

NATURAL VALUE

THE STATE OF DORSET'S ENVIRONMENT



The government's Natural Environment White Paper (2011) concluded that communities and the economy cannot survive or flourish without healthy natural systems to support them. It set out how nature provides valuable services directly and indirectly and pointed to economic opportunities arising from greener goods, services and greater resource-efficiency.

It proposed the establishment of a national network of Local Nature Partnerships (LNPs) to develop a vision for the local environment, champion its interests and better integrate environmental objectives with social and economic goals, working closely with Local Enterprise Partnerships (LEPs) and Health and Wellbeing Boards in the process.

The Dorset LNP was officially recognised by government in 2012. It brings together a wide range of partners in public, private and voluntary sectors across Bournemouth, Dorset and Poole. The LNP exists to maximise the benefits to be gained from protecting and enhancing the unique natural assets of the area for people, wildlife and businesses.

The Dorset Local Nature Partnership will:

- Provide leadership for those working to protect and enhance the environment in Dorset.
- Advocate the good management of Dorset's natural environment for its own sake and the many benefits it offers.
- Articulate the importance of Dorset's natural environment to economic and social wellbeing in a manner appropriate to diverse audiences.
- Ensure that the natural environment is taken into account in policy and decision-making.

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A 'Natural Value' report

In 2013, The Dorset Local Nature Partnership Board agreed that one of its first priorities should be to take stock of the state of Dorset's environment, hence the production of our first Dorset 'Natural Value' report. It seeks to present locally specific information which demonstrates both the environmental value of the area and the economic and social value of the area's environment. In time it will show changes in Dorset's natural environment and allow a more strategic approach to development planning to be taken. Much relevant data exists already; the LNP is simply seeking to add value to these data sets by compiling, integrating and analysing them as well as presenting them in a palatable form. This report:

- Provides an environmental evidence base to help inform the plans and strategies of other agencies, partners and partnerships such as the Dorset Local Enterprise Partnership (LEP).
- Provides raw material to raise awareness of the state and value of Dorset's environment.
- Provides a baseline against which the LNP can judge progress towards its aims and objectives using a combination of contextual and performance indicators.
- Identifies the key challenges facing Dorset's environment for which solutions need to be found.

Residents of, and visitors to, Dorset cannot fail to be impressed by the stunning environment we live in, parts of which are recognised nationally and internationally for their special interest and quality. As well as these 'special' places, Dorset's environment is made up of 'ordinary' countryside and green space, many less visible natural systems which provide crucial goods and services to support our way of life, and other natural assets which may not be immediately apparent. In producing this report, the Dorset LNP hopes to shine a light on these aspects of the environment so that we all can make an holistic assessment of the state of our environment, not just the parts which tend to attract the most focus, resources and the highest levels of protection.

A further important purpose of this report is to start to place financial values on aspects of our environment, a critical step to ensuring that the importance of natural places and systems is taken proper account of in the decisions we all take as consumers, companies, councils and so on. It is early days for this work, and important to say that in doing so we must be careful not to try to put a 'price' on nature. It would be impossible to put a price on something which is literally invaluable, and would risk implying that if we are not willing to pay that price, we can neglect or do without it. But by estimating the economic value which nature provides in the form of specific goods, services and sectors, we can at least help to ensure that it is valued in practical terms, and not treated as a valueless and unlimited resource - which it often is at present.

This report clearly shows what we all suspected - that Dorset's environment, nature and heritage are very special, both within a national and international context. Whilst in recent years the environment in Dorset has fared reasonably well, especially when compared with other parts of Britain, there is still a marked, ongoing decline. Our environment from grasslands and heaths to marine, as well as our heritage assets, are extremely fragile and easily degraded. In such a 'green' county, environment appears to be taken for granted so this report shows the huge economic value in terms of ecosystem services that it provides. I hope this report will be a step towards enabling us to reverse that decline in our natural environment and set us all on a course to a more sustained, healthy and valued Dorset.



Dr Simon Cripps
Chairman of the Dorset Local Nature Partnership

'The term 'Dorset' is to be taken to include the boroughs of Bournemouth and Poole and the Dorset County area, unless otherwise indicated.'



KEY FINDINGS



1) Condition of Dorset's 'crown jewels'

Dorset's outstanding environment is recognised by a wealth of designations. The majority of our most highly protected sites are in good condition, or recovering, supported by favourable management. However, some remain at risk or are declining. Designation has a reasonable track record of preventing site destruction; it is less reliable as protection for the full range of natural services that these sites should provide.

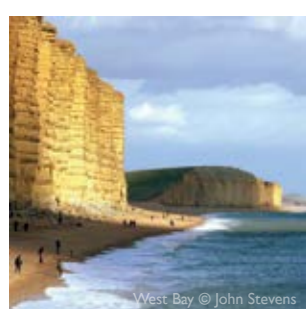
Headline indicators: Wildlife sites condition (p.7)
Heritage assets at risk (p.9)



2) Our key habitats and species

Dorset has a high baseline of environmental quality and diversity relative to other parts of England but this is against a backdrop of massive decline and fragmentation in wildlife habitats and loss of species over the last century. As a result, Dorset's environment may lack the necessary resilience to deal with future change, with serious consequences for the communities, businesses and wildlife which rely on it.

Headline indicators: Land Use Change (p.6)
Wildlife Sites (p.7)



3) Environmental goods and services

Dorset's natural systems provide communities and businesses with goods and services without which they could not function. Dorset clearly has a very attractive environment but we need to guard against the complacency that if it looks 'OK' it must be in good shape – it still faces underlying threats which are exposed at times of strain, for example, resulting from major development proposals or more extreme weather.

Headline indicators: Bathing water quality (p.12)
Flood risk (p.17)



4) Landscape-scale solutions

Piecemeal environmental management and enhancement may have reached a 'ceiling' - providing an undoubted benefit, but unable to achieve the crucial step change without vast resources. So we must work at larger scales and find methods which have environmental benefits, economic advantages (savings or income opportunities) and meet social aspirations. Current flagship projects in Dorset will bring significant progress towards this goal.

Headline indicators: Dorset AONB condition (p.8)
Ecological status of rivers (p.16)



5) Awareness and engagement

Understanding, measured by a variety of residents' surveys, appears to show a strong affinity with, and care for, Dorset's environment among residents. Thousands of hours of volunteer time are given each year towards environmental activities. Converted into a monetary figure this represents nearly £850,000 contributed.

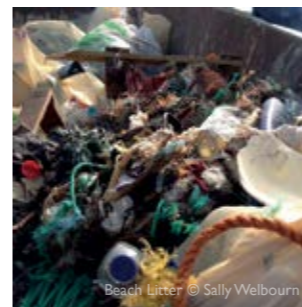
Headline indicators: Attitudes to the environment (p.19)
Environmental volunteering (p.19)



6) Outdoor exercise

Dorset residents recognise the importance of good access to natural spaces to health and wellbeing. A reasonable proportion of people regularly take exercise outdoors and rates of cycling are increasing. Access is generally good though there is some room for improvement and some areas where provision is poor. Pilot projects are underway to develop our 'natural health service'.

Headline indicators: Cycle traffic (p.14)
Outdoor physical activity (p.15)



7) Ecological footprint

Dorset, like the rest of the country and much of the developed world, is not alone in having a global ecological footprint which is disproportionately large compared to the size of its population. Reducing consumption and increasing efficiency continues to be a key international, national and local challenge – but we all have a part to play in reducing our global footprint and treading more lightly on the planet.

Headline indicators: Waste arisings (p.13)
Ecological footprint (p.21)



8) Energy use

We are some way from meeting the goal of a low-carbon, resource efficient economy but the economic drivers for developing one are becoming increasingly apparent. Carbon emissions per head have dropped slightly but alongside a recession when this might be expected. There has been recent progress but renewable energy use is some way short of 2020 targets.

Headline indicators: Dorset's carbon emissions (p.10)
Installed capacity of renewable energy (p.12)



9) Resources

Our primary resources are precious, and as the economy grows, we must find innovative solutions to ensure we make most efficient use of them. Dorset has both recycling rates and water use better than national averages, however, these still may not be at rates sufficient to prevent environmental harm.

Headline indicators: Recycling rates (p.13)
Water use (p.11)



10) Development planning

Local planning policy includes good intentions on the natural environment and resources but we are yet to see if these can be implemented and enforced effectively. Ensuring that new development contributes to environmental enhancement and does not cause undue harm is a key challenge. Our local protocols for wildlife mitigation and enhancement have made excellent progress towards an efficient but effective planning system.

Headline indicators: Development on 'brownfield' land (p.11)
Bat checks through Dorset protocols (p.20)



11) Economic resilience

Dorset's environmental industries have seen significant growth, now worth a minimum of £173m or 3500 jobs, and have great potential. However, developing a truly 'green economy' requires a holistic approach to resources, so that areas of growth do not counter-act each other. We must ensure that we are not trading off economic gain against environmental loss but seeking win-win solutions for both environment and economy.

Headline indicators: Traffic volumes (p.17)
Sustainable fisheries (p.17)



12) High environmental standards for all

Dorset residents recognise the need to integrate our ambitions for growth with protection and enhancement of the environment. There is a growing recognition of the inter-dependence between a healthy environment and a healthy economy. We must ensure that everyone can benefit from financial savings made through resource efficiency and can access and enjoy environmental assets.

Headline indicators: Wealth vs environment? (p.13)
Fuel poverty (p.15)

NATURAL CAPITAL

Natural capital is defined as the stock of natural assets that provide goods and services we rely on, from fertile soil and productive land and seas to fresh water and clean air. It includes vital services such as pollination of plants, natural protection against flooding, and the regulation of our climate.

