

## APPENDIX 7: Baseline data

Please note that this document is a working document and will be updated periodically.

### 1. Population

#### Population facts and figures

The population of Pembrokeshire, excluding areas in the National Park, was 91,589 at the last Census in 2001. The population of the entire County was 114,131 which is 3.9% of the Wales population of 2,903,085.

Table 1: Mid year estimates of population, all Pembrokeshire

Mid Year Estimates	2001	2002	2003	2004	2005	2006	2007	2008	2009
Males	54,386	54,719	55,623	55,810	55,891	56,167	56,601	57,100	57,089
Females	58,672	58,904	59,583	59,743	59,749	59,903	60,172	60,492	60,336
All Persons	113,058	113,623	115,206	115,553	115,640	116,070	116,773	117,592	117,425

Source: Office for National Statistics (Nov 2010)

Table 2: Breakdown of selected age groups (number and percentage), all Pembrokeshire

	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>0-4</b>	6,703	5272	6,322	6,150	6039	6038	6,191	6,340	6401
	<b>5.9</b>	<b>4.6</b>	<b>5.5</b>	<b>5.3</b>	<b>5.2</b>	<b>5.1</b>	<b>5.3</b>	<b>5.3</b>	<b>5.5</b>
<b>15-29</b>	17,483	17,118	17,440	16,274	17,936	18,435	18,869	19,419	18,795
	<b>15.5</b>	<b>15.0</b>	<b>15.1</b>	<b>14.0</b>	<b>15.4</b>	<b>15.7</b>	<b>16.0</b>	<b>16.3</b>	<b>16.0</b>
<b>65+</b>	21,909	20,929	22,436	23,140	23,387	23,712	24,042	24,565	24,993
	<b>19.4</b>	<b>18.4</b>	<b>19.4</b>	<b>19.9</b>	<b>20.0</b>	<b>20.2</b>	<b>20.4</b>	<b>20.7</b>	<b>21.3</b>
<b>Total</b>	113,058	113,623	115,206	115,553	115,640	116,070	116,773	117,592	117,425

Source: Office for National Statistics (Nov 2010)

Table 3: Population projections (numbers and percentage change) for all Pembrokeshire

Projections	2011	2016	2021	2026	2031
All persons	121,000	125,100	129,000	132,300	134,800
	3%	7%	10%	13%	15%

Source: WAG, 2006-based Local Authority Population Projections for Wales

<http://wales.gov.uk/topics/statistics/publications/publication-archive/popprojla08/?lang=en> (Nov 2009)

Table 4: Household projections (number in thousands and percentage change), for all Pembrokeshire and Wales

Projected households	2006	2011	2016	2021	2026	2031	Percentage change 2006-2031
All Pembrokeshire	51.3	54.7	58.1	61.3	64.1	66.5	30%
Wales	1,271.8	1,342.3	1,415.1	1,482.4	1,541.4	1,589.3	25%

Source: WAG, 2006-based Local Authority Household Projections for Wales

<http://wales.gov.uk/topics/statistics/publications/hseholdproj06sum/?lang=en> (Nov 2009)

Table 5: Population projections

<b>Projections</b>	<b>2006</b>	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>
Males	57,629	59,946	61,837	63,312	64,327	64,732
Females	60,280	61,219	61,949	62,490	62,604	62,120
All Persons	117,909	121,165	123,786	125,802	126,931	126,852

Source: Pop Group Model (PCC 2008)

Table 6: Projections by age split

<b>All Persons</b>	<b>2001</b>	<b>2006</b>	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>
<b>0-4</b>	6,703	6,097	6,115	6,284	6,371	6,177	5,842
<b>%</b>	<b>5.9</b>	<b>5.2</b>	<b>5.0</b>	<b>5.1</b>	<b>5.1</b>	<b>4.9</b>	<b>4.6</b>
<b>15-29</b>	17483	18541	20121	20724	19985	19270	18908
<b>%</b>	<b>15.3</b>	<b>15.7</b>	<b>16.6</b>	<b>16.7</b>	<b>15.9</b>	<b>15.2</b>	<b>14.9</b>
<b>65+</b>	21909	23883	26817	30783	33079	35187	37592
<b>%</b>	<b>19.2</b>	<b>20.3</b>	<b>22.1</b>	<b>24.9</b>	<b>26.3</b>	<b>27.7</b>	<b>29.6</b>
Total Pop	114,138	117,909	121,165	123,786	125,802	126,931	126,852

Source: Pop Group Model (PCC 2008)

Table 6a: Projections by age split – Males only

<b>Males</b>	<b>2001</b>	<b>2006</b>	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>
<b>0-4</b>	3531	3263	3266	3357	3403	3300	3122
<b>%</b>	<b>6.4</b>	<b>5.7</b>	<b>5.4</b>	<b>5.4</b>	<b>5.4</b>	<b>5.1</b>	<b>4.8</b>
<b>15-29</b>	8594	9416	10372	11082	11041	10969	10806
<b>%</b>	<b>15.6</b>	<b>16.3</b>	<b>17.3</b>	<b>17.9</b>	<b>17.4</b>	<b>17.1</b>	<b>16.7</b>
<b>65+</b>	9455	10741	12289	14343	15479	16414	17388
<b>%</b>	<b>17.2</b>	<b>18.6</b>	<b>20.5</b>	<b>23.2</b>	<b>24.4</b>	<b>25.5</b>	<b>26.9</b>
Total Males	55039	57629	59946	61837	63312	64327	64732

Source: Pop Group Model (PCC 2008)

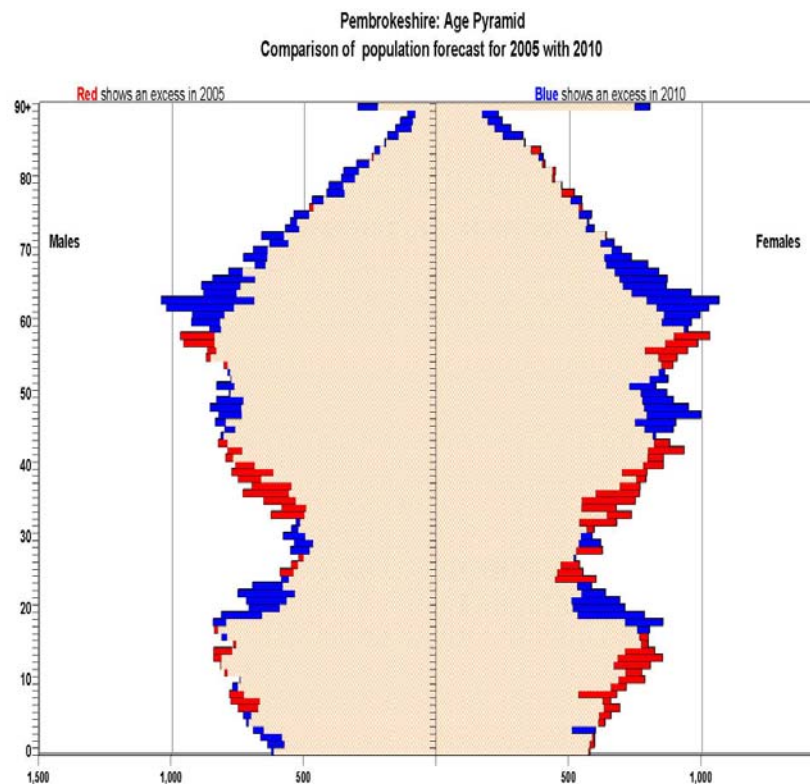
Table 6b: Projections by age split – Females only

<b>Females</b>	<b>2001</b>	<b>2006</b>	<b>2011</b>	<b>2016</b>	<b>2021</b>	<b>2026</b>	<b>2031</b>
<b>0-4</b>	3172	2834	2848	2927	2967	2877	2721
<b>%</b>	<b>5.4</b>	<b>4.7</b>	<b>4.7</b>	<b>4.7</b>	<b>4.7</b>	<b>4.6</b>	<b>4.4</b>
<b>15-29</b>	8889	9125	9748	9642	8943	8301	8103
<b>%</b>	<b>15.0</b>	<b>15.1</b>	<b>15.9</b>	<b>15.6</b>	<b>14.3</b>	<b>13.3</b>	<b>13.0</b>
<b>65+</b>	12454	13142	14528	16440	17601	18775	20205
<b>%</b>	<b>21.1</b>	<b>21.8</b>	<b>23.7</b>	<b>26.5</b>	<b>28.2</b>	<b>30.0</b>	<b>32.5</b>
Total Females	59099	60280	61219	61949	62490	62604	62120

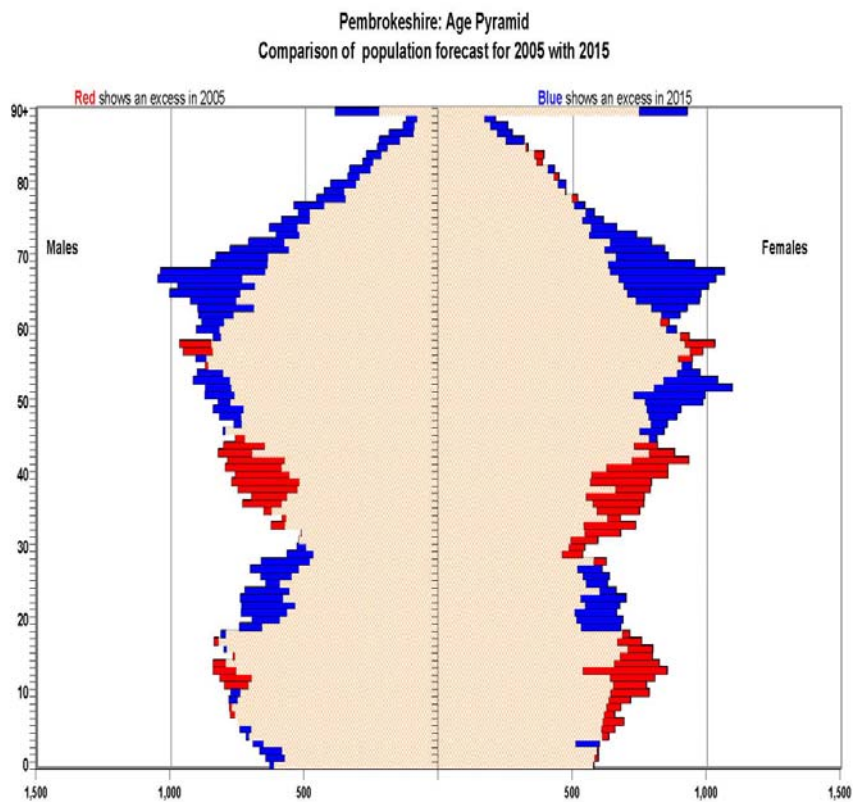
Source: Pop Group Model (PCC 2008)

**Figure 1: Population Age Pyramid (2005/10 Comparison)**

Source: Office of National Statistics



**Figure 2: Population Age Pyramid (2005/10 Comparison)**



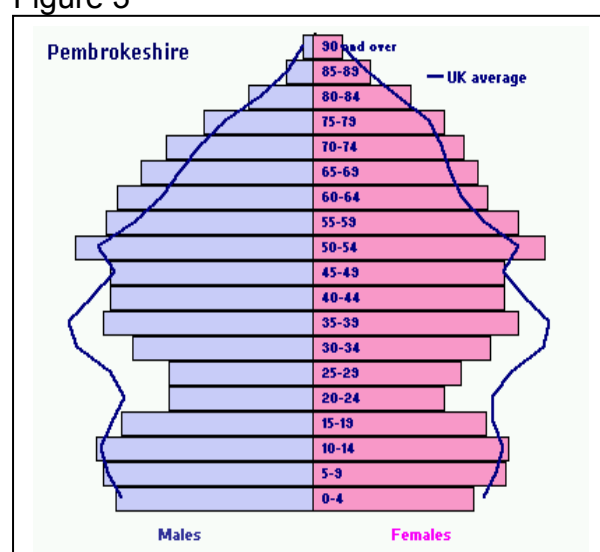
Pembrokeshire has a population of 114,131 (2001 Census) of whom 48% are male and 52% female (though it should be noted the County's population can increase by 100% as a result of summer tourism). This equates to a figure of 69.8 people/km<sup>2</sup>.

Table 7: Age distribution of Pembrokeshire's population, 2001

POPULATION (Number and Percentage) BY AGE, 2001		
Age Band	Pembrokeshire	
	Number	%
0 - 15	23,394	20.5
16 to 74	80,763	70.8
75 and over	9,974	8.7

The age profile shown in Figure 3 below demonstrates that the population is skewed towards the 45 to 74 age range, and away from the 20 to 44 age range compared to the UK average. This is a reflection of the tendency for young people to leave the County to seek higher education and to begin their careers. However, there is anecdotal evidence of these people subsequently returning to the County in later life, often prior to retirement. The proportion of individuals over the age of 65 is already higher than the Welsh average (19.2% compared to 17.39% in 2001, Census 2001).

Figure 3



Source: Office for National Statistics

## Life Expectancy

Table 8: Life expectancy in Pembrokeshire and Wales

		Male	Female
1995-1997	Pembrokeshire	74.3	79.7
	Wales	74.0	79.2
1997-1998	Pembrokeshire	74.5	79.6
	Wales	74.5	79.5
1998-2000	Pembrokeshire	74.9	79.7
	Wales	74.8	79.7
2002-2004	Pembrokeshire	76.0	80.5
	Wales	75.8	80.3

### Population Future Trend

Life expectancy in Pembrokeshire is continuously higher for both males and females than the national average and is increasing at the same rate.

### Sources

ONS, 2001 Census (Life Expectancy at Birth, 2002-2004)  
Community Profiling Database

### Mortality by Cause

Table 9

Males	All Causes	1	2	3	4	5	6	7	8	9	10	11	12	13
2001	696	203	7	22	44	30	17	270	167	50	80	22	43	5
2002	681	195	9	21	41	22	9	279	161	52	53	19	24	10
2003	686	201	12	20	42	40	8	287	155	73	65	19	30	11
2004	648	220	14	32	46	43	15	221	130	49	73	24	28	7

Data only available to 2004

Table 10

Females	All Causes	1	2	3	4	5	6	7	8	9	10	11	12	13
2001	679	164	9	18	32	28	6	285	126	93	80	35	31	0
2002	696	185	7	18	25	42	8	267	98	95	72	28	33	0
2003	730	188	6	26	29	37	14	287	111	95	90	41	25	4
2004	664	155	8	17	35	31	14	274	107	101	66	24	24	3

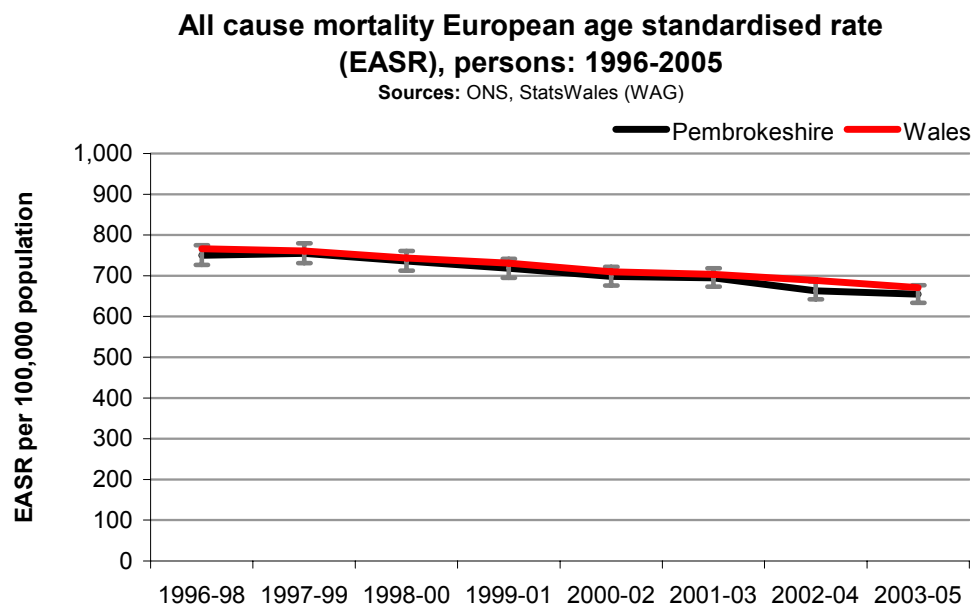
Data only available to 2004

### Mortality Causes

- 1 – Malignant Neoplasms
- 2 – Malignant Neoplasms of stomach
- 3 – Malignant neoplasms of colon rectosigmoid junction rectum and anus
- 4 – Malignant neoplasm of trachea bronchus and lung
- 5 – Malignant neoplasm of breast
- 6 – Diabetes mellitus
- 7 – Disease of the circulatory system
- 8 – Ischaemic heart diseases
- 9 – Cerebrovascular diseases
- 10 – Diseases of the respiratory system
- 11 – Pneumonia
- 12 – Bronchitis emphysema and other chronic obstructive pulmonary disease
- 13 – Land transport accidents

Source: Community Profile Database

Figure 4

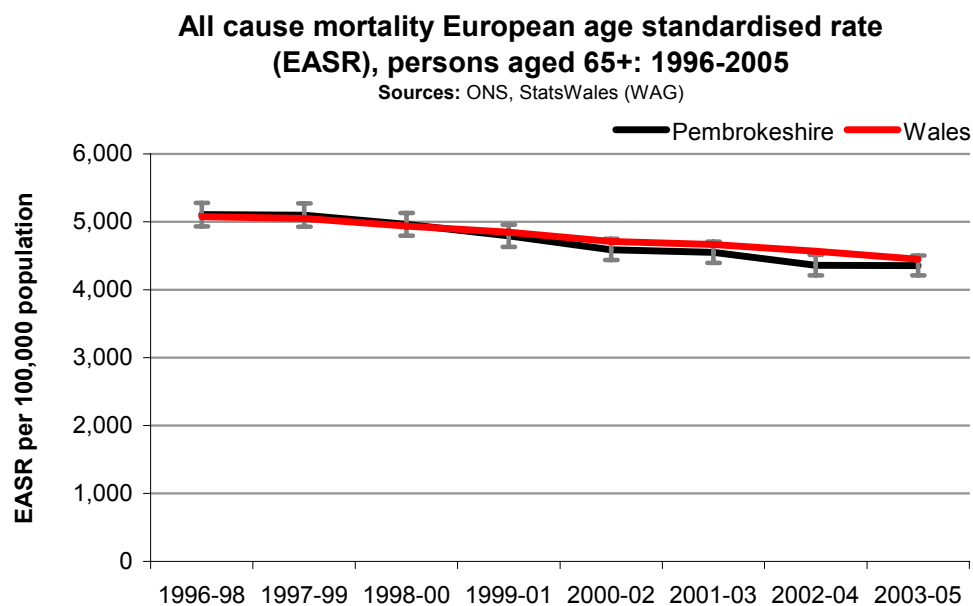


The European age standardised mortality rate (EASR) in Pembroke LHB residents for all causes decreased by almost 13 per cent from 750 in 1996-98 to 655 in 2003-05. Over the same period the equivalent EASR for Wales fell by almost 12.5 per cent.

Over the 10-year period, the EASR in Pembroke was virtually identical to the Wales rate.

Source: Health Needs Assessment Trend Data 2007 – Pembroke Local Health Board

Figure 5



The average annual number of deaths for Pembrokeshire LHB residents aged 65 and over has increased by over one and a half per cent from 1,156 in 1996-98 to 1,175 in 2003-05. Over the same period the equivalent number of deaths in Wales decreased by just over five per cent.

The European age standardised mortality rate (EASR) in Pembrokeshire LHB residents aged 65 and over for all causes decreased by over 14.5 per cent from 5,105 in 1996-98 to 4,356 in 2003-05. Over the same period the equivalent EASR for Wales fell by almost 12.5 per cent.

Over the 10-year period, the EASR in Pembrokeshire was very similar to the Wales rate.

Source: Health Needs Assessment Trend Data 2007 – Pembrokeshire Local Health Board

### **Infant Mortality**

The infant mortality rate is one of the key statistics generally used to indicate the general health of the population. Higher infant mortality rates (i.e. deaths of children below the age of one year) are associated with areas of high deprivation.

The infant mortality rate in Pembrokeshire declined in the late 1990's from 7.6 per 1,000 live births to 5.2 per 1,000 live births compared with a much smaller decline over Wales as a whole. The latest all-Wales figures (2006) are 4.1 per 1,000 live births.

### **Comparators**

National Rate 2006: 4.1%

National Rate 2005: 4.1%

National Rate 2004: 4.9%

National Rate 2003: 4.3%

National Rate 2002: 4.5%

National Rate 2001: 5.4%

### **Data Gaps**

Infant mortality rates for Unitary Authorities

### **Sources**

Key Health Statistics, WAG (2009)

<http://new.wales.gov.uk/topics/statistics/publications/keyhealth08/?jsessionid=c2VpLYkG1hLX9qFyd0kX9cN7hTS22QRxkXYt61FbCTQBy01x7J4n!1963699030?lang=en>

### **Ethnicity - 2001**

Table 11: Ethnicity in 2001

	Pembrokeshire	Wales
White	99.1	97.9
Mixed	0.3	0.6
Asian or Asian British	0.3	0.9
Black or Black British	0.1	0.3

Chinese or Other	0.2	0.4
% from Ethnic Minority Group	0.9	2.0
Percentage Identifying themselves as Welsh	13	14
Percentage of people born outside Wales	31.3	

## Data Gaps and Uncertainties

None Identified

## Sources

ONS, 2001 Census (Map 49, National SEA of WSP)

ONS, 2001 Census (KSO6A – Ethnic Group and Identification as Welsh)

<http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276866&c=pembrokeshire&d=13&e=15&q=415946&i=1001x1003x1004&m=0&r=1&s=1216908611988&enc=1&dsFamilyId=15>

WSP Topic Paper J: Population

## Welsh Index of Multiple Deprivation (WIMD)

### Percentage of people living in most deprived areas

Pembroke Dock Llanion = 2.2% of Pembrokeshire Population (2001 Census)

The Index of deprivation was calculated by the Welsh Index of Multiple Deprivation (2005) as the official measure of deprivation in Wales which is made up of separate domains; income (25%), employment (25%), health (15%), education, skills and training (15%), housing (5%), physical environment (5%) and geographical access to services (10%). The table also shows the ranking of the electoral divisions in Wales. The rankings are based on the level of deprivation, with a rank of one being the most deprived.

The deprivation scores from the 2008 index can't be compared with those from 2005. The parts that make up the index are different, and the indexes were worked out in different ways. But even if these changes had not been made, comparisons would still not be valid. An area's score is affected by the scores of every other area; so it is impossible to tell whether a change in score is a real change in the deprivation level of an area, or whether it is due to the scores of other areas going up or down (WAG, 2008).

Table 12: Welsh Index of Multiple Deprivation in Pembrokeshire and Wales

Ward	Pembs Ranking (1-71) 2005	Welsh Ranking 2005 (1-1896)	Welsh Ranking (2008) (1-1896)
Pembroke Dock: Llanion 1	1	55	71
Pembroke: Monkton	2	76	92
Haverfordwest: Garth 2	3	200	222
Milford: West	4	290	372
Milford: Hubberston 2	5	332	358
Pembroke: St Mary North	6	350	343
Haverfordwest: Castle	7	417	441
Pembroke Dock: Central	8	456	417
Milford: East	9	536	589
Pembroke Dock: Pennar 1	10	580	596



Table 13: Working-age client group - key benefit claimants (February 2007)

	Pembrokeshire (numbers)	Pembrokeshire (%)	Wales (%)
Total claimants	11,720	17.5	19.3
Job seekers	1,360	2.0	2.6
Incapacity benefits	6,640	9.9	11.2
Lone parents	1,290	1.9	2.2
Carers	1,040	1.6	1.4
Others on income related benefits	320	0.5	0.5
Disabled	820	1.2	1.2
Bereaved	240	0.4	0.3

Source: DWP benefit claimants - working age client group

Note: % is a proportion of resident working age people

### Income Deprived

4% of Pembrokeshire's LSOA's are within Wales' 10% most income deprived areas in 2005.

3% of Pembrokeshire's LSOA's are within Wales' 10% most income deprived areas in 2008. See previous note regarding the comparison of 2005 with 2008.

### Sources

Welsh Index of Multiple Deprivation – Local Authority Analysis Revised 8<sup>th</sup> December 2005

Welsh Index of Multiple Deprivation – 2008

<http://new.wales.gov.uk/topics/statistics/headlines/compendia2008/hdw20080709/?lang=en>

Nomis – [www.nomisweb.co.uk](http://www.nomisweb.co.uk)

### Poverty and social exclusion - Joseph Rowntree Foundation Research

Research by the Joseph Rowntree Foundation scored the 22 local authority areas in Wales against a range of indicators of poverty and social exclusion. Pembrokeshire was assessed as the most deprived local authority area in Wales in two regards: low pay and tax credits. Other poor scores were in the presence of central heating in residential properties (5th worst), working-age poverty (7th worst – the more poorly performing all being largely urban areas in the Valleys or Swansea), child poverty (9th worst). Pembrokeshire was also 11th worst for childcare places, limiting long-standing illness and premature death.

Source: Joseph Rowntree Foundation, Monitoring Poverty and Social Exclusion in Wales, 2005

### Migration

Table 14: Sources of population change in Pembrokeshire, 2001 - 2005

<b>Pembrokeshire County Council</b>					
		2001/2	2002/3	2003/4	2004/5

Births		1090	1150	1160	1200
Deaths		1350	1380	1330	1420
Natural Change		-260	-230	-180	-210
Internal Migration	In	4460	4440	4210	3870
	Out	3510	3480	3440	3290
	Net	950	960	760	580
International Migration	In	890	660	370	120
(International Passenger Survey)	Out	290	300	60	190
	Net	600	360	310	-70

Source: LHMA (2007)

Net migration of 16-24 year olds 1999-2001, Pembrokeshire: -8.5%

Net migration of 25-44 year olds 1999-2001, Pembrokeshire: 2.1%

Welsh average for 16-24 year olds 1999-2001: -1.0%

Welsh average for 25-44 year olds 1999-2001: 0.3%

Table 15: Deleted

Figure 6: ONS, 2001 Census (Maps 42 and 42a, National SEA of WSP)

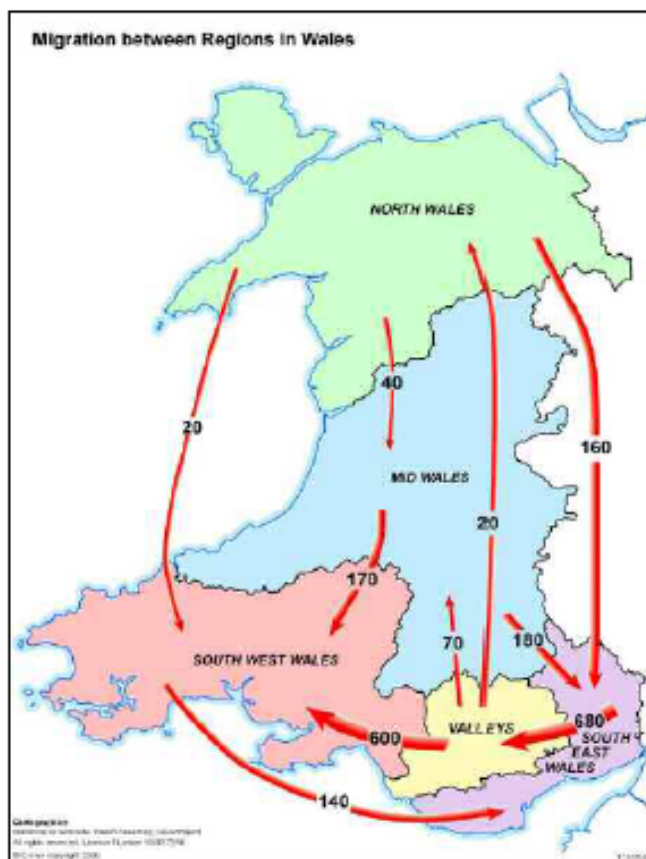


Figure 3J-3: Migration patterns within Wales  
(Source: Office for National Statistics – ONS, 2006a)

## Trends

Young people are moving out of Pembrokeshire and older/retired people are moving in, causing the population to age and contributing to the expensive housing market.

Sources:

- Wales Spatial Plan – Sustainability and Strategic Environmental Assessment Scoping Report – Topic J: Population
- Pembrokeshire County Council – Local Housing Market Assessment

## Settlement Pattern

There has been a small increase in the urban population from 52,515 in 1991 to 53,115 in 2001.

Table 16: Urban population in Pembrokeshire, 1991-2001

Major Settlements (Urban Classification)	% Population 1991	% Population 2001
Fishguard/Goodwick	5,010 7%	5,290 10%
Haverfordwest/Merlin's Bridge	13,345 25%	13,600 26%
Milford Haven/Steynton	13,440 26%	13,100 25%

Narberth	1,910 4%	2,155 4%
Neyland	2,990 6%	3,220 6%
Pembroke	7,170 14%	7,100 13%
Pembroke Dock	8,650 16%	8,650 16%

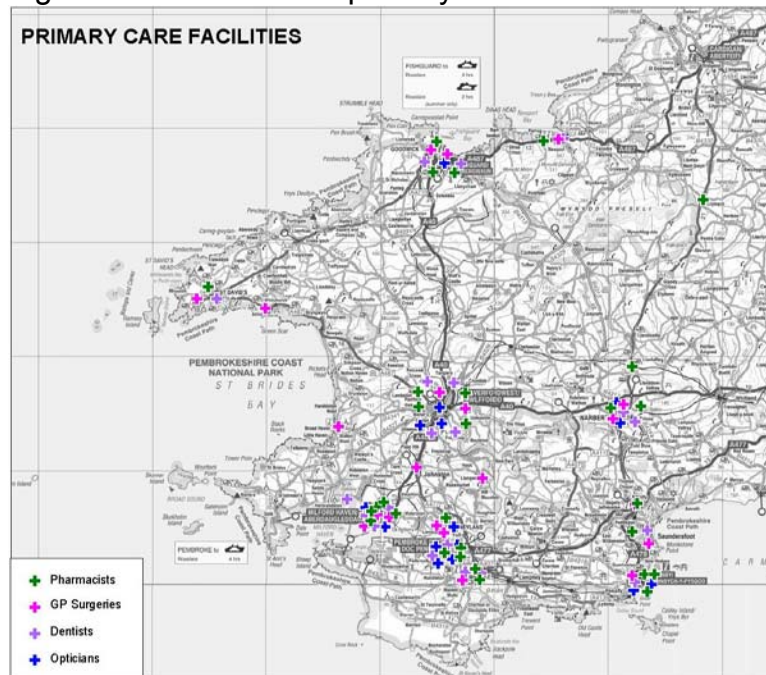
Source: Pembrokeshire County Council, 2008

## 2. Human health

### Health provision in Pembrokeshire

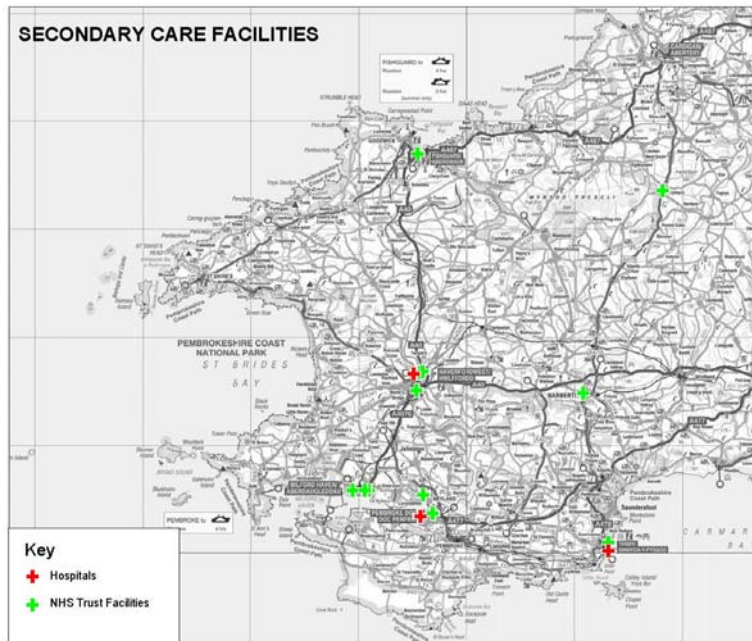
The distribution of primary care facilities in Pembrokeshire is shown on the map below. In all there are 18 general practitioners, 29 pharmacies, 16 opticians and 34 NHS dental practitioners in the County, mainly located in the main towns.

Figure 7: Distribution of primary care facilities in Pembrokeshire



Source: Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007

Withybush hospital in Haverfordwest is the County's only general hospital, with two smaller hospitals at Pembroke Dock and Tenby. There are ten NHS trust facilities in Pembrokeshire, all shown on the map below.



Source: Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007

Sources: Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007

### Long term illness

A limiting long-term illness covers any long-term illness, health problem or disability that limits daily activities or work. According to data from the 2001 Census, in the whole of Pembrokeshire there were 25,477 people with a long-term illness, which equates to 22.332% of the population of the County.

Figure 8: Percentage of population with a limiting long-term illness by Local Authority in Wales

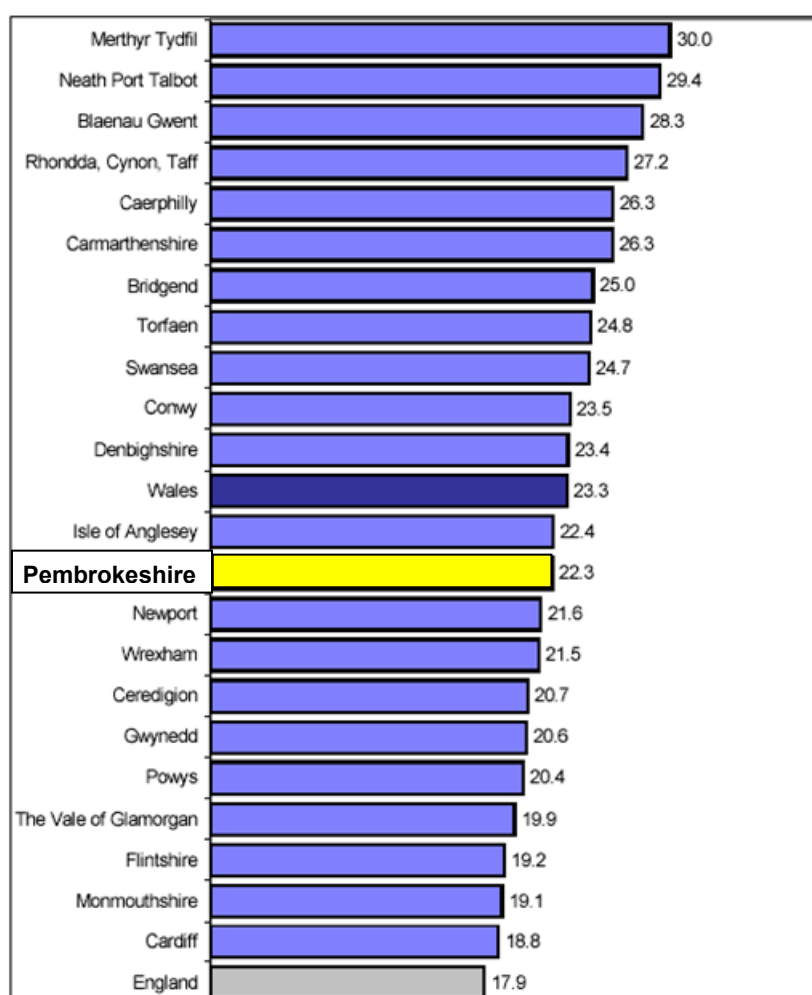


Table 17: Percentage of population with a long-term limiting illness in 1991 and 2001, Pembrokeshire and Wales:

	Pembrokeshire	Wales
1991	14.5%	17.1%
2001	22.3%	23.3%
% Increase	7.8%	6.2%

**Source**

Office for National Statistics – 1991 & 2001 census data

## Obesity levels

Table 18: Adults who were overweight or obese<sup>1</sup> in Pembrokeshire (%)

Year		Observed			Age-standardised	Unweighted base
		Male	Female	Person	Person	
2003/05	Pembs	61	51	56	55	1,377
	Wales	59	49	54	54	30,634
2005/06	Pembs	65	51	58	57	1,183
	Wales	60	50	55	55	28,635
2005/07	Pembs	68	52	60	58	1,024
	Wales	61	51	56	56	1,029
2007/08	Pembs	64	57	60	59	1,055
	Wales	62	52	57	57	25,080

Source WAG: <http://wales.gov.uk/topics/statistics/theme/health/health-survey/results/?skip=1&lang=en>

% of adults who were overweight or obese in 2007/08 = 59%, compared with 57% in Wales.

Source: Welsh Health Survey: 2003/05 Local Authority Report, National Assembly for Wales

<sup>1</sup> Reported Body Mass Index (BMI) of 25+. BMI is calculated as weight (kg) divided by squared height (m<sup>2</sup>).



## Individual opinion on own health

Table 20

2001	Pembs	%	Wales	%
<b>Good Health</b>	74921	65.6	1888849	65.1
<b>Fairly Good Health</b>	26413	23.1	652769	22.5
<b>Not Good Health</b>	12797	11.2	361467	12.5
<b>All People</b>	114131	100	2903085	100.0

Source: 2001 Census Data – Neighbourhood Statistics – Local Government Data Unit

The Welsh Health Survey (WHS) based on a sample of the general population asked about 'general health' of adults.

Table 21: % of adults in Wales reporting on their general health

Health in general	%		
	2005/06	2007	2008
Excellent	16	17	16
Very good	34	34	34
Good	29	29	29
Fair	16	15	15
Poor	6	6	6

Source: Welsh Health Survey – 2005/06, 2007, 2008

The WHS also asked a sample of adults who reported key health-related lifestyles (observed), by the National Statistics Socio-Economic Classification (NS-SEC) of the household reference person.

Table 22: Lifestyle issues

Lifestyle Issue	2003/05		2005/07		2007/08	
	Pembs (%)	Wales (%)	Pembs (%)	Wales (%)	Pembs (%)	Wales (%)
Being a smoker	26	27	25	24	23	24
Consuming alcohol above guidelines limit	38	40	31	36	41	45
Binge drinking at least 1 day in last week	16	19	17	20	21	28
Eating 5 or more portions of fruit/vegetables the previous day	43	40	50	46	40	36
Meeting physical activity guidelines in last week	33	29	33	29	35	30
Overweight or obese	55	54	58	57	59	57

Source: Welsh Health Survey: 2003/05, 2005/07, 2007/08 Local Authority Report, National Assembly for Wales

<http://wales.gov.uk/topics/statistics/theme/health/health-survey/results/?skip=1&lang=en#>

## Road collisions & safety

Table 23: Killed or seriously injured casualties in Pembrokeshire and Wales from 2001-2008.

