



**Community
Foundation**
Tyne & Wear and Northumberland

Tees Valley's Vital Issues 2017

Environment

Environment

1.1 Overview

The Tees Valley area includes several built-up, heavily-industrialised urban centres alongside large swathes of rural and semi-rural land, with small village communities. The natural landscape is very varied, with miles of beaches, rolling hills, beautiful parklands, wildlife sites and several areas of special scientific interest, and provides the environment for a wide range of leisure pursuits. This section looks at the natural and built environments, biodiversity, as well as the levels of pollution, recycling and household living conditions.

1.2 Comparing the Tees Valley environment to other areas

Various composite scores are available which assess the quality and make-up of the environment and associated issues, each of which is discussed below.

The **IMD Living Environment Deprivation Index** focuses on two indoor measures - housing without central heating, housing in poor condition (i.e. failing to meet the Decent Homes standard) - and two outdoor measures - air quality, and road traffic accidents resulting in injury to pedestrians and cyclists. The Tees Valley results on this measure are given in Table 13, below.

Table 13 - IMD Living Environment Deprivation Index, 2015ⁱ

Local Authority District name (2013)	Average score	Rank of average score	% of LSOAs in most deprived 10% nationally	Rank of % of LSOAs in most deprived 10% nationally	Decile
Darlington	10.7	285	0.0%	232	8
Hartlepool	8.3	306	0.0%	232	8
Middlesbrough	12.9	255	1.2%	219	7
Redcar and Cleveland	7.9	311	1.1%	222	7
Stockton-on-Tees	7.1	316	0.8%	228	8

On this index, the Tees Valley scores very well, with all areas falling within 7th or 8th deciles, meaning that they are within the 40% or 30% least deprived areas in the country in terms of living environment. As ever, there are variations within each local authority area, but no LSOA in the Tees Valley falls into the 1% most deprived on either indoor or outdoor measures.

By contrast, the **GTA Natural environment score** draws together housing density, road density, air quality, tranquillity, natural beauty, green space and water quality, and indexes local scores to an England-wide average of 100. Scores above 100 indicate the environment is better than the average.

The NE region scores well on this measure, with a regional score of 123, reflecting the low population density across the region as a whole, and the substantial proportion of the region that is rural. The Tees Valley, by contrast, scores quite

badly, with Middlesbrough in particular scoring extremely low at just 29. Redcar and Cleveland is the best-scoring part of the Tees Valley on this measure, reflecting the rural nature of much of this area.

Table 14 – GTA Natural environment scores, 2013ⁱⁱ

Area Name	Natural environment: score (2013)
Darlington	65.52
Hartlepool	66.12
Middlesbrough	29.12
Redcar and Cleveland	84.16
Stockton on Tees	58.49
North East	123.55
England	100

This intra-regional difference is even more stark on the **GTPA Natural Beauty score**. This index focuses on assets including National Parks, Areas of Outstanding Natural Beauty, Heritage Coasts, Blue Flag beaches, ancient woodlands, nature reserves and environmentally-sensitive areas. Again, this is indexed to the England average, meaning scores above 100 are better than average.

Table 15 – GTA Natural Beauty score (2013)ⁱⁱⁱ

Area Name	Natural beauty: score (2013)
Darlington	3.99
Hartlepool	21.26
Middlesbrough	-
Redcar and Cleveland	55.20
Stockton on Tees	17.18
North East	138.25
England	100.00

Again, the NE region as a whole scores well on this measure, largely due to the quality of the countryside in County Durham and Northumberland and the region's coastline. However, all five areas of the Tees Valley score very poorly for this measure because of the lack of recognised natural areas of beauty in the Tees Valley. They are virtually entirely missing from Middlesbrough and Darlington, and only Redcar & Cleveland manages a score over 50.

1.3 Pollution and energy use

Table 16, below, shows the performance of the five Tees Valley authorities in terms of a range of environmental measures.

The level of CO₂ emissions per capita is heavily influenced by the industrial base of the area, hence Redcar & Cleveland's figure being significantly higher than anywhere else in the Tees Valley. It is likely that future CO₂ rates will be lower since the closure of SSI. Domestic electricity use is lower in the NE region and across the Tees Valley than the national average. Darlington has the highest domestic usage, and Middlesbrough the lowest. Industrial use of electricity again reflects the

industrial structure, with Redcar & Cleveland and Stockton-on-Tees being higher than the rest of the Tees Valley.

