

10 The natural environment and promoting a 'functional landscape'

This section covers two priority areas: to *"Conserve and enhance the region's rural biodiversity, its distinctiveness, and the quality of its natural and built environment", and to promote a 'functional landscape' "where development draws on and sustains the natural, cultural and built heritage of the region's rural areas"*.

This chapter is intended to be a comprehensive or detailed review of the natural environment as this would simply duplicate reports already provided by organisations such as Natural England and National Park Authorities. However it will highlight some of the key data and intelligence about this aspect of the sub regions rural areas.

10.1 The environmental, cultural and heritage assets across the sub-region

The 2006 Rural Evidence Base for the region reports that over a fifth of all land in the region has a national or international environmental designation (e.g. which are areas of outstanding natural beauty and National Parks). This is the highest proportion of such designated land in any region and is a key asset for the region. Specifically, North Yorkshire contains the majority of these, including two National Parks (Yorkshire Dales and North York Moors), the whole of two Areas of Outstanding Natural Beauty (AONBs), (Nidderdale, which borders the Yorkshire Dales National Park and Howardian Hills which borders the North York Moors National Park) and part of the Forest of Bowland AONB. With regard to historic heritage assets, York and North Yorkshire accounts for a significant proportion of such sites in the region, including 1,780 Scheduled Ancient Monuments (accounting for two thirds of those in the region) and nearly 14,000 listed buildings and countless other vernacular buildings which all add to the character of the countryside.

Thousands of other archaeological and historic features are recorded on the Historic Environment Records maintained by the County Council, City of York and the two National Park Authorities. The pastoral landscapes of the Yorkshire Dales and North York Moors in particular have provided excellent conditions for the survival of both archaeological sites and historic landscapes. With the ruins of Fountains Abbey and Studley Royal, North Yorkshire also has a world Heritage Site.

North Yorkshire has 47 miles of nationally recognised Heritage Coast (with the Dinosaur coast a key attraction in many towns along this area). The area also has the region's only protected shipwreck – an 18th Century American warship Bonhomme Richard which lies off Flamborough Head.

For the listed buildings recorded, the vast majority are grade II, with the remainder grade I and grade II*.

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Table 10-1 Cultural assets across the sub-region, 2006

	Listed Buildings	Conservation Areas	Registered Parks & Gardens	Scheduled Monuments
Craven	1,632	31	3	167
Hambleton	1,764	53	5	213
Harrogate	2,277	52	12	171
Richmondshire	1,976	41	5	163
Ryedale	2,035	34	10	525
Scarborough	1,964	28	4	475
Selby	627	23	2	48
York	1,580	34	4	25
York and North Yorkshire	13,839	295	50	1,780
Yorkshire & Humber	31,866	779	129	2,663

Source: Heritage Counts, The State of Yorkshire's Historic Environment Report, 2006.

With regard to entries on English Heritage's Register of Buildings at Risk, due to the fact recent data hasn't been submitted for some districts, it is difficult to assess whether there is an accurate picture emerging. It appears that during 2006, based on those which are grade I and grade II*, there are at least 58 at risk in North Yorkshire (with 2005 data showing overall there were five buildings at risk in both of the national parks). It is also the case that 29% of scheduled monuments are seen as high risk, 22% seen as medium risk and 50% low risk.

Geodiversity

The following information was been provided by a member of the North Yorkshire Geodiversity Partnership. The county has a unique geodiversity. The rocks exposed cover almost 500 million years and range from the Ordovician, Silurian and Carboniferous of the Yorkshire Dales, through the Permian and Triassic of the Vale of York, to the Jurassic of the North York Moors and the Cretaceous of the Yorkshire Wolds. The Cleveland Dyke and the dykes in the south west of the Yorkshire Dales provide evidence of igneous activity. The county has extensive glacial and glaciofluvial deposits which include the York – Escrick moraine complex, the glacial lake deposits of the Vale of Pickering and the Norber erratics. It contains internationally important geological resources of which the best known are the Jurassic coast and the karst landscapes of the Yorkshire Dales. 36% of the limestone pavement in Britain lies within the Yorkshire Dales National Park while the area also includes a major network of underground cave systems and their associated surface and subsurface streams as well as other karst landforms including dolines, potholes, and scars. The cave systems are an important recreational as well as a scientific resource.

