



Hengistbury Head Management Plan

January 2011

Preliminaries

This management plan is based on the policies and principles set out in a number of documents. These are listed below with the relevant sections.

Bournemouth Vision 2026 - Sustainable Community Strategy ([Click here](#))
Theme 4, Section 4.5.4. Improve the biodiversity of green spaces.

Corporate Plan ([Click here](#))
Priority 1. Improving our environment.

Cultural Strategy ([Click here](#))
Aim 5. Conserve, enhance and promote access to Bournemouth's environment and heritage.

Leisure Strategy ([Click here](#))
Paper 2. Parks, Gardens, Countryside and Open Space in Bournemouth.
Policy Statement J. Objectives J3, J4, J5, J7 and J 11.

Bournemouth District Wide Local Plan ([Click here](#))
Section 3. The Natural Environment.

Green Space Strategy ([Click here](#))

Nature Conservation Strategy ([Click here](#))

Summary

This Management Plan sets out to describe and evaluate Hengistbury Head and to prescribe a workable management programme for the site.

It is the third revision of a Plan originally written in 1989.

While it is taken into account that the area has a high amenity and recreational value, the Plan is geared towards conservation management whilst seeking to minimise the inevitable conflicts that arise on such a site.

The Management Plan is divided into three stages:

- STAGE 1 gives an overall factual description of the site, providing a general background on which to base a management policy.
- STAGE 2 endeavours to evaluate the site from an ecological as well as cultural aspect. Management objectives are then discussed from both aspects.
- STAGE 3 describes the actual management requirements of the site and how these will be put into practice.

A summary of the proposed issues to be addressed in each compartment during the management plan period is provided below.

Compartment 1 - The Cliffs

	YEAR				
	1	2	3	4	5
Regular beach renourishment allowing longshore drift to contribute to existing beach volumes.			*		
Replacement of 4 timber groynes at Solent Beach with 3 rock groynes			*		
Construction of a rock revetment at Double Dykes				*	

Compartment 2 - Beaches, Intertidal Habitats and Mudflats

	YEAR				
	1	2	3	4	5
Harbour byelaw enforcement (discuss new patrol regime with Christchurch Harbour Steering Group & Brockenhurst College)	*	*		*	*
Maintain buoys (sensitive area) at Barn Bight #	*	*		*	*
Enforce restrictions on bait digging #	*	*		*	*
Leave seaweed on strandline	*	*		*	*

In conjunction with West Hants Water Co.

Compartment 3 - The New Dunes

	YEAR				
	1	2	3	4	5
Replace perimeter fencing	*				
Interpretation signs (fragile environment)	*				
Control <i>Gaultheria shallon</i>	*	*		*	*
Monitor Natterjack Toad	*	*		*	*

Compartment 4 - Mundeford Beach Sandspit

	YEAR				
	1	2	3	4	5
Fence off distal dunes until stabilised #	*				
Maintain end of spit for nesting birds #	*	*		*	*
Maintain/clear pond of vegetation & monitoring of Natterjack Toad	*	*		*	*
Control Sea Buckthorn, Lupin and other alien species on central dunes #	*	*		*	*
Interpretation of building dunes #	*	*		*	*
Control car parking off hard road #	*	*		*	*
Black House - monitor boat parking #	*	*		*	*

Responsibility of Christchurch Borough Council

Compartment 5 - Wick Spires (Reedbeds)

	YEAR				
	1	2	3	4	5
Maintain fencelines and signs	*	*		*	*
Maintain reed pool	*	*		*	*
Investigate long-term management	*	*		*	*

Compartment 6 - Rushy Piece

	YEAR				
	1	2	3	4	5
Maintain fencing & introduce grazing			*		
Research reed/saltmarsh ecotone	*	*		*	*

Compartment 7 - Salt Hurns

	YEAR				
	1	2	3	4	5
Quarry outwash - assess damage/recommendations					*
Maintain grazing - assess fencing requirements	*	*			
Clear blackthorn scrub from limekiln bar footpath	*		*		
Maintain footbridge	*	*		*	*
Control <i>Gaultheria shallon</i>	*	*		*	*
Assess schools' fieldwork/public impact near bridge	*		*		

Compartment 8 - Wick Hams

	YEAR				
	1	2	3	4	5
Summer grazing - vegetation height to 5cm	*	*		*	*
Deep litter invertebrate survey prior to proposed extension to grazing area (8a)	*				
Maintain causeway and river bank facility	*	*		*	*
Maintain ditches/restore Water Vole habitat	*				*
Assess grazing in the light of rising sea level & report on future management of the marsh	*	*		*	*

Compartment 9 - Long Field

	YEAR				
	1	2	3	4	5
Continue eradication of <i>Gaultheria shallon</i>	*	*		*	*
Clear 95% of Bramble, Bracken & Honeysuckle	*				
Assess and report on fencing to facilitate grazing with cattle within an extended area of Long Field and The Batters				*	*
River restoration project - attend to gullies and foreshore erosion & protect the archaeological record	*	*			

Compartment 10 - Barn Field and Double Dykes

Barn Field

	YEAR				
	1	2	3	4	5
Continue seasonal grazing management	*	*		*	*
Fence to repair ground (10c)				*	
Monitor effects of grazing	*	*		*	*
Control bracken and scrub as necessary	*	*		*	*

Double Dykes

	YEAR				
	1	2	3	4	5
Maintain protective fencing, signs/viewpoint	*	*		*	*
Maintain the gabion sea defence at the southern end	*	*		*	*
Remove scrub/bracken as required (trim sallow)	*				*
Close northern path to cyclists			*		
Lichen survey of sallow before considering removal			*		
Introduction of grazing - investigate/report	*	*			
Improve access to beach	*				

Compartment 11 - Warren Hill Heath

	YEAR				
	1	2	3	4	5
Extend Naturtux tarmac footpath down steps to Mudeford Spit				*	*
Maintain protective fencing	*	*		*	*
Eradicate Gaultheria and control scrub	*	*		*	*
Research scrub/heath interface	*				

Compartment 12 - Withybed Wood

	YEAR				
	1	2	3	4	5
Eradicate Gaultheria and Rhododendron	*	*		*	*
Control Bracken, White Poplar and Sycamore	*	*		*	*
Maintain glades and Bluebell woodland	*				*
Remove Grey Squirrel as migrants arrive	*	*		*	
Tree damage associated with vehicular traffic - report	*				
Investigate potential for introduction of grazing	*				

Compartment 13 - Old Nursery Bird Sanctuary

	YEAR				
	1	2	3	4	5
Control invasive alien species (Gaultheria, Holm Oak, Bamboo). Phased removal of Monterey Cypress	*	*		*	*
Maintain ponds on rotation	*	*		*	
Maintain Bluebell carpet	*				*
Control Grey Squirrel	*	*		*	

Compartment 14 - The Batters and Quarry

	YEAR				
	1	2	3	4	5
Control Bracken, Gaultheria, Holm Oak and Rhododendron	*	*		*	*
Remove western block of Rhododendron	*	*			
Maintain fencing - Quarry Pond	*				*
Maintain Natterjack Toad ponds and fencing	*	*		*	*
Continue Natterjack Toad monitoring	*	*		*	*
Clear ponds of Parrot's Feather	*	*		*	*
Clear overhanging vegetation on Batters Path		*		*	

Compartment 15 - Wick Farm Meadows

	YEAR				
	1	2	3	4	5
Maintain summer grazing at 1LU/ha	*	*		*	*
Maintain mown turf at Wick pond (no herbicides or fertilisers)	*	*		*	*
Monitor effects of grazing	*	*		*	*
Repair existing fencing and gates		*		*	
Maintain causeways and ditches in rotation		*		*	
Clear main tidal stream/ditch - 5 year rotation					*
Wick pond - replace ornamental shrubs with native species and upgrade pond			*		
Improve interpretation at access points				*	
Dogs on leads except on designated paths	*	*		*	*

Compartment 16 - Wick Fields

	YEAR				
	1	2	3	4	5
Maintain grazing - 1LU/ha	*	*		*	*
Maintain hedgerows	*	*		*	*
Control Ragwort and Thistle	*	*		*	*
Maintain restrictions on dogs in grazing paddocks	*	*		*	*
Relocate Land Train adjacent to Outdoor Centre	*				

Compartment 17 - Roebury Lane & Roebury Meadow

	YEAR				
	1	2	3	4	5
Upgrade Roebury Lane and extension to Wick Lane with the priority adjacent to the driving range (opposite the caravan site) as part of Cycling Strategy. Subject to funding			*		
Retain/maintain fencing and enhance hedgerows	*	*		*	*
Provide refuge area for Skylark and Meadow Pipit	*	*		*	*
Maintain grassland by haymaking and/or grazing	*	*		*	*
Improve interpretation at access point to Wick Fields north of Golfing Complex				*	
Monitor flora, invertebrate and breeding bird populations	*	*		*	*

Compartment 18 - The Golfing Complex

	YEAR				
	1	2	3	4	5
Establish route for the West Trail along the perimeter of Rolls Drive			*		
Maintain perimeter of site as appropriate	*	*		*	*

Compartment 19 - West Field

	YEAR				
	1	2	3	4	5
Implement the agreed Travel Plan in parallel with the planned development of the Visitor Centre	*	*		*	*
Upgrade signage in the car parks & on route to the planned Visitor Centre with provision for increased parking for the disabled	*	*			
Investigate a reduction in lighting (columns) and traffic calming measures on the Broadway with landscape improvements adjacent to the café building	*	*			
Hay cut (September) and footpath mowing	*	*		*	*
Enhance perimeter hedgerow	*	*		*	*
Expand 'safe' areas for Skylark and Meadow Pipit			*	*	*

Compartment 20 - Whitepits

	YEAR				
	1	2	3	4	5
Reduce trampling/disturbance /fires	*	*		*	*
Light grazing of fenced area to maintain favourable (SSSI) condition	*	*		*	*

Preface

Some of the main achievements during the period 2004-2010 were:

Visitor Centre project (see para. 3.2.1)

Costed plans drawn up.

Successful first stage application to Heritage Lottery Fund.

Preparation of an Environmental Impact Assessment.

Planning application submitted.

Public consultation revealing overwhelming support.

Partnership agreement with Brockenhurst College to co-ordinate an environmental education programme.

Grazing (see para. 3.2.2)

Introduction of grazing management on Whitepits and Long Field.

Habitat management

Continued scrub control on Barn Field, the Batters and Whitepits

Hedge laying in Wick Fields.

Ditch clearance in Wick Fields

Continued effort to eradicate Gaultheria, Bracken and Rhododendron.

Pitch and Putt site returned to grassland for access, ground nesting birds, haymaking and grazing

Research and monitoring

Transfer of research base to and establish office for the Bournemouth Environmental Advisory Team at the Barn/Cottage

Reports:

Butterfly survey 2006 - 2010 Completed 30 years of recording for national database.

Natterjack toads 2006 - 2010

Bird census 2006 - 2010

Grazing evaluation 2006 - 2010

Heathland Mitigation Projects 2008 - 2010

Moth records until 2010

Individual A level, graduate and post graduate dissertations

Hengistbury Head Visitor Survey 2009-2010

Visitor Centre - public consultation 2008 - 2010

Community involvement

Volunteer hours - habitat management 3000 hours annually

Supporters group through events, festivals, wildlife photographer of the year competition, newsletters, walks and talks - 750 hours annually

Students 10 Work experience placements annually

Bournemouth, Southampton, UCL and Oxford Universities (studies & projects and partnerships)

Brockenhurst College (partnership in developing an environmental education service)

Environmental Stewardship (see para. 3.2.4)

A successful application was made for entry into Environmental Stewardship in 2008. Hengistbury Head is included in the scheme at the Higher Level Stewardship (HLS). Through the scheme, funding is available to carry out habitat management work and capital projects such as fencing.

Interpretation

Nature Trail - revised booklet

West trail booklet and interpretation panels

Archaeological posters / images Stone Age, Bronze Age and Iron Age

Walks & talks x 20

Environment festival

Interpretation and Information boards at all the main access points

Installation of LCD information screens adjacent to the Hiker Café.

Access

Extension of footpath system on the headland.

Construction of boardwalk through Whitepits sand dunes.

Surfacing of footpaths through Wick Fields, upgrade of footbridge and installation of pedestrian gates

Other

Upgrading of the Hiker Café and surrounds.

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Stage I Description

1.1 General information

1.1.1 Location and Summary Description ([See Map 1](#))

Site Name	:	Hengistbury Head
District	:	Bournemouth
County	:	Dorset
Local Planning Authority	:	Bournemouth Borough Council
National Grid Reference	:	SZ 173 908
Area	:	162 ha

Hengistbury Head is a conspicuous promontory which forms the easternmost part of the Borough of Bournemouth and which shelters the estuarine harbour of Christchurch. In the strict sense, it is the land lying east of the earthwork called Double Dykes, but for the purpose of this Management Plan, it is taken to include the adjacent land to the west and Wick Fields to the north-west.

([See Map 2](#))

On the Christchurch side of the harbour is an area of some 57 ha known as Stanpit Marsh Nature Reserve. Taken together these areas form a landscape setting to Christchurch Harbour and provide a haven of natural and semi-natural country within the large conurbation of Bournemouth and Christchurch. Along the River Stour, there is associated land that forms a narrow, irregular link with the open countryside to the north.

The Hengistbury Head area is an integral part of the Stour-Avon estuary.

It comprises a wide variety of habitats including heathland, grassland, scrub, woodland, freshwater wetland and coastland. The geology is of international importance as is the Stone Age and Iron Age archaeology.

1.1.2 Land Tenure

The Borough of Bournemouth own the freehold of Hengistbury Head, West Fields and Wick Fields including the Hengistbury Head Outdoor Education and Field Studies Centre (HHC).

A summary of acquisitions and disposals is given below.

16th August 1930; purchased the freehold of 404.51 acres at Hengistbury Head; 1.30 acres for the Broadway and 24.122 acres at Wick Hams from Gordon Selfridge. The purchase is subject to covenants with obligations not to remove any ironstone or other minerals from the Head and not to disfigure the ancient earthworks known as Double Dykes. The Conveyance is also subject to rights of way over footpaths and tracks leading to the Head in favour of the Meyrick Estate for the purpose of removing wreck, wreckage, fish

or things cast up on the beach. The land on the Western boundary has been sold for residential development (Bournemouth Development Plan).

The Borough of Bournemouth also acquired from Gordon Selfridge the Leasehold of the foreshore, however the gradual erosion of the cliff top and cliff face means that this land is now part of the sea bed and the Doctrine of Accretion applies.

26th Sept. 1930; 41 acres of Solent Meads purchased from Charles James Lacey; freehold.

30th Sept. 1930; 32 acres at Solent Meads were purchased from Gordon Selfridge; freehold.

12th Dec. 1944; 4.486 acres, including The Elms, Wick from Vera Winifred Eaton; freehold.

9th August 1957; the purchase of the absolute interest of 17½ cow runs from Harry Whiting.

14th Nov. 1966; 10.0 acres at Solent Meads were purchased from Harry Whiting; freehold.

20th April 1970; 4.37 acres Solent Meads purchased freehold from Sir George Meyrick et al.

1.1.3 Map Coverage

OS Sheet 1: 50000 195 Second Series Landranger Edition

OS Sheet 1: 25000 Second Series Pathfinder Edition

OS Sheet 1: 10000 SZ 19 SE

1.1.4 Photographic Coverage

Bournemouth Borough Council owns the copyright of aerial photography of the whole Borough undertaken in 1998. Further aerial photographs were produced in 2000 and updated in 2003, 2005, 2007 and 2008. The copyright of these is owned by Ordnance Survey.

The Council is a partner in the Strategic Regional Coastal Monitoring Programme and aerial photography and other coastal data capture is undertaken as part of this work. Aerial photography is undertaken on an annual cycle at 1/5000 scale. Digitised data is available through the Southampton Oceanography Centre and Channel Coast Observatory who are gathering regional coastal data sets.

1.2 Environmental information

1.2.1 Physical

Geology

Hengistbury 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, with alternating deposits of Tertiary sands, loams and clays, capped at different levels with Pleistocene river gravels and alluvium. The inclusion within the Lower Bracklesham beds of large boulders or 'doggers' of low-grade ironstone is an essentially local feature. It is this very resistant ironstone which has, in the past, made Hengistbury Head a coastal buttress against the inroads of the sea. The Hengistbury Beds are considered to be the lateral equivalent of the internationally important Barton Beds (Geological Conservation Review JNCC 1995). The lowland parts of the area are mainly level river terrace lands, at around 2-4 m Ordnance Datum (O.D.), consisting of river gravels covered with old alluvium and capped with varying amounts of blown sand. Elsewhere, recent alluvial deposits form flood meadows and salt marshes. Sand dunes cover Mudeford Spit, the New Dunes and, in places, occur along the cliff tops. The land of Wick Fields, made by tipping waste over the northern part of the Wick Hams, was completed and top soiled in 1957.

Climate

There is no weather station on the headland itself but information is available from the Hengistbury Head Centre dating back to 1977. The climate is characteristically coastal and oceanic. Onshore winds are both more frequent and more often strong to gale force than inland. Summer daytime temperatures are moderated by off sea breezes and winter cold is reduced by the presence of the sea and harbour waters. There is a small temperature range and a high relative humidity. This is due partly to moist air from the sea, and partly to the cooling effect of the sea in warm weather. Rainfall is relatively low at around 850 mm per annum. Salty sprays, which influence vegetation type, occur whenever there are strong winds from the sea.

Wave Climate and Meteorology

From Solent Road to the Hengistbury Head Long Groyne the coastline is mostly unprotected from long-fetch Atlantic waves. The longest fetch English Channel waves come from a south-easterly direction. There is normally a small tidal range of 0.35m. However the exception would be a Channel surge combined with a Spring Tide cycle that would produce an extreme high water with a possible breach of the low cliffs (Tindall Centre for Climate Change Research 2003).

Microclimates

Places where local features modify the prevailing climate are critical for the survival of many species. This is notable in the lee of Warren Hill where the dominating effects of strong, salt-laden winds are screened and woodland has developed. Practical recognition of the effectiveness of this local microclimate is seen in the siting of the Nursery/Bird Sanctuary within this sheltered zone. Less obvious is the shelter from strong seas that is afforded by the nearby major headlands of Durlston in Purbeck and the Needles in the Isle of Wight.

Cliffs and Cliff Retreat

The rate of retreat of the cliff top line between Solent Road and the eastern cliffs of Warren Hill is between 1m-2m per annum. The rate of cliff top retreat above the New Dunes (Long Groyne) is so slight as to be barely discernible. However, in localised areas where extensive gulleying of the cliff face has occurred there are retreats of some 10m or more. Extensive gulleying of the cliff edge zone by the passage of pedestrian traffic and the combined effects of wind and rain has produced erosion in a vertical direction of at least 1m. The rate of cliff retreat north-east of the Hengistbury Long Groyne is now dependent on the large scale slips that are occurring in the clay and silt zones of the Upper Hengistbury Beds that form the cliffs in this area. Wave attack on the upper part of the cliff has been prevented by a coast protection scheme (1987).

Coastline Stability

The concept of a naturally stable bay held between two strong points e.g. rocky headlands can be applied to Poole Bay. Generally, if a critical volume of beach deposits is retained between the tide marks in the bay, then that volume will largely remain within the bay. There is evidence that little erosion occurred in Poole Bay between the Iron Age and 1848, when ironstone boulders were removed from the foreshore at Hengistbury Head. Here the strong point, previously held by the ironstone boulders, had to be replaced by the Long Groyne (1937). Because the Groyne has only been constructed to a point short of the Beerpan Rocks, a deep channel has formed ensuring a strong current now passes at certain states of the tide. This tends to cause an imbalance in the otherwise stable bay conditions applying at this end of Poole Bay.

Slopes and their stability

Erosion of the Warren Hill cliff face by wind and rain, together with the gulleying effects of surface water run-off generates zones of talus, which may extend for almost 50% of the heights of the cliffs. Cliff falls are generated as rain water seeps through the permeable Highcliffe Sands and is then trapped by the impermeable clay layers of the Hengistbury Beds. The clay bands become 'slip surfaces' along which slumping and landslides can occur. The material (sand, clay and ironstone) flows out across the

beach and is subsequently removed by wave action to create a vertical and over-hanging cliff. This cliff then degrades back to 35°, so releasing more material to form talus fans.

The erosion of the low-lying cliffs to the east and west of the Double Dykes is exacerbated by trampling (visitor pressure). The loss of cliff top vegetation and soil erosion encourages gully formation - the cliffs become unstable and collapse.

Nature of Beaches

The Southbourne beaches in general change rapidly from a fine sand to a medium gravel and then to a coarse gravel with cobble size material at Solent Beach. This material then largely prevails through to the Long Groyne. This natural state has been somewhat obscured by fine wind-blown sands, particularly at the cliff base west of Double Dykes. This is due to a beach renourishment scheme (1989). Occasionally a storm beach composed largely of cobble size material forms, most notably to the east of Double Dykes. The predominance of fine sand above the storm beach on the west side of the Hengistbury Long Groyne is due to material being driven from the drying inter-tidal zone towards and along the foot of the cliffs under strong wind conditions.

The 'natural' beach between the Long Groyne and the root of the Mudeford Sandspit, largely composed of ironstone boulders and mud flows, is now obscured by a coast protection scheme (1987) of five limestone rock groynes and a causeway. The groyne compartments are full of medium to fine sand. The 'natural' beaches of the Sandspit containing well-graded sand, shingle and cobbles beyond the Clarendon Rocks are largely hidden by coastal defence works (1999). 56,000 tons of shingle and 17,000 tons of rock were imported to secure the long-term stability of this feature. Renourishment to raise the level beaches was undertaken using dredged sand and shingle from the adjacent river channel. Beneath the Low Water Mark are highly mobile sand banks that form the characteristic unpredictable entrance shoals at the Run.

Christchurch Borough Council has completed a programme of coast protection works. This involved the building of additional rock groynes and extending existing rock groynes to provide a comprehensive defence line. In conjunction with the Bournemouth Borough Council rock groynes northeast of the Long Groyne, this work is designed to prevent a breach of the Sandspit and flooding of the hinterland.

1.2.2 Biological

1.2.2.1 Habitat Types ([See Map 6](#))

A wide variety of habitats is found on Hengistbury Head with a National Vegetation Classification (NVC) survey (Hawes & Walls 2002) identifying a suggested 43 habitat categories.