Road collisions (fatal or seriously injured)	1994-1998 average	2001	2002	2003	2004	2005	2006	2007	2008
Pembrokeshire	90	94	95	93	80	62	78	78	83
Wales	1623	1355	1315	1353	1302	1105	1150	1167	1190

Source: Road Casualties Wales: 2006, WAG and Welsh Transport Statistics: 2009

<http://new.wales.gov.uk/topics/statistics/publications/rcw2006/?lang=en>

<http://wales.gov.uk/topics/statistics/publications/transport2009/?lang=en>

WAG targets are to reduce the number of killed or seriously injured casualties by 40% by 2010. The 2006 figure is a 13% decrease from the 1994-1998 average.

### Source:

Road Casualties Wales: 2006, WAG.

<http://new.wales.gov.uk/topics/statistics/publications/rcw2006/?lang=en>

Welsh Transport Statistics: 2009, WAG.

<http://wales.gov.uk/topics/statistics/publications/transport2009/?lang=en>

### 3. Education and skills

#### Number of schools and pupils

In Pembrokeshire (**including** the National Park area) there are 65 primary schools (2009), a reduction of 21 since 1998. In addition there are eight secondary schools, one of which provides a Welsh-medium education. Pembrokeshire College in Haverfordwest is the only further education establishment in the County.

Table 24: Pupil numbers in full time primary and secondary education in Pembrokeshire schools

	2003	2004	2005	2006	2007	2008
Primary	10,749	10,545	10,379	10,229	10,128	10,142
Secondary	8,512	8,631	8,714	8,728	8,527	8,361
<b>Total</b>	<b>19,261</b>	<b>19,176</b>	<b>19,093</b>	<b>18,957</b>	<b>18,655</b>	<b>18,503</b>

Source: Annual statutory school census (PLASC returns)

Table 25: Percentage of Pembrokeshire and Wales populations in full time primary and secondary education in 2006/7

	Total population	Primary	Secondary	Total
Pembrokeshire	117,280	8.6%	7.3%	15.9%
Wales	2,965,885	8.5%	7.1%	15.6%

#### Sources:

National Survey of Adult Basic Skills in Wales, 2004, Welsh Assembly Government

Pembrokeshire County Council School Organisation Plan 2004-2009

Statswales – Welsh Assembly's Statistics for Wales

PLASC reports, WAG:

[http://newydd.cymru.gov.uk/topics/educationandskills/policy\\_strategy\\_and\\_planning/schools/ims/datacollections/pupillevelannualschoolcensus/;jsessionid=8LKIktnpXZXV1wpHQ67JQh41yryYw3vkMgcXjFyvwr2TYz8T4YFI1761965113?lang=en&ts=4](http://newydd.cymru.gov.uk/topics/educationandskills/policy_strategy_and_planning/schools/ims/datacollections/pupillevelannualschoolcensus/;jsessionid=8LKIktnpXZXV1wpHQ67JQh41yryYw3vkMgcXjFyvwr2TYz8T4YFI1761965113?lang=en&ts=4)

#### Further and higher education centres

Pembrokeshire College offers full and part time academic and vocational courses. The College provides HND, HNC and degree level education as an Accredited College of the University of Glamorgan.

#### Numbers

The college has around 2,000 full-time and 8,000 part-time students and over 700 staff.

#### Types of courses

A Levels, National Diplomas and NVQ in a wide range of subjects.

HNC and HND in art and design, business, computing, construction, engineering, animal studies, marine studies.

Degrees in business, computing, construction, engineering, health and childcare, marine and leisure boat design.

**Source:**

Pembrokeshire College website: [www.pembrokeshire.ac.uk](http://www.pembrokeshire.ac.uk)

**Adult education facilities**

'Learning Pembrokeshire' is the name for Pembrokeshire County Council's programme of adult education. The Council aims to provide a varied range of courses to suit its customers - Pembrokeshire residents and businesses, both small and large and those on the borders of neighbouring counties.

Courses are run from the Council's Community Learning Centres in all the main County towns, and from many other venues around Pembrokeshire. Schools, village halls, pubs and community venues all host Learning Pembrokeshire courses

**Source:**

PCC -

[http://www.pembrokeshire.gov.uk/content.asp?nav=647,534&parent\\_directory\\_id=646](http://www.pembrokeshire.gov.uk/content.asp?nav=647,534&parent_directory_id=646)

**Level of Qualifications**

Table 26: Percentage of people aged 16-74 years old highest qualification attained<sup>2</sup> in 2001

Highest level attained	Number of individuals (%)	
	Pembrokeshire	Wales
No Qualifications	31.1	33.0
Highest Level 1	16.0	15.5
Highest Level 2	22.2	19.8
Highest Level 3	6.0	7.0
Highest Level 4	17.0	17.4
Other qualification/level unknown	7.7	7.2

Source: Census 2001

<http://neighbourhood.statistics.gov.uk/dissemination/LeadKeyFigures.do?a=3&b=276866&c=pembrokeshire&d=13&e=16&q=415946&i=1001x1003x1004&m=0&r=1&s=1208792814187&enc=1>

NOMIS, ONS annual population survey 2006.

<sup>2</sup> All people aged 16 to 74 who were usually resident in the area at the time of the 2001

Census, whose highest qualification attained:

Level 1: 1+'O' level passes; 1+ CSE/GCSE any grades; NVQ level 1; or Foundation level GNVQ.

Level 2: 5+'O' level passes; 5+ CSE (grade 1's); 5+GCSEs (grades A-C); School Certificate; 1+'A' levels/'AS' levels; NVQ level 2; or Intermediate GNVQ.

Level 3: 2+ 'A' levels; 4+ 'AS' levels; Higher School Certificate; NVQ level 3; or Advanced GNVQ.

Level 4/5 qualifications: First Degree, Higher Degree, NVQ levels 4 and 5; HNC; HND; Qualified Teacher Status; Qualified Medical Doctor; Qualified Dentist; Qualified Nurse; Midwife; or Health Visitor.

## **Skills and Development Training**

In a Future Skills Wales survey, the six most cited skills needed by employers at high or advanced level are:

- |                                       |       |
|---------------------------------------|-------|
| 1. An ability to follow instructions  | (78%) |
| 2. Communications skills              | (74%) |
| 3. An understanding of customer needs | (73%) |
| 4. Adaptability / flexibility         | (72%) |
| 5. Team working skills                | (69%) |
| 6. The ability to show initiative     | (65%) |

These skills were also thought by employers to be the most important skills needed for the future (with minor changes in priority). Only 31% of employers surveyed considered that information technology skills were required at high or advanced level, but this increased to 44% who regarded it as a future skill requirement.

Of the employers surveyed, 19% reported that a significant skills gap existed amongst their employees. Of those reporting a skills gap, 31% of managers believed that a gap in the skills of managers had the most significant impact on their business, and 21% regarded skills gaps amongst skilled trade occupations as having the most impact.

In order to tackle these skills gaps, 56% reported providing further training, 19% reported they would do nothing and 4% reported they would increase recruitment activity. This last finding may suggest that the fear of trained staff being “poached” by rival companies is real, but possibly overstated.

The survey found that 45% strongly agreed that investment in skills brought business benefits with 31% tending to agree. Of these:

- 36% reported competing on customer service as a benefit
- 27% reported competing on quality as a benefit
- 25% reported that investment in skills had increased productivity
- 17% reported increased profits and 17% accelerated business growth
- 9% reported introducing new products or processes
- 6% reported improved staff morale as a result of the investment in skills

A half of those employers who recruited school/college leavers, and 39% of those who recruited graduates identified a significant gap between the skills they had and those the employers expected of them at recruitment:

- 33% reported that school/college leavers lacked the ability to show initiative
- 29% reported a lack of communication skills
- 19% reported a lack of practical skills and knowledge
- 13% reported a lack of ability to follow instructions
- 13% reported a lack of numeric skills

**Sources:**

Further Education, Work based Learning and Community Learning in Wales  
Statistics 2003/04, Welsh Assembly Government  
The Future Skills Wales 2003 Generic Skills Survey for Pembrokeshire

**Childcare Spaces**

On the 31<sup>st</sup> March 2007, the following childcare spaces were available within the whole of Pembrokeshire:

<b>Type of Care</b>	<b>Number of Spaces</b>
Childminder	546
Sessional Daycare	951
Full Daycare	533
Holiday Playscheme	72
Out of School clubs:	
Breakfast clubs	102
After school care	601
Holiday care	384

**Source:**

PCC Pembrokeshire Cymorth report 06-07 annex 2

## 4. Transport

### Road traffic

Table 27: Volume of traffic on major roads by Unitary Authority (billion vehicle km)

Area	2002	2003	2004	2005	2006	2007	2008
<i>Pembrokeshire</i>	1.00	1.02	1.03	1.05	1.09	1.09	1.11
Carmarthenshire	1.72	1.75	1.76	1.79	1.92	1.97	1.96
Ceredigion	0.69	0.71	0.72	0.71	0.72	0.74	0.73
<b>WALES</b>	<b>26.20</b>	<b>26.59</b>	<b>27.31</b>	<b>27.28</b>	<b>27.99</b>	<b>28.41</b>	<b>28.35</b>

These figures show that there is an annual gradual rise in volume of traffic, both in Pembrokeshire and through Wales. Traffic in Pembrokeshire accounted for 3.9% of traffic on major roads in Wales in 2008.

#### Source:

WAG: Accessed 4 Dec 2009

<http://wales.gov.uk/docs/statistics/2009/091110wts2009ch7ency.xls>

### Households without a car

The percentage of households without a car or van in the whole of Pembrokeshire, as measured in the 2001 census:

<b>Pembrokeshire</b>	<b>21.7%</b>
Carmarthenshire	23.1%
Ceredigion	19.5%
<b>Wales</b>	<b>26.0%</b>

#### Source:

Census 2001, Car or Van table KS17

<http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276866&c=pembrokeshire&d=13&e=15&g=415946&i=1001x1003x1004&m=0&r=1&s=1209389986000&enc=1&dsFamilyId=51>

## Travelling to work

Table 28: The method of travel to work used by all employed persons aged 16-74, in the whole of Pembrokeshire and Wales (2001):

Method of travel	Pembrokeshire		Wales	
	Number of persons	% of employed persons	Number of persons	% of employed persons
Driving a car or van	25,793	57.45%	726,363	61.23%
Passenger in a car or van	3,672	8.18%	106,526	8.98%
Train	169	0.38%	14,619	1.23%
Bus, coach or mini bus	1,353	3.01%	62,322	5.25%
Bicycle	364	0.81%	16,389	1.38%
On foot	5,190	11.56%	122,732	10.35%
Motorcycle, scooter or moped	332	0.74%	8,888	0.75%
Taxi	199	0.44%	5,975	0.50%
Other	448	1.00%	7,119	0.60%
Work at home	7,377	16.43%	115,323	9.72%
<b>Total</b> (all people aged 16-74 in employment)	<b>44,897</b>	<b>100%</b>	<b>1,186,256</b>	<b>100%</b>

Census data 2001, KS15 -Travel to work table

65.6% of the resident population aged 16-74 years drive a car to work or are a passenger in a car to work compared with 70.2% for Wales (Census, 2001).

### Source:

Census, 2001

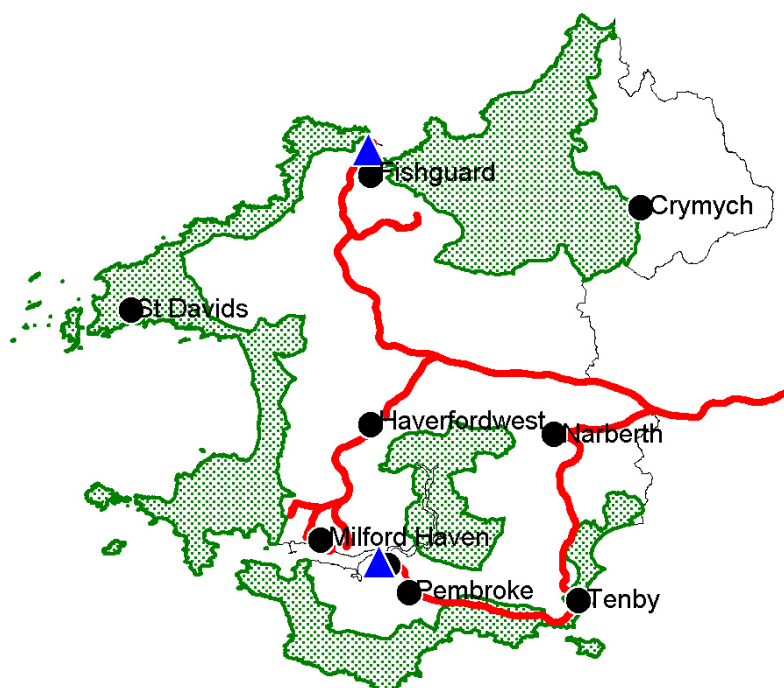
<http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276866&c=pembrokeshire&d=13&e=15&g=415946&i=1001x1003x1004&m=0&r=1&s=1209388884375&enc=1&dsFamilyId=283>

## Rail travel & links

Figure 9 indicates the rail infrastructure in Pembrokeshire (red line) and the passenger ferry terminals in the County (blue triangles). Commercial services provided by Arriva Trains Wales run approximately every two hours to Milford Haven and Pembroke Dock and twice a day to Fishguard Harbour on weekdays. The weekend timetable is significantly reduced. The infrastructure also extends to existing/disused large industrial sites at Milford Haven, Waterston and Trecwn.



Figure 9: Rail links and passenger ferry terminals



Passenger numbers with a valid ticket beginning and/or ending their journey at Pembrokeshire train stations in the financial year 2005/06:

Table 29

Station	Passenger numbers			
	2004/05	2005/06	2006/07	2007/08
Haverfordwest	114,021	110,023	116,960	127,227
Tenby	76,695	75,629	84,598	94,231
Milford Haven	39,750	40,899	45,935	51,559
Pembroke Dock	30,056	30,439	35,758	41,148
Fishguard	28,303	23,873	29,049	24,755
Harbour				
Pembroke	21,477	22,513	24,424	25,217
Clunderwen	12,709	12,430	14,297	17,439
Narberth	10,321	11,140	13,556	15,547
Kilgetty	7,794	8,221	9,607	12,103
Johnston	6,974	5,197	4,658	4,980
Saundersfoot	4,560	4,001	5,081	6,177
Penally	4,339	5,289	5,031	4,569
Manorbier	4,265	4,009	4,443	5,452
Clarbeston Road	3,011	3,210	3,802	4,127
Lamphey	2,646	2,552	2,936	4,291
.....	....	....	....	
Carmarthen	295,860	294,208	323,233	348,329
Cardiff Central	8,403,835	8,357,732	9,126,923	9,875,269
London Waterloo	66,342,182	61,036,093	83,993,314	100,306,690

### Future Trend

In Network Rail's investment programme for 2008-2010, Pembrokeshire has not been earmarked as the recipient of any substantial engineering projects. Work on the electrification of the line between Swansea, Cardiff, and London

is estimated to be completed by 2017, and will reduce journey time between Swansea and London by 20 minutes.

**Source:**

Pembrokeshire County Council – Geographical Information Systems map layers

Network Rail – 20<sup>th</sup> February 2008 -

<http://www.networkrail.co.uk/asp/3851.aspx>

Department for Transport – Station Usage Report (last accessed Dec 2009) -

<http://www.rail-reg.gov.uk/server/show/nav.1529>

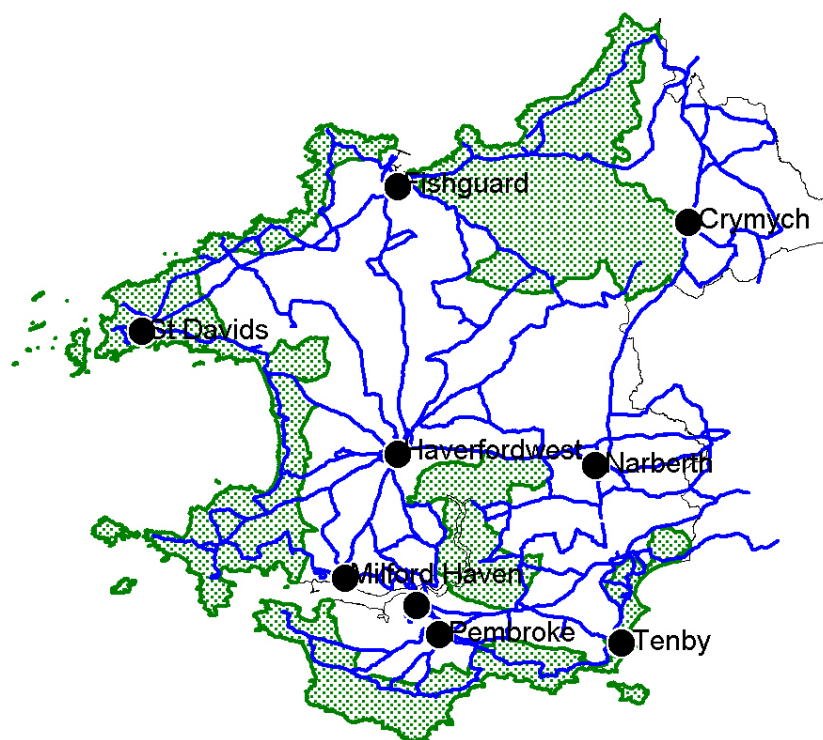
Arriva Trains Wales – Timetable 3, West Wales to Cardiff

**Bus Routes**

Blue lines indicate public bus service routes (Figure 10). 74% are PCC subsidised services with First Cymru operating two large routes. Haverfordwest is the central hub as the County town and can be reached directly from most areas of the County.

'Dial a bus' schemes have been set up in areas of weak provision, for example the Preseli Green Dragon scheme in rural North East Pembrokeshire.

Figure 10: Public bus service routes



In 2006/07 the aggregate number of journeys made by public transport in Pembrokeshire was 1,444,636 passengers.

## SOURCE

Pembrokeshire County Council – Geographical Information Systems map layers

## Sea passenger movements – no further data from 2005

Table 30: Annual number of ship arrivals, by port in Pembrokeshire

	2001	2002	2003	2004	2005	2006	2007
Fishguard	1,155	1,125	1,162	9,87	1,109		
Milford Haven*	3,088	3,224	3,456	3,456	3,360		
<b>WALES</b>	<b>10,477</b>	<b>10,379</b>	<b>1,1027</b>	<b>10,252</b>	<b>9,890</b>		

\* Milford Haven includes the ports of Pembroke Dock and Milford Haven

Table 31: Sea Passenger movements to/from Ireland:

	2001	2002	2003	2004	2005
Fishguard	687,000	662,000	645,000	614,000	590,000
Pembroke Dock	388,000	387,000	384,000	378,000	321,000
<b>WALES</b>	<b>3,581,000</b>	<b>3,585,000</b>	<b>3,528,000</b>	<b>3,381,000</b>	<b>3,185,000</b>

The figures show that sea travel is declining, both in numbers of passengers and ships in the County and throughout Wales.

Milford Haven is bucking the trend by securing increasing annual ship arrivals, confirming itself as Wales's busiest port ahead of Holyhead. The LNG development will see Milford Haven experience further growth in ship arrivals.

Milford Haven Port Authority which includes Pembroke Dock is the busiest port in Wales with 3360 ship arrivals in 2005. While sea travel to and from Ireland is declining in terms of numbers of passengers there has been an increase in freight. This increase in freight has major implications for the transport network.

## Source:

Statswales website:

Ship arrivals <http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx>

Sea passengers

<http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=3954>

No information found for later than 2005

## Air transport

Haverfordwest Airport has an annual total air transport movement of approximately 7,000 - 8,000 passengers. There are no scheduled flights; these numbers represent private flying, club flying, air ambulance, and some air taxi.

## Source:

Development of an Air Transport Strategy for Wales, Final Report, Stage 2 – Welsh Airports Infrastructure Appraisal, A report for the Welsh Assembly Government, December 2003, Avia Solutions.

[http://wales.gov.uk/docrepos/40382/4038231141/403821125/403821125/639095/640175/report2\\_part2.pdf?lang=en](http://wales.gov.uk/docrepos/40382/4038231141/403821125/403821125/639095/640175/report2_part2.pdf?lang=en)

### **Car Parking**

There are over 120 car parks throughout the County, of which the County Council operates 80. Other providers include Pembrokeshire Coast National Park Authority, the National Trust, supermarkets and so on. The vast majority are located adjacent to either retail centres or beaches.

**Source:** Pembrokeshire County Council

### **Trunk Roads/Length of Highways**

The County's highway network comprises the following classifications and distances:

Table 32

<b>Class of Highway</b>	<b>Length (km)</b>	<b>%</b>
Trunk Roads	118.8	5
A Roads	152.3	6
B & C Roads	1190	48
Unclassified	1028	41

Source: Pembrokeshire County Council

Trunk roads in the County form strategic routes into Pembrokeshire from the east and north, and are the responsibility of the National Assembly with Carmarthenshire County Council acting as its agent, and Powys and Ceredigion County Councils. These routes in Pembrokeshire include:

- The A40(T) (from the County boundary at Whitland towards Fishguard);
- The A477(T) (from the County boundary east of Llanteg to Pembroke Dock);
- The A4076(T) (from Haverfordwest to Milford Haven);
- Part of the A487(T) (between Fishguard and Cardigan).

### **Source:**

Advance Rural Development Plan 2007-2013, Part D

Trunk road agency websites (<http://www.midwales-tra.gov.uk/index.php?id=10&L=0> and <http://www.swtra.co.uk/>)

## 5. Social Fabric

### Housing

#### Housing Stock

Table 33 and 34: Dwelling stock estimates by tenure in Pembrokeshire and Wales, 2004 and 2005

2004	Rented from local authorities	Rented from registered social landlords	Owner-occupied, privately rented and other tenures	Total
<b>Pembrokeshire</b>	5,980	1,932	46,127	54,039
% of total dwelling stock	11%	3.6%	85%	
<b>Wales</b>	162,276	64,295	1,069,229	1,295,800
% of total dwelling stock	12.5%	5%	82.5%	

2005	Rented from Local Authorities	Rented from registered social landlords	Owner occupied, privately rented and other tenures	Total
<b>Pembrokeshire</b>	5,881	2,002	46,592	54,475
% of total dwelling stock	10.8%	3.7%	85.5%	
<b>Wales</b>	157,516	65,009	1,083,132	1,305,657
% of total dwelling stock	12.1%	5.0%	83.0%	

**Source:**

National Assembly for Wales: Key Publications: Housing statistics in Wales

#### Stock breakdown

Table 35: Pembrokeshire's housing stock, by Travel to Work Area (TTWA)

	Privately owned or rented		Social housing	
	Quantity	Percentage of stock in TTWA	Quantity	Percentage of stock in TTWA
Fishguard & St Davids	5,112	86	855	14
Haverfordwest	18,495	80	4605	20
Pembroke & Tenby	13,129	82	2796	18
Cardigan	3,050	93	246	7
<b>Pembrokeshire</b>	<b>39,786</b>	<b>82</b>	<b>8502</b>	<b>18</b>

#### Data Gaps and Uncertainties

Previous year's data, rate of stock increase.

**Source:**

Pembrokeshire Draft Local Housing Market Assessment 2007

Table 36: Housing Condition

Tenure Key Attribute	Owner	Council Tenant	RSL Tenant	Private Tenant	All Tenures
Home in Good Condition	93%	75%	92%	73%	89%
Roof Insulated	86%	84%	93%	64%	85%
Heating Satisfactory	86%	57%	86%	62%	81%
Home with Damp or Condensation	32%	61%	34%	60%	38%
External Walls Insulated	35%	21%	64%	18%	33%
Floors Insulated	15%	4%	29%	9%	14%
Insulation works within the last 12 months	5%	8%	8%	3%	5%

**Source:**

Pembrokeshire County Council Draft Local Housing Market Assessment

Table 37: Housing Need All Pembrokeshire – Current Need

<b>C: Current Need</b>	
1. Existing households in need of alternative housing <sup>3</sup>	3330
2. <i>Plus</i> Current non-households in need	198
3. <i>Minus</i> cases where they can afford to meet their needs in the market	Nil
4. TOTAL CURRENT HOUSING NEED	3528
<b>A: Available Stock to Offset Need</b>	
5. Current occupiers of Affordable Housing in Need	832
6. <i>Plus</i> surplus stock	Nil
7. <i>Plus</i> committed supply of new affordable housing units	129
8. <i>Minus</i> planned units to be taken out of management	97
9. <i>Equals</i> Total available stock to meet current need	864
10. TOTAL CURRENT NEED	2664
11. <i>Times</i> quota to progressively reduce levels of current need	5%
12. <i>Equals</i> ANNUAL NEED TO REDUCE LEVEL OF CURRENT NEED	133.2
<b>N: Newly Arising Need</b>	
13. New Household Formation (gross per annum)	446
14. <i>Times</i> proportion of households unable to buy or rent on the market	55.47%
15. <i>Plus existing households falling into need</i>	1376*
16. <i>Minus potential out- migrants unable to afford market housing</i>	Nil
17. <i>Plus in-migrants unable to afford market housing</i>	Nil
18. <i>Equals newly arising need</i>	1623*
<b>S: Supply of Affordable Housing Units per year</b>	
19. <i>Net Supply of social re-lets</i>	350
20. <i>Plus supply of intermediate housing available for re-let / resale at submarket levels</i>	Nil
21. <i>Equals Affordable Supply</i>	350
<b>NET SHORTFALL OR SURPLUS</b>	
22. <i>Overall shortfall or surplus</i>	1406

Source: Draft Local Housing Market Assessment

<sup>3</sup> Includes 30 persons on the register not currently living in Pembrokeshire

## House Prices

Table 38: Affordability of Housing (2005)

	Mean House Price	Mean Household Income	Affordability (house price/income)
<b>Pembrokeshire</b>	£152,986	£25,591	5.98
<b>Rural Wales</b>	£158,662	£26,803	5.92
<b>Wales</b>	£143,810	£27,328	5.26

The affordability ratio in Pembrokeshire has increased by 1.75 units, i.e. 29.33% from 2003 to 2005.

The number of second / holiday homes recorded in Pembrokeshire in the 2001 Census was 6.1% which had remained unchanged following the 1991 Census (this is for the whole County, what is this for the area excluding the national park).

Table 39: Lower Quartile Price for all Types and Sizes of Housing 2001-06

Year	2001	2002	2003	2004	2005	2006
TTWA						
Cardigan	£45,500	£58,000	£74,500	£100,000	£111,500	£125,000
Fishguard and St David's	£52,250	£64,000	£78,000	£97,500	£120,000	£134,000
Haverfordwest	£41,050	£50,063	£67,125	£92,000	£107,250	£120,000
Pembroke and Tenby	£43,375	£54,438	£73,250	£92,500	£110,000	£124,613

Table 40: Median price for all types and sizes of housing 2001 to 2006

Year	2001	2002	2003	2004	2005	2006
TTWA						
Cardigan	£60,000	£77,000	£115,000	£147,500	£145,500	£165,000
Fishguard and St David's	£79,950	£91,000	£121,250	£145,000	£166,250	£183,975
Haverford west	£54,000	£73,610	£90,500	£129,500	£137,500	£150,000
Pembroke and Tenby	£63,000	£85,000	£105,000	£137,500	£148,500	£160,000
Average	£64,237.50	£81,652.50	£107,937.50	£139,875.00	£149,437.50	£164,743.75

Table 41: Lower quartile prices by type in 2006

TTWA	Detached	Semi-detached	Terraced	Flat
Cardigan	£165,000 (228)	£118,250 (92)	£104,750 (80)	-
Fishguard and St David's	£181,875 (100)	£123,000 (69)	£122,750 (63)	-
Haverfordwest	£170,000 (370)	£119,963 (266)	£111,000 (284)	£77,000 (33)
Pembroke and Tenby	£172,000 (275)	£124,963 (166)	£110,000 (194)	£88,750 (83)

[Number of sales in brackets ( ) - denotes fewer than 10 sales]

Table 42: Median prices by type in 2006

TTWA	Detached	Semi-detached	Terraced	Flat
Cardigan	£202,000 (228)	£137,500 (92)	£120,500 (80)	-
Fishguard and St David's	£234,000 (100)	£155,000 (69)	£145,000 (63)	-
Haverfordwest	£210,000 (370)	£137,250 (266)	£125,000 (284)	£85,000 (33)
Pembroke and Tenby	£210,000 (275)	£146,500 (166)	£130,000 (194)	£115,000 (83)

[Number of sales in brackets ( ) - denotes fewer than 10 sales]

### House Price to Income Ratio, Wales 2005

Table 43: The following figures relate to the 'typical' first time buyer market

Local Authority area	Income <sup>1</sup>	House price <sup>2</sup>	Ratio
Pembrokeshire	£23,332	£136,807	5.86
Powys	£25,998	£144,459	5.56
Cardiff	£31,496	£158,322	5.03
Ceredigion	£28,705	£138,175	4.98
Denbighshire	£26,432	£129,903	4.91
Vale of Glamorgan	£26,432	£143,963	4.58
.....	.....	.....	.....
Merthyr Tydfil	£29,772	£83,111	2.79

Chartered Institute of Housing Cymru, 2005

<sup>1</sup> - earned income ratios for working households aged 20-39

<sup>2</sup> - average house prices for 2/3 bedroom dwellings

#### Trends

House prices both nationally and in Pembrokeshire are increasing, however the housing market in some areas of the UK is slowing down.

Pembrokeshire has a more expensive housing market than the national average.



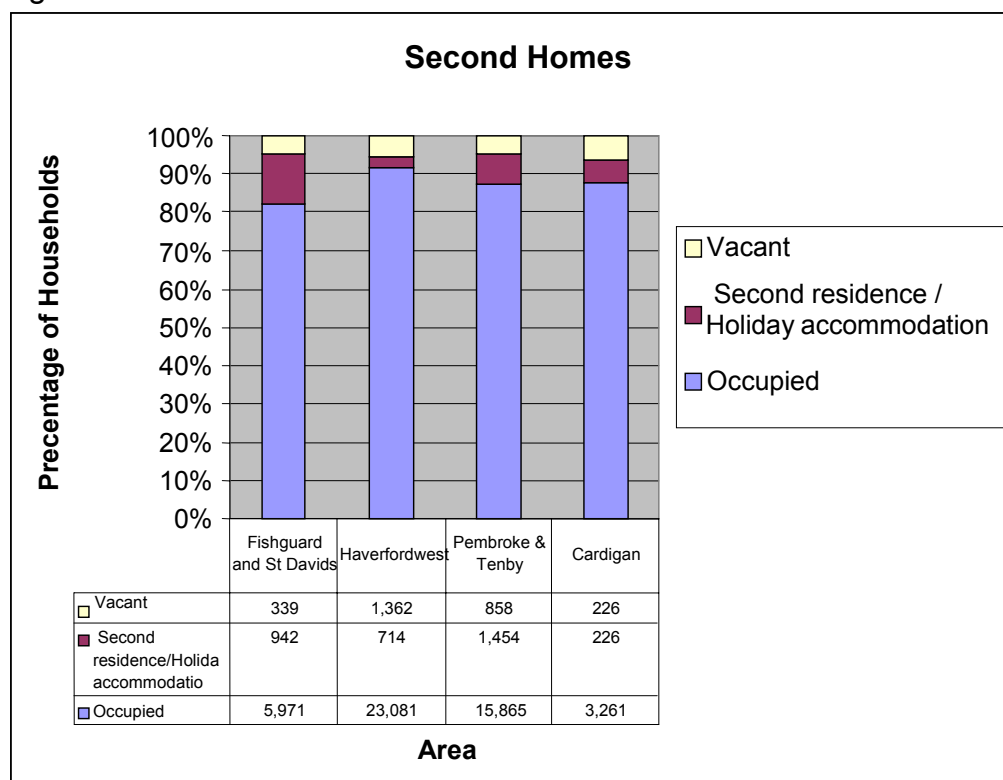
National Average House Price	2006 – £148,718
	2003 – £98,186
	2002 – £79,397

Pembrokeshire was the second least affordable rural local authority in Wales at spring 2006 at 6.5 times the average earnings of the County (behind Powys at 6.9 times average earnings).

National Data for: House price by type pre-2002  
House price by number of bedrooms

Welsh Rural House Price Index Spring 2006  
Pembrokeshire County Council Draft Local Housing Market Assessment  
Pembrokeshire County Council Local Housing Strategy  
National Assembly for Wales: Key Publications: Housing statistics in Wales  
Chartered Institute for Housing Cymru – *Young, Working and STILL Homeless*.  
*Housing market affordability in Wales in 2005*

## Figure 11: Tenure at 2001



National data for proportions of vacant dwellings - second and holiday homes.

Previous years' data for second and holiday homes.

**Source:**

Pembrokeshire County Council Draft Local Housing Market Assessment

Table 44: Affordable Housing – Current Need

<b>S: Supply of Affordable Housing Units per year</b>	
23. <i>Net Supply of social re-lets</i>	350
24. <i>Plus supply of intermediate housing available for re-let / resale at submarket levels</i>	Nil
25. <i>Equals Affordable Supply</i>	350
<b>NET SHORTFALL OR SURPLUS</b>	
26. <i>Overall shortfall or surplus</i>	1406

The application of this formulaic approach to assessing housing shortfall surplus indicates the following shortfall of affordable housing over the four areas:

- All Pembrokeshire                      Shortfall of 1406 units per annum

Pembrokeshire County Council currently requires all large housing developments to provide 20% as affordable housing. Future aspirations aim to increase this percentage requirement to 30%, after failing to meet demand.

Using the lower quartile house price within each area a net annual income of between £31,000 and £35,000 is needed to purchase and incomes are predominantly below this.

Private rented properties can cost up to £650 per month with an income of £26,000 needed to support the monthly payments.

Second and holiday homes are an issue in certain parts of the area, mainly in coastal areas. The lowest percentages are shown in Haverfordwest and the highest in the Fishguard and St Davids areas. Within individual communities, percentages can be as high as 20% or more, particularly if the area is also a very attractive retirement location. (Pembrokeshire Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007)

**Sheltered Housing**

% Housing Stock:    Social Rented = 14.7%  
                                 Privately Rented/Owned = 85.3%

Table 45: Social Rented Stock at January 2006 by Travel To Work Area

<b>Travel to Work Area</b>	Pembrokeshire County Council	Pembrokeshire Housing	Cymdeithas Tai Cantref	Cymdeithas Tai Dewi Sant	<b>Total</b>
<b>Cardigan</b>	105	0	74	0	179
<b>Fishguard / St Davids</b>	524	64	215	0	803
<b>Haverfordwest</b>	3294	721	5	122	4142
<b>Pembroke / Tenby</b>	1881	659	0	109	2649
<b>Total Properties</b>	5804	1444	294	231	7773

Pembrokeshire County Council = 74.7%

Pembrokeshire Housing Association = 18.6%

Dewi-Sant = 3.8%

Tai Cantref = 3.0%

### **Housing Land Availability**

Table 46: Housing units with planning permission and allocated in 2007

Housing Units September 2007	With Planning Permission	Allocated	Total
Pembrokeshire	3461	4505	7966
Urban	1761	3385	5146
% Urban	50.8%	75.1%	64.6%

Urban Classification: Those permissions/allocations within the boundaries of the major settlements of:

Haverfordwest/Merlins Bridge  
 Milford Haven/Steynton  
 Fishguard/Goodwick  
 Pembroke, Pembroke Dock  
 Neyland  
 Narberth

### **Trends**

The majority of housing land is located in the major settlements of Pembrokeshire.

### **Source:**

Pembrokeshire County Council

## Homelessness

Table 47: homelessness in 2004

<b>2004 – Homelessness Type</b>	<b>Pembs</b>	<b>Pembs % all homeless Households</b>	<b>Wales</b>	<b>Wales % of all homeless Households</b>
Ineligible Households	0	0%	72	0.3%
Eligible but not homeless	168	13.7%	6,347	27.6%
Eligible, homeless but not in priority need	434	35.4%	5,619	24.4%
Eligible, homeless and in priority need but intentionally so	86	7.0%	925	4%
Eligible, unintentionally homeless and in priority need	537	43.8%	10,040	43.6%
All Households	1,225	100%	23,003	100%
Eligible, unintentionally homeless and in priority need per 1000 population	4.6	--	3.4	

There were 266 people awaiting permanent accommodation at the end of April 2008 (Pembrokeshire County Council, 2008).

