European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC)

Third Report by the United Kingdom under Article 17

on the implementation of the Directive from January 2007 to December 2012
Conservation status assessment for

Species:

S1058 - Large blue butterfly (*Maculinea arion*)

Reporting format on the 'main results of the surveillance under Article 11' for Annex II, IV & V species

Field name	*Brief explanations*	
0.2 Species	**0.2.1 Species code**	**S1058**
	0.2.2 Species scientific name	***Maculinea arion***
	0.2.3 Alternative species scientific name Optional	
	0.2.4 Common name Optional	

1.1 Maps			
1.1.1 Distribution map	**True**	**Sensitive**	**False**
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document.		

1.1.2 Method used - map	**Complete survey/Complete survey or a statistically robust estimate**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information
1.1.3 Year or period	**2007-2012**
	The distribution map is based on species records which are considered to be representative of the range within the current reporting period. For further details see the 2013 Article 17 UK Approach document.

1.1.4 Additional distribution map Optional	**False**
1.1.5 Range map	**True**
	The range map was produced by applying the UK range mapping tool to the distribution map presented in 1.1.4. The alpha value for this species was 20km. For further details see the 2013 Article 17 UK Approach document.

2.1 Biogeographical region & marine regions	**ATL**
2.2 Published sources	**Thomas, J.A., Simcox, D.J. & Biourn, N.A.D. 2011. The restoration of the Large Blue butterfly to the UK. Global Re-introduction Perspectives: IUCN/SSC Re-introduction Sp[ecialist group (RSG) 10-13** **Thomas. J.A., Simcox D.J. & Clark, R.T. 2009. Successful conservation of a threatened Maculinea butterfly. Science Vol 325: 80-83** **Thomas, J.A., Simcox, D.J. & Hovestadt, T. 2011. Evidence based conservation of butterflies. Journal of Insect Conservation Vol 15: 241-258** **UK distribution map data sources** **NE. Emailed to JNCC (LH) by Jon Curson 07/08/2012. Data from Large blue re-introduction programme run by CEH (David Simcox) and Oxford University (Dr Jeremy Thomas).**

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2.3 Range		
2.3.1 Surface area Range	**800**	
	The surface area of the range was calculated from the map presented in 1.1.5. For further details see the 2013 Article 17 UK Approach document.	
2.3.2 Method used Surface area of Range	**Complete survey/Complete survey or a statistically robust estimate**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.3.3 Short-term trend Period	**2001-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.3.4 Short term trend Trend direction	**increase**	
	The short term trend direction was derived by comparing the range map in 1.1.5 with the range map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.3.5 Short-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
2.3.6 Long-term trend Period Optional	**1989-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.3.7 Long-term trend Trend direction Optional	**increase**	
	The long term trend direction was derived by comparing the range map in 1.1.5 with the range map produced in the 2007 report, by considering the range trend in the 2007 report, and by considering any further information provided by the UK country conservation agencies. For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.3.8 Long-term trend	**a) Minimum**	

Magnitude Optional		
	b) Maximum	
2.3.9 Favourable reference range	**a) Value in km²**	
	b) Operator for FRR	**approximately equal to**
	c) FRR is unknown (indicated by "true")	**False**
	d) Method used to set FRR	
2.3.10 Reason for change Is the difference between the reported value in 2.3.1 and the previous reporting round mainly due to…	**a) Genuine change?**	**True**
	The increase in range is genuine and is due to natural colonisation and some further re-introductions.	
	b) Improved knowledge/more accurate data?	**False**
	The increase in range is genuine and is due to natural colonisation and some further re-introductions.	
	c) Use of different method (e.g. "Range tool")?	**False**
	The increase in range is genuine and is due to natural colonisation and some further re-introductions.	

2.4 Population		
2.4.1 Population size estimation (using individuals or agreed exceptions where possible)	**a) Unit**	
	b) Minimum	
	c) Maximum	
2.4.2 Population size estimation (using population unit other than individuals)	**a) Unit**	**number of colonies**
	The population unit is the same as reported in 2007.	

