

# State of the Environment

Wiltshire and Swindon  
2012



**Does Wiltshire include Swindon?** Historically the county of Wiltshire has included Swindon. Two local authorities – Wiltshire Council and Swindon Borough Council – now have responsibility for distinct geographic areas, covering 3,255km<sup>2</sup> and 230km<sup>2</sup> respectively. For the purposes of this report, ‘Wiltshire’ and ‘Swindon’ are used to refer to those areas within the local authorities’ boundaries, unless stated otherwise.



This report is available to download from [www.wiltshirewildlife.org](http://www.wiltshirewildlife.org) and [www.intelligenancenetwork.org.uk](http://www.intelligenancenetwork.org.uk)

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50  
anniversary  
1962–2012

Wiltshire Wildlife Trust works to create Living Landscapes across Wiltshire and Swindon and to lead and support the transition of society towards more sustainable living. We are committed to ensuring that our work is based on sound knowledge and evidence and that we use this to influence and inform decisions by others. We own or manage almost 900 hectares of land that provide havens for wild plants and animals and places for people to experience nature. We have more than 17,000 members and supporters and more than 600 volunteers. Founded in 1962, Wiltshire Wildlife Trust is celebrating its 50th anniversary with a series of events and activities throughout 2012.

[www.wiltshirewildlife.org](http://www.wiltshirewildlife.org)

Front cover: View of Cherhill.  
Photo: Richard Ramsey



Photo: Barry Craske WWT

Lower Moor Farm nature reserve in north Wiltshire is one of two education centres run by Wiltshire Wildlife Trust to inspire people of all ages and abilities to explore and actively learn about wildlife and the environment. The site is a gateway to three other Trust reserves including Clattinger Farm, a precious remnant of Britain's lowland hay meadows and of international importance for its rare wildflowers.

# Contents

4-5	Forewords and Introduction
6-7	Key findings
8-9	Land use and development
10-11	Air and water
12-13	Centrefold map of Wiltshire and Swindon
14-15	People, places and green spaces
16-17	Climate change and energy
18-19	Waste and pollution
20-22	Wildlife
23	Notes on the data
24	Wiltshire Intelligence Network

# Foreword

by Professor Sir John Lawton

Having spent most of our married life in York, my wife and I moved to Swindon in 1999, when I took over as Chief Executive of the Natural Environment Research Council. Running NERC was a full-time job-and-a-half, but I joined Wiltshire Wildlife Trust (and the Wiltshire Ornithological Society), boned up on places to bug-hunt, bird-watch and botanise, and Dot and I took every rare opportunity to explore Lydiard Park, close to home, and the wider county.

We were captivated. Wiltshire is without question England's best-kept secret. The wide, windswept chalk downland was like nothing I had ever seen (the Yorkshire Wolds are geologically identical, but they 'feel' very different, and the scale of Salisbury Plain is staggering). During the six years we lived there we walked the entire length of the Kennet and Avon Canal, some parts of it several times. Avebury blew us away. Savernake Forest was like stepping back in time. The Cotswold Water Park was a revelation about what conservation can achieve in partnership with industry. Red kites and ravens were establishing toe-holds in the county, and I watched with pleasure as both occasionally passed over our house. It all helped to keep me sane in a busy world of work.

I am sure that the same can be said for countless other people; Wiltshire's wildlife, wild places and wonderful archaeology enrich our lives. I still remember after a particularly difficult week listening to skylarks singing on the downs above Wootton Rivers, and realising that, in the greater scheme of things, my worries were entirely trivial.

Will my grandchildren still be able to enjoy skylarks – indeed benefit from skylarks – when they are my age? The answer is worrying. Farmland birds in Wiltshire (including skylarks) are in decline, mirroring national trends. Effective conservation means we have to know where the problems lie (and of course, understand the successes). Data may be dull, but try doing without them. So I very much welcome this incredibly valuable State of the Environment in Wiltshire and Swindon 2012 report. Here is the information needed to guide the conservation efforts of Wiltshire Wildlife Trust and its partners. In a world of limited resources we need to know where to invest our money, and where all is well with the world and we can let nature get on with it.

I do not personally know of any comparable effort by another Wildlife Trust, where in one place I can find out not only about 'obvious' things like Sites of Special Scientific Interest, and the trends in plant and animal numbers (biodiversity), but also about archaeological sites, light pollution and fly-tipping. How well is Wiltshire doing to reduce its greenhouse gas emissions? Water-quality? Look in this report. It is a mine of information on which to base the long-term conservation of Wiltshire's precious wildlife and wild places. The intention is to update it as regularly as possible.

Health professionals and economists have had data like these for decades. Yet it is easy to forget that the economy is a wholly owned subsidiary of the environment, and our health and wellbeing are nurtured by nature. I congratulate Wiltshire Wildlife Trust for this initiative. Use it wisely.

**Professor Sir John Lawton CBE FRS**  
**Chair of the Making Space for Nature Review (2011)**  
**and former Chair of the Royal Commission on Environmental Pollution**





We are delighted to present this State of the Environment report for Wiltshire and Swindon 2012. It represents a key step forward in enabling us to take full account of the environment in planning, decision making and service provision.

The report builds on the environment chapter of the 2010/2011 Joint Strategic Assessment (JSA) for Wiltshire and will form the basis of future JSA updates. It is supported by a wealth of detailed data and resources on the Wiltshire Intelligence Network, facilitating public access to reliable and current information. The state of our environment has a huge impact on many aspects of our lives, from our health and wellbeing to the success of local businesses; access to information is critical to protecting and enhancing the environment for everyone's benefit. This project aims to provide the evidence needed to put the environment on an equal footing with social and economic issues.

The ongoing collaboration between NHS Wiltshire, Wiltshire Council and Wiltshire Wildlife Trust is a vital part of this, helping to share environmental information and knowledge between a wide range of partners and other stakeholders. We look forward to continuing this aspect of our work in years to come to help secure a healthy environment for future generations.

**Jane Scott, Leader of Wiltshire Council**  
**Maggie Rae, Corporate Director of Public Health and Public Protection Services, NHS Wiltshire and Wiltshire Council**

# Introduction

This State of the Environment report is the first of its kind for Wiltshire and Swindon; helping to paint a picture of how our environment is changing. We will build on this in years to come, developing better knowledge and understanding, identifying trends, anomalies and areas of concern as well as those aspects of the environment where Wiltshire and Swindon compare favourably with other parts of the country. I hope that this and the new environment section of the Wiltshire Intelligence Network website will serve as invaluable sources of data and analysis for anyone with an interest in this area. Wiltshire Wildlife Trust is very grateful to NHS Wiltshire for its financial support, to Wiltshire Council for its advice and cooperation and to all the data providers.

One of the great joys for people living and working in Wiltshire and Swindon is the quality of our environment. A healthy environment, rich in wildlife, has significant social and economic value, and provides for a better quality of life. This report helps to quantify some of the things that many of us intuitively recognise as making the county such a wonderful place. It aims not only to highlight issues of concern but also to help us to celebrate and protect those aspects that we value so highly. In a recent Wiltshire Council survey, 44% of respondents ranked 'access to nature' as one of the most important things in making somewhere a good place to live, second only to health services (55.8%).

