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The Greensand Trust

The Natural Environment

Indicators of sustainable development in
Bedfordshire - May 2008

A report prepared by Sue Raven of the Greensand Trust for
Bedfordshire County Council



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Introduction

In 2001 the Greensand Trust was commissioned to investigate and develop a set of indicators which would give a broad picture of the health of the natural environment of Bedfordshire. Baseline data for an initial set of indicators was produced in 2003; wherever possible results were given at district as well as county level. This indicator set has been updated and reported on regularly since then.

The introduction of a new national biodiversity indicator for local authorities has prompted a reporting round more promptly than would otherwise have been the case to allow local authorities to report as necessary. The opportunity has been taken to also update those indicators within the county set for which new data were available.

In addition a review has been carried out into the extent to which the county's local planning authorities are reporting on the national core biodiversity indicator which is an obligatory part of their Annual Monitoring Reports.

Summary

Overall there have been no major changes in the last twelve months for the indicators reported.

After the improvements seen between 1990 and 2000, biological and chemical water quality in the county's rivers remains at about the same level; this year's slight drop is likely to be a small fluctuation. High nutrient levels are felt to be the major water quality issue in the Great Ouse catchment at present and this continues to be the case for Bedfordshire. The proportion of rivers and canals with high levels of nutrients rose slightly for both nitrates and phosphates over the last twelve months.

In the case of the county's most important wildlife and geological sites, there was no loss of area of SSSIs and the proportion in favourable condition rose, albeit very slightly, to 86.3%. The area of land designated as CWSs and RIGs both rose over the last year, and the area of the former that has been monitored also increased to 26%. Of CWS land now monitored, 55% was found to be in favourable condition. Habitats of particular concern continue to be bog, heathland and neutral grassland. Particular monitoring effort was given to the latter in 2007 and it is worrying to note that of 50 CWSs where this habitat has now been monitored, only around 4% was felt to be in favourable condition.

The new national indicator for monitoring the positive conservation management of Local Sites (SSSIs, CWSs and RIGs) found 38.4% of these sites in Bedfordshire to have received such management over the last five years. These figures provide the baseline information from which future targets will be set.

Monitoring of wild bird populations shows that in the East of England, although the declines seen in farmland and woodland birds in 1970s, 1980s and early 1990s have now halted, no significant recovery has yet been seen. Between 1994 and 2006, there have been population decreases of over 50% for species such as turtle dove, cuckoo and willow warbler in this region.

A review of the Annual Monitoring Reports for the county's local planning authorities found that none had yet reported satisfactorily on the national biodiversity indicator, all acknowledging that progress needed to be made with obtaining the data. Lack of reporting on this indicator appears to be a widespread problem on a national scale.

Indicator – Bedfordshire	Who else uses?	Bedfordshire trends		Regional/national comparisons
		Short term	Long term	
<p>Percentage of rivers and canals of good water quality In 2006, 68% of rivers and canals had good biological water quality, 68% had good chemical water quality</p>	<p>UK sustainable development framework indicator</p> <p>UK biodiversity indicator</p>	Small decline (both)	Improving (both)	<p>Biological – slightly lower than seen regionally and nationally</p> <p>Chemical – higher than regional, similar to national</p>
<p>Percentage of rivers and canals of high nutrient status In 2006, 84% of rivers and canals had high nitrate levels, 91% had high phosphate levels</p>	-	Small rise (both)	Little change (possibly slight upward trend for nitrates?)	Both higher than that seen regionally and nationally
<p>Area of SSSIs and % in favourable condition In 2007, 1415ha of land was designated as SSSI, 86% of this was in favourable condition</p>	<p>PSA target of 95% by 2010</p> <p>UK biodiversity indicator</p>	Area remains the same; very small increase in proportion in favourable condition	Area remains the same; proportion in favourable condition improved but rate of improvement is slowing	Higher than that seen regionally or nationally
<p>Area of CWSs, % monitored and % in favourable condition In 2007, 7421ha of land (excluding SSSIs) was designated as CWSs; 26% of this, by area, had been monitored, of which 55% was in favourable condition. 21 RIGS had been recognised</p>	-	Increase in area designated and in proportion of sites monitored	Increase in area designated and in proportion of sites monitored	-
<p>Populations of wild birds Changes in the East of England 1994 – 2006 have been taken as indicative of those occurring in Bedfordshire</p>	<p>UK sustainable development framework indicator</p> <p>UK biodiversity indicator</p>	No significant change in populations of farmland or woodland birds in East of England	Declines seen from 1970s onwards halted since around 2000 but not yet reversed in East of England	Regional figures are not dissimilar to changes seen nationally
<p>NI 197 – proportion of Local Sites where positive conservation management has been or is being implemented At 31st March 2008, positive management had been or was being implemented at 38.4% (149/388) of Bedfordshire's Local Sites</p>	National Indicator for Local Authorities and Local Authority Partnerships	No trend data yet	No trend data yet	No comparative figures available yet

1. Update of selected Bedfordshire indicators

A. River and canal water quality

Background

The introduction of the EU's Water Framework Directive [WFD] is leading to objectives for water quality being broadened to focus more on ecological quality. A new national monitoring scheme is currently being developed to assess water quality in a manner which will reflect these broader aims. This will lead to the development of a new set of indicators in the future however, at present, while this work is still ongoing, the Environment Agency's General Quality Assessment [GQA] scheme is still being used to report on water quality.

The GQA scheme monitors the biological and chemical quality and nutrient status of running waters across England and Wales. In Bedfordshire all the major rivers, canals and tributaries (a length of 233km) are covered by the GQA scheme and so it provides a good indication of the quality of running water throughout the county.

Chemical quality is assessed on levels of dissolved oxygen, ammonia and biological oxygen demand – good indicators of the extent to which rivers are affected by the commonest types of pollution; sewage and the runoff and drainage from farms. Biological quality is assessed on the range of macroinvertebrates present in a stretch of water, compared with the number expected for the physical condition of that stretch. It gives a more integrated picture of the situation and can detect infrequently occurring pollution incidents that may be missed by the spot sampling techniques used in the chemical assessment. For both chemical and biological quality, stretches of river and canals are classified as one of six grades; Grade A (very good), Grade B (good), Grade C (fairly good), Grade D (fair), Grade E (poor) and Grade F (bad).

Nutrient status is assessed by monitoring levels of nitrates and phosphates as these are the nutrients most likely to be directly influenced by human activities. Grades range from 1 (very low) to 6 (nitrates – very high, phosphates – excessively high). Unlike the chemical and biological grades these are descriptive and cannot simply be interpreted as good or bad. They reflect not only variation in agriculture and sewage, but local geology. A high level of phosphate (average concentration greater than 0.1mg/l) is that considered indicative of possible existing or future problems of eutrophication. A high level of nitrate (average concentration greater than 30mg/l) roughly corresponds with the limits used in the EU's Drinking Water and Nitrate Directives.

Further details of the GQA scheme, taken from the Environment Agency Public Water Quality Register, are given in Appendix A.

Source of data

Data for 2006, and past years, have been obtained from the River Water Quality database for regional and local authority areas in England and Wales on Defra's e-Digest of Environment Statistics. This year it was not possible to obtain maps showing water quality in Bedfordshire from the Environment Agency.

Indicator 1: Percentage of length of rivers and canals of good quality

Indicator results

County level

In 2006, 68% of Bedfordshire's rivers and canals, by length, were of good biological quality (grades A & B) while 68% were of good chemical quality. Further details are given in Tables 1 and 2.

	% of length of rivers and canals					
	Beds Borough	Mid Beds	South Beds	Luton Borough	Beds	Beds & Luton
Biological Grade						
A	23.40	8.40	28.99	0	16.84	16.24
B	70.46	43.00	33.43	0	51.34	49.51
C	6.13	35.77	37.57	14.46	25.49	25.10
D	0	12.83	0	85.54	6.33	9.15
E	0	0	0	0	0	0
F	0	0	0	0	0	0
% of good quality	93.87	51.40	62.43	0	68.18	65.75
Length sampled (km)	79.9	110.7	33.8	8.3	224.4	232.7

Table 1: Details of biological water quality at county and district level, 2006
[data from Environment Agency]

	% of length of rivers and canals					
	Beds Borough	Mid Beds	South Beds	Luton Borough	Beds	Beds & Luton
Chemical Grade						
A	60.45	15.63	14.50	0	31.42	30.30
B	33.54	26.11	75.15	8.43	36.14	35.15
C	5.63	45.89	3.55	0	25.18	24.28
D	0.38	9.94	6.8	0	6.06	5.84
E	0	2.35	0	91.57	1.16	4.38
F	0	0	0	0	0	0
% of good quality	93.99	41.73	89.64	8.43	67.56	65.45
Length sampled (km)	79.9	110.7	33.8	8.3	224.4	232.7

Table 2: Details of chemical water quality at county and district level, 2006
[data from Environment Agency]

District level

There is considerable variation in river water quality between the districts. Similar patterns are seen for both biological and chemical quality and these are consistent with those seen in previous years – with water quality highest in Bedford Borough, followed by South Beds, Mid Beds and finally Luton Borough.

In general, water quality is reduced by built up areas due to urban runoff and poor habitat quality. Also, smaller rivers are more affected by low flow times and have less capacity to dilute discharges. A combination of these factors explains the low water quality in Luton Borough where the headwaters of the River Lea run through the heart of the urban area. By contrast, the River Great Ouse in Bedford Borough is a very large river flowing for much of its length through rural areas. Between these two extremes lie the smaller rivers/canals of Mid and South Beds which again flow predominantly through rural areas.

Trends

Table 3 shows the changes in quality over the last year - a small decline was seen in both measurements. The longer term trend is shown in Figure 1. The period 1990 – 2000 saw major improvements in water quality however since then quality has remained roughly stable, fluctuating year to year.

	% of good biological quality		% of good chemical quality	
	2005	2006	2005	2006
Beds Borough	94	94	89	94
Mid Beds	57	51	57	42
South Beds	76	62	74	90
Luton Borough	0	0	13	8
Bedfordshire	73	68	71	68
Beds & Luton	70	66	69	65

Table 3: Summary of changes in biological and chemical quality, 2005 – 06
[data from Environment Agency]

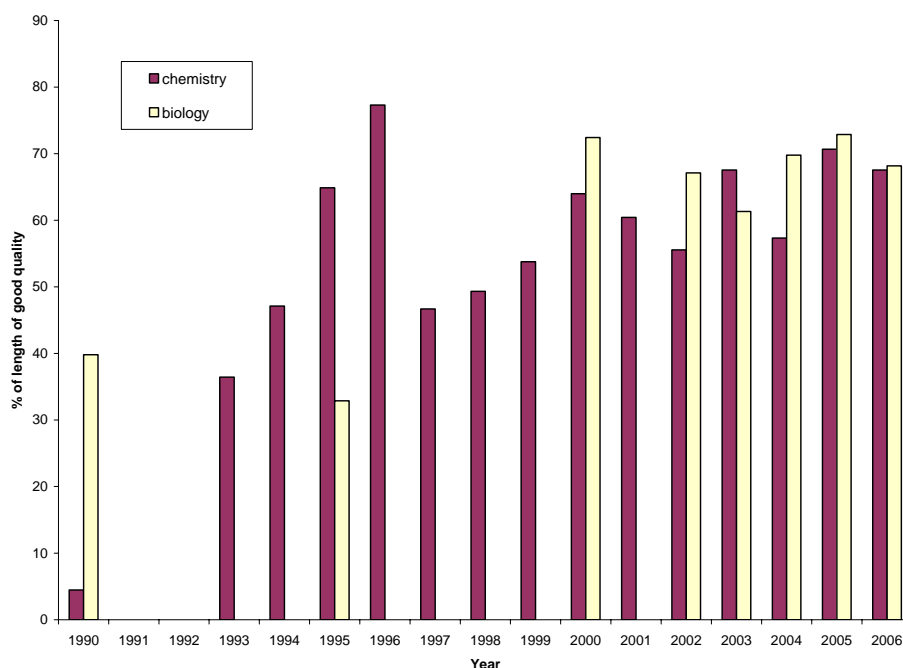


Figure 1: Biological and chemical water quality in Bedfordshire rivers and canals, 1990 – 2006
[data from Environment Agency]

National/regional comparisons

River water quality is one of the UK government's framework sustainable development indicators and as such is widely reported on nationally and regionally (Table 4).

In 2006, biological quality was slightly lower in Bedfordshire's rivers (68%) than that seen regionally (74%) and nationally (71%). Chemical quality was slightly higher (68%) than that seen nationally (66%), but considerably higher when compared to the East of England region (44%).

Both biological and chemical water quality were very low in Bedfordshire in 1990 when compared to elsewhere. Improvements since that time have been great and are reflected in the greater percentage point increases seen from 1990 – 2006 for the county than those seen for the region or nationally.

Area	% of river length of good water quality					
	Biological			Chemical		
	1990	2006	% point increase	1990	2006	% point increase
Beds Borough	64	94	30	0	94	94
Mid Beds	34	51	17	9	42	33
South Beds	0	62	62	0	90	90
Luton Borough	0	0	0	0	8	8
Bedfordshire	40	68	28	4	68	64
East of England	58	74	16	21	44	23
England	60	71	11	43	66	23

*Table 4: Improvements in water quality locally, regionally and nationally, 1990 – 2006
[data from Defra's e-digest of Environmental Statistics and Sustainable Development Indicators in your Pocket, 2007, Defra]*

Indicator 2: Percentage of length of rivers and canals of high nutrient status

Indicator results

County level

In 2006, 84% of Bedfordshire's rivers and canals, by length, were classified as having high levels of nitrate (Table 5) while 91% had high phosphate levels (Table 6). These figures are indicative of the situation throughout the catchment of the Great Ouse, which includes the majority of Bedfordshire's rivers, where high nutrient levels are felt to be the main water quality issue (The Upper Ouse and Bedford Ouse Catchment Abstraction Management Strategy, Environment Agency, March 2005). The whole of Bedfordshire is designated a Nitrate Vulnerable Zone.

	% of length of rivers and canals					
	Beds Borough	Mid Beds	South Beds	Luton Borough	Beds	Beds & Luton
Nitrate Level						
A	0	0	0	0	0	0
B	0	0	0	0	0	0
C	5.88	0.09	9.17	8.43	3.52	3.70
D	18.15	11.38	0	91.57	12.08	14.91
E	69.59	10.30	32.54	0	34.76	33.52
F	6.38	78.23	58.28	0	49.64	47.87
% of high nutrient status	75.97	88.53	90.83	0	84.40	81.39
Length sampled (km)	79.9	110.7	33.8	8.3	224.4	232.7

Table 5: Details of nitrate levels at county and district level, 2006
[data from Environment Agency]

	% of length of rivers and canals					
	Beds Borough	Mid Beds	South Beds	Luton Borough	Beds	Beds & Luton
Phosphate level						
A	0	0	0	0	0	0
B	0	0	9.17	8.43	1.38	1.63
C	0	6.41	28.99	91.57	7.53	10.53
D	12.52	13.28	0	0	11.01	10.61
E	87.48	64.50	53.85	0	71.08	68.54
F	0	15.81	7.99	0	9.00	8.68
% of high nutrient status	100.00	93.59	61.83	0	91.09	87.84
Length sampled (km)	79.9	110.7	33.8	8.3	224.4	232.7

Table 6: Details of phosphate levels at county and district level, 2006
[data from Environment Agency]

District level

The most obvious difference between districts is that no stretch of the River Lea in Luton was found to have high levels of nutrients whereas a high proportion of rivers in the other districts recorded high levels. This is most likely to reflect the urban nature of Luton.

For nitrates, the greatest proportion of rivers with high levels was found in South Beds (91%) and the lowest in Beds Borough (76%). By contrast, for phosphates figures were highest in Beds Borough (100%) and lowest in South Beds (62%). In both cases Mid Beds fell between these extremes.

