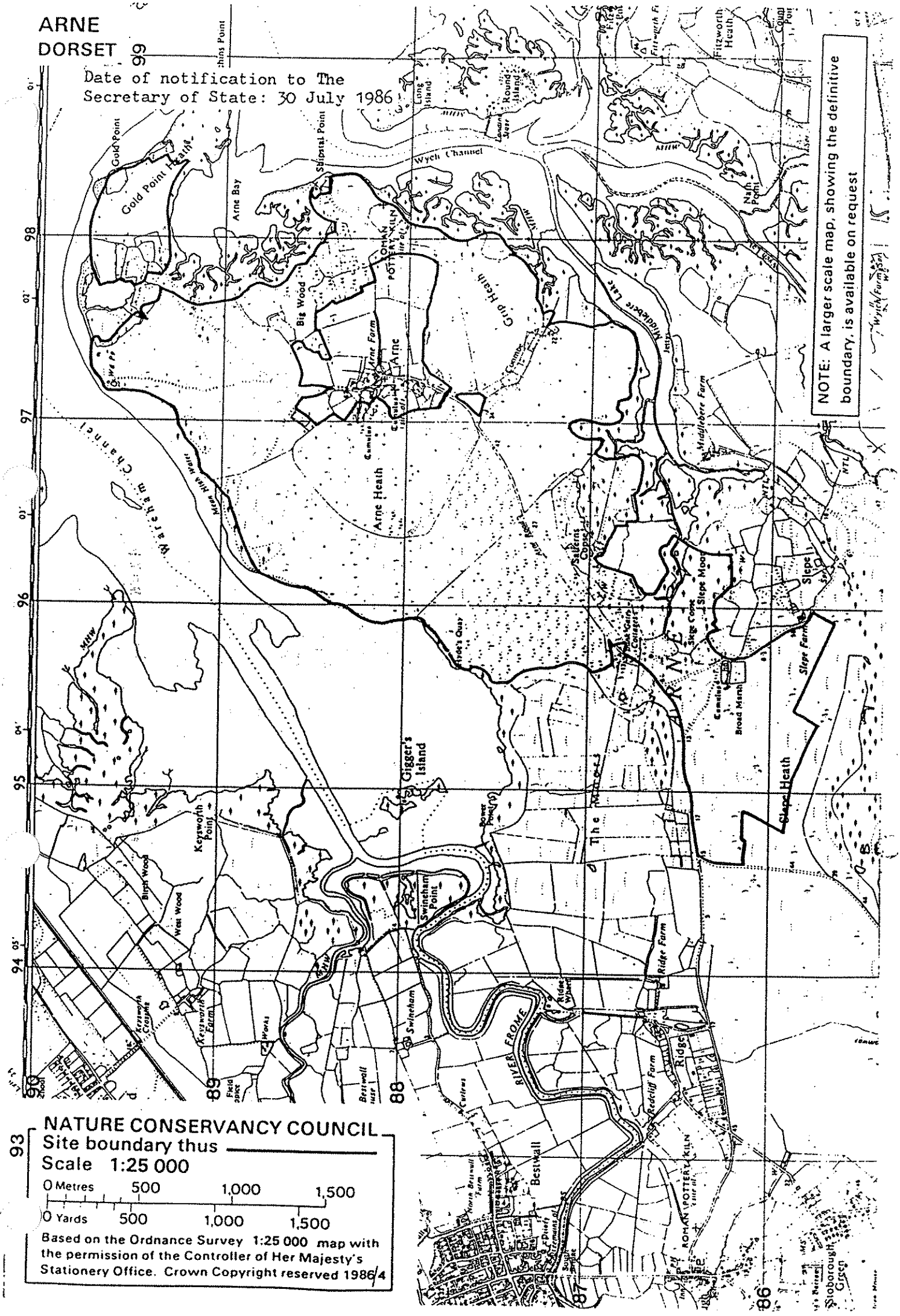
There is a rich invertebrate fauna. Dragonflies and damselflies are particularly well represented with 18 species including the very local Downy Emerald Cordulea aenia and Small Red Damselfly Ceriagrion tenellum as well as the Scarce Ischnura Ischnura pumilio. Butterflies include the Silver-studded Blue Plebejus argus, local and confined mainly to heathland. Over 800 species of moths have been recorded which include the rare heathland species, Speckled Footman Coscinia cribraria and Dingy Mocha Cosymbia pendularia; Reedbeds hold Flame Wainscot, Meliana flammea, a very rare species, and the local Narrow Bordered Bee Hawk Hemaris tityus is found on heathy grassland. The site has also yielded records of rare solitary wasps, beetles, dipteran flies and craneflies and Arne is one of the few localities for the salidid bug Salidala setulosa. The heathlands are rich in spiders with over 200 species recorded. These include Scotina palliardi, Zora armillata and Walekenaera incisa all of which are known from only a few other localities in Britain. Grasshoppers and crickets include the rare Heath Grasshopper Chorthippus vagans and scarce Long-winged Conehead Conocephalus discolor. The local Lesser Cockroach Ectobius panzeri is also frequent.