Although these services are essential to our way of life, current resources available to maintain them are in general insufficient to enable environmental quality to increase alongside economic and social goals. We need to invest in our natural capital, explaining the economic rationale for doing so, and develop market-based mechanisms to secure the resources necessary to maintain these services.

Land use change

Dorset is widely recognised for its landscape quality, geological diversity and biodiversity and in many local,

national and international designations for both sites and species. This recognition, however, does not necessarily mean that all aspects of the environment are in good health.

The Dorset landscape has seen a dramatic change since the 1930s. Changes include a huge increase in (agriculturally) improved grasslands - these tend to have low wildlife diversity. Past loss of heathland helps to explain why the remnants of this threatened habitat are so important today, and why they have such a high level of protection.

Over time, Dorset's natural environment has been subject to very substantial losses, with big declines in some habitats and species over the last century. The 'health' of the environment must therefore be viewed in this historic context, not just from the baseline presented in this report.

Wildlife

Dorset's varied geology and land use has led to an exceptional range of habitats and species, albeit now affected by past losses. Dorset holds some 32 priority habitats, terrestrial and marine. The Dorset Biodiversity Audit¹ lists 1,107 terrestrial Dorset species as threatened, rare, protected or priority. Many of these have associations with particular habitats, indicating where loss of suitable habitat has caused a particular strain:

Arable farmland	39
Coastal	114
Grasslands	102
Heathland/Mire	78
Wetlands	52
Woodland, parkland, hedges	111

In addition there are some 88 threatened, rare, protected and priority marine species recorded in Dorset, many associated with habitats such as reefs and seagrass beds which have been under pressure from a variety of human impacts. Species recording in the marine environment presents considerable challenges so this is likely to be an under-estimate.

Case studies² show that concerted conservation can turn round declining species populations, for example the Little Tern on Chesil Beach, which suffered a dramatic decline in the early 2000s, and is now recovering after many years of effort. The otter has recolonised most Dorset rivers, after virtual extinction by the 1970s. However, other species are doing less well, such as the Silver-studded Blue butterfly, which has seen a 51% decline since 1980.

The LNP is working towards 'bigger, better, more joined up' nature. The Dorset 'Nature Map' identifies the terrestrial areas with greatest potential for habitat enhancement at a landscape scale, restoring and re-connecting natural areas so that their value to people and wildlife can be maximised. Delivery of the ambition symbolised by the Nature Map - through the planning system, and through the land management policies of landowners, conservation bodies and businesses - will be a key test.

WILDLIFE SITES²

	No of sites	Area (hectares)	% of Dorset ³
Local Sites			
Sites of Nature Conservation Interest	1277	12,293	4.60%
Local Nature Reserves	49	702	0.26%
Voluntary Marine Wildlife Reserve	1	3,500	1.30%
National Sites			
Sites of Special Scientific Interest	141	20,287	7.58% ⁴
Marine Conservation Zones	3	23,420	6.90%
International Sites (Ramsar, SAC, SPA)			
Terrestrial	23	16,113	6.02% ⁴
Marine	6	54,000	20.17%

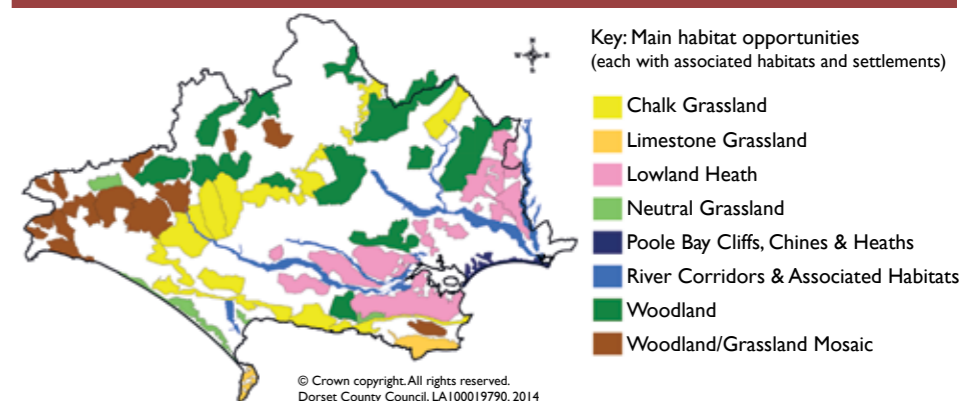
³ For marine sites the proportion of Dorset waters out to 12 nautical miles

⁴ There is much overlap between terrestrial national and international sites, the combined area of Dorset covered is 7.83%

WILDLIFE SITE CONDITION (MARCH 2014)²

Sites of Special Scientific Interest	Favourable	39%
	Unfavourable recovering	48%
	Unfavourable no change or declining/destroyed	13%
Sites of Nature Conservation Interest	Good maintained/improving	43%
	Fair maintained/improving	14%
	Poor or declining	15%
	Unknown	28%

NATURE MAP



Source: Dorset Environmental Records Centre

Protection has largely halted the past dramatic losses of large wildlife sites to development. However, incremental loss of natural habitat remains one of the unintended consequences of development of the area. There is a very long way to go before Dorset's habitats can be considered robust enough to cope with current and future pressures, and even further to reverse historic declines.

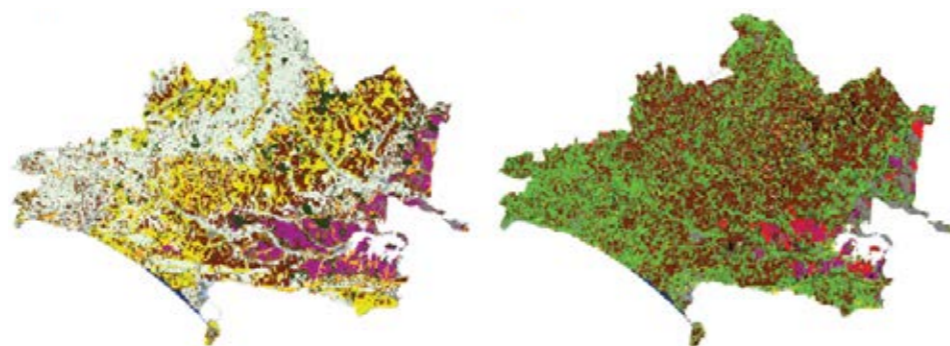
Figures on the condition of wildlife sites paint a mixed picture. They show that many important sites are in good condition or recovering. However, a significant proportion are not doing so well. Sites of Special Scientific Interest (SSSIs) enjoy legal protection

¹ http://www.dorsetwildlifetrust.org.uk/dorset_biodiversity_partnership.html

² Dorset Environmental Records Centre, Biodiversity Indicators Report, March 2014

LAND USE CHANGE 1930s TO 2000

Woodlands	Mesotrophic grasslands managed	Heathlands
Conifer woodlands	Calcareous grasslands managed	Fens, marsh and swamps
Arable	Calcareous grasslands rough	Inland bare ground
Improved grasslands	Acid grasslands	Build-up areas and roads
Mesotrophic grasslands rough	Littoral sediments, inc saltmarshes	Water



Maps from D.A.P. Hooftman, J.M. Bullock / Biological Conservation 145 (2012) 30 - 38

and cover some of the best areas in the country for wildlife and geology. They often serve as 'wildlife banks', a safe haven of prime habitat. The fact that many of these highly protected sites are in unfavourable condition suggests we should be concerned about the condition of the rest of our 'ordinary' environment and countryside which enjoys no such protection.

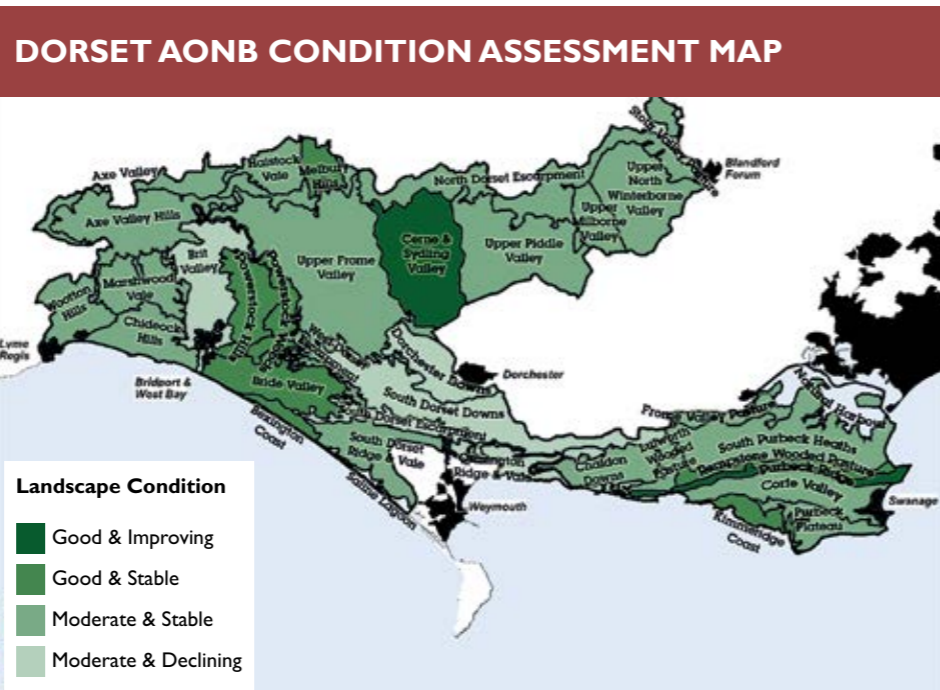
Very few people set out to deliberately destroy nature, and in fact lack of management has been a major cause of losses of some habitats in recent years. 76 Sites of Nature Conservation Interest (SNCIs) (183 hectares) have suffered losses (full or partial) since 2005. 34 of these were recorded as destroyed or part destroyed, 44 as having declined in quality to such an extent that they no longer qualified.²

On the positive side, there have been many projects, involving landowners of both private and publicly owned land, to create, re-create and restore habitats; often facilitated by government grant schemes. At March 2014, there were 256 sites³ known where habitat has been created or restored in Dorset. Though these cannot replace sites of the highest quality which have been lost, and may take many years to reach their potential, they play an important part in restoring and reconnecting habitats at a landscape scale.