The main habitats are summarised below:

Heathland covers much of the plateau top of Warren Hill and its lower slopes where the vegetation is dominated by Common Heather *Calluna vulgaris*. Bell Heather *Erica cinerea* also occurs and in the wetter areas there are stands of Cross-leaved Heath *E. tetralix*. An acid grass heath has developed over the northern half of Barn Field.

Grassland covers much of the headland. The grassland has largely developed over acid, sandy soils and tends to be dominated by the fescues *Festuca rubra* and *F. ovina*, Common Bent *Agrostis capillaris* and Sweet Vernal-grass *Anthoxanthum odoratum*. Herb species present include Common Heather, Heath Bedstraw *Galium saxatile*, Tormentil *Potentilla erecta* and Sheeps-sorrel *Rumex acetosella*. The 'ancient' grassland of Barn Field supports an abundance of herbs such as Birdsfoot *Ornithopus perpusillus*, Upright Chickweed *Moenchia erecta*, Harebell *Campanula rotundifolia* and scarce clovers. West of Double Dykes are semi-improved grasslands that are managed as hay meadow. Wick Fields 'tip land' comprises a mix of grazed pasture and areas of rough grassland dominated by coarse grasses such as Cock's-foot *Dactylis glomerata*.

Scrub occurs throughout the site but is a particular feature of Wick Fields, the older grasslands and the leeward side of Warren Hill. The main shrub species are Common Gorse *Ulex europaeus*, Blackthorn *Prunus spinosa* and Bramble *Rubus fruticosus* agg. There are also two non-native species namely Rhododendron *Rhododendron ponticum* and Shallon *Gaultheria shallon*. Both of these are highly invasive and totally incompatible in the context of a Local Nature Reserve with national and international designations.

Woodland has developed in the lee of Warren Hill with the main tree species being Pedunculate Oak *Quercus robur*, Silver Birch *Betula pendula*, willow *Salix* spp. and Holly *Ilex aquifolium*. The wood is of special interest as it is the only woodland to be shown on the 1811 O.S. map of the Bournemouth/Christchurch area.

Flood meadows about the River Stour at Wick. Here the vegetation is dominated by Fescues *Festuca* spp., Bents *Agrostis* spp. and Rushes *Juncus* spp. with Corky-fruited Water-dropwort *Oenanthe*

pimpinelloides, Crested Dog's-tail *Cynosurus cristatus* and False Fox-sedge *Carex otrubae*. The presence of Bulbous Foxtail *Alopecurus bulbosus* and Parsley Water-dropwort *Oenanthe lachenalii* indicate an occasional brackish water influence.

Reedbeds dominated by Common Reed *Phragmites australis* fringe the river and harbour.

Freshwater Ponds have been created on various parts of the site. They are either the result of mid-19th century mining activity (Quarry and Lily ponds) or have been constructed purposely for a conservation benefit. The latter include concrete ponds at the Batters and at Whitepits and four butyl-lined ponds in the Bird Sanctuary along with several in Wick Fields.

Saltmarsh and mudflat are low-lying areas of the middle and lower estuary. Red Fescue *Festuca rubra*, Sea Club-rush *Scirpus maritimus* and Saltmarsh Rush *Juncus maritimus* of the middle marsh give way to Sea Arrow-grass *Triglochin maritima*, Sea Lavender *Limonium vulgare*, Sea Aster *Aster tripolium* and pioneers such as Glasswort *Salicornia ramossissima* of the low marsh which is intersected by drainage channels both natural and man-made.

Sand dunes on Mudeford Spit and relic cliff top dunes at Whitepits, although physically degraded, still support dune vegetation and fauna of considerable interest. The New Dunes at the Hengistbury Long Groyne were fenced against recreational damage (1979) and support the usual plant species including Sea Bindweed *Calystegia soldanella*, Sea Sandwort *Honkenya peploides* and Sea Kale *Crambe maritima*.

The Beaches are notable for the scarce Ray's Knotgrass *Polygonum maritimum* and the very rare Sea Knotgrass *P. oxyspermum*, both of which have been recorded on Mudeford Spit since 1990.

The Estuary mud provides habitat for an abundant array of invertebrates that, in turn, attract large numbers of wading birds such as Dunlin *Calidris alpina* and Redshank *Tringa tetanus*.

The Cliffs tend to be steep and largely devoid of vegetation. An important environmental feature is the seepage line that occurs about one-third of the way down the cliffs and hillside along the junction of the Highcliffe Sands with the clays of the Hengistbury Beds. The seepage varies in amount along the line but persists even in times of drought, fed by the water stored in the permeable gravels and sands above. The scarce Rock Sea-spurrey *Spergularia rupicola* occurs on some of the outcrops and Royal Fern *Osmunda regalis* is found where there are wet flushes.

The Sea Bed, although not strictly part of the Nature Reserve, varies from sand and shingle to clay and ironstone boulders. The latter support a rich fauna and flora.

1.2.2.2 Flora

The diversity of habitats support a variety of plant communities with over 500 species recorded to date. The flora is documented in *The Vascular Plants of Hengistbury Head* (R. M. Walls 1990). It includes: a Schedule 8 species, Sea Knotgrass; a nationally rare species, Slender Bird's-foot-trefoil *Lotus angustissimus*; 14 scarce species and 39 locally rare species.

An NVC map has been produced along with target notes (Hawes and Walls 2004) that provides a detailed description of the plant communities.

1.2.2.3 Fauna

More than 300 bird species have been recorded including breeding Dartford Warbler *Sylvia undata* and Cetti's Warbler *Cettia cetti*. Insects are particularly well represented - the bumble bees include the BAP species *Bombus humilus* and the nationally rare *Melitta haemorrhoidalis*. *Dasygaster hirtipes*, a nationally scarce mining bee is also present. 16 breeding species of dragonfly occur including the scarce Small Red Damselfly *Ceragrion tenellum* and Scarce Blue-tailed Damselfly *Ischnura pumilio*. There is an extensive moth list including the Broad-bordered Bee Hawk-moth *Hemaris fuciformis* and Sand Dart *Agrotis ripae*. Rare beetles include the recently re-discovered 13 spot Ladybird *Hippodamia 13-punctata* (the first record in the UK since 1952). There is also an extensive list of wasps, ants and flies. Reptiles are well represented, as are amphibians with a healthy population of the nationally rare Natterjack Toad *Bufo calamita*.

1.2.3 Cultural

1.2.3.1 Previous Land Use

There is evidence of Man utilising Hengistbury Head since Palaeolithic times (12,500 years ago) and the rich archaeology is very well documented (Cunliffe 1987). Obvious evidence of past occupation is in the form of the Double Dykes, built by the Celts in the Iron Age approximately 2000 years ago as a defensive structure. There are also 10 round barrows (Bronze Age burial mounds) that would have been constructed approximately 3500 years ago. The first evidence of Iron Age activity and structures to the west of the Double Dykes was discovered in 2001 (Wessex Archaeology 2001).

Many artefacts have been recovered from the site and these are housed in collections throughout the country including the Russell-

Cotes museum in Bournemouth and the Red House museum in Christchurch.

Serious marine erosion of the headland is a relatively recent phenomenon. In the two decades after 1848, the Hengistbury Mining Co. removed from the foreshore the huge masses of ironstone boulders which formed a natural breakwater against the sea and at the same time virtually reshaped, by opencast mining, the whole of the northern and western flanks of Warren Hill. This initiated the phase of rapid coastal erosion that was partially checked by the building of the Hengistbury Long Groyne in 1937/39. In this period of about 80 years nearly half of the headland was lost to the sea. ([See Map 9](#))
More recent land use has included:

1912 13 parts of the headland were ploughed and seeded to grass in an abortive plan to make a Golf Course. There is no accurate map of the ploughed area.

1919 The headland was purchased by Gordon Selfridge who established the Nursery Garden as a prelude to a grandiose, but fortunately abortive, scheme for a castellated mansion in a landscaped setting. Gaultheria, Rhododendron and other non-native plant introductions mostly date from this period.

1930 The headland was purchased by Bournemouth Corporation, the Nursery Garden being retained and developed by the Parks Department until the late 1950s.

1935 Construction of the Broadway road.

1939-1945 Restricted war-time access and construction of defence works and radar station, including accommodation for personnel.

1952-1957 Tipping of waste on part of Wick Hams. This was then topsoiled and seeded down to grass, converting 25.69 hectares of marsh to dry grassland, now called Wick Fields.

1957 The Nursery officially managed by the Christchurch Harbour Ornithological Group as an Observatory and Ringing Station. The Nursery was designated as a Bird Sanctuary in 1979.

1964 The opening of the Hengistbury Head Outdoor Education & Field Studies Centre.

1969 Termination of farming lease on lands west of Double Dykes and withdrawal of grazing from the saltmarsh. Sheep grazing on Barn Field and Long Field terminated prior to 1939.

1969 to 1979 Development of recreational facilities (cafe, toilets, car park, land train and golf) is described by Holloway (1979).

1990-1992 Termination of grazing licences at Wick Fields and purchase of cattle by Bournemouth Borough Council.

1990 The development of Wick Fields as a Nature Reserve.

1992 Closure of Double Dykes and their reconstruction. Surfaced footpaths.

1998 Establishment of a research base (and programme) at the Hengistbury Head Centre

1998-2010 Programme of eradication of non-native species: Rhododendron, Gaultheria, Holm Oak etc.

1999 Reintroduction of grazing (cattle) to Barn Field and Wick Hams (2002)

1999 Armouring and stabilisation of the Sandspit with imported rock

2002 Excavations on pitch and putt site reveal internationally important Bronze Age offering and round barrows as well evidence of an Iron Age settlement to the west of Double Dykes

2005 Pitch and putt site returned to grassland / hay meadow

2007 Broadway road, at junction of Southbourne Coast Road, closed at night to combat vandalism

2008 Outdoor Education and Sailing Centre leased to Brockenhurst College

2009 Beach replenishment Poole Bay (Solent Beach to Double Dykes)

1.2.3.2 Present Land Use

Hengistbury Head is designated Public Open Space (POS). Restrictions on access apply to the Nursery bird sanctuary, the New Dunes, Double Dykes, reedbeds, ponds and the Ranger's Yard. It is estimated that 1 million people visit the site annually to participate in a number of recreational and educational activities.

1.2.3.3 Education and Research

There has been an increasing appreciation of the value and convenience of the headland as an area for ecological and

scientific studies. The significance of this development is shown in the attendance figures for the Hengistbury Head Outdoor Education and Sailing Centre HHOEC). In 1979 these courses attracted an estimated 7000 students. By 2002, attendance had risen to 18,000 student visits with an additional 6000 arriving and studying the headland independently of the centre (Source: EIA 2002). Student numbers reduced to 7600 during the handover to Brockenhurst College (Source: EIA 2010) but are currently estimated at 20,000 (Source: Brockenhurst College 2010)

A research base was established at the HHOEC in 1998 to formalise the collecting and dissemination of data and archives. A formal link to the Dorset Environmental Records Centre (DERC) is maintained. Information from the database is available to bona fide students and organisations. The research base has now been transferred to the Barn Cottage. The work of recording is complemented by professional studies related to coastal processes, ecology, geology and archaeology and by student research projects and dissertations. Apart from the major excavations, the responsibility for archaeological recording remains with the Russell-Cotes Museum Archaeological Service. Prehistoric finds are on display at the Archaeology Gallery, Red House Museum, Christchurch. Bournemouth Borough Council has long recognised the need for a field studies and visitor centre at Hengistbury Head to provide an in- depth exploration of the local heritage through traditional and ICT driven displays of the archaeology, ecology and geology. The plans for the new visitor centre incorporate a dry store for the loan of the collections from the Russell-Cotes Museum and an office for a research base and the Bournemouth Environmental Advisory Team (BEAT). BEAT carries out the task of scientific recording and data collation for the Borough of Bournemouth. ([See para. 3.2.9](#))

1.3 Present management

1.3.1 Management for conservation

Hengistbury Head is a remarkably diverse site that fully warrants its local, national and international wildlife designations. Management of the site takes this into account and is based on research and monitoring work that has been ongoing for a number of years.

A real structure for conservation management was put in place with the production of the first site management plan in 1989 of which this is the second revision.

Grazing by cattle continues to be a successful management option over a significant part of the Reserve and further areas have been identified that would undoubtedly benefit from grazing management. ([See para. 3.2.2](#))

As on many local heaths, scrub encroachment has tended to detract from the value of the heathland habitats. Work continues

to reduce the amount of scrub to an acceptable level. This involves the removal of Rhododendron and Gaultheria, alien species totally out of context on such an important site.

Management work is currently part-funded through an Environmental Stewardship agreement that is administered by Natural England. ([See para. 3.2.4](#))

1.3.2 Management for amenity

Access: In general terms there is unlimited public access with the exception of certain designated and sensitive areas such as the Double Dykes, Reedbeds, Sand Dunes and the Bird Sanctuary (Nursery). Visitors are encouraged to use the established footpath system. Vehicle access is limited to permit holders only. There is a land train for access to Mudeford Spit and a 'permissive' cycle route.

Activities: There is a range of recreational activities including watersports, golf (managed by a concessionaire), kite flying in a designated area and angling (by permit). Basic interpretation with guided walks and trails are on offer.

1.3.3 Management for archaeology

A zonal map for the archaeology has been produced as part of an overall policy for finds and areas of importance. ([See Map 7](#)).

In general terms archaeological research is encouraged subject to financial constraints and only in the context of an overall and detailed research programme. Rescue excavations such as the Upper Palaeolithic and Mesolithic 'digs' 1980-1984 (Barton et al) are undertaken where archaeological material is in danger, either from natural erosion or from other essential site management. An example of the latter is the excavation on the old Pitch and Putt site (Wessex Archaeology 2002) as part of an EIA and associated planning permission for a Field Studies and Visitor Centre.

For minor works such as fencing and other infrastructure Ancient Monument Consent is obtained and the works are monitored, recorded and reported on by an appointed archaeologist. The most recent exercise of this type was undertaken in securing consent for the Hengistbury Head Visitor Centre project in 2010. The four trial trenches did not reveal any archaeology apart from a brick lined 19th century well contemporary with the construction of the barn in the 1860s.

STAGE 2 - EVALUATION AND OBJECTIVES

2.1 Conservation status

Site of Special Scientific Interest (SSSI)

Hengistbury Head is a component part of the Christchurch Harbour SSSI. It was designated by the Nature Conservancy Council (now Natural England) on 8 October 1986 under Section 28 of the Wildlife and Countryside Act 1981. ([See Map 3](#))

The designation is for reasons that include geological features and the ecology. It includes the estuary of the Avon and Stour Rivers, the Avon being the only chalkland river system to have English Nature Grade 1 designation (A Nature Conservation Review Vol. 1, map 9, Vol. 2, p. 167). Habitats represented include estuarine marshes, heathland and a variety of other habitats that support a flora and fauna rich in rare and unusual species. The area is important as a bird migration route.

Scheduled Ancient Monument

Hengistbury Head including the Double Dykes and the two tumuli on the Golf Course is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 as amended by the National Heritage Act 1983. The archaeological interest is exceptional as indicated by various excavations summarised by Cunliffe (1978, 1979, 1987). The Palaeolithic and Mesolithic occupations as summarised by Barton (1992) are of international importance. ([See Map 7](#))

Local Nature Reserve

Hengistbury Head, Wick Fields and adjacent land were declared a Local Nature Reserve (LNR) on 18 May 1990 under Section 21 of the National Parks and Access to the Countryside Act 1949. This LNR declaration is a commitment by Bournemouth Borough Council to manage the area in a manner that will protect and enhance the natural features of the site. ([See Map 4](#))

Special Area of Conservation (SAC) and Special Protection Area (SPA)

In 1992, the EC Directive on the Conservation of Natural Habitats and of wild flora and fauna (the Habitats Directive) was published. The purpose of this is to establish a network of the best wildlife areas across Europe to be made up of a series of SACs and SPAs. In southeast Dorset it was the heathland SSSIs that were specifically targeted for this designation and most, including that of Hengistbury Head have subsequently been designated. ([See Map 5](#))

Environmentally Sensitive Area (ESA)

The upper reaches of Christchurch Harbour, namely Wick Fields and its meadows, form part of the Avon Valley ESA. This designation takes into account the traditional pastoral landscape that has evolved over the centuries through the farming of fertile flood plains.

Site of Nature Conservation Interest (SNCI)

Two areas of the site lying outside the SSSI are designated as SNCIs under a scheme administered by the Dorset Wildlife Trust.

[\(See Map 3\)](#)

Green Belt

Hengistbury Head is shown as Green Belt on the Bournemouth District Wide Local Plan (2002).

Public Open Space

Hengistbury Head is zoned as Public Open Space.

2.2 Evaluation of features

2.2.1 Ecological Evaluation

Hengistbury Head remains as an area of semi-natural open space at the eastern limit of the Borough. The fact that it is within the boundary of a large conurbation imparts upon it a considerable degree of importance both as a local amenity and as a refuge for a wide range of wildlife.

A recent NVC survey identified a wide range of plant categories. The most extensive communities are woodlands, heathlands, grasslands, and saltmarshes. There are also dunes, cliffs, the sea and harbour shorelines, ponds with a range of salinity and swamps, all with their characteristic vegetation.

The remarkable variety of habitats support associated flora and fauna, some of which are of national (and even international) importance.

STATUS				
HABITAT	International	National	Regional	Local
Water				
Maritime				*
Estuarine	*			
Fresh	*			
Coastal				
Tidal sands				*
Estuarine silt/mudflats			*	
Rock				*
Shingle			*	
Dunes			*	
Wetland				
Reedbed/Marsh	*			
Grassland				
Acid			*	
Neutral			*	
Heathland				
Climatic climax	*			
Scrub				
Gorse/Birch/Blackthorn				*
Woodland				
Oak/Birch/Sallow/Holly/Ivy			*	

2.2.1.1 Flora

Botanical records for Hengistbury Head are continually being updated and a recent survey revealed a total of more than 500 species.

Examples of some of the rarer species are given but full checklists are available in report form and on the site database.

STATUS				
	International	National	Regional	Local
<i>Cladonia incrassata</i> (Lichen)	*			
<i>Parmelia caperata</i> (Lichen)	*			
<i>P. perlata</i> (Lichen)	*			
<i>Aira caryophyllea</i> - Silvery Hair-grass			*	
<i>A. praecox</i> - Early Hair-grass				*
<i>Alopecurus bulbosus</i> - Bulbous Foxtail	*			
<i>Anthriscus caucalis</i> - Bur Chervil			*	
<i>Atriplex laciniata</i> - Frosted Orache			*	
<i>A. littoralis</i> - Grass-leaved Orache				*
<i>Cakile maritima</i> - Sea Rocket			*	
<i>Calystegia soldanella</i> - Sea Bindweed	*			
<i>Carex arenaria</i> - Sand Sedge				*
<i>C. extensa</i> - Long-bracted sedge	*			
<i>Catapodium marinum</i> - Stiff Sand-grass			*	
<i>Cerastium diffusum</i> - Sea Mouse-ear				*
<i>C. semidecandrum</i> - Little Mouse-ear				*
<i>Crambe maritima</i> - Sea Kale	*			
<i>Crassula tillaea</i> - Mossy Stonecrop	*			
<i>Elytrigia juncea</i> - Sand Couch-grass				*
<i>Euphorbia paralias</i> - Sea Spurge			*	
<i>Glaucium flavum</i> - Yellow-horned Poppy				*
<i>Honkenya peploides</i> - Sea Sandwort				*
<i>Jasione montana</i> - Sheep's-bit				*
<i>Leymus arenarius</i> - Lyme-grass			*	
<i>Ornithopus perpusillus</i> - Bird's-foot				*
<i>Parapholis strigosa</i> - Sea Hard-grass			*	
<i>Polygonum maritimum</i> - Sea Knotgrass	*			
<i>Salsola kali</i> - Prickly Saltwort			*	
<i>Spergularia rupicola</i> - Rock Spurrey			*	
<i>Trifolium glomeratum</i> - Clustered Clover	*			
<i>T. micranthum</i> - Slender Trefoil				*
<i>T. ornithopodioides</i> - Fenugreek			*	
<i>T. striatum</i> - Knotted Clover			*	
<i>T. subterraneum</i> - Subterraneum Clover			*	
<i>T. suffocatum</i> - Suffocated Clover	*			
<i>Vulpia fasciculata</i> - Dune Fescue	*			

2.2.1.2 Fauna

There has been considerable recording and monitoring work in respect of the animal life of the site. Particular attention has focussed on various Orders of insects, reptiles, amphibians, birds and mammals.

Examples of some of the more notable species are given but more comprehensive checklists are available in report form and on the site database.

