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

Fourth Report by the United Kingdom under Article 17

on the implementation of the Directive
from January 2013 to December 2018

Supporting documentation for the
conservation status assessment for the species:

S1044 - Southern damselfly (*Coenagrion mercuriale*)

WALES

IMPORTANT NOTE - PLEASE READ

- The information in this document is a country-level contribution to the UK Report on the conservation status of this species, submitted to the European Commission as part of the 2019 UK Reporting under Article 17 of the EU Habitats Directive.
- The 2019 Article 17 UK Approach document provides details on how this supporting information was used to produce the UK Report.
- The UK Report on the conservation status of this species is provided in a separate document.
- The reporting fields and options used are aligned to those set out in the European Commission guidance.
- Explanatory notes (where provided) by the country are included at the end. These provide an audit trail of relevant supporting information.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; (iii) the field was not relevant to this species (section 12 Natura 2000 coverage for Annex II species) and/or (iv) the field was only relevant at UK-level (sections 9 Future prospects and 10 Conclusions).
- For technical reasons, the country-level future trends for Range, Population and Habitat for the species are only available in a separate spreadsheet that contains all the country-level supporting information.
- The country-level reporting information for all habitats and species is also available in spreadsheet format.

Visit the JNCC website, https://jncc.gov.uk/article17, for further information on UK Article 17 reporting.

Report on the main results of the surveillance under Article 11 for Annex II, IV and V species (Annex B)

NATIONAL LEVEL

1. General information

1.1 Member State	**UK (Wales information only)**
1.2 Species code	**1044**
1.3 Species scientific name	**Coenagrion mercuriale**
1.4 Alternative species scientific name	
1.5 Common name (in national language)	Southern damselfly

2. Maps

2.1 Sensitive species	No
2.2 Year or period	2008-2017
2.3 Distribution map	Yes
2.4 Distribution map Method used	Based mainly on extrapolation from a limited amount of data
2.5 Additional maps	No

3. Information related to Annex V Species (Art. 14)

3.1 Is the species taken in the wild/exploited?		No
3.2 Which of the measures in Art. 14 have been taken?	a) regulations regarding access to property	No
	b) temporary or local prohibition of the taking of specimens in the wild and exploitation	No
	c) regulation of the periods and/or methods of taking specimens	No
	d) application of hunting and fishing rules which take account of the conservation of such populations	No
	e) establishment of a system of licences for taking specimens or of quotas	No
	f) regulation of the purchase, sale, offering for sale, keeping for sale or transport for sale of specimens	No
	g) breeding in captivity of animal species as well as artificial propagation of plant species	No
	h) other measures	No

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3.3 Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)

a) Unit

b) Statistics/ quantity taken	Provide statistics/quantity per hunting season or per year (where season is not used) over the reporting period					
	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
Min. (raw, ie. not rounded)						
Max. (raw, ie. not rounded)						
Unknown	No	No	No	No	No	No

3.4. Hunting bag or quantity taken in the wild Method used

3.5. Additional information

BIOGEOGRAPHICAL LEVEL

4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs

Atlantic (ATL)

4.2 Sources of information

Boardman, P. 2005. Assessment of favourable condition for the southern damselfly Coenagrion mercuriale on candidate Special Areas of Conservation in Wales (part 2). CCW Environmental Monitoring Report No. 18. Countryside Council for Wales, Bangor.
Boyce, D. 2002. Southern damselfly Coenagrion mercuriale GB site assessment project. CCW Contract Science No. 537. Countryside Council for Wales & UK BAP Southern Damselfly Steering Group.
Boyce, D. 2004. Condition assessment for the southern damselfly Coenagrion mercuriale on candidate Special Areas of Conservation in Pembrokeshire (Gweunydd Blaencleddau & Preseli (part 1). CCW Contract Science No. 622. Countryside Council for Wales, Bangor.
Coker, S. 2002. A long-term plan for Coenagrion mercuriale in north-east Pembrokeshire. Privately published.
Dalley, G. 2016. British Dragonfly Society Conservation Officer report on the visit to southern damselfly sites on Cors Erddreiniog on Friday 8th July 2016. Unpublished report by the British Dragonfly Society.
Dalley, G. 2016. Southern Damselfly Management Handbook. British Dragonfly Society.
Fowles, A.P. 2013. European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC) Supporting documentation for the 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: S1044 - Southern Damselfly (Coenagrion mercuriale).
Hopkins, G.W. & Day, K.J. 1997. The southern damselfly Coenagrion mercuriale:

dispersal and adult behaviour. CCW Contract Science No. 184. Countryside Council for Wales, Bangor.
Howe, M.A. & Harrison, T. 2015. Southern damselfly Coenagrion mercuriale on Nant Isaf spring field, Cors Erddreiniog in July 2015. NRW unpublished report. Natural Resources Wales, Bangor.
Howe, M. A. & Harrison, T. 2016. Southern Damselfly Coenagrion mercuriale on Nant Isaf spring field, Cors Erddreiniog in July 2016. NRW unpublished report. Natural Resources Wales, Bangor.
Install, C. 2012. An Overview of the Management Requirements of the Southern Damselfly (Coenagrion mercuriale-Charpentier) with Recommendations and Suggested Methodology for Habitat Improvement within and near to the Preseli SAC. Unpublished report for the British Dragonfly Society.
Jenkins, R.A. 1997. Surveys of southern damselfly (Coenagrion mercuriale) on Gower, June/July 1997. CCW filenote 16/7/97. Countryside Council for Wales, Swansea.
Skidmore, P. 1996. A baseline survey of the status of the southern damselfly Coenagrion mercuriale on Mynydd Preseli pSAC. CCW Contract Science No. 181. Countryside Council for Wales, Bangor.
Surry, K. 2012. Corsydd Mon SAC monitoring - Coenagrion mercuriale (1044). CCW draft report May 2012. Countryside Council for Wales.
Sutton, M. 2013. Southern damselfly Coenagrion mercuriale on the Anglesey fens. Survey and monitoring 2013. C.15: Action for Annex II species. Matt Sutton Ecology October 2013. LIFE 07 Nat UK 000948. Natural Resources Wales, Bangor.
Unpublished CCW & NRW SAC monitoring data for Coenagrion mercuriale.
Watts, P. C., Saccheri, I.J., Kemp, S.J. & Thompson, D.J. 2006. Population structure and the impact of regional and local habitat isolation upon levels of genetic diversity of the endangered damselfly Coenagrion mercuriale (Odonata: Zygoptera). Freshwater Biology51: 193-205.

5. Range

5.1 Surface area (km²)		
5.2 Short-term trend Period		
5.3 Short-term trend Direction	Stable (0)	
5.4 Short-term trend Magnitude	a) Minimum	b) Maximum
5.5 Short-term trend Method used		
5.6 Long-term trend Period		
5.7 Long-term trend Direction		
5.8 Long-term trend Magnitude	a) Minimum	b) Maximum
5.9 Long-term trend Method used		
5.10 Favourable reference range	a) Area (km²) b) Operator c) Unknown d) Method	
5.11 Change and reason for change in surface area of range	No change The change is mainly due to:	
5.12 Additional information		

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6. Population

6.1 Year or period	2008-2017	
6.2 Population size (in reporting unit)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	21
6.3 Type of estimate	Best estimate	
6.4 Additional population size (using population unit other than reporting unit)	a) Unit	
	b) Minimum	
	c) Maximum	
	d) Best single value	
6.5 Type of estimate		
6.6 Population size Method used	Based mainly on extrapolation from a limited amount of data	
6.7 Short-term trend Period	2008-2017	
6.8 Short-term trend Direction	Decreasing (-)	
6.9 Short-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.10 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
6.11 Long-term trend Period	1989-2017	
6.12 Long-term trend Direction	Decreasing (-)	
6.13 Long-term trend Magnitude	a) Minimum	
	b) Maximum	
	c) Confidence interval	
6.14 Long-term trend Method used	Based mainly on extrapolation from a limited amount of data	
6.15 Favourable reference population (using the unit in 6.2 or 6.4)	a) Population size	
	b) Operator	
	c) Unknown	
	d) Method	
6.16 Change and reason for change in population size	Genuine change	
	Improved knowledge/more accurate data	
	The change is mainly due to:	Genuine change
6.17 Additional information		