Some of the key findings are set out overleaf and these are explored in greater depth in the thematic sections that follow. More detailed information and links to sources are available on the Wiltshire Intelligence Network: [www.intelligencenetwork.org.uk](http://www.intelligencenetwork.org.uk)

**Dr Gary Mantle MBE**  
**Director, Wiltshire Wildlife Trust**





Langford Lakes nature reserve. Photo: Barry Craske WWT

# Key findings

## Landscape

Over 90% of Wiltshire and Swindon is green space<sup>1</sup>, with distinctive chalk uplands, clay vales and limestone valleys; 44% of Wiltshire and 28% of Swindon are designated Areas of Outstanding Natural Beauty (AONBs).<sup>2</sup>

## Farming

About 80% of the countryside is used for agriculture and more than half of this is grassland used for grazing farm animals. As well as providing employment and producing food this helps to protect vital wildlife habitat, maintain the character of the landscape and preserve other environmental features.<sup>3</sup> Sixty six per cent of agricultural land falls within environmental stewardship schemes, with farmers receiving funding to deliver effective environmental management.<sup>4</sup>

## Ecological footprint

While the numerous urban areas take up a relatively small proportion of the land, they have a significant and increasing environmental impact. The populations of both Wiltshire and Swindon are steadily growing, with implications for housing and infrastructure, all of which have an environmental impact.<sup>5</sup> The estimated individual 'ecological footprint' – an indicator of the total environmental burden we each place on the planet – is much higher than sustainable levels.<sup>6</sup>



Pewsey Downs. Photo: Stephen Davis WWT



Farming the land. Photo: Barney Wilczak



Urban impact. Photo: Wiltshire Council

**NB: All footnotes in this report indicate sources. For more details on references please visit [www.intelligencenetwork.org.uk](http://www.intelligencenetwork.org.uk)**

<sup>1</sup> Office of National Statistics, Land Use Statistics (Generalised Land Use Database), 2005

<sup>2</sup> Natural England

<sup>3</sup> Defra June Census 2010

<sup>4</sup> Natural England

<sup>5</sup> Office of National Statistics

<sup>6</sup> Stockholm Environment Institute

<sup>7</sup> English Heritage

<sup>8</sup> Wiltshire Council, Swindon Borough Council

<sup>9</sup> Environment Agency

<sup>10</sup> Department of Energy and Climate Change

<sup>11</sup> Regen SW

<sup>12</sup> Defra

<sup>13</sup> Natural England (SSSIs); Wiltshire and Swindon Biological Records Centre (Local Wildlife Sites)

<sup>14</sup> Wiltshire Geology Group

<sup>15</sup> Natural England



### Historic environment

Wiltshire and Swindon have a rich and varied historic environment, including the Stonehenge, Avebury and Associated Sites World Heritage Site. Thousands of historic buildings and other features are listed and protected by law, but over 19% of scheduled monuments are considered to be at risk.<sup>7</sup>

### Air quality

Air quality is good overall and reflects long-term improvements across the UK. However, levels of nitrogen oxide emissions from road vehicles have exceeded the recommended limits in some urban areas and require further action by the local authorities.<sup>8</sup>

### Water

Water levels in our rivers and below ground are of great concern; more than 70% of rivers are 'over-abstracted' or 'over-licenced' and two thirds of groundwater supplies are considered to be poor in terms of quantity. This has serious implications for public water supply, for agriculture and for a healthy natural environment.

Water quality is at a comparable level to the rest of the South West region; 23% of rivers in Wiltshire and 18% in Swindon (by length) have been classed as 'good' overall status while 56% and 64% respectively have 'moderate' status and 19% and 18% respectively have 'poor' status. Fourteen kilometres of river in Wiltshire failed to achieve acceptable standards of chemical quality.<sup>9</sup>

### Climate Change

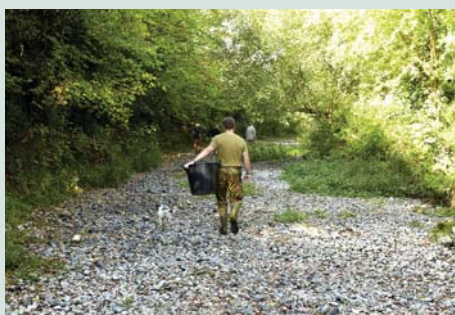
Carbon emissions per person are markedly higher than regional and national figures; 18% higher in Wiltshire than in England in 2009. However, these all declined between 2005 and 2009 and total carbon emissions in the county are declining, despite the growing population. Agriculture and landfill waste are significant sources of methane and nitrous oxide, both powerful greenhouse gases.<sup>10</sup> In 2010, Wiltshire (including



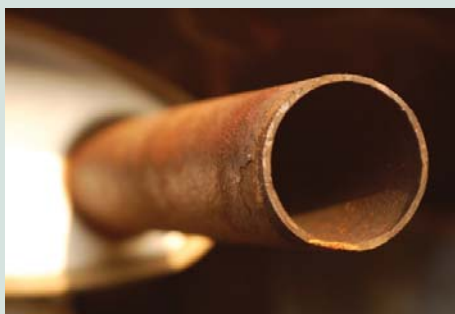
Avebury. Photo: Stephen Davis WWT



Salisbury traffic. Photo: Wiltshire Council



Dry River Kennet. Photo: ARK Les Wilson



Carbon emissions. Photo: Wiltshire Council

Swindon) had one of the lowest installed renewable energy capacities and the smallest number of projects in the South West region.<sup>11</sup>

### Waste

The environmental impact of municipal waste is being reduced, with levels of waste declining and recycling rates reaching record highs. The amount of municipal waste sent to landfill has dropped dramatically in recent years and new facilities to recover energy from waste are being developed.<sup>12</sup> There is much less information about levels and management of non-municipal waste, such as from construction, quarrying and industry, although the quantities involved are much greater.

### Wildlife and geological sites

More than 14% of the land area is recognised as a Site of Special Scientific Interest (SSSI) or Local Wildlife Site, although as a network they are fragmented and under pressure from a range of factors.<sup>13</sup> The management of Local Wildlife Sites appears to be improving in general. While less than 23% of the SSSI area is in favourable condition, over 75% is being actively managed and is improving. Around half of recognised geological sites are in declining condition and around half are in good, favourable or recovering condition.<sup>14</sup>

Ten sites are recognised at the European level as Special Areas for Conservation (SACs) for their importance to wildlife, including the vast open chalk grasslands of Salisbury Plain and Porton Down. While seven of these sites are considered to be in favourable or recovering condition, the condition of Chilmark Quarries, the River Avon and parts of the New Forest are of concern.<sup>15</sup>

Wiltshire is a stronghold for certain groups of species, including farmland birds, bats and butterflies. While monitoring the state of wild plants and animals across a large area is difficult, species such as these can serve as good indicators. The abundance and variety of wildlife is dependent on a range of factors. Farmland specialist bird species and many butterfly species have declined severely in recent decades, yet species such as otters and stone curlew have responded well to conservation efforts.



Common blue butterfly on burnt tip orchid. Photo: Stephen Davis WWT

# LAND USE and DEVELOPMENT

Wiltshire is predominantly rural – almost 94% is classified as green space – with 80% used for agriculture. Swindon is much more developed but has a relatively high percentage of land (7.29%) used for domestic gardens. The area attributed to water bodies in both Wiltshire and Swindon is proportionately much smaller than in the South West and England as a whole. There is significant overlap between some land uses and it is not possible to account for every piece of land. For example, the chalk grassland of Salisbury Plain is owned and used by the Ministry of Defence for military purposes, but it is also a protected area for wildlife and counts as agricultural land as it is grazed by livestock.



Tank on Salisbury Plain. Photo: Stephen Davis WWT

## Land use in Wiltshire and Swindon

Land use type	Land area (km <sup>2</sup> )		Percentage of total land area (%)			
	Wiltshire	Swindon	Wiltshire	Swindon	South West	England
<b>Total land area</b>	<b>3255</b>	<b>230</b>	-	-	-	-
Buildings	29.37	8.95	0.90	3.90	1.21	1.78
Roads	39.97	8.96	1.23	3.89	1.74	2.22
Paths and rail	4.30	1.30	0.13	0.56	0.13	0.24
Domestic gardens	80.11	16.77	2.46	7.29	3.03	4.24
Water	19.10	1.27	0.59	0.55	1.94	2.58
Other eg. hardstanding	31.13	7.16	0.96	3.11	1.05	1.39
Greenspace	3051.76	185.51	93.75	80.62	89.48	87.00

Sources: Office of National Statistics, Land Use Statistics (Generalised Land Use Database) 2005 - some categories have been combined from the original dataset

## New homes in Wiltshire and Swindon to 2026

	Wiltshire	Swindon
Homes built 2006-10	8,370	6,189
Homes to be built by 2026	28,630	18,811
Total homes built 2006-26	37,000	25,000

Sources: Wiltshire Core Strategy Consultation Topic Paper 17, Swindon Borough Core Strategy

## Extent of farmed area and nature-rich areas\*

	Land area (km <sup>2</sup> )		Percentage of total land area (%)			
	Wiltshire	Swindon	Wiltshire	Swindon	South West	England
Farmed area	2604.70	130.85	80.02	56.89	71.83	66.80
Nature-rich areas	490.31	8.58	21.49	6.87	12.42	>12.86

\*these two categories are not exclusive, for example nature-rich grassland grazed by livestock will count in both categories. Sources: Farmed area; Defra June Census 2010. Nature-rich areas (SSSIs and Local Wildlife Sites); Natural England, WSBRC and The Wildlife Trusts

While the numerous villages, towns and the city of Salisbury take up a relatively small area of land, they have a major and increasing environmental impact, including on water resources, air quality, waste and pollution. New housing, employment areas and infrastructure are required to meet the needs of a steadily growing population. Between 2006 and 2026, there are plans to build 37,000 new homes in Wiltshire and 25,000 in Swindon (see middle table left). However, the total number of homes built each year has decreased since 2006 in both areas.

