Our Environment

Buckinghamshire and Milton Keynes: **State of the Environment Report**

July 2016

Buckinghamshire and Milton Keynes Natural Environment Partnership
in collaboration with Natural England and
The Chilterns Conservation Board

For further information on the Buckinghamshire and Milton Keynes Natural Environment Partnership, see our website : http://www.bucksmknep.co.uk

Local Nature Partnerships: what and why?

What are "Local Nature Partnerships"?

- In June 2011 the UK Government published the Environment white paper *'The Natural Choice: securing the value of nature'.*
- The *White Paper* highlighted:
  - **Continued loss of biodiversity; and fragmentation of our natural environment** (development can fragment ecological systems geographically, making them less resilient to threats such as climate change); and
  - **The need for healthy, well-functioning and connected networks of ecosystems** to provide us with economic and social benefits.
- A clear message of the White Paper was the need for **coordinated action and to work across sectors in a joined up, strategic way to help manage the natural environment** and put the value of nature and its benefits to our economy and society at the heart of decision-making.
- So the White Paper established **Local Nature Partnerships** (LNPs) **to**
  - strengthen local action
  - develop a vision for the local environment
  - champion its interests; and
  - better integrate environmental objectives with social and economic goals.

Why do we need the Buckinghamshire and Milton Keynes Natural Environment Partnership? (the NEP)?

- The NEP is one of 48 LNPs in England and **works to bring people and projects together** across Buckinghamshire for the benefit of the environment, our communities, our economy, health and wellbeing.
- The NEP was formally recognised as a Local Nature Partnership by The Department of Environment, Food and Rural Affairs (Defra) in June 2012, and is chaired by Sir Henry Aubrey-Fletcher.
- Board members come from the health, education and business sectors alongside local government, governmental and non-governmental environmental bodies.
- The NEP's work is structured around **four themes**:
  1. **Advocacy and policy:** We work in partnership to provide a collective, co-ordinated voice to champion the Buckinghamshire environment in decision-making, raise awareness of the value of the environment, promote coordinated working and provide a platform to share best practice.
  2. **Promoting the environment as an economic asset and driver of growth:** We work with others to look for opportunities to deliver social and economic outcomes and aim for a prosperous economy supported by, managing and protecting its "natural" capital.
  3. **Working at the landscape-scale: more, bigger, better and joined.** We aim to restore and connect habitats across the county to make wildlife more resilient to climate change and other pressures.
  4. **Connecting people and nature:** we look to promote and highlight the health, wellbeing and quality of life benefits of accessing and enjoying the natural environment.

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Foreword

The Buckinghamshire environment is changing.

- **We are experiencing a period of unprecedented growth in Bucks** and associated pressures - housing demand; new infrastructure.
- **A healthy natural environment underpins our economy**, our health and well-being, our communities and landscapes, as well as having its own intrinsic value.
- **Yet our ecosystems are already under pressure** from multiple sources – including damage caused by development (e.g. river straightening, disconnection of rivers and floodplains); habitat fragmentation; the decline in pollinators; pollution in water bodies; invasive non-native plant and animal species; climate change; changing farming practices (e.g. under-grazing of grassland; agricultural and other diffuse sources of water pollution)
- **Growth and development poses potential threats to the Buckinghamshire environment** and to the benefits it provides to us
- **With development comes the need – and potentially the opportunity - to influence** the location and type of development, to minimise or offset the impacts, to connect and improve Buckinghamshire's natural assets and the benefits they provide us with, and to better connect people to their environment.

There has never been a more exciting, important and relevant time for the work of the NEP than now.

- **The NEP brings together people, best practice and projects** from right across Buckinghamshire and Milton Keynes, across sectors and areas of expertise, to review the threats and take best advantage of the opportunities to protect and enhance the environment, and thereby create multiple benefits for our economy, health and wellbeing - and ensure our environment is properly accounted for in strategic decision-making.

This report for the first time brings together a wide-range of County-scale environmental and related information

Gathering in one place the most up-to-date information provides:

- A timely baseline health-check on the quality of our natural "assets";
- An overview of how we currently make use of those assets; and
- Implications for the future.

Our report highlights in particular the need for action to

1. **Improve the quality of Buckinghamshire's natural assets** - including the extent, condition and linkage between our ***wildlife habitats, including priority habitats and Local Wildlife sites***; the status of our ***rivers and chalk streams;*** *and* ***air quality*****.**
2. **Reduce average energy demand & encourage cleaner energy sources to combat climate change.**
3. **Improve consumption of resources, waste generated and recycling rates**
4. **Ensure development seeks and provides opportunities to improve health and wellbeing of our communities** – e.g. access to high quality green space through development.
5. **Strengthen links between healthy living and the environment; and the economy and the environment** e.g. to encourage physical activity by connecting people to conservation; encourage visiting the environment.
6. **Improve data and data availability.** To avoid the scenario that "what gets measured gets done", better data is needed in key areas where action may be needed, for example **species trend data, flood risk and consequence monitoring**, **condition of Local Wildlife Sites and priority habitats, and progress towards meeting Biodiversity Action Plan targets.**

We are grateful to all those who have provided advice, assistance, support and data for this report (see final slide). We look forward to using the information as a baseline for future monitoring, and to direct future work.

Sir Henry Aubrey-Fletcher, *Chair, Buckinghamshire and Milton Keynes Natural Environment Partnership*

July 2016

Objectives

- Baseline – provides information for future tracking and monitoring
- Visioning – strategic overview to guide where to focus efforts; and to aid decision-making
- Raise awareness
  - Status and value of the environment (our “Natural Capital”)
  - Multiple benefits - the importance of the environment for society, communities, individuals and their mental and physical health and wellbeing; to support our economy; and for landscape, wildlife and conservation
  - The Buckinghamshire and Milton Keynes Natural Environment Partnership and its work

Summary of main findings

1 How healthy is our environment?

Quality and status of our natural assets

Indicator	Importance	Current status	Trend (where available)
Priority habitat extent	Nationally identified as habitats that are valuable for conservation of biological diversity. Extent and condition targets set nationally (Biodiversity 2020 strategy) and within Bucks.	Bucks and MK has **less priority habitat than the average English county.** Priority habitat as % of land area: Bucks and MK: **9.7% of land area** England: **14% of land area**	n/a
Species in wider countryside (Birds and butterflies)	Tracking populations of key species gives early warning of impacts of environmental changes, and of the effectiveness of conservation action. Taking action sooner can prevent higher costs if left (e.g. pollinators provide a free service – without them it would be expensive and time-consuming to pollinate crops).	National data shows long-term declines in breeding woodland and farmland birds and butterflies of the wider countryside (see England Natural Environment Indicators) *Species population trend data for Bucks in development*	n/a *Data, including trend data, needs improving*
Air quality for human health	Costs to NHS: adverse impacts on public health caused by **poor air quality costs the UK economy more than £20bn per year** (around 16% of current annual NHS budget).Royal College of Physicians Report, Feb 2016	**Health-based air quality objectives are being achieved except in the 7 Air Quality Management Areas across Buckinghamshire and MK.** These are designated by authorities and all due to elevated **nitrogen dioxide emissions from traffic.**	n/a
Water quality	EU Water Framework Directive (WFD) sets high quality **water standards.** Better water quality means lower water clean-up costs	**Only 8% surface water bodies in Bucks and MK are assessed as achieving "good" status,** compared to 21% nationally and a target of 100% by 2015/ 2027. **Chalk streams: 0% "good" in Bucks** compared with 23% nationally.	n/a

Summary

Good wildlife habitat in Buckinghamshire is precious, fragile and in short supply : ***we must focus on conserving, connecting and expanding it*** – in line with the NEP's Biodiversity Action Plan, emerging *Green Infrastructure Principles* and good practice.

Not all of Buckinghamshire's countryside is deemed a "priority" in biodiversity terms. But all wildlife habitat has a part to play in creating ecological resilience to withstand and respond to pressures like climate change and development.

Compared with other English counties, **only a small proportion of Buckinghamshire is nationally or internationally designated for its wildlife interest** (areas designated as a Site of Special Scientific Interest or Special Conservation Areas). **22.5% of Buckinghamshire lies within the Chilterns Area of Outstanding Natural Beauty (AONB)–** which are designated for their natural beauty and are recognised as amongst the finest landscapes in the UK.

Buckinghamshire has a good network of Local Wildlife Sites but they are vulnerable to neglect, inappropriate management and impacts of development; ***there is a need for better support for owners / managers of these sites.***

Health-based air quality objectives are being achieved in Buckinghamshire except for where Air Quality Management Areas have been identified – which are mostly in or around the major transport routes **due to nitrogen dioxide from vehicle emissions**. Air quality could be affected by construction work and lorry routes associated with HS2. **Meanwhile aerial-source pollutants** from agriculture, industry and flight **adversely affect wildlife and biodiversity.**

Fewer than 1 in 10 of our surface water bodies in Buckinghamshire achieve the "good" status required by EU targets. **None of Buckinghamshire's chalk streams meet these objectives (yet 23% do nationally) .**
There is a need to focus on improving water quality by reducing pollution and abstraction pressures through demand reduction and development of new water resources.

2 How do we use our environment? (1 of 2)

Energy Indicator	Importance	Current status	Trend (where available)
Domestic energy consumption – electricity and gas	UK relies on fossil fuels for energy supply: this has recognised energy security and climate change impacts. NB - targets for energy relate to carbon emissions rather than the amount of power used.	Electricity and gas consumption in Buckinghamshire households has reduced. Despite the trends, **Chiltern and South Bucks use more gas per household than any other districts in England**. MK is the most efficient area in Bucks (newer houses).	Improving ● (In line with national trends)
Non-domestic energy consumption Reflects wider economic output as well as industrial and commercial activities: so area-by-area comparison inappropriate.		Electricity use remains below regional and national averages in the Districts; MK much higher demand reflecting industry use. **Bucks is using less gas than national average**. There is a broad spread between authorities; upward trend in South Bucks.	Mixed ~
Renewable energy – % electricity consumed in Bucks that is met by renewables	Cleaner form of energy than fossil fuels. UK climate change target 15% energy needs from renewables by 2020. Electricity target: 30% by 2020 (14% by 2014)	**Only 11%** electricity consumed in Bucks is met by **renewables** (2014) Far short of national targets. Reliance on landfill gas to meet current levels (83%)	n/a
Micro-generation	Provides only a small proportion of energy needs, but indicate attitudes towards energy use.	**Huge growth** – from a low base. **Over 99%** Bucks micro-generation capacity is **solar PV.** Reduced Govt incentives likely o slow growth. Need to encourage other forms of micro-generation.	Improving ● (In line with national trends)

Summary

In line with national trends, **domestic energy consumption** (electricity and gas) **is reducing**. Milton Keynes is the most efficient authority in the county – reflecting newer housing. However, **Chiltern and South Bucks use more gas per household than any other districts in England.**

Non-domestic energy use tends to reflect industrial and commercial activities in an area. Less electricity is used in Bucks for non-domestic purposes compared with regionally and nationally; and overall Bucks is using less gas than nationally, but this varies by authority and economic output.

Overall, **only 11% of electricity consumed in Buckinghamshire on average is met by renewables**. This is far short of the national 2020 target (30%) and the 2014 interim target (14%). There is also a **reliance on landfill gas** to reach the 11%. With more waste being diverted from landfill, **Buckinghamshire is at risk of not doing enough to meet national renewables targets.** ***Buckinghamshire needs a watchful eye on landfill gas contribution to Bucks energy needs and should encourage other forms of renewables to meet the targets.***

Renewables must be supported by energy efficiency measures (homes and appliances) *to address future energy challenges and reduce energy demand.* ***Energy efficiency should be a priority both for future housing growth alongside retrofitting to improve the efficiency of existing housing (which is likely to account for 80% of the 2050 energy efficiency market despite new-build activity).*** Energy demand management and energy storage will become increasingly important – at the same time as making sure keeping warm is affordable.

Whilst the picture for micro-generation has been positive, it only supplies a small proportion of energy needs. With incentives for solar PV cut, then ***to keep improving, other forms of micro-generation should be encouraged.***

2 How do we use our environment? (2 of 2)

Indicator	Importance	Current status	Trend (where available)
Total waste generated	Reducing waste lowers demand for resources and amounts to landfill.	**Slight increase** in Bucks (household and municipal) In line with national trends	Deteriorating 🔴
Recycling	Reduces demand for scarce resources and waste to landfill	**Household waste:** **56% recycled.** Exceeds national rates (45%) and UK and EU targets (50% by 2020). **Municipal waste to landfill**: **down** since 09-10	Improving 🟢 Improving 🟢
Fly tipping (Detection rate = ratio of clearances to casefiles)	Partly indicative of changing attitudes towards environment and effectiveness of fly-tipping campaigns.	**Number of fly-tips and tonnage of waste disposed of have been declining** Fly tip detection rates have moved away from ambitious target in recent years.	Improving 🟢 Deteriorating 🔴
Average water consumption per customer	Removing water affects water quality & treatment costs. The less we use, the less we remove.	UK average: 150-160 litres per person per day MK average: 133 litres/day	n/a
Carbon emissions	Carbon Dioxide (CO2) is a potent greenhouse gas and makes up 82% of the UK's greenhouse gas emissions. UK has targets to reduce emissions and help prevent damaging climate change.	**CO2 emissions per capita** in Buckinghamshire (excl MK) **are 9th worst of all English counties** - (6.8t/CO2 p.c.) - higher than the regional and English average. Milton Keynes had per capita emissions in line with the combined Bucks Districts.	Improving 🟢

Summary

There has been a slight **overall increase in waste generated** in the county (household and municipal) recently. While in line with national trends, the anticipated unprecedented **growth in Buckinghamshire risks accelerating this trend.**

The household waste recycling rate in Buckinghamshire is 56%. This exceeds national rates, the UK and EU 2020 targets, and is above Hertfordshire and Northamptonshire – but Oxfordshire achieved 61% (2014-15 figures).