STATUS				
	International	National	Regional	Local
INSECTS				
Odonata - Dragonflies & Damselflies				
<i>Aeshna cyanea</i> - Southern Hawker			*	
<i>A. grandis</i> - Brown Hawker			*	
<i>A. mixta</i> - Migrant Hawker			*	
<i>Anax imperata</i> - Emperor Dragonfly			*	
<i>Brachytron pratense</i> - Hairy Dragonfly	*			
<i>Libellula depressa</i> - Broad-bodied Chaser			*	
<i>L. quadrimaculata</i> - Four-spotted Chaser			*	
<i>Sympetrum danae</i> - Black Darter			*	
<i>S. sanguineum</i> - Ruddy Darter	*			
<i>Calopteryx splendens</i> Beautiful Demoiselle			*	
<i>Ceriagrion tenellum</i> Small Red Damselfly	*			
<i>Ischnura pumilo</i> Scarce Blue-tailed Damselfly	*			
<i>Lestes sponsa</i> - Emerald Damselfly			*	
<i>Pyrrhosoma nymphula</i> Large Red Damselfly			*	
Lepidoptera - Butterflies & Moths				
<i>Callophrys rubi</i> - Green Hairstreak			*	
<i>Celastina argiolus</i> - Holly Blue			*	
<i>Hipparchia semele</i> - Grayling			*	
<i>Lycaena phlaeas</i> - Small Copper			*	
<i>Polygonia c-album</i> - Comma			*	
<i>Quecusia quercus</i> - Purple Hairstreak			*	
<i>Agrotis ripae</i> - Sand Dart	*			
<i>Archanara dissoluta</i> Brown-veined Wainscot			*	
<i>Arctia villica</i> - Cream-spot Tiger			*	
<i>Chilodes maritimus</i> - Silky Wainscot	*			
<i>Cossus cossus</i> - Goat Moth	*			
<i>Earias clorana</i> Cream-bordered Cream Pea	*			
<i>Hemaris fuciformis</i> Broad-bordered Bee Hawkmoth	*			
<i>Lasiocampa quercus</i> - Oak Eggar			*	

<i>Macrothylacia rubi</i> - Fox Moth			*	
<i>Pampelia genistella</i> - Pyrale			*	
<i>Paradarisa extersaria</i> Brindled White-spot			*	
Coleoptera - Beetles				
<i>Ampedes elongatus</i>	*			
<i>A. sanguidentatus</i>	*			
<i>Apion sicardi</i>	*			
<i>Arhopalus rusticus</i>			*	
<i>Corticarina similata</i>			*	
<i>Crepidocera impressa</i>			*	
<i>Cychrus caraboides rostratus</i>				*
<i>Laccobius atrocephalus</i>			*	
<i>Hippodamia 13 - punctata</i>	*			
<i>Lucanus cervus</i>				*
Hymenoptera - Ants, Wasps & Bees				
<i>Bombus humilus</i>	*			
<i>Dasydoda hirtipes</i>	*			
<i>Melitta haemorrhoidalis</i>	*			
<i>Mutilla europaea</i> - Velvet Ant			*	
<i>Padalonia hirsuta</i> - Hairy Sandwasp				*
<i>Vespa crabo</i> - Hornet				*
Diptera - Flies				
<i>Acrocera globulus</i>			*	
<i>Microdon latifrons</i> - Hoverfly			*	
<i>Volucella zonaria</i> - Hoverfly			*	
<i>Zylota nemorum</i> - Hoverfly			*	

STATUS				
	International	National	Regional	Local
REPTILES				
<i>Anguis fragilis</i> - Slow Worm				*
<i>Lacerta vivipara</i> - Common Lizard				*
<i>Lacerta agilis</i> - Sand Lizard (poss. extinct)	*			
<i>Natrix natrix helvetica</i> - Grass Snake				*
<i>Vipera berus</i> - Adder				*
AMPHIBIANS				
<i>Bufo bufo</i> - Common Toad				*
<i>Bufo calamita</i> - Natterjack Toad	*			
<i>Rana temporaria</i> - Common Frog				*
<i>Triturus vulgans</i> - Smooth Newt				*
BIRDS (breeding)				
<i>Accipiter nisus</i> - Sparrowhawk				*
<i>Acrocephalus schoenobaenus</i> Sedge Warbler				*
<i>A. scirpaceus</i> - Reed Warbler				*
<i>Aegithalos caudatus</i> - Long-tailed Tit				*
<i>Alauda arvensis</i> - Skylark				*
<i>Anthus petrosus</i> - Rock Pipit				*
<i>Ardea cinerea</i> - Grey Heron			*	
<i>Caprimulgus europaeus</i> - Nightjar	*			
<i>Carduelis cannabina</i> - Linnet				*
<i>C. carduelis</i> - Goldfinch				*
<i>Cettia cetti</i> - Cetti's Warbler	*			
<i>Egretta garzetta</i> - Little Egret	*			
<i>Emberiza schoeniclus</i> - Reed Bunting				*
<i>Panurus biarmicus</i> - Bearded Tit	*			
<i>Picus viridis</i> - Green Woodpecker				*
<i>Rallus aquaticus</i> - Water Rail			*	
<i>Regulus regulus</i> - Goldcrest				*
<i>Riparia riparia</i> - Sand Martin			*	
<i>Saxicola torquata</i> - Stonechat			*	
<i>Strix aluco</i> - Tawny Owl				*
<i>Sylvia atricapilla</i> - Blackcap				*
<i>S. communis</i> - Whitethroat				*
<i>S. undata</i> - Dartford Warbler	*			

2.2.2 Physical Evaluation

STATUS				
	International	National	Regional	Local
Headland owing erosional resistance to Tertiary ironstone inclusions	*			
Tertiary cliff section	*			
Shingle estuarine bar/dunes			*	
Dune system at Long Groyne				*
Drowned estuary unmodified and chalk river flush	*			

2.2.3 Archaeological Evaluation

STATUS				
	International	National	Regional	Local
Late Palaeolithic				
Hunter Gatherers' Campsite	*			
Mesolithic				
Archers' and Hunter Gatherers Campsite	*			
Neolithic				
Widespread & abundant flint scatter, all phases	*			
Bronze Age				
Wessex Barrow & other early & mid Bronze Age Barrows & pottery, metal, flints			*	
Early Bronze Age Collared Urn with carbonised crab apples	*			
Early Iron Age				
Carinate and situloid pottery, local concentrations	*			
Mid-Late Iron Age				
Settlement with defence earthworks, abundant domestic and industrial remains and many imports. Activity/ structural remains west of Double Dykes earthwork	*			
Romano-British				
Domestic pottery and small items, no known houses			*	
Historic				
Harbour improvement schemes			*	
Opencast ironstone mine and loading dock			*	
Salterns				*
Limekiln				*

2.2.4 Cultural Evaluation

Visitor surveys are notoriously difficult to evaluate. Estimates of visitor numbers have been made since 1978. The following surveys may be used as useful indicators:

SURVEY TEAM	VISITOR NUMBER
May and Osbourne (1981)	1,250,000
Borough Engineer Car Park calculations (1985)	912,000
Management Group, Holloway & Primett (1994)	1,269,369
Middlesex University, Tapsell, Ketteridge, Tunstall (1996)	609,000*
EIA - Dorset Ecological Consultancy (2002)	489,000**
EIA - Dorset Ecological Consultancy 2010 Access Land Report, 2009-10, Bournemouth Borough Council - Kylie Jones 2010	931,147 ***

* Visitors to east of Double Dykes only (excludes under 18 year olds)

** Visitors to west of Double Dykes only

*** Does not include students

Environmental Impact Assessment (EIA) 2010 - Summary

Analysis of the current visitor trends and numbers was carried out in conjunction with the planned development of the Visitor Centre.

Results

Car park data (ticket sales) indicate no significant trend between 1995 and 2001 however by 2008/09 there was a significant decline (by 50%) in parking at Solent Beach. Over the same period parking increased at the Hengistbury Head car park by a factor of some 30% which may as a result of the ending of cheaper short stay parking at Solent Beach.

The main findings can be summarised as follows:

Visitors in private vehicles	78% (2% less than 2002)
Visitors by public transport	2% (3% less than 2002)
Cyclists	2-3%
Pedestrians*	22% (12% more than 2002)

* 5% of pedestrians admitted to using other forms of transport 'en route' hence the figures totalling more than 100%

A sub set of visitors to the headland is the users of the Outdoor Education & Sailing Centre HHOEC and self-led school visits. An estimated 14000 student visits were recorded 2008-2009 (source Dorset Ecological Consultancy EIA 2010) however there were 23,400 student visits in 2009-2010 (Source pers. comm Rogers.T. HHOEC). In addition there were 7000 students on self-led visits - these groups had little or no interaction with staff.

Surveys 2001 - 2004 & 2008 - 2010

Projects to pull together information were carried out in 2004 (Griffiths, E) and 2010 (Jones, K). Results indicate that walking and relaxation remain the most popular activities /reasons for visiting:

Visitors

- Informal recreation, (walking, dog walking, picnics)
41% (2004) & 50% (2010)
- Mental stimulus, e.g. bird watching, curiosity, research
28% (2004) & 25% (2010)
- Formal recreation e.g. Cycling, Land Train, Café, Other
7% (2004) & 10% (2010)

Note: Multiple answers were given for the above categories

Informal recreation

A large component (25%) is the sub set of dog walkers with an estimated 250,000 dog visits per annum.

Formal recreation

Cycling is increasing as an activity with an estimated 40,000 cyclists annually. Formal education at the HHC attracts 12,500 visits per annum with an additional 6000 students studying the site independently of the Centre.

Transport, traffic and car parking

Historically, the majority of visitors arrive by car and, by choice, utilise the Hengistbury Head car park. An increasing minority favours the Solent Beach car park as a result of the ending of differential charging across the two car parks circa 2005.

19	95/6	1996/7	1997/8	1998/9	1999/0	2000/1	2008/9
Solent							
Beach	48435	35678	38 453	36633	42120	36 415	18679
Hengistbury	71663	65280	65 611	82628	78848	80 073	113117
Broadway*							147548
Totals	159078	139938	14 3044	158241	159948	15 5468	280744

* Broadway figures included for the first time in 2008/09 include other local roads and free car parks.

There is an identifiable trend in car park use over the past 20 years most notably the decline in parking at Solent Beach due to the result of the ending of differential charges in 2005 which encouraged parking on the edge of the site with cheaper short stay parking. A reduction in car parking at the Hengistbury Head car park is desirable in the context of the Travel Plan (BBC 2010) for Hengistbury Head which identifies incentives for walking, cycling and the use of public transport. In overall terms the Travel Plan offers a way forward for a better balance between individual convenience and environmental gain.

2.2.5 Conflicts arising between conservation and recreation interests

<u>FEATURE</u>	<u>DEMAND</u>	<u>ENVIRONMENTAL IMPACT</u>	<u>RISK ASSESSMENT</u>
Walking / running	Very High	Erosion locally serious on cliff tops/ headland disturbance to wildlife	3*
Dogs	Very High	Disturbance to wildlife Dog faeces problem	2**
Cycling	High	Cycle route OK Otherwise inappropriate Erosion & disturbance	3*
Informal games	High	Annoyance and disturbance to wildlife	3*
Kites	High	Annoyance, danger & disturbance to wildlife	1**
Sailboarding	High	Danger and disturbance to wildlife and users	1**
Beach/swimming	High	Confined to beach, low impact in general	3*
Fishing	Moderate	Damage to Reedbeds, disturb quiet areas, litter, fires etc.	3*
Boating	High	Disturbance to birds, wave action, speeding	3*
Barbecue/picnic	High	Fire hazards, burning of vegetation, fencing etc.	2**
Horse riding	Low	Can cause damage - restricted to licensees	3*
Education	Very High	HHC - low impact Field studies etc. Other visits higher impact	3*
Vehicle access	High	Nuisance, danger, etc.	2**

Estimate of residual risk - definition

1. High - imminent danger exists & activity should be stopped /controlled immediately.
2. Medium - additional action and control hazards required.
3. Low - hazards controlled - no further action, monitor.

Potential outcome - definition

- *** Catastrophe - fatality, major injury or fire.
- ** Serious - major injury, damage to health or serious damage to property.
- * Minor - minor injury, minor damage to property.

2.3 Objectives of management

Hengistbury Head is a fascinating site in terms of its ecological, geological and archaeological value. It is visited by a large number of people for recreational and educational purposes.

Management of the site has to take account of the important designations with regard to the wildlife and archaeology whilst, at the same time, having regard for the recreational and educational use.

The principle objectives are set out below.

2.3.1 Ecological

1. Maintain and, where possible, enhance the existing wildlife value of the site through appropriate management regimes.
2. To continue cattle grazing and to consider extending the grazing regime onto other appropriate areas. ([See para. 3.2.2](#))
3. To reduce the amount of scrub cover on the heathland habitat to a favourable level.
4. To eradicate invasive alien plant species from site with particular emphasis on Rhododendron, Gaultheria and Giant Hogweed.
5. To continue the practise of haymaking on Roebury Meadow and West Field.
6. To manage the hedges on Wick Fields by laying them in a traditional style.
6. To establish an appropriate management regime for the reedbeds in consultation with Natural England and other relevant organisations.
7. To continue to restrict access to the most sensitive areas e.g. the Nursery, the Natterjack Toad ponds and the sand dunes.
8. To incorporate the original Pitch and Putt site within the existing LNR designation.
9. To continue to monitor the effectiveness of management initiatives and to initiate research projects as required.
10. To ensure that site users are aware of the ecological importance of the site and of the need for it to be managed. A Visitor Centre will have a significant impact in raising awareness. ([See para. 3.2.1](#))

11. To investigate the potential for re-introduction programmes for species that have recently become extinct on the site.

A desired state condition for each working compartment has been produced and is shown in map form. Future management policies will aim to achieve this desired state. However, it is possible that the desired state condition will require modification as more data from research work becomes available and therefore management policies will require a certain amount of flexibility.

2.3.2 Physical

The effects of natural erosion give cause for concern for the future of Hengistbury Head, Christchurch Harbour and Stanpit Marsh. The associated problems were addressed in a discussion paper prepared by Halcrow Group Limited (2003) as part of the process of developing a draft Coastal Strategy for Poole Bay.

The draft Coastal Strategy has an initial planning horizon of 50 years during which time it is expected that 1.7ha of land will be lost from the coastal fringe of Hengistbury Head. Although there is general agreement that natural processes of erosion should be allowed to happen, this will have an inevitable impact on the cliff top archaeological sites.

Halcrow Group have identified that the provision of new coast and flood defences at and beyond Double Dykes was unsustainable under the terms of the revised Project Appraisal Guidance issued by the Department for Environment, Food and Rural Affairs (DEFRA). Currently justified projects are: the construction of the proposed rock groynes on Solent Beach to replace the existing time expired timber groynes and the reconstruction of the Long Groyne as the terminal of the Mundeford Sandspit defences.

Following the adoption by the Council of the Coastal Strategy, Bournemouth Borough Council's coast protection objectives will be:

1. To regularly renourish the beach.
2. To participate in the Strategic Regional Monitoring Programme.
3. To replace 4 timber groynes at Solent Beach with 3 rock groynes.
4. To maintain the Long Groyne.
5. To prepare a second Shoreline Management Plan.
6. To construct a rock revetment at Double Dykes.
7. To provide no defences beyond Double Dykes.

2.3.3 Archaeological

A Visitor Centre will provide a unique opportunity to display, for the first time, the internationally important archaeological collection. Located as the “gateway” to the ancient monument, the Centre will make imaginative use of ICT to bring this rich heritage to life.

The main objectives are:

1. To protect and conserve the archaeological sites by various practical methods as agreed with English Heritage and the Department of the Environment.
2. To conserve, interpret and display the archaeological features and artefacts.
3. Maintain a plan of general maintenance and conservation works on the Nature Reserve to be provided (as a schedule of works) for approval and consent by English Heritage.
4. Interpretation and display of the archaeology of Hengistbury Head in a site based Visitor Centre to be a priority.
5. Outside the Scheduled Ancient Monument, in which development will not normally be allowed, archaeological work will be undertaken when development is unavoidable.

2.3.4 Recreational

1. To enhance and promote sustainable access to the heritage of Hengistbury Head.
2. The development of a Visitor Centre as a physical and intellectual gateway to the reserve and Scheduled Ancient Monument. ([See para. 3.2.1](#))
3. Continue to evolve the ‘Green’ Travel Plan 2010 to address future issues arising from demographic and environmental changes.
4. To undertake regular visitor surveys. The previous survey was carried out in 2010.
5. To improve pedestrian and cycle access from Solent Beach car park to the Broadway and the beach and from Wick Village to Double Dykes via Roebury Lane.
6. To provide formalised access to the beach from Double Dykes.

7. To designate areas regarded as appropriate for certain activities to minimise conflicts with other interests. For example, the kite flying area in West Field and cycling on the permissive route between Double Dykes and Mudeford Sandspit.

8. To increase general awareness of the sensitive nature of the site and of the potential detrimental effect of even passive recreational pursuits such as walking.

9. To protect especially sensitive areas by excluding public access but ensuring that signage is in place explaining the rationale behind the decision.

10. To have no further provision of formal commemorative seating in order to maintain the special aesthetic quality. In recognition of the demand for commemorative features, to investigate the provision of alternatives.

11. To promote site-based events that are in keeping with the conservation objectives.

Note: For example, the termination of the kite festival in 2005 (an objective of the last plan and agreed by BBC in 2005) brought about significant improvements in terms public perception of the land as a nature reserve, a reduction in accidents and environmental improvements. It was replaced by annual Environment Festival.

12. Continue the good working relationship with the Hengistbury Head Supporters Group.

13. To increase awareness of other countryside sites in the Borough.

2.3.5 Educational

To develop an interpretation facility that will inspire the interest of school and college-based users, and the wider community. A new centre would act as a “gateway” to the headland.

[\(See para. 3.2.1\)](#)

The sustainable management programme for Hengistbury Head is based on the philosophy that people will care for what they first care about. This can only be accomplished by aiming for the highest standards of professionalism in interpretation and education.

The main objectives are:

1. To provide a single, coherent and organised approach to interpretation and education'

2. To raise awareness of the site through the provision of accessible education and interpretation, to be co-ordinated from a Visitor Centre (See Education & Interpretation Plan. Parr.C 2010).
3. To organise and run a programme of guided walks and talks.
4. To organise an annual Environment Festival on the site.
5. To upgrade existing and, where required, provide additional on-site interpretation.
6. To investigate the provision of storage of the archaeological collections within the Visitor Centre.
7. To provide a range of environmental study options for schools, higher education establishments and the general public.
8. To continue the provision of water-based activities from the Hengistbury Head Outdoor Education Centre through a lease with Brockenhurst College.
9. To continue to develop the Bournemouth Environment Advisory Team (BEAT) particularly with regard to partnership with Bournemouth University. ([See para. 3.2.9](#))
10. To create a stand-alone website, linked to that of the Council, as a gateway to all aspects of the Borough's countryside sites.
11. To develop the Stour Acres Barn as a satellite environmental resource centre in the north of the Borough.

2.4 Management Considerations

1. The land is zoned as Public Open Space.
2. The land is subject to byelaw control.
3. The site is designated as a Local Nature Reserve. ([See Map 4](#))
4. Most of the site is designated as a Site of Special Scientific Interest (part of Christchurch Harbour SSSI). ([See Map 3](#))
5. The SSSI heathland is designated as a Special Protection Area and a Special Area of Conservation. ([See Map 5](#))
6. The flood meadows from Wick Farm Meadows to Wick Hams are designated as an Environmentally Sensitive Area (part of the Avon Valley ESA).
7. The area east of and including Double Dykes and the tumuli within Solent Meads are designated as a Scheduled Ancient Monument. ([See Map 7](#))
8. Two areas are designated as Sites of Nature Conservation Interest. ([See Map 3](#))

9. Management of the site is part-funded under a Tomorrow's Heathland Heritage scheme and a Wildlife Enhancement Scheme.
10. The timing of any practical work is very important. Most of the work is carried out between October and March (except for Bracken and Gaultheria control). The Dorset Heathland Forum has compiled a Heathland Management Calendar that is used as a guide for the timing of specific management tasks on the heathland.
11. Zoning of archaeology beyond (westward) the Scheduled Ancient Monument and the implications for practical habitat management works, most notably on the golf course and Roebury Meadow. ([See Map 7](#))
12. Part of the site is designated as open access land under the Countryside and Rights of Way Act (2000). ([See Map 10](#))

STAGE 3 PRESCRIPTION

3.1 Working compartments

For the purposes of the management plan, Hengistbury Head has been divided into a number of convenient units or working compartments. The boundaries between adjacent compartments are either physical, for example established footpaths or, alternatively, relate to a distinct change in habitat type.

The working compartments have been numbered and named as follows:

- [1.](#) The Cliffs
- [2.](#) Beaches, Intertidal Habitats and Mudflats
- [3.](#) The New Dunes
- [4.](#) Mudeford Beach Sandspit
- [5.](#) Wick Spires - Reedbeds
- [6.](#) Rushy Piece
- [7.](#) Salt Hurns
- [8.](#) Wick Hams
- [9.](#) Long Field
- [10a.](#) Barn Field
- [10b.](#) Double Dykes
- [10c.](#) Clifftop
- [11.](#) Warren Hill Heath
- [12.](#) Withybed Wood
- [13.](#) Old Nursery Bird Sanctuary
- [14.](#) The Batters and Quarry
- [15.](#) Wick Farm Meadows
- [16.](#) Wick Fields
- [17.](#) Roebury Lane and Roebury Meadow
- [18.](#) The Golfing Complex
- [19.](#) West Field
- [20.](#) Whitepits

For each compartment, a brief description is given along with a summary of the flora and fauna. Where relevant, a section is included summarising the archaeological interest. The required management is then discussed in detail. Maps for each compartment show the existing state, desired state and required management.

3.1.1 The Cliffs (Compartment 1)

Description

The low cliffs west of Warren Hill are made up of about 2-5m of gravelly river deposits lying on an eroded surface of Boscombe Sand. The gravels are covered with a thin (0.3m-0.6m) layer of silty alluvium. There are lenses and layers of silts, loams and clays within the gravels. The gravels range from coarse grits to large, well rounded cobbles and are capped by a recent blown sand layer which shows evidence of up to three humic layers representing old turf lines or podzolic soil pans. A shallow valley, now partly filled, which slopes down to the NNE, lowers the cliff profile in the Whitepits area. The river deposits are Pleistocene (glacial phase) age and probably represent an ancient course of the River Bourne that flowed into the Stour.

The Warren Hill Cliffs are formed in Tertiary deposits of sands, loams and clays, with a capping of Pleistocene gravels and recent blown sand. The highest section of about 30m is below the trig-point. Towards the eastern end of Warren Hill, the land slopes down to a lower erosion surface where the gravel and sand capping lies directly on the Upper Hengistbury Beds. Grading of the cliff top here was completed in 1992. Subsequent stabilisation by seeding and planting of Marram Grass onto a biodegradable mat proved to be largely unsuccessful.

Flora

The low cliffs west of Warren Hill are steep and mainly unvegetated but where sand has accreted there are Stag's Horn Plantain, Marram Grass and Sand Sedge. Wet flushes are colonised by Royal Fern with drier outcrops supporting the scarce Rock Sea-spurrey *Spergularia rupicola*.

The sparse vegetation does not easily fall into NVC categories. The maritime community (MC5) may be most characteristic but heathland, sand dune and calcifugous grassland elements are present.

Maritime cliffs and slopes are a priority Biodiversity Action Plan habitat.

Fauna

Sand wasps and solitary bees colonise these cliffs. The Warren Hill Cliffs are home to a regionally important colony of Sand Martins with three separate sites occupied in 2009 including a newly established site on the low cliffs east of the Double Dykes. Jackdaw, Kestrel, Starling and Rock Pipit have also bred on these cliffs.

Archaeology _____

There are 2 major cross-sectional features: the Double Dykes (Late Iron Age) and the Early Iron Age entrenchment about 100m to the east. This prehistoric land surface has yielded finds of stone, pottery and occasionally metal of Neolithic to Romano-British date. Late Upper Palaeolithic and Mesolithic remains are also found. An Iron Age cremation site and a Bronze Age cremation internment have been revealed.

The erosion of Warren Hill cliffs has revealed Late Upper Palaeolithic and Mesolithic sites as well as five bloomery hearths and a large number of worked flints.