### Farming

Almost half of Wiltshire's agricultural land is used as grassland for grazing cattle and sheep, followed by cereals and other arable crops with less than 1% used for fruit and vegetables. Swindon's farmland use follows roughly the same pattern, although with a smaller proportion of grassland and more arable use. The majority of agricultural land is classed as grade 3 in terms of quality. About 80% of farmland is managed in holdings of 100 hectares or more, compared to 72% of England as a whole. Only 2.5% of Wiltshire's farmland is in holdings of 20 hectares or less, compared to 3.8% of England as a whole.<sup>16</sup>

Poultry are the most numerous type of livestock farmed in Wiltshire (89% of animals), with much smaller numbers of cattle, sheep and pigs. However, poultry farming involves much less land per animal. In Swindon, more than 50% of livestock are cattle, followed by sheep, poultry and pigs in that order.<sup>17</sup> Data was not found on horses and associated land use.





Sheep at Combe Bissett Down nature reserve. Photo: Barry Craske WWT

## Recognised geological sites

Sites	Condition
Wiltshire local sites	16 sites – good 2 sites – good steady 26 sites – good declining 10 sites – poor declining 4 sites – poor declining or lost
Swindon local sites	Coate Water – good declining Highworth town centre – good
Wiltshire SSSIs	11 sites – favourable 5 sites – unfavourable recovering 4 sites – mixed 2 sites – unfavourable declining
Swindon SSSIs	2 sites – favourable 1 site – mixed

Total number of recognised sites: 85

Sources: *Wiltshire Geology Group, Natural England 2011*

Sixty six per cent of agricultural land in Wiltshire and Swindon (and 52% of the total land area) is covered by 974 environmental stewardship agreements.<sup>18</sup> This is the same as the proportion of England as a whole that is covered by environmental stewardship agreements.<sup>19</sup> These agreements provide funding to farmers and other land managers

to deliver effective environmental management on their land. More than half of the land within agreements in Wiltshire and Swindon is covered by the Entry Level Stewardship scheme. The remainder is covered by higher level and organic schemes that require more complex management and deliver a wider range of environmental benefits.

## Landscape

The landscape is distinctive and varied, defined by its surface geology. This is often referred to as 'chalk and cheese' due to the contrast of sheep grazing on chalk downlands and dairy farming on the clay lowlands. There is a prominent scarp trending generally north east/south west across the centre of the county. To the north west, Jurassic rocks crop out in succession; to the south east, Cretaceous rocks form the high ground of the Marlborough Downs and Salisbury Plain. In the south east corner there are small outcrops of Tertiary rocks. The Vale of Pewsey and the Vale of Wardour jut into the chalk outcrop.<sup>20</sup> There are 85 recognised geological sites, including 25 Sites of Special Scientific Interest, but around half of these are declining in condition (see table left).

Three Areas of Outstanding Natural Beauty (AONB) and part of the New Forest National Park cover 45% of Wiltshire. The North Wessex Downs AONB also accounts for 28% of the Swindon area.<sup>21</sup> A Wiltshire Landscape Character Assessment concluded that "around a third of the landscape of the county is in moderate condition with none in poor condition. Most of the chalk uplands of the south of the county, and the limestone areas to the north west are in good condition. The chalk downs that dominate the county are considered strong in character along with the greensand hills and limestone valleys, while the less distinctive clay and limestone lowlands and greensand terraces are moderate in strength of character. Again there are no landscape types considered to be of weak character".<sup>22</sup>

Wiltshire has 69 km<sup>2</sup> of Green Belt land,<sup>23</sup> all part of the Avon Green Belt that surrounds the wider Bath and Bristol areas. The objectives are to maintain the open character of undeveloped land adjacent to Bath, Trowbridge and Bradford on Avon, to limit the spread of development along the A4 between Batheaston and Corsham and to protect the historic character and setting of Bradford on Avon.<sup>24</sup>

<sup>16</sup> Defra June Census 2010

<sup>17</sup> Defra June Census 2010

<sup>18</sup> Natural England, November 2011

<sup>19</sup> *Farming with nature: Agri-environment schemes in action* © Natural England 2009

<sup>20</sup> Wiltshire Geology Group

<sup>21</sup> Natural England

<sup>22</sup> *Wiltshire Landscape Character Assessment Final Report*, Land Use Consultants December 2005, Chapter 11, p.155

<sup>23</sup> Department for Communities and Local Government © Crown Copyright, 2011

<sup>24</sup> Wiltshire Core Strategy Consultation Document, June 2011

# AIR and WATER

## Air quality

Overall air quality in Wiltshire is good and reflects long-term improvements across the UK. However, levels of nitrogen dioxide (NO<sub>2</sub>) emissions from road traffic have exceeded the recommended limits in some urban areas. Levels of fine particulate matter (PM<sub>10</sub>) are monitored by Wiltshire Council and are of particular concern in Bradford on Avon.

Wiltshire Council has seven Air Quality Management Areas (AQMAs) in place (see table right). Once an AQMA is declared, the local authority must take action to reduce air pollution to within the recommended limits. Although some AQMAs have been in place for several years, regular reviews have confirmed that the limits are still being exceeded.

The council has recognised the need for further action to tackle air pollution from traffic in Wiltshire's urban areas, particularly as traffic levels are still increasing. An Air Quality Strategy 2011-2015 has been published, based on the need for a more holistic approach, working across council departments and with local communities and external partners.<sup>25</sup>

Swindon Borough Council has not declared any AQMAs. Detailed assessment was underway at Kingshill Road and Devizes Road in Swindon town, and in Stratton St Margaret, where levels of NO<sub>2</sub> are of concern.<sup>26</sup>



Traffic at Shanes Castle, Devizes. Photo: Wiltshire Council

Air Quality Management Area	Year declared
Bradford on Avon	2001
Devizes (Shanes Castle)	2010
Marlborough	2011
Salisbury (city centre)	2003
Salisbury (Wilton Road)	2007
Salisbury (London Road)	2007
Westbury	2001

Source: Wiltshire Council

Annual data is available on emissions of other primary pollutants, including sulphur dioxide (SO<sub>2</sub>). SO<sub>2</sub> emissions in England have declined by 91% in the past two decades. However, the contribution that major industry makes to SO<sub>2</sub> emissions can clearly be seen in the decreases from 2008 to 2009 shown in the table below. This can be largely attributed to the closure of the cement works near Westbury and temporary closure of the Honda factory in South Marston in 2009.



Air pollution. Photo: Wiltshire Council

## SO<sub>2</sub> emissions in 2008 and 2009

	Wiltshire	Swindon	England
Total emissions in 2008 (tonnes)	2,538	1,135	367,000
Total emissions in 2009 (tonnes)	1,325	274	284,000
% change from 2008 - 2009	-48%	-76%	-23%

Source: National Atmospheric Emissions Inventory



Westbury cement works. Photo: Paul McRae WWT



Although chalk streams are common in Wiltshire, globally they are only found in England and northern France.