Buckinghamshire has far more municipal waste going to landfill in the Districts, than is the case nationally. ***More needs to be done to divert municipal waste from landfill.***

A successful anti-fly-tipping campaign and a focus on detection by *The Waste Partnership for Buckinghamshire* has seen both the **number of fly-tips and tonnage of waste decline in the Districts**. BCC estimates the net savings from reduced fly-tipping is likely to be £3m in the last 12 years.

As the county grows, avoiding and reducing waste and encouraging more recycling and diverting municipal waste from landfill becomes even more important. Improved resource management is needed - and better public awareness of waste avoidance and re-use.

With water consumption, metered water customers use less water. ***Supporting water-saving methods,*** including the take-up of water meters, will reduce consumption, improve water quality and reduce water treatment costs.

Buckinghamshire has particularly high domestic CO2 emissions and **high transport emissions *which are both obvious targets for reduction.*** Combined with **very low industrial CO2 emissions,** overall, the county (excluding MK) ranks **9th worst of all 27 English counties.**

3 How do we benefit from the environment? (1 of 2)

SLIDE UPDATED OCTOBER 2016

Multiple benefits / "services": what the environment does for our health and wellbeing, society and the economy.

Benefit	Indicator	Importance	Current status	Trend (where available)
Natural health service	**Proximity of households to large-scale green space** (2 ha, 20 ha, 100 ha and 500 ha)	Access to green space directly affects health and wellbeing – and productivity.	**Some areas are relatively-well provided for.** **Aylesbury Vale is the most deficient** in accessible large-scale green space (nearly **70% households** met none of the accessibility requirements).	n/a
	Area of urban green space of 0.25 ha and over in Aylesbury, Chesham, and High Wycombe	Access to green space directly affects health and wellbeing - and therefore productivity. Provision of green space to encourage activity is an important way to improve adult health – with corresponding savings to the health service, employers and productivity gains.	Over 1,000 ha urban green space in over 350 sites across Aylesbury, Chesham and High Wycombe. **Most is accessible green space.** **There are pockets of low provision** in each of Aylesbury, Chesham and High Wycombe. **High Wycombe has the highest proportion of local-scale green space** of these 3 urban areas.	n/a
	How active is the NEP adult population? *The estimated direct cost of physical inactivity to the NHS across the UK is over £0.9 billion per year.*	A healthy lifestyle means lower risk rates for e.g. heart disease and stroke. Physical activity taken outdoors can improve people's connections with the environment.	**62% of the Buckinghamshire adult population takes "regular" exercise** – improving, and above regional (59%) and national (57%) levels. **21% Bucks adults are inactive** - better than south east and nationally; improving since 2012 (27.6% MK).	Improving Improving
	Health walk uptake	Help encourages mobility. Potential to improve appreciation of local countryside.	**30% increase in footfall** 2012-14 (excl MK) Wycombe has the most uptake; South Bucks the least.	Improving

Summary

Access to large-scale green space data shows that Aylesbury Vale is the most deficient. This directly affects health and wellbeing and productivity, costs to business and the health services, etc.

At the smaller-scale, **most of the area of green space** in Aylesbury, Chesham and High Wycombe (0.25 ha and over) **is "accessible"**, although there are pockets of low provision in each urban area.
Local Planning Authorities must be mindful of the deficiencies in access and provision of local-scale and large-scale green space when planning for future and providing for current populations – especially in urban areas. New green space is likely to be needed and should be provided in line with the NEP's Green Infrastructure Principles for Buckinghamshire and Milton Keynes.

The Buckinghamshire Districts' adult population is generally fitter compared with regional and national levels, and this is improving. Milton Keynes scores slightly less favourably. ***Physical activity could be a useful way to connect people in the NEP area to their environment.*** The increasing popularity of health walks (30% increase 2012-14) demonstrates this; and this is what the "Active Bucks" campaign builds on.

3 How do we benefit from the environment? (2 of 2)

Multiple benefits / "services": what the environment does for our health and wellbeing, society and the economy.

Benefit	Indicator	Importance	Current status	Trend (where available)
Public engagement with the natural environment	**Hours of conservation volunteering**	Indicates public engagement with the environment. Practical activity also benefits health and wellbeing.	**Organisations have seen increased volunteer hours** over the past 3 years – by 38% (available data).	Improving
	Visits to the natural environment	Indicates public engagement with the environment. Practical activity also benefits health and wellbeing.	**52% of the adult population of Bucks visit the countryside at least once a week (2014 – 2015)** Higher than national (42%) and up from 48% in 2010- 11	Improving
Heritage	**Number of planning-related heritage - evaluations** in Bucks (including MK).	Heritage can provide habitats. Valued by public and faces similar threats as the environment. Affects planning for growth.	**104** (2015 data) **81** (2010 data)	*Increasing*
Supporting the economy	**Flood risk Management: number of properties at significant risk** of river flooding. Annual flood damage costs in England are in the region of £1.1 billion.	Assists with planning for growth.	BCC operates a flood risk management strategy, as does MK Authority. **9,286 properties at risk** of a 1 in 100 year flood across Districts and MK (2014 data).	n/a *Data needs improving*
	Visitor spend (data for Districts excluding MK)	A measure of benefit to the economy of visitors (not all to Bucks environment).	10.1m day visits to Bucks each year - £261m is spent. 1.1m overnight trips, over 2.6m nights, with £142m being spent. (2011-13 data)	*Data,* including trend data *needs improving*
	Skills in the green economy	*Data in development*		
	Businesses with an Environmental Management System	*Data in development*		

Summary

More hours are spent on conservation volunteering than 3 years ago in Buckinghamshire.

As might be expected, given the nature of the county, more adults in Buckinghamshire visit the countryside at least once a week than do nationally.

Both have obvious benefits to health and wellbeing and indicates a certain level of public engagement with the environment. ***However, there remains considerable scope to increase the proportion of local population visiting the countryside and taking an active part in its conservation.***

There are **over 9,000 properties at significant risk of flooding across Bucks**, including MK. ***Flood risk must be monitored and minimised for current properties at risk and for new properties, as Buckinghamshire grows.***

Day visitors to Buckinghamshire spend £261m; and 13% of those trips (as a straight proportion of spend, around £1.3m) relates to outdoor leisure activities such as walking, cycling, golf, or to "exploring" the area. **A further £142m** is being spent on 1.1m overnight trips. (Data excludes MK).

Structure of the report

Recognising the importance of our Natural Capital

- Report structured to emphasise the importance of the environment in producing multiple benefits for the environment, the economy and society.
- Structure aligns with the Natural Capital approach:
  - Environmental resources – quality and status of Buckinghamshire's natural assets (section 1)
  - How we use the resources (section 2)
  - The benefits (services) they provide (section 3)
- But first – the Buckinghamshire context...

Buckinghamshire is a growth county

Buckinghamshire is experiencing rapid growth: in housing, population and infrastructure.

- Housing growth in Buckinghamshire and Milton Keynes is at record levels:
  - Growth in Aylesbury Vale and Wycombe are above national average - set to continue.
  - Buckinghamshire (excluding Milton Keynes) is projecting over 51,000 new homes by 2032, including around 31,000 homes in Aylesbury Vale. *Source: Bucks CC – correct at the time of writing.*
  - House prices have risen almost as much as London prices in the last year; affordability is low; average prices are well above the national average.
- National infrastructure growth is on similar timescales to housing growth – and includes:
  - North of Bucks: significant expansion expected between Bicester and Milton Keynes, along the east-west corridor of Aylesbury Vale: connected by East-West Rail. (And possible new Oxford-Cambridge Expressway)
  - In the South: Potential expansion of Heathrow, Heathrow Express, also Crossrail and HS2 .

- **The scale and pace** of housing growth and corresponding levels of infrastructure development **places a significant strain on physical, social and green infrastructure.**
- Growing development pressure in Buckinghamshire comes on top of existing pressures, from development, to agricultural practices and climate change, resulting in
  - Continued habitat and biodiversity loss
  - Fragmentation of areas of nature: without being connected to other areas, nature and wildlife is less able to move and adapt to change.
- This Report:
  - Provides a **timely baseline** for future monitoring during period of rapid growth
  - Helps to **identify opportunities and risks** that need to be addressed during growth
  - Helps **to identify where working in partnership** can address issues and take forward opportunities to **create multiple benefits** for the Buckinghamshire environment, the economy, people and our health and wellbeing.
  - **Raises awareness** of the value of the environment

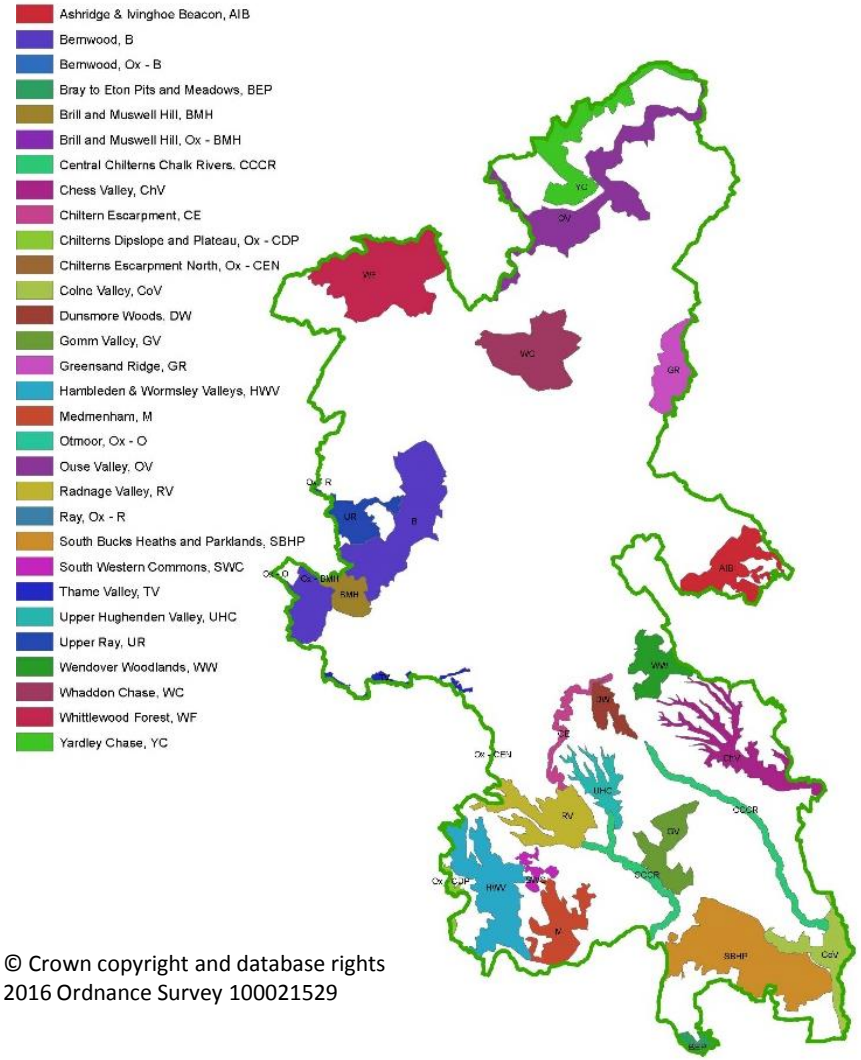
1. How healthy is our environment?

The quality and status of our natural resources in Buckinghamshire and Milton Keynes

1 How healthy is our environment?

Context: Biodiversity Opportunity Areas

Biodiversity Opportunity Areas



Source: Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC) – 2014 data

Background

- **A healthy natural environment underpins our economy**, our health and well-being, our communities and landscapes, as well as having its own intrinsic value.
- **Significant challenges lie ahead if we are to reverse the declines in biodiversity** and ensure we have a resilient natural environment in the face of climate change, pests and diseases, housing and infrastructure development and other pressures.
- **The Government has identified the need to connect habitats to create more resilient networks in the face of change**. This was set out clearly in the2010 "Making Space for nature" review (aka the "Lawton Report") of England's wildlife sites and the need for connections between them to boost resilience to change. In addition, the State of Nature Partnership's 2013 "State of Nature" report for the UK exposed the extent of species decline and habitat loss:

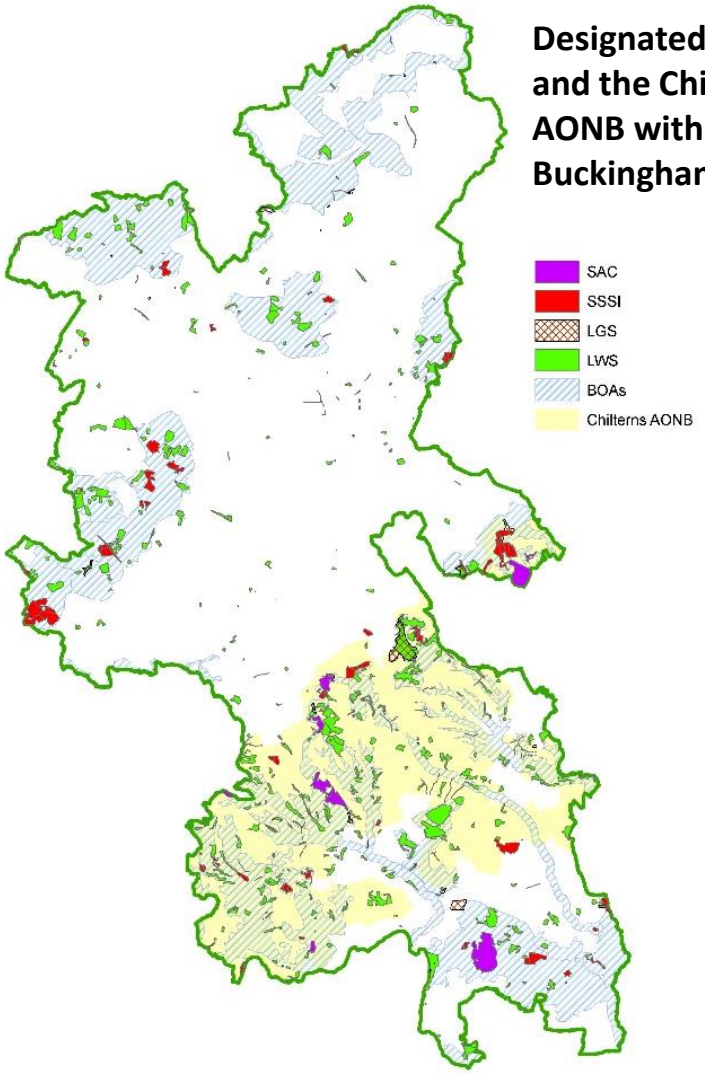
  > *"…The threats to the UK's wildlife are many and varied, the most severe acting either to **destroy valuable habitat or degrade the quality and value of what remains**. We should act to save nature both for its intrinsic value and for the benefits it brings to us that are essential to our well-being and prosperity" (Page 7)*

- Ambitious plans to restore and connect habitats across the county are set out in the Buckinghamshire and Milton Keynes Biodiversity Action Plan.
- The NEP's Biodiversity Action Plan proposes concentrating effort in **Biodiversity Opportunity Areas** - the areas where the greatest opportunities for habitat creation exist (see map opposite).
- **The NEP is working at a landscape scale** to help connect the BOAs – to make wildlife more resilient to change.