The Arne Peninsula, with its extensive dry heathland and scattered gorse is a very important area for the rare Dartford Warbler Sylvia undata. Nightjar Caprimulgus europaeus, an uncommon and decreasing bird, also breeds here; Hen Harrier Circus cyaneus is a frequent winter visitor and the diversity of habitat afforded by this site results in good numbers of commoner birds. The dry heathland supports strong populations of the rare and specially protected heathland reptiles, Sand Lizard Lacerta agilis and Smooth Snake Coronella austriaca.

ARNE

DORSET

Date of notification to The Secretary of State: 30 July 1986



NATURE CONSERVANCY COUNCIL

Site boundary thus

Scale 1:25 000

0 Metres 500 1,000 1,500

0 Yards 500 1,000 1,500

CITATION SHEET

COUNTY: DORSET SITE NAME: STUDLAND AND GODLINSTON HEATHS

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended). Major part of site National Nature Reserve (NNR) declared under Section 19 of the National Parks and Access to the Countryside Act 1949

Local Planning Authority: Dorset County Council, Purbeck District Council

National Grid Reference: SZ 030845 Area: 758.9 (ha) 1875.2 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 08 SW, NW, SY 98 SE

Date Notified (Under 1949 Act): 1954 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information: Most is owned by the National Trust. Within Dorset AONB and Heritage Coast.

Description and Reasons for Notification:

Underlying the south and west of this site are the Bagshot Beds against which sand dunes have built up over the past 3 or 4 centuries forming a large part of the South Haven Peninsula and enclosing a lake, Little Sea. In addition to the importance of the peninsula as a key site for coastal geomorphology, the range of habitats on Studland and Godlingston Heaths, including a fine expanse of heathland with many rare animals, makes this area of outstanding importance for nature conservation.

South Haven Peninsula provides an excellent example of progradation of a sandy beach which has been very well documented in historical records and by more recent field surveys. Three main ridges occur, each with dunes fronted by a seaward slope extending beneath alluvial deposits. There are few prograding sand beaches in southern Britain and South Haven Peninsula is a key member of the national network of soft coastal sites. It is extensively used as an educational site as the links between geomorphological process and ecological succession are especially well exemplified.

The fore dunes have Sea Lyme Grass Leymus arenarius and Sand Couch Elymus farctus on the seaward edge, giving way quickly to the dominant cover of Marram Grass Ammophila arenaria. Sand sedge Carex arenaria and the herbs Sea Bindweed Calystegia soldanella and Sheep's Bit Jasione montana are frequent and the uncommon Dune Fescue Vulpia membranacea also occurs. The dune system is composed of highly acidic sand and behind the fore dunes stable dune vegetation is entirely heathland. The former dune ridges are covered by dry heathland vegetation in which Ling Calluna vulgaris is dominant. There is a very important heathland lichen community. The intervening dune slacks with a high water table are dominated by Common Sallow Salix cinerea and birch Betula sp. carr in which the very local Royal fern Osmunda regalis is a conspicuous element. In open areas in the low-lying slacks there is wet heath with bog pools and here the rare Marsh Clubmoss Lycopodiella inundata occurs locally. The dune slacks run northwards from Little Sea, a substantial freshwater lake fringed by reedswamp containing Common Reed Phragmites australis and Greater Reedmace Typha latifolia. The lake is low in plant nutrients and acid in character. The submerged flora includes several rare species such as Six-stamened Waterwort Elatine hexandra and Spring Quillwort Isoetes echinospora.

To the north, south and west of Little Sea the acidic sands and gravels of the Bagshot Beds support varied heathland comprising one of the larger expanses of this habitat left in Dorset. The higher ground of Godlingston Heath is marked by sharp relief and the occurrence of many fragments and boulders of ironstone. Such well-drained slopes support dry heathland dominated by Ling with Bell Heather Erica cinerea, Bristle Bent Agrostis curtisii, Dwarf Gorse Ulex minor and stands of Common Gorse U. europaeus. Near the Agglestone Rock - the largest of the ironstone boulders - Bilberry Vaccinium myrtillus occurs, a scarce plant in Dorset heathland. Level ground with impeded drainage supports damp and wet heathland dominated by Ling, Crossleaved Heath Erica tetralix and Purple Moor Grass Molinia caerulea, with abundant lichens. The rare Dorset Heath Erica ciliaris occurs locally and Marsh Gentian Gentiana pneumonanthe is frequent. Valley mires with bog pools are a notable feature and support a rich variety of bog mosses Sphagnum spp. including S. pulchrum. Bog Asphodel Narthecium ossifragum and Common Cottongrass Eriophorum angustifolium are widespread; Black Bog-rush Schoenus nigricans and Long-Leaved Sundew Drosera intermedia are abundant in places and the rare Brown Beak - Sedge Rhynchospora fusca and the scarce Great Sundew Drosera anglica occur locally.

