fact sheet

Southwark Borough: Environmental summary

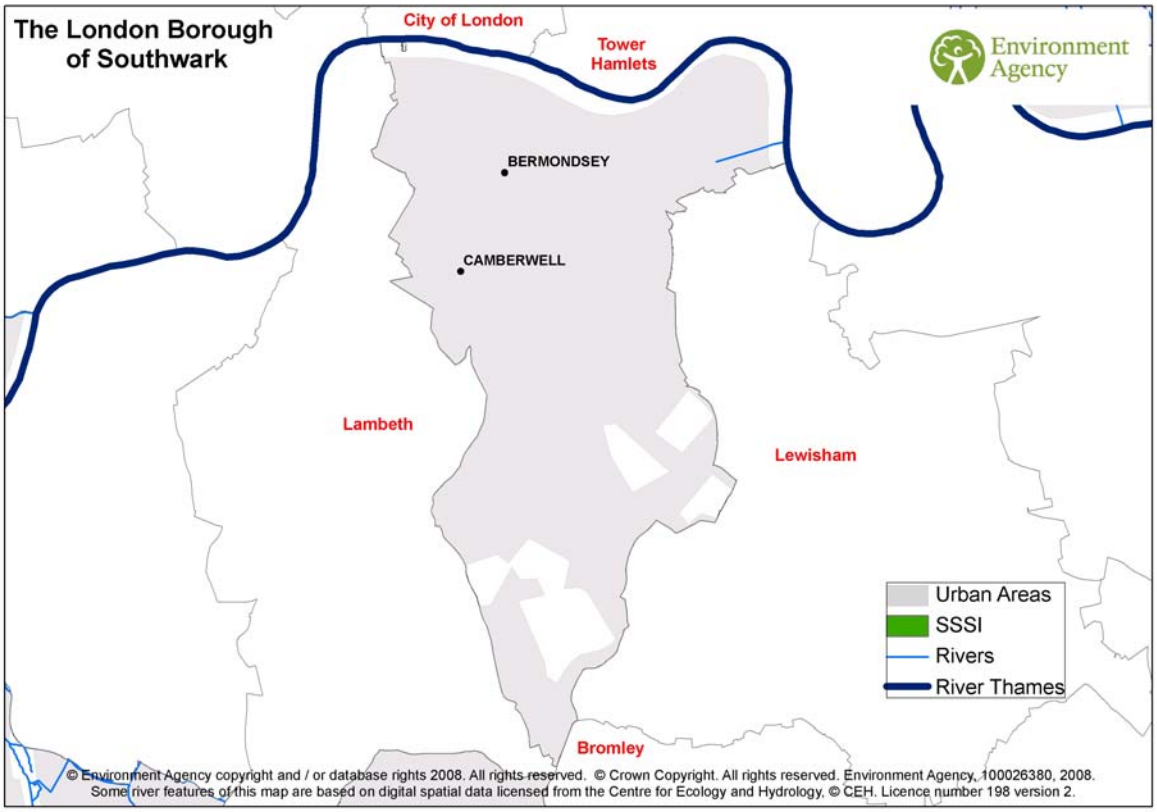
This report provides a snapshot of the environment in the London Borough of Southwark. It outlines trends and changes in the environment, and highlights some of the work being carried out in the local areas to improve the environment, and people's experience of it. The report has been compiled as an extension of the London State of the Environment report to provide a local focus on the boroughs and the health of their environment.

To navigate to other chapters in the fact sheet, click on the following links: Key environmental facts, Sustainability, Climate change, Flood risk, Waste, Water quality, Water resources, Land, Wildlife and Appendix.

Introduction to Southwark

The London Borough of Southwark is in south east London, directly south of the River Thames. It covers an area of 2885 hectares and has a population over 274,000. Southwark borders the boroughs of City of London, Tower Hamlets, Lambeth, Lewisham and Bromley.

Areas of Southwark include the towns of Bermondsey and Camberwell, and Crystal Palace, Dulwich, Elephant and Castle, Herne Hill, Newington, Peckham, Rotherhithe, Surrey Quays, Walworth and West Dulwich.