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7. Habitat for the species

7.1 Sufficiency of area and quality of occupied habitat	a) Are area and quality of occupied habitat sufficient (to maintain the species at FCS)?	No
	b) Is there a sufficiently large area of occupied AND unoccupied habitat of suitable quality (to maintain the species at FCS)?	No
7.2 Sufficiency of area and quality of occupied habitat Method used	Based mainly on extrapolation from a limited amount of data	
7.3 Short-term trend Period	2008-2017	
7.4 Short-term trend Direction	Decreasing (-)	
7.5 Short-term trend Method used	Based mainly on extrapolation from a limited amount of data	
7.6 Long-term trend Period		
7.7 Long-term trend Direction		
7.8 Long-term trend Method used		
7.9 Additional information		

8. Main pressures and threats

8.1 Characterisation of pressures/threats

Pressure	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Abandonment of management/use of other agricultural and agroforestry systems (all except grassland) (A07)	H
Extensive grazing or undergrazing by livestock (A10)	H
Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Accumulation of organic material (L03)	M

Threat	Ranking
Abandonment of grassland management (e.g. cessation of grazing or mowing) (A06)	H
Abandonment of management/use of other agricultural and agroforestry systems (all except grassland) (A07)	H
Intensive grazing or overgrazing by livestock (A09)	M
Extensive grazing or undergrazing by livestock (A10)	H
Agricultural activities generating diffuse pollution to surface or ground waters (A26)	M
Modification of hydrological flow or physical alteration of water bodies for agriculture (excluding development and operation of dams) (A33)	M

Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization) (L01)	H
Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices) (L02)	H
Accumulation of organic material (L03)	M
Change of habitat location, size, and / or quality due to climate change (N05)	M

8.2 Sources of information

8.3 Additional information

9. Conservation measures

9.1 Status of measures

a) Are measures needed? Yes

b) Indicate the status of measures Measures identified and taken

9.2 Main purpose of the measures taken: Restore the habitat of the species (related to 'Habitat for the species')

9.3 Location of the measures taken: Both inside and outside Natura 2000

9.4 Response to the measures: Medium-term results (within the next two reporting periods, 2019-2030)

9.5 List of main conservation measures

Reinstate appropriate agricultural practices to address abandonment, including mowing, grazing, burning or equivalent measures (CA04)

Adapt mowing, grazing and other equivalent agricultural activities (CA05)

Management of habitats (others than agriculture and forest) to slow, stop or reverse natural processes (CL01)

Improvement of habitat of species from the directives (CS03)

9.6 Additional information

10. Future prospects

10.1 Future prospects of parameters

a) Range

b) Population

c) Habitat of the species

10.2 Additional information

11. Conclusions

11.1. Range

11.2. Population

11.3. Habitat for the species

11.4. Future prospects

11.5 Overall assessment of Conservation Status

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11.6 Overall trend in Conservation Status	
11.7 Change and reasons for change in conservation status and conservation status trend	a) Overall assessment of conservation status No change The change is mainly due to: b) Overall trend in conservation status No change The change is mainly due to:
11.8 Additional information	

12. Natura 2000 (pSCIs, SCIs and SACs) coverage for Annex II species

12.1 Population size inside the pSCIs, SCIs and SACs network (on the biogeographical/marine level including all sites where the species is present)	a) Unit	number of map 1x1 km grid cells (grids1x1)
	b) Minimum	
	c) Maximum	
	d) Best single value	21
12.2 Type of estimate	Best estimate	
12.3 Population size inside the network Method used	Based mainly on extrapolation from a limited amount of data	
12.4 Short-term trend of population size within the network Direction	Decreasing (-)	
12.5 Short-term trend of population size within the network Method used	Based mainly on extrapolation from a limited amount of data	
12.6 Additional information		