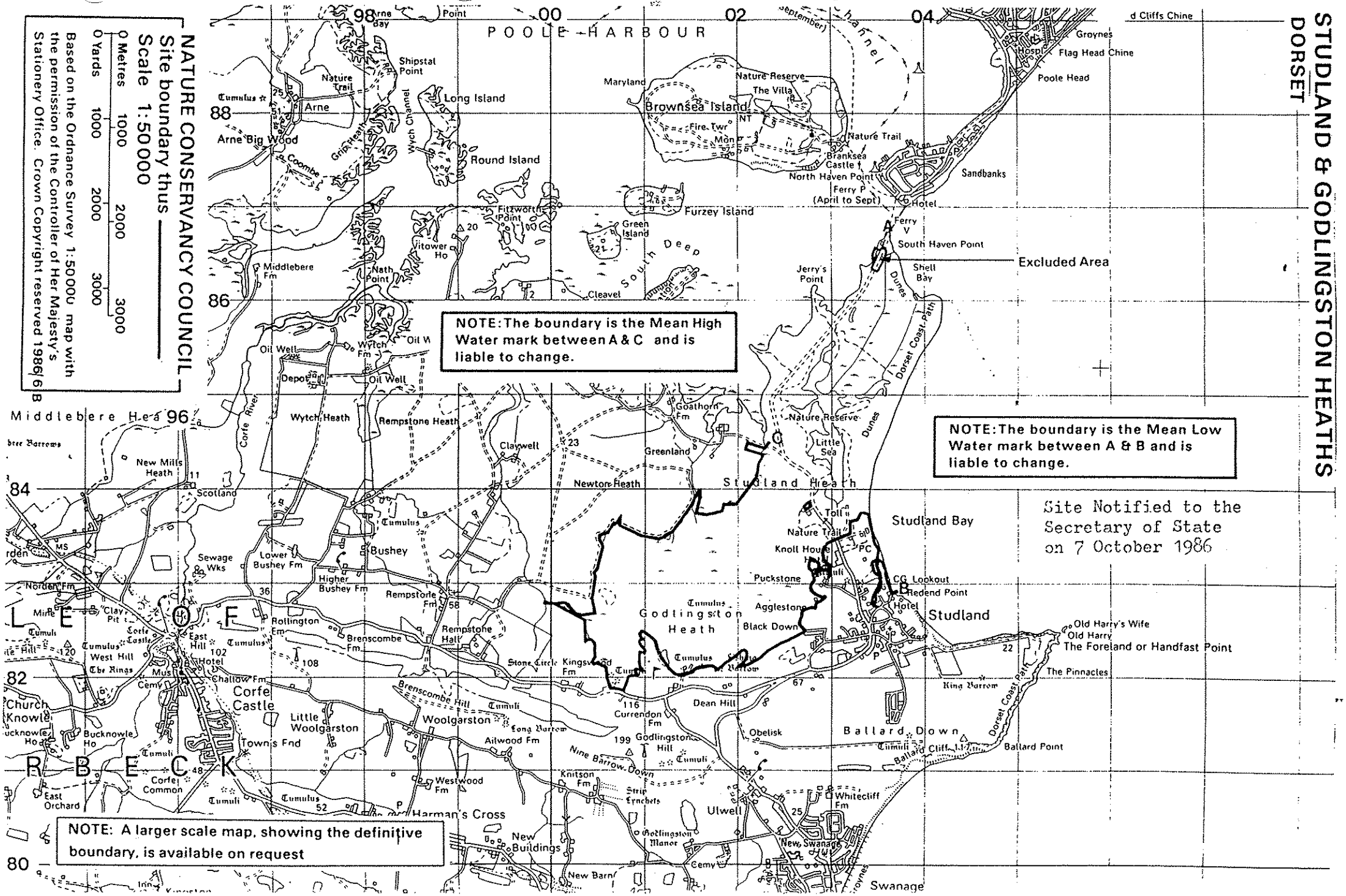
The heathland grades into the saltmarshes of Poole Harbour to the north and deciduous woodland of birch, Pedunculate Oak Quercus robur and Hazel Corylus avellana with sallow and Aspen Populus tremula south of Little Sea. There are several stands of self-sown Scots Pine Pinus sylvestris. In the south of the site there is further habitat diversity with heathy grassland of high floristic interest fringing the golf course.