Trends

Disappointingly over the last twelve months the proportion of rivers and canals with high levels of nutrients has risen slightly (Table 7). In the case of phosphates this was a small probably insignificant change however the rise for nitrates was greater and appears to reflect a longer term slight upward trend (Figure 2) since 2002. Since 1990, there has been little overall change in the proportion of rivers with high nitrate levels but a slight reduction in those with high phosphate levels.

	% of high nitrate level		% of high phosphate level	
	2005	2006	2005	2006
Beds Borough	76	76	100	100
Mid Beds	88	89	91	94
South Beds	62	91	62	62
Luton Borough	0	0	100	0
Bedfordshire	80	84	90	91
Beds & Luton	77	81	90	88

Table 7: Summary of changes in nitrate and phosphate levels, 2005 – 06
[data from Environment Agency]

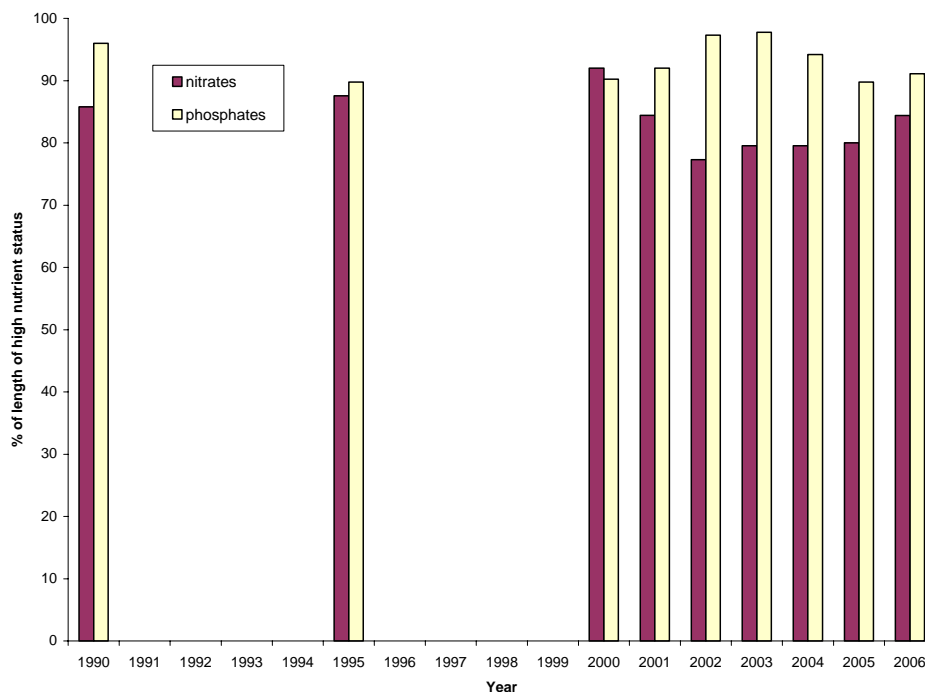


Figure 2: Nitrate and phosphate levels in Bedfordshire rivers and canals, 1990 – 2006
[data from Environment Agency]

National/regional comparisons

The proportion of rivers and canals in Bedfordshire with high nutrient levels is higher than that found regionally, and considerably higher than that found nationally (Table 8).

The UK government's annual report on its sustainable development indicators '*The Environment in your Pocket, 2007*' notes that 'rivers with the highest concentrations of nitrates and phosphates are mainly in central and eastern England, reflecting the geology, agricultural inputs and higher population'.

	% of river length with high levels of nitrates			% of river length with high levels of phosphates		
	1995	2000	2006	1995	2000	2006
Bedfordshire	88	92	84	90	90	91
East of England	72	78	64	83	85	78
England	33	36	32	56	60	55

Table 8: Proportion of rivers and canals with high nutrient levels locally, regionally and nationally [data from Defra's e-digest of environmental statistics]

B. Condition of important wildlife and geological sites

Background

Sites of Special Scientific Interest [SSSI], County Wildlife Sites [CWS] and Regionally Important Geological and Geomorphological Sites [RIGS] represent the best wildlife and geological sites in Bedfordshire and Luton.

SSSIs are designated by Natural England, are of national importance and are statutorily protected. CWSs and RIGS are of local importance, are ratified by the Bedfordshire and Luton Biodiversity Forum and recognised by local authorities and Natural England. Together these sites cover approximately 7% of the area of the county.

In 1997, English Nature, now Natural England, began a monitoring programme for assessing the condition of SSSIs. Sites are divided into units, usually using physical rather than habitat boundaries. Each unit is assigned a habitat type, generally the most important one, although there may be other habitat types present in the unit. Each unit is classified as being in 'favourable' or 'unfavourable' condition. Condition is assessed according to both the condition of the habitats and species present and also the management in place to conserve, or recover, them. The category 'unfavourable' is further divided into 'recovering', 'no change' or 'declining' when compared to previous visits. Natural England aims to assess each SSSI every six years; more frequently if the site is perceived to be at risk.

A monitoring system for CWSs, based on the SSSI assessment method, has been developed for Bedfordshire and has been in use since 2002. To date 26% of the area of the county designated as CWS (excluding SSSI land) has been monitored. As yet there is no monitoring scheme for RIGS.

The monitoring schemes for both SSSIs and CWSs allow the results to be broken down by broad habitat types.

Source of data

Data on SSSI condition have been obtained from the Natural England website [www.naturalengland.org.uk] and are summarised in Appendix B1.

Data on CWS condition have been taken from the CWS monitoring reports 2002 – 2007 and are summarised in Appendix B2. Additional information was obtained from the Bedfordshire & Luton Biodiversity Recording & Monitoring Centre [BRMC].

Information on RIGS was obtained from the BRMC.

Indicator 4: Area (ha) of SSSI and % in favourable condition

Indicator results

County level

The number of SSSIs in Bedfordshire remains at 40; 35 designated for their biological importance and 5 designated for their geological interest. The area covered by these sites is 1414.52ha – this includes a small area of the King's and Baker's Woods and Heaths SSSI which extends into Buckinghamshire, as has been the case in previous reports. The slight increase in area since 2006 is due to administrative correction of a boundary line, not an ecologically meaningful change on the ground.

Table 9 gives details of the condition of Bedfordshire's SSSIs as at 4th January 2008; this incorporates the results of monitoring carried out between July 1999 and November 2007.

Condition	Area (ha)	% of total area	% of total area in 2006
Favourable	885.64	62.6	63.0
Unfavourable – recovering	335.47	23.7	22.6
Unfavourable – no change	137.05	9.7	9.3
Unfavourable – declining	56.36	4.0	4.5
Part-destroyed	0	0	0.6
Total	1414.52		

Table 9: Area and condition of Bedfordshire's SSSIs, 4 January 2008 [data from Natural England]

For reporting purposes Natural England combines both the 'favourable' and 'unfavourable – recovering' categories to indicate favourable condition. This convention is followed in this report. The category 'unfavourable – recovering' indicates that although the condition is currently unfavourable, management is in place to address the problems.

By the end of 2007, 86.3% of Bedfordshire's SSSIs, by area, were in favourable condition.

Habitat types

Table 10 shows the data broken down by broad habitat type.

On the whole there have been few changes over the last twelve months with most habitat types being predominantly in favourable condition. The major exception to this is however bog habitat, of which the one area in the county is still in unfavourable condition. The most notable change since 2006 is the increase in the proportion of heathland habitat in favourable condition – this is due to improvements at Kings and Bakers Wood and Heaths. The small increase in the proportion of neutral grassland in favourable condition is due to improvements at Stevington Marsh. The reclassifying of Wavendon Heath Ponds as one single monitoring unit of bog habitat, rather than two units, bog and neutral grassland, will also have contributed to the higher neutral grassland figures.

Broad habitat type	Area of habitat (ha)	No. of sites at which habitat found	% of area in favourable condition	% of area in favourable condition in 2006
Bog	4.68	1	0	0
Heathland	61.8	3	60.6	47.1
Neutral grassland	53.95	10	68.6	62.2
Fen, marsh, swamp	9.86	3	73.3	73.3
Standing open water and canals	27.01	2	79.6	79.7
Calcareous grassland	402.73	12	80.5	80.4
Earth heritage	155.68	5	86.9	86.9
Woodland	683.93	10	94.1	94.1
Acid grassland	14.88	2	100.0	100.0
Total	1414.52			

Table 10: Details of SSSI condition in Bedfordshire by broad habitat type, 4 January 2008
[data from Natural England]

District level

Table 11 shows details of SSSI condition in the Bedfordshire districts. There are no SSSIs within Luton Borough. There has been no change in SSSI numbers or area (beyond the administrative alterations noted earlier) since 2006, and no significant changes in the percentage of area in favourable condition.

District	Number of sites (earth heritage)	Area (ha)	% in favourable condition	% in favourable condition in 2006
Bedford Borough	8 (1)	166.73	86.8	85.5
Mid Beds	14 (0)	490.96	92.6	92.7
South Beds	18 (4)	756.83	82.1	81.0
Total	40 (5)			

Table 11: Details of number and condition of SSSIs within Bedfordshire districts, 4 January 2008
[data from Natural England]

Trends

The area of land designated as SSSI in Bedfordshire has not changed since 2001, however, the proportion of this area that is considered to be in favourable condition has increased over this period from 78% to 86% (Figure 3). The rate of improvement was greatest from 2001 to 2005 but has now slowed. If the rate of improvement seen continues as it has from 2005 to 2007 it is unlikely that the government PSA target will be met for Bedfordshire as a whole.

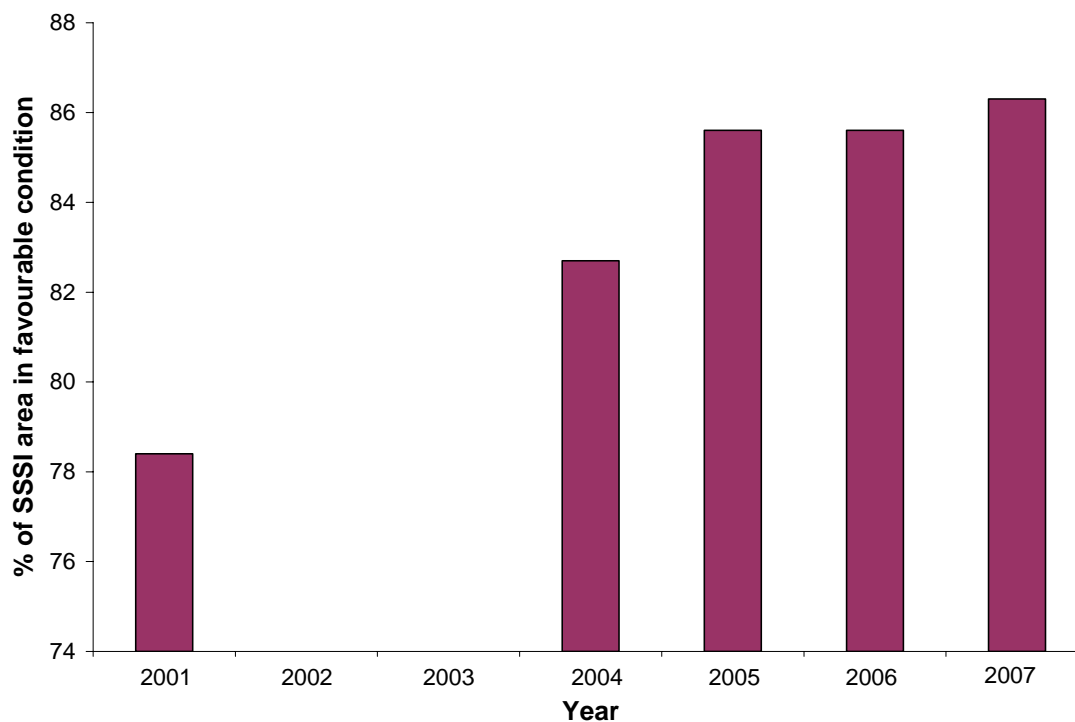


Figure 3: Change in % of SSSI area in favourable condition in Bedfordshire, 2001 – 2007
[data from Natural England]

National/regional comparisons

The government has a Public Service Agreement target for 95% of SSSI land, by area, to be in favourable condition by 2010.

Table 12 shows that Bedfordshire has a higher percentage of SSSI land in favourable condition when compared to that seen for the East of England region, or England as a whole, however, the PSA target has not yet been reached in the county, or any of its constituent districts.

Area	% of SSSI area in favourable condition	% of SSSI area in favourable condition in 2006
England	80.0	73.6
East of England	77.0	76.7
Bedfordshire	86.3	85.6
Bedford Borough	86.8	85.5
Mid Bedfordshire	92.6	92.7
South Bedfordshire	82.1	81.0

Table 12: SSSI condition at national, regional and local levels, 4 January 2008
[data from Natural England]

Indicator 5: Area (ha) of County Wildlife Sites, % monitored and % in favourable condition

Indicator results

County level

By March 2008 there were 387 CWSs in Bedfordshire and Luton, covering an area of 7420.72ha. As in previous reports this excludes the SSSI land which is included within CWS boundaries. There have been a number of changes in the last 12 months including the recognition of new sites, boundary clarifications, extensions to and amalgamations of existing sites. During this time the CWS monitoring system has been modified to make it simpler and faster.

26 CWSs or parts of CWSs were monitored during 2007; an area of 298.5ha. Of these, three sites had been surveyed before. Monitoring has now taken place on 145 of Bedfordshire's CWSs (as currently defined) since 2002 – an area of 1933ha. This represents of 37% of CWSs by number; 26% by area.

Table 13 shows that 55% of CWS monitored, by area, were in favourable condition by the end of 2007.

Condition	Area monitored (ha)	Percentage
Favourable	1067.99	55.24
Unfavourable	864.93	44.74
?	0.40	0.02
Total	1933.32	

Table 13: Area (ha) and condition of Bedfordshire's monitored CWSs, 2002-2007

21 RIGS are now recognised within Bedfordshire.

Habitat types

Habitat	Area of habitat type monitored to date (ha)	Estimated area of habitat within all Beds CWSs*	% of estimated area of habitat monitored to date	No. of monitored sites at which habitat found	% of monitored area in favourable condition
Heathland	4.0	47.08	8.5	1	0
Neutral grassland	582.11	1285.55	45.3	50	4.2
Acid grassland	138.39	176.4	78.45	14	19.8
Standing water	74.11	497.3	14.9	7	46.6
River	13.7	338.94	4.0	5	77.4
Fen, marsh, swamp	58.46	88.9	65.8	11	79.6
Calcareous grassland	66.11	534.95	12.4	10	84.0
Woodland	996.44	4182.3	23.8	66	87.2

Table 14: Details of CWS condition by broad habitat type, 2002-2007. * Areas of habitats within the county's CWSs are preliminary estimates developed in 2006 by the BRMC and include land within CWSs designated as SSSIs.

Table 14 shows the data broken down by broad habitat type. It is still difficult to draw reliable conclusions as in many cases only a small proportion of the habitat resource in CWSs has been monitored. During 2007 monitoring concentrated on neutral grasslands.

Generally a high proportion of woodland, calcareous grassland, fen/marsh/swamp and river habitats are felt to be in favourable condition however it should be noted that in the case of rivers and calcareous grassland this is based on only a small proportion of the resource having been monitored to date. Almost half the standing waters monitored were found to be in favourable condition but once again only a small proportion of the resource has been monitored.

Almost 80% of CWS acid grassland has now been monitored and worryingly only 20% is in favourable condition. Of even more concern is the fact that now 45% of the neutral grassland resource has been monitored and only 4% is in favourable condition. In the case of heathland only a small amount of the resource has been monitored, but all of this was in unfavourable condition.

District level

Table 15 shows the data for CWSs broken down by district. Sites crossing local authority boundaries have been allocated to the authority in which the majority of the site falls. Sites within Luton Borough are monitored, but a different system is used and so the area is not included within this indicator.