Table 48: Households found to be eligible for assistance, unintentionally homeless and in priority need

	<b>Pembs</b>	<b>% Of Total</b>	<b>Wales</b>	<b>% Of Total</b>
Household includes dependent child(ren)	261	48.6	4,042	40.3
Household member pregnant and no other dependent children	24	4.5	723	7.2
Vulnerable household member: old age	25	4.7	386	3.8
Vulnerable household member: Physical disability	46	8.6	434	4.3
Vulnerable household member: Mental illness/learning disability	34	6.3	679	0.0 6.8
Young person at risk: 18-20 yrs old	8	1.5	188	1.9
Young person at risk: 16-17 yrs old	65	12.1	985	9.8
Threat/Cases of domestic violence	27	5.0	1,310	13.0
Homeless after leaving armed forces	4	0.7	43	0.4
A former prisoner	32	6.0	785	7.8
Other	5	0.9	397	4.0
Household homeless in emergency	6	1.1	68	0.7
<b>Total</b>	<b>537</b>	<b>100.0</b>	<b>10,040</b>	<b>100.0</b>

Source: Stats Wales

Table 49: Homeless Reasons

	2002/3	2003/4	2004/5	2005/6
Rent Arrears – HA	0	0	0	0
Racial Violence / Harassment	2	1	0	0
Rent Arrears – LA	0	1	1	6
Rent Arrears – PRS	3	1	11	4
Mortgage Arrears	4	8	3	5
Other	10	5	5	2
Other Violence / Harassment	5	21	12	14
Leaving Institutional Care	20	20	33	55
Relationship Breakdown	78	107	105	103
Parents / Relatives / Friends no longer able to accommodate	117	193	173	136
Other Loss of Rented / Tied Accommodation	102	167	188	179
<b>Total</b>	<b>341</b>	<b>524</b>	<b>531</b>	<b>504</b>

Figure 12: Applications as Homeless

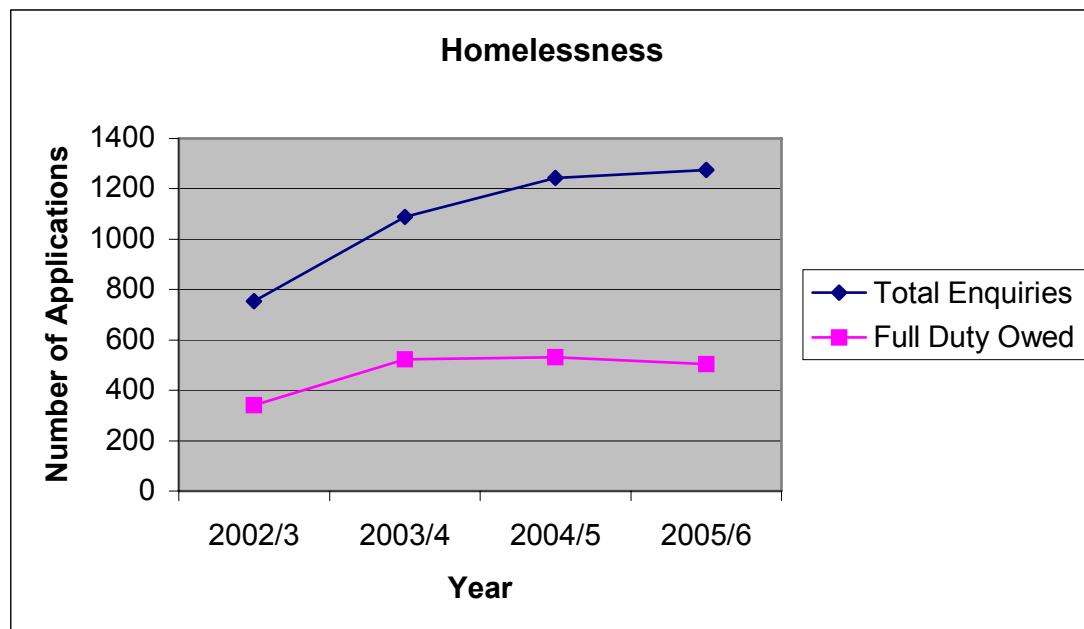
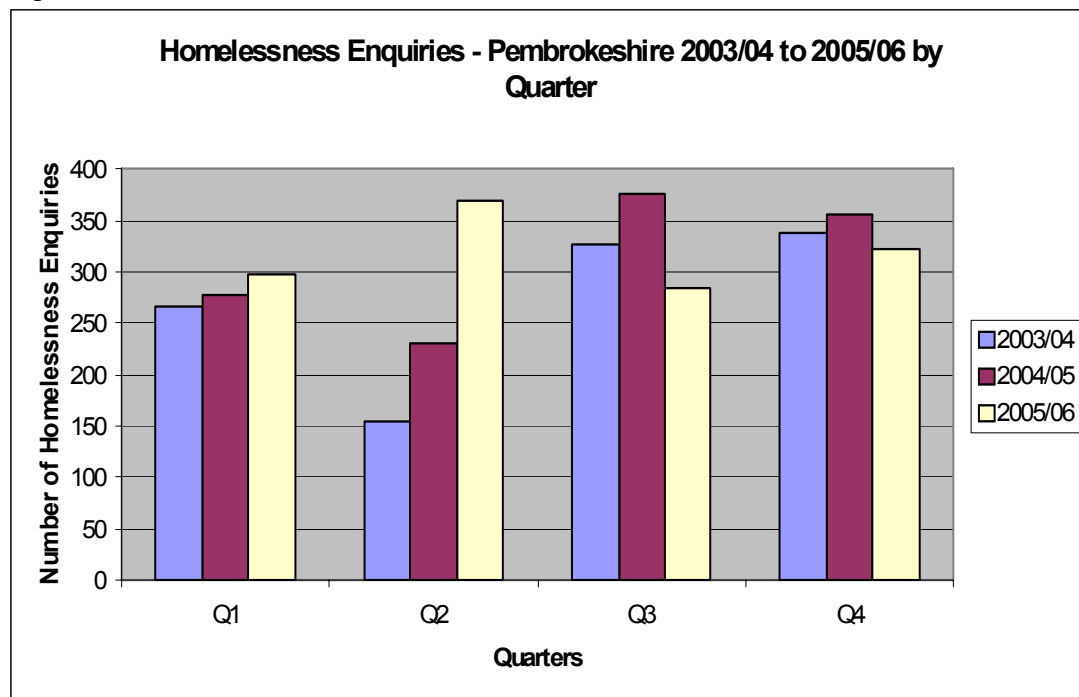


Figure 13



### Data Gaps and Uncertainties

Data for previous years in “Homelessness type” and “Households found to be eligible for assistance, unintentionally homeless and in priority need”.

Following the introduction of new data recording, it is anticipated that more detailed analysis by area will be possible in future years.

### Source:

Stats Wales

Pembrokeshire County Council Draft Local Housing Market Assessment

### Access to services

Pembrokeshire County Council produced an Access to Services Report in April 2006 following a survey asking for residents’ perception of ease of access to a range of services.

This table summarises the perception of access to each of the services given in the survey. Every service is more accessible to the urban population with schools, open space and pharmacies the most accessible services to all. Civic amenity sites, on the other hand, are considered relatively hard to reach by all.

Table 50

Accessibility. Very easy or fairly easy	Low difference in rural/urban	High difference in rural/urban
90%+	Local Schools Park / open space Pharmacy	Shopping facilities GP
80% - 89%	Recycling facilities Place of work Sport or Leisure centre	Library Public transport
70% - 79%	Civic amenity site	Council Office Childcare Local Hospital Cultural facility

**Source:** Pembrokeshire County Council internal report - Access to Services Report 2006

### Welsh Language

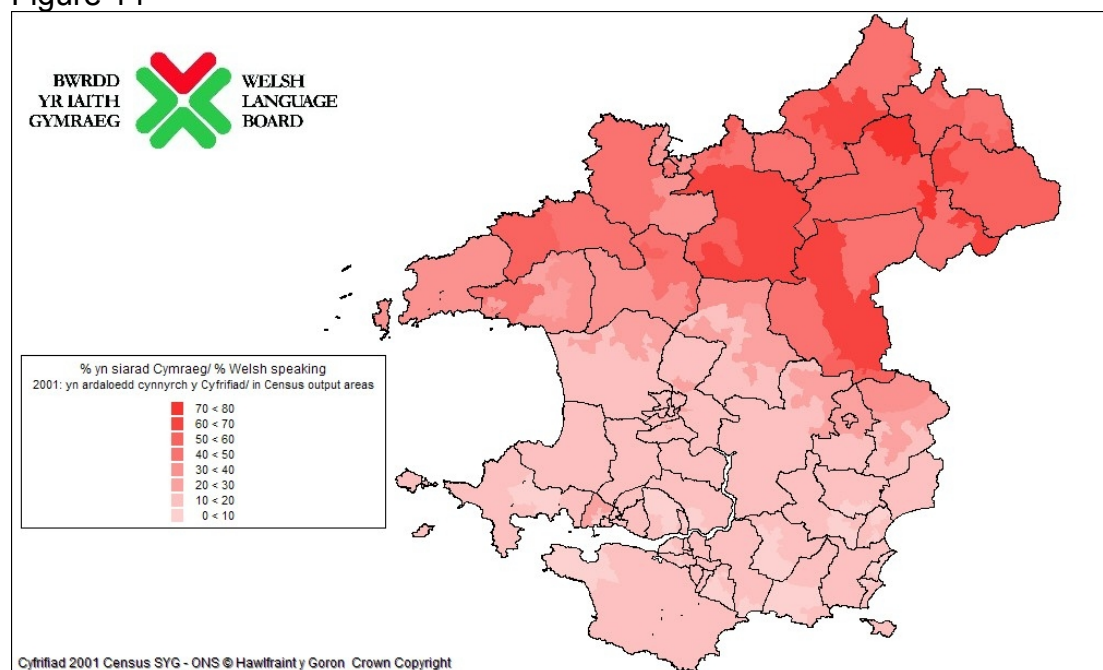
The 2001 Census asked the 110,182 residents aged over 3 years to describe their level of Welsh knowledge:

Table 51

Level of ability	Pembrokeshire		Wales	
	Number of persons	Percentage of population	Number of persons	Percentage of population
Understands spoken Welsh	26,915	24.43%	661,526	23.58%
Speaks Welsh	23,967	21.75%	582,368	20.76%
Reads Welsh	22,006	19.97%	567,152	20.21%
Writes Welsh	19,360	17.57%	495,519	17.66%
Speaks, reads or writes Welsh	26,358	23.92%	659,301	23.50%

In the last decade, the County has moved up three places to become the 8th highest in Wales in terms of the percentage of Welsh speakers, and this reflects the growing interest in the language and culture within Pembrokeshire.

Figure 14



**Source:** 2001 Census data

Bwrdd yr Iaith Gymraeg / Welsh Language Board:

<http://www.bwrdd-yr-iaith.org.uk/cynnwys.php?cID=&pID=109&nID=197&langID=2>

### Crime - British Crime Survey

The Pembrokeshire Monthly Performance Monitoring Summary for April 2007 included the following table, summarising crime statistics throughout the County during the preceding 12 months.

Table 52: Crime statistics

Crime Type	Baseline 03/04	April 05 – March 06	April 06 – March 07	Change from baseline
<b>BCS* Comparator Crime</b>	<b>4036</b>	<b>4448</b>	<b>4600</b>	<b>Up 14%</b>
Criminal Damage	1840	2324	2289	Up 24%
Wounding (serious and other)	1108	1010	1003	Down 9%
Theft from a vehicle	323	309	405	Up 25%
Theft or unauthorised taking of a vehicle	97	134	122	Up 26%
Domestic Burglary	179	172	173	Down 3%
Common Assault (inc. PC)	372	362	478	Up 28%
Vehicle Interference	19	31	32	Up 68%
Theft or unauthorised taking of a Cycle	72	69	56	Down 22%
Theft from the person	17	27	27	Up 59%
Robbery of personal property	9	10	15	Up 67%



\* BCS – British Crime Survey

The BCS measures the amount of crime in England and Wales. This includes crimes which may not have been reported to the police, or recorded by them. It thus provides an important alternative to police recorded crime statistics. Without the BCS the government would have no information on these unreported crimes. The BCS also helps identify those most at risk of different types of crime. This is used in designing and informing crime prevention programmes. It is also used to assess people's attitudes to crime and towards the Criminal Justice System. It is one of the major sources of information about levels of crime, public attitudes to crime and other Home Office issues.

### **Fear of crime surveys:**

#### **% of Pembrokeshire residents who “feel safe living in Pembrokeshire”**

2004/05 - 86% (Residents Survey based on the percentage of people disagreeing with the statement “I often do not feel safe living in this area”)

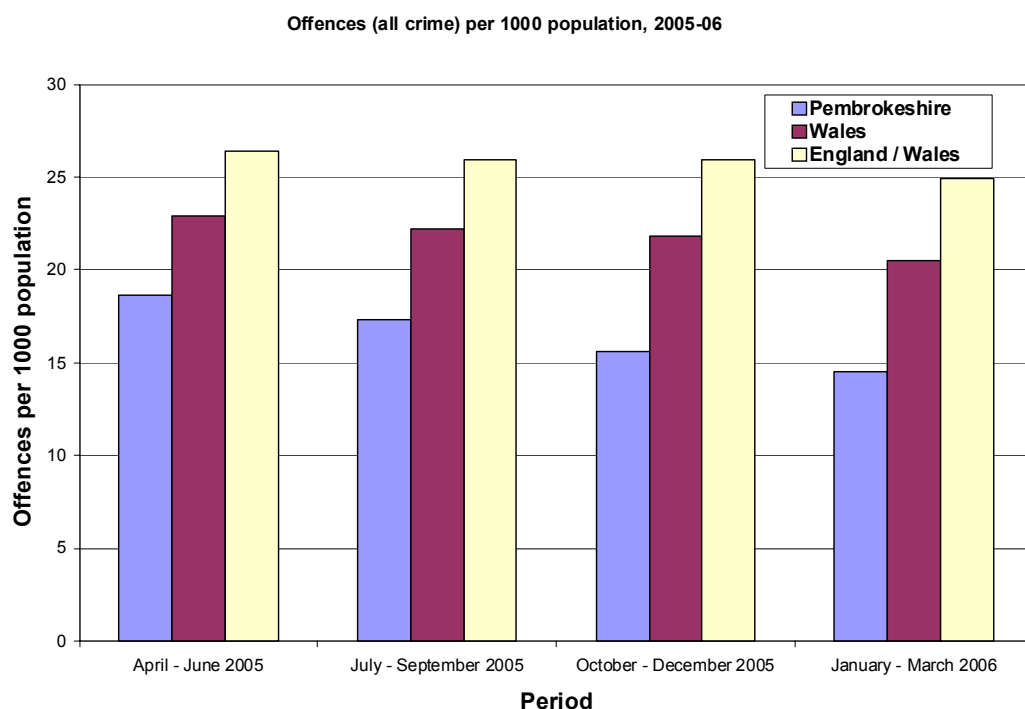
2005/06 - 94%

2006/07 - 94%

Source:

Pembrokeshire residents' survey and Citizens' panel

**Figure 15: Offences per 1000 population in Pembrokeshire, Wales and England/Wales – All crime**



**Source:** British Crime Survey, April 2005 – March 2006

<http://www.crimestatistics.org.uk/tool/Default.asp?region=5&force=16&cdrp=168&l1=0&l2=0&l3=0&sub=0&v=36>

Table 53: British Crime Survey results for various crimes (offences)

Crime	Pembrokeshire		Wales	
	Apr 05 – Mar 06	Apr 06 – Mar 07	Apr 05 – Mar 06	Apr 06 – Mar 07
Theft of a motor vehicle	135	120	11,695	11,312
Theft from a motor vehicle	318	403	26,115	25,307
Burglary in a dwelling	171	178	10,010	10,578
Violent against the person	1,897	2,045	52,595	53,667
Robbery	9	17	1,137	1,354
Criminal damage including arson	2,331	2,274	64,044	65,053

**Source:** ONS

<http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?adminCompAndTimeId=21471%3A256&a=3&b=276866&c=pembrokeshire&d=13&r=1&e=3&f=21467&o=171&g=415946&i=1001x1003x1004x1005&l=904&m=0&s=1209479855457&enc=1>)

### Crime Reduction Targets

The Home Office wishes to see national crime levels reduce by 15% from 2003/2004 figures by 2008. Although the overall crime rate within Pembrokeshire is low, local reduction targets are being negotiated with the Welsh Assembly Government.

Pembrokeshire consistently records lower figures than the national average, though the range varies across periods more than at national level. Criminal damage, theft of and from vehicles and violence against persons constitute the highest proportion of criminal offences which is a similar picture at a national level.

**Source:** Home Office Crime Statistics -

<http://www.crimestatistics.org.uk/tool/Default.asp?region=5&force=16&cdrp=168&l1=0&l2=0&l3=0&sub=0&v=36> – accessed 14 January 2008

### Pembrokeshire Voice survey on crime and disorder

Questions on crime and disorder were asked in the Pembrokeshire Voice survey:

- How do you think levels of crime and disorder in your area compare to the UK average?

47% of people said that they felt fairly safe walking alone in their area after dark, 26% felt very safe and 13% said they did not go out alone. 9% felt fairly unsafe, 3% said they were not sure and 2% felt very unsafe.

- How safe do you feel walking alone in your area after dark?

80% of people thought that the levels of crime and disorder in their area were lower or much lower than the UK average. 9% believed levels were about the same, 8% of people said they did not know and 3% felt they were higher or much higher.

**Source:** Pembrokeshire Voice, February 2007

### Miscellaneous Crime Reference Sources:

PCC Corporate & Improvement Plan 2007/08

PCC Pembrokeshire Monthly Performance Monitoring Summary

Home Office Crime Statistics -

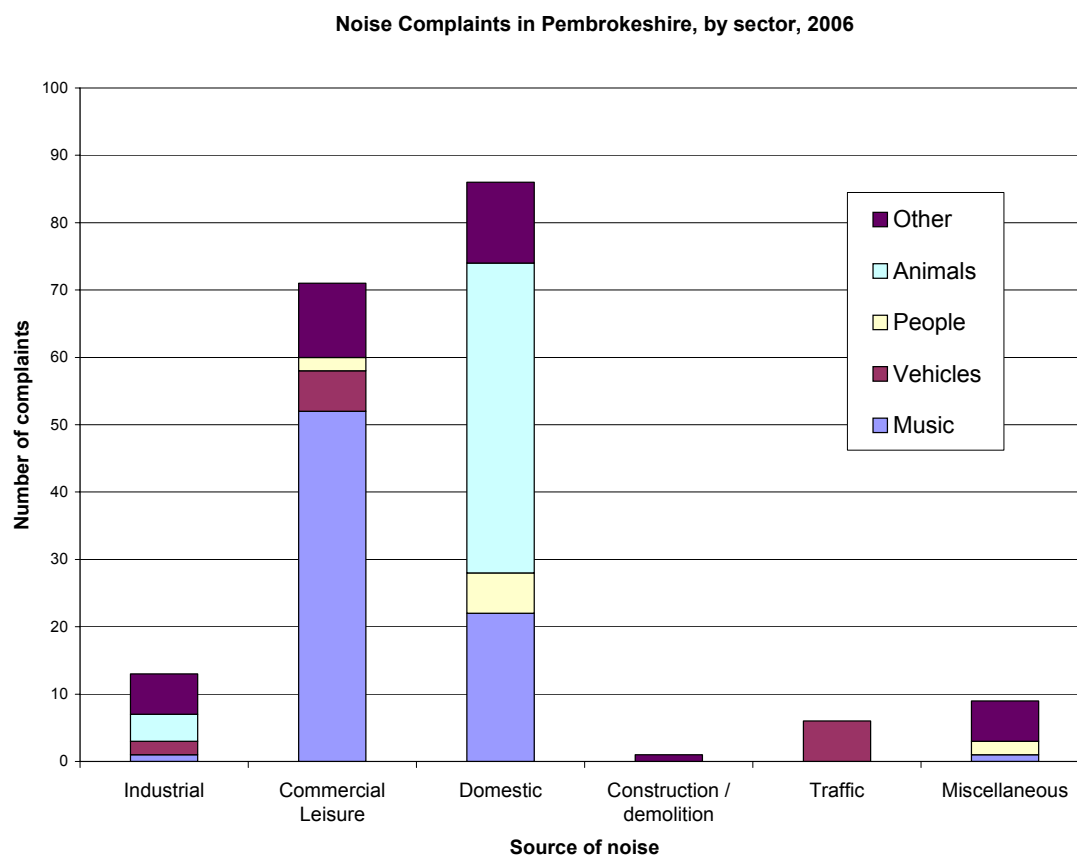
<http://www.crimestatistics.org.uk/tool/Default.asp?region=5&force=16&cdrp=168&l1=0&l2=0&l3=0&sub=0&v=36>

– accessed 14 January 2008

### Noise

In 2006, Pembrokeshire County Council received 186 complaints regarding 181 incidents of excessive noise, all of which were resolved. The following chart shows that the vast majority of cases occurred in Commercial Leisure or Domestic sectors.

Figure 16: Noise complaints



### Source:

Pembrokeshire County Council – Public Protection Division annual results 2006

## 6. Economy

A number of indicators of the economy and industry in Pembrokeshire are given in this section which relate to the **whole of the County** including the areas in the National Park.

### Economic Activity

Table 54: Economic activity statistics for Pembrokeshire, 2005

2005	Pembrokeshire (numbers)	Pembrokeshire (% of population aged 16-64)	Wales (% of population aged 16-64)
<b>All people</b>			
Economically active	51,400	76.8	75.2
In employment	48,100	71.9	71.2
Employees	38,700	57.8	62.1
Self employed	9,100	13.6	8.5
Unemployed	3,300	6.5	5.3
<b>Males</b>			
Economically active	27,800	80.8	79.0
In employment	26,000	75.7	74.1
Employees	18,900	55.0	61.0
Self employed	7,000	20.3	12.6
Unemployed	1,800	6.4	6.1
<b>Females</b>			
Economically active	23,700	72.7	71.2
In employment	22,100	67.9	68.2
Employees	19,800	60.8	63.2
Self employed	2,100	6.6	4.3
Unemployed	1,600	6.6	4.3

Table 55: Economic activity statistics for Pembrokeshire, 2006

2006	Pembrokeshire (numbers)	Pembrokeshire (% of population aged 16-64)	Wales (% of population aged 16-64)
<b>All people</b>			
Economically active	54,900	77.3	75.1
In employment	51,800	72.8	71.1
Employees	42,300	60.6	62.0
Self employed	8,800	11.6	8.6
Unemployed	2,700	5.0	5.2
<b>Males</b>			
Economically active	30,000	83.2	78.9
In employment	28,400	78.6	74.3
Employees	21,600	61.1	61.2
Self employed	6,700	17.6	12.6
Unemployed	1,600	5.5	5.8
<b>Females</b>			
Economically active	24,900	71.0	71.2
In employment	23,400	66.5	67.8
Employees	20,800	60.2	62.8
Self employed	2,100	5.4	4.5
Unemployed	1,500	6.1	4.5

Table 56: Economic activity statistics for Pembrokeshire, July 2006 to June 2007

July 2006- June 2007	Pembrokeshire (numbers)	Pembrokeshire (% of population aged 16-64)	Wales (% of population aged 16-64)
<b>All people</b>			
Economically active	56,500	78.8	75.2
In employment	54,200	75.7	71.1
Employees	44,800	64.0	61.8
Self employed	8,900	11.3	8.7
Unemployed	2,300	4.1	5.4
<b>Males</b>			
Economically active	30,400	84.3	78.9
In employment	29,200	81.1	74.2
Employees	22,600	64.3	61.0
Self employed	6,500	16.7	12.5
Unemployed	1,200	4.0	5.9
<b>Females</b>			
Economically active	26,000	73.0	71.4
In employment	25,000	70.0	67.8
Employees	22,200	63.6	62.6
Self employed	2,400	5.6	4.6
Unemployed	1,000	4.0	4.9

**Source:**

Official Labour Market Statistics - [www.nomisweb.co.uk](http://www.nomisweb.co.uk) based on ONS annual population surveys data. Last accessed December 2007.

Economically active tables

**Employee jobs**

The following table provides details of employee jobs in Pembrokeshire by sector, with a comparison to the Welsh average in 2006. Employee jobs do not include self-employed workers, government-sponsored trainees or members of the Armed Forces.

Table 57

2006	Pembrokeshire (numbers)	Pembrokeshire (% of population aged 16-64)	Wales (% of population aged 16-64)
Total employee jobs	39,900	-	-
Full-time	24,300	60.9	68.9
Part-time	15,600	39.1	31.1
<b>Employee jobs by industry</b>			
Manufacturing	3,000	7.4	10.9
Construction	3,100	7.7	4.8
Services	33,400	83.6	82.9
- Distribution, hotels & restaurants	12,600	31.4	23.5
- Transport & communications	2,200	5.5	5.9
- Finance, IT, other business activities	3,600	9.0	21.2
- Public admin, education & health	12,700	31.7	26.9
- Other services	2,400	5.9	5.4
Tourism-related <sup>†</sup>	5,900	14.8	8.3

- Data unavailable

† Tourism consists of industries that are also part of the services industry

Notes: % is a proportion of total employee jobs

Employee jobs excludes self-employed, government-supported trainees and HM Forces

Source: ONS annual business inquiry employee analysis

#### Source:

Official Labour Market Statistics - last accessed 26 February 2008:

<https://www.nomisweb.co.uk/reports/lmp/la/2038432114/report.aspx#tabjobs>

### Number of people working from home

Table 58

	Pembrokeshire		Wales
	Number	%	%
All people <sup>†</sup>	44,897	-	-
Works mainly at or from home <sup>#</sup>	7,377	16.4	9.7

<sup>†</sup> All people aged 16 to 74, who were usually resident in the area at the time of the 2001 Census, and were in employment.

<sup>#</sup> All people aged 16 to 74, who were usually resident in the area at the time of the 2001 Census, and worked mainly at or from home.

The percentage of people who work mainly at or from home (16.4%) is higher than the proportion in Wales (9.7%).

#### Source

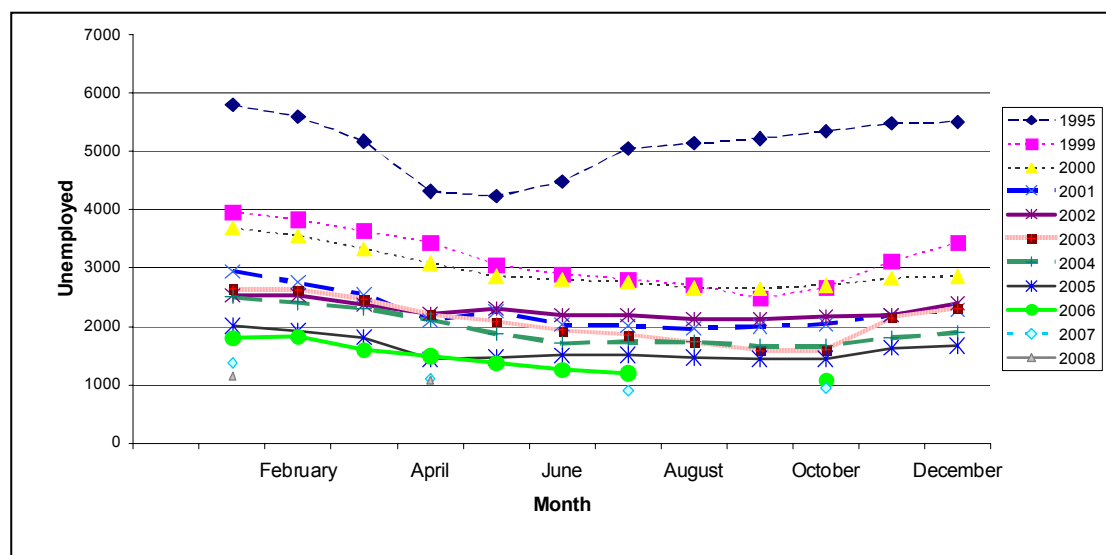
Census, ONS, Distance travelled to work (UV35), 2001

<http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=3&b=276866&c=pembrokeshire&d=13&e=9&g=415946&i=1001x1003x1004&m=0&r=1&s=1209135352187&enc=1&dsFamilyId=121>

## Unemployment & economic inactivity

Number of unemployment claimants in Pembrokeshire, by month and year from 1995 to 2008 (note that only quarterly data available from January 2006):

Figure 17



**Source:** Data extrapolated from Nomis:

[https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/jsa\\_time\\_series/report.aspx](https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/jsa_time_series/report.aspx)

The diagram also illustrates that seasonal unemployment, previously a major factor in winter unemployment rates, has become less pronounced in recent years.

## Economically inactive

Table 59: % of people of working age who are economically inactive in Pembrokeshire, 2006 and Jul 2006 – June 2007 (Nomis)

	Pembrokeshire (numbers)		Pembrokeshire (% of population aged 16-64)		Wales (% of population aged 16-64)	
	2006	2007	2006	2007	2006	2007
<b>All people</b>						
Economically inactive	15,200	14,300	22.7	21.2	24.9	24.8
Wanting a job	3,300	2,300	4.8	3.4	5.8	5.5
Not wanting a job	12,000	12,000	17.9	17.8	19.1	19.3
<b>Males</b>						
Economically inactive	5,800	5,500	16.8	15.7	21.1	21.1
Wanting a job	1,500	900	4.3	2.7	4.9	4.8
Not wanting a job	4,300	4,500	12.5	13.0	16.2	16.3
<b>Females</b>						
Economically inactive	9,500	8,800	29.0	27.0	28.8	28.6
Wanting a job	1,800	1,400	5.4	4.2	6.7	6.2
Not wanting a job	7,700	7,500	23.6	22.8	22.2	22.5

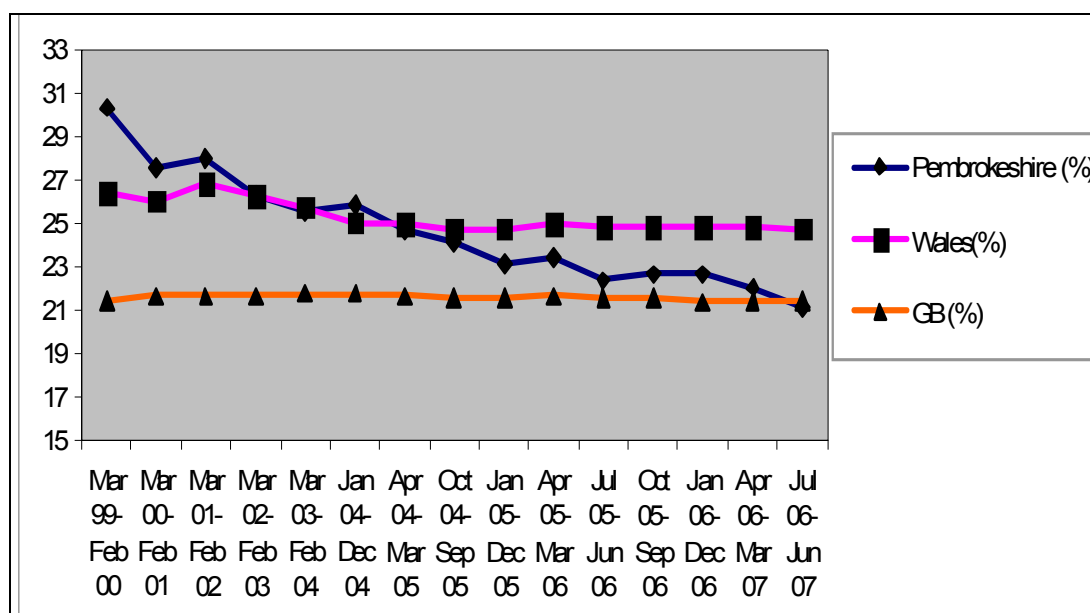
Notes: Numbers and % are for those of working age  
% is a proportion of total working age population

**Economically inactive:** People who are neither in employment nor unemployed. This group includes, for example, all those who were looking after a home or retired.

**Wanting a job:** People not in employment who want a job but are not classed as unemployed because they have either not sought work in the last four weeks or are not available to start work.

**Not wanting a job:** People who are neither in employment nor unemployed and who do not want a job.

Figure 18: Percentage of population aged 16-64 economically inactive in Pembrokeshire, Wales and Great Britain, 1999/00 – 2006/07



**Source:** Extrapolated from Nomis

[https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/einact\\_time\\_series/report.aspx](https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/einact_time_series/report.aspx)

**Other sources:**

Pembrokeshire Advance – Rural Development Plan 2007-2013, Part D

Official Labour Market Statistics:

<https://www.nomisweb.co.uk/reports/lmp/la/2038432114/tabjobs>



## Employment Land availability

Table 60: Total area of employment land in Pembrokeshire, annually, by hectare

	Allocated	Not Allocated	<b>Total</b>
Total site area, 2000	771.85	529.72	<b>1301.57</b>
Total site area, 2003	727.96	517.36	<b>1245.32</b>
Total site area, 2005	718.98	556.42	<b>1275.4</b>

The slight increase in 'Not Allocated' land from 2003 to 2005 was caused largely by the recalculation of the size of the PetroPlus site, from 150.8 ha to 195.1 ha.

### Source

Internal PCC Report - Employment Sites Report Comparison of 2000, 2003 and 2005 Survey Data. May 2006.

### Income

Table 61: Average gross hourly and weekly pay in Pembrokeshire and Wales by residence, in 2006 and 2007

YEAR	Earnings by residence	<u>Hourly pay</u>		<u>Gross weekly pay</u>	
		Pembrokeshire	Wales	Pembrokeshire	Wales
2006	<b>Full time workers</b>	£9.17	£10.10	£367.50	£404.20
	<b>Male</b>	£9.62	£10.80	£424.20	£447.30
	<b>Female</b>	£7.96	£9.29	£305.80	£350.10
2007	<b>Full time workers</b>	£9.08	£10.40	£369.70	£415.50
	<b>Male</b>	£9.13	£10.91	£380.90	£450.00
	<b>Female</b>	#	£9.78	£351.80	£362.10

# Sample size too small for reliable estimate. Does not include self employed

### Nomis

Time series data extrapolated from:

[https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/asher\\_time\\_series/report.aspx](https://www.nomisweb.co.uk/reports/lmp/la/2038432114/subreports/asher_time_series/report.aspx)

### Sources:

Official Labour Market Statistics:

<https://www.nomisweb.co.uk/reports/lmp/la/2038432114/report.aspx#tabearn>

Pembrokeshire Advance - Rural Development Plan 2007 – 2013, Part D

### Labour Demand

'Jobs density' is a ratio of total jobs available to population aged 16-64. Total jobs includes employees, self-employed workers, government-sponsored trainees and members of HM Armed Forces.

Table 62: Jobs density in Pembrokeshire, Wales and G.B.

	<b>Pembrokeshire (density)</b>	<b>Wales (density)</b>	<b>Great Britain (density)</b>
<b>2005</b>	0.79	0.78	0.84
<b>2001</b>	0.75	0.73	0.82

**Source:**

Official Labour Market Statistics, based on ONS Census and population survey data

**Stock of VAT Registered Businesses**

Table 63: The number of VAT registered businesses in Pembrokeshire at the beginning of recent years and the annual net loss / gain of registrations

	<b>VAT Registered Business per Year</b>			
	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>Stock at 1 January</b>	4975	4895	5135	5165
<b>Net loss / gain</b>	N/A	-80	+ 240	+30

A breakdown of the sectoral structure of Pembrokeshire's VAT registered businesses is given below, for the year 2005, with percentage comparison to Wales.

Table 64: Sectoral structure of VAT registered businesses

<b>Sector</b>	<b>Pembrokeshire</b>		<b>Wales</b>
	<b>Number</b>	<b>% of all VAT registered businesses</b>	<b>% of all VAT registered businesses</b>
ALL	4,895	100.0	100.0
Agriculture, hunting, forestry & fishing	1,665	34.0	19.9
Mining, quarrying, and electricity, gas and water supply	10	0.2	0.1
Manufacturing	240	4.9	7.3
Construction	515	10.5	11.5
Wholesale, retail trades & motor trades	865	17.7	21.0
Hotels and restaurants	565	11.6	9.5
Transport, storage & communications	135	2.8	4.4
Financial intermediation	5	0.1	0.4
Real estate, renting & business activities	580	11.9	18.5
Public admin, defence, compulsory social security and other	265	5.4	6.0
Education, health and social work	45	0.9	1.4

**Sources:**

Pembrokeshire Advance - Rural Development Plan 2007-2013, Part D  
StatsWales -

<http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=111>

## Industrial Structure

Table 65: Size of enterprises by quantity and percentage in Pembrokeshire and Wales, 2006

Size	Pembrokeshire		Wales	
	Number of enterprises	% of total enterprises	Number of enterprises	% of total enterprises
<b>All Enterprises</b>	<b>11,865</b>	<b>100</b>	<b>190,420</b>	<b>100.0</b>
Micro (0 – 9 employees)	11,220	94.5	179,855	94.5
Small (10 – 49 employees)	390	3.3	7,065	3.7
Medium (50 – 249 employees)	80	0.7	1,890	1.0
Large (250+ employees)	175	1.5	1,615	0.8

### Source:

Stats Wales, last accessed 27<sup>th</sup> February 2008:

<http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=1694>

## Wealth Creation

Indicators for wealth creation specifically in Pembrokeshire are not available – Pembrokeshire is bracketed with Carmarthenshire and Ceredigion as South West Wales. Wealth creation is measured by Gross Value Added (GVA) per capita. GVA measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom.

Table 66: Gross Value Added (GVA) per capita at current basic prices, 2002-2005 (£)

Year	South West Wales	Wales
2002	9,192	11,980
2003	9,601	12,633
2004	10,033	13,316
2005		13,813
2006		14,396

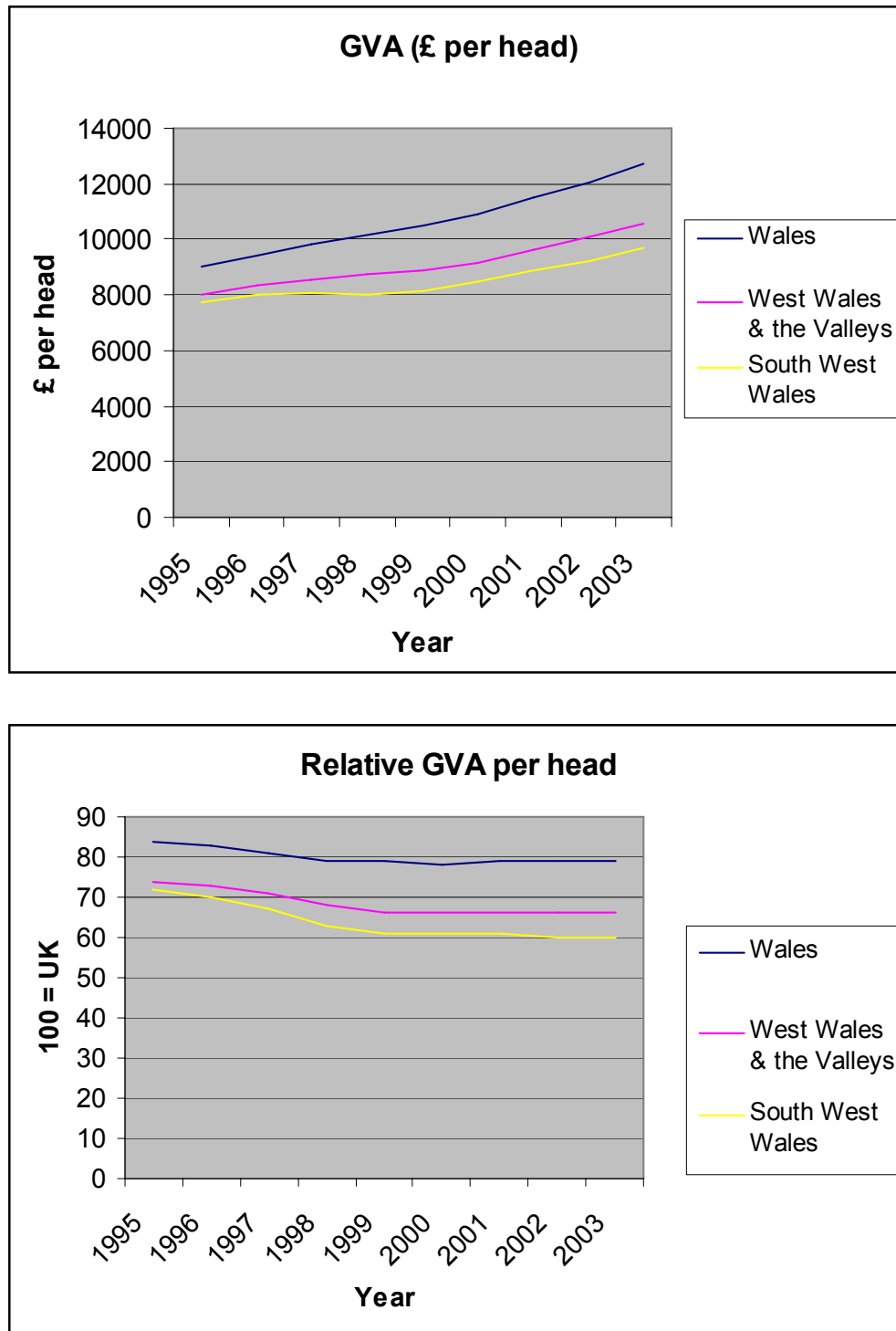
Table 67: WSP - ONS, Regional GVA December 2006

	Year	1999	2000	2001	2002	2003	2004
<b>Measure</b>	<b>Area</b>						
<b>£ million</b>	Wales	30595	31744	33416	35024	37115	39316
	West Wales and the Valleys	16545	17039	17823	18657	19716	20870
	East Wales	14050	14705	15593	16366	17399	18447
<b>£ per head</b>	Wales	10548	10920	11482	11980	12633	13316
	West Wales and the Valleys	8932	9195	9610	10029	10556	11126
	East Wales	13404	13954	14772	15397	16256	17133
<b>Index (UK=100)</b>	Wales	79	79	79	78	78	78
	West Wales and the Valleys	67	66	66	65	65	65
	East Wales	100	100	101	100	100	100

Source: [000300] Sub-regional Gross Value Added (GVA), by Welsh NUTS2 area (Welsh NUTS areas) NS ETES3, Welsh Assembly Government

As may be seen from the graphs below, whilst this is rising in absolute terms, it is declining in comparison to the UK average.