The range of habitats and their transitions support a very rich invertebrate fauna. The site is of great importance for dragonflies with 22 species occurring, including uncommon species such as Small Red Damselfy Ceriagrion tenellum and Hairy Dragonfly Brachytron pratense; and for grasshoppers and crickets which include the rare Heath Grasshopper Chorthippus vagans, Large Marsh Grasshopper Stethophyma grossum and Woodland Grasshopper Omocestus rufipes. A great diversity of dipteran flies, moths and beetles has been recorded including a number of very restricted distribution such as the Weevil Strophosomus curvipes. Butterflies are well recorded and include the restricted heathland species Silver-studded Blue Plebejus argus.

All six British reptiles are present including strong populations of the rare Sand Lizard Lacerta agilis and Smooth Snake Coronella austriaca. This heathland is one of the most important breeding sites in the country for the rare Dartford Warbler Sylvia undata. Other heathland birds breeding here include Nightjar Caprimulgus europaeus and Stonechat Saxicola torquata and the many swamps and pools support several pairs of Water Rail Rallus aquaticus. Outside of the breeding season Little Sea is important for wildfowl, with notable concentrations of Pochard Athya ferina, Scaup A. marila, Gadwall Anas strepera and Goldeneye Bucephala clangula amongst the species regularly present.

Site Notified to Secretary of State on 7 October 1986

STUDLAND & GODLINGSTON HEATHS
DORSET



CITATION SHEET

SITE NOTIFIED TO SECRETARY OF STATE ON 26 NOVEMBER 19[illegible]

DOR/SSSI/10

COUNTY: DORSET

SITE NAME: STUDLAND CLIFFS

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

Local Planning Authority: Purbeck District Council, Dorset County Council

National Grid Reference: SZ 038828 to SZ 048813 Area: 18.3 (ha) 45.2 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 08 SW

Date Notified (Under 1949 Act): 1970 and 1954 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information: Site formerly known as Studland Bay Cliffs SSSI. Includes part of previously scheduled Ballard Down and Cliffs SSSI. Site is part of the Dorset Heritage Coast and lies within an Area of Outstanding Natural Beauty. Boundary amended by extension and deletion.

Description and Reasons for Notification:

An outstanding stratigraphic and structural site of national importance, the strike and dip cliff section displays unequalled exposures of mid-Campanian Chalk, especially important for palaeontological studies. To the south the Upper Chalk is separated from the Lower and Middle Chalk by the spectacular Ballard Down Fault.

This site is the best exposure, west of Alum Bay, to show the Chalk - Tertiary unconformity, and a relatively complete Palaeocene and lower Eocene succession. The bay provides important sedimentological data and enables palaeogeographic reconstruction of the western part of the Hampshire Basin during the deposition of the Reading Beds - 'Redend Sandstone' interval.

