

Conservation of the Southern Damselfly

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The southern damselfly (*Coenagrion mercuriale*) is one of the small blue damselflies. It has received special attention as a result of being listed on the Berne Convention on the Conservation of European Wildlife. This convention was enshrined in law by the Habitats and Species Directive (HSD) and the southern damselfly has consequently been included in domestic legislation by adding it to the list of protected species, and in the Biodiversity Action Plan. It was listed in the British Red Data Book before the HSD came into force, together with another eight species (three now extinct), but it is the only one of our rare species to have international status.

Its range extends from southern Britain to the north coast of Morocco, with France and Spain probably holding the largest numbers. Its distribution in Britain is patchy. The largest populations are in the heathlands of the New Forest, along chalk streams in the Itchen valley (Hampshire), in heathy moorland of the Preseli hills in Pembrokeshire, and in the Dorset heaths. Smaller colonies occur in the East Devon Pebblebeds (heathland), Dartmoor, the Gower in Pembrokeshire, Cors Erdreiniogg NNR (fen) on Anglesey and Dry Sandford Pit. Nearly all colonies are within SSSIs, and most are included within Special Areas of Conservation designated as part of the HSD.

The species has attracted much research, including valuable work by amateurs, studies commissioned by English Nature, Countryside Council for Wales and the Environment Agency, two PhDs and input into recording and monitoring by the British Dragonfly Society. The Wildlife Trusts lead on the BAP for southern damselfly and at least two local BAP groups have been set up specifically for it. The research has given us a better understanding of the adults' behaviour and refined the habitat requirements, which can feed directly into practical management on sites where there are problems.

Three habitats are used by the southern damselfly. Most colonies are on heathland or moorland where they occupy flushes and very shallow runnels with slowly flowing water, and open vegetation (M29 *Hypericum elodes* - *Potamogeton polygonifolius* soakways). Chalk streams (so far only the Itchen and Test) support colonies in the carriers dug for water meadow management. Two colonies live in calcareous fen, at Cors Erdreiniogg and Dry Sandford.

Adults are sedentary and disperse poorly. Several mark-recapture studies have shown that almost all individuals move at most 50m and usually rather less in their expected life span of about 6 days. Only three males, out of several thousand marked animals, have been found at just over 1 km from the point where they were marked and no females have been found to move such distances. Most movements are along water courses; there are very few that could have crossed inhospitable ground. The implications for conservation are that we cannot expect the damselfly to colonise new sites quickly and that existing sites need to be maintained in good condition.

Management should concentrate on expanding existing sites by removing barriers to dispersal, especially scrub and overgrown flushes.

The life expectancy is only about 5.5-6 days for both sexes although the flight period lasts about 8-10 weeks, usually peaking in the last week or two of June and first week of July. The damselflies are active on warm days, with most flying in a narrow window from about 11 a.m. to 2 p.m. The implications for this are that monitoring the numbers of adults has to be well planned, otherwise the results could reflect poor weather, the time of day or how close the count was made to the peak abundance. Several transects have been set up, using the method developed for the Butterfly Monitoring Scheme. These show consistent abundances from year to year at good sites where there are no management issues, and in one case a large and steady increase in timbers following the introduction of light cattle grazing and 'tinkering' with the runnels to enhance the open character of the flushes. When animals have been marked in mark-release studies, we find that there are many more damselflies than seen in transect counts. Most sites probably support 5-10 times as many as are seen at any one time.

Several more studies will start shortly. A review taking place this summer will document the condition and management of all sites supporting the southern damselfly; this should help us spot the sites where management could be improved. A second PhD will concentrate on the larval ecology (still largely unknown) in chalk streams and fens. Studying the relationship of the genetic difference between colonies and their physical separation in the New Forest should confirm the hunch that the damselfly really does not move far, and that all new colonisation events have a local origin. This information will have direct application in site management and in appraising the effects of 'plans and projects' that could have an impact on the species, and which authorities have a duty to consider under the HSD.

References

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