Objectives

1. The Council will pursue coast protection policies in line with the adopted Coastal Strategy (Halcrow Group Limited 2004).
2. Fallen cliff material will no longer be removed.
3. To monitor ongoing erosion with the aid of ortho-rectified photographs.

Management _____

	YEAR				
	1	2	3	4	5
Regular beach renourishment allowing longshore drift to contribute to existing beach volumes.				*	
Replacement of 4 timber groynes at Solent Beach with 3 rock groynes				*	
Construction of a rock revetment at Double Dykes					*

3.1.2 Beaches, Intertidal Habitats and Mudflats (Compartment 2)

Description

Since the mid-19th century the beaches have been unstable. Much of the present beach material was imported in 2005 -06 from a dredging site at the entrance to Poole Harbour with a top up in 2008 from material dredged from south of the Isle of Wight (in order to improve the beach profile and check coastal erosion).

The latter is a sand/shingle mix with many oyster shells that are not normally found on this shoreline. There are three main rock types; the ironstone boulders or 'doggers' derived from the cliff, the structures or remains of structures made of concrete, and limestone boulders imported to build groynes. The seabed habitats are sand, gravel, ironstone boulder and clay. Poole Bay is less than 20m deep with a sand bottom and clay outcrops that run parallel with the shore at Southbourne. Christchurch Bay is less than 10m deep, sandy inshore and bounded by gravel offshore.

Flora

Very few vascular plants grow on the foreshore and intertidal habitats. Since the coastal protection works on the Spit, important strandline communities (SD2, 5, 6) are developing and so far have survived the heavy recreational pressures. Some may accumulate sand and generate dunes, whilst others will retain the shingle. The scarce species are Sea Knotgrass, Ray's Knotgrass, Sea Spurge and various Oraches. Coastal vegetated shingle and sand dunes are priority Biodiversity Action Plan habitats.

Fauna _____

The seabed off Hengistbury has a rich and diverse fauna (particularly the ironstone boulders), and should be considered as an extension to the already recognised SSSI although a suggestion by BBC to have it included as a marine protected area (Special Area of Conservation SAC) was not taken up by Natural England. Large numbers of crabs, lobster and tube worms dominate the marine landscape alongside anemone and sponges. Microscopic Copepods and Nematode worms as well as the larger Brackish Water Shrimp *Gammarus locusta*, Ragworm *Nereis diversicolor* and Shore Crab occur in large numbers in the estuary. Fish species include: Common eel, Salmon, Mullet and Flounder. A whole range of birds utilise this area such as Gulls, Terns and a variety of waders.

Archaeology

The Clarendon Rocks are the remains of a long pier or jetty built in the late 17th century to protect an artificially cut entrance to the harbour about midway along the Mudeford Beach Spit. This silted up and the Run re-formed on its old course about 50 years later.

Management _____

	YEAR						
	1	2	3	4	5		
Harbour byelaw enforcement (discuss new patrol regime with Christchurch Harbour Steering Group / Brockenhurst College)	*	*	*	*	*		
Maintain buoys (sensitive area) at Barn Bight #	*	*	*	*	*		
Enforce restrictions on bait digging #	*	*	*	*	*		
Leave seaweed on strandline	*	*	*	*	*		

In conjunction with West Hants Water Co.

3.1.3 The New Dunes (Compartment 3)

Description

The New Dunes developed as a direct result of the construction of the Hengistbury Long Groyne in 1937-39. A system of three lines of dunes developed, colonised by dune and foreshore species. From circa 1950 the dunes steadily deteriorated until, in 1979, they were protected from trampling and erosion. Today the dunes are almost stable although they are very prone to exceptional tidal surges such as in 1987 and 1990. The renourishment of the beaches, between Solent Beach and Warren Hill, in 1989, 2005-06 and 2008, has contributed to the recent growth of these dunes and burying of the existing protective fence.

Flora

On the seaward side Sea Sandwort *Honkenya peploides* and Sea Rocket *Cakile maritima* predominate as they are resistant to inundation by sea water. Sand Couch Grass *Elymus farctus*, Sea Bindweed *Calystegia soldanella*, Sea Kale *Crambe maritima* and Sea Lyme Grass *Lymus arenarius* colonise the foredunes. Marram Grass *Ammophila arenaria* binds the landward dunes with the older ridges being colonised by Common Bent *Agrostis capillaris* and Sheep's Fescue *Festuca ovina*. At the cliff base, ericaceous heathland dominates. Royal Fern and Sallow flourish along the mineral-enriched flushes. The very scarce Ray's Knotgrass *Polygonum oxyspermum* spp. *raii* was rediscovered here on the foreshore in 1992.

The dune communities SD2, 5, 6 and others are found on the seaward side, grading into fixed dune communities with more lichen near the base of the cliffs. These are priority Biodiversity Action Plan habitats.

Fauna

The flushes support fauna such as the rare shore bug *Saldula arenicola* and two notable species of water beetle *Laccobius atratus* and *Hydychus angustatus*. The Sand Dart moth was rediscovered here in 1994 and has been recorded regularly since. A project to increase the range of the nationally rare Natterjack Toad at Hengistbury Head was completed in 1995. Breeding occurred at this pond for the first time in 2004.

Objectives

1. It is accepted that the priority here is coast protection and the maintenance of the habitat for Natterjack toads.

Management _____

	YEAR						
	1	2	3	4	5		
Replace perimeter fencing		*					
Interpretation signs (fragile environment)		*					
Control <i>Gaultheria shallon</i>	*	*	*	*	*		
Monitor Natterjack Toad	*	*	*	*	*		

3.1.4 Mundeford Beach Sandspit (Compartment 4)

Description

Mundeford Spit is an estuary mouth sandspit, probably formed on a shingle base. It is the larger of the two opposing spits of the Christchurch Harbour Estuary, the mouth of which is called The Run. The origin of the spit is uncertain. However, it is likely that a series of sand and gravel bars were built by sea action from east to west, as part of the development of the cusped headland, created by longshore drift (Cunliffe and Tooley 1986/87). One of these gravel bars is clearly visible to the north of Holloway's Dock. During this period (Neolithic?) the headland would have been considerably larger and, no doubt, the sandspit as we know it today, did not exist. It is accepted that it is an old feature that occurs on the earliest known maps (Yarranton 1677). Smeaton's sketch map, of 1762 and the 1st Edition Ordnance Survey Map (published 1811), both show the spit as wider than it is now with the Head standing further out to sea and having a protecting foreshore of ironstone boulders. By 1900, erosion had reduced the headland considerably, but illustrations of the time (Braithwaite and Hengistbury Golf Club 1913) show the existence of magnificent dunes, up to 12 metres high, which were only degraded when beach huts were introduced in the 1930s. Photographs taken about 1912 show that the dune backs were developing a heath-type vegetation which implies soil formation. Relics of this soil persist in places.

Between 1852 and the building of the Hengistbury Long Groyne in 1937-39 there was an excess supply of beach material derived from coastal erosion. This resulted in the spit extending as an offshore bar for as much as 2.5km, with a corresponding extension of the Run.

The 'natural' beaches of the Sandspit comprising well-graded sand, shingle and cobbles are now largely hidden by coastal defence works (1999). 56,000 tons of shingle and 17,000 tons of rock were imported to secure the long-term stability of this feature.

Christchurch Borough Council have now completed their programme of rock groyne building along the Sandspit and a co-ordinated defence line is now in place for the length of coastline that extends from the distal point of the Sandspit to the Hengistbury Head Long Groyne. Recycling of beach quality sediment is undertaken as part of the Christchurch BC Beach Management Plan using dredged sediment from within the Harbour that would otherwise present a hazard to navigation. The material is used to reinforce beach volumes on the Sandspit.

The Sandspit is currently leased to Christchurch Borough Council. The lease runs for 98 years with an expiry date of 2029.

There are presently 346 beach huts on the site.

Flora

Sea Knotgrass *Polygonum maritimum*, (a national rare Red Data & Schedule 8 species) discovered here in 1992 has spread along much of the sandspit. Ray's Knotgrass is also present. These two rare species seem to have benefited from the recent coastal protection works.

Fauna

The programmed reintroduction of the Natterjack Toad to Hengistbury Head included the establishment of a breeding pool in 2001 at the southern end of the spit/base of Warren Hill. The first breeding occurred in April 2004 and continued through to 2009. The habitat is ideal but there is a requirement to manage the invasive willow and rush and remove wind blown sand. The Sandspit is also a vital feeding and roosting site for wading birds including Oystercatcher, Dunlin, Turnstone and Ringed Plover. Ringed Plover has bred here, as has Little Tern and in this respect a nesting (fenced) area was set up (2005) in partnership with Christchurch BC on the 'old' dunes. However, to date this has been unsuccessful. Black Redstart is recorded here annually.

Objectives

1. The priority is coast protection. Close liaison between the staff of Bournemouth and Christchurch Borough Councils will be maintained.
2. To review the future number of beach huts on the Sandspit at the expiry of the lease in 2029.
3. Monitoring and protection of the rare flora and fauna.

Management

	YEAR						
	1	2	3	4	5		
Fence off distal dunes until stabilised #	*						
Maintain end of spit for nesting birds #	*	*	*	*	*		
Maintain/clear pond of vegetation & monitoring of Natterjack Toad	*	*	*	*	*		
Control Sea Buckthorn, Lupin and other alien species on central dunes #	*	*	*	*	*		
Interpretation of building dunes #	*	*	*	*	*		
Control car parking off hard road #	*	*	*	*	*		
Black House - monitor boat parking #	*	*	*	*	*		

Responsibility of Christchurch Borough Council

3.1.5 Wick Spires - Reedbeds (Compartment 5)

Description

These estuarine reed swamps fringe parts of the western margin of the harbour, adjacent creeks and drainage channels. Recent in origin, they appear to have extended from small up-river reed beds that spread into the drainage system that ran into Smugglers Ditch. This has occurred mainly since the 1939-45 war when increased labour costs led to neglected maintenance of drains.

Flora

The dominant species is Common Reed, *Phragmites australis* (S4) with zones of Reed Canary-grass *Phalaris arundinacea* (S28) and Reed Sweet-grass *Glyceria maxima* (S5) and Alder and Willow carr on the landward side. Fens and reedbeds are priority Biodiversity Action Plan habitats.

Fauna

These reedbeds support a diverse fauna with interesting communities of invertebrates that are an important food source for both resident and migrant birds. For example heavy crops of aphids are vital food for Reed and Sedge Warblers as they 'stoke up' before their autumn migration. Cetti's Warbler and Reed Bunting breed regularly here, along with the occasional Bearded Tit.

Archaeology

Of local historical interest is Smuggler's Ditch, a 'choked' channel between the Hams and the gravel ridge.

Objectives

1. The priority is to retain the reedbeds as quality feeding grounds for migrating and resident birds.
2. Recreational activities will be discouraged. The byelaw access restrictions (public and dogs) will be maintained and enforced.

Management

	YEAR						
	1	2	3	4	5		
Maintain fencelines and signs	*	*	*	*	*		
Maintain reed pool	*	*	*	*	*		
Investigate long-term management	*	*	*	*	*		

3.1.6 Rushy Piece (Compartment 6)

Description

Rushy Piece is in fact a reed-dominated swamp. It occupies an embayment of about 1.5 ha. Work by Cunliffe (1985/86) indicated how the marsh developed with an early beach (Neolithic?) being covered by alluvial material in the Bronze Age and then a peat layer in the late Iron Age. This was sealed by a thick estuarine alluvium during the Roman period. The final stage was the development of a further peat layer that is now dominated by Common Reed. The area has developed between two bars, possibly glacial in origin. These were part of a series of gravel bars that developed from west to east. A tentative reconstruction is available (Cunliffe 1987).

Flora

The growth of Common Reed here is confined to the western section, presumably as a result of the increasing salinity at this end of the harbour. The eastern portion is SM16, *Festuca rubra* saltmarsh. Both are Biodiversity Action Plan priority habitats.

Fauna

There is a diverse community of invertebrates here including spiders, hoverflies and beetles that requires further detailed investigation.

Archaeology

Following evidence discovered in 1984 during the digging of a water main and an extended programme of excavations by Cunliffe in 1985/86, the activities of man during the late Iron Age were found. A ditch with imported wares from N.W France and fragments of amphorae datable to 100 BC were found in the lower alluvium. An occupation level was found on either side of the ditch. This level had been deliberately covered with alluvium that may have been dug out of the marsh to the north, in order to create deeper water conditions. This area was also consolidated with gravel quarried from nearby beaches. The gravel produced sherds of datable amphorae. It appears that this was a deliberate act of engineering in order to construct deeper water with adjacent hard for the beaching of ships. Further recognizable human activity was found with the excavation of plough marks that were dated, by associated pottery, to the late Iron Age and Early Roman period. The ploughing had been done on a thick soil that had accumulated over the south end of the gravel hard. See Volume 1, Hengistbury Head, Dorset; Cunliffe 1987. The

environmental study programme is at present continuing and will be published in due course.

Objectives

1. Maintain the compartment in its existing state pending further biological/archaeological research.
2. To publish the results of the environmental studies and sea level changes (Cunliffe and Tooley).
3. Re-introduce grazing.

Management _____

	YEAR				
	1	2	3	4	5
Maintain fencing and introduce grazing			*		
Research reed/saltmarsh ecotone	*	*	*	*	

3.1.7 Salt Hurns (Compartment 7)

Description

Massive gravel bars, formed possibly during the late Glacial period, are clearly visible today as scrub-covered high ground. The northernmost bar (Limekiln Bar) is joined to the mainland in the vicinity of the Nursery. There is a more recent (Neolithic?) series of gravel bars formed as a result of longshore drift around the headland. The most obvious of these is the higher ground to the north of the Saltmarsh lagoon. Over time alluvial material was deposited in this 'embayment' leading to the formation of marshland. During this century, the western end of the lagoon has been infilled by an outwash fan of clayey silt deposited by acidic floodwaters from the ironstone quarry. The floodwaters have been somewhat controlled by the making of Quarry Lake (1976). There is thus a gradient from the alkaline (brackish) floodwaters of the estuary that invade the channels around the Lagoon to the acid freshwaters running from the heathlands on Warren Hill. The compartment is grazed by cattle.

Flora

The 'high saltmarsh' is fringed by stunted Birch and Oak. Sea Couch-grass *Elytrigia atherica*, Red Fescue *Festuca rubra* and Sea Rush *Juncus maritimus* dominate, but in the less saline areas Field Milk-Thistle *Sonchus arvensis* and Parsley Water Dropwort *Oenanthe lachenalii* are present. The middle saltmarsh is a community of Mud Rush *Juncus gerardi*, Thrift *Armeria maritima*, Sea Aster *Aster tripolium*, Sea Lavender *Limonium vulgare* and Sea Arrowgrass *Triglochin maritima*. The 'low saltmarsh' supports early pioneer species such as Glasswort *Salicornia spp*, Sea Poa *Puccinellia maritima* and Annual Seablite *Suaeda maritima*. Coastal saltmarshes, including mud colonies, encompassing a wide range of NVC communities are priority Biodiversity Action Plan habitats and on Annexe 1.

Fauna

The mud and open water are feeding grounds for estuarine birds. The adjacent rough grass is ideal for ground nesting birds and smaller mammals, including the water shrew. The woodland fringe offers shelter, food and nesting sites for passerine birds. These all benefit from the abundant invertebrate populations that includes the impressive spider *Argiope bruennichi*. Adders are frequently recorded here from May onwards when the marsh is drier but still damp.

Archaeology

The excavations of 1985 to 1987 seem to indicate that human activity was very limited in the area of the Salt Hurns. However there is evidence to suggest that there was Late Neolithic occupation in the lee of sand dunes that had formed at the foot of the headland. There may indeed be a degree of Iron Age and Roman interference in the area of the Lagoon but investigations by Cunliffe are at present incomplete. There are 3 historical features:

- The remains of a limekiln on Limekiln Bar (19th century?)
- The Salterns (i.e. 'Salt Hurns') - salt extraction from seawater in the lagoon and pools (17th century to early 19th century).
- Holloway's Cut - a channel running from the harbour to a small dock area in the lagoon where ironstone was loaded and shipped to Southampton in returning coal barges (1850s for some 20 years).

Objectives

1. Much of the Salt Hurns has a remoteness that is unusual at Hengistbury Head. This will be preserved by discouraging recreational and educational use.
2. The maintenance and enhancement (by grazing with cattle) of the natural features and qualities of the saltmarsh will be the priority whilst also giving consideration to a policy of allowing some degree of natural succession. ([See para. 3.2.2](#))

Management

	YEAR					
	1	2	3	4	5	
Quarry outwash - assess damage/recommendations						*
Maintain grazing - assess fencing requirements	*	*				
Clear Blackthorn scrub from limekiln bar footpath	*	*				
Maintain footbridge	*	*	*	*	*	
Control <i>Gaultheria shallon</i>	*	*	*	*	*	
Assess schools' fieldwork/public impact near bridge	*	*				

3.1.8 Wick Hams (Compartment 8)

Description

The Wick Hams saltmarshes used to extend from Barn Bight to merge with the water meadows of Wick Meadows, their vegetation showing a gradation or ecotone related to the decreasing salinity of the estuarine flood waters as one progressed upstream. Between 1951 and 1957 the main section between the Hengistbury Head Centre (built 1964) and Wick Meadows was used for tipping and then topsoiled and seeded to grass. This is now the rough grazing land of Wick Fields. The remaining area of Wick Hams consists of a peaty alluvium over whitish alluvial clay. The presence in the clay of a geologically unaccountably large number of pebbles of the shape and size used in Iron Age times (sling stones) suggests that the clay deposits may have been laid down at that time, and that the saltmarsh has therefore developed during the last 2000 years. This habitat forms the lowest reach of the Avon Valley Environmentally Sensitive Area (ESA).

Flora

The lack of grazing 1989 - 2001 resulted in the spread of the reedbeds at the expense of the open saltmarsh. In 2002 grazing was re-instated and brought about significant environmental improvement with regard to maintaining the favourable condition status. The reedbed was controlled and there was a significant reduction in Sea Club-rush *Bulboschoenus maritimus*. However between 2005 and 2009 the area has been inundated by higher than average tidal waters which restricted the ability to graze this compartment. The southern part still retains a saltmarsh flora, dominated by a now rather coarse growth of Red Fescue grass. The drainage is by natural creeks and channels. A characteristic dendritic form is visible which develops where the tidal range is small. The vegetation has a pattern of mosaic type, rather than the markedly zoned form of regions with a greater tidal range. This is a complex of salt influenced and mesotrophic/calcifugous grasslands with swamp communities fringing the creeks. The grazed section is probably a lowland meadow in priority habitat terms.

Fauna

Both reedbed and saltmarsh provide essential feeding and nesting habitats for estuarine birds. Here, this is enhanced by the several brackish pools that support a considerable invertebrate fauna. Water Vole, commonly recorded here until circa 1995 has, it seems, become extinct, probably due in large part to Mink predation. The recent (2003/4) re-discovery of two nationally rare beetles here (13 Spot Ladybird *Hippodamia 13-punctata* and the

Water Ladybird *Anisosticta 19-punctata*,) both of which prefer damp conditions, confirms the need for a deep litter survey.

Archaeology

The re-curved northern horn of the main bank of the Double Dykes extends out into the saltmarsh and this is the only surface feature to be seen. A trial section of the northern end of the Dykes was excavated in 1984 by Cunliffe. It is almost certain that there are features of Iron Age and earlier times associated with old land surfaces now covered by the estuarine deposits of the saltings, but these are under no threat so long as the marsh remains undisturbed.

Objectives

1. The overall guiding principle will be the retention of a rural appearance by maintaining the reedbed adjacent to the Hengistbury Head Centre and enhancing the saltmarsh flora to the east.
2. Access will be strictly controlled in accordance with the current LNR Byelaws. The riverbank, reedbed and saltmarsh will remain undisturbed, apart from the legitimate grazing. ([See para 3.2.2](#))

Management

	YEAR						
	1	2	3	4	5		
Summer grazing - vegetation height to 5cm	*	*	*	*	*		
Deep litter invertebrate survey prior to proposed extension to grazing area (8a)	*						
Maintain causeway and river bank facility	*	*	*	*	*		
Maintain ditches/restore Water Vole habitat	*						*
Assess grazing in the light of rising sea level & report on future management of the marsh	*	*	*	*	*		

3.1.9 Long Field (Compartment 9)

Description

Long Field lies in the lee of Warren Hill. There is a slight slope from the foot of Warren Hill to the low cliff of the harbour shore, reflecting the underlying gravel deposit. Cunliffe (1987) has shown that the area to the south of the shallow valley of Barnfield Inlet is a gravel ridge (Barnfield Bar) that was laid in the late glacial period. This merges southwards to become compacted sand. This was possibly the result of riverine conditions or of the sand being 'wind blown'. The soil is a mix of sand and humus reaching a thickness of 1.2 metres in the south, decreasing to 0.3 metres on the gravel ridge. This topsoil partly derives from the long period of human occupation in prehistoric times, and from cultivation in the 19th century (Browne, J. 1825). The southern boundary of Long Field is now formed by the abrupt slope of 19th century mining spoil (the Batters).

A River Restoration Project (BBC & Mouchel 2011) is planned for the River Stour in Bournemouth. It includes the harbour shoreline at Long Field. There is an urgent requirement to address the erosion in the harbour in order to safeguard the access route for pedestrians and the Land Train and to protect the archaeological record.

Flora

The open grassland is botanically-rich with species including Dyer's Greenweed *Genista tinctoria*, Harebell *Campanula rotundifolia*, Common Dog Violet *Viola riviniana* and various Trefoils. The trampled roadside sward supports Fenugreek *Trifolium ornithopodioides*, Suffocated Clover *Trifolium suffocatum*, Bulbous Meadow-grass *Poa bulbosa* and Early Meadow-grass *Poa infirma*. The grassland to the west gives way to the acid grass heath of Barn Field where the influence of the prevailing salt-laden winds increases. Grazing (possibly by sheep and cattle) ceased in 1939. A large population of 'grazing' rabbits succumbed to the combined effects of myxomatosis and disturbance by dogs in the 1980s allowing the grass sward to become dominated by coarser species, with bracken and scrub, including the alien *Gaultheria shallon*. Bracken has been largely eliminated and *Gaultheria* has been severely checked by spraying.

The lowland, dry acid grassland and lowland heathland are priority biodiversity Action Plan habitats and the latter is on Annexe 1.

Fauna

There are abundant populations of invertebrates, small mammals and insectivorous and seed-eating birds; ideal prey for predators such as the Kestrel, Skylark, Meadow Pipit, Linnet, Whitethroat,

Stonechat and Dartford Warbler regularly breed here. The large anthills of the Yellow Meadow Ant *Lasius flavus* seem to indicate that this field has been grassland for at least the last 100 years.