River Avon at Gunville Cottage. Photo: David Rawlings

### Water supply and quality

Sufficient water supplies are essential both for people and for a healthy natural environment. Fresh water for public supplies in Wiltshire and Swindon is removed from surface water (such as rivers and lakes) and groundwater. Tens of millions of litres are abstracted every day from groundwater bodies and rivers. More than 70% of rivers (by length) are assessed as 'over-abstracted' or 'over-licensed', with an unacceptable environmental impact if the abstraction licenses that are already granted were used to their full extent. The remaining 29% of rivers have 'no water available' for further licensing at low flows.<sup>27</sup> Two-thirds of the area of groundwater sources have been classed as 'poor' in terms of water quantity.<sup>28</sup>

In March 2012, rainfall in the east of the county was 62% less than the long-term average.<sup>29</sup> All rivers were below normal levels, with some at exceptionally low levels. Groundwater levels were the lowest for 90 years. Locks along part

of the Kennet and Avon Canal were closed in November 2011 due to a lack of groundwater to supply the canal.<sup>30</sup>

The ecological status of Wiltshire and Swindon's rivers can be compared with the larger River Basin Districts (RBDs) monitored by the Environment Agency (see table below). Swindon's rivers all fall within the Thames RBD and are generally of higher quality than the rest of the district. Wiltshire's rivers fall primarily within the Severn and South West RBDs with smaller river lengths lying within the South East and Thames RBDs. Wiltshire's river status is similar to the Severn RBD as a whole but has significantly more river with 'poor' and 'bad' ecological status than the South West RBD. Wiltshire has two sections (14km in total) of river which have been classed as 'fail' on chemical status: Midford Brook on the Wiltshire border south of Bath (3.5km) and the River Marden southeast of Calne (10.5km).<sup>31</sup>

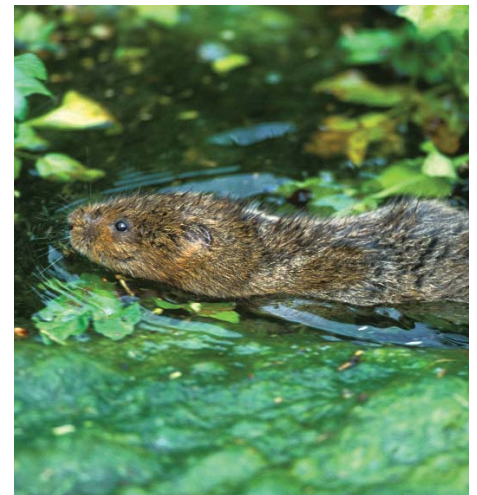


Photo: David Kjaer

Healthy rivers provide vital habitat for a range of species, including watervole.

### Ecological status of river water bodies

(as a percentage of total river length)

	High	Good	Moderate	Poor	Bad
Wiltshire	0%	23.3%	55.6%	18.9%	2.2%
Swindon	0%	18.2%	63.6%	18.2%	0%
Severn RBD	0%	21.4%	55.4%	21.3%	1.9%
South West RBD	0%	24.8%	63.6%	10.4%	1.1%
Thames RBD	0%	10.2%	54.8%	30.2%	4.9%

Sources: Environment Agency Water Framework Directive data 2011; Wiltshire and Swindon figures - South West Observatory Environment Local Profiles 2011

<sup>25</sup> Wiltshire Council

<sup>26</sup> Swindon Borough Council

<sup>27</sup> Environment Agency Catchment Abstraction Management Strategies (CAMS)

<sup>28</sup> Environment Agency

<sup>29</sup> Environment Agency

<sup>30</sup> British Waterways

<sup>31</sup> Environment Agency Water Framework Directive data

# State of the Environment of **Wiltshire** and **Swindon**

Over 90% of Wiltshire and Swindon is green space, with 44% of Wiltshire and 28% of Swindon designated as Areas of Outstanding Natural Beauty. About 80% of the countryside is used for agriculture and 66% of farmland is in environmental stewardship schemes.



The open chalk grasslands of Salisbury Plain are used for military purposes and for agriculture, but are also of international importance for their wildlife. Wildlife-rich sites account for more than 14% of the land area but as a network they are fragmented and under pressure from a range of factors











Wiltshire and Swindon's rich and varied historic environment includes the distinctive chalk hill carvings of white horses as well as the World Heritage Site of Stonehenge, Avebury and Associated Sites. While many historic features are protected by law, over 19% of scheduled monuments are considered to be at risk.

Top: Poppies on Salisbury Plain.  
Photo: Stephen Davis WWT

Bottom: Autumn in Green Lane Wood.  
Photo: Steve Day WWT

## Key

-  Towns/city
-  M4
-  A Roads
-  B Roads
-  Railway line
-  Canals
-  Rivers
-  White Horse



Top: Housing development, Westbury.  
Photo: WWT

Bottom: Kennet and Avon Canal.  
Photo: Beverley Heath WWT

The human population is steadily growing (9% higher in Swindon than the national rate up to 2026) and 62,000 new homes are to be built across Wiltshire and Swindon, with a corresponding environmental impact. The estimated individual ecological footprint is currently much higher than sustainable levels and carbon emissions per person are markedly higher than regional and national figures (18% higher in Wiltshire than in England in 2009).



Rivers such as the Kennet and Wylde were at exceptionally low levels in 2011-12 and groundwater levels were the lowest for 90 years, leading to the closure of parts of the Kennet and Avon canal and concerns about the impact on public water supply, agriculture and the natural environment.



Air quality is good overall but road traffic emissions are a problem in some urban areas, including Salisbury. Overall levels of municipal waste are declining, while recycling and composting rates have reached record highs.

### Special Areas of Conservation

- |                                    |                      |
|------------------------------------|----------------------|
| 1 North Meadow and Clattinger Farm | 6 The New Forest     |
| 2 Bath and Bradford on Avon Bats   | 7 Great Yews         |
| 3 Pewsey Downs                     | 8 River Avon         |
| 4 Kennet and Lambourn Floodplains  | 9 Prescombe Down     |
| 5 Salisbury Plain and Porton Down  | 10 Chilmark Quarries |

# PEOPLE, PLACES and GREEN SPACES

## Population

The growing populations of Wiltshire and Swindon have a significant impact on the state of the environment. The rate of population growth from 1991 to 2010 was significantly higher than the rest of the country. Projected population growth up to 2026 is even faster in Swindon and 9% higher than for England (see table right). These projections are based on the assumption that current demographic trends in fertility, mortality and migration will continue. Results of the 2011 Census will be published from July 2012 onwards.

The environmental impact of people's activities is sometimes expressed as an 'ecological footprint'. This has been estimated at the local authority level (see table right). The average footprint of people in Wiltshire and Swindon is estimated at roughly double the global average and more than double the sustainable level. People in Wiltshire have, on average, a larger footprint than those in the South West region as a whole, and both have a larger footprint than the average individual across the UK. The average footprint in Swindon is lower than in Wiltshire and the South West but higher than the UK average.<sup>32</sup>



Avebury. Photo: Beverley Heath WWT

## Human population (in thousands), 1991-2026

	1991	2001	2010	2016	2026	% change 1991-2010	% change 2010-2026
Swindon	171	180	202	218	244	17.9%	20.9%
Wiltshire	394	433	459	476	510	16.6%	11.2%
South West	4,609	4,928	5,297	5,556	6,023	14.9%	13.7%
England	47,055	49,139	52,198	54,472	58,334	10.9%	11.8%
UK	56,457	58,789	62,262	65,271	69,820	10.3%	12.1%

Sources: 1991 and 2001 figures - Census data; figures for 2010 onwards - Subnational and National Population Projections, ONS (Crown Copyright) and 'Wiltshire Population 2011' report, Wiltshire Council

## Ecological footprint (hectares per capita)

Kennet	4.82
North Wiltshire	4.87
Salisbury	4.91
West Wiltshire	4.84
Swindon	4.67
South West	4.74
UK	4.64
Global average	2.4
Sustainable level	1.9

Source: Stockholm Environment Institute

## Listed buildings, monuments and areas (number at risk in brackets)

	Swindon	Wiltshire	Total
Grade I/II* listed buildings	41 (2)	978 (17)	1,019 (19)
Grade II listed buildings	613	11,229	11,842
Scheduled monuments	53 (15)	1,309 (248)	1,362 (263)
Registered parks and gardens	3	41 (1)	44 (1)
Registered battlefields	-	1	1
Conservation areas	28	244 (1)	272 (1)

Source: English Heritage

## Percentage of historic assets on the Heritage At Risk Register 2011

	Wiltshire and Swindon	South West	England
Grade I/II* listed buildings	1.9%	2.1%	3.0%
Scheduled monuments	19.3%	20.3%	16.9%
Registered parks and gardens	2.3%	6.1%	6.4%
Conservation areas	0.4%	8.1%	6.6%

Source: English Heritage

Outdoor activity improves physical and mental health.



Wiltshire Wildlife Trust allotment. Photo: Thomas Bunce WWT

### Historic environment

The importance of Wiltshire and Swindon's historic environment is recognised by the number of buildings, sites and monuments that are protected by law (see table left). The Stonehenge and Avebury World Heritage Site is internationally renowned.

Some of these assets are included in the Heritage At Risk Register 2011 (see table left bottom); those at risk represent a smaller percentage than for the South West or England as a whole. The exception to this is scheduled monuments, where Wiltshire and Swindon are faring slightly better than the South West but worse than England. Only one conservation area is considered at risk, which is well below the regional and national proportion and suggests that the character of these areas is being protected.