Southwark key environmental facts

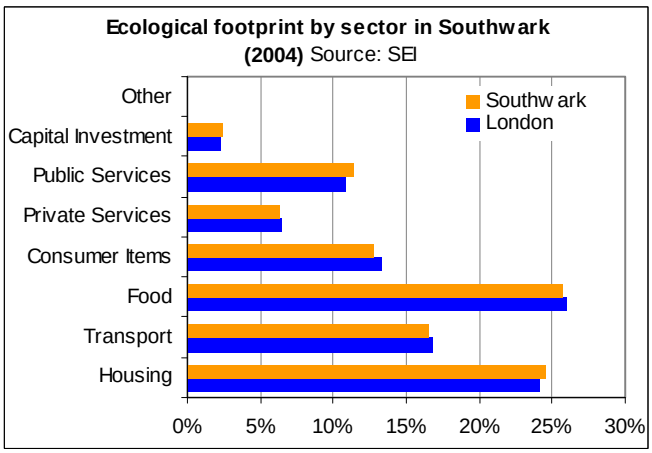
- The ecological footprint and the carbon footprint are both lower than the London and UK footprints.
- More than half of the properties in the borough are at risk of tidal flooding, although the likelihood is low due to the presence of the Thames tidal defences, including the Thames Barrier.
- The volume of waste produced in Southwark has increased over the last few years. However, the amount going to landfill has declined and there has been an increase in the volume that is recycled or reused.
- The recycling rate is one of the lowest in London

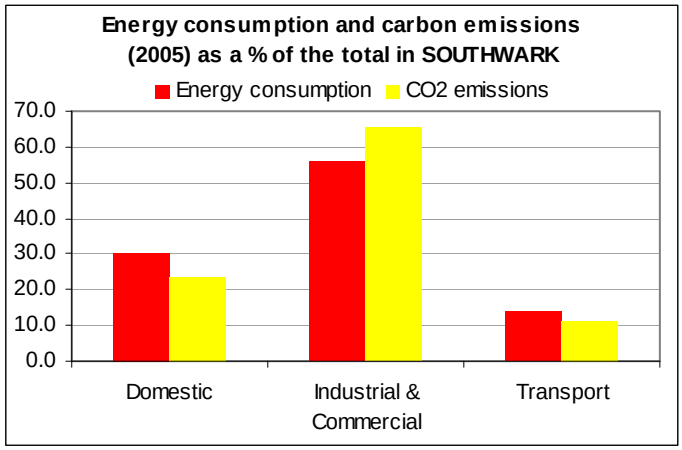
The Environment in Southwark

Sustainability

The ecological footprint is an indicator of 'how much land and sea is needed to provide the energy, food and materials we use in our everyday lives, and how much land is required to absorb our waste'. It is measured in global hectares per capita.

The ecological footprint in Southwark is 5.19[1] global hectares per capita (2004), which is amongst the lowest in London. This footprint is lower than the overall London footprint of 5.48, and the UK footprint of 5.30. The primary contributors to the ecological footprint in Southwark are food (26%) and housing (25%) – this is consistent with the London figures[1].





Climate change

The carbon footprint in Southwark is 10.42[1] tonnes/CO2 per capita, (2006) which would cost £276.19 if valued using the shadow price of carbon (2009). This represents the cost to society of the damage caused by a tonne of carbon emitted into the atmosphere. The sector with the highest contribution to this footprint is housing, and more specifically the electricity, gas and other fuels used in the home. This carbon footprint is lower than the London average of 11.38 tonnes CO_2 per capita and the UK average of 12.12 CO_2 per capita.

Using the London Emissions and Greenhouse Gas Inventory (LEGGI):

Energy consumption:

- Energy consumption was 6,254 gigawatt hours per year (Gwh/yr) in 2005[2]. This has increased from 6,028 in 2004.
- In 2005, more than half (56%) of the energy consumption in the borough was from the industrial and commercial sector [2]. The transport sector has the lowest energy consumption, at 14%.
- The total energy consumption in Southwark equates to 4.05% of the total energy consumption in London[2]. Energy consumption in this borough is amongst the highest in London, ranking 4th out of all the London boroughs.

Carbon emissions:

- The industrial and commercial sector has the highest carbon emissions in Southwark, accounting for 65% of the total. Electricity use is the highest contributor.
- The transport sector have carbon emissions accounting for 11%, predominantly road transport.
- The carbon emissions associated with Southwark account for 4.56% of the total London emissions in 2005, which is amongst the highest in London, ranking 3rd out of all the London boroughs.