1 How healthy is our environment?

Context: Designated sites (1 of 2)

Designated sites and the Chilterns AONB within Buckinghamshire



Source of data: Natural England (data accessed from geostore website April 2016), Buckinghamshire and Milton Keynes Environment Record Centre (BMERC) – (2014 data.)

Designated sites and landscapes

Background

- **Special Areas of Conservation (SACs)** are strictly protected sites designated under the EC Habitats Directive – part of a network of important, high quality conservation sites.
- **Areas of Outstanding Natural Beauty (AONBs)** are designated for their natural beauty and are recognised as amongst the finest landscapes in the UK. **22.5% of Buckinghamshire* lies within the Chiltern Hills AONB.**
- **Sites of Special Scientific Interest (SSSIs**) are a representative sample of the country's best wildlife and geological sites. They are protected by law, and their condition is monitored by Natural England, who work with landowners to ensure that the site is cared for appropriately.
- **Local Sites** (geological or wildlife) have nature conservation or geological interest which is important at a County or local level. (see next page for more details)

Results

- **Compared to other English counties, Buckinghamshire has a very low proportion of land designated as SAC or SSSI** - only 0.5% of the land area is designated as SAC compared to 8.2% nationally, and only 1.4% designated as SSSI compared to 7.7% nationally*****.
- **Local Wildlife Sites are a crucial part of the ecological network**, and many have equivalent conservation value to that of SSSIs. **More land is designated as a Local Wildlife Site than as a SSSI or SAC** (Local Wildlife Sites cover 3.1% of Bucks and MK; Local Geological sites cover 0.4%)*****.
- **However, a greater proportion of the SSSI units in Buckinghamshire are in better condition than nationally:**
  - 54.8%***** of SSSI units in Bucks are assessed as being in favourable condition , compared to 37.5% in favourable condition across England at April 2015. A further 40.5% SSSIs in Bucks are in unfavourable recovering condition. This compares to 58.4% nationally. *(Source: Natural England)*

***** *Land area is based on the "ceremonial county" area of Buckinghamshire and Milton Keynes, of 1,874 km²*

1 How healthy is our environment?

Context: Designated sites (2 of 2)

Designated sites - Local Sites

Yoesden Bank, Local Wildlife Site, Radnage Valley
© Allen Beechey

Local Sites

Background

- Local Sites are designated for their wildlife or geological interest. Those designated for their wildlife interest are known as **Local Wildlife Sites.**
- Whereas SSSIs (see previous slide) are only a sample of the best sites, **Local Wildlife Sites include *all* sites that meet specified criteria – so are a crucial part of the ecological network.**

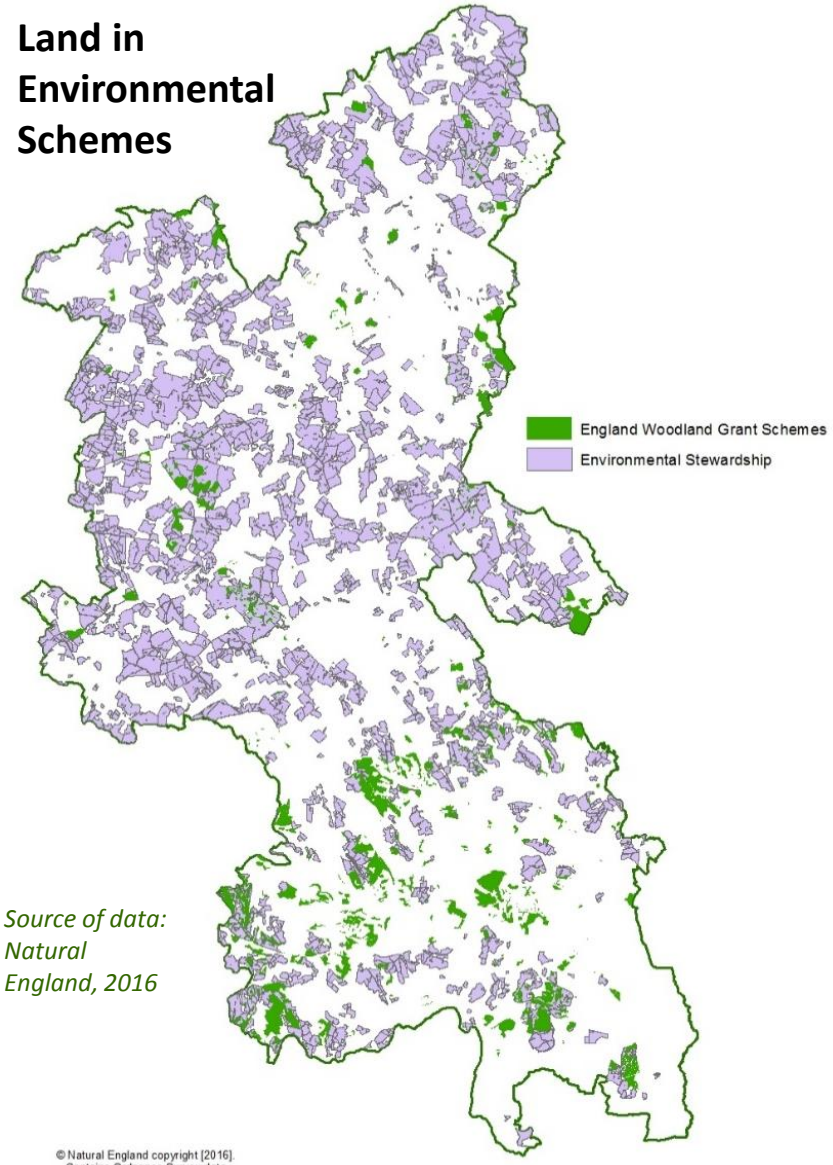
Results

- **Local Wildlife Sites** in Buckinghamshire cover 5,854 hectares **(3.1% of the county)** – and **many are equivalent in conservation value to SSSIs**. Local Geological Sites cover 702 hectares (4% of the county).
- However, **Local Wildlife Sites do not enjoy the same level of protection in planning** as SSSIs and are more vulnerable to inappropriate management, neglect and being impacted by development.
- **When last assessed (2011–12), 51% of Local Wildlife Sites in Bucks were assessed as in positive conservation management**. Figures vary from 35% in Chiltern District to 63% in Milton Keynes. *(Data source: Buckinghamshire & Milton Keynes – Single Data List 160 Report 2011-2012, BMERC)*
- **There are significant gaps in knowledge about the condition of Local Wildlife Sites in the county** and a need for more and better advice and support for land owners and managers to ensure that Local Wildlife Sites are in good condition.
- **The NEP is working to re-establish an effective Local Sites Partnership**, to survey potential Local Sites and to improve the monitoring and management of the Local Sites network.
- **With appropriate management Local Wildlife Sites are able to make an enormous contribution** to ensuring more, bigger, better, and more connected spaces for wildlife in Buckinghamshire, helping ensure greater resilience in the face of the many pressures on our natural environment.

1 How healthy is our environment?

Context: Management of Woodland and Farmland

Land in Environmental Schemes



Source of data: Natural England, 2016

Management of woodland and farmland

Background

- **Environmental Stewardship and English Woodland Grant Schemes were available over the period 2004- 2014** and provided funding to farmers, woodland managers and other land managers to deliver effective environmental management. Existing agreements will continue in some cases for another 3- 8 years.
- **A new combined scheme - 'Countryside Stewardship' (CS),** has now been established, and is part of the 2014-2020 Rural Development Programme for England. Anyone can apply, for land that is not already in the predecessor schemes.
- **Priority is given within the scheme to schemes that will deliver the most for the environment.** Farmers and land managers who work together, or choose options that support wild pollinators and wildlife; or improve water quality or reduce flood risk are more likely to receive a grant *(Data source: Natural England , data accessed April 2016 from Geostore)*

Results

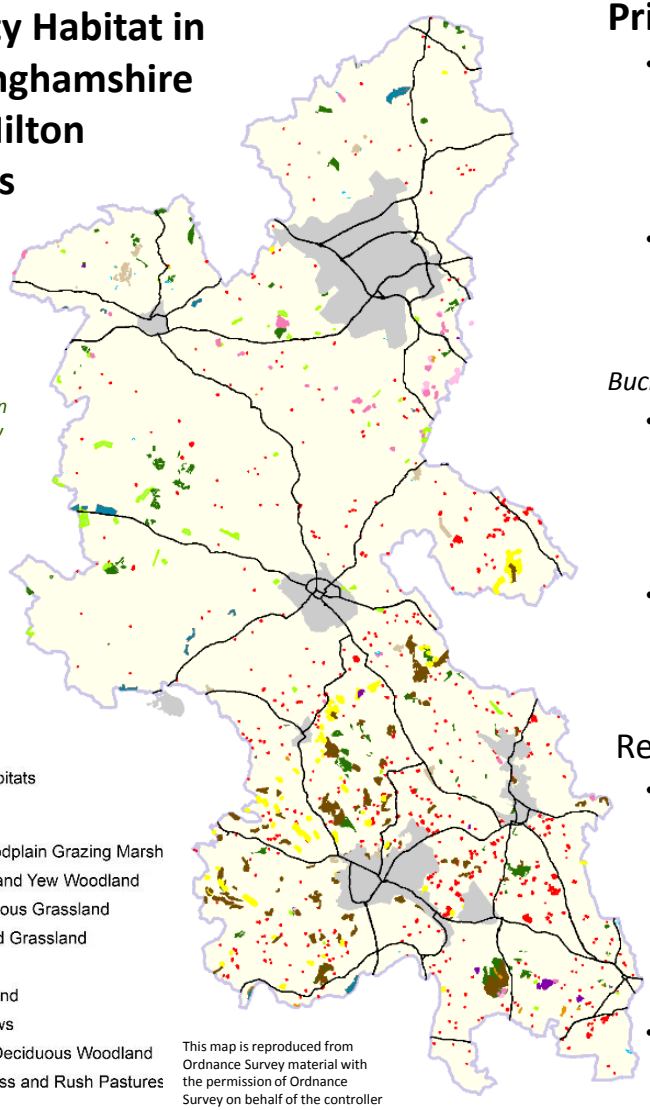
- **Most of the agreements currently in place are from the predecessor schemes**, which are shown here on the map.
- New CS agreements are only just beginning to be put in place and are not yet included in the data.
- Overall as the map shows, **there was relatively high coverage of the predecessor schemes** and it will be **important to monitor take up of CS** and the implications of this.

1 How healthy is our environment? (Continued)

Indicator: Priority Habitats Extent

Priority Habitat in Buckinghamshire and Milton Keynes

Based on information supplied by BMERC



UK BAP Priority Habitats

- Coastal and Floodplain Grazing Marsh
- Lowland Beech and Yew Woodland
- Lowland Calcareous Grassland
- Lowland Dry Acid Grassland
- Lowland Fens
- Lowland Heathland
- Lowland Meadows
- Lowland Mixed Deciduous Woodland
- Purple Moor Grass and Rush Pastures
- Reedbeds
- Wet Woodland
- Wood-Pasture and Parkland
- Traditional Orchard
- Built up areas

Priority Habitats Extent: Background - *National targets*

- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (2011) includes **national targets for the condition and extent of priority habitats and protected species by 2020:** to achieve an **increase in overall extent** of priority habitats by at least 200,000 ha; **and 90% of priority habitats in favourable or recovering condition**.
- The Strategy's priority habitats are embedded in law through Section 41 of the Natural Environment and Rural Communities (NERC) (2006) Act. This lists **56 priority habitats of principal importance for conservation** in England; the same as those that have historically been addressed by UK Biodiversity Action Plan work.

Buckinghamshire targets for priority habitats

- The NEP's 'Forward to 2020: Buckinghamshire and Milton Keynes Biodiversity Action Plan' , published in 2015, sets out **restoration and creation targets for 14 of the English priority habitats** to achieve a 20% increase in the area of priority habitat in the county by 2020. The NEP and partners are supporting a number of initiatives at a landscape scale to help meet the target.
- However - **currently we do not have good data on progress**, which needs to be addressed. **There is no meaningful *trend* data on the extent or condition of priority habitat locally -** in part because the methodology for national habitat inventories has been substantially changed; and updates are due on the 2010 local habitat mapping.

Results - What the indicators say

- Much, but not all, of the priority habitat within Buckinghamshire and Milton Keynes lies within a site designated for its nature conservation interest.

Indicator: Priority habitats extent

Buckinghamshire, including Milton Keynes, has less priority habitat than the average English county: 9.7% of the land area compared to 14% of England as a whole (based on Natural England Priority Habitat data).