Such is the importance of the county's geodiversity that 78 sites have been designated as geological Sites of Special Scientific Interest representing 111 Geological Conservation Review Sites. A large number of the geological SSSIs are former quarries where the workings have revealed features which would otherwise have remained unseen. In 2004 13 quarries in the county produced 2.8 million tonnes of sand and gravel, and 34 quarries produced 8.2 million tonnes of crushed rock. With a total annual production of approximately 4.5 million tonnes (55 percent of the county total) the quarries in the Yorkshire Dales are the largest producers and have the largest reserves with 137.28 million tonnes in the Yorkshire Dales National Park alone (57% of the county total) sufficient for an estimated 33.3 years of production.

There is a direct link between local geology and the character of the vernacular buildings and villages of the various regions of the County, perhaps best seen in the limestone buildings with sandstone flag roofs in the Yorkshire Dales or the brick and pantile roofed buildings of the Vale of York.

The key geodiversity management issues include:

- Maintaining and enhancing the exposures of Ordovician, Silurian, Carboniferous, Permian, Triassic, Jurassic and Cretaceous rocks
- Maintaining the operation of natural fluvial processes
- Protecting and enhancing the areas of limestone pavements
- Reducing the potential for damage to the underground cave systems through both internal and external activities
- The need, where practicable, to safeguard and maintain exposures in quarries and cuttings
- The potential conflict between the mineral extraction industry, landfill operations and geological conservation
- The need to promote the heritage value of mineral sites
- The need to maintain and where appropriate restore or improve sites with important geomorphological features such as drumlins
- The need to encourage initiatives aimed at the promotion and interpretation of the geological and landscape character of the county
- There is a need to redevelop local sources of vernacular building materials.

Geodiversity Action Plans

The Your Dales Rocks Project – A Geodiversity Action Plan for the Yorkshire Dales and Craven Lowlands is available for download from the North Yorkshire Geodiversity Partnership at either www.nygp.org.uk or www.yourdalesrocks.org.uk. One of the first tasks of the NYGP is creating an audit of the area's geology and geomorphology. The Northeast Yorkshire Geology Trust covers Scarborough, Ryedale and the North Yorkshire Moors National Park.

Biodiversity

Natural England has also identified 13 natural areas within the county⁴⁰. These Natural areas are now known as Joint Character Areas (JCA's). These are:

- Tees Lowlands
- Yorkshire Dales
- Forest of Bowland
- Lancashire Plain and Valleys
- Southern Pennines
- Pennine Dales Fringe
- Vale of York and Mowbray
- North York Moors and Hills
- Vale of Pickering
- Yorkshire Wolds
- Humberhead Levels
- Southern Magnesian Limestone
- Saltburn to Bridlington Marine NA

From the national Countryside Quality Counts (CQC) data base it is possible to see evidence of changes within the 13 distinctive Joint Character Areas that define the landscape and natural habitats across York and North Yorkshire. The CQC database identifies changes in woodland areas, boundary features, agriculture, settlement & development, semi-natural habitats, historic features and river & coastal management. It is maintained by Natural England and English Heritage, updated every five years and categorises three levels of change: -

⁴⁰ A description of each natural area is available which describes the specific geological, biological and topographical features which make it a unique area

- Limited or small changes consistent with character.
- Some changes consistent with character.
- Marked changes inconsistent with character.