Southwark borough has signed up to the Local Area Agreement target 186 – per capita reduction in CO2 emissions in the LA area, as one of its top 35 indicators.

Flood risk

Flood zones

Southwark has land within flood zones 2 and 3. Flood zone 2 represents the 1 in 1000 year probability of flooding, and flood zone 3 represents the 1 in 100 year probability of flooding. The land is predominantly located in the north of the borough, alongside the Tidal Thames.

In Southwark, there are just over 82,700 properties (59% of all properties) at risk of flooding from tidal sources*. The majority of the properties at risk are residential. All properties at risk of flooding in Southwark are classified as having a low likelihood of flooding due to the high standard of protection provided by the Thames tidal defences, including the Thames Barrier.
Locations of the floodplain and likelihood of flooding are shown in appendix 1. ** Figures are indicative only and are taken from the 2008 National Flood Risk Assessment (NaFRA) – Environment Agency*

Fluvial (river) and tidal flood events
Flooding has only occurred in Southwark in 1928, as shown on the map **(appendix 2).** This event occurred along the northern border of the borough, along the banks of the River Thames. It was a tidal flood event from the River Thames, before the Thames Barrier was built to defend against tidal flooding.

Flood warning
In Southwark there are 45 people registered (mid 2009) to Flood Warnings Direct (FWD). This is only a small number of those at risk. However, those at risk of tidal flooding are protected by the Thames Barrier flood defence, and receive alternative warnings. The Environment Agency offers the FWD flood warning service, which gives advance warning of flooding via phone, text, email, pager or fax. We would encourage all households at risk of flooding to register. Warnings are also broadcast on local radio, particularly LBC who have agreed to broadcast flood warnings in London.

Future flood risk management
National Indicator (NI)189 is defined as: the percentage of agreed actions to implement long-term flood and coastal erosion risk management plans that are being undertaken satisfactorily. This refers specifically to the Thames Catchment Flood Management Plan (CFMP) which focuses on flooding from rivers and the Thames Estuary 2100 (TE2100) Plan which is concerned with flooding from the sea. Both of these plans make recommendations for how flood risk will be managed in the future and through NI189 we will be working together with Local Authorities to implement them.

Waste

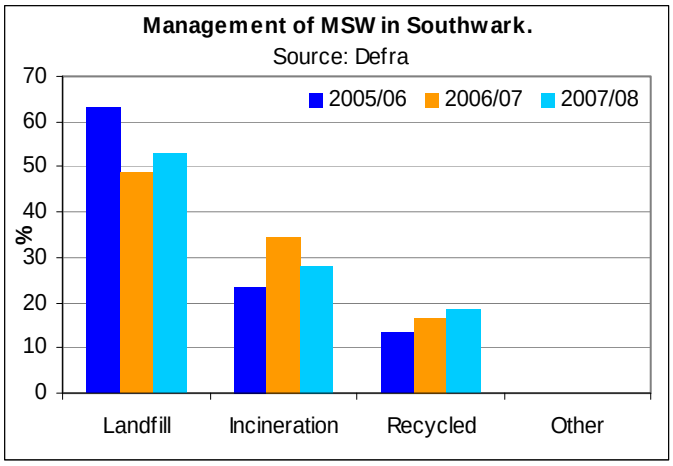
As a Unitary Waste Authority, the London Borough of Southwark is responsible for both the collection and disposal of the Borough's waste. The main collection and disposal of waste in the borough is currently contracted out to Veolia Environmental Services Ltd.