Archaeology

The excavations 1979-84 by Cunliffe showed how a large settlement grew here between the 8th to 6th century BC. Attracted by the iron ore (doggers) and the excellent harbour and river communications, these settlers built circular huts of timber and mud. Considerable amounts of fine angular pottery with furrowed decoration and coated with bright haematite together with coarser pottery enhanced with fingertip decoration were found. Between the 1st century BC and 1st century AD an important trading station developed on the site.

Hengistbury and its harbour were now fully exploited and trade grew in raw materials and slaves. Gold, silver and copper were exchanged for the imported wine and glass. The wine, from Italy, was brought to Hengistbury in Amphorae (also made in Italy) via Brittany. Finely made Breton pots were also imported - after being added to the wine cargoes in Brittany. Mediterranean purple glass was imported and then made into beads and bracelets. A number of circular timber built houses existed during this period with drainage ditches around their perimeters. The inhabitants probably constructed the Double Dykes to protect the trading port. An associated hard and harbour works (discovered 1984-86) were constructed during this period to the east at Rushy Piece. When the port declined, the settlement continued in use and some commodities such as Spanish wine were imported for local use. The Durotriges, a local tribe, were now the main inhabitants of the headland; their Durotrigan bowls and coins have been found in Long Field. The settlement eventually declined after the Roman Conquest in AD 43, although Roman occupation continued on the site into the 4th century AD.

Excavations in 1984 (Cunliffe 1987) seem to indicate that the southern end of the Iron Age settlement had been found. These excavations and those earlier confirm that the site was an important Iron Age settlement. It is, today, internationally significant in terms of Iron Age studies.

Objectives

1. The priority will be to develop and maintain a mosaic of scrub and herb rich grassland by grazing with cattle. ([See para. 3.2.2](#))
2. The variety of vegetation, the varied textures and seasonally changing colours make this a quality landscape that is much appreciated. Recreational pressures will be controlled.
3. To address the coastal erosion on the harbour shoreline.

Management _____

	YEAR				
	1	2	3	4	5
Continue eradication of <i>Gaultheria shallon</i>	*	*	*	*	
Clear 95% of Bramble, Bracken & Honeysuckle	*				
Assess and report on fencing to facilitate grazing with cattle within an extended area of Long Field and the Batters				*	*
River restoration project - attend to gullies and foreshore erosion & protect the archaeological record.	*	*			

3.1.10 Barn Field (Compartment 10a)

Description

Barn Field lies between the Double Dykes and Warren Hill, its southern boundary being the low sea cliff that rises about 2-3 metres above beach level. It receives the full force of the prevailing off-sea winds that carry wind blown sand from the beach into the turf of the field thereby covering the original alluvial surface. In the past, this sand has also formed a narrow band of dunes along the cliff top, but this is now much reduced by cliff recession and human trampling.

The cliff section shows the alluvium as a thin cover to a floodwater river gravel, about 2-2.5 metres deep over a base of Boscombe sand. Until about the mid 19th century the cliff stood some 150-200 metres south of its present position and appears to have been remarkably stable for at least the previous 1800 years.

Damaging operations include radar installations (1939-45), the construction of the main track from the Double Dykes to Mudeford Spit, re-seeding treatments, aeration, severe trampling by visitors 1950 -1990 and regrettably, fertiliser on badly worn areas 1970 - 1979.

Flora

Barn Field has probably been grassland for at least several centuries, and qualifies as 'ancient grassland'. It is a locally important example of its type and deserves special protection. The majority is a grass sward of *Agrostis-Fescue* type with Sweet Vernal Grass *Anthoxanthum odoratum* with areas of Heather *Erica cinerea* and *Calluna vulgaris*. In common with other long established grasslands it contains a large number of scarce species, and is of great botanical interest. Species recorded include: Birdsfoot, Harebell, Suffocated Clover *Trifolium suffocatum*, Sea Mouse-ear *Cerastium diffusum*, Mossy Stonecrop *Crassula tillaea* and notably the Upright Chickweed *Moenchia erecta*. Cattle grazing was introduced (2002) following research by Hawes (1999-2001). Together with a programme of gorse eradication (2004 - 2010) considerable progress has been made in the restoration of this priority habitat to its 'ancient' character.

Fauna

A marked reduction in public pressure (since the closure of the Double Dykes 1990) and the return of grazing within an enclosed paddock (2001) has enhanced the environment in favour of the ground nesting birds, Skylark and Meadow Pipit (Bird Census: Smith 1999 - 2003). Barn Field is now a haven for birds, such as Linnet, Stonechat, Whitethroat and notably the Dartford Warbler.

Nationally scarce insect species include the Brown-banded Carder Bee *Bombus humilis* and the Mining Bee *Dasygaster hirtipes*.

Archaeology

Two round barrows of the Bronze Age and one oval barrow are visible. An inner defence earth work exists 200 metres east of the Double Dykes visible only from the shore, in the cliff section on the south side of the Headland. There were two phases with a flat-bottomed U-shaped ditch backed by a 5.5 metre wide rampart being constructed first. The second phase was a re-cut of the ditch with an increase in size of the rampart. This defence probably pre-dates the Double Dykes and may be associated with the Early Iron Age Settlement. The defence may end at the Barnfield Inlet, meeting the Barnfield Ridge - a gravel ridge which runs from the east and westwards into Barn Field (Cunliffe 1987). There is also a low bank and ditch, an old field boundary, which is marked on the Tithe Map of 1844.

Finds by Bushe-Fox in 1911-12 and those revealed by erosion have been summarised by Cunliffe (1987). The finds date from Mesolithic to Romano-British times, and it is highly probable that other prehistoric remains are present in some quantity in this buried land surface as this field would have formed part of the settled area in Iron Age times.

Objectives

1. To build on the success of the conservation measures already undertaken, by continuing the grazing.
2. It follows that the access restrictions will be maintained in order to carry out Objective 1.
3. In overall terms the maintenance of the ancient grassland including the dunes to the south will be the priority.

Management _____

	YEAR						
	1	2	3	4	5		
Continue seasonal grazing management	*	*	*	*	*		
Fence to repair ground (10c)						*	
Monitor effects of grazing	*	*	*	*	*		
Control Bracken and scrub if necessary	*	*	*	*	*		

3.1.10 Double Dykes (Compartment 10b)

Description

The Double Dykes is a defensive bank and ditch earthwork, and is around 2,000 years old. It runs from the coastal cliff northward to the harbour and consists of two parallel banks with a ditch between. The banks were made of gravel taken from the ditches. The 'outer' ditch is infilled, probably with material from the outer bank. The inner and taller bank has a recurved hornwork extending out into the Wick Hams. Until the late 20th century there were four causeways cut through the dykes. In 1991 a 'convenience cut' made in c.1970 to give access from a cafe then situated in the car park in West Field and an 'historic period' cut made for farming to its south were closed and the banks reconstructed*. There still exists the largest cut, the main track leading to Mudeford Spit and possibly the original entrance in Iron Age times, and an 'informal' path which cuts across the northern part of the dykes. A second 'historic period' cut near the seaward end, is now lost to marine erosion.
**Note: The causeway material originally derived from the main bank was used for the reconstruction.*

Flora

The vegetation is a natural extension of that of Barn Field, and is ancient grassland. The bank and ditch topography, however, increases the variety of habitat by affording different degrees of exposure to sun, wind, and of soil moisture and drainage. Scarce plants include the Little Mouse-ear *Cerastium semidecandrum* and many legumes including Hairy Bird's-foot Trefoil *Lotus subbiflorus*, Clustered Clover *Trifolium glomeratum* and Knotted Clover *Trifolium striatum*. Where the causeway of the main entrance holds up the drainage there is a semi-permanent pond. The pond is overgrown with Sallow that harbours some scarce lichens and algae.

Fauna

Before the 'recreational invasion' of the 1950s, the Double Dykes were a breeding site for the rare Sand Lizard, and for ground nesting birds including Shelduck. Since the closure of the dykes (1991) Shelduck periodically attempt to nest here. Skylark and Meadow Pipit breed successfully here (Bird Census 1999-2010).

Archaeology

The Double Dykes are defensive ramparts of the Late Iron Age settlement and port on the headland. They are, today, the only visible evidence of the Iron Age presence. The structure of the banks, as tips of gravel and sand, with evidence of more than one

phase of construction for the main bank, was recorded at the seaward end (1911 Bushe-Fox). The Dykes are characteristic of the later phases of the Iron Age but there is, as yet, no direct internal evidence. It is not known exactly when the Dykes were first made, or whether there was any revetment to, or superstructure on, the main bank, except at the entrance. Here, a service trench (1973) along the north flank of the main trackway where it crosses the inner bank, revealed the foundations of a revetment wall of ironstone boulders with flint chock-stones. An earlier (1957/58) cable trench revealed ironstone and charred wood in a position where a gatehouse might have been expected. In 1984 a trial trench was cut into the back face of the rampart on Wick Hams in order to examine the relationship of the Dykes to the formation of the marsh. The rampart was composed of discontinuous tips of gravelly clay and silts together with a few ironstone boulders (Cunliffe 1987). Ironstone boulders were again noted during the construction of a water main trench (1984).

Objectives

The Double Dykes Ancient Monument is the most visible feature of the archaeology of Hengistbury Head and sets the scene and atmosphere for the visitor to this important headland. It follows that:

1. In order to protect this Ancient Monument and Barn Field beyond, it is necessary to continue to restrict access onto the Double Dykes.
2. The coastal defence at the southern end is of paramount importance and will be maintained.
3. The grass turf vegetation will be maintained, in conjunction with the management of the Barn Field, in order to give the best protection to the earthworks.

Management

	YEAR						
	1	2	3	4	5		
Maintain protective fencing, signs/viewpoint	*	*	*	*	*		
Maintain the gabion sea defence at the southern end	*	*	*	*	*		
Remove scrub/Bracken as required (trim Sallow)	*						*
Close northern path to cyclists				*			
Lichen survey of Sallow before considering removal				*			
Introduction of grazing - investigate/report	*	*					
Improve access to beach			*				

3.1.11 Warren Hill Heath (Compartment 11)

Description

The topography of the hill shows the basic structure to be two gravel capped terraces separated by a gentle slope. The lower, eastern terrace eroded into a shallow valley, cuts through the porous gravel and underlying Highcliffe sand into the loamy clays of the Upper Hengistbury Beds. Seepage water at the sand-clay junction keeps the valley bottom almost perpetually wet (water flows down the cliff near the Long Groyne). The soils have developed in a superficial layer of blown sand, which varies in depth from around 25 cm to 4 metres. Soils vary from the humo-ferric podzol of the Transverse Quarry to the gley-podzol of the Eastern Depression (Barton 1992). The main routes across this area have been surfaced with Naturtex tarmac to reduce the amount of erosion on this sensitive habitat.

Flora

There is zoning of vegetation related to wind, land slope, soil and water regime, proximity to the cliff edge and, possibly, man's activities (early 20th century). The heathland is of particular interest because it has been controlled by the strong salt-laden coastal winds and is not dependent on grazing or burning to prevent its reversion to woodland, as are all the inland heaths (but see fauna below). Such 'climatic climax' heaths were once extensive along much of the Dorset and Hampshire coast, but are now reduced to small areas at Studland, Headon Warren, Isle of Wight and at Hengistbury. There is evidence of a possible relict woodland flora (Hawes & Walls 2004) that may be indicative of changes resulting from the approaching coastline.

The NVC of the *Calluna* dominated eastern end is H2. To the west this has increasing amounts of Sand Sedge and the classification is less clear. A large tract east of Quarry Pond is dominated by variable proportions of Bracken and European Gorse with a woodland-type understorey. All heathlands are priority Biodiversity Action Plan habitats and on Annexe 1.

Fauna

Beneath the wind-pruned hummocks of heather, grass and Sand Sedge *Carex arenaria* there is a comparatively sheltered world inhabited by spiders and other invertebrates that provide food for birds such as Dartford Warbler. Meadow Pipit and Skylark also continue to thrive here as does the Dartford Warbler. Nightjar is a frequent summer visitor but their breeding success is not known (Bird Census 2009). There are exposed sandy areas which attract burrowing sand wasps and mining bees such as the nationally scarce Nomad Bee *Nomada fucata*, the Large Velvet Ant *Mutilla*

europa and the Cuckoo Bee *Speocodes longulus*. Tiger Beetles are common, as are Adders. Sand Lizard may be present. The once common Grayling Butterfly has suffered a serious decline here since the 1980s (Butterfly Census 1999 - 2010). Typical of arid sites where fine grasses grow among patches of bare ground, the decline may be an early indicator of climate change (i.e. encouraging the development of an increasingly 'lush' type of vegetation).

Archaeology

Warren Hill has an extensive range of remains and features ranging in time from the late glacial of 11,000 years ago to Romano-British times and it was clearly a site with qualities most attractive to prehistoric man. Cunliffe (1987) and Barton (1992) have summarised the excavations to this date. The late Upper Palaeolithic and Iron Age sites are of international importance. Erosion is known to have destroyed many of the sites including 5 bloomery hearths of probably Iron Age date and part of the Mesolithic 'Archers' Campsite' during the last 40 years (Barton 1981-1984). It is clearly important that such sites should be properly monitored. There are several barrow mounds, which have been investigated in the past, but which might yield further information on environmental history if the buried soils could be investigated with modern techniques. For the historic period, there are slight earthwork banks near the O.S. trig. point and traces of small defence trenches from the 1939-45 war.

Objectives

1. The overall objective will be to conserve the 'climatic climax' heath, once so extensive along our coast. In doing so, the landscape and the underlying archaeology will also be protected.
2. To investigate grazing as a tool for management and conservation for this compartment as part of the Higher Level Stewardship Grazing Agreement (HLS)

Management

	YEAR						
	1	2	3	4	5		
Extend Naturtex tarmac footpath down steps to Mudeford Spit.						*	*
Maintain protective fencing	*	*	*	*	*		
Eradicate Gaultheria and control scrub	*	*	*	*	*		
Research scrub/heath interface		*					

3.1.12 Withybed Wood (Compartment 12)

Description

The name Withybed recalls a past venture to establish basket withies for making lobster and prawn pots. This may be the small, enclosed wood marked on the O.S. map of 1811. The woodland has developed in the shelter of Warren Hill on the eastern part of the Long Field. Its fertile soils differ from those of Long Field in having a thin band of clay (Batters outwash) about 20 cms below the surface that, in places, causes impeded drainage. The ground slopes down to the North and the soils merge with the deep alluvial peats of Salt Hurns. Photographic evidence suggests that part of the woodland was cleared during the 1939 -1945 war. However, some of the present oaks may originate from the 18th century. The wildlife community suggests this could qualify as 'ancient semi-natural woodland'. It is unique geographically in that it lies just at the point of landfall and departure for birds and other flying animals using the important cross-channel migration route linking the Cherbourg Peninsula with the Avon valley. This gives the wood an importance out of all proportion to its small size.

Flora

The main trees are Oak *Quercus robur* and Downy Birch *Betula pubescens*, with Holly as undershrub and Ivy locally abundant (NVC communities W10 and W16). The wetter parts have Sallow *Salix cinerea* ssp *oleifolia*. These four species are of particular value in wildlife conservation because they support a very wide range of insect larvae in great abundance that are, in turn, food for insect-eating birds. White Poplar, Dutch Elm *Ulmus x hollandica* v. *hollandica*, Ash, Rowan, Elder, Honeysuckle, Blackthorn and 12 species of Bramble (including the rare *Rubus holmesliensis* & *R. incurvatus*) are also present. Sunny rides once dominated by bracken and *Gaultheria shallon*, before spraying in 1997-2003, support Foxglove, Ground Ivy, Speedwells and Violets. Bluebells dominate the western fringe of the wood with the occasional Butcher's-broom *Ruscus aculeatus*. Broad-leaved Helleborine *Epipactis helleborine* is found alongside the main track. There is an interesting range of macro-fungi (Wiseman 2003).

Fauna

Chiffchaff, Blackcap, Green Woodpecker, Sparrowhawk, and Tawny Owl are examples of birds that breed here either regularly or occasionally (Common Bird Census 2005-2010). The range of native trees supports an extensive list of invertebrates. The more visible of these include the butterflies, Speckled Wood and Purple Hairstreak.

Archaeology

Cunliffe (1987) found a probable Late Neolithic occupation level associated with the series of sand dunes that existed at the foot of the headland. Worked flint, probably of this period, was found in the vicinity to the south of the road. Historic features include the Batters and the concrete foundations of wartime buildings (1939-45).

Objectives

1. To maintain the woodland as an Oak-Birch and Oak-Sallow-Alder wood, with other associated native species of tree, shrub, and ground flora
2. Where practicable, eliminate alien species.
3. To give special attention to the scenery and landscape value and to monitor and control recreational, educational and vehicular use so that it does not reach a level unacceptably damaging to the quality of the woodland.

Management

	YEAR				
	1	2	3	4	5
Eradicate Gaultheria and Rhododendron	*	*	*	*	*
Control Bracken, White poplar and Sycamore	*	*	*	*	*
Maintain glades and Bluebell woodland	*				*
Remove Grey Squirrel as migrants arrive	*	*	*		
Tree damage associated with vehicular traffic-report			*		
Investigate potential for introduction of grazing			*		

3.1.13 Old Nursery Bird Sanctuary (Compartment 13)

Description

An enclosed area of 1ha to the West of Withybed Wood that was originally part of Long Field. It was established as a Nursery Garden (1919 - 1950s) following which it was managed by the Christchurch Harbour Ornithological Group (CHOG), at first as a Bird Observatory and Ringing Station. It is now a designated bird sanctuary. Topographically, it is part of the alluvial covered gravel terrace that makes up the rest of Long Field and its soils have the same history of pastoral and agricultural use, but with the addition of over 40 years of tillage and fertilising as a nursery garden. The position, in the lee of Warren Hill, and with trees to the east ensures a mild, sheltered micro-climate which is favourable to bird and insect life. Grazing was established here in 2008 in parallel with a programme of tree felling (Monterey Cypress & Holm Oak).

Flora

A mosaic of trees, shrubs and open grassy places includes Scots Pine, Holly Oak and the remaining Monterey Cypress along with native Oak, Birch and Sallow. Bamboo, Gaultheria and Holm Oak are a few of the alien plant species that require controlling.

Fauna

There are three man-made ponds. Two butyl-lined ponds (created in 1972 & 1985) and a clay-lined pond (1981) have been colonised by a wide range of dragonflies (sixteen breeding species). The ponds are also a haven for Grass Snake and Smooth Newt. Firecrest, Redstart, Nightingale, Blackcap, Garden Warbler, Spotted Flycatcher, Pied Flycatcher and Lesser Whitethroat are a few of the migrants recorded here. The Nursery harbours an important resident wildlife community of its own including Grey Heron (first bred 1989) and Little Egret (first bred 1998 with up to 5 pairs annually (CHOG 2010)). There are many small mammals including Common and Pygmy Shrew, Bank and Short-tailed Vole and Harvest Mouse. Invertebrates include grasshoppers and crickets such as Long-winged Cone-head. Humming-bird Hawk-moths and Broad-bordered Bee Hawk-moth are occasionally recorded.

Archaeology

The Nursery was investigated by Bushe-Fox (1911-12) and Gray (1919-23) who found large amounts of Neolithic material. Further archaeological investigation occurred in 1984/85 when two ponds were created. A 'schools excavation' under professional supervision (Oxford University) found Late Neolithic and Early Bronze Age occupations represented by an extensive flint

assemblage of 2500 struck flakes and Grooved Ware. Also revealed was an extensive horizon of spade marks (probably Early Iron Age) that are, so far, unique in the British Isles (Cunliffe 1987). A new water supply (2008) to feed water troughs was extended from the Nursery to Long Field and into the Saltmarsh (Compartment 7). This provided an opportunity (with Ancient Monument Consent) to examine the trench and soil cast up by the excavation. The watching brief revealed a concentration of worked flint and burnt flint which confirmed early discoveries of Late Neolithic flintwork (Gardiner 1987) as well as a burin which may be Mesolithic (Terrain Archaeology, Bellamy 2009).

Objectives

1. The area will continue to be used as a designated Bird Ringing Station (British Trust for Ornithology) by the Christchurch Harbour Ornithological Group in conjunction with Bournemouth Borough Council. The restrictions on public access will be maintained.
2. The priority for management will be the creation of a woodland edge habitat with thorn hedges, areas of scrub and open grassy glades.

Management _____

	YEAR						
	1	2	3	4	5		
Control invasive alien species (Gaultheria, Holm Oak, Bamboo). Phased removal of Monterey Cypress	*	*	*	*	*		
Maintain ponds on rotation	*	*	*				
Maintain Bluebell carpet	*						*
Control Grey Squirrel	*	*	*				
Act on Objective 2 above	*	*	*	*	*		

3.1.14 The Batters and Quarry (Compartment 14)

Description

The Batters and the Quarry are both the result of opencast mining for ironstone by the Hengistbury Mining Company during the period 1848-1872. The Batters were formed by digging into the hillside down to the level of the ironstone deposits and throwing back the spoil to form the terrace. As a result the natural contour of Warren Hill has been lost. Good sections of the spoil tips can be seen towards the West Batters and Warren Hill cliffs. The working face cut across the seepage lines at the junctions of the gravels and Highcliffe Sands and Upper Hengistbury Beds. The seepage outflow results in local wet areas and pools as well as the larger and deeper Lily Pond and the shallow Natterjack Toad pools. Also on the positive side, the quarry provides useful geological exposures and, since 1976, has been enhanced by the making of Quarry Pond. The pond was created by constructing an earth dam across the quarry with a variable overflow control. This checked seepage and rainwater scour which was carrying a deposit of silt on to the saltmarsh below. The 'importation' of ironstone doggers from the foreshore of Hengistbury during the building of coastal protection works in 1987 has aided the protection of the dam (from erosion by wave action) and added interest to the site. The fencing of the pond (2000) to prevent disturbance by dogs has been a success in terms of attracting wildfowl to breed here.

Flora

The West Batters is mainly grass-heath (U4), bracken (U20) and gorse (W23) vegetation interspersed with areas of erosion and windblown sand. Much of the Bracken and Gaultheria has been eradicated. The zone behind Long Field (North Batters) was, until recently, dominated by *Rhododendron ponticum* and an invasive form of *Gaultheria shallon* which was planted in the early 1920s. A programme of eradication of these alien species has led to a grass/heath/gorse mosaic with Oak, Birch and Sallow scrub in the lee of the headland.

