



Brighton & Hove City Sustainability Partnership  
with Brighton & Hove City Council

Brighton & Hove  
**State of the Local Environment  
Summary Report**

December 2011

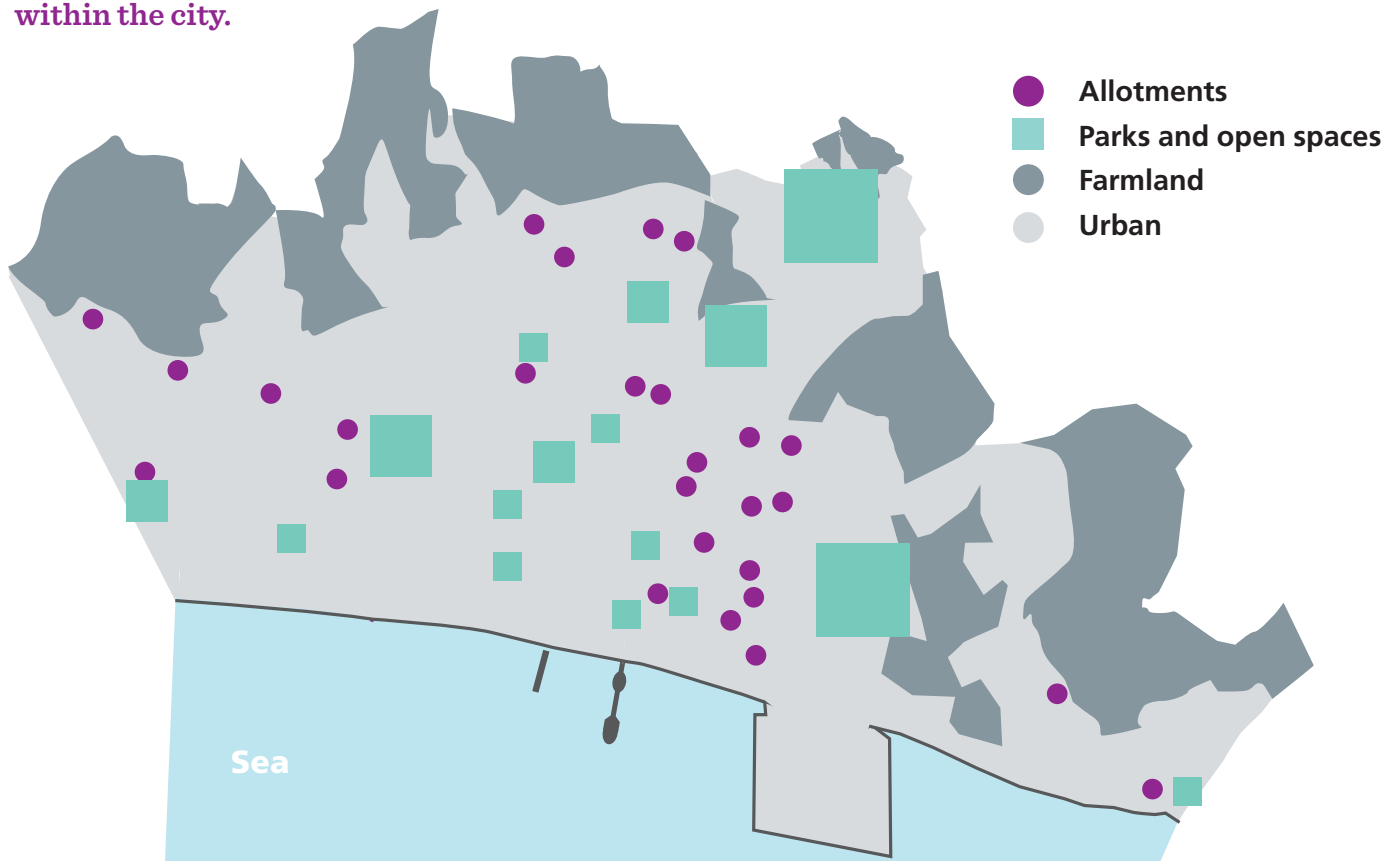
# Introduction

This is the first State of the Local Environment report produced within Brighton & Hove and has been led by the City Sustainability Partnership and developed by the Sustainability Team at Brighton & Hove City Council. It draws on a wide range of existing information and data to present a picture of the state of our local environment.