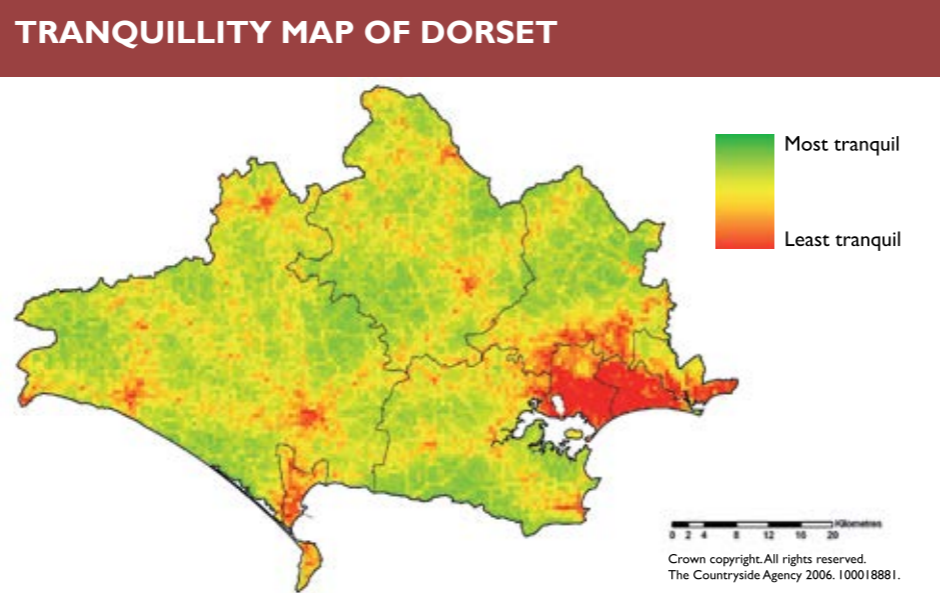
Environmental land management schemes play an important role in restoring, linking and creating natural habitats. Current schemes in Dorset provide for the restoration of 10,452 hectares and creation of 410 hectares of species-rich grassland, heathland, woodland, saltmarsh, reedbed and fen habitat.⁵ This underlines the importance of targeted support, and the need to ensure that reform of the Common Agricultural Policy continues to enable investment in our natural capital.

Landscape

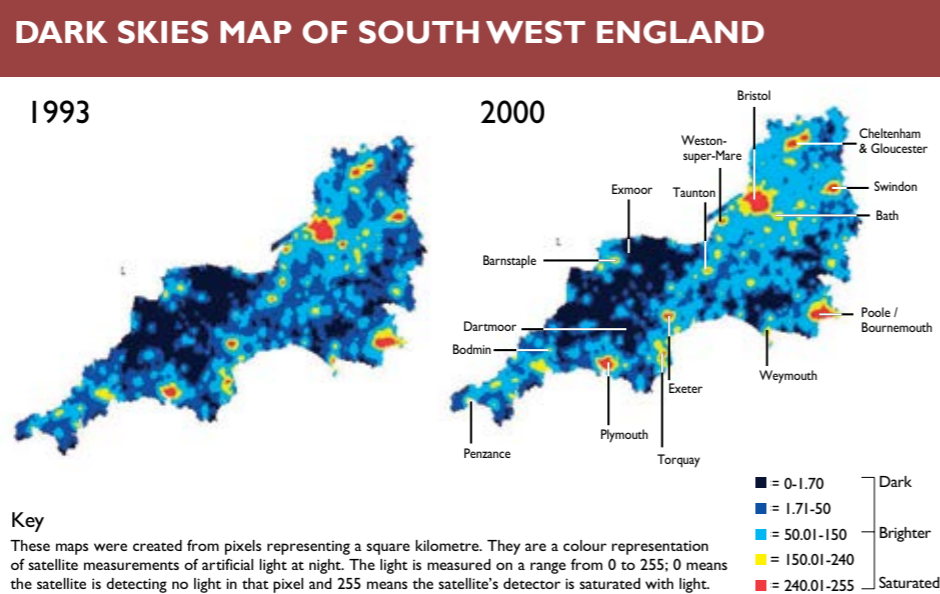
The high quality of much of the Dorset landscape is recognised in the designation of over 50% of Dorset



Source: Dorset AONB



Source: Reproduced courtesy of the Campaign to Protect Rural England. Revised edition 2007.



Source: Campaign to Protect Rural England



County as Areas of Outstanding Natural Beauty (AONBs). Within and beyond the AONBs, high quality landscapes are important to our lifestyle, economy and wellbeing and also for the wildlife they support and their rich cultural associations.

The assessment of landscape condition in the Dorset AONB suggests that while many areas are in good condition or improving, there are still areas of concern. As these are our most protected landscapes, we must also wonder what is happening in 'ordinary', unprotected landscapes outside AONBs which are not monitored as closely.

The maps show that both light pollution and loss of tranquillity are affecting parts of Dorset, in rural areas as well as urban. The move towards part-night lighting of street lights in Poole and the Dorset County area is already reducing energy consumption and light pollution significantly and there may be further potential to extend this practice. In Bournemouth energy efficient LED bulbs are being introduced to streetlights.

Heritage

Of around 11,000 registered Heritage Assets across Dorset, approximately 2.8% are considered 'at risk'. While this sounds like a modest proportion, heritage assets, if lost, are impossible to replace.

While the challenge of maintaining

HERITAGE ASSETS

District/Borough	Number of Heritage Assets	Heritage Assets at risk
Bournemouth	237	1
Christchurch	303	2
East Dorset	830	46
North Dorset	2,141	54
Poole	252	6
Purbeck	1,707	68
West Dorset	4,723	119
Weymouth & Portland	826	8

Source: English Heritage National Heritage List & Heritage at Risk Register

our heritage may increase with time, it need not, however, be a story of inevitable decline. In recent years, the Dorset Monument Management Scheme has delivered enhancements to Scheduled Monuments by supporting landowners in, for example, clearing scrub and improving public access. Many communities and individuals have also raised money and devoted time to caring for their local heritage and need support to continue to do so in future.

The Dorset and East Devon Coast World Heritage Site remains in favourable condition. There has been no significant deterioration of the condition of the Site since 2001 when it was designated. Pragmatic engagement between coastal authorities, landowners, communities and the WHS Partnership has helped ensure that necessary coastal defence

works have not compromised the natural processes which create the Site's Outstanding Universal Value.

Dorset's geological interest is not confined to the World Heritage Site, however, and the area has a series of inland geological Sites of Special Scientific Interest and 63 Local Geological Sites, selected for important geological or geomorphological features and contribution to scientific understanding.

The geological diversity of Dorset is expressed beautifully in the variety of local building stone. The sensitive use of this resource helps maintain landscape and historic character as well as creating economic opportunities.

⁵ Source: Natural England

NATURAL

VALUE

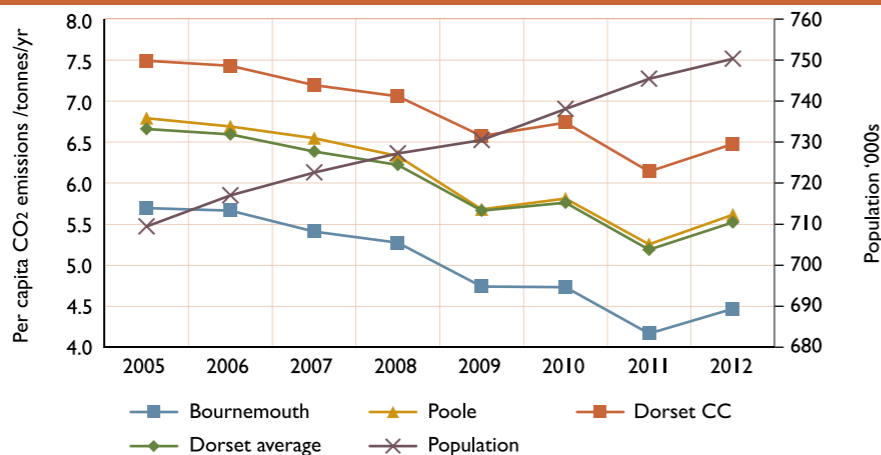
Government policy emphasises that the concept of the 'green economy' should relate to the whole economy, not just sectors providing environmental goods and services. Gaining a better understanding of the value of the natural environment is therefore fundamental to the purpose of LNPs. Whilst it is neither possible, nor desirable, to put a price on 'nature' in its entirety, we can estimate some aspects of its economic value. This evidence supports the case for investing in environmental enhancement for economic reasons as well as for its own sake.

The Dorset Local Enterprise Partnership's (LEP) analysis of Dorset's economy suggests that 'Environmental goods and services' contribute £173 million and 3500 full time equivalent jobs to the local economy. The LEP also identifies this is a sector 'with significant growth potential, harnessing the environmental assets of Dorset, developing existing business activity and expertise, and realising the opportunities presented by the demand for renewable energy'¹. The definition of 'environmental

goods and services' used, however, excludes sectors such as tourism, creative industries, food and drink and environmental management for which a high quality environment is clearly important. Work is underway to establish this supplementary data to assess the true size and potential of the 'environmental economy'. As an example of how important a high quality environment is, research in neighbouring Devon values its own 'green economy' at over £2,400 million per annum (16% of Gross Value Added), accounting for over 100,000 jobs (20% of all employment)².