Such information is not included here, but is available from www.cqc.org.uk

Within North Yorkshire there are 240 SSSIs, 7 National Nature Reserves, 15 Local Nature Reserves, 16 Special Areas of Conservation (SACs) designated via the EU Habitats Directive, 5 Special Protection Areas (SPAs) designated via the EU Birds Directive and 2 Ramsar Sites (Lower Derwent Valley and Malham Tarn). There are also the reserves of the Yorkshire Wildlife Trust and the National Trust and a marine conservation area in Scarborough. It is also the case that during 2002 7.2% of the land in York and North Yorkshire was woodland. This equates to approximately 59,600 hectares (compared to 60,840 in 1999) and accounts for around two thirds of the region's overall figure.

With its large area, wide altitudinal range and cliffed coastline North Yorkshire has developed a very wide range of habitats and plant and animal communities. Each local authority has produced a Biodiversity Action Plan (BAP) which includes Habitat Action Plans (HAP) and Species Action Plans (SAP). HAPs are produced for Priority, Broad and Local Habitats. Full details of the individual BAPs, together with specific habitat and species action plans are available for download from www.ukbap.org.uk.

Table 10-2 Condition of Sites of Special Scientific Interest, 2005

Area	% meeting PSA target	% favourable	% unfavourable recovering	% unfavourable no change	% unfavourable declining	% destroyed/part destroyed
Yorkshire and Humber	58.31%	32.11%	26.20%	36.28%	5.41%	0.01%
York and North Yorkshire	55.79%	20.68%	35.11%	40.44%	3.76%	0.00%
The Humber	94.93%	91.75%	3.18%	2.15%	2.91%	0.02%
West Yorkshire	17.46%	1.84%	15.62%	77.39%	5.09%	0.06%
South Yorkshire	42.49%	16.16%	26.33%	33.08%	24.43%	0.00%

Source: English Nature, January 2006

10.2 Water Quality and beaches

The Rural Evidence Base for the Yorkshire and Humber 2006 reports that for some environmental measures analysing the findings by rural and urban areas does not work well, including for rivers which typically can flow through both urban and rural areas. Having said this, during 2004 only two (of the eight) districts in the sub region did not register a rating of 100% for the total river length being rated as good or fair in relation to biological quality. The exceptions were Hambleton (95%) and particularly Selby being significantly lower (64%).

Similarly in relation to the chemical quality of the river, during 2004 the rural districts of Craven and Richmondshire saw scores of 100%, with Ryedale achieving 99% for the total river length being rated as of a good or fair quality. Again the notable exceptions were Hambleton (97% - although this moved from 83% in 1998), and particularly Selby were significantly different (60%, although this improved from 55% in 1998).

There are ten bathing waters/beaches in North Yorkshire, including Whitby, Robin Hood's Bay, Scarborough (North and South bays), Cayton Bay and Filey. The Environment Agency reports that during 2006 seven of these achieved a rating of excellent and two rated as good (which were Scarborough South Bay which has seen this rating since 1998 and Sandsend, which in recent years has recorded excellent ratings). It is only Staithes which sees a poor rating (although no comment is made here in relation to the geological features and the impact that other factors, such as the industries in the area can have on such ratings).

www.blueflag.org.uk also reports that in 2006 Filey, Scarborough North Bay and Whitby West Cliff all achieve blue flag status⁴¹.

10.3 The green infrastructure

Although this report will not cover this in any detail, there is a need to consider the Green Infrastructure. On behalf of the Countryside Agency, Leeds Metropolitan University produced a report in 2006 entitled "The Green Infrastructure of Yorkshire and the Humber" www.leedsmet.ac.uk/as/cudem/projects/country/CIAT_final.pdf. Green infrastructure is a term fairly new to the UK which encompasses green space and water assets both in and around towns and cities. These places are best treated as linked networks of spaces and corridors which provide for natural habitats, recreation, economic and social benefits. A key part of the green infrastructure approach is the coordinated and collaborative multi-agency basis required for successful planning and management.