This report will be a useful and accessible reference for a range of audiences to help illustrate the challenges that face us in improving our local and global environment. The information summarises and highlights important environmental issues and along with other evidence, will help prioritise areas where action is required.

The full report can be found on the Brighton & Hove City Council website.

This map provides a representation of the different types of land uses we have within the city. This includes urban areas, parks and open spaces, farmland and even where some allotments are located within the city.



# Headline messages



**Groundwater provides 100% of our water supply**



**29.5% recycling and composting rate (2008/09)**

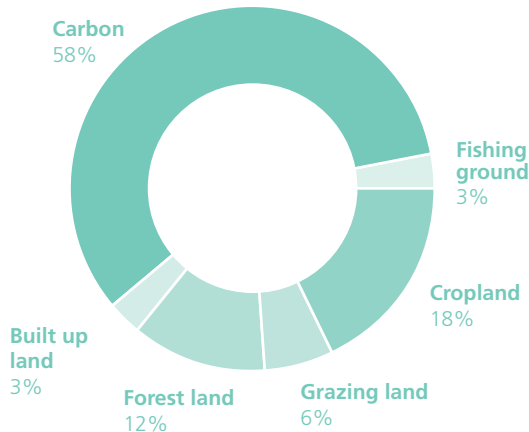


**27.5% recycling and composting rate (2009/10)**

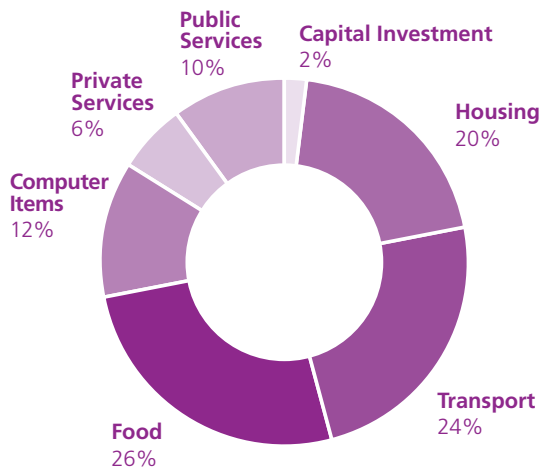
- Our city is bounded by the sea & the newly designated South Downs National Park
- The land required per resident to sustain their current lifestyles is 5.14 (2006) global hectares per person, a reduction from the 2004 footprint of 5.72
- City Carbon Dioxide (CO<sub>2</sub>) emissions from homes, industry & commerce & transport fell by 15.6 per cent over the last four years measured (2005-2009)
- Concentrations of nitrogen dioxide (NO<sub>2</sub>) continue to exceed the annual mean objective at some roadside locations across the City.
- The three most deprived areas for living environment, measured in the 2010 Indices of Deprivation, are all in the Regency ward
- There are at least 1,099 properties in the city at risk of coastal flooding; the majority of these properties are protected by sea defences
- Our groundwater system provides 100 per cent of our water supply. Its current overall status is “poor”
- In 2010, three bathing water sites along the Brighton & Hove coastline were rated “good” & one was rated “excellent” (we have 4 bathing sites in total)
- Household waste that was collected but not sent for reuse, recycling or composting increased by three per cent between 2008/09 & 2009/10
- The recycling & composting rate fell from 29.5 per cent to 27.4 per cent between 2008/9 & 2009/10, the national rate in 2009/10 was 39.7 per cent
- The city has two Sites of Special Scientific Interest (SSSI) which are in “favourable condition”
- We have eight Local Nature Reserves spanning 7.4 per cent of the land within the city

# Climate change

## Ecological breakdown



## Functional breakdown



**Our ecological footprint, or the land required per resident to sustain their current lifestyles, is high at 5.14 global hectares per person,** compared to the regional average of 5.09 & UK average of 4.64.<sup>1</sup> This means that if everyone lived & consumed resources like the average person in Brighton & Hove we would need 3.5 planets to support us.<sup>2</sup> This is, however, a reduction from the 2004 footprint (5.72). The diagram to the left outlines the breakdown of our ecological footprint.