- More fine-grained local habitat mapping data held by BMERC suggests the Priority Habitat land area in Bucks and Milton Keynes is in fact **just below 3%,** rather than 9.7%. Further work is needed to ensure accurate, up-to-date mapping of priority habitat.
- **Buckinghamshire has above average extent of traditional orchards, lowland dry acid grassland and lowland meadows**; **Lowland mixed deciduous woodland is the single most extensive priority habitat in the county** (1,682 ha) followed by Beech and Yew Woodland (1,191 ha) and lowland wood pasture and parkland (536 ha).

1 How healthy is our environment? (Continued)

Indicator: Number of Air Quality Management Areas

Air Quality – for human health

Background

- **Air pollution is a local, regional and international problem** caused by the emission of pollutants into the atmosphere, which can have negative impacts on human health and ecosystems. There are many sources of air pollution, including traffic, household heating, agriculture and industrial processes.
- Adverse impacts on public health caused by **poor air quality costs the UK economy more than £20bn per year** (around 16% of current the annual NHS budget).Royal College of Physicians Report, Feb 2016
- **Local authorities must measure local levels of air quality** against national, health-based air quality objectives for a number of pollutants, and report progress regularly to Defra.[1]
- **At the core of Local Air Quality Management in the UK are health-based objectives for three pollutants** – Nitrogen Dioxide (NO_2), Particulate matter (specifically PM_{10}) and Sulphur dioxide (SO_2), with NO_2 accounting for the majority.
- Where a local authority considers exceedences compared with the objectives are likely, it must declare an "**Air Quality Management Area" (AQMA).** Authorities must produce an associated **Action Plan** setting out the measures it intends to put in place in pursuit of the air quality objectives.
- **Measures included in Air Quality Action Plans** range from installing a green wall to improve air quality (e.g. Chesham Town Council building); improving bus emissions; measures to improve traffic flow; restrictions on goods vehicles; and encouraging cleaner forms of transport such as cycling and greater use of public transport. (See page 33, Chiltern DC LAQM progress report 2014).

Results

- **Health-based air quality objectives are being achieved in Buckinghamshire except for** where AQMAs and potential AQMAs have been identified - which are mostly around the **major transport routes**.
- **The main pollutant of concern in Buckinghamshire for human health is NO_2, arising from vehicle emissions,** according to the latest available ratified reports for each local authority. Effects are exacerbated where residential development is close to main roads. (In Milton Keynes, residential properties are set back from grid roads, allowing for dispersion and dilution of pollutants before reaching them_.

Indicator: Air quality for human health
There are 7 AQMAs in Buckinghamshire – all due to elevated NO_2 emissions, and all in urban areas (2 in Aylesbury, 1 in Chesham, 1 in Olney [high traffic flows]) **or around main roads** (AVDC:1 along the A41 Tring Road; South Bucks: 1 around the motorways; Wycombe: 1 alongside M40).

- In Milton Keynes, residential properties are set back from grid roads, allowing for dispersion and dilution of pollutants before reaching them.
- **Revisions to the AQMAs are being considered** and are subject to air quality data review. In the Aylesbury area data is currently indicating that the A41 Tring Road AQMA could be revoked and Buckingham Town Centre should be considered. There is also concern about High Wycombe Town Centre, which is a potential AQMA. This would be contiguous to an amended M40 AQMA, to extend it slightly either side.
- **Construction work and lorry routes associated with HS2 have been identified by Chiltern District as possible new sources of air quality concerns.** Elsewhere in the county, **road improvements may reduce NO_2 levels in certain hotspots**; for example the Eastern Link Road improvements should improve traffic flow and therefore air quality along the A41 Tring Road corridor, currently an AQMA.

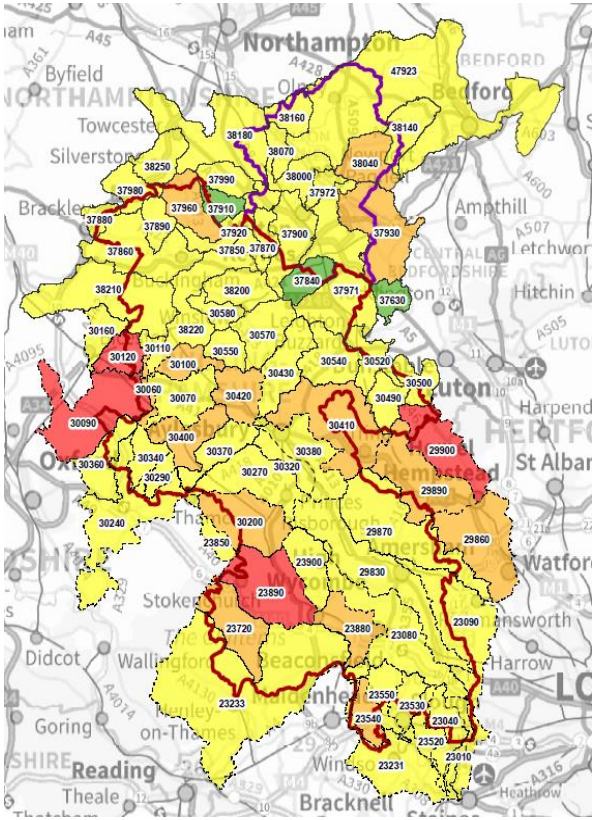
Source of data: latest available "air quality monitoring reports" for each District.

[1] All local authorities are required to regularly review and assess air quality in their areas, and meet Local Air Quality Management process requirements as set out in the National Air Quality Strategy, Environment Act (1995), related guidance and technical documents. Authorities monitor continuously the levels of certain pollutants at "hotspot" locations (often major roads), to identify any breaches of levels compared with national air quality objectives. Other, non-continuous monitoring is also commonly used, which helps identify average levels of exposure elsewhere and possible new hotspot locations.

1 How healthy is our environment? (Continued)

Indicator: Water Quality

Status of waterbodies 2015 – Water Framework Directive assessment



Source of data: The Environment Agency, 2015 data ; © Crown copyright and database rights 2016 Ordnance Survey 100024198

Water quality

Background

- The European Water Framework Directive (WFD) became law in the UK in 2003 and introduced **a requirement for all member states to attain at least good status in all water-bodies** (surface water and ground water) by 2015, or where this was not possible, by 2027.
- There have been 2 cycles of reporting to date – 2009 and 2015. Changes in thresholds and extent of data collated mean that the 2009 and 2015 data is not entirely comparable.

Results - what the indicators say

Indicator: Water quality

Only 8% of surface water bodies (rivers, lakes and canals) **in Buckinghamshire** have attained **good status**, compared to 21% across England.

- **Chalk streams are internationally rare and support many rare and endangered wildlife species**, as well as having high recreational and cultural value. **Buckinghamshire has 2.5% of the world's chalk streams** (and 3.1% of England's chalk streams)**.**
- **Currently none of the chalk streams in Bucks achieve "good" status (WFD) compared to 23% nationally.** *[Data source:* WWF-UK and *Waterlife* "The State of England's Chalk Streams" report 2014; *and Chilterns Conservation Board].*
- ***There is a need to improve water quality of water bodies - including chalk streams - across the county.*** There is also a need to reduce current unsustainable levels of water abstraction – for example by reducing demand for water and developing new water sources. However demand is likely to increase as a result of future growth.

Table: Water Framework Directive status of surface waterbodies in Bucks and MK in 2015

Status (2015 WFD status)	No. of waterbodies	% waterbodies
Good	6	8%
Moderate	57	70%
Poor	14	17%
Bad	4	5%

2. How do we use our environment?

Resource use in Buckinghamshire and Milton Keynes

Information on the use of energy and water consumption; on waste and fly tipping; and carbon emissions tells us about people's attitudes towards the environment, their use of resources and how this is changing over time.

2 How do we use our environment?
Context: Energy use in Buckinghamshire

Energy: the UK relies on fossil fuels, which have a range of negative environment impacts

- Although the amount of energy produced through renewables is increasing, **the UK is still heavily-dependent on fossil fuels** in all areas of energy use, particularly in transport and for use in buildings as gas and electricity.
- The Government's target is for 15% of the UK's energy consumption (electricity, heating, transport) to come from renewable sources by 2020. Despite reaching interim targets, of the UK's overall national energy consumption, only 7% comes from renewable sources. So we are still 93% non-renewable. *(DUKES – Chapter 6 2015 data)*
- This **reliance on fossil fuels has a range of environmental impacts – from local effects on air quality to contributing to global climate change.**
- **To reduce the impact of energy on the environment, Buckinghamshire must seek to improve its energy efficiency** (lower energy use due to lower demand) **and generate and use more energy from less polluting, renewable sources** such as the sun, water and wind.

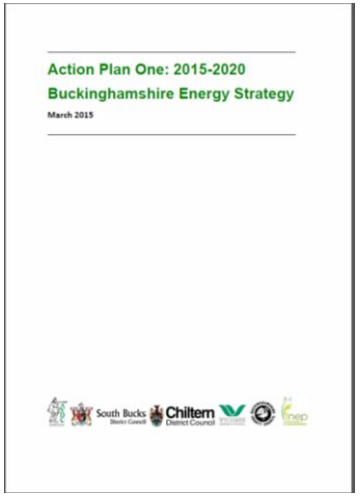
- Improved retro-fitting to existing buildings will lower demand, improve comfort, air quality and support affordable warmth objectives.
- The aim for the Greatmoor "Energy from waste" facility is to generate around 22MW electricity to the local grid by thermally treating up to 300,000 tonnes of household and commercial waste each year, which would otherwise have gone to landfill.

Buckinghamshire Energy Strategy: a 25-year vision

- Buckinghamshire's first Energy Strategy was published in June 2015. It is a 25-year vision that aims to address the risks of energy security and the rising cost of heating and lighting, while at the same time promoting the benefits that developing energy sources can bring. In particular, the Strategy:
  - *Encourages improved energy efficiency* in domestic and commercial premises – to help reduce overall demand for energy and energy resources, and to save money;
  - *Focuses on Buckinghamshire communities* – aiming to increase the amount of community-generated energy; and ensure that communities both influence and benefit from energy projects;
  - *Supports the growth of the local green economy* - where *demand for energy-related goods and services* can be met locally (e.g. Buckinghamshire-based technology development, local suppliers of green technology and investment in it from local businesses).

Detailed action planning to meet the aims of the Strategy is conducted in 5 year cycles.

- Action Plan One (2015-20) can be found here, and sets out the detailed priorities and targets for projects in the first 5-year planning cycle, as well as the main challenges.
- The Action Plan also sets out key measures that will be monitored as the Strategy progresses, covering the themes of energy generation, efficiency, community, local economy and benefits, such as avoided CO_2 emissions.
- The Action Plan is reviewed annually – next update is due summer 2016.

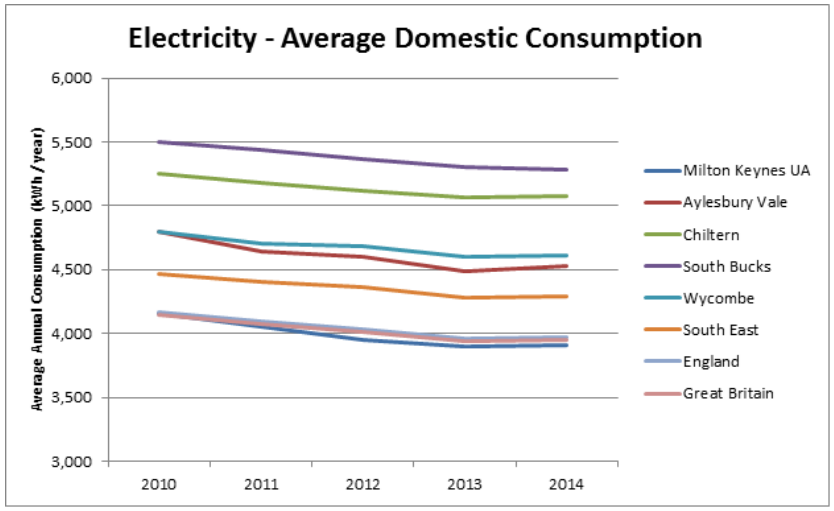


2 How do we use our environment?
Indicator: Domestic Electricity Consumption

Domestic energy consumption

Background

Average levels of domestic energy consumption are closely linked to the overall efficiency of the housing stock in the county. Whilst there may be fluctuations within and between years, for example if there is a particularly cold or mild winter, the overall pattern of energy use in the domestic sector is principally a function of how efficiently our homes use energy.



Source of data: DECC electricity consumption statistics 2014. Accessed January 2016, available at: DECC electricity consumption statistics

Results – electricity consumption

Electricity usage is less affected by the weather than energy consumption more broadly - although not entirely separated from it. **There are also counteracting trends** – for example, the greater use of energy efficient light bulbs is partly offset by the increased use of computers and other electrical equipment. However, as the Figure opposite shows:

Indicator: Average domestic electricity consumption
Average consumption per consumer has declined gradually since 2010 across Buckinghamshire, in line with national trends.

- The fall in electricity consumption in Bucks is likely to indicate that the general efficiency of the electrical equipment we have in our homes has improved, countering any increase in demand from population growth. So despite population growth, improving efficiency is leading to reduced overall demand for electricity.
- **All the Districts consumed on average above the regional and national averages for domestic electricity consumption**. South Bucks and Chiltern Districts consumed the most; then Wycombe and Aylesbury Vale.
- **Milton Keynes had the lowest average annual domestic electricity consumption**, which in 2014 had reduced to below average national and Great Britain levels, in line with the newer age of housing.

