

# SOUTHERN DAMSELFLY

*Coenagrion mercuriale*

Hampshire Biodiversity Partnership

**SPECIES  
ACTION  
PLAN**

## 1 INTRODUCTION

The Southern damselfly has been identified by the UK Biodiversity Steering Group as a priority species for conservation action. A Species Action Plan for southern damselfly was published as part of Tranche 1 of UK action plans in *Biodiversity: The UK Steering Group Report*<sup>1</sup> (Volume 2, page 132).

Although the UK populations are at the northern edge of the global distribution, they represent a significant part of the global resource<sup>2</sup>. Hampshire is the UK stronghold for this globally threatened species<sup>10,11</sup> and has a key role to play in its conservation. The Hampshire Biodiversity Partnership has identified the Southern damselfly as a species requiring action in Hampshire.

## 2 CURRENT STATUS

### 2.1 Ecology and Habitat Requirements

The Southern damselfly is a species of shallow, slow-flowing water, which runs over gravel or marl beds and is overlain in places with organic detritus. The species is numerous on calcareous substrates, particularly the limestone areas of France and Spain<sup>2</sup>. In Britain, only parts of the Rivers Itchen and Test provide these conditions, and here the Southern damselfly occupies disused water meadow systems.

All other British sites are on heathland streams and seepages or valley mire runnels where stream pH typically varies from just below 6 to around neutral. In most cases, the water arises from deep-lying calcareous formations, such as at Headon Beds in the south of the New Forest, to give base-rich flushes which are less acidic than the surrounding area<sup>3,6</sup>. Water velocity, associated plant communities, slope and altitude of the site may all be important to the species. Nutrient status and water temperature may be more important parameters than pH<sup>4,10</sup>.

Adults are on the wing from mid-May to August. The flight is weak and low, so most stay close to the breeding site and do not appear to disperse easily to colonise new

areas<sup>5,6</sup>. Low shrubs are used for perching and feeding forays.

Eggs are laid in submerged parts of aquatic and emergent vegetation and the larvae usually take two years to mature. Eggs and larvae may be sensitive to changes in water chemistry and it is suspected that pollution is not greatly tolerated<sup>6</sup>.

### 2.2 Population and Distribution

*International:* The Southern damselfly is globally rare. It is mainly a Central and West European species with a sub-species in Italy and North Africa<sup>12</sup>. It has vanished or is on the edge of extinction in seven countries situated along the northern boundaries of its distribution (Belgium, The Netherlands, Luxembourg, Slovenia, Romania, Poland and Austria) and is declining in three others (UK, Germany and Switzerland)<sup>2</sup>.

*National:* It is believed that up to 25% of the global population of this species occurs in the UK<sup>2</sup>. Thus these populations are particularly in need of conservation in a global context. Within Britain, the Southern damselfly is at the northern limit of its range, and is found in only seven counties: Devon, Dorset, Hampshire, Pembrokeshire, Gower/Glamorgan, Anglesey and Oxfordshire. The largest populations occur in the New Forest and Prescelli, Pembrokeshire<sup>1,13</sup>. There has been a 30% decline in the UK distribution since 1961<sup>1</sup>.

*Local:* Hampshire is a recognised national stronghold for the species and local expert opinion suggests that any decline in the strength of the Hampshire population is insignificant when compared to the national decline<sup>7</sup>. The species is well-established and widespread in the New Forest and has been regularly recorded there from the 1900's to the present<sup>9</sup>. The abundance of suitable habitat suggests that new populations could still be found.

The first record for the Itchen catchment is a from a siting near Winchester in 1900<sup>9</sup>. Sporadic records exist up to 1939 between Shawford and Brambridge, with a single record for 1951. Since 1983 the species has been regularly recorded in the lower Itchen at Itchen Valley Country Park (IVCP), and

occasionally near Otterbourne. Records for the River Test are rare, dating from 1927 and 1983 only, and centered on the King's Somborne area<sup>9</sup>.

