APPENDIX B

Baseline Data and Key Issues and Opportunities

CONTENTS

Abbreviations Used in this Appendix

Abbreviation	Definition
AONB	Area of Outstanding Natural Beauty
ASNW	Ancient Semi-Natural Woodland
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
CO_2	Carbon Dioxide
CSI	Core Subject Indicator
DBEIS	Department for Business, Energy and Industrial Strategy
Defra	Department for Environment, Food and Rural Affairs
EC	European Commission
FPI	Foundation Phase Indicator
GDP	Gross Domestic Product
GDHI	Gross Disposable Income
GVA	Gross Value Added
HBAI	Households Below Average Income
HMO	Houses in Multiple Occupancy
ISA	Integrated Sustainability Appraisal
LA	Local Authority
LCA	Landscape Character Area
LSOA	Lower Super Output Area
MCA	Marine Character Area
MCZ	Marine Conservation Zone
NDF	National Development Framework
NEET	Not in education, employment or training
NI	National Indicator
NLCA	National Character Areas
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

Abbreviation	Definition
NRW	Natural Resources Wales
ONS	Office for National Statistics
NQF	National Qualifications Framework
NVZ	Nitrate Vulnerable Zone
PM	Particulate Matter
RIGS	Regionally Important Geodiversity Sites
SAP	Standard Assessment Procedure
SAC	Special Area of Conservation
SCA	Seascape Character Assessment
SME	Small to Medium Enterprises
SoNaRR	State of Natural Resources Report
SMP	Shoreline Management Plan
SPA	Special Protection Area
SPP	Statement of Public Participation
SSSI	Site of Special Scientific Interest
TAN	Technical Advice Note
TSA	Tourism Satellite Account
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCVA	Wales Council for Voluntary Action
WIMD	Welsh Index of Multiple Deprivation

1 Introduction

This appendix provides the baseline social, economic, cultural and environmental data for Wales that is being used to help undertake the following aspects of the ISA:

- Identify the current baseline social, economic, cultural and environmental situation within Wales against which the likely effect of the NDF will be predicted;
- Identify key trends issues and opportunities for the ISA and NDF to consider;
- Develop the ISA Framework to use for the appraisal of the NDF; and
- Ultimately assist the development of a monitoring framework to monitor the significant effects of the NDF.

The appendix has been structured around each of the seven well-being goals. Within those goals, the baseline data has been sub-divided into a series of ISA topics. Each section is structured as follows:

1. Well-being Goal and identification of relevant ISA topics within it.
2. Overview of Baseline Conditions for each topic. This comprises:
    a. The relevance of that topic to the NDF;
    b. The baseline conditions and trends structured around the baseline data sets;
    c. Any data gaps that are in the process of being filled; and
    d. Identification of the relevant ISA Objectives and questions relevant to that topic.
3. Key Issues derived from the above that are relevant to the NDF and opportunities for it to address them.

Note on the baseline data sets

In the ISA the baseline data sets used are specific facts and statistics that are gathered by different organisations including, for example, the Welsh Government, the UK Government, or statutory bodies such as Natural Resources Wales (NRW), amongst others. These have been carefully selected to help give an appropriate overview of the baseline conditions and trends over time at a national scale and where necessary more detail on regional variations within Wales. Where possible, the Wales National Indicators have also been used as contextual indicators which are monitored regularly by the Welsh Government.

In relation to the National Indicators, the Well-being of Future Generations (Wales) Act 2015 requires that Ministers publish an annual progress report setting out the progress of Wales as a nation towards the 7 well-being goals made over the previous year. The Annual Well-being report will draw on the latest information available on the 46 National Indicators. The first Annual Well-being report – Well-being of Wales[1] has been published and presents the information that is available for each of the indicators. This report assesses progress against those shared national goals for Wales as a whole.

It is intended that the baseline data sets can be used as factual yardsticks to support the appraisal of the effects of the NDF against each of the relevant ISA Framework Objectives.

Ultimately, once the ISA is complete and the NDF is adopted, indicators will be produced to help monitor the predicted significant effects of the NDF as it is used.

There are hundreds of potential baseline data sets that could be used, many providing only subtly different information. As such, the selection of indictors for this ISA will be focussed, streamlined and reflective of the national scale and influence that the NDF is expected to have.

[1] http://gov.wales/statistics-and-research/well-being-wales/?lang=en

2 Well-Being Goal: A Prosperous Wales

This section provides baseline data relating to the following well-being goal:

'An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.'

The data relates primarily to:

- The Economy, Employment and Income in Wales; and
- Education in Wales.

2.1 Overview of Baseline Conditions

2.1.1 The Economy, Employment and Income in Wales

Relevance to the NDF

A strong national economy is vitally important for securing people's wealth, jobs and incomes. This has a large contribution to the quality of life and the economic, social, cultural and environmental well-being of people and communities in Wales.

The NDF has a key role in developing the national economy, through helping to guide decisions relating to economic activity and its supporting infrastructure, through the planning process.

Baseline conditions and trends

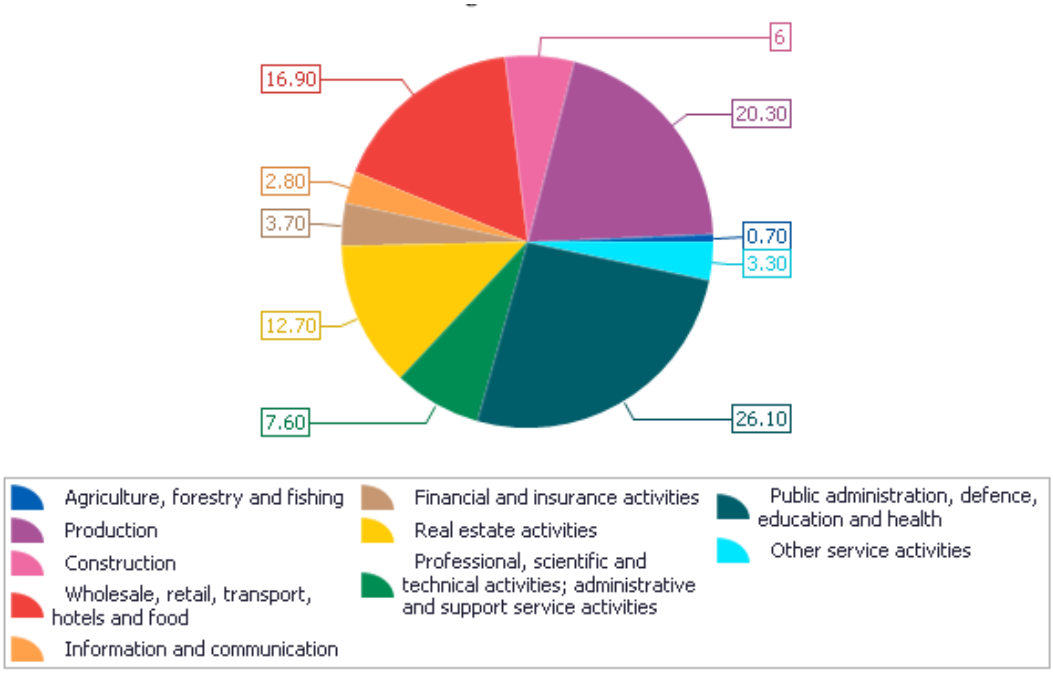
The economy of Wales is closely aligned with that of the rest of the UK. However, for a long time, economic output has been lower in Wales compared with other areas. In 2015, the GVA (a key measure of economic output) was £55.8 billion, or £18,002 per head. This was 71.0% of the average for the total of all UK regions, up from 70.5% in 2014. Wales had the lowest level of GVA per head in the UK (measured against the other UK regions), behind Northern Ireland and the North East, where GVA per head was 73.3% and 74.7% of the UK average respectively (Welsh Government analysis of Regional Accounts, ONS – 2015). GVA is rising, however the economic future of the whole of the UK is currently uncertain in light of the approaching exit of the UK from the European Union. Economists and politicians are currently divided over what this will mean for the UK, with many schools of thought suggesting a short-term economic downturn, with potential for higher growth in the longer term.

Over the past decade (2005-2015), GVA per head in Wales has increased by 20.5%, although this has been less than the overall UK level (24.5%) in the same period. Comparative trends are anticipated to continue in this manner, although with the caveat of uncertainty surrounding Brexit. The highest levels of output in 2015 were from Cardiff, the Vale of Glamorgan, Monmouthshire, Newport, Flintshire and Wrexham, reflecting the larger proportion of industry, population and services in those areas. GVA per head is significantly lower across much of the rest of Wales, reflecting its more rural nature. The Isle of Anglesey recorded the lowest GVA per head (£13,411). The fastest growth over the last decade has been in the Central Valleys region (all figures from Stats Wales).

In 2015, GVA per hour worked in Wales was 19% below the UK average – making it the joint lowest region in the UK alongside Northern Ireland. This reflects a lower than average level of productivity in Wales (ONS).

The second half of the 20th century saw a significant decline in the traditional manufacturing and extractive industries in Wales with a move towards service sector employment. The modern Welsh economy is now dominated by the service sector including public health, education, defence and administration, accounting for over half of the total Wales GVA. Figure 1-1 shows the split of GVA per industry.

Figure 1-1 Gross Value Added in Wales by industry (%)



Source: Stats Wales (2015)

After the service industry, the next largest group is the 'Production' industry. Whilst heavy industry has been in decline, Wales still has a diverse manufacturing sector. This includes:

- Metal ore refining at plants in, for example, Port Talbot, Llanwern, Newport, Trostre, Shotton, Ammanford, Pontardulais, Tafarnaubach and Caerphilly;
- Oil refining at Milford Haven;
- Automotive component production; and
- Growth in the electronics industry.

The three national parks of Snowdonia, Brecon Beacons and Pembrokeshire Coast are important to the prosperity of the Welsh economy.

- In 2013 Welsh National Parks accounted for over half a billion pounds of Wales GVA representing 1.2% of the Welsh economy (Valuing Wales' National Parks, Arup Report 2013).
- In 2013 more than 12 million people visited Wales' three National Parks, resulting in some £1 billion pounds' worth of spend in the Welsh economy (Valuing Wales' National Parks, Arup Report 2013).
- 38% of all jobs in Welsh National Parks are linked to the environment (UK Census 2011).

Rural economy

Wales is largely rural in nature, so agriculture and forestry represent a large area of economic land-use. This is dominated by beef, sheep and dairy farming on relatively small farms, compared to the rest of the UK. Economic output from these industries is, however, relatively small.

Tourism

With its rich natural and cultural assets, tourism is also a significant and growing part of the national economy. Cardiff, in particular, is a primary tourist destination due to its large number of high-quality attractions. This brings income and employment opportunities for a range of associated businesses such as hotels, food and retail outlets. The Wales Tourism Satellite Account (TSA) estimated a total tourism GVA of £1.8bn – around 4.4% of total direct GVA for the Welsh economy in that year. Emerging research suggests that when indirect impacts are added, the Tourism GVA increases to £2.5bn, which represents 6% of the whole economy (The Welsh Government Strategy for Tourism 2013 – 2020).

Third sector

The third sector, as defined by the Wales Council for Voluntary Action (WCVA), is a very diverse range of organisations including voluntary organisations and social enterprises that share a set of values and characteristics. There are between 52,800 and 79,200 posts in the third sector, equivalent to between 4% and 7% of all jobs in Wales (WCVA Statistical Resource 2012).

The value of the third sector has been estimated by WCVA by adding the value of volunteer time (provided by organisations – an estimated 145 million hours is given in a year and this has a monetary value of £1.7 billion), to the overall income of organisations (£2.0 billion third sector income). When the monetary value of volunteer hours is added to the overall income of the third sector, this gives £3.7 billion which is equivalent to 6.8% of Wales GDP (WCVA Statistical Resource 2012).

SMEs and Micro-businesses

In 2016, there were an estimated 250,100 enterprises, the highest estimate since the start of the series in 2003. There was a steady annual increase from 2009-2016 and this trend is likely to continue (StatsWales). The overall increase was largely attributed to growth in the micro size-band enterprises - 0-9 employees (up to 49%). This could be a result of the recent labour market conditions, which may have encouraged people to set up businesses, as they are made redundant (for example). Regionally, micro enterprises in 2016 accounted for 94.3% in North Wales; 95.7% in Mid Wales; 94.1% in South West Wales and 93.8% in South East Wales. The agriculture, forestry and fishing sector had the smallest proportion of total employment in SMEs in Wales at 4.9 per cent. This suggests a major bias towards urban areas for SMEs and micro-businesses, with very few in rural areas (Stats Wales). Despite this bias towards employment in urban areas, it is estimated that over 5,000 small businesses are located in Welsh National Parks, employing more than 29,000 people (Valuing Wales' National Parks, Arup Report 2013).

Innovation

The Welsh Government also monitors the levels of innovation in the economy. It identified that in 2015, 51% of Welsh businesses were innovation active, comparable to levels in Scotland, but just behind England (54%) and ahead of Northern Ireland (Welsh Government).

Economic Activity

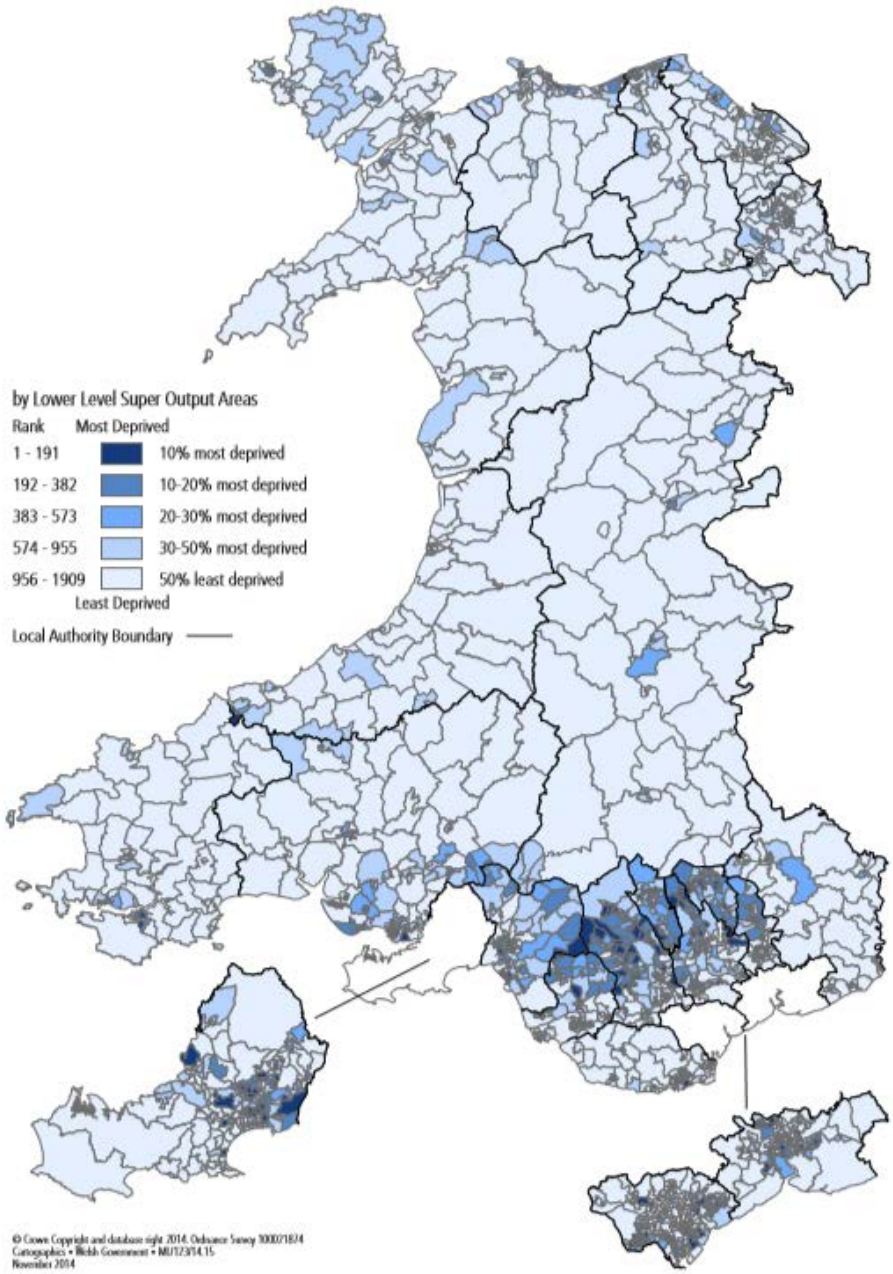
The 2010, the Welsh Government publication, *Economic Renewal: a new direction*, identified two important factors responsible for Wales weaker economic position compared to the rest of the UK. These are a low employment rate and low average wages (reflecting low average productivity).

In November 2016, the number of people economically active had increased in Wales over the past decade by 1.9% from 74% to 75.9% (between Nov 2006 – Nov 2016). Whilst similar to the UK, the national trend of growth in Wales has been below the UK average over this period – the UK average was 78.3% in November 2016. For Wales, the drop in those economically active has come mainly from men, with the number for males dropping 0.5% and females 4.1% over the last ten years (NOMIS/Stats Wales). The future direction of this trend is likely to be affected by the outcome of Brexit.

According to the Welsh Index of Multiple Deprivation (WIMD)[2] 2014 employment domain (see Figure 1-2), the highest levels of employment deprivation were in the South Wales valleys and in some North Wales coastal towns. In terms of local authorities, Merthyr Tydfil recorded the highest proportion of LSOAs in the most deprived 10% in Wales for the employment domain. Monmouthshire had no LSOAs in the most deprived 10%.

[2] The WIMD ranks each of the 1909 Lower Super Output Areas (LSOAs) in Wales in terms of the level of deprivation that LSOA exhibits for a given domain. Those ranked in the bottom 191 LSOAs are, therefore, in the 10% most deprived nationally.

Figure 1-2 WIMD 2014 Map for Wales, Employment Domain



Source: WIMD 2014

Education/Training

The Welsh Government also publishes data on the learning activities and labour market status of young people (aged 16 to 24) in Wales. The provisional data series for 2015 further focuses on the proportion of young people who are not in education, employment or training (NEET) in Wales.

In terms of 16 to18 year olds, around 79.5% were in education or training (down from 80.1% in 2014) and 33.2% were in full or part-time employment (up from 31.8% in 2014). In addition, 10.5% of 16 to18 year olds were reported as NEETs, which is a fall of 0.3% from the previous year.

Since 2004, the proportion of 19 to 24 year olds in education or training has remained around a similar level (37 to 39 per cent), whilst the proportion who are NEET increased to higher levels, following the start of the 2008 recession, reflecting contracting employment levels. There has, however, been an increase in

employment, and a decrease in the proportion who are NEET in the last 3 successive years. As with many economic statistics, the immediate future direction of this trend is likely to be influenced by Brexit.

In terms of 19 to 24 year olds, around 37.6% were in education or training (down from 38.2% in 2014) and 61.2% were in full or part-time employment (up from 60.3% in 2014). In addition, 19% of 19 to 24 year olds were reported as NEETs which is a fall from 20.4% from the previous year.

Earnings

In April 2016, the average (median) weekly earning in Wales was £492.40. This has increased from £478.60 in April 2015 and is anticipated to continue to grow steadily. However, this compares to a UK average of £538.70.

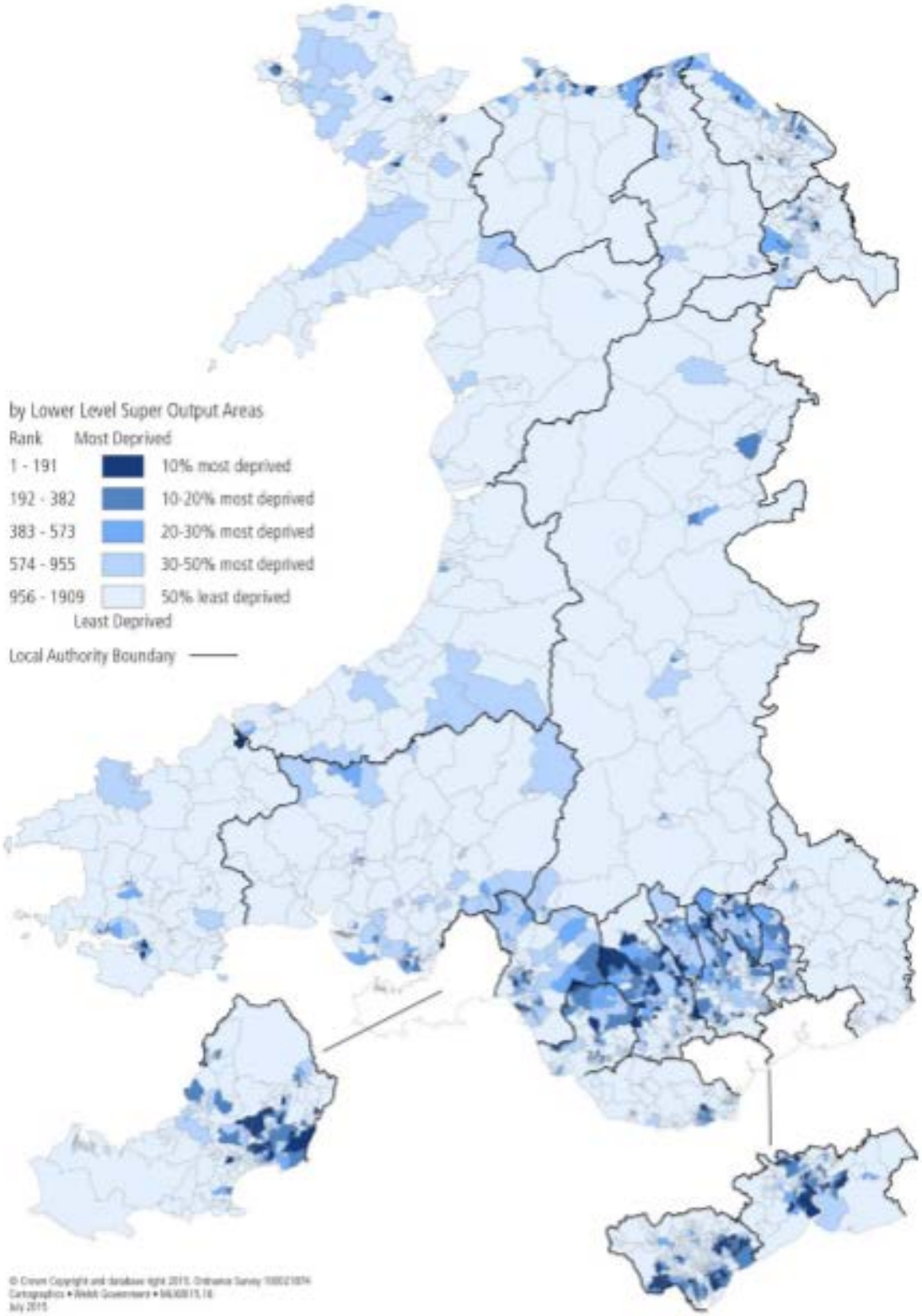
The highest average earnings were in the South East and West Wales economic regions, followed closely by the North Wales economic region with the Mid Wales region significantly lower (Stats Wales).

In Wales, 62.2% of people in employment were either on permanent contracts (or have a temporary contract and are not seeking permanent employment) and were earning more than two thirds of the UK median wage for August to October 2016 (Welsh Government Statistical Bulletin Feb 2017).

UK total Gross Disposable Household Income (GDHI) in 2014 was £1,160 billion. Of that, Wales accounted for 4.1% (which was the 3rd lowest out of all the UK regions). Wales experienced a growth in overall total GDHI growth in 2014 by 0.3% from the previous year (ONS 2016). Low income is a key concern nationally, which the Welsh Government is looking to improve.

The WIMD 2014 income domain (see Figure 1-3) focuses on the proportion of people with income below a defined level and has a weight of 23.5% in the overall index. In the WIMD 2014 income domain, there were pockets of high deprivation in the South Wales valleys, and in some North Wales coastal towns. The local authority with the highest proportion of LSOAs in the most deprived 10% in Wales, for the income domain, was Newport (20%). Powys and Monmouthshire had no LSOAs in the most deprived 10%.

Figure 1-3 Overall Income Deprivation Map for Wales



Notes

(r) This map was revised on 12 August 2015 following provision of revised data by the Department for Work and Pensions (DWP).

Source: WIMD 2014

Job Satisfaction

In 2013-14, respondents (to the National Survey of Wales) were asked how satisfied they were with their present job. On a scale of 0-10, the average satisfaction score was 7.5. There appears to be a strong correlation between satisfaction with present job and satisfaction with commuting time. 66% of people who were highly satisfied with their present job were also highly satisfied with their commuting time.

Broadband

Whilst the coverage of internet access is growing, speeds and, in particular, access to superfast broadband can be a particular issue in rural communities, particularly amongst those with low incomes (National Survey for Wales, 2014-15). Poorer households across Wales are less likely to have internet access in their home. This is exacerbated in rural areas by relatively poor access to good quality broadband (Rural broadband ICT Toolkit, Welsh Government). Over time, it is anticipated that the coverage of high speed broadband will improve.

Data Gaps

National data on digital connectivity in rural areas.

2.1.2 Education in Wales

Relevance to the NDF

Education is a fundamental factor in developing people's skills, both for future employment and for life in general. Improvements in educational attainment are directly linked to increased incomes, employment and overall economic growth. In particular, education and training to meet the skill-sets required to grow the economy are of greatest importance.

The NDF has a key role to play in educational development through helping guide decisions through the planning process relating to educational facilities, training promotion and job creation which overall contributes to a healthy economy.

Baseline conditions and trends

Educational attainment in Wales is slightly below the UK average. The proportion of adults of working age holding Higher Education or equivalent level qualifications (NQF level 4 or above) in 2015 was 36%, compared with 35% in 2014. Wales is below the UK average level for NQF level 4 (which is 36%). However, Wales is above Northern Ireland (31%) and some other UK regions. Over 75% of adults were qualified to NQF level 2 or above.

The trend is rising, with a more than 25% increase in NQF level 4 attainment in working age adults since 2008, with the greatest rises being amongst women.

In terms of regional distribution, adults in Mid Wales had the highest level of qualifications, whereas adults in South West Wales had the highest number of adults with no form of qualifications. This is presented in Table 1-1. More specifically, qualification levels were highest in Cardiff, Monmouthshire, and Vale of Glamorgan and lowest in Blaenau Gwent, Merthyr Tydfil and Neath Port Talbot.

Table 1-1 Percentage of adults with qualifications at the different levels of the NQF

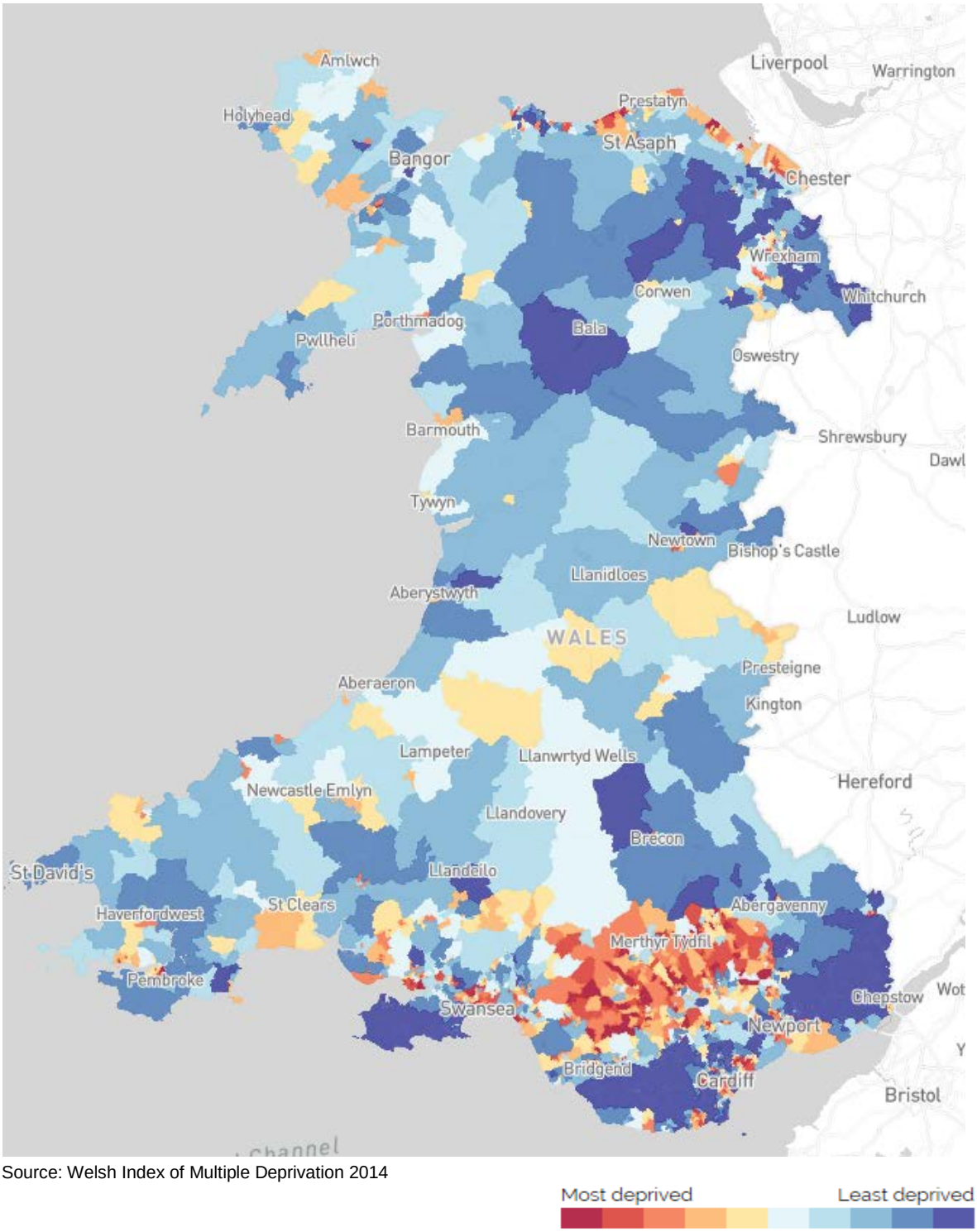
Area	No qualifications	Qualified to below level 2	Qualified to NQF level 2 or above	Qualified to NQF level 3 or above	Qualified to NQF level 4 or above
Wales	10.2%	13.5%	76.2%	56.6%	35.8%
North Wales	7.9%	14.1%	77.9%	56.9%	36.0%
Mid Wales	6.9%	9.9%	83.2%	62.8%	38.1%
South West Wales	12.5%	13.6%	73.9%	53.5%	33.5%
South East Wales	10.7%	13.7%	75.6%	57.0%	36.3%

Source: Stats Wales

In terms of core subjects only (English/Welsh language, mathematics or science), in 2016, 88.6% of pupils achieved a Core Subject Indicator (CSI) level of 4 or above – which was an increase of 0.9% since 2015 and the highest on record. Science had the highest percentage of pupils achieving the expected Key stage 2 Level or above. This has always been the case since figures started to be collected in 1999.

The distribution of LSOAs and their relative deprivation in the education domain illustrates regional variation in educational attainment and access to education. This is shown in Figure 1-4 below.