A low carbon economy
Currently, the size of our carbon footprint relates closely to economic growth – when the economy grows, carbon emissions go up, when it contracts, they go down. So though emissions per head have fallen, they are now starting to rise again. Decoupling these two will be a key challenge for the future, not just for the sake of the environment, but to avoid the severe economic impacts which will occur if we are unable to reduce global carbon emissions and avoid dangerous climate change.³

PER CAPITA CO₂ EMISSIONS



Source: Department of Energy & Climate Change

The LNP wants to see businesses which have a low impact on the environment flourish. We have no established methodology for defining or measuring the extent of 'low impact business'. However, provision of effective and extensive superfast broadband infrastructure is a pre-requisite for achieving it through reducing the need for travel. The production of local, sustainable goods and services offers a means of delivering growth, reducing environmental impacts and improving resilience by shortening supply chains. Dorset Food and Drink now has a membership of over 70 food and drink businesses and the establishment of the Sustainable Food Partnership in Bournemouth & Poole provides further evidence of the interest in local, sustainable produce.

Land and development

The amount of new development using previously developed land is a good indicator of how efficiently we are making use of this scarce natural resource. While the percentage of new homes being built on brownfield sites has dropped off in the Dorset County area, it has remained very high in Bournemouth and Poole.

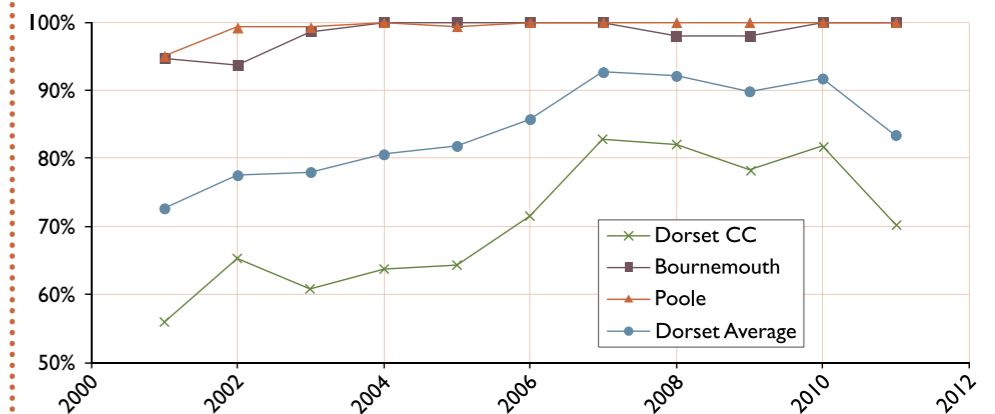
While not all 'brownfield' sites are suitable for development, where they can be developed this will generally reduce the pressure on 'greenfield' sites, support the vitality of existing town centres and make sustainable transport more viable. We need to ensure that the built environment functions as 'naturally' as possible, by for example, providing green infrastructure so that water and wildlife can provide services as they would in a more natural environment.

Water use

The national average domestic water use is 150 litres per head per day and the current average in the Wessex Water area is 147 litres per head per day for unmetered properties, and 132⁴ litres per head per day for metered properties. Though demand per head may fall, as population rises, demand for water overall may still go up, adding to the challenges of planning for future incidences of



% OF DEVELOPMENT ON BROWNFIELD LAND



Source: Bournemouth, Dorset & Poole Local Authorities

drought, which is predicted to happen more frequently⁵.

Tourism

The importance of the visitor economy to Dorset is clear: total visitor related spend in 2011 was calculated at £1.44 billion while total tourism related employment amounted to 12% of all employment⁶. This sector is highly if not entirely dependent on the quality of the environment in both rural and urban areas. At the same time, accommodating a significant volume of visitors puts pressure on transport networks, host communities and sensitive habitats which need to be

carefully managed if we are not to damage the very things which attract visitors in the first place.

¹ Dorset LEP, 2011, Dorset LEP Prospectus.

² Transform Research Consultancy Ltd (for Devon County Council and Devon LNP), 2012. Devon's Green Economy.

³ <http://www.ipcc.ch/>

⁴ Wessex Water - Water Resources Management Plan 2014

⁵ Adapting to climate change, UK climate projections 2009, DEFRA

⁶ <http://www.visit-dorset.com/trade/research/dorset-tourism-data>



BATHING WATER QUALITY - NUMBER OF BEACHES TESTED MEETING STANDARDS

	2008	2009	2010	2011	2012
Higher	32	34	33	34	23
Minimum	5	2	3	3	11
Fail	0	1	1	0	3

KEY:

- Higher:** Bathing water meets the criteria for the stricter guidelines standards of the current Bathing Water Directive
- Minimum:** At least 95% of the samples meet the mandatory standards of the cBWD
- Fail:** Fewer than 95% of the samples meet the required mandatory standards of the cBWD

Source: Environment Agency 2012

TOTAL INSTALLED RENEWABLE ENERGY CAPACITY, FEBRUARY 2014

Heat	Energy generation/ GW hours	Electricity	Energy generation/ GW hours
ATW & AD*	9.5	ATW & AD*	14.2
Sewage gas	9.5	Sewage gas	18.9
Poundbury biogas	20.0	Landfill gas	98.1
Biomass	5.2	Hydro	0.4
Heat pumps	1.4	Onshore wind	1.3
Solar thermal	0.5	Solar PV roof-mounted	31.5
Wood stoves	51.0	Solar farms	68.3
SUB-TOTAL	97.1	SUB - TOTAL	234.7
TOTAL			331.8

* Advanced treatment of waste and anaerobic digestion

Source: Dorset Energy Partnership

⁷ Adapting to climate change, UK climate projections 2009, DEFRA

⁸ Source: Bournemouth Borough Council and Borough of Poole

⁹ Source: Dorset County Council and the Dorset Waste Partnership

¹⁰ Source: Defra

¹¹ Defra, 2009. Commercial and Industrial Waste Survey – Final Report.

¹² Source: Office for National Statistics, Personal wellbeing across the UK 2012-13.

¹³ <http://news.bbc.co.uk/1/hi/england/somerset/4451118.stm>, 2005

¹⁴ West of England Strategic Green Infrastructure Framework, 2011

Bathing water quality

Clean bathing water is essential for the economic wellbeing of our coastal towns as well as marine wildlife. Pollution from sewage and agriculture can cause diffuse pollution of bathing waters.

Wessex Water's investment at coastal sewage works between 1990 and 2005 significantly improved bathing water quality in Dorset and most beaches tested meet the tough guideline standards under the EU Bathing Water Directive. However, further work is necessary on discharges from combined sewers and overflows at times of heavy rainfall, which we expect to increase in frequency and magnitude as the climate changes⁷. In 2012 there was exceptional summer rainfall and standards dropped with a number of beaches failing the mandatory standards.

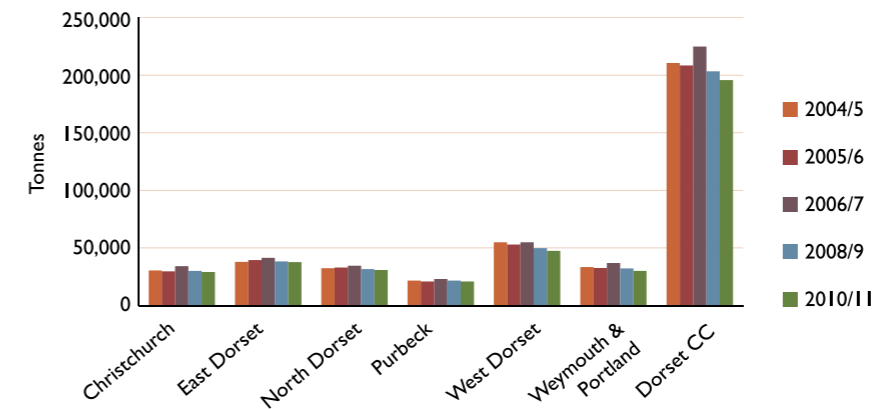
Energy

Over £1bn a year is spent on energy and fuels in Dorset. Energy efficiency is the most cost effective way to reduce energy demand, reducing emissions and bills. From 2008-2013, 38,359 homes had cavity wall insulation installed and 42,158 had loft insulation installed or improved.

Renewable energy generated in Bournemouth, Dorset and Poole in 2014 totals 332 gigawatt hours, equivalent to 2.1% of total energy consumption, and has seen a capital investment of £203 million into Dorset since 2010. Whilst significantly higher than 0.95% in 2011, we are a long way short of the target of 7.5% through local installations adopted through the Dorset Renewable Energy Strategy.

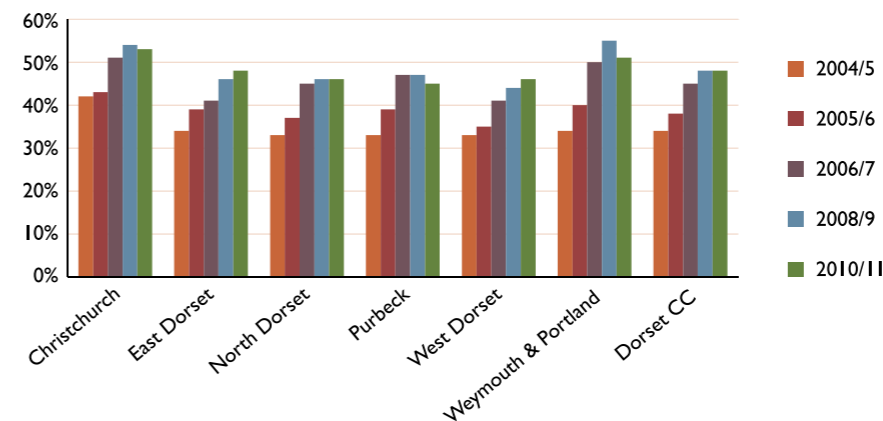
Since 2011, installation of solar photovoltaic energy to social housing in

WASTE ARISING



Source: Dorset Waste Partnership

RECYCLING RATES



Source: Dorset Waste Partnership

Bournemouth and Poole has resulted in savings of 5645 tonnes of CO₂ from 2381 installations⁸.