### 2.3 Important Sites

A 1998 survey initiated by the Environment Agency (EA) and the Hampshire Southern Damselfly BAP Group (HSDG)<sup>15</sup> visited most of the sites for which there are historical records in Hampshire. Of the sites that were surveyed, Southern damselfly were recorded at 26 sites in the New Forest, six sites in the Itchen Valley and two sites in the Test Valley. Most of these sites were within 1km grid squares for which there are historical records, although the survey identified three new 1km grid squares in the Itchen Valley and five in the New Forest<sup>15</sup>. The survey excluded six sites in the New Forest and two in the Itchen Valley where other recent survey work has confirmed the presence of strong colonies.

The 1998 survey<sup>15</sup> concluded that of the eight chalk stream sites surveyed and found to be supporting Southern damselfly, only one was 'strong' – supporting a breeding population of over 100 individuals. In the New Forest this category of population strength was recorded at four sites. Six new populations were discovered in the Itchen Valley, including one on the main river margins, through a more comprehensive survey in 1999<sup>16</sup>.

Southern damselfly has not been recorded for the River Meon, a small chalk stream neighbouring the Itchen catchment. There are only a few records for the Hampshire Avon – a chalk stream of exceptional quality – from the New Forest area in the east of the catchment<sup>15</sup>. However a survey of suitable habitat types in all of Hampshire's chalk streams could discover new Southern damselfly populations.

### 2.4 Protection

The Southern damselfly is the only British resident dragonfly species to be listed on Annex II of the Habitat and Species Directive. It is also listed on schedule 5 of the Wildlife and Countryside Act 1981 (which protects it against a variety of factors including killing or selling of individuals and damage or destruction of habitat) and in Appendix II of the Berne Convention. In addition, it is listed as rare (category 3) in the British Red Data Book and also features on the red list of other countries in Europe.

Six sites in England and Wales have been proposed as candidate Special Areas of

Conservation (cSACs) under the EC Habitats Directive, with one of the qualifying criteria being the presence of Southern damselfly<sup>1</sup>. These include the River Itchen cSAC and New Forest cSAC. The Test and Itchen are both riverine SSSIs. The 1998 and 1999 surveys<sup>15,16</sup>, however, showed that many of the Southern damselfly colonies in the Itchen and Test occur outside protected areas.

Through the Natura 2000 Moderation process it is likely that Southern damselfly will be added to the features of other existing cSACs and new cSACs in England and Wales in 2000.

## **3 CURRENT FACTORS AFFECTING SOUTHERN DAMSELFLY**

- Loss of suitable habitat due to a lack of appropriate management, for example, an absence of, or reduction in grazing, neglect of water meadow systems, and a reduction in ditch maintenance allowing sites to become overgrown.
- Habitat destruction through development, inappropriate scrub clearance and ditch management, over-grazing, changing agricultural practices and over-deepening of shallow streams.
- Alteration to site hydrology through neglect, development, abstraction, drainage and changing climate patterns.
- Isolation and scarcity of suitable habitats.
- Pollution changes to water chemistry. In chalk streams, arable run-off, particularly nitrates, phosphates, silt and effluent from fish and cress farms, may pose a problem.

## **4 CURRENT ACTION**

### 4.1 National

- The UK Biodiversity Action Plan for the Southern damselfly is being co-ordinated by a Steering Group comprising the Environment Agency (EA), Countryside Council for Wales (CCW), English Nature (EN), the Wildlife Trusts, British Dragonfly Society (BDS) and Liverpool University. A national work programme to implement the BAP has been prepared.
- The UK Southern damselfly BAP Steering Group initiated a project looking at the dispersal and adult behaviour of populations in the New Forest and Pembrokeshire<sup>5</sup>. Further research into the

species' ecology and habitat management requirements is being undertaken through a PhD studentship at Liverpool University sponsored by the Steering Group partners and run as an EA Research and Development Project. A new PhD investigating the species management requirements in chalk stream habitats in Hampshire is planned for 2000/1.

- An awareness-raising leaflet will be produced by the UK Southern damselfly BAP Steering Group in 2000.