13. Complementary information

13.1 Justification of % thresholds for trends
13.2 Trans-boundary assessment
13.3 Other relevant Information

Distribution Map

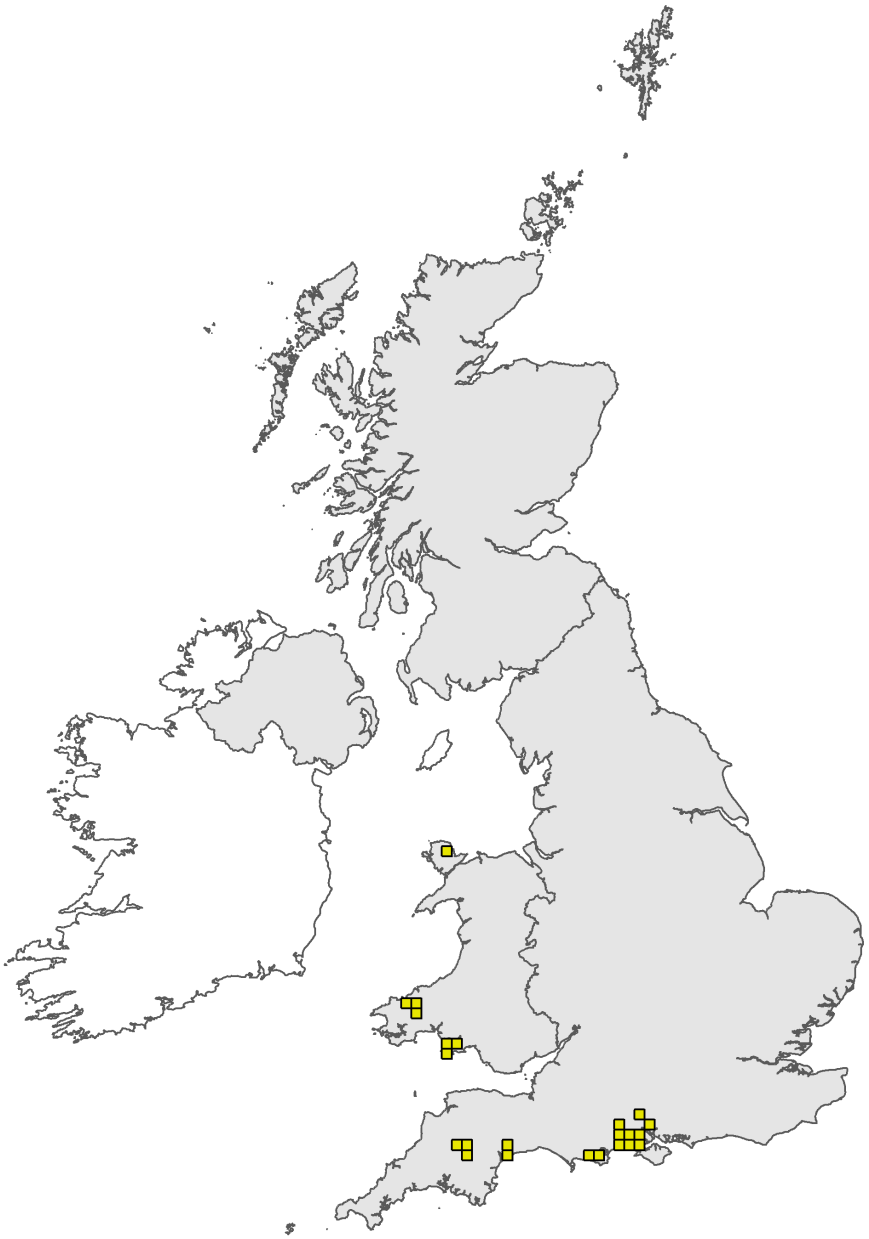

Figure 1: UK distribution map for S1044 - Southern damselfly (*Coenagrion mercuriale*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The 10km grid square distribution map is based on available species records within the current reporting period. For further details see the 2019 Article 17 UK Approach document.