2 How do we use our environment?
Indicator: Domestic Gas Consumption

Domestic gas consumption

Background

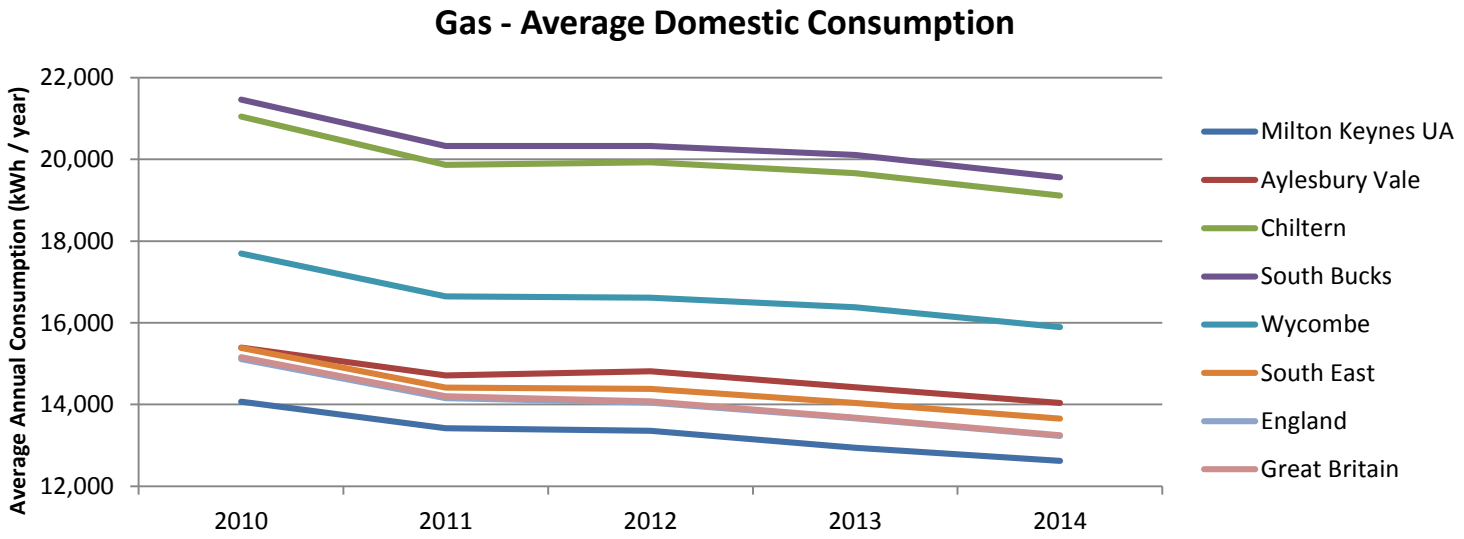
- Gas in domestic properties is mainly used for space heating, domestic hot water and cooking.

Results

- **Milton Keynes is by far the most efficient area locally, outperforming national averages.** This may reflect the newer age of housing stock, average size of home, etc.
- **Chiltern and South Bucks are higher gas consumers – and in fact use more gas per household than any other districts in England** DECC Regional and Local Authority gas consumption statistics 2005-2014; consumption there has also been gradually falling since 2010, following the national and regional trends.

Indicator: Average domestic gas consumption

Improvements to the thermal efficiency of homes have led to a drop in the average gas consumption per customer in all NEP areas since 2010 - which reflects the national picture. Despite the trend, **Chiltern and South Bucks use more gas per household than any other districts in England.**

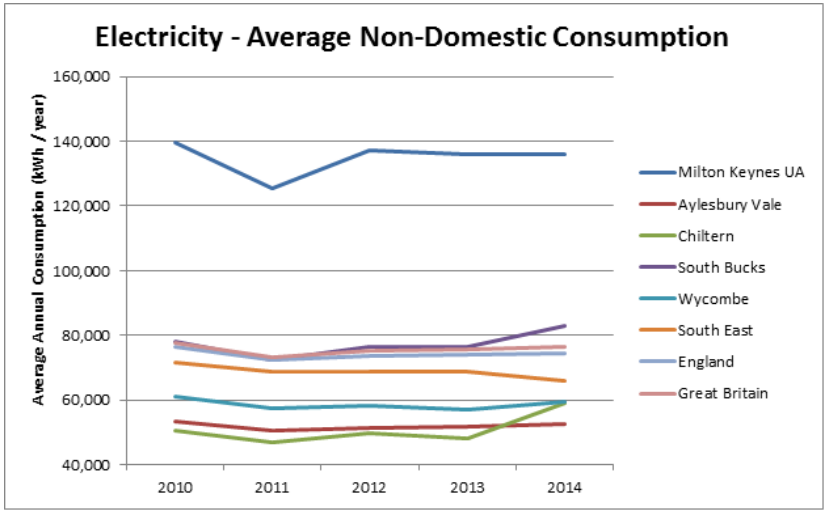


Source of data: DECC gas sales - region and local authority statistics 2014. Accessed February 2016, available at: DECC gas consumption statistics

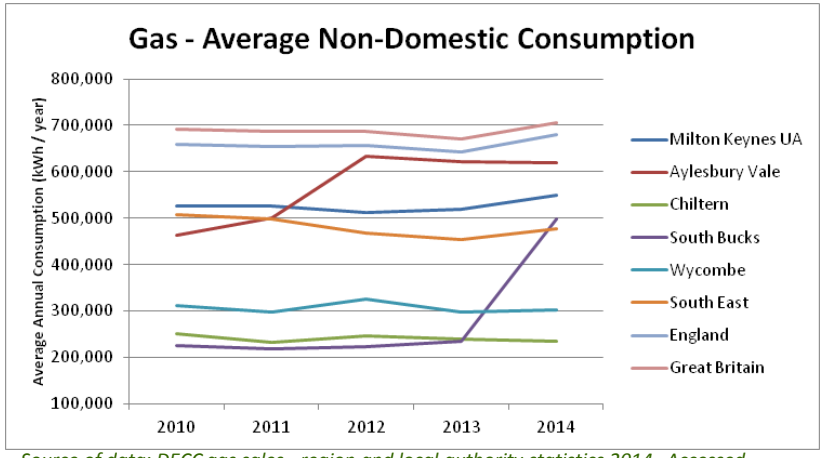
2 How do we use our environment?

Indicators: Non-domestic Energy Consumption: ELECTRICITY and GAS

Non-domestic energy consumption in Buckinghamshire - 2010 - 2014



Source of data: DECC electricity consumption statistics 2014. Accessed January 2016, available at: DECC electricity consumption statistics



Source of data: DECC gas sales - region and local authority statistics 2014. Accessed February 2016, available at: DECC gas consumption statistics

Background

Energy use in non-domestic settings can differ significantly between areas depending on the industrial and commercial activities taking place. So it is not appropriate to compare energy use in offices to energy use in light industrial processes. There is also a greater tendency for non-domestic energy use to reflect the wider economic output.

Results – what the indicators say

Indicator: Non-domestic ELECTRICITY consumption

Non-domestic electricity consumption in Wycombe, Aylesbury Vale and Chiltern Districts **remained below regional and national averages** throughout the 5-year period 2010 - 2014.

- Data by Authority shows the difference between the higher-use of electricity by industries in the Milton Keynes area compared to the rest of Buckinghamshire and national averages.
- The increase in non-domestic electricity consumption in South Bucks could relate to new business premises, or a change in the type of business, with higher energy demands.

Indicator: Non-domestic GAS consumption

All areas are consuming less gas for non-domestic purposes than the national averages; however there is a broad spread between authority areas; Aylesbury Vale and Milton Keynes are the highest non-domestic gas consumers; and consumption in South Bucks has increased significantly since 2013.

- This may be related to the opening of new business premises or the changing of business activities within existing ones. (NB As these measures use the mean average, as opposed to the median which is not available, the figures are more liable to being influenced by a small number of high consumption sites, pulling the average up or down accordingly).

2 How do we use our environment?
Indicators: Microgeneration;
Renewable electricity generation in Bucks compared with consumption

Background

Renewable energy is energy used for electricity, heat and transport that comes from a source which is not depleted when it is used. It covers common examples such as solar, wind, water, as well as lesser-known sources such as landfill and sewage gas.

The amount of renewable electricity generation has been increasing in recent years in all areas of the country, with some areas better suited for certain forms. This leads to a varied picture of both overall levels of generation as well as the types found in those areas.

The UK has a target of achieving 15% of its energy needs through renewable sources by 2020 – however this is across all forms of energy (i.e. including heating and transport). This has been translated into a 30% target for renewable electricity by 2020 (including 2% from small-scale resources), with an interim target of 14% in 2014*. (National Renewable Energy Action Plan for the United Kingdom)

Results – what the indicators say

Indicator: Micro-generation

In the last 5 years (2010 – 2015), huge growth in micro-generation in Buckinghamshire – in line with national trends.

Source: Ofgem statistics, accessed May 2015; FiT Installation Report March 2015

Microgeneration provides only a small proportion of energy needs, but is indicative of attitudes towards energy use.
Over 99% of renewable micro-installations relate to solar PV.
Growth expected to slow significantly, due to FITs reduction.
Although there is potential for continuing PV growth and potential for energy storage, to keep improving, ***other forms of micro-generation need to be encouraged, such as renewable heat. The Government's incentive for this pays individuals and organisations to heat their buildings from renewable sources, with the greatest benefits for those off the gas grid.***

Indicator: Renewable electricity generation - in Buckinghamshire compared with consumption (2014)

In 2014, Buckinghamshire produced enough renewable electricity to meet on average 11% of its total ELECTRICITY consumption *(see Table below).* This is far short of the national target (30% by 2020). *

Table: Renewable electricity generation by local authority area, 2014

	Total Consumption (GWh)	Total renewable generation (GWh)	% Renewable
Milton Keynes UA	1,465	100	7%
Aylesbury Vale	670	168	25%
Chiltern	385	3	1%
South Bucks	387	110	28%
Wycombe	726	5	1%
NEP Area	3,633	386	11%

Source: DECC statistics accessed February 2016. Regional Renewable Statistics 2014; and DECC electricity consumption statistics

- **NB The average figure of 11% masks great variability between Local Authority areas.** A quarter or more of the electricity demand is met by supply in Aylesbury Vale and South Bucks (which has a landfill site), this is only 1% in Chiltern District and Wycombe.
- **There is a reliance on landfill gas to reach the 11%: landfill gas was the single largest source of renewable electricity generation in Buckinghamshire in 2014.** Some 83% of the renewable generation came from sewage and landfill gas sites.
- **The renewables figure would be only 1.8%** excluding landfill and sewage gas. Solar, wind and hydro combined – only generated 17 %.

* ***The national target is not a local target –*** *as some areas are more able and suited to generating renewable energy.*

(Because of the way the grid functions, we cannot directly attribute generation in the region to consumption in the region. *The 11% is a comparison between electricity generated and the amount consumed to give* ***AN IDEA*** *of how much consumption was renewably-generated in the region).*

2 How do we use our environment?

Indicators: Waste generated and % waste recycled

Waste

Background

- Around half of UK waste is generated by construction, a quarter by commercial and industrial activities and households responsible for a further 14%.
- Reducing overall waste generated and improving the proportion of waste recycled, re-used and composted reduces the demand for scarce resources and reduces waste to landfill - which needs land and contributes to pollution and greenhouse gas emissions.

National trends and targets

- **Waste generated**
  - Total UK household waste generated (tonnes) had been falling between 2010-2013, but rose again in 2014. But the amount going to landfill fell by 20%.
  - The UK comfortably met its EU targets in 2010 and 2013 to restrict the amount of municipal waste* to landfill. The next target is to restrict this to 35% of the 1995 baseline by 2020.
- **Waste recycled**
  - Recycling rates have improved nationally. The latest data shows UK household recycling is at 44.9% – up 4.5 percentage points since 2010. **The EU Target for the UK is to recycle at least 50% of household waste by 2020.**
  - England contributes the highest proportion of UK household waste of all four countries; yet has the lowest recycling rate at 43.6%. *Data source: Defra: UK Statistics on waste (Dec 15)*

* NB *"municipal" waste - refers to all waste collected by district / MK authority – including trade waste, construction and demolition waste and all household waste*

** *The aim for the Greatmoor "Energy from waste" facility is to generate around 22MW electricity to the local grid by thermally treating up to 300,000 tonnes of household and commercial waste each year, which would otherwise have gone to landfill.*

Buckinghamshire Results

Waste generated in Buckinghamshire is rising again

- **In line with national trends**, the total amount of both "**municipal"** (waste collected by the authority, including commercial, industrial and household waste) **and "household" waste generated** in Buckinghamshire in 2014-15 **rose slightly** compared with 2009-10 (by just under 2% and 3% respectively).
- **Unprecedented growth in Bucks risks accelerating slight downward trend.**

Indicator: Waste generated (tonnes)

	2014-15 [2009-10 data]
Household:	240,985 [236,950] (Bucks Districts)
	121,471 [114,955] (MK)
Municipal:	262,950 [256,374] (Bucks Districts)
	130,870 [130,179] (MK)

Data source: Buckinghamshire County Council and Milton Keynes Authority – Waste data

Waste recycling – rates have improved

- **Household recycling**
  - Around **56% of household waste was recycled** in Buckinghamshire in 2014-15 - **above national proportions**, and the UK target. Bucks is aiming for a 60% rate in 2015-16.
  - The Buckinghamshire recycling rate exceeds neighbouring Hertfordshire and Northamptonshire (just under 50%); Oxfordshire households recycled 61% .
- **Municipal waste***
  - Nationally, around 23% municipal waste was sent to landfill in 2014-15 (based on county authority data).
  - **Milton Keynes performed better than average:** 19.3% of municipal waste was sent to landfill, down from 57% in 2009-10 - partly due to more recycling now of municipal waste (e.g. soil, hardcore and road sweepings) and waste being sent for energy recovery – e.g. 25% of MK waste is diverted from landfill in this way.
  - **Across the rest of Bucks a far higher proportion of waste sent to landfill than nationally.**

Indicator: Recycling rates (***proportion sent for recycling, composting or re-use in the financial year)***

	2014-15 [2009-10 data]
Household:	**57%** [45] (Bucks Districts)
	54% [48] (MK)
Municipal: **waste to landfill**	**47% [59%]** (Bucks Districts)
	19.3% [57%] (MK)

Data source: Buckinghamshire County Council and Milton Keynes Authority – Waste data

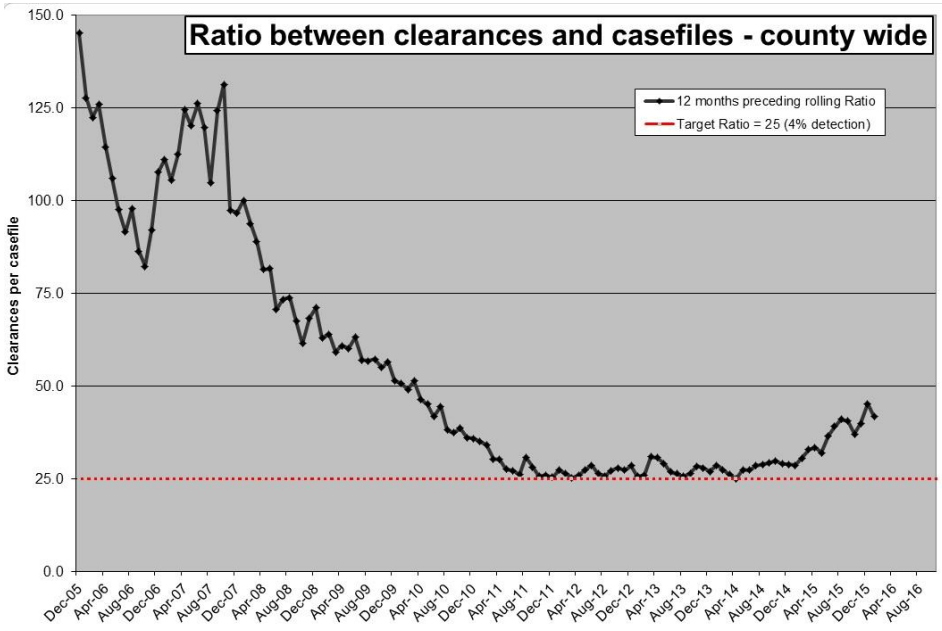
2 How do we use our environment?