#### **4.2 Local**

---

- The Hampshire Southern Damselfly BAP Group (HSDG) was initiated by the Environment Agency in February 1998 and comprises representatives from EN, Eastleigh Borough Council (EBC), the Forestry Commission (FC), BDS, Hampshire County Council (HCC) and Hampshire Wildlife Trust (HWT). The Group initiated the 'Hampshire Southern Damselfly Survey' in May 1998 as a precursor to identifying many of the actions and targets in this Plan<sup>15,16</sup>. The HSDG will now oversee implementation and monitoring of this Action Plan<sup>14</sup>.
- A comprehensive survey of the Itchen floodplain from Winchester to the IVCP in 1999 discovered a further six new populations of the Southern damselfly<sup>16</sup>. As a result of the 1998 and 1999 surveys, EN will review the boundaries of the Itchen cSAC in 2000 to incorporate the findings of these surveys.
- EBC continue to refine and implement a management plan for the IVCP which concentrates on appropriate water meadow management. This includes managing water levels, ditch maintenance, grazing regime management, surveying and monitoring. EBC is committed to a long-term monitoring programme of the IVCP Southern damselfly population.

- The FC is preparing a 'New Forest cSAC Management Plan' in partnership with EN as part of a European Union (EU) LIFE Project. The Project includes a mire restoration programme and scrub management to benefit Southern damselfly populations. The FC has already undertaken considerable scrub clearance in recent years, and surveying and monitoring is on-going.

- EA and EN are producing conservation strategies for the River Itchen and Test SSSIs as part of a 'Memorandum of Understanding' for management of all riverine SSSIs. The strategies note the presence of the Southern damselfly and will be the basis of future management plans for the cSACs under the Habitats Directive.

- EA have published Local Environment Action Plans (LEAPs) for the Test and Itchen, New Forest and the Hampshire Avon catchments. The Agency is also producing a Water Level Management Plan (WLMP) for the Itchen. All of these plans recognise the presence and needs of the Southern damselfly.

- Several initiatives/organisations provide advice on appropriate land management to support nature conservation, and this will be a key means of delivering proposed actions for the Southern damselfly. These include the Habitat Management Advisory Project (HMAP) which provides advice to managers of SINCs and the Hampshire Farming and Wildlife Advisory Group (FWAG) Officer.

- Other recent initiatives include a status report and individual management plans for sites in the New Forest by the FC<sup>9</sup>; on-going research, surveys and monitoring in the New Forest by BDS; and survey work in the IVCP by EBC<sup>8</sup>.

## 5 OBJECTIVES

The overall aim of this Plan is to protect and increase the distribution and population of Southern damselfly in Hampshire. This broad aim translates the specific objectives set out below. Where feasible, objectives have been allocated targets against which achievement can be measured. The 'Proposed Action' table in section 6 identifies the action to be taken to meet these objectives.

### SPECIES ACTION PLAN

	OBJECTIVES	PROPOSED ACTIONS
<b>A</b>	Maintain the existing Hampshire Southern damselfly populations by preventing any loss of breeding populations or key habitat sites.	<b>1-14, 17, 19-22, 29-31, 34-35</b>
<b>B</b>	Enhance the status of Southern damselfly in Hampshire by establishing and monitoring areas of suitable habitat adjacent to known colonies.	<b>1-5, 8-20, 22, 29-31, 34, 35</b>
<b>C</b>	Establish and maintain a comprehensive understanding of Southern damselfly distribution, status and ecological requirements in Hampshire through appropriate research, survey and monitoring.	<b>22-29, 32-34</b>
<b>D</b>	Promote communication, education and awareness of the status and needs of Southern Damselfly.	<b>2, 3, 5, 8-10, 12, 14, 17-20, 22, 29-35</b>

**6 PROPOSED ACTION**

The following table lists the actions required to achieve the objectives set out in this Plan. Each action has been assigned to one or more 'Key Partners'. Key Partners are those organisations that are expected to take responsibility for the delivery of the actions assigned to them, according to the targets set in this Plan. Other organisations may also be involved in the delivery of action, and they have been indicated in the 'Others' column.