Figure 1-4 Education Deprivation for LSOAs in Wales



Source: Welsh Index of Multiple Deprivation 2014

The South Wales valleys are the most educationally deprived area of Wales. This area includes the local authorities of Merthyr Tydfil, Blaenau Gwent and Rhondda Cynon Taff. There are also parts of the urban areas of Cardiff, Newport and Swansea that are suffering from education deprivation. Parts of Monmouthshire, Powys, Vale of Glamorgan and the North-East corner of Wales exhibit relatively low levels of education deprivation.

The development of young people in Wales is also monitored. The statutory curriculum for all 3 to 7 year olds, in both maintained and non-maintained settings is measured as the Foundation Phase Indicator (FPI).

The Foundation Phase has 7 areas of learning, which are delivered through practical activities and active learning experiences both indoors and outdoors. The areas of learning are:

- Personal and social development, well-being and cultural diversity;
- Language, literacy and communication skills;
- Mathematical development;
- Welsh language development;
- Knowledge and understanding of the world;
- Physical development; and
- Creative development.

The percentage of pupils achieving an FPI Outcome of 5 or above has increased every year since 2012, when the measure was introduced. This percentage was 87% in 2016 – which is the highest figure on record and shows a rising trend, although the increase between 2015 and 2016 was slightly smaller than previous years.

Data gaps

No significant data gaps have been identified for this topic at this stage.

2.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

The economy of Wales is closely aligned with that of the rest of the UK. There has been a move towards service sector employment and a decline in heavy industry; Wales still has a diverse manufacturing sector.

Economic productivity per head is below the UK average.

Relatively low employment rates and low earnings compared to other parts of the UK although these have been increasing.

There are clear geographical differences in employment activity in Wales with pockets of higher than average deprivation in the South Wales valleys and in some North Wales coastal towns. There are also dispersed levels of deprivation in rural Wales which include issues relating to income levels, fuel prices and the energy efficiency of the home.

Poverty affects some children living in Wales.

Key reasons for this relatively poor economic performance include:

- Relatively low skills levels and poor educational attainment levels (although improving), particularly in the more deprived parts of the country.
- The largely rural nature of the country results in relatively small urban areas which would otherwise be more strongly associated with agglomeration effects.
- There is a relatively high proportion of older people who are retirement age.

The UK Climate Change Risk Assessment 2017: Evidence Report, highlights a number of key risks and opportunities facing Wales with regard to business. These could have effects on a number of factors including health and well-being, employment and the economy. Such matters facing Wales can be summarised as risks to business from flooding, loss of coastal locations, water scarcity, reduced access to capital, reduced productivity from disruption to infrastructure etc., disruption to supply chains and changes in demands for goods and services. These should be taken into consideration in the NDF.

Opportunities

The NDF has a role to play in achieving balanced and sustainable growth, encouraging inward investment, increasing employment and promoting a green growth strategy to underpin prosperity and the transition to a low resource use (including low carbon) economy, to enable the population to live within environmental limits.

The NDF provides an opportunity for the economy to be guided towards more sustainable industries, seeking to meet the key target of at least an 80% reduction in greenhouse gases by 2050, as set out in the Environment (Wales) Act. This can be through the promotion of appropriate employment development and supporting infrastructure, including digital infrastructure and sustainable travel infrastructure, in areas to maximise their benefits. It can also provide a framework that is more responsive to the needs of the economy and able to support new, emerging sectors and support transition of existing ones. Furthermore, it can also help to guide the creation of an environment that is attractive to inward investment and encourages sustainable access to jobs. As part of this, it should seek to address the geographical differences within the country. Similarly, the NDF may facilitate improvements to educational provision and sustainable access and it should seek to address the geographical differences within the country.

Many of the proposals of the NDF will look to address issues related to poverty and inequality through access to better education, better places to live and access to jobs and the job market.

Other sector-specific opportunities include:

- Opportunities for the development of the rural economy could be supported through the NDF alongside programmes geared specifically towards rural areas such as the *Rural Development Programme 2014-2020*. Furthermore, opportunities could be sought through the NDF to support the growth of the rural economy through new micro and small enterprises.
- Access to high speed internet can be a particular issue in rural communities and for those with low incomes. The NDF could help to address digital exclusion by seeking to support the delivery of high speed connections.
- There are opportunities for tourism to grow in a sustainable way and to make an increasing contribution to the economic, social, cultural and environmental well-being of Wales.
- Overall, the NDF must help to achieve the important balance of economic and social improvement that is also sustainable and respects the country's valuable natural and cultural environment.

2.3 Relevant ISA Objectives and Questions

The Economy of Wales

3. To create opportunities for an increase in employment across the country and promote economic inclusion
• Create opportunities to increase employment across all working age ranges? • Create opportunities to improve physical access to jobs through land use planning initiatives? • Create opportunities for an increase in the number of people who are satisfied with their job? • Create opportunities for new investment and growth in the number of skilled workers?
4. To create opportunities for sustainable economic growth, diversity and business competitiveness
• Create opportunities for sustainable economic growth? • Create opportunities for diversification within the economy and encourage new business formation and inward investment? • Create opportunities for businesses who are innovation-active? • Create opportunities for and promote sustainable tourism, sensitively capitalising on environmental, cultural, heritage and leisure assets? • Create opportunities for enhancements to the rural economy and rural diversification (including agriculture, forestry, SMEs, micro businesses and the development of digital connectivity)? • Create opportunities to maintain and encourage third sector activities? • Create opportunities for businesses and infrastructure to become more resilient when facing the risks from climate change? • Help deliver physical infrastructure to support sustainable economic growth, including digital infrastructure and sustainable travel infrastructure?

Education in Wales

1. To encourage and support improvements in educational attainment for all age groups and all sectors of society to help to improve opportunities for life
• Encourage and support an increase in levels of participation and attainment in education for all members of society? • Encourage and support an improvement in access to lifelong learning opportunities? • Encourage and support an improvement in the provision of education and training facilities through land use planning initiatives?

3 Well-Being Goal: A Resilient Wales

This section provides baseline data relating to the following well-being goal:

'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).'

The data relates primarily to:

- Air Quality;
- Biodiversity, Flora and Fauna;
- Climate and Flood Risk;
- Geology and Soils;
- Water Environment; and
- Minerals and Waste.

3.1 Overview of Baseline Conditions

3.1.1 Air Quality

Relevance to the NDF

Clean air is important for both human health and the health of the natural environment. The UK's air is cleaner in overall terms since the start of the Industrial Revolution. However, poor air quality still causes adverse health effects. It is estimated that the life expectancy of every person in the UK is reduced by an average of 7-8 months due to air pollution[3]. Air pollution can directly affect vegetation (e.g. through exposure to sulphur dioxide or high levels of ozone), or indirectly affect the wider environment through pollutant deposition. Deposition of pollutants can adversely affect the acid and nutrient status of soils and waters, which, in turn, can affect habitat integrity and the fauna and flora they support. The introduction of environmental protection legislation has led to significant changes in the way air quality is managed and controlled, although the planning system also has a large role to play.

The NDF can affect air quality through helping to guide decisions through the planning process relating to the location of polluting sources relative to sensitive receptors such as residential areas, schools and hospitals and by helping to minimise pollution from transport, through minimising the distance travelled and encouraging more sustainable modes of transport. Landscaping and environmental policies could also encourage the reduction of the effects of pollution through sequestration.

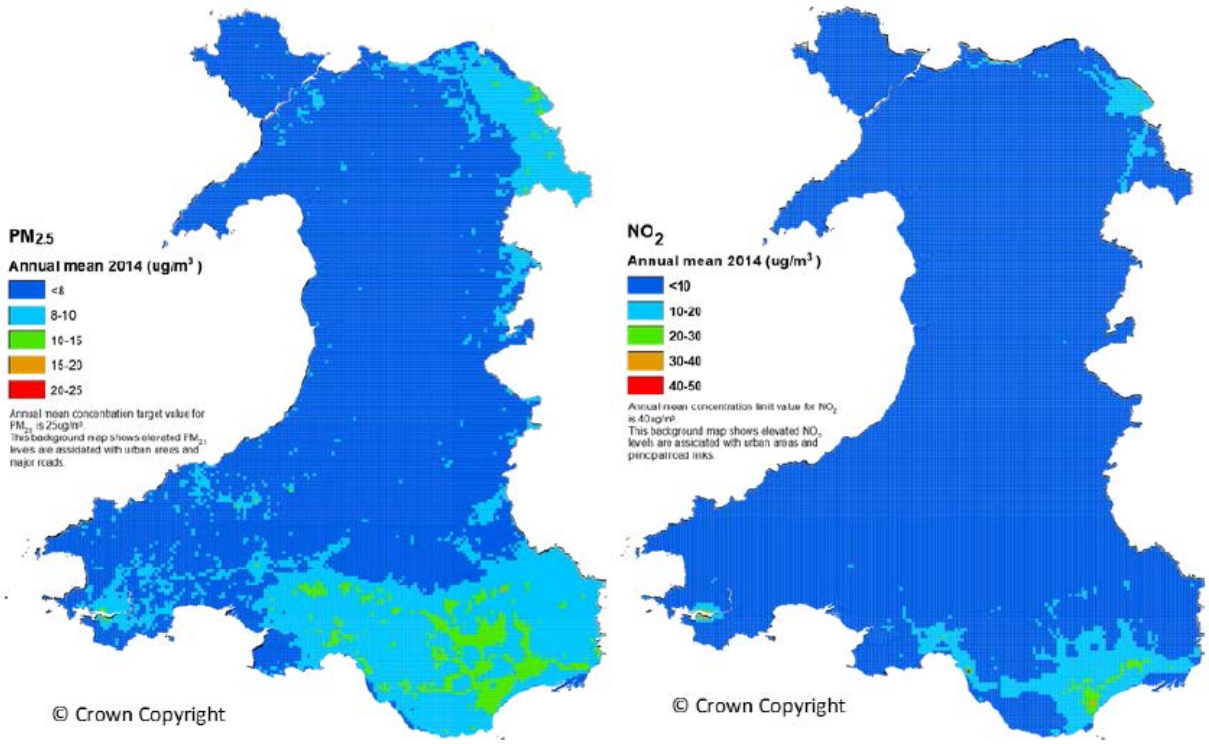
Baseline conditions and trends

Air pollution is a local, national and international problem caused by the emission of pollutants. In Wales, air quality is generally very good, largely due to its predominantly rural nature and historic decline in heavy industry which has resulted in a reduction in emissions of some pollutants, such as particulate matter (PM) and Nitrogen Dioxide (NO_2). However, there are some parts of the country that experience highly elevated levels of localised pollution, notably due to road traffic. Targets for NO_2, PM, nickel and polycyclic aromatic hydrocarbons are still being breached in certain parts of Wales thereby posing a threat to human health and the natural environment (SoNaRR, 2016).

There are currently 38 designated Air Quality Management Areas (AQMAs) in Wales all of which are found in the south particularly centred around urban centres such as Cardiff, Newport and Swansea and relate to vehicle emissions. However, one area of elevated air pollution from an industrial source also exists associated with Port Talbot, where Tata Steel is located (Defra, 2017). Only four designated AQMAs have been revoked in Wales, with the last AQMA being revoked in 2015 in Rhondda Cynon Taff. The other three revocations occurred in Cardiff in 2007 (two AQMAs revoked) and 2013. Figure 2-1 illustrates the highest concentrations of PM and NO_2 nationally.

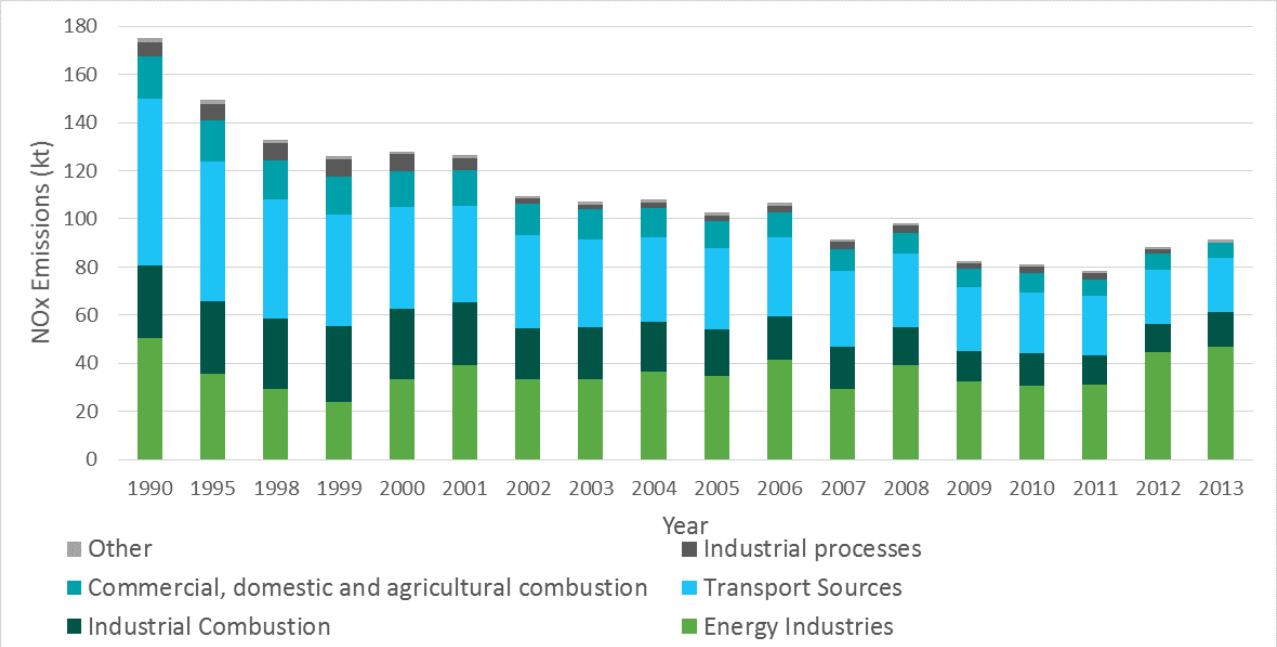
[3] Defra in partnership with the Scottish Executive, Welsh Assembly Government and the Department of the Environment Northern Ireland (2007) the Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Volume 1.

Figure 2-1 $PM_{2.5}$ and NO_2 concentrations in Wales (SoNaRR, 2016).



Levels of Nitrogen Oxides (NO_x) emissions have seen a significant decrease of over 50% between 1990 and 2013. The major contributor to NO_x emissions is the energy industry, however, the largest decrease in emissions between 1990 and 2013 was recorded by transport sources (see Figure 2-2).

Figure 2-2 Wales nitrogen oxides (NO_x) emissions by source sector (Defra, 2017)



Over time, air pollution is expected to decline as a result of continued regulation and, in particular the uptake of cleaner vehicle technologies. However, the volume of road traffic is expected to increase in the future.

Ammonia also remains an issue, both as a local air pollutant and as a contributor to the formation of secondary particulate matter. Concentrations of secondary particulate matter have risen in Wales in recent years, largely due to changes in agricultural practice. Indeed, 90% of semi-natural nitrogen sensitive Welsh habitats are subject to nitrogen deposition in excess of critical load limits (SoNaRR, 2016).

Data gaps

No significant data gaps have been identified for this topic at this stage.

3.1.2 Biodiversity, Flora and Fauna

Relevance to the NDF

Biodiversity refers to the variety of all living organisms. It can be seen at a number of levels, in terms of the diversity within species, the diversity between different species, and the diversity of different ecosystems (i.e. the environments within which species live). High levels of diversity ensure habitats and species are more resilient and able to cope with changes in the environment, both in terms of natural fluctuations and those caused by human activity, therefore supporting their long-term survival.

Ensuring the protection of biodiversity, including important marine, freshwater and terrestrial habitats, species and protected sites, as well as biodiversity in general (including non-designated sites) and its resulting benefits in terms of ecosystems services, in turn, will have benefits to an improved economic and social health of an area. Therefore, conserving biodiversity not only fulfils our global responsibility but will improve the quality of life for Wales' residents and help maintain its attraction as a place to live and visit.

The NDF protect and enhance biodiversity through helping to guide decisions through the planning process to ensure features of ecological importance, as well as their connectivity and the ecosystems services they provide, are protected and enhanced.

The Ministerial Forward in the Nature Recovery Plan emphasises the importance of the well-being of the future generations and their dependence on the health of our environment. The plan addresses the underlying causes of loss by putting nature at the heart of our decision-making, by increasing the resilience of our natural systems (ecosystems), and by taking specific action for habitats and species. It sets out how Wales will deliver the commitments of the EU Biodiversity Strategy and the UN Convention on Biological Diversity to halt the decline in our biodiversity by 2020 and then reverse that decline.

Baseline conditions and trends

The land area of Wales covers 2,078,224 ha. The Welsh marine area extends out to 12 nautical miles, covering just under 15,000 km^2 or 41% of the territory of Wales. Figure 2-8 shows the river catchments and other water features in Wales with more detail in section 5.1.5.

Wales has a wide representation of species across a broad range of taxonomic groups with estimates varying from 25,000 to 50,000 different species of animals, plants and other organisms. There are 20 Special Protection Areas (SPAs) for internationally important populations of birds and 92 Special Areas of Conservation (SACs) for other threatened species and natural habitats. 562 of the total 1,016 Sites of Special Scientific Interest (SSSI) (as of 2010) have individually qualifying species and 54 have species assemblages which qualify. Many of the same species are also found on sites that qualify for their habitat. The list of species and habitats of principal importance in Wales (the interim Section 7 list) includes 557 species (SoNaRR, 2016).

Species

The 2013 reports on the Annexes of the Habitats Directive and Birds Directive summarise the UK status and trends of the selected habitats and species and are important evidence resources. A summary of the Welsh results for species is presented in Figure 2-4.

From monitoring data collected for species features on Natura 2000 sites, the overall condition of SAC and SPA species features on these sites in Wales, as reported in 2013, was mostly unfavourable (55%) with the exception of birds and other mammals of which 86% and 68% were in favourable condition respectively.

In Wales, the interim Section 7 list of the Environment (Wales) Act has 557 species and 55 habitats of principle importance. These were originally selected for the Section 42 list of the Natural Environment and Rural Communities Act 2006 for prioritised action from the UK Biodiversity Action Plan using criteria based on the level of threat they face, the level of responsibility in Wales for their populations and whether remedial action could be taken to improve their status. The list includes species as diverse as slow-worm (*Anguis fragilis*), hornet robber fly (*Asilus crabroniformis*) and long-snouted seahorse (*Hippocampus guttulatus*).

An assessment of the status of some of the interim Section 7 species in comparison to their condition at the time of the last Biodiversity Action Plan report in 2008 is shown in Box 1 below.

Box 1 Assessment of the state of some of the Welsh priority species at broad taxonomic group level (SoNaRR, 2016).

Of the 104 invertebrate species listed as priorities, 67 were assessed. *21% of these were declining*, the outlook was *improving for 25%*, and the remaining *54% showed little change* in their status.

83 vertebrate species appear on the list of priority species and we assessed 78 of them. *37% of these were declining* and the outlook was *improving for 21%*. The remaining *42% showed little change* in their status.

Of the 87 fungi and lichens listed as priorities, 55 were assessed. *29% of these were declining*, the outlook was *improving for 27%* and the remaining *44% showed little change* in their status.

52 bryophytes feature on the priority species list and we assessed 49 of them. *47% of these were declining*, the outlook was *improving for 24%* and the remaining *29% showed little change* in their status.

The latest studies (2015) suggest that climate change may pose more of a threat to UK species than had been previously realised. A study of the impact of the 1995 drought on butterfly abundance showed that some widespread species, including large skipper (*Ochlodes sylvanus*) and green-veined white (*Pieris napi*), were particularly drought-sensitive. The impact of extreme weather events is also relevant to many invertebrates and birds on a yearly basis.

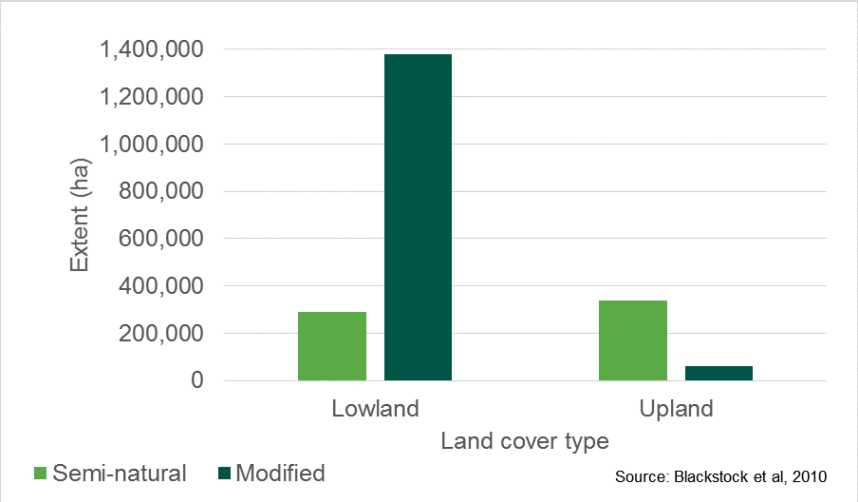
Climate change impacts such as acidification, sea temperature rises and extreme weather events have the potential to affect marine species through a number of factors including prey population dynamics, reproduction and distribution.

Habitats

The Habitat Survey of Wales (Phase 1 Survey) provides complete coverage of the country and was undertaken between 1979 and 1997. More detailed information for habitats which are a priority for conservation measures is provided by NRW's ongoing Phase 2 Habitat Survey.

The land-cover of Wales can be divided broadly into semi-natural habitats and modified land-cover types. Semi-natural habitats retain many of their characteristic species. Modified land-cover types include the built environment as well as land where ecological processes and species composition have been hugely altered, for example, improved grassland, arable land and conifer plantations. The representation of semi-natural habitat varies significantly across Wales. The Welsh lowlands are highly modified as shown in Figure 2-3. Of the lowlands 17.3% is semi-natural habitat, whereas of the upland area 84% is semi-natural habitat. Semi-natural habitats in Wales cover a total of 626,100 ha (30% of the Welsh land surface) (SoNaRR, 2016).

Figure 2-3 Summary of the representation of semi-natural habitats and modified land-cover types in Wales.



The extent, condition and trends of terrestrial species in Wales are influenced primarily by habitat management and by climate change. Habitat management directly influences plant community composition, amounts of bare substrate, shading and vegetation structure. Shading due to scrub encroachment, following changes in grazing regime, can be as damaging for butterflies and many other species groups as overgrazing or agricultural improvement. These effects are compounded by direct habitat loss which leads to fragmentation of suitable habitat types or conditions and the increasing influence of nutrient enrichment which leads to changes in plant communities and patterns of growth. As above, climate change is also a significant threat to both habitats and the species they support (SoNaRR, 2016).

Habitats of Principle Importance

In Wales, the interim Section 7 list has 55 habitats of principle importance, which were originally selected for the Section 42 list of the Natural Environment and Rural Communities Act 2006. These habitats cover terrestrial, freshwater and marine. They include for example, blanket bog, ponds and seagrass beds and were selected for prioritised action from the UK Biodiversity Action Plan (BAP) using criteria based on the level of threat they face, their relative importance as habitat in Wales and whether remedial action will be able to improve their status. Terrestrial habitats of principle importance extend over a total area of 387,300

ha. The most extensive of these in Wales (each with a resource of greater than 30,000 ha) include upland heathland, blanket bog, upland oak woodland, purple moor-grass and rush pasture, lowland dry acid grassland and coastal and floodplain grazing marsh. However, some key habitats of conservation importance are scarce, small in extent and highly vulnerable. Marine Intertidal BAP habitats extend over 15,000 ha. The most extensive intertidal BAP habitat, mudflats, covers over 14,000 ha and is found all around the coast of Wales. Honeycomb worm reefs cover 476 ha and are mainly found in South and West Wales. More than 50% of all BAP habitats were in decline in Wales in 2008 (SoNaRR, 2016).

International, European Protected Sites

European protected sites are designated either as exemplars of listed habitat and species types or specifically to conserve wild birds that are listed as rare and vulnerable. The protection of these sites makes a significant contribution to conserving the habitats and wildlife species that live there. Protected sites also exist in the marine environment, and work continues to ensure these sites contribute to an ecologically coherent network of marine protected areas in UK seas. These sites include Special Areas of Conservation (or SACs) Special Protection Areas (or SPAs) and Ramsar sites are called Natura 2000 sites and are internationally important for threatened habitats and species.

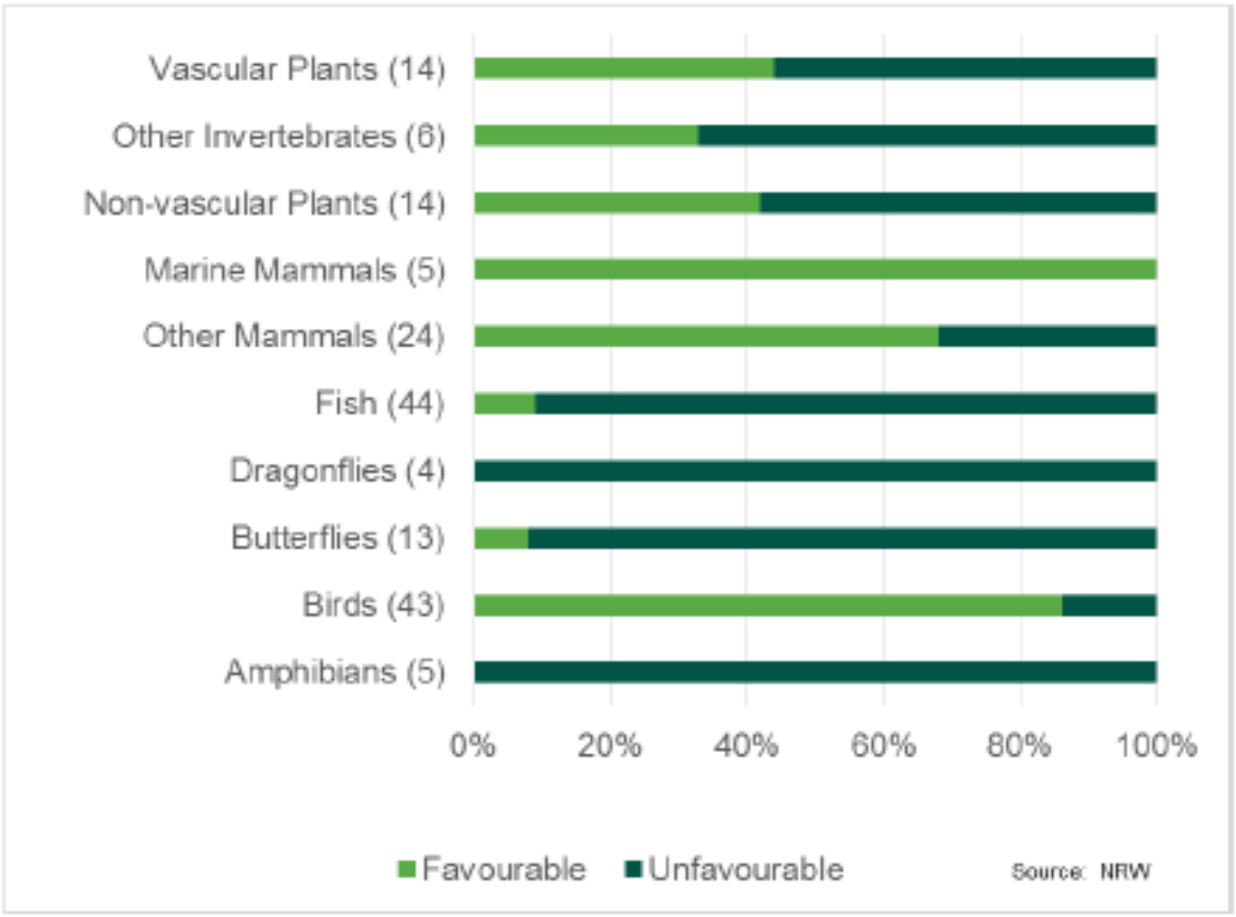
Special Protection Areas (SPA)

SPAs are strictly protected sites classified in accordance with Article 4 of the EC Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species (Defra, 2013).

SPAs in Wales include the coastline between Burry Port and Saundersfoot, sections of the Pembrokeshire coast and the coastline from Penarth to the Severn Bridge in South Wales. The area between Llandrindod Wells and Tregaron in Mid Wales and the South Gwynedd area and Northern coastline in North Wales. The spatial distributions of Welsh SPAs can be found in Figure 1 - Designated Nature Conservation Sites.

The condition of SAC and SPA species features on sites in Wales, as reported in 2013, remains mostly unfavourable (55%), with the exception of birds and mammals of which 86% and 68% were in favourable condition, respectively. A summary of the results for species is shown in Figure 2-4.

Figure 2-4 Overview of condition of Habitat and Bird Directive species features on SACs and SPAs. Number of features in assessment shown in brackets.



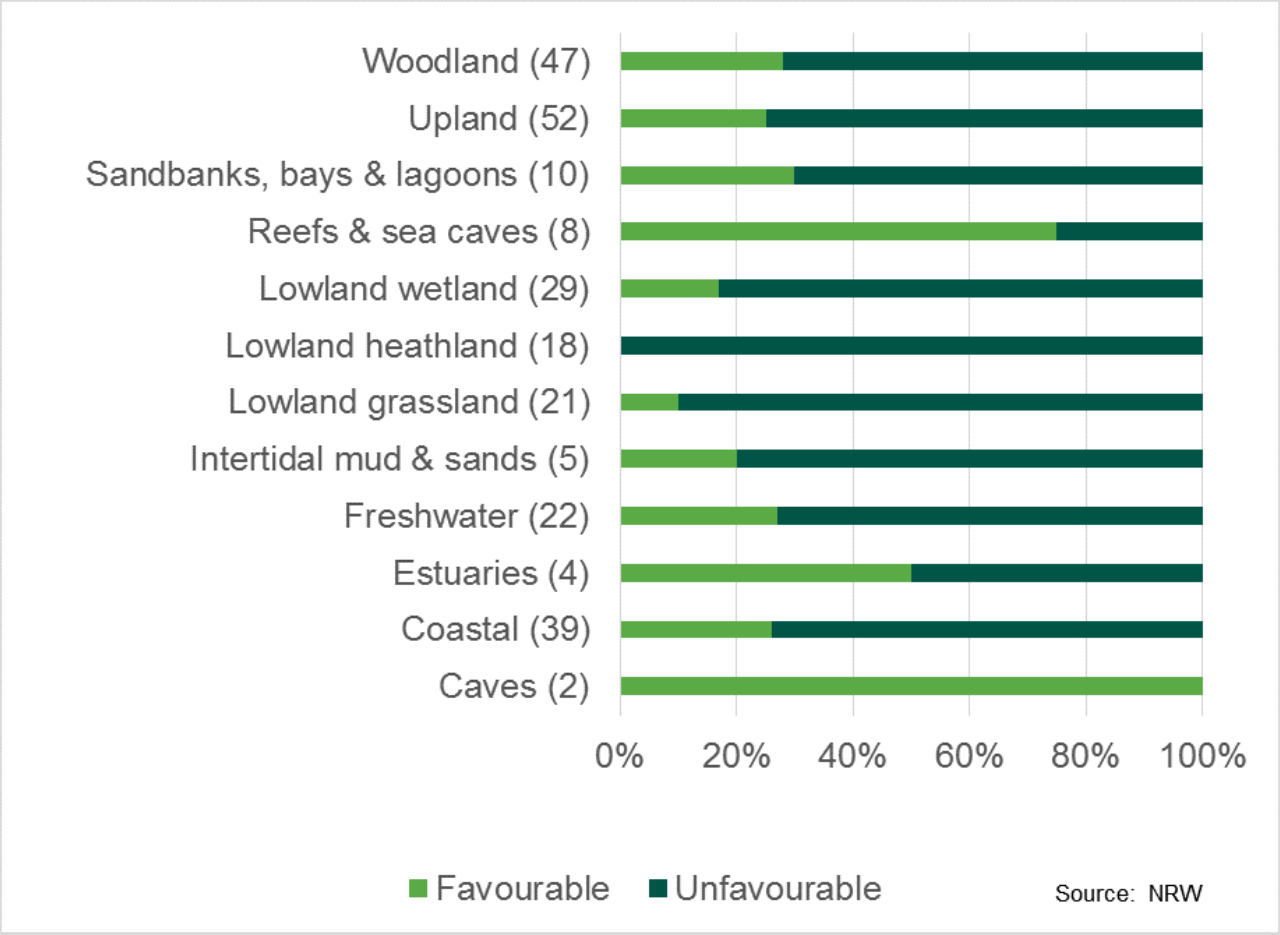
Special Areas of Conservation (SAC)

A Special Area of Conservation (or SAC) is a site designated under the Habitats Directive for their habitats and/or species of European importance.