Optional *(if 2.4.1 filled in)*	**b) Minimum**	**15**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
	c) Maximum	**27**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.3 Additional information on population estimates / conversion Optional	**a) Definition of "locality"**	
	b) Method to convert data	
	c) Problems encountered to provide population size estimation	**Regular counts of adults and eggs provide an index of change, but it is hard to get an absolute estimate of abundance. The number of individuals naturally fluctuates between years. Number of colonies is a more useful population unit to use.**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.4 Year or period	**2007-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.5 Method used Population size	**Complete survey/Complete survey or a statistically robust estimate**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.6 Short-term trend Period	**2001-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.7 Short-term trend Trend direction	**increase**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.8 Short-term trend Magnitude Optional	**a) Minimum**	**0**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
	b) Maximum	**80**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
	c) Confidence interval	

2.4.9 Short-term trend Method used	**Complete survey/Complete survey or a statistically robust estimate**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.10 Long-term trend – Period Optional	**1989-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.11 Long-term trend Trend direction Optional	**increase**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.12 Long-term trend Magnitude Optional	**a) Minimum**	
	b) Maximum	
	c) Confidence interval	
2.4.13 Long term trend Method used Optional	**Estimate based on partial data with some extrapolation and/or modelling**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information	
2.4.14 Favourable reference population	**a) Number of individuals/agreed exceptions/other units**	**20**
	The FRV for population is the same as reported in 2007.	
	b) Operator	
	c) FRP is unknown (indicated by "true")	**False**
	d) Method used to set FRP	**The favourable reference value is the same as used in the 2007 Article 17 report. The value is considered to be large enough for the population to be viable and no lower than the population estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document and relevant country-level reporting information.**

	The favourable reference value is the same as used in the 2007 Article 17 report. The value is considered to be large enough for the population to be viable and no lower than the population estimate from when the Habitats Directive came into force in the UK. For further details please see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.4.15 Reason for change Is the difference between the value reported at 2.4.1 or 2.4.2 and the previous reporting round mainly due to:	**a) Genuine change?**	**True**
	The annual monitoring is done in a standardised way and has clearly shown that the population increase is a genuine one and not due to improved knowledge/ different method.	
	b) Improved knowledge/more accurate data?	**False**
	The annual monitoring is done in a standardised way and has clearly shown that the population increase is a genuine one and not due to improved knowledge/ different method.	
	c) Use of different method (e.g. "Range tool")?	**False**
	The annual monitoring is done in a standardised way and has clearly shown that the population increase is a genuine one and not due to improved knowledge/ different method.	

2.5 Habitat for the species		
2.5.1 Area estimation	**1**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information. It is unknown whether the amount of habitat in the UK is sufficient to support a viable population of the species.	
2.5.2 Year or period	**2007-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.3 Method used Habitat for the species	**Estimate based on partial data with some extrapolation and/or modelling**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.4 Quality of the habitat	**a) Habitat quality**	**Good**
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
	b) Assessment method	**All sites are monitored in detail and managed to promote good quality habitat for the species.**
	For further details see the 2013 Article 17 UK Approach document and	

	relevant country-level reporting information.	
2.5.5 Short-term trend Period	**2001-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.6 Short-term trend Trend direction	**increase**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.7 Long-term trend Period Optional	**1983-2012**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.8 Long-term trend Trend direction Optional	**increase**	
	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.	
2.5.9 Area of suitable habitat for the species	**a) Value in km²**	**1**
	b) Absence of data indicated as '0'	
2.5.10 Reason for change Is the difference between the value reported at 2.5.1 and the previous reporting round mainly due to	**a) Genuine change?**	**True**
	The increased amount of habitat is available is down to good management specifically for this species, rather than improvement in knowledge/ different method.	
	b) Improved knowledge/more accurate data?	**False**
	The increased amount of habitat is available is down to good management specifically for this species, rather than improvement in knowledge/ different method.	
	c) Use of different method (e.g. "Range tool")?	**False**
	The increased amount of habitat is available is down to good management specifically for this species, rather than improvement in knowledge/ different method.	