Key to symbols in Action Table:

- ◆ To be completed by the indicated year. Work can commence at any time before the due date, at the discretion of the Key Partner.
- ◆⇄ Design or production of a plan/strategy to be completed by this year and then followed by its implementation.
- ➡ To start by the indicated year and usually followed by ongoing work. A start arrow in year 2000 can indicate a new action or a new impetus to existing work.
- ⇄ Work that has already begun and is ongoing.

**SPECIES  
ACTION  
PLAN**

	ACTION	DELIVERY BY		YEAR						MEETS OBJ.		
		Key Partner	Others	◆=complete by	◆⇄=design by and implement	➡=start by	⇄=ongoing	2000	2001		2002	2003
<b>Site and Species Policy and Protection</b>												
1	Ensure that statutory 'Water Quality Objectives' support existing and potential Southern damselfly populations.	EA	EN	⇄	⇄	⇄	⇄	⇄	⇄	⇄		A, B
2	Ensure that competent authorities review the impact of their operations on cSACs..	EA, EBC, FC, LAs	EN, HSDG					◆				A, B, D
3	Ensure that LEAPs for the Test and Itchen, New Forest, and Hampshire Avon give due consideration to the presence and needs of Southern damselfly.	EA		◆								A, B, D
4	EN and EA to liase and review the priority list of SSSI Water Level Management Plans.	EN, EA			◆							A, B
5	Produce and implement WLMPs to achieve SAP objectives in all core breeding sites in Hampshire by 2005.	EN, EA	HSDG, NFU, CLA					◆ 2005				A, B, D
6	Review the boundary of the Itchen cSAC in accordance with the 1999 survey <sup>16</sup> .	EN	EA	◆								A
7	Protect all sites with large breeding populations as	LAs, EN,	HSDG									A

**Southern Damselfly**

	SINC/SSSI/cSAC to ensure that core sites are appropriately protected.	HWT		◆						
ACTION		DELIVERY BY		YEAR						MEETS OBJ.
				◆=complete by    ◆⇄=design by and implement ⇨=start by      ⇄=ongoing						
		Key Partner	Others	2000	2001	2002	2003	2004	2010	
<b>Site and Species Policy and Protection (continued)</b>										
8	Endeavour to take account of the conservation requirements of this species when reviewing and adjusting agri-environment schemes.	FRCA/MAFF	HSDG	⇄	⇄	⇄	⇄	⇄	⇄	A, B, D
9	Ensure that advisors receive appropriate advice/training in the identification and habitat management requirements of Southern damselfly.	EN, EA, HSDG	FRCA/MAFF, FWAG, HMAP				◆			A, B, D
10	Ensure that future development, drainage or hydrological alterations do not affect existing or potential Southern damselfly sites, and the needs of the species are properly recognised in strategic plans and on a day-to-day level in the planning and development control process.	LAs	EN, EA	⇄	⇄	⇄	⇄	⇄	⇄	A, B, D
<b>Site and Species Management</b>										
11	Implement appropriate management of all occupied sites in the New Forest and Itchen Valley to ensure that there is always adequate suitable habitat present.	EBC, FC, EN	EA, FRCA/MAFF, FWAG, HMAP	⇄	⇄	⇄	⇄	⇄	⇄	A, B
12	Revise the Itchen Valley Coutry Park Management Plan in accordance with any new information on habitat management for the species.	EBC	HSDG				◆⇄			A, B, D
13	Under the Habitats Directive, cSACs require Management Plans. The New Forest cSAC Management Plan (funded through the EU LIFE programme) makes provision for the presence and needs of Southern damselfly. The future Itchen cSAC Management Plan will need to do likewise.	EN	FC, EBC, EA	⇄	⇄	⇄	⇄	⇄	⇄	A, B

