

The Nature of Torbay

A Local Biodiversity and Geodiversity Action Plan 2006 - 2016



Biodiversity and geodiversity action plan highlighting the current threats and key actions for Torbay's priority species and habitats.

Foreword

England's beautiful diverse natural landscape and rich wildlife is our heritage. The great natural diversity of our living planet is an innate part of its life support system, and nature has the power to inspire, engage and improve the health of all of us.

However, current day pressures such as invasive species, over-exploitation, development and climate change are threatening our country's biological and geological wealth. To successfully conserve our natural world for future generations we must respond now to halt this decline. Local biodiversity action plans are fundamental in translating national priorities into local action, connecting the local community with the wildlife on their doorstep.

Torbay's distinction is its natural landscape. It drives the local economy and was fundamental to the development of the tourist industry within the area. Limestone cliffs covered in rare wildflowers such as the white rock rose; rockpools teeming with anemones; woodlands carpeted with bluebells; veteran trees adorned with rare lichens; all are part of Torbay's heritage and have survived into the 21st Century.

The continued protection of Torbay's valuable natural landscape for future generations requires a partnership approach with a strong commitment from local people, Torbay Council, Natural England, Torbay Coast and Countryside Trust and other conservation organisations, public agencies and local businesses. This local biodiversity action plan strives not only to protect Torbay's natural environment, but also to enrich and encourage the local community to achieve a healthy and sustainable Torbay.



Helen Phillips
Chief Executive of Natural England



Nick Bye
Elected Mayor of Torbay

Summary

Biodiversity Action Planning is the methodology followed by national government, local authorities, statutory agencies and voluntary organisations concerned with nature conservation across the UK. A Biodiversity Action Plan (BAP) is a way of focusing resources on the most important habitats and species in an area. It can be at a national, regional or local level – whatever is most appropriate. A Geodiversity Action Plan does the same thing, but for geological and geomorphological sites and features. The two plans are integrated into a single document to include all of Torbay's natural assets.

The Nature of Torbay details the 9 priority habitat action plans and 7 priority species action plans for Torbay, describes the issues currently identified as threatening these habitats and species and sets out the main objectives and targets for their future conservation. The Marine Habitat Action Plan includes 4 priority habitats and Earth Heritage 3 priority habitats. A total of 84 key species have been identified in this report and are included within the 16 action plans. It should be noted that not all habitats and species in Torbay are included in the document; priority habitats and species were chosen because they are threatened, rare, have public value or are characteristic to Torbay. This report is live and is only dated until 2016; review will take place at 3 yearly intervals.

In Torbay we have an array of important habitats and species on our doorstep; from caves to ancient woodland and sandy shore to limestone grassland. This distinct and varied landscape not only contributes to the biological and geological wealth of our planet but drives our local economy and improves our quality of life. However if generations to come are to take as much pleasure in Torbay's natural landscape as we have done we must start the 21st century with sustainability at the forefront of our minds.

Since 1900 we have lost over 100 species in the UK and Torbay is no exception. As Torbay's population increases and development pressures rise our natural landscape is slowly diminishing. This document aims to highlight the habitats and species in Torbay of conservation importance and, if known, their current status. If we are to achieve sustainability of our biodiversity and geodiversity then the key will be to maintain and where possible increase these habitats and species for the future.

This document has been produced by the Torbay Biodiversity Steering Group with financial assistance from Torbay Council and Natural England. The document has been consulted on by these groups and has been written in collaboration with many other local organisations and individuals through workshops and meetings.

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1. Introduction

'Biodiversity is all living things from the tiny garden ant to the giant redwood tree. You will find biodiversity everywhere, in window boxes and wild woods, roadsides and rainforests, snow fields and shore.' (UK Biodiversity Action Plan, 1995).

1.1 What is a biodiversity action plan?

Following the Earth Summit in Rio in 1991, the Government published *Biodiversity: The UK Action Plan* (1994) and formed an advisory Steering Group to put together detailed targets and priorities for the conservation of biodiversity in the UK. The Steering Group set a framework of national priorities that currently includes 38 key habitats and around 1250 individual species of conservation concern. In the South West region an audit of the area's biodiversity was published in 1996 and from this a number of Regional Action Plans have been developed (*Action for Biodiversity in the South West*, 1997). These draw upon the national priorities and supplement them with detail from across the region. Finally, in 1998, a Devon BAP was published, setting priorities at a county level.

The Torbay LBAP translates the national, regional and county priorities into local action and also promotes the conservation of species and habitats that are important on a local level to Torbay. The links between the Biodiversity Action Plans and supporting documents are shown in Figure 1 (p 6).

1.2 Background

In 1996 a partnership of nature conservation organisations came together to assess the priority habitats and species of Torbay and agreed a framework to focus future work on biodiversity in the Bay, in both terrestrial and marine environments. In 2005 this was taken a stage further when a Local Biodiversity Action Plan Officer was employed to complete an 'Issues' report, which was to provide the framework for a Torbay LBAP. This work, in turn, is the foundation of the Torbay LBAP, now named *The Nature of Torbay*.

The Torbay LBAP Steering Group members and other organisations involved in the LBAP are shown in Box 1 (p 7). The Torbay priority habitats and species and their links with National, Regional and County BAPS are shown in Table 1 (p 8).

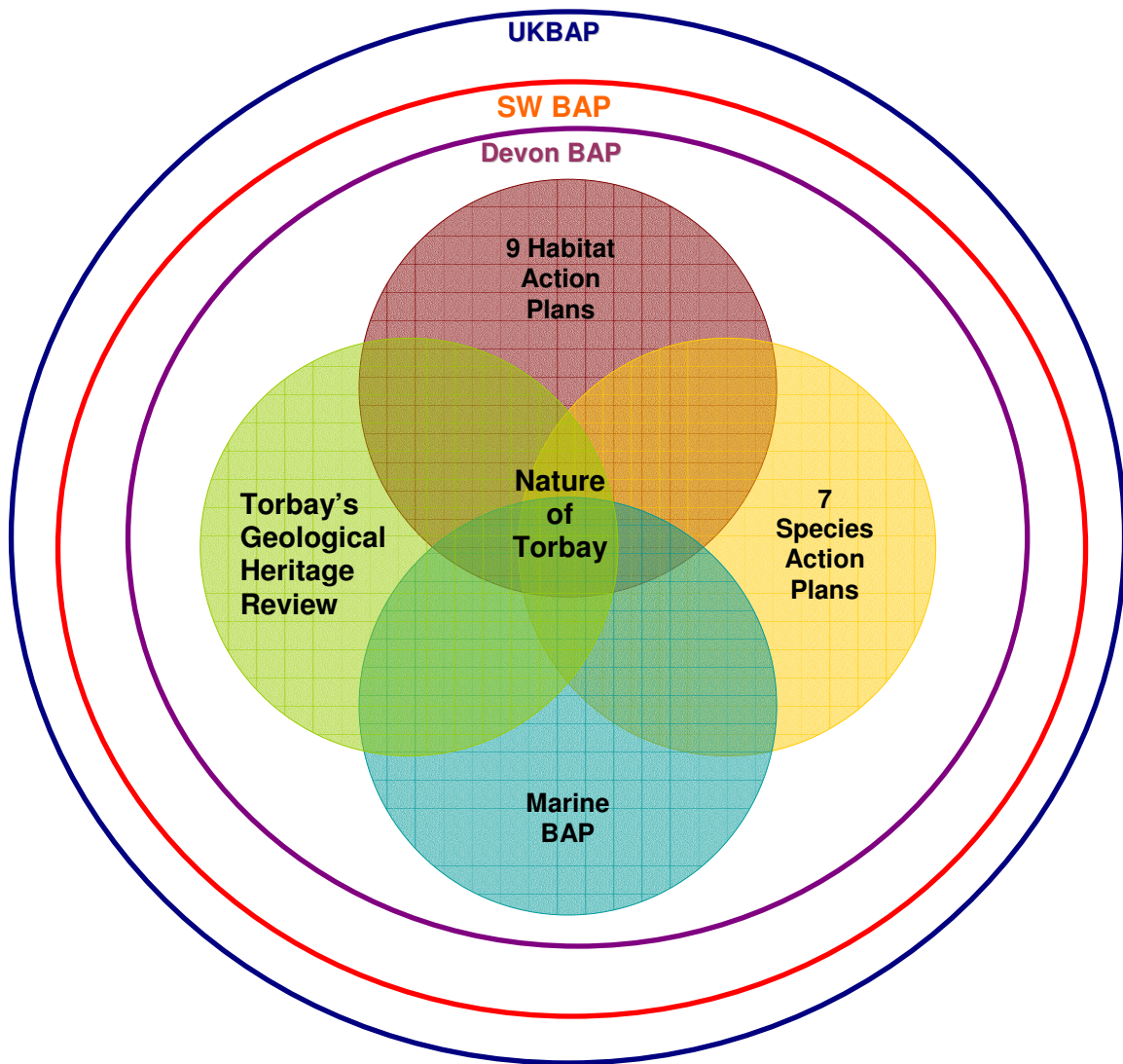


Figure 1: Venn diagram showing the links between the National UK BAP, SW BAP, Devon BAP and the Torbay LBAP and supporting documents.

Box 1: The priority habitats and species were consulted and decided on by the following organisations:

Torbay Steering Group members are:

Torbay Coast & Countryside Trust (TCCT)	Paignton Zoo Environmental Park (PZ)
Torbay Council (TC)	RSPB
Whitley Wildlife Conservation Trust (WWCT)	Natural England (NE)
Botanical Society of the British Isles (BSBI)	Devon County Council (DCC)

Other organisations and individuals involved in the planning process so far include:

Ancient Tree Forum – Keith Alexander and Chris Knapman
Barn Owl Trust
British Bryological Society – Mark Pool
British Dragonfly Society – Dave Smallshire
British Lichen Society – Barbara Benfield
British Trust for Ornithology (BTO) – John Woodland
Buglife (Invertebrate Conservation Trust) – Andrew Whitehouse
Butterfly Conservation – Maurice Edmonds
Conchological Society of Great Britain & Ireland – Jerry White
Devon Bat Group – Chris Shaw and Sylvia Bevis
Devon Bird Watching & Preservation Society
Devon Biodiversity Records Centre
Devon Churches Green Action – John Gibson
Devon Conservation Forum – Philip Ward-Green
Devon Fungus Group – David Farley
Devon Mammal Group – David Appleton
Devon Moth Group – Roy McCormick and Bill Deakins
Devon Reptile & Amphibian Group – Eleanor Bremner
Devon RIGS
Devon Sea Fisheries – Keith Bower
Environment Agency – Jeremy Bailey
Force for Change Environmental Trust – Leon Corral
FWAG – Charlotte Lamble
Professor Malcolm Hart – English Nature Council & University of Plymouth
Kents Cavern – Nick Powe
Dr Kevin Page – Geological, Landscape and Heritage Conservation
Peninsular Invertebrate Forum – Pete Smithers
Chris Proctor
John Risdon – Heritage South Devon
Martin Summers
The Seahorse Trust – Neil Garrick-Maidment
The Woodland Trust – James Mason
Torbay Harbour Authority – Kevin Mowat
Torquay Museum – Audrey Berrie

Table 1: Details the priority habitats identified by the Steering Group in Torbay and their links to national, regional and county BAPS.

Priority	Torbay LBAP	Devon BAP	South West BAP	UK BAP (to be reviewed 2006)
HABITATS				
Lowland Calcareous Grassland	✓		✓	✓ (P)
Maritime Cliff and Slope	✓	✓	✓	✓(P)
Urban	✓	Cities, towns and villages	✓	Urban Built up areas and gardens
Farmland	✓	Flower-rich meadows & pasture Species-rich Hedges	Arable farmland Species-rich hedges	Improved grassland Ancient and/or species rich hedgerows (P) Lowland meadows (P) Neutral grassland Arable and horticulture Cereal field margins (P)
Broadleaved woodland	✓	Oak Woodland	Ash – maple woodland	Broadleaved, mixed and yew woodland Lowland beech and yew woodland (P) Wet woodland (P)
Parkland & Veteran Trees	✓	Parkland and Wood Pasture	Parkland and Wood Pasture	Lowland Wood-pasture and parkland (P)
Wetlands	✓	Fresh Water Reedbed	Reedbeds Standing Open Water	Reedbeds (P) Standing open water and canals
Earth Heritage				
Caves, Karsts and Mines	✓	Caves, Karsts and Mines		
Quarries and Cuttings	✓	Pits, Quarries and Cuttings		
Coastal Exposures and Geomorphological Features	✓	Sea Cliff and Slope		

Marine Habitats				
Marine Caves	✓			
Littoral Rock & Sediment (Honeycomb Reefs)	✓	Rocky Foreshore		Littoral rock Littoral sediment
Inshore Sublittoral Rock & Sediment	✓	Rocky Seabed	Rocky seabed	Sublittoral sands and gravels (P) Inshore sublittoral rock Inshore sublittoral sediment
Priority	Torbay LBAP	Devon BAP	South West BAP	UK BAP (to be reviewed 2006)
Seagrass beds (Zostera species)	✓	Estuaries	✓	✓ (P)
SPECIES				
Seabirds	✓		✓	
Clirl Bunting	✓	✓		✓(P)
Small Blue Butterfly	✓			UK 'Long list'
Horseshoe Bat	✓	Greater Horseshoe		✓
White Rock-rose	✓			
Seahorses	✓			UK 'Long list'
Dolphins, Porpoises and Basking Sharks	✓		Harbour Porpoise	✓

(✓) indicates where action plan is present
(P) Priority Habitat.

2. A Partnership Approach

For this biodiversity and geodiversity action plan to have a real positive impact on Torbay's natural environment everyone needs to be involved in taking the actions forward.

Individuals, local businesses, developers, schools and public agencies all have a role to play in conserving Torbay's wildlife.

Individuals

- Join or volunteer for a local conservation charity.
- Create space for wildlife in your garden, allotment or window box.
- Take part in a local wildlife recording project.

Local businesses

- Sponsor local biodiversity and geodiversity projects.
- Create space for wildlife on your premises.
- Encourage environmentally friendly practices.

Developers

- Incorporate wildlife friendly features into development design.
- Create new habitats (e.g. native species-rich hedges or wildlife ponds), put up bat and bird boxes, build log/rubble piles, plant native trees.
- Build around wildlife corridors not through them.

Schools

- Create space for wildlife at your school (e.g. build a wildlife pond), put up bat and bird boxes, plant native trees and wildflowers.
- Start up a school wildlife club.
- Take part in a local wildlife recording project.

Public Agencies

- Incorporate Torbay's biodiversity into relevant plans.
- Conserve and where possible enhance biodiversity by creating new habitats.
- Take measures to mitigate any impacts to biodiversity.

3. Monitoring Progress and Review

Biodiversity Action Plans need to be live and be amended as actions are completed and new actions arise. For this reason the main document is electronic; although hard copies can be made available. The Nature of Torbay is

dated until 2016, with reviews at 3 yearly intervals. The Steering Group will continue to meet up after the document has been published to monitor progress and discuss funding opportunities. The national Biodiversity Action Reporting System (BARS) will also be used to monitor and report on actions.

4. Torbay Nature Conservation Sites

Table 2: Nature Conservation Sites in Torbay. Source Torbay Wildlife Sites Review (1998) and the Devon Biodiversity Records Centre (DBRC). Sites of nature conservation interest may change status over time, please consult DBRC on dbrc@devonwildlifetrust.org for accurate up-to-date information. The map reference numbers refer to site numbers in the Torbay Local Plan 1995 - 2011.

Site Designation	Number of Sites	Map Ref	Location
Special Areas of Conservation (SAC)	1		Berry Head to Sharkham Point, Brixham.
National Nature Reserve (NNR)	1		Berry Head and Sharkham
Sites of Special Scientific Interest (SSSI)	12	A	Dyer's Quarry
		B	New Cut, Torquay
		11	Lummaton Quarry
		24	Babbacombe Cliffs
		26	Hope's Nose to Walls Hill
		31	Kent's Cavern
		36	Meadfoot Sea Road
		38	Daddyhole
		39	Occombe
		51	Roundham Head
		56	Saltern Cove
		79	Berry Head to Sharkham Point (same as SAC)
Local Nature Reserve (LNR)	4	C	Occombe Farm
		D	Scadson Woods
		E	Occombe Valley Woods
		56	Saltern Cove and Sugar Loaf Hill
County Geological Sites (CGS) also known as RIGS	6 (10 sites proposed)	F	Breakwater Quarry, Brixham
		G	Goodrington Road Cutting and Quarry
		I	Barcombe Mews, Quarry
		J	Quarry Wood Quarry
		17	Chapel Hill
		66	Brokenbury Quarry, Churston Ferrers
		Proposed	Barton Quarry
		Proposed	Berry Head NNR to Sharkham
		Proposed	Brixham Cavern
		Proposed	Churston Cove/Point
		Proposed	Hollicombe Head to Corbyns head
		Proposed	Black Head, Ansteys Cove
		Proposed	Hopes Nose South
		Proposed	Petitor / Maidencombe
		Proposed	Roundham Head
		Proposed	Saltern Cove LNR
County Wildlife Site (CWS)	31 (1 site potential)	1	Maidencombe
		5	Ashleigh
		6	Petit Tor to Watcombe Coast
		9	Smalldon Lane & Easterfield Lane
		12	Torbay Golf Course
		20a	Cockington Court
		25	St Marychurch Down
		33	Black Head Field
		34	Ilsham Marine Drive
		35	Thatcher Point

		38	Daddyhole Cove to Peaked Tor Cove
		39	Occombe Meadows
		41	Livermead - Hollicombe
		42a	Occombe Woods W
		44	Ramshill
		53a	Clennon Woods
		53b	Clennon Ponds
		55	Torbay-Dartmouth Railway
		60	Blue Waters Drive
		62	Tor Rocks
		65	Galmpton Common
		67	Churston Railway
		68	Churston Point – Elberry Cove
		69	Elberry Cove
		70	The Grove
		71	Battery Grounds
		77	Southdown and Woodhuish
		78	Sharkham Point
		81a	Berry Head Farm
		84	Lower Gabwell Fields
		85	Churston Ferrers
		Potential	Stoke Hill Road and Whitehill, Yalberton
Local Wildlife Sites (LWS)	50	2	Sladnor Road
		3	Great Hill
		4	Brunel Woods
		8	Mincent Hill
		13	Torbay Ring Road
		14	Marldon Road
		15	Edginswell
		16	Shiphay Hospital
		17	Chapel Hill
		18	Mainline Railway
		18a	Rainbow Fields
		19	Chelston Slopes
		20b	Cockington Court
		21	Windmill Hill
		22	Daison Wood
		23	Stantaway Hill
		27	Stentiford Hill
		28	Warberry Copse
		29	Asheldon Copse
		30	Burial Ground
		32	Black Head
		37	Lincombe Slopes
		40	Scadson Plantation & Ten Acre Brake
		42b	Occombe Woods E
		43	Shorton Woods
		45	Blagdon Woods
		47	Brake Copse
		48	Broomhill Plantation
		49a	Yalberton Stream
		49b	Lower Yalberton
		49c	Yalberton Quarry
		50	Primley Woods
		52	Paignton Zoo
		53c	Grange Farm
		54	Waddeton Woods
		57	Sugar Loaf
		58	Meadowside

		59	Dartmouth Road
		61	Manor Farm
		63	Broadsands Marsh
		64	Churston Quarry
		66	Brokenbury Quarry, Churston Ferrers
		72	Kennels Road
		73	Alston Lane
		74	Lupton Park
		75	Rydons
		76	New Road
		80	Mudstone Lane
		81b	Berry Head Farm
		83	Highfield Crescent
BAP Habitats	N/A	N/A	For maps please consult main document

Torbay Wildlife Sites Review (1998), Devon Biodiversity Records Centre (DBRC).
 Sites of nature conservation interest may change status over time, please consult DBRC on
 dbrc@devonwildlifetrust.org for accurate and upto date information.