Table 16 – Measures of pollution and energy use^{iv}

Area Name	CO2 emissions: total per capita (2014)	Electricity sales: domestic (per hhd) (2011)	Electricity sales: industrial (per consumer) (2011)	Deprivation: Air quality (2010)	Green belt (%) (2012)
Darlington	5.64	3,949	73,464	80%	0%
Hartlepool	6.75	3,653	82,308	86%	0%
Middlesbrough	5.08	3,579	96,378	95%	0%
Redcar & Cleveland	66.02	3,750	196,742	86%	0%
Stockton on Tees	13.68	3,689	147,526	85%	0%
North East	8.05	3,703	92,849	81%	8.52
England	6.10	4,266	73,365	100%	12.58

The air quality score is calculated using the concentration of four pollutants - nitrogen dioxide, benzene, sulphur dioxide and particulates. The average score is 100, and scores below this indicate a better air quality. All parts of the Tees Valley have better air quality than average, with Darlington having the best of all. This should be beneficial for health.

Finally, none of the Tees Valley has any green belt land.

1.4 Waste management

Table 17 – measures of waste management and recycling^v

Area Name	Fly-tipping: total incidents (2010/11)	Waste (hhld) kg: collected per hhld (2012/13)	Waste (hhld): recycled (2012/13)	Waste (municipal): landfill (2012/13)
Darlington	2,090	582.69	37.78	44.94 %
Hartlepool	1,110	561.15	42.79	3.09 %
Middlesbrough	2,934	740.43	21.55	6.17 %
Redcar and Cleveland	3,299	543.49	37.90	1.22 %
Stockton on Tees	2,448	690.04	28.91	0.70 %
North East	64,745	602.10	35.89	28.33 %
England	819,571	503.13	41.59	30.33 %

The Tees Valley has a far lower rate of fly-tipping than the NE average, with only one in six of the NE's fly-tipping incidents being here.

The amount of waste collected per household that is not then recycled is higher than the national average across the whole of the Tees Valley. However, while Darlington, Redcar & Cleveland and Hartlepool are among the better areas in the NE, Stockton-on-Tees and Middlesbrough both have high rates of household waste.

Recycling rates follow a similar pattern, with Middlesbrough and Stockton-on-Tees performing worst, while other areas are better than the NE average, and Hartlepool beats the national average.

By contrast, on waste going to landfill, all areas perform very well with very low proportions of waste going to landfill, with the exception of Darlington, where the proportion going to landfill is almost 50% higher than average.

1.5 Climate change and deprivation

The Joseph Rowntree Foundation has carried out work analysing which areas of the country are most likely to be affected by heat or flooding associated with climate change, and how resilient local communities are likely to be in the face of this, given their deprivation. They have produced maps which combine these factors to illustrate which areas are most climate disadvantaged^{vi}.

Their on-line mapping tool^{vii} indicates that Billingham and parts of Thornaby are at acute risk of river and coastal flood disadvantage, while Seaton Carew, the area north of the mouth of the Tees, and an area North of the Tees stretching from Portrack to Preston on Tees are at extremely high risk.

Much of Darlington Borough and Stockton-on-Tees are identified as at extremely high risk of heat vulnerability within the next 30 years.

The very high levels of flood and heat disadvantage suggest a need for action in those areas most at risk. These could include:

- identifying which groups of people in these areas are likely to be most adversely affected by flooding or heat, and least able to deal with that
- raising awareness of the potential issues
- engaging and empowering local people to respond should flooding or heat issues occur
- putting in place plans and resources to prevent flooding where possible and to ensure that local people are equipped to deal with flooding and heat should they happen.

1.6 Transport

In the Tees Valley, transport is one of the areas that has been devolved to local control through the combined authority settlement. The authority's plan shows that^{viii}:

The Tees Valley has a number of significant transport assets, including:

- Teesport is the 5th largest port in the UK, and handled over 36m tonnes of cargo in 2015. It is one of the major gateway ports into the UK and in particular to the north of the UK.
- Durham Tees Valley Airport has regular services to the Amsterdam Schiphol hub and to Aberdeen, important routes for Tees Valley businesses, particularly in the oil and gas sectors.
- The rail links connect the Tees Valley to London and Scotland and to Leeds and Manchester. Darlington acts as a critical rail "gateway" into and out of Tees Valley and is the main interchange hub for national and inter-regional rail connections. The Grand Central service provides key connectivity to London from Hartlepool and Eaglescliffe, while Transpennine provides links from Middlesbrough, Thornaby and Yarm to Leeds and Manchester, and a direct rail service from Middlesbrough to London has recently been confirmed.