**SPECIES ACTION PLAN**

**Southern Damselfly**

14	Encourage sympathetic management of historically occupied sites, potentially suitable sites, and land adjacent to currently occupied sites, in the Test and Itchen valleys.	EA, EN	FRCA/MAFF, FWAG, HMAP, HSDG	↔	↔	↔	↔	↔	↔	A, B, D
15	Aim to restore/create 1km of suitable ditch habitat in both the Itchen and Test Valleys by 2004.	EA, EN	HSDG					◆		B
16	Aim to establish new populations in at least one new site in each of the Itchen and Test valleys by 2006.	EA, EN	HSDG						◆ (2006)	B
17	Ensure that the requirements of the Southern damselfly are considered during the production and implementation of other action plans for habitats used by the Southern damselfly and species with overlapping distributions.	EN, EA	HSDG	↔	↔	↔	↔	↔	↔	A, B, D
18	The UK Southern Damselfly BAP Steering Group has identified the re-introduction of the species as part of any species recovery programme as a LOW priority. Inappropriate releases in Hampshire will be discouraged by the Hampshire Southern Damselfly Group (review policy in 2003).	EA, EN	HSDG				◆↔			B, D
19	Encourage landowners to take-up beneficial land management schemes (eg. Countryside Stewardship Scheme) on occupied sites and on land adjacent to occupied sites, in the Test and Itchen Valleys.	FRCA/MAFF, FWAG, HMAP	EN, EA, LAs	↔	↔	↔	↔	↔	↔	A, B, D
20	Aim to get 5 sites (see action 19 above) into CS or ESA by 2003.	MAFF/FRCA	HSDG					◆		A, B, D
21	Within SSSIs, partial funding for appropriate management is sometimes available from English Nature. EN to target core sites and secure Site Management Statements/Agreements for 5 sites by 2001.	EN			◆					A
<b>Research, Survey and Monitoring</b>										
22	Review Hampshire Southern Damselfly SAP in 2004.	HSDG	HCC, HWT					◆↔		A, B, C, D
23	Repeat 1998 survey of historical, current and potential sites, using a standard and consistent methodology in 2004.	EA	HSDG, HCC					◆↔		C
24	Establish regular long-term monitoring protocol and programme of monitoring core occupied sites.	EN, EBC, FC, BDS	HSDG		➔					C

**SPECIES  
ACTION  
PLAN**

**Southern Damselfly**

25	Consider initiating surveys for the species in the Hampshire Avon and River Meon catchments.	EA, EN	HSDG			◆⇄				C
26	Monitor and study the effects of habitat management on Southern damselfly together with other species associated with the same habitat.	EBC, FC, EN	BDS, HSDG	⇄	⇄	⇄	⇄	⇄	⇄	C
27	Co-operate with and support the Liverpool University PhD examining the species ecology and habitat management requirements.	HSDG		⇄	⇄	⇄	⇄	⇄	⇄	C

**SPECIES  
ACTION  
PLAN**

	ACTION	DELIVERY BY		YEAR						MEETS OBJ.
		Key Partner	Others	2000	2001	2002	2003	2004	2010	
<p>◆=complete by    ◆⇄=design by and implement                      ▶=start by    ⇄=ongoing</p>										
<b>Research, Survey and Monitoring (continued)</b>										
28	Stimulate research by a relevant educational establishment (eg. Southampton University) into possible causes of extinction of the species within a number of chalk stream and New Forest sites.	EN	HSDG					▶		C
<b>Communication, Awareness and Promotion</b>										
29	Support and encourage the Hampshire Southern Damselfly BAP Group to meet regularly to oversee, implement and monitor progress of this Plan.	EA	EN, HWT, LAs, BDS, FC,	⇄	⇄	⇄	⇄	⇄	⇄	A, B, C, D
30	Promote awareness, appreciation and conservation of the Southern damselfly in Hampshire through provision of press releases, awareness raising and advisory leaflets, and appeals for records.	HSDG		▶						A, B, D
31	Hold habitat management workshops, aimed at landowners and advisors, at a demonstration site.	HSDG						▶		A, B, D
32	Hold at least 2 training days in Odonata identification and surveying techniques for volunteer surveyors.	HSDG					◆			C, D
33	Disseminate survey and monitoring information to relevant local biological databases, landowners and partner groups.	HSDG		⇄	⇄	⇄	⇄	⇄	⇄	C, D
34	Maintain liaison with the UK Southern Damselfly BAP Steering Group in order to facilitate efficient exchange of information on research progress, new initiatives and ongoing issues.	EA	HSDG	⇄	⇄	⇄	⇄	⇄	⇄	A, B, C, D
35	Ensure that relevant landowners, managers and all others involved in the management of sites which support this species have easy access to advice on appropriate methods of habitat management for Southern damselfly conservation.	EN, EA	FRCA/MAFF, FWAG, HMAP, LAs, HSDG	⇄	⇄	⇄	⇄	⇄	⇄	A, B, D