The East Batters (East of the Quarry) includes some wind-pruned Birch and Sallow with Ivy. It is essentially a continuation of the hilltop heathland but, because it is in the lee of the hill, it has been colonised by Pine and seedling *Rhododendron*. The latter was eradicated from large areas in 2002-2004. The flatter land near Holloway's Dock is a more diverse broadleaved woodland (W16), damp in places and with 2 seasonal ponds, one of which was cleared of Sallow in 2002. The very local Isle of Wight Helleborine *Epipactis phyllanthes* var. *vectensis* was discovered here in 2003. The acid freshwater of Quarry Pond is exposed to strong S.W. winds resulting in slow colonisation by plants and animals. Nevertheless Great Reedmace *Typha latifolia* invaded in the late 20th century

and now provides excellent cover for duck. Quarry Swamp, a seasonal pond, is shallow and has rushes, sedges and Bog Cotton and is important for some specially adapted plants and animals. The Lily Pond is dominated by Water Lilies ('rescued' from a damaged pond in the Bournemouth Gardens 1939-45), Bog Cotton *Eriophorum angustifolium* and aquatic Bog-mosses *Sphagnum spp.*

Fauna

The western Batters through to the Quarry Pond is an excellent habitat for a variety of birds including warblers and flycatchers. Nightjar has also bred here. The bare ground and south facing 'warm' slopes of the Quarry are important for Common Lizard, Adder, solitary bees, wasps and other insects such as the Green Tiger Beetle. The rare Sand Lizard may also be present. The Quarry Pond margins are much used by damselflies and by Mallard, Sand Martin, Swallow, House Martin, Rock Pipit and Dartford Warbler. The Lily Pond is an important breeding site for Dragonflies, with 14 recorded species, including the scarce Hairy Dragonfly *Brachytron pratense* and Small Red Damselfly *Ceriagrion tenellum*.

The Batters' Ponds are a series of seasonal ponds, the most westerly of which were chosen for the reintroduction (in 1989) of Britain's rarest amphibian the Natterjack Toad *Bufo calamita* (the Natterjack was present on the headland until the early 1950's). Natural 'run off' of rain water from Warren Hill footpath and cliffs maintains a pH 6-8 here unlike the seepage line ponds to the east which average pH 3-4. This higher pH together with gently shelving ponds in a sunny aspect, where the water temperature regularly exceeds 20C and where there are few predators, is ideal for this amphibian. The relatively short turf here allows the adults to run and hunt for food while sandy outcrops are excellent for burrowing and winter hibernation. 11 strings of spawn were laid here in 2009. (Holloway - 'Natterjack Toad Reports' 1989-2009).

Archaeology

The Batters present an unusual archaeological aspect. They are themselves virtually sterile as regards early archaeological features because, when they were made, any features on the upper hill slopes were destroyed or left so out of context as to have negligible archaeological value. But, in the making of the Batters, the lower slopes of Warren Hill were covered by outcast soil and thus protected from further disturbance. It is very likely that prehistoric features lie beneath this overburden at the back of Long Field. The southern-most extent of the Iron Age Settlement has probably been found to the north of the Batters (Cunliffe 1984). Industrial archaeology is represented by the Batters but, apart from one piece of inscribed slate, no artefacts from this period have been recorded.

Objectives

1. The priority will be to maintain the Natterjack ponds and their associated short turf/sand dune habitat in conjunction with Amphibian and Reptile Conservation. The ponds will remain fenced and access and research will be by Natural England licence only.
2. The remainder will be managed as grassy heath with scrub/woodland primarily by the continued eradication of *Gaultheria shallon*, Bracken, Holm Oak, Rhododendron and Sycamore. The ponds will be protected from disturbance (e.g. dogs).

Management

	YEAR						
	1	2	3	4	5		
Control Bracken, Gaultheria, Holm Oak and Rhododendron	*	*	*	*	*		
Remove western block of Rhododendron	*		*				
Maintain fencing - Quarry Pond	*						*
Maintain Natterjack Toad ponds and fencing	*	*	*	*	*		
Continue Natterjack Toad monitoring	*	*	*	*	*		
Clear ponds of Parrot's Feather	*	*	*	*	*		
Clear overhanging vegetation on Batters Path			*	*			

3.1.15 Wick Farm Meadows (Compartment 15)

Description

These meadows are old pasture grassland and now form part of the Avon Valley Environmentally Sensitive Area (ESA). They have not been subjected to modern agricultural improvement and are rich in species of grasses, rushes, sedges and flowering plants. Such 'ancient grasslands' are now scarce and recognised as a valuable asset. With the exception of Wick Pond and its immediate surrounds the meadows are low lying and periodically flooded; alluvial soils (pH 7-8) deposited by the Stour and Avon cover the underlying clay and river gravels. There is an artificial flood defence revetment surrounding the northern perimeter of the Wick Farm development.

Flora

This habitat is indicative of plentiful freshwater at the confluence of the Avon and Stour. These flood meadows with their *Festuca/Agrostis/Juncus* sward and stands of Corky-fruited Water-dropwort *Oenanthe pimpinelloides*, Crested Dog's-tail *Cynosurus cristatus* and False Fox Sedge *Carex otrubae* are the remains of a pasture which once extended eastward to Wick Hams before the land filling of the 1950's. The widespread presence of Bulbous Foxtail *Alopecurus bulbosus*, the incidental Parsley Water-dropwort *Oenanthe lachenalii* and Brackish Water-crowfoot *Ranunculus baudotii* indicate a variable salt water influence.

The variable edaphic conditions are responsible for the mosaic of NVC communities that are principally MG6, 10, 11 and U4 with stands of S4, 6 and 19 along the river bank and ditches. The hedges are probably the only 'ancient' examples on the Headland.

The nationally scarce Mudwort *Limosella aquatica* occurs in the damp 'fenny' vegetation whilst the nationally rare species Slender Bird's-foot Trefoil *Lotus angustissimus* is to be found in the drier surrounds of Wick Pond. Grassland structure is therefore important and the sward height is controlled by grazing. These meadows have been grazed and managed for many hundreds of years. The contemporary arrangement allows for summer grazing by the Council owned herd of Galloway and Shetland cattle and a licence to graze a maximum of 4 horses adjacent to Wick Pond.

Fauna

Birds include Snipe, Redshank, Curlew, Lapwing, Shoveler, Shelduck, Teal, Mallard, Heron, Kingfisher, Little Egret and Water Rail. It has long been suspected that Water Rail breeds here and this was confirmed in 2002 when two young were recorded. The fringes provide habitat for breeding Song Thrush, Lesser Whitethroat, Reed Bunting, Reed Warbler and Cetti's Warbler.

Archaeology

There are no known archaeological remains/features.

Objectives

1. The priority is to maintain the species richness of these ancient pastures by the continued use of traditional grazing methods without herbicides or fertilisers and within the ESA guidelines.
2. To give special protection to the scenery and landscape by restricting the recreational and educational use to the marked footpaths.

Management

	YEAR						
	1	2	3	4	5		
Maintain summer grazing at 1LU/ha	*	*	*	*	*		
Maintain mown turf at Wick pond (no herbicides or fertilisers)	*	*	*	*	*		
Monitor effects of grazing	*	*	*	*	*		
Repair existing fencing and gates				*	*		
Maintain causeways and ditches in rotation				*	*		
Clear main tidal stream/ditch - 5 year rotation							*
Wick pond - replace ornamental shrubs with native species and upgrade pond				*			
Improve interpretation at access points						*	
Dogs on leads except on designated paths	*	*	*	*	*		

3.1.16 Wick Fields (Compartment 16)

Description

These fields were made over what was part of the Wick Meadows by tipping refuse (1952 -1957). They were topsoiled and presumably seeded with a mixture of Cocksfoot and Ryegrass. The surface, which generally lies above flood levels, is uneven with a range of soil depths between 95mm and 290mm. The soil texture is sand/loam and is well drained with soil moisture levels being determined more by ground level than by soil depth. The area is part of the Avon Valley ESA and is grazed using the council owned herd of Galloway and Shetland cattle. As a result of a successful bid for Heathland Mitigation Funding (contributions from local developers) a new footpath system with self closing (wheel chair and push chair friendly) gates and ramp access to the bridge were installed in 2009. Information panels on route and a colour booklet provide an up-to-date view of the prehistory of the area through to the present day.

Flora

The flora is changing from an original sward of Cocksfoot, Ryegrass, Soft Brome and Squirrel-tail Fescue to a community that now has over 100 flowering plant species including the scarce Corky-fruited Water-dropwort *Oenanthe pimpinelloides* and Sea Mouse-ear *Cerastium diffusum*. Bramble, Gorse and maturing hedgerows of Hawthorn, Blackthorn and Dog Rose dominate the paddock perimeters with Sallow/Willow/Alder carr adjacent to the reedbeds. Ragwort and Creeping Thistle continue to pose a potential management problem. The original mesotrophic grasslands (MG1, 6, 7) and the more open communities are succeeding to calcifugous grasslands such as U4, more characteristic of the undisturbed ground.

Fauna

The hedgerows provide nesting and feeding habitat for birds and are important for small mammals such as mice, voles and shrews. The common bird census (Smith & Hawes 2009) reveals the growing importance of this area for breeding birds - as the hedgerows mature and the invertebrate population grows. Song Thrush, Skylark, Meadow Pipit, Whitethroat, Wren, Dunnock, Dartford Warbler and Stonechat are regular breeders here (mainly within the paddocks away from the busy walkways. The abundance of small mammals and birds makes Wick Fields the best hunting ground in the harbour for birds of prey such as Kestrel, Sparrowhawk, Barn Owl, Tawny Owl and Little Owl. There are several man-made ponds supporting a range of common aquatic species including Smooth Newt, Emperor, 4-spot Chaser

and Broad-bodied Chaser Dragonflies and Large Red and Common Blue Damselflies. A pond database is maintained at the BEAT research office at the Barn.

Archaeology

There are no visible archaeological features because of the layer of tipped material.

Objectives

1. The priority is to enhance the area by traditional grazing methods, hedge laying and the maintenance of ponds, hedgerows and wildflower meadows.
2. Relocate the land train adjacent to the Outdoor Sailing Centre (see Visitor Centre Stage D report) as agreed with Natural England.

Management

	YEAR						
	1	2	3	4	5		
Maintain grazing - 1LU/ha	*	*	*	*	*		
Maintain hedgerows	*	*	*	*	*		
Control Ragwort and Thistle	*	*	*	*	*		
Maintain restrictions on dogs in grazing paddocks	*	*	*	*	*		
Relocate Land Train adjacent to Outdoor Centre	*						

3.1.17 Roebury Lane & Roebury Meadow (Compartment 17)

Description

This compartment includes the redundant pitch and putt site. This area was the subject of an excavation in 2001 that revealed Early Bronze Age archaeology of international significance. The lane is part of an ancient trackway linking Wick village with Hengistbury Head and likewise the Wick Tumulus with the Bronze Age Barrows of Roebury, the remains of which include items dating back at least 5,000 years. This gives some idea of the probable antiquity of the trackway. It runs along the edge of the well-drained river terrace close to where it drops down to the flood meadows and reedbeds, now covered with tip material (see 3.1.16 Wick Fields). The lane is bounded on the South West side by a wide verge and ditch. Towards the Hengistbury end, the verge broadens to include Roebury itself, a long earthen mound of uncertain origin. Roebury Meadow (a hay meadow) established in 1970 is to the south of the lane and now includes the redundant pitch and putt site.

Flora

The irregular hedge which grows along the lane verge is mainly composed of Gorse, Bramble, Hawthorn, White Poplar, Crab Apple, Willow, Alder, some Clematis and the only plants of Burnet Rose in the harbour area. Much of the hedge is of comparatively recent origin with planting undertaken in the late 20th century. The hedge forms a much used and important flyway for small birds on spring and autumn passage. Where Roebury Lane meets Wick Lane there is a small Oak and Hawthorn copse with a ground flora of Lesser Celandine and Bluebell. A relic of woodland that once stretched from here through to Tuckton, it is an important oasis for nesting and roosting birds. The hay meadow is developing in species richness following 20 years of hay making.

Overall, the vegetation of the lane is patchy and has yet to settle into recognisable communities extensive enough to categorise. The meadow and the now redundant pitch and putt site are an extension of the sown sward of the golf course (MG6).

Fauna

Since its closure in 2004, the Pitch and Putt site has become an important refuge and breeding area for Skylark and Meadow Pipit. The existing hay meadow would similarly be ideal nesting and feeding habitat for Skylark and Meadow Pipit but for constant disturbance by dogs. Cetti's Warbler regularly raise young in the ditch parallel to Roebury Lane as have Song Thrush, Dunnock, Wren and notably Lesser Whitethroat. The lane and its hedgerows are important thoroughfares for mammals including Fox, Stoat, Weasel, Woodmouse and bats. Adders are recorded here regularly.

Speckled Wood and Red Admiral butterflies have become more abundant as a result of the increasingly lush growth at the eastern end of the lane. Natterjack toads have been recorded hibernating in piles of woodchips on Roebury Lane.

Archaeology

An archaeological investigation (2001) on the pitch and putt site revealed an Early Bronze Age site of international significance (a shallow pit with Collared Urn fragments and carbonised hazel nut shells and crab apples). Elsewhere there is evidence of Late Bronze Age to Middle Iron Age activity. A Late Bronze Age urn with a cremated bone may link these burials to other tumuli on the Golf Course. Large assemblages of Iron Age pottery represent the first evidence of Iron Age activity west of the Double Dykes. There was also evidence of Mesolithic occupation. This may be linked to finds of worked flints from Roebury Lane that were collected but not properly recorded during the 20th century. (Wessex Archaeology 2001). There is on site interpretation and a colour booklet (The West Trail - Hawes & Delbarre 2010) depicting the past use of this site.

Objectives

1. To continue to manage the redundant pitch and putt site as an acid grassland meadow with the northern strip as a refuge for ground-nesting birds and incorporate the land into the LNR as a medium term aim.
2. Roebury Lane will be informally maintained as a 'country lane' with appropriate hedgerow planting. The permissive cycle route shared with pedestrians will be maintained and developed as part of the Bournemouth Cycling Strategy.
3. Maintain the woodland copse and the small grassland area to the north of the driving range as a mini hay meadow.

Management _____

	YEAR				
	1	2	3	4	5
Upgrade Roebury Lane and extension to Wick Lane with the priority adjacent to the driving range (opposite the caravan site) as part of Cycling Strategy. Subject to Funding.				*	
Retain / maintain fencing and enhance hedgerows	*	*	*	*	*
Provide refuge area for Skylark and Meadow Pipit	*	*	*	*	*
Maintain grassland by haymaking and/or grazing	*	*	*	*	*
Improve interpretation at access point to Wick Fields north of Golfing Complex.					*
Monitor flora, invertebrate and breeding bird populations	*	*	*	*	*
Remove alien plants e.g. White Poplar	*	*	*		
Store hay as cattle feed	*	*	*	*	*

3.1.18 The Golfing Complex (Compartment 18)

Description

The Golf Course and its associated features were developed from agricultural land in 1970. Some minor land shaping was done. It is part of the low-level river terrace where a thin but fertile layer of alluvium is mixed with wind blown sand. The pitch and putt facility was relocated to an area adjoining Rolls Drive in 2004.

As a result of an archaeological investigation (2001) this area requires special attention/protection even though it is currently outside the Scheduled Ancient Monument (see Objectives & Management Considerations).

Flora

The sward is sown grassland including *Lolium perenne* and *Agrostis capillaris* (MG6). There are no trees or scrub except for localised patches of Gorse and Sallow and thorn hedge adjacent to Roebury Meadow. There are no special biological features except by the verge with the Broadway road. These verges are worth conserving for their worn droughty grassland (akin to MC5) that supports many of the scarce annuals characteristic of the Poole Bay hinterland.

Fauna

Natterjack Toads have occasionally been recorded in the sandy bunkers and short turf of the course. Skylark and Meadow Pipit use the course as a refuge and feeding area during quieter periods.

Archaeology

The excavations in 2001 are briefly described in compartment 17 above. The Tumulus marked on the O.S. maps which is visible as an almost ploughed out mound of Round Barrow type is possibly linked with the recent Late Bronze Age finds on the pitch and putt site. (Wessex Archaeology 2001). When the land was under the plough there were numerous finds of worked flints which were not adequately recorded, but included Neolithic and Bronze Age arrowheads.

Objectives

1. The priority will be to maintain the Par 3 and Driving Range golfing facilities at their present location in a manner that takes account of the surroundings.
2. There is a requirement to limit works (i.e. no excavations or intrusive operations) on the golf course in line with management considerations regarding the archaeology.

Management _____

	YEAR				
	1	2	3	4	5
Establish route for the West Trail along the perimeter of Rolls Drive.				*	
Maintain perimeter of site as appropriate	*	*	*	*	*

3.1.19 West Field (Compartment 19)

Description

West Field was previously part of the arable farmland to the West of Double Dykes and is probably some of the oldest cultivated land in Wessex. It is part of the low-level river terrace land that has retained a thin but fertile capping of alluvium above the gravel. The soil found today is an agriculturally modified alluvium with a considerable admixture of blown sand (Wessex Archaeology 2002). A shallow valley crosses in a S.W. to N.E. direction and probably represents the old course of the Bourne River (Cunliffe 1987). After termination of the farming lease in 1969, West Field was grassed down for recreational use. Subsequently, as part of the comprehensive redevelopment policy for this area promoted by the Council, the Southbourne Coast Road, Solent Beach Car Park and the Land Train Terminal Buildings were constructed. The growth in the use of the facilities at Double Dykes required the existing car park at Double Dykes to be enlarged and rearranged to incorporate screening using grassed banks, similar to that already in place at the Solent Beach Car Park, to reduce their visual impact. A kite flying zone was demarcated in 2005.

Flora

West Field is now neutral sown grassland managed as hay meadow. The grassland is not particularly botanically rich but 145 species have been recorded here and in Whitepits (Walls EIA 2002). *Vicia sativa*, *Vicia hirsuta* and notably Beaked Hawk's-beard *Crepis vesicaria* dominate. The sward is improving after 35 years of hay making. 13 Dorset notable species and 3 nationally scarce species (*Trifolium suffocatum*, *Crassula tillaea* and *Lotus subbiflorus*) are present on the more compacted and worn areas. The banks of the Solent Beach car park also include Clustered Clover *Trifolium glomeratum*, and Fenugreek *Trifolium ornithopodioides* in a dwarf theophyte community akin to MC5.

Fauna

Skylark and Meadow Pipit attempt to nest each year but are disturbed by dogs and people. Linnets have bred successfully in the scrub near the seaward end of the Double Dykes. There is an increasing range of invertebrates associated with the improving flora.

Archaeology

There are no earthworks or other visible remains, apart from a boundary bank separating Whitepits Rough from West Field, which is recorded on the Christchurch Tithe Map of 1844. Nevertheless, when the land was under the plough, Mesolithic, Neolithic and Bronze Age flint arrowheads and other tools types were found. Pottery from Late Neolithic through to Romano British times is recorded as well as a few Iron Age coins. Judging by what has been revealed in the cliff face of the adjacent Whitepits compartment, there are almost certainly other archaeological features beneath the plough level. Trial trenches excavated in 2001 at the Hengistbury Head Car Park revealed that almost all deposits of archaeology had been removed during the car park's construction (Wessex Archaeology, January 2002).

Objectives

It is acknowledged that West Field, not currently part of the SSSI or Ancient Monument, can accommodate increased public pressure. Therefore the priorities will be:

1. To upgrade the signage from the car park linking it to the planned Visitor Centre.
2. Following the development of a Visitor Centre, make recommendations for the sensitive landscaping of the land adjacent to the Café, in the car park and for the Broadway Road on its approaches to Double Dykes.
3. Implement the Visitor Centre Travel Plan.

Management _____

	YEAR				
	1	2	3	4	5
Implement the agreed Travel Plan in parallel with the planned development of the Visitor Centre.	*	*	*	*	*
Upgrade signage in the car parks & on route to the planned Visitor Centre with provision for increased parking for the disabled.	*		*		
Investigate a reduction in lighting (columns) and traffic calming measures on the Broadway with landscape improvements adjacent to the café buildings.	*	*	*		
Hay cut (September) and footpath mowing	*	*	*	*	*
Enhance perimeter hedgerow	*	*	*	*	*
Expand 'safe' areas for Skylark and Meadow Pipit				*	*

3.1.20 Whitepits (Compartment 20)

Description _____

Whitepits differs from West Field in that its alluvial capping has been covered with so much blown sand that it was useless for agriculture. The unploughed soil has become podsolised (nutrients have leached downwards) leaving an impoverished surface soil. Whitepits was largely eroded away by the severe English Channel surge and storm in October 1976 and was restored by the use of imported fill material to reinstate the cliff line. Much of the coastal topography in this area has evolved since the reinstatement works carried out by the Council's Coastal Engineering staff following the 1976 storm.

The relic of a once extensive coastal dune system survives much reduced in size because of coastal recession and severe trampling. The supply of sand to these dunes (which nowadays depends upon artificial beach replenishment) promises to rebuild this system, but only when visitor pressure is kept under control. A positive attempt to reduce footfall on the dunes was implemented in 2009 with the construction of a boardwalk (using recycled timbers from Boscombe Pier). Linking Solent Beach Car Park with land to the east the boardwalk has reduced erosion. In addition the improved access has been welcomed by local residents and visitors.

The scrub and dune heath adjacent to the dunes has benefited from the introduction of grazing in 2006 following the creation of three small grazing compartments. The creation of a shorter turf with the removal of bracken and the retention of a limited amount of gorse and other scrub is the priority for management in line with Natural England's remit to bring this area into 'favourable condition'.

Flora _____

The live dunes are established with Marram Grass, Lyme Grass and Sand Sedge (SD6, 10, 12) grading inland to dune heath, scrub and dune-back ponds surrounded by Sallow and Royal Fern. The notable flora includes Sea Mouse-ear *Cerastium diffusum*, Hairy Birds-foot Trefoil *Lotus subbiflorus*, Mossy Stonecrop *Crassula tillaea* and Bulbous Meadow-grass *Poa bulbosa*.

Fauna _____

The scrub provides good nesting and feeding habitat for birds including Linnet, Stonechat and Whitethroat. There is evidence (Smith - Breeding Bird Census 2001) that Skylark and Meadow Pipit would breed here if disturbance by the public and dogs was minimised. The nationally rare Natterjack Toad breeds here now following its successful re-introduction in 1989. (Holloway M - Natterjack Toad Reports 1989 -2009).