District	Total no. of CWS	Total area of CWS (ha)	No. monitored [% of total]	Area monitored (ha) [% of total]	% of area monitored in favourable condition
Beds Borough	123	2269.62	35 [28.5]	458.07 [20.2]	70.93
Mid Beds	147	3808.37	81 [55.1]	1233.45 [32.4]	51.55
South Beds	92	1066.41	29 [31.5]	241.8 [22.7]	44.34
Luton Borough	25	276.32	-	-	-
Total	387	7420.72	145 [37.5]	1933.32 [26.1]	55.24

Table 15: Details of CWS and monitoring results within Bedfordshire and Luton districts, 2002 - 2007

The area of land designated as CWS has increased in Mid Beds, South Beds and Luton Borough since 2006. The proportion of these areas that have been monitored is still greatest in Mid Beds however the proportions for Beds Borough and South Beds have risen considerably as a result of the last year's monitoring work. It is unlikely that the proportion monitored in Mid Beds will be able to increase much beyond its present level as there are large areas of CWS land in this district to which access for monitoring will not be granted.

The proportion of CWS monitored in favourable condition is highest for Beds Borough; this is probably due to the high proportion of monitored sites in this district being woodland, a habitat which is generally in good condition. The monitoring of a number of grassland sites in the district this year has reduced the proportion since 2006.

Table 16 shows distribution of RIGS between the districts.

District	No. of RIGS
Beds Borough	1
Mid Beds/Beds Borough	1
Mid Beds	8
Mid Beds/South Beds	1
South Beds	10

Table 16: Distribution of RIGS in Bedfordshire's districts

Trends

The number of CWSs has risen from 378 to 387 over the last twelve months. The designated area has also risen by just over 200ha from 7204ha to 7421ha. The number of RIGS has increased from 17 to 21 over the same period.

The number and area of CWSs monitored rose by a further 26 sites; approximately 300ha. The overall increase in the percentage of CWS monitored (by number and area) is shown in Figure 4.

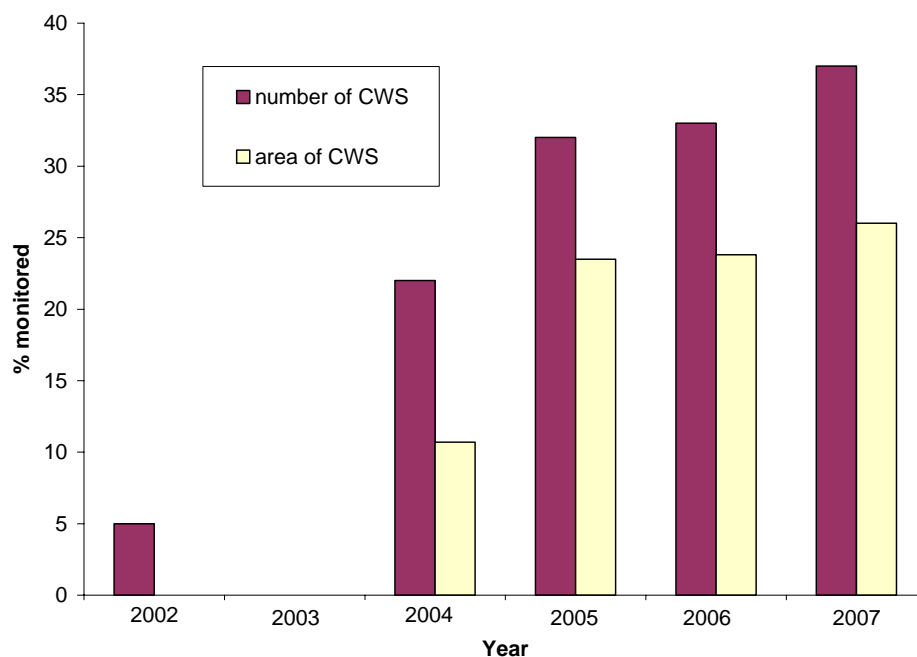


Figure 4: Increase in percentage of CWSs monitored, by number and area, 2002 – 2007. A figure for the total area of CWS was not available in 2002.

Three CWS (or parts of them) have now been monitored more than once however this is too small a sample to work out trends in condition. The 2007 figure of 55% of CWS monitored being in favourable condition is a better estimate than that for 2006 (59%) as it is based on a larger sample of sites.

National/regional comparisons

No equivalent national or regional figures have been found for the condition of CWSs.

Indicator 9: Populations of wild birds

Background

Birds are useful indicator species; found in a wide variety of habitats and at, or near, the top of the food chain, their numbers reflect conditions throughout their habitat.

The British Trust for Ornithology [BTO] runs a Breeding Bird Survey [BBS] in which its volunteers throughout the country collect data on numbers of common birds. The BBS is based on surveys of randomly selected 1km squares. Within each square two 1km transects across the square are walked on two occasions, surveyors recording the birds they see or hear. Its aim is not to establish total population sizes but to compare numbers year on year. These data form the basis for the national wild bird indicator which forms one of the framework indicators supporting the government's Sustainable Development Strategy.

It is recommended that a species must occur in 20 or more squares for accurate population trends to be established. The small size of Bedfordshire means that it is difficult to calculate statistically significant trends for any but the commonest species. It is generally felt that the changes seen in bird populations throughout the Eastern Region are representative of those occurring in Bedfordshire.

Source of data

Information concerning regional trends in wild bird populations was obtained from 'The BTO/JNCC/RSPB Breeding Bird Survey' by Richard Bashford, pp95 – 99 of The Bedfordshire Bird Report 2006, published by the Bedfordshire Bird Club.

Indicator results

Table 17 shows the changes in bird population levels in the East of England between 1994 and 2006. As the overall habitat makeup of the regional is similar to that found in Bedfordshire it is possible to use these as a guide to changes in bird populations within the county.

During this period significant changes were seen in the populations of 42 species; 27 of which increased while 15 decreased.

Significant declines of over 50% were seen for turtle dove, cuckoo and willow warbler. Other lesser, but still significant, declines were seen for stock dove, swift, skylark, yellow wagtail, song thrush, mistle thrush, starling, house sparrow, goldfinch, linnet, yellowhammer and corn bunting.

Species	% change 1994-2006	Species	% change 1994-2006
Mute Swan	68*	Blackbird	6
Canada Goose	101*	Song Thrush	-22*
Shelduck	52*	Mistle Thrush	-43*
Mallard	17*	Sedge Warbler	10
Red-legged Partridge	19*	Reed Warbler	15
Grey Partridge	-23	Blackcap	41*
Pheasant	30*	Garden Warbler	-15
Cormorant	84*	Lesser Whitethroat	9
Grey Heron	-7	Common Whitethroat	30*
Sparrowhawk	-19	Chiffchaff	17
Kestrel	-15	Willow Warbler	-51*
Moorhen	33*	Goldcrest	47*
Coot	25	Long-tailed Tit	-21
Lapwing	23	Blue Tit	38*
Feral Pigeon	-7	Great Tit	34*
Stock Dove	-23*	Coal Tit	11
Wood Pigeon	40*	Jay	20
Collared Dove	106*	Magpie	47*
Turtle Dove	-65*	Jackdaw	124*

Cuckoo	-51*	Rook	70*
Swift	-32*	Carrion Crow	87*
Green Woodpecker	174*	Starling	-30*
Great spotted Woodpecker	148*	House Sparrow	-27*
Skylark	-22*	Chaffinch	43*
Swallow	0	Greenfinch	52*
House Martin	-13	Goldfinch	-18*
Meadow Pipit	-2	Linnet	-37*
Yellow Wagtail	-31*	Bullfinch	-19
Pied Wagtail	42*	Yellowhammer	-16*
Wren	-6	Reed Bunting	32*
Dunnock	20*	Corn Bunting	-40*
Robin	31*		

*Table 17: Population changes in the East of England, 1994 – 2006 [data from The Bedfordshire Bird Report 2006] * denotes changes which are statistically significant*

National/regional comparisons

Overall the national index of breeding birds has remained relatively stable since the 1970s, although this masks the steep declines seen for farmland birds (over 50%) and woodland birds (over 30%) over this period. The majority of this decline took place in the 1970s/80s for farmland birds and 1980s/early 1990s for woodland birds and although populations have stabilised since then, no significant recovery has yet taken place [The Environment in your Pocket 2007, Defra].

This is reflected in East of England figures where from 1994-2005 the changes seen (a 5% drop in farmland birds and a 3% rise in woodland birds) were not statistically significant [The Environment in your Pocket 2007, Defra, East of England Regional Sustainable Development Indicators Factsheet, 31 January 2008].

2. NI 197 – Improved local biodiversity – proportion of Local Sites where positive conservation management has been or is being implemented

Background

This indicator has recently been developed by government as a national indicator to measure the performance on biodiversity of Local Authorities and Local Authority Partnerships. The implementation of positive conservation management is used as a proxy for assessing improvements in biodiversity as it is considered that monitoring by ecological survey would be expensive and unlikely to identify improvements in biodiversity during the reporting period.

In Bedfordshire, Local Sites are represented by County Wildlife Sites, Sites of Special Scientific Interest and Regionally Important Geological & Geomorphological Sites.

The definition of positive conservation management is given below, taken from National Indicators for Local Authorities and Local Authority Partnerships: Handbook of Definitions, published 1st April 2008 by the Department of Communities and Local Government:

'Positive conservation management is management that contributes to maintaining or enhancing the features of interest for which a site has been selected. To show that positive management has been or is being implemented on a Local Site, there must be documented evidence of appropriate management activities. The Local Sites partnership will verify the evidence. The nature of the management activity appropriate to interest features of a site will commonly be defined within one, or more, of the following:

- *site management plan*
- *management schemes – agri-environment or conservation management agreement or scheme*
- *relevant Biodiversity Action Plan (including habitat action plan, species action plan or local biodiversity action plan). Where a site is designated primarily for its geological features, the recommended management activity may be defined with a Geodiversity action plan*
- *management guidance and advice'*

Further guidance is given at www.defra.gov.uk/environment/localgovindicators/index.htm

The indicator is to be reported on annually for the position at 31st March, covering the five year period preceding this date.

Good performance will be indicated by an increase in the percentage of local sites under positive management year on year and targets will be set.

Source of data

Information on the conservation management of local sites has been gathered from those organisations in the county involved in the management of sites and also those working with private landowners advising on land management – Beds County Council, Beds Rural Communities Charity, the Farming & Wildlife Advisory Group, the Greensand Trust and the Wildlife Trust.

Indicator results

County level

As at 31st March 2008, there were 388 Local Sites within Bedfordshire. Luton Borough is not included for the purposes of this indicator. Where positive management is known to have taken place on part of a Local Site, it has been deemed to qualify.

At 149 of Bedfordshire's Local Sites, positive conservation management is known to have occurred during the preceding five year period – for details see Appendix C. This represents 38.4% of Local Sites.

District level

Table 18 gives details of the figures at district level. The variation between districts is very small.

Area	Number of local sites meeting the criteria	Total number of local sites	% of local sites where positive conservation management has been or is being implemented
Bedford Borough	49	127	38.6%
Mid Beds	60	156	38.5%
South Beds	40	105	38.1%
Bedfordshire	149	388	38.4%

Table 18: Details of NI 197 at district and county level.

Trends

As this is the first year of reporting no information is yet available on trends.

National/regional comparisons

As this is intended as a local indicator there are no plans for a national or regional dataset, however, in future it will be possible to compare results with those from other local authorities within the region or elsewhere in the country to gauge performance against that of other areas.

3. Local Development Framework – national core output indicator for biodiversity

Background

The production of an Annual Monitoring Report [AMR] as part of the development and implementation of a Local Development Framework is a requirement of the Planning and Compulsory Purchase Act 2004. Government good practice guidance outlines a set of ten national core output indicators which all local planning authorities are required to report on within their AMR.

Biodiversity is one of these core indicators. Details of the core indicator for biodiversity are given below, taken from Local Development Framework Monitoring: A Good Practice Guide, published and updated in 2005 by the Office of the Deputy Prime Minister:

8 Change in areas and populations of biodiversity importance, including:

(i) change in priority habitats and species (by type); and

(ii) change in areas designated for their intrinsic environmental value including sites of international, national, regional, sub-regional or local significance.

Definitions

- *'Change' to be considered in terms of impact of completed development, management programmes and planning agreements. Measurement includes additions and subtractions to biodiversity priority habitats (hectares) and numbers of priority species types. Regional targets for biodiversity priorities are compiled by regional biodiversity partnerships, reflecting those in the national biodiversity action plan and those agreed by local biodiversity partnerships at the sub-regional level. Priority habitats and species are found in designated sites and the wider landscape.*

- *Areas of environmental value should be measured in hectares.*

Within the AMRs there are also contextual indicators, local output indicators and significant effect indicators. These are developed by the individual local planning authority and do include some related to biodiversity however they are outside the scope of this report.

Review of reporting by Bedfordshire's local planning authorities

The most recently available AMRs cover the period 1st April 2006 – 31st March 2007 and represent the third round of reporting since the start of the Local Development Framework process.

Appendix D gives the relevant extracts concerning the biodiversity core indicator from each of the AMRs; these are summarised below:

8 i) Change in priority habitats

Beds Borough	Lists the 11 priority habitat types present in the Borough
Mid Beds	Notes documents where priority habitats are defined and extent to which habitat mapping has occurred in Bedfordshire
South Beds	No information
Luton	In an analysis of 24 housing sites, none were found to be within 100m or 500m of a priority habitat.

8 i) Change in priority species (by type)

Beds Borough	Lists the 25 priority species present in the Borough
Mid Beds	No information
South Beds	No information
Luton	For the 24 housing sites, details given of BAP priority species and CROW Section 74 species recorded within 500m

8 ii) Change in designated areas

Beds Borough	Gives details of number and area of the various types of designated area in the Borough. Notes that have been no changes during the reporting period.
Mid Beds	Table giving numbers and areas of wildlife sites within 100m and 500m of development. No indication of number of developments considered or whether development had an impact.
South Beds	No information
Luton	Gives details of changes in area of designated sites during the recording period – no comment on whether these are linked to planning or not.

General comments

Beds Borough	Within Executive Summary it is highlighted that more information is needed on biodiversity data for next year's AMR
Mid Beds	Analysis of core indicators - "Progress will continue to be made over the coming year to establish countywide biodiversity monitoring systems. Through this [in] the next AMR we will be in a position to report on changes in the habitats, species and areas as a result of development."
South Beds	"This data is not available for this monitoring period. We will work closely with the Biodiversity Recording & Monitoring Centre through the County Monitoring Group, to put procedures in place to collect and analyse relevant data for the preceding (sic) monitoring period 2007/08."
Luton	Notes complexity of reporting satisfactorily on this indicator. For this reporting year authority supplied only 24 housing sites as confirmed completions to BRMC for analysis against. No detail as to how these 24 sites were selected.

None of the authorities have reported satisfactorily against all parts of this indicator yet and all acknowledge that progress needs to be made with obtaining information for this indicator. A brief internet search of AMRs from ten local authorities elsewhere in the country shows that this is a widespread problem.

8ii is the most straightforward part of the indicator and Beds Borough and Luton Borough have reported on it, although in the latter case the reason for changes in area have not been given. Designated areas do not change frequently and when they do it is for a specific reason which will have been formally agreed by Natural England (SSSIs) or the Beds & Luton Biodiversity Working Group (CWSs). Changes to SSSIs and CWSs are reported briefly in this report and the BRMC already inform the planning authorities of boundary changes to CWSs. It would be relatively straightforward for the BRMC to provide each authority annually with a list of changes to designated areas that are felt by the Biodiversity Working Group to be the result of planning decisions, either positive or negative.

Part 8i is far more complex as the exact areas of priority habitats and the distribution and population sizes of priority species are not fully known. A clearer definition with examples would help authorities and the biodiversity community understand what is required. In an ideal world it would mean planners having maps showing the location of priority habitats and species to help them take biodiversity into account in planning decisions and then report accordingly on areas of habitat lost or provided in mitigation. In terms of priority species, far more extensive monitoring would be required before and after the completion of a permission than is at present possible.