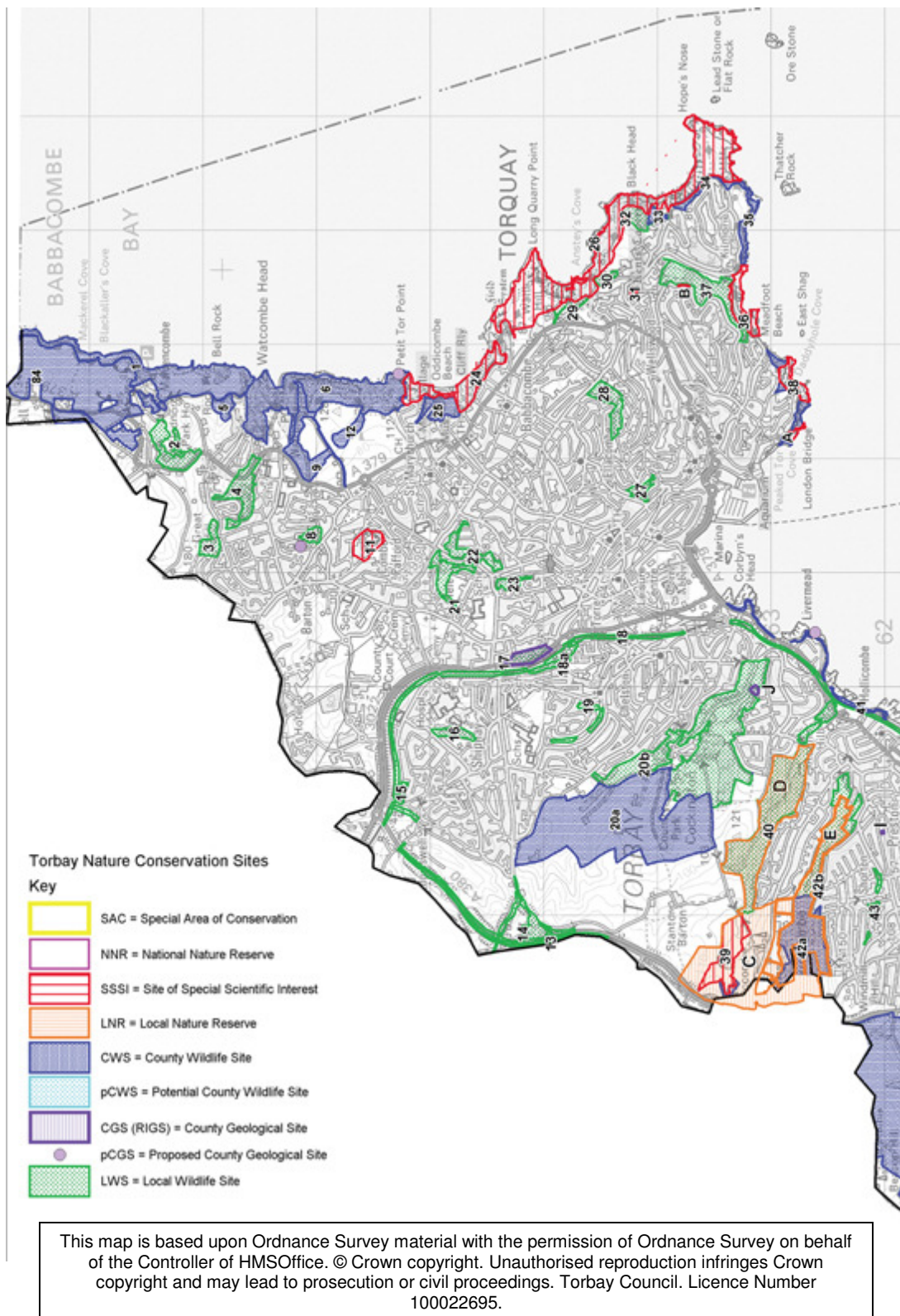
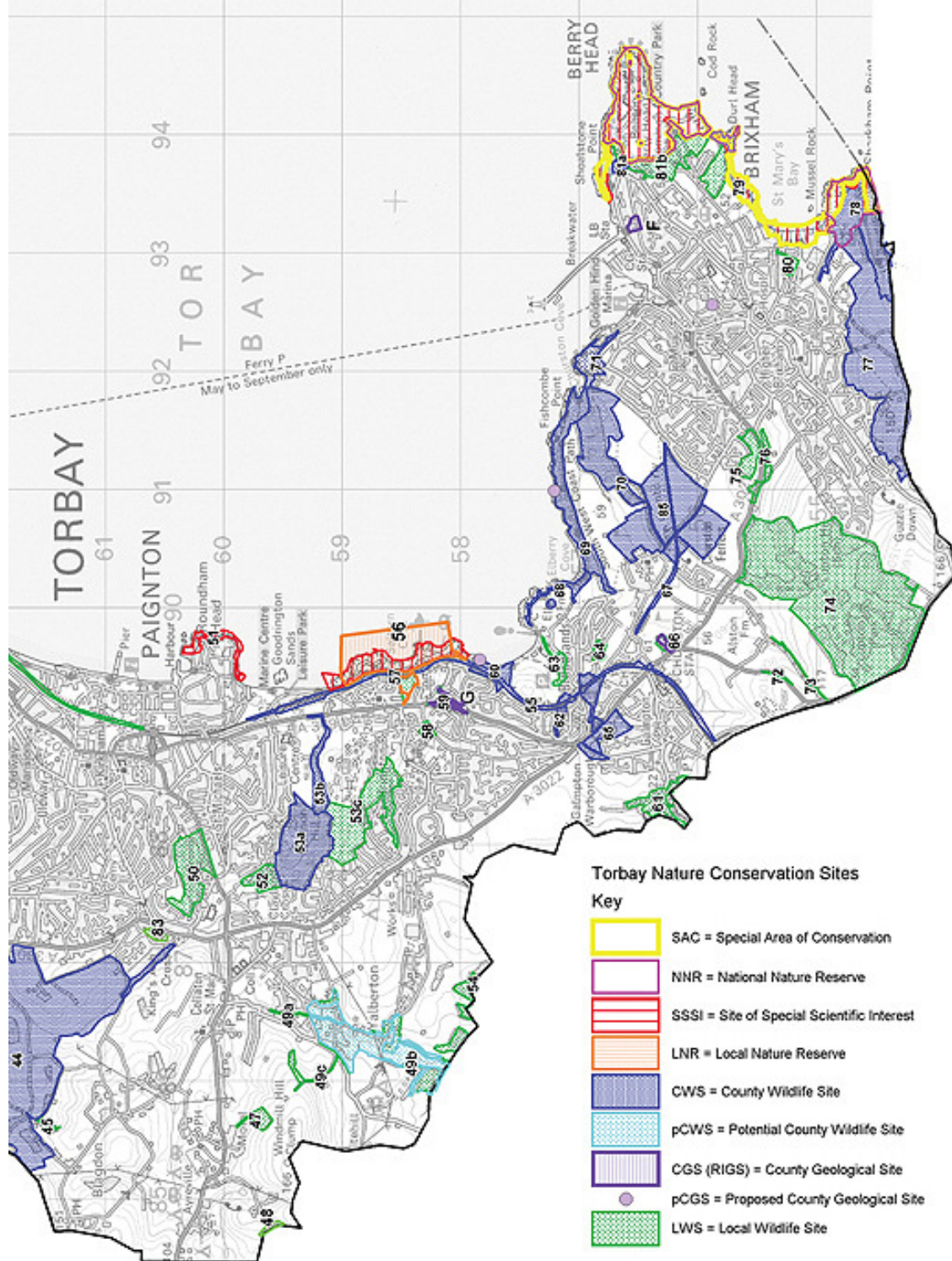


Figure 1a: Torbay Nature Conservation Sites

Torbay Wildlife Sites Review (1998), Devon Biodiversity Records Centre (DBRC).
 Sites of nature conservation interest may change status over time, please consult DBRC on
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Figure 1a: Torbay Nature Conservation Sites

5. Overall Objectives of ‘The Nature of Torbay’

The following over-arching objectives summarise the main areas of work that need to be undertaken. These are described in detail for each individual priority habitat or species in the action plans.

Objective 1 – POLICY AND LEGISLATION

Ensure the conservation of Torbay’s biodiversity and earth heritage is incorporated in local and regional strategies and plans.

Objective 2 – SITE MANAGEMENT

Maintain and extend site management practices to support Torbay’s LBAP Habitats and Species.

Objective 3 – COMMUNICATION AND PUBLIC AWARENESS

Increase public awareness of and involvement in Torbay’s biodiversity and earth heritage.

Objective 4 – RESEARCH AND MONITORING

Increase scientific knowledge and understanding of Torbay’s biodiversity and geology resource.

Priority Habitat Action Plans

6.1 Lowland Calcareous Grassland

Main Objectives & Key Actions:

- 1) **Bring all existing calcareous grassland sites into effective management.**
 - Maintain current resource of high quality calcareous grassland.
 - Establish restoration plans for all sites by 2009.
 - Bring all significant areas of calcareous grassland into favourable condition by 2012.
- 2) **Expand and link existing sites and establish new sites through habitat recreation projects.**
 - Recreate 10 ha of calcareous grassland habitat, for example as part of development schemes, by 2012.
- 3) **Improve designation of all sites, including fragments.**
 - Designate all appropriate calcareous grassland County Wildlife Sites by 2009.
 - Survey and establish new and existing 'Special Verges' by 2009 and seek inclusion in LDF.
- 4) **Increase the amount of research and monitoring.**
 - Resurvey the 10 key sites identified in the 2001 Calcareous Grassland Survey by 2009.
 - Monitor every calcareous grassland site on a 5 year cycle.
- 5) **Increase education & public awareness.**
 - Set up an 'Autumn Ladies Tresses' awareness campaign by 2009.
 - Continue to promote the 'Save the Small Blue' campaign.

6.1.1 Background & Current Status

Calcareous grassland typically occurs on unenclosed land with generally shallow, well-draining soil and is usually associated with chalk and limestone. With only about 41,000 hectares remaining in the UK, calcareous grassland is very localised, restricted to the chalk hills of southern England and various limestone areas in the North and West.

Within Devon it is largely confined to the chalk hills of East Devon and the limestone outcrops of Torbay and Plymouth. The South Devon Natural Area description published by English Nature in 1998 describes Torbay's calcareous grassland as being of "tremendous importance for its large number of nationally rare and scarce flowering plants". Torbay supports the most extensive stands of calcareous grassland in Devon, on its outcrops of Devonian limestone. The Torbay Wildlife Survey (1991) identified only 22.36 hectares of unimproved and 16.6ha of semi-improved calcareous grasslands in Torbay. The most extensive sites identified as having areas of calcareous grassland in the Calcareous Grassland Survey (2001) are Berry Head, Wall's Hill, Hopes Nose and Sharkham Point (Figure 2). Smaller areas have been identified in The Grove, Fishcombe

Point, Clennon Hill, Petit Tor Quarry, Daddy Hole, St Marychurch Down, Lummaton Quarry and Durl Head, many of these smaller sites are in unfavourable condition (Figure 2).

The limestone grassland communities of Torbay include a large number of nationally rare plant species. Torbay supports a concentration of rare and local plants these include small hare's ear, small restharrow, goldilocks aster, white rock-rose and little robin. Certain species of lichens and bryophytes thrive in these open, dry, sparsely-vegetated calcareous grasslands.

The main calcareous grassland sites in Torbay have been designated as SSSIs for many years and these occur at Hopes Nose, Wall's Hill, Berry Head and Sharkham Point. Berry Head is also a National Nature Reserve and a SAC. Lowland calcareous grassland is included within the *Festuco - Brometalia* grassland identified in Annex 1 of the EC Habitats Directive as of Community Interest and is of priority type if orchids present (UK BAP).

Torbay's calcareous grasslands are of regional and national importance and their conservation is of highest priority.

Species that are highlighted in the Plan are:

Small hare's-ear	
Small rest harrow	Honewort
White rock-rose	Goldilocks aster
Dwarf mouse-ear	Autumn squill
Small blue butterfly	Autumn ladies tresses
<i>Cheilothela chloropus</i> - bryophyte	
<i>Weissia levieri</i> - bryophyte	
Beautiful gothic - moth	
Chalk carpet - moth	
<i>Cladonia convulata</i> – lichen	
<i>Psora decipens</i> – lichen	
Hornet robberfly	
Waxcaps	
Dotted bee fly (<i>Bombylius discolor</i>)	

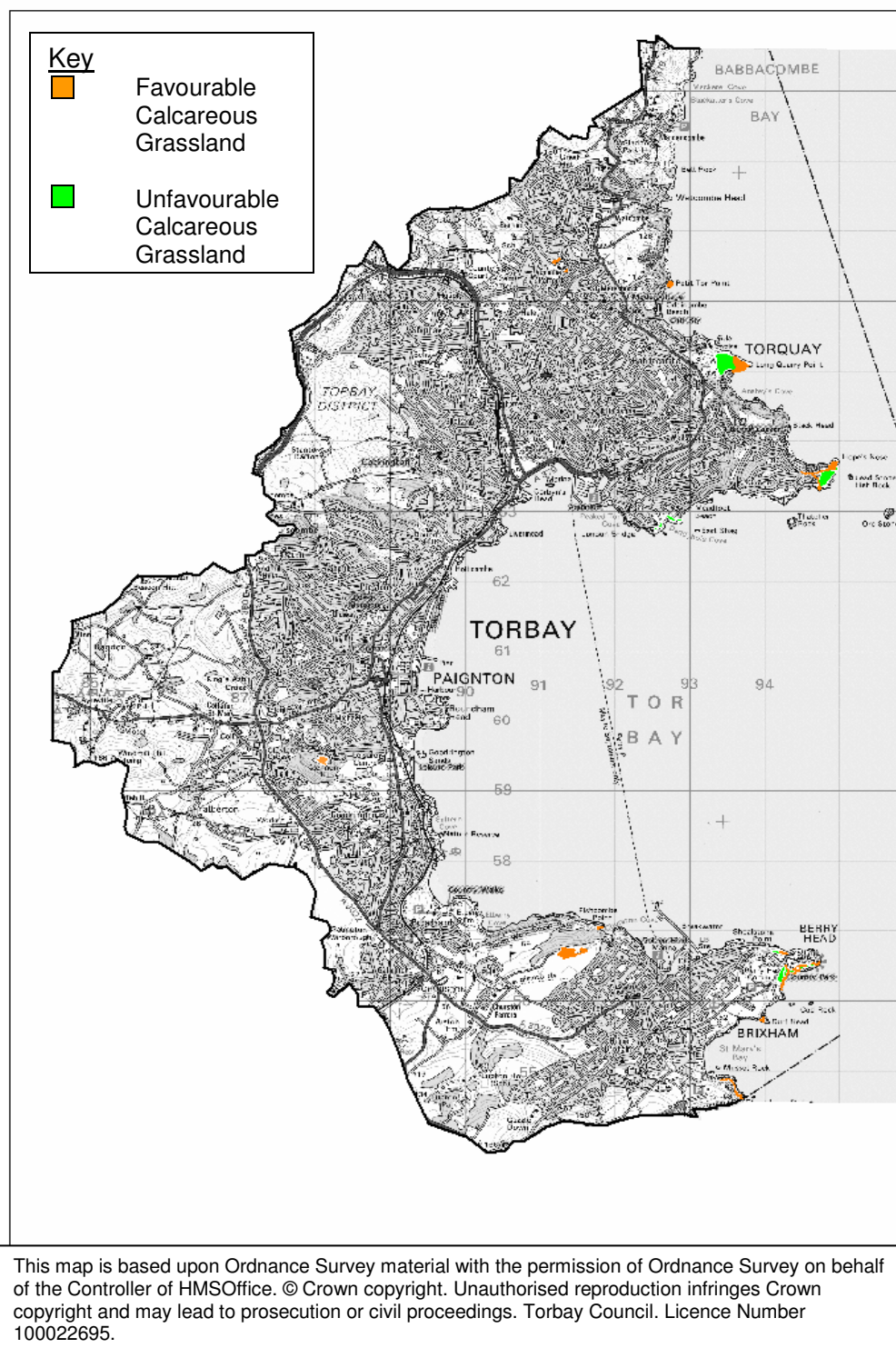


Figure 2: Map to show distribution of favourable and unfavourable calcareous grassland sites in Torbay. Location and status was obtained from the Calcareous Grassland Survey (2001) and English Nature's SSSI condition assessment. It should be noted that some of this data is 5 years old and sites may have changed in condition.

6.1.2 The Current Threats to this Habitat:

- Scrub encroachment from species such as blackthorn, cotoneaster, holm oak, gorse linked to a reduction in grazing and lack of management.
- Habitat destruction and possible development threats.
- Heavy trampling
- Dog fouling and disturbance leading to a loss in species diversity through localised nutrient enrichment.
- Fragmentation leads to a decline in species diversity and abundance and an increase probability of species extinction.
- Misuse of habitat e.g. fire, mini motorbikes and litter

Table 3: Lowland Calcareous Grassland Action Plan. Actions shaded in grey indicate further funding is required.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016)

Actions for Lowland Calcareous Grassland	Priority (High, Medium and Low)	Meets Main Objective	Partners	Ongoing Action
Policy & Legislation				
LCG1 - Implement calcareous grassland recreation schemes in identified areas through the development control process.	M	2	TC, Developers	✓
LCG2 - Improve designation and protection of all calcareous grassland sites in Torbay e.g. verges, pockets and corridors as CWS, SSSI, CGS.	H	3	TC, NE	✓
Site Management				
LCG3 -Maintain management balance – grassland/scrub mosaic. Through clearance and removal of non-natives e.g. cotoneaster & holm Oak.	H	1, 2	TCCT, TC, WWCT, NE	✓
LCG4 - Maintain grassland quality by grazing and taking a hay crop where necessary.	M	1	TCCT	✓
LCG5 - Bring small pockets linked with larger areas into favourable status e.g. Churston Common, golf courses, roadside verges and	M	1, 2, 3	Land Owners	✓

railway banks and seek protection such as Protected Road Verges.				
Communication & Publicity				
LCG6 - Inform local groups, communities, schools, householders, dogwalkers and other stakeholders of the importance of calcareous grassland/maritime cliff and slope e.g. local radio and newspaper, guided walks and interpreters on sites.	H	5	TCCT, TC, AONB	✓
LCG7 - Provide information to landowners, local businesses e.g. garden centres on limestone grassland and associated flora. Raise an awareness campaign 'Have you seen this plant in your garden?' e.g. Autumn Ladies Tresses.	M	5	TCCT, TC	
LCG8 - Establish a network of local specialists to run walks and increase publicity.	L	5	TCCT	
LCG9 - Inform landowners and developers of the importance of sites and appropriate management.	H	1, 5	TCCT, TC, Landowners, Developers, NE	✓
LCG10 - Inform Highways about key areas and advise on management regimes e.g. Churston Common and Blue Water drive	H	1, 5	TCCT, TC, Landowners, NE	✓
Research & Monitoring				
LCG11 - Complete an inventory of all lowland calcareous grassland sites e.g. verges and identify networks and identify owners.	H	4	TCCT, NE, TC, DBRC	
LCG12 - Set up standard surveying protocols across key limestone grassland sites in the Bay. Complete at 5 year intervals.	H	4	TCCT, WWCT, NE, BSBI	✓ (5yearly intervals)
LCG13 - Ensure all data is collated and disseminated to DBRC and the NBN and maintain exchange agreements.	M	4	TC, WWCT, TCCT, DBRC	✓

LCG14 - Identify suitable areas for habitat restoration using soil surveys, aerial photography, ant hill relicts, former commons.	H	4	TCCT, NE, TC	
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Abbreviations: Torbay Coast & Countryside Trust (TCCT), Torbay Council (TC), Natural England (NE), Whitley Wildlife Conservation Trust (WWCT), Devon Biodiversity Records Centre (DBRC), Botanical Society of the British Isles (BSBI)

This Habitat Action Plan should be linked with the following action plans:
Earth Heritage HAP ‘Coastal Exposures and Geomorphological Features’
Maritime Cliff and Slope
White Rock-rose

6.2 Urban – built up areas, greenspace and wasteland.

Main Objectives & Key Actions:

1) Increase positive management for biodiversity in the urban environment.

- Provide 'natural' greenspace sites within 300m of every home in the urban area by 2012.
- Ensure wildlife friendly policies are incorporated into all greenspace management plans by 2010.

2) Raise public awareness of the importance of urban biodiversity and greenspace.

- Launch an awareness campaign and community involvement programme to encourage people to take action on their doorstep to help biodiversity by 2009.
- Promote wildlife-friendly gardening by establishing links with garden centres
- Promote biodiversity through other, connected programmes (e.g. Bay Walks) by 2009.
- Set up exemplar sites of good practice for biodiversity. Establish at least one exemplar site per category (developments, school grounds, gardens, churchyards, businesses) by 2009.

6.2.1 Background & Current Status

This action plan encompasses all managed greenspace (domestic gardens, golf courses and playing fields, public parks, churchyards, school grounds, tourist facilities e.g. caravan parks, zoos and allotments), buildings, industrial estates and derelict land, retail parks, railway embankments and roadside verges.

Torbay is the 10th most populated local authority in the South West and it is predicted that by 2010 Torbay's population will have increased by 6.7% and by 23.31% by 2028 (Torbay Greenspace Strategy). This growth in population will put greater pressures on the need for new housing and the transport infrastructure, which will in turn threaten Torbay's biodiversity.

Domestic gardens and public greenspaces (Figure 3) can provide wildlife havens in a concrete landscape for butterflies, bumblebees and garden birds such as the UK BAP species, the song thrush. Garden ponds increase urban biodiversity by providing a habitat for frogs, newts, insects and aquatic plants. Brownfield sites in Torbay, which are under threat from development, are very important for scarce and rare invertebrates, birds and plant species. These areas only occupy a small area in Torbay and therefore even more care needs to be taken to protect them.

Urban biodiversity has been given priority status because of increasing pressures from development, recreation and inappropriate management. Urban wildlife also

offers a high potential for public involvement and it is where Torbay's local population will enjoy Torbay's biodiversity the most. The main aim is to raise public awareness of wildlife and focus people's attention on what they can do on their own doorstep to achieve biodiversity targets.

Species which will be highlighted:

Pipistrelle bat
Song thrush
House sparrow
Swift
Frogs, toads, newts, grass snakes and slow worms.
Bumblebees
Butterflies – Garden species
Species rich lawns and grasslands
Autumn ladies tresses
Dragonflies – Garden pond species
Great green bush cricket
Grasshoppers
Tiger moths
Bloxworth snout
Sawyer beetle (*Prionus Coriarius*)

6.2.2 The Current Problems/Threats to these Habitats:

Domestic Gardens and Public Greenspace

- Neat and tidy gardening– little 'death and decay' (lack of log piles and leaf litter), intensive mowing, removal of 'weed' species and lack of nectar rich flowers, use of fertiliser, pesticides and herbicides.
- Unsustainable garden materials – use of peat compost and limestone pavements for rock gardens and water features.
- Cats – predation on wildlife.
- Alien species – dumping of non-natives in private gardens.
- Cutbacks in public sector funding, lack of information, health and safety issues, reduction in area size.
- People pressures – dog fouling leading to enrichment, trampling, vandalism and desire for clean, neat and tidy parks.
- Lack of interpretation and community involvement with urban biodiversity.

Buildings, Development & Industry

- Development pressures – Government policy encourages the development of new housing on 'Brownfield' sites. Torbay Council's aim is for 65% of new development to be on Brownfield Sites (Torbay Local Plan).
- Lack of awareness by developers of building for biodiversity e.g. use of native species, planting with biodiversity in mind.

- Traffic and the over-use of cars leading to an increase in air pollution.
- Inappropriate management of roadside verges – tarmacing over, not replacing highways trees.
- Railways – inappropriate management of embankments.
- Infilling with a reduction in garden size and loss of mature trees through lack of planning control. The current plans for Torbay are to construct 500 new houses per year and many could be located in gardens.

Tourist Facilities

- Inappropriate management for biodiversity e.g. constant grass cutting, lack of nectar rich flowers, trampling.

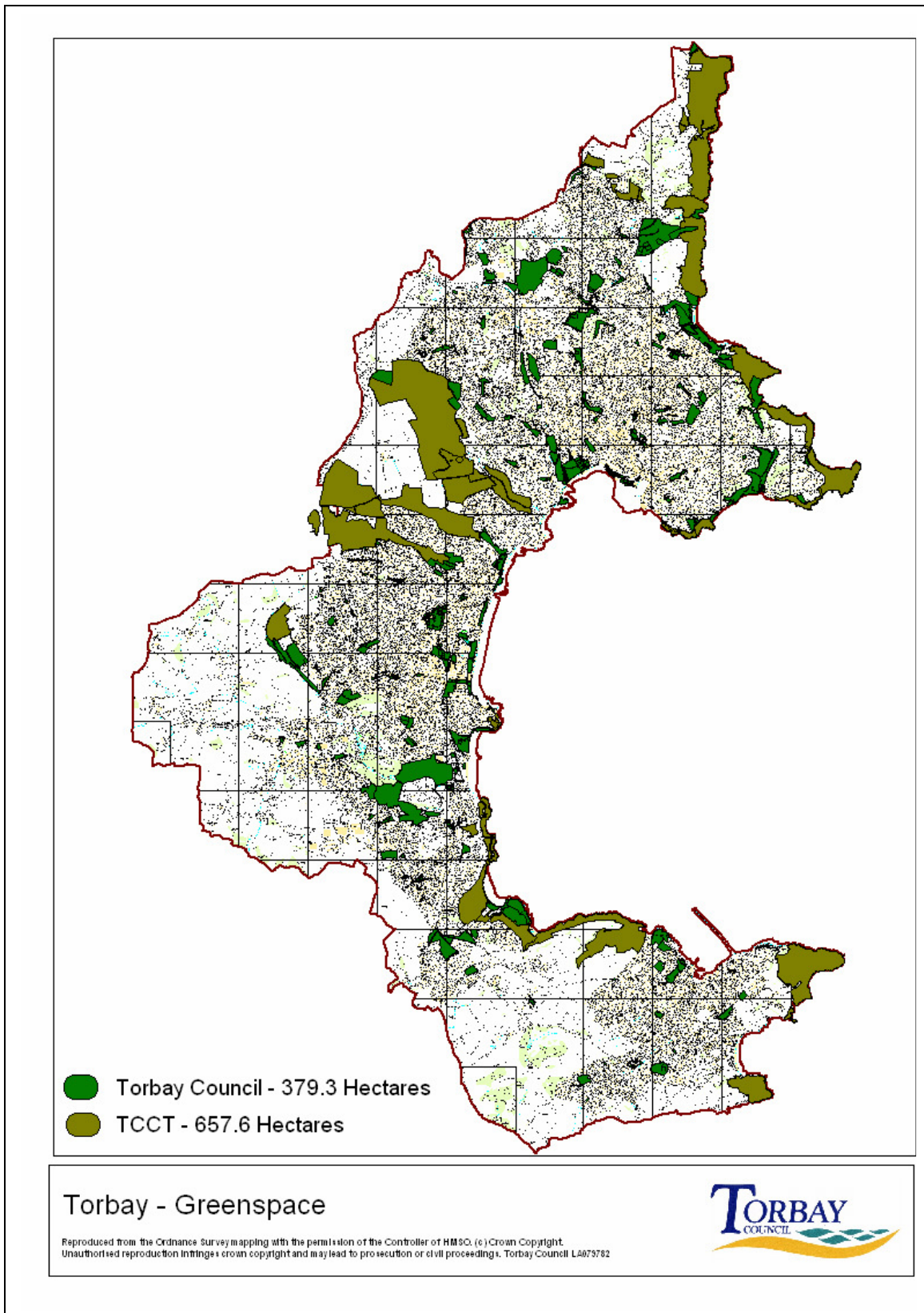


Figure 3: Map showing sites managed by Torbay Coast & Countryside Trust (TCCT) and Torbay Council. The plan does not show greenspace land in private ownership.