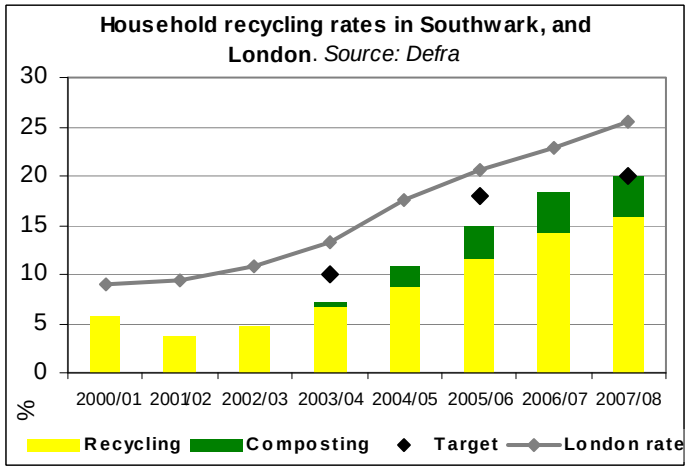
Southwark currently recycles about 20% of its municipal waste at the Municipal Recycling Facility at Nathan Way and sends a quarter to South East London Combined Heat & Power (SELCHP), an energy-from-waste plant that recovers power for supply to the National Grid in Lewisham; leaving the rest to be land-filled via Waldo Road transfer station to mainly the Rainham Landfill site but also to Ockenden Landfill site in Essex by road.

For more information on waste in Southwark, visit Capital Waste Facts.

Municipal Waste (MSW)
Municipal waste arisings in Southwark in 2007/08 are 140,351 tonnes. This is over 2,000 tonnes more than the volume produced in 2005/06.

There has been a 10% reduction in the amount of waste sent to landfill in Southwark, between 2005/06 and 2007/08, from 63% to 53%. This coincides with a marked increase in the volume of MSW being recycled or reused – from 13% to 19%.





Southwark is currently not achieving its 2009/10 target, of 51,141 tonnes, under the Landfill Directive. Although it is on target to do so -it will need to reduce the amount of biodegradable municipal waste (BMW) land-filled over the next couple of years in order to meet this target. Under the Landfill Allowance Trading Scheme (LATS), each waste disposal authority is given an allocation for the amount of BMW that they can landfill each year. This is to reduce the amount of waste land-filled in order to meet the requirements of the Landfill Directive. The amount of BMW going to landfill in Southwark has declined from 59,835 tonnes in 2005/06 to 50,914 tonnes in 2007/08. This is within the allocation provided.

Southwark has signed up to the Local Area Agreement indicator N192 – percentage household waste sent for re-use, recycling and composting. This aims to see the local authority maximise waste recycling in order to achieve the Governments targets for waste management. The targets for this indicator, in Southwark are 20.3% by 2008/09, 24.2% by 2009/10, and 30% by 2010/11. Progress with these targets will be monitored.

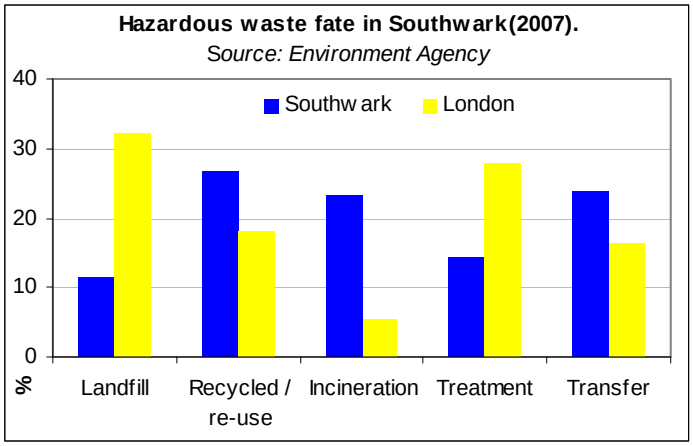
Recycling and composting

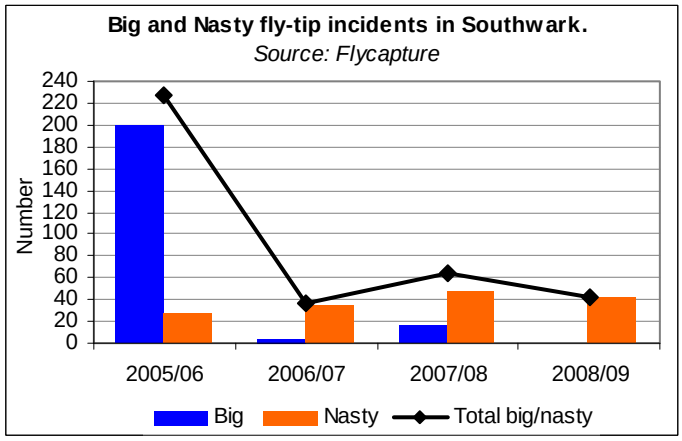
- Southwark borough has one of the lowest recycling and composting rates in London, ranking 31st out of all 33 boroughs. The recycling only rate is 16.01% ranking 28th, and the composting only rate is 4.02% ranking 22nd[3].
- The household recycling and composting rate in Southwark has increased dramatically since 2000/01, especially since the introduction of composting in 2003/04.
- The current recycling and composting rate is just over 5% lower than the total London rate of 25.5%.
- Southwark did not met its statutory household recycling target in 2003/04 or 2005/06. It has met the 2007/08 target of 20%[3].
- There needs to be an increase in the levels of recycling and composting in Southwark borough.