⁴¹ Blue Flag status is awarded to those coastal areas which have achieved the highest quality in water, facilities, safety, environmental education and management

10.4 Environmental management and climate change

The Rural Evidence Base for the Yorkshire and Humber 2006 has an extensive analysis for carbon dioxide emissions. A brief summary for York and North Yorkshire follows. For the tonnes of carbon dioxide (CO₂) emitted per capita, Selby (19.8) saw the highest figure (this is also the second highest in the region and effectively double that seen in some of other districts in the sub region). This reflects the nature of industries and commerce which affect such findings. When focusing specifically on domestic emissions, estimates show that the five rural districts are all within a range of 3.0 - 3.5 tonnes of carbon dioxide emitted per capita, with Craven seeing the lowest (3.0) and Hambleton the highest (3.5%). With the exception of York, the districts in the sub region do not however compare favourably to the region (2.8). This issue is explored in great detail in the Rural Evidence Base for the Yorkshire and Humber 2006, including noting high levels per capita of CO₂ emissions in rural areas due to factors such as use changes, domestic oil use, etc. For this reason the vast majority of this information is not duplicated here.

The following table does however show the estimated levels for the different sources of emissions, e.g. industry and commercial, domestic, etc.

Table 10-3 Carbon Dioxide Emissions by Local Authority

Area	CO ₂ tonnes per capita	A	B	C	D	E	F	G	H
		Industry and Commercial	Domestic	Road Transport	Land Use Change	Total		Population Thousands	Per capita CO ₂ -tonnes (Column E/F)
Yorkshire & Humber	Number	31,516	13,864	11,164	1,278	57,822	5,009	11.5	2.8
	%	55%	24%	19%	2%	100%	n/a	n/a	n/a
Craven	Number	141	163	196	23	523	54	9.7	3
	%	27%	31%	37%	4%	100%	n/a	n/a	n/a
Hambleton	Number	287	295	427	140	1149	85	13.5	3.5
	%	25%	26%	37%	12%	100%	n/a	n/a	n/a
Harrogate	Number	428	486	625	83	1622	153	10.6	3.2
	%	26%	30%	39%	5%	100%	n/a	n/a	n/a
Richmondshire	Number	125	152	273	70	620	50	12.4	3.1
	%	20%	25%	44%	11%	100%	n/a	n/a	n/a
Ryedale	Number	219	179	215	142	755	51	14.7	3.5
	%	29%	24%	28%	19%	100%	n/a	n/a	n/a
Scarborough	Number	346	315	194	61	917	107	8.6	3
	%	38%	34%	21%	7%	100%	n/a	n/a	n/a
Selby	Number	815	250	375	77	1517	77	19.8	3.3
	%	54%	16%	25%	5%	100%	n/a	n/a	n/a
York	Number	610	504	263	25	1402	183	7.7	2.8
	%	44%	36%	19%	2%	100%	n/a	n/a	n/a

Source: DEFRA, Local and Regional CO₂ Emissions Estimates for 2003

Although not shown here, the 2004 Indices of Deprivation also showed "pockets" where the air quality (i.e. levels of benzene, nitrogen and sulphur dioxide) is poorer. These tended to occur in and around Selby and in the mixed districts such as Harrogate and Scarborough.

10.5 Ecological footprint

The Stockholm Environment Institute (at the University of York) has developed a measure of how the earth's resources are used, which is known as the 'ecological footprint'. This includes travel, waste production, and electricity consumption, and calculates how many hectares of forest land would be needed to provide the energy to produce all the goods consumed and to absorb all the emissions, such as carbon and methane, caused by each activity. The results are then averaged to produce an overall 'footprint' (with higher ratings showing a more negative picture). North Yorkshire has a higher Environmental Footprint (gha /capita) rating than the rest of the region.