The conservation and enjoyment of the World Heritage Site is currently affected by the busy roads that run through and around both Stonehenge and Avebury. At Stonehenge, planning permission has been granted for a new visitor centre, car park and partial closure/restriction of the A344 road from Stonehenge Bottom to Airman's Corner. The works are scheduled to begin in April 2012 and to be completed by 2014. The works are intended to improve visitor facilities and to "restore a sense of dignity" to the Stonehenge setting.<sup>33</sup>

### Green spaces

The importance of public access to natural green space is increasingly recognised in public health policy,<sup>34</sup> the planning process and elsewhere. Networks of footpaths, parks, nature reserves, woodlands, waterways and other open spaces and countryside near to where people live is known as 'green infrastructure'. This provides a wealth of benefits to people and the environment, including better mental and physical health, and places for wildlife to thrive. If everyone in England was given good access to green space it is estimated that the cost saving to the health service could be in the order of £2.1 billion per annum.<sup>35</sup>

Wiltshire's network of public rights of way is more than 6,100km long, almost all on privately-owned land. There are 26,000 hectares of access land, around three-quarters of which are within the Salisbury Plain Training Area.<sup>36</sup> There are 11 Local Nature Reserves (LNRs) in Wiltshire and seven in Swindon; LNRs offer people special opportunities to experience nature and geology as well as protecting the sites themselves.<sup>37</sup>

Swindon Borough Council has published a Green Infrastructure Strategy and Wiltshire Council's equivalent is being prepared. These will give an assessment of the condition of existing green spaces and the ease of access for local people, and outline plans for investment in creating new and better quality spaces. This will help



Coppicing at Ravensroost nature reserve. Photo: Barry Craske WWT

to integrate green infrastructure into plans for new housing and other development set out in Wiltshire and Swindon's Local Development Frameworks.

<sup>32</sup> Stockholm Environment Institute Biology Department, University of York, Footprint Results from BRIO model, Oct 2009

<sup>33</sup> English Heritage

<sup>34</sup> Department of Health White Paper *Healthy Lives, Healthy People: Our strategy for public health in England*, 2010

<sup>35</sup> Natural England Technical Information Note TIN055 *An estimate of the economic and health value and cost effectiveness of the expanded WHI scheme 2009*

<sup>36</sup> Wiltshire Council Core Strategy Consultation June 2011 Draft topic paper 13: Green infrastructure, Rights of Way Improvement Plan for Wiltshire County Council 2008-2012

<sup>37</sup> Wiltshire Council, Swindon Borough Council

# CLIMATE CHANGE and ENERGY

Climate change caused by greenhouse gas emissions is one of the greatest threats to the environment in Wiltshire and Swindon. In the long term, it is predicted that the annual average temperature in Wiltshire could increase by up to 5.1°C by the 2080s (see table right). There will be hotter, drier summers and milder, wetter winters. There will also be more frequent and extreme weather events, such as heat waves, storms and droughts. Although there appears to be little change in total rainfall each year, it will rain less often and in greater downpours, primarily in winter. When these downpours fall on dry land they will lead to increased runoff and flooding.<sup>38</sup>

The year 2011 has included some unusual climate events. England had the warmest April and spring, and the second warmest autumn on record. There was 15.7% less rainfall than average over the year.<sup>39</sup> The Tilshead borehole ran dry at the end of October for the first time since the 1976 drought and levels at Rockley were very close to the lowest on record.<sup>40</sup> Spring appeared to arrive earlier than in the past 120 years and wildlife was demonstrating spring-like behaviour in November due to the mild conditions.<sup>41</sup>



Photo: Peter Hayes

Wiltshire Wildlife Trust has installed special temperature loggers in the River Wylde at its Langford Lakes nature reserve near Salisbury to help discover what effect climate change is having on salmon and trout (above) populations.



Increased downpours could lead to flooding. Photo: Wiltshire Council

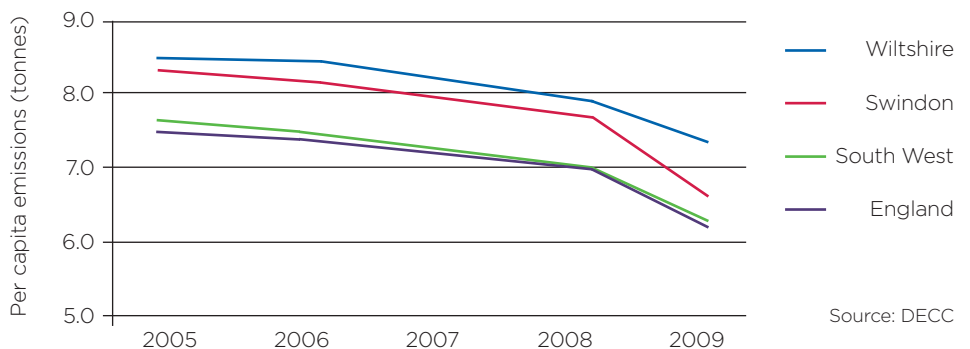
## Projected changes in annual mean temperature in Wiltshire

Time period	Low emissions scenario (°C)	Medium emissions scenario (°C)	High emissions scenario (°C)
2020s	1.2 to 1.7	1.2 to 1.7	1.2 to 1.7
2050s	1.9 to 2.6	2.2 to 2.9	2.4 to 3.2
2080s	2.4 to 3.3	3.1 to 4.1	3.8 to 5.1

Source: UKCP09 User Interface (© UK Climate Projections, 2009); figures show the likely range, 33% to 67% probability levels

Reducing greenhouse gas emissions is vital to avoiding more extreme impacts of climate change. Emissions targets are now legally binding on the UK government. Carbon dioxide (CO<sub>2</sub>) makes up the largest proportion of greenhouse gas emissions in the UK – about 84% in 2009. While CO<sub>2</sub> emissions declined between 2005 and 2009, provisional 2010 figures for the UK as a whole showed an increase of 3.8% from 2009.<sup>42</sup>

## Per capita CO<sub>2</sub> emissions, 2005-09



<sup>38</sup> Wiltshire Local Climate Impacts Profile 2009

<sup>39</sup> Meteorological Office

<sup>40</sup> Centre for Ecology and Hydrology

<sup>41</sup> The Nature's Calendar Survey, Woodland Trust

<sup>42</sup> Department of Energy and Climate Change (DECC)

<sup>43</sup> A full dataset is available on the DECC website.

<sup>44</sup> DECC

<sup>45</sup> DECC





Government strategy will see increase in renewable energy generation. Photo: Ryan Tabor WWT

CO<sub>2</sub> emissions per capita in both Wiltshire and Swindon were markedly higher (18% higher in Wiltshire than in England in 2009) than the regional and national figures between 2005 and 2009, although they have followed the same downward trend (see graph left). Total CO<sub>2</sub> emissions also fell between 2005 and 2009, from 1,519 to 1,319 kilotonnes in Swindon and from 3,699 to 3,291 kilotonnes in Wiltshire. This is despite a steadily growing population.

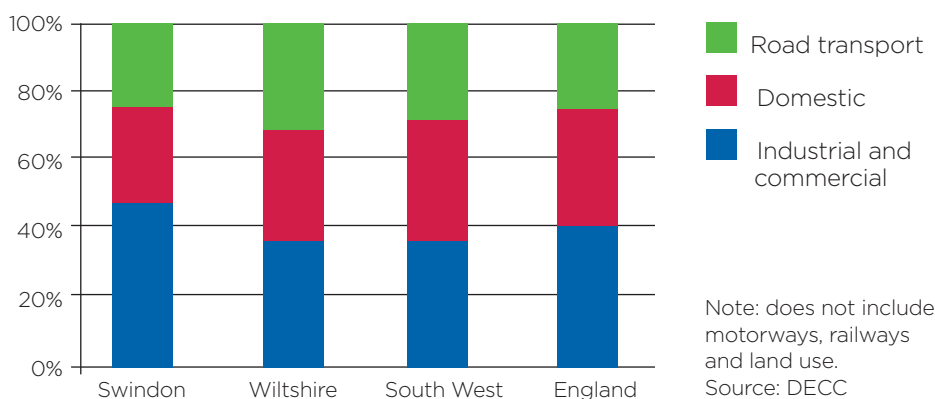
These figures do not include emissions from sources considered to be outside the local authority's scope of influence; most importantly in Wiltshire and Swindon this includes the M4 motorway.<sup>43</sup> Swindon has a greater proportion of industrial and commercial emissions (46.6% compared to 40.2% for England), while Wiltshire has a greater proportion of road transport emissions (28.4% compared to 24.9% for England) (see chart below).