Waste

Waste is a good example of an environmental problem which can be turned into an opportunity: sending waste to landfill requires land, emits greenhouse gases, can pollute soil and water if not well managed and represents a significant cost to council tax payers. By reducing waste, recycling and treating some residual waste as a resource, we can save money, help the environment and capitalise on the market for sustainable waste management.

Dorset achieved overall 40-50% recycling rates against a national average of 43% in 2012-13. The new collection regime introduced by the Dorset Waste Partnership is already achieving substantially higher

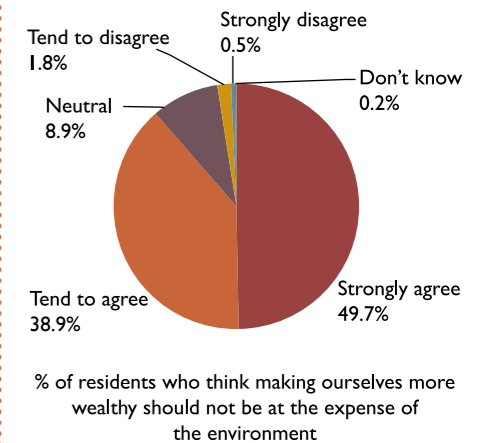
recycling rates – upwards of 65% in some areas⁹. Household waste, however, represents just 21% of total waste arisings. In 2009¹⁰ almost 0.5 million tonnes of commercial and industrial waste was generated in Dorset. Of the total, around 53% was recycled or composted, 24% was disposed of by landfill, and 0.7% was treated with energy recovery. Around 5% was transferred onwards and approximately 3% was reused¹¹.

Energy, water and other natural resources are also wasted in producing goods that are thrown away, so reducing the amount of waste we generate in the first place is the best option from an environmental perspective.

Dorset's natural businesses assets

There has been a growing recognition among policy-makers about the

WEALTH vs ENVIRONMENT?



Source: Dorset Citizen's Panel 27, 2012

short-comings of relying on Gross Domestic Product as our sole or main measure of progress, and of the need for a shift in emphasis from measuring economic production to measuring people's wellbeing. Dorset has a higher proportion of people rating their life satisfaction very highly than any other English county¹². Local evidence suggests support for maintaining Dorset's environment at a high quality in tandem with economic growth.

This is important for business as well. 'Wellbeing at Work' surveys¹³ have found that workers and bosses in the South West region enjoy higher levels of wellbeing at work than anywhere else in the UK, and 35% of companies relocating to South West England quoted 'environmental attractiveness' as a key reason for their move¹⁴.



Beach Clean © Sally Welbourn

NATURAL

HEALTH

Access to the natural environment

The natural environment already makes a major contribution to public health and wellbeing. This could be greater with improved access, more effective and well connected "green and blue infrastructure" and better information on how and where to use the environment responsibly and safely. The LNP will work with local authorities, Health and Wellbeing Boards, the Dorset Local Access Forum and others to promote access to the natural environment as a key strand in the improvement of public health and wellbeing, the promotion of active lifestyles, independent living and as a potential means of reducing welfare costs.

The LNP wants to see access to the environment and improved inter-connections between open spaces make a measurable improvement in public health and reduce costs associated with health treatments.

Access to natural spaces

A population of 458,000 people live within the area covered by the South East Dorset Green Infrastructure Strategy. There are approximately 6,897 hectares of

accessible greenspace sites, and 26.7 kilometres of beaches. This gives a ratio of 15 hectares per 1,000 people. However, over 88% of the sites are also internationally designated heathland, which has suffered declines in key species due to disturbance. A green infrastructure strategy aims to address this by increasing the area on non-heathland greenspace available to local residents.

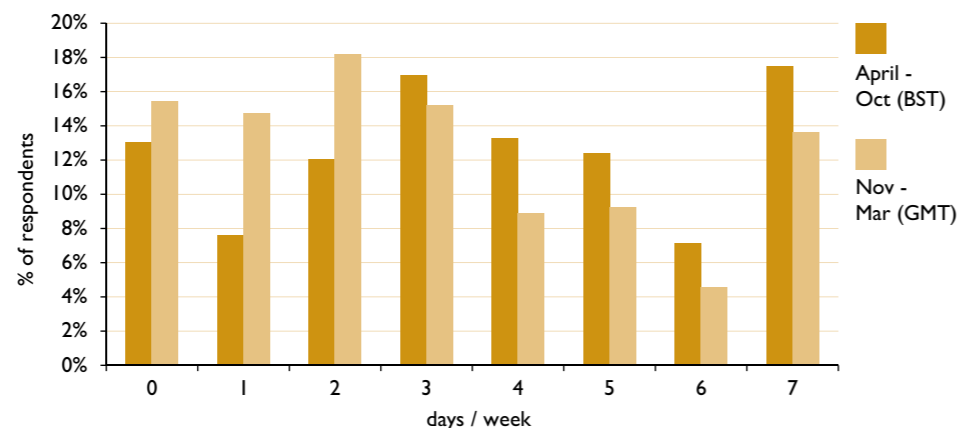
Health inequalities

Communities and social groups suffering poor health often lack access to a healthy environment. Poor air quality, flood risk and lack of access to greenspace are often associated with social deprivation.

Energy efficiency measures offer not only one of the most cost effective solutions for reducing carbon emissions, but also improving public health, will also reduce costs and help address fuel poverty. Whilst this is below average in Dorset, there is some marked variation between districts, reflecting both income and energy efficiency of current housing stock.

Several projects in Dorset have seen local authorities, their partners and

DAYS SPENT DOING 30 MINUTES PLUS OF OUTDOOR PHYSICAL ACTIVITY THAT RAISES BREATHING RATE



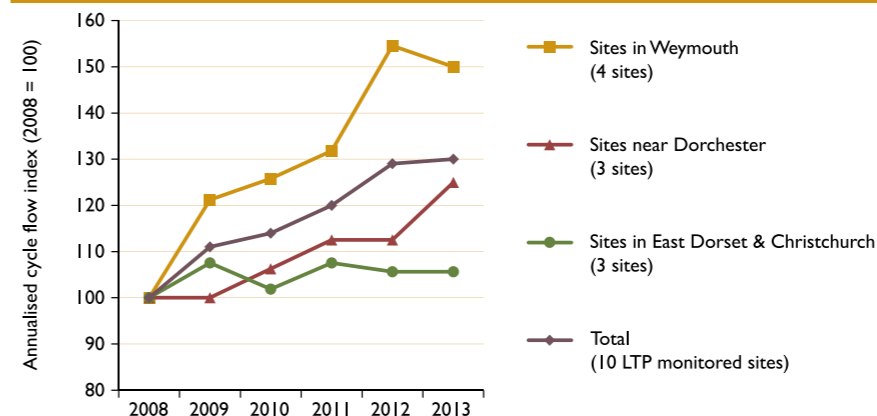
Source: Dorset Citizen's Panel 27, August 2012

FUEL POVERTY

2012	Estimated no. of households	Estimated no. of fuel poor households	Proportion of fuel poor households
Bournemouth	84,750	8,367	9.9%
Poole	65,450	4,805	7.3%
Christchurch	22,139	1,456	6.6%
East Dorset	38,744	2,397	6.2%
North Dorset	29,582	2,497	8.4%
Purbeck	20,207	1,694	8.4%
West Dorset	45,782	4,233	9.2%
Weymouth & Portland	29,435	2,775	9.4%
TOTAL	336,089	28,224	8.4%
National average			10.4%

Source: <https://www.gov.uk/government/statistics/2012-sub-regional-fuel-poverty-data-low-income-high-costs-indicator>

CYCLE FLOWS IN DORSET



Source: Dorset County Council (LTP = Local Transport Plan)

the NHS successfully promote health and winter warmth through energy efficiency.

At present, the health burden due to low temperature exceeds that of high temperature. However, heat-related mortality, which is currently around 2,000 premature deaths per year, is projected to increase steeply in the UK throughout the 21st century as the climate warms, from around a 70% increase in the 2020s to around 540% in the 2080s¹.

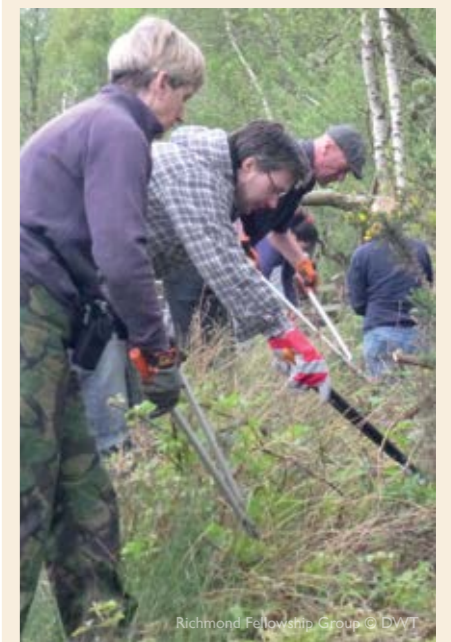
Natural health service

In 2010 over £940 million was spent across England on dealing with the consequences of physical inactivity, each Primary Care Trust spending on average £6.2 million and some

individually as much as £17.7 million. Promotion of access to nature can be both a remedy and a preventative medicine for a wide range of physical and mental health conditions.