Hazardous waste

The volume of hazardous waste arising in Southwark was 3,775 tonnes in 2007, a decrease from the 4,555 tonnes in 2006. This accounted for just over 1% of the hazardous waste produced in London. The primary waste disposal method was recycling and re-use, which accounted for 27% of all the hazardous waste produced. This has changed from 2006 when landfill was the primary disposal method.

Out of the 3,775 tonnes arising in Southwark, around 30% was disposed of within London. The remaining hazardous waste was diverted to other regions for disposal. The main recipient was the South East, receiving 43% of the hazardous waste.





Fly-tipping

The number of fly-tipping incidents in Southwark borough has declined significantly since 2005/06, but increased slightly between 2006/07 and 2007/08. A decline is evident in 2008/09. Big incidents are those of tipper lorry load size or larger, and 'nasty' incidents are those involving oil, fuel or chemical drums. The number of big incidents has shown a larger decline, but the number of nasty incidents has increased over the last few years.

Water Framework Directive

Under the Water Framework Directive (WFD), there are no rivers in Southwark that have been classified under the WFD. However, the Ravensbourne (Catford to Deptford) river water-body goes over the boundaries of Southwark borough. This has been classified as having poor ecological status in the draft plan (October 2009). Under the WFD, these need to achieve good status or good potential by 2027. A programme of measures to improve the status is being developed. The Water Framework Directive (WFD) will introduce a series of measures to address urban diffuse pollution in some parts of London, in order to achieve the 'good' ecological status required for the Directive.

Water quality

Chemical water quality

There are no watercourses in Southwark designated under the GQA scheme.

The dominant water body in Southwark is the Thames Estuary. The reaches forming the northern borough boundary are affected by combined sewer overflows in wet weather, when dissolved oxygen concentrations regularly fall to levels unsuitable for fish. The 'super sewer' scheme to be completed by 2020, will remedy this issue.

Water pollution incidents

Between 2004 and 2008 there was one major (category 1) pollution incident, which occurred in 2005. The incident occurred in Bermondsey and was attributed to oil and fuel from a transport incident. During this same period there was also three significant (category 2) pollution incidents – two in 2004 and one in 2007. All three of these incidents were due to algal activity.

There was a year on year decline in the number of minor (category 3) water pollution incidents in Southwark between 2004 and 2008. The number fell from a high of seven in 2004 to only two in 2008. The main cause of these incidents, in the cases where the cause was identified, was fire.

Water resources

- The Borough's public water supply is provided by Thames Water Utilities Ltd (London WRZ).
- Average water use (2004/05 to 2008/09) in the London water resource zone is 158.4 litres per person per day [4] and 161.9 litres per person per day in London. These are much higher than the England and Wales average of 148 litres per person per day.
- The Thames Water supply zone has a deficit in supply. Some of this deficit will be met by building a desalination plant and further resources, such as a reservoir in the upper Thames catchment will need to be developed in the future. The south east is an area of serious water stress (Defra Water Strategy) and water efficiency measures will be essential to support new growth in the borough.
- There are 10 licensed abstractions in the borough, mostly for industrial uses (e.g. non-evaporative cooling and laundry). All but one abstract from the confined Chalk aquifer.
- The Borough falls into the London Catchment Abstraction Management System (CAMS) area and is situated in a direct Thames catchment. The groundwater in the catchment has been assessed as 'over-licensed' for abstraction, but is managed so that groundwater doesn't flood any of London's deep infrastructure. Any surface waters (including the River Thames) have not been assessed as they are heavily influenced by the tide.

Land

Land use and development
The land use in Southwark is predominantly urban. The River Thames runs along the northern boundary of the borough. There is no greenbelt land is Southwark.