- In terms of roads, major highways such as the A1(M), A66 and A19, A174 and A1053 provide fast communications within the sub-region as well as to the North East region and rest of the country. These routes, along with other key road links within the urban centres, form the strategic road network, which is critical in supporting key housing and employment sites across the Tees Valley.

The Tees Valley Combined Authority has identified four strategic transport priorities within the City Region:

1. Implementation of the Darlington High Speed 2 Growth Hub
2. An additional strategic road crossing of the River Tees
3. Improved east-west road connectivity to provide a high quality, resilient corridor along the A66 from the A1(M) to the international gateway at Teesport
4. Major upgrade of the rail line from Northallerton to Middlesbrough/Teesport, including journey time reductions and the re-modelling of Middlesbrough Station, prior to future electrification.

All of these measures will improve the transport infrastructure in the Tees Valley, benefitting local businesses, organisations and people.

A recent survey by the NE Chamber of Commerce found that on average people in the NE region make fewer car journeys than people elsewhere, but they tend to be longer, with the average business-related trip covering 28.2 miles and taking 49 minutes, compared to 21.4 miles and 41 minutes in the rest of England outside London. We also travel around 100 miles more by bus each year^{ix}, reflecting the sparsely populated nature of much of the region.

87% of Tees Valley residents work within the Tees Valley. 248,000 people both live and work in Tees Valley, but while most work within their district of residence, there are substantial number of people travelling between districts^x. Of those people in the Tees Valley who use buses to commute, 85% are satisfied with their service, and 61% of bus commuters in Tees Valley thought their service was good value for money^{xi}.

However, there is a disparity between rural and urban provision, with just 6% feeling public transport in rural areas was good or very good compared to 46% in urban areas^{xii}.

Some parts of the Tees Valley have very poor or no public transport links, for example rural parts of Stockton-on-Tees. The local authority did invite ideas for developing a community transport service here, but there was little take-up and nothing happened as a result. Informal schemes do exist, for instance regular minibus trips to allow people to access out of town supermarkets etc. This kind of low level support is becoming ever more important as local services close.

In the more rural parts of the sub-region there are also particular issues for people who work evenings, e.g. chefs and others in restaurants and catering, in terms of being able to get home after work. In Redcar & Cleveland an innovative solution is being provided through a moped rental scheme allowing people on low wages to hire

a bike as and when they need it to suit their shifts. Similar schemes could be established elsewhere to enable people to access wider work opportunities.

1.7 Conservation and biodiversity

The Tees Valley Nature Partnership (TVNP) carries out research, surveying and actions to conserve and enhance biodiversity across the Tees Valley. The Partnership also advises local authorities and others on areas that need protection, and then helps manage these sites.

The Partnership has developed a strategy for development of the Tees Valley's natural assets, which builds on and reflects the TVCA's approach to developing the area. The strategy has three themes:

- natural assets – protecting and increasing biodiversity, protecting areas of special interest, developing the green infrastructure and sustainable food and fuels.
- natural growth – climate change, a low carbon economy, nature based tourism, and water management and flood control.
- natural health and wellbeing – healthy communities, local pride and distinctiveness, and volunteers, skills and training.

Natural assets

There are over 30 sites where the natural heritage is protected by statute, such as:

- Special Areas of Conservation (SAC) such as the North Yorks Moors
- Special Protection Areas (SPA) such as Teesmouth and Cleveland Coast
- Ramsar site (Wetland of international importance) at Teesmouth and Cleveland Coast, and
- Sites of Special Scientific Interest (SSSI) such as Hartlepool submerged forest.

In addition, there are over 280 locally designated sites.

The National Biodiversity Network has established an interactive atlas can be used to record sightings of animals, birds and plants by location. Counts for the main groups are given in table 18 below.

Table 18 – Counts of species within 10km of location centre^{xiii}

	Darlington	Hartlepool	Middlesbro'	Redcar & Cleveland	Stockton on Tees
Mammals	27	38	37	33	39
Birds	162	314	330	329	282
Amphibians	5	4	7	6	6
Fish	17	33	36	38	27
Molluscs	96	172	162	213	121
Arthropods	682	1876	972	1006	686
Plants	150	311	211	296	190
Fungi	973	541	828	878	527
Chromista	8	22	9	18	6
Protozoa	15	40	19	20	14
Bacteria		0	0	0	0
Algae		36	11	49	1
TOTAL	2135	3389	2625	2889	1899

Each of the counts is for a 10km radius from the centre of the area, so there will be overlaps between areas and therefore in counts, while other areas will not have been captured here. Nevertheless, the figures suggest a wide range of animals and plant-life exist across the Tees Valley.