Table 4: Urban Action Plan. Actions shaded in grey indicate further funding is required.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016)

Actions for Urban Priority Habitat Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
U1 - Improve policy implementation by greenspace contractors working for public bodies.	H	1	TC, Contractors	✓
U2 - Ensure Torbay LDF includes biodiversity within housing developments.	H	1	TC	
U3 - Ensure biodiversity is incorporated in greenspace management plans	H	1	TC	✓
U4 - Ensure that new developments meet greenspace requirements and adhere to Section 106 Agreements.	H	1	TC, NE	✓
Site Management				
U5 - Encourage the use of national quality standards in public greenspaces and working towards schemes such as the 'Green Flag'.	H	1	TCCT, TC	
U6 - Adopt policies and promote reductions in the use of pesticides, fertilisers and peat in gardens and public greenspace.	H	1, 2	TC, TCCT, Owners, PZ	✓
U7 - Encourage management of gardens, greenspace ,churchyards, school grounds, tourist attractions, business parks, golf courses and holiday parks for biodiversity and encourage community involvement. Promote success stories and encourage others to follow suit.	M	2	TCCT, TC, PZ, Church Groups, Developers and media.	✓
Communication & Publicity				
U8 - Educate public about green waste and dogwaste in public greenspaces and enforce dog fouling byelaws.	H	2	TC, TCCT	✓

U9 - Improve interpretation of biodiversity at public greenspaces.	H	2	TC, TCCT, WWCT	
U10 - Promote importance of gardens and damage caused by re-developing them. Highlight historic changes.	M	2	TCCT, TC	✓
U11 - Promote sustainable tourism initiatives based on Torbay's wildlife-rich greenspaces.	M	2	TDA, PZ	✓
U12 - Integrate biodiversity of railways with promotion of tourist attractions e.g. Steam Railway	M	2	TCCT, Network Rail, Steam Railway	
U13 - Raise awareness of biodiversity value of 'Brownfield' sites with planners, public and developers.	H	2	TCCT, TC, Developers, Public	✓
U14 - Launch community-based programme to promote wildlife-friendly gardening	H	2	TCCT	
U15 - Promote the importance of garden ponds and the Pond of the Year Award.	M	2	TCCT, PZ	✓ (yearly)
U16 - Promote, conserve and enhance demonstration garden at Cockington and involve garden centres – through Bay Blooms, Parks Groups.	M	2	TCCT, Bay Blooms, TC	
U17 - Create more allotments and link with Bay Blooms	M	1	TC, Bay Blooms	✓
U18 - Create an example organic allotment.	L	1	TCCT, TC	
U19 - Increase membership of conservation organisations in Torbay and volunteer involvement.	H	2	TCCT, PZ	✓
Advisory				
U20 - Encourage developers to take biodiversity into design from the start and build around wildlife corridors not through them. Refer to literature that explains incorporating wildlife-friendly features into development design.	H	1	TC, Developers, Architects	✓
U21 - Educate contractors, managers about biodiversity value of public greenspaces and	H	1	TCCT, NE, TC	✓

improved management practices.				
U22 - Introduce developers to SUDS and promote.	M	1	TC, Developers,	✓
U23 - Communicate with railway management (eg Network Rail, Steam Railway) and advise on management for biodiversity.	H	1	TCCT, Network Rail, TC	
Research & Monitoring				
U24 - Identify and prioritise important brownfield sites if not already listed as CWS or LWS.	M	1	TC, Buglife DBRC	
U25 - Encourage the local community to get involved in recording sightings.	M	2	TCCT, PZ	✓
U26 - Encourage developers to survey 'Brownfield' sites before development – identify flagship species to survey for. Use recognised survey methods e.g. Buglife Tool Kit.	H	1	TC, TCCT, Developers, Buglife	✓ (identify flagship 2007)
U27 - Research and develop an accreditation scheme for biodiversity with golf courses, holiday parks, tourist attractions.	M	1	TCCT, TDA	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Torbay Development Agency (TDA), Devon Biodiversity Records Centre (DBRC), Sustainable Drainage System (SUDS), Paignton Zoo (PZ) and Whitley Wildlife Conservation Trust (WWCT).

6.3. Farmland

Main Objectives & Key Actions:

- 1) Maintain/increase the numbers and range of key farmland wildlife.**
 - Increase the area of farmland under environmental stewardship schemes by 20% by 2010. This area will include:
 - an increase in the area of land under low input arable management by 10% by 2012.
 - an increase in the area of rough/semi-improved grassland by 10% by 2012.
 - Maintain and expand existing populations of Gull buntings and Greater horseshoe bats.
- 2) Maintain the network of existing ancient boundary hedgerows.**
 - Identify the current resource of species-rich and ancient hedgerows in Torbay by 2009 and achieve 25% favourable condition by 2012.
 - Halt net loss of species-rich and all loss of ancient hedgerows by 2009.
- 3) Maintain/recreate the area of traditional orchards.**
 - Identify the current resource by 2009 and increase by 10% by 2012.
- 4) Work with smallholders to improve the farmed environment for biodiversity.**
 - Encourage 20% of Torbay's smallholders to improve the farmed environment for biodiversity by 2012.
- 5) Survey farmland wildlife and habitats to develop a stronger understanding of changes**
 - Continue with RSPB/Natural England survey programme.
 - Undertake Phase 1 surveys of key farmland habitats every 5 years.

6.3.1 Background & Current Status

The term farmland includes all habitats especially arable management, hedgerows and hedgerow trees, traditional orchards, flower-rich meadows and permanent pasture including in-field trees.

Figures from DEFRA (2004) gave total farmed area in Torbay as 1805 hectares, which represents 28% of Torbay's total land area. There has been a 10% decrease in hectares of farmland in Torbay from 1995, which reflects a decrease nationwide. Farmland is under pressure from development, recreation and changes in farming practices and this poses a great threat to wildlife that depends on the farmland habitat.

The Environmental Stewardship Scheme launched in 2005 replaces Defra's two flagship schemes – Countryside Stewardship and Environmentally Sensitive Areas. One of its primary aims is to conserve biodiversity by providing compensation to farmers that show good land management such as good hedgerow management. It is split into three elements: Entry Level Stewardship

(ELS), Organic Entry Level Stewardship (OELS) and Higher Level Stewardship (HLS). For more information refer to the DEFRA Environmental Stewardship 'Look after your land and be rewarded' 2005. Torbay's current 14 Countryside Stewardship Agreements, are shown in Figure 4 below.

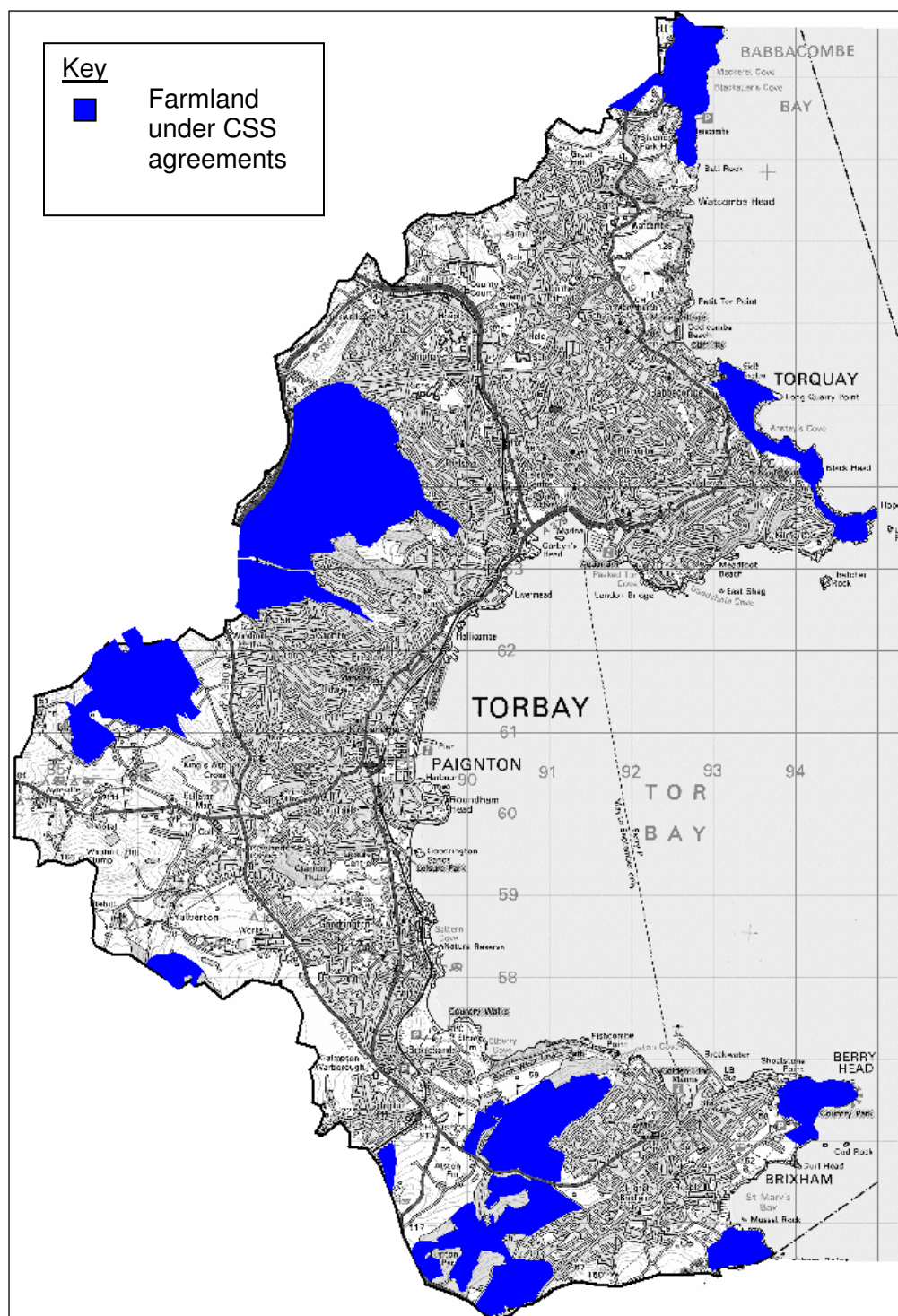
In Torbay relatively large amounts of farmland (100ha or greater) are managed by few holdings, with 54% of Torbay's agricultural holdings being less than 5ha. This means a greater commitment for schemes such as the Environmental Stewardship will be needed if positive changes are to be made for Torbay's farmland biodiversity.

Some of Torbay's farmland is designated in the Local Plan as Area of Great Landscape Value. Several areas of farmland are designated as County Wildlife Sites. In addition, part of Occombe Farm, near Paignton, was classed as SSSI in 1992 and consists of 12 ha of unimproved meadows and an area of ancient semi-natural woodland. Occombe's herb-rich grassland is neutral and characterised by NVC Grassland as *Cynosurus cristatus* – *Centaurea nigra* grassland. This plant community is recognised in the UK BAP Lowland Meadows Habitat Action Plan.

Table 5: Farmland landuse in Torbay (Defra Agricultural Census, 2004, 1995)

Farmland Type	Area (hectares) and % of total area	
	2004	1995
Crops & Fallow	377 - 20%	395 – 20%
Temporary grass	219 – 12%	217 – 11%
Permanent grass	1087 – 60%	1,266 – 63%
Rough grazing	7 – 0.4%	62 – 3%
Woodland	23 - 1.2%	17 – 0.8%
Set-aside	69 – 3.8%	39 – 1.9%
All other	29 – 1.6%	24 – 1.2%

Farmland habitat and its management are vital for many species that are declining throughout the UK. Changes in farming practices over the last sixty years have had wide ranging effects on the British countryside, one of the most dramatic being the removal of hedgerows and intensification of the land for increased production. Traditional mixed farming methods have declined and in Devon there has been a reduction in arable farming. This reduction in the planting of crops leads to a reduction in seed available for farmland birds. Threatened bird species such as circl bunting, linnet and yellowhammer greatly benefit from over-wintered stubble fields, which have been described by the British Trust for Ornithology as 'giant bird-tables'. A variety of boundary types provide a diverse habitat for insects, birds and mammals. Wildflower strips at field edges will attract butterflies and bees, provide food for birds and increase arable rare plants. Farmland ancient and mature trees are disappearing at a fast rate, yet they are vital for lichens, fungi, insects, bats and birds.



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Figure 4: Map to show Countryside Stewardship Agreements (CSS) (2006) in Torbay. Information was kindly provided by the Rural Development Service.

This action plan must reach a balance between the economic needs of the farmer and biodiversity. It is crucial that this action plan informs not only conservationists but farmers, landowners and members of the public.

Species that will be highlighted in this plan are:

Barn owl
Skylark
Linnet
Cirl bunting
Yellowhammer
Bullfinch
Swallow
Brown hairstreak
Pipistrelle bat
Greater horseshoe bat
Lesser horseshoe bat
Arable rare plants

6.3.2 The Current Problems/Threats to this Habitat:

- Improvement of grassland resulting in a species poor sward with low wildlife value.
- Bad hedgerow management - lack of nesting habitats and shelter, break in potential wildlife corridor, lack of old hedgerow trees.
- Cost of managing marginal land.
- Use of unsuitable worming treatments – leading to a loss or reduction in dung fauna.
- Changes in crop type and land use – loss of arable land linked to reduction in seed source, reduction in mixed farming practices.
- Stock management – high densities of livestock (damaging effects on trees, sward and lead to erosion and run-off) stock type.
- Changes in support systems.
- Development pressures.
- Recreational Pressures

Table 5: Farmland Action Plan. Actions shaded in grey indicate further funding is required.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016)

Actions for Farmland Priority Action Plan	Priority (High, Medium and Low)	Meets Main Objective	Partners	Ongoing Action
Policy & Legislation				
F1 - Ensure there is an effective system of planning mitigation to reduce the impact of development on the farmed environment (including species-rich hedgerows) and its biodiversity e.g. section 106 agreement.	H	1	TC, NE, TCCT, Developers	✓
Site Management				
F2 - Link areas under agri-environment schemes to provide areas of continuous beneficial habitat for biodiversity.	M	1,2	TCCT, TC	
F3 - Encourage all farmers to enter into agri-environment schemes and look to add value to existing agreements.	H	1	TCCT, TC, Tenants, RDS, RSPB, FWAG, DWT	✓
F4 - Replacement of unsuitable worming treatments with more environmentally friendly treatments.	M	1, 4	Farmers, Horseowners	
F5 - Encourage planting of new species-rich hedges using locally native species.	H	2	TC, TCCT	✓
F6 - Encourage the use of set aside to achieve the arable and rough grassland aims.	M	1,3,4	TCCT, TC, NE, DEFRA, FWAG	✓
Communication & Publicity				
F7 - Where suitable encourage the use of traditional local breeds	L	4	TCCT	✓
F8 - Use TCCT holdings (Maidencombe/Occombe) to	H	1,2	TCCT	✓

promote good hedgerow management.				
F9 - Use other 'actively' farmed holdings to promote wildlife management to other farmers.	M	1,2,3,4	TCCT, FWAG	
F10 - Promote the use of non toxic worming treatments.	H	1	TCCT, TC, Farmers	✓
F11 - Use Maidencombe and Occombe to educate people about farmland issues, from biodiversity to reducing recreational pressures.	M	1,2,3,4	TCCT	✓
F12 - Develop partnerships with Equestrian groups to promote positive management for biodiversity	H	4	TCCT, Horse Owners	
F13 - Promote the use of local produce and traditional local breeds through sites such as Occombe and Farmers Markets.	M	1	TCCT	✓
Advisory				
F14 - Look at existing agreements and promote Environmental Stewardship especially Higher Level to land managers across Torbay.	H	1,2,3,4	DEFRA, FWAG, DWT	
F15 - Promote training in good hedge management for contractors and suppliers of hedge cutting machinery.	H	2	TC, TCCT, contractors, land managers, farmers	
F16 - Work with the local unitary authority to promote the use of local produce in catering contracts etc.	M		TC, DRN, Catering companies	
Research & Monitoring				
F17 - Identify and map all the key farmland habitats (Arable, species-rich grassland, semi-improved, rough grassland, ancient species rich hedgerows and orchards).	H	1,2,3,5	TCCT, NE	
F18 - Establish baseline data on the quantity and quality of hedges through sample surveys. Monitor change at 5 year intervals.	H	2, 5	TCCT	✓ (5 yearly intervals)

F19 - Ensure target species are monitored on a regular basis. Most birds except Swallow and Bullfinch, will be monitored in 2009 by RSPB Cirl bunting survey providing a comparison with the baseline data collected in 2003. Collate distribution maps of missing species.	H	1,5	RSPB	✓ (5 yearly intervals)
F20 - Continue monitoring of bat roosts and develop a system of monitoring elsewhere. Map distribution of known roost sites.	H	1,5	NE, TCCT	✓ (monitoring)
F21 - Set up and conduct standard surveys of arable rare plants and record. Set up inventory of sites where arable plants are present.	M	1,5	TCCT	
F22 - Prepare a distribution map of all known Brown Hairstreak sites and develop a system for regular monitoring at key sites.	M	1,5	BC, TCCT	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Butterfly Conservation (BC), Devon Rural Network (DRN) Devon Wildlife Trust (DWT), Rural Development Service (RDS), Farming Wildlife Advisory Group (FWAG).

Please refer to the Parkland and Veteran Tree HAP.

6.4 Broadleaved Woodland

Main Objectives & Key Actions:

- 1) Maintain the current extent of broadleaved woodland and improve its statutory protection.**
 - Maintain the 532 ha of total woodland and 40 ha of ancient woodland.
 - Increase the designation of appropriate woodland sites to CWS / LNR by 2012 e.g. The Grove.
- 2) Manage and enhance the current areas of broadleaved woodland positively for biodiversity.**
 - Achieve favourable status of 25% of the current resource by 2012 through a programme of woodland management.
- 3) Expand and link current areas of woodland without a loss to other priority habitats.**
 - Increase the area of native broadleaf woodland by 5% through new planting by 2012.
- 4) Increase knowledge and understanding of Torbay's woodlands, particularly on areas identified as semi-natural or scarce.**
 - Conduct a resurvey of LWS/CWS by 2009.
 - Establish a targeted surveying programme for semi-natural woodland by 2012.

6.4.1 Background & Current Status

Today Torbay's woodland covers approximately 7.2% of the total land area. The majority of Torbay's woodland is described as secondary woodland or plantation and is dated post 1600AD. These areas would have grown up from abandoned farmland, coastal slopes and open grassland or would have been planted with compartments of exotic or non-native tree species. The few sites that are classed as ancient semi-natural woodland on English Nature's Ancient Woodland inventory occur in the Clennon Valley, Ocombe Woods, Lupton Park, and The Grove, Brixham. These date back to at least 1600AD. Ancient woodland is considered by English Nature to be of highest value for nature conservation. The Torbay Wildlife Survey (1991) recognised c 532 ha of total woodland, which includes c 40 ha of ancient woodland and c 193.94 ha of semi-natural broadleaved woodland. Figure 5 shows the broadleaved woodland resource in Torbay, further survey work is needed as some of the data is over 5 years old and the condition of sites can change.

The Torbay Wildlife Survey (1991) describes the woodland communities as 'typically characterised by oak, ash and an often diverse shrub layer and a varied ground flora.' This general pattern has in places been altered by extensive planting of broadleaves and conifers, and extensive invasion by sycamore. Torbay does have pockets of a scarce and important class of woodland currently known to be between Watcombe and Oddicombe and at The Grove and Seven Quarries (pers comm, Baker, 2006). The communities typical of this woodland

are: National Vegetation Classification W8a Ash (*Fraxinus excelsior*) – Field Maple (*Acer campestre*) – Dog’s Mercury (*Mercurialis perennis*) woodland - Primrose (*Primula vulgaris*) and Ground Ivy (*Glechoma hederacea*). This woodland generally has a South-Eastern distribution and occurs on dry, calcareous soils that are free draining. Torbay’s unique climate means that this woodland is at the most South-Western limit of its range, most abundant in the south and east of Britain. Ash-Maple Woodland is a SW BAP priority habitat.

Woodland designations:

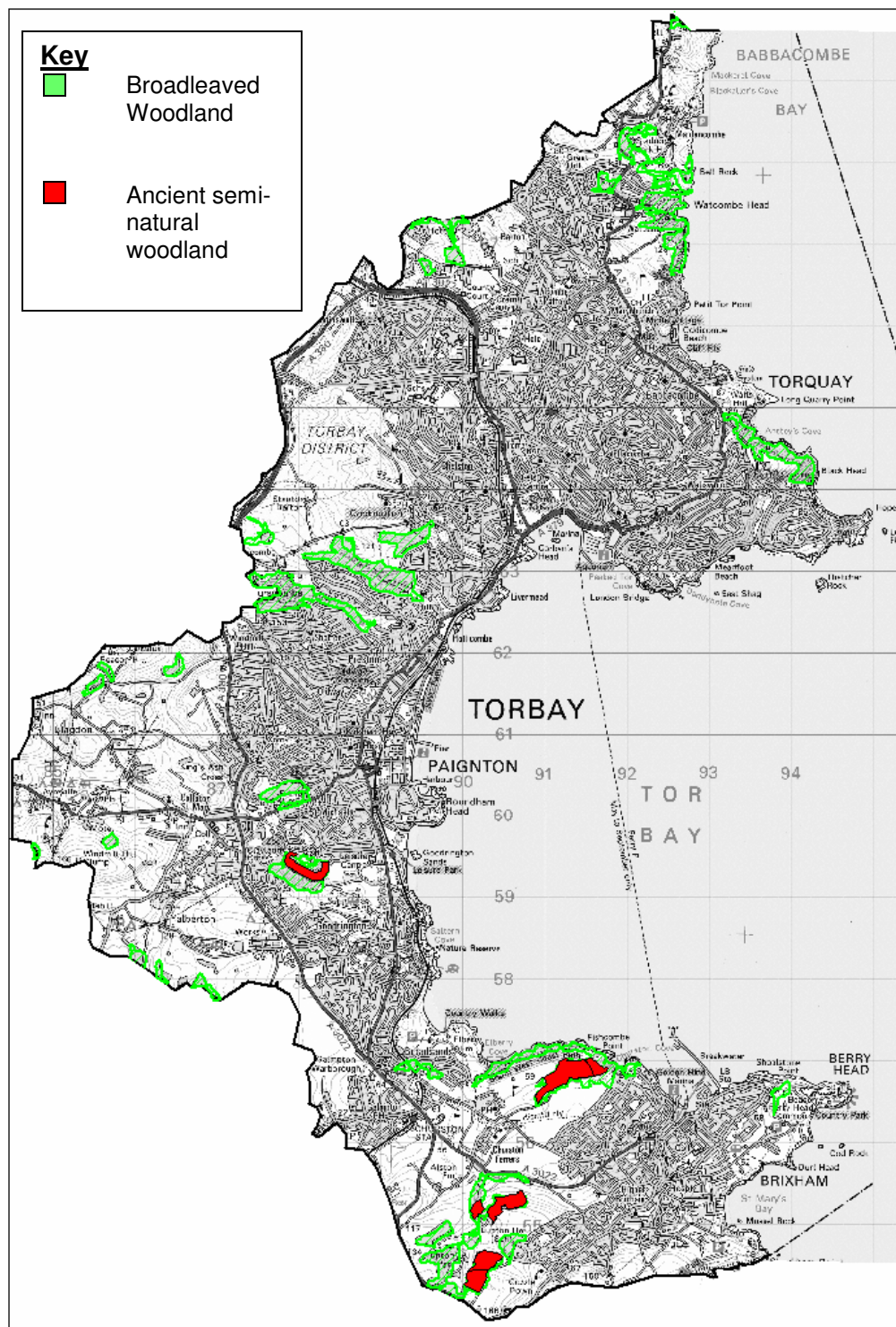
Scadson Woods (35.5 ha) and Ocombe Valley Woods (c 38 ha) have Local Nature Reserve Status; the area of wet woodland at Ocombe is classed as SSSI; and the other areas of woodland in the Bay are classed either as County or Local Wildlife Sites.