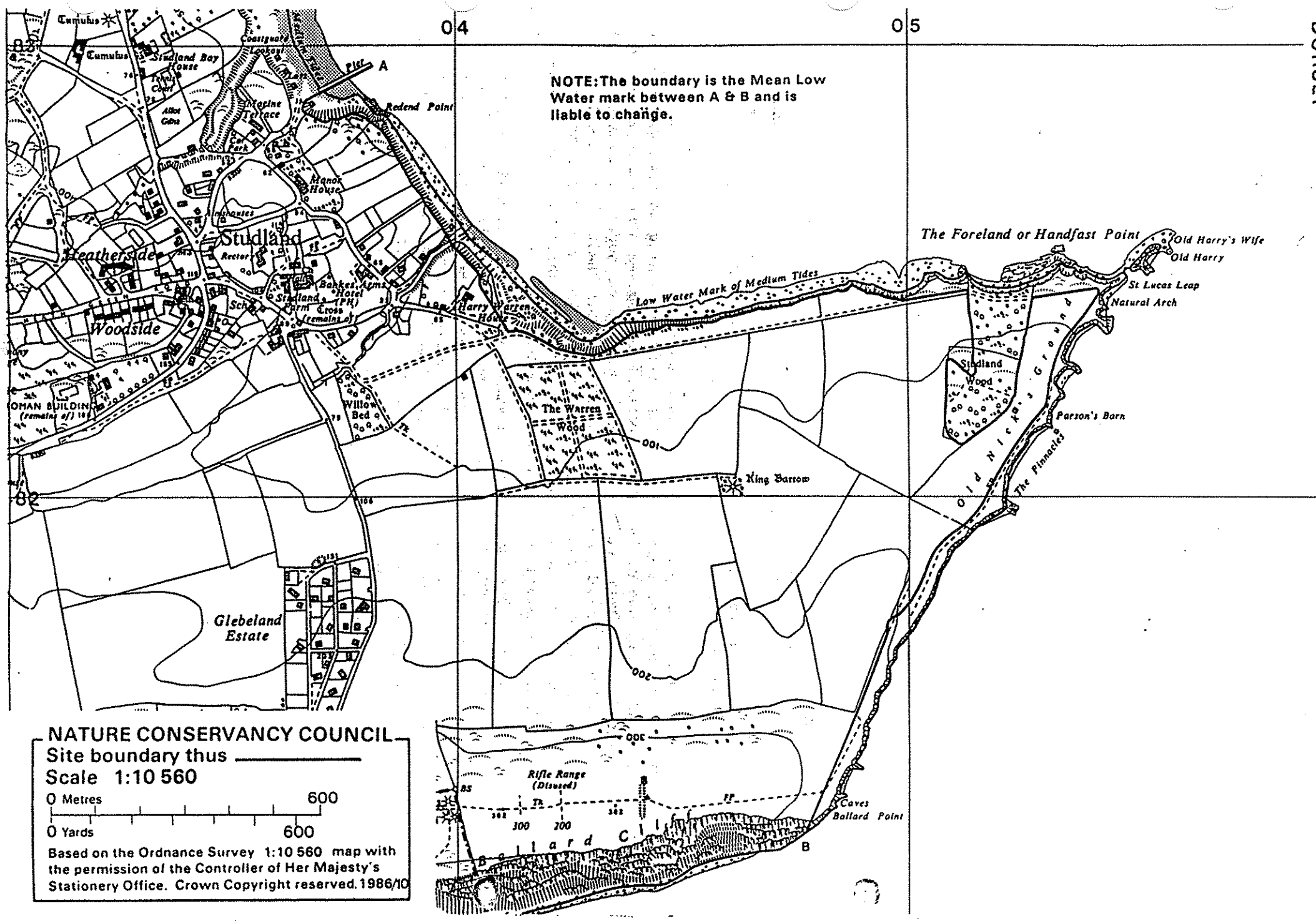
These coastal rock outcrops provide an outstanding cross section through the Purbeck Monocline, part of a belt of crustal flexures running through South Dorset and the Isle of Wight, one of the most important geological structures in southern England. The Ballard Down fault is exposed 300 metres north of Ballard point, cutting through the fold and juxtaposing nearly vertical Chalk to the south against nearly horizontal Chalk to the north. At Redend Point, horizontal Eocene sands overlying the Chalk are cut by sets of small faults which reflect compression associated with the formation of the Purbeck Monocline.

Ballard Down is a key site for coastal geomorphology. It includes a series of predominantly chalk cliffs, platforms and associated beaches, best known for the classic assemblage of stacks, arches and caves at Handfast Point. The site is also important for revealing not only the relationships between local bedrock structures and coastal form, but also the effects of different wave dynamics on the north and south sides of the peninsula respectively. Ballard Down is the most sheltered of the major chalk cliff systems and so forms a key element of the suite of chalk cliff sites.

The site includes a strip of maritime, cliff-top grassland, dominated in places by Red Fescue Festuca rubra. There are many associated herbs including Kidney Vetch Anthyllis vulneraria, Wild Carrot Daucus carota and a good population of the local Wild Cabbage Brassica oleracea. Dense scrub covers the less steep cliffs in the north west of the site. The adjoining Studland Wood has an almost pure Hazel Corylus avellana canopy with occasional mature Field Maple Acer campestre, over a ground flora dominated by Ramsons Allium ursinum and Dogs Mercury Mercurialis perennis. Mature Spindle Euonymus europaeus and Dogwood Cornus sanguinea are frequent as fringing scrub. The wood has a rich invertebrate fauna with a number of uncommon species. These include the beetles Grynobius excavatus, Ptinomorphus imperialis and Caulotrupodes aeneopiceus in dead wood on the old Field Maple. The rare ant Stenamma westwoodi and the local Jet Ant Lasius fuliginosus also occur.

The cliffs are important for birds with several species nesting including one of three sites in Dorset for Cormorant Phalocrocorax carbo and an unusual cliff locality for House Martin Delichon urbica.

STUDLAND CLIFFS
DORSET



NATURE CONSERVANCY COUNCIL

Site boundary thus ——

Scale 1:10 560

0 Metres 600

0 Yards 600

SITE NOTIFIED TO SECRETARY OF STATE ON 26 NOVEMBER 1986

VOL/SSSI/9

CITATION SHEET

COUNTY: DORSET SITE NAME: PURBECK RIDGE (EAST)

DISTRICT: PURBECK

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981(as amended).