Table 10-4 Ecological Footprints in hectares per person, 2006

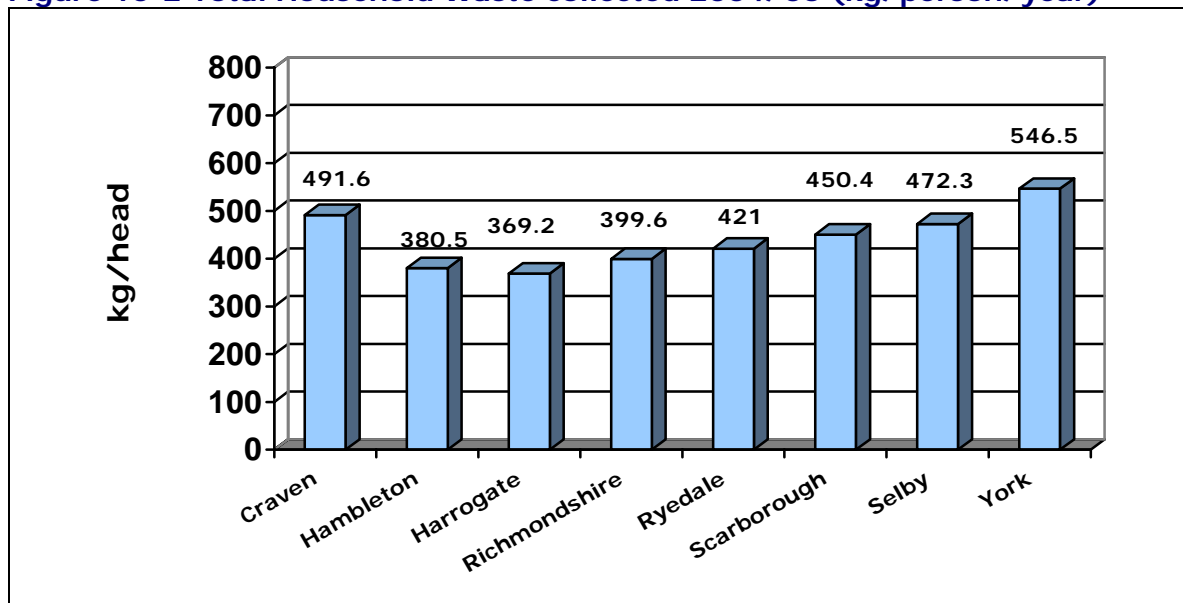
Area	Environmental Footprint (gha/capita)
Craven	5.46
Hambleton	5.63
Harrogate	5.67
Richmondshire	5.57
Ryedale	5.49
Scarborough	5.42
Selby	5.44
York	5.38
York & North Yorkshire	5.51
The Humber	5.23
South Yorkshire	5.24
West Yorkshire	5.19

Source: WWF, Stockholm Environment Institute, 2006

10.6 Household waste

The Department for Communities and Local Government (DCLG) produce Best Value Performance Indicators (BVPIs) for each local authority in the country. It is possible to compare local authorities across a wide range of indicators. The following graph shows the volume of waste collected per person for 2004/5. When considering rural areas in the region, Craven (492kg per head), Selby (472kg per head) and also the East Riding of Yorkshire districts have high volumes of waste collected. Hambleton and Harrogate have the lowest kilograms of waste collected per head (369.2kg / head and 380.5kg / head respectively).

Figure 10-2 Total Household Waste collected 2004/05 (kg/person/year)