The Mayor's London plan set a target for 16,300 new homes in Southwark between 2007/08 and 2016/17.

Land pollution incidents
Southwark saw only one significant pollution incident to the land between 2004 and 2008. This was due to the fly-tipping of contaminated materials and waste from construction and demolition in 2008. The number of category 3 incidents, which result in minimal environmental damage, has remained low during this period, never rising above three incidents a year. The main causes being fly-tipping and fire.
Category 4 land pollution incidents, which have no environmental impact, have not been included.

Land contamination
We protect the environment and by so doing assist in bringing sites back into beneficial use through our land contamination work. Since 2000 we have worked with Southwark Council and developers on over 100 potentially-contaminated sites in the borough in order to protect groundwater and surface watercourses from serious pollution. Southwark has its share of former industrial sites, particularly in the Bermondsey and former Surrey Docks area in the north-east, but has largely a dense urban mixed residential / employment environment. Groundwater in the superficial deposits associated with the River Thames is at risk in this area as a result of former maritime industries such as tar works. Many wharves have been redeveloped along the Thames, some requiring remediation, and a large volume of miscellaneous material (mainly from WWII bomb damage) has filled former docks and canals.

Between 2000 and 2008, 112 sites have been investigated as a result of planning applications or voluntary submissions; 16 sites required no further remedial action, 76 had unrecorded remedial status, 8 sites were remediated (covering 1.9 hectares) and 12 sites are under active investigation. **Locations of investigated sites are shown in appendix 3.**

Green Flag Award
There are 7 parks or green spaces in Southwark that have received the Green Flag Award [5] in 2009. This recognises high environmental quality and management, and access to all members of the community. The green spaces awarded the Green Flag are: Bermondsey Spa Gardens, Dulwich Park, Peckham Rye Park, Southwark Park and Sunray Gardens. New in 2009 is Paterson Park and Russia Dock Woodlands.

Wildlife

Southwark borough has signed up to the local area agreement indicator 197 – improved local biodiversity – as one of its top 35 indicators. This aims to achieve improved local biodiversity through implementation of positive conservation management of Local Sites. Progress with this indicator will be monitored and reported.

SSSI Condition
There is no Sites of Special Scientific Interest (SSSI) in Southwark [6].

Conservation sites
Each borough has a number of Sites of Importance for Nature Conservation (SINC). There are 3 types of SINC: Sites of Metropolitan Importance, Sites of Borough Importance and Sites of Local Importance.

The Sites of Metropolitan Importance are designated by the Mayor of London, and the GLA - they are the most important wildlife sites in London. There are 4 of these sites in Southwark. They are Nunhead Cenetary, Dulwich and Sydenham Hill Woods, Forest Hill to New Cross Gate Railway Cutting and the River Thames and its tidal tributaries.

Sites of Borough Importance are habitats designated as important wildlife sites by the borough's themselves. The lowest grading wildlife sites are the Sites of Local Importance - these are smaller sites such as parks and gardens that help the community have access to wildlife near their homes. In Southwark, there are 31 Sites of Borough Importance and 25 Sites of Local Importance[7].

Biological river quality
There are no watercourses in Southwark designated under the biological general quality assessment (GQA).

River and habitat restoration
A river restoration project was conducted at Bullhead Dock and Bellamys Wharf on the River Thames. The project was designed to reduce flood risk and enhance the habitat available for wildlife. A further project has been proposed at Sydenham Hill Wood on the Am Brook in the Effra catchment. This project will enhance the biodiversity of the area.
More details of these projects can be found in the London River's Action Plan at www.therrc.co.uk/lrap.php.

Invasive species
Invasive species can lead to a decline in native species due to habitat destruction and competition for food and light. Examples found within the London Borough of Southwark include the prolific spread of Japanese knotweed. Other species to be identified in a few locations include water fern and giant hogweed.

Current mapping of invasive species may not be comprehensive. The Environment Agency are currently working with external partners to map the spread of invasive species along the rivers in London. The work should be completed in 2010.

Action is now being taken to eradicate invasive species from our rivers. One technique undertaken by the Environment Agency is to spray Japanese knotweed and giant hogweed.