Health services and GPs are increasingly able to offer patients the choice of outdoor activity as an alternative to, or to supplement, traditional prescriptions.

The last decade has seen an increase in the popularity of cycling in Dorset, due to improved provision of cycle lanes and workplace facilities for cyclists (storage, showers etc). A greater proportion of Dorset residents walk or cycle to work compared to the national average, but there is still significant potential to



The Richmond Fellowship and Dorset Wildlife Trust have been helping people with mental health problems to recover through environmental volunteering.

Eric is a typical volunteer:

"Doing this work outside gives me peace of mind and clarity. It helps lift my worries. I would recommend it to anyone trying to overcome anxiety - it is hard to make the first jump, but works well alongside my medication and it's a distraction from the things that worry me. Every time I come out, I learn something different - I saw a bee orchid the other day, which I had never seen before."

encourage people to walk and cycle more, given the health benefits and the reduction in traffic congestion.

Some barriers to encouraging healthy lifestyles remain. For example, concern about the safety of cyclists and pedestrians in some areas, linked in part to traffic speeds. The World Health Organisation² estimates the average economic benefit of 100 people starting to walk 1 km per day at £31,000 per year (£305,000 over 10 years), due to reduced risk of premature death.

¹ Health Protection Agency, Health Effects of Climate Change in the UK 2012, Current evidence, recommendations and research gaps

² World Health Organisation, 2011. Health Economic Assessment Tool. Available from: <http://www.heatwalkingcycling.org/>

NATURAL

RESILIENCE

Dorset faces a challenging future. Changes in the global economy, global climate and demography present risks and threats to the resilience of both the environment and the communities which depend on it. For example, increased pressure on coastal communities from rising sea level may lead towards the construction of more coastal defences, with negative implications for protected sites.

But a well managed, resilient natural environment can help us adapt to these changes. This would include widespread adoption of landscape-scale and whole catchment approaches to environmental management, to adapt to change, working with rather than against natural processes such as coastal change.

Water catchments

Land use activities and run-off account for between 24% and 56% of current failures of ecological status of catchments, point source inputs from waste water (mainly sewage treatment works) for 10-25% and

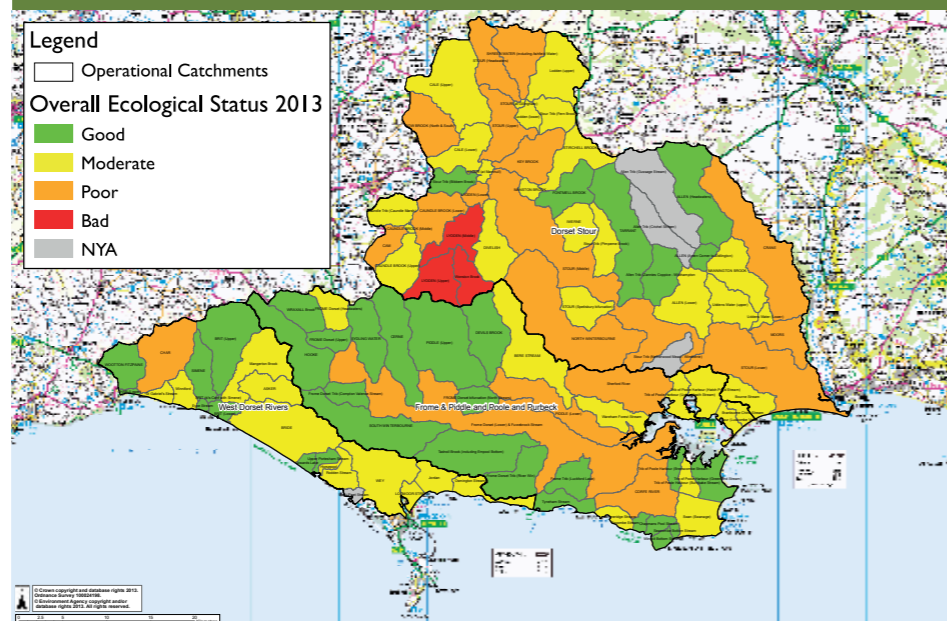
physical modifications for 12-21% of failures. Invasive plants and signal crayfish are also likely to harm ecological status.

Nitrate levels have increased in rivers and groundwater (in the River Frome over 200% higher today than in the 1960s)¹. High nitrate levels have caused growth of dense algal mats in Poole Harbour, smothering the intertidal ecosystem. Nearly half the public water supply sources in the Poole Harbour catchment have exceeded safe drinking water standards for nitrate in recent years. Diffuse pollution from agriculture is the dominant source, but treated sewage also discharges nitrates. Solutions may take decades to show results in the Harbour, but the most promising and cost effective action is to establish best practice crop and soil management by working with farmers in the catchment to reduce inputs at source.

Flood risk

The maps show locations with the highest flood risk in Dorset's

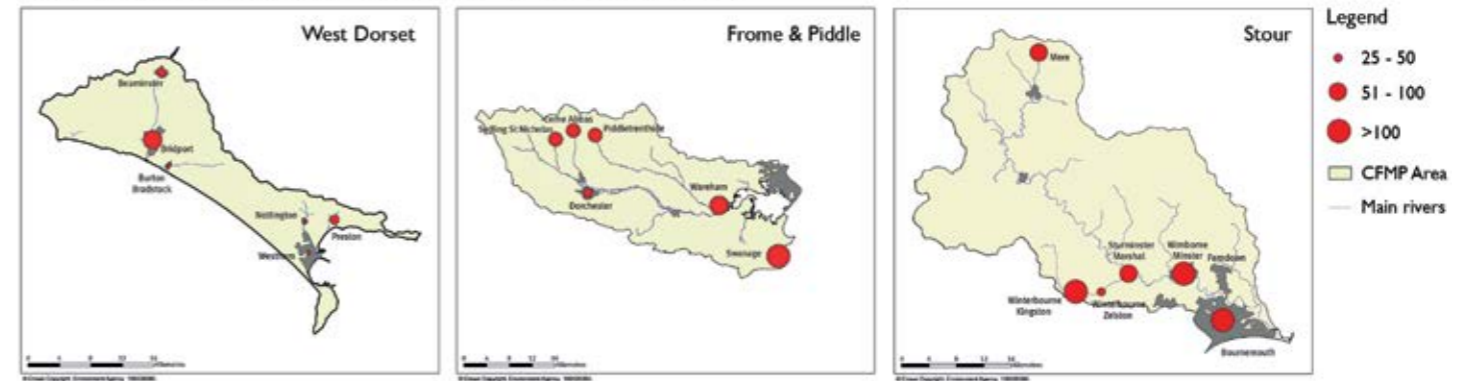
ECOLOGICAL STATUS OF RIVER CATCHMENTS, 2013



Source: Environment Agency (NYA = Not Yet Assessed)

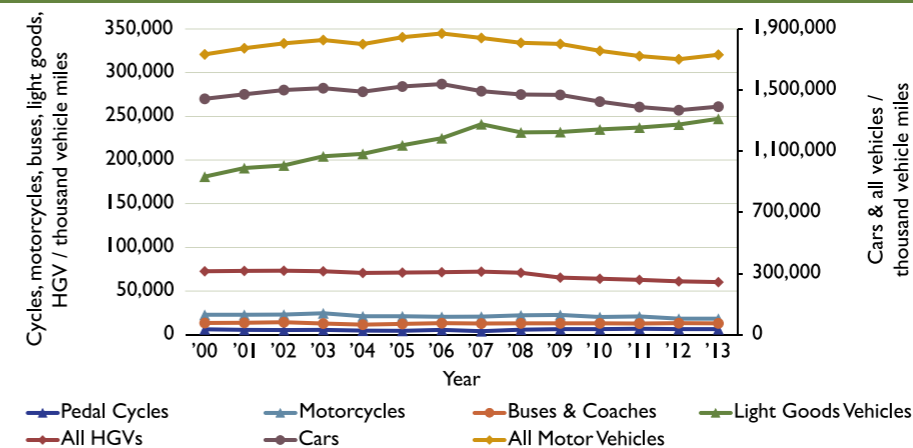
FLOOD RISK TO PROPERTY

Properties with a 1% chance of flooding, taking current flood defences into account



Source: Environment Agency Catchment Flood Management Plans (CFMPS)

TOTAL TRAFFIC ON MAJOR DORSET ROADS 2000 - 2013



Source: Department for Transport

main catchments. The main sources of flooding are river flooding, tidal, surface water drainage and groundwater. Catchment-based solutions can again help address problems, ameliorating flash flows and working with natural floodplains.

Climate change and wildlife

Dorset faces a range of risks from anticipated extreme weather and other climate impacts². As climate changes, we should expect new species to colonise, particularly as a south coast county. Since 2000, 11 new marine species and 43 new terrestrial invertebrates have been recorded for the first time in Dorset³. Other species may be lost as the climate becomes less suitable; however we can help prevent this by re-connecting habitats and adapting site management. Most new species will present no problems and will enrich our flora and fauna. However some could become invasive and/

or be carriers of harmful diseases. Exotic species can also colonise from gardens, arrive on ships or be deliberately introduced. Past experience shows that tackling problem invasive species before they become widespread can save millions of pounds.

Future-proof homes

Affordable housing is a clear priority for people in Dorset, and some have argued that higher standards of resource efficiency increase the costs of buying a home. However, housing must be affordable to live in as well as to purchase.