Indicator: Fly-tipping – amount and "detection rate" (Districts only)

Fly tipping

Background

In 2003 the four District Councils and Buckinghamshire County Council launched a **campaign against fly-tipping.** The campaign highlights the clean-up and disposal costs to the taxpayer, environmental costs and costs of convictions. The messages show the loss of amenity and financial cost to council tax-payers, but also warns potential offenders that there may well be a cost to them too.



Source of data: Buckinghamshire County Council

***The ratio between clearances and casefiles is a rough measure of 'detection rate'.** In terms of measuring performance, Bucks CC uses the ratio between clearances and casefiles submitted. Casefile submission in fly-tipping is the equivalent of when police "charge" offenders. This is usually within three months of the dumping and shows that the offender has been 'detected'.*

*** Milton Keynes does not measure this ratio in the same way – but fly tipping incidents are monitored, and the authority formed an Environmental Crime Unit in September 2014, which focuses on waste alongside other issues.*

Results: Buckinghamshire (excluding MK**)

The campaign has had a significant effect on fly-tipping

- Bucks CC estimates that the "*Illegal Dumping Costs*" campaign has resulted in a **net 'saving' to the Buckinghamshire council tax payers of over £3m over the last 12 years** and a significantly better environment in respect of dumped waste than it would have been.

Since the start of the "Illegal dumping costs" campaign:

- **The number of "clearances" (clean-ups) of fly-tipped waste has declined.** (It had been increasing at 10% annually prior to the campaign).
- **The decline in tonnage of fly-tipped waste from public land disposed of shows a 90% drop.** This figure may even be higher although there were some early data inaccuracies.
- **Enforcement has increased .** For example, for the past five years, on average, **one offender per week has been convicted.** Prior to the campaign that figure was zero as no offenders were being convicted.

Offenders are more likely to be caught and punished in Buckinghamshire.

- Although it is not possible to compare directly to other councils as they often use different measures, Buckinghamshire County Council estimates that **offenders are ten-times more likely to be caught and punished for their fly-tipping offence if they dump in Buckinghamshire than for the rest of England.** *(English averages here are taken from "Flycapture" data compiled by the Environment Agency for DEFRA).*

Indicator: Fly-tipping "detection rate"

The ratio between clearances and case-files is a rough measure of 'detection rate'. * This shows how effective detection of offenders of fly tipping incidents is becoming.

- Buckinghamshire County Council's target ratio is 25 across the Districts. In general, the data is improving.
- **The latest figures show a ratio of 42.9 – and a slight trend away from target since early 2015.**

2 How do we use our environment?
Indicator: water consumption

Water consumption

Background

- The supply of, and demand for, our water resources is unevenly distributed over the year and geographically.
- The Environment Agency calculates that **the national water use average is 163 litres per day**. Nearly half of water in the home is used for bathing, showering and flushing toilets.
- So – aim to conserve water resource, reduce demand, and improve supply.
- **Lower water consumption and abstraction can improve water quality and save water treatment costs.**

- Average per customer water consumption data gives an idea of how the county is performing relative to national figures.
- But the figures are only indicative – data is often by water company area; not specific to Buckinghamshire boundaries.

Results

Indicator: Average water consumption

Although not available on a county-wide basis, average water consumption per customer is monitored by the water companies. Available data shows:

- Affinity: **182 litres per day** (non-metered) and **162** per day (metered). (See Affinity Water website).
- Anglian: for **MK area only, average 133 litres per person per day** (due to high water meter penetration - around 80% customers pay measured charges – average 125 per day on meters; and 148 per day otherwise).

The national average is [163] litres per day (Affinity website).

Source: Affinity Water website (accessed May 2016); Anglian Water.

The water consumption data shows that:

- **Metered water customers use less water**
- Average daily use in the Affinity area per customer is above the national average.
- Average daily use in MK area is less than national average for both metered and non-metered customers.

Encouraging take-up of water-saving measures such as water meters would help reduce consumption, improve water quality and save water treatment costs.

2 How do we use our environment?
Indicator: Carbon emissions per capita

Carbon emissions
Background

- Changing climates and higher sea-levels threaten to destabilise the global economy, environment and society, with likely devastating impacts on both people and wildlife.
- New, more stringent international greenhouse gas emissions targets are being sought for individual countries so that global climate change is kept to a minimum and prevent potentially devastating and irreversible effects.
- Carbon dioxide is the main greenhouse gas, accounting for about 82% of the UK's greenhouse gas emissions in 2013.
- The UK Government has in place a legal Framework, the Climate Change Act 2008, which sets a statutory target to lower UK carbon emissions by 80% by 2050, (and 57% by 2032) compared with 1990 to enable it to become a low carbon economy.

Results

Indicator: Carbon emissions per capita in Buckinghamshire (excluding MK): 6.8 tonnes CO2 per capita in 2013.

This faired around two-thirds of the way down the rankings **of all County Council areas (19th of 27 – i.e. 9th worst),** and would be worse still were it not for the **very low industrial CO_2 emissions** in Bucks.

The very low industrial emissions counter-act **high domestic CO_2 emissions** and relatively **high transport CO_2 emissions** in Buckinghamshire (excluding MK).

Source: DECC - *Carbon dioxide emissions by Local Authority – 2005-2013*

*Table: Buckinghamshire carbon dioxide emissions 2013 data [**EXCLUDING Milton Keynes**]*

	Domestic		Industrial & Commercial		Transport		Total	
	t CO2/ capita	Rank (1 is worst)	t CO2/ capita	Rank (1 is worst)	t CO2/ capita	Rank (1 is best)	t CO2/ capita	Rank (1 is best)
Buckinghamshire	2.4	4	1.7	**26**	2.7	10	6.8	19
South East	2.1	8	2.1	12	2.2	4	6.3	11
England	2.0		2.8		1.9		6.7	
UK	2.1		3.1		1.9		7.0	

Source: DECC - *Carbon dioxide emissions by Local Authority – 2005-2013*

Buckinghamshire (All Districts - excluding MK):

- **has higher than average domestic and transport CO_2 emissions**
  - The **4th highest domestic CO_2 emissions per capita** of the 27 English counties;
  - **Relatively high transport CO_2 emissions** compared with regional and national averages.
- **has the 2nd lowest industrial CO_2 emissions of all English counties (1.7t CO_2 p.c.)**
- This brings down the county average emissions CO_2 p.c. – but at 6.8 t CO_2 p.c., Buckinghamshire (excluding MK) still ranks 9th poorest (19 of 27).
- ***The results suggest a focus on reducing domestic and transport CO2 emissions*.**
- Milton Keynes had a 2013 total per capita emissions of 6.8 t CO_2 - in line with the combined Buckinghamshire Districts.

At a District level:

- **South Bucks has the highest per capita total CO_2 emissions of the Buckinghamshire Districts**, and is high compared with national and regional levels, at 12.2t CO2 p.c. The other three Districts range from 5.7 (Chiltern), 5.9 (Aylesbury Vale) and 6.1 (Wycombe).
- The high per capita emissions overall in South Bucks overall is **mainly due to particularly high transport carbon dioxide emissions** (3rd highest of English Local Authorities).; and **higher-than average** (regional) CO_2 per capita **industrial and commercial emissions** (unlike the other Bucks Districts).
- **Domestic CO_2 emissions were less varied** across the Districts – from 2.7t CO2 p.c in Chiltern and South Bucks to 2.3 in Wycombe and 2.1 in Aylesbury Vale. **Milton Keynes was at 1.9 t/ CO_2 p.c**. – just below regional and national average.

3. How do we benefit from our environment?

Benefits provided by our environment and its resources: our Ecosystem “services”

The natural environment and its wildlife have intrinsic value in their own right.

They also provide a great many benefits to people.
*These natural benefits have been given the term "**ecosystem services**" –*
Their identification is helping in our understanding of the many ways in which we depend upon our natural environment.

A healthy environment is needed to support our health and wellbeing, our society, people and communities and our economy and workforce.

3 How do we benefit from our environment?

Context: Services provided by our environment and its resources – health and wellbeing

Natural health service

Introduction

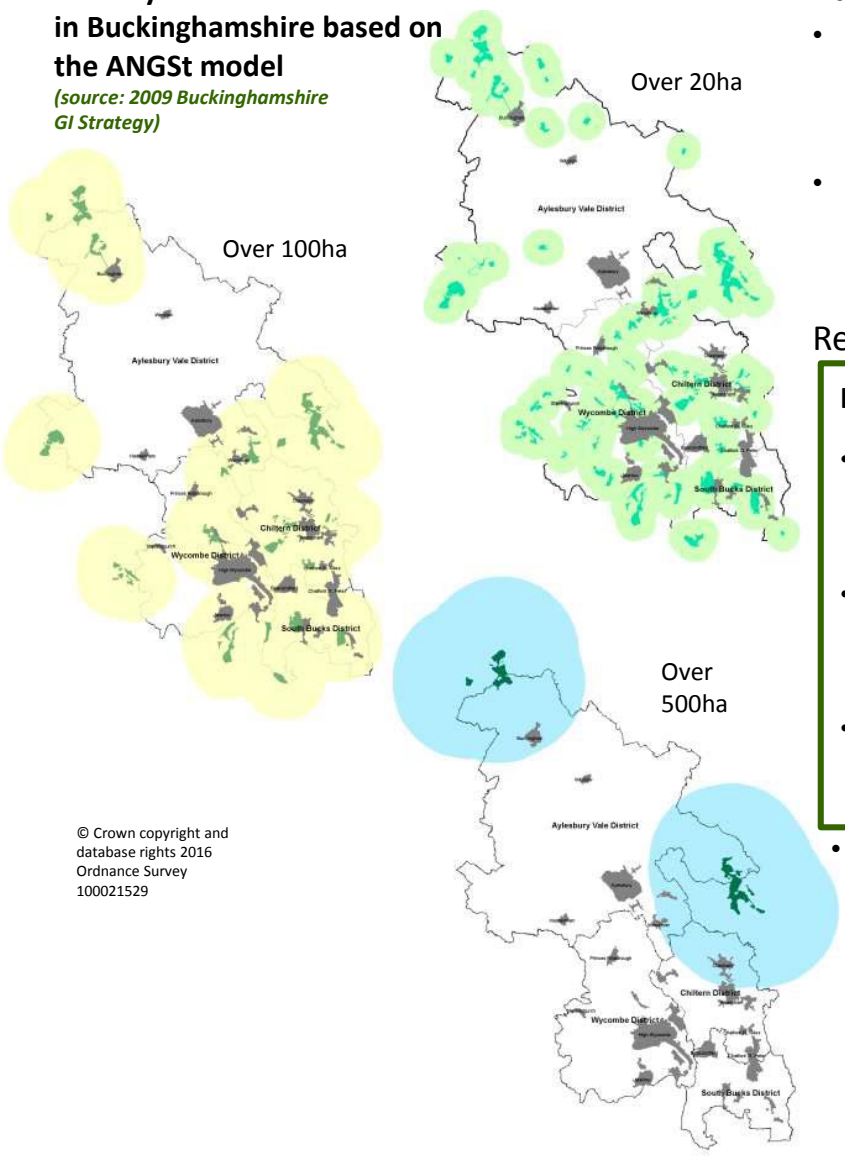
- The Public health agenda is increasingly focused on healthy lifestyle behaviours and choices to prevent ill health.
- There is a wealth of research showing links between access to the environment and (mental and physical) health and wellbeing.
- There is a growing recognition of the role the natural environment can play in improving public health outcomes, including increasing levels of physical activity, improved mental well-being, social cohesion and reduced physical problems – resulting in lower NHS costs as well as fewer lost working days due to ill health.
- Research shows that those living in more deprived communities, who tend to have poorer health, are less likely to have good access to high quality parks and green spaces.

Photo credit: Chilterns Conservation Board

3 How do we benefit from our environment?

Natural Health Service Indicator: Proximity to large-scale green space

Publicly Accessible Green Infrastructure in Buckinghamshire based on the ANGSt model
(source: 2009 Buckinghamshire GI Strategy)



Background

- The "ANGSt" model (which is the "Accessible Natural Greenspace Standard system" developed by Natural England and the Forestry Commission and supported by the planning system) advocates accessible GI close to where people live, so they can gain access from their homes without the need to travel.
- The Buckinghamshire GI Strategy reviewed access to larger-scale Green Infrastructure provision, opportunity and deficiency in Buckinghamshire (excluding MK) based on ANGSt criteria, which looks at proximity to larger-scales of green space of 2 ha, 20 ha, 100 ha and 500 ha.