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THE GENERAL QUALITY ASSESSMENT SCHEME – METHODOLOGIES FOR THE CLASSIFICATION OF RIVER AND ESTUARY QUALITY

The Environment Agency's method for classifying the water quality of rivers and canals is known as the General Quality Assessment scheme (GQA). It is designed to provide an accurate and consistent assessment of the state of water quality and changes in this state over time.

The scheme consists of separate windows on water quality:

- **Chemical quality** – dissolved oxygen, biochemical oxygen demand and ammonia.

An indicator of organic pollution in general, chemical monitoring assesses the quality of rivers in terms of the measurements which detect the most common types of pollution – discharges of organic wastes from sewage treatment works, from agriculture and from industry.

- **Biological quality** – using macro-invertebrates.

An indicator or overall "health" of rivers, biological monitoring can provide information about types of pollution that would be missed by chemical monitoring.

- **Nutrient status** – phosphate and nitrate.

Levels of these nutrients are most likely to be directly influenced by human activities.

What this document contains

Section 1. Offers brief background notes on the various parts of the GQA assessment scheme. These notes include tables showing "Grades at a glance" for each of the above windows. These "at a glance" tables will assist with the interpretation of any GQA printouts which may have been supplied.

Section 2. Reference is made during Section 1 to tables 1 to 9. These tables offer more detailed information on how grades are assigned and comprise the second part of this document.

For further information

Please visit our website at www.environment-agency.gov.uk. From our home page follow the links to Science and Research, then What Science Is Happening Now, then Environmental Monitoring, then GQA Methodologies.

SECTION 1 – NOTES ON THE GQA

General Quality Assessment of Rivers – Chemistry

The chemical GQA describes quality in terms of chemical measurements which detect the most common types of pollution. It allocates one of six grades (A to F) to each stretch of river, using the same, strictly defined procedures, throughout England and Wales. The process is set out below.

To each sampling site, we assign a stretch of river that the site will characterise. In the main these sites, and the monitoring, are the same as those used to take decisions on developments that will affect water quality – discharges, abstractions and changes in land use.

We use only results from the routine pre-planned sampling programmes with samples analysed by accredited laboratories. To avoid bias we ignore all extra data collected for special surveys or in response to incidents or accidents. The routine programme involves monthly sampling at some 7,000 monitoring points on over 40,000 kilometres of rivers and canals in England and Wales.

Sites are sampled a minimum of 12 times a year. We use the data collected over three years because this produces 36 samples per site, giving the required precision in making judgements about particular rivers, bearing in mind the cost of monitoring. All the results collected over the three years are included. No extreme data values are excluded.

Chemistry grades at a glance

<i>Grade</i>	<i>Quality</i>
A	Very good
B	Good
C	Fairly good
D	Fair
E	Poor
F	Bad

A grade is defined in Table 1 by standards for the determinands biochemical oxygen demand (BOD), ammonia and dissolved oxygen. A grade is assigned to each river length according to the worst determinand. These determinands are indicators of pollution that apply to all rivers, first because of the widespread risk of pollution from sewage or farms, and second because of the toxicity of ammonia and the requirement for dissolved oxygen for aquatic life, including fish.

Table 2 describes the general characteristics of each grade.

General Quality Assessment of Rivers – Biology

Each biological sampling site corresponds to a stretch of river also characterised by a chemical site (but not all stretches have a biological sampling point). Although biological and chemical sites are not always coincident they are subject to the same water quality, and as far as possible are not separated by tributaries, discharges, weirs or other potential influences on water quality.

The biological scheme is based on the macro-invertebrate communities of rivers and canals, and include insects such as mayflies and caddis flies, together with snails, shrimps, worms and many others. Macro-invertebrates can be affected by pollutants that occur infrequently or in very low concentrations and which may be missed by chemical sampling.

For biological assessment, macro-invertebrates are grouped into 83 taxa. As different taxa respond differently to pollution, they are given scores of between 1 (pollution-tolerant taxa) and 10 (pollution-sensitive taxa). The presence of taxa sensitive to pollution suggests better water quality than for sites where only pollution-tolerant taxa are found.

By comparing taxa found in the sample with those expected if the river were unpolluted, rivers can be classified into one of six grades (Table 3). There will be some rivers where water quality might permit a higher grade were it not for limits imposed by poor habitat, the nature of the river channel or the pattern of river flows.

The divisions between grades are based on the need to detect and report changes in biological quality so that any deterioration may be acted upon before it goes too far. The extremes (grades a and f) are set to reflect very good and bad quality, with intermediate grades set pragmatically between these extremes. Although the biology of these intermediate grades will differ from site to site in terms of the actual taxa that are present, the grades will reflect the relative position of the sites on a common scale between the best and worse possible quality.

The grading of waters through sampling is not precise. There is, on average, a risk of 22% that rivers will be graded incorrectly. It is unusual for this error to extend beyond the adjacent grade. There is a tendency for a pessimistic grade to be calculated as taxa are more likely to be missed than added when samples are analysed.

Biology grades at a glance

<i>Grade</i>	<i>Quality</i>
a	Very good
b	Good
c	Fairly good
d	Fair
e	Poor
f	Bad

General Quality Assessment of Rivers – Nutrients

Samples are analysed for their concentrations of two nutrients, nitrate and phosphate. Data collected over three years are used to determine average nutrient concentrations. All the results collected over three years are included. No extreme data values are excluded.

A grade from 1 to 6 is allocated for both phosphate and nitrate. These are not combined into a single nutrients grade, because they reflect different aspects of water quality. Table 4 shows the limits for each phosphate grade. Table 5 shows the limits for each nitrate grade.

There are no 'good' or 'bad' concentrations for nutrients in rivers in the way that we describe chemical and biological quality. Rivers in different parts of the country have different concentrations of nutrients. 'Very low' nutrient concentrations, for example, are not necessarily good or bad; the classification merely states that concentration in this river are very low relative to other rivers.

Phosphate grades

The descriptors used relate to the Phosphate concentrations in the grades. 'High' descriptions refer to grades where the average concentration is more than 0.1mg l^{-1} . This is the concentration which is considered indicative of possible existing or future problems of eutrophication (the enrichment of water by nutrients, especially compounds of nitrogen and/or phosphorus, causing accelerated growth of algae and higher plant forms which can disturb the balance of organisms present in the water and the quality of the water concerned.)

High concentrations of phosphate do not necessarily mean that the river is eutrophic. Other factors have to be taken into account such as the amount and type of algae present, flow rates and dissolved oxygen concentration.

Nitrate grades

The descriptors used relate to the Nitrate concentrations in the grades. 'High' descriptions refer to grades where the average concentration is more than 30mg l^{-1} . This limit very roughly corresponds to the 95 percentile limit of 50mg l^{-1} which is used in the European Community (EC) Drinking Water Directive and the EC Nitrate Directive. There is, however, no direct comparison because the methods used to calculate the 95 percentile for the purposes of these Directives are strictly laid down and cannot be estimated from average concentrations over three years.

Phosphate and Nitrate grades at a glance

<i>Grade</i>	<i>Description – Phosphate</i>	<i>Description – Nitrate</i>
1	Very low	Very low
2	Low	Low
3	Moderate	Moderately low
4	High	Moderate
5	Very high	High
6	Excessively high	Very high

SECTION 2 - TABLES

<i>GQA Grade</i>	<i>Dissolved oxygen (% saturation) 10-percentile</i>	<i>Biochemical oxygen demand (mg^l⁻¹) 90-percentile</i>	<i>Ammonia (mgNI^l⁻¹) 90-percentile</i>
A	80	2.5	0.25
B	70	4	0.6
C	60	6	1.3
D	50	8	2.5
E	20	15	9.0
F	<20	-	-

NOTES:

90-percentile compliance – the river should contain less than the specified levels for at least 90% of the time.

10-percentile compliance – levels should not fall below the standard for more than 10% of the time.

mg^l⁻¹ – milligrammes per litre

mgNI^l⁻¹ – milligrammes per litre of Nitrogen

<i>Chemical grade</i>		<i>Likely uses and characteristics*</i>
A	Very good	All abstractions Very good salmonid fisheries Cyprinid fisheries Natural ecosystems
B	Good	All abstractions Salmonid fisheries Cyprinid fisheries Ecosystems at or close to natural
C	Fairly good	Potable supply after advanced treatment Other abstractions Good cyprinid fisheries Natural ecosystems, or those corresponding to good cyprinid fisheries
D	Fair	Potable supply after advanced treatment Other abstractions Fair cyprinid fisheries Impacted ecosystems
E	Poor	Low grade abstraction for industry Fish absent or sporadically present, vulnerable to pollution** Impoverished ecosystems**
F	Bad	Very polluted rivers which may cause nuisance Severely restricted ecosystems

* Provided other standards are met

** Where the grade is caused by discharges of organic pollution

<i>Grade</i>	<i>Biological criteria</i>
a	The biology is similar to (or better than) that expected for an average, unpolluted river of this type, size and location. There is a high diversity of families, usually with several species in each. It is rare to find a dominance of any one family.
b	The biology shows minor differences from grade 'a' and falls a little short of that expected for an unpolluted river of this size, type and location. There may be a small reduction in the number of families that are sensitive to pollution, and a moderate increase in the number of individuals in the families that tolerate pollution (such as worms and midges). This may indicate the first signs of organic pollution.
c	The biology is worse than that expected for an unpolluted river of this size, type and location. Many of the sensitive families are absent or the number of individuals is reduced, and in many cases there is a marked rise in the numbers of individuals in the families that tolerate pollution.
d	The biology shows considerable differences from that expected for an unpolluted river of this size, type and location. Sensitive families are scarce and contain only small numbers of individuals. There may be a range of those families that tolerate pollution and some of these may have a high number of individuals.
e	The biology is restricted to animals that tolerate pollution with some families dominant in terms of the numbers of individuals. Sensitive families will be rare or absent.
f	The biology is limited to a small number of very tolerant families, often only worms, midge larvae, leeches and the water hog-louse. These may be present in very high numbers, but even these may be missing if the pollution is toxic. In the very worse cases there may be no life present in the river.

<i>Grade</i>	<i>Grade limit (mgPI¹) Average</i>	<i>Description</i>
1	<0.02	Very low
2	>0.02 to 0.06	Low
3	>0.06 to 0.1	Moderate
4	>0.1 to 0.2	High
5	>0.2 to 1.0	Very high
6	>1	Excessively high

NOTES:

MgPI¹ – milligrammes per litre of Phosphate

<i>Grade</i>	<i>Grade limit (mgNO₃f¹) Average</i>	<i>Description</i>
1	<5	Very low
2	>5 to 10	Low
3	>10 to 20	Moderately low
4	>20 to 30	Moderate
5	>30 to 40	High
6	>40	Very high

NOTES:

MgNO₃f¹ – milligrammes per litre of Nitrate

Condition of SSSI units (Bedfordshire) - compiled 4 January 2008
Data from Natural England

SSSI name	District	Main habitat	Unit number	Unit area (ha)	Latest assessment date	Condition
Barton Hills	SB	Calcareous grassland - lowland	1	44.18	16/06/2006	Favourable
Barton Hills	SB	Calcareous grassland - lowland	2	2.74	11/08/2004	Unfavourable declining
Biddenham Pit	BB	Earth heritage	1	0.13	02/03/2006	Favourable
Biddenham Pit	BB	Earth heritage	2	0.3	11/01/2002	Favourable
Blow's Down	SB	Calcareous grassland - lowland	1	19.72	11/07/2003	Unfavourable recovering
Blow's Down	SB	Calcareous grassland - lowland	2	13.64	11/07/2003	Unfavourable recovering
Cooper's Hill	MB	Dwarf shrub heath - lowland	1	17.77	08/06/2005	Unfavourable no change
Deacon Hill	MB	Calcareous grassland - lowland	1	25.06	15/06/2004	Favourable
Deacon Hill	MB	Calcareous grassland - lowland	2	10.3	01/06/2005	Favourable
Double Arches Pit	SB	Earth heritage	1	1.71	11/07/2001	Favourable
Dropshort Marsh	SB	Neutral grassland - lowland	1	2.66	24/06/2005	Unfavourable no change
Dunstable And Whipsnade Downs	SB	Calcareous grassland - lowland	1	38.71	16/08/2002	Unfavourable recovering
Dunstable And Whipsnade Downs	SB	Calcareous grassland - lowland	2	13.08	03/07/2006	Unfavourable no change
Dunstable And Whipsnade Downs	SB	Calcareous grassland - lowland	3	21.53	23/08/2004	Unfavourable no change
Fancott Woods And Meadows	SB	Neutral grassland - lowland	1	8.87	28/06/2007	Unfavourable no change
Fancott Woods And Meadows	SB	Neutral grassland - lowland	2	4.32	16/02/2006	Unfavourable recovering
Felmersham Gravel Pits	BB	Standing open water and canals	1	21.52	21/07/1999	Unfavourable recovering
Flitwick Moor	MB	Broadleaved, mixed and yew woodland - lowland	1	11.02	13/07/2005	Unfavourable declining
Flitwick Moor	MB	Broadleaved, mixed and yew woodland - lowland	2	9.56	12/10/2007	Favourable
Flitwick Moor	MB	Fen, marsh and swamp - lowland	3	2.63	25/10/2003	Unfavourable declining
Flitwick Moor	MB	Broadleaved, mixed and yew woodland - lowland	4	4.41	13/07/2005	Favourable
Flitwick Moor	MB	Broadleaved, mixed and yew woodland - lowland	5	31.29	12/10/2007	Favourable
Galley And Warden Hills	SB	Calcareous grassland - lowland	1	11.05	18/07/2003	Favourable
Galley And Warden Hills	SB	Calcareous grassland - lowland	2	20.73	18/07/2003	Unfavourable recovering
Galley And Warden Hills	SB	Calcareous grassland - lowland	3	15.25	18/07/2003	Unfavourable no change
Galley And Warden Hills	SB	Calcareous grassland - lowland	4	0.47	12/06/2007	Unfavourable no change
Hanger Wood	BB	Broadleaved, mixed and yew woodland - lowland	1	21.31	21/05/2007	Favourable
Hanger Wood	BB	Broadleaved, mixed and yew woodland - lowland	2	2.63	21/05/2007	Favourable
Houghton Regis Marl Lakes	SB	Calcareous grassland - lowland	1	15.55	09/06/2006	Unfavourable recovering
Houghton Regis Marl Lakes	SB	Calcareous grassland - lowland	2	5.49	08/02/2005	Unfavourable declining
Kensworth Chalk Pit	SB	Standing open water and canals	1	130.91	30/03/2006	Favourable
Kings And Bakers Woods And Heaths	SB	Earth heritage	1	8.31	22/08/2007	Unfavourable recovering
Kings And Bakers Woods And Heaths	SB	Dwarf shrub heath - lowland	2	6.6	22/08/2007	Unfavourable declining
Kings And Bakers Woods And Heaths	SB	Dwarf shrub heath - lowland	3	15.8	08/09/2003	Unfavourable no change
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	4	8.14	08/09/2003	Favourable
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	5	14.02	08/09/2003	Favourable
Kings And Bakers Woods And Heaths (Bucks)	SB	Broadleaved, mixed and yew woodland - lowland	6	3.86	19/08/2005	Favourable
Kings And Bakers Woods And Heaths (Bucks)	SB	Broadleaved, mixed and yew woodland - lowland	7	3.92	06/06/2006	Favourable
Kings And Bakers Woods And Heaths (Bucks)	SB	Neutral grassland - lowland	8	20.07	06/06/2006	Unfavourable recovering
Kings And Bakers Woods And Heaths (Bucks)	SB	Dwarf shrub heath - lowland	9	15.14	08/09/2003	Unfavourable recovering
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	10	25.34	11/06/2004	Unfavourable recovering
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	11	20.77	20/04/2006	Favourable
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	12	18.61	06/06/2006	Favourable

Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	13	22.22	09/09/2005	Favourable
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	14	10.25	09/09/2005	Favourable
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	15	11.61	19/08/2005	Favourable
Kings And Bakers Woods And Heaths	SB	Broadleaved, mixed and yew woodland - lowland	16	6.62	11/06/2004	Favourable
Kings Wood And Glebe Meadows, Houghton Conquest	MB	Neutral grassland - lowland	1	9.43	09/06/2004	Favourable
Kings Wood And Glebe Meadows, Houghton Conquest	MB	Broadleaved, mixed and yew woodland - lowland	2	26.64	09/06/2004	Favourable
Knocking Hoe	MB	Calcareous grassland - lowland	1	8.09	30/11/2007	Favourable
Marston Thrift	MB	Broadleaved, mixed and yew woodland - lowland	1	5.42	24/07/2003	Favourable
Marston Thrift	MB	Broadleaved, mixed and yew woodland - lowland	2	18.76	24/07/2003	Favourable
Marston Thrift	MB	Broadleaved, mixed and yew woodland - lowland	3	13.47	24/07/2003	Favourable
Maulden Church Meadow	MB	Neutral grassland - lowland	1	4.19	06/06/2006	Unfavourable recovering
Maulden Heath	MB	Acid grassland - lowland	1	2.77	01/06/2006	Unfavourable recovering
Maulden Heath	MB	Acid grassland - lowland	2	4.78	01/06/2006	Favourable
Maulden Wood And Pennyfather's Hill	MB	Broadleaved, mixed and yew woodland - lowland	1	50.2	30/07/1997	Favourable
Maulden Wood And Pennyfather's Hill	MB	Broadleaved, mixed and yew woodland - lowland	2	43.55	13/11/1998	Favourable
Maulden Wood And Pennyfather's Hill	MB	Broadleaved, mixed and yew woodland - lowland	3	16.61	13/11/1998	Favourable
Maulden Wood And Pennyfather's Hill	MB	Broadleaved, mixed and yew woodland - lowland	4	38.07	15/01/1998	Favourable
Nares Gladley Marsh	SB	Neutral grassland - lowland	1	5.39	27/06/2005	Favourable
Nine Acres Pit	SB	Earth heritage	1	20.42	17/06/2003	Unfavourable no change
Odell Great Wood	BB	Broadleaved, mixed and yew woodland - lowland	1	18.72	15/04/2003	Favourable
Odell Great Wood	BB	Broadleaved, mixed and yew woodland - lowland	2	13.68	08/08/2007	Unfavourable no change
Odell Great Wood	BB	Broadleaved, mixed and yew woodland - lowland	3	31.49	15/04/2003	Favourable
Odell Great Wood	BB	Broadleaved, mixed and yew woodland - lowland	4	22.06	15/04/2003	Favourable
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	1	16.07	01/08/2002	Unfavourable recovering
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	2	18.28	31/07/2002	Favourable
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	3	13.65	31/07/2002	Favourable
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	4	16.15	31/07/2002	Favourable
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	5	13.74	31/07/2002	Favourable
Potton Wood	MB	Broadleaved, mixed and yew woodland - lowland	6	7.35	31/07/2002	Favourable
Pulloxhill Marsh	MB	Neutral grassland - lowland	1	4.25	21/02/2006	Unfavourable recovering
Pulloxhill Marsh	MB	Neutral grassland - lowland	2	0.83	21/02/2006	Unfavourable recovering
Sandy Warren	MB	Acid grassland - lowland	1	7.33	28/07/2005	Favourable
Sandy Warren	MB	Dwarf shrub heath - lowland	2	9.05	16/09/2005	Unfavourable recovering
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	1	2.97	23/01/2006	Unfavourable recovering
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	2	6.07	11/11/2004	Unfavourable recovering
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	3	14.75	11/11/2004	Unfavourable recovering
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	4	21.14	15/04/2004	Unfavourable declining
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	5	29.18	11/11/2004	Unfavourable recovering
Smithcombe, Sharpshoe And Sundon Hills	SB	Calcareous grassland - lowland	6	13.38	11/11/2004	Unfavourable recovering
Southill Lake And Woods	MB	Broadleaved, mixed and yew woodland - lowland	1	25.56	06/08/2007	Favourable
Stevington Marsh	BB	Neutral grassland - lowland	1	4.68	12/10/2007	Unfavourable recovering
Stevington Marsh	BB	Calcareous grassland - lowland	2	2.94	12/10/2007	Unfavourable declining
Sundon Chalk Quarry	SB	Fen, marsh and swamp - lowland	1	1.49	22/03/2006	Unfavourable recovering
Sundon Chalk Quarry	SB	Calcareous grassland - lowland	2	25.3	18/03/2004	Favourable
Swineshead Wood	BB	Broadleaved, mixed and yew woodland - lowland	1	9.01	17/03/2006	Favourable
Swineshead Wood	BB	Broadleaved, mixed and yew woodland - lowland	2	12.85	17/03/2006	Favourable
Tebworth Marsh	SB	Fen, marsh and swamp - lowland	1	5.74	10/08/2007	Unfavourable recovering

Tilwick Meadow	BB	Neutral grassland - lowland	1	2.57	22/06/2007	Unfavourable declining
Totterhoe Chalk Quarry	SB	Calcareous grassland - lowland	1	10.59	04/11/2004	Unfavourable recovering
Totterhoe Chalk Quarry	SB	Calcareous grassland - lowland	2	1.65	22/10/2007	Unfavourable recovering
Totterhoe Chalk Quarry	SB	Calcareous grassland - lowland	3	1.23	14/06/2006	Unfavourable declining
Totterhoe Knolls	SB	Calcareous grassland - lowland	1	4.76	29/09/2004	Unfavourable recovering
Totterhoe Knolls	SB	Calcareous grassland - lowland	2	8.67	29/09/2004	Favourable
Totterhoe Stone Pit	SB	Earth heritage	1	2.21	11/01/2002	Favourable
Wavendon Heath Ponds	MB	Bogs - lowland	1	4.68	10/09/2004	Unfavourable no change
Yelden Meadows	BB	Neutral grassland - lowland	1	2.84	12/12/2005	Unfavourable no change

Site	Site Number	Unit	District	Area surveyed (ha)	Date surveyed	Surveyor	Habitat	Condition
Amphill Cemetery & The Knoll (cemetery)	201	1	M	1.4	16.9.03	PI	lowland acid grassland	U
Amphill Cemetery & The Knoll (knoll)	201	1	M	0.9	16.9.03	PI	lowland acid grassland	U
Amphill Cutting	199	1	M	2.1	16.9.03	PI	lowland neutral grassland	U
Amphill Park	1882/4/1	1	M	7.6	26.6.02	PI	lowland acid grassland	U
Amphill Park	1882/4/1	2	M	17	26.6.02	PI	lowland acid grassland	U
Amphill Park	1882/4/1	3	M	15.5	26.6.02	PI	lowland acid grassland	U
Amphill Park (Laurel Wood)	1882/4/1	4	M	9.6	26.6.02	PI	lowland acid grassland	U
Apsleybury Wood	31061/1	1	M	3	23.4.02	PI	lowland woodland	F
Arlesey Meadows	309	1	M	17	15.7.05	RL	lowland neutral grassland	U
Ashen Grove	122	1	S	3.7	1.6.04	SH	lowland woodland	F
Aspley Guise Meadows	43	1	M	1.3	16.9.03	PI	lowland neutral grassland	U
Astley Wood	61	1	B	8.8	20.5.04	PI	lowland woodland	F
Austin Cannons Meadow	?	1	B	3	27.6.07	AP	fen, marsh, swamp	F
Badgerdell Wood	150	1	S	10.6	7.5.04	PI	lowland woodland	F
Barley Brow	971	1	S	13.62	19.6.07	PI	lowland calcareous grassland	F
Begwary Brook Pits & Marsh	360	marsh	B	5.7	9.8.06	AP	fen, marsh, swamp	F
Begwary Brook Pits & Marsh	360	pit A	B	1.5	9.8.06	AP	standing water	F
Begwary Brook Pits & Marsh	360	brook	B	0.1	14.7.06	AP	river	U
Begwary Brook Pits & Marsh	360	river	B	1.8	14.7.06	AP	river	F
Biggleswade Common	340	1	M	130	13.7.05	RL	lowland neutral grassland	U
Blows Down (Cottage Bottom Field)	136/2	1	S	10	22.6.05	PI	lowland calcareous grassland	F
Blue Lagoon	305	1	M	5	28.7.04	RL	lowland calcareous grassland	F
Blunham Disused Railway	348	1	M	5.2	3.9.04	RL	lowland neutral grassland	U
Bohnurst Churchyard	308	1	B	0.57	8.5.07	LD/LJ/GB	lowland neutral grassland	F
Bottom Wood	333	1	M	6.2	26.4.05	PI	lowland woodland	F
Bowels Wood	230	1	B	8.3	22.6.04	RL	lowland woodland	F
Broadlands	298	1	M	3	13.5.04	PI	lowland woodland	F
Bromham Lake	234	1	B	4.4	18.7.05	PI	standing water	F
Bromham Park	?	1	B	1.8	2.7.07	AP	fen, marsh, swamp	F
Bromham Water Meadows	?	1	B	9.5	Aug-07	AP	lowland neutral grassland	U
Buckle Grove	31006/1	1	M	16	8.5.02	PI	lowland woodland	F
Bunkers Hill	342	1	M	32	28.7.05	RL	lowland acid grassland	U
Cainhoepark Wood	31070/3	1	M	3.7	25.4.02	PI	lowland woodland	F
Cainhoepark Wood	31070/3	2	M	4.4	25.4.02	PI	lowland woodland	F
Cainhoepark Wood	31070/3	3	M	0.5	25.4.02	PI	lowland woodland	F
Castlecroft Wood	139	1	S	3.9	9.6.04	SH	lowland woodland	F
Chicksands Grassland	290	1	M	16	13.7.04	PI	lowland neutral grassland	F
Chicksands Wood	316	1	M	109	12.5.05	PI	lowland woodland	F
Chiltern Green	276	1	S	2.8	12.7.04	PI	lowland neutral grassland	U
Church Meadows	7	1	S	4.8	13.6.07	PI	lowland neutral grassland	U
Church Meadows	7	2	S	1.6	13.6.07	PI	lowland neutral grassland	U
Church Meadows	7	3	S	1	13.6.07	PI	lowland neutral grassland	U
Claphampark Wood	238	1	B	11.6	21.4.05	PI	lowland neutral grassland	U
Cockayne Hatley Wood	373	1	M	40	16.6.04	RL	lowland woodland	F

College Wood	337	1	M	60	14.5.05	RL	lowland woodland	F
Double Arches (Churchways Quarry)	18	1	S	3.6	15.7.05	PI	lowland neutral grassland	U
Double Arches (Churchways Quarry)	18	sw 1	S	0.24	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 2	S	0.1	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 3	S	0.19	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 4	S	0.12	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 5	S	0.05	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 6	S	0.18	15.7.05	PI	standing water	F
Double Arches (Churchways Quarry)	18	sw 7	S	0.36	15.7.05	PI	standing water	U
Double Arches (Churchways Quarry)	18	sw 8	S	0.02	15.7.05	PI	standing water	U
Double Arches (Churchways Quarry)	18	sw 9	S	0.5	15.7.05	PI	standing water	F
Double Arches (Sandhouse Pit)	18	1	S	3	24.6.03	PI	lowland neutral grassland	U
Double Arches (Sandhouse Pit)	18	2	S	0.8	24.6.03	PI	lowland calcareous grassland	F
Double Arches Quarry	18	grassland	S	18	19.7.07	PI	lowland neutral grassland	U
Double Arches Quarry	18	1	S	0.2	19.7.07	PI	standing water	F
Double Arches Quarry	18	2	S	7.8	19.7.07	PI	standing water	U
Double Arches Quarry	18	3	S	0.7	19.7.07	PI	standing water	F
Duck End	191	1	M	1.6	22.7.03	PI	lowland neutral grassland	U
Duck End	191	2	M	1.7	22.7.03	PI	lowland acid grassland	U
Elstow Pit	212	1	B	13	11.7.05	PI	lowland neutral grassland	U
Everton Churchyard	374	1	M	0.5	21.7.04	RL	lowland neutral grassland	U
Everton Hill	359	1	M	1.5	16.7.05	RL	lowland neutral grassland	U
Felmersham Marshy Meadow	?	1	B	1.6	22.6.07	AP	lowland neutral grassland	U
Fenlake Meadows	?	1	B	2.05	1.8.07	AP	fen, marsh, swamp	F
Fenlake Meadows	?	2	B	2.82	1.8.07	AP	fen, marsh, swamp	F
Fenlake Meadows	?	3	B	5.03	1.8.07	AP	fen, marsh, swamp	F
Fenlake Meadows	?	4	B	6.76	1.8.07	AP	fen, marsh, swamp	F
Flit Valley (Flitton Moor)	204	1	M	2.7	9.6.04	PI	lowland neutral grassland	U
Flit Valley (Flitton Moor)	204	2	M	0.5	9.6.04	PI	fen, marsh, swamp	U
Flit Valley (Pennyfathers Moors & Grassland)	187	1	M	7.5	2.6.04	PI	lowland woodland	F
Flit Valley (Pennyfathers Moors & Grassland)	187	2	M	2.4	2.7.04	PI	fen, marsh, swamp	U
Flit Valley (Pennyfathers Moors & Grassland)	187	3	M	2	2.7.04	PI	fen, marsh, swamp	U
Flit Valley (Pennyfathers Moors & Grassland)	187	4	M	3.1	2.7.04	PI	fen, marsh, swamp	U
Flitwick Moor	204	1	M	4.7	7.7.05	PI	lowland neutral grassland	U
Flitwick Moor	204	2	M	1.3	7.7.05	PI	lowland neutral grassland	U
Flitwick Wood	1789/2	1	M	24.5	10.5.02	PI	lowland woodland	F
Folly Wood	132	1	S	4.2	7.5.04	PI	lowland woodland	F
Galsey Wood (meadow area)	257	1	B	32	Jul-07	LD/GB	lowland neutral grassland	U
George Wood, Streatley	165	1	S	5.2	6.5.04	PI	lowland woodland	U
Grange Meadow, Haynes	225	1	M	5	29.6.04	PI	lowland neutral grassland	U
Grange Meadow, Haynes	225	2	M	5	29.6.04	PI	lowland neutral grassland	U
Grange Meadow, Haynes	225	3	M	7	29.6.04	PI	lowland neutral grassland	U
Great Barford Gravel Pits	349	1	M	5.1	21.7.05	PI	standing water	U
Greencroft Wood	114	1	S	3.9	1.6.04	SH	lowland woodland	F
Harrold Odell Country Park	70	1	B	3	22.7.05	PI	lowland woodland	F