SACs in Wales include the coastline between Burry Port and St. Davids, sections of the Pembrokeshire coast, and the coastline from Penarth to the Severn Bridge in South Wales. Large sections of the coastline between Cardigan up to Caernarfon in Mid Wales and the coast between Bangor and Conwy in North Wales are also protected under this designation. The spatial distributions of Welsh SACs can be found in Figure 1 – Designated Nature Conservation Sites.

Roughly a quarter of SAC habitats in Wales are in a favourable condition, see Figure 2-5.

Figure 2-5 Percentage of SAC habitat features in favourable and unfavourable condition. Number of habitat features in assessment shown in brackets (SoNaRR, 2016)



Ramsar Sites

The Ramsar Sites in Wales include wetlands that are considered of international importance under the Ramsar Convention.

Wales currently has 10 Ramsar Sites including The Dee Estuary, Llyn Idwal, Llyn Tegid and Corsydd Mon a Llyn in the north; Cors Caron, Cors Fochno and Midland Meres and Mosses in Mid Wales/Midlands; and Burry Inlet, Crymlyn Bog and Severn Estuary in the south. The spatial distributions of Welsh Ramsar sites can be found in Figure 1 – Designated Nature Conservation Sites.

UK Protected Sites

Sites of Special Scientific Interest (SSSI)

SSSIs help conserve and protect the best of the nation's wildlife, geological and physiographical heritage for the benefit of present and future generations.

SSSIs in Wales include coastline, freshwater, upland and lowland sites and range from small fens or sand dunes to woodlands and vast reaches of mountain. They can be notified for their biology and or geology. Geological sites range from quarries to rocky outcrops and massive sea-cliffs (Natural Resources Wales, 2016). As demonstrated in Figure 1 – Designated Nature Conservation Sites, the SSSIs in Wales are geographically spread across the country with a slight cluster in the rural areas of North Powys and South Gwynedd.

National Nature Reserves

National Nature Reserves are sites designated to conserve and to allow people to study their wildlife, habitats or geological features of special interest. They include mountain summits, sand dunes, ancient woodland, peat bogs and islands. There is a strong presence of nature reserves in the coastal areas of Wales. The highest concentration is to the east of the Llyn Peninsula. The spatial distributions of Welsh National Nature Reserves can be found in Figure 1 – Designated Nature Conservation Sites.

Marine Conservation Zones (MCZ)

The marine environment includes 2,740 km of coastline. The marine ecosystems in Wales form part of two wider biogeographic regions: the Irish Sea, and the Western Channel and Celtic Sea. There is a high diversity of habitats and species including sediment and biogenic habitats, sessile and highly mobile species. A proportion of marine habitats are surveyed and mapped, but for some areas our understanding only comes from modelling.

In 2014, the first MCZ in Welsh waters was established. Skomer MCZ is situated around the island of Skomer and the Marloes Peninsula in Pembrokeshire, South West Wales. Before 2014 the area had been Wales' only Marine Nature Reserve for 24 years (Joint Nature Conservation Committee). This is clearly visible in Figure 2-6 below.

Figure 2-6 Skomer Marine Conservation Zones – The first and only current MCZ in Wales situated off the South-West coast of Wales.

Dyfi Biosphere

The UNESCO Biosphere reserve status is a voluntary designation for areas where locals work with biodiversity and its sustainable use. Sites are nominated by national governments and must fulfil three aims:

- Conservation protecting, wildlife, habitats and the environment;
- Development – encouraging a sustainable economy and community; and
- Education – supporting research, monitoring, and building global networks to share and learn.

The Dyfi Biosphere[4] in Mid Wales includes high peat moorland, a wide estuary, sand dunes and beaches, broadleaved woodland, coniferous forest, farmland, saltmarsh and large lowland peat bog.

GeoParks

Global Geoparks are areas of geological heritage of international significance where that heritage is used to promote the sustainable development of the communities who live there. Their activities are diverse and may cover education, sciences, sustainable development and geotourism. There are seven Geoparks in the UK (2 in Wales, 1 in Northern Ireland, 2 in Scotland and 2 in England) in mostly rural territories in some of the most deprived areas of the country. [5]

The 2 Geoparks in Wales are:

- Geo Môn[6], Anglesey which is 720 km^2 and includes 201km of coastline; and
- Forest Fawr[7], Brecon Beacons which is 763 km^2 and includes mountain and moorland, woods and meadows, towns and villages, lakes and rivers.

Data gaps

No significant data gaps have been identified for this topic at this stage.

[4] http://www.dyfibiosphere.wales/?lightbox=dataItem-ixgpdupm
[5] Wider value of UNESCO to the UK 2012-13
[6] http://www.geomon.co.uk/
[7] http://www.fforestfawrgeopark.org.uk/

3.1.3 Flood Risk

Relevance to the NDF

Flooding is a key area in which the effects of climate change are felt locally. Flood risk both in the present day and in the future is a significant issue in Wales including coastal, fluvial and surface water flooding.

Measurements indicate that over the past century air and ocean temperatures have increased, rates of ice melt in valley glaciers and ice caps have accelerated and sea levels have risen. However, the extent of future warming and both the nature and geographical distribution of its impacts are the subject of much greater uncertainty. Scientists predict that climate change will result in increased sea-levels, increased average annual temperatures, warmer wetter winters, hotter drier summers and an increase in extreme weather events. These factors have significant implications for both our human and natural environment. Flooding is a key area in which the effects of climate change are felt locally.

Baseline conditions and trends

Figure 2-7 presents the Technical Advice Note (TAN) 15 development flood risk areas, including the identification of areas served by significant infrastructure including flood defences; areas without flood defences; areas known to have had past flooding events; and areas at little or no risk of fluvial coastal or tidal flooding. The North West, North East, and South East regions are areas that have a high risk of flooding due to the extent of watercourses. Shoreline Management Plans (SMPs) provide a large-scale assessment of the risks associated with coastal processes that result in both erosion and flooding and presents a policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner. Wales is covered by the following SMPs:

- SMP 19 Anchor Head to Lavernock Point (Severn Estuary);
- SMP 20 Lavernock Point to St Ann's Head (South Wales);
- SMP 21 St Ann's Head to Great Ormes Head (West of Wales); and
- SMP 22 Great Ormes Head to Scotland (North West England and North Wales).

Overall it has been assessed that:

- There are at present around 208,500 properties at risk from flooding from rivers and sea in Wales. Around 163,000 properties are at risk from surface water flooding.
- Natural Resources Wales[8] estimates that 33 properties could be lost to coastal erosion over the next 20-50 years, and about 156 could be lost in the next 50-100 years. These estimates take into account the interventions proposed in the Second Generation Shoreline Management Plans. Without the interventions, these figures could increase to about 559 properties within 20-50 years and about 2,126 in 50-100 years.

[8] NRW (2015) Flood and Coastal Erosion Risk Management in Wales 2011-2014

Figure 2-7 TAN 15 Development Flood Risk

Source: Development Advice Maps, Welsh Government

The Welsh Government endorses the conclusions of the UK Climate Change Risk Assessment 2017 on flood risk and the need to manage and adapt to it is a very significant issue for Wales in the future as the risks brought about by climate change are anticipated to exacerbate flooding issues in the future. The most recent information for Wales from the UK Climate Impacts Programme (UKCP09) forecasts that by 2080 (under a medium emissions scenario), there will be an increase in winter mean precipitation of 19% (it is very

unlikely to be less than 4% and it very unlikely to be more than 42%). Sea levels are forecast to increase by 36.2 cm compared to 1990 levels[9].

Almost 28% of the coast has some form of artificial protection, whilst 23.1% of the Welsh coast is considered to be eroding, with the potential to affect people, properties and infrastructure. In addition, both erosion and coastal protection have the potential to affect protected sites, although allowing dynamic processes to take place is usually considered to be positive.

Flooding is not only a pressure on communities and built structures but also causes impacts on the environment, as seen in the 2013-14 winter storms. These storms caused £8.1 million of damage to flood defence structures, in addition to the financial costs associated with the approximately 300 properties that were flooded. Knock-on effects from flooding events also include damage to infrastructure, and disruption to people's lives such as a loss of work and being able to travel, loss of local facilities and services, impacts on local business and the economy, as well as impacts on health and well-being through pressure on local services as well as potential mental health consequences.

The work by NRW, Lead Local Flood Authorities, Internal Drainage Boards and Water and Sewerage companies has sought to manage flooding and coastal erosion. In the winter storms of 2013/14, it is estimated that approximately 75,000 properties and 34,000 hectares of agricultural land was protected from flooding. Between 2011 and 2014, in excess of 340 coastal and river flood defence schemes were delivered, reducing flood risk to approximately 6,700 properties (Welsh Government Climate Change Annual Report 2014). It is estimated that £2.96 billion of damage to properties was avoided as a result of protection from defences (SoNaRR, 2016). The trends in hydrological processes, which include sea-level rise and increased storminess, are likely to increase the likelihood and consequences of coastal flooding and erosion.

Data gaps

No significant data gaps have been identified for this topic at this stage.

3.1.4 Geology and Soils

Relevance to the NDF

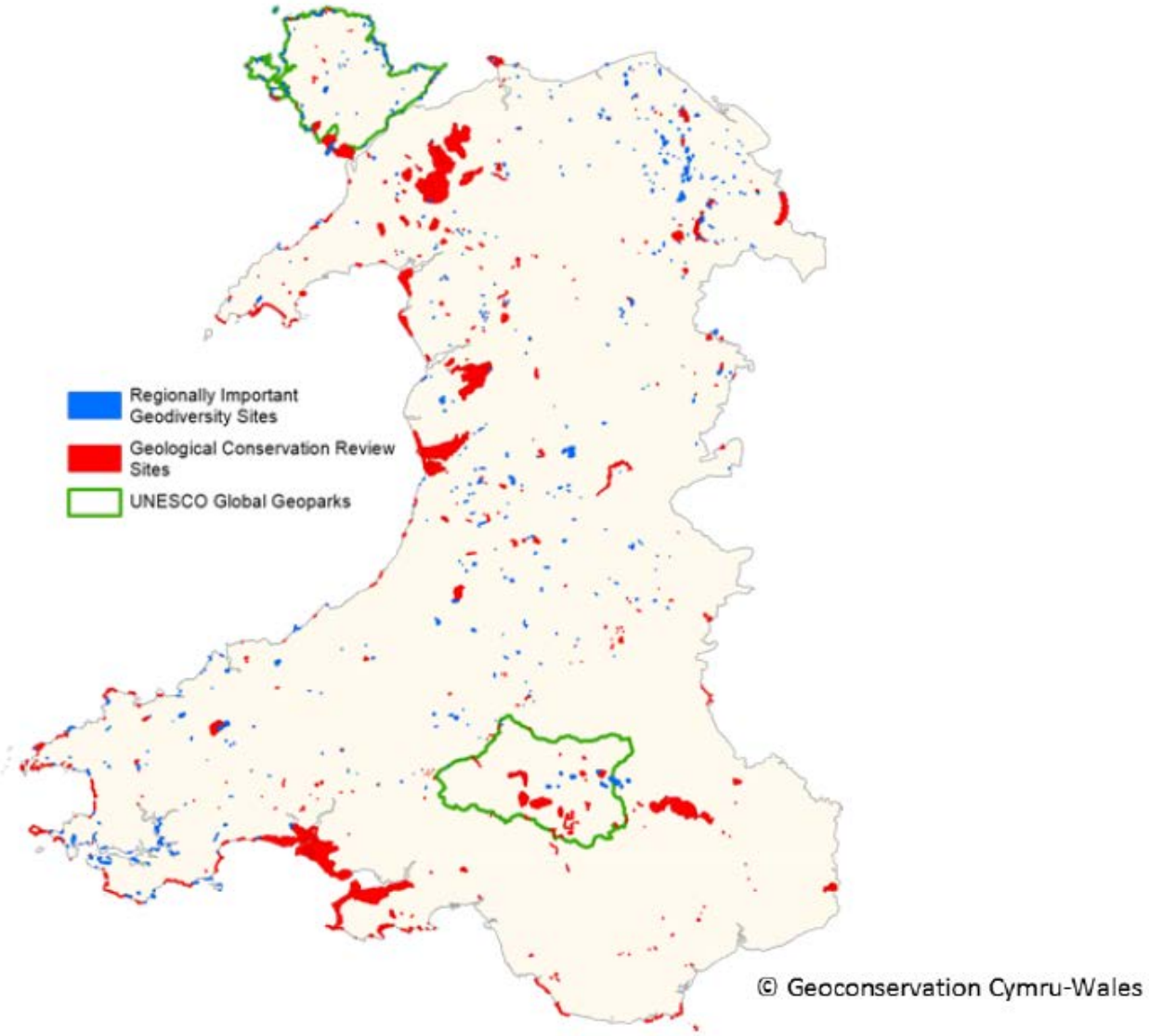
Wales has some of the most varied geology in the world representing all geological periods and spanning 1.4 billion years of the Earth's history. This diverse geology not only underpins the country's biodiversity and landscape but also provides important mineral resources. The protection and sustainable use of geological diversity, soil resources and minerals can be delivered through the guidance within the NDF.

Baseline conditions and trends

As identified above, Wales' geodiversity is significant. 300 SSSIs in Wales, covering 48,815 ha, contain some 500 geological features and 93% of these features are in favourable condition. Figure 2-8 illustrates the distribution of geological SSSIs and Regionally Important Geodiversity Sites (RIGS). Two UNESCO Global Geoparks, Geo Môn and Fforest Fawr, cover 1,483 km^2 of Wales and are also designated for the primary purpose of promoting geo-tourism (SoNaRR, 2016).

[9] UK Climate projections (2009) maps and key findings. Available: http://ukclimateprojections.defra.gov.uk/21708#key (accessed March 2017)

Figure 2-8 Welsh Geodiversity Sites (SoNaRR, 2016).

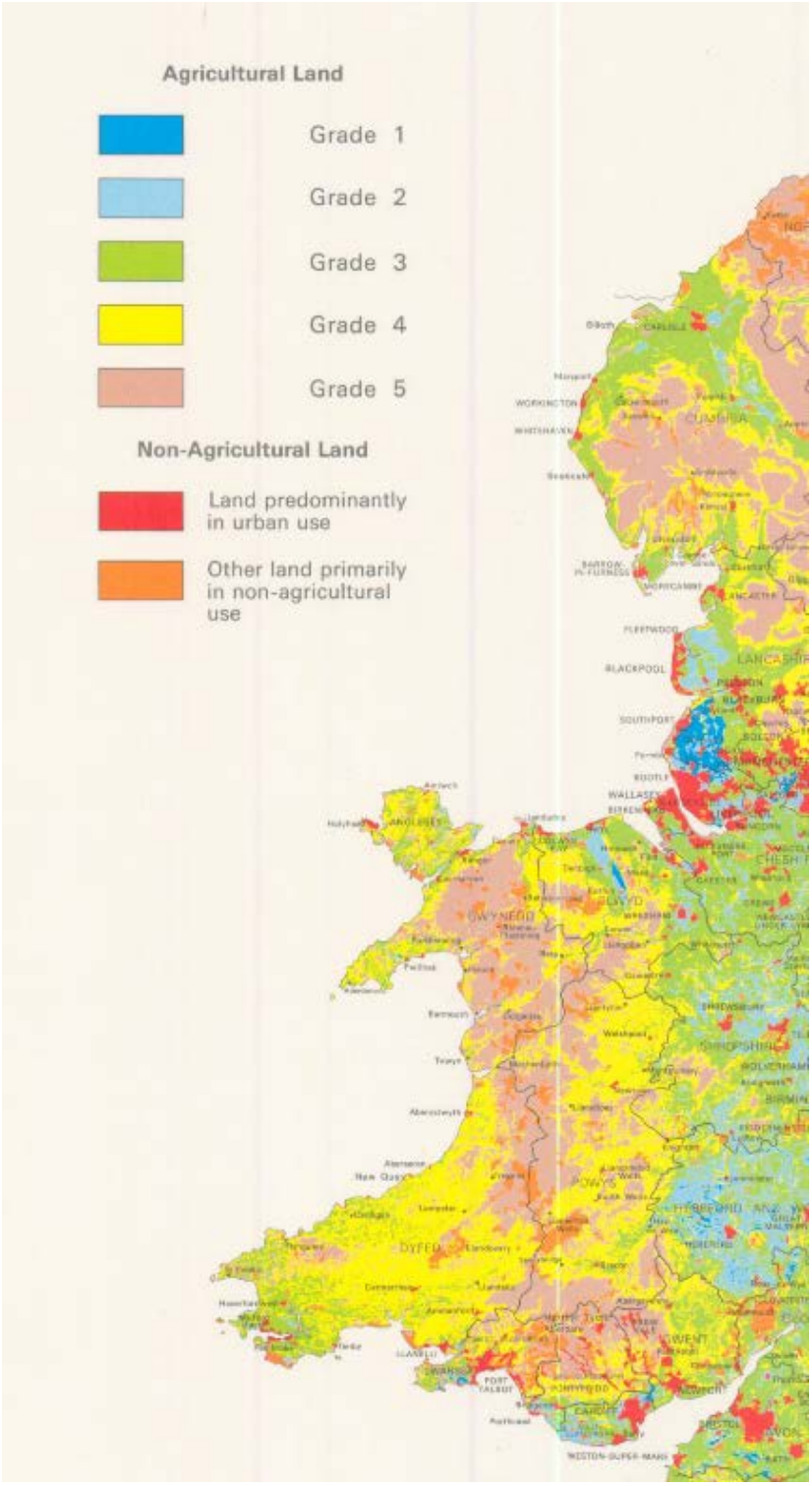


In the future, geological hazards may change as a response to climate change. For example, coastal erosion, landslides and pollution from former mine sites. Exploration for conventional and unconventional sources of oil and gas also remains a possibility in Wales and its consideration will form a part of the emerging Welsh Government Energy Strategy.

The soil and agricultural land quality of Wales is reflective of the topography and geology of the country. The soil types are diverse with over 400 different soil types present across the country, which contribute to a rich geodiversity and biodiversity, landscapes and land uses. The majority of Wales is either Grade 4 or 5 in the Agricultural Land Classification, as shown in Figure 2-9. This classification is generally considered to be of poor or very poor quality agricultural land and is largely due to the predominantly upland nature of Wales. This has a strong influence on the types of agriculture feasible, lending itself more towards livestock farming. The soils of best quality and most productive agricultural land are a scarce and finite resource in Wales accounting for less than 7% of land area.

Soil quality has deteriorated over time across all habitats apart from woodlands where there has been some improvement (SoNaRR, 2016).

Figure 2-9 Agricultural Land Classification Map of England and Wales (extract) (Natural England).

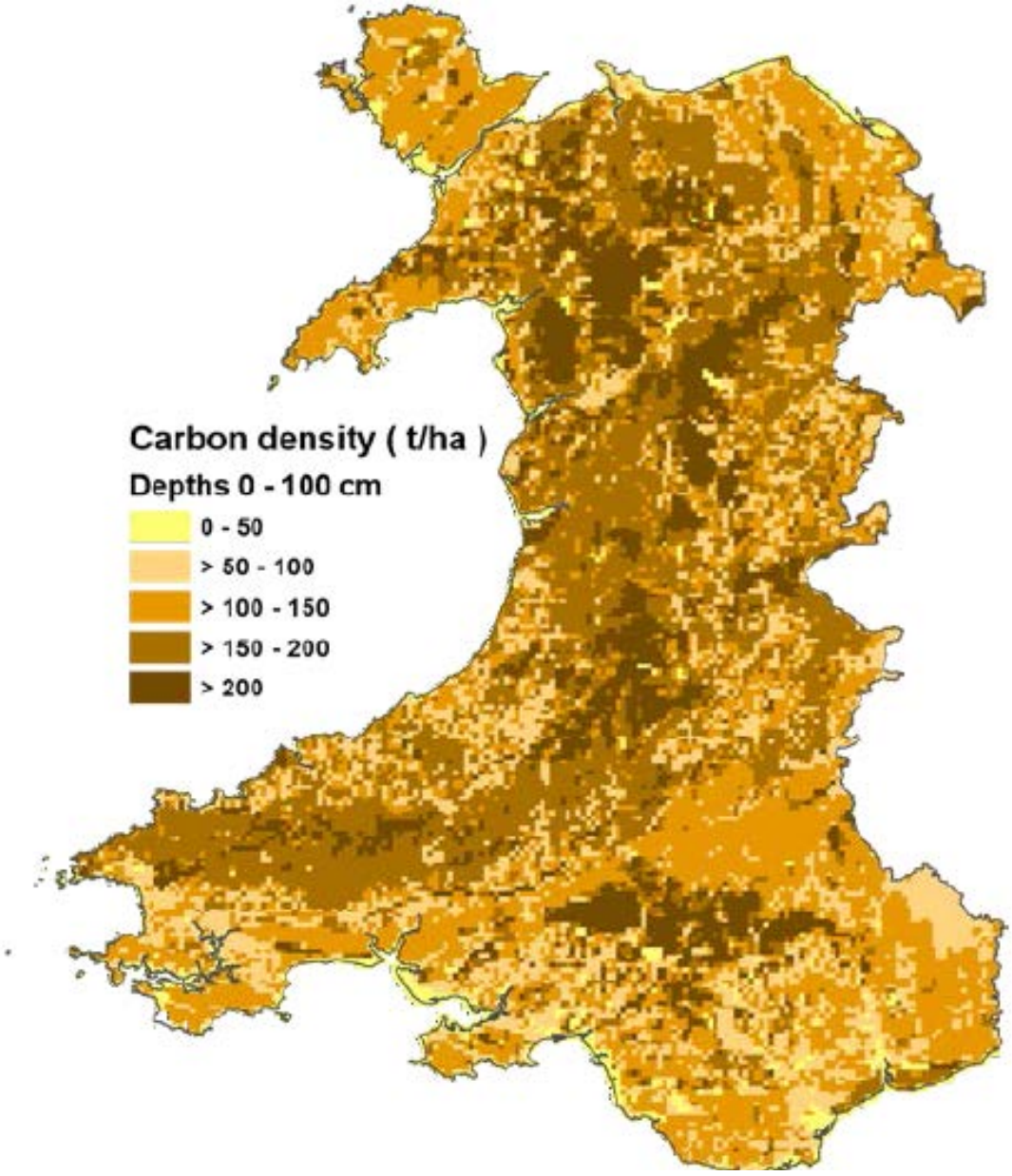


Whilst the severity and spatial extent of soil erosion has not been directly quantified in Wales, around 10-15% of grassland fields in England and Wales are thought to be affected by severe soil compaction and 50-60% are in moderate condition. Only 30% of the Welsh peat soil area is considered to be in 'good condition' (SoNaRR, 2016).

Remediation has been completed at 97 of the 111 Contaminated Land sites identified in Wales, but around 9,330 potentially contaminated sites have yet to be investigated (SoNaRR, 2016).

Welsh soils contain 410 million tonnes of carbon. The carbon density of Wales on the whole, is relatively high with the densest areas mainly being upland parts of the country. Again, this reflects the country's upland nature and large quantities of peaty soils. Figure 2-10 below, shows the carbon density of Wales at a depth of 0-100cm. Topsoil carbon concentrations are generally stable and there is ongoing recovery from soil acidification (SoNaRR, 2016).

Figure 2-10 Distribution of soil carbon in Wales, shown as carbon density (t/ha) depth 0-100 cm (SoNaRR, 2016).



Data gaps

No significant data gaps have been identified for this topic at this stage.

3.1.5 Water Environment

Relevance to the NDF

Water is central to life. Wales relies on considerable quantities of water to produce resources, transport goods, provide recreational benefits, as a drinking resource and to grow food. The quality and quantity of water is therefore vitally important.

The NDF can help manage the water environment through helping to guide decisions through the planning process relating to development that could harm water quality or put pressure on water resources. It also has a role to play in environmental protection in general through its guidance.

Baseline conditions and trends

Freshwater

The Geodiversity sites map of Wales in Figure 2-8 was produced under the requirements of the Water Framework Directive. The map shows the river catchments and other water features in Wales. Water resources across Wales tend to range from a good to poor classification but are very rarely classed as high or bad. In particular, the river catchments in the south and Cardigan Bay are classed as moderate or good.

The landscape and geology of Wales provide few natural stores of water either in aquifers or soils. This means that rainfall generally travels quickly to our rivers and streams and little is held back to slowly pass through the ground to maintain river flows (base flows) in drier periods. Rivers rise rapidly when it rains and drop quickly afterwards. As a consequence, the flows in all Welsh rivers can change particularly quickly leading to flood conditions, but also as importantly, to very low flows whenever we have extended periods of dry weather. The lack of natural water storage in Welsh catchments means that reservoirs are useful to ensure reliable sources of water during drier periods.

Although Wales is perceived to be water rich, we are facing challenges. For example, in 7% of our water bodies, water is only reliable for people to abstract 30% of the time for new consumptive abstractions. In approximately 60% of water bodies, water is reliable for people to abstract for at least 95% of the time for new consumptive abstractions (SoNaRR, 2016).

The Water Framework Directive required the UK to achieve ‘good’ status of all water bodies (including rivers, streams, lakes, estuaries, coastal waters and groundwater) by 2015. Water Framework Directive (WFD) investigations have identified 29 (3%) water bodies that have failed to meet objectives because of changes to flows and water levels (SoNaRR, 2016).

In 2015 Cycle 1 for Wales 37% of water bodies achieved good or better ecological status. For Wales in Cycle 2, in 2015 over 38% of water bodies achieved good or better ecological status. 39% relates to the overall figure (combined ecological and chemical) for Wales in Cycle 1 2015. 42% refers to the predicted number of water bodies in 2021. (Natural Resources Wales). Figure 2-11 details the Water Framework Directive Cycle 2 results (2015-2021).

Climate change is predicted to affect the amount and distribution of rainfall, which has an impact on flows and water levels, drought and flood events. Work carried out in 2002 showed that by 2050 river flows in winter may rise by 10-15%, but in the summer and early autumn could reduce by over 50%, and as much as 80% in some places. Droughts and flood events may become more common. Climate change may affect groundwater recharge. By 2025 it is likely that groundwater recharge will decrease, resulting in decreased dry weather river flows and a general lowering of groundwater levels. This may have impacts on base-flow to rivers and wetlands in dry periods and affects small domestic and agricultural water supplies. The CCRA17 Evidence Report has identified risks to aquifers and habitats from salt water intrusion. (SoNaRR, 2016).

Marine & coastal

The Welsh marine area extends out to 12 nautical miles, covering just under 15,000 km^2 or 41% of the territory of Wales. 35% of Welsh marine waters are designated as marine protected areas (Special Areas of Conservations, Special Protection Areas, Sites of Special Scientific Interest with intertidal features, Marine Conservation Zones and Ramsar sites) (SoNaRR, 2016).

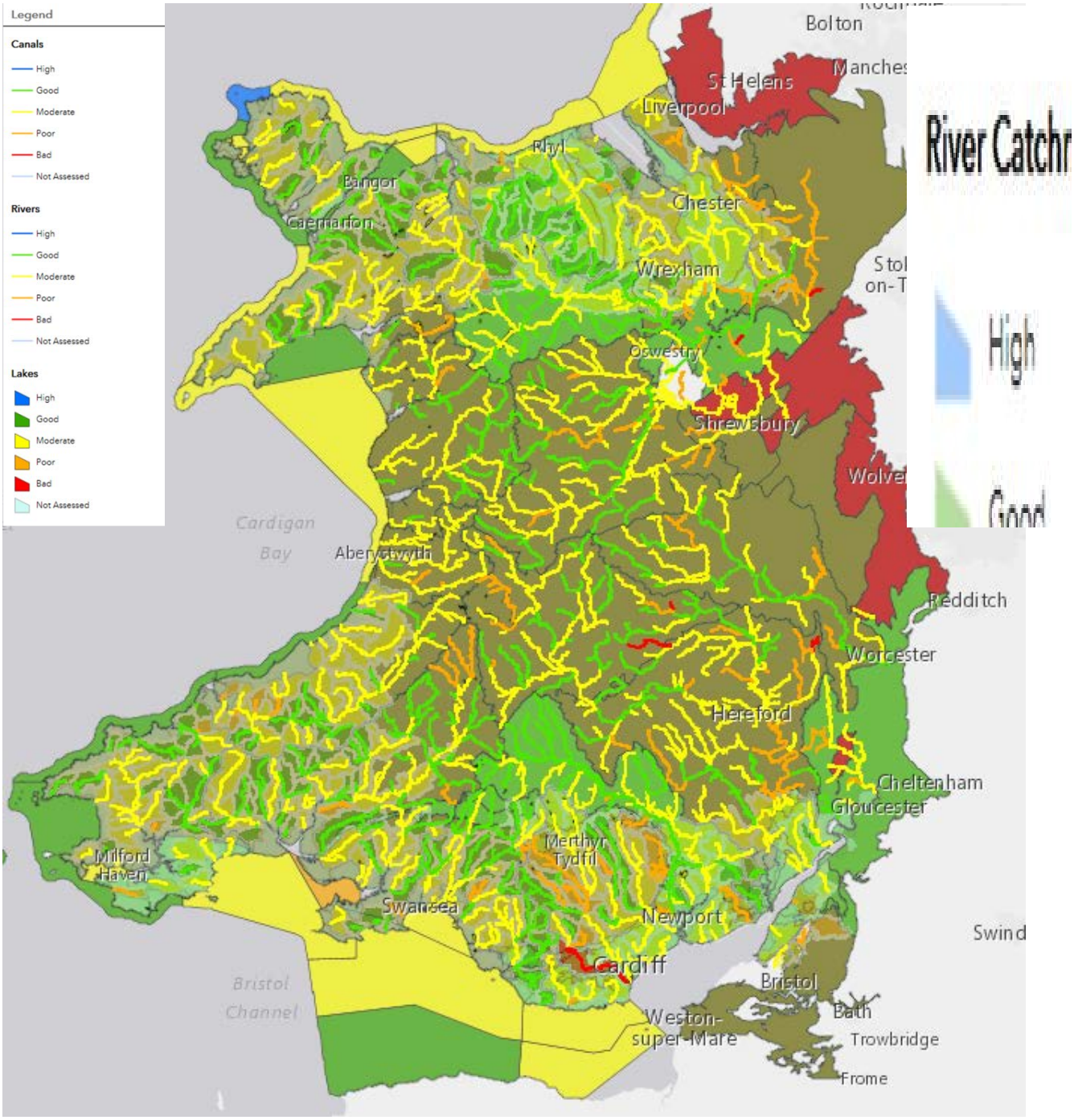
The marine environment remains highly diverse. There have been improvements in water quality in recent years. Evidence suggests marine habitats are in variable condition but they are able to support healthy

populations of many species of seabirds and marine mammals. Wales has contributed to the good progress made towards achieving Good Environmental Status for UK waters by 2020, as defined in the UK Marine Strategy Part One (SoNaRR, 2016). The number of designated bathing waters has increased from 50 in 1990 to 102 in 2015. Over this period, their quality has improved due to significant investment to improve discharges from water company assets and to address diffuse pollution in and around bathing waters. In 2015, 82 bathing waters were excellent, 16 good and 4 sufficient. This was 100% compliance with the directive.