The Wildlife and Countryside Act (1981) is a measure for preventing the establishment of non-native wildlife which may be detrimental to native species. The Act states that it is an offence to plant or cause to grow in the wild any plant which is stated in part II of schedule 9. This includes Japanese Knotweed and Giant Hogweed. Giant Hogweed (*Heracleum mantegazzianum*) is a toxic plant and potentially hazardous to human health, for more information follow this link www.nonnativespecies.org/documents/Giant%20Hogweed%20(v3b).pdf or contact your local Environmental Health Officer. It is the riparian owner's responsibility to remove invasive weeds. The Environment Agency only has a duty to remove invasive species that are affecting river flows and increasing flood risk.

Fish
The London Borough of Southwark is adjacent to the Thames estuary. This reach is known to support extremely diverse and abundant fish stocks. Surveys have found 125 fish species, these are a combination of marine, migratory and freshwater populations. Species commonly found include grey mullet, bass, smelt, flounder, and eels. The Environment Agency use the fisheries information to promote enhancements along the Thames estuary.

Eels are an important designated species under the EU Habitats Directive and are often found throughout river systems. However, their numbers have significantly declined across Europe in recent years due to a number of fairly complex factors. They are locally abundant in the estuary and a small commercial fishery works in this area.

There are successful fishing venues in the area including the docks adjacent to the Thames Tideway, and Burgess Park Lake, which is a busy carp fishery. Projects supported by the Environment Agency are underway to maintain and improve the fisheries available in Southwark.

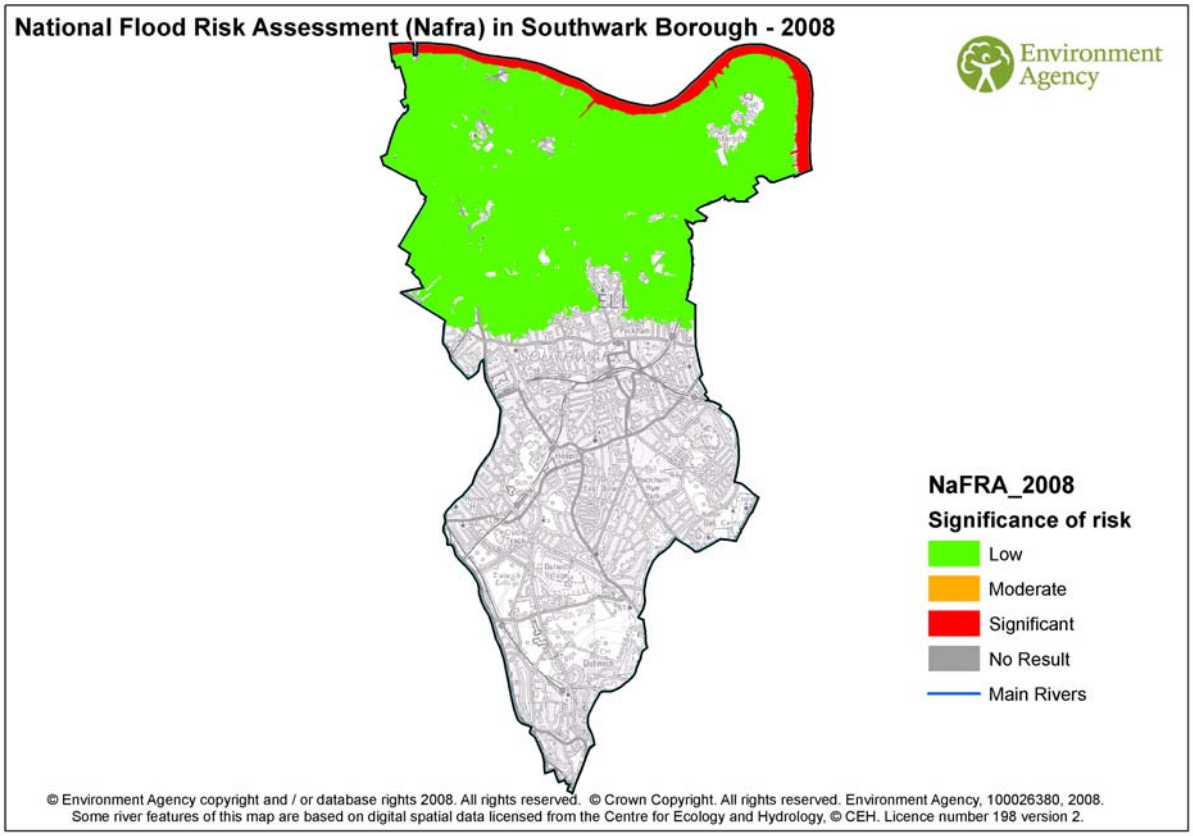
For more information on biodiversity and open spaces, visit the GIGL website.