Range Map

Figure 2: UK range map for S1044 - Southern damselfly (*Coenagrion mercuriale*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority.

The range map has been produced by applying a bespoke range mapping tool for Article 17 reporting (produced by JNCC) to the 10km grid square distribution map presented in Figure 1. The alpha value for this species was 20km. For further details see the 2019 Article 17 UK Approach document.

Explanatory Notes

Species name: Coenagrion mercuriale (1044)

Field label	Note
2.4 Distribution map; Method used	There has never been a comprehensive survey of Coenagrion mercuriale in Wales and, whilst there is an assumption that it has been lost from sites with historic records, additional surveys are required to confirm this.
3.1 Is the species take in the wild/ exploited	Coenagrion mercuriale is not included on Annex V

Species name: Coenagrion mercuriale (1044) Region code: ATL

Field label	Note
5.3 Short term trend; Direction	See 5.11
5.11 Change and reason for change in surface area of range	Fowles (2013) reports that 'mercuriale continues to occupy 8 10km squares and although there may have been a few losses of populations within these squares the range is un-altered over the short-term'. However, it appears to have been lost from SM92 (Springfield, Hayscastle Cross) after 2003 and it is currently restricted to 7 10x10km squares. Fowles (2013) further reports that is has been 'probably lost from two 10km squares since 1989, hence a 20% loss over the long-term period.' Whilst it has been lost from Sluxton Farm, Whitemoor during this period, this does not represent a major range change as this was probably part of the Rhossili Down population. Coenagrion mercuriale is currently found in 7 10x10km squares.
6.2 Population size	Since 2008, it has been recorded from 21 1x1km squares in 7 10x10km squares. This probably equates to 6 populations (Cors Erddreiniog, Cefn Bryn Common, Rhossili Down, Waun Fawr Puncheston, north Preseli, south Preseli & Gweunydd Blaencleddau) on four SACs. There are two outliers on non-statutory land just outside Preseli SAC.
6.8 Short term trend; Direction	Unpublished SAC monitoring data suggest that suitable habitat and damselfly populations are declining on all four SACs over this period. Remedial works have been initiated on three sites to address these declines but may not be on the necessary scale to reverese current trends. It has also been lost from Sluxton Farm, Whitemoor during this period (last recorded in 2010). Corsydd Mon SAC - amount of suitable habitat and adult numbers below Conservation Objective thresholds. Currently in unfavourable condition, although recent management undertaken. Gower Commons SAC, Cefn Bryn - amount of suitable habitat and adult numbers below Conservation Objective thresholds, despite recent ditch management interventions. Currently in unfavourable condition. Gower Commons SAC, Rhossili Down - amount of suitable habitat and adult numbers below Conservation Objective thresholds, although main ditchline supports good numbers. Currently in unfavourable condition. Gweunydd Blaencleddau SAC - some good seepage areas with reasonable numbers of damselflies. Other areas very rank with few damselflies. Overall, probably declining. Preseli SAC - large site with some good seepage areas with large damselfly numbers. Other areas rank with few damselflies. Recent small-scale management to improve seepage condition. Overall, probably declining.
6.9 Short term trend; Magnitude	Current monitoring data don't allow for an accurate assessment of the rate of population decrease.