Source: Communities and Local Government website: Local Government Performance

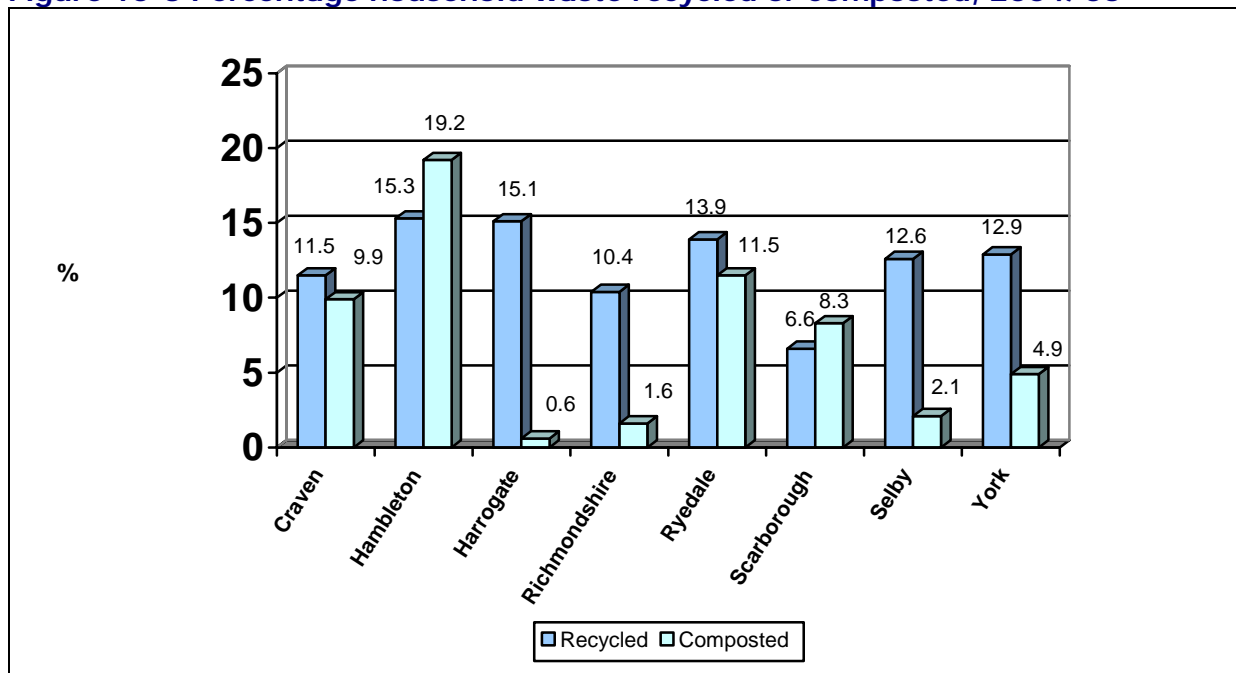
It is also important to consider the change in amount of waste collected from year to year. The Rural evidence base for the Yorkshire and Humber 2006 reports that between 2002/03 and 2004/05 Selby and Richmondshire were the only districts in the region not to have recorded an increase in the amount of household waste collected per head. Whilst the rural districts of Craven (an increase in excess of 30kg per head) and Ryedale (in excess of 20 kg per head) saw increases, the latter sees an overall volume (at 421kg/head) which remains below the England and regional averages (444.2kg/head and 487.6kg/head respectively). Whilst Selby still collect above the England and regional averages, it has seen a fall approaching 30kg/head since 2002/03.

Although not shown here, the Rural Evidence Base for the Yorkshire and Humber 2006 also reports on the cost of household waste per household and any changes over the last three years. Of the rural areas in North Yorkshire, Richmondshire has the lowest cost per household (although such figures are no doubt influenced by the degree to which door step collections actually take place). Ryedale, Hambleton and particularly Selby all have costs above the average for England. Over the three years, all but one district in the region have seen costs increase, with Selby having the largest increase in the region (£22 per household) and also has the second highest cost in the region at £57.33 per household.

10.7 Household waste recycled or composted

The Rural evidence base for the Yorkshire and Humber 2006 also reports that some of the rural areas in the area, including Richmondshire and Selby have very low composting rates. Regionally, Hambleton is the best performing rural district for both composting and recycling, meeting the national average for recycling and far exceeding the national average for composting. The rural districts of Richmondshire and Selby and also the mixed area of Harrogate see some of the worst composting rates. Ryedale (13.9%) also sees a high percentage of household waste recycling.