**Our climate is changing.**<sup>3</sup> Across the country the trend for winter rainfall has increased in recent years & summer rainfall has decreased. There has been an upward trend in average temperatures & mean sea level has risen.

**Climate projections are telling us that we will experience hotter drier summers, warmer wetter winters, disruption in usual weather patterns** & more frequent or intense weather events (e.g. heat waves, droughts, & flooding) & continued rising sea level. This is likely to have an adverse impact on water quality & availability, biodiversity, human health, buildings & infrastructure, soils & the economy.<sup>4</sup>

**Carbon Dioxide emissions have been reducing at a slow rate and in Brighton & Hove stood at 4.8 tonnes per head in 2009.** In the UK Carbon Dioxide (CO<sub>2</sub>) is responsible for 85 per cent of our contribution to global warming. Our city has seen a 15.64 per cent reduction since 2005; this is just below the regional reduction of 15.67 per cent. In terms of total emissions, domestic emissions, the largest contributor to gross emissions, have reduced 14.22%, industrial and commercial emissions have reduced in total by 12.12%, and transport CO<sub>2</sub> emissions have reduced by 10.06%. A significant volume of the reduction for all sectors occurred between 2008 and 2009.<sup>5</sup>



**If everyone lived & consumed resources like the average person in Brighton & Hove we would need 3.5 planets to support us.**

1 Stockholm Environment Institute, 2006  
 2 Bioregional One Planet Framework Scoping Work, 2009  
 3 The Intergovernmental Panel for Climate Change (IPCC)

4 For more information on climate adaptation visit UK Climate Impacts Programme website  
 5 Department for Energy and Climate Change (DECC), National Indicator 186 data

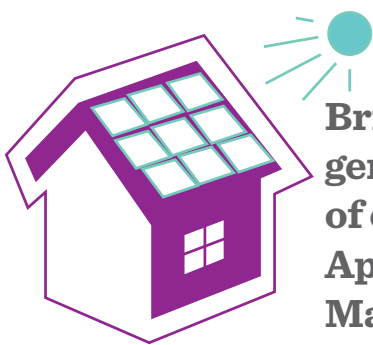
**Our domestic, commercial & industrial electricity consumption increased by 0.7 per cent between 2005 & 2009.** Since CO<sub>2</sub> is mainly produced by burning fossil fuels (non-renewable resources) for producing electricity, heating & road transport this is an important issue locally. Regionally & nationally there was a reduction in electricity consumption of two per cent & 7.6 per cent, respectively.<sup>6</sup>

**Our consumption of natural gas rose by 14 per cent between 2005 & 2009.** Regionally & nationally there was a two per cent decrease & two per cent increase, respectively. While our domestic energy consumption has reduced, commercial & industrial consumption has risen.<sup>7</sup>

**Road transport energy use has fallen by 5.2 per cent since 2005 for personal travel, while freight has remained static.<sup>8</sup>**

**Climate change concerns, increasing energy costs & security for energy supply are influencing renewable energy generation.** Small scale renewable energy technology (microgeneration) installed across **Brighton & Hove generated 0.16 megawatts of electricity<sup>9</sup> from April 2010 - March 2011. This contributed 0.15 percent of total microgeneration in the UK.** Brighton and Hove compares poorly to local authority areas generating the highest levels of energy (from installed capacity) of up to 5.256 percent (Aberdeen) of total microgeneration in the UK.<sup>10</sup>

**At least 1,099 properties in the city (0.4 per cent) are at risk of flooding from the sea.<sup>11</sup>** Properties at risk are mostly located within Brighton Marina and are notably protected by sea defences. It is projected that sea level will continue to rise, increasing the risk of tidal flooding. Periods of high rainfall can cause water to rise up from underground, overwhelm drainage systems, & run-off agricultural land & these have all caused flooding in the city during the last ten years.