6.12 Long term trend; Direction	Fowles (2013) states that 'Since 1989 C. mercuriale has been recorded from 53 1km squares in Wales. This was reduced to 45 squares for the last round of reporting and in the current period stands at just 15. There has undoubtedly been a decline in the number of occupied squares over this time period but these figures exaggerate reality. Comprehensive surveys took place in the late 1980s and 1990s (1990s (eg Jenkins 1997, Hopkins & Day 1997, Skidmore 1996, Woodman 2000), building up a picture of the status and distribution of mercuriale in Wales, but since the culmination of several research projects there has been reduced observer effort and this has resulted in substantial under-recording in recent years. It is therefore impossible to say with any certainty what the rate of decline has been long-term, but it is likely to be less than 25% (ie. lost from 13 squares)'.
6.16 Change and reason for change in population size	There are 21 occupied 1x1km squares compared to 22 to 45 1x1km squares in the last reporting period. As well as a decline in occupied 1x1km squares, habitat quality and adult numbers have probably declined in each of the four SACs.
7.1 Sufficiency of area and quality of occupied habitat	Fowles (2013) states that 'The UK assessment (Boyce 2002) measured linear extent of watercourses and extant populations in Wales were estimated to occupy 23,050 metres of watercourse. Assuming an average width of 1metre per watercourse this equates to less than 2.5 sq kms of habitat. In 2003 and 2004 each Welsh site was re-assessed and habitat estimated as area (Boyce 2004, Boardman 2005). In total they reported 36,070 sq metres of suitable habitat on occupied sites. Subsequently some of the SACs have been monitored (Wilkinson 2009, 2011, Surry 2012) and they have recorded 1840 sq metres of habitat, though this excludes the extensive areas on Mynydd Preseli SAC. There are difficulties in comparing these results due to observer bias and further work needs to be done to address this problem.' On Cors Erddreiniog, there was 80m2 of good quality breeding habitat in 2016 compared to the required minimum of 500m2 (Tom Harrison, pers. comm.). Recent management work is trying to increase this area.
7.5 Short term trend; Method used	Recent management interventions to provide more suitable habitat conditons on Corsydd Mon, Gower Commons and Preseli SACs may not be on a large enough scale to arrest declines.
8.1 Characterisation of pressures/ threats	Pressures: As Coenagrion mercuriale occupies shallow, open streams and runnels, the main pressure is from natural succession arising from undergrazing by livestock (A10), grazing/agricultural abandonment (A06 & A07) and natural succession (L01, L02 & L03). Threats: As with Pressures, but future threats include overgrazing (A09) if there is a change agricultural usage, diffuse pollution (A26), changes in hydrology (A33), and changes to hydrology and habitat quality as a result of climate change (N05).
9.5 List of main conservation measures	There have been recent conservation efforts to restore the open, shallow runnels and streams required for breeding following agricultural abandonment or reduced livestock grazing. This has involved the careful excavation of overgrown runnels and the reinstatement of grazing. This has been undertaken by Pembrokeshire National Park Authority & the British Dragonfly Society in Preseli SAC, by Natural Resources Wales and the National Trust on Gower Commons SAC, and Natural Resources Wales on Corsydd Mon SAC. Given continued population declines on these sites, it is likely that further interventions are required, and on a much larger scale.

10.1 Future prospects of parameters	The Southern Damselfly has contracted in range to occupy open runnels and streams on a small number of sites in Wales, and may now be restricted to Cefn Bryn Common, Rhossili Down, Gweunydd Blaencleddau, Mynydd Preseli and Cors Erddreiniog. All populations are small and vulnerable to stochastic extinctions, particularly as adults are very poor at dispersal. The population on Cors Erddreiniog is under immediate threat, being a very isolated site with little suitable and occupied habitat and adult numbers currently very low. Without changes to the grazing regimes on Preseli, the damselfly is likely to experience a slow, terminal decline. The immediate focus is to ensure that sympathetic management is in place on occupied to maximise the amount of suitable habitat to avoid future localised extinctions.
12.1 Population size inside the pSCIs, SCIs and SACs network	Since 2008, it has been recorded from 21 1x1km squares in 7 10x10km squares. This probably equates to 6 populations (Cors Erddreiniog, Cefn Bryn Common, Rhossili Down, Waun Fawr Puncheston, north Preseli, south Preseli & Gweunydd Blaencleddau) on four SACs. There are two outliers on non-statutory land just outside Preseli SAC. In recent years, the Welsh resource has been predominantly found within SACs and may now be restricted to four SACs.
12.6 Additional information	In recent years, the Welsh resource has been predominantly found within SACs and may now be restricted to four SACs - Corsydd Mon, Gower Commons, Gweunydd Blaencleddau & Preseli. Adult numbers on all four SACs appear to have suffered recent declines, most likely as a consequence of habitat succession and a deterioration in the suitability of runnels and streams used for breeding.