Figure 10-3 Percentage household waste recycled or composted, 2004/05



Source: Communities and Local Government website: Local Government Performance

The Rural evidence base for the Yorkshire and Humber 2006 also reports on government targets, landfill allowances and schemes which have been set up, all of which may have contributed to all local authorities across the region reporting an increase in the percentage of waste recycled. It is however the case that recently the rural areas tended not to have increased as much as some of the urban areas. Some of the districts that had lower than average percentages of recycling and composting in 2004/05, e.g. Scarborough, Richmondshire and to a lesser degree Craven, also had small increases in waste recycled compared to three years ago.

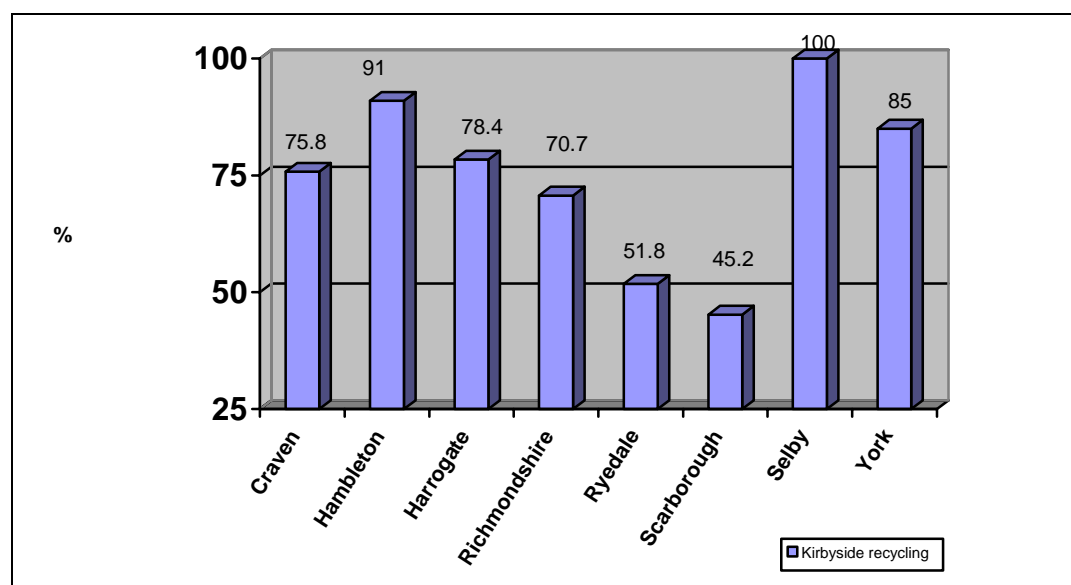
With regard to composting the percentage change has however increased in many rural areas, often at a higher rate than urban areas. Hambleton for example, has had a large increase in composting over the past three years, with a 19.2% increase in household waste composted in 2004/05, with Craven also seeing nearly a 10% increase. The local authorities in Hambleton and Ryedale have recently set up green waste collections for every household, which explains their large increases. When considering the findings, it should be noted that some areas may have “only” piloted some schemes / implemented these in selected areas, or may have only recently introduced such schemes.

Future patterns of recycling and composting can be indicated by looking at the (combined) target set for these in 2005/06. The rural areas of Craven and Hambleton have relatively high targets in comparison to the other Local Authority areas and have already exceeded these, achieving 27% and 24% respectively. Ryedale has the highest target of 30% and is still to meet this for 2005/06. Harrogate has a target of 21% to meet and the remaining rural areas, Richmondshire and Selby have yet to achieve their set targets of 18%.

10.8 Kerbside recycling

Some of the rural districts in the region are less well served by kerbside recycling than is the case for urban districts. Ryedale, Richmondshire, and Craven fall well below the average percentage for England (91.2%), with the mixed area of Scarborough having only 45.2% of residents served. Hambleton (91.0%) and particularly Selby (100%) see the highest figures, although noting that the latter saw high costs in relation to household waste collection.