The lowest level of diversity recorded is in Darlington, which has lower recorded varieties of birds, fish, molluscs and plants, though the variety of fungi recorded here is by far the highest. However, this apparent variation should be treated with caution as it may well reflect the interests of those people who have taken the time to record their sightings and enter them into the national database, rather than any actual difference in biodiversity levels.

Natural growth

TVNP estimates that tourism generates over £500m for the Tees Valley economy every year. There are an increasing number of nature-based sites attracting visitors, including Guisborough Forest, North Tees Marshes and the Tees Barrage.

The Tees Valley is also developing new ways to reduce its carbon footprint. The National Centre for Process Innovation and the Thermal Technology Centre are leading the way in reducing the impact of chemical production and improving recycling, but have also worked with schools to encourage young people to think about new ways of using plastics.

Water management activities are benefitting species as well as providing opportunities for skills development. For example, the Tees River Trust has carried out activities to clear and improve the River Leven, working closely with the North Yorks National Parks Apprentices to carry out practical instream habitat improvements.

Natural health and wellbeing

Groundwork and Walking for Health have provided outdoor activity and walking programmes across the Tees Valley, while the TVNP has evaluated its own volunteering programmes and found that they are providing positive social experiences for volunteers, improving their skills, confidence and self-esteem.

Natural England, together with Mind, have carried out a significant amount of work on the positive impact of engaging with nature on health, and mental health in particular. They identified three main pathways that the natural environment provides that contribute to mental health benefits: i) directly through the restorative effect of nature; and then indirectly, ii) through providing opportunities for positive social contact; and iii) through providing opportunities for physical activity^{xiv}.

They also reported a strong relationship between the proximity of urban open green spaces, how frequently people visited them, how long they stayed, and users' stress levels. Other researchers have also found a link between the quantity of green space available and longevity, a reduced likelihood of mental health, and lower levels of health inequality in areas with a high level of income-deprivation.

Table 19, below, compares the amount of green space available in each part of the Tees Valley and the proportion of the population who use it:

Table 19 – green space and frequency of use

	% land classed as green space^{xv}	% using outdoor space for exercise / health reasons^{xvi}
Darlington	88.27%	20.30%
Hartlepool	78.77%	11.30%
Middlesbrough	54.67%	19.50%
Redcar & Cleveland	85.75%	15.40%
Stockton-on-Tees	76.16%	25.40%
NE region	92.15%	17.30%

Darlington and Redcar & Cleveland have the most green space available for people to use. However, people in Redcar & Cleveland and in Hartlepool are less likely than others to use outdoor space for exercise or health-related activities.

Nationally, Natural England found that in 2015-16 42% of people had visited green space in the previous week, and 47% of these visits were for health and exercise^{xvii}. This suggests an average % of people using green space for exercise / health reasons of $42\% \times 47\% = 19.7\%$ of the population. Rates are therefore above average in Middlesbrough, Darlington and Stockton-on-Tees, but below average in Hartlepool and Redcar & Cleveland.

There could therefore be a role for philanthropy to support actions to encourage more people in these areas to use the green space around them for exercise and health.

Potential roles for philanthropy

Many parts of the Tees Valley provide a green and pleasant place to live and work, however higher densities of houses and roads in some areas mean it scores less well on some measures, and lack of protected and designated assets mean that the more urban areas are ranked low for natural beauty. Specific actions that philanthropy could support include:

- Encouraging recycling where this is available to reduce landfill.
- Widening opportunities for apprenticeships and other skills development as part of environmental improvements.
- Encouraging action now to prevent and mitigate the impact of climate change-related heat and flooding in areas identified as being climate-disadvantaged.
- Supporting new approaches to providing transport for people in more rural areas to enable them to access work, shopping and leisure opportunities when public transport is not available.

- Increasing use of green spaces for leisure and exercise purposes and engagement in environmental volunteering to help promote mental health and wellbeing issues, particularly in Hartlepool and Redcar & Cleveland.