Woodlands provide diversity to the landscape, improve well-being and are key to many species. Mature and older trees, and the associated dead wood, are important as they provide a habitat for invertebrates and fungi whilst birds and mammals use the holes in trees to nest or roost. Woodland plants such as bluebells, wild garlic and primroses are characteristic and a highly appreciated aspect of Britain’s flora. Woodlands provide important wildlife corridors or reservoirs in a fragmented landscape, especially in Torbay where the areas of woodland are relatively small.

Torbay’s woodlands in the past have been managed in an unintensive manner with public safety a major priority. Nature conservation directed work has been sporadic and this, along with the storm of 1990, has contributed to the long-term decline of many of Torbay’s woodland sites. This action plan will raise awareness, focus attention, and prioritise future management decisions.

Species that will be highlighted in this plan are:

Brown long-eared bat
Pipistrelle bat
Natterer’s bat
Noctule bat
Barbastelle bat
Bechstein’s bat
Lesser horseshoe bat
Bluebell
Primrose
Spurge laurel
Torbay elm



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Figure 5: The Map shows areas identified as Broadleaved Woodland in Torbay. Areas shaded red are designated by English Nature as ancient semi-natural. This data was obtained using aerial photography.

6.4.2 The Current Problems/Threats to this Habitat:

- Urban expansion
- Fragmentation of woodland – no habitat linkage/wildlife network
- People pressure – vandalism, dog fouling
- Lack of management and knowledge
- Incorrect management – too tidy and too safe
- Invasion/dominance of a particular species e.g. rhododendron and laurel
- Dumping of garden waste and introduction of alien species
- Lack of dead wood
- Woodland structure – lack of shrubs and younger growth, uniform age structure.
- Pests – squirrel and deer damage

Table 6: Woodland Action Plan. Actions shaded in grey indicate further funding is required.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016)

Actions for Woodland Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
BW1 - Opportunity for decoupling of payments (single farm payment) Access money for woodland management through higher level stewardship scheme payment/ English woodland grant scheme.	L	1,2	DEFRA	✓
BW2 - Protect Ancient Trees (veteran) through relevant legislation e.g. Tree Preservation Orders.	H	1,2	TC, NE	✓
BW3 - Establish networks of habitats to buffer woodland resource and link to planning framework.	H	2	TCCT, TC	✓
BW4 - No loss of current resource through development. Ring fence (policy) current areas not identified as ancient woodland.	H	1	TC, TCCT, NE	✓
Site Management				
BW5 - Remove plantations on	L	2,3	TC, TCCT, NE	✓

ancient sites and replace with native broadleaves, where it does not compromise other HAPS.				
BW6 - Increase age range by thinning, to achieve non uniform age structure.	H	2,3	TCCT, TC, WWCT	✓
BW7 - Manage and control pests/invasives such as rhododendron/laurel and exotics.	H	2	TCCT, TC, WWCT	✓
Communication & Publicity				
BW8 - Educate dog owners about problems associated with dog mess.	M	2,4	TCCT, TC	✓
BW9 - Increase awareness of problems associated with pests and exotics in Torbay's woodlands.	M	2,4	TCCT, TC, NE, PZ	✓
BW10 - Advise developers to plant native trees – refer to documents such as 'Creating New Native Woodlands' Forestry Commission.	M	3	TC, Developers, NE	✓
BW11 - Educate landowners and land managers over biodiversity, safety and the importance of standing and dead wood.	M / H	4	TCCT, TC, NE, Land managers	✓
Research & Monitoring				
BW12 - Survey and identify all veteran trees as part of the Woodland Trust Ancient Tree Hunt. Submit all records to the Woodland Trust.	M	4	TCCT, Volunteers, WWCT	
BW13 - Survey and map all NVC W8a woodlands in the Bay.	H	4	TC, TCCT, NE	
BW14 - Conduct surveys to look at extent of invasive exotics in Torbay's Woodlands e.g. Spanish Bluebell.	M/H	4	TCCT, PZ	
BW15 - Research into the level of damage caused by pests e.g. squirrel and deer.	L	4	TC, TCCT, NE	
BW16 – Employ a Woodland Ranger.	M	1- 4	TCCT, NE	
BW17 – Set up volunteer woodland groups across the Bay.	M	4	TCCT	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Paignton Zoo (PZ), Whitley Wildlife Conservation Trust.

6.5 Marine Habitats

Main Objectives & Key Actions:

- 1) **Maintain, improve and expand priority marine habitats and species.**
 - Halt any decline in seagrass populations resulting from human impacts by 2008.
 - Maintain the extent and quality of Honeycomb reefs by 2012.
- 2) **Increase research and monitoring of distribution, ecology and threats to marine habitats and species.**
 - Establish a monitoring programme for seagrass beds by 2008 and Honeycomb reefs by 2012.
- 3) **Create zones to protect sensitive habitats and species from disturbance and seek further protection.**
 - Restrict damaging fishing and boating activities over known seagrass beds by 2008.
 - Establish a voluntary code of conduct for the Bay by 2008.
- 4) **Ensure EIAs are carried out before marine/coastal development and are taken into account in planning applications.**
 - Ongoing.
- 5) **Establish partnerships to integrate effort and deliver actions.**
- 6) **Increase awareness of marine wildlife and associated threats.**
 - Set up an awareness campaign for seagrass by 2008 and Honeycomb reefs by 2009.

6.5.1 Background & Current Status

This habitat action plan will focus on seagrass beds, marine caves and sublittoral and littoral rock and sediment habitats. The marine wildlife in Torbay has been described as the jewel in South Devon's crown and for a more in depth description please refer to the Torbay Marine Biodiversity Action Plan.

Torbay, from high-water mark out to the boundary of the Harbour limit, is one of 28 Sensitive Marine Areas in England. Approximately 70% of the coastline adjoining the sea is designated as a protected wildlife site (these include the National Nature Reserve and Special Area of Conservation at Berry Head to Sharkham Point, 6 coastal Sites of Special Scientific Interest, several County Wildlife Sites and, at Saltern Cove, an underwater Local Nature Reserve).

Littoral Rock and Sediment (including Honeycomb Worm reefs)

The inter-tidal zone is rich with life including reefs of the UK HAP species honeycomb worm, *Sabellaria alveolata* and *Sabellaria spinulosa*. Honeycomb worm reefs have been included within the Intertidal Habitat Action Plan, however at a later stage they may warrant their own action plan due to their UK BAP status. The intertidal areas in Torbay are generally of a high quality in regional terms and are subject to above average pressures. Some of Torbay's rocky

foreshore is protected by site designation (e.g. Saltern Cove SSSI and LNR; Meadfoot Beach SSSI).

Inshore Sublittoral Rock and Sediment

The majority of the Bay consists of soft muddy areas with rocky outcrops. The muddier areas hold moderately rich communities characterised by the heart urchin and brittlestars, whilst the cleaner sands closer inshore hold dense populations of the razor shell, heart urchins and eelgrass. The most striking communities are on the limestone rock particularly from Sharkham Point to Churston Cove and Princess Pier to Petit Tor Point and have communities of sea squirts, piddocks, anemones and sponges. Species to highlight include burrowing anemones (*Cerianthus lloydii*, *Peachia cylindrical*, *Edwardsia clapedii*), starfish (*Astropecten irregularis*, *Ophiura ophiura*, *Amphiura brachiata*) heart urchins (*Echinocardium cordatum*), sea cucumber (*Labidoplax digitata*), rare cup corals (*Caryophyllia inornata*, *Hoplangia durotrix*) and the pink sea fingers (*Alyconium hibernicum*).

Seagrass beds (*Zostera* sp)

Seagrasses are the only flowering plants able to grow fully submerged in British seas. They occur on sheltered intertidal and shallow subtidal sands and muds where they can produce extensive beds. Within Torbay there are five major *Zostera* bed systems (pers comm. Flint, 2007; Proctor, 1999), the most extensive being that from Torre Abby Sands to beyond Livermead Head and the large bed at Elberry Cove. In addition there are numerous small beds and *Zostera* patches dotted around the Bay and north of Hopes Nose (Proctor, 1999; Black & Kochanowska, 2004). All of Torbay's seagrass beds are subtidal and grow from the low water mark to five meters below chart datum (pers comm. Flint, 2007). They are comprised of the species *Zostera marina*, although *Zostera marina* var. *angustifolia* has been reported. The beds support extensive and varied assemblages of species and function as breeding and nursery grounds for many commercially fished species. Seagrass beds are of national and international importance and are listed as a UK Priority Biodiversity Habitat.

Marine Caves

Marine cave faunas in Torbay are exceptionally diverse and certainly of national importance. Berry Head has a unique and extensive solutional limestone cave system that extends well beyond daylight and the influence of wave action. Brackish lagoons, muddy tidal pools and surge gullies create a diverse range of habitats and although investigations are in their early days the marine life identified so far has been outstanding. Caves that have been noted for their rare species so far are: Garfish Cave, Berry Head; Corbridge Cave, Berry Head; Berry Head Quarry, Hope's Nose, Petit Tor and Anemone Cave at Shag Cliff. Species identified so far include the carpet coral (*Hoplangia durotrix*), pink sea fingers (*Alyconium hibernicum*), devonshire cup coral (*Caryophyllia smithii*), sponge (*Dercitus bucklandi*), anthozoans (*Edwardsiella carnea* and *Epizoanthus*

couchi), burrowing anemones (*Cerianthus lloydii* and *Edwardsia clapedii*) and the squat lobster (*Galathea nexa*) (pers comm. Proctor, 2006).

Torbay's sheltered aspect, unusual geology and warm climate mean that underwater, just as on land, the area is host to an exceptionally diverse range of habitats and species.

6.5.2 The Current Problems/Threats to these Habitats:

Littoral Rock and Sediment (including Honeycomb worm reefs)

- The use of bleach on tourism beach steps, harbours and yacht clubs.
- Litter – associated with beach users, boat users, lack of bins.
- Lack of monitoring of clearance of seaweeds from tourist beaches – important habitat and potential damage to benthic fauna.
- Hand gathering of mussels/winkles – disrupt natural balance of rocky shore as key species.
- Cumulative recreation – trampling on fragile habitats such as honeycomb worm reefs, disturbance from dogs.
- Development pressures (Beacon Cove, Brixham Harbour, Paignton Harbour).
- Lack of knowledge.
- Use of antifouling paints, detergents, sewage, waste oil and fuel – high levels in harbours and marinas.
- Angling weights, hooks and lines especially around angling hotspots such as Babbacombe.
- Alien species – introduced species from abroad that are now interfering with the natural ecosystem e.g. Sargassum.
- Trampling especially over honeycomb worm reefs.

Sublittoral Rock and Sediment

- Unsustainable fishing practices.
- Collection of cuttlefish – cuttlefish eggs left in pots often out of water.
- Trawling – particularly over areas of seagrass beds
- Occasional scalloping disturbing the seabed.
- Pollution from sewage and marine litter.
- Use of antifouling paints, detergents, sewage, waste oil and fuel – high levels in harbours and marinas.
- Construction of sea defences and pipe and cable laying.
- Fishing line and tackle
- Recreational Pressures – propeller damage, oil pollution
- Alien species – introduced species from abroad that are now interfering with the natural ecosystem e.g. Sargassum.

Seagrass

- Physical disturbance by trampling, dredging, mooring/anchor drag and use of mobile bottom fishing gear, land claim and adjacent coastal development through the construction of sea defences and potential for changes in the hydrological regime.
- Lack of awareness of significance of eelgrass as a habitat.
- Lack of up to date surveys – last one completed in 1997/98
- Pollution – eelgrass is known to accumulate metals and organic pollutants.

Marine Caves

- Lack of knowledge and awareness.
- Pollution – dumped waste, organic, litter, oil etc.
- Disturbance – trampling by visitors damage, collecting.

Table 7: Marine Action Plan. Actions shaded in grey indicate further funding is required.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016)

Actions for Marine Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
LITTORAL ROCK & SEDIMENT				
Policy & Legislation				
M1 - Enforce winkle minimum landing size (MLS).	L	6	DSFC	✓
Site Management				
M2 - Establish core volunteers to warden rockpooling hotspots during Summer months and promote good rockpooling practice and the seashore code.	M	6	TCCT	
M3 - Improve litter disposal sites at Harbour and promote awareness of problems associated with marine litter.	M	1,6	TC, Harbour Authority, TCCT, Living Coasts	✓
M4 - Work with dive clubs to establish a group of volunteer divers to conduct underwater litter picks in key areas e.g. fishing line.	H	1,2,6	TCCT, Dive clubs, SHT	
Communication & Publicity				
M5 - Increase awareness of	L	6	TCCT, TC,	✓

impacts of winkle collecting among collectors and improve communication between TCCT, TC (beach managers) and DSFC so that collectors can be reported.			DSFC	
M6 - Raise awareness of the problems for marine biodiversity with the use of chemical cleaners for boats and hard substrate.	H	6	TCCT, TC, NE Harbour Authority	✓
M7 – TCCT Seashore Centre to continue to expand and develop marine education work through events programme and work with schools.	H	6	TCCT	✓
M8 - Increase awareness with anglers and at angling clubs about the impact discarded fishing line and tackle has on marine life e.g. fishing magazines.	H	6	TCCT, TC, Anglers	
Advisory				
M9 - Advise Harbour authority on environmental good practices in Harbours e.g. litter disposal and anti-fouling paints.	H	6	NE	
M10 - Advise the Harbour authority, Yacht clubs and Torbay Council in the use of more environmentally friendly cleaning products.	M	6	TCCT, NE, Harbour Authority	✓
Research & Monitoring				
M10 - Develop co-ordinated surveying programme and input into Marine Recorder. Set up exchange agreements with DBRC.	M	2	TCCT, dive groups, NE, SHT	
M11 - Reappraisal of species in Torbay Marine BAP.	H	2	TCCT, NE	
M12 - Research into more environmentally friendly mechanisms to clean boats, steps etc for Torbay Council, Harbours and Yacht clubs.	M	5, 2	TC, TCCT, Harbour Authority and Yacht Clubs	
M13 - Identify 3-4 key areas where fishing line is a problem and promote angling good practice in these areas e.g. advise on seabed type.	M	2	TCCT, NE, Anglers	
SUBLITTORAL ROCK & SEDIMENT				

Policy & Legislation				
M14 - Investigate the implementation of a voluntary scheme implementing more sustainable fishing practices for cuttlefish e.g. problems associated with leaving pots out of the water with eggs in.	H	3	NE, SHT, DSFC	
Site Management				
M15 - Map out all legal discharge points in the Bay and improve litter disposal sites.	H	2	TC, SW Water, TCCT	
Communication & Publicity				
M16 - Publish and promote an integrated Code of Conduct for all users of the Bay.	H	6	TCCT	
M17 - Improve communications between Devon Sea Fisheries, TCCT and NE.	H	5	TCCT, NE, DSFC	✓
Advisory				
M18 - Advise sea front shops on the use of more environmentally friendly packaging and problems associated with plastics e.t.c.	L	6	TC	
Research & Monitoring				
M19 - Monitor trends in trawling in the Bay.	L	1, 2, 5	DSFC, NE	✓
M20 - Seek funding for MCS Seasearch surveys – knowledge currently very poor.	H	2,6	TCCT, MCS, Living Coasts	
M21 - Map out the areas in the Bay where scalloping occurs and flag up sensitive areas.	L	2	DSFC, TCCT, NE	✓
SEAGRASS BEDS				
Policy & Legislation				
M22 - Restrict mobile fishing gear within and around the seagrass beds where necessary.	H	1,3	DSFC, NE	
Site Management				
M23 – Investigate changes to zoning and launch arrangements for water-ski lanes in Elberry Cove and Livermead Sands.	M	1,3	TCCT Harbour Authority	
M24 – Investigate restricting anchorage within seagrass beds	M	1,3	TCCT Harbour	

			Authority	
Communication & Publicity				
M25 - Provide Devon Sea Fisheries and fishermen with information on what and where the seagrass is and why it is important to commercial fisheries.	H	5,6	TCCT, NE	
M26 - Inform boat operators of the effects of anchoring and propeller damage to seagrass beds. Provide information, code of conduct and advice on good practice.	H	3,6	TCCT, NE, Harbour Authority	
M27 – Produce information on the impacts of mobile fishing gear over seagrass beds and raise awareness with boat operators and Devon Sea Fisheries.	H	6	TCCT, NE	
M28 – Raise awareness with residents and visitors of the location, importance and vulnerability of the seagrass beds	M	6	TCCT, NE, Harbour Authority, Living Coasts	✓
Research & Monitoring				
M29 – Complete mapping audit of distribution and quality of seagrass beds in the Bay.	H	2	TCCT, NE,	
M30 – Put in place a three yearly research plan to monitor changes in seagrass beds area, health and human use.	H	2	TCCT, NE, SHT, Seasearch	✓ (3 yearly intervals)
MARINE CAVES				
M31 - Seek protection of sensitive species rich marine caves.	H	1	NE	
M32 - Increase the amount research and monitoring of Torbay's marine caves.	H	2	TCCT	
M33 - Work with volunteer divers and increase communication between conservation groups.	M		TCCT, dive clubs	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Sea Fisheries (DSFC), Seahorse Trust (SHT), Marine Conservation Society (MCS).

6.6 Maritime Cliff and Slope

Main Objectives & Key Actions:

- 1) **Maintain/ improve and increase the existing maritime cliff and slope biological and geological resource.**
 - Establish and strengthen designation of identified sites where appropriate by 2012.
 - Bring identified unfavourable areas of supralittoral rock into favourable condition through scrub clearance by 2012.
- 2) **Ensure that natural processes of erosion continue to operate on all areas of conservation interest.**
 - Ongoing
- 3) **Increase research and monitoring of sites.**
 - Survey SSSI unfavourable areas of supralittoral rock to establish access for management by 2010.
- 4) **Increase awareness of the importance of the habitat, the threats it faces and actions required by all for its continued well-being.**
 - Ongoing

6.6.1 Background & Current Status

Maritime cliff and slope is defined in the UK BAP as 'sloping vertical faces on the coastline where a break in slope is formed by slippage and/or coastal erosion. Extending landward to at least the limit of sea salt deposition and encompasses entire islands or headlands and seaward to the splash zone'. Maritime cliff and slope provide important habitats for plant communities, nesting seabirds and peregrines and are important geologically.

In Torbay there is approximately 22 miles of coastline which includes cliffs, slopes, ledges, rocky/sandy/shingle beaches and caves. The actual amount of maritime cliff and slope resource is unknown.

Maritime cliff and slope form varies according to several factors: the geology, configuration of the coastline, condition of the shore and the nature of wave attack. These factors can lead to a wide range of maritime cliff and slope habitats.

In Torbay the calcareous soils and generally mild climate have led to floristically rich maritime cliff grassland communities with notable rare species (Torbay Wildlife Survey, 1991). All sites surveyed were found to have a dominance of red fescue, thrift (*Armeria maritime*) and bladder campion (*Silene vulgaris* subs *maritima*) - during the survey twelve NVC maritime cliff communities were identified.

Candidate Species that are highlighted in the Plan are:

White rock-rose

Whitebeam (*Sorbus rupicola* and *Sorbus porrigentiformis*)

Bloxworth snout

Peregrine

Linnet

British whorl snail (*Truncatellina callicratis*)

6.6.2 The Current threats to this habitat:

- Coastal Development – Species are able to retreat with erosion of the cliff line however if it is squeezed between developed or cultivated land then this increases the chance of species loss through habitat loss. Natural erosion is necessary to maintain fresh geological outcrops.
- Scrub encroachment from species such as blackthorn, cotoneaster, holm oak, gorse linked to a reduction in grazing and lack of management. This obliterates habitats and exposures.
- Recreational Pressures – trampling; rock climbers can increase disturbance to seabirds and peregrines, damage rock faces or delicate geological features; increase worrying of grazing livestock.
- Coastal Protection – Re-profiling, stabilising with foreign substrates and disturbance can all lead to a reduction in biodiversity and geodiversity.
- Pollution
- Lack of access to resource – leads to a lack in knowledge and understanding.

Table 8: Maritime Cliff and Slope Action Plan. Actions shaded in grey indicate further funding is required.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Maritime Cliff and Slope	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy and legislation				
MC1 - Ensure all designated sites are detailed within local planning docs	H	1,2,4	TC, TCCT	✓
MC2 - Ensure PPS9 is adhered to	H	1	TC, NE	✓
Site Management				
MC3 - Review site specific management plans to ensure integrated geological-ecological approach and to allow natural	M	1,2,4,	TCCT, TC, NE	✓

erosion to continue				
MC4 - Work to bring all SSSI's into favourable condition	H	1	TCCT, NE	✓
MC5 - Ensure all suitable sites are designated as County Wildlife Sites	M	1	TCCT, NE	
MC6 - Promote coastal grazing for nature conservation	M	4	TCCT	✓
MC7 - Maintain population of whitebeam <i>Sorbus rupicola</i> and <i>Sorbus porrigentiformis</i>	L	1,3	TCCT	✓
MC8 - Achieve CGS designation of proposed sites	H	1,2,4	TCCT, Devon RIGS, TC	
Communication and Publicity				
MC9 - Provide information for walkers on any management that is being carried out	L	4	TCCT	✓
MC10 - Increase public awareness through events and developing links with schools	M	4	TCCT	✓
Advisory				
MC11 - Advise user groups (climbers, ramblers, geologists, water sport groups) on appropriate and sustainable use of cliff and slope environment.	M	1,4	TCCT	✓
MC12 - Liaise on suitable grazing regimes	M	1	TCCT, NE, DEFRA	✓
Research and Monitoring				
MC13 - Ensure audit, research and monitoring information is linked with site protection and management	H	1,2,4,6	TCCT, TC, NE,	✓
MC14 - Identify and map population of whitebeam <i>Sorbus rupicola</i> and <i>Sorbus porrigentiformis</i>	L	3	BSBI	
MC15 - Encourage research of flora and fauna	M	1,2,5,7	TCCT, TC, NE,	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Botanical Society of The British Isles (BSBI).