Figure 19: GVA per head 1995-2003 and relative GVA per head



The reasons behind these figures are highly complex and inter-related. In broad terms, however, low GDP per head in Pembrokeshire is the result of a combination of the following key factors:

- Ageing population structure

- 32% of all those aged 16+ are over retirement age (this compares with 25% for Wales as a whole)
- Low value added economy
  - Over-reliance on primary sectors
- Domination of micro-businesses in a small and peripheral economy
  - Over 94% of businesses employ fewer than 10 people, but have restricted scope for expansion due to limited local markets and Pembrokeshire's distance from other markets
- Pembrokeshire's peripheral location and distance from major markets mean that it is difficult for the County to benefit from the agglomeration effects associated with so-called "city regions".

**Source:** Pembrokeshire Advance - Rural Development Plan 2007-2013, Part D.

### **Data Gaps and Uncertainties**

Pembrokeshire GVA data is unavailable.

### **Sources:**

ONS, Regional GVA December 2006  
Stats Wales

## **Agriculture**

### **Land Area and Usage**

Wales - Approximately 2 million hectares of land  
Of which 81% is rural

Pembrokeshire - 170,000 hectares  
125,752 hectares (74%) is rural  
Of which 60% is permanent grassland and 26% is arable  
3,591 agriculture holdings employ a labour force of 5,862 owners and employees, which has decreased from 11,000 in 1911.

Farms and farming related occupations provide 7,000 jobs in Pembrokeshire.

### **Employment Trends and Business Prospects**

In the current economic climate, employment prospects within the land-based industries are poor. This lack of opportunity coupled with low incomes, has resulted in the younger generation migrating from rural areas in search of employment. As a consequence, the age structure of the rural population has deteriorated. The recent trend towards aggregation of farm holdings resulting in an increase in the number of large holdings and a decline in the availability of smaller holdings also makes it harder for young people to enter the industry. Unless these, and other, problems are resolved the sustainability of agriculture and the rural economy is in jeopardy. (The Road to Recovery for Rural Wales – the FUW Manifesto 2003). A demand for higher yields and greater profitability has fuelled the experimentation with genetic modification of crops and stock and raising public fears for the environmental implications.

**Source:** Pembrokeshire Coastal Forum – Topic Papers – Agriculture Rural Land Use (August 2003)

### **Agri-environment schemes**

EU Common Agriculture Policy – Objective 1 programme for Wales  
June 2003 – EC moved away from production related subsidy due to problems including over grazing, intensified use of fertilizers and increasing animal health risks.

A large proportion of Pembrokeshire is classified as a ESA (Environmentally Sensitive Area) which are designated under Section 18 of the Agriculture Act 1986. Its objective is to protect and enhance the environment through encouraging environmentally beneficial agricultural practices. Incentive payments are made under the Tir-Gofal scheme covering all of Wales.

Diversification of the rural economy occurs through the re-use of buildings for new houses. Schemes that currently operate are as follows:

- Tir-Mynydd – replaced Hill Livestock Compensatory Allowance as a method of supporting farmers in less favoured areas.
- Single Payment Scheme – introduced the 1<sup>st</sup> January 2005 it replaced most livestock and crop payment schemes, it breaks from traditional

production led payments. Recipients must show that they are keeping their land in good condition.

- Farm Improvement Grant (FIG) – Capital grant aimed at improving farm holdings, available through the Farming Connect Service.
- Farm Enterprise Grant (FEG) – Available for on farm diversification, available through the Farming Connect Service.
- Environmentally Sensitive Area (ESA) Scheme – helps farmers in ESA's whilst maintaining and protecting the landscape.
- Tir-Gofal – Encourage farmers to maintain the agricultural landscape and wildlife. The scheme also intends to improve public access to the working countryside and provide education and training opportunities.
- Tir-Cynnal – Entry level agri-environment scheme aiming to broaden opportunities for farmers wishing to take part in agri-environment schemes, also acts as a feeder for Tir-Gofal scheme.
- Habitat Scheme – Helps farmers protect and enhance the wildlife value of specifically important habitats in Wales.
- Organic Farming Scheme – Helping farmers convert to organic farming.
- Farm Woodland Premium Scheme – Payments for farmers who convert agricultural land to woodland.

### **Trends**

The number of agri-environment schemes has increased over recent years enabling farmers to find alternate sources of incomes which help maintain the numbers in farming. Farms can be expected to continue taking part in these schemes as traditional farming practices become less profitable. Diversification levels and range are therefore likely to increase in the rural economy.

### **Source:**

Welsh Agricultural Statistics 2006

## Tourism

Table 68: Volume and value of tourism in Pembrokeshire – Summary

	<b>CAMBRIDGE 2003</b>	<b>STEAM 2003</b>	<b>CAMBRIDGE 2004</b>	<b>STEAM 2004</b>
Visitor trips				
Staying trips	1,153,000	*	1,209,000	
Tourism/leisure day trips	2,100,000	2,025,000	2,173,000	1,875,000
Total visitor nights	5,100,000	10,565,000	5,377,000	10,732,000
Total visitor days	7,200,000	12,590,000	7,550,000	12,607,000
<b>Visitor spend</b>				
Direct visitor spend	£262,000,000	*	£292,712,000	
Indirect and induced spend	£81,000,000	*	£70,091,000	
Total visitor spend	£343,000,000	£423,000,000	£362,803,000	£450,300,000
<b>Employment</b>				
Total FTE jobs supported by tourism	6,139	*	6415	16,105

2005 – STEAM Model (Scarborough Tourism Economic Activity Monitor)

Total tourism trips (staying and day visitors) - 4,140,000

Total tourism spending - £449,200,000

FTE jobs supported by tourism - 15,964

### Data Gaps and Uncertainties

Data is derived from commercially run models which differ hugely in their outputs, despite having the same local inputs in terms of bedspace criteria, occupancy etc, and are at best indicative and in no way definitive. The reality is probably somewhere between the two. The most recent figures are for 2005 (from the STEAM model).

### Source

PCC Tourism Strategy.

## Recreation Facilities

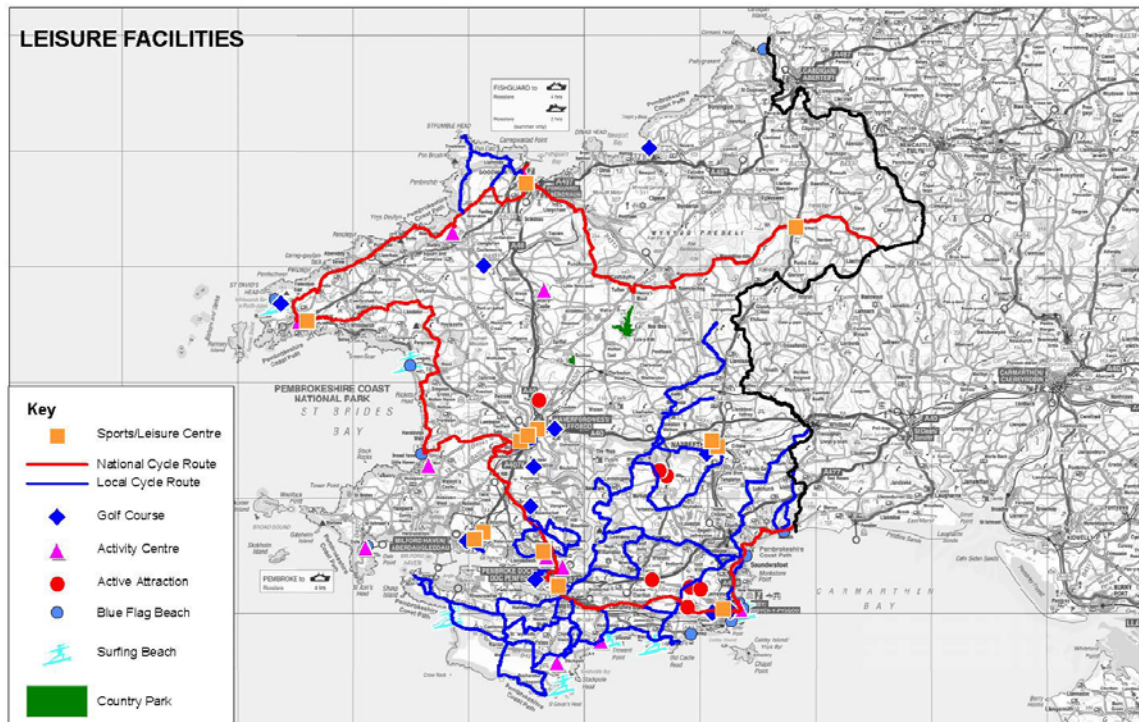
Pembrokeshire County Council operate: 6 Multi Activity Leisure Facilities

3 Swimming Pools  
5 Modern Fitness Suites  
4 Artificial Turf Pitches  
1 Indoor Bowls Hall  
Outdoor Tennis Courts  
Indoor Tennis Centre  
Athletics Track



Plus other school and community based indoor and outdoor facilities (Figure 20).

Figure 20



Source: Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007

Table 69: Visitors using Leisure Centres

Year	Number
2004/05	984,000
2005/06	1,195,000
2006/07	1,318,000
2007/08 (Projected number)	1,357,000

Table: Health Care and Well-being Strategy 2008-2011 – Needs Assessment Report 2007

### Sports Participation in the Community

Table 70: % of the Adult population (aged 18+) participating in moderately intense exercise for at least 30 minutes daily on 5 days of each week:

2004/05	2005/06	2006/07
42%	42%	42%

Source: Pembrokeshire County Council Corporate & Improvement Plan 07/08

Percentage of adults that are members of a sports club:

2003/04 – 17%

2004/05 – 17%

2005/06 – 17%

A target of 19% was set for 2006-07 (Pembrokeshire County Council C & I Plan 06/07).

### Comparators

Wales: WAG has launched 'Climbing Higher' to increase sport participation rates, with dedicated schemes to increase community participation. Spending has grown 250% since 1999.

### Sources:

PCC Corporate & Improvement Plan 2006/07

PCC Corporate & Improvement Plan 2007/08

Welsh Assembly Government - [www.wales.gov.uk](http://www.wales.gov.uk)

### Rights of way

When the figures from the WPI and Town and Community Council surveys between 2002 and 2005 were combined (and double entries removed) a total of 23% of the network had been surveyed. The table below summarizes the position at 2005.

Table 71

	Length of right of way (m)	% of paths surveyed
Paths open and signed	254,169	47%
Paths open but not signed	78,976	15%
Paths closed but signed	26,881	5%
Paths closed and not signed	177,957	33%
Total open	333,145	62%
Total closed	204,838	38%
Total surveyed	537,983	(100%)

The Pembrokeshire Coast National Park Authority surveyed the whole inland network in the National Park, checking which paths were open and met CCW criteria. The Pembrokeshire Coast Path itself was not included, but permissive paths were. The results are summarized below:

Table 72

	Length of right of way and permissive path (m)	% of paths surveyed
Open	878,106	83.5%
Closed	172,533	16.5%
Total surveyed	1050,639	(100%)

Source: Rights of Way Improvement Plan for Pembrokeshire (ROWIP) 2007-2017

In 2002, CCW commissioned a countrywide sample survey of rights of way, looking at a wide variety of issues, including the signing and ease of use performance indicators. Some of the results are summarised below:

Table 73

	Signed	Open
<b>Pembrokeshire County Council</b>	<b>39.7%</b>	<b>23%</b>
Pembrokeshire Coast National Park Authority	54.7%	55%
Wales	41.9%	46%

Source: Rights of Way Improvement Plan for Pembrokeshire (ROWIP) 2007-2017

Performance monitoring indicated that 63% of paths in the County were open in 2006/07.

### Data Gaps and Uncertainties

Just 23% of network surveyed and represented in data for PCC.

### Source:

Rights of Way Improvement Plan for Pembrokeshire (ROWIP) 2007-2017

## Communications and Utilities

### Water & Sewerage

Waste water – Dwr Cymru Welsh Water has numerous Waste Water Treatment Works within the County which are designed to treat foul effluent from residential and commercial/industrial premises. The discharges from each of the Works are licensed by the Environment Agency to meet European Directives. Dependant on the scale of development identified within your proposed Local Development Plan the associated sewerage catchments (sewer network & WWTW) and may need to be upgraded as required to accommodate future growth (Dwr Cymru Welsh Water).

## **Broadband, Digital Television and Radio Coverage**

The area's ICT links are a key factor in its competitiveness and have the potential to reduce the need to travel. Although nearly all exchanges are now enabled for broadband, there are significant constraints on geographical coverage, capacity and cost. It is crucial to develop bandwidth and coverage, and to encourage competition between suppliers, so that the area has access to competitively priced, high specification broadband. Wireless broadband opportunities need to be exploited as part of this. More work is needed to increase take-up of ICT applications by local business and by the public more generally. A programme of action on ICT will be developed (WSP Pembroke-shire Haven, <http://new.wales.gov.uk/about/strategy/spatial/pembrokeshire/Pembsinterim/accessibility/?lang=en>).

Consultation on broadband and mobile telephone 'not spots' in Pembrokeshire is being undertaken between April and September 2008.

Digital radio is transmitted via the Preseli mast and should provide DAB radio to the majority of the County (<http://www.ukdigitalradio.com/home/default.asp>). Similarly, digital television is available throughout the County.

## **Mobile Communications**

Groupe Speciale Mobile (GSM) are the world-leading mobile communications operator, providing a platform for over 700 networks including all the UK's leading providers (02, Orange, T-mobile and Vodafone).

For standard GSM 1800 connection, coverage by four operators is rated as 99.8% for all areas of the UK. In Pembrokeshire the only official weak spots are low, north-facing areas on the Coast on the 02 network. Ofcom has recently launched a Wales-wide investigation into quality levels of mobile phone coverage to determine the exact coverage levels.

Pembrokeshire lags behind much of the UK in terms of 3G coverage, which enables greater Internet use and video messaging. Only 32.3% of Wales is covered by four 3G operators, with the south-east and M4 corridor experiencing greatest coverage. In Pembrokeshire the networks have varying coverage:

02	No coverage
Orange	Haven area, Tenby & Fishguard areas only
T-mobile	Central Pembrokeshire only
Vodafone	Haven & Haverfordwest areas only

Sources:

<http://icwales.icnetwork.co.uk/news/wales-news/2008/01/05/disgrace-of-mobile-network-coverage-91466-20315617/> Accessed 9/1/08

[http://www.gsmworld.com/roaming/gsminfo/cou\\_gb.shtml](http://www.gsmworld.com/roaming/gsminfo/cou_gb.shtml) Accessed 9/1/08

## 7. Climatic factors

Table 74: Temperature and rainfall data

	Max temperature (°C)			Min temperature (°C)			Rainfall (mm)		
	1961 - 1990	1971 - 2000	2002 - 2006	1961 - 1990	1971 - 2000	2002 - 2006	1961 - 1990	1971 - 2000	2002 - 2006
Tenby (Pembs)	13.1	13.4	-	6.7	7.0	-	1092.2	1106.5	-
Aberporth (Ceredig)	12.1	12.3	-	6.9	7.1	-	850	870.2	-
Wales	12	12.3	13.2	5.3	5.5	6.3	1397.5	1433.5	1395.6

Source: The Meteorological Office, 2008 (accessed at <http://www.metoffice.gov.uk/climate/uk/averages/index.html>)

### Carbon dioxide emissions

Table 75: CO<sub>2</sub> emissions 2003 categorised by industry

CO <sub>2</sub> emissions (kt) 2003	Pembrokeshire	Wales	UK
Industry & Commercial	3735 (85%)	21782	262087
Domestic	331 (8%)	8040	163737
Road Transport	269 (6%)	6116	128606
LULUCF <sup>4</sup>	40 (1%)	225	13676
TOTAL	4376	36163	568105
Population (thousand)	116	2938	59537
Domestic per Capita CO <sub>2</sub>	2.8	2.7	2.8

Source: Defra

<http://www.defra.gov.uk/environment/statistics/globalatmos/download/regionalrpt/laregionalco2rpt20051021.xls>

Table 76: CO<sub>2</sub> emissions 2004 categorised by industry

CO <sub>2</sub> emissions (kt) 2004	Pembrokeshire	Wales	UK
Industry & Commercial	573 (44%)	16539	245107
Domestic	346 (26%)	7954	155139.8
Road Transport	317 (24%)	7244	150471.2
LULUCF	62 (5%)	-433	-1942
TOTAL	1298	31303	548777
Population (thousand)	114	2903	58785
Domestic per Capita CO <sub>2</sub>	3.0	2.7	2.6

Source Defra

<http://www.defra.gov.uk/environment/statistics/globalatmos/download/regionalrpt/laregionalco2rpt20061127.xls>

Table 77: CO<sub>2</sub> emissions 2005 categorised by industry

CO <sub>2</sub> emissions (kt) 2005	Pembrokeshire	Wales	UK
Industry & Commercial	540 (44%)	20494	284511
Domestic	307 (25%)	7451	149504
Road Transport	316 (26%)	7218	149816
LULUCF	66 (5%)	-370	-2056
TOTAL	1228	34793	545775
Population (thousand)	114	2903	58785
Domestic per Capita CO <sub>2</sub>	2.7	2.6	2.5

<sup>4</sup> LULUCF – Land use, Land use change & forestry

Source: Defra

<http://www.defra.gov.uk/environment/statistics/globalatmos/download/regionalrpt/local-regionalco2emissions2005.xls>

<http://www.defra.gov.uk/environment/statistics/globalatmos/download/regionalrpt/local-regionalco2emissions2005.xls>

Table 78: Pembrokeshire contribution to Wales and UK CO<sub>2</sub> emissions

	Pembrokeshire (2003) as a percentage of:		Pembrokeshire (2004) as a percentage of:		Pembrokeshire (2005) as a percentage of:	
	Wales	UK	Wales	UK	Wales	UK
<b>Population</b>	3.95	0.19	3.93	0.19	3.93	0.19
<b>Industry &amp; Commercial *</b>	17.15	1.43	3.46	0.23	2.63	0.19
<b>Domestic</b>	4.12	0.20	4.35	0.22	4.12	0.21
<b>Road Transport</b>	4.40	0.21	4.38	0.21	4.38	0.21
<b>TOTAL EMISSIONS</b>	12.10	0.77	4.15	0.24	3.53	0.23

The above table summarises the extent of Pembrokeshire's contribution to Wales' and the UK's CO<sub>2</sub> emissions.

It should be noted that the change from 2003 to 2004 in Industrial and Commercial emissions can be explained by changes to the methodology: In 2004 it was decided that emissions from shipping, aviation, military transport and exports should not be counted regionally – only on a UK level. With Milford Haven being a major shipping hub (5<sup>th</sup> busiest in the UK), this exclusion dramatically decreased emissions accredited to Pembrokeshire.

### Targets

The UK is bound to meeting specific emission targets as part of the Kyoto Agreement, which is to reduce emissions 8% below the 1990 baseline levels. By 2050, the target is to have cut carbon emissions by 60%, with 25% cut by 2020. The UK government is actively promoting Carbon Capture and Storage schemes, which could reduce emissions from fossil fuel power stations by as much as 90%.

### Issues, constraints and gaps

Reliance on cars for transport

Efficiency of homes

LNG and Pembroke Power Station may contribute to an increase in CO<sub>2</sub>.

Figures for Pembrokeshire on the above graph come under the 'South West Wales' grouping, which also includes Carmarthenshire and Ceredigion.

Public buildings carbon reduction 7.46% by April 2007

**Sources:**

Welsh Assembly Government – Sustainable Development Indicators for Wales, March 2007

DEFRA emissions report & report spreadsheet -

<http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm>

[http://www.pembrokeshire.gov.uk/content.asp?Parent\\_Directory\\_id=104&nav=993,1005](http://www.pembrokeshire.gov.uk/content.asp?Parent_Directory_id=104&nav=993,1005)

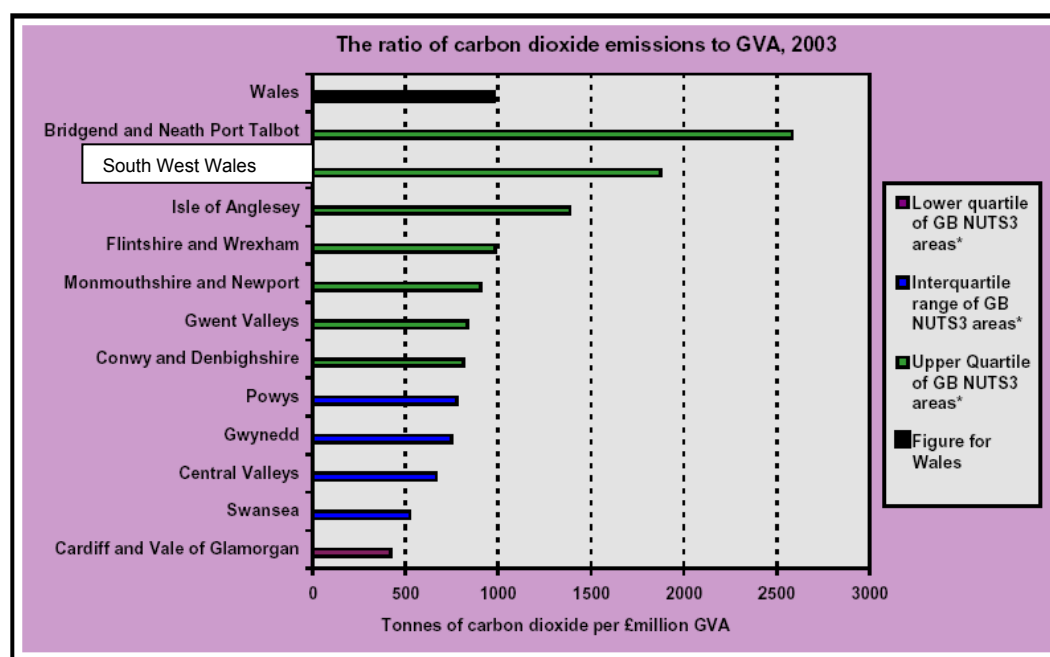
POSTnote 238 March 2005 -

<http://www.parliament.uk/documents/upload/POSTpn238.pdf>

**Resource efficiency – with CO<sub>2</sub>**

The figure below is an indicator of resource efficiency. It shows, at current prices, the ratio of CO<sub>2</sub> emissions (tonnes) to Gross Value Added (GVA) (£ million), 2003. South West Wales is shown to be one of the most inefficient areas of Wales, with Cardiff and the Vale of Glamorgan the only area that has a better ratio than the UK average of 574 tonnes per £ million GVA.

Figure 21



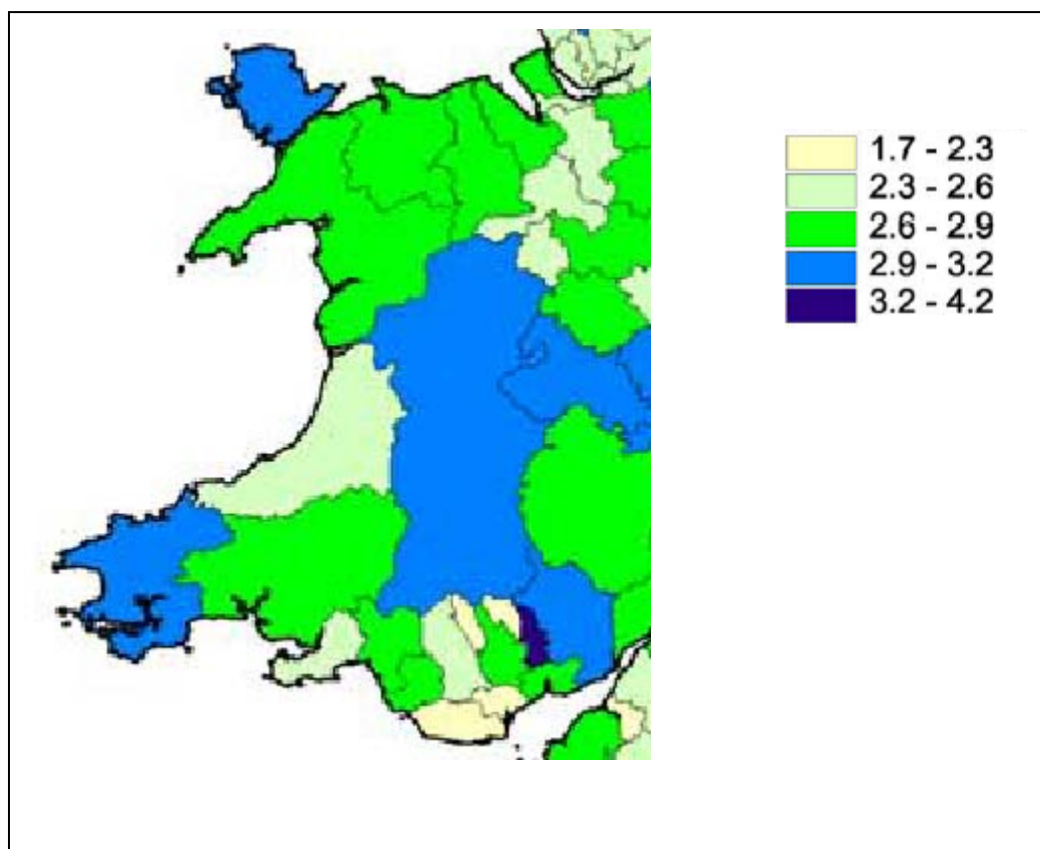
Source: Experimental High Level Indicators 2003, Department of Trade and Industry

\*South West Wales = Pembrokeshire, Cardigan & Carmarthenshire CCs.

A similar picture is given in the following thematic map, with Pembrokeshire in one of the highest brackets for domestic emissions.



Figure 22: Domestic emissions by Local Authority, per capita 2004 (kT CO<sub>2</sub>)



### Data Gaps and uncertainties

Figures for Pembrokeshire on the above graph come under the 'South West Wales' grouping, which also includes Carmarthenshire and Ceredigion.

### Sources:

Welsh Assembly Government – Sustainable Development Indicators for Wales, March 2007

DEFRA emissions report & report spreadsheet -

<http://www.defra.gov.uk/environment/statistics/globalatmos/galocalghg.htm>

[http://www.pembrokeshire.gov.uk/content.asp?Parent\\_Directory\\_id=104&nav=993,1005](http://www.pembrokeshire.gov.uk/content.asp?Parent_Directory_id=104&nav=993,1005)

POSTnote 238 March 2005 -

<http://www.parliament.uk/documents/upload/POSTpn238.pdf>

### Climate change scenarios

The UK climate is changing as a result human influences through emissions of greenhouse gases such as carbon dioxide and methane. Possible climate change scenarios have been developed by the Defra funded UK Climate Impacts Programme (UKCIP). In general terms, the UK climate will become warmer, sea levels will rise. The temperature of coastal waters will also increase, although not as rapidly as over land. High summer temperatures will become more frequent, whilst very cold winters will become increasingly



rare. There will be wetter winters, drier summers, decrease in snowfall and heavy winter precipitation will become more frequent. This means increased flow into estuaries, and also increased storminess of coasts. Relative sea level will continue to rise around most of the UK's shoreline, and there will be a higher risk of flooding of low lying areas. Extreme sea levels will be experienced more frequently.

Modelled sea level rises for the South West and Wales as 3.5mm per year in 1990-2025 (Defra). Technical Advice Note 15 suggests projections for sea level rises around the Welsh coast of between 25 to 30cm by 2050, slightly more in the south than the north.

Table 79

Region	Assumed vertical land movement (mm/yr)	Net sea-level rise (mm/yr)				Previous allowances PPG25 TAN15
		1990-2025	2026-2055	2056-2085	2086-2115	
Wales	-0.5	3.5	8.0	11.5	14.5	5mm/yr constant

Wales emits 3,147kg of carbon every year for each consumer (Wales and Sustainable Development Facts and Figures document)

### **Trend**

Increase in temperature  
Frequency of storm events.

### **Issues/constraints/gaps**

Impacts of climate change on agriculture, infrastructure (sewers), flooding, erosion, storm damage and subsidence, drought in summer, low flows in rivers, thermal discomfort in buildings, increased health risks in summer, but reduced cold weather illness, effects on biodiversity and habitats.

### **Sources:**

UKCIP [http://www.ukcip.org.uk/climate\\_change/uk\\_future.asp](http://www.ukcip.org.uk/climate_change/uk_future.asp)

## 8. Air quality

### Summary of baseline

Pembrokeshire has no designated Air Quality Management Areas (AQMA). However, there are pollutants which are sampled in the County include benzene, nitrogen dioxide (NO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>) and ozone.

Other pollutants are also measured at a national scale:

Lead, volatile organic compounds, sulphur dioxide, nitrogen oxides, carbon monoxide, benzene, 1,3-butadiene, fine particles\*. Fine particles can be both primary and secondary pollutants. These pollutants can reduce local air quality - affecting human health and vegetation growth, and causing damage to materials.

Sulphur dioxide, nitrogen oxides, hydrochloric acid contribute to acid deposition which leads to degradation of the terrestrial environment.

Ozone is primarily formed by a complicated series of chemical reactions initiated by sunlight. These reactions can be summarised as the sunlight-initiated oxidation of volatile organic compounds (VOCs) in the presence of nitrogen oxides (NO<sub>x</sub>). Traffic exhausts, power plants and factories are the main sources of VOCs and NO<sub>x</sub>.

Benzene is a VOC which is a minor constituent of petrol. The main sources of benzene in the atmosphere in Europe are the distribution and combustion of petrol. Of these, combustion by petrol vehicles is the single biggest source (70% of total emissions).

### Benzene

There have been no exceedances for benzene in Haverfordwest or Pembroke.

Table 80: Annual mean benzene concentrations 2002-2006

Location	Annual mean benzene concentrations 2002-2006 µg/m <sup>3</sup> (Number of months monitoring in brackets)				
	2002	2003	2004	2005	2006
Dark St., H'west	2 (12)	2.14(12)	1.77(11)	2.03 (12)	1.52(10)
Main St., Pembroke	2.9 (12)	2.98(12)	2.24(11)	2.41 (12)	2.03(11)
UK Air Quality Strategy objective (2007) for benzene = 16.25 µg/m <sup>3</sup> running annual mean and 5µg/m <sup>3</sup> annual average					

Source: PCC Air Quality Review 2007

## Nitrogen dioxide (NO<sub>2</sub>)

Bias adjusted figures indicate no exceedances the Air Quality Strategy objectives, however there are 'hotspots' for nitrogen dioxide at Dark Street and Albert Street in Haverfordwest, and Main Street in Pembroke.

Table 81: Bias adjusted annual mean nitrogen dioxide levels 2004-2006

Location	Bias adjusted annual mean NO <sub>2</sub> levels µg/m <sup>3</sup> A (Bias Adjustment Factor) x Raw mean		
	2004 (A = 1.086)	2005 (A = 0.971)	2006 (A = 0.781)
Salutation Sq. Roundabout, Hwest	25.8	23.8	20
Dark St., Hwest	39	35	35.1
Res. Homes, Withybush	10.7	9.3	9.8
Merlins Bridge Roundabout, Hwest	29.4	26.7	26.7
Main St., Pembroke	39	31.7	31.4
Mansel St., Pembroke	10.3	9	7.4
Greenmeadow Ave, Pembroke	10.2	8.8	8
High St., Tenby	18.8	15.3	13.7
High St., Narberth	21.1	20.8	20.5
Albert St., Hwest	45.6	33.6	35.5
Redhill Pk., Hwest	9.3	7.8	7.3
Monkton Bridge, Pembroke	19.3	16.5	14.4
UK Air Quality Strategy objective (2007) for NO <sub>2</sub> = 200 µg/m <sup>3</sup> not to be exceeded more than 18 times per year (one hour mean) and 40 µg/m <sup>3</sup> annual mean			

Source: PCC Air Quality Review 2007

## Narberth AURN

There were no exceedances of nitrogen dioxide levels at Narberth Automated Urban Rural Network (AURN).

Table 82: Nitrogen dioxide levels (µg/m<sup>3</sup>) monitored at the Narberth AURN site 2004-2006

	2004	2005	2006	2007?
Annual Mean	5.3	5.1	5.3	
Max Hourly Mean	55.6	57.7	61.9	
Data capture (%)	94	95	94	
UK Air Quality Strategy objective (2007) for NO <sub>2</sub> = 200 µg/m <sup>3</sup> not to be exceeded more than 18 times per year (one hour mean) and 40 µg/m <sup>3</sup> annual mean				

Source PCC Air Quality Review 2007

### Industrial sources of NO<sub>x</sub>

Release limits of nitrogen oxides were not exceeded during 2006.

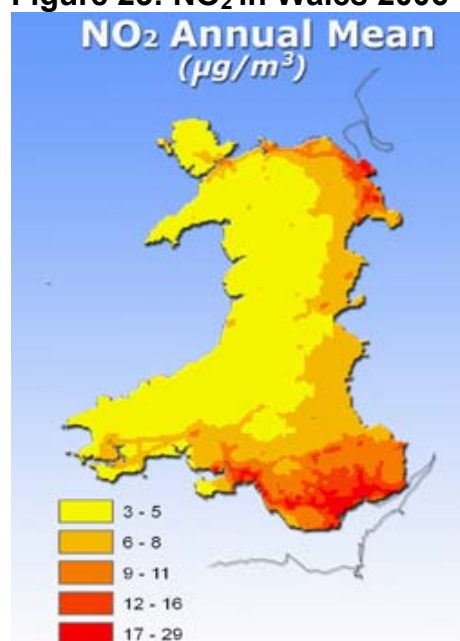
Table 83: Release (tonne per year) of nitrogen oxides (NO<sub>x</sub>) for January to August 2006

Location	Annual NO <sub>x</sub> Release Limit	NO <sub>x</sub> Released 2006	As a % of limit
Total Fina Elf, Milford Haven	1600	763*	48
Chevron Refinery, Pembroke	2497	1489*	60

\*January to August 2006

Source PCC Air Quality Review 2007

Figure 23: NO<sub>2</sub> in Wales 2006



Source – Welsh Air Quality Forum

<http://www.welshairquality.co.uk/trend.php?t=4>

### Sulphur dioxide (SO<sub>2</sub>)

The UK Air Quality Strategy objectives (2007) for SO<sub>2</sub> are:

- 350µg/m<sup>3</sup> not to be exceeded more than 24 times per year (one hour mean);
- 24-hour mean of 125µg/m<sup>3</sup> to be exceeded no more than 3 times per year;
- 266µg/m<sup>3</sup> not to be exceeded more than 35 times per year (15 minute mean measured as the 99.9th percentile).

### Sulphur dioxide levels at Narberth AURN

Narberth did not exceed the 24 hour mean or the 15 minute mean objectives in 2006 (PCC Air Quality Review, 2007).

### Industrial sources of sulphur dioxide

Release limits of sulphur dioxide were not exceeded in 2005-2006.

Table 84: Release (tonne per year) of sulphur dioxide (SO<sub>2</sub>) for 2005 to 2006

Location	Annual SO <sub>2</sub> Release Limit	SO <sub>2</sub> Released 2005	As a % of Limit	SO <sub>2</sub> Released 2006	As a % of Limit
Total Fina Elf, Milford Haven	4600	1073	23.3	700*	15
Chevron Refinery, Pembroke	n/a	1990	n/a	1733*	n/a

\*January to August 2006

Source: PCC Air Quality Review 2007

Chevron Ltd Pembroke Refinery monitored sulphur dioxide at Portclew Lodge, Freshwater East. This data shows no exceedances.

Table 85: Quarterly SO<sub>2</sub> levels (µg/m<sup>3</sup>) measured at Freshwater East 2006

Quarter	SO <sub>2</sub> average/ µg/m <sup>3</sup>
Jan/Feb/Mar	16.5
Apr/May/Jun	Instrument out of service
Jul/Aug/Sep	6.3
Oct/Nov/Dec	7.6

Source: PCC Air Quality Review 2007

Table 86: 15-minute maximum SO<sub>2</sub> level µg/m<sup>3</sup> measured at Freshwater East 2006

Month	Maximum Value (µg/m <sup>3</sup> )	Equipment in Service
July	30	77%
August	29	100%
September	16	100%
October	737	100%
November	12	100%
December	22	100%

Source PCC Air Quality Review 2007

### Particulate matter (PM<sub>10</sub>)

Table 87: PM<sub>10</sub> level (µg/m<sup>3</sup> gravimetric) measured at Narberth AURN site

	2003	2004	2005	2006
Max 24 hr mean	66.5	34.6	35.9	42.9
Annual mean	17.42	12.9	15.9	13.4
Data capture (%)	73	94	95	94

Source PCC Air Quality Review 2007

Air Quality Strategy objective for PM<sub>10</sub>

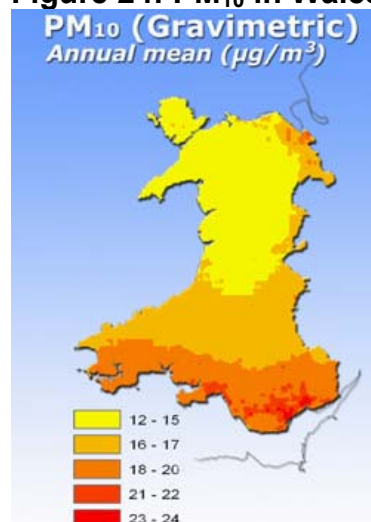
UK Air Quality Strategy Objectives (2007) for PM<sub>10</sub> are:

- 50µg/m<sup>3</sup> not to be exceeded more than 35 times a year (24 hour mean);
- 40µg/m<sup>3</sup> annual mean.

The results indicate that there have been no exceedances of the PM<sub>10</sub> objectives at Narberth.

An exposure reduction approach to PM<sub>2.5</sub> is included in the UK Air Quality Strategy. National level policy framework for exposure reduction for fine particles to improve public health across the UK.

**Figure 24: PM<sub>10</sub> in Wales 2006**



Source: Welsh Air Quality Forum

<http://www.welshairquality.co.uk/trend.php?t=4>

The Environment Agency monitored the ambient air quality in the vicinity of Milford Haven and Pembroke Refineries using mobile monitoring stations at Hubberston between 27<sup>th</sup> June and 20<sup>th</sup> September 2006, and Thornton between 25<sup>th</sup> September and 12<sup>th</sup> December 2006. The pollutants monitored were sulphur dioxide, nitrogen oxides, carbon monoxide, particulate matter and VOCs (benzene and 1,3-butadiene) (Environment Agency, <http://www.environment-agency.gov.uk/regions/wales/426317/464239/1193404/1768051/> and PCC Air Quality Review and Assessment Progress Report, 2007).