None of these figures include indirect CO<sub>2</sub> emissions, such as from consumer goods and food. Other greenhouse gas emissions also make a significant contribution to climate change, in particular methane and nitrous oxide. These gases have a greater impact on climate change per tonne than carbon dioxide and are often calculated as CO<sub>2</sub> equivalent. The main source of nitrous oxide emissions in Wiltshire and Swindon is agricultural fertilisers, while the main sources of methane emissions are landfill waste and agriculture.<sup>44</sup>

In Swindon in 2009, domestic electricity consumption was 5% below average and commercial and industrial consumption was 80% higher than the average for Great Britain. For Wiltshire, it shows that domestic electricity consumption in all former districts was above average and in Kennet was more than 27% higher than the regional average and 36% higher than the national average. In general from 2005 to 2009, electricity consumption declined gradually. In terms of energy consumption of all types (not just electricity), there is a fairly even split between transport, industrial/commercial and domestic sectors.<sup>45</sup>

A key element of the UK government's strategy to tackle climate change is to increase renewable energy generation. In 2010, Wiltshire (including Swindon) had one of the lowest installed renewable energy capacities and the smallest number of projects in the South West region (see table bottom). To meet the UK Renewable Energy Strategy target of 30% renewable electricity by 2020, Wiltshire's capacity would need to increase from 10.4 MW in 2010 to around 367 MW (Wiltshire Core Strategy).

### Main sources of CO<sub>2</sub> emissions, 2009



### Installed renewable energy capacity in 2010

	Renewable electricity			Renewable heat		
	No. of projects	Capacity (MW)	% of SW capacity	No. of projects	Capacity (MW)	% of SW capacity
Swindon	16	4.90	2.9	13	0.45	0.7
Wiltshire	47	10.39	6.1	154	2.25	3.3
South West	891	171.59	100	2842	68.06	100

Source: Regen SW 2010 annual survey: Renewable electricity and heat projects in south west England

# WASTE and POLLUTION

The amount of waste collected by local authorities (municipal solid waste) peaked in Wiltshire and Swindon in 2006/7 and has declined since then. This is despite a steady increase in population and the number of households (municipal waste is largely made up of household waste). Recycling and composting of household waste has increased dramatically in recent years, from 21% in 2003/4 to 41% in 2010/11 in Wiltshire, and from 15% in 2003/4 to 50% in 2010/11 in Swindon. This compares favourably with the regional and national rates; 46% in the South West and 41% in England in 2010/11.<sup>46</sup>

Much greater quantities of waste are produced from other sources and managed by private contractors (see pie chart below). Less data is available on this non-municipal waste at a local level. However, an indication of the quantities involved can be gained from the Environment Agency figure of 921,000 tonnes of waste sent to landfill in Wiltshire and Swindon in 2010. The two councils reported 164,480 tonnes of municipal waste sent to landfill in 2009/10, leaving over 700,000 tonnes of other waste. The sources of this waste are unclear, although some may be municipal waste from other counties. Only 120,000 tonnes of the landfilled waste was inert (which will not decompose). Agriculture accounted for less than 1% of waste (5% of hazardous waste) in the UK as a whole.

Waste sent to landfill can have a significant environmental impact, in particular due to gases that are emitted as waste decomposes. The main gas of concern is methane, a greenhouse gas that has an impact more than 20 times that of carbon dioxide in its contribution to climate change. Food waste is of particular concern as it is primarily organic material.

The percentage of waste sent to landfill has dropped by more than half in Wiltshire since 2002. In 2008/09 and 2009/10, none of Wiltshire and Swindon's municipal waste was incinerated without creating energy from the waste. Wiltshire Council and Hills Waste Solutions Limited are increasing their capacity to recover energy from waste, investing in a new facility in Westbury that will process 60,000 tonnes of waste each year.<sup>47</sup>

### Other waste and pollution

Fly-tipping (illegal dumping of large quantities of rubbish) is a problem across the region. Both councils have taken action to address this problem, including a small number of successful prosecutions (see table top right).

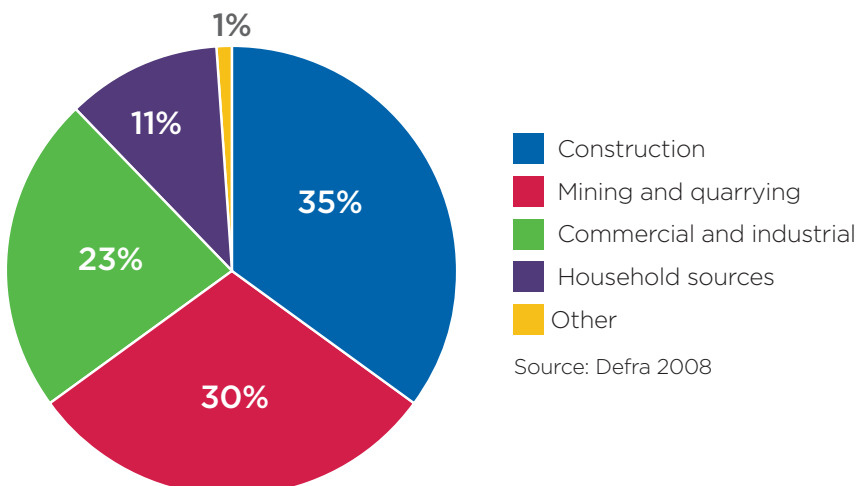
Both councils have produced strategies to address contaminated land. Given the industrial heritage of the region, many sites of concern are on previously developed land. As this land is now a priority for new development, many issues relating to contaminated land are being addressed through the planning system.

Between 2006 and 2008, local environmental quality was surveyed in every local authority to assess the cleanliness and condition of streets and their infrastructure (eg. litter bins, bus stops). The overall results for the former district of Salisbury are comparable to the national picture, while for Swindon and the other former districts in Wiltshire the results suggest a higher quality environment (see table bottom right).



Photo: Wiltshire Council

### Total UK waste generation by sector



Source: Defra 2008



Photo: Barry Craske WWT

Fly-tipping is a problem across the region (opposite top left). Recycling and composting have dramatically increased in recent years (opposite bottom left and above).

### Fly-tipping in Wiltshire and Swindon, 2007 to 2010

		2007/08	2008/09	2009/10
Wiltshire (excluding Swindon)	Incidents	1,364	1,274	1,436
	Actions	1,665	1,752	1,658
	Prosecutions	3	1	2
Swindon	Incidents	1,972	2,142	2,120
	Actions	769	3,009	3,815
	Prosecutions	0	2	7
England	Incidents	1,284,317	1,164,281	946,906
	Actions	503,761	523,304	537,123
	Prosecutions	2,077	1,941	2,374

Source: Defra

### Overall assessment of local environmental quality (percentage of headline elements within each category)

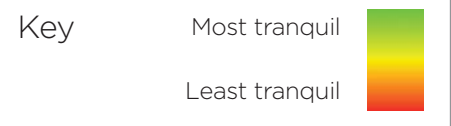
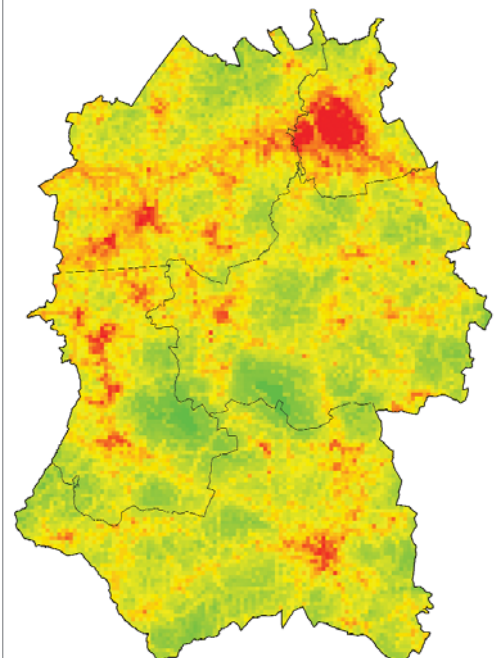
Overall quality standard	Kennet	North Wiltshire	Salisbury	West Wiltshire	Swindon	National
Good	46%	40%	28%	33%	36%	28%
Satisfactory	31%	32%	22%	23%	25%	19%
Unsatisfactory	18%	23%	44%	37%	33%	48%
Poor	5%	6%	6%	7%	7%	5%

Source: Keep Britain Tidy 2007, 2008

Headline elements comprise cleansing standards, highway infrastructure, street furniture, litter bins, bus stops and landscaping.