In Dorset, since the Code for Sustainable Homes was introduced in 2008, 1,663 certificates have been issued at the Design Stage and 1,437 at post-construction⁴. What is not clear is what level of Code standard, and therefore what level of sustainability, is being achieved.

Traffic volumes

Traffic in Dorset peaked in 2006, then fell back but in 2013 rose again. In Bournemouth and Poole traffic is now below 2000 levels, but is higher⁵ elsewhere. Though, as nationally, past huge rises have currently plateaued, high volumes of traffic remain and can harm the environment, communities and businesses. It is crucial that traffic levels are decoupled from economic growth and that cost-effective and accessible non-car travel and public transport choices are available.

Sustainable fisheries

Project Inshore's⁶ 2012-13 pre-assessment of all English fisheries using Marine Stewardship Council (MSC) standards provided the first ever in-depth rating of the sustainability of Dorset's fisheries. It found sole and plaice caught by trammel net and sole caught by drift net in the Western Channel were very likely to pass full MSC certification. For all other fisheries, challenges and recommendations for improvements were highlighted, such as the health of the fish stock, impact on the ecosystem or management system.

¹ Source: Poole Harbour Catchment Initiative catchment plan, Wessex Water

² Terrestrial Biodiversity Climate Change Impacts, 2012-13, LWEC

³ Source: Dorset Environmental Records Centre

⁴ <https://www.gov.uk/government/statistics/code-for-sustainable-homes-june-2014>

⁵ Source: <http://www.dft.gov.uk/traffic-counts/area.php?region=&la>

⁶ <http://www.seafish.org/industry-support/fishing/project-inshore>

NATURAL UNDERSTANDING

We know Dorset residents and visitors already value their environment, but improved public understanding of the environment as a system, and the benefits it offers, will be an important step in encouraging good stewardship now and in the future.

The LNP will seek to define and promote the idea of 'natural value', identifying the financial benefits and costs associated with environmental goods and services, as well as providing honest and reliable assessments on the state of Dorset's natural assets. The LNP will support a step change in our understanding of the environment, the quality of the environmental evidence base to inform planning and other decision-making processes, and the application of this evidence to the process of setting priorities and allocating resources.

Publication of the first Dorset LNP Natural Value report is an important first step in collating the picture of the health and benefits of Dorset's natural environment and forthcoming risks and opportunities. Some gaps in the evidence base remain, but the exercise has at least highlighted where these are.

Dorset's living textbook
Dorset County Council and Bournemouth Borough Councils have both supported the voluntary Eco-Schools programme and Borough of Poole run a Schools' Environment Award. These initiatives encourage school children to learn about, care for and enjoy the environment, as well as celebrate sustainable, healthy living.

Participation in environmental initiatives and, especially, learning outside the classroom makes a positive contribution to educational attainment. A variety of public bodies and organisations also run programmes which enable people of all ages to learn about the natural environment.



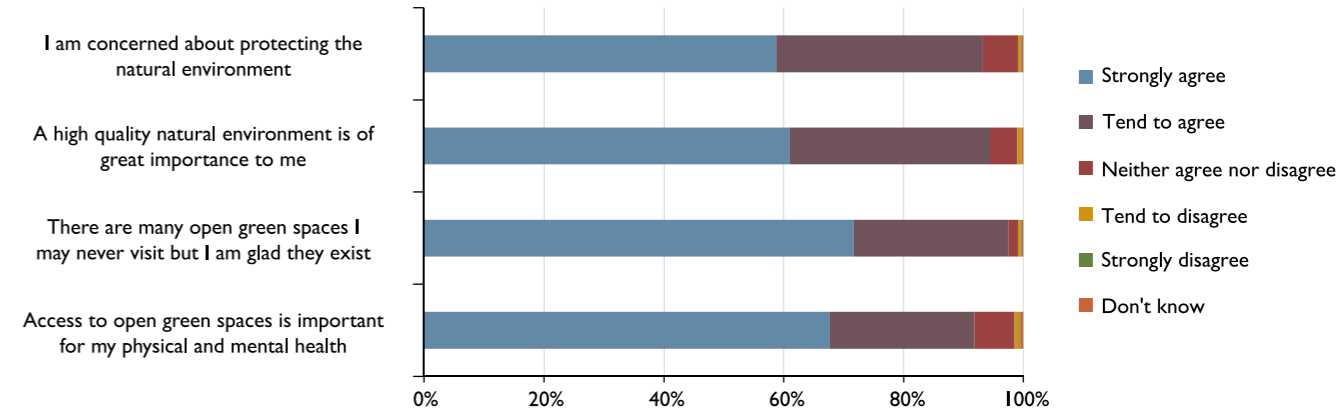
"Doing the archaeology walks helps me keep fit, meet people with similar interests and learn about Dorset's past – what are you doing next year?" participant in a Dorset Archaeology Day

PARTICIPATION IN ECO SCHOOLS PROGRAMME

Council	No. of schools	Registered for Eco Schools	Bronze Award	Silver Award	'Green Flag' Award (highest level)
Dorset County	228	205 (90%)	122 (54%)	71 (31%)	18 (8%)
Bournemouth Borough	40	36 (90%)	20 (50%)	6 (15%)	1 (0.25%)

Source: Bournemouth Borough Council and Dorset County Council
NB in Borough of Poole 16 of 36 schools (44%) have achieved their Schools Environment Award

ATTITUDES TO THE ENVIRONMENT



Source: Dorset Citizen's Panel 27, 2012

Attitudes to the environment
Dorset Citizen's Panel offers several thousand randomly recruited residents a chance to give views on a range of policy areas.

In 2012¹, questions on the natural environment were asked, to gauge attitudes and levels of outdoor activity. The results show that Dorset residents on the whole both value the environment in its own right, and recognise its importance for their health and wellbeing.

The proactive education work of the Urban Heaths Partnership, including Dorset Fire and Rescue Service and Dorset Police, illustrates an approach which has both reduced environmental damage and saved costs to the Fire Service. Historically Dorset had a high number of heathland fires, but over the last 10 years they have reduced, whilst increasing in other counties.

There remains a need to engage fully with all sectors of the community and with all people in ways relevant to their lives. For example, ensuring environmental value is explained where appropriate in economic and social information. Engagement through cultural events and festivals can also help promote natural understanding.

Environmental volunteering

The LNP seeks to improve opportunities for individuals and communities to get involved in caring for, and improving, their local

ENVIRONMENTAL VOLUNTEERING

Organisation	Approx. annual hours contributed by volunteers on environmental projects
Borough of Poole	2,300
Bournemouth Borough Council	4,600
Dorset Countryside Service	23,000
Dorset Wildlife Trust	18,072
National Trust	63,000
Natural England	450
RSPB	9,063

Source: The above organisations

environment, so increasing public understanding.

The table shows just a sample of the huge amount of voluntary effort committed to look after Dorset's environment. Costed at £7/hour this is worth £843,395 to Dorset's environment. To these figures the effort from many other organisations and communities needs to be added.

There is still a major scope to broaden this level of involvement to include more people of all backgrounds, ages and abilities.

Litter and environmental quality

Litter and flytipping are among the most visible indicators of whether there is society-wide pride in local environmental quality. The South

West is the 'cleanest' region nationally in these terms but still has significant problems with litter and fly tipping.

Fly tipping has increased in Dorset since 2005² which is obviously a matter of concern as failure to control such incidents tend to lead to escalation of them. They also impose costs on the public purse in terms of clean-up costs, over £100,000 in 2012-13.³

The Litter Free Coast and Sea initiative seeks to tackle the issue at source and reduce marine and beach litter through behavioural change.

¹ <https://www.dorsetforyou.com/400020>

² <http://www.defra.gov.uk/statistics/environment/waste>

³ Source: Dorset Waste Partnership

NATURAL

INFLUENCE

A founding principle of all LNPs is that they will embed the value of the natural environment in decision-making. We need to make sure that decisions made locally and beyond take better account of the costs, consequences, benefits and opportunities associated with natural assets and environmental change.

Dorset has a national and international reputation for leadership in areas such as coastal management and biodiversity mitigation, and we will leverage this to ensure Dorset's interests are reflected in national policy and that resources are attracted to Dorset to increase our capacity to deliver. In doing so, the LNP will promote creative approaches to overcoming traditional conflicts between economic and environmental objectives.

Planning and development

The LNP wants to see more accurate and transparent accounting for environmental costs and benefits and widespread adoption of the concept of 'natural value' in the planning process. A holistic approach to planning and development should take account of the need to maintain and create quality natural and historic environments near where people live,

and space for wildlife to get food and shelter in a changing environment. Adoption and application of a planning charter between LNPs and local planning authorities would provide one mechanism to help achieve this objective – this has been drafted and already adopted by two of the local planning authorities.

In south east Dorset the issue of development affecting wildlife has been highly focussed. Increasing human pressure on our internationally important heathlands has caused declines in their special wildlife. Planning authorities, with the help of the Urban Heaths Partnership, have been working to resolve the issues and for the past 7 years have implemented a tariff on all new housing development near heathland.¹

Each year, around £950,000 has been collected and spent on providing alternative (non-heathland) green space and additional wardening and education on heaths. Monitoring has shown that, with the right site design and promotion, it is possible to increase use of the alternative sites, and on heathlands encourage appropriate use and reduce the damaging activities.