The monitoring determined that quality objectives were likely to be met.

Pembrokeshire County Council does not monitor carbon monoxide, 1,3-butadiene and lead as previous monitoring has indicated that it is highly unlikely that these Air Quality Objectives would be breached (PCC Air Quality Review and Assessment Progress Report, 2007).

#### **Number of days of moderate or high air pollution in Narberth (rural)**

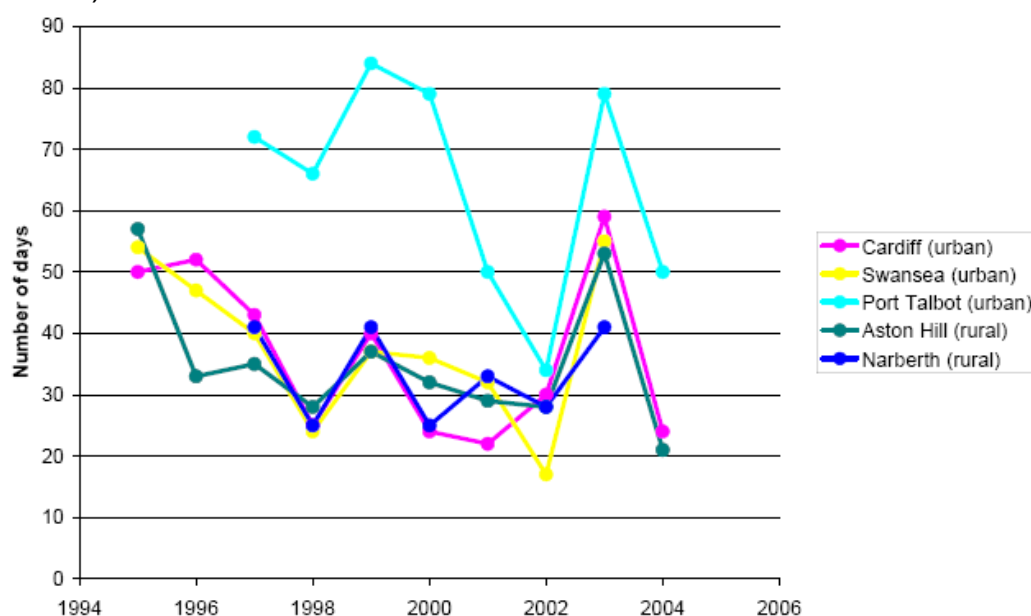
Concentrations of pollutants are analysed to determine the number of days which the pollution was moderate or higher. This is when concentrations for at least one of the pollutants exceed the National Air Quality Standards. The variation in ozone levels which is the main cause of pollution in rural areas is affected by weather conditions such as higher temperature.

**Table 88: Number of days of moderate or high air pollution in Narberth**

1997	1998	1999	2000	2001	2002	2003	2004	2005
41	25	41	25	33	28	41	*	*

\*Narberth was excluded for giving incorrect measurements during 2004 and failing data capture rules in 2005 (Key Environmental Statistics for Wales, 2007)

Figure 25: Number of days with moderate or higher pollution levels (South Wales)



## Ozone

Ozone is measured at Narberth AURN.

Table 89: Annual mean of the ozone daily maximum 8 hour running mean (average of  $\mu\text{g}/\text{m}^3$ )

1997	1998	1999	2000	2001	2002	2003	2004	2005
73	75	77	#	73	71	67	*	*

# Data capture was slightly below the recommended 75% maximum in 2000.

\* Incorrect measurements during 2004 and failed data capture in 2005.

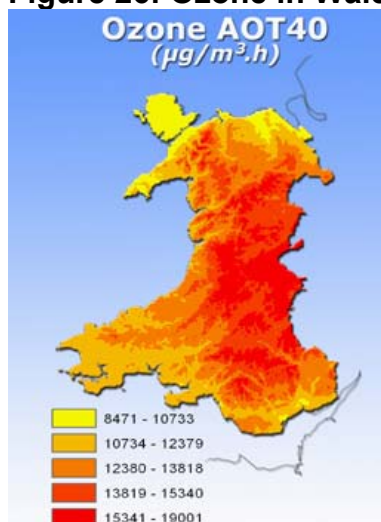
(Source - Key Environment Statistics for Wales, 2007).

The Air Quality Strategy objective for Ozone is:

- $100\mu\text{g}/\text{m}^3$  not to be exceeded more than 10 times a year (8 hour mean);

The results indicate that there have been no exceedances of the ozone objectives at Narberth.

**Figure 26: Ozone in Wales**



Source: Welsh Air Quality Forum

<http://www.welshairquality.co.uk/trend.php?t=4>

### **Acid and nitrate deposition at Natura 2000 sites**

Figure 27: WSP Pembrokeshire Haven: acid deposition at Natura 2000 sites – modelled predictions for 2010

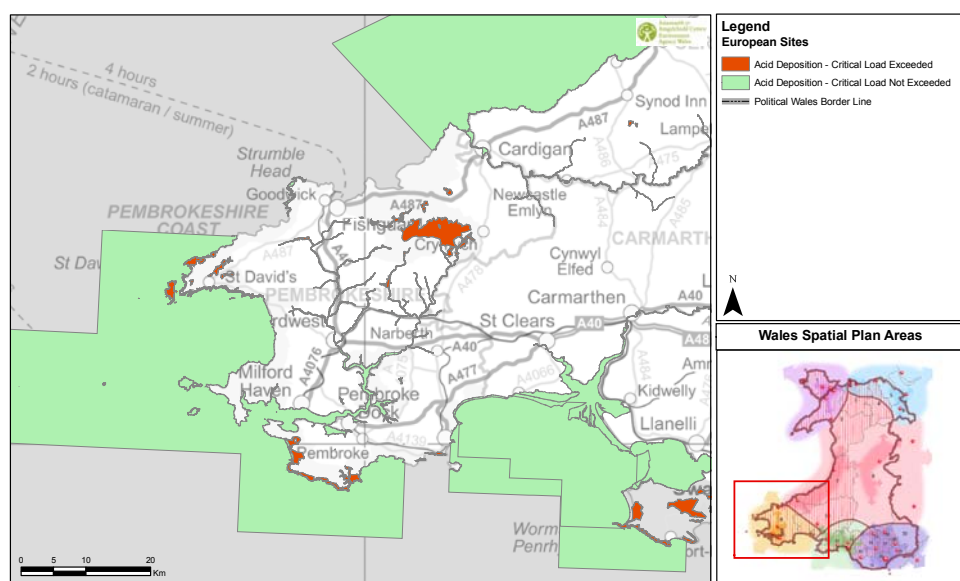
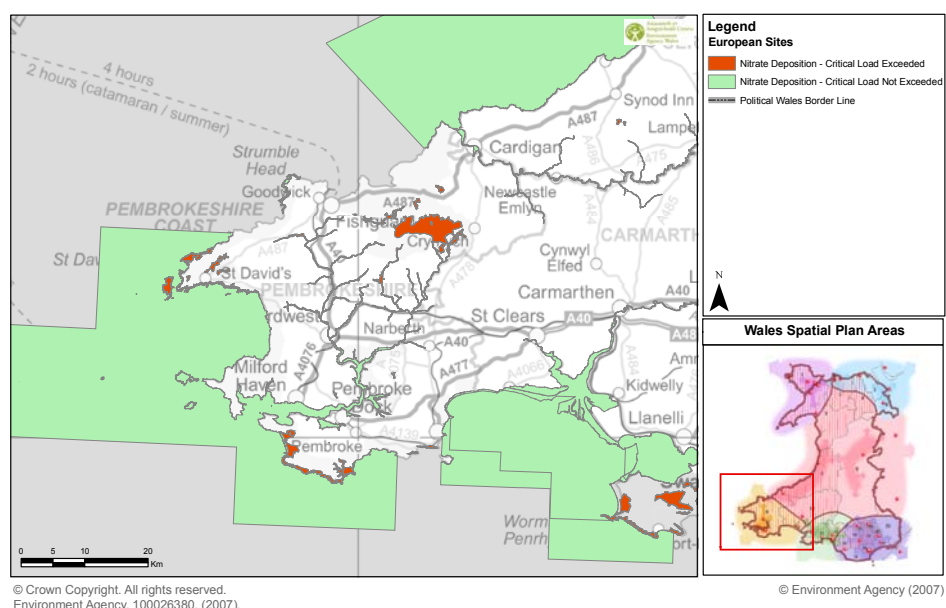




Figure 28: WSP Pembrokeshire Haven: nitrate deposition at Natura 2000 sites – modelled predictions for 2010



### Issues/constraints/gaps

The main sources of air pollutants in Pembrokeshire are road traffic, power generation and other heavy industries. Air Quality Strategy objectives currently being met, however future developments may impact localised air quality. Increased traffic in particular hotspots can have an impact on localised air quality. There have been issues with dust ( $PM_{10}$ ) from quarries and dust suppression takes place.

### Sources:

Air quality strategy

Etc

<http://www.airquality.co.uk/archive/index.php>

<http://www.welshairquality.co.uk/>

<http://www.sustainable-development.gov.uk/progress/national/index.htm>

Wales Spatial Plan

## 9. Material Assets

### Waste

#### Municipal Solid Waste (MSW)

Table 90: Total MSW arisings, 1998/99 – 2008/09 (Tonnes) Pembrokeshire

Year	Tonnes of MSW	Growth %
1998/99	59,400	
1999/00	64,062	7.85
2000/01	68,991	7.69
2001/02	74,466	7.94
2002/03	76,394	2.59
2003/04	75,726	-0.87
2004/05	76,198	0.62
2005/06	76,299	0.13
2006/07	78,579	2.90
2007/08	74,185	-5.90
2008/09	70,952	-4.60

Note: Includes household and non-household sources

Source: South West Wales Regional Waste Group, Annual Monitoring Report 2007

[http://www.walesregionalwasteplans.gov.uk/pdfs/sw\\_pdf/Annual\\_Monitoring\\_Report\\_April\\_2007.pdf](http://www.walesregionalwasteplans.gov.uk/pdfs/sw_pdf/Annual_Monitoring_Report_April_2007.pdf)

WAG -

<http://wales.gov.uk/docs/desh/publications/090901wasteq40708bulletinen.pdf>

#### Future trend

The 2001 Technical Advice Note 21<sup>5</sup>: Waste, laid out the preferred all-Wales strategy for waste – the Waste Hierarchy. Waste management decisions will be expected to follow the principles of **Reduction, Re-use, Recycle & compost, Energy recovery**, and as a final option, **Disposal**. The table above gives an indication that growth of municipal waste has experienced a significant slow-down, and the next step is to reverse the trend and achieve consistent reductions.

#### Target: Stabilisation and reduction of household waste

- By 2009/10 (and to apply beyond) waste arisings per household should be no greater than those (for Wales) in 1997/98;
- By 2020 waste arisings per person should be less than 300kg per annum.

**Target Type:** Secondary.

Source: South West Wales Regional Waste Group, Annual Monitoring Report 2007

<sup>5</sup> Technical Advice Note 21: Waste available at <http://new.wales.gov.uk/topics/planning/policy/tans/tan21?lang=en>

[http://www.walesregionalwasteplans.gov.uk/pdfs/sw\\_pdf/Annual\\_Monitoring\\_Report\\_April\\_2007.pdf](http://www.walesregionalwasteplans.gov.uk/pdfs/sw_pdf/Annual_Monitoring_Report_April_2007.pdf)

### **South West Wales MSW arisings**

Table 91: Total Municipal Solid Waste arisings, 1998/99 – 2008/09, SW Wales

	<b>SW Wales</b>	<b>Growth (%)</b>
<b>1998/ 99</b>	454,800	
<b>1999/ 00</b>	484,979	6.64
<b>2000/ 01</b>	499,533	3.00
<b>2001/ 02</b>	512,095	2.51
<b>2002/ 03</b>	534,464	4.37
<b>2003/ 04</b>	551,156	3.12
<b>2004/ 05</b>	580,736	5.37
<b>2005/ 06</b>	561,423	-3.33
<b>2006/07</b>		
<b>2007/08</b>		
<b>2008/09</b>		

Source: South West Wales Regional Waste Group, Annual Monitoring Report 2007

[http://www.walesregionalwasteplans.gov.uk/pdfs/sw\\_pdf/Annual\\_Monitoring\\_Report\\_April\\_2007.pdf](http://www.walesregionalwasteplans.gov.uk/pdfs/sw_pdf/Annual_Monitoring_Report_April_2007.pdf)

### **Data gaps and uncertainties**

Data refers to Pembrokeshire County Council as a whole, including the areas under the planning jurisdiction of the National Park Authority

### **Source:**

Planning Policy Wales: Technical Advice Note 21: Waste

### **Recycling and Composting Figures**

Proportion of MSW recycled and composted in Pembrokeshire (incl. Park). The figures quoted do not correspond to local authority monitoring data as definitions exclude other waste sources such as rubble, incinerator residues and beach cleansing.

Table 92: Recycling and composting figures as a percentage of arisings

	<b>Recycling</b>	<b>Composting</b>	<b>Combined</b>
<b>2000/ 01</b>	8.8	3.7	12.5
<b>2001/ 02</b>	7.7	7.9	15.6
<b>2002/ 03</b>	8.1	7.3	15.5
<b>2003/ 04</b>	8.2	7.3	15.5
<b>2004/ 05</b>	9.3	7.0	16.4

<b>2005/ 06</b>	13.2	7.9	21.1
<b>2006/ 07</b>	17.91	8.55	26.46
<b>2007/08</b>	20.34	9.97	30.31
<b>2008/09</b>	25.68	9.46	35.14

**Note:** NAWPI data excludes abandoned vehicles / incinerator bottom ash / beach cleansing wastes / rubble. The use of this data source avoids any potential for the skewing of data and gives a more accurate impression of each local authority's performance against the respective targets.

Source: South West Wales Regional Waste Group, Annual Monitoring Report 2007

[http://www.walesregionalwasteplans.gov.uk/pdfs/sw\\_pdf/Annual\\_Monitoring\\_Report\\_April\\_2007.pdf](http://www.walesregionalwasteplans.gov.uk/pdfs/sw_pdf/Annual_Monitoring_Report_April_2007.pdf)

PCC reports, January 2010.

## Targets

Table 93: Waste targets

Year	Target	Total Tonnage (recycling & composting)	Minimum tonnage of:	
			Recycling	Composting
2006/07	Achieve at least 25% recycling / composting of MSW with a minimum of 10% composting and 10% recycling.	19,796	7,918	7,918
2009/10	Achieve at least 40% recycling / composting of MSW with minimum 15% of each	33,121	12,420	12,420

### Target: Landfilling of Biodegradable Municipal Waste

Targets to limit the amount of biodegradable municipal waste (BMW) landfilled:

- By 2010 no more than 75% of the BMW produced in 1995 can be landfilled;
- By 2013 no more than 50% of the BMW produced in 1995 can be landfilled;
- By 2020 no more than 35% of the BMW produced in 1995 can be landfilled.

**Target Type:** UK.

D7 Waste Strategy 2000 (England and Wales) sets out that we are to recover value (via recycling, composting, energy recovery) to meet the following targets:

- Recover value from 40% of municipal waste by 2005
- Recover value from 45% of municipal waste by 2010
- Recover value from 67% of municipal waste by 2015.

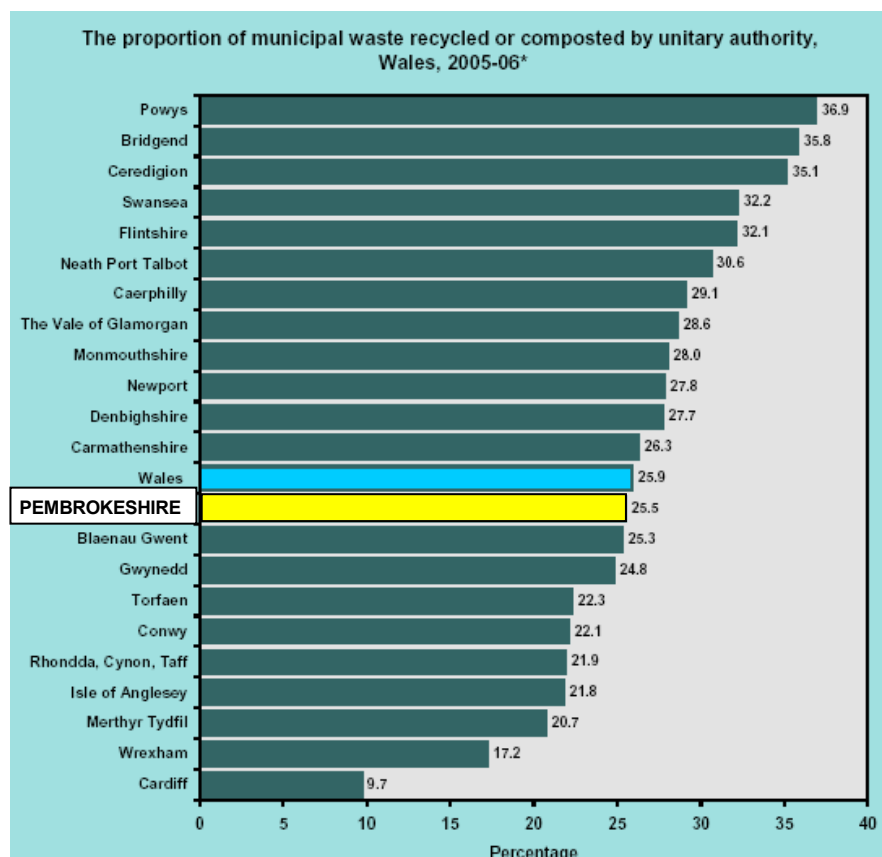
Regional Waste Plan Consultation for Wales:

*"Following the 10-week consultation period, all information received will be analysed and the three regions of Wales will work together to produce revised and updated Regional Waste Plans by March 2008. The key aims of these plans will be to identify the most appropriate new approaches for managing waste within each region. This will include new recycling, composting and residual waste treatment facilities".*

### Comparators

According to the Office for National Statistics and Key Environment Statistics for Wales, Pembrokeshire recycles or composts 25.5% of municipal waste, compared to the Welsh average of 25.9% (Figure X).

Figure 29: The proportion of municipal waste recycled or composted by unitary authority, Wales, 2005-06\*



\* excluding abandoned vehicles

Source: Key Environment Statistics for Wales 2007, NAW

<http://new.wales.gov.uk/docrepos/40382/40382313/statistics/environment/1268249/sb8-2007.pdf?lang=en>

See also: <http://www.cylch.org/content/files/RPSReport.pdf>

This report is fairly comprehensive in that financial values have been collated from every Local Authority (LA) for provision of refuse, recycling and composting services. However it fails to identify the LA individually, thereby not allowing comparison between LA. What the report does allow is for one LA, knowing its own results, to identify itself and compare with the best and worst in Wales.

#### Other sources:

Planning Policy Wales: Technical Advice Note 21: Waste

<http://www.cylch.org/content/files/RPSReport.pdf> Accessed 17<sup>th</sup> October 07

SWW Regional Waste Group - Annual Monitoring Report 2007

PCC Municipal Waste Management Strategy – preliminary draft. Technical Appendices. Nov. 2004

Pembrokeshire County Council. Best Value Review of Waste Services 2002

<http://www.publications.parliament.uk/pa/cm200607/cmselect/cmcomloc/536/536i.pdf> 18<sup>th</sup> October 07

## Landfills

Table 94: Annual Landfilled waste figures for Pembrokeshire County Council

	Total tonnage of municipal wastes sent to landfill	% of municipal wastes sent to landfill
2001/ 02	60,965	84%
2002/ 03	60,237	80%
2003/ 04	60,114	79%
2004/ 05	60,060	78%
2005/ 06	56,481	73%
2006/ 07	54,109	69%
2007/08	48,904	66%
2008/09	43,356	61%

Withyhedge Landfill is Pembrokeshire's only putrescible and Materials Recycling Facility landfill and is the destination for the orange and black bag weekly collections from around the County. Between November 2006 and October 2007, orange bags took 5,229.98 tonnes of recyclable waste to Withyhedge.

Swansea City Council also has a contract with the operators of Withyhedge Landfill to export all its waste there, but as the site is privately owned it is difficult to obtain detailed figures on how much is sent. Withyhedge Landfill site has begun an energy extraction process using methane from landfill to generate electricity for the National Grid.

## Future waste figures

Table 95: Article 5 (1) of the EC Landfill Directive insists:

Year	Target	BMW Landfill Allowance
2010	No more than 75% of the BMW produced in 1995 can be landfilled	29,481
2013	No more than 50% of the BMW produced in 1995 can be landfilled	19,516
2020	No more than 35% of the BMW produced in 1995 can be landfilled	13,702

(BMW = Biodegradable Municipal Waste)

Table 96: Current Landfill allowances

Year	Total landfill allowances available (All Wales)	Pembrokeshire
2004/ 05	550,000	20,736
2005/ 06	1,022,000	39,074
2006/ 07	944,000	36,676
2007/ 08	866,000	34,278
2008/ 09	788,000	31,879
2009/ 10	710,000	29,481
2010/11	630,000	26,134
2011/12	550,000	22,815
2012/13	470,000	19,497
2013/14	450,000	18,667
2014/15	430,000	17,837

<http://wales.gov.uk/pubdecisionreports/852137/enviro09/revlandfillschtables?lang=en>

Table 97: Predicted Landfill Allowance Tonnages for Pembrokeshire

Year	BMW Landfill Allowance (tonnes)	Predicted BMW arisings (tonnes) (assuming 1.5% growth)	Diversion requirements (tonnes)
2004	41,472	46,886	5,414
2005	39,074	47,589	8,515
2006	36,676	48,303	11,627
2007	34,278	49,028	14,750
2008	31,879	49,763	17,884
2009	29,481	50,510	21,029
2010	26,159	51,267	25,108
2011	22,837	52,036	29,199
2012	19,516	52,817	33,301
2013	18,685	53,609	34,924
2014	17,855	54,413	36,558
2015	17,024	55,229	38,205
2016	16,194	56,058	39,864
2017	15,363	56,899	41,535
2018	14,533	57,752	43,219
2019	13,702	58,618	44,916

### Comparators

Wales maximum landfill allowance (Landfill Allowances Scheme (Wales) Regulations 2004):

- 2010 710,000 tonnes of BMW
- 2013 470,000 tonnes of BMW
- 2020 330,000 tonnes of BMW



**Sources:**

PCC Municipal Waste Management Strategy – preliminary draft. Technical Appendices. Nov. 2004

SWW Regional Waste Group - Annual Monitoring Report 2007

Planning Policy Wales: Technical Advice Note 21: Waste

**Civic Amenity sites / Bring sites**

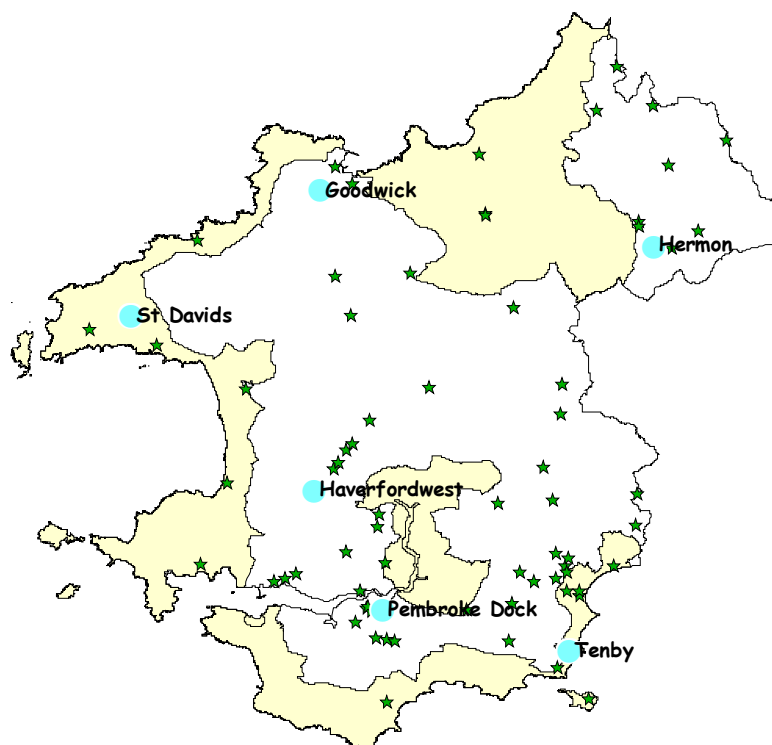
In areas of Pembrokeshire under County Council's authority:

55 Bring Sites, also known as recycling points (stars)

35 non-public facilities (based in schools and not shown on map)

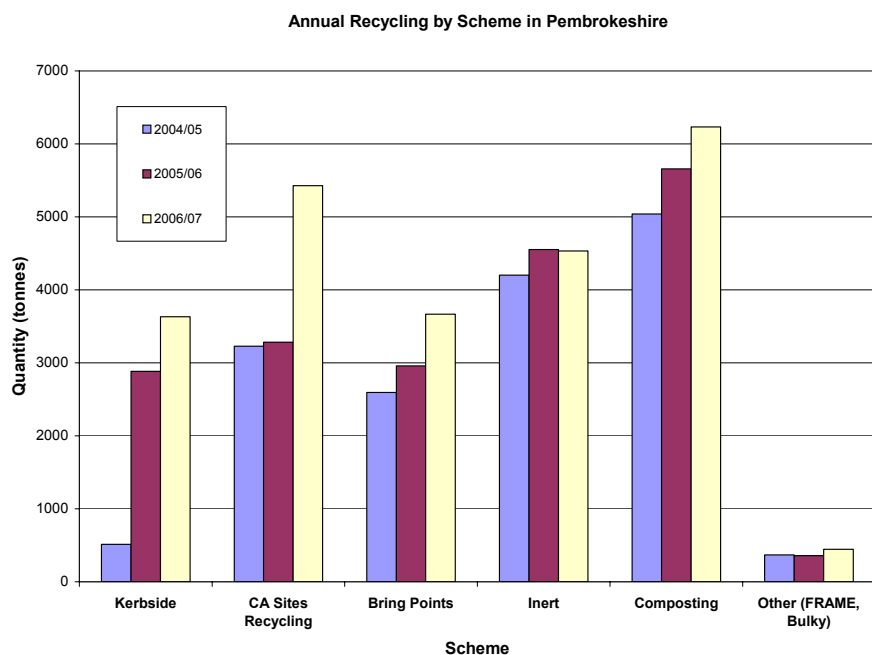
4 Civic Amenity sites: Goodwick, Haverfordwest, Hermon, and Pembroke Dock, St. Davids (National Park), Tenby (National Park).

Figure 30

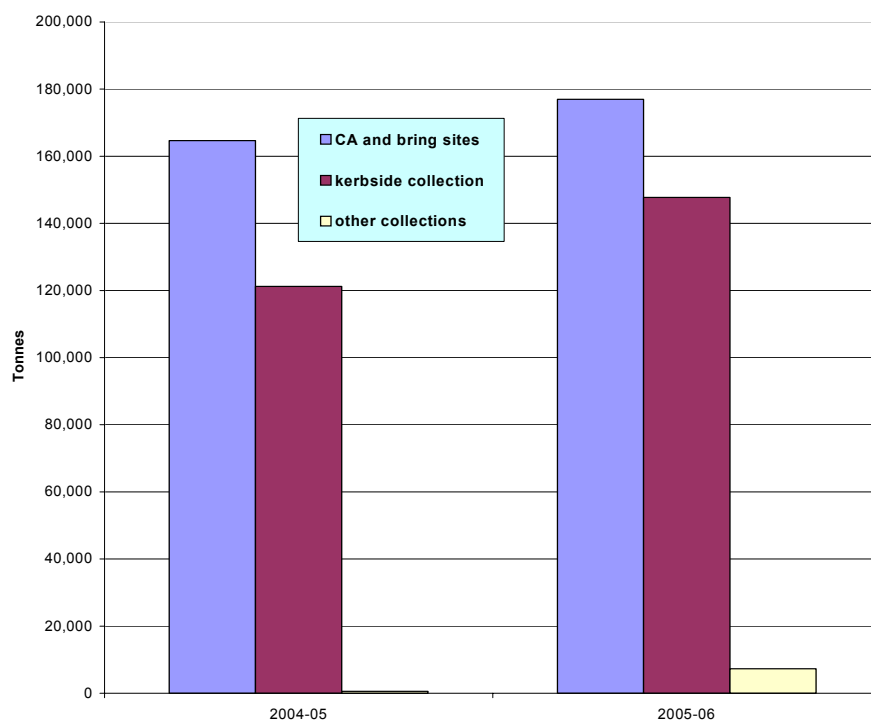
**Future trend**

More bring sites, located in convenient areas such as popular shops, car parks and schools. The kerbside scheme will be expanded, ensuring all households have regular collections for a range of recyclable waste. Greater education on domestic composting will result in less kitchen and garden waste being classified as municipal waste.

## Pembrokeshire recycling schemes (Figure 31)



## Wales recycling schemes (Figure 32)



The available figures for Wales are not as detailed as for Pembrokeshire, due to the disparities in service provided by local authorities across Wales. Both Pembrokeshire and Wales are showing significant year-on-year increases.

**Sources:**

Pembrokeshire County Council - Waste Management department  
 Environment Agency Wales – Waste Strategy Branch  
 Planning Policy Wales: Technical Advice Note 21: Waste

**Hazardous Waste**

Table 98: Hazardous waste arisings in Pembrokeshire (tonnes)

Year	Hazardous waste arisings (tonnes)
1999	26,308
2000	416,538
2001	312,743
2002	428,984
2003	325,559
2004	
2005	
2006	
2007	
2008	
2009	
2010 target	333320
Comments	Target met

Huge 1999 – 2000 increase caused by “re-classification of tanker washings and bilge water associated with the refinery complex at Milford Haven” (Environment Agency).

**Comparators**

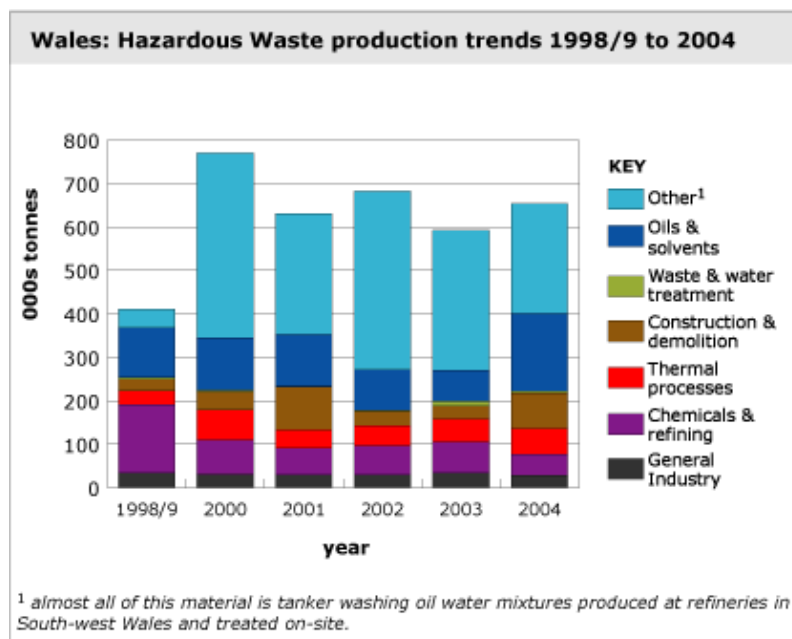
Deposits of hazardous waste by Waste Planning Authority (WPA) and method of disposal or recovery (tonnes), 2004.

Table 99

Deposit WPA	Incineration without energy recovery	Landfill	Recycling / reuse	Transfer (Short term)	Treatment	TOTAL
Blaenau Gwent				15		15
Bridgend			135	315	320	770
Caerphilly		156,113		86		156,198
Cardiff County				6,221	4,354	10,575
Carmarthenshire		2,478		143	9,361	11,981
Ceredigion				93		93
Conwy		27				27
Denbighshire				0		0
Flintshire		8,066		1,295		9,361
Gwynedd		118		0		118
Isle of Anglesey		224				224
Neath Port Talbot		15,602	1,046			16,648
Newport	0	559		1,966	88,395	90,919

<b>Pembrokeshire</b>		<b>485</b>	<b>233,125</b>			<b>233,610</b>
Powys				0		0
Rhondda Cynon Taff		79	47			126
Swansea	8		21,416	5		21,429
Torfaen				20		20
Vale of Glamorgan	6			53	7,265	7,324
Wrexham	1,701	46,373	44,690			92,764
<b>TOTAL</b>	<b>1,715</b>	<b>230,123</b>	<b>300,460</b>	<b>10,212</b>	<b>109,694</b>	<b>652,205</b>

Figure 33



### Sources:

South west Wales Regional Waste Plan - Report on Hazardous Waste (September 2005),

Environment Agency - <http://www.environment-agency.gov.uk/subjects/waste/1031954/315439/1434288/1434293/1489083/?lang=e> - 16<sup>th</sup> October 07

Planning Policy Wales: Technical Advice Note 21: Waste

SWW Regional Waste Group - Annual Monitoring Report 2007

### Waste Licences

Pembrokeshire County Council has an arrangement with various organisations for collection, recycling and disposal of the following wastes:

1-year contracts:

- Engine oil recycling
- Vehicle batteries recycling
- Glass recycling
- Yellow pages recycling
- Aluminium steel cans recycling
- Frame – furniture re-use

- Car tyres

3-year contracts:

- Fridge & freezer recycling
- Inert waste recycling
- Green waste composting
- Clinical waste collection and disposal

Other contracts:

- Scrap metal recycling (monthly quote)
- Refuse disposal – Landfill (10 years)

**Sources:**

PCC Municipal Waste Management Strategy – preliminary draft. Technical Appendices. Nov. 2004

Environment Agency – [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

**Waste Transfer Stations**

Table 100: Pembrokeshire has a number of operational and non-operational (\*) waste transfer stations

Station	Location
Plot 9 Enviroventure	Waterston Ind. Estate
Plot 10 TBS	Waterston Ind. Estate
St Dogmaels	St Dogmaels
Waterloo	Pembroke Dock *
A J Recycling	Boncath
Withybush Hospital	Haverfordwest
Transco	Haverfordwest
Manorwen	Scleddau

**Data gaps and uncertainties**

Many operators have licenses for waste transfer but don't use them, clouding the picture significantly.

**Sources:**

Pembrokeshire County Council & Pembrokeshire Coast National Park

Authority - Joint Unitary Development Plan (Adopted 2006)

South West Wales Regional Waste Plan 2007 (draft)

**Fly-tipping**

Corporate and Improvement plan 2006/07: Page 28 – Ref LSS24:

The time taken to remove fly tips improved last year from 3.9 days to 2.5 days. The number of incidents reported also reduced significantly between 2004/05 and last year, from 1633 to 1067.

Table 101: Time taken to remove fly tips

Ref: LWM 8	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
<b>Number of reported incidents</b>	1650	1633	1067	1272		
<b>Target Collection time</b>			4 days	3 days		
<b>Actual Collection time</b>	4.74 days	3.9 days	2.5 days	3 days		

A Best Value Inspection of the Waste Service in February 2003 by the Audit Commission identified fly tipping as an area of great concern, due to very high levels of tipping and a non-existent prosecution rate. It is clear from the statistics, which show an improving situation, that action has been taken to lower instances of fly tipping.

Also, “recognising that the Welsh Assembly Government is concerned to improve the management of litter control, the Authority will develop a Plan to formalise its response to dealing with the problems of littering and fly-tipping behaviour.”

This response will include specific countywide policies for: dog fouling; school generated litters; weeds; shopping trolleys; beach cleansing; chewing gum & fly tipping.

### Future trend

Continued reduction of reported cases due to effective policing and greater educating of societal costs of fly-tipping, along with a gradual reduction in collection times – partly due to reduction in occurrences but primarily due to an appreciation of the importance of quick collection. Future targets should be more ambitious and aim to provide the most rapid response in Wales.

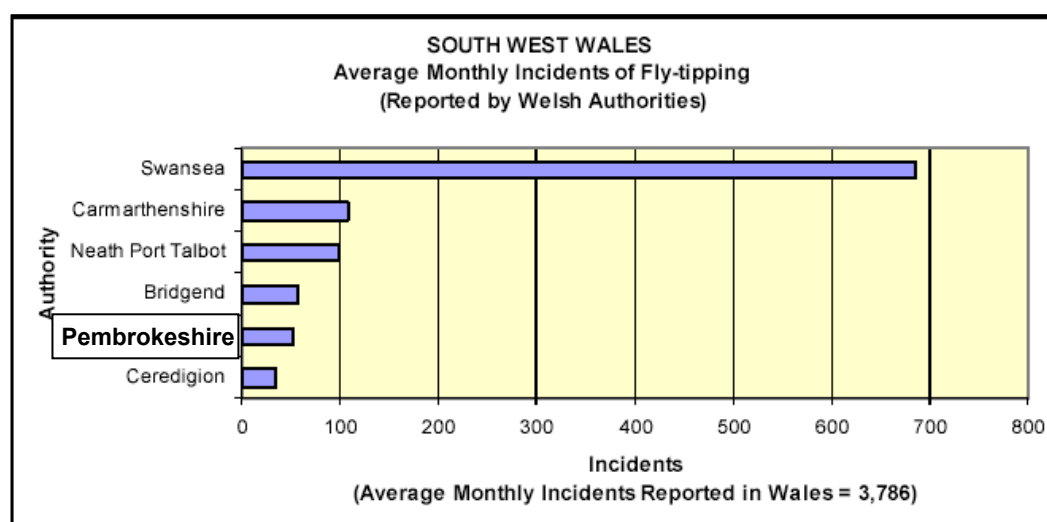
Owners of vehicles regularly caught fly-tipping will face tougher punishment “in an extension to the Clean Neighbourhoods and Environment Act 2005”

### Comparators

Recommended targets set by WAG are to:

- Reduce reported incidents by 20% over the next 10 years
- Removal of fly tipped material within 14 days for large incidents and 5 days for smaller incidents.