Local Planning Authority: Purbeck District Council, Dorset County Council

National Grid Reference: SZ 020812 Area: 142.0 (ha) 350.9 (ac)

Ordnance Survey Sheet 1:50,000: 195 1:10,000: SZ 08 SW, SY 98 SE

Date Notified (Under 1949 Act): 1952 (part) 1954 (part) Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information: Site boundary amended by extension and deletion.
Site formerly notified as Ballard Down and Nine Barrow and Ailwood Downs SSSIs.

Description and Reasons for Notification:

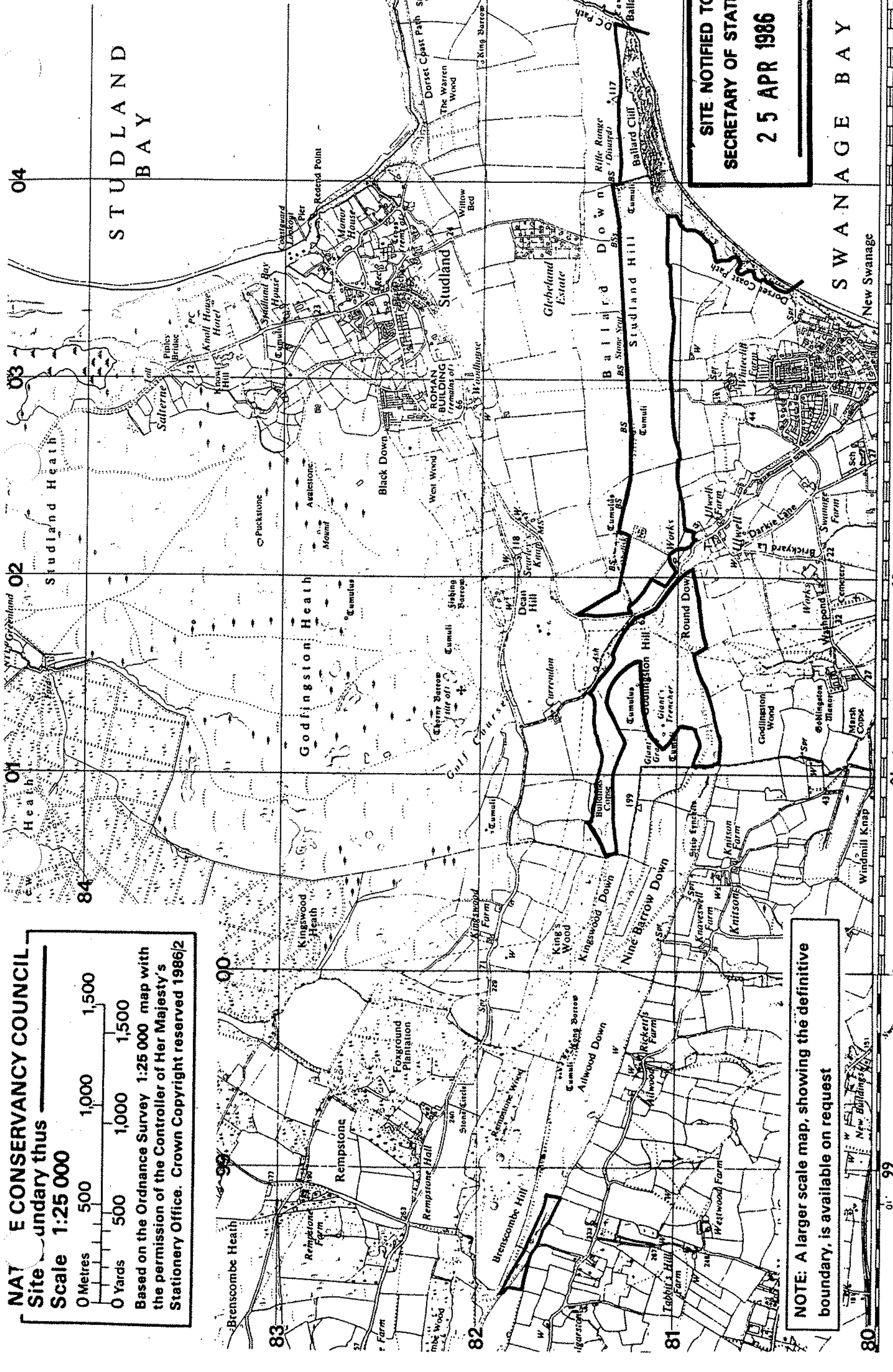
Part of the southern side of the Purbeck chalk ridge and the cliffs between Ballard Point and Punfield Cove, the site contains an important area of chalk grassland with a great diversity of plants and substantial populations of insects, some of which are very local. Punfield Cove is of considerable geological interest.