Results:

Indicator: Proximity to large-scale green space

(data from the 2009 Buckinghamshire Green Infrastructure Strategy – see maps opposite):

- **Some areas of the County such as the Chilterns, South Bucks and the Thames Valley are relatively well provided for** in terms of access to large-scale GI networks. Much of the larger-scale GI in the south of the County serves large population centres in neighbouring areas.
- The Strategy found that **the north and around Aylesbury have comparatively less provision – nearly 70% households there met none of the ANGSt requirements** (compared with 0% for Chiltern and South Bucks, and 2% for Wycombe).,
- **32% of households (compared with barely any in other District) in the Aylesbury Value were serviced only by linear grassland.** (Page 62, Buckinghamshire Green Infrastructure Strategy, 2009).

- The 2009 Buckinghamshire GI Strategy (Page 65) recommended that:
  - Measures are put in place to address this deficiency.
  - Existing key Infrastructure sites should be supported to meet growing demand. New opportunities could be created to reduce pressure in areas already at capacity or with high sensitivity.
  - Consider quality of experience for users, not just availability / access.
  - Smaller-scale, more local green infrastructure studies are required - to assess elements such as carrying capacity, use, sensitivity and quality - in conjunction with local communities.

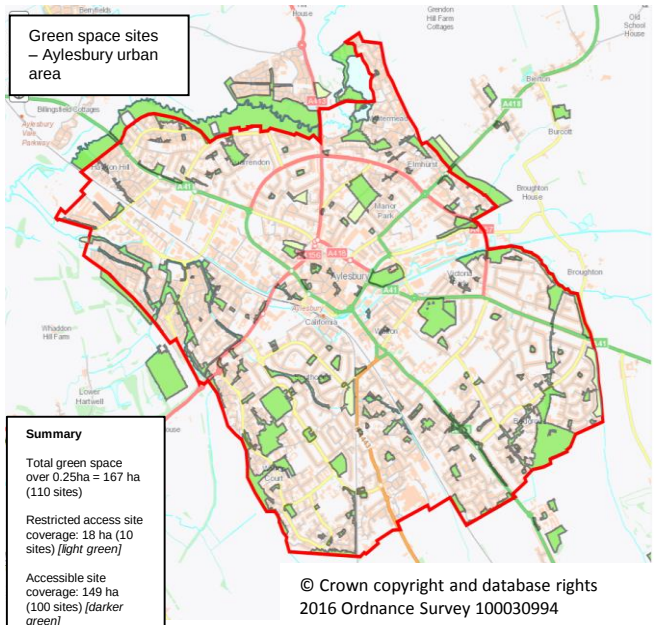
3 How do we benefit from our environment?

Natural Health Service Indicator: Accessible local-scale green space in main urban areas

Accessible local-scale green space in main urban areas (Aylesbury, Chesham and High Wycombe (approximate)

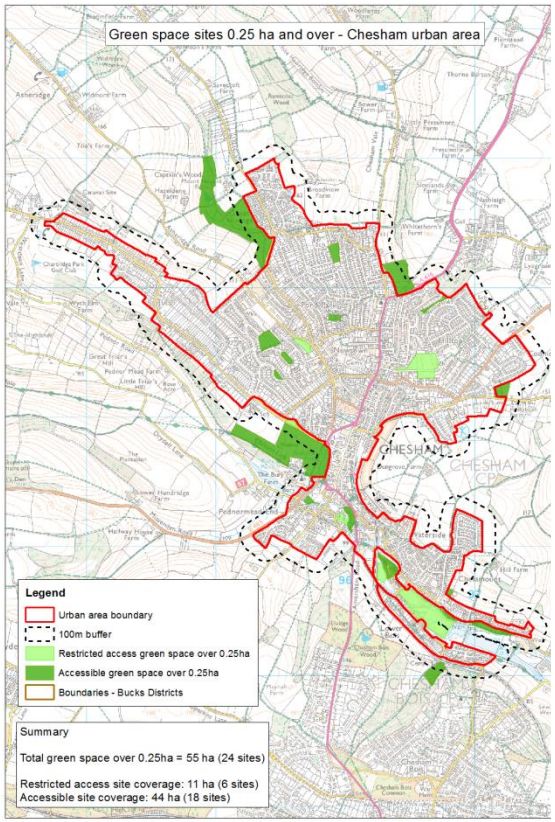
- The maps below are based on underlying data (from c.2009), and shows the amount of green space over 0.25 ha (where possible) in the three main urban areas in Buckinghamshire.
- The maps also show green space situated within 100m beyond the strict urban boundaries (shown by the dotted lines), to account for similar-sized green space in those zones, as they are in such close proximity to the urban area.

AYLESBURY



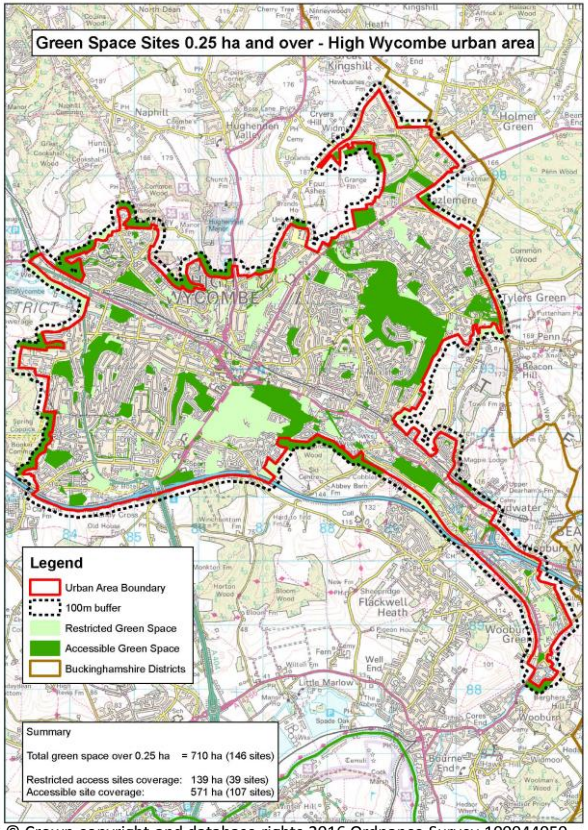
NB – Map for Aylesbury relates to open spaces of 0.1ha and larger; data is from the Green Space Audit 2012. Does not include school playing fields.

CHESHAM



NB – Data and map for Chesham relate to open spaces contained in the Local Plan (public open spaces and open spaces with limited access). They do not include school playing fields or the cemetery.

HIGH WYCOMBE



NB – Data for Wycombe does not include school playing fields

3 How do we benefit from our environment?

Natural Health Service Indicator: Accessible local-scale green space in main urban areas

Accessible local-scale green space in main urban areas

(Aylesbury, Chesham and High Wycombe *(approximate)*

Results

- **There are over 1,000ha urban green space (of 0.25ha and over) in Buckinghamshire's 3 main urban areas,** across around 350 sites.
- **Most of this local-scale green space is "accessible".** In Aylesbury around 90% of green space is accessible.
- **High Wycombe is the greenest of the three urban areas** – with the highest proportion of its area that is green space. At 27%, this is more than double the proportion of Aylesbury or Chesham.
- **There are pockets of low or non-provision in Aylesbury, Chesham and High Wycombe.**

Definitions

"Accessible" - covers green space from amenity green spaces to cemeteries, commons and natural green spaces.

"Restricted" access - refers to allotments, gardens, institutional or operational sites and vacant / derelict sites, etc.).

NB - accuracy / relevance of data is dependent on underlying mapping. Data does not include school playing fields.

Indicator: The proportion of each urban area that is green space (of 0.25ha or over):

Aylesbury (1,487 ha urban space altogether)	**11%**
Chesham * (473 ha altogether)	**12%**
High Wycombe (2,652ha altogether)	**27%**

**NB – Figures and map for Chesham relate to open spaces contained in the Local Plan (public open spaces and open spaces with limited access). They do not include school playing fields or the cemetery.*

Indicator: Proportion of green space in each urban area that is accessible: (of 0.25ha and over):

- Aylesbury: **89%** (of 167 ha)
- Chesham: **80%** (of 55 ha) *
- High Wycombe: **80%** (of 710 ha)

MK data: total 1,724 ha recreation and open space

3 How do we benefit from our environment?

Natural Health Service Indicator: How active is the NEP Population?

How active is the NEP population?

Background

- Although not all exercise is taken outdoors, the natural environment plays an increasingly important part in keeping us healthy.
- The estimated direct cost of physical inactivity to the NHS across the UK is over £0.9 billion per year.

Results

Buckinghamshire adults are on average more active than adults in the south east region or nationally, although figures are slightly worse in MK than for the rest of the Buckinghamshire Districts.

- Nearly **62%** of the Buckinghamshire Districts' adult population takes **regular exercise** (2.5 hours activity per week in bouts of 10 minutes or more – Chief Medical Officer guidelines). This has crept up from 57% in 2012, and is **above both the regional (59%) and national (57%) levels.**
- The **proportion in Milton Keynes is lower** – with only **58.7% adults active**.
- **21%** of Bucks adults were **inactive** in 2014 (less than 30 minutes of moderate activity per week in bouts of 10 minutes or more). This is down from nearly 26% in 2012 and is **better than the south East** (25.4%) **and nationally** (27.7%).
- In MK, inactive adults figures are higher – 27.6% in MK (2014 data)
- The NEP hopes to help influence this through efforts to encourage better access to, and regular use of, green space.
- The NEP supports the recently-launched **"Active Bucks"** initiative which aims to encourage physical activity through the regular use of green space in Buckinghamshire *(data: 2012 – 2014 Public Health Outcomes Framework*).

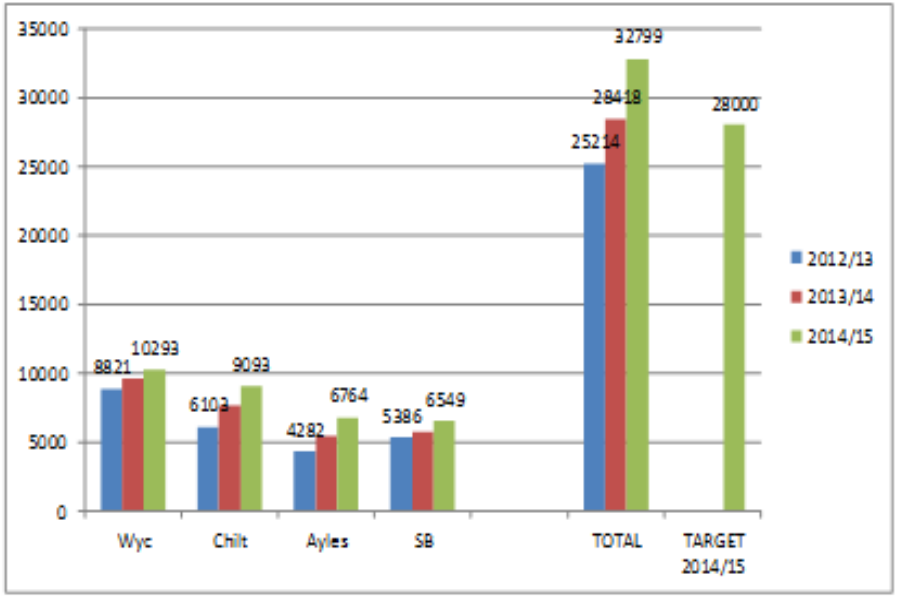
Indicator - Health Walk Uptake

Take up has increased by 30% over the period 2012/13 2014/15.

- In 2014 – 2015 a total of 2381 individuals participated in health walks in Buckinghamshire

- There is a very active programme of health walks in Buckinghamshire, aimed at less confident or less mobile walkers. The programme is entirely volunteer-led.

Health walk attendances by Local Authority district 2012 – 2015



Data source: Simply Walk, Bucks County Council, 2015 data

3 How do we benefit from our environment?

Public engagement with the natural environment indicators:

Hours of conservation volunteering; Visits to the natural environment

Public engagement with the natural environment

Photo credit: Chilterns Conservation Board

Indicator - Hours of conservation volunteering

Number of volunteer hours worked over a period of the past 3 years has **increased by an average of 38%**

Data source: Berks, Bucks and Oxon Wildlife Trust, and the Chiltern Society, 2016

Background

- Practical conservation volunteering provides a benefit to the individual in terms of health and wellbeing as well as the environment
- Many local environmental organisations – including the National Trust, Berks Bucks and Oxon Wildlife Trust, the Chiltern Society, the Chiltern Rangers and the MK Parts Trust - provide conservation volunteering opportunities.

Results:

- The data on volunteering needs further development, at present it is based only on information from 2 local organisations - Chiltern Society and Berks, Bucks and Oxon Wildlife Trust. Baseline information was provided by several other organisations, which can be used as the basis of reporting trend data for future reports.

Indicator – Visits to the natural environment

52% of the adult population in Buckinghamshire report visiting the countryside at least once a week. As expected given the demographics of Buckinghamshire and its rural character, this is a **higher proportion than the average** across England of 42%.

A far higher proportion (53%) of 65+ year olds in Buckinghamshire visit the countryside at least once a week compared to the average across England of 34% of 65+ year olds. ***Data source: Monitor of Engagement with the Natural Environment report (2015) Natural England***

3 How do we benefit from our environment?
Indicator: Number of planning-related heritage investigations

Heritage assets

Background

- **There are close links between the historic and natural environment**:
  - Aspects of the historic landscape provide important habitats for wildlife (e.g. ancient hedgerows and woodlands, historic farm buildings, churchyards, canals, etc).
  - Threats to the historic environment can have an impact on the natural environment and vice versa.
- **Buckinghamshire has a special historic environment:**
  - Vale of Aylesbury: evidence of intense settlement from the late Iron Age to the modern day
  - Chiltern Ridge: own unique landscape character shaped by geology and thousands of years of human activity
  - River terraces of South Bucks have yielded significant prehistoric sites through to the 20th century.