### Tranquillity

The Campaign to Protect Rural England (CPRE) has produced this map (below) showing levels of tranquillity in Wiltshire and Swindon. This clearly shows the contrast between rural and urban areas and the impact of major roads. CPRE has estimated that 46% of Wiltshire and 84% of Swindon is disturbed by noise and visual intrusion, compared to 50% of England as a whole.



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The Countryside Agency 2006. 100018881

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

<sup>46</sup> Department for Environment, Food and Rural Affairs (Defra)

<sup>47</sup> Wiltshire Council, Swindon Borough Council, Hills Waste Management Solutions

# Wildlife

Burnt tip orchid (right), the county flower of Wiltshire, is one of 60 vascular plants under threat and in need of conservation.

Wiltshire and Swindon have a unique and diverse range of wild plants and animals, closely linked to the different habitats and land uses and management across the county. Extensive areas of Wiltshire and Swindon are recognised for their local, national and international importance for wildlife conservation. While many of these are carefully managed for wildlife, many sites suffer from insufficient or inappropriate management, or face external threats such as development. The large expanses of calcareous grassland, chalk streams and hay meadows are particularly important habitats for wildlife. There are at least 196km<sup>2</sup> of calcareous grassland, 53.6km<sup>2</sup> of woodland and parkland, 19.8km<sup>2</sup> of lowland meadows, 8.2km<sup>2</sup> of running water and 2.8km<sup>2</sup> of fen, marsh and swamp.<sup>48</sup>

Local Wildlife Sites (LWS) are recognised by local authorities for their high wildlife value and are a material consideration in the planning system, but have no legal protection. Wiltshire has a large area of LWS and a high number of individual sites, although geographically they are highly fragmented. There are 1,524 sites in Wiltshire and Swindon, covering 219 km<sup>2</sup> and accounting for 6.3% of the land area.<sup>49</sup> The percentage of the land area is lower than in some counties such as Berkshire (7.7%) and Cornwall (10%), but higher than the South West (5.5%) and England as a whole (5.3%).

The proportion of Wiltshire's sites known to be receiving positive conservation management in the preceding five years rose from 38.5% in 2008 to 64.8% in 2011. Part of this increase is due to improving data quality and part is due to improved uptake of agri-environment schemes by land owners. From 2007 to 2010, between 20 and 40 hectares of land within LWS were damaged or destroyed each year, including through development and ploughing.<sup>50</sup>

Sites of Special Scientific Interest (SSSI) are designated at the national level by Natural England and are given legal protection from development, damage and neglect. There are 127 SSSIs in Wiltshire and eight in Swindon, accounting for 8.1% of the total land area (as of December 2011). Ninety eight per cent of SSSI land is in favourable or recovering condition, an increase of 3% since 2009 and well above the government target of 95% (see table below). The overall condition of SSSI land within Wiltshire and Swindon is in large part determined by the condition of Salisbury Plain and Porton Down, which together account for 73% of SSSI land and are primarily assessed as being in 'unfavourable recovering' condition. Other SSSIs have much more land in 'favourable' condition, well above the national average. There are also seven National Nature Reserves in Wiltshire, all of which are SSSIs.



Bumblebee. Photo: Darin Smith

About 180 bee species are known to live in Wiltshire, although their status is unclear in many cases. Salisbury Plain in particular is a vital habitat for rare bee species.

Salisbury Plain and Porton Down have additional protection as Special Areas of Conservation (SACs) and Special Protected Areas (SPAs), designated under the European Habitats and Birds Directives. Salisbury Plain supports the largest known expanse of unimproved chalk downland in north west Europe, and represents 41% of Britain's remaining area of this rich wildlife habitat.<sup>51</sup> There are nine other SACs in Wiltshire (see table right).

## Condition of SSSIs

Area/site name	SSSI area (km <sup>2</sup> )	Favourable	Unfavourable recovering	Unfavourable no change	Unfavourable declining	Destroyed/part destroyed
Wiltshire	282.3	22.78%	75.21%	1.48%	0.52%	0%
South West	1,693.8	41.30%	54.05%	2.87%	1.76%	0.02%
England	10,000+	36.64%	60.04%	2.19%	1.10%	0.03%
Salisbury Plain	197.2	14.34%	85.66%	0%	0%	0%
Porton Down	10.3	14.85%	85.15%	0%	0%	0%
Savernake Forest	9.2	0.00%	94.64%	0%	5.36%	0%
Bentley Wood	6.6	100%	0.00%	0%	0%	0%
Other Wiltshire	59	45.94%	45.31%	7.10%	1.66%	0%

Source and copyright: Natural England November 2011



## Condition of Special Areas of Conservation in Wiltshire

Special Area of Conservation	SSSI condition
Bath and Bradford on Avon Bats, Great Yews, North Meadow and Clattinger Farm, Prescombe Down	Favourable
Pewsey Downs (60%/40%) Salisbury Plain and Porton Down (15%/85%)	Favourable/unfavourable recovering
Kennet and Lambourn Floodplain	Unfavourable recovering
Chilmark Quarries, The New Forest (within Wiltshire), River Avon	>50% unfavourable no change

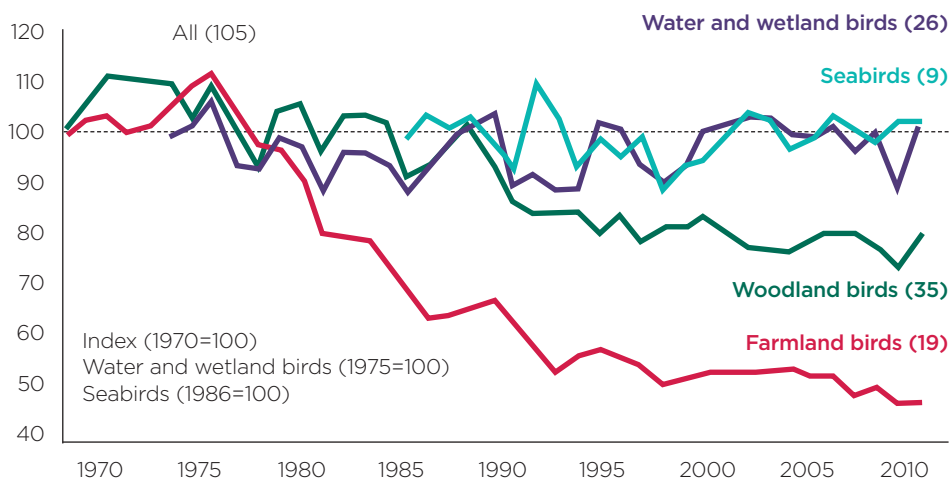
Source: Natural England November 2011



Photo: Darin Smith

Farmland specialist species such as lapwing (above) have declined severely in recent decades.<sup>54</sup>

## Wild bird populations in England 1970 - 2010



Figures in brackets show the number of species in each category.

Source: Defra, RSPB and BTO

<sup>48</sup> Based on WSBRC mapping, 2012

<sup>49</sup> Wildlife Sites Project data from December 2011

<sup>50</sup> Wiltshire Council, Swindon Borough Council, Wildlife Sites Project

<sup>51</sup> Natural England

<sup>52</sup> South West Farmland Bird Initiative, British Trust for Ornithology (BTO) Breeding Bird Survey

<sup>53</sup> RSPB Big Garden Birdwatch 2011

<sup>54</sup> RSPB

Monitoring the state of wild plants and animals across a whole county is a difficult task and one that is largely dependent on volunteers. However, some data is available for certain groups of species which can serve as indicators for the state of wildlife more generally.

Across England and the UK, farmland and woodland bird populations are declining, driven by steady declines in specialist species (see graph left). Wiltshire is of national importance for farmland birds, but farmland specialist species have declined severely.<sup>52</sup> Garden bird populations appear to be slightly healthier in Wiltshire and Swindon than the UK average. House sparrow, blackbird, starling, blue tit and chaffinch are the top five in both Wiltshire/Swindon and the UK.<sup>53</sup>

Although not thought of as a common habitat in Wiltshire, there are several important ancient woodlands that support a wide range of wildlife such as this parasol mushroom *Macrolepiota procera* (right).