At Punfield Cove occur important sections through sediments of the Lower Greensand which are critical to geologists' understanding of the conditions of deposition of these rocks. Comparison with sections seen in the Isle of Wight shows significant environmental differences to have existed. Within the Lower Greensand is a thin unit known as the 'Punfield Marine Band' which contains a rich assemblage of fossils having many affinities with assemblages of similar age found on the continent. Part of this site also contributes to the Ballard SSSI on account of its outstandingly important coastal geomorphology.

A turf dominated by Tor Grass Brachypodium pinnatum covers most of the slopes but extensive stands of Common Gorse Ulex europaeus occur especially on the more acid superficial deposits at the top of the ridge. The site is variously grazed by cattle, sheep and horses, giving rise to differences in the height and composition of the sward. In closer-grazed areas there is a rich calcareous sward frequently with an abundance of Horseshoe vetch Hippocrepis comosa; Kidney Vetch Anthylis vulneraria, Carline Thistle Carlina vulgaris and many other typical chalk species are also frequent. The site supports good numbers of Pyramidal Orchid Anacamptis pyramidalis as well as Autumn Lady's Tresses Spiranthes spiralis and Bee Orchid Ophrys apifera. The very local Early Gentian Gentianella anglica is in some years abundant and the scarce Nottingham Catchfly Silene nutans occurs. Acid areas on the ridge top have swards containing typical acid-loving species such as Heath Bedstraw Galium saxatile and Bell Heather Erica cinerea and at certain locations at the foot of the ridge, the Greensand supports more neutral herb rich swards. The grassland interest is supplemented by scrub communities which have developed on and below the cliff.

With a wide variety of aspects and turf height the slopes provide a range of conditions which suit many invertebrates including a large number of species of butterfly. The site is of national importance for the very local Adonis Blue Lysandra bellargus and supports other scarce and local species including Small Blue Cupido minimus and Lulworth Skipper Thymelicus acteon. Other notable invertebrates of this site are Grey Bush Cricket Platycleis denticulata, Stripe-winged Grasshopper Stenobothrus lineatus, the weevils Larinus planus and Rhinocyllus conicus, the Cistus Forester Moth Procris geryon and the spiders Anelosimus aulicus, Araneus redii and Mangora acalypha.

PURBECK RIDGE (EAST)
DORSET



DOR/SSSI/7

CITATION SHEET

COUNTY: DORSET SITE NAME: SOUTH DORSET COAST

DISTRICT: Purbeck, West Dorset, Weymouth and Portland

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: Purbeck District Council, West Dorset District Council, Weymouth & Portland Borough Council, Dorset County Council

National Grid Reference: SY697816-SZ040786 Area: 1760.9 (ha) 4351.2 (ac)

Ordnance Survey Sheet 1:50,000: 194, 195 1:10,000: SY78SW,SE; 87NW; 88SW,SE; 87NE; 97NE; SZ07NW

Date Notified (Under 1949 Act): 1952 Date of Last Revision: 1977

Date Notified (Under 1981 Act): 1986 Date of Last Revision:

Other Information: Formerly notified as Bowleaze Cove to Peveril Point SSSI. Within A.O.N.B. and part of the Dorset Heritage Coast. Parts are owned by the National Trust. Site amended by extension and deletion. More detailed geological and biological information is available on request.

Description

This stretch of coastline combines internationally important geological interest with a rich range of wildlife habitats supporting populations of several rare plants and animals.

The coastal cliffs are of international geological importance and expose a complete section through the Upper Jurassic and Cretaceous rock succession. The site includes the type localities for the Kimmeridge Clay, the Kimmeridgian Stage, the base of the Portlandian Stage and the Purbeck Beds as well as the standard reference section for the Oxfordian of southern England. Numerous features of great importance for studies of Palaeontology, sedimentology, stratigraphy and environments of rock formation are present and have been studied by geologists for well over 150 years. The site is also of national importance for its physiographic interest.

Most of the rock units are very fossiliferous and a number are of international significance for the assemblages of fossil vertebrates which they contain. In particular the Purbeck Beds of Durlston Bay are of special note since they have yielde one of the most important collections of Mesozoic mammals from anywhere in the world. Durlston is also the most important late Jurassic - Early Cretaceous fossil insect site in Europe. Internationally important sites for fossil reptiles also occur in the Kimmeridge Clay at Gaulter Gap to Broad Bench and between Swyre Head and Chapmans Pool and in the Oxford Clay at Furzy Cliff.

The great range of rock types has given rise to a varied coastline of vertical cliffs, undercliffs and landslips which support an outstanding array of local and maritime species. Among the rare plants which occur here are the Carrot Broomrape Orobanche maritima and the strongest national populations of Wild Cabbage Brassica oleracea.