Figure 34



**Sources:**

<http://www.environment-agency.gov.uk/subjects/waste/1029679/1032559/?lang=en> 15 October 2007

[http://new.wales.gov.uk/topics/environmentcountryside/epq/waste\\_recycling/flytipping/?lang=en](http://new.wales.gov.uk/topics/environmentcountryside/epq/waste_recycling/flytipping/?lang=en) 16 October 2007

<http://new.wales.gov.uk/docrepos/40382/4038231121/403827/777213/flytipping.pdf?lang=en> 16 October 2007

<http://www.rwminfo.com/page.cfm/action=Archive/ArchiveID=2/EntryID=3569> 17 October 2007

<http://www.audit-commission.gov.uk/reports/accessible.asp?ProdID=F76D7E50-638F-11d7-B29B-0060085F8572> 22 October 2007

Pembrokeshire County Council Corporate and Improvement Plans (2006-07 & 2007-08)

PCC Municipal Waste Management Strategy – preliminary draft. Technical Appendices. Nov. 2004

## **Minerals and Aggregates**

### **Active quarries**

The quarries in the area of Pembrokeshire under the jurisdiction of Pembrokeshire County Council are:

1. Blaencilgoed / Gellihalog – limestone
2. Bolton Hill – igneous
3. Brawdy – previously sand and gravel extraction (currently under restoration)
4. Penlan – rab
5. Plascwrt – sandstone
6. Popehill & Lawrence Landfill – rab
7. Slade Hall – rab
8. Cefn – slate
9. Gilfach – slate waste
10. Glogue – slate waste
11. Cotts Lane – rab
12. Treffgarne
13. Tangiers Farm – rab
14. Cronllwyn Quarry – slate waste

Note that Treffgarne and Gilfach are not currently operational but have valid planning permissions and are monitored by the County Council.

There are two unimplemented quarry permissions in the area of Pembrokeshire under the jurisdiction of Pembrokeshire County Council:

Trefigin – sand and gravel  
Yetwen - dolerite

### **PCNPA Quarries**

- A – Bottom Meadow
- B – Carew
- C – Middle Mill
- D – Pantgwyn
- E – Penberry
- F – Rhyndaston
- G – Syke
- H – Trefigin (under PCC jurisdiction)

### **Data Gaps and uncertainties**

A long-standing ‘three company confidentiality rule’ means that detailed figures of production for individual quarries are kept in confidence, for competition reasons.



**Source:**

Pembrokeshire County Council & Pembrokeshire Coast National Park Authority - Joint Unitary Development Plan 2006

**Reserves in 2008:****Active Aggregate Reserves: 58.99 million tonnes**

In Carmarthenshire, Ceredigion, Pembrokeshire CC and Pembrokeshire NP, Neath-Port Talbot and Swansea combined (does not include Brecon Beacons NP and Powys).

**Inactive Aggregate Reserves: 44.18 million tonnes**

In Carmarthenshire, Ceredigion, Pembrokeshire CC, Pembrokeshire NP, Neath-Port Talbot and Swansea combined (does not include Brecon Beacons NP and Powys).

**Dormant Aggregate Reserves: 88.60 million tonnes**

In Carmarthenshire, Ceredigion, Pembrokeshire CC, Pembrokeshire NP, Neath-Port Talbot and Swansea + Brecon Beacons NP and Powys.

**Total Aggregate Reserves: 295.29 million tonnes**

In Carmarthenshire, Ceredigion, Pembrokeshire CC, Pembrokeshire NP, Neath-Port Talbot and Swansea + Brecon Beacons NP and Powys.

Aggregate reserves could be logically expected to decrease annually as minerals are a finite source. Reserves can however increase as a result of a quarry obtaining permission to expand its boundaries, and if quarries are successful in their planning permission applications, active reserves may increase. The distinction between 'inactive' and 'dormant' is complex and technical, related to the origins of the permissions granted (see para. 47 of MTAN 1). Based on recent shares of production Pembrokeshire and PCNP would be expected to contribute 10.5 Mt over the next 15 years; on a per capita basis this would equate to 6.0 Mt (Regional Technical Statement, 2007)<sup>6</sup>.

Currently there are two active limestone quarries; one active granite quarry; one active slate quarry and one active slate waste quarry; and four active mudstone/shale quarries. This is one of the most diverse areas in terms of types of aggregate produced in South Wales.

The majority of the area is also within 30 km of an active sand wharf at Pembroke Dock.

The geology and the environmental capacity of the County are extremely varied making generalisation difficult, but resources in most areas apart from the hinterland and east, tend to have lower capacity (i.e. are sensitive to the establishment of mineral operations).

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<sup>6</sup> The Pembrokeshire County Council and Pembrokeshire Coast National Park are grouped together for confidentiality reasons in the Draft Technical Statement)

If Pembrokeshire was to be called upon to support demand currently met by PCNP, overall permitted reserves are still well in excess of a 15 year requirement, but the varied mix of materials contained in that overall reserve is far from evenly balanced and may necessitate some extra provision.

Reserves of land won sand and gravel are sufficient for more than 15 years based on recent rates of output. This may change following updates.

Although slate waste has been recycled for some years, this has been on a small scale and suitable resources are limited. Sources of CD & EW (construction demolition and excavation waste) are likely to be concentrated in the parts of the County with built up areas.

### **South Wales figures**

Aggregate reserves in South Wales \*:

Active Aggregate reserves:	348.31 million tonnes
Inactive Aggregate Reserves:	84.41 million tonnes
Dormant Aggregate Reserves:	101.16 million tonnes
Total Aggregate Reserves:	533.88 million tonnes

\*South Wales, in this instance, comprises:

Blaenau Gwent; Brecon Beacons NP; Bridgend; Caerphilly; Cardiff; Carmarthenshire; Ceredigion; Merthyr; Monmouthshire; Neath-Port Talbot; Newport; Pembrokeshire CC; Pembrokeshire NP; Powys; Rhondda Cynon Taff; Swansea; Torfaen & Vale of Glamorgan.

### **Data gaps**

The report where these figures appeared advised caution when using the figures, as many involved some degree of estimation. The figures hold value in that they reflect the contribution of dormant sites to the overall landbank.

### **Sources:**

South Wales Regional Aggregates Working Party (SWRAWP). Annual Report 2008.

Available online: <http://www.swrawp-wales.org.uk/Html/RAWP2008%20Annual%20Report%20A4.pdf>

Welsh Assembly Government Minerals Technical Advice Note 1:Aggregates. March 2004. (MTAN 1).

SWRAP, Regional Technical Statement, 2007 – need to update date.

## Permissions

Table 102

Pembrokeshire County Council		Pembrokeshire Coast National Park	
Quarry	Permission Expiry	Quarry	Permission Expiry
Blaencilgoed	2042	Bottom Meadow	2015 / 2039
Bolton Hill	2042	Carew	2035
Brawdy	2008 + 5 yrs aftercare	Middle Mill	2042
Cefn	2009	Pantgwyn	2009
Cotts Lane	2007	Penberry	2042
Gellihalog	2042	Rhyndaston	2020
Gilfach	2042	Syke	2042
Penlan	2009	Trefigin	2032
Plascwrt	2014		
Popehill	2007		
Slade Hall *	2007		
Treffgarne	2042		
Yetwen	2010		

\* An extension has been applied for.

GLOGUE: Slate waste removal until 2023.

### Future trend

The large number of permissions expiring in 2042 are a legacy of decisions made during the Second World War to award unlimited permissions and consequent agreements in 1982 to make these last 60-years. The system now is far stricter in awarding permissions and considers each case on its individual merits, with extensive consultation and surveys undertaken. Lengths of permissions can range from two to 20/30 years.

### Sources:

Planning documents, conditions and legislation, Pembrokeshire County Council.

## Aggregates

Table 103

Crushed rock aggregate sales in million tonnes, Reserves in parentheses (million tonnes and years)					
Area	2004 (Reserves at 31.12.04, Years)	2005 (Reserves at 31.12.05, Years)	2006 (Reserves at 31.12.06, Years)	2007 (Reserves at 31.12.07, Years)	2008 (Reserves at 31.12.08, Years)
<b>Pembrokeshire County Council</b>	Sales not available (15.0, 47yrs)	Sales not available (14.70, 34 yrs)	Sales not available (29.00, 65yrs)	Sales not available (29.00, 28)	Sales not available (15.10, 25)
<b>Dyfed</b>	Sales not available (147.2, 284)	Sales not available (167.75, 237)	Sales not available (178.00, 252yrs)	Sales not available (145.93, 182)	Sales not available (126.4, 183)
<b>Dyfed + West Glamorgan*</b>	2.77 (163.8, #)	2.66 (182.00, #)	1.90 (193.00, #)	3.27 (x, #)	2.85 (x, #)
<b>South Wales</b>	11.58 (575.10, #)	10.85 (584.00, #)	11.46 (600.00, #)	12.51 (600)	535.64 (767)

Dyfed incorporates Carmarthenshire, Ceredigion, Pembrokeshire, and Pembrokeshire Coast National Park

\* = Data includes Dyfed + West Glamorgan (Neath-Port Talbot and Swansea)

Reserves = Landbank<sup>7</sup> of reserves

# = Years cannot be provided due to confidentiality rules

Table 104

Land won sand & gravel, total sales (million tonnes) and reserves (in parentheses)					
	2004	2005	2006	2007	2008
Area					
Dyfed	0.25 (9.87)	0.35 (10.86)	0.23 (10.63)	0.23 (10.39)	0.29 (3.09)
<b>South Wales</b>	0.40 (10.48)	0.44 (11.36)	0.28 (11.08)	0.24 (10.75)	0.30 (3.64)

Table 105

Marine Dredged Aggregates (tonnes)						
Area	Landing Port	2004	2005	2006	2007	2008
<b>Pembrokeshire County Council</b>	Pembroke Dock	44,509	66,607	54,034	60,267	42,494
South Wales		1,071,344	1,001,767	951,968	1,070,981	846,458

## Sources:

South Wales Regional Aggregates Working Party – Annual Report 2004; 2005; 2006; 2007; 2008

<http://www.swrawp-wales.org.uk/Html/publications.html>

<sup>7</sup> A landbank is a stock of planning permissions for the winning and working of minerals, measured in years it would take to exhaust supplies, based on current trends.

## **Recycling**

A number of companies, separate to quarries, recycle material in Pembrokeshire using crushing machinery to make secondary aggregates suitable for road surfacing and concrete and so on.

A target for recycling C&D waste as aggregates was proposed for Wales of at least 40% by 2005 (MTAN1, 2004).

The amount of secondary aggregates that have been used as a substitute for primary aggregates is reported (Faber Maunsell Draft in 2007/8 C+D waste arisings survey) to have increased from less than 25% in 2003 to in excess of 40% in 2005. This meets the 40% target set out in Minerals Technical Advice Note - Aggregates, even though the total amount of arisings have increased significantly from 6.00 to 8.50mt (2003-2005) (SWRAWP, Annual Report 2006).

## **Future trend**

Pembrokeshire County Council has targeted aggregates recycling as a growth area in accordance with national policies in order to reduce dependence on unsustainable mineral resources. In April 2008 the aggregates levy will increase to £1.95 per tonne, meaning that recycling aggregates becomes even more economically viable.

## **Comparators**

Over 25% of the aggregates sold in the UK are from recycled or secondary sources, a figure that is the highest in Europe and is significantly higher than the average of 8%. 90% of arisings from sites demolished in the UK were recycled or reused.

## **Sources:**

South Wales Regional Aggregates Working Party – Annual Report 2006  
South Wales Regional Aggregates Working Party – Annual Report 2007  
South Wales Regional Aggregates Working Party – Annual Report 2008  
South Wales Regional Aggregates Working Party – Annual Report 2009?  
Quarry Products Association. Quarrying Today – Issue 21, Summer 07.  
Welsh Assembly Government Minerals Technical Advice Note – Aggregates. March 2004

## **Building stone**

The British Geological Survey, on behalf of the Department for Communities and Local Government, claimed that Pembrokeshire's primary importance as a building stone resource on a UK level is for Ordovician slate. Such resources are found at Yetwen quarry (which is inactive) and in areas of North Pembrokeshire controlled by the National Park, but are quarried only at a very limited level. In the County itself, limestone and granite are more valuable building stone resources, originating from Blaencilgoed, Gellihalog and Bolton Hill quarries.

## Comparators

Total sales of building stone in Great Britain were reported by the Office for National Statistics as £67 million in 2004, of which sandstone accounted for some 59%.

Table 106: Distribution of active building stone quarries in the UK, March 2007

	Wales	UK
Building sandstone	16	208
Building limestone, incl. chalk	10	137
Granite & other igneous rocks	4	48
Slate & marble	15	38
Ironstone flint, serpentine etc.	0	8

## Data Gaps and uncertainties

3-company confidentiality rule obstructs attempts to gain detailed figures.

## Source:

<http://www.mineralsuk.com/britmin/mpfbuildingstones.pdf>

Quarry Products Association - Sustainable Development Report 2007

## Coal Reserves

The Pembrokeshire Coalfield is predominately in a band some 2-6 miles wide from the Tenby to Telpyn Point coast in the east, to the Little Haven to Haroldston West coast in the west. There is also a coastal section between Nolton Haven and Newgale on the same coast of St Brides Bay. There are no accurate records of the quantity, quality or arrangement of remaining coal deposits in Pembrokeshire.

Figure 36: The lightly shaded area on the map below shows the Pembrokeshire Coast National Park, with the yellow area denoting the location of the Pembrokeshire Coalfield.



### **Future trend**

No coal is mined in Pembrokeshire and there are no plans to do so, but Pembrokeshire County Council and Pembrokeshire Coast National Park Authority created a Supplementary Planning Guidance to safeguard the resource in case it is required in the future.

### **Source:**

Pembrokeshire County Council & Pembrokeshire Coast National Park Authority – Safeguarding the Coal Resource in Pembrokeshire: Supplementary Planning Guidance. Adopted February / March 2007

### **Quarry Restoration**

When Pembrokeshire County Council gives permission for quarrying it will also provide guidance regarding restoration of the land once operations come to an end. The official reason for these planning conditions is often concerned with “ensuring the satisfactory restoration of the site in the interests of the amenity of the area”, sometimes with reference to “local residents in particular”.

Conditions can include demanding that no topsoil is taken away from the site, that no trees or shrubs are removed from the site and that any intrusions of Japanese Knotweed are eradicated fully. An over-riding aim of such conditions is to allow and promote the colonisation of the site by the natural flora and fauna of the locality. Many disused and restored quarries can provide a local biodiversity and geodiversity resource.

Such conditions have been applied to non-operational quarries in Pembrokeshire, which were listed under the ‘Active Quarries’ section.

## **Energy**

### **Ecological footprint**

Pembrokeshire had an ecological footprint of 5.3 global hectares per capita (gha/cap)<sup>8</sup> in 2003 which is marginally higher than the Welsh footprint (5.16 gha/cap), but lower than the UK footprint (see Table). The Ecological Footprint is a measure of how much land and sea area we use to support our lifestyles, compared with what is available.

Table 107: Ecological footprint in global hectares per capita

Area	Ecological footprint in global hectares per capita per person
Pembrokeshire footprint	5.3
Wales Spatial Plan area: Pembrokeshire Haven	5.26
Wales footprint	5.16
UK footprint	4.89

<sup>8</sup> Dawkins, E., Paul, A., Barrett, J., Minx, J. and Scott, K.: Wales’ ecological footprint – Scenarios to 2020 (2008)

Global footprint	2.2
Global capacity (refers to the biological land actually available on a global level)	1.8

### Future trend

Table 108: Potential ecological footprint reductions if waste reduction target is met

Year	Total EF gha / Wales / yr	EF per resident Gha / cap / yr	Reduction
2001	1,722,201	0.59	-
2020	1,089,880	0.37	37%

The above table is based on the assumption that Wales will meet the following waste reduction target:

'By 2020 waste arisings per person should be less than 300 kg per annum' compared to current production of 461 kg per person.

The footprint of Wales has increased at an average rate of 1.5% per year between 1990 and 2003. This closely mirrors the growth in Gross Value Added (GVA) in Wales over the same period. This trend is not unique to Wales and is replicated elsewhere in the UK.

If the historic growth in footprint were to continue at rate of 1.5% a year, this would result in an ecological footprint 20% higher than the 2003 figure (6.19gha/capita) in 2020.

Three broad areas of household consumption contribute 63% of the footprint of Wales; these are housing, food and personal travel. The report Wales' ecological footprint – Scenarios to 2020 (2008) illustrates how consumption in these areas may change over time, modelling scenarios from 2001 to 2020.

Figure 37: Ecological Footprint of Wales

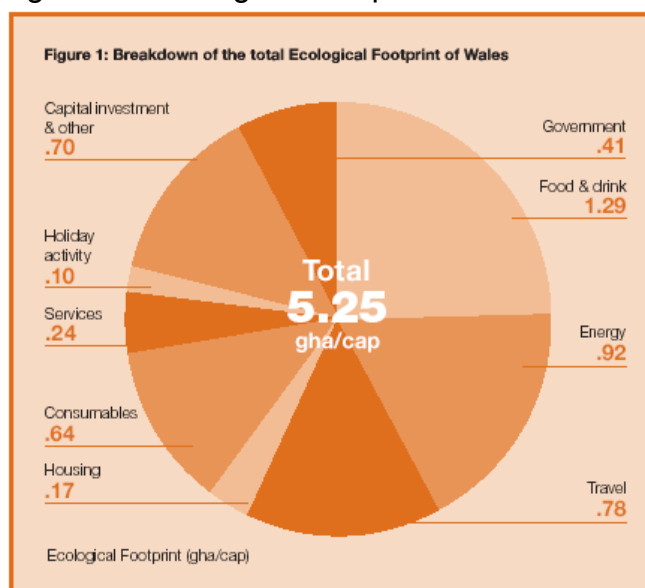
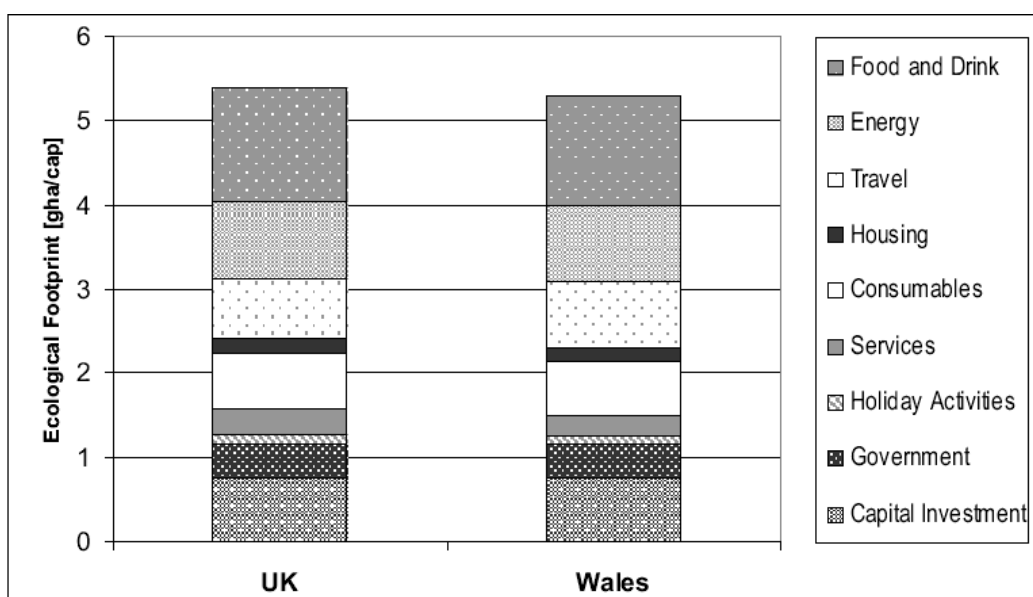




Figure 38: Ecological footprint by sector, Wales & UK, 2001:



#### Sources:

Reducing Wales' Ecological Footprint, March 2005. Stockholm Environmental Institute & WWF Cymru -

<http://www.sei.se/index.php?page=pubs&pubaction=showitem&item=13>

See also 'Report summary' -

[http://www.wwf.org.uk/filelibrary/pdf/redwalesfoot05\\_eng.pdf](http://www.wwf.org.uk/filelibrary/pdf/redwalesfoot05_eng.pdf)

(5) The Footprint of Wales, A Report to the Welsh Assembly Government, WWf Cymru, 2002.

Wales' ecological footprint – Scenarios to 2020 (2008)

[http://sei-international.org/mediamanager/documents/Publications/Future/wales\\_ecological\\_footprint\\_report\\_270508\\_final.pdf](http://sei-international.org/mediamanager/documents/Publications/Future/wales_ecological_footprint_report_270508_final.pdf)

#### Energy consumption per building and per occupant

[http://www.pembrokeshire.gov.uk/content.asp?Language=&id=10328&nav=101,154,983&parent\\_directory\\_id=646](http://www.pembrokeshire.gov.uk/content.asp?Language=&id=10328&nav=101,154,983&parent_directory_id=646)

This page on the Council's website summarises the measures towards reducing energy consumption undertaken throughout the County's public buildings, which include schools, council offices, leisure centres and so on. However, it is short on quantified data.

#### Comparators

The UK building stock is directly responsible for approximately 50 per cent of UK's energy use and carbon emissions.

#### Data gaps and uncertainties

Data is available for public buildings over 1000m<sup>2</sup>, but so far there has not

been a comprehensive review of energy consumption in all of Pembrokeshire's buildings. It has been suggested that a 'per occupant' measure would be misleading, given that occupancy varies over the time of day, week, year and so on.

**Sources:**

Pembrokeshire County Council Transportation and Environment department  
Parliamentary Select Committee on Science and Technology Memo –  
October 2004

Welsh European Funding Office. A practical guide to promoting environmental sustainability – Energy

**Electricity and gas use**

Western Power Distribution is responsible for electricity supplies across South Wales and South West England. Wales & West Utilities is the area's gas supplier. Comprehensive consumption figures for Local Authorities and Regions are provided annually by the Department for Business, Enterprise and Regulatory Reform. Figures for electricity use are higher in Pembrokeshire than Wales and figures for gas are lower than the Wales average.

Table 109

<b>Regional and local electricity consumption statistics (experimental)</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>	
NUTS4 Area and Government Office Region:		<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>
Domestic consumers	Sales – GWh	242	5,196	263	5,602	265	5,656.0	260	5,600	246	5,398	250.6	5,307.2
	Number of MPANs * (thousands)	50.3	1,211.5	54.4	1,305.1	55.2	1,315.1	56.0	1,328	54.1	1,303	57.6	1,338.5
Commercial and Industrial Consumers	Sales – GWh	638	9,961	787	10,970	798	11,910.6	782	11,794	816.7	11,233.7	806.1	10,960.0
	Number of MPANs (thousands)	4.6	99.1	8.0	130.1	8.3	134.5	7.9	125	7.7	124.2	8.0	122.9
All Consumers	Sales – GWh	880	15,158	1,051	16,572	1,063	17,566.1	1,042	17,394	1,063	16,632.6	1,056.8	16,267.1
	Number of MPANs (thousands)	54.9	1,310.6	62.4	1,435.2	63.0	1,449.5	63.9	1,454	61.8	1,427.2	65.6	1,461.4
Sales per consumer	Average domestic consumption kWh	4,824	4,289	4,843	4,293	4,801	4,300.5	4,640	4,215.1	4,556	4,143	4,355	3,965
	Average industrial and commercial consumption kWh	138,189	100,529	97,890	84,315	96,609.0	88,584.2	99,270	94,290.7	105,668	90,462	100,429	89,182
Sales per household	Average domestic consumption kWh	-	-	-	-	-	-	-	-	4,896	4,328	4,829	4,132

MPANs – Meter Point Administration Numbers

Sources:

2003/2004: <http://www.berr.gov.uk/files/file45727.xls>

2005/2006: <http://www.berr.gov.uk/files/file45726.xls>

2007/2008:

[http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1\\_20091222104451\\_e\\_@@\\_subnatelectricity0508.xls&filetype=4](http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1_20091222104451_e_@@_subnatelectricity0508.xls&filetype=4)

<http://www.decc.gov.uk/en/content/cms/statistics/regional/regional.aspx>

Table 110

<b>Gas Sales and numbers of customers by region and area, 2005</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>	
<b>NUTS4 Area and Government Office Region:</b>		<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>	<b>Pembs</b>	<b>Wales</b>
Domestic Consumers	Sales 2005 – GWh	542	20,278	628	20,735	552	19,889	543	19,599	523.2	18,837.5	503.9	18,254.6
	Number of consumers (thousands)	28.38	992.00	32.11	1,001.02	30.85	1,041.74	31.2	1,060	31.8	1,073.4	32.1	1,079.9
Commercial and Industrial consumers	Sales 2005 – GWh	237	21,009	319	22,357	137	14,422	128	12,803	123.1	12,100.2	118.9	11,429.5
	Number of consumers (thousands)	0.50	16.00	0.59	16.45	0.51	16.08	0.5	15	0.5	14.2	0.4	13.0
All Consumers	Sales 2005 – GWh	779	41,287	946	43,092	688	34,311	671	32,401	646.3	30,937.7	622.8	29,684.2
	Number of consumers (thousands)	28.88	1,008.00	32.71	1,017.47	31.36	1,057.83	31.7	1,075	32.3	1,087.6	32.6	1,092.9
Sales per Consumer	Domestic-kWh	19,115	20,442	19,540	20,714	17,883	19,092	17,401	18,493	16,447	17,550	15,678	16,905
	Commercial and industrial – kWh	470,651	1,313,063	536,077	1,358,914	265,927	896,725	269,936	827,908	270,566	850,389	289,203	879,465

Sources:

2003 <http://www.berr.gov.uk/files/file11886.xls>2004 <http://www.berr.gov.uk/files/file18546.xls>

2005/2006/2007/2008

[http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1\\_20091222104505\\_e\\_@@\\_subnatgas0508.xls&filetype=4](http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1_20091222104505_e_@@_subnatgas0508.xls&filetype=4)
<http://www.decc.gov.uk/en/content/cms/statistics/regional/regional.aspx>

There is also a reliance on oil powered energy in domestic residences due to limited supply of gas to some areas of Pembrokeshire.

**Future trend**  
None identified

**Comparators**  
Figure 39: Annual Average Domestic Gas Consumption  
KWh per customer, 2005

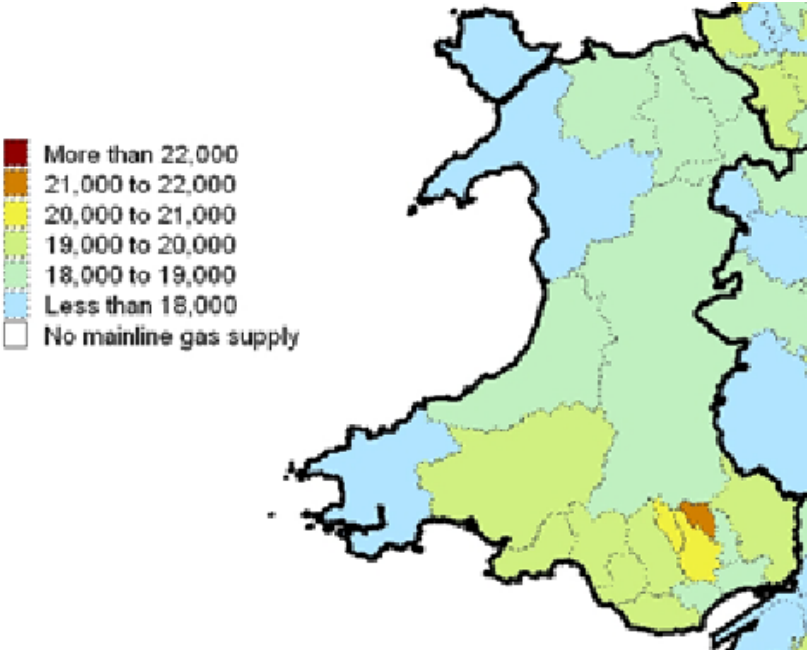
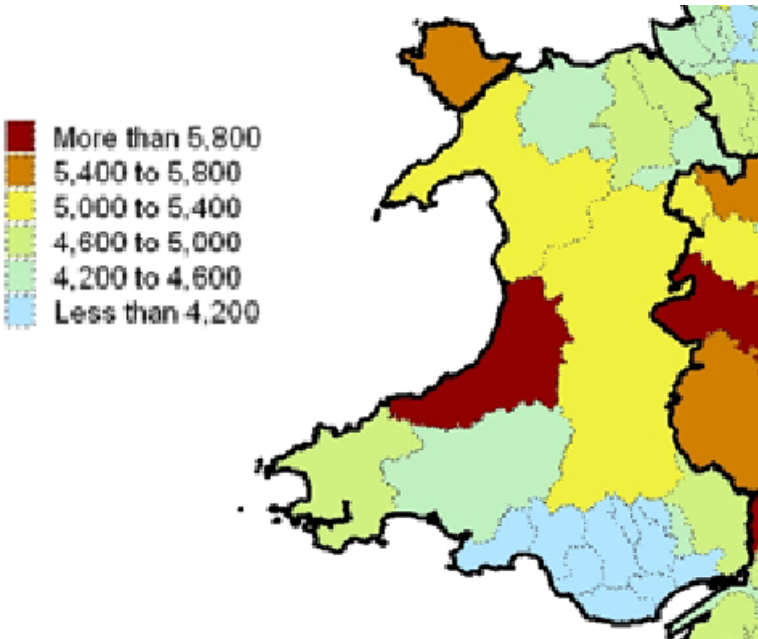


Figure 40: Annual Average domestic electricity consumption  
KWh per customer, 2005



There is a lack of detailed information on the energy efficiency of domestic, industrial and commercial consumers.

**Source:**

BERR Regional Energy Consumption Statistics -

2003 <http://www.berr.gov.uk/files/file11886.xls>

2004 <http://www.berr.gov.uk/files/file18546.xls>

2005/2006/2007/2008

[http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1\\_20091222104505\\_e\\_@@\\_subnatgas0508.xls&filetype=4](http://www.decc.gov.uk/media/viewfile.ashx?filepath=statistics/regional/december09/1_20091222104505_e_@@_subnatgas0508.xls&filetype=4)

<http://www.decc.gov.uk/en/content/cms/statistics/regional/regional.aspx>

**Renewable energy statistics (inc. electricity generated from renewable sources)**

The Non-Fossil Purchasing Agency Ltd has contracts with six renewable energy providers in Pembrokeshire (excluding Park areas).

Table 111

Name of site	Type of energy produced	Contracted capacity (MW)
Llys y fran	Hydro	0.25
Withyhedge	Municipal & Industrial	8.073;
	Waste; Landfill Gas	2.422
Rhoscrowther, Angle	Wind	0.947
Mynydd Cilciffeth,	Wind	3.371 x 2
Puncheston (A & B)		
Jordanston	Wind	4.214
Trenowydd, Puncheston	Wind	2.739
		<b>TOTAL = 25.387</b>

The amount of energy produced from renewable sources in the County is negligible.

**Future trend**

Renewables obligation: 10% of UK electricity supply to come from renewables by 2010, and 20% by 2020. TAN 8 guidelines will have implications for LDPs as they will be required to 'consider the local availability of renewable energy resources and develop suitable policies that promote their implementation'.

The Renewable Energy Route Map for Wales believes that it is quite feasible for Wales to produce more electricity from renewables than consumed within 20 years (WAG, 2007).

## Comparators

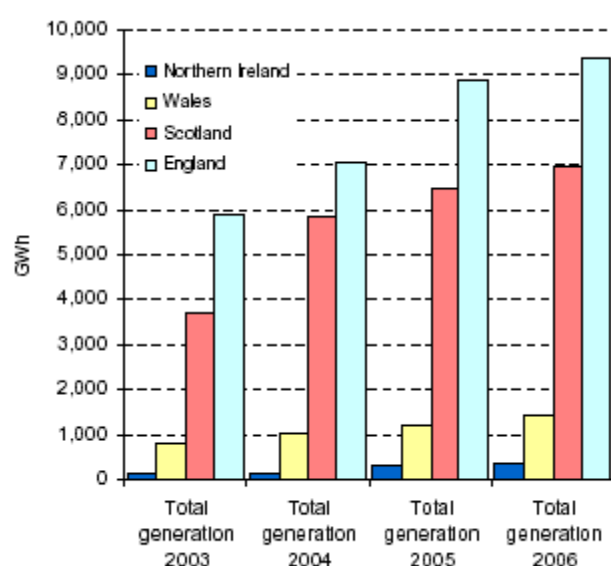
Table 112: Renewable energy statistics for Wales and the UK, 2006.

		Hydro	Wind & Wave	Landfill gas	Other Biofuels	Total
Number of sites generating electricity from renewable source	Wales	46	35	17	4	102
	UK	318	329	372	199	1218
Installed capacity of sites generating electricity from renewable sources (MW)	Wales	147.1	359.0	33.7	3.3	543.1
	UK	1521.6	1955.0	856.2	670.6	5013.3
Electricity generated from renewable sources (GWh)	Wales	275.0	867.0	182.7	84.4	1409.2
	UK	4604.7	4225.1	4424.5	4871.7	18193.3

Table 113: Renewable energy statistics for Wales and the UK, 2008.

		Hydro	Wind	Landfill gas	Other Biofuels	Total
Number of sites generating electricity from renewable source	Wales	50	42	21	14	127
	UK	374	459	405	268	1506
Installed capacity of sites generating electricity from renewable sources (MW)	Wales	147	375	43.5	8.5	574.4
	UK	1,629.8	3,406.7	908.3	835.8	6,803.1
Electricity generated from renewable sources (GWh)	Wales	334.2	989.1	221.4	82.1	1,626.9
	UK	5,167.8	7,094.5	4,757.3	4,558.1	21,577.7

Figure 41: Trends in generation from renewable by country, 2003 – 2006.



## Data gaps and uncertainties

No data more specific than Wales

### Sources:

Department for Business Enterprise and regulatory reform – Energy trends 2007

[www.restats.org.uk](http://www.restats.org.uk) (30<sup>th</sup> Oct 07)

Welsh Assembly Government Technical Advice Note 8. July 2005

Non-Fossil Purchasing Agency - <http://www.nfpa.co.uk/> 6<sup>th</sup> November 07

## Planning applications for wind turbines

Between January 1996 and October 2007, Pembrokeshire County Council determined 30 planning applications for wind turbines: 14 were conditionally approved, ten refused and two determined by appeal. Two applications were withdrawn and two have not been decided.

Between May 2008 and 2009, Pembrokeshire County Council determined 10 applications for wind turbines: 6 were conditionally approved, 2 refused and 1 withdrawn.

## Future trend

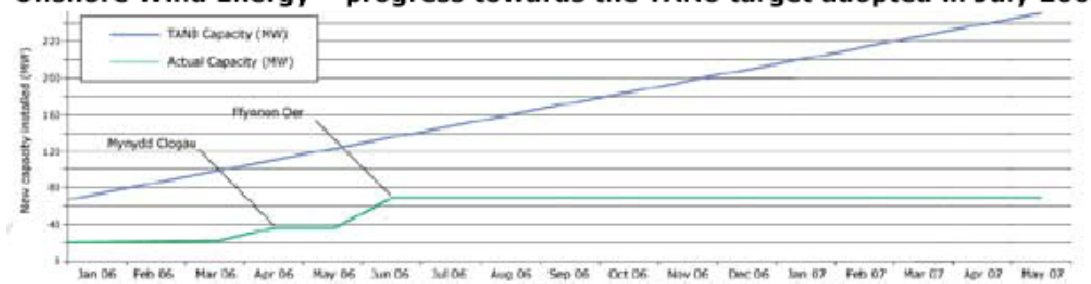
Welsh Assembly Government TAN 8 section 5 sets out theoretical targets for increasing the number of successful applications, but emphasises that judgement be case-specific and sound.

## Comparators

The British Wind Energy Association (BWEA) are concerned that Wales has fallen 75 % behind its target for renewable energy generation in 2010. No extra capacity was built between June 2006 and May 2007, resulting in Wales falling further behind the target output, shown below.

Figure 42

### Onshore Wind Energy – progress towards the TAN8 target adopted in July 2005



### Sources:

PCC planning application records -

<http://planning.pembrokeshire.gov.uk/swiftlg/apas/run/WCHVARYLOGIN.display?langid=1>

BWEA Wales renewable energy bulletin – Issue 6 July 2007

Welsh Assembly Government Technical Advice Note 8. July 2005

## Power production

No fossil fuels have been used to generate power in Pembrokeshire since the



Pembroke Power Station shut in 1997. Details of renewable power production in Pembrokeshire can be seen above in the section 'Renewable energy statistics'.

### **Future trend**

Construction on the RWE n-power gas fired power station at the former Pembroke Power Station has commenced. This will see use made of the National Grid's capacity for 4,000MW to be generated in Pembrokeshire.

Pembrokeshire is placing itself as an 'Energy Capital', and one important aspect of this is the WaveDragon project based offshore around 3 miles from Dale. This is a temporary 7MW project that, if successful, may pave the way for similar larger-scale schemes.

### **Sources:**

PCC:

[http://www.pembrokeshire.gov.uk/content.asp?nav=104,993,1005&parent\\_directory\\_id=646&id=11148&d1p1=1](http://www.pembrokeshire.gov.uk/content.asp?nav=104,993,1005&parent_directory_id=646&id=11148&d1p1=1) 5 November 2007

BERR

<http://www.berr.gov.uk/energy/markets/consents/applications/page23224.html> 5 November 2007

WaveDragon - <http://www.wavedragon.co.uk/home/> 5 November 2007

### **Refineries**

Two of the UK's major oil refineries are located in Pembrokeshire, one on either bank of the Milford Haven. Between them they produce around 30% of the UK's refined oil products. In Pembroke, Texaco process 28.6 million litres of crude oil a day and produces 13.6 million litres of petrol each day. It receives almost a million barrels a week of crude oil. The refinery at Milford Haven is smaller, receiving 750,000 barrels a week. The plant is soon to be owned wholly by Murco having successfully bid for the 70% share belonging to TotalFinaElf.

### **Sources:**

<http://www.uk.total.com/activities/milford.asp> (November 5<sup>th</sup>)

<http://www.texaco.co.uk/biodiversity/Index.htm> (November 5<sup>th</sup>)

<http://www.murco.co.uk/pages/refining.html> (November 5<sup>th</sup>)

### **LNG**

Two large-scale facilities have been built on the northern shore of the Milford Haven waterway with a pipeline under construction linking the Haven to destinations in Swansea and Gloucestershire. The Liquefied Natural Gas importation and regassification plant at South Hook will be used by eight 250,000 tonne ships transporting LNG from Qatar to the UK. The first shipment of LNG arrived on 7 May 2009. The smaller Dragon LNG plant at Waterston processes LNG from various sources worldwide.

### **Sources:**

South Hook LNG - <http://www.southhooklng.co.uk/>

Dragon LNG - <http://www.dragonlng.co.uk/>

Milford Haven port authority - <http://www.mhpa.co.uk/lng.php>

## 10. Water

### Summary of baseline

#### Non-designated beaches/water quality

Table 113: Non-designated beaches/recreational waters/water sampling points water quality results (outside the park):

Site	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Haverfordwest River	F	F	F	F	F	F	F	F	F	NS
Neyland Marina	I	I	I	G	I	G	G	I	I	NS
Llanion Slip	I	I	I	I	I	G	I	I	I	I
Pembroke Mill Pond	I	I	F	I	I	F	F	F	F	F
Gelliswick	I	F	I	I	I	I	I	I	F	I
Goodwick Harbour	I	G	G	G	G	G	G	I	G	NS
Goodwick Sands	I	G	F	I	G	I	I	I	I	F

#### KEY

G = EC Guideline Standard  
 I = EC Mandatory Standard  
 F = Poor

Source: Public Protection, Pembrokeshire County Council (Diane Turbervill)

#### The Standards

1. The Directive specifies a range of water quality standards that should be achieved in identified bathing waters and indicates the required monitoring frequency. These standards fall into two categories, mandatory (I, imperative) and guideline (G) standards.
2. The government currently uses the faecal and total coliforms "I" standards as the basis for determining UK compliance with the directive. Additional microbiological "I" standards concern the occurrence of salmonella and enteroviruses. Physico-chemical "I" standard parameters are tested as indicated. The occurrence of faecal streptococci is also examined. Faecal streptococci has a guideline standard in the Directive. Environment Agency Wales has been granted a derogation for transparency at all its bathing waters from 1991.
3. Compliance with the "G" standards is not mandatory but the Directive states that member states should "endeavour" to observe them as guidelines.