Harrold Odell Country Park	70	sw 1	B	22	22.7.05	PI	standing water	U
Harrold Odell Country Park	70	sw 2	B	4.2	22.7.05	PI	standing water	U
Harrold Odell Country Park	70	sw 3	B	0.4	22.7.05	PI	standing water	F
Harrold Odell Country Park	70	sw 4	B	0.5	22.7.05	PI	standing water	F
Harrold Odell Country Park	70	sw 5	B	0.1	22.7.05	PI	standing water	F
Harrold Odell Country Park	70	sw 6	B	0.9	22.7.05	PI	standing water	F
Harrold Odell Country Park	70	7	B	3.5	22.7.05	PI	river	F
Henlow Common/Langford Meadows	339	1	M	18	28.6.05	PI	lowland neutral grassland	U
Heydon Hill	174	1	M	1.9	8.6.05	PI	lowland woodland	U
Heydon Hill	174	2	M	6.8	8.6.05	PI	lowland acid grassland	U
Holcot Wood	30560/1	1	M	22.7	15.5.02	PI	lowland woodland	F
Home Wood	335	1	M	60	26.5.05	RL	lowland woodland	F
Horsemoor Farm Marsh	35	1	M	2.1	27.6.05	PI	fen, marsh, swamp	U
How Wood	85	1	B	2.2	20.5.04	PI	lowland woodland	F
Judge's Spinney	235	1	B	1.8	27.5.05	PI	lowland woodland	F
Kangaroo Meadow	267	1	B	0.51	9.7.07	LD/LJ	lowland neutral grassland	U
Kettledean Farm Grassland	296	1	M	2.1	1.7.05	PI	lowland calcareous grassland	F
Keyse's Spinney & Pasture	217	1	M	4.3	16.6.05	PI	lowland woodland	F
Keyse's Spinney & Pasture	217	2	M	2.5	16.6.05	PI	lowland neutral grassland	U
King's Wood, HC (Bury Farm)	229	1	M	46	5.7.04	PI	lowland neutral grassland	U
Lambert's Spinney	60	1	B	2.1	24.5.04	PI	lowland woodland	F
Lark Hill	31018/1/1	1	M	0.8	1.7.02	PI	lowland neutral grassland	F
Latch Pool & Ditch	357	ditch	M	0.4	12.10.06	AP	river	?
Latch Pool & Ditch	357	pool	M	0.05	12.10.06	AP	standing water	F
Linslade Wood	9	1	S	5.5	20.5.03	PI	lowland woodland	U
Little John's/Dame Ellen's Woods	137	1	S	3.7	9.6.04	SH	lowland woodland	F
Long Grove	123	1	S	3	25.6.04	SH	lowland woodland	F
Lower Alders	303	1	M	5.1	2.6.04	PI	lowland woodland	F
Marston Thrift non-SSSI	30580/12	1	M	18.7	16.5.02	PI	lowland woodland	U
Marston Thrift spinnies	30580/12	1	M	3.7	9.5.02	PI	lowland woodland	F
Marston Thrift spinnies	30580/12	2	M	1.4	9.5.02	PI	lowland woodland	F
Marston Thrift spinnies	30580/12	3	M	0.6	9.5.02	PI	lowland woodland	F
Maulden Heath & Grasslands	185	7	M	4.5	28.6.02/1.7.02	PI	lowland acid grassland	F
Maulden Heath & Grasslands	185	8	M	2.2	28.6.02/1.7.02	PI	lowland acid grassland	F
Maulden Heath and Grasslands	185	1	M	8.3	28.6.07	PI	lowland acid grassland	U
Maulden Heath and Grasslands	185	3	M	0.9	28.6.07	PI	lowland neutral grassland	U
Maulden Heath and Grasslands	185	4	M	4.6	28.6.07	PI	lowland neutral grassland	U
Maulden Heath and Grasslands	185	6	M	2.5	28.6.07	PI	lowland neutral grassland	U
Meadhook Wood	31002	1	M	2.5	3.5.02	PI	lowland woodland	F
Mill Rise	136	1	B	0.6	15.8.07	LD	lowland neutral grassland	U
Millbrook Complex	175	1	M	3.1	17.6.05	PI	lowland acid grassland	U
Millbrook Complex	175	2	M	0.2	17.6.05	PI	fen, marsh, swamp	F
Mogerhanger Park	334	1	M	8.9	22.7.05	RL	lowland neutral grassland	U
Molliver's Wood	231	1	B	3.6	29.7.04	RL	lowland woodland	F
Montague Wood	186	1	M	6	10.5.04	PI	lowland woodland	F

Moors Plantation	196	1	M	2.3	28.5.04	PI	lowland woodland	F
Newton Gorse	264	1	B	1.5	30.7.07	LD	lowland neutral grassland	U
Northley Farm Meadows	314	1	M	1.6	19.9.03	PI	lowland neutral grassland	U
Nunswold	304	1	M	2.9	17.6.04	RL	lowland woodland	F
Old Linslade Churchyard	10	1	S	0.73	7.6.07	PI	lowland neutral grassland	U
Old Warden Tunnel	323	1	M	3.4	5.7.05	RL	lowland calcareous grassland	U
Ouzel Valley	11	2	S	30	8.6.07 & 12.6.07	PI	lowland neutral grassland	U
Ouzel Valley	11	3	S	10	8.6.07 & 12.6.07	PI	lowland neutral grassland	U
Ouzel Valley	11	4	S	3	8.6.07 & 12.6.07	PI	lowland neutral grassland	U
Ouzel Valley	11	5	S	1	8.6.07 & 12.6.07	PI	fen, marsh, swamp	U
Ouzel Valley	11	7	S	6	8.6.07 & 12.6.07	PI		no access
Ouzel Valley	11	8	S	8	8.6.07 & 12.6.07	PI		no access
Ouzel Valley (Heath Meadow)	11	6	S	2.3	8.6.07 & 12.6.07	PI	lowland neutral grassland	U
Ouzel Valley (inc NG SSSI)	11	9	S	15	8.6.07 & 12.6.07	PI		no access
Ouzel Valley (Ouzel Meadows)	11	1	S	14	8.6.07 & 12.6.07	PI	lowland neutral grassland	U
Palmers Wood	327	1	M	61	26.5.04	RL	lowland woodland	F
Patemans Wood	297	1	M	5.9	13.5.04	PI	lowland woodland	F
Pavenham Meadow	93	1	B	2.27	7.8.07	LD	lowland neutral grassland	U
Pegsdon Grasslands	293	1	M	1.9	30.6.05	PI	lowland calcareous grassland	U
Pippin Wood	259	1	B	4.7	7.9.04	RL	lowland woodland	F
Portobello Wood	31000/1	1	M	2.9	3.5.02	PI	lowland woodland	F
Potsgrove Grasslands	40	1	M	45	27.6.05	PI	lowland neutral grassland	U
Potton Wood	372	1	M	8	14.7.05	RL	lowland woodland	F
Pulloxhill North Marsh	180	1	M	0.8	17.9.03	PI	fen, marsh, swamp	U
Pulloxhill South Grasslands	179	1	M	8.4	17.9.03	PI	lowland neutral grassland	U
Pulloxhill South Grasslands	179	2	M	2.4	17.9.03	PI	lowland neutral grassland	U
Ransom's Wood	63	1	B	2.1	24.5.04	PI	lowland woodland	F
Readshill Grassland	184	1	M	0.3	17.9.03	PI	lowland acid grassland	U
River Great Ouse (Bromham Mill)	65	1	B	1.6	20.7.05	PI	river	F
River Great Ouse (Gadsey Brook)	65	1	B	1.9	21.7.05	PI	river	U
River Great Ouse (Gadsey Brook)	65	2	B	2.1	21.7.05	PI	river	F
River Great Ouse (Pinchmill Islands)	65	1	B	1.6	20.7.05	PI	river	F
Rowney Warren	321	1	M	4	6.7.05	PI	lowland heathland	U
Salem Thrift	86	1	B	8.2	14.6.04	RL	lowland woodland	F
Salford Wood	30649	1	M	1	9.5.02	PI	lowland woodland	F
Sallowsprings Wood	120	1	S	2.1	30.6.04/16.7.04	SH	lowland woodland	F
Sandy Cemetery	344	1	M	1.7	20.7.04	RL	lowland acid grassland	F
Sandy Disused Railway	369	1	M	17	15.7.05	RL	lowland neutral grassland	U
Sharnbrook Summit	101	1	B	18.62	3.5.07	LD/LJ	lowland neutral grassland	U
Sheerhatch Wood	332	1	B	71	18.6.04	RL	lowland woodland	F
Shillington Churchyard	294	1	M	1.2	19.9.03	PI	lowland neutral grassland	F
Shillington Meadow	292	1	M	1.9	19.9.03	PI	lowland neutral grassland	U
Simpsonhill Plantation	31010/5	1	M	14.5	21.5.02	PI	lowland woodland	U
Sir Johns Wood	363	1	M	8.7	15.7.04	RL	lowland woodland	F
Skimpot Wood	140	1	S	2.5	8.6.04	SH	lowland woodland	F

Appendix B2: County Wildlife Site monitoring results, 2002 - 2007

Speedsdairy Wood	31071	1	M	3.4	24.4.02	PI	lowland woodland	U
Spoondell	131	1	S	0.98	19.6.07	PI	lowland calcareous grassland	F
Stanbridge Meadows	29	1	S	4.1	10.6.04	PI	lowland neutral grassland	F
Stanners Wood	141	1	S	3.24	8.6.04	SH	lowland woodland	F
Steppingley Hospital Grounds	1870/1	1	M	0.8	10.5.02	PI	lowland neutral grassland	U
Stevington Meadow	?	1	B	2.7	23.9.07	AP	fen, marsh, swamp	F
Stewartby Lake	209	1	M	23	14.6.04	PI	lowland calcareous grassland	F
Stockgrove Country Park	17	1	S	13.69	6.6.07	PI	lowland acid grassland	F
Stockgrove Country Park	16/17	2	S	0.5	11.6.03/12.6.03	PI	lowland acid grassland	F
Suncroft Pit	129	1	S	5.31	19.6.07	PI	lowland calcareous grassland	U
Sundon Wood	162	1	S	5.4	5.5.04	PI	lowland woodland	F
Swiss Garden Woodland	346	1	M	3	26.5.05	PI	lowland woodland	F
Tebworth Meadow	27	1	S	5.07	15.6.07	PI	lowland neutral grassland	U
Temple Grove	31072/2	1	M	2.1	24.4.02	PI	lowland woodland	U
The Paddocks	763	1	S	4.1	22.6.05	PI	lowland neutral grassland	U
The Pinnacle	598	1	M	5.9	12.7.05	RL	lowland acid grassland	U
Thorn Spring	135	1	S	3.9	3.6.04	PI	lowland woodland	U
Thrift Wood	181	1	M	3.4	27.5.04	PI	lowland woodland	F
Tiddenfoot Park	5	1	S	4	12.6.03	PI	lowland acid grassland	F
Tingley Field Plantation	31066/1	1	M	7.8	11.6.02	PI	lowland woodland	F
Turvey - Bromham Disused Railway	69	1	B	5.7	23.6.05	PI	lowland neutral grassland	U
Upper Alders	301	1	M	16.5	29.7.05	PI	lowland woodland	F
Upper Alders	301	2	M	16.5	29.7.05	PI	fen, marsh, swamp	F
Utcoate Grange Meadow	42	1	M	0.8	6.7.04	PI	lowland acid grassland	F
Utcoate Grange Meadow	42	2	M	0.5	6.7.04	PI	lowland acid grassland	U
Warren Wood	310107	1	M	26	2.5.02	PI	lowland woodland	F
Washer's & Daintry Woods	50	1	M	62.5	23.5.05	PI	lowland woodland	U
Watergate Meadow, Tebworth	30304/1	1	M	1.6	4.7.02	PI	lowland neutral grassland	F
Wavendon Heath Fullers Earth Quarry	39	1	M	10	25.6.03	PI	lowland acid grassland	U
West Wood	106	1	B	81.7	21.4.05	PI	lowland woodland	F
Whipsnade Heath	118	1	S	11	14.6.05	PI	lowland woodland	F
Whipsnade Heath	118	2	S	1.5	14.6.05	PI	lowland neutral grassland	U
Wilstead Wood	219	1	B	67	16.5.05	PI	lowland woodland	F
Wood near Washers Wood	49	1	M	2.3	11.5.04	PI	lowland woodland	F
Wootton Wood (grassland)	59	1	B	13.3	27.6.07	LD	lowland neutral grassland	U
Wrest Park Grounds	183	1	M	2	15.6.04	PI	lowland neutral grassland	U
Wymington Meadow	115	1	B	1.42	3.5.07	LD/LJ	lowland neutral grassland	U
Yelden Field	366	1	B	4.92	21.5.07	LD/LJ	lowland neutral grassland	U
Zwetsloots Pits	356	A	M	1.2	22.6.06	AP	standing water	F
Zwetsloots Pits	356	B	M	10.7	22.6.06	AP	standing water	F
Zwetsloots Pits	356	C	M	12.4	22.6.06	AP	standing water	F
Zwetsloots Pits	356	D	M	0.1	22.6.06	AP	standing water	F
Zwetsloots Pits	356	E	M	0.1	22.6.06	AP	standing water	U
Zwetsloots Pits	356	ditch	M	0.7	22.6.06	AP	standing water river	U

Haynes Church End Marsh	220	4	M	3-5	4-6-04	PI	fen, marsh, swamp	Destroyed
Above data taken from:								
Condition Recording System for County Wildlife Sites' prepared on behalf of Mid Beds DC and the Beds & Luton Wildlife Working Group by the Greensand Trust, June 2002, Phil Irving.								
Mid Beds County Wildlife Site Work 2003' prepared on behalf of Mid Beds DC by the Greensand Trust, December 2003, Phil Irving.								
County Wildlife Site Monitoring & Survey Work 2004' carried out on behalf of Mid Beds DC & Beds CC by the Greensand Trust, the Ivel & Ouse Countryside Project and the North Chilterns Trust, September 2004, Phil Irving.								
County Wildlife Site Condition Monitoring Programme 2005' carried out on behalf of Mid Beds DC, Beds CC and the Forestry Commission by the Greensand Trust and the Ivel & Ouse Countryside Project, September 2005, Phil Irving.								
Reports on CWS monitoring at Begway Brook Pits, Latch Pool & Ditch and Zwetsloots Pits CWSs carried out for the Bedfordshire Otters and Rivers Project by Amanda Proud, 2006.								
Reports on CWS monitoring carried out in 2007 by Phil Irving (Greensand Trust), Laura Downton (Wildlife Trust) and Amanda Proud (BRCC)								

County Wildlife Site	District	Qualifies	why and how?
Astey Wood CWS	B		
Austin Cannons Meadow CWS	B	Y	advice - JC
Barwick Wood CWS	B		
Begwary Brook Pits CWS	B	Y	advice - LD
Biddenham Pit SSSI	B	Y	advice - NE website
Birchfield Farm Meadows CWS	B		
Bolnhurst Churchyard CWS	B	Y	plan, advice - LD
Bowels Wood CWS	B		
Bromham Bridge RIGS	B		
Bromham Lake CWS	B	Y	plan - JC
Bromham Park CWS	B		
Bromham Water Meadows CWS	B		
Brownage and Louse Acre Woods CWS	B		
Brown's Wood CWS	B	Y	Beds BC plan - SR
Bushmead Big Wood CWS	B		
Bushmead CWS	B		
Bushmead Meadows CWS	B		
Carltonhall Wood CWS	B		
Castle Dairy Farm Meadows CWS	B		
Chapel End Meadows, Wilstead CWS	B		
Chellington Hill Farm CWS	B		
Claphampark Wood CWS	B	Y	plan - JC
Cleat Hill CWS	B		
Cockle Spinney CWS	B		
Colworth Thicket CWS	B	Y	scheme - JC
Cople Pits CWS	B	Y	WT plan - SR
Coronation Pit CWS	B	Y	advice - JC
Coxfield Farm Grassland CWS	B		
Dungee Wood and Odell Plantation CWS	B	Y	advice - CW
Elstow Pit CWS	B		
Exeter Wood CWS	B		
Felmersham Gravel Pits SSSI	B	Y	plan - JC
Felmersham Marshy Meadow CWS	B		
Fenlake Meadows CWS	B	Y	Beds BC plan - JC
Forty Acre Woods CWS	B		
Forty Foot Lane (West) CWS	B	Y	advice - JC
Forty Foot Lane CWS	B	Y	advice - JC
Foster Hill Road Cemetery CWS	B		
Francroft Wood CWS	B		
Freer's Wood CWS	B		
Galsey Wood CWS	B	Y	advice, plan - LD
Great and Little Early Groves CWS	B		
Great and Little Woods, Ravensden CWS	B		
Great Barford House Grassland CWS	B		
Great Hayes Wood CWS	B	Y	scheme - JC
Great Oaks Wood CWS	B		
Halsey Wood CWS	B		
Hammerhill Farm Meadow CWS	B		
Hanger Wood and Oxleys CWS	B	Y	advice - JC; EWGS on part (The Thorns) - PI
Harrold Country Park CWS	B	Y	plan - JC, RL; advice, scheme & BAP - BW
Harrold Lake CWS	B		
High Farm Meadow CWS	B		
Hinwick Roman Road CWS	B	Y	advice - JC
Hobbs-Green Wood CWS	B		
Holywell Marsh CWS	B		
Honeydon Road Verge CWS	B	Y	plan - JC
Hook and Home Woods CWS	B		
Hooked Lane Meadows CWS	B		
How Wood CWS	B		
Judge's Spinney CWS	B	Y	plan - JC
Kangaroo Meadow CWS	B	Y	advice - JC, LD
Kempston Hardwick Pit CWS	B	Y	advice - JC
Kempston West End CWS	B		
Kempston Wood CWS	B	Y	plan - JC
Keysoepark Wood CWS	B		
Lady Wood CWS	B		
Lambert's Spinney CWS	B		
Little Barford CWS	B		
Little Catsey Wood CWS	B		
Manor Wood CWS	B		
Melchbourne Park CWS	B		
Melchbourne Woods CWS	B		
Mill Rise, Turvey CWS	B		
Milton Ernest Pits CWS	B	Y	plan - BW
Molliver's Wood CWS	B		
Mowsbury Hill CWS	B	Y	plan - JC
New Wood CWS	B		
Newton Gorse CWS	B	Y	advice - JC
Newton Gorse Green Lane CWS	B	Y	advice - JC
Newton Park Grassland CWS	B		
Northwood Lane Meadows CWS	B		
Nun Wood CWS	B		
Odell Great Wood CWS	B		
Palaceyard Wood CWS	B		