**SPECIES ACTION PLAN**

**KEY TO ORGANISATIONS**

BDS British Dragonfly Society  
CLA Country Landowners Association  
EA Environment Agency  
EBC Eastleigh Borough Council  
EN English Nature  
FC Forestry Commission  
FRCA Farming and Rural Conservation Agency  
FWAG Farming and Wildlife Advisory Group

HCC Hampshire County Council  
HMAP Habitat Management Advisory Project  
HSDG Hampshire Southern Damselfly Group  
HWT Hampshire Wildlife Trust  
LAs Local Authorities  
MAFF Ministry of Agriculture, Fisheries and Food  
NFU National Farmers Union

## REFERENCES

- 1 ***Biodiversity - The UK Steering Group Report, Volume 2: Action Plans***, Department of the Environment, HMSO, 1995.
- 2 Background information on invertebrates of the Habitat Directive and the Berne Convention: Part 2, P J Van Helsdingen, L Willemse and M C D Speight in ***Nature and Environment No. 80***, Council of Europe Publishing, Strasbourg, 1996.
- 3 ***Audit of Priority Species of Rivers and Wetlands: Southern Damselfly (Coenagrion mercuriale)***, M Thurner, Environment Agency/Hampshire and Isle of Wight Wildlife Trust, 1998.\*
- 4 ***Report of Six Dorset Heath Sites for Coenagrion mercuriale***, D Winsland, English Nature Research Report no. 133, English Nature, 1994 (unpublished).
- 5 ***The Southern Damselfly (Coenagrion mercuriale): Dispersal and Adult Behaviour***, G W Hopkins and K I Day, CCW Gwynedd, 1997.\*
- 6 ***Species and Habitats Handbook: Southern Damselfly Species Management Guidelines***, D K Jenkins, M J Parr, N W Moore, and J Silsby, Environment Agency R & D Report 640, 1998.\*
- 7 Minutes of the Hampshire Southern Damselfly Group inaugural meeting, 18 March 1998, unpublished.\*
- 8 ***Southern Damselfly (Coenagrion mercuriale) - Survey of Itchen Valley Country Park***, A Strange and S Burt, Eastleigh Borough Council, 1998.
- 9 ***A Review of New Forest Dragonflies***, D Winsland, Forestry Commission, 1997.
- 10 ***Field Guide to the Dragonflies & Damselflies of Great Britain & Ireland***, S Brooks, British Wildlife Publishing, 1997.
- 11 ***Atlas of the Dragonflies of Britain and Ireland***, R Merritt, N W Moore and B C Eversham, ITE/JNCC, HMSO, 1996.
- 12 ***The Dragonflies of Europe***, R R Askew, Harley Brooks, 1998.
- 13 ***The Dragonflies of Great Britain & Ireland***, C O Hammond, Harley Books, 1993.
- 14 ***Biodiversity Action Plan for Hampshire: Volume One***, Hampshire Biodiversity Partnership, Hampshire County Council, 1998.
- 15 ***A 1998 Survey to Further Investigate the Status and Distribution of the Southern Damselfly (Coenagrion mercuriale) in Hampshire***, J Stevens and M Thurner, 1999.
- 16 ***Distribution of Southern Damselfly on the River Itchen***, A Strang, EN/EA, 1999.

An extensive bibliography of Southern damselfly literature is presented in J Stevens and M Thurner, 1999.

\* Copies of these publications are available upon special request from the Environment Agency.

This is one of many Habitat, Species and Topic Action Plans being prepared by the Hampshire Biodiversity Partnership. It will be monitored by the Partnership and fully updated in 2004.

This species action plan has been prepared by Tim Sykes and the Southern Damselfly SAP Working Group on behalf of the Hampshire Biodiversity Partnership.

For further information contact: Tim Sykes, Environment Agency, Tel: 01962 713267