2.6 Main pressures		
a) Pressure	**b) Ranking**	**c) Pollution qualifier**
	H = high importance (max 5 entries) M = medium importance L = low importance	
A04: grazing	H	
K02: Biocenotic evolution,	H	

succession		
D01: Roads, paths and railroads	M	
G01: Outdoor sports and leisure activities, recreational activities	M	
K04: Interspecific floral relations	M	

2.6.1 Method used – Pressures	**mainly based on expert judgement and other data**

2.7 Threats		
a) Threat	**b) Ranking**	**c) Pollution qualifier**
	H = high importance (max 5 entries) M = medium importance L = low importance	
A04: grazing	H	
K02: Biocenotic evolution, succession	H	
D01: Roads, paths and railroads	M	
D05: Improved access to site	M	
G01: Outdoor sports and leisure activities, recreational activities	M	
H05: Soil pollution and solid waste (excluding discharges)	M	
K03: Interspecific faunal relations	M	

2.7.1 Method used – Threats	**expert opinion**

2.8 Complementary information	
2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant information	**This species is subject to a high level of legislative protection and management, including habitat management and an ongoing re-introduction programme.**

	For further details see the 2013 Article 17 UK Approach document and relevant country-level reporting information.
2.8.3 Trans-boundary assessment	

2.9 Conclusions *(assessment of conservation status at end of reporting period)*		
2.9.1 Range	**a) Conclusion**	**Favourable**
	Range has been assessed as inadequate because the FRV is approximately equal to the current surface area of range, and the short term trend is increasing.	
	b) Qualifier	
2.9.2 Population	**a) Conclusion**	**Inadequate**
	The FRV is 20 colonies. Over the reporting period there have been fluctuations in the number of colonies between 15 and 27. Population has been assessed as inadequate because there are just short of 20 definitely self sustaining populations. However, the short term trend is increasing.	
	b) Qualifier	**improving**
	The short term population trend is increasing.	
2.9.3 Habitat for the species	**a) Conclusion**	**Inadequate**
	Habitat is assessed as Inadequate because it is currently unknown if there is sufficient habitat to maintain a viable population, although the quality is good and habitat is increasing due to management.	
	b) Qualifier	**improving**
	Habitat trend is increasing due to management of sites and potential sites.	
2.9.4 Future prospects	**a) Conclusion**	**Favourable**
	Future prospects is assessed as Favourable on the basis of assessments of the future prospects of the three parameters, range, population and habitat for species: Range future prospects: Good Population future prospects: Good Habitat future prospects: Good Overall future prospects: FV Sites occupied by this species are being well managed, additional sites are being surveyed and brought into suitable management to support the species, and there are plans for further reintroductions to bring the population up to the FRV.	
	b) Qualifier	

2.9.5 Overall assessment of Conservation Status	**Inadequate**
	The overall assessment is Inadequate because range, population and habitat for species have been asssessed as Inadequate.
2.9.6 Overall trend in Conservation Status	**improving**
	On balance, the overall trend is increasing.

3 Natura 2000 coverage & conservation measures - Annex II species
(only applies to species listed under Annex II of the Directive)

3.1 Population		
3.1.1 Population size Estimation of population size included in the SAC network	**a) Unit**	
	b) Minimum	
	c) Maximum	
3.1.2 Method used		
3.1.3 Trend of population size within the network (short-term trend) Optional		

3.2 Conservation measures

Conservation measures taken (i.e. already being implemented) within the reporting period and provided information about their importance, location and evaluation.

3.2.1 Measure	**3.2.2 Type**	**3.2.3 Ranking** H = high importance	**3.2.4 Location** where the measure is PRIMARILY applied	**3.2.5 Broad evaluation of the measure**

	a) Legal/statutory	b) Administrative	c) Contractual	d) Recurrent	e) One-off	M = medium importance L = low importance	a) Inside	b) Outside	c) Both inside & outside	a) Maintain	b) Enhance	c) Long term	d) No effect	e) Unknown	f) Not evaluated