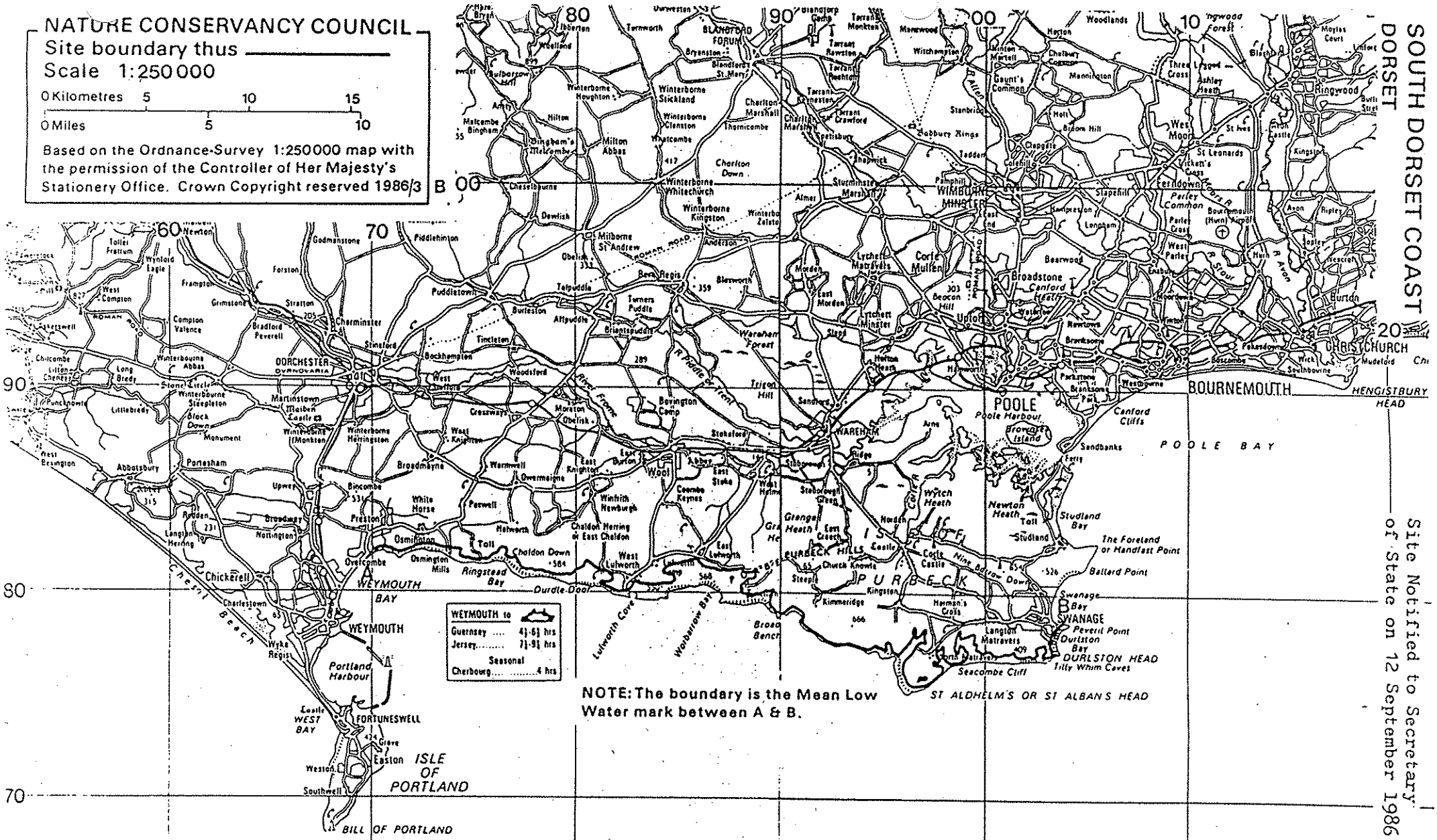
The majority of unimproved limestone grassland in Dorset falls within this site which also includes one of the main areas of unimproved chalk grassland in the county. The character of these calcareous grasslands is strongly influenced by their maritime location and also very locally there is 'chalk heath' on clay with flints over the chalk. Among the many scarce and localised plants and animals of the chalk and limestone are the largest national populations of two rare species - Early Spider Orchid Ophrys sphegodes* and Lulworth Skipper butterfly Thymelicus acteon.

Unimproved grassland, scrub and woodland typical of more neutral soils are found on the clays and sands of the Wealden, the Kimmeridge, Oxford and Gault Clays and the Reading Beds. Of the woodlands, those of the Tyneham Valley are especially notable for their lichen communities which include several rare species.

* This species is given special protection under Section 13 of the Wildlife and Countryside Act 1981.

SITE NOTIFIED TO SECRETARY OF STATE ON 12 SEPTEMBER 1986

SOUTH DORSET COAST
DORSET



Site Notified to Secretary of State on 12 September 1986