**This action plan should be referred to with the following Action Plans:
Lowland Calcareous Grassland, White Rock-Rose, Earth Heritage - Coastal Exposures and Geomorphological features and Seabirds**

6.7 Earth Heritage

Main Objectives & Key Actions:

- 1) Protect all sites that are of geological importance**
 - Achieve new CGS designation for all proposed sites by 2008
- 2) Conserve and enhance all sites that are of geological importance**
 - Write management plans for new sites by 2008
 - Bring appropriate SSSI units into 95% favourable or recovering condition by 2010.
- 3) Seek to integrate objectives of earth heritage and wildlife conservation across the bay.**
 - Ensure geology is incorporated into existing management plans when plans are under review. All to have been reviewed by 2012.
- 4) Establish improved communication and co-ordination between all groups with management, research, educational or recreational interests in the earth heritage sites in Torbay**
 - Set up Geo-network by 2008
- 5) Foster greater community involvement, public awareness and understanding of the value of earth heritage sites, both as wildlife habitats and as resources for education and study of the geology of Torbay**
 - Establish Geodiversity Officer post by 2008
 - Achieve designation of Torbay as a European Geopark by 2008
 - Roll out annual programme of events and activities
- 6) Establish a programme of research and monitoring across the sites**
 - Establish both site based and document based research where areas are not yet fully documented or contemporary reviews are lacking e.g. Devonian palaeontology and Berry Head Caves by 2009

6.7.1 Background & Current Status

Torbay is geologically famous for its limestone cliffs and quarries. In the early 18th century when scientists were developing a system of naming the principal periods of geological time, fossils found at sites in Torbay, such as Lummaton Quarry, made an important contribution to understanding what was happening on Earth from around 409-363 million years ago. As a result a period of geological time named the Devonian was proposed and was soon used globally to identify rocks and fossils with a similar age.

Torbay also includes excellent exposures of Permian “Red Beds”, which overlie the older Devonian rocks. These were laid down in desert wadis and plains and date from around 280-240 million years ago. Tectonic structures such as folds and faults recall the dramatic mountain building era of the Variscan Orogeny and unique mineral deposits of Triassic age all contribute to the heritage of the bedrock of the Bay.

Relatively high sea levels within the last 10 million years or so cut the distinctive, high level marine platform which tops Berry Head, whilst the development of karstic features and caves is characteristic of the dramatically fluctuating climates of the Quaternary, which started around 2.6 million years ago with its alternating ice ages and warmer interglacials. As Torbay lay south of the maximum limit of glacial ice sheets, it therefore provides key evidence of these changes as permafrost 'head', raised beaches and, crucially, caves (in addition to excellent examples of more recent coastal processes and landforms).

The international importance of the historical type localities of the Devonian, the Permian 'Red Beds' and the Quaternary raised beaches are all recognised through the GEOSITES project, initiated by the IUGS (International Union of Geological Sciences) and supported by UNESCO to develop an inventory of globally important geological sites

The inclusion of this Earth Heritage section within the Nature of Torbay recognises the wealth of geodiversity underpinning the biodiversity within the Bay and the requirement to manage it sensitively.

The importance of Torbay's geological heritage is recognised by the abundance of designated geological sites.

- 11 SSSI (Site of Special Scientific Interest)
- 1 NNR (National Nature Reserve)
- 1 LNR (Local Nature Reserve)
- 6 CGS (County Geological Site – known as RIG sites in other counties) A further 10 sites are currently proposed for CGS status.
- 15 GCR (Geological Conservation Review Network sites)

Table 9: Table shows geological sites and their current designations. Data from English Nature website (<http://www.english-nature.org.uk/special/sssi/search.cfm>) and citation sheets. Please refer to Figure 6.a for map of sites.

Table Heading Key: A: Interpretation - B: Geoeducation - C: Geotourism - D: No Geotourism,

Site No.	SITE name and GCR reference	SSSI Grid ref	CGS	A	B	C	D
1	Babbacombe Cliffs: Marine Devonian (No.421, SX929655)	SX928662 to SX930655				x	
2	Barcombe Mews Quarry, Shorton		SX86SE1				x
3	Barton Quarry		Proposed				x
4	Berry Head to Sharkham Point	SX937568, SX947565, SX937546	Proposed	x	x	x	
5	Black Head and Anstey's Cove	SX932654 to SX944633 and SX944628	Proposed	x			
6	Breakwater Quarry, Brixham		Ref: SX95NW1		x		x
7	Brokenbury Quarry, Churston Ferrers		Ref: SX85SE1				x
8	Brixham Cavern		Proposed				x
9	Chapel Hill, Torre		Ref: SX96NW1		x		x
10	Churston Cove / Churston Point		Proposed			x	
11	Crystal Cove		Proposed			x	
12	Daddyhole: Marine Devonian (No 425, SX928628)	SX927628		x		x	
13	Dyers Quarry: Marine Devonian (No 468, SX921628)	SX922628		x		x	
14	Goodrington Quarry and Road Cutting		Ref: SX85NE1				x
15	Hollicombe Head to Corbyns Head		Proposed		x	x	
16	Hopes Nose to Wall's Hill: Marine Devonian (No 426, Hopes Nose, SX948635)	SX932654 to SX944633 and SX944628		x	x	x	
17	Hopes Nose: Mineralogy of SW England (No 1725, Hopes Nose, SX949636)	SX932654 to SX944633 and SX944628		x	x	x	
18	Hopes Nose and Thatcher Rock	SX932654 to SX944633 and SX944628		x	x	x	
19	Hopes Nose South	SX932654 to SX944633 and SX944628	Proposed	x	x	x	

20	Kents Cavern: Quaternary of SW England (No 1312, SX935641)	SX934641		x	x	x	
21	Long Quarry: Marine Devonian (No 420, SX937651)	SX932654 to SX944633 and SX944628				x	
22	Lummaton Quarry: Marine Devonian (No 471, SX912665)	SX912665					x
23	Meadfoot Sea Rd: Marine Devonian (No 422, SX934633)	SX934633			x	x	
24	New Cut: Marine Devonian (No 429, SX93526375)	SX9353, SX6575					x
25	Oddicombe: Permian-Triassic (No 1496, SX927660)	SX928662 to SX930655		x	x	x	
26	Petitor, Maidencombe		Proposed			x	
27	Quarry Woods Quarry, Cockington		Ref: SX96SE1				x
28	Roundham Head: Permian Triassic (No 1504, SX896603, SX894598)	SX898601		x		x	
29	Saltern Cove: Marine Devonian (No 424, SX89555880 to SX89655805)	SX895585		x	x	x	
30	Saltern Cove: Permian Triassic (No 1503, SX894591 to SX896586)	SX895585		x	x	x	
31	Sharkham Iron Mine	SX937568, SX947565, SX937546	Proposed	x			
32	Shoalstone: Permian-Triassic (No 1494, , SX934568, SX939568)	SX937568, SX947565, SX937546			x		

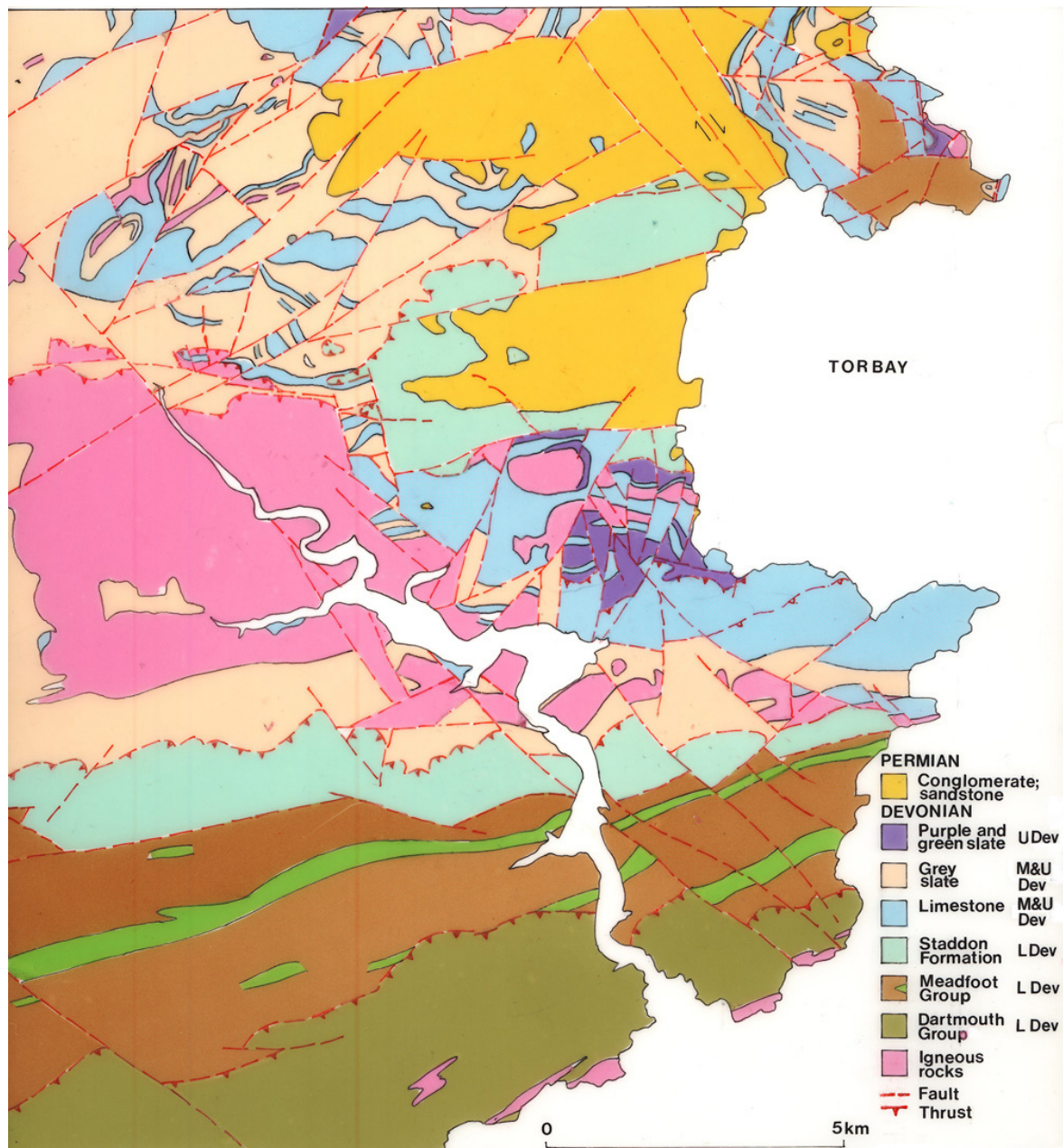


Figure 6.b: Geological map of Torquay and surrounding area

6.7.2 Key Features

i) Caves and Karsts and Mines

Cave sediments and other deposits including speleotherms (stalagmites, stalactites etc) can reveal evidence of past landscapes, groundwater chemistry and climate over the last half a million years.

Torbay has some of the best examples of coastal solution caves in the UK at Berry Head, in addition to other cave systems which are more dominantly phreatic (systems formed by ground water solution).

Several of the caves in the district provided animals and earliest man, of the Pleistocene period, with shelter when the shape of the Bay was present in the form of rock exposures and plains but sea levels were much lower than today. Evidence of Middle Quaternary bears and handaxes in Kents Cavern dated with a minimum age of 350,000 years ago (potentially they could be significantly older) identify the caves as the oldest human shelter known in the British Isles.

The stable environmental conditions found within caves provide ideal roosting sites for bats and fragile biological assemblages.

Key geological features/sites:

- Coastal solution caves at Berry Head (SSSI)
- Caves with nationally / internationally important sediment and palaeontological record at Kents Cavern (SSSI)

The current problems/threats to this habitat:

- Visitor pressure: collection of geological specimens, erosion and damage to biological assemblages, cave floor sediments and items of archaeological importance by trampling, disturbance of roosting bats and cave dwelling species.
- Uncontrolled access
- Infilling from landfill and other waste disposal, pollution and contamination of underground water courses and bodies
- Lack of information of the distribution and the ecology of cave dwelling species
- Lack of reliable geological information which is co-ordinated and communicated

Key Species

Refer to Horseshoe bat SAP,
Daubenton's bat, Natterers bat, Brown Long Eared bat
Gammarid cave shrimp *Niphargus glenniei* (known sites include Fishcombe Quarry, Colemans maze and Kents Cavern)
Thysanuran bristletail *Trigoniophthalmus alternatus*
Bloxworth Snout

ii) Quarries and cuttings

Torbay's disused quarries provide unique exposures of geology and are an important supplement to the natural exposures provided by coastal cliffs. Building stone, road stone, and aggregate, brick making material, pottery clay, mineral pigments and iron ore have all been mineral products from Torbay in the

past. Operational sites are now closed with the exception of the limestone quarry at Yalberton, Paignton. Large quantities of Devonian limestone were exported from coastal quarries in the past for use as building stone in addition to local use in the sea walls and other structures. Cleaved Devonian mudstone was formerly quarried near Brixham for roofing slates and Permian breccias and Devonian sandstones have been used in the construction of local walls and buildings. The built environment thus provides ideal opportunities to show the links between history, culture and the geological past.

Often providing warm sheltered microclimates, quarries and cuttings provide a suitable environment for a rich and diverse assemblage of vegetation and insects, some of which occur at few other sites in Devon.

Key geological features/sites:

- Middle Devonian Lummaton Shell Beds of Givetian age at Lummaton Quarry (SSSI)
- One of the most fossiliferous exposures of the Staddon facies of the Lower Devonian Meadfoot Group at New Cut (SSSI), Torquay
- The exceptional coralline-sponge reef deposits of Long Quarry Point (Hopes Nose to Walls Hill SSSI).
- Exposures of stromatoporoid fossils and Neptunean Dykes at Berry Head quarry.

The current problems/threats to this habitat:

- Development: expansion of industrial estates and housing
- Waste disposal/dumping/landfill
- Lack of safe public access where appropriate
- Natural degradation/neglect: invasion of scrub which obliterates exposures and dominates the rarer wildlife habitats
- Damage to rare or delicate geological features or deposits by inappropriate or irresponsible specimen collection.
- Lack of information on the distribution and the ecology of resident species
- Lack of reliable geological information which is co-ordinated and communicated

Key Species

Refer to Small blue butterfly SAP

Refer to Horseshoe bat SAP

Daubenton's bat, Barbastelle

Peregrine

Bloxworth Snout

Trigoniophthalmus alternatus

Niphargus glenniei

iii) Coastal Exposures and Geomorphological features

NB also refer to Maritime Cliff and Slope

Coastal geological sites form a very important part of Torbay's geological resource. Foreshore and cliff exposures provide key, readily accessible, excellent exposures of Devonian limestones and slates and Permian deposits. Sea level change records are evident in the form of both raised beaches (Hopes Nose) and drowned forests (Torre Abbey Sands and Goodrington Beach)

Key geological features/sites

- Quaternary stratigraphy and sea level changes at Hopes Nose (SSSI)
- Marine Platform at Berry Head (SSSI)
- One of the most important Upper Devonian localities in Britain at Waterside Cove, part of Saltern Cove SSSI
- The excellent exposures of Permian wadi deposits at Saltern Cove including unique burrows presumed to have been made by reptiles.
- The unique palladium-selenium-gold deposits of Hopes Nose.
- The cliffs and landslips of St Mary's Bay with their important Devonian faunas including some of the oldest ammonoids in Britain.
- Quaternary platforms and raised beaches at Thatcher Rock and Shoalstone/Berry Head, the importance of the latter being due to the sites close proximity to the dated marine sediments in Berry Head caves.
- Superb exposures of fossiliferous Middle Devonian limestones at Hope's Nose, Triangle Point and Sharkham.

The current problems/threats to this habitat:

- Coastal development and defence (Inappropriate construction of coastal defences can completely conceal rock exposures and result in the effective loss of the geological interest. In addition, any development that prevents or slows natural erosion can have a damaging effect. Erosion is necessary to maintain fresh geological outcrops. Reducing the rate of erosion usually results in rock exposures becoming obscured by vegetation and rock debris.)
- Natural degradation/neglect: invasion of scrub which obliterates exposures and dominates the rarer wildlife habitats
- Beach management regimes
- Damage to rare or delicate geological features or deposits by over-use or irresponsible or inappropriate specimen collection.
- Pollution
- Lack of safe public access where appropriate
- Lack of reliable geological information which is co-ordinated and communicated
- Lack of information of the distribution and the ecology of resident species

Key Species

Refer to Maritime Cliff and Slope and Lowland Calcareous Grassland HAP

Table 10: Earth Heritage Action Plan. Actions shaded in grey indicate further funding is required.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Earth Heritage	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy and legislation				
EH1 - Ensure all designated sites are detailed within local planning docs	H	1,2,4	TC, TCCT	✓
EH2 - Ensure PPS9 is adhered to	H		TC, NE	✓
EH3 - Achieve CGS designation of proposed sites	H	1,2,4	TCCT, Devon RIGS, TC	
EH4 - Ensure survey and recording of temporary exposed sections	H	1,4,6	TC, NE, Devon RIGS	✓
EH5 - Seek funding to establish a Geodiversity Officer to co-ordinate actions	H	3	TCCT, ERGO	
Site Management				
EH6 - Review site specific management plans to ensure integrated geological-ecological approach, and to allow natural erosion to continue	M	1,2,4,	TCCT, TC, NE	✓
EH7 - Produce management plans for new sites as and when appropriate	H	1,2,4	TCCT, TC, NE	✓
EH8 - Ensure that all geological sites at risk from overuse (including over collection of specimens) are identified and measures taken to improve access management.	H	1,2,4,	TCCT, NE, Devon RIGS	✓
EH9 - Improve public access to key sites	L	1,5,6	TCCT	
Communication and Publicity				
EH10 - Develop an interpretation strategy to educate the public and publicise geodiversity.	H	4,5	TCCT, ERGO	

EH11 - Increase public awareness through, volunteer opportunities, events and developing field trips and resources for schools and colleges.	M	5	TCCT	✓
EH12 - Develop links with other Earth Heritage sites both locally and globally	L	4	TCCT, ERGO	✓
EH13 - Apply for Geopark designation and promote if successful.	H	4,5	TCCT	✓
Advisory				
EH14 - Promote and encourage adherence to TCCT Policy and appropriate codes of conduct for geological fieldwork.	H	1,2,4	TCCT, Devon RIGS	✓
EH15 - Establish and maintain network of scientific officers that can be consulted	M	1,2,4	TCCT, ERGO	✓
EH16 - Provide advice on management to the owners/managers of CGS.	H	1,3,4	Devon RIGS, ERGO, TCCT, THF, NE and site owners	✓
Research and Monitoring				
EH17 - Ensure audit, research and monitoring information is linked with site protection and management	H	1,2,4,6	TCCT, TC, NE, Devon RIGS	✓
EH18 - Encourage research of Cave morphology, flora and fauna	M	1,2,5,7	TCCT, TC, NE, Devon RIGS	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), English Riviera Geopark Organisation (ERGO)

6.8 Parkland and veteran trees

Main Objectives & Key Actions:

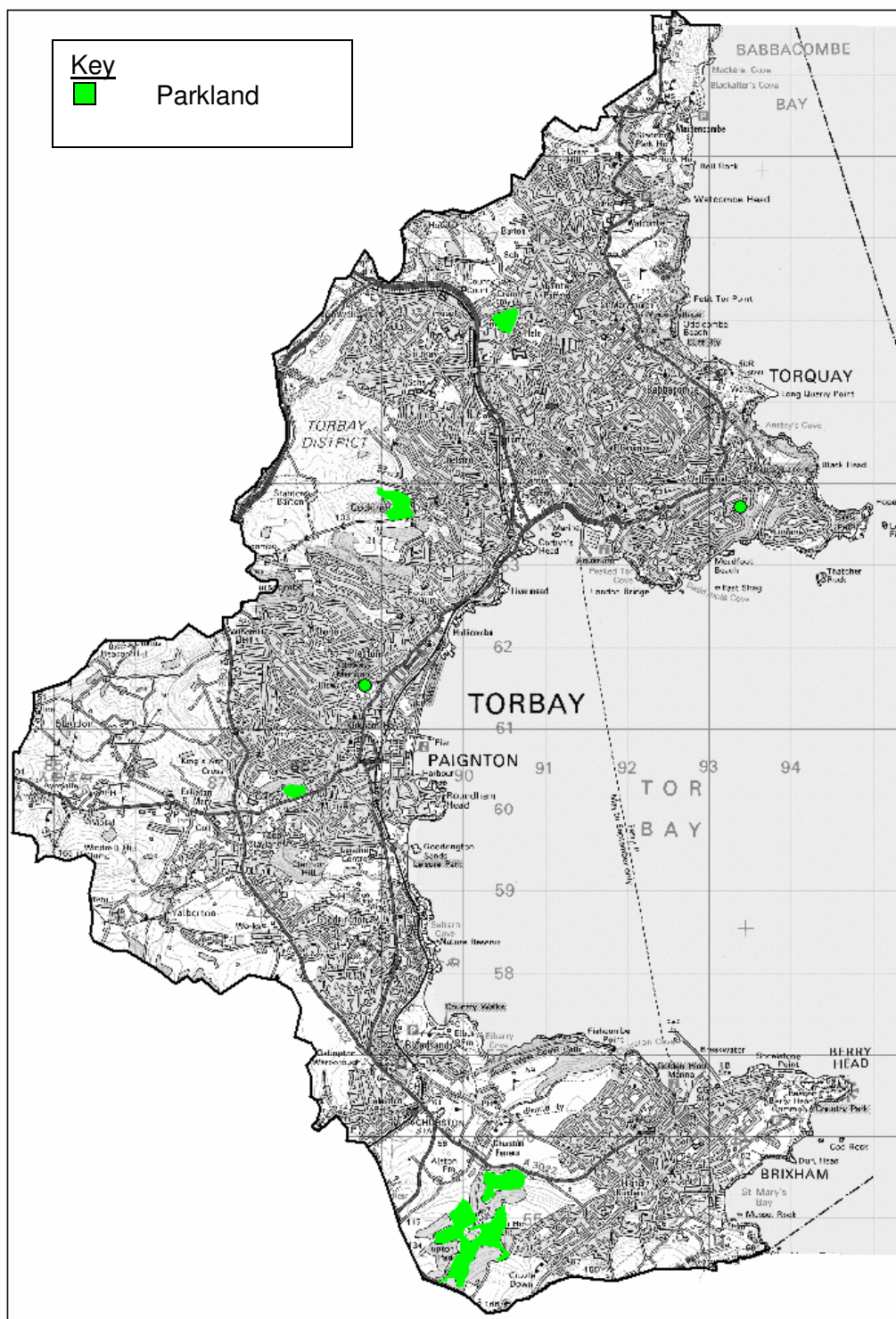
- 1) Conserve and enhance the current extent, distribution and quality of parkland and veteran trees in Torbay.**
 - If appropriate increase designation of suitable sites by 2008.
 - Establish Environmental Stewardship agreements in areas of Parkland/Veteran Trees by 2012.
- 2) Extend and improve knowledge of the parkland and veteran tree resource and research into best management options.**
 - Complete inventory of Torbay's veteran trees by 2012.
 - Establish the current resource of parkland in Torbay by 2009.
- 3) Ensure that the management of surviving sites acknowledges and incorporates the biological value of parkland as well as historical, cultural and agricultural aspects by 2012.**
- 4) Restore, where appropriate, the quality of parkland by ensuring long term recruitment and by linking and buffering within existing sites.**
 - Seek to restore 50% by 2012.
- 5) Continue to encourage appreciation and interpretation of Torbay's parkland and veteran trees.**
 - Encourage local community to be involved in the Veteran Tree Hunt – ongoing.

6.8.1 Background & Current Status

The South West Biodiversity Action Plan broadly defines parkland as 'Sites with old trees, sometimes mixed with younger trees of various ages but often associated with open habitats including grassland'. A veteran tree is usually old, having survived longer than other trees of the same species.

Parkland and veteran trees are not only valuable resources of biodiversity, but are also of great historical significance, and this double interest affords these environments a special place in Devon's natural and cultural heritage (Devon BAP). Nationally it is estimated that between 10 – 20,000 ha of working lowland pastures and parks remain and Devon is estimated to currently hold 1753 ha of this habitat (The Biodiversity of the South West).