### Non-EC identified bathing waters

Table 114: Compliance of non-EC identified bathing waters with “I” and “G” standards in 2006<sup>9</sup>, for faecal and total coliforms, and faecal streptococci:

Bathing Water	Total Coliforms				Faecal Coliforms				Faecal Streptococci			
	No. samples	No. fail “I”	No. fail “G”	Compliance	No. samples	No. fail “I”	No. fail “G”	Compliance	No. samples	No. fail “G”	Compliance	Overall compliance G, I, F
Gelliswick	20	0	5	I	20	1	7	I	20	3	F	I
Goodwick Sands	20	0	5	I	20	0	7	I	20	6	F	I
Goodwick Harbour South	20	0	0	G	20	0	3	G	20	1	G	G

Source (EA Bathing Waters Report 2006 - [http://www.environment-agency.gov.uk/commondata/acrobat/bw\\_wales2006b\\_1273866.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/bw_wales2006b_1273866.pdf))

Table 115: Compliance of non-EC identified bathing waters with “I” and “G” standards in 2008<sup>10</sup>, for faecal and total coliforms, and faecal streptococci:

Bathing Water	Total Coliforms				Faecal Coliforms				Faecal Streptococci			
	No. samples	No. fail “I”	No. fail “G”	Compliance	No. samples	No. fail “I”	No. fail “G”	Compliance	No. samples	No. fail “G”	Compliance	Overall compliance G, I, F
Gelliswick	20	0	5	I	20	2	7	F	20	3	F	F
Goodwick Sands	21	0	3	G	21	0	3	G	21	2	G	G
Goodwick Harbour South	21	0	1	G	21	0	3	G	21	2	G	G

Table 116: Summary of non-EC identified bathing waters sampled between 1998 and 2008: overall compliance with the “I” standard for faecal and total coliforms:

Bathing water	Year									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2008
Pembrokeshire	P	P	P	P	P	P	P	P	P	F
Gelliswick	P	P	P	P	P	P	P	P	P	P
Goodwick Harbour		P	P	P	P	P	P	P	P	P
Goodwick Sands										
Wales										
Total number of bathing waters	116	116	114	111	113	111	107	106	95	93

<sup>9</sup> (G = Guideline and Mandatory pass; I = Mandatory pass; F = Fail \*)

<sup>10</sup> (G = Guideline and Mandatory pass; I = Mandatory pass; F = Fail \*)

sampled										
Number not exceeding "I" standards	92	100	89	95	100	107	94	99	88	73
% not exceeding "I" standards	<b>79.3</b>	<b>86.2</b>	<b>78.1</b>	<b>85.6</b>	<b>88.5</b>	<b>96.4</b>	<b>87.9</b>	<b>93.4</b>	<b>92.5</b>	<b>78.5</b>

Source (EA Bathing Waters Report 2006 - [http://www.environment-agency.gov.uk/commondata/acrobat/bw\\_wales2006b\\_1273866.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/bw_wales2006b_1273866.pdf) and [http://www.environment-agency.gov.uk/static/documents/Research/2008\\_BATHING\\_WATERS\\_REPORT\\_WALES.pdf](http://www.environment-agency.gov.uk/static/documents/Research/2008_BATHING_WATERS_REPORT_WALES.pdf))

Table 117: Summary of non-EC identified bathing waters sampled between 1998 and 2008: overall compliance with the "G" standard for faecal and total coliforms, and faecal streptococci

Bathing water	Year									
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2008
Pembrokeshire										
Gelliswick	F	F	F	F	F	F	F	F	F	F
Goodwick Harbour	P	P	F	P	P	P	P	P	P	P
Goodwick Sands		F	F	F	F	F	F	P	F	F
Wales										
Number of bathing waters sampled	116	116	114	111	113	111	107	106	95	93
Number not exceeding "G" standards	22	36	32	33	59	46	39	57	43	40
Number not exceeding "G" standards	19	31	28.1	29.7	52.2	41.4	36.4	53.8	45.3	43

Source (EA Bathing Waters Report 2006 - [http://www.environment-agency.gov.uk/commondata/acrobat/bw\\_wales2006b\\_1273866.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/bw_wales2006b_1273866.pdf)) (EA Bathing Waters Report 2008 - [http://www.environment-agency.gov.uk/static/documents/Research/2008\\_BATHING\\_WATERS\\_REPORT\\_WALES.pdf](http://www.environment-agency.gov.uk/static/documents/Research/2008_BATHING_WATERS_REPORT_WALES.pdf))

Compliance is considered an unreliable indication of trends. Variation in compliance from year to year does not necessarily indicate genuine improvement or deterioration, owing to the statistical limitations of using such a small data set. There will always be some beaches that change their status as a result of marginal failures or passes.

### Comparators, targets and trend

Table 118: Summary of compliance with faecal and total coliform and streptococci standards in Wales in 2006:

Bathing water		Number	"I" standard compliance	Percent	"G" standard compliance	Percent
EC	Wales	80	79	98.8	71	88.8
Non-EC	Wales	95	88	92.6	43	45.3

Source (EA Bathing Waters Report 2006 - [http://www.environment-agency.gov.uk/commondata/acrobat/bw\\_wales2006b\\_1273866.pdf](http://www.environment-agency.gov.uk/commondata/acrobat/bw_wales2006b_1273866.pdf))

Table 119: Summary of compliance with faecal and total coliform and streptococci standards in Wales in 2008:

Bathing waters		Number of Bathing waters	"I" standard compliance	Percent I Compliance	"G" standard compliance	Percent G Compliance
EC	Wales	81	80	98.8	62	76.5
Non-EC	Wales	93	73	78.5	40	43

Source (EA Bathing Waters Report 2006 - [http://www.environment-agency.gov.uk/static/documents/Research/2008\\_BATHING\\_WATERS\\_REPORT\\_WALES.pdf](http://www.environment-agency.gov.uk/static/documents/Research/2008_BATHING_WATERS_REPORT_WALES.pdf) )

The revised Bathing Water Directive (rBWD) entered into European Law on 24<sup>th</sup> March 2006. The Directive must be translated into UK law by March 2008, but the new features of the revised directive will take longer to come into effect. The revised directive should be fully in operation by 2015. The Government has set up a Policy Lead Group to introduce regulations and steer implementation of the Directive.

Consultation on the draft regulations is expected during 2007.

The rBWD makes changes to the monitoring and classification of bathing waters, the management of bathing water quality and the provision of information to the public. The rBWD requires close co-ordination with, and complements Water Framework Directive. More information is available on the DEFRA website ([www.defra.gov.uk](http://www.defra.gov.uk)). Bathing water classifications will probably be based on 4 years of data.

There will be 4 classes - EXCELLENT, GOOD, SUFFICIENT and POOR - and stricter microbiological standards.

EXCELLENT – approximately twice as stringent as the current guideline standard

GOOD – similar to the current guideline standard

SUFFICIENT – tighter than the current mandatory standard

POOR – non-compliant

An objective is set for all bathing waters to achieve SUFFICIENT status by 2015. The standards will use two parameters: intestinal enterococci and *Escherichia coli*, and will be based on 95- and 90-percentile values.

### **River quality assessment**

Rivers are assessed by the Environment Agency using a General Quality Assessment (GQA) according to chemical and biological quality (Defra).

River stretches are graded according to their quality, from grades A –F, where

A is very good and F is bad. Phosphate and nitrate status in rivers are classified according to the amount of nitrate or phosphate detected. For nitrates 1 is very low (<5mg NO<sub>3</sub>/l) and 6 is very high (>40mg NO<sub>3</sub>/l). For phosphates, 1 is very low (<0.02mg P/l) and 6 is excessively high (>1mg P/l).

mg P/l – milligrammes per litre of phosphate

mg NO<sub>3</sub>/l – milligrammes per litre of nitrates

140.5km of rivers classified wholly in or on the border or partly in the County.  
(Borders with PCNPA, Ceredigion and Carmarthenshire) – Extrapolated from EAW data.

### Percentage length of rivers with good biological and chemical river quality for Pembrokeshire\*

Table 120

River length quality	1990	1995	2000	2005	2006	2007	2008
Pembrokeshire good biological quality	88.9	94.9	95.6	97.2	97.2		
Pembrokeshire good chemical quality	95.3	95.6	93.8	100.0	100.0		
Wales biological quality	78.5	87.0	78.3	80.0	82.0	88.0	
Wales chemical quality	86.3	93.2	93.4	94.7	95.3	94.8	

\* Includes Pembrokeshire Coast National Park

Source:

<http://www.defra.gov.uk/environment/statistics/inlwater/download/xls/rq2006Wales.xls>

### Percentage length of rivers with high nutrient status\*

Table 121

River length	1990	1995	2000	2005	2006	2007	2008
Pembrokeshire high nutrient status – phosphate	11.8	3.4	0.0	2.4	3.6		
Wales high nutrient status – phosphate	26.1	10.2	7.6	9.1	10.7	10.2	8.5
Pembrokeshire high nutrient status – nitrate	No data	0.0	0.0	0.0	1.3		
Wales high nutrient status – nitrate	No data	0.5	1.5	0.4	1.4	1.4	1.3

\* Includes Pembrokeshire Coast National Park

High nutrient status for rivers: nitrates = high + really high status;

phosphates = high + very high + excessively high.

Source:

<http://www.defra.gov.uk/evidence/statistics/environment/inlwater/download/xls/rq2006Wales.xls>

<http://www.defra.gov.uk/evidence/statistics/environment/inlwater/kf/iwkw10.htm>

100% of rivers in Pembrokeshire are good chemical quality

97% of rivers in Pembrokeshire are good biological quality, 3% are fair quality.

### The Water Framework Directive

The Water Framework Directive (WFD) was published in December 2000 and transposed into English and Welsh law in December 2003. It introduces a new concept of “good status” that is far more rigorous than current water

environment quality measures. It is estimated that 95% of water bodies are at risk of failing to meet "good status".

The River Basin Management Plans (RBMPs) required by the Directive are important new strategies that should influence development plans, and be influenced by them. The first RBMPs must be published by December 2009.

While the GQA assessments have addressed river quality issues, the Water Framework Directive will help tackle water quality issues such as diffuse pollution. A new approach to water management is promoted through river basin planning, and it will set the objectives for water protection for the future. It requires all inland and coastal water bodies to reach at least "good" status by 2015 – subject to certain exemptions.

The WFD will ensure the water environment is looked at as a whole, integrating water quality, quantity and physical habitat with ecological indicators.

Monitoring of water quality in all water bodies started at the beginning of 2007. Other important dates for the WFD are:

- Draft River Basin Management Plans for each river basin district
- Final River Basin Management Plans
- Programs of measures for improvements to be fully operational
- Achieve the first set of water body objectives.

#### **Comparators and targets – see tables above**

94.4% of rivers in Wales are of good chemical quality

4% fair

1.5% poor

0.1% bad

79.4% of rivers in Wales are of good biological quality

19.7% fair

0.9% poor

0% bad

#### **Trend**

Difficult to determine trend due to statistical limitations and small sample size. There is variation in compliance year by year.

#### **Drinking Water Quality**

Water supplies:

Domestic premises with private water supplies = 830

Commercial premises with private water supplies = 183 (227 expected samples)

Public springs sampled = 16

Source: Public Protection, Pembrokeshire County Council.

There are approximately 1600 private water supplies in Pembrokeshire; 1200 various water samples are taken annually.

(<http://www.pembrokeshire.gov.uk/content.asp?id=12708&d1=0>)

### **Water Quantity**

#### **Cleddau Catchment Abstraction Management Plan (CAMS)**

The majority of licensed abstractions in the Cleddau and Pembrokeshire Coastal rivers CAMS area are for spray irrigation. However, these licences make up only a small percentage (less than 3%) of the total volume of water licensed in the area. A large proportion of the water licensed for abstraction is for fish farming.

However, almost all this water is returned to the river close to the point of abstraction. This is known as non-consumptive use of water.

Water for public supply accounts for the biggest consumptive use, almost all of which is taken from the Eastern and Western Cleddau. This water is used by the water company, Dwr Cymru Welsh Water, to supply most of Pembrokeshire with its domestic water supply in addition to some of the major industry in the area.

There are also water related SSSIs/SACs including Cleddau River, Pembrokeshire Marine and Teifi River and Carmarthen Bay SAC.

There are 5 water resource management units and 4 groundwater management units:



Table 120

WRMU GWMU name	Associated main river	Resource Availability Status		
		Individual WRMU status	Target status in 2012	Target status in 2018
WRMU1	Western Cleddau	No water available	No water available	No water available
WRMU2	Eastern Cleddau	Over licensed	Over licensed	Over licensed
WRMU3	Nevern, Gwaun	Water available	Water available	Water available
WRMU4	Alun, Solva, Castlemartin	No water available	No water available	No water available
WRMU5	Cartlett Brook, Westfield Pill, Gann Flats, Cresswell River, Ritec	Water available	Water available	Water available
GWMU1	Bosherston groundwater	No water available	Management of these units will not be possible until the exempt status is removed therefore no target status is proposed.	
GWMU2	Park Springs	No water available		
GWMU3	Milton	Over licensed		
GWMU4	Pendine	Water available		

Source: Cleddau and Pembrokeshire Coastal Rivers CAMS, 2006,  
Environment Agency

#### Key to resource availability status

Indicative resource availability status	Licence availability
Water available	Water is likely to be available at all flows. Restrictions may apply
No water available	No water is available for further licensing at low flows. Water may be available at higher flows with appropriate restrictions.
Over licensed	Current actual abstraction is such that no water is available at low flows. If existing licences were used to their full allocation they could cause an unacceptable environmental damage at low flows. Water may be available at high flows, with appropriate restrictions.
Over abstracted	Existing abstraction is causing unacceptable damage to the environment at low flows. Water may still be available at high flows, with appropriate restrictions.

Source: Cleddau and Pembrokeshire Coastal Rivers CAMS, 2006,  
Environment Agency

Figure 43: Resource availability status for water resource management units and groundwater management units (Cleddau and Pembrokeshire Coastal Rivers CAMS, 2006)



The Wales Spatial Plan (WSP) information packs from the Environment Agency predict that there is currently sufficient water supply available to meet planned demands in the resource zones within this spatial planning area (2007 annual review of water company water resources plans). However this applies to the Pembrokeshire Haven area, on a local scale, issues have been identified in previous Environment Agency documents and there is a lack of information from the water company on specific details.

There is also some conflict between information, regarding the availability of water, the CAMS documents state there is no water available in some areas of the County, however, the WSP 'water resources for public supply' pack states that there is a surplus in Pembrokeshire.

### Water quantity issues, constraints and gaps

There are perceived to be issues with water abstraction licensing in the Western and Eastern Cleddau (Cleddau CAMS).

There is also a lack of information from DCWW data on water resources and sewerage capacity.

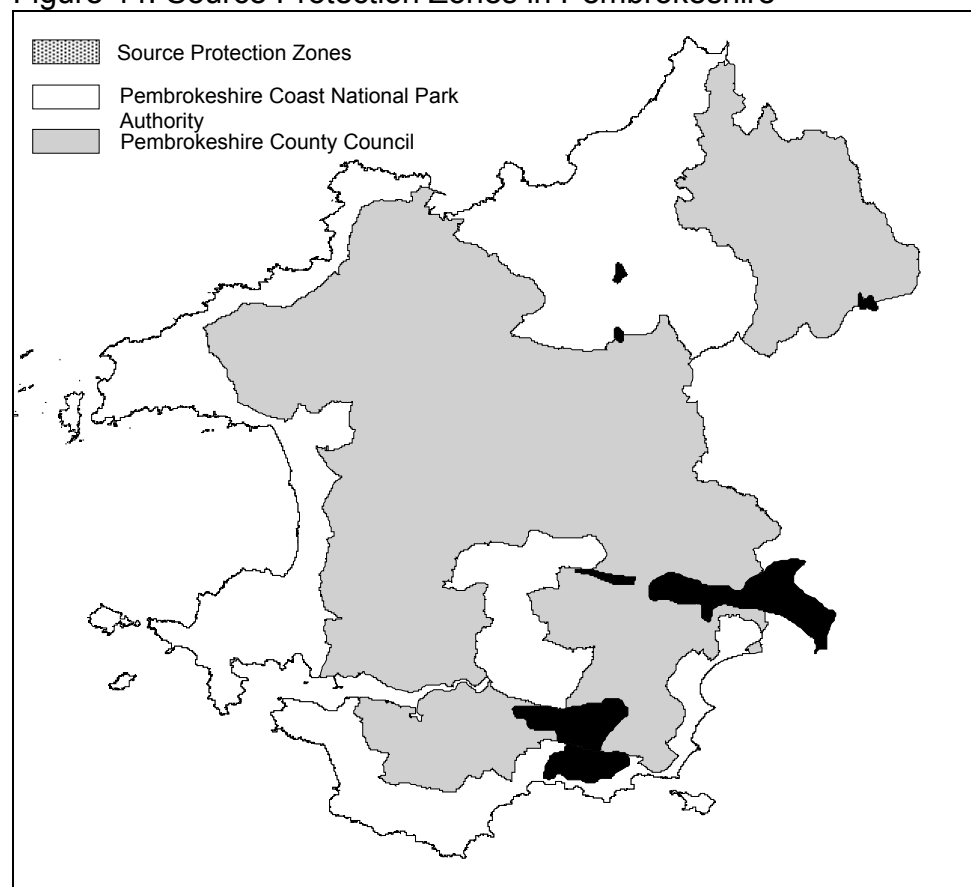
### Source Protection Zones

Source Protection Zones (SPZs) defined by the Environment Agency for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. Maps show three main zones (inner, outer and total catchment) and a fourth zone of special interest, which the EA occasionally apply, to a groundwater source.

Table 121

Source protection zones in Pembrokeshire
Milton
Eithbed
Valley Court
Henfeddau (on boundary with Carmarthenshire)
Park Springs Standby (SPZ within National Park and County)
Pendine (abstraction outside of County but SPZ partly within County)

Figure 44: Source Protection Zones in Pembrokeshire



Source: Environment Agency

**Teifi CAMS area:**

Teifi at tidal limit

Afon Cych

Teifi and Glanteifi gauging station

Water available at all three.

Agricultural activities have been identified as the cause of some localised organic pollution. There are some sewage treatment works on the Teifi.

**Water availability**

The majority of Pembrokeshire is fed from our Bolton Hill Water Treatment Works located to the West side of Haverfordwest. This works is a strategic asset for Dŵr Cymru Welsh Water (DCWW) in delivering potable water to customers, commercial, health and education premises. DCWW are developing a 25 year water resource plan to meet projected future demands for the County. Based on the future demands already shared with us we do not foresee any problems at present in meeting the anticipated domestic demands during the life of the Local Development Plan.

Water is a precious resource and in line with Government objectives on sustainable development we would look to promoters of developments to have considered and included where feasible, water efficient devices within buildings and sustainable drainage measures (Dwr Cymru Welsh Water, Pers. Comm.)

**Salmon Action Plans**

Catchments are at risk: the Cleddau, and the Teifi is also 'probably at risk' (Environment Agency WSP documents). The key factors affecting salmon stock in the Cleddau and Teifi are water quality, channel structure and siltation.

**Comparators, targets and trend**

Second wettest summer since records began in 1914 (Environment Agency, 2007).

Wales: Average consumption of water per head per day is between 140 and 150 litres.

The move towards river basin planning approach will protect all water bodies, including rivers, lakes, groundwater, estuaries and coastal waters.

**Groundwater****Aquifers**

Limestone aquifers in the south of the County (JUDP):

Carew - Milton spring source aquifer - limestone

Minor aquifer near Johnston

Old Hakin Road, Merlin's Bridge area – minor groundwater aquifer

Slade Lane, Haverfordwest – major aquifer groundwater aquifer

**Pollution incidents**

DATA FROM EAW for County specific pollution incidents – information is not part of the SEA package.

Public protection (PCC) – 5 complaints relating to pollution in 2006-2007.

## **Flooding**

There is fluvial and coastal flooding of main rivers in the Eastern and Western Cleddau, and tributaries. Coastal flooding occurs at Amroth.

There are issues with flooding due to the capacity of sewers, drains and infrastructure. High river flows combined with high tides also present problems in Haverfordwest, Fishguard, Cardigan, and St. Dogmaels.

Summary of main flood risk areas in Cleddau catchment:

- Haverfordwest (fluvial, tidelocking, surface water, sewer flooding)
- Llawhaden (fluvial and surface water)
- Narberth and Johnston (non-main river flooding and urban drainage)

Summary of main flood risk areas in southern coastal streams

- Begelly, Pembroke and New Hedges (partly in the Park) (Non main river flooding and urban drainage)
- Carew (non main river flooding and urban drainage)
- Amroth (tidelocking).

The main risks in the Lower Teifi catchment are fluvial river flooding and fluvial combined with high tides.

The main risks in the Western coastal rivers are on the Gwaun at Fishguard (high river flows combined with high tides).

There is the potential for groundwater flooding at Ludchurch.

## **Source:**

Catchment Flood Management Plan Scoping Report 2007 (EAW)

Table 122: Summary of significant flood defences (CFMP Scoping report 2007):

Standard of protection	Defence type	Maintainer	Type	Location
100	Raised defence (man-made)	Local Authority	Fluvial/tidal	Haverfordwest
		Local Authority	Fluvial	Haverfordwest
		Local Authority	Fluvial/tidal	Riverside market, Haverfordwest
50	Raised defence (man-made)	Environment Agency	Fluvial	Cartlett Brook, Haverfordwest
10	Raised defence (man-made)	Private	Fluvial	Amroth
		Environment Agency	Fluvial	Cerbyd, Solva
		Private	Fluvial	Cwmteg House, Fishguard
		Private	Fluvial	Gelli
		Private	Fluvial	Henllan Bridge, Cardigan

Table 123: Number of properties at risk from flooding in Pembrokeshire (Environment Agency, Flood Risk Management WSP package):

Local Authority	Local Authority Properties			% Wales Floodplain Properties
	Total	Floodplain Total	% of properties in floodplain	
Pembrokeshire	59063	1296	2.2	0.7

Table 124: Residential properties at risk from river flooding by community (CFMP scoping report, EAW, 2007)

Data source	Area	Key communities	Number of residential properties at risk		
			10 to 1	100 to 1	1000 to 1
Flood zones	Nevern	Newport, Fishguard	-	37	98
	Pembroke	Pembroke	-	6	21
	Ritec	Tenby area	-	5	16
Broadscale modelling	E Cleddau	Narberth	1	3	7
	W Cleddau	Haverfordwest	6	7	33
	Teifi	Cardigan, Tregaron, Lampeter	91	157	330
	TOTAL		98	215	505

AEP - Annual exceedance probability – the statistical chance of a flood event occurring in any one year. The chance is stated as a percentage, for example, 1% annual probability event i.e. there is a 100 to 1 chance of this magnitude of flood event in any one year.

Table 125: Population currently at risk from river flooding (CFMP scoping report, EAW)

Source data	Area	10 to 1	100 to 1	1000 to 1
Flood zones	Nevern & tributaries	-	90	230
	Pembroke	-	15	50
	Ritec	-	10	40
Broadscale modelling	Eastern Cleddau	5	10	20
	Western Cleddau	15	20	80
	Mwldan	10	25	25
	Teifi	220	380	790

Based on number of residential properties x 2.39 occupants per property

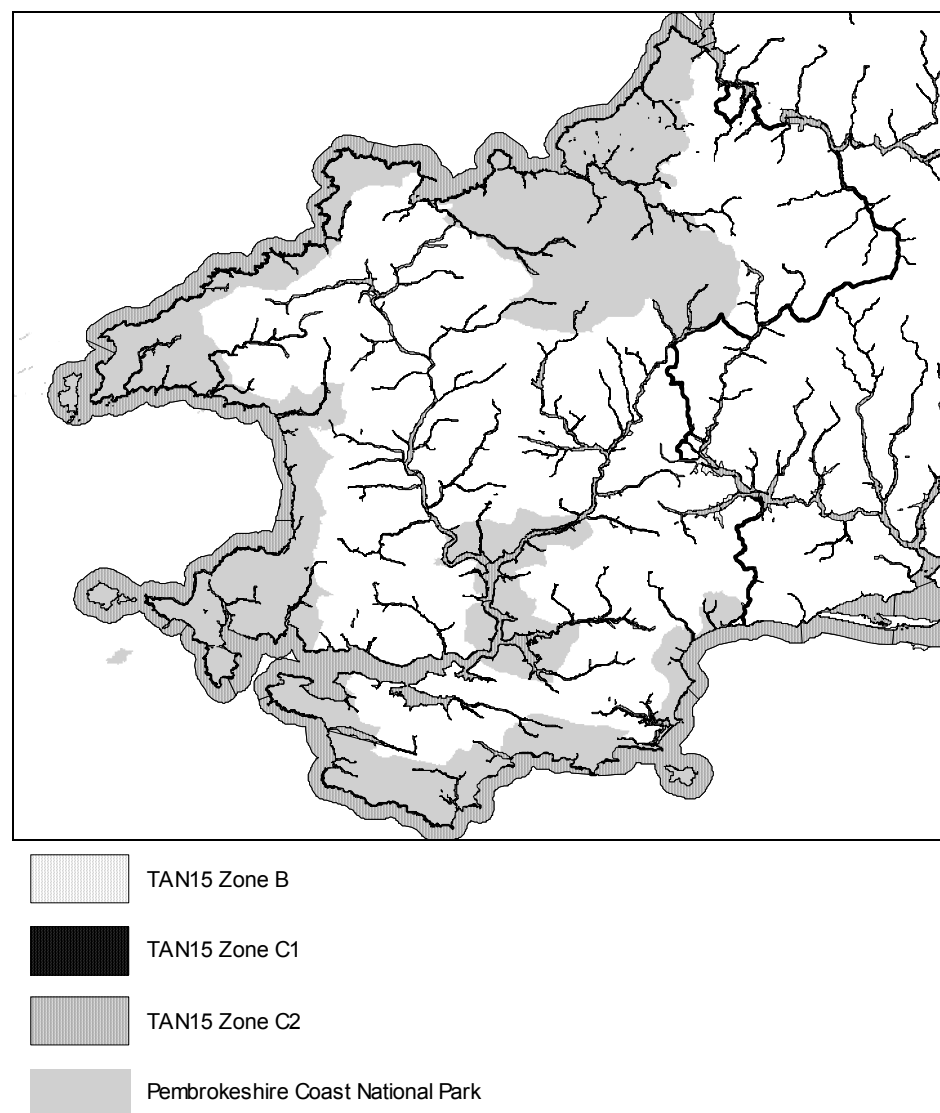
Proposed scenarios are summarised for hydraulic modelling work carried out by the Environment Agency which show general conclusions about changes in the conditions to which the catchments are most sensitive and whether the impact is positive or negative in terms of the depth and extent of flooding and associated damage costs (Table 126 below). The Western Cleddau is particularly sensitive to the effects of flooding associated with climate change due to the more densely populated area of Haverfordwest.

Table 126

Water course	Climate change (50 years time)	Climate change (100 years time)	Sea level rise (50 years time)	Sea level rise (100 years time)	Urban development (50 and 100 years time)	Land use change (50 years time)	Land use change (100 years time)
E Cleddau	Small	Small	N/A	N/A	No impact	Small	Small
W Cleddau	Significant	Significant	Significant	Significant	No impact	Significant	Significant
Mwldan	Small	Small	N/A	N/A	No impact	Small	N/A
Teifi	Moderate	Moderate	Moderate	Moderate	No impact	Significant	Significant

Source: Pembrokeshire and Ceredigion Rivers Catchment Flood Management Plan (2007)

Figure 45: TAN15 B, C1 and C2 Flood Maps



**Comparators, targets and trend**

140,000 properties in Wales (12% of the total housing stock) are thought to be at risk from flooding by rivers or the sea (TAN 15, WAG).

(See for information on drains and sewers: <http://www.environment-agency.gov.uk/news/1817352>).

**Flooding issues, constraints and gaps**

Climate change is the biggest issue with regards to flooding in the County.

The ability of flood defences to cope with increased storminess, increased surface water run-off from urban and rural areas.



## **11. Soil and land**

### **Contaminated land**

Despite its clean environmental image, Pembrokeshire does have certain sites that are contaminated as a result of previous economic activity.

Contamination makes re-use of the land either unsafe or uneconomic without public sector investment. Sites suffering contamination include Arnold's Yard, Wards Yard, Dale Road, the former Esso refinery site and Llanreath tank farm, as well as areas at existing sites of economic activity such as Waterloo and Texaco (Pembrokeshire Advance, Rural Development Plan).

Pembrokeshire County Council are currently reviewing the Contaminated Land Inspection Strategy 2002, its five year programme of inspection was originally envisaged to be Oct 2002 to April 2007 however this was extended to April 2010. This process is subject to ongoing review however all the potentially contaminated land sites in the County have been risk prioritised using GeoEnviron in accordance with the council's original risk inspection strategy.

The contaminated land strategy is due to be reviewed in 2010 and will be available for consultation during 2010.

### **Comparators, targets and trend**

There is limited information available on national contaminated land as assessment of contaminated land in Wales is varied.

### **Land issues, constraints, gaps**

The programme of inspection of contaminated land is scheduled to 2010.

### **Subsidence**

There has been some subsidence associated with historical coal mining in the County.

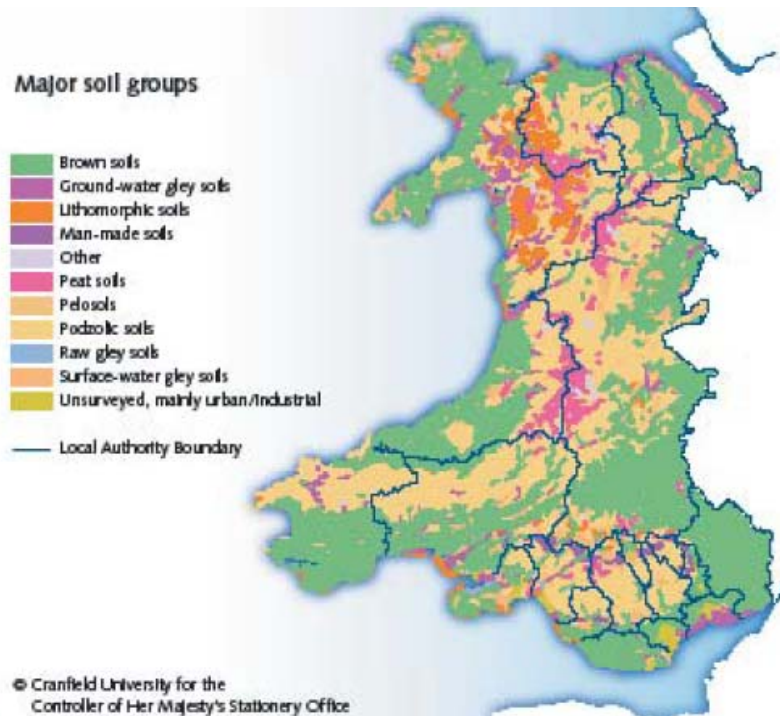
## **Soil**

### **Summary of baseline**

There is comparatively little information about soils in Pembrokeshire. Information is available on soil grade, however this is a measure of the soils suitability for intensive agriculture rather than other attributes such as ability to store water or carbon store. Soils in lower lying areas of Pembrokeshire are generally classified as Grade 3 (Grade 1 is classified as being the most suitable). Higher land, particularly in the north of the County, as well as land overlying the coal measures tend to be Grade 4.

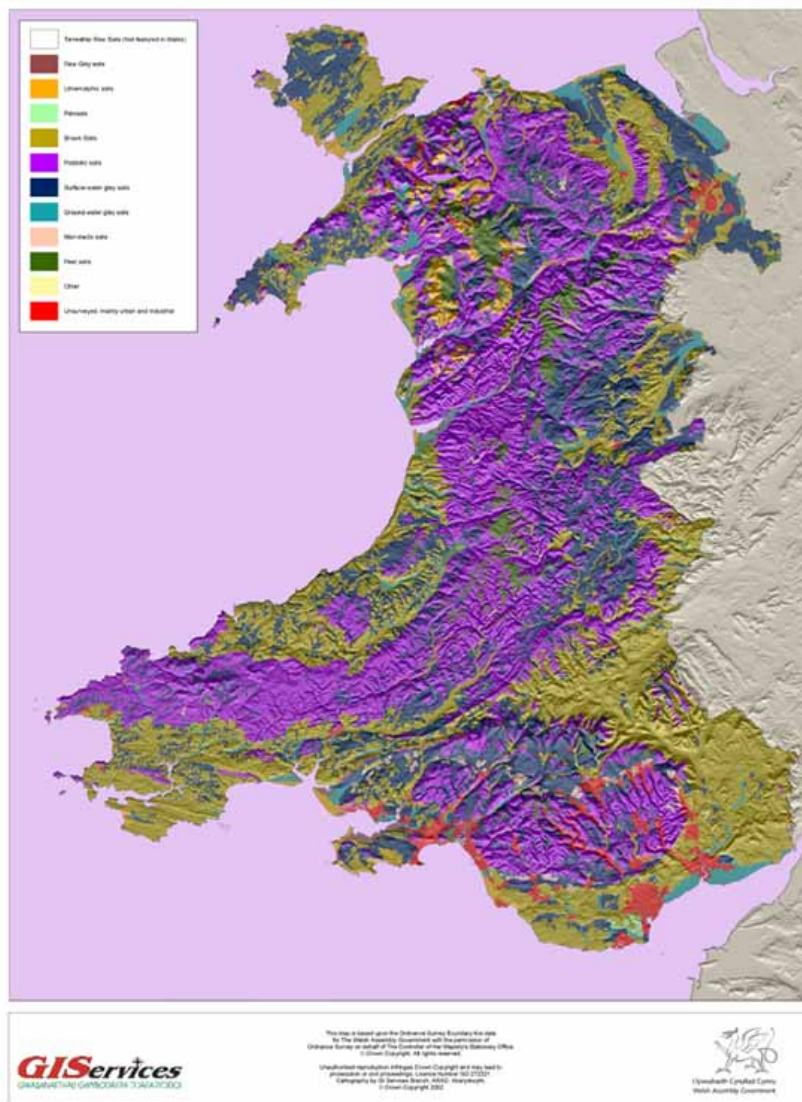
The maps below illustrate soil types and agricultural land classifications.

**Figure 46: Major soil groups**



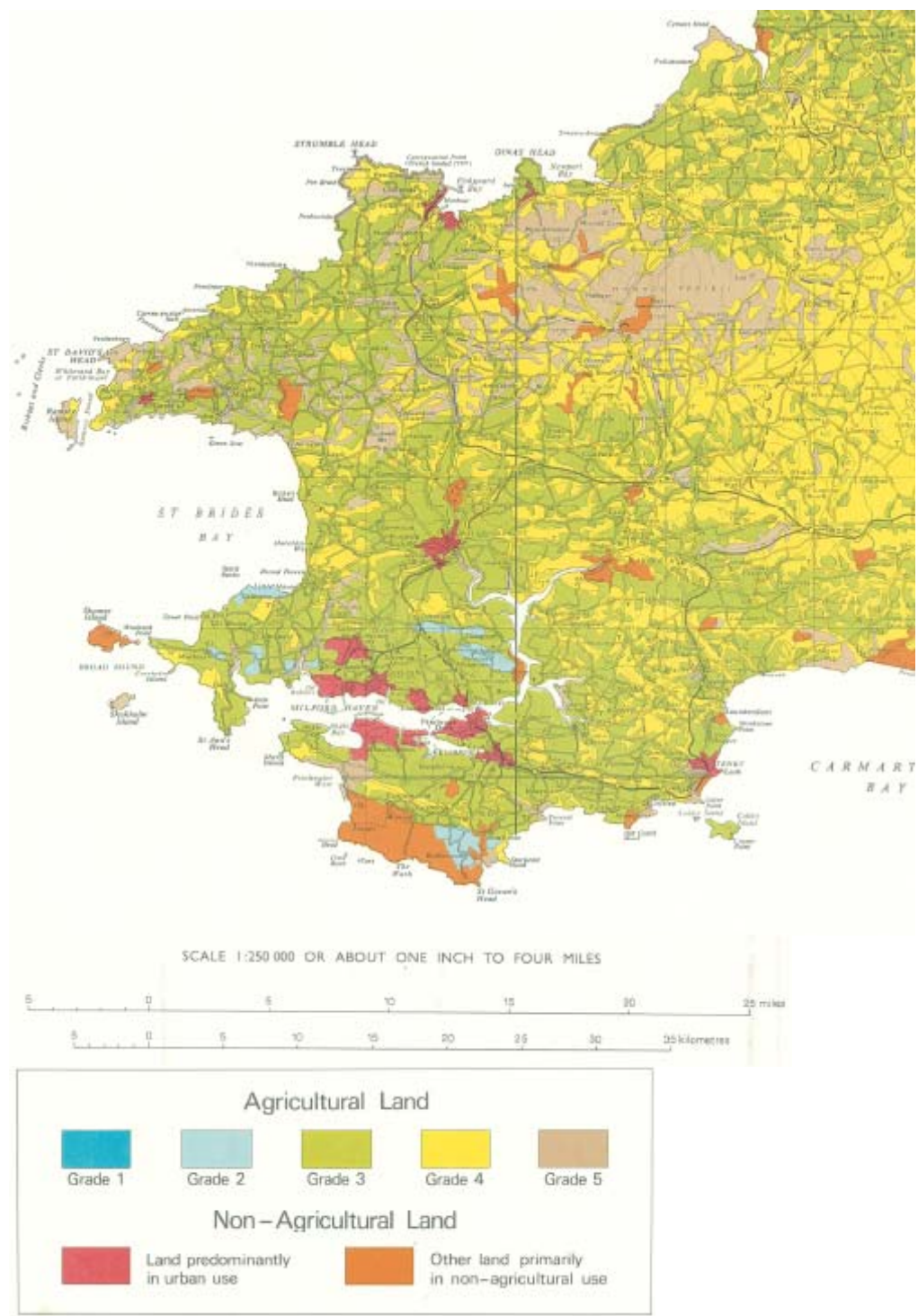
Source: WAG 2005d, Our Environment, Our Future, Your Views, the Consultation on the Environment Strategy for Wales, 2005, also WSP

**Figure 47: National soil map and relief for Wales**



Source:  
[http://www.countryside.wales.gov.uk/fe\\_maps/maps\\_preview.asp?image\\_id=9](http://www.countryside.wales.gov.uk/fe_maps/maps_preview.asp?image_id=9)

Figure 48: Agricultural Land Classification

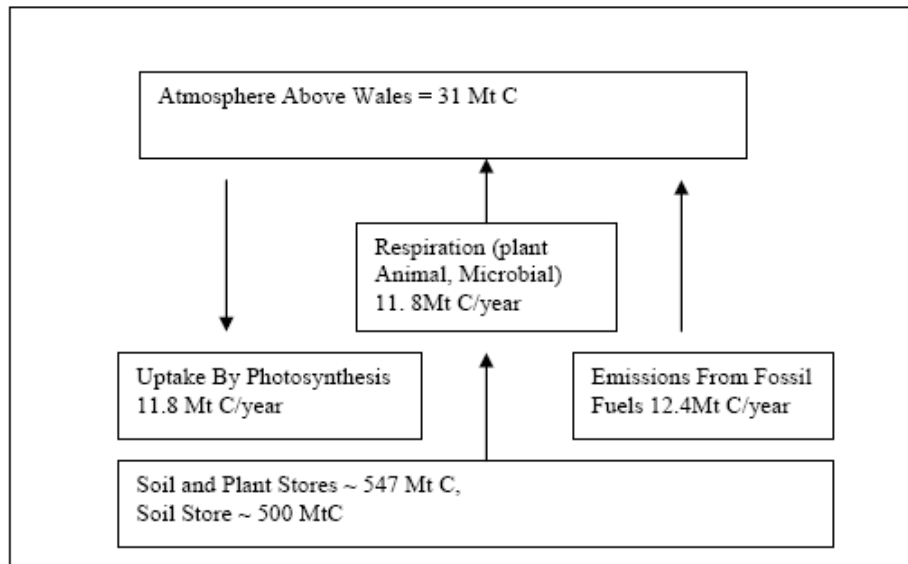


Source: Defra  
There is approximately 76.42% agricultural land in Wales.