Park Wood CWS	B	Y	advice - CW
Pavenham Meadow CWS	B	Y	plan - LD
Penn and Worley's Woods CWS	B		
Pippin Wood CWS	B		
Priory Country Park CWS	B	Y	Beds BC plan - JC; plan - LD
Priory Park Railway CWS	B	Y	Beds BC plan - JC
Putnoe Wood CWS	B	Y	Beds BC plan - JC
Radwell Pits CWS	B		
Ransom's Wood CWS	B		
River Great Ouse CWS	B		
Round Wood, Sharnbrook CWS	B		
Salem Thrift CWS	B	Y	Beds CC plan - SR
Sandy Lane CWS	B	Y	advice - JC
Sharnbrook Castle Close CWS	B	Y	advice - JC; plan - RL
Sharnbrook Summit CWS	B	Y	advice - LD
Sheerhatch Wood CWS	B		
Spanoak Wood and Tilbrook Bushes CWS	B	Y	advice - JC
Spencer's Wood CWS	B		
St. John's Station CWS	B		
St. Macute's Wood CWS	B		
Stevington Marsh CWS	B		
Stevington Meadow CWS	B		
Swineshead Wood CWS	B	Y	plan - JC
Temple Wood CWS	B		
Templegrove Spinney CWS	B		
The Slipe CWS	B		
Thurleigh Cutting CWS	B	Y	plan - JC
Tilwick Meadow SSSI	B		
Tilwick Wood CWS	B		
Turvey - Bromham Disused Railway CWS	B	Y	advice - JC
Twin Wood CWS	B		
West Wood CWS	B	Y	plan - JC
Wilden Road Verges CWS	B	Y	plan - JC
Willington Moat CWS	B		
Wilstead Meadows CWS	B		
Wilstead Wood CWS	B	Y	FC plan - SR
Wootton Wood CWS	B	Y	advice - LD
Wyboston Pits CWS	B		
Wymington Meadow CWS	B	Y	advice - LD
Yarl's Wood CWS	B		
Yelden Field CWS	B	Y	advice - LD
Yelden Meadows SSSI	B		
Yelnow Lane CWS	B	Y	advice - JC
Amphill Cemetery and the Knoll CWS	M	Y	advice - LD
Amphill Park CWS	M	Y	plan - SR; advice - JC
Amphill Tunnel CWS	M		
Apesfield Spring CWS	M		
Apsleybury Wood CWS	M		
Arlesey Meadows CWS	M	Y	scheme - LD
Arlesey Road Pit CWS	M		
Aspley Guise Meadows CWS	M	Y	advice - LD
Aspley Heath Field CWS	M		
Battlesden Lake CWS	M		
Beal's Wood CWS	M		
Biggleswade Common CWS	M	Y	scheme - RL
Birchall's Wood CWS	M		
Blue Lagoon CWS	M	Y	advice - JC
Blunham Disused Railway CWS	M	Y	advice - JC
Bottom Wood CWS	M	Y	advice - JC
Boughton End Grasslands CWS	M		
Braystone CWS	M	Y	advice - JC, LD
Briar Stockings Woods CWS	M		
Broadlands CWS	M		
Brogborough Lake CWS	M		
Broom Quarry RIGS	M	Y	advice - RL
Buckle Grove CWS	M		
Bunker's Hill CWS	M	Y	plan, BAP (RSPB) - PI
Bushycommon Wood CWS	M		
Cainhoe Lakes CWS	M	Y	advice - JC
Cainhoe Quarry RIGS	M		
Cainhoepark Wood CWS	M		
Caswell Lane Field CWS	M		
Charlie Wood CWS	M		
Chicksands Grassland CWS	M	Y	advice - PI, scrub clearance done - SR
Chicksands Wood CWS	M	Y	FC plan - SR
Cityfield Farm Pits CWS	M		
Cockayne Hatley Wood CWS	M		
College Wood CWS	M	Y	FC plan - SR
Cooper's Hill CWS	M	Y	advice - JC, plan - LD
Cranfield Manor Farm Meadow CWS	M		
Deacon Hill CWS	M	Y	scheme - PI
Deepdale Quarry, Potton RIGS	M	Y	Beds CC aftercare scheme - JC
Duck End Marshy Grassland CWS	M	Y	advice - JC; scheme, plan - SR, PI
Dunton Green Lane CWS	M	Y	advice - JC
Eversholt Millennium Pond CWS	M		

Everton Churchyard CWS	M		
Everton Hill CWS	M		
Flit Valley CWS	M	Y	plans (Flitton Moor), BAP willows, scheme - Beds CC, D Catlin - SR, PI
Flitwick Manor CWS	M	Y	plan - SR
Flitwick Moor CWS	M	Y	advice & part scheme - JC; plan - LD
Flitwick Wood CWS	M	Y	plan - JC
Foxhole Wood CWS	M		
Grange Meadow, Haynes CWS	M		
Great Barford Gravel Pits CWS	M		
Grove Wood CWS	M		
Harlington Village Pond CWS	M	Y	advice - PI, work done this winter - SR
Hay Wood, Woburn CWS	M		
Henlow Park Woods CWS	M		
Henlow Pit CWS	M		
Heydon Hill CWS	M		
Hill Farm Pit CWS	M		
Hill's Plantation CWS	M		
Holcot Wood CWS	M	Y	plan - JC
Home Wood, Northhill CWS	M	Y	FC plan - SR
Home Wood, Potsgrove CWS	M		
Horsemoor Farm Marsh CWS	M		
Hungerhill Wood and New Planting CWS	M		
Ickwell Bury CWS	M		
Keepers Warren CWS	M		
Kettledean Farm Grassland CWS	M		
Keyse's Spinney CWS	M		
King's Wood, Houghton Conquest CWS	M	Y	plan - JC; advice - BW; plan/scheme - PI
Kingshoe Wood CWS	M		
Knocking Hoe CWS	M	Y	advice - LD
Langford Common CWS	M	Y	plan - JC; scheme - RL
Lark Hill CWS	M		
Latch Pool and Ditch CWS	M		
Lidlington Pit CWS	M		
Lord's Wood CWS	M		
Lower Alders CWS	M	Y	advice - JC; plan - PI
Lowe's Wood CWS	M		
Marston Thrift CWS	M	Y	plan - JC
Maulden Church Meadow SSSI	M	Y	plan, scheme - JC, PI; advice, scheme, BAP - BW
Maulden Woods and Heaths CWS	M	Y	FC & GST plans, CSS scheme - SR, PI
Meadhook Wood CWS	M		
Millbrook CWS	M		
Millbrook Pilling Pit CWS	M		
Millbrook Warren CWS	M		
Milton Wood CWS	M		
Mogerhanger Park CWS	M	Y	advice - JC
Montague Wood CWS	M		
Moors Plantation CWS	M	Y	plan - PI
Northley Farm Meadows CWS	M		
Nunswood CWS	M		
Old Warden Church CWS	M		
Old Warden Disused Railway CWS	M	Y	plan for tunnel section - RL; advice - LD
Palmer's Shrubs CWS	M		
Palmer's Wood CWS	M		
Pateman's Wood CWS	M		
Pegsdon Grasslands CWS	M	Y	advice - LD
Poppyhill Pits CWS	M		
Portobello Wood CWS	M		
Potsgrove Grasslands CWS	M	Y	scheme - PI
Potton Wood CWS	M	Y	FC plan - JC
Pulloxhill Marsh SSSI	M	Y	advice - BW
Pulloxhill North Marsh CWS	M		
Pulloxhill South Grasslands CWS	M	Y	plan, scheme (CSS) - PI, SR
Quest Pit RIGS	M	Y	advice - RL
Readshill Grassland CWS	M		
River Flit CWS	M		
Rivers Ivel and Hiz CWS	M		
Rod Wood and Steppingley Copse CWS	M		
Rookery Clay Pit CWS	M		
Rowney Warren CWS	M	Y	FC plan - JC
Salford Wood CWS	M	Y	plan - JC
Sandy Cemetery CWS	M		
Sandy Disused Railway CWS	M		
Sandy Meadows CWS	M		
Sandy Warren CWS	M	Y	plan - JC; plan/BAP (RSPB) - PI
Segenhoe Church RIGS	M		
Shillington Churchyard CWS	M	Y	advice - LD
Shillington Meadow CWS	M	Y	advice - LD
Silsoe Pit CWS	M	Y	advice - JC
Simpsonhill Plantation CWS	M	Y	advice - JC
Sir John's Wood CWS	M		
South Mills Pits CWS	M		
Southill Lake and Woods CWS	M		
Speedsdairy Wood CWS	M		
St Mary's Church, Clophill RIGS	M		
Stanford Plantation CWS	M	Y	FC plan - SR

Steppingley Hospital CWS	M	Y	advice - JC; BAP (annual haycut done) - PI
Stewartby Lake CWS	M	Y	plan - JC
Sutton Fen and Woods CWS	M		
Swiss Garden Woodland CWS	M	Y	advice - JC; plan - RL
Temple Grove CWS	M		
The Pinnacle CWS	M	Y	plan - RL
Thrift Wood CWS	M		
Tingley Field Plantation CWS	M		
Upper Alders CWS	M	Y	advice - JC; plan/scheme - PI
Utcoate Grange Meadow CWS	M	Y	scheme - PI
Warden Abbey Grasslands CWS	M		
Warden Great Wood CWS	M		
Warden Little Wood CWS	M		
Warden Warren CWS	M		
Warren Villas CWS	M	Y	plan - JC
Warren Wood CWS	M		
Washer's and Dainry Woods CWS	M	Y	advice, plan written - PI
Watergate Meadow CWS	M		
Waterloo Thorns CWS	M		
Wavendon Heaths and Aspley Wood CWS	M	Y	scheme (WGS) - PI
White Wood CWS	M		
Woburn Park CWS	M		
Woburn Park Grassland CWS	M		
Wood End Alders CWS	M		
Wood near Washer's Wood CWS	M		
Woodbury Moats and Spinneys CWS	M		
Woodbury Sinks CWS	M		
Wrest Park Grounds CWS	M		
Zwetsloots Pits CWS	M		
Ashen Grove CWS	S		
Badgerdell Wood CWS	S		
Barley Brow CWS	S		
Barton Gravel Pits CWS	S	Y	plan - SR
Barton Hills CWS	S	Y	plan - JC
Barton Pit CWS	S		
Barton Quarry CWS	S	Y	plan - SR
Barton scrubby grasslands CWS	S	Y	advice - LD
Blow's Down CWS	S	Y	plan - JC; advice - LD
Bramagar Wood CWS	S		
Castlecroft Wood CWS	S		
Chalton scrub and grassland CWS	S		
Chamberlain's Barn RIGS	S		
Chiltern Green CWS	S		
Church Meadows CWS	S	Y	BAP (pollarding) - PI
Clements End Field CWS	S		
Clipstone Brook CWS	S	Y	BAP (willow pollarding) - PI
Dedmansey Woods CWS	S		
Dell Wood CWS	S		
Dog Kennel Down CWS	S	Y	plan - PI
Double Arches Pit CWS	S	Y	plan - PI
Dropshort Marsh SSSI	S	Y	plan - JC
Dunstable and Whipsnade Downs CWS	S	Y	plan, scheme - JC, advice - LD
Dunstable Meadow CWS	S		
Dunstable to Luton disused railway CWS	S	Y	advice - JC
East Hyde Riverside CWS	S		
Eaton Bray Meadow CWS	S		
Edlesborough Hill CWS	S		
Eggington Fields CWS	S		
Fancott Woods and Meadows CWS	S	Y	plan - JC, LD; scheme - BW
Flasket's Wood CWS	S		
Folly Wood CWS	S	Y	plan - LD
Foster Avenue CWS	S		
Galley and Warden Hills CWS	S	Y	plan - JC
George Wood, Hyde CWS	S		
George Wood, Streatley CWS	S		
Graves Wood CWS	S		
Greencroft Wood CWS	S		
Hardingdell and Fernell's Woods CWS	S		
Heath Wood, Leighton Buzzard CWS	S	Y	plan - PI
Heath Wood, Whipsnade CWS	S		
Hipsey Spinney CWS	S		
Holt Wood CWS	S		
Horsley's Wood CWS	S		
Houghton Regis Chalk Pit CWS	S	Y	advice - JC
Hudnall Corner CWS	S		
Hudnall Field CWS	S		
Icknield Way CWS	S		
Kensworth Chalk Pit SSSI	S	Y	advice - JC, positive m'tment of RIGS - MO
Kidney and Bull Woods CWS	S	Y	plan for LBC part - PI
King's and Baker's Woods and Heaths CWS	S	Y	plan - JC; plan/scheme/BAP - PI
Ledburn RIGS	S		
Linslade Wood CWS	S	Y	plan - PI
Little John's and Dame Ellen's Woods CWS	S		
Long Grove CWS	S		
Luton Hoo Park CWS	S	Y	plan - JC

Munday's Hill Quarry RIGS	S		
New Trees Quarry RIGS	S		
Nine Acres Pit SSSI	S		
Old Linslade Churchyard CWS	S		
Oldhill Wood CWS	S		
Oosey Hill CWS	S		
Ouzel Valley CWS	S	Y	plans/schemes/BAP (willow pollarding) - PI
Pedley Hill CWS	S		
Poplars Nursery CWS	S	Y	plan - JC
Rackley Hill Pit CWS	S		
Ravensdell Wood CWS	S	Y	advice on grassland - LD
River Lea CWS	S		
River Ouzel CWS	S	Y	BAP (pollarding & otter holts) - PI, SR
Rock Lane CWS	S		
Round Wood, Hyde CWS	S		
Rushmere Manor Woods CWS	S		
Rushmere Park CWS	S		
Sallowspring Wood CWS	S		
Sewell Disused Railway CWS	S	Y	plan - JC
Sharpenhoe Grove CWS	S		
Skimpot Wood CWS	S		
Spoondell CWS	S		
St Nicholas' Church, Barton RIGS	S		
Stanbridge and Blackgrove Woods CWS	S		
Stanbridge Meadows CWS	S	Y	plan, advice - PI
Stanner's Wood CWS	S		
Stockgrove Country Park CWS	S	Y	plan - JC; plan/scheme - PI
Studham Common CWS	S	Y	plan - PI
Suncote Pit CWS	S		
Sundon Chalk Pits CWS	S		
Sundon Hills CWS	S	Y	plan - JC; advice, plan, BAP - BW
Sundon Wood CWS	S		
Tebworth Marsh SSSI	S		
Tebworth Meadow CWS	S		
The Linces CWS	S	Y	advice - LD
The Paddocks CWS	S	Y	advice - JC
Thorn Spring CWS	S		
Tiddenfoot Park CWS	S	Y	plan - PI, advice - JC
Toddington Manor Lakes CWS	S		
Totternhoe and Sewell Quarries CWS	S	Y	plan for part - SR
Totternhoe Knolls CWS	S	Y	advice, scheme - JC, advice - LD
Totternhoe Stone Pit SSSI	S	Y	scrub control done - NE website
Well Head CWS	S	Y	advice - BW
Wentworth Fields CWS	S		
Whipsnade Heath CWS	S	Y	plan - RL
Whipsnade WAP Grasslands CWS	S	Y	advice, scheme - JC
Whipsnade Wood CWS	S		
Whitehill Wood CWS	S		
Woodcock Wood CWS	S		