A number of further marine SACs and SPAs have been proposed in Welsh waters and, if designated, these additional sites would increase the combined coverage of marine protected areas in Welsh waters. Historically, the marine environment around Wales has suffered significant habitat loss, with key examples being coastal habitat (particularly saltmarsh) and subtidal native oyster beds. A key issue is to understand opportunities to restore or facilitate the recovery of these ecosystems as well as to identify the wider social and economic benefits that such projects could provide for Wales. The CCRA17 Evidence Report has identified risks to and opportunities for marine species, fisheries and marine heritage from ocean acidification and higher water temperatures.

Hydrological processes such as tides, waves and water temperature are influenced primarily by large scale oceanographic processes but with the potential for small to medium-scale effects from anthropogenic influences. Climate change effects are the main broad scale driver of change for coastal and marine hydrological processes, and include changes to tidal levels due to sea-level rise and increased storminess leading to increases in wave energy. The CCRA17 Evidence Report has identified risks to offshore infrastructure from storms and high waves. Changes to hydrological processes from either climate change or, at a smaller scale, from infrastructure development in the marine and coastal environment can affect seabed and coastal geomorphology and associated habitats and species. Hydrological processes provide an important resource for wave, tidal stream and tidal range renewable energy. (SoNaRR 2016).

Figure 2-11 Wales Water Framework Directive Cycle 2 results (2015-2021)



(Source: Natural Resources Wales, Water Watch Wales Cycle 2: Rivers and Waterbodies)

Welsh Water supply drinking water to most of Wales and parts of England. Around 95% of its water resources originates as surface water either from reservoir storage or river abstractions. Welsh Water has 65 impounding reservoirs which are water storage areas mainly created by building dams, 68 water treatment works, where reservoir water is treated so it can be drunk from the tap, and it supplies an average of 840 million litres of water every day through a network of 27,400 km of water mains. As many reservoirs and water treatment works are on high ground, gravity helps supply much of the water required (Welsh Water).

Whilst Wales is perceived to be water-rich, it is already facing challenges. For example, in 7% of water bodies, water is only reliable for new consumptive abstractions for 30% of the time. This is anticipated to be a continued concern in the future (SoNaRR, 2016).

Groundwater provides a third of the drinking water in England and Wales, and it also maintains the flow in many of our rivers. All of Wales is classified as a Drinking Water Protected Areas under the WFD.

In Wales, the EC Nitrates Directive (91/676/EEC) was brought into law through the Nitrate Pollution Prevention (Wales) Regulations 2013. A Nitrate Vulnerable Zone (NVZ) is an area of land draining into ground or surface waters that are currently high in nitrate, or may become so if appropriate actions are not taken. Around 2.4% of Wales is currently within an NVZ.

Data gaps

No significant data gaps have been identified for this topic at this stage.

3.1.6 Minerals and Waste

Relevance to the NDF

As described above, Wales' diverse geology provides important mineral resources which underpins the country's construction and energy industries and is therefore an important aspect of the economy. Waste can also be viewed as a resource, both in terms of recycling and re-use for other purposes or as a source of energy.

The sustainable use of these minerals and waste resources can be delivered through the guidance within the NDF.

Baseline conditions and trends

Following a long history, metal mining has ceased and there is only localised coal mining and slate quarrying in Wales. The aggregates industry is now the main mineral extraction industry in Wales, including marine and terrestrially derived aggregates. In 2014, the largest extraction of minerals in tonnes was limestone and dolomite (see Table 2-1 (SoNaRR, 2016)).

Table 2-1 Mineral Production in Wales for 2014 (SoNaRR, 2016)

Mineral	Thousand Tonnes Extracted
Coal (deep-mining)	91
Coal (opencast)	2,343
Igneous Rock	1,905
Limestone and Dolomite	8,934
Sand and ravel (land)	673
Sand and gravel (marine)	632
Sandstone	2,774
Total	**17,352**

The data produced by the National Minerals Map and Aggregate Safeguarding Map of Wales[10] project assists national and local government by depicting the location and extent of mineral resources throughout Wales and highlighting aggregate mineral resources that should be safeguarded.

Geographically, different regions of Wales possess different types of natural resources. The Mineral Resource Maps show all minerals which geologically have resource potential in Wales. South Wales is dominated by the presence of sandstone with potential for high specification aggregate in the south east and limestone towards Carmarthenshire and Pembrokeshire in the south west. Similar to South Wales, Mid Wales is dominated by bedrock resources such as sandstone and limestone whereas North Wales has a greater presence of superficial resources such as sand and gravel.

[10] https://www.bgs.ac.uk/research/ukgeology/Wales/mineralsMap.html

The future trend in minerals extraction is heavily influenced by the national economy and confidence in the construction industry. Exploration for conventional and unconventional sources of oil and gas also remains a possibility in Wales and its consideration will form a part of the emerging Welsh Government Energy Strategy.

The Welsh Government publication, 'Towards Zero Waste 2010–2050' aims for Wales to become a a high recycling nation by 2025 and a zero-waste nation by 2050. The 2015 Progress Report identifies the following key statistics and trends:

- Wales leads the UK in recycling municipal waste by a significant margin, achieving 54.3% in 2013/14.
- Wales has reduced waste sent to landfill at permitted sites by 37% between 2010 and 2013.
- Since 2009-10, Wales has made progress in reducing household waste arisings by an average of 1.8% per year, and the recycling rate of local authority collected waste has improved by 13.8%.
- Wales met the EU target 2020 for biodegradable waste collected by local authorities and others sent to landfill eight years early.
- Wales has also reduced the greenhouse gas emissions from waste by 4.7% per year since 2007, exceeding the target reduction of 3% per year set in the Climate Change Strategy.

Table 2-2 shows the total amount of waste per sector that was not recycled, re-used or composted as a percentage of overall municipal waste production. This shows a steady decrease in the amount of waste sent to landfill. This trend is echoed in the commercial and construction sectors.

Table 2-2 Percentage of Municipal Waste sent to Landfill (Statistical Bulletin 'Local authority municipal waste management report for Wales, 2013-14', Welsh Government)

Year	% municipal waste sent to landfill
2009-10	59.5%
2011-12	50.0%
2013-14	45.7%

Data gaps

No significant data gaps have been identified for this topic at this stage.

3.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Air Quality

Air quality in Wales is generally very good, reflective of its largely rural nature and high quality natural environment. However, targets are being breached for a number of key pollutants (nitrogen dioxide, particulate matter, nickel and polycyclic aromatic hydrocarbons) which pose a risk to human health in particular that of vulnerable groups such as young people, older people and those with heart and respiratory conditions and the natural environment. These notably occur in urban areas and adjacent to busy roads and comprise particulate matter (PM) and nitrogen dioxide concentrations.

Ammonia remains an issue both as a local air pollutant and as a contributor to the formation of secondary particulate matter. Concentrations of secondary particulate matter have risen in Wales in recent years, largely due to changes in agricultural practice.

90% of semi-natural nitrogen sensitive Welsh habitats are subject to nitrogen deposition in excess of critical load limits.

Since controls on air pollution were introduced in the 1980s there has been a significant recovery in surface water quality from the effects of acidification.

Biodiversity, Flora and Fauna

Wales has a rich and varied natural environment including a wide representation of important habitats and species. However, the condition of species features in European designated sites in Wales and the condition of priority habitats in Wales remains mostly unfavourable. Between 2002 and 2008, fewer than half of the species on the interim Section 7 list were considered to be stable or increasing. Wales (along with the UK as a whole) did not meet the 2010 international and national biodiversity targets (SoNaRR 2016).

Terrestrial, freshwater and marine biodiversity is under threat from development, pollution and climate change. All species are directly affected by changes in habitat quantity and quality. These changes are directly related to changes in the intensity of management regimes. Fragmentation and eutrophication create particular problems for many species. The CCRA17 Evidence Report has identified risks to species and habitats due to their inability to respond to changing climatic conditions. There may also be opportunities from new species colonisations. Conversely, native wildlife may be increasingly at risk from pests, pathogens and invasive species. There are also risks from change in the frequency and/or magnitude of extreme weather and wildfire events. Climate change is influencing the expansion or contraction of some species' ranges and populations, and the increasing frequency of extreme climatic events, predicted in many climate change scenarios, may have serious implications.

The intensity of natural resource use has already severely affected habitat quality and biodiversity. The potential for future generations to enjoy the same benefits from natural resources and ecosystems that we experience today could reduce if we continue to use or manage our land at an intensity which leads to over-exploitation of stocks. Along with land-uses and consequential habitat changes, the way we use and exploit our natural resources is the most prominent pressure on biodiversity. Increased intensity of use and overexploitation also reduce the potential of our habitats to adapt to the changing climate.

The UK Climate Change Risk Assessment 2017: Evidence report, highlights a number of key risks and opportunities facing Wales with regard to biodiversity including risks to species and habitats including inability to respond to climatic conditions, changes to agricultural and forestry productivity, increased seasonal aridity and wetness, impacts on natural carbon stores and carbon sequestration, impacts on agricultural and wildlife from water scarcity, pests and extreme weather events etc., flooding, higher water temperatures, sea level rise, ocean acidification, changes in landscape character and opportunities for new species colonisation. These should be taken into consideration in the NDF.

Flood Risk

Flood risk is a significant issue in Wales including coastal, fluvial and surface water flooding. This will be exacerbated over time, by an increase in extreme weather events and this means that the existing risk to properties and businesses, as well as health and well-being, will become even more prominent over time. Flood risk may also be exacerbated through unsustainable land use practices, including development and channel modifications, which can lead to increased flow rates and subsequent erosion. The impact on the local economy as a result of flooding is also a key issue – not only in terms of direct clean-up/recovery/repair costs, but also from impacts such as disruption to local services, loss of trade to local businesses (including agriculture) and working days lost.

Geology and Soils

In the future, geological hazards may change as a response to climate change. For example, coastal erosion, landslides and pollution from former mine sites. This poses risks to the human and natural environment.

The soils of best quality and most productive agricultural land are a scarce and finite resource in Wales and soil quality has deteriorated over time across all habitats, except woodland. Only 30% of the Welsh peat soil area is considered to be in 'good condition'. This is important for biodiversity, landscape character, tourism, agricultural productivity and climate change resilience. Topsoil, in particular peaty soils in Wales are a major carbon sink which needs protection**.**

Water Environment

The quality of Wales' water bodies is still not up to Water Framework Directive requirements with only 42% being of good ecological status in 2014. Land management and development practices are a key contributor to poor water quality.

In many Welsh rivers flows are particularly vulnerable to climate change because they tend to rise and fall quickly in response to rainfall. Increased flows during winter may also increase pressure upon sewerage and drainage systems and diffuse pollution.

Whilst Wales is perceived to be water-rich, it is already facing challenges in terms of supply and water resources can become relatively scarce during prolonged warm, dry weather.

Wales' River Basin Management Plans (RBMPs) identify four significant water management issues under the SONARR Report' driver for nutrient enrichment and pollution of air, land and water. These include pollution from sewage and waste water; pollution from towns, cities and transport; pollution from rural areas and pollution from mines.

The 2009 RBMP included measures, across sectors and all water body types. This was the first programme of statutory measures specifically developed to meet the requirements of the Water Framework Directive (WFD). They include actions to prevent deterioration and improvements in water body status.

Minerals and Waste

The data produced by the National Minerals Map and Aggregate Safeguarding Map of Wales project assists national and local government by depicting the location and extent of mineral resources throughout Wales and highlighting aggregate mineral resources that should be safeguarded. The sustainable management of mineral resources is a key issue for the NDF. The Mineral Resource Maps show all minerals which geologically have resource potential in Wales.

Wales has made good progress on the 2050 Zero Waste Ambition and continues to reduce the proportion of waste sent to landfill. However, future development needs will continue to put pressure on this aim.

The UK Climate Change Risk Assessment 2017: Evidence Report, highlights a number of key risks and opportunities facing Wales with regard to infrastructure including risks from flooding, coastal erosion, unstable land, power generation, water supply and drought, impact to transport and digital infrastructure from high winds, heat and lightning impacts, off shore infrastructure impacts from storms, and potential benefits for water, transport, digital and energy infrastructure from reduced extreme cold events. These should be taken into consideration in the NDF.

Opportunities

Air Quality

Directly, the planning system can benefit air quality and its effects through helping to guide decisions through the planning process relating to the location of polluting sources relative to sensitive receptors such as residential, schools, hospitals and sensitive habitats. Also, the planning system can help to minimise pollution from transport through minimising the distance travelled and encouraging more sustainable modes of transport. Sustainable design and landscaping policies could help to provide opportunities for absorbing some pollutants.

More widely, planning policies across the NDF should help to provide benefits for air quality, which will also lead to wider sustainable development benefits for other environmental aspects, as well as social and economic indicators, which will all be mutually reinforcing.

Biodiversity, Flora and Fauna

The NDF must both benefit and enhance biodiversity through guiding the location and manner in which new development occurs. It provides opportunities to ensure biodiversity is protected and enhanced through the planning system, not just in terms of protected sites but also in terms of biodiversity and connectivity in general.

Nature based solutions, such as green infrastructure, can help to deliver multiple benefits across Wales, including in relation to the identified key issues such as habitat connectivity, adaptation to changing temperatures and microclimates, air quality, water quality, flood risk and soil quality.

Opportunities can be sought to maximise benefits to ecosystems through sustainable design and management. The services provided by ecosystems and green infrastructure are a significant opportunity and could enable species to adapt to the changing climate.

Flood Risk

The NDF has a significant role to play in terms of reducing the risk from present day flood risk, as well as in relation to climate change adaptation and resilience. Flooding and coastal erosion are key areas in which the effects of climate change are felt locally. The NDF can help provide guidance on the location and design of development to help minimise this risk and promote resilience measures. Flood risk is, however, not just an issue relating to climate change. The NDF should seek to direct development away from areas of existing flood risk and providing guidance on location and design, as well as considering potential increases in flood risk due to climate change. It is also an opportunity to further work with partners such as NRW, Lead Local Flood Authorities, Local Resilience Forums and other key stakeholders such as the Wildlife Trusts and National Trust (and others) in developing flood management and protection schemes as part of encouraging sustainable land and ecosystem management.

Geology and Soils

The NDF has an opportunity to guide the sustainable use of Wales' geology and soils. In particular, valuable soils and geodiversity, not only statutorily designated sites, should be protected from inappropriate land-uses whether this is directly or indirectly. Opportunities should be enhanced to maximise benefits as they can have an important function in terms of ecosystem services, the economy, climate change and people of Wales.

The NDF should also help to avoid future risks by managing or avoiding geological hazards through the planning system. Exploration for conventional and unconventional sources of oil and gas may be a possibility in Wales however the Welsh Government is committed to de-carbonisation of the economy and legislation requires 80% reduction in carbon emissions by 2050. The NDF will be used to implement the outcomes of the overarching energy policy

Water Environment

The NDF can help to guide new development and land management practices in a manner that seeks to avoid pollution of water bodies. It should also be cognisant of the potential limitations of water supply and should promote measures to reduce water use in developments. The sustainable disposal of water in developments should also be considered. SUDs could provide an example of a mechanism which could be used to manage surface water in a sustainable way.

The NDF should also consider the impact of climate change on water quality and supply in the future and how this can be accommodated through the planning system.

The NDF must consider landward and seaward pressures and ensure there is an integrated and collaborative approach to planning where these systems interact to optimise opportunities for the sustainable development of our seas.

Minerals and Waste

The NDF has an important role to play with regard to minerals demand (through economic aspirations), planning and management. It can help to guide the sustainable use of such resources through its policy and strategic development proposals. For example, building materials should be of low embodied energy, from renewable sources or made from recycled materials. Such materials should preferably be from within the UK and sourced close to the site in order to reduce transport miles and therefore adding to the embodied energy content.

The Welsh Government Circular Economy Fund (2017) aims to increase the length of time that resources are available within the economy and also minimise the amount of waste generated. This includes proposed increases to specific recycling targets which would increase the amount of recycling required, and the amount of recycled material available for use. It may also lead to other recycled material streams, or a move towards designing products for recycling and reuse, which should be considered when assessing infrastructure requirements, along with considerations in line with the Welsh Waste Strategy, Towards Zero Waste.

There is also opportunity for the NDF to help consider waste volumes and recycling alongside its ambitions for new development. This could achieve benefits such as landscape scale biodiversity enhancement, flood alleviation, water storage etc.

3.3 Relevant ISA Objectives and Questions

Air Quality

8. To create opportunities to encourage the protection and improvement of air quality
• Create opportunities to improve and protect air quality?
• Reduce the likelihood of new Air Quality Management Areas being required?
• Create opportunities within which potential emissions from power generation, transport and heavy industry may be reduced?
• Create opportunities to ensure that the most vulnerable communities are not disproportionately affected by poor air quality?
• Create opportunities to ensure that sensitive habitats and water resources are not adversely affected by air pollution?

Biodiversity, Flora and Fauna

16. To create opportunities for the conservation and enhancement of biodiversity and geodiversity
• Create opportunities for the establishment of more coherent and resilient ecological networks on land that benefit of wildlife and people, and enhancement of ecosystems services?
• Create opportunities to increase the extent and diversity of functioning ecosystems?
• Create opportunities to increase the resilience and adaptability of ecosystems?
• Create opportunities for the conservation and enhancement of designated and non-designated nature conservation sites, habitats and species?
• Create opportunities for the conservation and enhancement of marine ecosystems?
• Create opportunities for the conservation and enhancement of the quality of natural green space?
• Create opportunities for species and habitats to adapt to changing climatic conditions?

Climate Change and Flood Risk

7. To contribute to the reduction and management of flood risk
• Contribute to the reduction and management of flood risk?
• Encourage all new development to be climate change resilient?
• Promote the benefits of green infrastructure, which can include sustainable flood risk management?
• Create opportunities for communities in existing flood risk areas to become more resilient to flood risk?
• Direct all new development away from areas of high flood risk?

Geology and Soils

16. To create opportunities for the conservation and enhancement of biodiversity and geodiversity
• Create opportunities to protect, conserve and promote geodiversity so that there is a greater access, understanding and enjoyment of it all?
17. To create opportunities for the sustainable management and use of natural resources, taking into account their benefits and intrinsic value.
• Create opportunities to remediate contaminated sites and prevention of further contamination? • Create opportunities to reduce hazardous waste? • Create opportunities within which soil quality can be maintained and/or enhanced? • Create opportunities to protect peatland?

Water Environment

9. To create opportunities to protect and enhance the quality and quantity of water features and resources
• Create opportunities to protect and enhance ground and surface water quality and quantity? • Create opportunities to protect and enhance coastal waters? • Create opportunities for the sustainable use of water resources in both domestic and industrial settings?

Minerals and Waste

17. To create opportunities for the sustainable management and use of natural resources, taking into account their benefits and intrinsic value.
• Create opportunities to use recycled and secondary materials in construction? • Create opportunities to develop brownfield land, where this is sustainable? • Create opportunities to increase the proportion of waste recycling and re-use? • Create opportunities to reduce the proportion and amount of waste sent to landfill?

4 Well-Being Goal: A Healthier Wales

This section provides data relating to the following well-being goal:

'A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.'

The data relates primarily to:

- Human Health; and
- Well-Being.

4.1 Overview of Baseline Conditions

4.1.1 Health and Well-being

Relevance to the NDF

Better health is central to human happiness and well-being and also makes an important contribution to economic progress as healthy populations live longer and are more productive. The health and well-being of the Welsh population is important in helping to enable people to achieve their potential and to make Wales a more equal society.

The NDF has a key role in supporting health and well-being through helping to guide decisions through the planning process relating to health services as well as natural resources available that can encourage an improvement in physical and mental health whilst promoting healthy and active lifestyles. The NDF should also seek to promote health protection, through improving population-level health and well-being. This should focus on health improvement such as opportunities for physical activity and mental health benefits through outdoor recreation and ways to protect the health of the community such as through improving air quality.

Baseline conditions and trends

In many ways, health in Wales is improving; people are living longer and rates of certain types of diseases are coming down. According to the National Survey of Wales in 2017, 47% of adults reported they had a physical or mental health condition or illness which was expected to last for 12 months or more. 33% stated they had a condition or illness which limited their ability to carry out day tasks. In many parts of Wales the heath of those living in rural communities is generally good in comparison to those in a more urban setting. However, there are factors specific to a rural environment compared to those of urban environments that can impact on health more significantly and lead to inequalities and poorer health, such as distance from public services and support, availability of transport, housing standards, and an ageing population.

Fuel poverty

Fuel poverty has been defined as when a household needs to spend more than 10% of its household income on energy to achieve an adequate standard of warmth since the introduction of the Warm Homes and Energy Conservation Act in 2000. The combination of (moderately) rising household incomes, reduction in household energy consumption due to energy efficiency improvements, and decreasing gas and oil prices since 2014, have led to fuel poverty levels across all Welsh households decreasing since 2014 to a projected level of 23% (291,000 households) in 2016. The predicted national levels of fuel poverty for Wales are higher than in England but lower than in Scotland or Northern Ireland (as a percentage of all households) (Estimated Levels of Fuel Poverty in Wales, Welsh Government 2016). 15% of adults in Wales were materially deprived, (that is, not being able to afford basic things like keeping the house warm). 5% of pensioners were materially deprived and 6% of parents have materially deprived children.

Child poverty

The Households Below Average Income (HBAI) data for Wales published in June 2016 show a two-percentage point reduction in the proportion of children living in relative poverty in Wales. For the three-year period ending in 2014/15, 29% of children in Wales were living in poverty. This compares to 31% for the three-year period ending in 2013/14. These figures show that whilst progress is being made in reducing child poverty, rates in Wales still remain stubbornly high (Child Poverty Strategy, Welsh Government, 2016).

Healthy life expectancy at birth including the gap between the least and most deprived

Healthy life expectancy is an estimate of the years of life that will be spent in good health. In 2015, life expectancy in Wales between 2013-2015 was generally below the UK average. However, it is noted that six out of the 22 Welsh local authorities had life expectancies (for male and female) at or above the UK levels (Neighbourhood Statistics). Life expectancy has increased for both males and females by 2.3 years and 1.8 years respectively since 2003-2005.

Whilst people in Wales are living longer and spending longer in good health, large differences in life expectancy persist between the least and most deprived areas. In men, there remains a gap in life expectancy of around 9 years between the least and most deprived, and an even larger gap in healthy life expectancy of approximately 19 years. These gaps show no clear sign of reducing over time (Measuring Inequalities, 2016).

Percentage of live single births with a birth weight of under 2500g

In terms of live single births, low weight births are associated with health risks in an infant's first year of life. In 2015, approximately, 6.7% of all live births in Wales were of low birth weight, that is, less than 2,500g. The records show that there was no notable change in the distribution of births by birth weight over the last 10 years.

Percentage of adults who have fewer than two healthy lifestyle behaviours

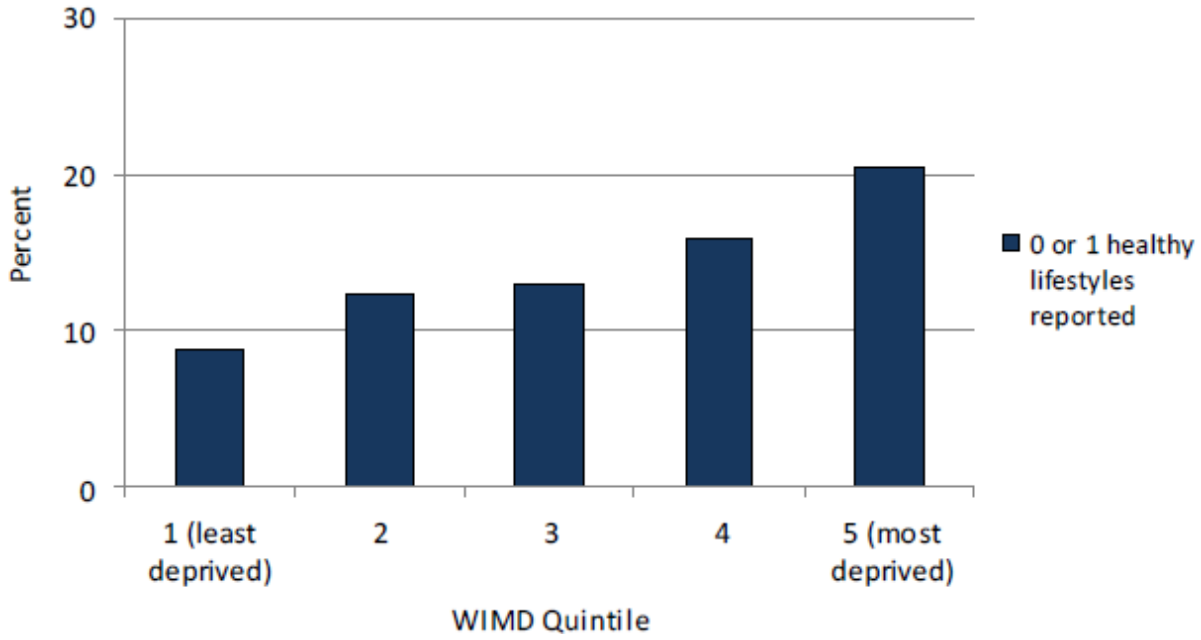
The 2017 National Survey for Wales assessed whether Welsh respondents exhibited the following healthy lifestyle behaviours:

- Not smoking;
- Not drinking above daily guidelines in the previous week;
- Eating five or more portions of fruit and vegetables the previous day;
- Being physically active for at least 150 minutes in the previous week; and
- Maintaining a healthy weight/body mass index.

10% of adults reported following less than 2 healthy lifestyle behaviours, 1 in 20 (5%) of adults reported following all 5 healthy lifestyles.

Figure 3-1 shows that the percentage of adults who reported following 0 or 1 healthy lifestyles was more prevalent in the most deprived areas (age-standardised).

Figure 3-1 Percentage of adults who exhibited 0 or 1 healthy lifestyles, by deprivation quintile



Source: Welsh Government

Spatially, the Welsh Health Survey (2015) established the following trends:

- For the years 2014 and 2015 combined, amongst local authorities the highest smoking rate reported was 26% for Blaenau Gwent and the lowest was 16% for Ceredigion (age standardised).
- For the years 2014 and 2015 combined, the percentage of people who reported drinking above guidelines ranged from 35% in Torfaen to 46% in Monmouthshire. The percentage of people who reported binge drinking ranged from 20% in Pembrokeshire to 29% in Swansea (age-standardised).
- For the years 2014 and 2015 combined, Ceredigion reported that 39% of their respondents met the guidelines for the consumption of fruit and vegetables.

Mean mental well-being score for adults

In 2017, the mean mental well-being score for people in Wales is 50.9 (where higher scores indicate better health). The respondents focus on their own perception of their mental health and the impact it has on their daily lives. Male respondents (51.3) reported higher scores than female respondents (50.4).

Percentage of people who are lonely

In 2016-17, the National Survey for Wales included a series of questions to assess levels of loneliness. Based on these, 17% of people in Wales were found to be lonely. People in material deprivation were more likely to feel lonely (37% of those in material deprivation), compared with 14% of people who aren't in material deprivation).

Percentage satisfaction with life

In 2015, Wales was the only country to have reported significantly lower life satisfaction than the UK as a whole (7.55 compared with 7.61). Compared to the previous year, satisfaction levels in Wales did not have any significant positive improvements between 2013-2014, whereas England, Scotland and Northern Ireland all had significant improvements in the average estimates for life satisfaction (ONS).

In England and in Wales there were no year-on-year improvements between the years ending September 2015 and September 2016 for life satisfaction, worthwhile and happiness. However, there was an increase in anxiety between these two periods.

Scotland and Northern Ireland have not seen a significant change in any of the well-being measures between the years ending September 2015 and September 2016 (ONS).

Location of health facilities in Wales

There are a number of hospital facilities within Wales spread across a number of departmental requirements. The number and types of facilities are shown in Table 3-1. In addition, in 2016, 85% (375 practices) of GP practices were open for daily core hours, (08:00 to 18:30) or within one hour of the daily core hours, Monday to Friday. This is an increase from 82% (373 practices) in 2015 (GP Access, Welsh Government, 2016).

Table 3-1 Number and Type of Hospital Facilities within Wales

Hospital Facility Type	Number
Major A&E Unit	13
Minor A&E Unit	1
Minor Injuries Unit	20
Other Hospitals	
Acute	2
CHC Local Committee	3
Clinic	19
Community	31
Community Hospital: Elderly Mental Infirm	4
Day Hospital	5
Major Acute	1
Psychiatric: Learning Disability	2
Psychiatric: Mental Illness	16
Psychiatric: Mental Illness / Learning Disability	2
Specialist Acute	3

Source: NHS Wales

Percentage participating in sporting activities three or more times a week

Sport Wales previously commissioned the Active Adults Survey to monitor adult participation in sport in Wales. Questions previously included in that survey have now been included in the National Survey for Wales. The change in the way this information is collected may have resulted in a change in how people have responded to the survey. Therefore, the new survey results should not be compared directly with results from the previous survey.

59% of people had participated in some sporting activity in the past 4 weeks. By far the most commonly reported activity was to have walked more than 2 miles (34% of people).Apart from walking, 49% of respondents had participated in at least some sporting activity over the previous 4 weeks. The survey demonstrates that the number of young people taking part in sport or physical activity three or more times a week has fallen from 48% in 2015 to 29% in 2017. Boys (34%) were still more likely than girls (24%) to regularly participate in sport and physical activity (National Survey for Wales 2017).

In addition to sport participation and involvement in outdoor recreation, 28% of the Welsh population partake in volunteering for a variety of clubs and organisations (1% volunteer for environmental groups).

The Welsh Government Statistical Bulletin, 'Walking and Cycling in Wales: Active Travel in Wales, 2014-2015' published October 2015 highlights that only 2% of primary school children cycle to school and only 6% of adults cycled at least once or twice a week for active travel purposes. Given the Welsh Government ambition to increase the number of people walking and cycling for everyday journeys this it is an important issue for the NDF to fully consider.

Percentage of people overweight in particular levels of childhood obesity

In 2015, 59% of adults were classified as overweight or obese, including 24% obese. Obesity levels in Wales have seen an increase since the Welsh Health Survey began in 2003/2004. Childhood obesity rates were higher in Wales in 2014 than in England. The prevalence of overweight and obese children in Wales was highest in Merthyr Tydfil (34%), Gwynedd and Bridgend (both 30%) and lowest in Monmouthshire (21%) and the Vale of Glamorgan (22%) (Public Health Wales).