**Brighton & Hove generated 0.16 MW of electricity from April 2010 to March 2011**

**This contributed 0.15 percent of total microgeneration in the UK**

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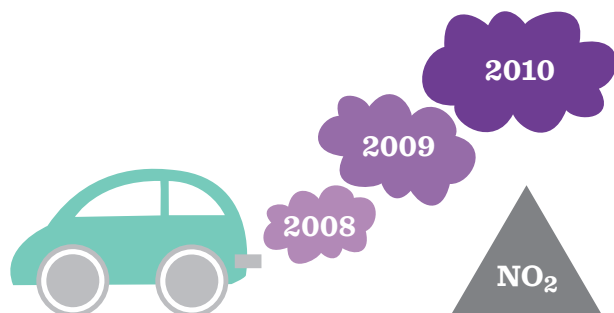
6,7,8 Department for Energy and Climate Change (DECC), 2009 Energy Consumption Statistics

9 All from Photovoltaic

10 AEA Microgeneration Index (data from Ofgem on the number and capacity of systems applying for Feed-In Tariff (FIT) registration)

11 Environment Agency: National Flood Risk Assessment 2009

## Health and wellbeing



**Average Nitrogen Dioxide concentrations in the air were higher in 2010 than in 2008 and 2009 in some Brighton & Hove streets**

**Concentrations of Nitrogen Dioxide (NO<sub>2</sub>) continue to exceed national limit values at some roadside locations within the city.** Air quality is a key environmental factor that affects the health of the population. Road vehicles are the greatest contributing factor to poor air quality in Brighton & Hove.<sup>12</sup> Nitrogen Dioxide monitoring records suggest that average concentrations were higher in 2010 than in 2008 and 2009 in some streets. The continuous analysers at Preston Park and at Hove Town Hall recorded a small increase in levels during 2010 compared to previous years. The Local Sustainable Transport Fund has given Brighton & Hove City Council £4 million to spend in the Lewes Road corridor which gives an opportunity to make a quick start in one of the worst affected areas.

**Ground level ozone is more likely to exceed target levels in rural areas.** Sunlight, fine particles and oxides of nitrogen in the air can cause ground level Ozone<sup>13</sup> to form in harmful concentrations which can be harmful to health – air alerts are often announced during these conditions.

**Observed annual concentrations of fine particles in the air (PM<sub>2.5</sub>) have not been seen to exceed target levels; however there were some spikes in measured concentrations in 2008 & 2009.**<sup>14</sup>

**According to the 2010 Indices of Deprivation, 44 per cent of the city (72 of our 164 local areas or super output areas) falls within the 20 per cent most deprived for the living environment.** This measure combines indicators focused on the indoors living environment, such as condition of housing & presence of central heating, combined with outdoors indicators, such as air quality. The three most deprived areas for living environment are in the Regency ward.<sup>15</sup>

12 Air Quality Progress Reports Part One, 2010

13 Note: Ozone is not directly emitted to the air but is a chemical reaction between Nitrogen Dioxide and volatile organic compounds in the presence of sunlight.

14 Defra Air Quality data archive

15 Index of Multiple Deprivation 2010 (<http://www.bhlis.org/dataviews/view?viewId=41>)

# Water quality and resources

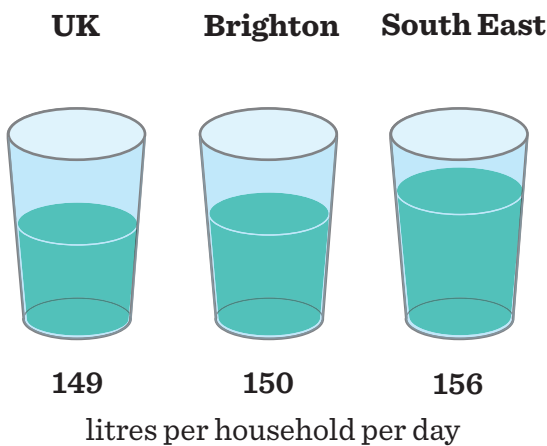
**The South East region is considered to be water-stressed & locally our area is very vulnerable to short term, severe drought events.** This is because the city is supplied entirely by chalk groundwater sources. During 2010/11 the Brighton area was considered to be in water deficit, but due to decreasing demands & improvements (for example, reducing leakage) it is considered that we will have surplus water until the planning period ends in 2035.<sup>16</sup> However, our water consumption is having detrimental environmental effects.