The two main areas of parkland in Torbay are Cockington Country Park, Torquay and Lupton Park, Brixham. Cockington Country Park totals c 186 ha of parkland, woodland and farmland and has CWS and LWS status. Lupton Park is a LWS and has 108 ha of parkland and woodland and is currently managed privately as permanent pasture. There are also small areas of parkland (c 1.3 ha) at Primley Park, Paignton, Brunel Woods, Rainbow Estate, Torquay Cemetery (Barton Road), Oldway Gardens and Castle Tor. Figure 7 shows the current areas identified as having parkland in Torbay.



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Figure 7: Map showing areas of Parkland in Torbay, identified using aerial photography.

Cockington Country Park is managed by Torbay Coast and Countryside Trust and was established in 1991 to regenerate an area of neglected and under-used urban fringe countryside. The exact figure for number of hectares as parkland is currently not known, as current figures combine woodland and farmland habitats. Lupton Park is known for its rare lichens including *Cryptolechia carneolutea* and *Lobaria pulmonaria*.

Candidate Species to be highlighted:

Lobaria pulmonaria – lichen.
Wadeana dendrographa – lichen.
Melaspilea lentiginosa – lichen.
Physcia tribacioides – lichen.
Parmelina quercina – lichen (parkland species)
Greater horseshoe bat
Lesser horseshoe bat
Noctule bat

6.8.2 The current problems/threats to this habitat:

- Removal of old trees and dead wood and cessation of old management practices e.g. pollarding.
- Recreational pressures – too tidy and too safe.
- Uniform age structure and fragmentation of sites.
- High stocking rates – compaction, trampling, bark stripping and nutrient enrichment around trees.
- High grazing levels – species poor grassland
- Grassland management – intensive in areas that have the potential for habitat enhancement.
- Inappropriate use of herbicides and fertiliser.
- Machinery – trees damaged by collisions and bad tree surgery.
- Lack of knowledge
- Loss of hedgerows

Table 11: Parkland & Veteran Tree Action Plan. Actions shaded in grey indicate further funding is required.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Parkland & Veteran Trees Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
P1 - Ensure TC follow PPS9 recommendations for 'veteran' trees.	H	1	TC, NE	✓
P2 - Ensure that development schemes do not affect the integrity or conservation of this resource and are considered in planning applications.	H	1	TC, NE	✓
P3 - Encourage development of strategies to promote positive management of parkland.	M	1,3	TC, NE, TCCT	✓
Site Management				
P4 - Ensure management plans include sympathetic management actions for parkland ecology and veteran trees.	H	1,2, 3	NE, TCCT, TC, WWCT, PZ	✓
P5 - Encourage ES of land surrounding parkland as a buffer zone.	M	1,2	TCCT, NE, TC	✓
P6 - Reduce generation gaps by planting native species.	M	1,4	TCCT, TC	
P7 - Identify the next generation of veteran trees in the Bay and seek protection.	M	2,5	TCCT, TC	
P8 - Restore degraded areas of parkland.	M	1,4	TCCT, TC, Landowners, WWCT	
P9 - Look to parkland sites to CWS status if appropriate.	H	1	TC, DBRC	
P10 - Encourage farmers and land managers to look into ES schemes to help protect veteran trees and parkland.	M	1,5	TCCT, DEFRA	

Communication & Publicity				
P11 - Promote the trees at Cockington – produce a tree trail and leaflet.	L	5	TCCT	
P12 - Promote Torbay's veteran trees through walks, talks newspaper etc	M	5	TCCT, WWCT	✓
Advisory				
P13 - Advise developers, landmanagers, farmers and tree workers on best management practice for veteran trees and parkland. Refer to documents produced by Woodland Trust and English Nature.	H	1,2,5	TC	✓
Research & Monitoring				
P14 - Work with volunteers and local community to undertake surveys of veteran trees.	M	5	TCCT, WWCT, PZ	
P15 - Produce a veteran tree database, map and submit to the Woodland Trust 'Ancient Tree Hunt'.	M	5	TCCT	
P16 - Work with relevant groups to establish and carry out parkland species surveys e.g. invertebrates and lichens.	M	5	Peninsular Invertebrate Forum, BLS, TCCT, WWCT, PZ	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Biodiversity Records Centre (DBRC), British Lichen Society (BLS), Paignton Zoo, Whitley Wildlife Conservation Trust.

6.9. Wetlands

Main Objectives & Key Actions:

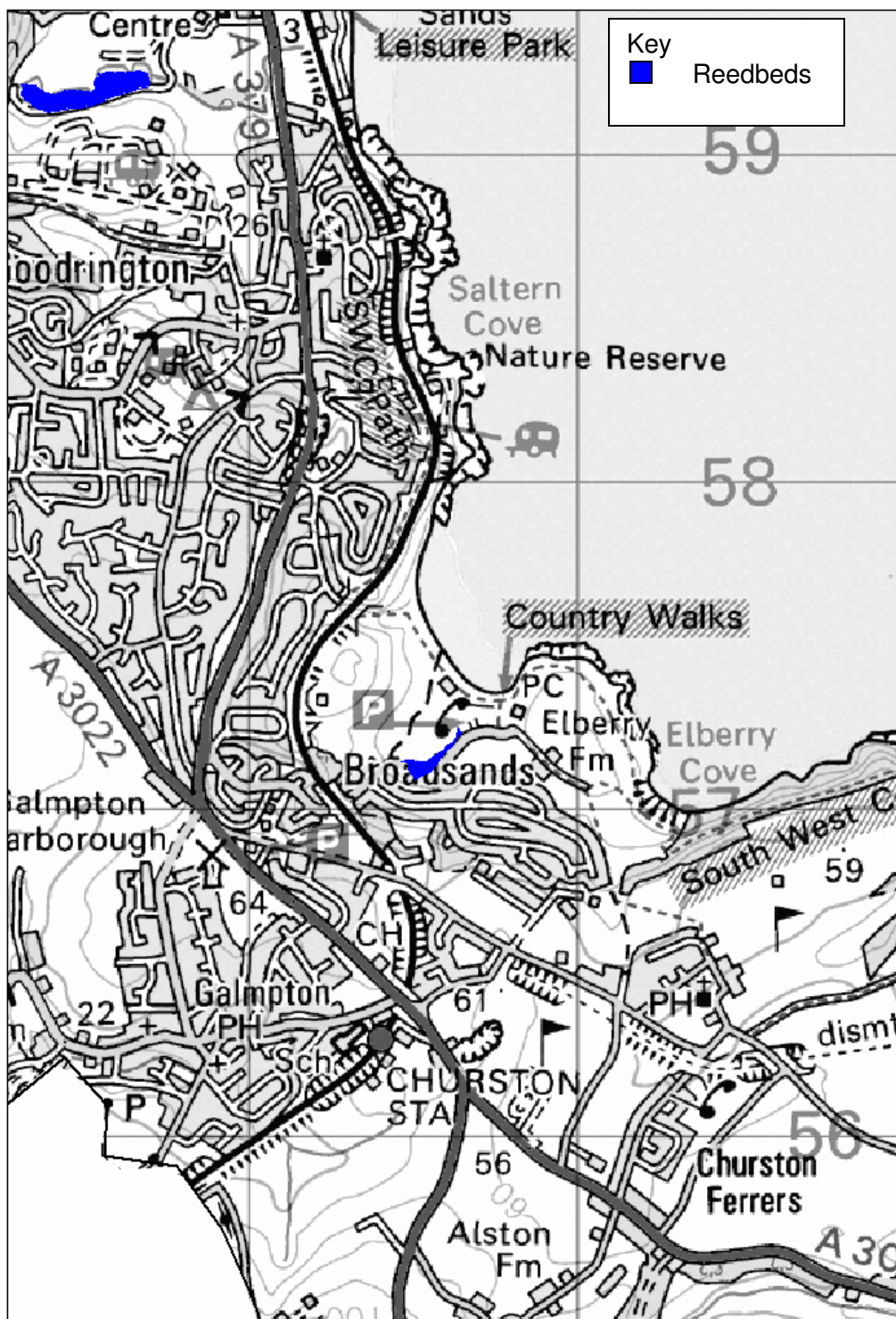
- 1) Conserve and enhance the existing remnant areas of reedbeds and open water.**
 - Improve designation of sites by 2009.
 - Restore the current resource of reedbeds by 2012.
- 2) Manage marginal vegetation to create a mosaic of reedbed, areas of scrub and Sallow woodland.**
 - Complete up to date management plans for identified sites by 2012.
- 3) Manage the sites for key species of conservation concern.**
 - Establish complete list of reedbed key species by 2009.
- 4) Survey and monitor the areas of reedbeds and associated habitats.**
 - Ongoing.
- 5) Increase education and awareness of Torbay's wetlands.**
 - Install interpretation boards at Broadsands and Clennon Valley by 2009.

6.9.1 Background and Current Status

The term 'Wetlands' in this action plan refers to reedbeds, open water and ditches. Farmland ponds are included in the Farmland Habitat Action Plan. Reedbeds are a rare and threatened habitat in the UK, with only about 5000 ha in total and provide a habitat for species such as the reed warbler, bittern, Cetti's warbler, water rail, tufted duck and unusual plants and invertebrates.

Although wetlands can only be found in small pockets in Torbay and there are no rivers, some wetland areas have been identified as having considerable wildlife value (Torbay Wildlife Survey, 1991). Reedbeds were once extensive in Torbay with historical sites at Goodrington Sands, Broadsands, Preston, Paignton and Torre Abbey Sands. Broadsands and Clennon ponds now have small areas of remnant reedbeds (*Phragmites australis*), with c 1.5 ha at Broadsands and have been under-managed for a number of years. Figure 8 shows the current areas of reedbeds in Torbay. Torbay's reedbeds are important as a link for bird species between bigger areas of reedbeds outside the Bay at Slapton Sands and the Teign and Exminster Marshes. A bittern has been sighted on the reedbeds at Broadsands.

Clennon Valley ponds are by far the most significant area of open water in Torbay and support interesting aquatic and marginal flora, including extensive stands of Common Reedmace *Typha latifolia* (Torbay Wildlife Survey, 1991) and the most productive breeding population of tufted duck in the county in 2005 (minimum 4 pairs and 5 broods raised). There is also a substantial lake system within Paignton Zoo which is used by native species as well as zoo birds.



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Figure 8: Map showing areas of Reedbeds in Torbay.

The marshland habitat creation at Youngs Park is already proving to be a success with birdlife and with continued management could create a small window into the past showing what the whole of Goodrington would have been like.

Key Species:

Cetti's warbler
Water rail
Reed warbler
Sedge warbler
Silky wainscot
Fen wainscot

6.9.2 The current problems/threats to this habitat:

- Inappropriate management leading to scrub dominance and succession to woodland.
- Small, isolated fragments.
- Development pressures
- Trampling
- Coastal defence and urban squeeze.
- Pollution and litter.

Table 12: Wetlands Action Plan. Actions shaded in grey indicate further funding is required.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Wetlands Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
W1 - Ensure that development schemes do not affect the integrity or conservation of this resource and are considered in planning applications.	H	1	TC, NE	✓
Site Management				
W2 - Control Japanese Knotweed at Clennon Valley.	H	1,2,3	TC	✓
W3 - Draw up plans on cutting techniques and regime.	M	1,2,4	TC, TCCT, NE	
W4 - Control scrub and willow carr by cutting and extraction of stumps.	M	1,2,4	TC, TCCT	
W5 - Draw up a management plan	H	1,2,4	TCCT	

for the area of willow carr at Broadsands.				
W6 - Control bulrush to allow regeneration of phragmites.	M	1,2,4	TC, TCCT	
W7 - Plant phragmites rhizome at Youngs Park	M	1,2,4	TC	
W8 - Maintain, continue flow within the natural water courses.	H	1	TC	✓
Communication & Publicity				
W9 – Install a board walk at Clennon and Broadsands.	L	5	TCCT, TC	
W10 - Increase interpretation and consider options for environmental education at sites.	L	5	TCCT, TC	
W11 - Involve voluntary groups in the local area to help with management.	M	1,5	TCCT, TC	✓
Research & Monitoring				
W12 - Re-survey to look into promoting Broadsands marsh from a LWS to a CWS.	H	4	TCCT, DBRC, NE	
W13 - Monitor areas of Japanese Knotweed	H	1,2,3	TC	✓
W14 - Determine areas where past ponds existed.	L	4	TCCT, TC	
W15 - Establish a list of species of key conservation concern.	M	3,4	TCCT, DBPS	
W16 - Map distribution and condition of the Phragmites.	M	1,2,4	TCCT, TC	
W17 - Conduct standard surveys for invertebrate, bird and plant species.	M	4	TCCT, TC, DBWPS, PZ	
W18 - Survey the area covered by willow carr and monitor the regeneration of the reed.	H	4	TCCT, TC	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Bird Watching and Preservation Society (DBWPS), Paignton Zoo.

7.1. Seabirds – Lead Partner RSPB

Main Objectives & Key Actions:

- 1) **Maintain suitable conditions for internationally important populations of seabirds including, Balearic shearwater.**
 - Ongoing.
- 2) **Maintain suitable conditions for nationally important species of seabirds including black-necked grebe, shag, guillemot.**
 - Investigate the creation of a winter protected zone from Roundham to Seven Quarries by 2009.
 - Strictly control the use of gill nets by 2008.
 - Increase an awareness and compliance with the Area of Special Protection at Berry Head - ongoing.
- 3) **Maintain numbers of breeding herring gulls.**
 - Ongoing.
- 4) **Improve data collection, dissemination and communication between groups.**
 - Ongoing.

7.1.1 Background & Current Status

Torbay is nationally important as a winter roost site for a number of bird species, holding up to 40% of the national winter population of black-necked grebes. Berry Head is nationally important for its guillemot colony, with up to 450 pairs present in the spring, forming the largest breeding colony on the English Channel Coast. The cliffs and surrounding water are as a result designated an Area of Special Protection.

Other seabirds that breed on Torbay's cliffs: Shag, herring gull and kittiwake are notable. A large winter population of divers and grebes has developed in Torbay over recent years with, for example, upwards of 100 great crested grebes being seen at one time. A winter roosting herring gull count of approximately 12,000 individuals has been counted in one evening (pers comm, Langman, 2005). The Balearic shearwater, a critically endangered species is also seen in and around Torbay.

Refer to the Torbay Marine BAP for more information.

Species to be included:

Guillemot	Razorbill
Red-throated diver	Black- throated diver
Great northern diver	Great crested grebe
Black-necked grebe	Red-breasted merganser
Manx shearwater	
Slavonian grebe	

Kittiwake
Balearic shearwater
Common scoter

Fulmar

7.1.2 Current problems/threats to these species:

- Noise disturbance – nesting
- Gill nets
- Need more research on stability of population numbers (especially divers)
- Litter
- Lack of systematic data collection of breeding seabirds and productivity, distribution of wintering birds and the frequency of use of Torbay and Lyme bay by Balearic shearwater, especially to determine feeding areas.
- Leisure activity disturbance wind surfers, kite boarders, water skiing the uncontrolled proliferation of these activities does affect the winter populations of seabirds.

Table 13: Seabirds Action Plan Table. Actions that require further funding are shaded in grey.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Seabirds Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
S1 - Investigate the creation of a marine nature reserve extending from Roundham headland to Seven Quarries.	H	1, 2, 3,4	NE, TCCT, TC	
S2 - Establish a code of conduct on gill nets only being set out at dusk and brought in at dawn.	H	1,2,4	DSFC, NE,	
S3 - Devon Sea Fisheries to strictly control the use of gill nets e.g. code of conduct.	H	1,2,4	DSFC, NE	✓
S4 - Introduce byelaw on not feeding seagulls.	L	3	TC	
S5 – Investigate the feasibility of establishing a no launch from Broadsands for kite boarding/windsurfing between Oct – march. Implement with notices.	M	2	TC, NE	
Species & Site Management				

S6 – Investigate creating no go zones for winter leisure activities either with buoys or instruction. Put signs in carparks.	H	2	TC	
S7 - Seek to put guillemot restricted zone into Admiralty Charts.	H	2	NE, Harbour Authority	
S8 - Research into the cost of seagull bins and establish in areas where there is a known problem. Empty existing bins more frequently.	L	3	TC	
S9 - Establish significance (in population terms) of urban breeding herring gulls and seek broad consensus about management if appropriate.	M	3	DBPS, RSPB	
Communication & Publicity				
S10 - Raise awareness of the problems associated with litter.	H	4	TCCT	✓
S11 - Publicise and promote Torbay as a significant wintering seabird population site in the SW/UK.	M	4	TCCT, RSPB	✓
S12 - Increase awareness with boat operators of the guillemot restricted zone.	H	4	Harbour Authority	✓
S13 - Increase communication between bird groups, RSPB, TCCT.	H	4	TCCT, RSPB, Bird groups	✓
Research & Monitoring				
S14 - Continue to take part in the JNCC Seabird Survey at Berry Head.	H	4	TCCT	✓ (yearly)
S15 - Research and monitor the stability of the population/numbers (especially divers) and the population decline in kittiwakes.	H	4	TCCT, DBPS, RSPB	✓ (yearly)
S16 - Encourage and increase the sharing of seabird data in the Bay.	H	4	TCCT	✓
S17 – Research into the problems associated with Kite surfers and wintering birds at Broadsands	H	2	DBPS	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Bird Watching and Preservation Society (DBPS)

7.2 Cirl Bunting (*Emberiza cirlus*)

Lead Partner RSPB

Main Objectives & Key Actions:

- 1) Maintain/increase population numbers in Torbay**
 - Establish where value can be added to existing agri-environment agreements to deliver improved management for cirl buntings by 2008.
 - Maintain and increase population by 30% by 2009.
- 2) Maintain/increase geographical spread and reduce fragmentation.**
 - Maintain the current range and focus future management in buffer areas around hotspots – ongoing.
 - Create 50 ha of new appropriate habitat through agreements with landowners by 2012
- 3) Maintain/increase the favourable management of sites for the cirl bunting.**
 - Ensure no net loss of winter stubble – ongoing.
 - Ensure Maidencombe, Cockington and Occombe continues agri-environment agreement for cirl buntings – ongoing.
- 4) Improve knowledge of the cirl bunting population and range.**
 - RSPB/NE to continue to conduct 6 yearly Cirl Bunting Survey – ongoing.
- 5) Raise awareness with the public and land managers of the importance of the cirl bunting as an indicator of the health of the farmed environment.**
 - Ongoing.

7.2.1 Background and Current Status

In the 1930's cirl buntings were widespread, found across most of southern England and parts of Wales. Cirl buntings started to decline as farming became more intensive and traditional mixed farmland was lost. By 1989 the range had dramatically contracted to South Devon with only 118 pairs left (UK BAP). Cirl bunting numbers are now recovering, through the work of the RSPB and partners, and the numbers recorded in the last 2003 survey showed 697 pairs. Torbay currently has approximately 60 pairs, which is 8.5% of the UK population. Its current range in Torbay is concentrated around Maidencombe, Cockington, Elberry and Brixham.

The cirl bunting is described by the RSPB as 'a bird of traditional mixed farmland. Thriving in a landscape characterised by a patchwork of small arable fields and grazed pasture, bounded by tall, thick hedges and abundant scrub on valley slopes and corners.' Cirl buntings rely on seeds and spilt grain left in stubble and feed their chicks predominantly on large insects, such as grasshoppers and crickets in the Spring and Summer.

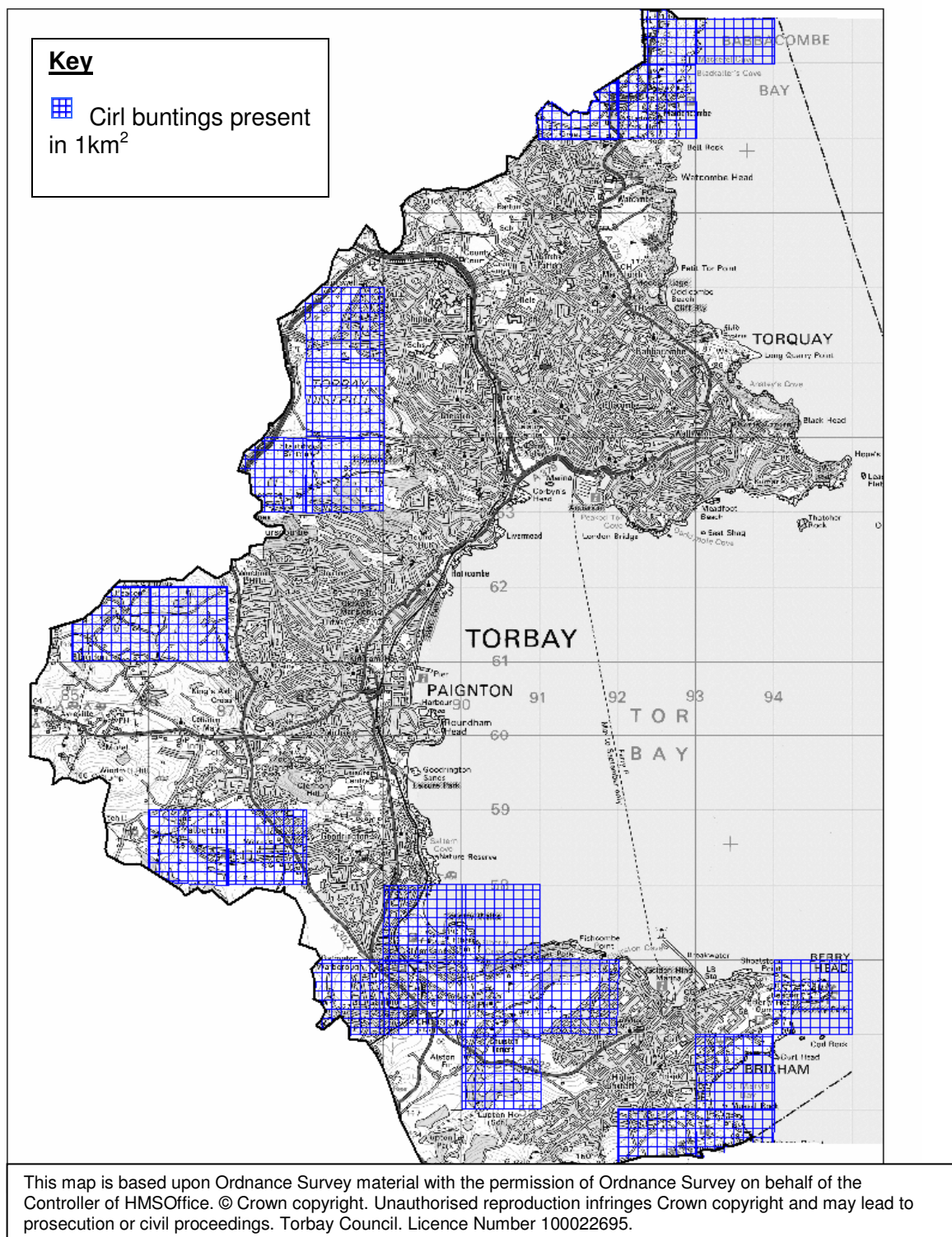


Figure 9: Map to show the presence of cirl buntings in 1km squares. Data was kindly provided from the RSPB 2003 Farmland Bird Survey, which was funded by RSPB, Natural England and Defra.

In 1993 the RSPB, funded by English Nature (from 1995), set up a Cirl Bunting Project which provided advice to farmers and landowners on how to gain grants for cirl bunting friendly management. The Environmental Stewardship (ES) Scheme, which has replaced the Countryside Stewardship and Environmentally Sensitive Areas will hopefully continue to be as successful in increasing favourable management for the cirl bunting. The Cirl Bunting Countryside Stewardship "Special" Project" has been very successful at increasing cirl bunting numbers and will be replaced by an option within the ES that includes a reduced herbicide, cereal crop management, over-wintered stubble and spring crop. These schemes help farmers and land managers by providing funding to deliver environmental management on their land.