Wiltshire is a stronghold for bats – 14 out of 17 species breeding in the UK were recorded in the county in 2011.<sup>55</sup> Two SACs have been designated for their importance for bats: Chilmark Quarries near Tisbury, more than 80% of which is reported as being in ‘unfavourable no change’ condition; and Bath and Bradford on Avon Bats, comprising Box Mine and Winsley Mine SSSIs in Wiltshire, which are reported as being in ‘favourable’ condition. In late 2010, a breeding colony of Bechstein’s bats – one of the rarest species in the UK – was discovered in the Braydon Forest. The only other known breeding area for this species in Wiltshire at present is in woodland near Trowbridge.<sup>56</sup>

Wiltshire is also a stronghold for butterflies – with a greater abundance of species than in most other parts of the UK. Seventy two per cent of butterfly species have declined in abundance in the UK in the past 10 years, although some species such as the Adonis blue have responded well to conservation efforts.<sup>57</sup> Salisbury Plain is listed among Butterfly Conservation’s top 20 ‘Survival Zones’ for butterflies, along with the New Forest and the Cotswolds, both partly within Wiltshire. Bentley Wood SSSI is a very important site for woodland butterflies and moths. Trend data for 48 sites in Wiltshire shows that many butterfly populations are stable (although a large proportion of the monitoring data is insufficient to provide a trend analysis; see table above right).

<sup>55</sup> WSBRC 2011

<sup>56</sup> Wiltshire Wildlife Trust/Cotswold Water Park Trust Bat Initiative

<sup>57</sup> Butterfly Conservation/Centre for Ecology and Hydrology

<sup>58</sup> WSBRC/Wiltshire Wildlife Trust

<sup>59</sup> Environment Agency

<sup>60</sup> Rural Crime Team, Wiltshire Police

### Trends in butterfly species at 48 sites in Wiltshire, 1979 to 2010

Trend	No. of findings	% of findings
Declining	143	9.6
Stable	588	39.5
Increasing	90	6
Insufficient information	667	44.8
Total	1,488	100

Source: UK Butterfly Monitoring Scheme. Each finding represents the population trend for one species at one site

The abundance and variety of wildlife is dependent on a range of factors, including water supply and quality, diffuse pollution, climatic events and changes, fragmentation of the landscape, inappropriate management, development and farming practices. The Wiltshire Biodiversity Action Plan 2008 lists 278 priority species (those identified as being the most threatened and requiring conservation action).

Native wildlife has suffered from the introduction of non-native invasive species, including American mink. River systems have been badly affected by plants such as giant hogweed, Japanese knotweed and Himalayan balsam, and the native white-clawed crayfish is threatened by crayfish plague introduced by the non-native signal crayfish.<sup>58</sup> More positively, otters have returned to all river systems due to conservation efforts and the national recovery of water voles has been greatly helped by important local populations.<sup>59</sup>

Wildlife crime takes many forms, affecting protected and endangered species and habitats. Wiltshire Police report that most incidents relate to hare coursing and deer poaching, with low levels of reported other crimes such as damage to SSSIs, theft of plants and trapping or poisoning of species including birds, bats, badgers

and otters. In 2011, there were on average 25 reports of hare coursing or deer poaching each month, with peak months having in excess of 50 reports a month.<sup>60</sup> Wiltshire Police has a dedicated Rural Crime Team, with an additional six Police Wildlife Crime Officers across the county.

Wiltshire is one of the remaining strongholds for the marsh fritillary (below) and many other butterfly species, which have declined severely across the UK in the last few decades.



Photo: Stephen Davis

# Notes on the data and sources

A variety of measures have been used in this report to assess the state of the environment. These broadly fall into two types. The first is those datasets which are unlikely to change in the near future, such as AONBs. While these do not tell us much about the changing state of the environment in Wiltshire and Swindon, they provide useful context. The second type is those which show the current state of the environment – such as the condition of wildlife sites, air quality and carbon emissions.

As far as possible, sources have been used that are publicly accessible online. Responsibility for any error in the use, interpretation or representation of this data lies with the author. Every effort has been made to indicate the sources of information used in compiling this report and more details are available on the Wiltshire Intelligence Network [www.intelligencenetwork.org.uk](http://www.intelligencenetwork.org.uk)

If you are able to provide further information or have questions regarding this report, please contact the Head of Conservation Policy at Wiltshire Wildlife Trust (contact details on inside front cover).

Wiltshire is one of the few breeding areas for the stone-curlew; its long-term decline has now been halted due to intensive efforts by farmers and conservation bodies.<sup>61</sup>



Stone-curlew chick. Photo: RSPB

## Main sources of environmental information

**Wiltshire Council**  
[www.wiltshire.gov.uk](http://www.wiltshire.gov.uk)

**Swindon Borough Council**  
[www.swindon.gov.uk](http://www.swindon.gov.uk)

**South West Observatory**  
[www.swo.org.uk](http://www.swo.org.uk)

**Natural England**  
[www.naturalengland.org.uk](http://www.naturalengland.org.uk)

**Environment Agency**  
[www.environment-agency.org.uk](http://www.environment-agency.org.uk)

**English Heritage**  
[www.english-heritage.org.uk](http://www.english-heritage.org.uk)

**Department for Environment, Food and Rural Affairs**  
[www.defra.gov.uk](http://www.defra.gov.uk)

**Department of Energy and Climate Change**  
[www.decc.gov.uk](http://www.decc.gov.uk)

**Office for National Statistics**  
[www.ons.gov.uk](http://www.ons.gov.uk)

**The Wiltshire and Swindon Biological Records Centre (WSBRC)** is a not-for-profit partnership initiative which provides a central reference point for environmental information on species, sites, habitats and geology in Wiltshire and Swindon: [www.wsbrc.org.uk](http://www.wsbrc.org.uk)



<sup>61</sup> RSPB

# Wiltshire Intelligence Network

More detailed statistics, graphics, documents and web links on all the issues covered in this report can be found online at the Wiltshire Intelligence Network website: [www.intelligencenetwork.org.uk](http://www.intelligencenetwork.org.uk)

Wiltshire Wildlife Trust has worked closely with Wiltshire Council, Swindon Borough Council, the Wiltshire and Swindon Biological Records Centre and others to develop an extensive environment section on the Wiltshire Intelligence Network.

This Network has been developed in response to the ever growing demand for local information, be it for developing local strategies, funding applications or assisting local decision making. It hosts information on a broad range of social, economic and environmental issues, including strategic assessments at community area level.

Its aim is to improve access to information in Wiltshire by providing a 'one-stop shop' for key local data and reports, presented in a consistent format that is easy to understand and use. This should help to provide a robust evidence base for ongoing work, policy processes and decision-making by all interested parties.

The network consists of a number of key organisations in Wiltshire involved in the collection and analysis of local data, including Wiltshire Council, NHS Wiltshire, Wiltshire Police, Wiltshire Fire and Rescue Service, and the South West Observatory.



Photo: David Tipling

Wiltshire's changing environment: reintroduction of the Great Bustard onto Salisbury Plain began in 2004, using chicks reared in Russia. Having been extinct in the UK since 1832, the birds are now breeding in the wild again.

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WILTSHIRE INTELLIGENCE NETWORK

Search  Go

Cultural Finding the Dots July 2010 Available to Download Health Profiles 2010 Launched

You are here: » Home » Welcome

**Welcome to the Wiltshire Intelligence Network**

The Wiltshire Intelligence Network has been developed in response to the ever growing demand for local information, be it for developing local strategies, funding applications or assisting local decision making. The network consists of a number of key organisations in Wiltshire who are involved in the collection and analysis of local data. It is often difficult to know what information exists or who can supply it. Our aim is to improve access to information in Wiltshire by providing a 'one-stop shop' for key local data and reports, presented in a consistent format that are easy to understand and use.

The site contains information covering a wide variety of topics, which has been arranged into 12 topic themes, as set out in the "How this site is organised" page. The site content will continue to grow and be updated. If you have any comments or suggestions please contact us.

**What's new**

 Wiltshire Joint Strategic Needs Assessment Main Report - [1.09 MB]

 Wiltshire Strategic

Welcome
» How this site is organised
Search
Joint Strategic Assessment
Consultation
Local Area Profiles
Population & Census