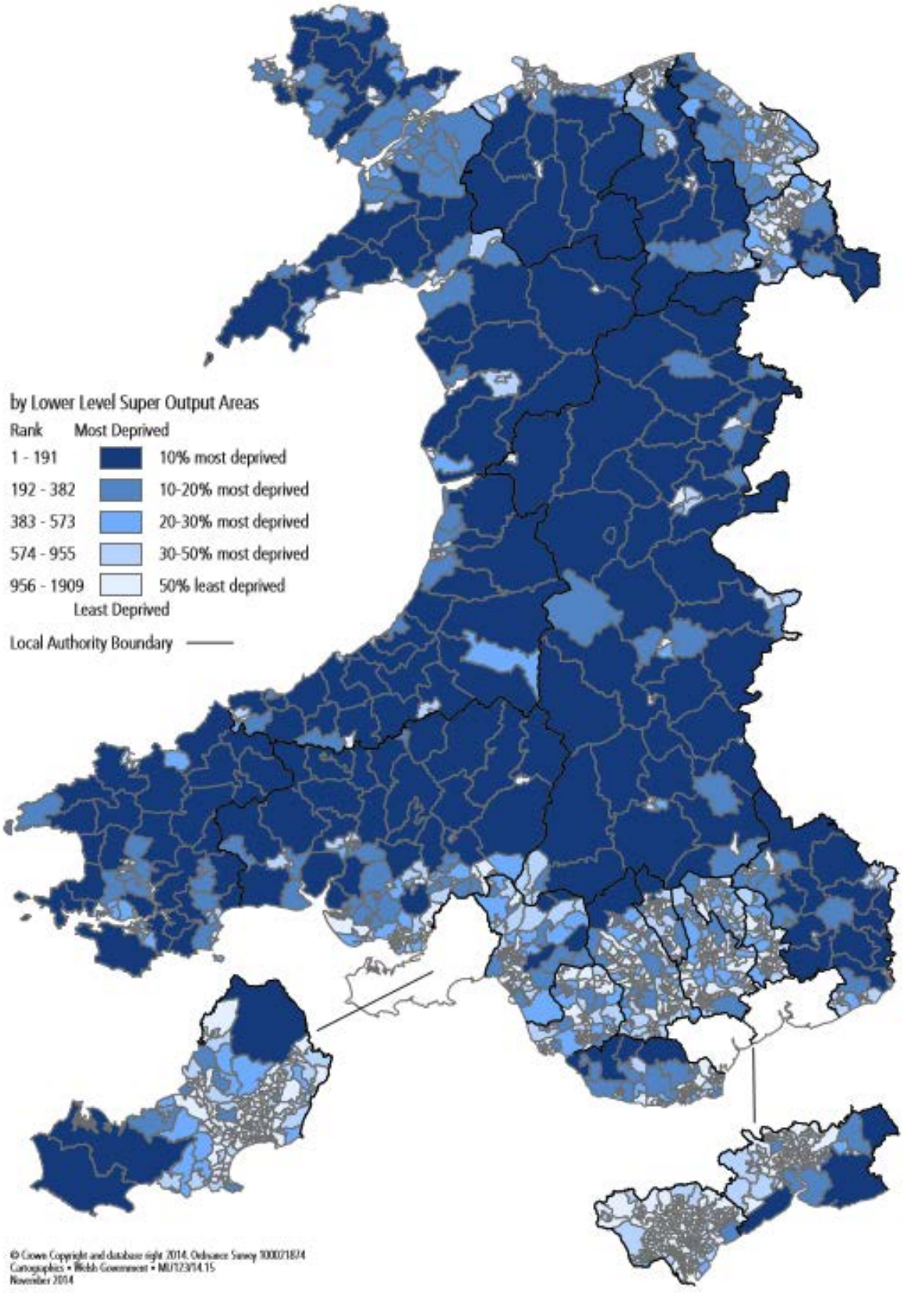
Number and distribution of LSOAs in bottom 10% of most deprived in terms of access to services

Latest figures for the LSOAs in Wales (there are 1909 LSOAs in total in Wales) include average travel times using private transport when access to services have been considered. The WIMD 2014 access to services domain results have demonstrated that there is a widespread deprivation across Wales and also particularly within rural areas in terms of access. Furthermore, there are some deprived pockets near large urban areas.

The local authorities with the highest proportion of LSOAs in the most deprived 10% were Powys (46.8%) and Ceredigion (43.5%). Blaenau Gwent, Bridgend, Caerphilly, Cardiff and Torfaen had no LSOAs in the most deprived 10%.

Figure 3-2 shows the deprivation levels of the LSOAs in Wales with regard to access to services.

Figure 3-2 Access to Services Deprivation Map for Wales



Source: WIMD 2014

No of LSOAs in bottom 10% Health deprivation domain

Table 3-2 presents data relating to the WIMD 2014 for health. Patterns in health deprivation in Wales have remained largely unchanged since the 2011 WIMD. High deprivation levels were recorded in South Wales valleys and large cities, coastal areas of North Wales and border towns. The local authority with the highest proportion of LSOAs in the most deprived 10% in Wales for health domain was Merthyr Tydfil. Three local authorities (The Isle of Anglesey, Ceredigion and Monmouthshire) were recorded as having had no LSOAs in the most deprived 10%.

For the health domain, the most deprived LSOA in Wales was Rhyl West 2, Denbighshire.

Table 3-2 WIMD 2014 Health domain deprived LSOAs, by local authority

Local authority	Number of LSOAs in local authority	% LSOAs in most-deprived 10% ranks 1-191	% LSOAs in most-deprived 20% ranks 1-382	% LSOAs in most-deprived 30% ranks 1-573	% LSOAs in most-deprived 50% ranks 1-955
Isle of Anglesey	44	0.0	4.5	15.9	29.5
Gwynedd	73	2.7	4.1	5.5	19.2
Conwy	71	1.4	7.0	15.5	31.0
Denbighshire	58	10.3	15.5	22.4	37.9
Flintshire	92	2.2	8.7	17.4	34.8
Wrexham	85	4.7	16.5	27.1	50.6
Powys	79	1.3	5.1	8.9	19.0
Ceredigion	46	0.0	0.0	4.3	15.2
Pembrokeshire	71	4.2	7.0	12.7	31.0
Carmarthenshire	112	4.5	11.6	29.5	55.4
Swansea	148	14.2	20.9	29.7	54.7
Neath Port Talbot	91	17.6	36.3	50.5	72.5
Bridgend	88	12.5	29.5	45.5	61.4
Vale of Glamorgan	79	3.8	11.4	17.7	41.8
Rhondda Cynon Taf	154	21.4	43.5	56.5	77.3
Merthyr Tydfil	36	30.6	47.2	58.3	86.1
Caerphilly	110	20.0	32.7	45.5	74.5
Blaenau Gwent	47	14.9	40.4	61.7	95.7
Torfaen	60	6.7	21.7	33.3	61.7
Monmouthshire	56	0.0	0.0	1.8	17.9
Newport	95	8.4	22.1	33.7	52.6
Cardiff	214	14.5	22.0	29.9	44.4
Wales	**1909**	**10.0**	**20.0**	**30.0**	**50.0**

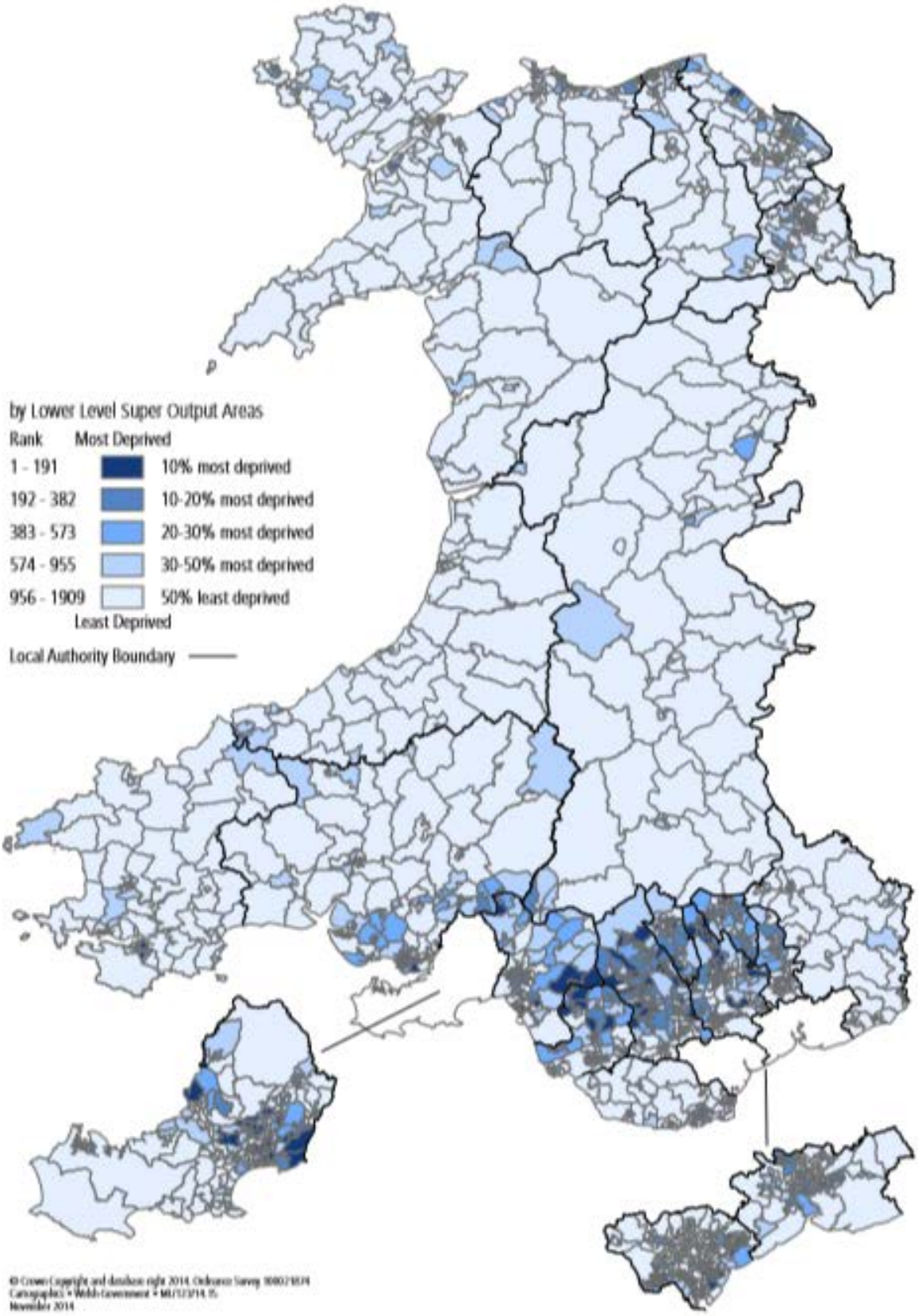
Source: WIMD

Percentage of good/bad health

In 2017, 72% of people in Wales reported their general health as either ‘Very good’ or ‘Good’. This is 3.6% lower than that of England (81.4%). The gap between local authorities reporting the highest (Cardiff: 81.4%) and lowest (Blaenau Gwent: 72.6 per cent) percentages of ‘Very good’ and ‘Good’ general health was 8.8%. The concentration of low percentages of ‘Good’ general health recorded in 2011 corresponds with the former coal mining and heavy industrial centres of the Welsh Valleys in 2011 suggesting that these former industries have had long term health implications. Cardiff, Gwynedd and Flintshire were identified as having the best levels of general health (ONS).

Isle of Anglesey, Ceredigion and Monmouthshire had no LSOAs in the most deprived 10%. Only 15.2% of the LSOAs in Ceredigion were in the most deprived 50% in Wales. Blaenau Gwent had the highest proportion of LSOAs in the most deprived 50% in Wales (95.7%). The next highest was Merthyr Tydfil, with 86.1% of its LSOAs in the most deprived half of Wales. Figure 3-3 Health Deprivation Map for Wales details the LSOAs.

Figure 3-3 Health Deprivation Map for Wales



Source: WIMD 2014

Data Gaps

- Up to date national data relating to access to green space including access to play

4.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Overall health statistics for Wales are improving with life expectancy increasing and fewer people with reported poor health over the past decade. However health gains are not distributed equally across the country and in particular access to services is varied, being good in more urban areas, notably the south, but relatively poor across much of rural Wales. Although the health of those living in rural communities is generally good compared to those of urban environments. Low levels of primary school children (2%) and adults (6%) cycle as a mode of transport to work or school.

Factors specific to a rural environment compared to those of urban environments that can impact on health more significantly and lead to inequalities and poorer health, such as distance from public services and support, availability of transport, housing standards and the ageing population. Access to healthcare can be limited in many parts of rural Wales.

Whilst people are living longer and the rates of some diseases is decreasing, challenges such as living environment and modern lifestyles can contribute towards increasing levels of chronic diseases such as diabetes, joint problems, heart disease and some cancers. These in turn can lead to disability and increased demand on health services. In addition, poor mental health can also be an underpinning factor in a number of physical diseases and unhealthy lifestyles.

The UK Climate Change Risk Assessment 2017: Evidence Report, highlights a number of key risks and opportunities facing Wales with regard to people and the built environment including risks to health and well-being from high temperatures, increased outdoor activities, flooding and sea level rise, impact on structures including culturally valued buildings, poor water and air and food quality, and impacts on health and delivery of health and social care from extreme weather. These should be taken into consideration in the NDF.

Opportunities

Overall, the NDF must help to achieve the important balance of economic and social improvement that is also sustainable and respects the country's valuable natural and cultural environment.

The NDF should recognise the potential for accessible natural green spaces, as well as other outdoor spaces, as places for health and recreation, for people of all ages, connecting habitats and supporting community interaction. The Welsh Government target of accessible natural green spaces being within a six minute walk of home (300m) is noted. Improving the quality and access to green and open spaces, facilities for play, leisure and culture and a healthier aquatic environment can greatly encourage healthier lifestyles. Ahealthier population could enable people (including children) to achieve their potential and to make Wales a more equal society.

The design of the built environment can play an important role in creating a healthier Wales, many aspects of which are considered under other headings in this report, such as housing active travel, development patterns, green infrastructure, flood risk, climate change, biodiversity and air quality, amongst others. Active travel as well as reducing isolation is an important issue for the NDF to address in relation to the Welsh Government's ambitions. There is an opportunity for the NDF to enable more journeys to be travelled actively and reduce car journeys. This would be enabled by creating walkable and cycle friendly neighbourhoods and settlements with safe, direct, and attractive space for walking and cycling, connected by a coherent national walking and cycling network and public transport network. This can also provide opportunities for improved access to healthcare facilities.

Good housing can improve health and well-being; but poor housing conditions can damage health, particularly in relation to asthma, damp and mould. For children, the effects can last a lifetime. The importance of access to well paid jobs and the potential consequential impact on living standards and health is also an important factor.

The NDF has an important contribution to make towards ensuring that health challenges are addressed in order to improve health and well-being and reduce inequalities. Planning decisions should take into account how they will affect people across different stages of the life course of future generations.

An example of a potential way in which land use planning to increase opportunities for people to engage with their local environment would be through allotment and community growing schemes. Opportunities for active travel, through the provision of safe and interconnected walking and cycling routes, could also provide multiple health benefits, both physically and mentally, as well as creating environmental and economic benefits.

4.3 Relevant ISA Objectives and Questions

Health and Well-being

2. To contribute to an improvement in physical, mental and social health and well-being for all, including contributing towards a reduction in health inequalities across Wales
• Contribute towards an improvement in access to health and social care services especially in isolated/rural areas? • Contribute towards a reduction in health inequalities amongst different groups in the community including specifically children and older people? • Contribute towards healthy lifestyles and promote well-being including walking and cycling, through land use planning initiatives? • Contribute towards a reduction in levels of child poverty and fuel poverty? • Contribute towards improving access to natural green space, wildlife, open space including opportunities for play, leisure and recreation? • Contribute towards an increase in green infrastructure? • Create opportunities for communities to adapt to risks to health from climate change?
11. To create the opportunities within which an improvement in social cohesion and equality can be achieved
• Create opportunities within which social cohesion and equality can be improved? • Create opportunities within which equalities based on background or circumstances can be improved? • Create opportunities within which gender inequality may be reduced? • Create opportunities within which age inequality may be reduced? • Create opportunities within which inequalities based on disability can be improved? • Create opportunities for children who have any kind of disability to lead full and independent lives? • Create opportunities for children to develop healthily, and have access to good quality health care, clean water, nutritious food and a clean environment? • Create opportunities to ensure children can live to a standard that is good enough to meet their physical and mental needs? • Create opportunities to ensure children have access to an education? • Create opportunities to ensure children can relax and play, and join in a wide range of activities? • Create opportunities for the development of strong, cohesive communities? • Create conditions to reduce levels of crime and the fear of crime? • Create opportunities to improve the number of people satisfied with their neighbourhoods as a place to live? • Create opportunities for older and disabled people to participate in their communities and wider society?

- Create opportunities to reduce loneliness amongst the community?
- Create opportunities for the built environment to be designed in a way that is accessible for all?

5 Well-Being Goal: A More Equal Wales

This section provides baseline data relating to the following well-being goal:

'A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio-economic background and circumstances).'

The data primarily relates to:

- Population

5.1 Overview of Baseline Conditions

5.1.1 Population

Relevance to the NDF

An equal society in Wales can help to ensure that public services and employment are fair and accessible to all and that communities are inclusive. The NDF could contribute positively towards making more fair and inclusive societies.

Baseline conditions and trends

The following baseline indicators have been used to characterise existing conditions relating to goal 4 of the Well-being of Future Generations (Wales) Act 2015 for population in Wales:

Percentage of people who feel able to influence decisions affecting their local area

The National Survey for Wales is a large-scale survey of adults in Wales, covering a range of topics such as well-being and people's views on public services. The results included are from 2014-2015 (there was no survey taken in 2015-2016; 2016-2017 is in progress).

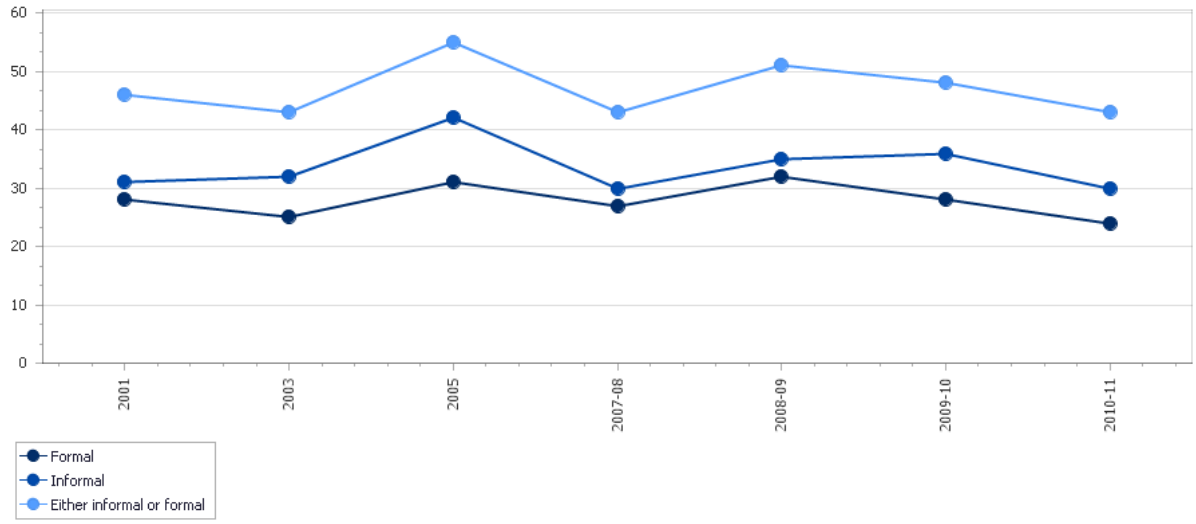
When asked if they felt able to influence decisions affecting their local area, the survey revealed that 35% of people tended to disagree; 24% strongly disagreed and 18% tended to agree. Only 3% of those surveyed strongly agreed that they felt able to influence decisions affecting their local area. 20% of respondents neither agreed nor disagreed. The results demonstrate that over 50% of respondents felt that they cannot influence decisions affecting their local area.

Community cohesion

In response to being asked whether or not people in their local area from different backgrounds 'get on well together', the National Survey for Wales revealed that 31% of people strongly agreed and 48% tended to agree with that assertion. 12% neither agreed or disagreed. 6% tended to disagree and 3% strongly disagreed. This demonstrates that over 70% of people agreed with the statement.

Percentage of people who volunteer

Figure 4-1 Percentage of people volunteering on a formal and informal basis



(Source: Stats Wales)

Since 2001 -2011 volunteer levels shows a consistent level of volunteers across Wales over the 10 year period from 2001-2011, as presented in Figure 4-1. There are higher levels of informal volunteering compared with those undertaking more formal volunteering roles.

Gender pay difference

The gender pay gap for median earnings of full-time employees decreased to 9.4%, from 9.6% in 2014. This is the lowest since the survey began in 1997, although the gap has changed relatively little over the last 4 years. A similar trend is seen when full-time and part-time employees are combined, although the gap is unchanged from 2014, at 19.2% (ONS).

Percentage of Ethnic Groups

The ethnic make-up of the Welsh local authorities compared to national figures is shown in Table 4-1 below.

Table 4-1 Percentage of Ethnic Groups in Wales and local authorities

Area	All categories: Ethnic group	White (%)	Mixed (%)	Asian (%)	Black (%)	Other (%)
United Kingdom	63,182,178	87.2	2.0	6.9	3.0	0.9
Wales	3,063,456	95.6	1.0	2.3	0.6	0.5
Anglesey	69,751	98.2	0.7	0.7	0.1	0.3
Blaenau Gwent	69,814	98.5	0.6	0.7	0.1	0.1
Bridgend	139,178	97.8	0.7	1.1	0.2	0.2
Caerphilly	178,806	98.3	0.7	0.8	0.1	0.1
Cardiff	346,090	84.7	2.9	8.1	2.4	2.0
Carmarthenshire	183,777	98.1	0.6	1.0	0.2	0.2
Ceredigion	75,922	96.7	1.0	1.4	0.4	0.5

Area	All categories: Ethnic group	White (%)	Mixed (%)	Asian (%)	Black (%)	Other (%)
Conwy	115,228	97.7	0.8	1.1	0.2	0.3
Denbighshire	93,734	97.4	0.8	1.5	0.2	0.1
Flintshire	152,506	98.5	0.6	0.8	0.1	0.1
Gwynedd	121,874	96.5	0.8	1.8	0.2	0.7
Merthyr Tydfil	58,802	97.6	0.8	1.2	0.2	0.2
Monmouthshire	91,323	98.0	0.7	1.0	0.2	0.1
Neath Port Talbot	139,812	98.1	0.7	1.0	0.2	0.1
Newport	145,736	89.9	1.9	5.5	1.7	1.0
Pembrokeshire	122,439	98.1	0.6	1.0	0.1	0.2
Powys	132,976	98.4	0.6	0.9	0.1	0.1
Rhondda Cynon Taf	234,410	97.4	0.6	1.3	0.6	0.1
Swansea	239,023	94.0	0.9	3.3	0.8	1.0
The Vale of Glamorgan	126,336	96.4	1.3	1.6	0.4	0.3
Torfaen	91,075	98.0	0.7	1.1	0.2	0.1
Wrexham	134,844	96.9	0.7	1.7	0.5	0.2

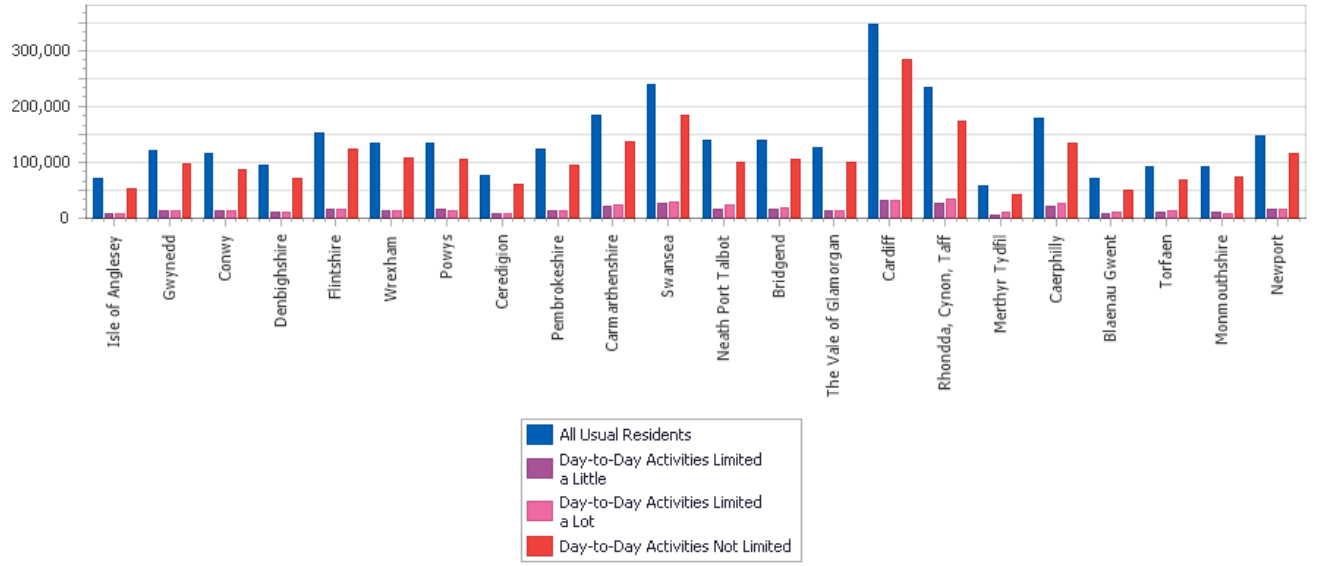
(Source: 2011 Census – Nomis)

In 2011, Wales had 8% more of its population who were white compared to the rest of the United Kingdom and a lower percentage of people who were Asian, black, mixed or other. The white ethnic group is dominant across all of the local authorities. The urban areas of Cardiff and Newport have a slightly more multicultural population and their percentages of white persons compares similarly with the UK figures.

Limiting long term illness or disability by local authority

Figure 4-2 shows the extent of illness or disability by local authority in Wales. In all cases, the majority of residents do not have an illness or disability that limits their day-to-day activities. The trend of results on a national scale for Wales is similar to that of the local authorities with 11.9% limited a lot and 10.8% limited a little. However, levels in Wales were slightly higher than that of England with 8.3% limited a lot and 9.3% limited a little in England (ONS).

Figure 4-2 Limiting long term illness or disability by local authority



(Source: StatsWales)

Experience of discrimination

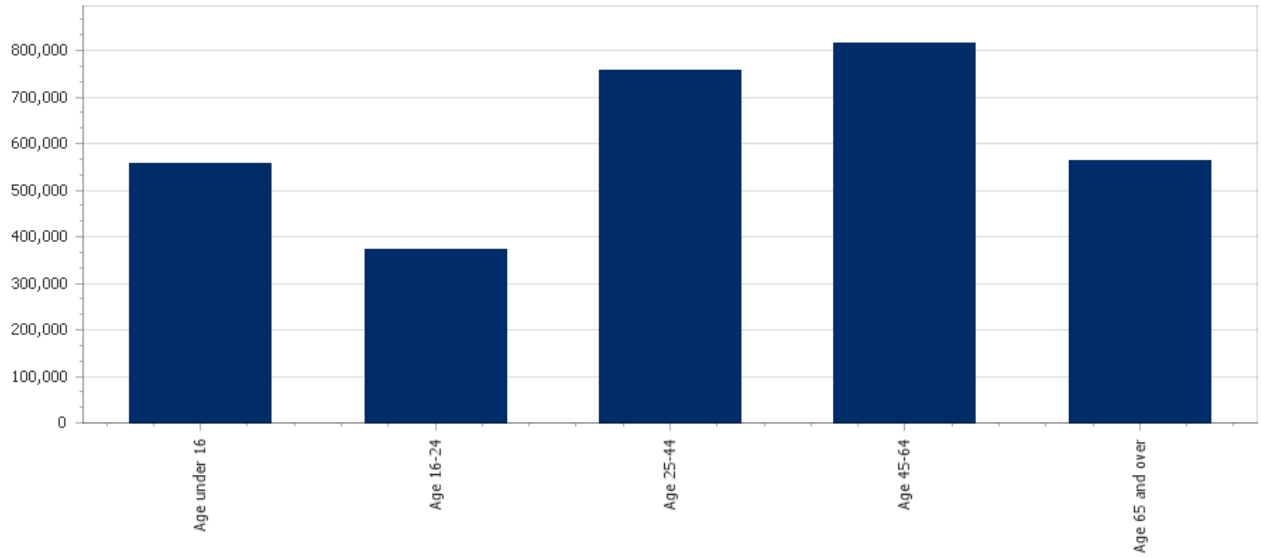
Welsh Government's 'Programme for Government' sets out the aim to improve community cohesion to reduce the incidence of domestic and sexual violence; reduce homophobic, transphobic, disability-related and religiously-motivated bullying; and tackle hate crime (National Survey for Wales). The National Survey for Wales defines these as reasons for discrimination. The 2012 National Survey for Wales found that the main reasons people were discriminated against were due to where they lived (15.7%), nationality (11.4%), age (10.6%), and health problems or disability (9.7%).

Population Age Structure

Wales' population age structure for 2011 is shown in Figure 4-3. It shows the dominant age group is 45 to 64 years old. The results would also suggest that Wales is an 'aging' population with the higher figures leaning towards the older age groups. The number of people aged 65 and over is projected to increase by 292,000 (44%) between 2014 and 2039 (ONS). The 2009 Older People's Wellbeing Monitor identified that 44% of older people in Wales had a limiting long-term illness or disability.

In local authority terms, the majority of the authorities have a higher population between 25 and 64 with a fairly even split between the 25-44 and 45-64 age groups. Cardiff has a considerably higher proportion of 25 to 44 year olds.

Figure 4-3 Resident Population in Wales by broad age group



(Source: statswales.wales.gov.uk)

Country of Birth

The number of those born in Wales currently residing in Wales has decreased by 2.9% to 72.7% over 10 years subsequently leading to an increase in the number of those now residing in other parts of the UK and elsewhere across Europe. In comparison, the percentage for the UK in 2011 was 21.9% and this has increased by 0.4%.

Net Migration Trends

Net migration in Wales has fluctuated over the past 12 years. Between 2012 and 2013 showed a considerable upturn in net migration (14,000) compared to the preceding years. Wales nationally experienced a steady rise in net inward migration from 2001 to 2013.

Population Projections

The population of Wales is projected to increase by 3.1 per cent to 3.19 million by 2024 and by 6.1 per cent to 3.28 million by 2039. The number of children aged under 16 is projected to increase to 572,000 by 2023 before fluctuating between 2024 and 2039, with a population of 567,000 in 2039. Overall, the number of children is projected to increase by 2.3 per cent between 2014 and 2039. The number of people aged 16-64 is projected to decrease by 95,000 (5.0 per cent) between 2014 and 2039. The number of people aged 65 and over is projected to increase by 292,000 (44 per cent) between 2014 and 2039 (Office for National Statistics, 2015)

Data Gaps

No significant data gaps have been identified for this topic at this stage.

5.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Levels of community cohesion could be impacted through a projected increase in net-migration mainly from within the UK and with urban areas projected to see greatest increase. However, it is noted that over 70% of people agree that people from different backgrounds within their area get on well.