### Soil processes

Environmental services such as retaining and releasing clean water in river catchments, buffering, filtering and transforming and storing contaminants are provided by soil. Soils are also a store for carbon (Figure x) with Welsh soils storing 16 times more carbon than the atmosphere above Wales (Welsh Soils Action Plan, 2008), soil is also important for biodiversity.

Figure 49: Provisional Carbon Budget for Wales (Megatonnes Carbon - MtC)



Source: Welsh Soils Action Plan (2008)

### Soil and agricultural land issues

There are data gaps on soils and soil quality, and issues such as acidification, soil erosion and the extent of soil carbon stores.

### Radon

The natural radioactive gas radon comes from the small amounts of uranium which occur naturally in all rocks and soils. The geology of Pembrokeshire means that there are higher levels of radon than in other parts of the country and is designated as a radon affected area. Radon has been found to cause lung cancer and therefore any new development will need to ensure mitigation against radon.

Maps are available online at:

([http://www.hpa.org.uk/radiation/publications/hpa\\_rpd\\_reports/2007/hpa\\_rpd\\_033\\_placenames.pdf](http://www.hpa.org.uk/radiation/publications/hpa_rpd_reports/2007/hpa_rpd_033_placenames.pdf))

## **12. Biodiversity, fauna and flora**

### **Summary of baseline**

The County has a range of sites designated for biodiversity. There are parts of seven land based Special Areas of Conservation (SACs) within the area excluding the Pembrokeshire Coast National Park Authority. There are parts of three marine based SACs including part of the Pembrokeshire Marine SAC, part of the Cardigan Bay SAC and a small part of Carmarthen Bay and Estuaries SAC. There is also part of one Special Protection Area (SPA) designated under the EU Birds Directive within a small coastal area of the County (Carmarthen Bay SPA). The County also has all or parts of 33 Sites of Special Scientific Interest (SSSI). There are two National Nature Reserves (NNRs) and one Local Nature Reserve (LNR). The total area which is designated for biodiversity is 35.3 km<sup>2</sup> (3530 ha) or 3.4% of the land area. This is a reflection of the linear nature of many sites which provide essential 'corridors' or ecological connectivity for biodiversity. This area includes land based SACs, SSSIs, NNRs and LNRs.

### **European sites (Natura 2000 sites)**

Two of the SACs are wholly within the County, and 8 SACs are partly within or on the boundary of the County. There is part of one SPA within the County. The sites cover 1590 ha (or 15.90 sq km) of land within the County, this figure does not include the marine SAC or SPAs. The table below summarises the designated features, condition and vulnerabilities. There is a 6 year reporting cycle for the condition of SACs and SPAs, and the next report is due in 2012.

## SACs

Table 127

SAC and SAC Features	Condition: Trend*	Vulnerabilities/potential threats
Carmarthen Bay and Estuaries (Part) UK0020020		
1110 Sandbanks which are slightly covered by sea water all the time	Favourable	Over-grazing (including deer browsing); Flood defence or Coastal defence works, potential threats from fisheries and shellfish management, aggregate dredging.
1130 Estuaries	Favourable	
1140 Mudflats and sandflats not covered by seawater at low tide	Favourable	
1160 Large shallow inlets and bays	Favourable	
1310 Salicornia and other annuals colonising mud and sand	Favourable	
1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	Unfavourable	
1103 Twaite shad <i>Alosa fallax</i>	Unfavourable: No Change	
1095 Sea lamprey <i>Petromyzon marinus</i>	Unfavourable	
1099 River lamprey <i>Lampetra fluviatilis</i>	Unfavourable	
1102 Allis shad <i>Alosa alosa</i>	Unfavourable: No Change	
1355 Otter <i>Lutra lutra</i>	Favourable	
Cardigan Bay (Part) UK0012712		
1110 Sandbanks which are slightly covered by sea water all the time	Unfavourable	Bottlenose dolphin, porpoise and seals are vulnerable to disturbance from seismic surveys and sea based recreation. Environmental contaminants such as mercury and PCBs in dolphin prey. Entanglement of marine mammals in fishing nets. Fisheries, damage to seabed habitats. Marine litter, military testing or ordnance. Harbour dredging projects.
1170 Reefs	Unfavourable	
8330 Submerged or partially submerged sea caves	Favourable	
1349 Bottlenose dolphin <i>Tursiops truncatus</i>	Favourable	
1095 Sea lamprey <i>Petromyzon marinus</i>	Unfavourable	
1099 River lamprey <i>Lampetra fluviatilis</i>	Unfavourable	
1364 Grey seal <i>Halichoerus grypus</i>	Favourable: Declining	
Pembrokeshire Marine (Part) UK0013116		
1130 Estuaries	Unfavourable: Declining	Water quality issues, marine communities vulnerable to damage
1160 Large shallow inlets and	Unfavourable:	

bays	Declining	from certain fishing methods. Pollution from transport or exploration/production of oil and gas.
1170 Reefs	Unfavourable: No Change	
1110 Sandbanks which are slightly covered by sea water all the time	Unfavourable: No Change	
1140 Mudflats and sandflats not covered by seawater at low tide	Unfavourable: Declining	
1150 Coastal lagoons	Favourable	
1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )	Unfavourable: Declining	
8330 Submerged or partially submerged sea caves	Favourable	
1364 Grey seal <i>Halichoerus grypus</i>	Unfavourable: No Change	
1441 Shore dock <i>Rumex rupestris</i>	Favourable	
1095 Sea lamprey <i>Petromyzon marinus</i>	Unfavourable: Declining	
1099 River lamprey <i>Lampetra fluviatilis</i>	Unfavourable	
1102 Allis shad <i>Alosa alosa</i>	No Data	
1103 Twaite shad <i>Alosa fallax</i>	No Data	
1355 Otter <i>Lutra lutra</i>	Favourable	
North West Pembrokeshire Commons (part on boundary) UK0030229		
4030 European dry heaths	Unfavourable: Recovering	Under-grazing; invasive species.
7140 Transition mires and quaking bogs	Unfavourable: Un-classified	
4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	Unfavourable: Recovering	
1831 Floating water-plantain <i>Luronium natans</i>	Unfavourable: Un-classified	
North Pembrokeshire Woodlands (part) UK0030227		
91A0 Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	Unfavourable: Declining	Decline in traditional woodland management, forestry, fragmentation by coniferous afforestation.
91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> )	Favourable: Maintained	
1308 Barbastelle <i>Barbastella barbastellus</i>	Favourable: Un-classified	
Pembrokeshire Bat Sites and Bosherton Lakes (Oriellton) UK0014793		
3140 Hard oligo-mesotrophic waters with benthic vegetation of	Unfavourable: Un-classified	Water quality (including silt, water pollution (direct or diffuse), run-



<i>Chara spp.</i>		off, nutrient enrichment, eutrophication etc), water quantity (drought). Physical deterioration of roost buildings. Habitat loss and disturbance in key feeding areas. Otter population vulnerable to water quality, human disturbance, entanglement in fishing gear and habitat loss.
1304 Greater horseshoe bat <i>Rhinolophus ferrumequinum</i>	Favourable: Un-classified	
1303 Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	Favourable: Un-classified	
1355 Otter <i>Lutra lutra</i>	Unfavourable: Un-classified	
<b>Preseli (part on boundary) UK0012598</b>		
4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	Unfavourable: Un-classified	Under-grazing, acidification.
4030 European dry heaths	Unfavourable: Un-classified	
7150 Depressions on peat substrates of the <i>Rhynchosporion</i>	Favourable: Maintained	
7230 Alkaline fens	Favourable: Un-classified	
1044 Southern damselfly <i>Coenagrion mercuriale</i>	Favourable: Maintained	
1065 Marsh fritillary butterfly <i>Euphydryas (Eurodryas, Hypodryas) aurinia</i>	Unfavourable: Un-classified	
1393 Slender green feather-moss <i>Drepanocladus (Hamatocaulis) vernicosus</i>	Favourable: Maintained	
<b>Afon Teifi (Part) UK0012670</b>		
3260 Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and Callitriche-Batrachion vegetation	Favourable: Maintained	Water quality (including silt, water pollution (direct or diffuse), run-off, nutrient enrichment, eutrophication etc); water management (including drainage, dredging or alterations to the water table), flow rate. Future potential to affect abstractions and discharges. Migratory fish vulnerable to obstacles to migration, overfishing and damage to habitats outside the site.
3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	Favourable: Unclassified	
1096 Brook lamprey <i>Lampetra planeri</i>	Unfavourable: Unclassified	
1099 River lamprey <i>Lampetra fluviatilis</i>	Unfavourable: Unclassified	
1106 Atlantic salmon <i>Salmo salar</i>	Unfavourable: Unclassified	
1163 Bullhead <i>Cottus gobio</i>	Unfavourable: Unclassified	
1355 Otter <i>Lutra lutra</i>	Favourable: maintained	

1831 Floating water-plantain <i>Luronium natans</i>	Favourable: maintained	
1095 Sea lamprey <i>Petromyzon marinus</i>	Unfavourable: Unclassified	
Afonydd Cleddau (Part) UK0030074		
3260 Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	Favourable: Maintained	Water quality (including silt, water pollution (direct or diffuse), run-off, nutrient enrichment, eutrophication etc); water management (including drainage, dredging or alterations to the water table). Over-exploitation of fisheries and non-native species of animal or plant. Otters vulnerable to human disturbance, habitat loss, crossing highways, injury from fishing equipment.
7110 Active raised bogs	Unfavourable: Un-classified	
91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> )	Unfavourable: Un-classified	
1096 Brook lamprey <i>Lampetra planeri</i>	Unfavourable: Un-classified	
1099 River lamprey <i>Lampetra fluviatilis</i>	Unfavourable: Un-classified	
1163 Bullhead <i>Cottus gobio</i>	Unfavourable: Un-classified	
1355 Otter <i>Lutra lutra</i>	Favourable: Maintained	
1095 Sea lamprey <i>Petromyzon marinus</i>	Unfavourable: Un-classified	
Yerbeston Tops (All) UK0030305		
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	Unfavourable	Loss of habitat, under-grazing.
1065 Marsh fritillary butterfly <i>Euphydryas</i> ( <i>Eurodryas</i> , <i>Hypodryas</i> ) <i>aurinia</i>	Unfavourable	

\*Preliminary assessments pending completion of full condition report. Source: CCW (\* condition and trend information for the marine SACs (Carmarthen Bay and Estuaries; Cardigan Bay; and Pembrokeshire Marine) is provisional).

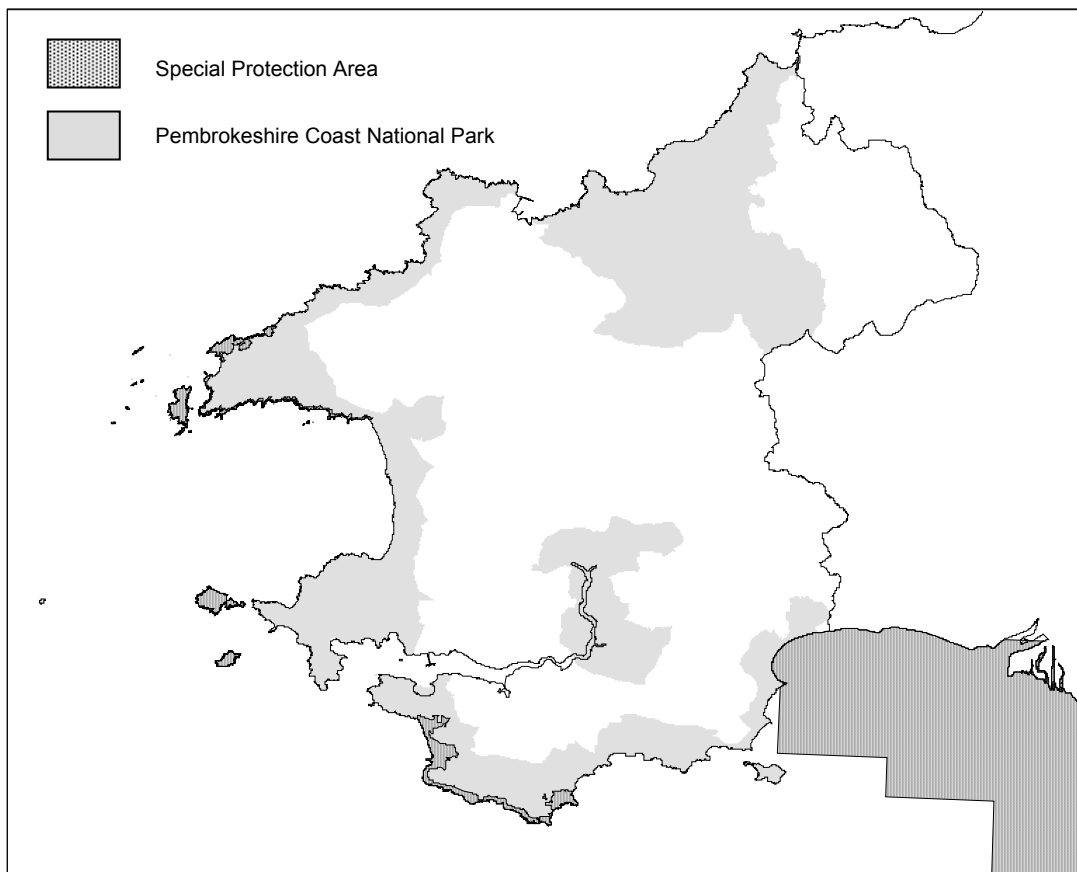
## SPAs

Table 128

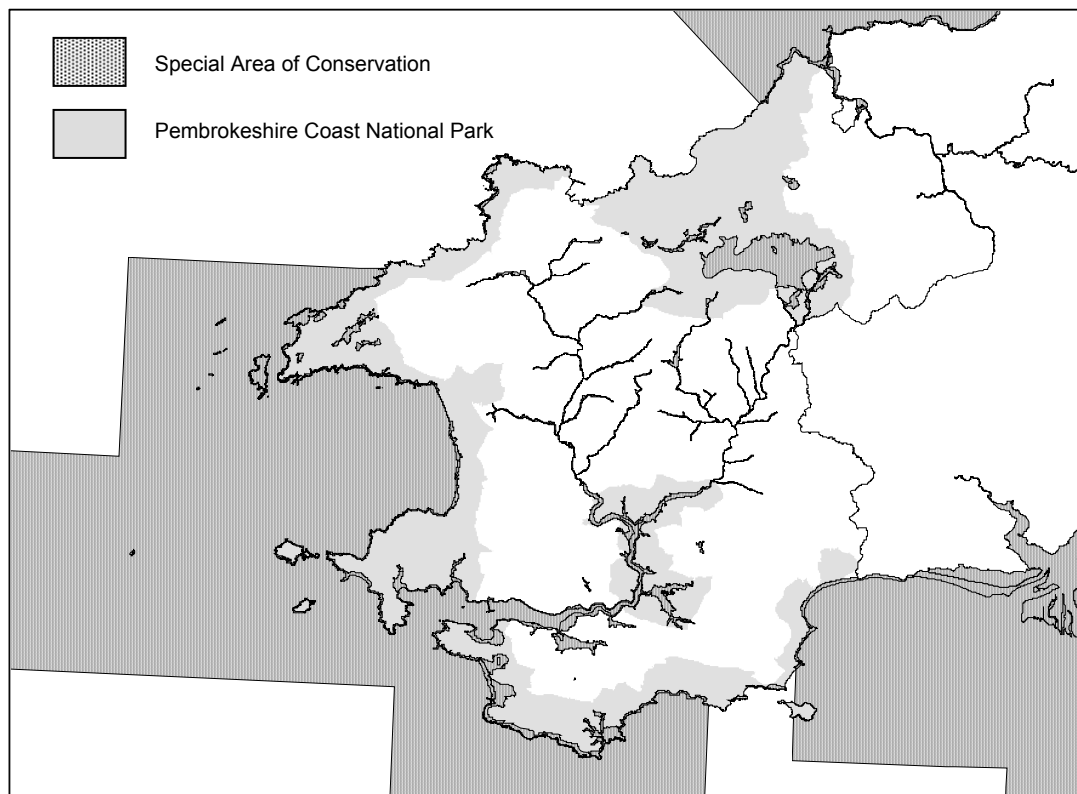
SPA & SPA Important Species	Condition	Vulnerabilities/ potential threats
<b>Carmarthen Bay (Part) UK9014091</b>		
Common Scoter ( <i>Melanitta nigra</i> )	Not assessed	Fisheries management indirectly affecting food supply; water quality and pollution; sea-surface or aerial activity creating disturbance of feeding and/or resting scoter flocks; disturbance from major infrastructure development (e.g. offshore energy generation); aggregate exploitation causing changes to the sediment structures or sediment transport regime; major harbour infrastructure and maintenance regimes; on a broader scale long-term climatic change.

\*Source: CCW

**Figure 50: Pembrokeshire Special Protection Area**



**Figure 51: Pembrokeshire Special Area of Conservation**



### **Condition of SACs and SPAs (in the County and partly in the County)**

There are 11 international sites, with 71 features.

38% of SAC features in favourable condition

58% of SAC features in unfavourable condition

4% of SAC features – no data or unknown

Overall the SAC features in the area are in an unfavourable condition.

Source: CCW (based on 2007 assessment)

### **Comparators**

61% of SAC species features and 80% of SAC habitats features reported as being in unfavourable condition in Wales in 2006(Rural Development Plan for Wales, 2007-2013)

### **Targets**

Target of 95% of international sites to be in favourable condition by 2010. All sites to be in favourable condition by 2026 (Rural Development Plan for Wales, 2007-2013)

### **National and Local Nature Reserves**

The County has part of two National Nature Reserves which cover a total area of 50.93 ha entirely within the County (excluding the National Park designation).

Table 129

<b>NNR Name</b>	<b>Total area of NNR in hectares</b>
Corsydd Llangloffan	39.36
Pengelli Forest (part)	66.02
Total	105.38

The total area of NNRs within the County excluding the National Park area is 50.93 ha.

There are six Wildlife Trust of South and West Wales Reserves, one of which is also a Local Nature Reserve:

Table 130

Garn Turne Rocks
Goodwick Moor
Llangloffan Fen
Pembroke Upper Mill Pond (LNR) 9.018 ha
Part of Pengelli Forest
Westfield Pill

(Source - Wildlife Trust Website

[http://www.welshwildlife.org/reservesPembrokeshire\\_en.link](http://www.welshwildlife.org/reservesPembrokeshire_en.link))

### **Comparators**

National NNR area – 24,102 ha

### **SSSIs**

33 Sites of Special Scientific Interest (SSSI) of which 18 are partly within or on the boundary of the County. They cover a total land area of 7832.69 ha, however only 1880 ha are totally within the County area. These include those SSSIs designated for geology or partly for geology. Condition assessment of the SSSI features has not been carried out for all sites; however half of those features which have been assessed (at 24 sites) are in unfavourable condition (CCW review, 2007). Some geological SSSIs are also nationally important Geological Conservation Review (GCR) sites. The GCR was designed to identify those sites of national and international importance needed to show all the key scientific elements of the Earth heritage of Britain. Regionally Important Geodiversity Sites (RIGS), though not legally protected, are selected for historical, educational and aesthetic reasons in addition to scientific qualities, however there are currently no RIGS groups in Pembrokeshire. The Local Geodiversity Action Plans (LGAP) enable broad local partnerships with common goals for geoconservation and the sustainable use of geodiversity resources. There are no LGAPs in Pembrokeshire.

### **Comparators, targets and trend**

There is a target for 95% of Welsh SSSIs to be in favourable condition by 2015 and all sites to be in favourable condition by 2026 (Environment Strategy, 2006).

SSSIs cover over 264,000 ha in Wales. There are over 1,021 SSSIs. Terrestrial SSSIs - 70% are in unfavourable condition, 29% favourable condition and 1% partially destroyed (2003 data). "Favourable features are expected to stay favourable, and unfavourable ones to stay unfavourable" (SSSIs in Wales, 2005). (Rural Development Plan for Wales, 2007-2013).

29% of terrestrial (land-based) SSSI habitat features (such as woodland or heath) on SSSIs were classed as being in favourable condition. Inclusion of intertidal features, such as shorelines and estuaries, increases this to 35%.

1% of terrestrial SSSI habitat features were classed as partially destroyed, while the remaining 70% were classed as in unfavourable condition. Adding in the inter-tidal features reduces this to 64%. (CCW, Sites of Special Scientific Interest (SSSIs) in Wales, 2005). Terrestrial sites were also classified according to whether they were recovering or declining. 47% favourable or recovering, 52% unfavourable/declining, 1% partially destroyed (CCW, Sites of Special Scientific Interest (SSSIs) in Wales, 2005).

### **National Trust land**

The National Trust own land at: Underhill Wood; Kings Mill; Brownslade Lake, Marledge and at Amroth (Colby Estate and Woodland)

Source: Pembrokeshire County Council

### **Local Biodiversity Action Plan**

The County has a local biodiversity plan for certain species and habitats which has recently been updated to include the Section 42 list produced by the WAG. There are 293 species and 44 habitats on the list.

There were 41 Habitat Action Plans, of which 9 are finalised / available, 23 are in the UKBAP. There are 111 Species Action Plans, of which 24 are finalised / available, and 49 are in UKBAP

Source: Pembrokeshire County Council LBAP Officer  
[http://www.pembrokeshire.gov.uk/content.asp?Language=&nav=109,139&parent\\_directory\\_id=101&id=4937](http://www.pembrokeshire.gov.uk/content.asp?Language=&nav=109,139&parent_directory_id=101&id=4937)

### **Comparators, targets and trend**

LBAP species - Fewer species are in decline in Wales (7%) compared with the UK (14%).

LBAP - 11 Welsh species (6%) are reported to be increasing.

Declining: 13 Welsh species (7%) are reported to be declining, however the decline is said to be slowing for 11 of these species (6%).

Unknown: The Welsh trend was reported as unknown for an alarming 66 species (37%).

Welsh LBAP Habitats – 13% reported as declining, 43% declining slowly, 5% unknown, 18% increasing

Source: UKBAP reporting website, Progress towards the 2010 target in Wales: Species  
<http://www.biodiversitywales.org.uk/English/Library/BAPReport05/default.aspx?id=41>

Habitats

<http://www.biodiversitywales.org.uk/english/Library/bapreport05/default.aspx?id=43>

### **Issues/constraints/gaps**

Main threats to LBAP species are habitat loss, degradation due to agriculture, management practice and infrastructure development. The main threats to habitats are habitat loss, degradation due to agriculture, management practice and infrastructure development. Climate change, global warming, sea level rise are also threats to biodiversity.

The most common threat to species in Wales is habitat loss / degradation due to agriculture; this threat was reported for 99 species. Intensive management, losses of field margins and inappropriate grazing regimes have all taken their toll on priority species habitats.

Habitat loss / degradation due to management practice (51 species) and infrastructure development (45 species) forms the second and third place in the ranking, consecutively  
(<http://www.biodiversitywales.org.uk/english/Library/bapreport05/default.aspx?id=43>)

Other issues are specific to the designated sites.

### **Wild bird populations in Wales**

Wild bird populations in Wales - woodland and urban increasing, farmland birds decreasing. (Key environment statistics for Wales, NAW, 2006). No local data for Pembrokeshire.

### **Woodland and Hedgerows**

There is a generally sparse coverage of woodland in Pembrokeshire (WAG, 1999). The area covered by ancient woodlands is approximately 1284.61 ha (Pembrokeshire County Council Map Layers). There are approximately 202 Tree Preservation Orders (excluding the National Park). There can be more than one tree per TPO.

There are also areas of community woodlands which is a scheme funded by the Forestry Commission. The scheme provides grants and support to community groups in Objective 1 areas who want to improve woods or plant new woods (<http://www.forestry.gov.uk/forestry/infd-5ksfcg>).

Hedgerows are important for biodiversity providing wildlife corridors and important landscape features. There is no data on the length of hedgerows in the County.

### **Comparators, targets and trend**

Extent of tree cover in Wales is 13.7 % (Forestry Commission, 2006).

Broadleaved woodland has historically been declining.

### **Invasive species**

There are invasive species present in the County, for example Japanese knotweed, winter heliotrope, Himalayan balsam and giant hogweed, however the extent of cover is not known.

### **Data Gaps**

Overall up to date condition of SSSIs and other biodiversity sites.

Length and location of hedgerows.

Conservation objectives for Natura 2000 sites.

### **Sources:**

Welsh Assembly Government (2007) Rural Development Plan for Wales 2007-2013, available at [http://new.wales.gov.uk/topics/environmentcountryside/countryside\\_policy/rural\\_development/rdp0713/?lang=en](http://new.wales.gov.uk/topics/environmentcountryside/countryside_policy/rural_development/rdp0713/?lang=en)



### **13. Cultural heritage and historic environment, including landscape**

#### **Baseline summary**

Pembrokeshire (excluding the area of National Park Designation) has 1621 listed buildings, 236 scheduled ancient monuments, 20 Historic Parks and Gardens, 24 Conservation Areas and 2 Townscape Heritage Initiatives which make up the special natural characteristics and cultural heritage of the area which require protection and enhancement.

The Historic Environment Record (HER) which used to be known as the SMR (Sites and monuments record). Scheduled Ancient Monuments represent a small percentage of total historic assets.

#### **Listed buildings**

1621 (Conservation Team, PCC)

There is also a lack of recent information on the grading of listed buildings. However, a buildings at risk survey was undertaken in 2008. The report identifies that 135 are at risk, 237 are vulnerable and 1249 are not at risk (Buildings at Risk Survey, PCC, 2008).

#### **Scheduled Ancient Monuments (SAMs)**

236 scheduled ancient monuments (Quality Regeneration and Tourism, PCC). There is a lack of information on the condition of SAMs, however many SAMs are in a poor condition.

#### **Historic Parks and Gardens**

There are 20 Historic Parks and Gardens in the County (excluding the National Park area) which cover a total of 0.40% (4.12 km<sup>2</sup> or 412 ha).

- 111 Main Street, Pembroke
- Blackaldern
- Castell Malgwyn
- Castle Hall
- Cilwendig
- Ffynone
- Fishguard Bay Hotel
- Great Harmeston
- Haroldston
- Haverfordwest Priory
- Kilgetty
- Lamphey Bishops Palace and Lamp
- Landshipping
- Manorwen
- Merrixtion House Farm
- Molleston Baptist Chapel
- Monkton Old Hall and Vicarage
- Orielton
- Plas Glyn-y-mel

- Scolton Manor

### **Conservation areas**

There are 24 areas which cover 0.53% of the County (544.83 ha)

- Carew
- Carew Cheriton
- Cosheston
- Eglwysrw
- Fishguard
- Goodwick
- Haverfordwest
- Honeyborough
- Lamphey
- Llangwm
- Llawhaden
- Lower Town
- Mathry
- Milford Haven
- Narberth
- New Moat
- Neyland
- Pembroke
- Pembroke Dock
- Penally
- Scotsborough House
- St Dogmaels
- St Florence
- Wiston

### **Country Parks**

There are two country parks in the area: Llys-y-fran Country Park and Scolton Manor (combined area of 140.001 ha).

### **Townscape Heritage Initiative**

Townscape Heritage Initiative schemes aim to stimulate economic regeneration through historic building conservation. There are two schemes in the plan area in Haverfordwest and Pembroke Dock.

The Haverfordwest Townscape Heritage Initiative is a partnership project jointly funded by Pembrokeshire County Council, The Heritage Lottery Fund, Cadw and the Department of Enterprise, Innovation and Networks at the Welsh Assembly Government.

Under the scheme over £2.5m in grant aid is being spent refurbishing historic properties in the town's Conservation Area focusing on High Street, Market Street, Hill Lane and Goat Street. The Pembroke Dock THI restored and renovated the historic buildings of the waterside town such as the Garrison Chapel and Market Hall in the former Royal Naval Dockyard.

### **Local landscape and built heritage distinctiveness**

Traditional hedgerows and hedgebanks are distinctive in Pembrokeshire and the LANDMAP assessment has identified that traditional field boundaries should be retained and managed appropriately. Traditional hedgerows also provide important links for biodiversity.

The built heritage includes locally distinctive non-listed buildings and building materials which are present throughout the County and contribute to the diverse townscapes and landscapes.

### **Landscape**

Pembrokeshire's landscape ranges from parts of the coastline to open hills, valleys and woodland and secluded tree-lined rivers and estuaries to areas with industrial development and populated villages and towns. The LDP will have to integrate development pressures with the need to conserve the special characteristics of the area.

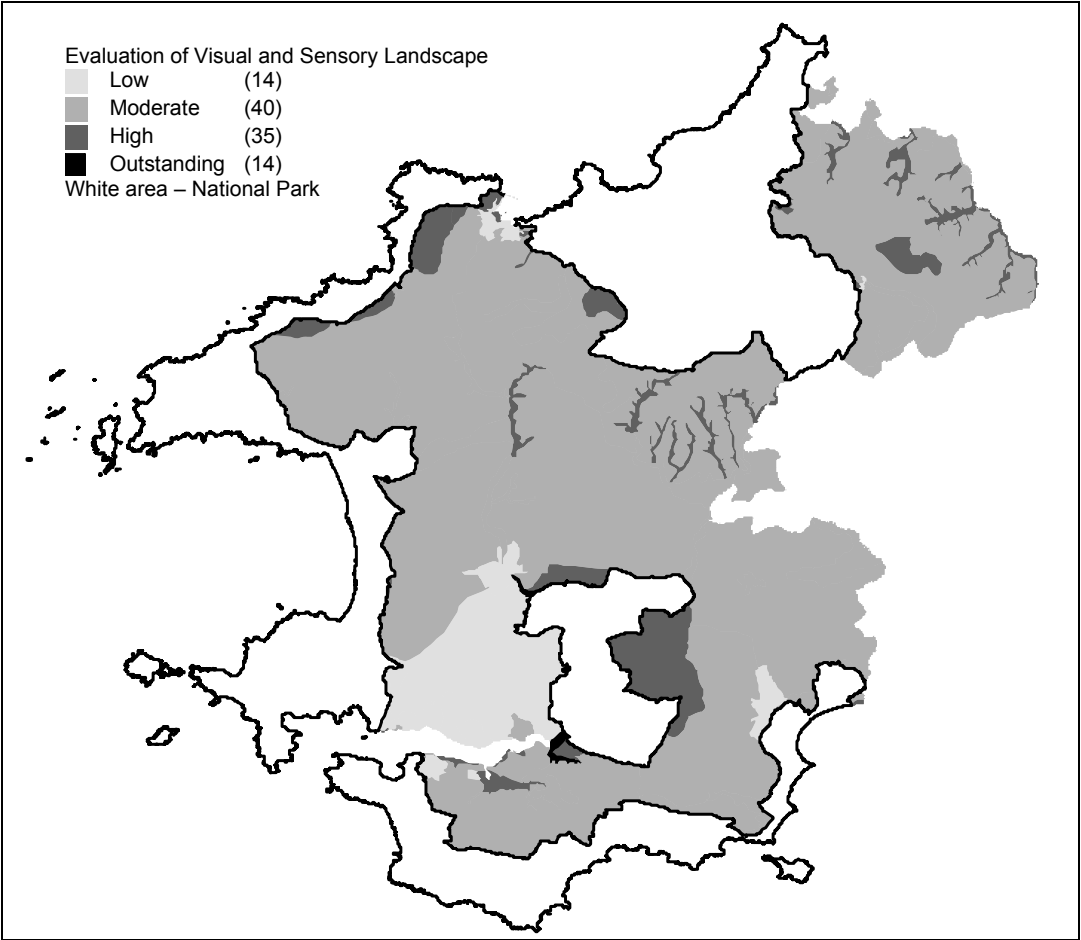
The coastal sections of Pembrokeshire excluding the National Park area, is a small length of coastline to the east of Amroth, parts of the Milford Haven Waterway, and parts of the Teifi Estuary. There are four sites identified as historic landscapes which are partly within the plan area, namely Pen Caer, Lower Teifi Valley, Mynydd Preseli and Milford Haven Waterway. The plan will have regard to these areas and ensure the status is not prejudiced.

Previous industrial processes such as quarrying, mining and agricultural practices have also impacted the landscape.

A LANDMAP assessment carried out by CCW has been quality assured and is available on the CCW website (<http://landmap.ccw.gov.uk/>).

Overall evaluation of the visual and sensory layers of low, moderate, high and outstanding value of landscape illustrates that the majority of Pembrokeshire is classified as moderately important, with areas of high importance east of the Cleddau river and in coastal areas and on the Preseli Mountains. The area of land southwest of Haverfordwest is classified as low in terms of scenic quality (LANDMAP report).

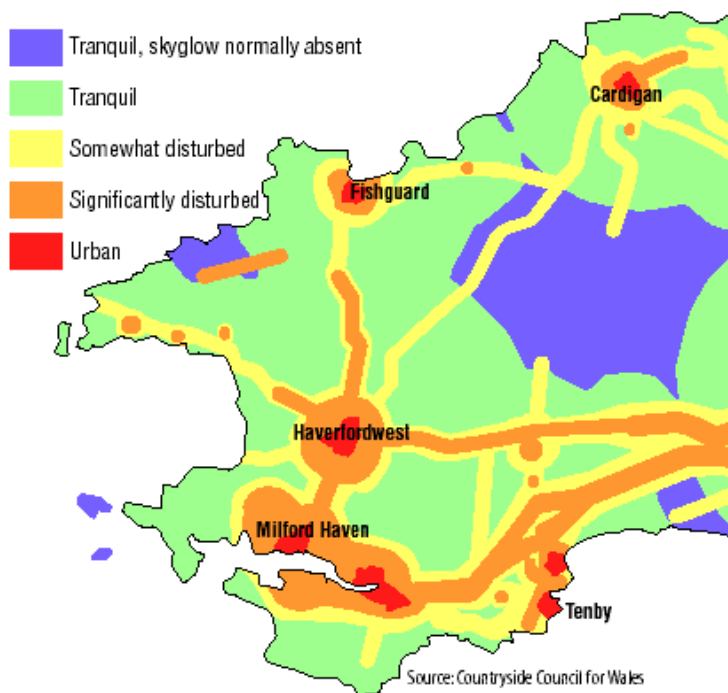
Figure 52: LANDMAP Pembrokeshire



### Tranquillity and light pollution

Tranquillity is essentially a subjective issue given that it is a measure of the experience of calmness in the surrounding environment. A definition has been created so that mapping can occur – “*places which are sufficiently far away from the visual or noise intrusion of development or traffic to be considered unspoilt by urban influences*”.

Figure 53: Tranquillity map of Pembrokeshire



Pembrokeshire tranquillity:

A map showing tranquillity across the UK can be viewed at this website:  
[http://www.swansea.gov.uk/media/pdf/s/m/AONB%20Management%20Plan%20\(Chapter%202%20-%20Resources%20-%20Environmental\).pdf](http://www.swansea.gov.uk/media/pdf/s/m/AONB%20Management%20Plan%20(Chapter%202%20-%20Resources%20-%20Environmental).pdf)

Large urban conurbations in south east England, north west England, the west Midlands and south east Wales are described as ‘significantly disturbed’. Light pollution has also increased significantly.

Source:

Countryside Council for Wales

Swansea County Council, see above link– accessed 10 January 2008

### Comparators and targets

- 3850 SAMs in Wales
- 30,000 listed buildings which equates to 1-2% of overall building stock (Cadw, 2004). Less than 2% of listed buildings in Wales are Grade I (Cadw).
- 372 registered historic parks and gardens
- 513 conservation areas (WAG, 2003b)
- 128 monuments in state care

- 200 underwater wreck sites (RCAHMW, 2006)
- The % of Welsh SAMs which have deteriorated has reduced from 15.17% in 1989 to 10% of sites visited in 2004 (Cadw, 2004 – from WSP)

### **Trend**

There has been a decline in number of SAMs, which are 'stable' or 'improved' from 93% in 1996 to 82% in 2004 in Pembrokeshire (WSP SEA).

The number of Conservation Areas is unlikely to change significantly in the short to medium term (WSP).

The number of Registered Historic Parks and Gardens is unlikely to change significantly in the short to medium term (WSP).

### **Urban and accessible greenspace**

99 areas of common land, area of 810.6 Ha.

28 village greens, area of 53.46 Ha.

An assessment of proportion of people within 300m of natural green space (Urban greenspace standards, 'Climbing Higher' Policy) has not been carried out, however the County is predominantly rural, therefore most of the population are relatively close to natural green spaces. An urban open space survey is currently being developed within the Council and data will be added when available.

### **Comparators – Wales data**

Area of common land

South East – 5,261 ha

Central – 77,322 ha

North East – 4,000 ha

North West – 3629 ha

Swansea Bay – 19,905 ha

National Area: 115,283 ha

### **Source:**

Wales Spatial Plan, Pembrokeshire Haven area

### **Issues/constraints/gaps**

There are data gaps relating to the condition of Listed Buildings, SAMs, Historic Landscapes, Historic Parks and Gardens, location of wreck sites  
Landscape character areas for the area of the County not including the park.

There is difficulty in identifying trend data on the condition of historic environment. There is also a lack of general information.