References

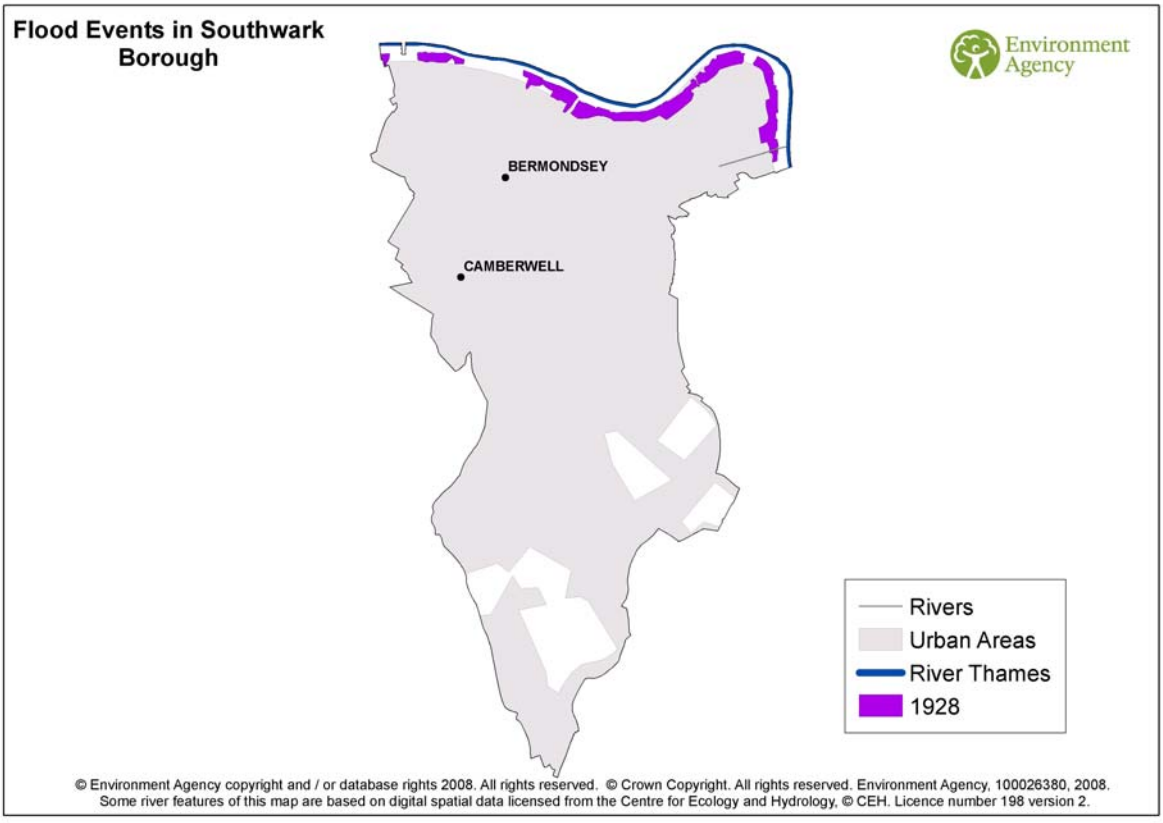
1. *REAP data release: Published by SEI - BRIO Model v2 May 2009 Available at http://www.resource-accounting.org.uk/downloads*
2. *LEGGI (London emissions and greenhouse gas inventory) 2004-2005*
3. *www.defra.gov.uk/environment/statistics/wastats*
4. *Thames Water draft water resources management plan*
5. *Communities and Local Government (CLG)*
6. *Natural England*
7. *London Wildweb (Mayor or London) – www.wildweb.london.gov.uk/wildweb/About.do*

Appendix

Appendix 1 – Map of flood plain and likelihood of flooding in Southwark



Appendix 2 – Map of the flood events in Southwark



Appendix 3 – Map of contaminated sites – investigated sites in Southwark.