Currently in Torbay Maidencombe , Naptor, Occombe and Cockington Farms are in Countryside Stewardship agreements to provide Cirl bunting habitat.

Current species and associated Habitat Protection

Berry Head to Sharkham are designated as NNR, SSSI and SAC.

Occombe SSSI and CWS

Cirl buntings are listed on Schedule 1 of the Wildlife and Countryside Act 1981, EC Birds Directive and listed on Appendix II of the Bern Convention.

Hedgerow Regulations

7.2.2 Current problems/threats to this species:

- Reduction in arable crops and left winter stubble – greatly reduces food availability in the winter months.
- Development pressures
- Improvement of grassland – decline in wildflower rich fields and insect food source.
- Wet, cool weather in the breeding season - results in poor breeding success.
- Disturbance – walkers, visitors during breeding season.

Table 14: Cirl Bunting Action Plan table. Actions that require further funding are shaded in grey.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Cirl Bunting Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
CB1 - Ensure cirl buntings are taken into account in planning applications and the appropriate mitigation is put in place.	H	1	TC, NE	✓
CB2 - Produce a strategic plan for cirl bunting habitat creation through planning gain and ES schemes.	M	1,2,3	RSPB, TC	
CB3 - Ensure Hedgerows are not removed where cirl buntings are present – Hedgerow Regulations.	H	1,2,3	TC, RSPB	✓
CB4 - Include cirl bunting guidance in Supplementary Planning Guidance.	M	1	TC, RSPB	✓
CB5 - Continue/improve consultation between TC and RSPB for planning applications affecting cirl bunting sites.	H	1,2,3,4	TC, RSPB	✓
CB6 - Seek cirl bunting habitat creation and after-care as a condition of relevant planning permissions.	H	1,2,3	TC, RSPB, Developers	✓
Species & Site Management				
CB7 - Seek to establish positive management programmes on SSSIs and look to include adjacent arable land to provide winter stubble.	M	3	TC, TCCT, RSPB, NE	
CB8 - Continue to set up winter feeding stations in cirl bunting territory during periods of hard winter weather.	M	1	RSPB, DBPS	✓ (Yearly)
CB9 - Seek to retain management of sites already undertaking	H	1,2,	RSPB	✓

sympathetic management for ciril buntings and look at HLS.				
CB10 - Promote Environmental Stewardship as a good management tool and ensure that it is targeted at key areas for ciril buntings. Put emphasis on stubbles, 6m cultivated margins, hedgerows.	H	5	RSPB, TC, TCCT, DEFRA	✓
CB11 - Seek to establish protection of key breeding and wintering sites and they are taken into consideration in respect to planning and land-use strategies.	H	1,3,4	TC, NE, RSPB	(Ongoing consideration)
CB12 - Ensure that hedge cutting operations minimise disturbance to breeding ciril buntings and are carried out in a way which encourages suitable nesting sites.	H	1,2,3	TC, RSPB	✓
Communication & Publicity				
CB13 - Promote as farmland 'Flagship' species.	M	5	RSPB, TCCT	✓
CB14 - Run ciril bunting events and talks for members of the public and schools.	M	5	TCCT, RSPB	✓
CB15 - Promote favourable management of farmland for ciril buntings through demonstration farms.	L	5	TCCT, RSPB	✓
CB16 - Promote the ongoing programme of advisory work of RSPB.	M	5	TC, NE	✓
Advisory				
CB17 - Ensure ciril bunting population maps are available to all relevant parties.	H	1,2	TC, RSPB	✓
CB18 - Promote the use of the Devon Hedge Pack advisory literature, produced by Devon Hedge Group.	L	5	TC	✓
CB19 - Liaise with bodies undertaking work near to known ciril sites to minimise damage and to maximise positive benefits for ciril buntings and associated habitat.	H	4	TC, RSPB	✓
CB20 - Ensure that relevant	H	3,5	RSPB	✓

landowners are aware of and take account of the needs of the cirl buntings in the management of their land.				
Research & Monitoring				
CB21 - RSPB to conduct breeding cirl bunting surveys every six years – next 2009.	H	5	RSPB	✓ (every six year)
CB22 - Assess the success of ES agreements in delivering favourable management for cirl buntings.	M	4	RSPB, DEFRA	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Bird Watching and Preservation Society (DBPS).

7.3 Small Blue Butterfly (*Cupido minimus*) – Lead Partner Butterfly Conservation

Main Objectives & Key Actions:

- 1) **Maintain viable population at Lummaton Quarry.**
 - Ongoing.
- 2) **Maintain/increase favourable management of sites with potential for re-colonization.**
 - Bring Wall's Hill and other historic sites into favourable status by 2012.
- 3) **Ensure no net loss of habitat suitable for breeding colonies of Small Blue within Torbay**
 - Ongoing.
- 4) **Encourage establishment of new colonies/restoration of former colonies at suitable sites within Torbay.**
 - When favourable management is achieved look to reintroduce colonies at appropriate sites – ongoing.
- 5) **Maintain a viable network between populations.**
 - Establish and map potential networks between known colonies and seek to implement favourable management by 2012.
- 6) **Continue monitoring to maintain accurate knowledge of numbers and distribution within Torbay**
 - Carry out yearly counts at Lummaton Quarry and sites where reintroductions have taken place – ongoing.
- 7) **Raise awareness of Small Blue and habitat requirements with the community and land owners/managers**
 - Ongoing.

7.3.1 Background and Current Status

The small blue has declined severely since the 1950s. The species has shown a reduction in range of over 50% in the 20th century (Bourn & Warren, 2000), becoming extinct in many areas of northern England and becoming increasingly isolated in some Southern strongholds. A recent study by Butterfly Conservation for DEFRA (2006) highlighted the decline in many British butterfly species, including the small blue.

The small blue is restricted to habitats where the kidney vetch (*Anthyllis vulneraria*) grows, as this is the sole food source for larvae. These include calcareous grassland, dunes and man-made habitats such as disused railways, road embankments and quarries. Research has shown that the most suitable habitats will contain a mosaic of short and tall vegetation and patches of light scrub (Bourn & Warren, 2000). Such habitats can provide shelter required by adults and suitable conditions for growth of kidney vetch. The small blue is a

sedentary species, colonies tend to be small and fluctuate in numbers possibly related to variable flower production in kidney vetch.

Torbay holds one of only three small blue sites in Devon, at the disused Lummaton Quarry; the other known sites in North and East Devon. In the past there have been colonies recorded at other sites in Torbay such as Walls Hill, Daddyhole, Berry Head and Ilsham Valley, but Lummaton Quarry is at present the only existing colony (Figure 9). **The current Torbay site is not accessible to the public.**

Since the discovery of the Lummaton Quarry colony in 1999, TCCT has worked alongside Butterfly Conservation and Torbay Council to manage this site, including scrub clearance to maintain suitable conditions for kidney vetch growth. Transect counts at Lummaton Quarry since 2003 have shown numbers of up to 75 adults present in this colony. However, an area of habitat inside the quarry was lost to industrial development in 2005.

In 2005, TCCT in conjunction with Butterfly Conservation moved approximately 80 small blue larvae from Lummaton Quarry to Wall's Hill with the aim of re-introducing a colony to Walls Hills. TCCT have been working to clear scrub on Walls Hill and improve conditions for kidney vetch. However there have been no confirmed sightings of small blue butterflies in 2006 at Wall's Hill since the reintroduction, and therefore it appears it has been unsuccessful.

Current species and associated Habitat Protection

UK BAP status: Species of Conservation Concern

European threat status: not threatened

Listed under Schedule 5 of the Wildlife and Countryside Act (1981) for sale only

Fully protected under the Wildlife (Northern Ireland) Order (1985) which makes it a criminal offence to kill, injure or take the species as well as own or sell it.

Butterfly Conservation priority: medium (National SAP produced by Butterfly Conservation trust in 2000)

7.3.2 Current problems/threats to this species:

- Habitat loss through scrub encroachment
- Overgrazing – inappropriate grazing regimes at managed sites and grazing from rabbits can lead to removing flower heads of kidney vetch
- Habitat fragmentation and isolation of colonies
- Development pressure on sites
- Habitat destruction from vandalism and fires (these are issues at Lummaton Quarry)
- Human disturbance e.g. through littering, trampling, dog fouling
- Small size of colonies combined with fluctuations in larval food plant kidney vetch can make colonies prone to localised extinctions
- Low dispersal ability of this sedentary species in combination with habitat fragmentation and isolation can restrict recovery and ability to re-colonize

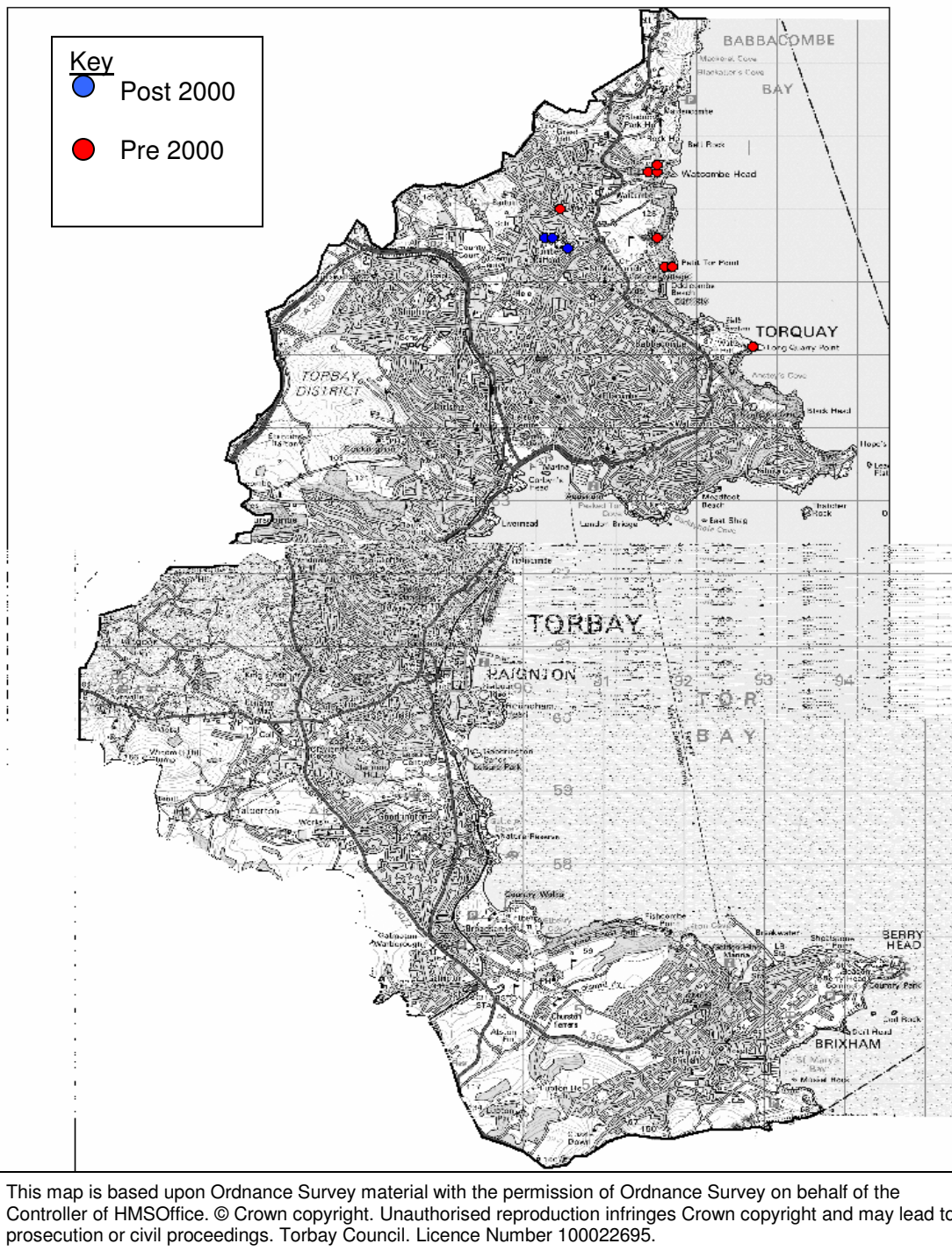


Figure 9: Map to show Small Blue Butterfly records pre and post 2000. Additional data was kindly provided by Devon Biodiversity Records Centre. The current Torbay site is not accessible to the public.

Table 15: Small Blue Action Plan. Actions shaded in grey require further funding.
High priority actions are proposed for completion within the next 3 years (to end of 2009).
Medium priority actions are proposed for completion within the next 6 years (to end of 2012).
Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Small Blue Priority Action Plan	Priority (High, Medium and Low)	Meets Objective	Partners	Ongoing Action
Policy & Legislation				
SB1 - Seek protection of potential Small Blue sites that are not already designated as SSSI or CWS.	H	2	TCCT, TC, NE	
SB2 - Seek to include habitat requirements for Small Blue in any new/revised Environmental Stewardship agreements covering existing or potential habitats	H	1,3,4,7	TCCT, DEFRA, NE, FWAG, BC	✓
Species & Site Management				
SB3 - Continue favourable management of existing site at Lummaton Quarry and Wall's Hill to encourage growth of Kidney Vetch.	H	2, 4	TCCT	✓
SB4 - Incorporate requirements of small blue into appropriate site management plans/statements.	H	3,4,7	TC, TCCT, NE, BC	✓
SB5 - Restore more suitable habitats within Torbay (e.g. through scrub clearance and applying appropriate grazing regimes) concentrating on areas close to existing population where there is potential for natural colonization.	M	3, 4, 5	TC, TCCT, BC	
Communication & Publicity				
SB6 - Use of public/volunteer effort to identify potential areas for re-colonization and link into other surveying projects e.g. Lowland Calcareous Grassland.	L	7	TCCT, BC	✓
SB7 - Raise public awareness of Small Blue population by publicising management work carried out at Lummaton and Walls	H	7	TCCT, BC	✓

Hill, and reporting on success of re-colonization at Walls Hills.				
SB8 - Provide advice on habitat requirements and practical habitat management.	M	1,3,4,7	BC, TCCT, FWAG, NE	✓
Research & Monitoring				
SB9 - Utilise volunteer effort for monitoring of colonies where appropriate	M	7	BC, TCCT	✓ (Yearly)
SB10 - Ensure data on distribution, abundance and habitat requirements available to all relevant authorities/organisations. Data exchange with DBRC.	H	6,7	BC, TCCT, EN, DBRC	✓ (Yearly update)
SB11 - Continue to monitor existing transects and collate results annually	M	6	BC, TCCT, volunteers	✓ (Yearly)
SB12 - Survey work to assess potential for re-colonisation of other sites in Torbay.	M	3	BC, WWCT, PZ, TCCT	
SB13 - Identify potential corridors between habitats (e.g. road embankments, disused railways)	M	5	BC	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Butterfly Conservation (BC), Paignton Zoo (PZ), Whitley Wildlife Conservation Trust (WWCT).

7.4 Horseshoe Bat – Lead Partner Natural England

Main Objectives & Key Actions:

- 1) **Maintain and where suitable enhance current populations of lesser and greater horseshoe bats in Torbay.**
 - Ensure no maternity/hibernation site is threatened and seek remedial work if appropriate – ongoing.
 - Ensure a bat survey is carried out at all sites (where likely to affect bats) before granting planning permission – ongoing.
- 2) **Improve and increase favourable management of feeding areas and flight routes.**
 - Ensure all key feeding areas and flight routes are identified for both bat species by 2012.
 - Seek to establish favourable management of 25% of greater horseshoe feeding areas and flight routes at Berry Head by 2012.
 - Seek to increase favourable management of identified feeding areas and flight routes for lesser horseshoe bat by 2012.
- 3) **Increase an understanding of bat roost distribution in Torbay.**
 - Expand on existing knowledge of population figures and distribution of both bat species by 2009.
- 4) **Raise awareness of the bats in Torbay especially with local community, roost owners, planners, developers and land managers.**
 - Ongoing.

7.4.1 Background and Current Status

Greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) populations are restricted to South West England and South Wales. Bats depend on a good network of diverse habitats and are therefore vulnerable to habitat fragmentation and land change. This means they are good indicators of the health of the local environment.

Greater Horseshoe

The greater horseshoe is one of Britain's rarest bats and Berry Head holds a colony of between 80 – 100 individuals (English Nature, 2005), with an estimate of only 5,000 individuals in the UK. Nationally, it is estimated that the greater horseshoe bat has declined by over 90% in the last 100 years. This is believed to be due to disturbance of roosts especially nursery and winter hibernation roosts, and intensive agricultural practices.

The only known maternity roost in Torbay is at Berry Head and there are another five known hibernation sites and six further roost sites (see Figure 11).

The greater horseshoe's feeding habitat requirements include woodland, scrub, permanent pasture, water and continuous flight paths e.g. hedgerows. The greater horseshoe feeds on larger insects such as dung beetles, chafers and

moths. During the winter the bats hibernate in caves or mines, cellars, disused railway tunnels and, increasingly, in buildings. Greater horseshoe bats hibernate from late September to mid May, depending on the weather and food availability.

In the summer the bats roost in buildings and underground sites and use these roosts as maternity sites. Maternity sites are where reproductively active females gather to rear their young and they are strongly attached to these sites, returning year after year.

Lesser Horseshoe

The lesser horseshoe has suffered severe decline in the northern part of its range and suffers from loss or damage to summer roosts and winter hibernation sites. It has become extinct in northern England and the midlands in the last 100 years and is seriously threatened in many parts of Europe. Current estimates suggest a UK population of around 14,000. In Torbay there is currently recorded one breeding, six hibernation sites and thirteen other roost sites (see Figure 10).

The lesser horseshoe's feeding habitat includes deciduous woodlands, permanent pasture, scrub, parkland, wetlands and continuous flightpaths e.g. hedgerows. They feed on midges, small moths and other small insects. During the winter the bats hibernate in caves, tunnels and other underground sites and in the summer in buildings and warm attics. The lesser horseshoe bat hibernates from September/October until April/May and sets up maternity roosts in April/May.

This Species Action Plan will encourage favourable habitat management in foraging areas and future monitoring of the bat populations in Torbay.

Refer to EN report 'Dispersal and foraging behaviour of greater horseshoe bats, Brixham Devon.' (Robinson *et al*, 2000)

Current species and associated Habitat Protection:

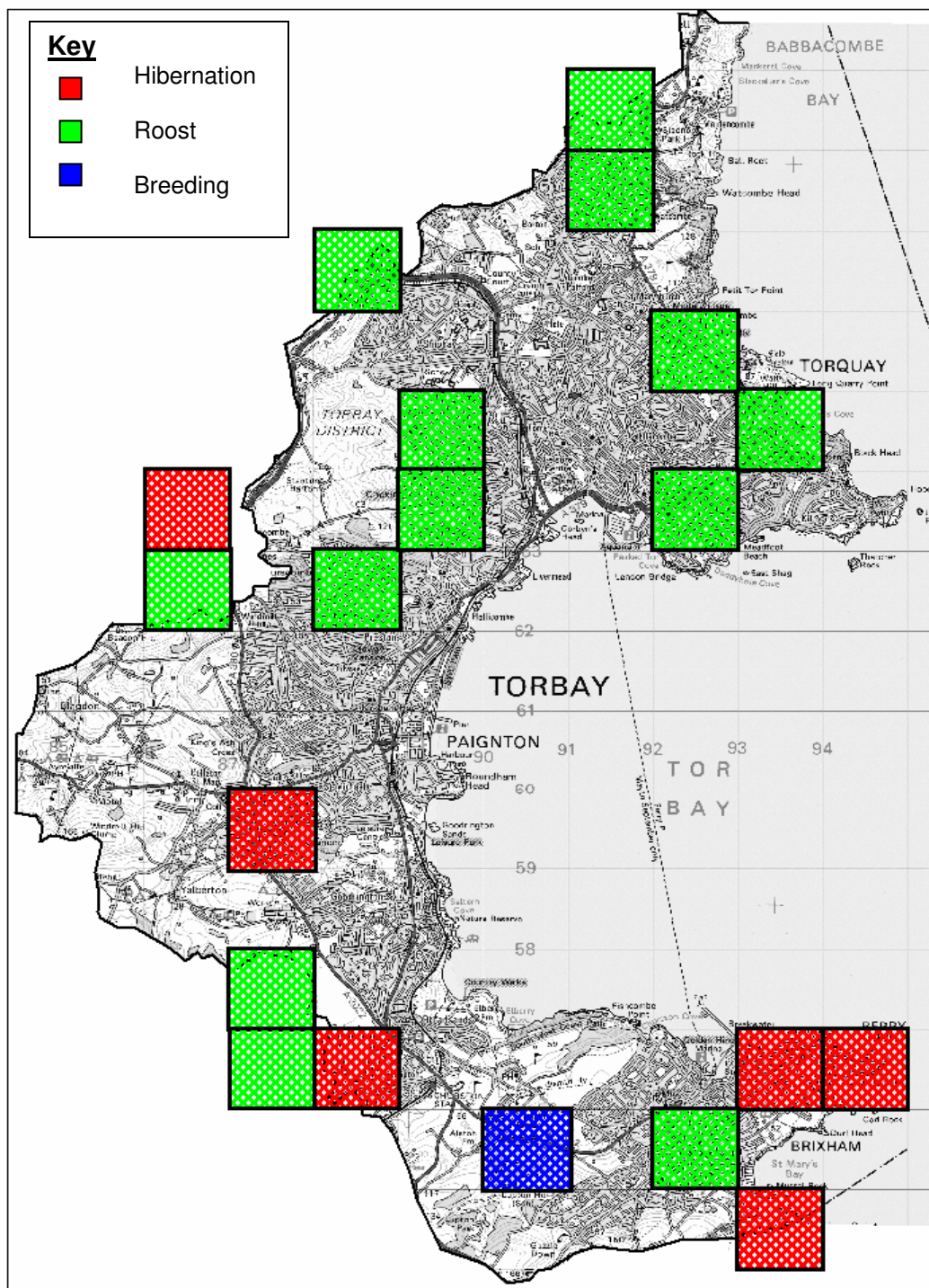
Berry Head to Sharkham Point is designated as a SAC and SSSI.

Both species are listed on Appendix II of the Bonn Convention, Appendix II of the Bern Convention, Annexe IVA and Annexe II of the EC Habitats Directive.

Protected under Schedule 2 of the *Conservation (Natural Habitats, etc) Regulations*, 2000 (as amended) and Schedule 5 of the WCA 1981 (as amended).