Increasing levels of those aged 65 and over could present pressures across the country (dependent on whether healthy life expectancy i.e. the number of years you live a healthy life, continues to track overall life expectancy) including:

- Pressure on health services to provide adequate care;

- Availability of residential homes to meet the needs of the whole population, including but not limited to, the elderly and adults with a learning disability; and

- Provision of appropriate services for an older generation (e.g. transport).

Opportunities

Overall, the NDF can help to address issues surrounding the aging population through facilitating the provision of accessible services supported by connective infrastructure to meet local population growth needs.

Third sector/volunteering could improve cohesion within a community by increasing levels of employment and contributing to the well-being of the residents from a social perspective.

An equal Wales can enable people to reach their full potential whilst addressing social, economic, cultural and environmental inequality. The NDF could provide an opportunity to reduce isolation and encourage the development of integrated and liveable communities. It is essential that the built environment in communities is designed and adapted in an age friendly way so that it is suitable for people of all ages. Increasing opportunities for older and disabled people to take part locally can do much to boost independence, combat social isolation and loneliness and promote health and well-being. All outdoor environments and public spaces across Wales should be accessible and usable for all older and disabled people, alongside young people. Safe and accessible streets, places to meet to socialise that are easily accessible by public and community transport, and adequate public seating and public toilets in our communities all help to facilitate this. Housing provision should be suitable for people of all ages, to create an equitable society, but also to make an efficient use of housing.

5.3 Relevant ISA Objectives and Questions

Population

11. To create the opportunities within which an improvement in social cohesion and equality can be achieved
• Create opportunities within which social cohesion and equality can be improved? • Create opportunities within which equalities based on background or circumstances can be improved? • Create opportunities within which gender inequality may be reduced? • Create opportunities within which age inequality may be reduced? • Create opportunities within which inequalities based on disability can be improved? • Create opportunities for children who have any kind of disability to lead full and independent lives? • Create opportunities for children to develop healthily, and have access to good quality health care, clean water, nutritious food and a clean environment? • Create opportunities to ensure children can live to a standard that is good enough to meet their physical and mental needs? • Create opportunities to ensure children have access to an education? • Create opportunities to ensure children can relax and play, and join in a wide range of activities? • Create opportunities for the development of strong, cohesive communities? • Create conditions to reduce levels of crime and the fear of crime? • Create opportunities to improve the number of people satisfied with their neighbourhoods as a place to live? • Create opportunities for older and disabled people to participate in their communities and wider society? • Create opportunities to reduce loneliness amongst the community? • Create opportunities for the built environment to be designed in a way that is accessible for all?

6 Well-Being Goal: A Wales of Cohesive Communities

This section provides baseline data relating to the following well-being goal:

'Attractive, viable, safe and well-connected communities.'

The data relates primarily to:

- Crime;
- Housing;
- Deprivation and Living Environment; and
- Transportation.

6.1 Overview of Baseline Conditions

6.1.1 Crime

Relevance to the NDF

The creation of cohesive communities which are attractive, well-connected, safe and meet the needs of the population are important for Wales. The NDF has a key role to play in helping to guide decisions through the planning process relating to the development of space which can help to reduce crime.

Baseline conditions and trends

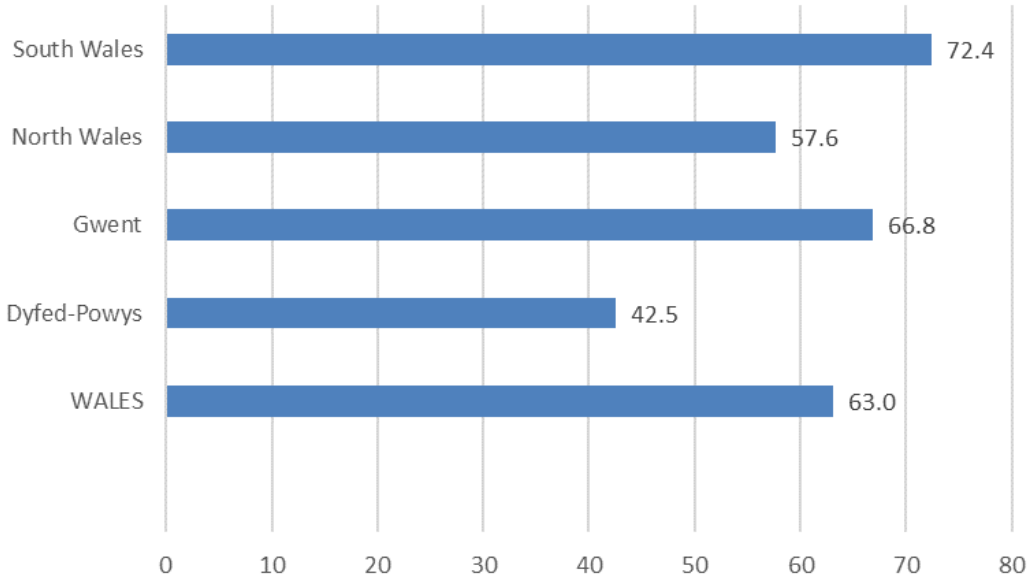
Recorded Crime Rates / 1000 for Key Offences

Latest figures for year ending September 2016 show the total crime rate per 1000 population/households in Wales was 63 per 1000 for headline offences. Broken down in key crime statistics the crime rate changes from the previous year ending September 2015 figures are as follows (Source ONS):

- Violence against the person – 18.4 / 1000 (+21%)
- Sexual offences – 1.8 / 1000 (+19%)
- Robbery – 0.2 / 1000 (-0.1%)
- Burglary – 5.3 / 1000 (-7%)
- Theft offences including a motor vehicle – 24 / 1000 (-3%)

The above figures show violent crime and sexual offences in Wales have increased compared to a year ago but theft offences and burglary rates have both decreased. Robbery rates are negligible. Figure 5-1 shows the crime recorded per 1000 population in the local authorities in Wales compared to the national average. South Wales and Gwent recorded higher crime rates than the national average.

Figure 5-1 Crime Rate per 1000 Population in Wales and other Welsh police force areas, year ending in September 2016



Source: ONS

Theft offences and violence against the person are the two highest crimes recorded in Wales at 38.1% and 29.2% respectively.

Safe for Children to Play Outside in Local Area

The proportion of Wales' residents who feel it is safe to let their children play outside is a useful indicator of the general feeling of safety in an area. In 2014, 64% of people considered it safe to allow their children to play outside, whereas 25% did not and 11% were undecided. In terms of local authorities, Isle of Anglesey was perceived as the safest place for children to play outside with 81% of respondents agreeing with this statement. Whereas Blaenau Gwent was perceived as the least safe place for children to play outside with only 51% of respondents stating it was a safe area (stats wales).

Percentage of people feeling safe at home, walking in the local area and when travelling

In 2014, in the National Survey, people were asked how safe they felt in a variety of situations after dark:

- 79% of people said they felt safe walking alone in their local area after dark;
- 96% of people felt safe at home after dark; and
- 79% of people felt safe on public transport after dark (this has increased from 74% in 2012-13).

Percentage of people satisfied with local area as a place to live

In 2014 the National Survey included a series of questions on the quality of the local area. These were included in the survey to help investigate the environmental dimension of well-being.

People were asked whether they agreed or disagreed with positive statements about their local area. 70% agreed with the statement 'my local area is well maintained', 77% agreed that their local area was free from graffiti and vandalism, and 62% agreed that 'my local area is free from litter and rubbish'. In terms of local authority level analysis:

- 80% of people in Pembrokeshire felt that their local area was well-maintained, compared with 56% of people in Blaenau Gwent.
- 93% of people in Powys felt that their local area was free from graffiti and vandalism, compared with 65% of people in Merthyr Tydfil.

In 2015, 79% agreed that in their local area people from different backgrounds get on well together. 79% agreed that people in their local area treat each other with respect and consideration. Older people were more likely to have a positive view about people in their local area than younger people.

Data Gaps

No significant data gaps have been identified for this topic at this stage.

6.1.2 Housing

Relevance to the NDF

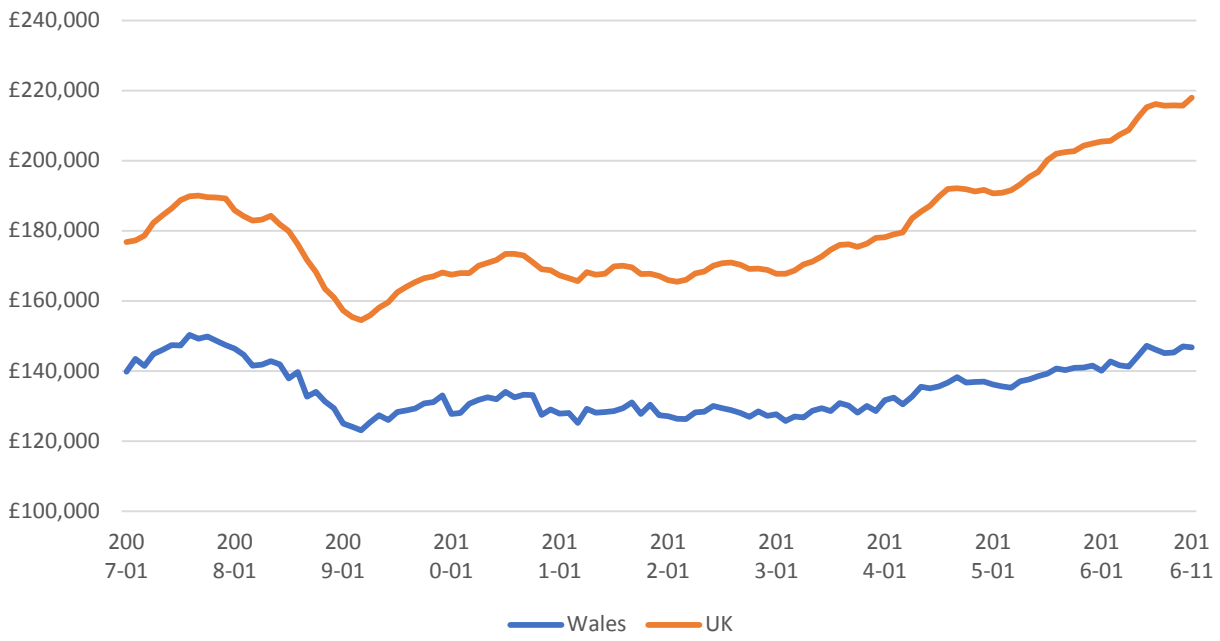
The development of housing to meet the needs of the population within Wales are both important for Wales and have strong links with supporting the economy. The NDF has a key role to play in helping to guide decisions through the planning process relating to housing.

Baseline conditions and trends

Average House Prices

Figure 5-2 shows the average house prices from 2007 to 2016 in Wales. It shows that prices have fluctuated considerably since 2007 and have stablised since the significant price falls in 2009 due to the recession – which saw prices fall to around £123,100. As of November 2016 the average house price in Wales was £146,700. The Welsh average house price is 33% lower than the UK average (which stood at around £217,900).

Figure 5-2 Average House Prices in Wales from 2007-2016



Source: Proviser

Residential land availability

Welsh Government's planning policy requires local planning authorities in Wales to identify specific, deliverable sites for the following five-year period and to review this position on an annual basis through the preparation of a Joint Housing Land Availability Study.

According to local planning authority (LPA) information, it was identified in the Welsh LPAs' 2016 Studies that as at 1 April 2016 14 out of the 25 local planning authorities had less than five years housing land supply – (five local planning authorities have not published their 2016 data yet). By comparison, 17 local planning authorities had less than five years housing land supply in 2015, 12 of which still have less than five years supply in 2015 (this figure excludes the five local planning authorities who have not yet published their 2016 data).

12 local planning authorities have had less than five years housing land supply for three or more consecutive years.

Percentage of Property Types

In 2011 there were 1,302,676 properties in Wales, 27.7% of these were detached, 31.8% were semi-detached, 27.7% were terraces and 12.3% were flats/apartments. Compared to 2001 this is an increase of 0.6%, 0.1% and 1.1% for detached housing, semi-detached and flats / apartments respectively. There was a fall in terraced housing types over the 10 years, by 1.8%.

No. of Houses in Multiple Occupation (HMOs)

In 2015-16 1.1% (14,749) of households were known to be Houses in Multiple Occupancy (HMOs). The four local authorities with the highest number of HMOs were located in South Wales (Cardiff - 5,344); South West Wales (Swansea - 1,658) and North Wales (Gwynedd -1,300 and Conwy - 1,100). The local authorities with the lowest number of HMOs were all located in the South and South East of Wales (Torfaen – 37; Blaenau Gwent 46; Merthyr Tydfil 48 and Monmouthshire 59).

New home building rates

In 2015-16 Wales accounted for around 3.9% of all permanent dwellings started in the UK – this figure recorded for Wales was similar to Northern Ireland. These figures were the lowest for any of the UK countries. In 2015-16 Wales accounted for 4.1% of all the UK's permanent houses built.

Dwellings Demolished

Flintshire recorded the highest number of dwellings that were demolished across Wales (114 total dwellings demolished) over the 2015-16 period. Six local authorities across Wales recorded no dwellings demolished.

Affordable housing availability and building rates – Granted permission

In 2015-16 930 new affordable properties were secured through planning obligations in Wales. This shows a decrease of 37% from the year before (2014-15 – 1,483 properties). Monmouthshire provided the highest number of affordable properties through planning obligations (165 properties in 2015-16) compared to five authorities that did not secure any affordable properties through planning obligations (Flintshire, Wrexham, Swansea, Merthyr Tydfil and Pembrokeshire Coast National Park). It is recognised that house building rates are heavily influenced by the current economic circumstances, which inevitably impact on the viability of development and thus on the delivery of affordable housing.

Affordable housing availability and building rates – delivered

In 2015-16 705 new affordable properties were delivered in Wales. This shows a decrease of 11% from the year before (2014-15 – 796 properties). Bridgend delivered the highest number of affordable properties (126 properties in 2015-16) compared to six authorities that did not deliver any affordable properties (Gwynedd, Denbighshire, Powys, Merthyr Tydfil, Caerphilly and Blaenau Gwent).

Vacant Housing

Both the number and the percentage of vacant social housing stock decreased during 2015-16. At the end of March 2016, 1.9% (4,340) of all social housing stock was vacant, down by 4% on the previous year (StatsWales).

Housing units vacant for more than 6 months decreased by 13% compared to the end of March 2015, and accounted for 28% of all vacant social housing compared with 31% in 2014, indicating a decreasing trend in the number of vacant housing units.

In 2015-2016 the local authorities with the highest number of vacant housing for more than 6 months were Neath Port Talbot (153), Rhondda Cynon Taf (138) and Blaenau Gwent (213) (Stats Wales).

Household Projections

The 2014-based National Parks household projections are higher than the previously published 2013-based household projections for both the numbers of households and the numbers of people living in them. Both the 2014-based and 2013-based National Parks household projections show decreases in average household size with the 2014-based projections estimating lower average household sizes. Between 2014 and 2029, the number of people living in households in the National Parks areas in Wales is projected to decrease steadily from 80,100 to 75,900 and the average household size in the National Parks areas in Wales is projected to decrease steadily from 2.14 people to 2.05 (Office for National Statistics, 2017).

Data Gaps

At the time of writing, information on development on brownfield land was only available at the Local Authority level. However, this information was not available for all the authorities within Wales therefore a national representation of this information could not be gathered.

6.1.3 Deprivation and Living Environment

Relevance to the NDF

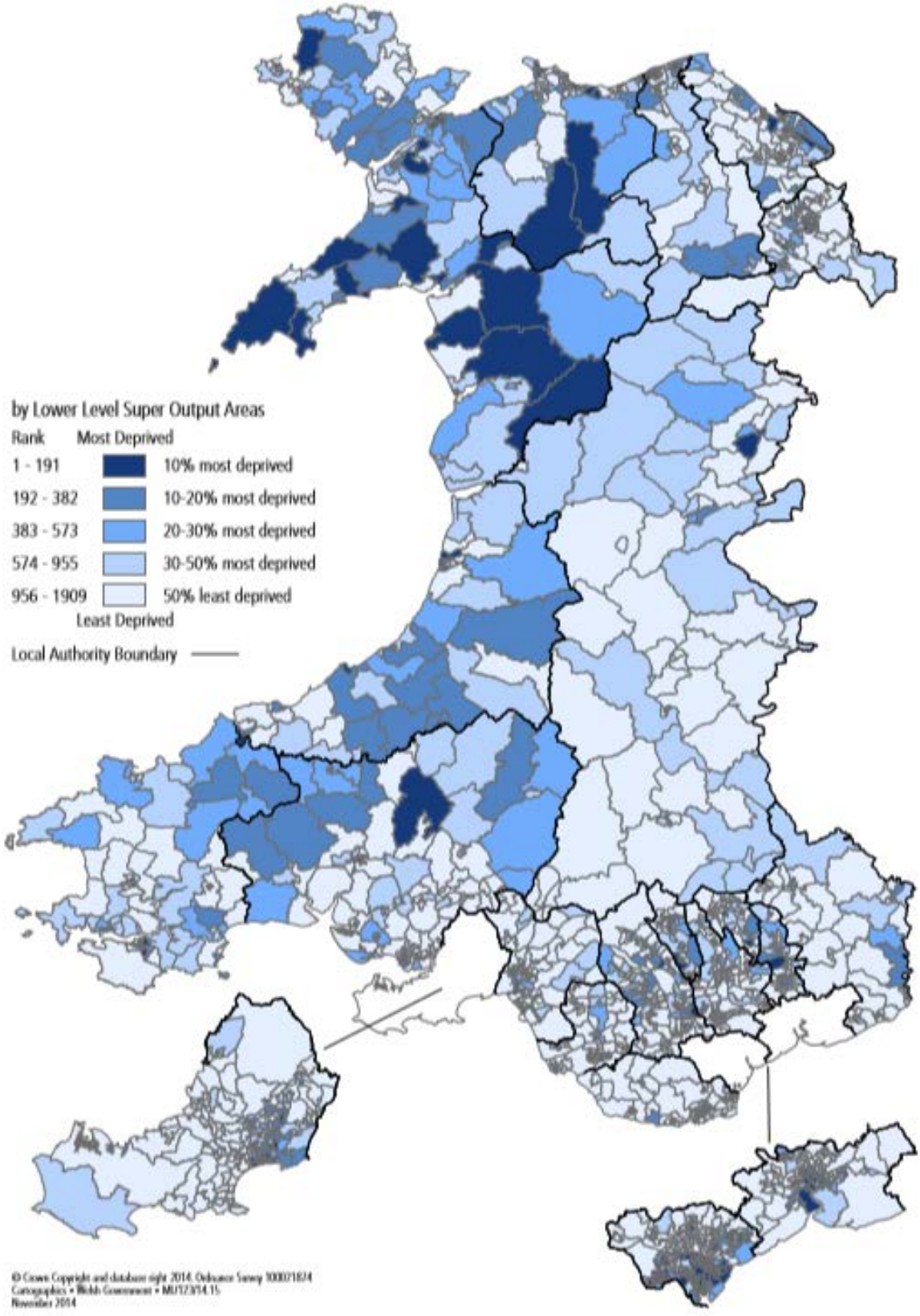
The creation of cohesive communities which are attractive, well-connected, safe and meet the needs of the population are important for Wales. The NDF has a key role to play in helping to guide decisions through the planning process relating to the development of space which can help to reduce deprivation and deliver sustainable living environments.

Baseline conditions and trends

Number and Distribution of LSOAs Within Bottom 10% Most Deprived Housing

Figure 5-3 shows the deprivation levels of the LSOAs in Wales with regard to housing.

Figure 5-3 Housing Deprivation Map for Wales



Source: WIMD

Wales has 1909 LSOAs in total – In the WIMD 2014 housing measurement there are pockets of high housing deprivation in the urban areas in the large South Wales cities and in the more rural areas of North West Wales.

In terms of local authorities, the highest proportion of housing deprivation in Wales was prevalent in Cardiff (36.9%). Monmouthshire and Caerphilly had no LSOAs in the most deprived 10%.

Percentage of people living in households in income poverty relative to the UK median

Between 2008-09 and 2014-2015, 23% of people in Wales were living in households experiencing income poverty (after housing costs) – this meant that Wales experienced the highest percentage in household poverty compared to the other countries in the UK.

In 2012-13 to 2014-15, Wales had the highest levels of children, working age adults and pensioners living in household poverty compared to other countries in the UK.

Percentage of households living in material deprivation

The National Survey for Wales (April 2014 – March 2015) includes material deprivation which is one of the measures the Welsh Government use to analyse poverty – such questions that are asked include whether a household is able to afford things like keeping the house warm enough, make regular savings, or have a holiday once a year.

Material deprivation questions are designed to capture the consequences of long-term poverty on households, rather than short-term financial strain.

The key findings regarding material deprivation include:

- 16% of people were materially deprived (that is, unable to afford certain things such as keeping the house warm enough, make regular savings, or have a holiday once a year).
- 9% of parents had materially deprived children (that is, being unable to afford certain things like warm winter coats for the child(ren), or to celebrate special occasions such as birthdays and Christmas).
- People in urban areas were more likely to be materially deprived than those in rural areas: 17% of people in urban areas were materially deprived, compared with 12% in rural areas.
- People in their 30s were the age group most likely to be materially deprived. 23% of people aged 30 to 39 were materially deprived, compared with 6% of people aged 70 or over. (National Survey of Wales).

Percentage of dwellings which are free from hazards

According to Stats Wales, during 2015-16 local authorities carried out 6,276 assessments under the Housing Health and Safety Rating System (HHSRS), a decrease of 7% on the previous year. Over two thirds (68 per cent) of all assessments made during 2015-16 recorded no Category hazards.

During 2015-16 Category 1 hazards were found in 2,024 (32%) of all assessments made. The most common Category 1 hazard found in both Houses in Multiple Occupation (HMOS) and non-HMO dwellings was ‘excess cold’.

Number of households successfully prevented from becoming homeless for at least 6 months – rate per 10,000 households

During 2015-16 7,128 households in Wales were assessed as being threatened with homelessness within 56 days. For 4,599 households (65 per cent), homelessness was successfully prevented for at least 6 months.

For a further 1,119 households (16 per cent of those threatened with homelessness), prevention for at least 6 months was unsuccessful. In these cases, the applying households have been discharged and have become statutorily homeless and may be owed a duty under Section 73 (Welsh Government).

Data Gaps

No significant data gaps have been identified for this topic at this stage.

6.1.4 Transport

Relevance to the NDF

The development of transportation links within Wales is important for Wales and is strongly tied to supporting the economy. The NDF has a key role to play in helping to guide decisions through the planning process relating to transportation.

Baseline conditions and trends

Distance travelled to work

Table 5-1 shows the majority of Welsh residents travel less than 10km to work. The majority of residents living within all Welsh regions travel a maximum distance of less than 10km to work at a proportion ranging between 37.9 to 58%. Of the residents who work from home Mid and West Wales have significantly higher numbers than the Welsh and other regional levels. The transportation network across Wales is presented in Figure 4 – Transportation Network.

Table 5-1 Distance travelled to work by Welsh Regions

Distance travelled to work	Mid and West Wales	North Wales	South Wales Central	South Wales East	South Wales West	Wales
Less than 10km	37.9%	48.6%	58.0%	51.2%	55.9%	50.5%
10km to less than 30km	23.0%	23.5%	20.4%	25.8%	21.1%	22.8%
30km and over	11.7%	9.6%	6.1%	7.6%	8.1%	8.5%
Work mainly at or from home	18.2%	10.8%	7.8%	8.1%	7.7%	10.4%
Other	9.3%	7.6%	7.7%	7.3%	7.2%	7.8%

Source: 2011 Census

Journey to work by mode

The methods of travel to work census data (QS701EW) for Welsh residents are illustrated in Table 5-2. The results show a similar split between each mode type compared across each of the Welsh regions. The results for Wales overall reveal the majority of residents travel by car (car or van driver, car passenger or motorcyclist) 45%, and lower for active travel (walking or cycling) 7%, with the proportion of residents travelling via public transport (bus or rail) lower at 4%. The proportion of residents not in employment in Wales overall is at 39%.

Table 5-2 Method travelled to work by Welsh Regions, 2011 Census

Source: 2011 Census

Distance travelled to work	Mid and West Wales	North Wales	South Wales Central	South Wales East	South Wales West	Wales
Car	44%	48%	42%	47%	46%	45%
Public Transport	2%	4%	7%	5%	4%	4%
Active	8%	7%	9%	6%	6%	7%
Other method of travel to work	1%	0%	0%	0%	0%	0%
Not in employment	38%	37%	39%	40%	42%	39%
Working from home	7%	3%	2%	2%	2%	3%

Road accidents by area by year and people killed or seriously injured on roads

In 2015 105 people were killed and 1,081 people seriously injured on Welsh roads.

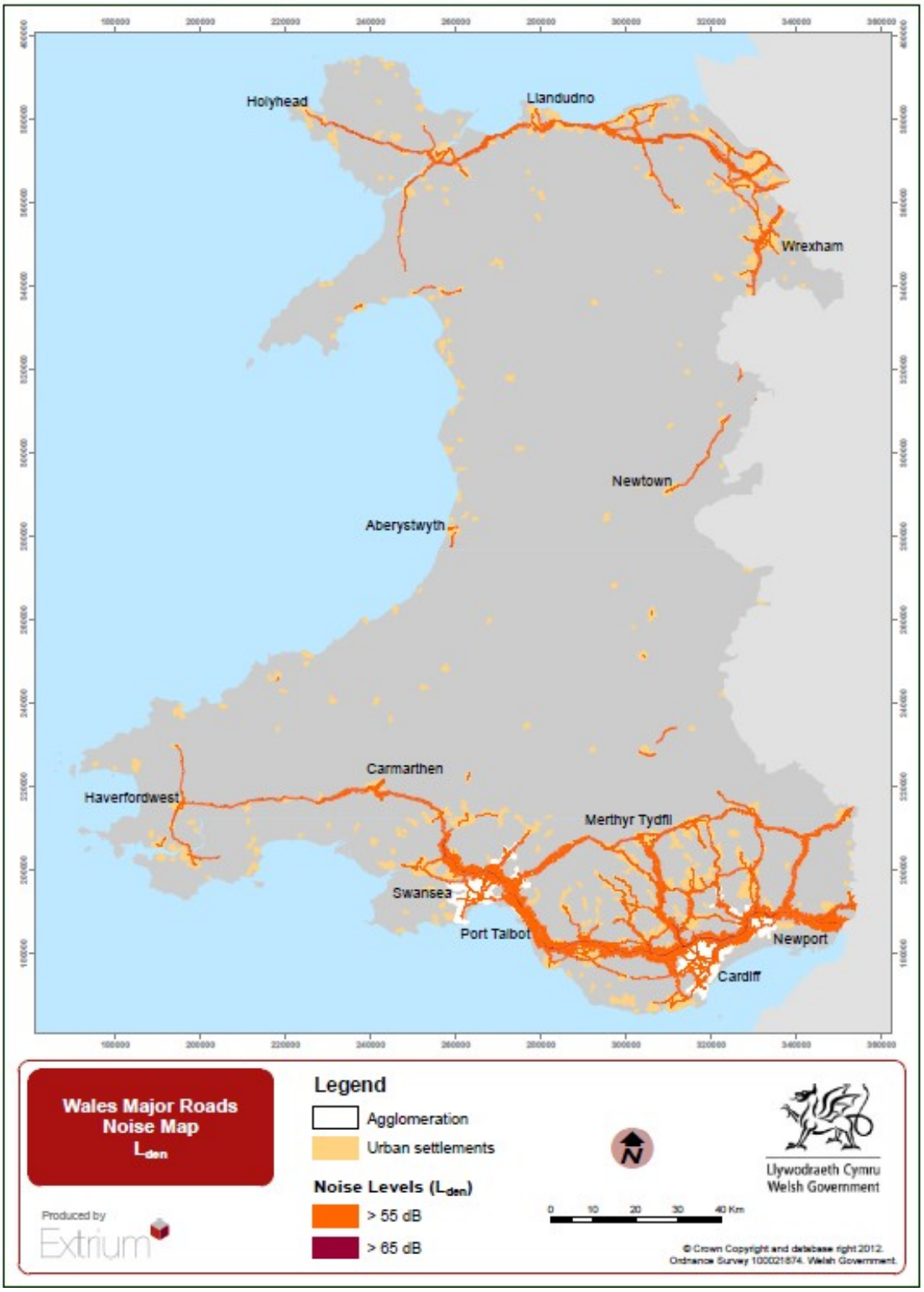
In 2015 there were 5,543 road accidents in Wales involving personal injury recorded by the police, a reduction of 333 on 2014 (6% reduction). These recorded accidents resulted in 7,682 casualties, which was 526 fewer than in 2014.

According to statistics, the majority of areas have experienced falls in all road accidents over the past 15 years. In 2015 Gwent police force recorded the lowest number of incidents and South Wales police recorded the highest number – this is largely due to South Wales being the largest police force in Wales in terms of population.

Noise pollution

Noise mapping carried out by the Welsh Government in 2013 under the Environmental Noise Directive (see Figure 5-4) highlights that road noise is focused around the M4 in South Wales and adjoining 'A' roads. The A55 and adjoining 'A' Roads in North Wales, and the A483 in Mid Wales, also contribute to high levels of noise pollution.

Figure 5-4 Wales Major Roads Noise Map



Source: Welsh Government (2013) Data Flow 4 and 8 Supplementary Report Major Roads in Wales. Available at http://gov.wales/docs/desh/publications/130214noise-major-roads-en.pdf [Accessed January 2016].

Data Gaps

6.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Surveys suggest that in 2014, 70% agreed with the statement 'my local area is well maintained', 77% agreed that their local area was free from graffiti and vandalism. These figures are highest in rural areas such as Powys and Pembrokeshire and lowest in Blaenau Gwent and Merthyr Tydfil.

In 2014, 64% of people considered it safe to allow their children to play outside, whereas 25% did not. Therefore there are issues around the level of perceived safety within neighbourhoods. The Isle of Anglesey was perceived as the safest place and Blaenau Gwent the least safe place.

Levels of housing deprivation are relatively high in pockets of the urban centres in the South and in the more rural areas of the North West. Between 2008-09 to 2014-2015, 23% of people in Wales were living in households experiencing income poverty (after housing costs) – this meant that Wales experienced the highest percentage in household poverty compared to the other parts of the UK

Levels of noise pollution around key roads within Wales are high. Noise can have multi-ranging effects, including on landscape receptors, ecological resources and human health.

Opportunities

The NDF should support the provision for a range of housing and other types of accommodation that meet the needs of the population and promotes safe and sustainable communities. This could be through methods such as identifying strategic housing locations and/or developing national housing targets. The NDF will play a key role in the delivery of affordable housing at a national level.

The creation of safe and well-maintained communities, where there is a sense of cohesion, should be a priority.

The NDF should also plan for reducing the need to travel, provide opportunities to access new and existing development and for services to be easily accessible by a range of sustainable travel modes and or improvements to digital connectivity. This should seek to reduce reliance on the private car. Highways infrastructure should meet people's needs, focused on prioritising safe, direct and attractive walking and cycling routes and networks for urban journeys less than 5 miles.

The NDF should look to ensure the development of a fully integrated sustainable transport network in Wales, with trains and buses linked to other forms of transport including community transport, pedestrian and cycle routes, and better integration between transport and key services. It should also ensure that improvements are made to transport infrastructure in Wales to improve accessibility to public transport services.

The NDF should consider strategic transport proposals in terms of the opportunities they present to encourage regional equality as well as improving human health, landscape and nature conservation from a reduction in noise and light pollution.