Figure 10-4 Percentage of residents served by kerbside recycling, 2004/05



Source: Communities and Local Government website: Local Government Performance

10.9 York and North Yorkshire Waste Partnership

North Yorkshire County Council is also part of the York and North Yorkshire Waste Partnership which has developed a Municipal Waste Management Strategy ('Lets Talk Rubbish'). The strategy is wide ranging and considers issues and the action required, not least:

- Highlighting the challenges in relation to new legislation that has been introduced which restricts the amount of landfill
- That there is still a need to reduce the amount of waste produced
- Acknowledging the role of the community sector – whether this is supporting kerbside re-cycling, or re-use, e.g. furniture
- Details and encourages improvements e.g. composting, kerbside collections, etc
- Recording the positive impact of new operating procedures and also new waste management centres have had
- Detailing that not all waste can re-cycled or composted, with an expectation that residual treatment plants will be required
- That to meet legislative requirements and deliver initiatives will result in increased costs to households.

10.10 Plans and strategies

It is also important to consider the work of Natural England. This organisation works for people, places and nature to conserve and enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas. We conserve and enhance the natural environment for its intrinsic value, the well-being and enjoyment of people, and the economic prosperity it brings.

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Natural England has defined four strategic outcomes that will be used to focus their activities and resources, namely:

- A healthy natural environment: England's natural environment will be conserved and enhanced;
- Enjoyment of the natural environment: more people enjoy, understand and act to improve the natural environment, more often;
- Sustainable use of the natural environment: the use and management of the natural environment is more sustainable;
- A secure environmental future: decisions which collectively secure the future of the natural environment.

To achieve these outcomes Natural England have a number of outcomes, with links shown to where further information can be found also examples of the types of activities/schemes.

Outcomes	Examples	Links for further information
<ul style="list-style-type: none"> • Support individuals, organisations, land managers & business to take action to conserve and enhance the natural environment. 	Include SSSIs, Environmental stewardship via ELS, Organic ELS, HLS and wildlife enhancement schemes	<ul style="list-style-type: none"> - individuals http://www.naturalengland.org.uk/visitors/default.htm - organisations www.naturalengland.org.uk/authorities/default.htm - land managers & business www.naturalengland.org.uk/farmers/default.htm
<ul style="list-style-type: none"> • Increase opportunities for people to make the natural environment an enriching part of their every day lives 	E.g. Nidderdale & Howardian Hills AONBs, Yorks Moors and Yorks Dales National Parks. Pennine and Wolds Way National Trails	www.naturalengland.org.uk/leisure/default.htm
<ul style="list-style-type: none"> • Develop and promote sustainable solutions to environmental challenges 	E.g. Derwent, Ouse, Swale & Nidd Catchment sensitive farming projects	www.naturalengland.org.uk/planning/default.htm
<ul style="list-style-type: none"> • Influence and shape our environmental future at home and overseas 		www.naturalengland.org.uk/research/default.htm

There is also a need to consider a number of other organisation plans / strategies, including those of:

- English Heritage
- The Yorkshire Dales and North Yorkshire Moors National Park Authorities
- The Environment Agency
- Forestry Commission (and Woodland Strategy).

10.11 Conclusions and policy implications

- It is clear from the evidence that the sub regions rural areas contain a significantly high proportion of the regions environmental and heritage designations. The area has an outstanding landscape and environmental quality. This offers opportunities for recreation and culture, contributing to the visitor economy. However this also highlights the need for continued investment in these assets for the future
- The strategies / prospectus highlight a number of general issues, e.g.
 - The importance of partnership / cross department working and protocols
 - The funding and national reputation in relation to the youth arts programme
 - A general theme which stresses the importance of good marketing, often across the area and / or a number of different assets / festivals
 - There is a "recognition" (e.g. in economic and social terms) and need to protect other assets, such as churches, castles and archaeological sites
 - The significance of volunteers in the cultural life of the county cannot be underestimated
- When considering rural areas in the region, Craven and Selby have high volumes of waste collected, with Hambleton seeing much lower waste collected. Selby does however have a particularly high cost per household for this
- Hambleton and Craven have seen large increases in composting over the past three years, with there being the potential for further community composting schemes in rural areas.