Objectives

Whitepits is a fragile and important habitat requiring sensitive management. Therefore the priorities will be:

1. To give special protection to this interesting landscape so that the qualities which afford it SSSI status are enhanced and not degraded.
2. Maintain the grazing compartments and boardwalk.
3. Maintain the Natterjack ponds.

Management _____

	YEAR				
	1	2	3	4	5
Reduce trampling/disturbance / fires	*	*	*	*	*
Light grazing of fenced area to maintain favourable (SSSI) condition	*	*	*	*	*

3.2 General items

3.2.1 Visitor Centre

Despite the importance of the site and its popularity, facilities for visitors have remained rudimentary and improvements are long overdue. Bournemouth Borough Council's ambitions for a visitor centre at Hengistbury Head have long been identified in its Cultural and Leisure Strategies and management plan for Hengistbury Head (see objectives). The pressures that generated the above policies have not diminished and without a material change in facilities, along with supporting efforts to educate and modify patterns of use, environmental and ecological degradation will continue.

At present the area attracts approximately 1 million visitors per annum. The challenge is to provide a physical and intellectual 'gateway' to Hengistbury Head that will offer initial information, through interpretation facilities, to in depth exploration of the local heritage.

The development would be the driving force for the sustainable management programme for Hengistbury Head; based on the philosophy that people will care for what they first care about. This can only be accomplished by aiming for the highest standards of interpretation and education.

Initial proposals considered building a new Centre on part of the Hengistbury Head car park or on the old pitch and putt site. However, there was considerable public opposition to these proposals. It became apparent, through further public consultation, that there was support for a Centre but that the desired option was to convert the existing buildings to provide the facility.

On the basis of this, a feasibility study was commissioned. Development plan and building design proposals were prepared and presented to the Council's Economic Overview Panel where it was recommended that officers should proceed with additional public consultation and identify funding opportunities.

Section 106 money (Developer's Contributions) was allocated to the project and a Stage 1 application was made to the Heritage Lottery Fund (HLF). This application was successful and funding was made available to develop design plans for the building and its surrounds along with an alternative land train storage area.

An architect, associated building consultants and an exhibition and interpretation consultant were employed to do this.

A consultation process was established from the outset when views of a stakeholders' group were sort and used to inform the project design. The design was presented for public consultation in June 2010 and received overwhelming support. See Stage D report.

A second stage HLF application is currently in preparation and an application has been made for grant aid through the Landfill Communities Fund.

The project comprises:

1. Conversion of the existing thatched barn and cottage to include:

- Exhibition and study areas
- Offices for staff and volunteers
- A base for partners and community groups
- A community learning room on a mezzanine floor
- General storage
- Secure dry storage for the conservation of archaeological collections and archives

2. A new low-level (green roofed) extension to include:

- A welcoming gateway to the site and the Centre
- A retail outlet (National Trust style)
- Exhibition space
- Toilets

3. Externally:

- Two courtyards (outdoor classrooms with interpretation, seating and shelter)
- An exemplar wildlife garden as a model to copy for gardeners and schools
- Improvements to way-marking signage from the car parks and main access points
- Cycle storage
- Land Train relocation

The principal aims of the project:

- To provide a safe, welcoming and inspirational environment for visitors, staff and volunteers
- To provide physical and intellectual access to information, activities and collections
- To give better and more informed access to Hengistbury Head
- To ensure long-term financial sustainability

Objectives

- Raise awareness and understanding through education and interpretation to ensure that the human use and enjoyment of the reserve's cultural and natural resources does not, in overall terms, diminish or destroy them.
- Provide improved interpretation and exhibition and storage space for archaeological collections. (See Interpretation Plan).

- Work in partnership with Brockenhurst College to provide an environmental education service.
- Work in partnership with Bournemouth University to expand the existing research and monitoring function.
- Work in partnership with Cherry Tree Nursery to establish and maintain the wildlife garden.
(<http://www.cherrytreenursery.org.uk>)
- Create further opportunities for volunteer and work experience input into the operation of the building and outdoor space and the management of the Reserve. (See Volunteer Policy)
- Incorporation of green technologies in the building design and energy provision.
- Encourage alternative modes of transport to (and on) the site. (See Travel Plan).

3.2.2 Grazing

It is widely recognised that grazing is an effective and sustainable method of managing conservation areas. This has been demonstrated on sites throughout the borough, including parts of Hengistbury Head.

Public consultation has shown that the vast majority of site users also perceive the presence of large grazing animals as aesthetically pleasing.

There is the potential to expand the current grazing management regime to include other areas of the site such as Double Dykes and the redundant pitch and putt facility, (See Management Objectives in Sections 3.1.9, 3.1.10(b), 3.1.11 & 3.1.17).

The grazing scheme will continue to be closely monitored.

3.2.3 Dorset Urban Heaths Grazing Partnership (DUHGP)

Bournemouth Borough Council is one of nine partners that make up DUHGP. The stated vision of DUHGP is; “A consortium of stakeholders working in partnership to re-introduce traditional extensive grazing onto urban heaths to improve the quality, condition and public appreciation of the nature conservation features for which the heathlands are designated.”

The key aims of the partnership are:

- Sustainable management of the heathland landscape utilising extensive grazing by traditional livestock to ensure that heathland biodiversity is protected and enhanced.
- Favourable conservation status of the designated wildlife sites (SSSI) is to be secured by the partners to meet the Public Service Agreement (PSA) target of 95% (unfavourable recovering or favourable) by area in 2010.

- Good practice - increasing understanding and promotion of the use of traditional livestock as a conservation tool, developing the economic and marketing opportunities for heathland products and building upon experiences of integrating people and recreation with agricultural management through community involvement.
- Environmental quality - raising the quality and public perception of local heathlands through active involvement and improving educational opportunities for local people.
- Achieve the highest standards of livestock husbandry for all parties.

3.2.4 Environmental Stewardship (ES)

Environmental Stewardship is an agri-environment scheme funded by the UK Government and the European Union (EU). Farmers and land managers across England enter into voluntary management agreements with Natural England in order to deliver the scheme. In return for looking after England's countryside - our wildlife, landscapes, historic features and natural resources (soils and water) - and providing new opportunities for public access in some cases, ES provides farmers and land managers with a financial incentive that supports and rewards them for this work. ES is managed by Natural England on behalf of the Department for Environment Food and Rural Affairs (Defra).

Most of Bournemouth's countryside sites, including Hengistbury Head, are included in the scheme at the Higher Level Stewardship (HLS). In return for carrying out agreed HLS options such as grazing and scrub clearance, an annual area payment is received. In addition, funding is provided for carrying out an agreed capital works programme.

3.2.5 Urban Heaths Partnership

Bournemouth Borough Council is one of ten partners that make up UHP. It's stated vision is; "A consortium of stakeholders working in partnership to improve the quality, condition and public appreciation of the Dorset heaths within the context of a multi-functional countryside."

The key aims of the partnership are:

- Undertake the work to mitigate development pressures on the heaths as agreed in the implementation plan for the Dorset Heaths Interim Planning Framework.
- Provide an agreed strategy for community education and outreach.
- Provide an agreed wardening strategy.

- Maintain standardised fire plans for the heaths and keep these updated.
- Maintain a standardised incident recording system for the heaths.
- Maintain a Dorset heaths website.
- Promote a landscape level approach to nature conservation and countryside management, seeking funding for projects that will add value to work included in the Interim Planning Framework and produce the green infrastructure for a sustainable, multi-functional countryside for future generations.

3.2.6 Environmentally Sensitive Area (ESA)

Part of the site forms the southernmost extremity of the Avon Valley ESA. An ESA scheme was entered into in 1991 which provided grant aid to manage the land appropriately. This was superseded by an Environmental Stewardship scheme which was entered into in 2008.

ESAs will be phased out in 2014.

3.2.7 Dogs (Fouling of Land) Act 1996

This legislation applies to all Open Space in the Borough and requires any dog owner to collect their dog's faeces and dispose of it appropriately. On Hengistbury Head there are dog waste bins provided for this purpose.

3.2.8 Hengistbury Head Supporters Group

The Hengistbury Head Supporters Group is a local residents group that works in partnership with Bournemouth Borough Council. They assist in the management of the site by participating in practical conservation tasks and promoting Hengistbury Head to members of the public. (<http://hengistburyhead.org>).

3.2.9 Bournemouth Environmental Advisory Team (BEAT)

BEAT was established in 2003 as an expansion of the original Hengistbury Head Technical Advisory Group. It comprises the Countryside Team, specialist ecologists, the DUHGP grazing manager and representatives from Natural England and Bournemouth University. Individuals from other Council directorates and relevant organisations are co-opted as necessary. It aims to provide a co-ordinated environmental monitoring and research role on a Borough-wide basis. Data collected will be used to determine site management policy. It will also give access to specific site environmental data for educational purposes.

3.2.10 Management Plan Review

This management plan will run for 10 years covering the period 2011-2021. There will be a review of the management prescriptions after 5 years in 2016.

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Technical Annexe 1 - Coastal and Tidal Conditions

Technical Annexe 2 - Beach Modelling

Technical Annexe 3 - Shoreline Evolution

Technical Annexe 4 - Habitat Change Analysis

Technical Annexe 5 - Coastal Processes

Technical Annexe 6 - Estuarine Process Assessment

Technical Annexe 7 - Implications of Climate Change

Technical Annexe 8 - Flood and Coast Defence Benefits and Costs

Technical Annexe 9 - Sources of Beach Recharge

Technical Annexe 10 - Strategic Environmental Assessment

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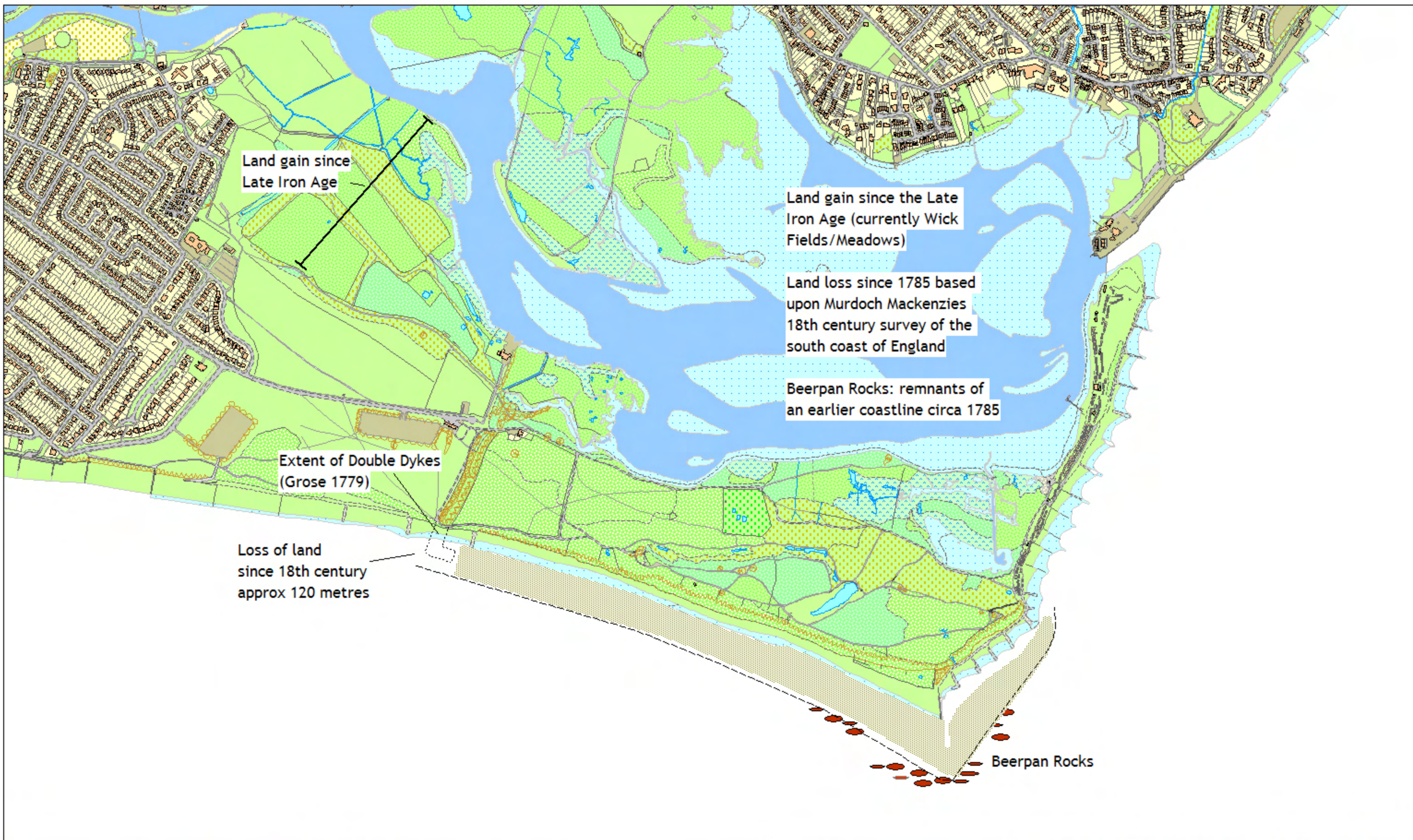
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Land gain since Late Iron Age

Land gain since the Late Iron Age (currently Wick Fields/Meadows)

Land loss since 1785 based upon Murdoch Mackenzie's 18th century survey of the south coast of England

Beerpan Rocks: remnants of an earlier coastline circa 1785

Extent of Double Dykes (Grose 1779)

Loss of land since 18th century approx 120 metres

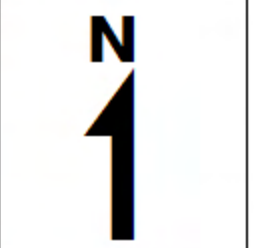
Beerpan Rocks



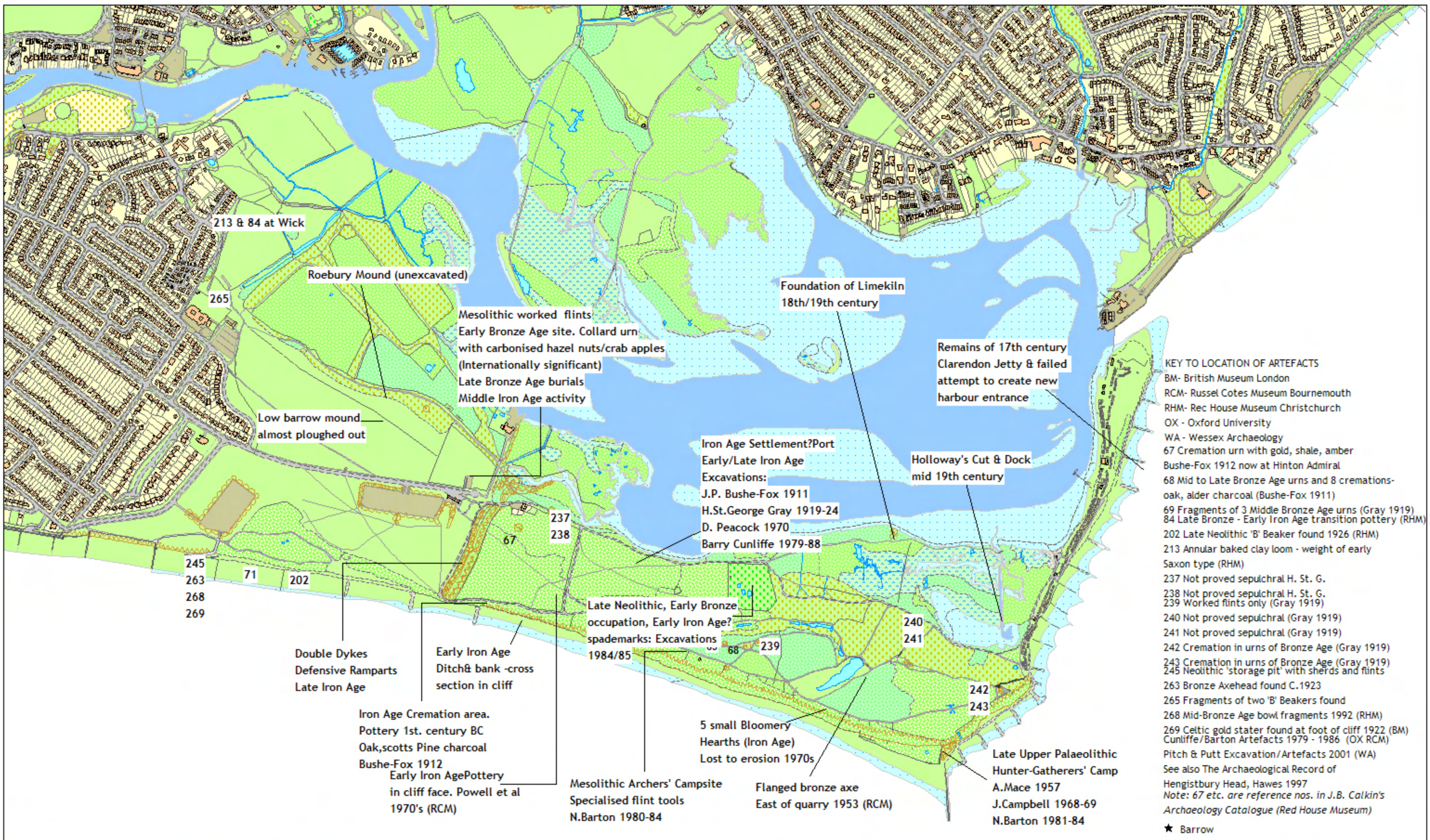
Map 9
Land loss and gain

Scale 1:10000
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Drawn By: S Clarke

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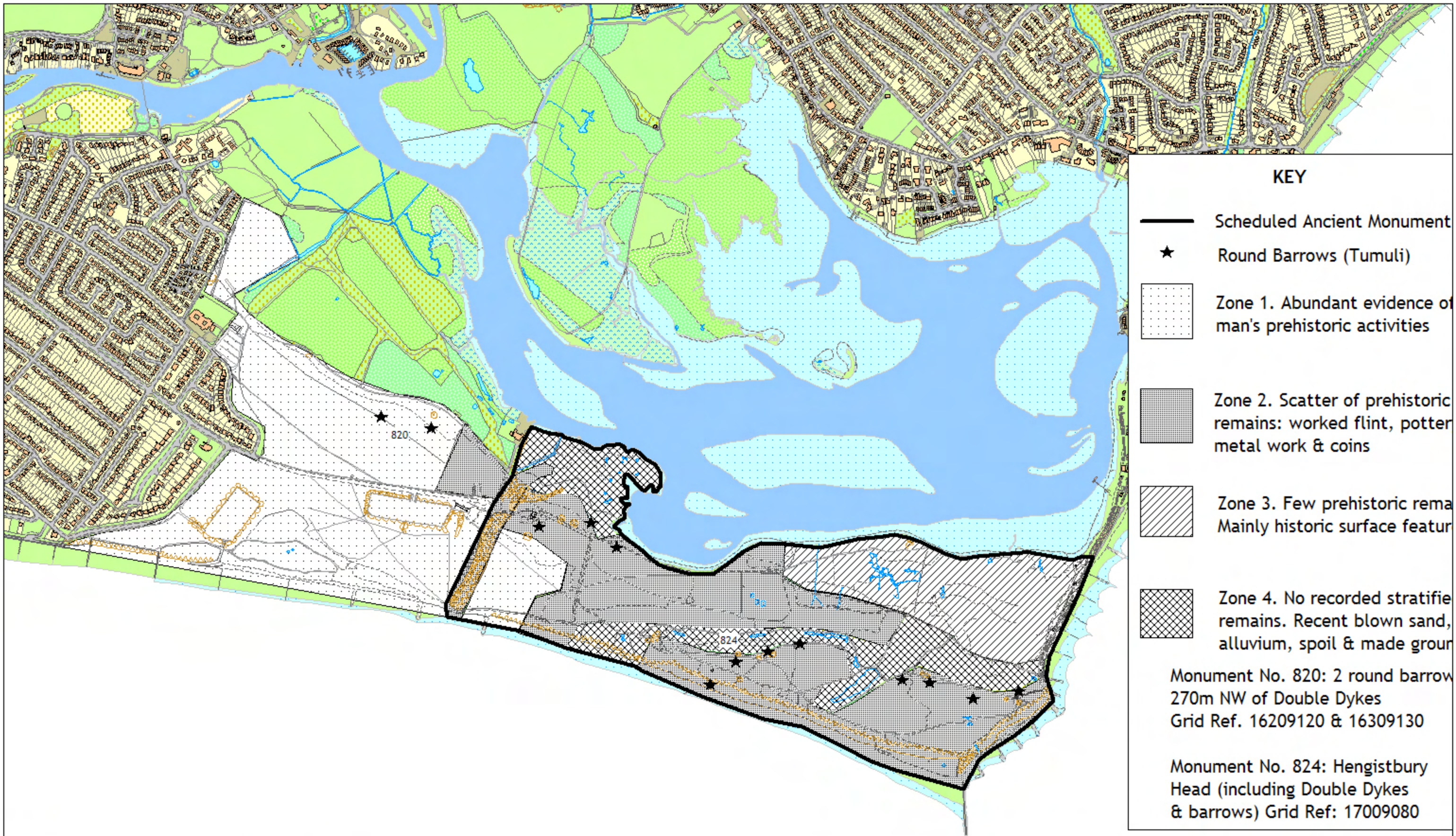
Map 8
Selected archaeological features