The NDF should help support cohesive communities e.g. the integration of places and networks for health, habitats and climate resilience within housing and transport proposals.

The NDF is focused towards the sustainable planning of new development. It would be helpful also to introduce regeneration and retrofitting as important planning means of addressing the social, health and well-being issues faced by existing communities.

6.3 Relevant ISA Objectives and Questions

Crime

11. To create the opportunities within which an improvement in social cohesion and equality can be achieved
• Create opportunities to reduce levels of crime and the fear of crime • Create opportunities to improve the number of people satisfied with their neighbourhoods as a place to live?

Housing

12. To create opportunities for the provision of good quality, safe, affordable housing that meets identified needs
• Create opportunities for the provision of sufficient accommodation to meet identified needs in all areas? • Create opportunities for the provision of good quality homes? • Create opportunities within which the availability of affordable housing should increase? • Create opportunities within which rural housing needs can be met? • Create opportunities within which levels of homelessness are reduced? • Create opportunities within which there is a reduction in the number of households in income poverty or material deprivation?

Deprivation and living environment

11. To create the opportunities within which an improvement in social cohesion and equality can be achieved
• Create opportunities within which social cohesion and equality can be improved? • Create opportunities within which equalities based on background or circumstances can be improved? • Create opportunities within which gender inequality may be reduced? • Create opportunities within which age inequality may be reduced? • Create opportunities within which inequalities based on disability can be improved? • Create opportunities for children who have any kind of disability to lead full and independent lives? • Create opportunities for children to develop healthily, and have access to good quality health care, clean water, nutritious food and a clean environment? • Create opportunities to ensure children can live to a standard that is good enough to meet their physical and mental needs? • Create opportunities to ensure children have access to an education? • Create opportunities to ensure children can relax and play, and join in a wide range of activities? • Create opportunities for the development of strong, cohesive communities? • Create conditions to reduce levels of crime and the fear of crime? • Create opportunities to improve the number of people satisfied with their neighbourhoods as a place to live? • Create opportunities for older and disabled people to participate in their communities and wider society? • Create opportunities to reduce loneliness amongst the community?

- Create opportunities for the built environment to be designed in a way that is accessible for all?

Transport

10. To create opportunities for the improved connectivity of communities and sustainable access to basic goods, services and amenities for all groups
• Create opportunities for the provision of integrated and inclusive public transport services that meet people's needs? • Create opportunities for the provision of highways infrastructure (including walking and cycling routes) that meets people's needs, including business, commercial and personal use? • Create opportunities for the use of sustainable travel modes and encourage a reduction in dependence on the private car? • Create opportunities for an improvement in inclusive access to cultural and recreational facilities? • Create opportunities for the provision of new and improvement of existing digital connective infrastructure? • Create opportunities for the maintenance and improvement of access to essential services and facilities, particularly in rural areas? • Create opportunities to reduce the risks from climate change to transport infrastructure?

7 Well-Being Goal: A Wales of Vibrant Culture and Thriving Welsh Language

This section provides baseline data relating to the following well-being goal:

'A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.'

The data relates primarily to:

- Welsh Language;
- Landscape and Townscape Character; and
- Cultural and Heritage Assets.

7.1 Overview of Baseline Conditions

7.1.1 Welsh Language

Relevance to the NDF

Wales is a bilingual country and the Welsh language is an important component of Welsh national identify and culture. As such, the future well-being of the Welsh language needs to be a core element of the NDF.

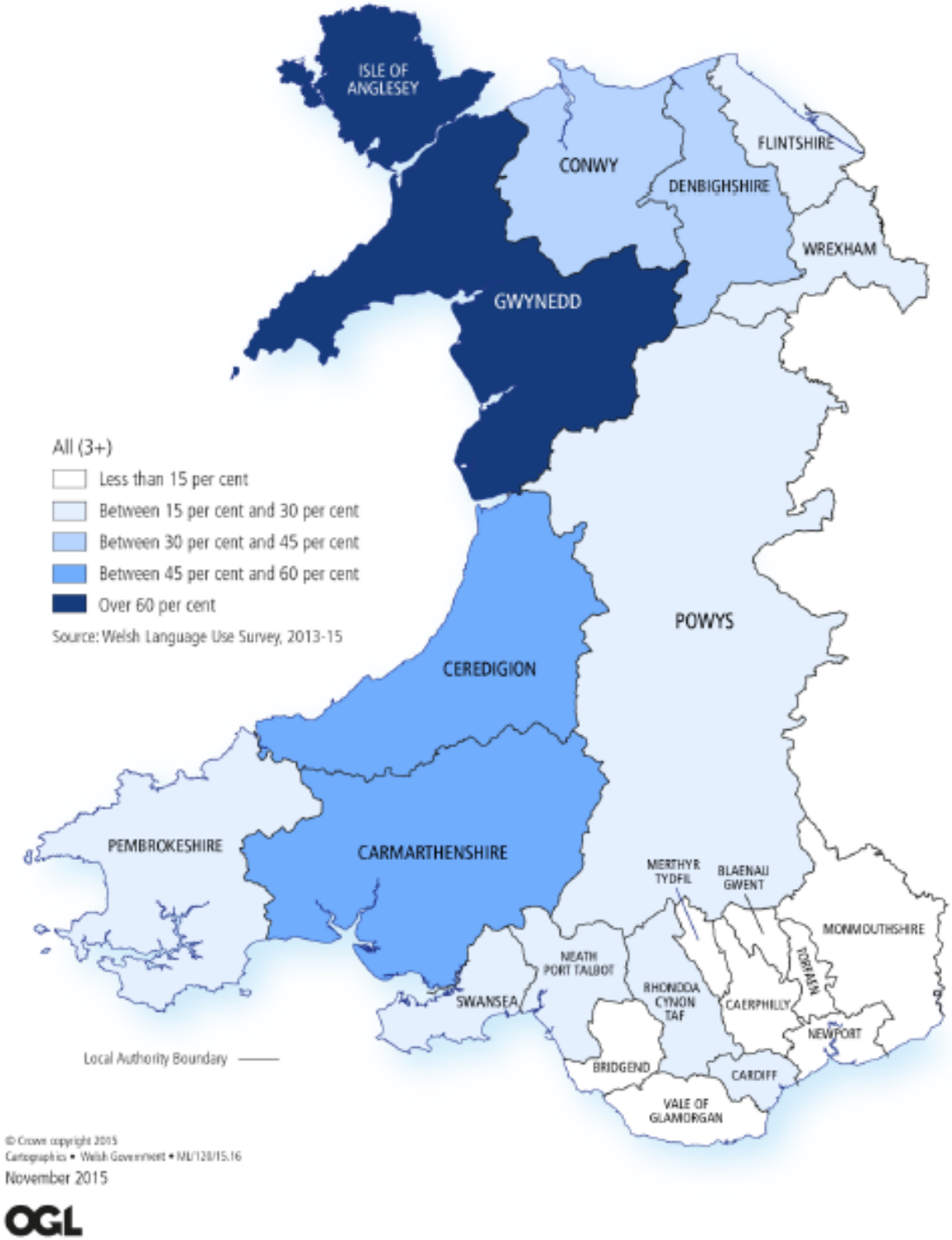
Baseline conditions and trends

The historic decline in use of the Welsh language has been halted and has now been on a general upward trend since the early 1990s. This is in part due to Welsh entering the national curriculum and being a compulsory subject in schools. However, levels of fluency are still low and there are large regional variations.

The Welsh language use survey is funded jointly by Welsh Government and the Welsh Language Commissioner. It provides information about Welsh speakers' use of the Welsh language. The most recent survey covers 2013 – 2015. According to the Welsh Language Use Survey 2013-15, 24% of people aged three and over were able to speak Welsh. The percentage of Welsh speakers decreased with age; it was at its highest amongst the 3 to 15 age group (41%), and at its lowest amongst the 45 to 64 age group (18%).

The percentage of people able to speak Welsh also varies between local authority areas. Figure 6-1 presents the percentage of people able to speak Welsh by local authority area. The highest concentration of Welsh speakers can be found in North West and West Wales, especially in Gwynedd, the Isle of Anglesey, Ceredigion and Carmarthenshire. The lowest percentage of people able to speak Welsh can be found in South East Wales.

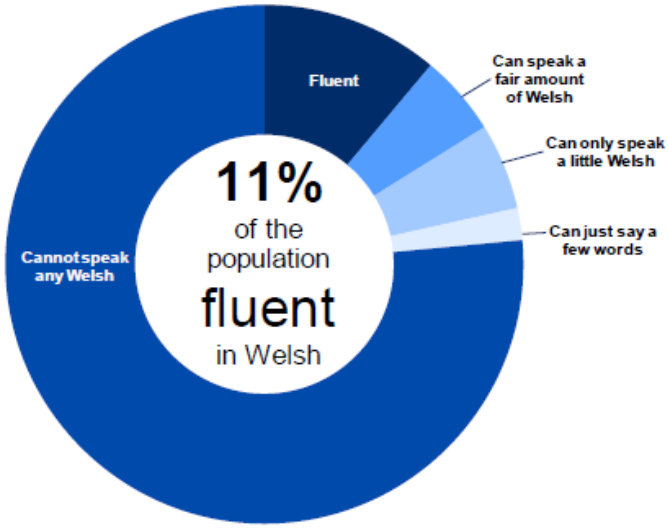
Figure 6-1: Percentage of people who are able to speak Welsh by local authority area



Source: Welsh Language Use in Wales (2013-2015)

Adults and young people aged three and over were asked as part of the Welsh Language Use Survey 2013-15 to best describe their ability to speak Welsh. Figure 6-2 presents the results of the question on fluency as a percentage of the whole population.

Figure 6-2: percentage of people who speak Welsh by fluency



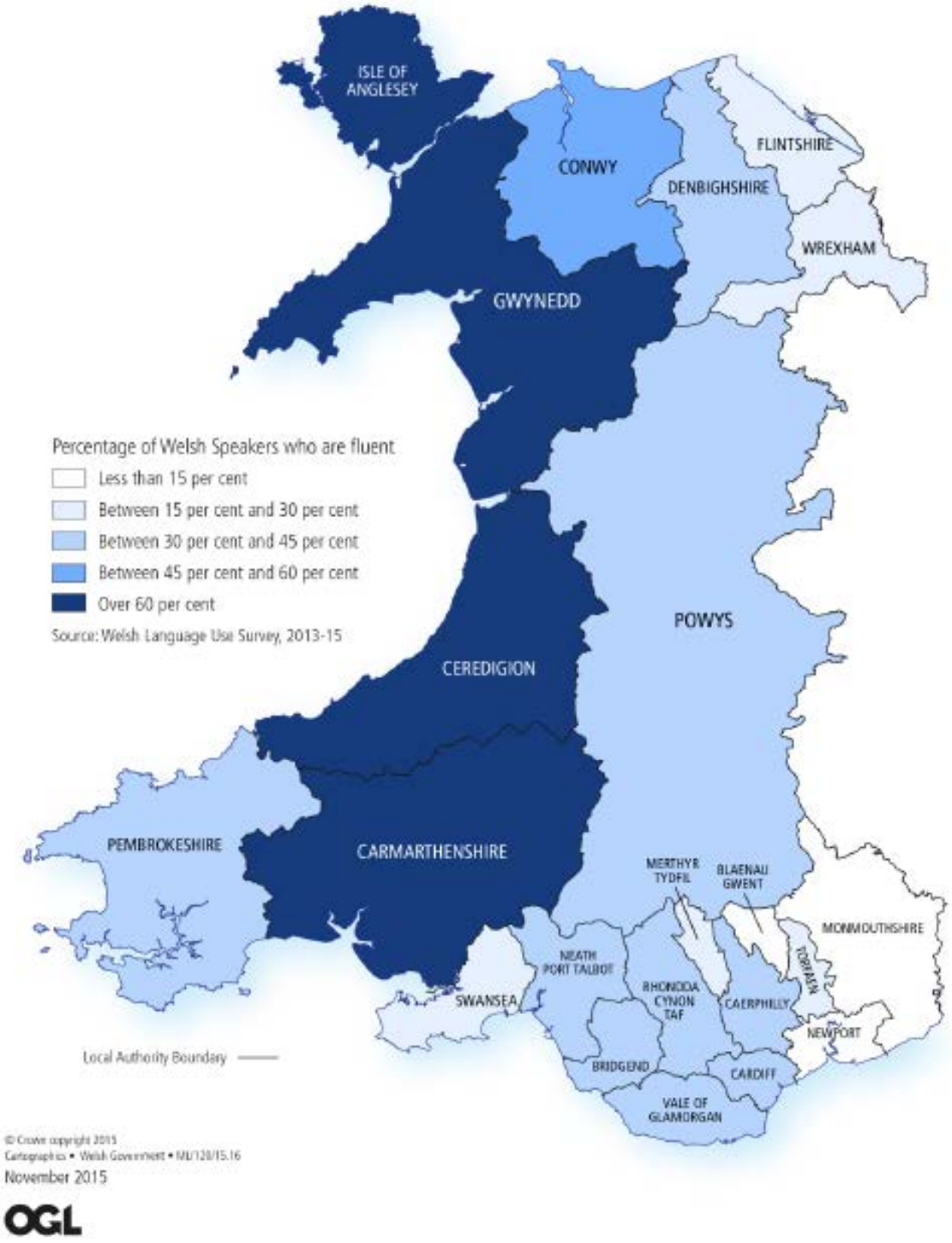
Source: Welsh Language Use in Wales (2013-2015)

11% of all people aged three and over living in Wales were able to speak Welsh fluently. This represents around 318,800 people. 12% of people stated that they could speak Welsh but not fluently. Both the percentage and the number of people who stated that they are fluent Welsh speakers have remained relatively constant since 2004-06. 12% of all people aged three and over were able to speak Welsh fluently in 2004-06, which represents 317,300 people.

The percentage of people who were fluent in Welsh tends to decrease with age, from 15% of the 3 to 15 age group to 9% of the 45 to 64 age group. The percentage of people aged 65 and over who were fluent was slightly higher than the percentage of the 30 to 44 and 45 to 64 age groups (Welsh Language Use in Wales (2013-2015)).

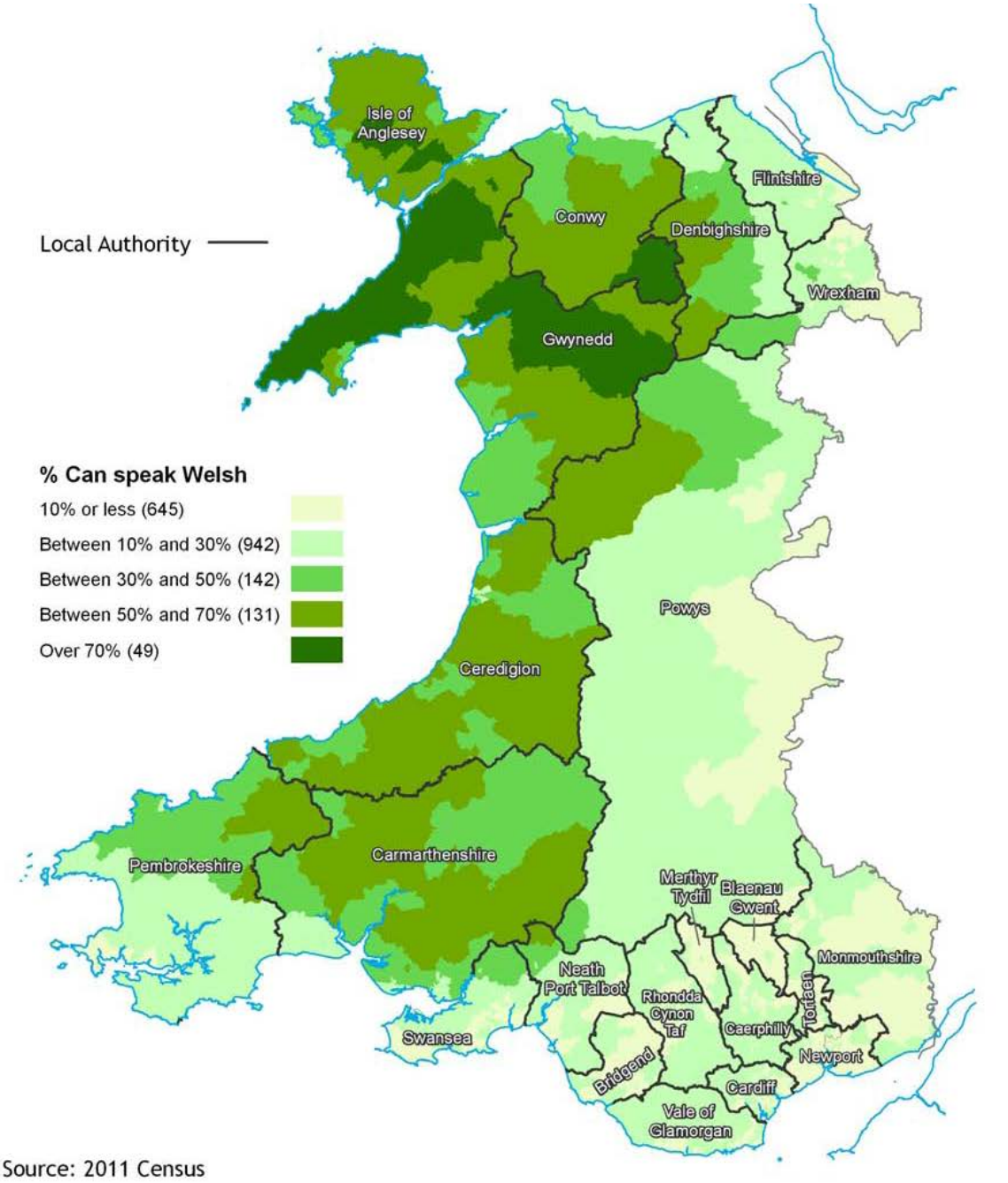
Fluency also varies according to local authority areas. Figure 6-3 presents the percentage of Welsh speakers who were fluent based on local authority area. The local authority areas with the highest percentages of Welsh speakers also had the highest percentages of fluent Welsh speakers, and are located in North West and West Wales. The percentage of Welsh speakers who are fluent was highest in Gwynedd, where almost four in every five Welsh speakers are fluent. Figures 6-4 and 6-5 presents the Proportion of people (aged 3 and over) able to speak Welsh, by LOSA, 2011 and 2001 respectively, illustrating the variation at the local level.

Figure 6-3: Percentage of Welsh Speakers who are fluent by local authority area



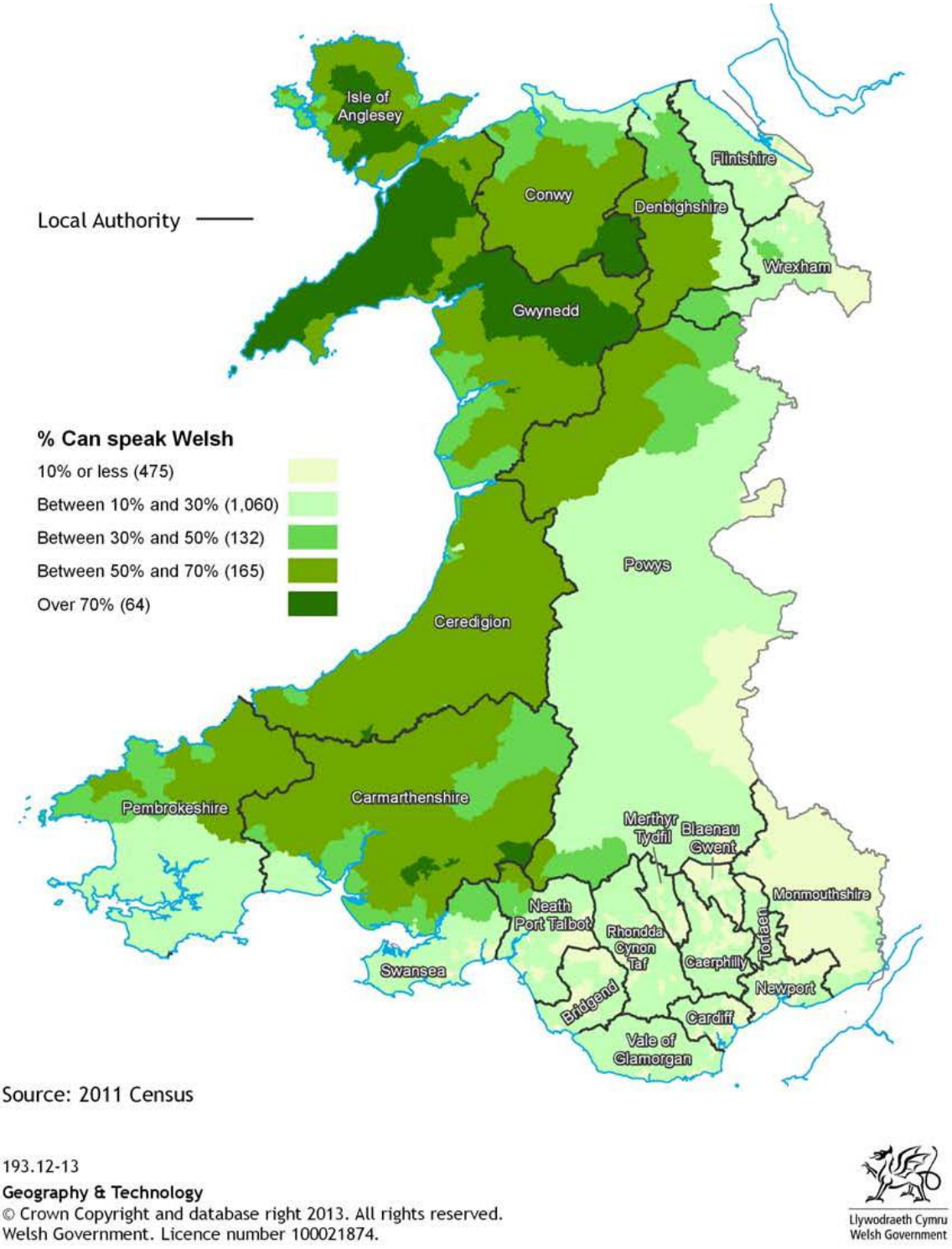
Source: Welsh Language Use in Wales (2013-2015)

Figure 6-4: Proportion of people (aged 3 and over) able to speak Welsh, by LOSA, 2011



Source: Statistics Bulletin 30 January 2013 2011 Census: Welsh Language Data for Small Areas

Figure 6-5: Proportion of people (aged 3 and over) able to speak Welsh, by LOSA, 2001



Source: Statistics Bulletin 30 January 2013 2011 Census: Welsh Language Data for Small Areas

Data Gaps

No significant data gaps have been identified for this topic at this stage.

7.1.2 Landscape and Townscape Character

Relevance to the NDF

Welsh landscapes reflect the extent and condition of a range of natural resources and ecosystems against the complexity of human influences and land-use decisions. Townscapes and urban character also reflect a long history of human development. Similarly, seascape information complements the landscape/townscape information and together the two types of information provide an understanding of the cultural benefits to be had from both the terrestrial, freshwater and the marine environment.

These elements have been strongly shaped by human intervention and land-uses throughout history and the NDF will continue to play an important role in shaping this character and quality through its guidance on land-use planning. Landscape, townscape and seascape character and quality are important in terms of Wales' strong sense of place and cultural identity with close links to the tourism industry.

Baseline conditions and trends

Wales has a varied and generally high-quality landscape with over 50% of the land area being nationally valued for its scenic quality and character. Many Welsh landscapes are iconic with a clear sense of place and recognisable identity (SoNaRR, 2016). The country is predominantly rural in character, with 60% of the landscape defined as Field Pattern/Mosaic, and 20% is categorised as Open Land (SoNaRR, 2016).

National landscape change to 2015 has been small overall, but some changes have been substantial locally. The key contributors to landscape change in the built environment include: the expansion of settlements, commercial and industrial developments, quarries and road improvements, onshore wind-farms, turbines and large recreational related developments. In the rural environment examples include: the felling of conifers and replanting with broadleaves, woodland expansion and changing bracken cover.

Climate change over time is likely to have significant impacts on landscape character, local distinctiveness and quality, directly through changing land cover (migrating habitat and species ranges) and indirectly by influencing land use decisions. Landscape changes may also be evident from mitigation measures, such as renewable energy generation, water resource management and adaptation through the planned expansion of woodland. Climate change also poses a risk to landscapes from pests, pathogens and invasive species and from changes in frequency and/or magnitude of extreme weather and wildfire events.

25% of Wales is designated as either National Park or Area of Outstanding Natural Beauty.

Designated Landscapes

Within Wales there are three National Parks; Brecon Beacons, Snowdonia and Pembrokeshire Coast. Each National Park also has local planning authority status in Wales. Combined, these National Parks in Wales cover around 25% of the land area of Wales. The National Parks and AONBs are national strategic assets contributing to the delivery of social, environmental, cultural and economic well-being goals. The locations of the National Parks in Wales are presented on Figure 2 – Landscape Features.

Brecon Beacons

The Brecon Beacons National Park contains some of the most distinctive upland landforms in southern Britain. The Park covers 520 square miles (1344 square kilometres) and lies between rural Mid Wales and the industrial South Wales Valleys. It is a diverse landscape, where sweeping uplands contrast with green valleys, with dramatic waterfalls, ancient woodland, caves, forests and reservoirs. The highest point is Pen y Fan, at the centre of the National Park. Its distinctive table topped summit stands at 886m, and it is climbed by hundreds of thousands of people each year.

The National Park is also home to 33,000 people, over 9000 different plants and animals, and has a strong Welsh heritage and rich economic, social and cultural life. The largest settlement is the cathedral town of Brecon with a population of approximately 7,500[11].

[11] Brecon Beacons National Park Authority Local Development Plan 2007-2022

Snowdonia National Park

The Snowdonia National Park takes its name from Snowdon which, at 1085m (3,560 feet), is the highest peak in Wales. The Snowdonia National Park is rich in landscape and townscape and has 60km of coastline. In addition to this, Snowdonia has extensive areas of woodland and over 96,000 hectares of moorland. The landscape within the National Park has been formed over millions of years. Since the end of the last Ice Age, 10,000 years ago, the interaction between people and nature has shaped the landscape of the National Park and there are strong cultural associations between people and place. The traditional rural character of settlements is distinct to the National Park and forms part of its historic landscape character. Fourteen towns and villages in Snowdonia have Conservation Areas and there are 1,900 listed buildings, 13 being Grade I and 116 buildings at Grade II*, plus there are also 21 Historic Parks and Gardens within the National Park. The Welsh language is a fundamental part of the area's culture. Welsh is the spoken and written language of approximately 62% of the population of Snowdonia and in some communities the percentage is as high as 85%. The 2001 Census showed a population of 25,482, with a small increase to 25,745 in the Mid-2006 Population Estimates for National Parks[12].

Pembrokeshire Coast National Park

Pembrokeshire Coast National Park boasts some of the most spectacular scenery and diverse wildlife in Britain including internationally important nature reserves, geology and archaeology. The Park was designated in 1952 and remains the only UK National Park recognised primarily for its coastline. It is one of the smallest UK National Parks, but has one of the most diverse landscapes – sandy beaches, rugged cliffs and islands, quiet wooded estuary and hill country with big sea views. The Park covers 232.5 square miles (602 sq km). At the widest point, it is about 16km, at its narrowest about 100m. Around 22,500 people live in the National Park[13].

In Wales, there are five AONBs: Anglesey, Gower, Llŷn, the Clwydian Range and Dee Valley and Wye Valley. See Figure 2 – Landscape Features.

Anglesey AONB

Designated in 1966 the Isle of Anglesey's AONB has one of the most distinctive, attractive and varied landscapes in the British Isles. It is also home to approximately 7,000 people. Some of the main features of the Anglesey AONB are:

- Low cliffs alternating with coves and pebble beaches;
- Sheer limestone cliffs interspersed with fine sandy beaches; and
- Stretches of sand dunes with beaches.

A number of the habitats found on Anglesey are afforded even greater protection both through UK and European designations because of their nature conservation value. These include:

- 5 Special Areas of Conservation;
- 3 Special Protection Areas;
- 1 National Nature Reserve;
- 31 Sites of Special Scientific Interest; and
- 75 Scheduled Monuments[14]

Gower AONB

The Gower AONB was designated in 1956 for its classic limestone coast and the variety of its natural habitats. It was the first AONB designated in the UK. Rich and diverse, Gower's scenery ranges from fragile dune and salt marsh in the north to the dramatic limestone cliffs along the south coast, intercut by sand

[12] Eryri Local Development Plan 2007-2022
[13] http://www.pembrokeshirecoast.org.uk/?PID=552
[14] http://www.anglesey.gov.uk/planning-and-waste/countryside/areas-of-outstanding-natural-beauty-aonbs/aonbs-in-wales/

beaches. Inland, the hills of Cefn Bryn and Rhossili Down dominate the landscape of traditional small fields, wooded valleys and open commons[15].

Pen Llyn AONB

Pen Llyn was designated as an AONB in 1956, the third to be designated in the UK. The Llŷn Peninsula is renowned for its diverse and interesting coastline. The AONB encompasses around one quarter of the peninsula, a total of 15,500 hectares, mostly along the coast, but it also extends inland and includes prominent igneous protrusions. Llŷn, whose complex geology includes ancient pre-Cambrian rock formations, is a natural extension of the Snowdonia massif. The geology is typified by the wide variation of coastal landscapes, ranging from the steep cliffs of Aberdaron Bay and promontories to the sand dune systems in the Abersoch area. The highest point in Llŷn is the Eifl (564m) mountain range which levels out to a plateau that extends towards the sea and the black rocks of Mynydd Mawr at the tip of the Peninsula. The area is typified by narrow and winding roads, farms and whitewashed cottages and also includes open areas of ancient common land[16].

Clwydian Range and Dee Valley AONB

The Clwydian Range was designated as an AONB in July 1985, then in November 2011 the Welsh Government's Environment Minister confirmed a southerly extension to include much of the Dee Valley from Corwen to Newbridge along with stunning natural features such as the Eglwyseg Escarpment, Horseshoe Pass and Esclusham Mountain. At the same time the whole area became known as the Clwydian Range and Dee Valley AONB. Its special qualities include historic landmarks such as Pontcysyllte Aqueduct and Canal and the Iron Age hillforts that crown the Clwydian Range. They also include cultural and artistic inspirations such as the eisteddfodau held all over the area, plus its quarrying and mining heritage[17].

Wye Valley AONB

The rich combination of breath taking views, impressive geology, historic legacies and diverse wildlife in the valley of the River Wye between Hereford and Chepstow led to the designation, in 1971, of the valley and adjoining plateaux and hills as an AONB. The Wye Valley AONB covers 92km (58 miles) of the lower reaches of the River Wye totalling an area of 327km^2. It stretches from Mordiford in the north, just east of the city of Hereford, southwards to the outskirts of Chepstow[18].

The location of AONBs in Wales are presented on Figure-002 Landscape Features.

Quality of Landscapes

The most detailed landscape baseline in Wales reporting on landscape state, condition and trend is LANDMAP. LANDMAP is an all-Wales landscape resource where landscape characteristics, qualities and influences on the landscape are recorded and evaluated. LANDMAP explains the physical, geological, ecological, visual, historic and cultural landscape: the summary descriptions, evaluations and management recommendations aid understanding of landscape and identify important landscape qualities and characteristics. By capturing multi-dimensional landscape information, it ensures that all aspects of the landscape can be taken into account. It is the focus for landscape monitoring in Wales, enabling the tracking of change and identifying key factors determining landscape change, condition and resilience.