ⁱ **Dept of Communities and Local Government (2015)**, *Index of Multiple Deprivation, 2015*, Office for National Statistics, downloaded from: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>, 30/5/16 07:30

ⁱⁱ **GTA (2017)** *Natural Environment Score*, generated and downloaded from: [http://gt-placeanalytics.org/placeanalytics/\(S\(wxi4f2yghgvdj455ggv4x45\)\)/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=206](http://gt-placeanalytics.org/placeanalytics/(S(wxi4f2yghgvdj455ggv4x45))/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=206) 11/7/17, 14:04

ⁱⁱⁱ **GTA (2017)** *Natural Beauty Score*, generated and downloaded from: [http://gt-placeanalytics.org/placeanalytics/\(S\(wxi4f2yghgvdj455ggv4x45\)\)/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=206](http://gt-placeanalytics.org/placeanalytics/(S(wxi4f2yghgvdj455ggv4x45))/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=206), 11/7/17, 14:04

^{iv} **Grant Thornton Analytics (2017)** downloaded at: [http://gt-placeanalytics.org/placeanalytics/\(S\(evylqt4540vmzrfqueupwqh\)\)/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=904,145,463,1430,927,7885](http://gt-placeanalytics.org/placeanalytics/(S(evylqt4540vmzrfqueupwqh))/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=904,145,463,1430,927,7885), 27/6/17 17:59

^v **Grant Thornton Analytics (2017)** downloaded at: [http://gt-placeanalytics.org/placeanalytics/\(S\(evylqt4540vmzrfqueupwqh\)\)/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=904,145,463,1430,927,7885](http://gt-placeanalytics.org/placeanalytics/(S(evylqt4540vmzrfqueupwqh))/paweb/ShowAllIndicators.aspx?spatialLevel=18&indicators=904,145,463,1430,927,7885), 27/6/17 17:59

^{vi} Joseph Rowntree Foundation (2011) *Climate change, justice and vulnerability*, downloaded from: <https://www.jrf.org.uk/report/climate-change-justice-and-vulnerability> 15/6/17 10:03

^{vii} <http://www.climatejust.org.uk/map>

^{viii} ^{viii} **Tees Valley Combined Authority (2016)** *Strategic Economic Plan*, downloaded from: <https://teesvalley-ca.gov.uk/wp-content/uploads/2016/12/TVCA207-SEP-Documents-Full-WEBSITE.pdf>, 1/6/17 10:03

^{ix} **NE Chamber of Commerce (2017)** *Public Transport Priorities*, downloaded from: <https://www.neechamber.co.uk/uploads/files/GsEQmx57sAbJ8D84.pdf> 16/7/17 15:47

^x **Tees Valley Combined Authority (2016)** *Strategic Economic Plan*, downloaded from: <https://teesvalley-ca.gov.uk/wp-content/uploads/2016/12/TVCA207-SEP-Documents-Full-WEBSITE.pdf>, 1/6/17 10:03

^{xi} **NE Chamber of Commerce (2017)** *Public Transport Priorities*, downloaded from: <https://www.neechamber.co.uk/uploads/files/GsEQmx57sAbJ8D84.pdf> 16/7/17 15:47

^{xii} **NE Chamber of Commerce (2017)** *Public Transport Priorities*, downloaded from: <https://www.neechamber.co.uk/uploads/files/GsEQmx57sAbJ8D84.pdf> 16/7/17 15:47

^{xiii} **National Biodiversity Network (2017)** *explore your area tool*, accessed via: https://records.nbnatlas.org/explore/your-area#54.574227|-1.234956000000011|11|ALL_SPECIES 11/7/17 16:58

^{xiv} **Natural England (2016)** *A review of nature-based interventions for natural health*, downloaded from: www.gov.uk/natural-england, 1/6/17 08:10

^{xv} **Grant Thornton Analytics (2017)** *Land use: green space* downloaded at: [http://gt-placeanalytics.org/placeanalytics/\(S\(z4bdjzqyt03kx355hzpkgo45\)\)/paweb/ShowIndicatorDetails.aspx?spatialId=18&indicatorId=671](http://gt-placeanalytics.org/placeanalytics/(S(z4bdjzqyt03kx355hzpkgo45))/paweb/ShowIndicatorDetails.aspx?spatialId=18&indicatorId=671) 11/7/17 16:00

^{xvi} **Public Health England (2016)** *Public Health Outcomes Framework - wider determinants of health*, accessed at: <http://www.phoutcomes.info/public-health-outcomes-framework#page/0/gid/1000041/pat/6/par/E12000001/ati/102/are/E06000047> 11/7/17 15:19

^{xvii} **Natural England (2016)** *Monitor of engagement with the natural environment*, downloaded from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/614353/mene-headline-report-2015-16.pdf 12/7/17 09:28