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Map 7
Archaeological zones

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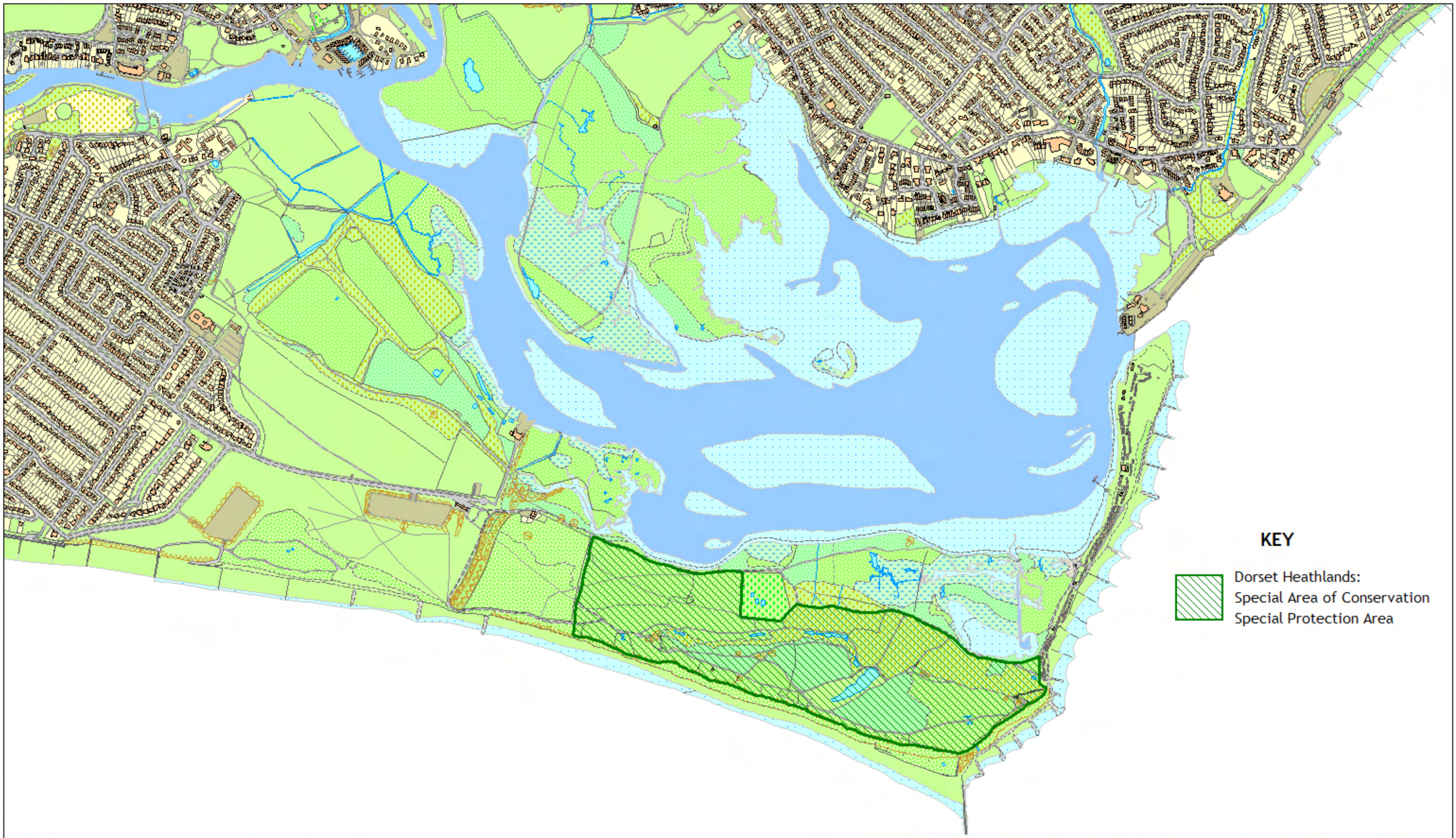
Map 6
Compartments, place names & habitats

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KEY

-  Dorset Heathlands:
Special Area of Conservation
Special Protection Area



**Map 5
European designations**

Scale 1:10000

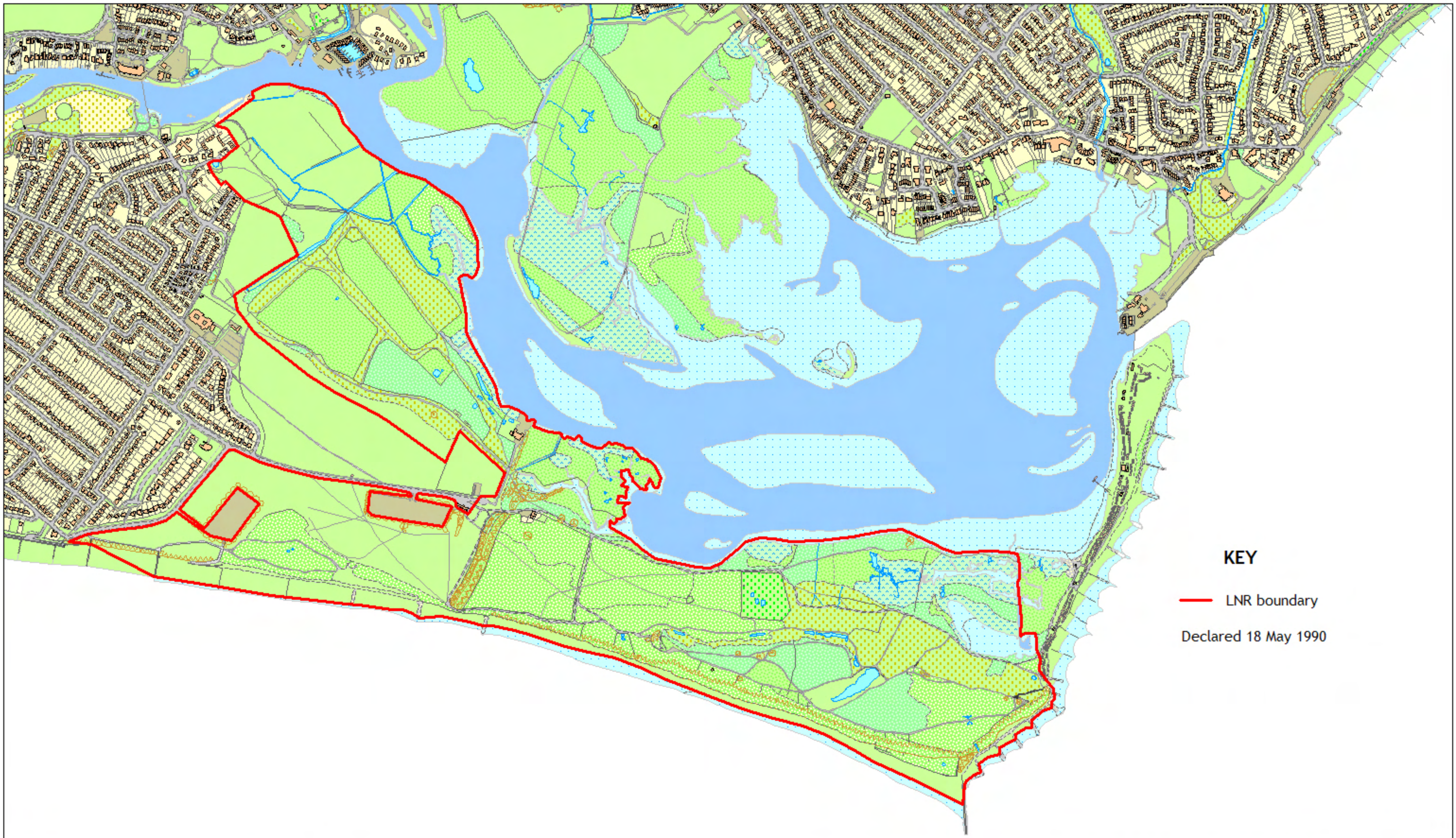
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KEY

- LNR boundary
- Declared 18 May 1990



**Map 4
LNR boundary**

Scale 1:10000

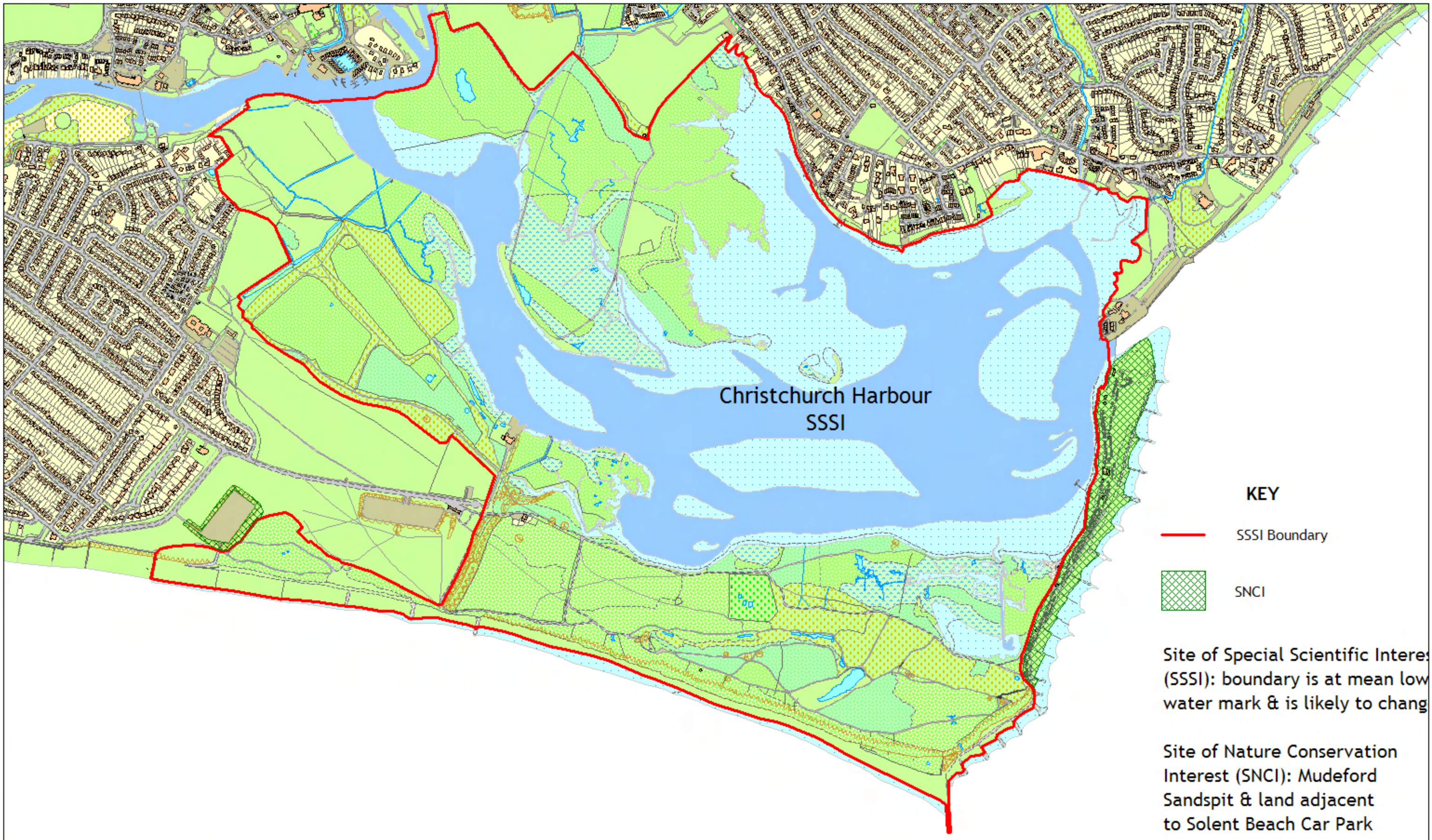
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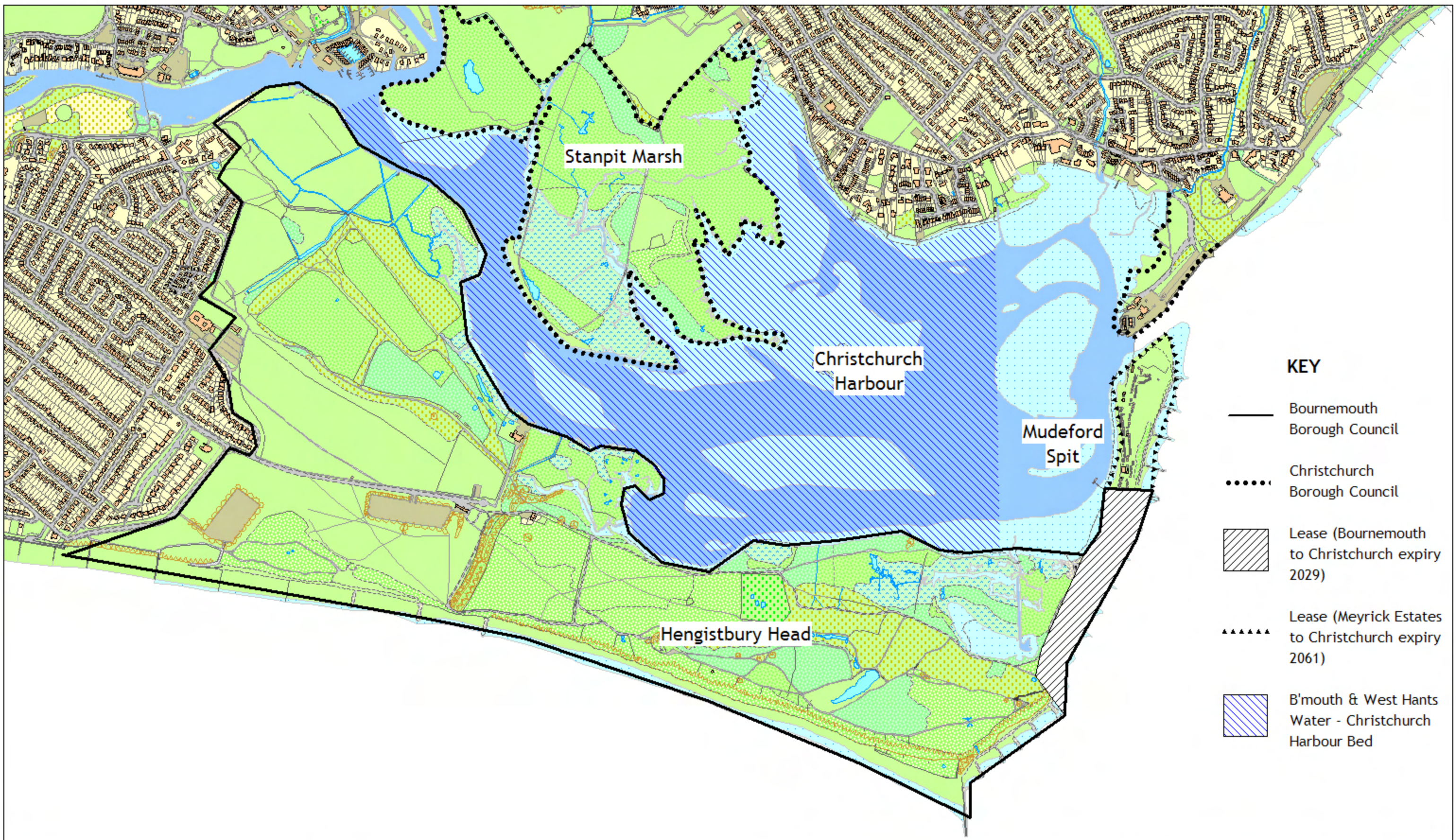
Map 3
SSSI and SNCI

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KEY

- Bournemouth Borough Council
- Christchurch Borough Council
- ▨ Lease (Bournemouth to Christchurch expiry 2029)
- Lease (Meyrick Estates to Christchurch expiry 2061)
- ▨ B'mouth & West Hants Water - Christchurch Harbour Bed



**Map 2
Land ownership**

Scale 1:10000

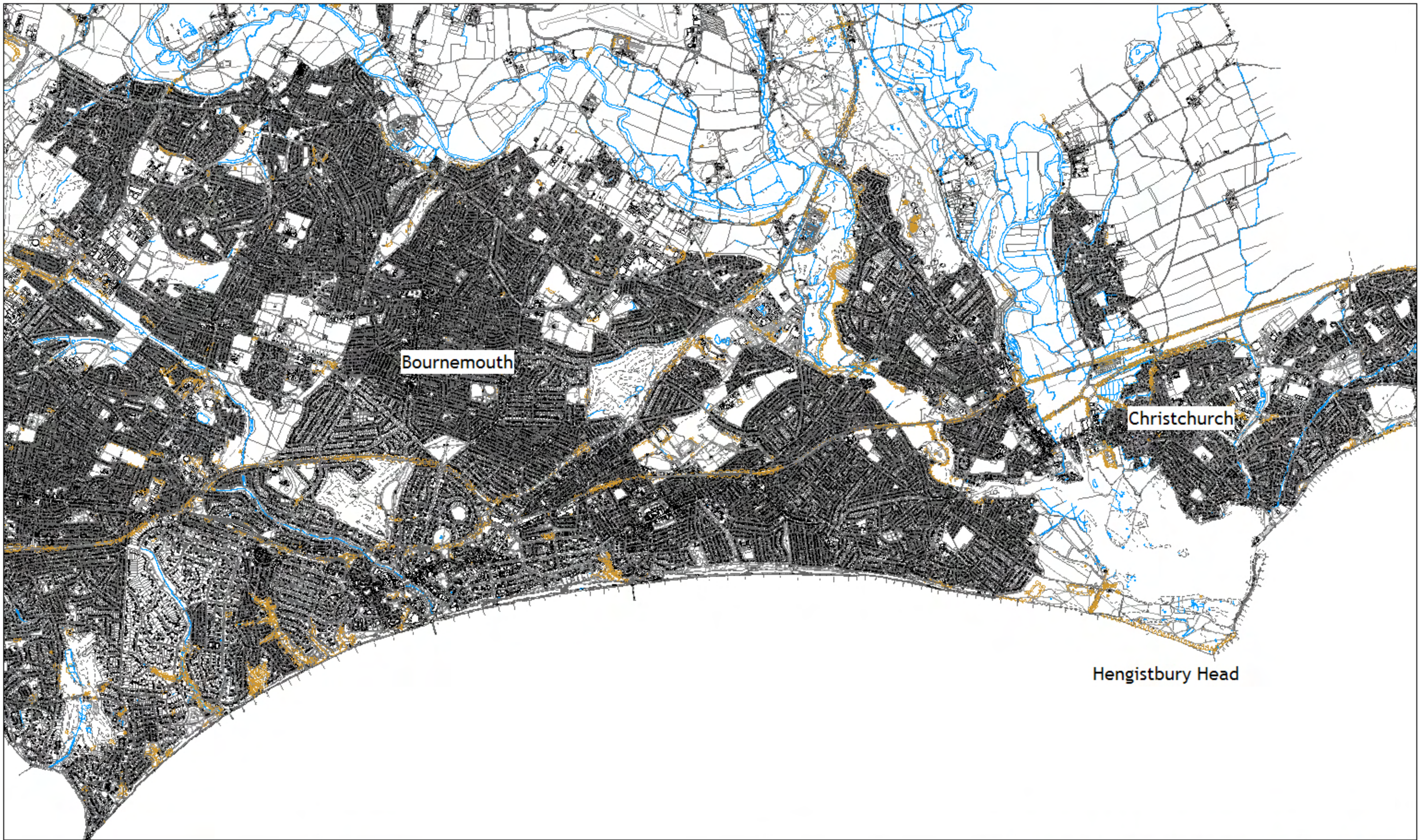
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**Map 1
Location**

Scale 1:40000

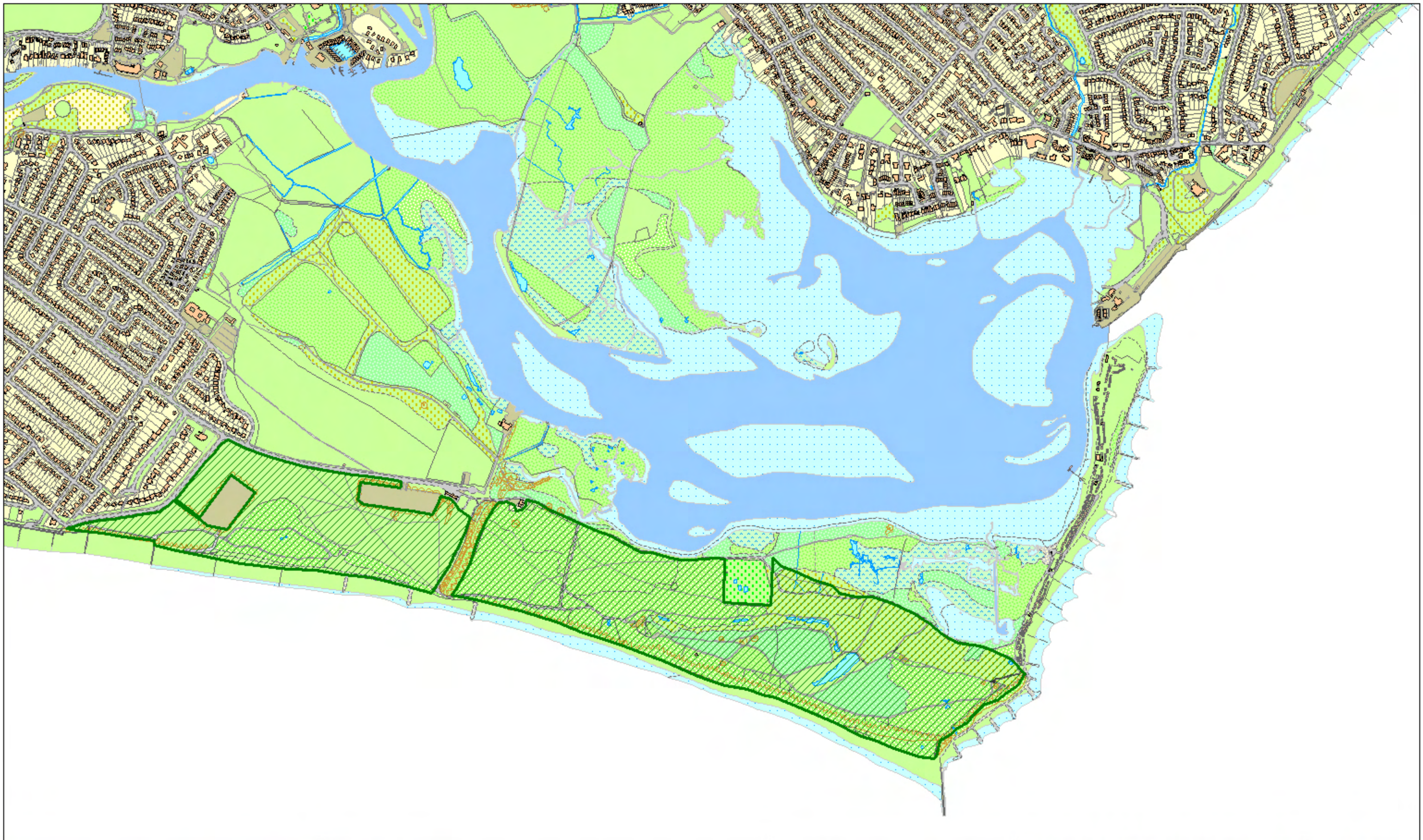
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Map 10
Open Access Land (CROW Act 2000)

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