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Biodiversity

<p>Indicator C8: Change in areas and populations of biodiversity importance, including</p> <p>i) change in priority habitats and species (by type) and</p> <p>ii) change in areas designated for their intrinsic environmental value including sites of international, regional, sub-regional or local significance</p>	
<p>Draft Regional Target: East of England Priority habitats targets</p> <p>Local Target: Biodiversity Action Plan targets</p> <p>Progress:</p>	
<p>The following information provides baseline statistics against which future changes can be monitored</p> <p>i) Priority habitats and species that are present in the Borough (the list includes national priority habitats and species and those identified as local priorities by the Bedfordshire and Luton Biodiversity Forum).</p>	
<p>Habitats:</p> <p>Ancient and/or species rich hedgerows</p> <p>Cereal field margins</p> <p>Coastal and floodplain grazing marsh</p> <p>Eutrophic standing waters</p> <p>Lowland calcareous grassland</p> <p>Lowland Meadows</p> <p>Lowland wood pasture and parkland</p> <p>Reedbeds</p> <p>Lowland mixed deciduous woodland</p> <p>Wet woodland</p> <p>Marshy grassland, marsh and swamp (local priority)</p>	<p>Species:</p> <p>Great crested newt</p> <p>Skylark</p> <p>Linnet</p> <p>Reed bunting</p> <p>Spotted flycatcher</p> <p>Tree sparrow</p> <p>Grey partridge</p> <p>Bullfinch</p> <p>Turtle dove</p> <p>Song thrush</p> <p>Water vole</p> <p>Barbastelle bat</p> <p>Brown hare</p> <p>European otter</p> <p>Pipistrelle bat</p> <p>Fine lined pea mussel</p> <p>Bordered gothic moth</p> <p>Common fat foot moth</p> <p>Pale shining brown moth</p> <p>Argent and sable moth</p> <p>Shepherds needle</p> <p>Spreading hedge parsley</p> <p>All bat species (local priority)</p> <p>Grey mouse-ear (local priority)</p> <p>Spined loach (local priority)</p>

<p>ii) The Borough does not contain any internationally designated areas and there are no designated sites of regional or sub-regional significance.</p> <p>The following Sites of Special Scientific Interest are of national significance and are statutorily protected. No new SSSI have been designated in the reporting period.</p> <p>The following Local Nature Reserves are of local significance and are statutorily protected. One new LNR has been proposed in the reporting period at Harrold Odell Country Park (57ha). It is hoped that confirmation of this designation will be received in the 07/08 reporting period.</p> <p>(Source: Bedfordshire County Council, English Nature, www.bedsbionet.org.uk)</p>	<p>Local Nature Reserves:</p> <p>Bromham Lake (10.86ha)</p> <p>Brickhill Allotments/Park Wood (5.2ha)</p> <p>Browns Wood (6.04ha)</p> <p>Fenlake Meadows (19.14ha)</p> <p>Hill Rise (0.86ha)</p> <p>Mowsbury Hill (2.76ha)</p> <p>Putnoe Wood (10.34ha)</p> <p>TOTAL – 55.2ha</p> <p>The Borough also contains county wildlife sites, these are listed below. These sites are of local importance and are not statutorily protected. No new CWS were designated in the reporting period and no existing CWS were lost.</p> <p>County Wildlife Sites:</p> <p>Astey Wood</p> <p>Austin Cannons Meadow</p> <p>Barwick Wood</p> <p>Biddenham Pit (also SSSI)</p> <p>Birchfield Farm Meadows</p> <p>Bolnhurst Churchyard</p> <p>Bowels Wood</p> <p>Bromham Lake (also LNR)</p> <p>Bromham Park</p> <p>Bromham Water Meadows</p> <p>Brownage and Louse Acre Woods</p> <p>Brown's Wood (also LNR)</p> <p>Bushmead Big Wood</p> <p>Bushmead</p> <p>Bushmead Meadows</p> <p>Carltonhall Wood</p> <p>Castle Dairy Farm Meadows</p> <p>Chapel End Meadows, Wilstead</p> <p>Chellington Hill Farm</p> <p>Claphampark Wood</p> <p>Cleat Hill</p>	<p>SSSI:</p> <p>Biddenham Pit (0.43ha)</p> <p>Felmersham Gravel Pits (21.52ha)</p> <p>Hanger Wood (23.94ha)</p> <p>Odell Great Wood (85.95ha)</p> <p>Swineshead Wood (21.86ha)</p> <p>Stevington Marsh (7.62ha)</p> <p>Tilwick Meadow (2.57ha)</p> <p>Yelden Meadows (2.84ha)</p> <p>TOTAL – 166.73ha</p> <p>Mill Rise, Turvey</p> <p>Milton Ernest Pits</p> <p>Molliver's Wood</p> <p>Mowsbury Hill</p> <p>New Wood</p> <p>Newton Gorse</p> <p>Newton Gorse Green Lane</p> <p>Newton Park Grassland</p> <p>Northwood Lane Meadows</p> <p>Nun Wood</p> <p>Odell Great Wood</p> <p>Palaceyard Wood</p> <p>Park Wood</p> <p>Pavenham Meadow</p> <p>Penn and Worley's Woods</p> <p>Pippin Wood</p> <p>Priory Country Park</p> <p>Priory Park Railway</p> <p>Putnoe Wood</p> <p>Radwell Pits</p> <p>Ransom's Wood</p> <p>Round Wood, Sharnbrook</p>
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Cockle Spinney Colworth Thicket Cople Pits Coxfield Farm Grassland Dungee Wood and Odell Plantation Elstow Pit Exeter Wood Felmersham Gravel Pits (also SSSI) Felmersham Marsiny Meadow Fenlake Meadows (also LNR) Forty Acre Woods Forty Foot Lane (West) Forty Foot Lane Foster Hill Road Cemetery Francroft Wood Freer's Wood Galsey Wood Great and Little Early Groves Great and Little Woods, Ravensden Great Barford House Grassland Great Hayes Wood Great Oaks Wood Halsey Wood Hammerhill Farm Meadow Hanger Wood and Oxleys Harrold Country Park Harrold Lake High Farm Meadow Hinwick Roman Road Hobbs-Green Wood Holywell March Honeydon Road Verge Hook and Home Woods Hoked Lane Meadows How Wood Judge's Spinney Kangaroo Meadow Kempston Hardwick Pit Kempston West End Kempston Wood Keysoepark Wood Lady Wood Lambert's Spinney Little Barford Little Catsey Wood Manor Wood Melchbourne Park Melchbourne Woods	Salem Thrift Sandye Lane Sharnbrook Castle Close Sharnbrook Summit Spanoak Wood and Tilbrook Bushes Spencer's Wood St. John's Station St. Macute's Wood Stevington Marsh Stevington Meadow Swineshead Wood Temple Wood Templegrove Spinney The Slupe Thurleigh Cutting Tilwick Meadow (also SSSI) Tilwick Wood Turvey – Bromham Disused Railway Twin Wood Wilden Road Verges Willington Moat Wilstead Meadows Wootton Wood Wyboston Pits Wymington Meadow Yarl's Wood Yelden Field Yelden Meadows Yelnow Lane Begwary Brook Pits (also in Mid Bedfordshire) Coronation Pit (also in Mid Bedfordshire) Great Barford Gravel Pits (also in Mid Bedfordshire) Keyse's Spinney (also in Mid Bedfordshire) Old Warden Disused Railway (also in Mid Bedfordshire) River Great Ouse (also in Mid Bedfordshire) Rookery Clay Pit (also in Mid Bedfordshire) Sheerhatch Wood (also in Mid Bedfordshire)
Regionally important Geomorphological Sites (RIGS) have been designated during the monitoring period. Two are found in Bedford Borough. These are	

locally defined, non-statutory sites. Bromham Bridge RIGS Quest Pit RIGS	Identifying and monitoring appropriate biodiversity monitoring information remains a priority for the countywide monitoring group, though progress on agreeing a countywide procedure is slow owing to the lack of clarity regarding the government's expectations in respect of this indicator. The council continues to work with colleagues both in the county and at regional level to identify an appropriate monitoring framework. Notably progress at regional level is also slow in respect of biodiversity monitoring. Progress will continue to be made over the coming year and it is hoped that by the next AMR, we will be in a position to report on changes in the habitats, species and areas as a result of development.
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Output Indicators

8a

Change in areas and populations of biodiversity importance,

including:
 - Monitoring and monitoring appropriate biodiversity information remains a priority for the countywide monitoring group. Progress on agreeing a countywide procedure is slow owing to the clarity regarding the Government's expectations in respect of this indicator. The council continues to work with colleagues both in the county and at regional level to identify an appropriate monitoring framework. Progress at a regional level is also ongoing in respect of biodiversity monitoring.

Work will continue to be made over the coming year and it is the intention that by the next AMR we will be in a position to report on changes in habitats, species and areas as a result of development.

(i) **Change in priority habitats and species (by type)**

Habitats are defined in the National and Local Biodiversity Action Plan. Mapping of Bedfordshire habitats is currently incomplete but a high analysis of County Wildlife Site Surveys, Wet Woodland mapping, National England and Wildlife Trust Data, has been undertaken.

(ii) **Change in areas designated for their intrinsic environmental value including sites of international, national, regional, sub-regional or local significance.**

Areas of four categories of wildlife site affected by development are as follows.

Wildlife sites in relation to proximity of development:

	Within 100m of development		Within 500m of development	
	Number	Area	Number	Area
County Wildlife Site	14	14.5	58	602.38
	2	0.75	7	93.83
National Nature Reserve	0	0	0	0
Local Nature Reserve	2	1.75	7	51.52

The numbers and areas relate to the wildlife sites not the developments (ie 14 County Wildlife sites fall within 100m of a development).

Biodiversity

Core Output Indicator 8 - Change in areas and populations of biodiversity importance, April 2006 - March 2007, including change in priority habitats and species (by types); and change in areas designated for their intrinsic environmental value including sites of international, national, regional, sub-regional or local significance.

This data is not available for this monitoring period. We will work closely with the Biodiversity Recording and Monitoring Centre through the County Monitoring Group, to put procedures in place to collect and analyse relevant data for the preceding monitoring period 2007/08.

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- CROW Act Section 74 – containing species considered of principal importance for the conservation of biological diversity in England;
- Priority Species listed within the UK Biodiversity Action Plan, which is a priority for conservation action within the UK.

UK BAP Priority Species/CROW Act Section 74 species records within 500m of development

Permission	Common name(s)	Last record date(s)
06/01490/FUL	Spotted Flycatcher	31/08/1990
06/00862/LAWE	Wall Brown butterfly, Small Heath butterfly, Slow-Worm	30/08/1988, 20/01/2006, 12/07/2006
05/01726/COU	Wall Brown butterfly, Small Heath butterfly, Slow-Worm	15/08/2005 (all)
05/01063/FUL	Wall Brown butterfly, Small Heath butterfly, Slow-Worm	06/07/2005, 28/05/2005, 28/05/2005
05/00807/COU	Spotted Flycatcher	15/05/2005
05/00534/FUL	Spotted Flycatcher	22/11/2004
04/01790/FUL	Spotted Flycatcher	10/11/2004
04/00668/OUT	Wall Brown butterfly, Small Blue butterfly, Basil Thyme, Caraway, Cornflower, Wild Candytuft	06/08/2004, 28/05/2003, 24/05/2001, 12/05/2001, 12/05/2001, 19/06/2003
03/01680/FUL	Hedgehog	05/06/1997
03/01526/FUL	Spotted Flycatcher	26/08/1994
03/01524/FUL	Wall Brown butterfly	26/08/1994
03/01465/COU	Hedgehog	26/08/1994
03/00630/FUL	Spotted Flycatcher, Hedgehog	26/08/1994 (both)
03/00538/FUL	European Water Vole*	27/05/1990
02/01533/FUL	Small Heath butterfly, Slow-Worm	08/09/1988, 19/05/1982
01/00268/COU	Wall Brown butterfly, Small Heath butterfly, Slow-Worm	19/05/1982 (all)
00/00453/COU	Wall Brown butterfly, Small Heath butterfly, Slow-Worm	19/05/1982 (butterflies), 2002 (Slow-Worm)

*All listed are UK BAP Priority Species, except CROW Act section 74 species European Water Vole

1.2.1

Explanation

The last recorded dates refer to the occasion on which the species was last casually observed by a naturalist, and does not indicate the species might no longer be present. The list does not preclude the existence of other species that might also have been affected by development. This snapshot in time does not provide an active framework of monitoring species before and after a development nor does it record if any species mitigation measures were considered or undertaken. Further work is required to check the effects of development on species and species type.

1.3

Change in areas designated for their intrinsic environmental value

Year	Area type	Change in designated areas	Net change (ha)
April 2007	County Wildlife Sites	9.98	9.98
	Other sites of nature conservation interest	0	0

1.3.1

Explanation

One new County Wildlife Site (CWS), Winch Hill Wood (0.52ha of which is within Luton's boundary) and an extension to the existing Bradger's Hill CWS (of 9.46ha) gave the first growth in Luton for some years.

J)

Biodiversity

National Core Output Indicators	
LDFCOI	Change in areas and populations of biodiversity importance, including: change in priority habitats and species (by type), and
LDFCOI	change in areas designated for their intrinsic environmental value including sites of international, national, regional, sub-regional or local significance
8ii	
Regional Sustainability Objectives	
RPG9	Regional Monitoring Indicators
9vi	44, 49, 50
East of England Plan	Ei, Eiii

Data for LDFCOI 8ii is a complex indicator to report satisfactorily. Wildlife to a greater or lesser extent may be affected by development. Disturbance of habitat and or pollution may be a problem even if the footprint of a development has not directly affected the site. Wildlife whose habitat is nearby may venture outside sites as part of their natural behaviour. Developing near a sensitive site might lead to problems due to increased footfall from people and their animals. Conversely, some animals can benefit: birds, for example, may find refuge in the roof of a new building or near a heat source such as an extractor duct.

Officers of the Bedfordshire and Luton Biodiversity Recording and Monitoring Centre (BRMC) have devised a form of analysis that makes best use of the information recorded by naturalists over many years. For this first year of reporting both 8i and 8ii, the authority supplied only 24 housing sites as confirmed completions to the BRMC for analysis against.

1.1

Priority habitats

An analysis of sites and species recorded within 100m (classed as adjacent to a site) and 500m, which represents a foraging area, has been undertaken. This provides a guide to where sites had the potential to affect sites and species.

2006/07	Within 100m of development	Within 500m of development
Area	0	0

Priority habitats affected by the proximity of development

1.2

Priority species

No areas of UK BAP Priority Habitats were identified within any of the areas identified.

To provide a consistent means of reporting and comparing, two national lists of species have been used in the analysis. They do not cover all of those of local importance as described in the Local Biodiversity Action Plan. Bats are also excluded, being for the moment outside the scope of this study as are records of Badgers and species suffering a similar risk of persecution.