BAT CHECKS THROUGH THE DORSET BIODIVERSITY PROTOCOL

Year	Total number of positive bat checks (i.e roosts found)	Total number of roosts of different bat species located (ie several species may be in same building)
2013	56	87
2012	120	149
2011	102	143
2010	109	123
2009	75	95
TOTAL	462	597

Source: Data compiled by the Natural England & Natural Environment Team (DCC) to the end of Dec 13



Wildflower grassland created on Weymouth Relief Road © Phil Sterling

Biodiversity appraisal in Dorset

Mitigating the impacts on wildlife of small scale development is now being addressed through the Dorset Biodiversity Protocol. The Dorset Bat Protocol has been operating in six Dorset Local Planning Authorities since 2009, with the Dorset Biodiversity Protocol in place since April 2011. It is simple to operate and has been seen as an exemplar of a system which caters for wildlife needs whilst enabling the planning process to proceed without undue delay. It has been studied by a number of other counties and by Defra for possible wider adoption. Since its introduction, over 750 enhancements for bats have been secured, and nearly 950 other biodiversity benefits through the planning system.

Ecological footprint

We hope to see greater awareness of the impacts of the decisions we take as consumers on the environment, and more sustainable choices being made as a result. Ecological footprint is a composite measure of consumption, which compares the natural resources we use with our 'share' of what is available based on global population. While a fairly blunt calculation, it gives a powerful metaphor for unsustainable lifestyles in the developed world, and if the calculations are only half-right, still presents an alarming picture!

Dorset, like the rest of the country and much of the developed world, is not alone in having a global ecological footprint which is disproportionately

large compared to the size of its population. Dorset's population is growing, and whilst this in itself is not necessarily undesirable, the more people living in the county, the more resources we utilise. Reducing consumption and increasing efficiency continues to be a key international, national and local challenge – but we all have a part to play in it.

Our ecological footprint will not reduce overnight, but the long term aim should be to bring it in line with the goal of 'one planet living' - living off the 'interest' which natural systems provide, and not eating into the 'capital'.

¹ Dorset Heathlands Planning Framework 2012-2014, available at <https://www.dorsetforyou.com/387392>

DORSET'S ECOLOGICAL FOOTPRINT



If everyone on Earth were to consume as many natural resources as the population of Dorset, we would need three planets to sustain the current lifestyle.

Source: Dorset County Council



Touch Garden © Nicky Hoar

DORSET LNP'S VISION

The Dorset LNP is working towards a future in which:

- Dorset's natural environment is richer in quality and diversity, and more resilient to change in urban and rural areas and in the marine environment.
- Dorset's natural systems are providing a wider and more valuable range of services, more reliably, to people and wildlife.
- Dorset's communities have increased understanding of, better access to and are more engaged in and supportive of the care and management of Dorset's environment, for its own sake, and for the benefits it offers them.
- Dorset's outstanding natural value is recognised, protected, enhanced, celebrated and invested in.

- Dorset's environment contributes to and benefits from development of a low-carbon, resource efficient and socially inclusive economy in which greener business practices are widely adopted.
- Dorset's wildlife sites are bigger, better and more joined up, giving them greater resilience in the face of future change and challenges.
- Dorset's world class terrestrial, coastal and marine environment is recognised as what makes Dorset a great place to live, work and visit.
- It is recognised that a healthy natural environment and a strong and sustainable local economy are mutually dependent.
- Dorset's impacts on the global environment are reduced.

- Maintenance of a healthy environment is recognised as a critical success factor in the wellbeing of current and future generations.
- Development and growth in Dorset is planned so that the natural resource on which the development is based is enhanced and not eroded, thus restricting future development.
- The natural environment is not thought of as a constraint to be overcome, rather it is the basis upon which growth and development can be sustained and therefore consistently requires both protection and enhancement to deliver such benefits.

FURTHER INFORMATION

This report has been put together by Dorset LNP and its partner organisations. We have tried hard to ensure that the information in this report is as up to date and relevant as possible. Nevertheless in some areas we have found gaps, which we hope will be addressed in future editions. One of our aims is to raise awareness of the need for comprehensive environmental information and we anticipate that readers may have suggestions and updates for us. Such input is very welcome and can be emailed to dorsetlnp@dorsetwildlifetrust.org.uk.

This report is available digitally, alongside more detailed technical reports, on the Dorset LNP web pages at www.dorsetwildlifetrust.org.uk/naturalvaluereport. For further information on the Dorset LNP please go to www.dorsetwildlifetrust.org.uk/dlnp.

There are many further sources of information, some are referenced in the report, others are available on websites of partner organisations. The following are just a start:

LOCAL STATISTICS AND CENSUS INFORMATION:

Bournemouth <http://www.bournemouth.gov.uk/PeopleLiving/BournemouthStatistics/BournemouthStatistics.aspx>

Dorset <https://www.dorsetforyou.com/statistics>

Poole <http://www.boroughofpoole.com/your-council/how-the-council-works/research/>

Local Environmental data

Dorset Environmental Records Centre <http://www.derc.org.uk/general/welcome.htm>

Dorset Local Enterprise Partnership Data Dashboard <https://www.dorsetforyou.com/datadashboard>

Dorset Health and Wellbeing Board <https://www.dorsetforyou.com/healthandwellbeingboard>

Bournemouth & Poole Health and Wellbeing Board <http://www.boroughofpoole.com/your-council/how-the-council-works/health-and-wellbeing-board/>

NATIONAL INFORMATION

Office for National Statistics <http://www.ons.gov.uk/ons/index.html>

National Environmental information and reports can be found on the websites of government agencies:

English Heritage <http://www.english-heritage.org.uk/professional/>

Environment Agency <http://apps.environment-agency.gov.uk/wiyby/default.aspx>

Forestry Commission <http://www.forestry.gov.uk/statistics>

Marine Management Organisation <https://www.gov.uk/government/organisations/marine-management-organisation>

Natural England <http://www.naturalengland.org.uk/ourwork/evidence/default.aspx>

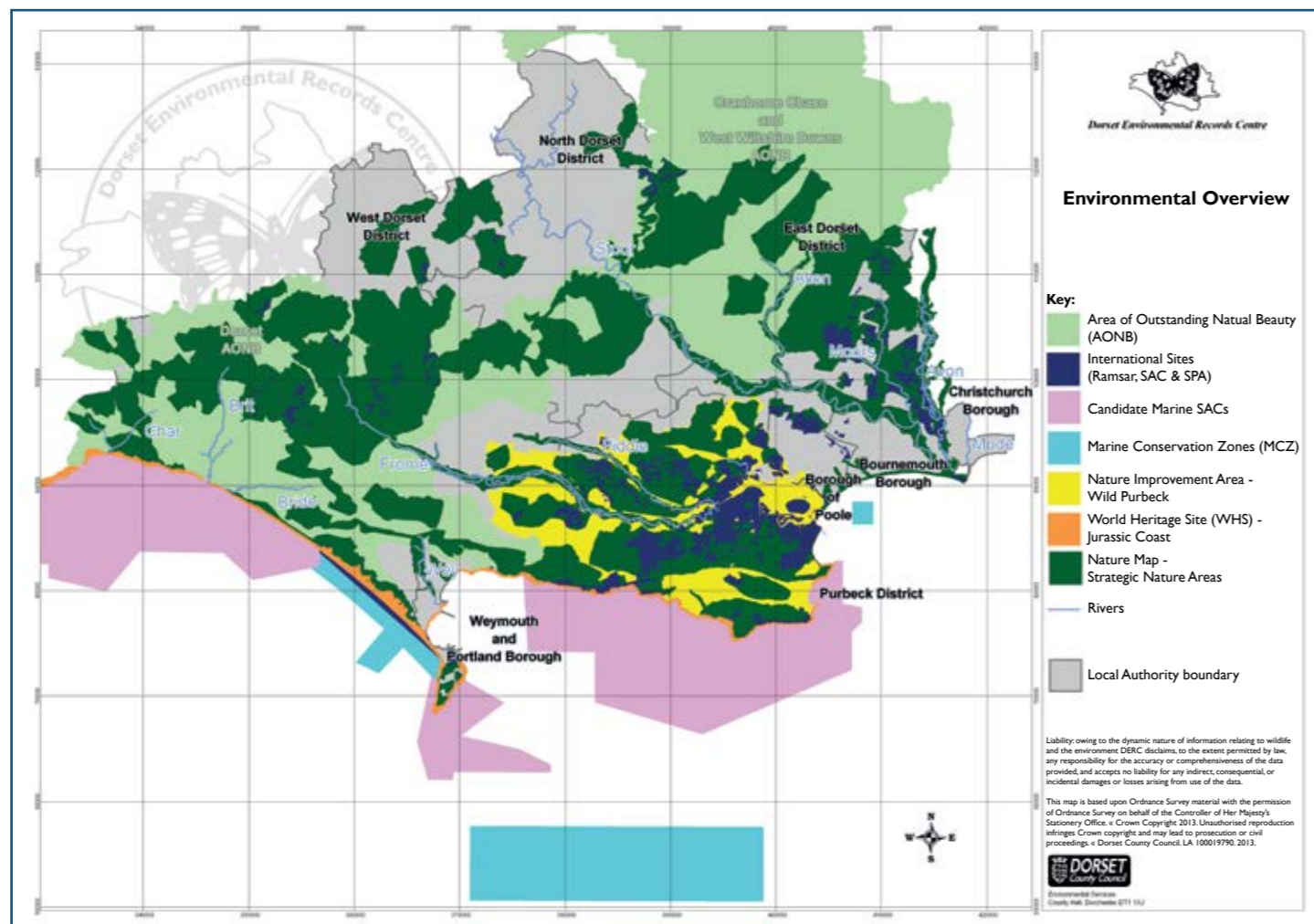
The national **State of Nature report** was produced by 25 UK conservation and research organisations in 2013 <http://www.rspb.org.uk/forprofessionals/science/research/details.aspx?id=363867>

ACKNOWLEDGEMENTS

Dorset LNP is grateful to all who provided information for this report and assisted in its production. The main contributing organisations are shown on the back, but there are many others who have helped. We cannot list all, but would particularly like to thank the following individuals:

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