**Brighton’s chalk aquifer provides 100 per cent of our water supply. Its current overall status is “poor” under the Water Framework Directive,** mainly due to water abstraction. Water quality is “at risk of deterioration” largely as a result of nitrate and pesticide contamination through farm practices, but also highway, municipal & domestic pesticide use & leaking sewers.<sup>17</sup>

**Household water consumption was 150 litres per household per day in 2009/10, below the South East average level of consumption (of 156) but more than the UK average (of 149).** Water meters encourage us to use less water & are installed in two fifths of households, with the aim of achieving universal metering by 2015.<sup>18</sup>

**In 2010 Saltdean beach was rated “excellent” & Kempdown, central Brighton & Hove were rated “good”.**<sup>19</sup> Central Brighton has lost its “excellent” rating for the first time in three years. We also have three “Quality Coast Awards” in recognition of highest quality & standards.

**Wastewater is discharged a mile out to sea at the eastern edge of the city with only basic treatment, meaning we are one of the last in the UK to meet European standards.** New treatment facilities are due to be completed by March 2013 and will ensure that water quality along our coastline will improve.



## Household water consumption

<sup>16</sup> Southern Water Oct 2009, Final Water Resources Management Plan 2010-2035  
<sup>17,18,19</sup> Environment Agency, data provided in 2011 (from Southern Water)



## Waste, recycling & composting

**Household waste collected that is not sent for reuse, recycling or composting increased in 2009/10 to 629.3kg, a three per cent increase on the previous year.** This is contrary to the trends we have seen in the city over the last few years & is above the national average at 561.47kg. Whilst the percentage of waste recycled has increased significantly from 8.6 per cent in 2001/02 recently it has decreased from 24.9 per cent in 2008/09 to 23.4 per cent in 2009/10. Composting rates remained the same at 3.6 per cent between 2008 and 2010. Our total recycling & composting rate in 2009/10 was 27.5 per cent, this compares against the national average of 39.7 per cent. The national average includes rural authorities which generally have higher recycling and composting rates than urban authorities like ours.<sup>20</sup>

**Food waste accounts for 35 per cent of waste that households throw away,<sup>21</sup> & this is taken to landfill or an energy from waste facility.** When land filled, food waste produces methane, a damaging greenhouse gas. According to national research by WRAP the proportion of this food waste which is avoidable or possibly avoidable<sup>22</sup> amounts to 81 per cent.<sup>23</sup>



**\* that is not sent for recycling or composting**

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20 Data supplied from City clean, 2011

21 B&H City Council, Municipal Waste Management Strategy 2010

22 Note: Possibly avoidable food waste is categorised as food that may be eaten depending on cooking methods (eg potato skins) and food that some people chose not to eat (eg bread crusts)

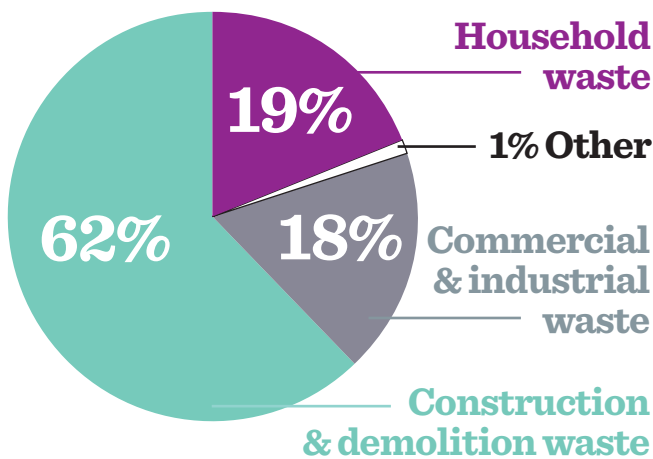
23 Quested & Johnson 2009, Waste Resources Action Programme



The percentage of our waste sent to landfill has been consistently decreasing & energy from waste (incineration) has been increasing for a number of years.<sup>24</sup> Landfill waste is sent to Horton in West Sussex & waste for incineration is transported to Kent or Portsmouth. An “Energy from Waste” facility is under development at Newhaven and our waste will be transported there from 2011.<sup>25</sup>

Household waste only makes up 19 per cent of the total amount of waste produced in the city. Construction & demolition waste accounts for 62 per cent, commercial & industrial waste 18 per cent & other waste one per cent. The amount and destination of these types of waste is not clear on a local level but figures are available on a joint level with East Sussex.<sup>26</sup>

### Waste produced in the city



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24 Cityclean data, Brighton & Hove City Council