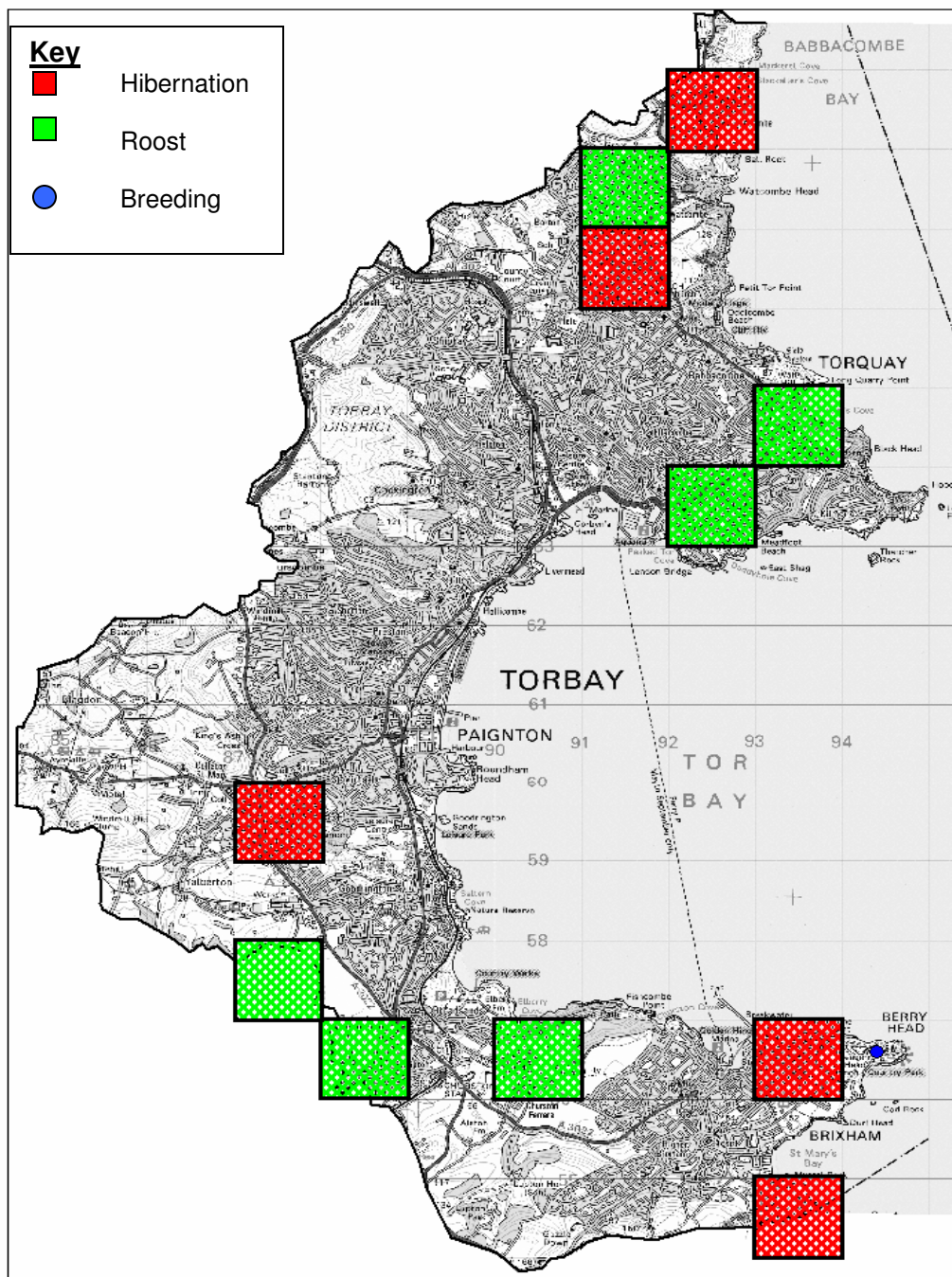
7.4.2 Current problems/threats to this species:

- Loss, destruction and disturbance of roosting and hibernation sites.
- Loss of food – Large insect abundance declined due to intensification of agricultural land resulting in loss of unimproved pasture, insecticides.
- Unsympathetic management of corridors e.g. good hedgerows that the bats use as networks to/from feeding and roost sites.
- Development and destruction of flight path features.



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Figure 10: Map to show lesser horseshoe hibernation, breeding and other roost sites in Torbay in 1km squares. Data was kindly provided by Devon Bat Group and Devon Biodiversity Records Centre.



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Figure 11: Map to show greater horseshoe bat hibernation, breeding and other roost sites in Torbay in 1 km squares. Data was kindly provided by Devon Bat Group and Devon Biodiversity Records Centre.

Table 16: Horseshoe Bat Action Plan. Actions that require further funding are shaded in grey.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Horseshoe Bat Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
HB1 - Ensure that TC follows PPS9 recommendations on species protection.	H	1	TC, NE	✓
HB2 - Ensure a licensed bat survey is carried out (where likely to have an impact) on all planning applications before permission granted.	H	1,3,4	TC, NE, Developers	✓
HB3 - Promote Environmental Stewardship as a good management tool and ensure that it is targeted at key areas for bats.	H	1,2	NE, TCCT, TC, DEFRA	✓
HB4 - Seek to establish statutory protection is given to all roost sites and key areas (corridors and feeding areas) are taken into consideration in respect to planning and land-use strategies.	H	1,3	TC, NE	✓
Species & Site Management				
HB5 – Carry out habitat enhancement schemes around roost sites.	H	1, 2	TCCT, NE, TC	✓
HB6 - Encourage favourable management of key corridors and feeding sites (aiming for up to 4 km around each roost) especially grazed pasture, woodlands and hedgerows.	H	1, 2	TCCT, NE, TC, Landowner, FWAG	✓
HB7 - Seek to establish new favourable roost sites – when identified.	M	1,2,3	TC, NE, TCCT, Devon Bat	✓

			Group	
HB8 - Promote and carry out, where appropriate, site protection works and improvements to key roost sites.	H	1,4		✓
Communication & Publicity				
HB9 - Improve communication between roost site owners and Devon Bat Group and other bat conservation bodies.	H	4	Devon Bat Group, DBRC, NE	✓
HB10 - Increase awareness with the public of the importance of conserving Torbay's bats, the appropriate steps to take if bats are discovered in their loft or outbuildings and the need to report roosts to Devon Bat Group.	H	4	NE, Devon Bat Group, public	✓
HB11 - Promote bat friendly building management to developers, TC, public and other appropriate parties.	H	1,4	NE, TC, Developers	✓
HB12 - Encourage public to enhance their houses and gardens for bats e.g. put up recognised bat boxes.	M	4	TCCT	✓
HB13 - Promote bat friendly management of woodlands, hedgerows and farmland with landowners and other appropriate parties.	H	2, 4	TCCT, NE, Devon Bat Group, FWAG	✓
Advisory				
HB14 - Advise farmers, horseowners and other livestock owners on the use of more environmentally friendly worming treatments, other chemical treatments and favourable management regimes for bats.	M	4	TCCT, FWAG, NE and Devon Bat Group	✓
HB15 - Offer advice to owners of roost sites about looking after the roost.	H	4	NE, Devon Bat Group	✓
Research & Monitoring				
HB16 - Identify and map all key corridors and foraging sites for both bat species.	H	3	NE, Devon Bat Group, TCCT	✓

HB17 - Research new roost sites and investigate into how to increase their favourability for bats.	M	3	NE, Devon Bat Group, TCCT	
HB18 - Monitor known roosts and ensure data is exchanged between NE, TCCT, TC, Devon Bat Group and DBRC.	H	3	NE, Devon Bat Group, TCCT, TC, DBRC	✓
HB19 - Establish a standard surveying protocol for all roost sites, foraging sites and corridors and implement.	M	3		
HB20 - Establish a bat potential section on the veteran trees survey and database for Torbay. Refer to Parkland HAP.	M	3,4	TCCT	

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Devon Biodiversity Records Centre (DBRC).

7.5 White rock- rose (*Helianthemum apenninum*) – Lead Partner BSBI

Main Objectives & Key Actions:

- 1) **Maintain and expand the current populations of white rock-rose through favourable management.**
 - Bring Wall's Hill, Daddy Hole and Berry Head into favourable status for the species by 2012.
- 2) **Increase the amount of research and monitoring of the current population.**
 - Establish yearly monitoring programme at known sites – ongoing.
- 3) **Investigate expansion of the current population and re-establish at other historical/suitable sites.**
 - Ongoing.
- 4) **Raise awareness of the importance of the white rock-rose with the community and land managers.**
 - Highlight the importance of the white rock-rose and limestone in Torbay through media, events and communication with land managers by 2012.

7.5.1 Background & Current Status

The white rock-rose grows on limestone seacliffs and has small silvery downy leaves and white petals, flowering between April and July. In Torbay it is currently located at three sites and these are Berry Head, Wall's Hill and Daddyhole (see Figure 12).

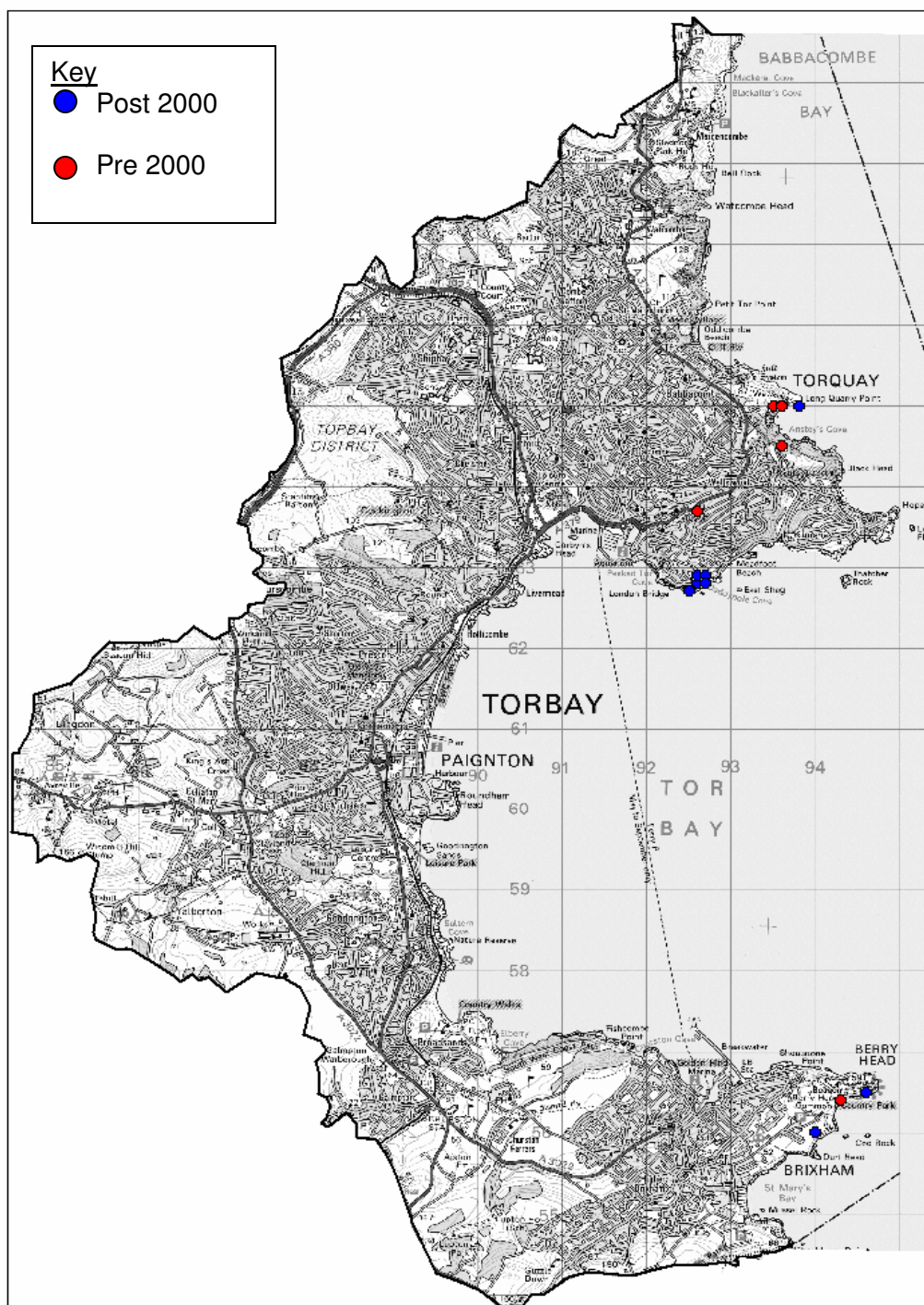
The white rock-rose is confined to carboniferous limestone around Brean Down in Somerset and Devonian limestone in Torbay. It occurs on dry, rocky limestone grassland on south facing slopes. In the UK it is at its northern-most European limit and in the UK it has Nationally Rare Status.

Current species and associated Habitat Protection:

Berry Head, Wall's Hill and Daddyhole have SSSI status.

7.5.2 Current problems/threats to this species:

- Scrub invasion – needs open limestone grassland to survive.
- Lack of up to date knowledge of current status of the white rock-rose.
- Lack of suitable management at current sites.
- Coastal developments and increase in trampling.
- Dog fouling



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Figure 12: Map to show pre and post 2000 White Rock-Rose records. Data was kindly provided by Botanical Society of the British Isles and Devon Biodiversity Records Centre.

Table 17: White Rock-rose Action Plan. Actions that require further funding are shaded in grey.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for White Rock-rose Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
WR1 - Safeguard existing sites and new sites against development through planning control.	H	1	TC, NE	✓
WR2 - Seek to ensure existing and new sites are within SSSIs and CWS.	H	1,2	TC, NE	✓
Species & Site Protection & Management				
WR3 - Look to re-establish populations at identified sites	M	3,4	BSBI, TCCT	✓
WR4 - Maintain populations at new and existing sites through scrub control etc.	H	1,2	TCCT, TC	✓
WR5 - Ensure ecological requirements are taken into account in appropriate management plans.	H	1,2	TC, BSBI, NE, TCCT	✓
Communication & Publicity				
WR6 - Raise the importance of the white rock-rose and limestone grassland with community, land managers, developers etc.	M	5	TCCT, TC, BSBI	✓
Advisory				
WR7 - Advice land managers on current locations of white rock-rose and advise on suitable management regimes.	M	2, 5	TCCT, BSBI	
Research & Monitoring				
WR8 - Look at historical data to identify suitable sites for recolonisation.	L	3	BSBI	
WR9 - Establish annual monitoring of existing sites and research into	M	3	TCCT, BSBI	✓ (Yearly)

expansion of existing population.				
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Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Botanical Society of the British Isles (BSBI).

7.6 Seahorse – Lead Partner Seahorse Trust

Main Objectives & Key Actions:

- 1) **Increase knowledge of seahorse numbers and distribution in the Bay.**
 - Set up surveying programme of known sites by 2012.
- 2) **Increase communication between divers, members of the public, fishermen, TCCT and The Seahorse Trust and promote the need to report sightings.**
 - Ongoing.
- 3) **Conduct a status review of both species of seahorse in Torbay and seek further protection of their habitats by 2009.**

7.6.1 Background & Current Status

Seahorses are threatened worldwide and Torbay is known to hold good populations of two species, the Spiny Seahorse (*Hippocampus guttulatus*) and Short Snouted Seahorse (*Hippocampus hippocampus*). Seahorses are very sensitive to their surrounding environmental conditions and are therefore a useful indicator for analysing the health of the environment. Population figures for both species of Seahorse in the UK are hugely underestimated and this has resulted in them being designated as Data Deficient by the IUCN.

Studies on seahorses have shown them to be characterised by their sparse distribution, low mobility, small home ranges, low fecundity, and lengthy parental care during pregnancy and mate fidelity. For more information regarding the distribution of British seahorses please consult the British Seahorse Survey Report (Garrick- Maidment & Jones, 2004).

Short Snouted Seahorse

The short snouted seahorse can measure between 12 and 15 centimetres in length when fully grown. Its habitat includes shallow, muddy waters, estuaries, inshore amongst algae and rocky areas and deep rocky areas especially off The Channel Islands in the English Channel There are two main habitats that it is thought to prefer; eelgrass beds and rocky areas.

Spiny Seahorse

The spiny seahorse is the larger of the two species, growing up to 20 centimetres. Its preferred habitat is eelgrass beds and weedy areas.

Current species and associated Habitat Protection

Protection already exists for both species from a number of sources: the Convention of the Conservation of Migratory Species of Wild Animals (Bonn

Convention), the Convention of European Wildlife and Natural Habitats (Bern Convention) and Appendix II of CITES, the Convention on International Trade in Endangered Species. This protection from CITES has only allowed trade in the seahorse species subject to licensing. Both species are also recognised as Vulnerable by the IUCN Red List of Threatened Species, a factor that contributed to their recent submission for inclusion under the Wildlife and Countryside Act by The Seahorse Trust.

7.6.2 Current problems/threats to this species:

- Lack of awareness
- Habitat loss e.g. Seagrass beds - the spiny seahorse depends on this habitat to offer them protection against predators and camouflage against prey.
- Lack of information - Many seahorses around the world are recognised as Vulnerable and Data Deficient by IUCN.

Table 18: Seahorse Action Plan. Actions that require further funding are shaded in grey.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Seahorse Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
SH1 - Include protection policies in all relevant statutory and strategic plans.	H	1,2	SHT, TC, NE	✓
Species & Site Management				
SH2 - Establish protected zones in the Bay where seahorses are established.	M	3	SHT, TCCT, NE	✓ (where sites identified)
Communication & Publicity				
SH3 – Promote the work of the British Seahorse Survey and The Seahorse Trust in the Bay.	M	1,2	SHT, TCCT, NE	✓
SH4 - Increase an awareness of Seahorses with fishermen, divers, snorkellers and members of public.	M	1,2,3	SHT, TCCT, NE, Angling clubs, Dive clubs, Fishermen.	✓
SH5 - Encourage fishermen, divers, snorkellers and public to report all sightings to the British Seahorse	H	2,3	SHT, TCCT, NE, Angling Clubs, Dive	✓

Survey.			Clubs, DSFC	
Advisory				
SH6 - Advise fishermen on procedures if they discover a Seahorse.	H	2	SHT, NE, DSFC	✓
Research & Monitoring				
SH7 - Research and map key areas for Seahorses in the Bay and compare with known fishing zones to identify trouble hot-spots.	H	3	SHT, NE, TCCT, Dive Clubs	✓
SH8 - Establish a relationship with local dive groups to undertake survey work and report sightings.	M	2,3	SHT, NE, Dive Clubs	✓

Abbreviations: Torbay Coast & Countryside (TCCT), Torbay Council (TC), Natural England (NE), Seahorse Trust (SHT)

7.7 Dolphins, Porpoises and Basking Sharks – Lead Partner TCCT

Main Objectives & Key Actions:

- 1) Maintain suitable conditions for the current populations of bottlenose dolphins and harbour porpoise in the Bay.**
 - Develop a joint conservation/monitoring strategy for dolphins and harbour porpoise with DWT and Seawatch.
- 2) Minimise disturbance of visiting megafauna by boat operators.**
 - Promote the 'Dolphin Code of Conduct' by 2008.
- 4) Increase knowledge and understanding of numbers that visit the Bay.**
 - Continue the yearly monitoring programme from Berry Head – ongoing.
 - Ensure data is disseminated to the appropriate bodies – ongoing.
- 5) Raise awareness of the importance and the threats that face Torbay's dolphins, porpoises and basking sharks.**

7.7.1 Background & Current Status

A pod of up to 50 bottlenose dolphins range along the South Devon and Dorset coast and members of this group regularly visit Torbay. Groups of Harbour Porpoise are also frequent visitors and Basking sharks and seals can be seen in the Bay.

See Torbay Marine Biodiversity Action Plan for more information.

Current species and associated Habitat Protection

All species of cetaceans are given protection under the Wildlife and Countryside Act, 1981. The bottlenose dolphin is listed in Annex 11 and IV of the EC Habitats Directive.

The harbour porpoise is listed on Appendix II of CITES, Appendix II of the Bern Convention and Annexes II and IV of the EC Habitats Directive. It is also on Appendix II of the Bonn Convention and is covered by the terms of the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), a regional agreement under the Bonn Convention. It is protected under Schedule 5 of the WCA 1981. The global status is assessed as Vulnerable (A1a,d, A2d) in the 1996 IUCN Red List.

7.7.2 Current problems/threats to this species:

- Disturbance from leisure craft – physical damage, interference with navigation, food finding.
- Contaminants.
- Direct Harassment (Boat Operators).
- Reduction in food availability – over fishing.
- Lack of knowledge and awareness.

Table 19: Dolphins, Porpoises and Basking Sharks Action Plan. Actions shaded in grey indicate where further funding is required.

High priority actions are proposed for completion within the next 3 years (to end of 2009).

Medium priority actions are proposed for completion within the next 6 years (to end of 2012).

Low priority actions are proposed for completion within the next 10 years (to end 2016).

Actions for Dolphins, Porpoises and Basking Sharks Priority Action Plan	Priority (High, Medium and Low)	Objective	Partners	Ongoing Action
Policy & Legislation				
D1 - Enforce protection laws (CROW Act 2002).	H	1,2	NE	✓
Species & Site Management				
D2 - Follow Marine HAP actions on reducing the discharge/leaching of toxic chemicals and litter into the sea to safe levels.	M	1,5	Harbour Authority, NE, TC, SW Water	✓
Communication & Publicity				
D3 - Encourage boat operators, yacht owners and fishermen to report sightings to TCCT.	H	4,5	TCCT, Boat Operators, Yacht Owners, Fishermen	✓
D4 - Increase communication between TCCT, DWT and Seawatch and coordinate work.	H	4	TCCT, DWT, Seawatch	✓
D5 - Encourage volunteers to take part in Torbay whale & dolphin watches.	H	4,5	TCCT, Living Coasts	✓
D6 - Work closely with boat operators to raise awareness of the issues associated with direct harassment.	H	2,4,5	TCCT, Boat Operators	✓
Advisory				
D7 - Advise boat operators on dolphin code of conduct and WISE accreditation scheme.	H	2,4	TCCT	✓
Research & Monitoring				
D8 - Contribute towards national mega fauna stranding schemes and integrate with post mortem studies and analyses of important biological	H	4	TCCT, Living Coasts	✓

data.				
D9 - Monitor cetacean visits to Torbay using sonar recording equipment and visual recording and investigate possible breeding grounds.	M	4	TCCT, DWT	✓
D10 - Continue recording programme from Berry Head and ensure data is sent to Seaquest and other relevant bodies.	H	4,5	TCCT	✓

Abbreviations: Torbay Coast & Countryside (TCCT), Devon Wildlife Trust (DWT), Torbay Council (TC)

Appendix A:

Geological time – Phanerozoic Eon (not to scale)

Period	Epoch	Major Features	Age/Ma Present Day
Quaternary	Holocene	Development of Agriculture	0.01
	Pleistocene	Major glaciations Expansion of hominids and development of <i>Homo Sapiens</i>	1.75
	Pliocene	Major glaciations Earliest hominids	5.3
Tertiary	Miocene	Earliest hominids	23.8
	Oligocene	Greenhouse world in decline	33.7
	Eocene	Formation of Alps and Himalayas	54.8
	Paleocene	India – Asia collision Major evolutionary radiation of mammals	65
Cretaceous		Major impact event Deccan flood basalts Major mass extinction, including dinosaurs Sea level maximum First flowering plants High sea level	142
		First birds Oldest surviving ocean floor	205
Jurassic		Break up of Pangea First dinosaurs and mammals	245-48
		Major mass extinction Siberian flood basalts Formation of Pangea Onset of greenhouse world	290
Triassic		Major glaciations Earliest reptiles Icehouse world Extensive sequestering of carbon Possibly high atmospheric oxygen levels	354
		Earliest amphibians First forests	417
Permian		Spread of land flora and fauna	443
		First land plants First fish	
Carboniferous			
Devonian			
Silurian			
Ordovician			

	Major glaciations	495
Cambrian	Deposition of Burgess Shale	
	Earliest shelled animals	540 - 45

Appendix B: Abbreviations used in text.

BAP – Biodiversity Action Plan.
 CGS – County Geological Site.
 SAC –Special Area of Conservation.
 CWS – County Wildlife Site.
 FWAG – Farming and Wildlife Advisory Group.
 HAP- Habitat Action Plan
 LNR – Local Nature Reserve
 NNR – National Nature Reserve
 RIGS – Regionally Important Geological Site
 SAP – Species Action Plan

APPENDIX C:

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South West Biodiversity Action Plan
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