The medieval *St Peter's Church, Quarrendon* *© Eliza Alqassar*

Results

- There are **6,288 designated heritage assets in Buckinghamshire and 1,175 in Milton Keynes**. These include Listed Buildings, Scheduled Monuments, Conservation Areas, Registered Parks and Gardens and Locally Listed Buildings – spread across the county.
- Of these, **26 are considered by Historic England to be 'at risk'** (an Historic England classification that identifies sites most at risk of being lost as a result of neglect, decay or inappropriate development)**.**
- There is also a **large number of undesignated heritage assets -** mainly buried archaeological sites, historic buildings and landscapes.
- **Heritage assets are evaluated during the planning process** either prior to permission being sought, or resulting as a condition of planning permission.

Indicator - Number of planning-related heritage evaluations

Development in Buckinghamshire led to heritage evaluations at 104 sites in 2015 – up by 28% compared with 2010* (see Table)**.**

* This work is overseen by staff at the County Archaeological Service at Buckinghamshire County Council and the Conservation and Archaeology Team for Milton Keynes Unitary Authority

Table: Number of planning-related heritage investigations by Local Authority

District	Number of planning-related heritage investigations (2015)	Number of planning-related heritage investigations (2010)
Aylesbury Vale	56	33
Wycombe	7	4
South Bucks	13	7
Chiltern	3	4
Milton Keynes	25	33
TOTAL FOR BUCKINGHAMSHIRE	**104**	**81**

Data source: Buckinghamshire County Council and Milton Keynes Unitary Authority

- While this does not show up non-official, local group archaeological and historic building investigations the Table above shows that **most investigations in 2015 and 2010 were undertaken in Aylesbury Vale District and Milton Keynes, with most growth in Aylesbury Vale.**
- **These are the areas currently under greatest development pressure – and where the historic environment is most under threat.**
- There is a need to prepare for **expected increase** in planning-related investigations.

3 How do we benefit from our environment?

Indicator: Flood Risk Management - Number of properties at significant risk of river flooding

Flood Risk Management

Number of properties at significant risk of river flooding across Buckinghamshire

District / Authority	Number of properties at significant risk of river flooding (in a 1 in 100 year event) : (2014 data)
Aylesbury Vale	2,733
Chiltern	784
South Bucks	1,474
Wycombe	3,040
Milton Keynes	1,255 (2010 data)
TOTAL	**9,286**

District data: *Buckinghamshire County Council: Figures have been calculated using GIS by using Risk of Flooding from Rivers and Sea maps with the National Receptors Dataset.*

Milton Keynes data source: *Environment Agency, Great Ouse Catchment Flood Management Plan, adopted in 2010 – also using National Receptors Dataset.*

NB - The data changes as the models are refined and checked against real events.

Background

- **Looked after, our environment provides natural flood protection.** But – there can be pressure to build on flood risk areas and speed up the flow to water courses by using impermeable materials in building.
- Flooding can have a devastating effect on the health of the communities affected, and a significant impact on the local and national economy.
- Some 5.2 million properties are at risk of flooding in England. **Annual flood damage costs are in the region of £1.1 billion.** (House of Commons Library Briefing note Nov 2014).
- Flood risk management explores how flooding risks can be reduced – such as through careful planning and flood defences – including catchment planting to "slow the flow".

Results: **Flood Management:** managing the risk and consequences of flooding

- Bucks CC has a **Flood Risk Management plan**, which is currently being updated. Feasibility studies to help develop projects are being carried out in Saunderton, Monks Risborough, Bishopstone and Hughenden Valley.
- In Buckinghamshire the flood risk comes a combination of river flooding, surface water and groundwater. There are centres of population such as Chesham, High Wycombe, Marlow, Aylesbury and Buckingham which are more at risk - but the risk is dispersed across the county.

Indicator - Number of properties at significant risk of river flooding
As shown opposite, **the number of properties based at significant risk of a 1 in 100 years river flooding event in Bucks is 9,286 (based on latest available data).**

- Climate change impacts are likely to increase the frequency and extent of flooding.
- Buckinghamshire County Council is planning work in 2016 to look at the risks and consequences of flooding which will give evidence for focus of effort for managing flood risk.
- MK Authority has recently adopted its Local Flood Risk Management Strategy (April 2016) which contains a 5 year action plan for mitigating flood risk from local sources across the Borough. This currently includes working up projects to concentrate on surface water flood management, and working with partner organisations on a detailed model of surface water courses, which will be used in future planning decisions and to help mitigate against flood risk.

3 How do we benefit from our environment?

Supporting the economy Indicator: Visitor Spend

Supporting the economy

Visitor spend

Background: tourism spend by day visitors and overnight visitors to Buckinghamshire (excluding MK)

- **10.1m day visits are made each year to Buckinghamshire, and £261m is spent.**
- Around a third of day trips to Buckinghamshire were to visit friends or family, and a quarter were to go out for a meal or a night out.
- **5.5% of day trips to Bucks related to an outdoor leisure activity such as walking, cycling, golf, etc.,** and a further 7.5% to explore the area.
- Buckinghamshire is host to **1.1m overnight trips,** over 2.6m nights, with **£142m** being spent.

The Buckinghamshire ratio of nights to day trips is middling for county council areas even though the numbers involved and spend are low. (Only Northamptonshire has a higher proportion of all holidays lasting 1-3 days (85 per cent in Bucks compared to 58.8 in Cumbria).

Source: ONS sub-national tourism data 2011-13 (April 2015 and Dec 2015 release)

Results – what the indicators say

Indicator - Visitor spend

- **10.1m day visits are made each year to Buckinghamshire (excluding Milton Keynes) and £261m is spent**
  - i.e. an average spend of around £26 per day visit.
  - **5.5% of day trips related to an outdoor leisure activity such as walking, cycling, golf, etc.,** and a further 7.5% to explore the area – together 13% of day visits. (The same proportion of total spend is £1.3m).
- Buckinghamshire is host to **1.1m overnight trips,** over 2.6m nights, with **£142m** being spent (i.e. an average of around £129 per overnight trip).

Jobs in tourism

The number of jobs, second jobs and businesses in tourism as a share of the total in Buckinghamshire (7.2, 16.6 and 7.9) ranks low, middling and **last** (22nd, 9th, 27th) among the 27 county council areas.

Source: ONS sub-national tourism data 2011-13 (April 2015 and Dec 2015 release)

*NB **Data improvements are needed to provide the average amount spent by visitors when they are in the Buckinghamshire green spaces.***

Buckinghamshire & Milton Keynes Natural Environment Partnership

Conclusions

The report highlights the need for action and proper preparation for development and population growth, as well as to improve current performance and provision, in the following areas:

1. **Improve the quality of Buckinghamshire's natural assets** where Buckinghamshire is far behind national levels and targets, and where each is at risk from new and continued growth and development:
   - ***The extent and condition of our wildlife habitats - including priority habitats*** – in line with the targets outlined in the NEP's Biodiversity Action Plan; focusing activity in the Biodiversity Opportunity Areas (BOAs); as well as increasing connectivity between broader habitats for wildlife right across the county, from parks to road verges, local green spaces and farmland – which helps build ecological resilience to pressures including development and climate change.
   - ***The condition of Local* Wildlife *Sites*** - there is a need for better advice and support for those who own or manage Local Wildlife Sites in the county to ensure they are in good condition.
   - ***The status of our rivers and chalk streams*** – by reducing pollution and reducing abstraction, including demand reduction measures and water-saving methods such as the take-up of water meters;
   - ***Air quality - by reducing NO2 air pollution*** inside the Air Quality Management Areas (AQMAs); and working towards improving air quality outside the AQMAs.
2. **Reduce average energy demand and encourage cleaner energy sources to combat climate change:**
   - ***Improve average energy efficiency*** in homes and businesses
   - ***Increase*** to at least national target levels (30% by 2020) the proportion of ***electricity consumed in Buckinghamshire that comes from renewable sources.***
   - ***Encourage micro-generation technologies beyond solar PV***
   - ***Focus on reducing CO_2 emissions per person in Buckinghamshire.*** *The average per capita total CO_2 emissions in Bucks, at 6.8t, is nearly 3.5 times higher than the 2t p.c. stabilisation level that some proponents say is needed globally to prevent catastrophic climate change (Committee on Climate Change). It is also far higher than the 2011 global average* CO_2 p.c. *(4.9 tonnes – World Bank data).*
3. **Improve Buckinghamshire's consumption of resources, production of waste and recycling rates**
   - To ***reduce overall waste*** generated: needs improved resource management and better public awareness of waste avoidance / re-use.
   - To encourage recycling, so the amount of ***waste recycled*** is kept within national targets, despite population increases;
   - **To *divert more municipal waste from landfill***
4. Ensure **development** seeks and provides **opportunities** to **improve the health and wellbeing of our communities**.
   - ***Access to high quality green space* through development:** Local Planning Authorities must be mindful of the deficiencies in access and provision of large-scale and local-scale green space when planning for future populations – especially in Aylesbury Vale. New green space is likely to be needed.
   - ***Green space provision, protection, enhancement, connection and creation*** should be carried out in line with the NEP's "Vision and Principles for the Improvement of Green Infrastructure in Buckinghamshire and Milton Keynes". Strategic-level green space should meet minimum "ANGSt" access requirements (a standard developed by Natural England and the Forestry Commission advocating accessible green infrastructure close to where people live) - and **supported by the planning system**. **Access to large-scale green space data shows that Aylesbury Vale is the most deficient.** This directly affects health and wellbeing and productivity, costs to business and the health services, etc.
5. **Strengthen links between healthy living and the environment; and the economy and the environment**
   - Encourage health walks and regular exercise in Bucks – ***connecting people through physical activity to their environment***;
   - Linked to ***encouraging visits to local Buckinghamshire green spaces***, and provide more opportunities to take an active part in conservation.

Next steps

1. Advocacy

- **The NEP will:**
  - **Seek endorsement** of the findings of the SOE report from within and beyond the NEP partnership, including the Buckinghamshire authorities and the Local Plan process;
  - Coordinate and encourage **actions** from delivery partners to take the lead in addressing the issues and areas of concern;
  - **Repeat the SOE report** exercise in c. 2 years, and then c. every 5 years thereafter – to identify trends and review work priorities

2. Work plan – to deliver change

- The NEP, its Board, Delivery Group and Task Groups, will consider each new publication of the SOE report, the extent of positive change or otherwise, and how that may **affect delivery priorities**.
- Each organisation that participates in the NEP will seek to ensure that the **work and priorities of its organisation align with taking appropriate action on the findings and issues raised in the SOE report**.

3. Data improvements (see next slide for full list): To avoid the scenario of "what gets measured gets done", we acknowledge the need to improve data and its availability, particularly where action is needed.

- Suggestions for data improvements include:
  - **Priority habitat condition** (as well as extent)
  - **Species data**
  - **Progress towards meeting BAP targets**
  - **Flood risk** - data to better identify flood risks and consequences across Bucks; and to identify progress to mitigate flood risks
  - **Air quality impacts on wildlife and biodiversity** (not just on human health)
  - **Supporting the economy indicators** – e.g. skills in the green economy.

The NEP's role in making use of this "state of the environment" report is to bring the findings together to the right audiences, and to bring people, initiatives and projects together at the right time to tackle the issues arising.

The time to act is now

Future development pressure provides challenges but also opportunities to improve Buckinghamshire's environment. Done well, coordinated environmental improvement in Buckinghamshire and Milton Keynes can maximise the multiple benefits that the environment brings to our economy, health and wellbeing.

DATA IMPROVEMENTS

- We have made use of the latest available data robust enough to give a picture of the environment across Buckinghamshire. We will continue to monitor how this information changes over time.
- There are a number of areas where we would like to see data more readily available and/or indicators developed to help monitor change in critical areas:
  - Land use change over time: maps showing change in Buckinghamshire
  - Land quality (e.g. contaminated land)
  - Air quality – measurements of smaller particulates than currently is required – so-called "PM-2.5"s – something that Public Health England is promoting.
  - Air quality – impacts on wildlife and biodiversity
  - Green space in urban areas – *judgement criteria (how measure better?)*
  - Flood risk management – how to best measure risk and consequences of flooding (in development at Buckinghamshire CC) – and to better identify progress towards flood risk reduction.
  - Supporting the economy data – such as skills in the green economy and number (%) of Bucks businesses operating an Environmental Management System.
  - Population trends in key species in the wider countryside
  - Extent and condition of priority habitat (including accurate, up-to-date mapping). It is intended that progress within Biodiversity Opportunity Areas will be reported via the NEP Biodiversity Task Group
  - Condition of Local Wildlife Sites
  - Visitor spend in Buckinghamshire's green spaces.
  - "Green pound" data – investment in energy efficiency, low carbon energy in stationary and transport infrastructure and increasing spend on electric transport.

DATA SOURCES AND FURTHER INFORMATION

Data sources are provided throughout the report. For further information, see [NEP website].

With thanks to individuals at the following organisations for providing / analysing data, information and analysis for use in this report:

- Anglian Water
- Affinity Water (website)
- Buckinghamshire County Council
- Buckinghamshire District Councils – Aylesbury Vale, Chiltern, South Bucks, Wycombe)
- Buckinghamshire and Thames Valley LEP
- Buckinghamshire Business First
- Buckinghamshire and Milton Keynes Environmental Records Centre ("BMERC")
- Chilterns Conservation Board
- Chiltern Society
- DECC
- DEFRA
- Environment Agency
- Forestry Commission
- Geostore website
- Milton Keynes Unitary Authority
- Natural England
- Office for National Statistics (ONS)
- South East Midlands LEP
- Wildlife Trust - BBOWT