25 Veolia Environmental Services

26 East Sussex and Brighton & Hove Preferred Strategy, Waste and Minerals Development Framework, Consultation

# Biodiversity and open spaces

**We have eight Local Nature Reserves spanning 7.4% of the land within the city.**



**Sites of Special Scientific Interest are the country’s very best wildlife & geological sites & we have two within the city.** These are rated as being in “favourable condition” which means that the land is being adequately conserved for their special qualities. They are located at Castle Hill & the Marina to Newhaven cliffs.<sup>27</sup>

**We have eight Local Nature Reserves spanning 7.4 per cent of the land within the city.** These are important areas for wildlife, geology, education or public enjoyment & provide access to the natural environment close to where people live. The last assessments undertaken to determine the condition of these areas was over five years ago, & of those that were assessed, none were managed to their full potential for wildlife.<sup>28</sup> In addition, we have 62 wildlife sites across the city which are important in a local context & have significant nature conservation value. The current condition of these areas is unknown but will be reassessed during 2011.

**There are 1,279 hectares of open space in the city** (5.6 hectares of per 1000 population).<sup>29</sup> According to future population estimates the city will need to increase the amount of open space by approximately 215 hectares by 2026 (to meet recommended standards).<sup>30</sup> The provision of open spaces is important to support a sustainable & thriving community & provide opportunities for recreation, habitats for wildlife & provide valuable amenities for residents & visitors alike.

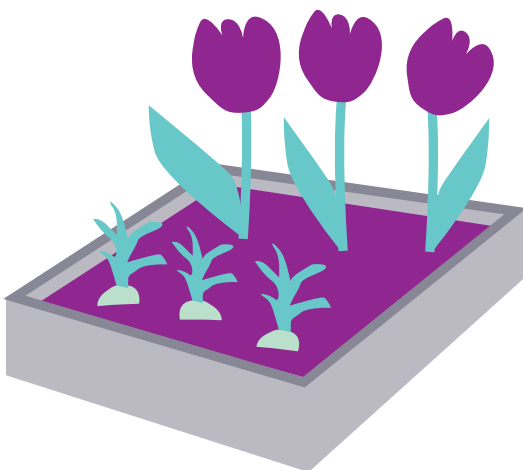
27 Nature on a Map, Natural England, 2010

28 CityWildlife website 2010

29 Note: this includes: Natural and semi natural open space, amenity green space, allotments and community gardens, civic spaces, parks and gardens, outdoor sports facilities, churchyards and cemeteries, provision for children and teenagers, the beach/coastal areas.

30 PMP Open Space, Sport and Recreation Study 2008

**The current provision of natural<sup>31</sup> & semi-natural green space is relatively good, however the majority of this space is located on the edges of the city.** These areas play a key role in wildlife conservation & biodiversity within the city & also offer important recreational opportunities. By maintaining the current level of provision, a significant amount of additional natural & semi-natural green space would be required by 2026, to keep up with the projected increase in population. There is poor access to natural & semi-natural green space north of the city due to the A27 creating a barrier.<sup>32</sup> There is a good level of provision of urban & formal parks & gardens; however the demands of an increasing population would require a significant increase (40 hectares) in order to retain current levels of provision.<sup>33</sup>



**The demand for & interest in allotments in the city is high & the number of plots per 1,000 households is currently 22.**

**The demand for & interest in allotments in the city is high & the number of plots per 1,000 households is currently 22.**<sup>34</sup> The National Society of Allotment & Leisure Gardeners suggests a national standard of 20 allotments per 1,000 households. There are currently 59 hectares of allotments, with an additional 9.01 hectares required by 2026 to maintain the current standard of provision, given the projected population increase. In terms of access to allotments there are some notable areas of under-provision across the city, the greatest being found in Hove.<sup>35</sup> Generally, larger sites on the outskirts of the city have 2 to 3 year waiting lists and smaller inner city sites have waiting times of more than 10 years. In addition to allotment provision there are 60 community food growing projects in the city offering residents the chance to take part in food growing & improving access to fresh local produce. There are also alternatives to allotments called 'meanwhile leases', aimed at residents wishing to set up community growing spaces.<sup>36</sup>

31 Note: This type of open space includes woodlands, urban forestry, scrubland, grasslands (eg downlands, commons, meadows), wetlands, nature reserves and wastelands with a primary purpose of wildlife conservation and bio-diversity within the settlement boundaries.