Landscape Character Areas (LCAs) are identified at both a local planning authority level and at a national level, with 48 National Landscape Character Areas (NLCAs) identifying regional landscapes. They offer overall landscape summaries linked to the five LANDMAP layers, key characteristics, and forces for change, and may be linked to design or sensitivity studies.

Special Landscape Areas that identify areas of high landscape importance, often linked to LCAs, are identified by some authorities (SoNaRR, 2016). Within Wales there are many of these landscapes designated.

[15] http://www.swansea.gov.uk/aonb
[16] Penrhyn Llŷn Area of Outstanding Natural Beauty, Management Plan, 2010-2015
[17] http://www.clwydianrangeaonb.org.uk/landscape/
[18] Wye Valley Area of Outstanding Natural Beauty (AONB), Management Plan, 2015 – 2016

Marine Character Areas

70% of Wales' coastline is designated or registered AONB, National Park, Heritage Coast or Historic Landscape (Seascapes and Marine Planning in Wales, 2014). Seascape information complements available landscape information and together the two types of information provide an understanding of the cultural benefits to be had from the marine environment. There are 29 national Marine Character Areas (MCAs) (National Seascape Assessment for Wales, NRW Evidence Report 80[19], the 50 Regional Seascapes (Welsh seascapes and their sensitivity to offshore developments, CCW Policy Research Report 08/5, 2009) and the local Seascape Character Assessments (SCA) of Pembrokeshire, Snowdonia and Ynys Mon provide comprehensive seascape information for Wales as a whole.

Landscapes of Historic Importance

The landscape of Wales is a vital resource for social, economic, cultural and environmental well-being. It has also been historically shaped by human activity and is rich in evidence of the past. To recognise the value of historic landscapes, and raise awareness of their importance, Cadw, in partnership with NRW and the ICOMOS UK compiled a Register of Landscapes of Historic Interest in Wales. The Register identifies 58 landscapes of outstanding or special historic interest, which are considered to be the best examples of different types of historic landscapes in Wales. Figure 3 – Heritage Features shows the locations of historic landscapes.

The Register provides information to decision makers and landscape managers, to help ensure that the historic character of the landscape is sustained, and that where change is contemplated, it is well-informed (Cadw).

7.1.3 Dark Skies and Tranquil Areas

Relevance to the NDF

It is recognised that dark skies and tranquil areas can bring benefits to an area including enhancing the environment, attracting visitors and can boost the local economy. The NDF has a key role to play in helping to guide decisions through the planning process.

Baseline conditions and trends

Dark sky areas are a good indicator of very low light pollution. There are three locations in Wales that have been designated as part of the International Dark Sky Places Program. These are:

- Brecon Beacons National Park (Dark Sky Reserve status)
- Snowdonia National Park (Dark Sky Reserve status)
- Elan Valley Estate, Powys (A Silver-tier International Dark Sky Park)

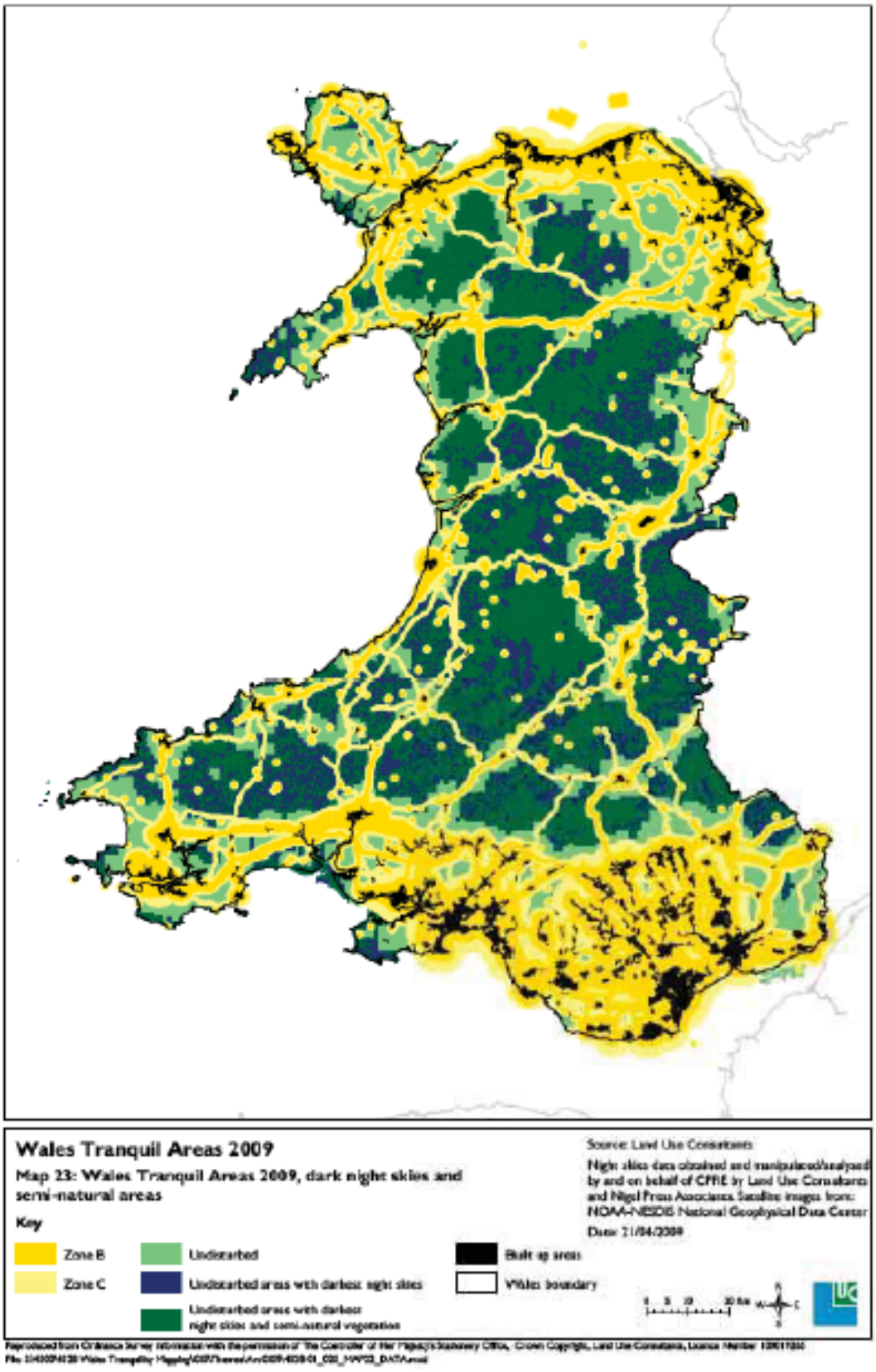
The Countryside Council for Wales (now NRW) commissioned a tranquil areas assessment in 2009, following an earlier assessment in 1997 (See Figure 7-1). This identified 55% of Wales (11,600 km^2) as tranquil in 2009, a loss of 1500km^2 of tranquil landscapes from 1997.

The two largest Tranquil Areas on the 2009 Map are both over 1,000km^2. These areas are parts of the Berwyn Mountains, bordered by the towns of Dolgellau, Bala, Llangollen and Welshpool, and the southern part of the Cambrian Mountains, bordered by Llangurig, Rhayader, Llandovery, Lampeter and Tregaron. It is noted (July 2017) that the Clwydian Range and Dee Valley AONB is also currently pursuing Dark Sky designation.

Between 1997 and 2009, there was a loss of Tranquil Areas of nearly 1,500km^2 of land. This is over 6% of the total land area of Wales, and is greater than the area of the Brecon Beacons National Park.

[19] http://naturalresources.wales/our-evidence-and-reports/marine-character-areas/?lang=en

Figure 7-1: Tranquil Areas



Data Gaps

No significant data gaps have been identified for this topic at this stage.

7.1.4 Cultural and Heritage Assets

Relevance to the NDF

The historic environment comprises archaeological remains, structures and relict landscapes associated with past human activity. This section also covers cultural activities undertaken by the population. Wales has a large number of designated and non-designated historic assets reflecting its long history of human occupation. Many of these provide attractive places to live and important tourist attractions, in addition to being central to Welsh cultural identify.

The NDF has a key role to play in the protection and enhancement of the historic environment and historic assets through guiding decisions made in the planning system. New development can have a range of direct and indirect effects on the historic environment, historic assets and their settings. Some development can be beneficial, but where its impact is adverse this should be avoided or mitigated. This includes effects on cultural activities.

Baseline conditions and trends

Historic assets in Wales are numerous. This section describes the key types of asset present.

World Heritage Sites

World Heritage Sites are regarded as being universally important and 'belonging to all the peoples of the world, irrespective of the territory on which they are located'. They are inscribed by UNESCO.

Wales currently has three world heritage sites:

- The Castles and Town Walls of Edward I in Gwynedd at Caernarfon, Conwy, Beaumaris and Harlech in North-West Wales;
- Blaenavon Industrial Landscape in South-East Wales; and
- Pontcysyllte Aqueduct and Canal in North-East Wales.

Each of these cover large areas straddling a number of local authorities and have management plans which detail the planning policies of each authority regarding the protection of the World Heritage Sites. Some, such as Pontcysyllte, have buffer zones to add a supplementary degree of protection within the landscape adjacent to the site while others, such as Edward's Castles, have defined their Essential Setting and Significant Views within the management plan to protect the surrounding area. Each of the Welsh World Heritage Sites, their buffer zones, or their essential settings/significant views contain privately owned houses or land. Figure 3 – Heritage Features shows the locations of the World Heritage Sites in Wales.

Listed Buildings

Welsh Ministers are required by law to compile lists of buildings of special architectural or historic interest, known as listed buildings. The lists are used to help planning authorities make decisions that protect the special architectural or historic interest of such buildings, and their settings. Compilation of the lists is undertaken by Cadw. Listed buildings are classified in grades to show their relative importance. The grades are:

- I — Buildings of exceptional, usually national, interest. Currently fewer than two per cent of buildings listed in Wales qualify for this grade;
- II* — Particularly important buildings of more than special interest; and
- II — Buildings of special interest which warrant every effort being made to preserve them.

There are over 30,000 Listed Buildings (Grade I, Grade II and Grade II *) within Wales varying from medieval halls and castles to Edwardian villas.

Scheduled Monuments

Welsh Ministers have a statutory duty to compile and maintain a Schedule of Monuments. The monuments included on this Schedule are of national importance and cover a diverse range of archaeological sites. Some examples may be completely buried below ground, and may only be known through archaeological excavation. Others are more prominent, and include the great standing ruins of well-known medieval castles and abbeys. The oldest known example in Wales is a natural cave — found to contain the earliest evidence of people in Wales — dating to a quarter of a million years ago. At the other end of the spectrum are twentieth-century military structures. Scheduled monuments are often in a ruinous or semi-ruinous condition or take the form of earthworks.

Over 4,000 monuments have now been scheduled across Wales and the number is increasing as part of an ongoing planned policy of enhancing the Schedule.

Scheduled monuments are distributed throughout Wales and their locations are presented on Figure 3 – Heritage Features.

Historic Battlefields

The locations where historic battles took place can be significant historic assets. They often retain topographical and archaeological evidence, including war graves, which can increase understanding of these events. An inventory of Historic Battlefields in Wales was launched in February 2017 and is hosted on the RCAHMW website.

Conservation Areas

There are over 500 conservation areas in Wales. They are designated by local planning authorities for their special architectural and historic interest. Many local planning authorities have undertaken conservation area character appraisals which identify areas where enhancement through development may be desirable (Cadw).

Conservation areas in Wales are distributed throughout its counties and are largely situated within urban settlements, from small villages to areas within towns and cities.

Heritage Coasts

Heritage coasts are ‘defined’ rather than designated, so there isn’t a statutory designation process like that associated with National Parks and AONBs. However, they are largely located within areas that are afforded with National Park or AONB status.

Within Wales there are 14 heritage coasts:

- Glamorgan;
- Gower;
- South Pembrokeshire;
- Marloes and Dale;
- St Brides Bay;
- St Davids Peninsula;
- Dinas Head;
- St Dogmaels and Moylgrove;
- Ceredigion;
- Llŷn;
- Aberffraw Bay;
- Holyhead Mountain;
- North Anglesey; and
- Great Orme.

The location of heritage coasts is presented on Figure 3 – Heritage Features.

Historic Parks and Gardens

Wales has a rich inheritance of historic parks and gardens. They form an important and integral part of the historic and cultural fabric of the country.

Cadw has undertaken a comprehensive survey of historic parks and gardens in Wales. Those thought to be of national importance are included on the Cadw/ICOMOS Register of Parks and Gardens of Special Historic Interest in Wales. The Register was compiled in order to aid the informed conservation of historic parks and gardens by owners, local planning authorities, developers, statutory bodies and all concerned with them. Through the Historic Environment (Wales) Act 2016 it is now statutory and has six volumes. It was completed in 2002 although further sites can be added (or subtracted) at any time. There are currently almost 400 sites on the Register.

Sites on the Register are Graded I, II* and III in the same way as listed buildings. Approximately 10% are Grade I and 23% Grade II*. Grade I sites, such as Bodnant, Powis Castle, Dynevor Park, Margam Park, Erddig, Plas Brondanw and Raglan Castle, are of international importance.

Parks and gardens on the Register range from medieval to late twentieth century. Many are multi-period, with features of different styles and periods.

The existing register does not enjoy statutory status. However, the Historic Environment (Wales) Act 2016 places a duty on Welsh Ministers to compile and maintain a statutory register of historic parks and gardens in Wales. The intention is that this provision will be commenced during 2018.

Locations of historic parks and gardens are presented on Figure 3 – Heritage Features.

Historic Landscapes

The register of Historic Landscapes in Wales is a non-statutory advisory register. Its purpose is two fold. Firstly, when major change might be contemplated, it is intended to inform policy making and decision making at a strategic level about the historic importance of the areas identified. Secondly, information on the register should be taken into account when determining planning applications where the development requires Environmental Impact Assessment or, if on call in, in the opinion of Welsh Ministers is of a sufficient scale to have more than a local impact on the historic landscape.

Designated Wrecks

The seas around Wales are littered with the wrecks of vessels of all shapes and sizes. Although all of them have historic value, six currently have legal protection. These six are known as ‘designated wrecks’ and are protected under the 1973 Protection of Wrecks Act.

Heritage at Risk

A key element of Cadw’s heritage regeneration activity is action related to heritage assets in a deteriorating condition. Cadw has been working to identify the number and type of listed buildings at risk or in a vulnerable condition in Wales. Surveys of the condition of listed buildings have been carried out in Wales on a rolling basis for more than 15 years. 2015 data shows that the trend for buildings at risk is moving in the right direction. The number of buildings in an ‘at risk’ or ‘vulnerable’ condition has decreased since the last comparable data available (2013) and the percentage of buildings at risk has fallen from 8.92% to 8.54%. This figure is calculated using existing survey data and the most up-to-date data available from the approximate 20% of the building stock which has been re-surveyed in the past year (Cadw).The percentage of building at risk over time has fallen since 2013.

Over time, there have been additional buildings given listed status. The Historic Environment (Wales) Act 2016 aims to give more effective protection to listed buildings and scheduled monuments, to improve the sustainable management of the historic environment and to introduce greater transparency and accountability into decisions taken on the historic environment. These seek to preserve the cultural heritage and historic environment of Wales and in turn will provide greater financial gain for the Welsh tourism sector.

Cultural activity

According to the National Survey for Wales 58% of people had been to an arts event in the last 12 months, 59% had visited an historic place, and 39% had been to a museum. Of those people that attended 97% of people were satisfied with the arts and historic place they visited, and 96% were satisfied with the museum they visited (National Survey for Wales, 2014 – 2015).

Canal Network

The Canal network in Wales includes the Montgomery and Swansea Canals, the Monmouthshire & Brecon Canal and the Llangollen Canal, which includes the World Heritage designated Pontcysyllte Aqueduct.[20]

Historic Environment Records

The Historic Environment (Wales) Act placed a duty on the Welsh Ministers to compile and keep up to date a historic environment record for each local authority area in Wales. This provision was commenced in May 2017. The historic environment records contain and signpost information about both designated and non-designated historic assets. They also contain records of the investigation and management of the historic environment. The Welsh Ministers have chosen to discharge their duties relating to historic environment records through the Welsh archaeological trusts and online public access to the core information is available through Archwilio – www.archwilio.org.uk

Data Gaps

There are no significant data gaps for this topic.

[20] http://data-canalrivertrust.opendata.arcgis.com/

7.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Welsh Language

There has been an upward trend since the 1990s in the number of people using the Welsh language, noting large regional variations; there are opportunities to increase levels of fluency.

Landscape, Townscape and Seascape Character

Wales is renowned for its high-quality landscapes with over 50% of the land area being nationally valued for its scenic quality and character, 25% of which is designated as National Parks. This has implications for new development within these areas, with a key challenge for sustainable management being to enable appropriate levels of growth, whilst retaining the distinctiveness of places and landscapes as well as maintaining and enhancing their 'special qualities'. This must also recognise that the natural and historic components of landscape are important to both place and the cultural value of landscape.

Landscape character and tranquillity is already under pressure from development with around 1,500 km^2 of tranquil landscapes being lost between 1997 and 2009.

In addition, there are non-anthropogenic risks to landscapes from pests, pathogens and invasive species and from changes in frequency and/or magnitude of climate change, extreme weather and wildfire events.

Historic Environment, Cultural Heritage and Assets

Wales has a wealth of historic and cultural assets which are important components of national cultural identity. Many such assets are at risk from, for example, decay, climatic factors, neglect, reduced funding and inappropriate development. As with other environmental factors, recognising, protecting, enhancing and promoting cultural and historic assets is a key challenge for sustainable planning and management.

The National Survey for Wales and other related statistical information identified the importance of culture to tourism, highlighting the visits to heritage attractions, museums and the arts across Wales.

Opportunities

Welsh Language

The NDF has an opportunity to contribute towards the future well-being of the Welsh language by establishing conditions to allow sustainable communities to thrive. ***Landscape, Townscape and Seascape Character***

The planning system has a major role to play in how future development affects landscape, townscape, seascape and sense of place in general.

The NDF should consider how areas of landscape and townscape resource and components contributing to landscape distinctiveness bring together a wide range of multiple benefits for the economy (through tourism, but also increasing the attractiveness of places for inward investment), socially (through health and well-being benefits) as well as environmentally (from a landscape, air quality, heritage, water, soil and biodiversity perspective in particular. Linked to this green infrastructure is a wide range of blue infrastructure, which can be provided through the canals and waterways of Wales, which provide linkages between spaces and communities, as well as being features in themselves.

Historic Environment, Cultural Heritage and Assets

As with landscape, the NDF has a major role to play in the protection and enhancement of the historic environment and cultural heritage through guidance to the planning system. This should include the recognition that non-designated heritage assets are also an important part of the make-up of historic and cultural identify and sense of place and that indirect effects on the setting of assets are also important considerations.

Opportunities also exist for the NDF to promote awareness of cultural heritage and the historic environment and encourage the enhancement of cultural education centres.

Opportunities for the NDF to provide a framework to recognise, protect, promote and enhance cultural assets which could help to deliver tourism, economic growth and regeneration.

7.3 Relevant ISA Objectives and Questions

Welsh Language

5. To contribute towards the future well-being of the Welsh Language
• Encourage an increase in the number of Welsh language speakers across Wales? • Encourage an increase in the proportion of Welsh language speakers who are fluent across Wales? • Encourage an increase in the number of people who speak Welsh daily and who can speak more than just a few words of welsh?

Landscape and Townscape Character

13. To create opportunities for the protection and enhancement of the local distinctiveness of our landscapes, townscapes and seascapes
• Create opportunities for the protection and enhancement of areas of landscape and seascape character, distinctiveness, diversity and quality? • Create opportunities for the protection and enhancement of townscape character and quality including historic townscapes? • Create opportunities to promote sensitive, place-responsive design in all development/redevelopment? • Create opportunities to reduce noise and light pollution? • Create opportunities to maintain areas of tranquillity? • Create opportunities to encourage well designed and accessible places and networks for people and nature within our townscapes? • Create opportunities for landscapes to become more resilient to the effects of climate change?

Cultural and Heritage Assets

14. To create opportunities for the protection, conservation and enhancement of the historic environment, historic assets and their settings
• Create opportunities for the protection, conservation and enhancement of designated and non-designated historic assets, as defined in the glossary? • Create opportunities to promote the significance of historic assets, so that there is greater access, understanding and enjoyment for all? • Create opportunities for heritage led regeneration? • Create opportunities for the conservation and enhancement of Wales' historic landscapes?
15. To create opportunities for the protection and promotion of Welsh culture
• Create opportunities within which Welsh culture can thrive, through land use planning initiatives? • Create opportunities for access to Wales' cultural and heritage assets and activities? • Recognise, protect, promote and enhance Welsh culture? • Create opportunities for culture–led regeneration?

8 Well-Being Goal: A Globally Responsible Wales

This section provides baseline data relating to the following well-being goal:

'A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.'

In many ways, this well-being goal relates to all of the ISA topics. However, for the purposes of presentation, the data in this section relates primarily to:

- Energy Consumption, Greenhouse Gas Emissions and Ecological Footprint

8.1 Overview of Baseline Conditions

8.1.1 Energy Consumption, Greenhouse Gas Emissions and Ecological Footprint

Relevance to the NDF

Wales is a globally responsible nation and the NDF has an important role in helping to guide planning and development in a way that contributes positively to this. In particular energy consumption and greenhouse emissions are two things that occur locally through homes, businesses and transport but contribute to global consequences.

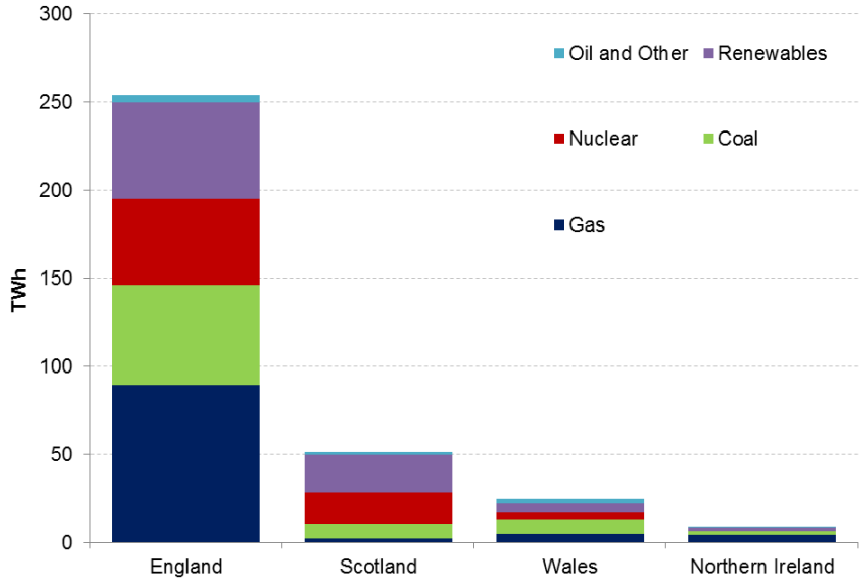
Baseline conditions and trends

Energy Generation

Energy generation in Wales is relatively evenly split between gas, coal, renewable and other sources with generation overall being significantly lower than in England and Scotland. Production has been in decline since 2010, largely due to the decline in energy from gas generation (Welsh Government, Energy Generation and Consumption Biennial Report, 2015).

Figure 7-1 below shows energy generation by fuel in 2015 for England, Scotland, Wales and Northern Ireland.

Figure 7-1 Energy Generation by fuel in 2015 for England, Scotland, Wales and Northern Ireland.



Sources: www.gov.uk

Between 2000 and 2013, the percentage of electricity generated from renewable energy sources has increased from less than 3% to over 10%. This is largely as a result of wind generation. However, this proportion of generation is still lower than any other UK country. The use of renewable energy could help to reduce Wales' carbon footprint over time. The Capacity (in GWh) of renewable energy generated in Wales in a recent study was 5,182.6 GWh (DECC).

Energy Consumption

Energy use in Wales in 2015 was about 25TWh which is about a 10th of the 250TWh energy used in England. Total energy consumption has been falling since 2005, though more so since 2007, which coincides with the economic downturn (as of 2015). The industry and commercial sector accounts for a large proportion of this decline[21].

The average energy efficiency of new homes in Wales in monitored. Percentage of dwellings with a Standard Assessment Procedure (SAP) rating of 65 or above is considered adequate. The SAP is a methodology used by Government for assessing the energy performance of dwellings. The SAP rating is expressed on a scale of 1 to 100 – the higher the number, the lower the running costs. Average SAP rating of new homes in Wales in 2008 was 77.6 and in 2009 this was 77[22].

Greenhouse Gas Emissions

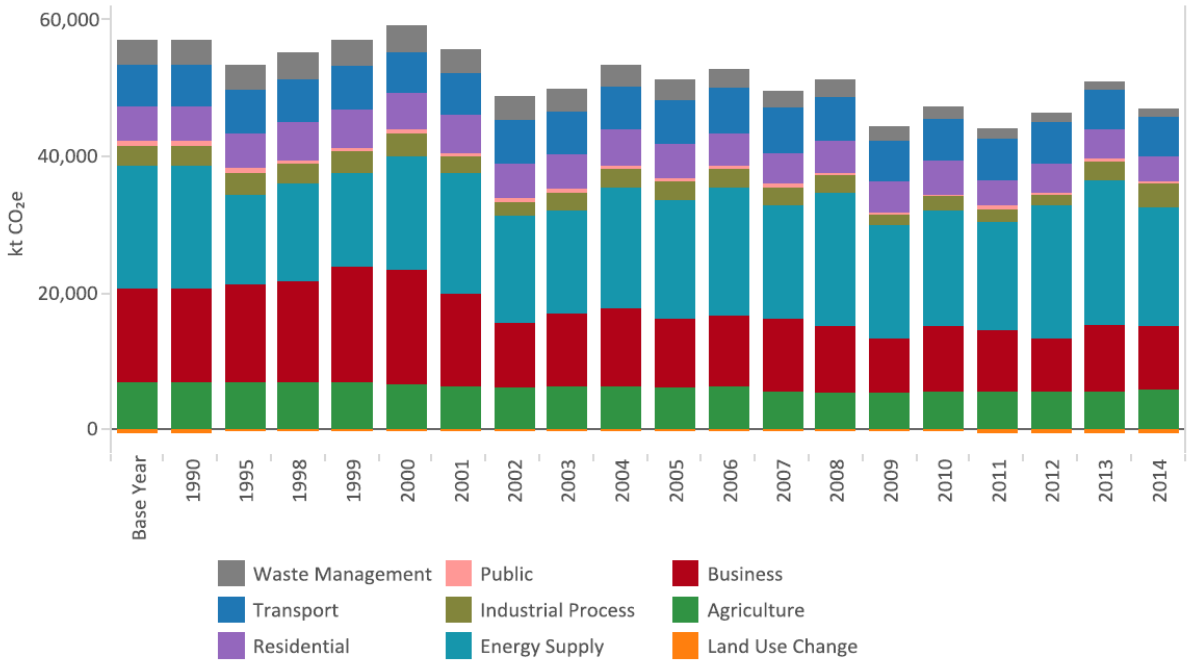
Total greenhouse gas emissions in Wales in 2014 amounted to 46,402 $ktCO_{2e}$. This compares to 56,620 $ktCO_{2e}$ in 1995, although that figure has fluctuated over the period showing a gradual decreasing trend overall. Total greenhouse gas emissions from Wales have reduced between 1990 and 2014 by 18%, whilst carbon dioxide emissions have fallen by 12%. These emission reductions are mainly due to efficiencies in energy generation and business sector heating, the use of natural gas to replace some coal and other fuels as well as abatement in some chemical industries, and variations in manufacturing output (e.g. in iron and steel, bulk chemical production)[23].

Wales is moving in the right direction to help combat some of the most serious causes of climate change. The increase of renewable energy production is an example of this. A reduction of overall CO_2 emissions is helping Wales and the whole of the UK meet its reduction targets. However, although moving in the right direction, change needs to happen in Wales and across the UK to ensure reduction targets are met.

Figure 7-2 illustrates the split of emissions between different sources in Wales between 1990 and 2014. This shows that the largest contributor remains the energy supply industry. Since 1990, the sector that has decreased its proportion of emissions the most is the business sector (NAEI Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2014).

[21] Welsh Government, Energy Generation and Consumption Biennial Report, 2015
[22] data.gov.uk
[23] NAEI Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990-2014

Figure 7-2 Total Greenhouse Gas Emissions per Sector in Wales (ktCO2e)



Ecological footprint

A study in 2008 estimated that Wales' ecological footprint at 10.05 million global hectares (gha), which is roughly five times the size of Wales, or 3.28 global hectares per capita (gha/c). Wales' carbon footprint is estimated at 34 Mt CO_{2e}, or 11 t CO_{2e} per capita. In comparison with other developed countries, Wales' ecological footprint is significantly higher (Stockholm Environment Institute/University of York).

Data Gaps

No significant data gaps have been identified for this topic at this stage.

8.2 Key Issues relevant to the NDF and opportunities for it to address them

Issues

Greenhouse gas emissions have been steadily falling in Wales; there is still a long way to go to meet the emissions targets.

This reduction is partly as a result of a gradual shift in energy generation to renewable and cleaner fuels together with technological and efficiency improvements in industry. However, again there are challenges to maintain these positive trends.

The estimated global footprint of Wales is high compared with other developed countries. There is a challenge to reduce this whilst also accommodating new development and economic growth.

Opportunities

The NDF has an opportunity to help deliver a prosperous low carbon economy through the promotion of low carbon development including low carbon fuels and improved standards of energy efficiency in industry and residential development.

The NDF has an opportunity to help ensure the delivery of the Government targets in terms of new renewable energy generation capacity and the promotion of energy efficiency measures in buildings.

The NDF has an opportunity to demonstrate that it is possible to achieve economic growth without generating growth in road traffic and the associated growth in carbon dioxide emissions.

There is an opportunity for the NDF to provide a national Framework against which the generation of energy from low and zero carbon sources can be delivered. This may include the promotion of locally owned/community energy schemes.

The NDF has an opportunity to place a greater emphasis on reducing energy demand, to an extent that reflects the ambition implied in the Wales Carbon Budgets set by the Welsh Government under the Environment (Wales) Act 2016.

The NDF has an opportunity to reduce emissions by highlighting the opportunities from natural resources and diversification of the energy sector i.e. encouraging a greater energy mix for security, affordability and climate factors.

The NDF could realise the potential of the right technology in the right place (heat networks, wind, marine).

The NDF has the potential to identify the need for and support development of, energy infrastructure such as electricity transmissions and grid distribution.

The NDF has the potential to support decentralised energy networks; reflecting the objective of greater community and local ownership of renewable energy, whilst encouraging demand reduction.

The NDF has the potential to identify and support innovation and emerging energy technologies in decarbonising Wales.

8.3 Relevant ISA Objective and Questions

Energy Consumption, Greenhouse Gas Emissions and Ecological Footprint

6. To create the opportunities within which greenhouse gas emissions can be reduced and limited and encourage energy efficient and sustainable design
• Create opportunities to reduce greenhouse gas emissions from existing and new development? • Create opportunities to reduce the greenhouse gas emissions from power generation, heavy industries and transport? • Create opportunities whereby sustainable design is required to be an integral part of new development? • Create opportunities to reduce the demand for energy and increase energy efficiency? • Create opportunities to in crease the potential for the generation of low and zero carbon energy sources?