

An important habitat for invertebrates



Draining of wetlands in England and Wales has occurred for hundreds of years. In some places that are still prone to flooding, drainage has created 'grazing marsh' - damp pasture with networks of ditches ('wet fences'). As a result much of the wildlife that previously inhabited pools and streams in the historic wetlands is now confined to these ditch systems, making grazing marsh ditches an important farmland habitat.

Grazing marsh ditches support a wealth of invertebrate and plant life, including numerous nationally rare species. Wetland species occur on the margins and the water provides a refuge for a wide diversity of plants and invertebrates, including insects such as the Great silver water beetle (*Hydrophilus piceus*).



Braunton Marsh, Devon © Roger Key

The Buglife Grazing Marsh Ditches Project

From 2007 to 2009, Buglife - The Invertebrate Conservation Trust carried out a survey of over 500 coastal grazing marsh ditches across southern England and Wales. Data on aquatic invertebrates, plants and environmental features were gathered and analysed. Also a picture of recent change in the quality of ditches was built up by

comparing the information collected with data from previous surveys.

Rare and threatened species

Seventy rare and threatened aquatic invertebrates were found during the Buglife survey; of these, 47 were water beetles. Nine of these rare invertebrates are on the UK Biodiversity Action Plan (BAP) priority list, including the Fen raft spider (*Dolomedes plantarius*), the Lesser water-measurer (*Hydrometra gracilentata*), the Norfolk Hawker dragonfly (*Aeshna isosceles*) and the Little whirlpool ram's-horn snail (*Anisus vorticulus*). This snail is also protected under European legislation. The project identified two 'flagship' invertebrate species for ditches, the red listed Ornate brigadier soldierfly (*Odontomyia ornata*) and the Great silver water beetle (*Hydrophilus piceus*), which were among the most widespread and frequent of the rare invertebrates and are also a sign of ditch quality.

Grazing marshes were found to be a stronghold for eleven rare and threatened aquatic plants, including Frogbit, Tubular water-dropwort, Sharp-leaved pondweed and Water soldier. Five of the rare plants are conservation priorities (on the UK BAP list).



Fen raft spider (*Dolomedes plantarius*) © Roger Key

Species changes

The survey showed surprising increases in some species, for instance in the Saucer bug (*Ilyocoris cimicoides*) and Water stick insect (*Ranatra linearis*). Although the general quality of the flora and fauna appeared to be stable or improving in sites where conservation management is in place, it was not all good news. Some invertebrate species showed declines, including a suite of common water beetles in Somerset.

Habitat diversity

The surveys found that the more varied the habitat the richer the wildlife it supported. Different salinity levels, vegetation types and water depths are associated with distinct groups of invertebrates. Cattle create a variety of habitats by poaching shallow margins and grazing. Grazing marshes throughout England and Wales have distinctly different habitats and species, so marshes throughout this range need to be protected.

Threats to the ditch habitat

Although ditches must occasionally be cleared out to prevent them becoming overwhelmed by vegetation, the wholesale clearance of ditches is still common and creates empty and steep-sided channels with greatly reduced wildlife. Other threats to ditches include:

- pollution from fertilisers and pesticides
- invasive non-native species
- unsuitable water level management
- threats from climate change, including drought and rising sea levels



Grazing marsh ditch © Nick Stewart

CONSERVATION OF GRAZING MARSH DITCHES

Currently, there are several exciting conservation projects targeting wetlands, including coastal and floodplain grazing marshes. The England Wetland Vision (www.wetlandvision.org.uk) sets out a 50-year plan for creating and restoring wetlands throughout the country. Two ambitious projects are already under way in Cambridgeshire: the Great Fen Project (spear-headed by the Wildlife Trust) and the National Trust's Wicken Fen Project. These will recreate landscape-scale wetlands through land purchase and will join up remaining fragments of historic wetlands that are now isolated nature reserves.

Buglife has developed a series of advice sheets on the creation, conservation and management of grazing marsh ditches. These are available at www.buglife.org.uk

- Sheet 2 - **Creation and restoration for invertebrates**
- Sheet 3 - **Management for invertebrates**
- Sheet 4 - **Agri-environment schemes in England**
- Sheet 5 - **Coastal realignment for invertebrates**

Further information

The Buglife grazing marsh project produced two technical reports, which are available on Buglife's web site www.buglife.org.uk

Drake C.M., Stewart N.F., Palmer M.A. & Kindemba V.L. (2010) The ecological status of ditch systems. An investigation into the current status of the aquatic invertebrate and plant communities of grazing marsh ditch systems in England and Wales. Technical Report. Buglife - The Invertebrate Conservation Trust, Peterborough

Palmer M.A., Drake C.M. & Stewart N.F. (2010) A manual for the survey and evaluation of the aquatic plant and invertebrate assemblages of ditches. Version 4. Buglife - The Invertebrate Conservation Trust, Peterborough



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