32 Note: Due to the poor accessibility to this area from the city, the area of NSN greenspace was not incorporated in the figures of the PMP Open Space, Sport and Recreation Study 2008

33 PMP Open Space, Sport and Recreation Study 2008

34 Based on allotment figures at the beginning of 2011 (Allotments Team, Brighton & Hove City Council) and household total is 125,616 – this from Council Tax 1/8/11

35 PMP Open Space, Sport and Recreation Study 2008

36 Note: This is under development and a partnership between the city council and Brighton & Hove Food Partnership



**In 2011 Six of the city’s parks & recreation grounds were awarded Green Flags.**

**The council owns 4,137 hectares of farmland; the majority of this is leased out & mainly under intensive agricultural use.** The Downland Initiative<sup>37</sup> has been running since 2005 but with limited achievements. Over half of council owned farmland (2,431 hectares) falls within the boundary of the city. Local allotment provision is in addition to this & is the equivalent to 2.4 per cent of this farmed area.

**In order to produce enough food to feed the population of Brighton & Hove we would need approximately 70,000 hectares of productive agricultural land.** Each year the food produced on that land would require in the order of three quarters of a million barrels of oil, & almost 625 million tonnes of fresh water. In all, this would generate an estimated half a million tonnes of greenhouse gases.<sup>38</sup>

**Six of the city’s 36 parks & recreation grounds of significance in the city were awarded Green Flags in 2011.**<sup>39</sup> This is in recognition for their environmental standards & the service they provide for their communities.

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37 Note: The overarching aim of the study is to reconnect the people of Brighton & Hove to a more biodiverse downland with better education, improved access and a better sense of connection to the land.

38 Resource requirements and GHG emissions are based on a population of 250,000 for Brighton and Hove, assuming average UK food consumption patterns, and are estimated from results of LandShare’s ‘How to Feed a City’ work, developed in conjunction with Best Foot Forward .

39 Note: here are 36 parks and recreation grounds of significance, and in total there are 98 parks and areas of green open space across the city (not all of which would qualify for a Green Flag)

## Built environment



In 2009/10 there were **15** conservation areas 'at risk'

**Our city has a large amount of conservation areas (34 in total).** Eighteen per cent of our city's built up area lie within conservation areas. In 2009/10 there were 15 conservation areas 'at risk'<sup>40</sup> and in 2010/11 this decreased to 6.<sup>41</sup>

**There are approximately 3360 listed buildings in the city** and in 2009/10 17 of these were 'at risk' and in 2010/11 this decreased to 16.<sup>42</sup>



In 2010/11 there were **6** 'at risk'

## Sustainable economy

**The city has 9 hotels that have Green Accreditation under the Green Tourism Business Scheme;** this is a national sustainable tourism certification scheme where businesses opt to be assessed against a set of criteria covering areas like energy and water efficiency, waste management and biodiversity.<sup>43</sup>

**We are a Fairtrade city.** Fairtrade is about better prices, decent working conditions, local sustainability, & fair terms of trade for farmers & workers in the developing world.

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40 i.e. at risk through neglect or decay or vulnerable to becoming so  
41 Data from Planning Conservation Team at Brighton & Hove City Council, 2011  
42 Data from Planning Conservation Team at Brighton & Hove City Council, 2011  
43 Green Tourism Business Scheme website

## Sustainable transport



**One in eight of our residents use a bus service regularly, for journeys to work.** Bus patronage has increased from 30.2 million journeys in 2001 to 41.1 million in 2009/10. In addition to the Brighton & Hove bus company there are other operators in the city, including the Big Lemon service which runs entirely on locally sourced used cooking oil.

**There are 9 electric vehicle charging points up and running within the city** (at December 2011), the scheme started February 2010 and at the end of 2011 there were 28 users registered to them.<sup>44</sup>

**There are two Car Clubs operating in the city with 2910 registered members between them** (at March 2011). These provide over 80 vehicles in the city, which are available in dedicated parking spaces dotted around the city.

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44 Information supplied from Transport Department at Brighton & Hove City Council, 2011



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