

Springs and Seepages - An important habitat for wildlife

Freshwater springs and seepages are small in scale, but are still important as they support specialist invertebrate communities and a number of species of conservation concern. However, they are vulnerable to damage through changes in land management and changes to the supply and quality of groundwater.

These sheets provide management advice for the future preservation of these habitats, and to promote understanding and good management of them.



Seepages at Hense Moor, Blackdown Hills © Sharon Pilkington

Freshwater springs and seepages can be extremely long-lived habitats, and support specialist communities of invertebrates and lower plants, including species that are now exceedingly rare elsewhere. The water in springs arises from groundwater from a single point and is usually cold throughout the year, unpolluted, well-oxygenated and has excellent clarity. The cold groundwater in seepages and from springs can help support more northerly species.



Southern damselfly (*Coenagrion mercuriale*) © Steven Falk

Seepages also provide special conditions arising from constantly flowing shallow water which can occur over a wide area and which is present throughout all, or most of, the summer. Any change from the stable, high quality water conditions found in springs and seepages could be detrimental to their invertebrate and plant life.

Springs and seepages provide habitat for aquatic invertebrates or those which have an aquatic stage in their life-cycle. They also provide food plants and refuge for invertebrates that have specific associations with aquatic or marginal plants. Seepages provide ideal conditions for the invertebrates which live in thin films of water, oxygenated surface layers of mud and in permanently wet mosses, liverworts and other lower plant communities.

The flowers of seepages are important for bees, hoverflies and other pollinating insects, especially spring-flowering willows, and summer-flowering plants such as Hemlock water-dropwort (*Oenanthe crocata*). Some species of bees and wasps use wet muds from seepages and pools as a material for nest construction.

Springs and seepages are generally small in scale, and this can lead to their importance being underestimated. There

are many examples of these habitats being neglected or damaged, often through lack of knowledge, and as a result, their rare invertebrate life being lost.

The Buglife Wessex springs and seepages project

“Conserving Wessex’s invertebrate-rich springs and seepages” was a Wessex Water funded project which ran from 2010-2015. The project aimed to better understand the ecology of springs and seepages in Wessex, study the threats to the habitat, and promote a wider understanding of springs and seepages and their invertebrate wildlife.

Whilst the project was primarily invertebrate-focussed, associated information about lower plants (mosses, liverworts and hornworts) was also gathered to provide a more detailed baseline of the ecological interest of springs and seepages.

Springs and seepage sites in four geographically and geologically distinct parts of Wessex were surveyed for invertebrates and lower plants between 2011 and 2014 including: the Blackdown Hills on the Somerset-Devon border; the coastal undercliffs of Lyme Bay in Dorset; North Somerset (mainly the Mendip Hills); and some of the spring complexes of the west Wiltshire chalk and limestone.

This project has identified key spring and seepages sites for invertebrates in the Wessex Water area and developed management advice for the future preservation of these habitats.

Rare and threatened species

Springs and seepages support 10 Section 41 (S41)¹ and 53 Red Data Book species in England². The Wessex Water region is an important area in the UK for springs and seepages because it hosts 7 S41 priority species including the Cliff tiger beetle (*Cylindera germanica*), Southern damselfly (*Coenagrion mercuriale*), Southern yellow splinter crane fly (*Lipsothrix nervosa*), South-western groundwater shrimp (*Niphargus glenniei*), and the Rockface beetle (*Ochthebius poweri*). There are also fourteen associated Red Data Book invertebrate species and many more nationally scarce invertebrates occurring in the area.

The majority of Wessex spring and seepage sites are poorly known and there is little awareness of their ecological importance – even amongst the conservation community.

Threats to springs and seepages

There are various factors which can threaten the ecological interest of springs and seepages. These can be broadly grouped into threats to:

- water quality
- water supply
- physical modification of the spring or seepage
- damaging land management activities, or lack of land management (especially shading out by trees and shrubs)
- invasive species

Further information

¹ The Natural Environment and Rural Communities (NERC) Act came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. These were formerly UK Biodiversity Action Plan (UKBAP) priority species.

² Boyce, D.C. (2002) A review of seepage invertebrates in England. English Nature Research Review 452.

Buglife has developed a series of advice sheets on the conservation, management and restoration of springs and seepages. These are available at www.buglife.org.uk. Whilst these sheets have been developed as part of the Wessex springs and seepages project, much of the habitat management advice is applicable to other parts of the United Kingdom.

- Sheet 2 - **General guidance to managing springs and seepages for wildlife**
- Sheet 3 - **Managing springs and seepages in woodlands**
- Sheet 4 - **Managing springs and seepages in grasslands, heathlands and open habitats**
- Sheet 5 - **Managing springs and seepages on coastal cliffs**



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