



Ditches on farmland were traditionally used not only for drainage but to enclose or exclude animals, mark land ownership and provide drinking water to livestock. Now farmland ditches are a very important habitat for many wetland invertebrate and plant species. There are numerous management options available in the current Environmental Stewardship scheme in England that can be used to manage ditches for the benefit of wildlife.

Using the experience gained from the Buglife survey of grazing marsh ditches (see Further information), the following recommendations are made on choosing Environmental Stewardship ditch management options to benefit invertebrates and plants.



North Kent Marshes © Vicky Kindemba

Higher Level Stewardship (HLS) options

If you want to maintain ditches of very high wildlife quality and manage them for specific rare invertebrates, you may want to explore HLS option HB14. Discuss this option, potentially relevant local species (see Table 1 overleaf) and complementary options with your Natural England officer or farm advisor.

HB14 Management of ditches of very high environmental value

This option is aimed at the management of ditches that support target species, including invertebrates. Sensitive management is necessary to maintain the correct type of ditch habitat for specific species, whose requirements can range from open water to ditches thick with wetland plants.



Lesser silver water beetle (*Hydrochara caraboides*) © Roger Key

Examples of potential target invertebrate species are given in Table 1 (overleaf). More details on rare species are available in the Buglife grazing marsh survey report, referenced in the 'Further Information':

It is recommended that option HB14 is combined with a relevant associated grassland option. Use of the grassland option will increase the potential of the ditch habitat and help to protect water quality. Associated options include:

- HK6 Maintenance of species-rich, semi-natural grassland
- HK7 Restoration of species-rich, semi-natural grassland
- HK8 Creation of species-rich, semi-natural grassland

HK19 Raised water levels supplement

This supplement supports the raising of water levels in ditches and adjacent land, where exceptional and time-consuming management is needed at key periods of the year. This option may be relevant to ditches that lose water, particularly if this is detrimental to target invertebrate species.

HLS capital items

Two capital item options can be implemented for the creation and restoration of ditches. Refer to information in Grazing marsh ditches - Sheet 2 and see 'Further Information' for a web link to the HLS Management Handbook.

DR Ditch, dyke and rhine restoration

WDC Creation of ditches – rhines and dykes

Table 1: Potential target invertebrate species for option HB14

Target Species	Grazing marshes where the species occur	References/and or advice
Shining ram's-horn snail (<i>Segmentina nitida</i>)	Lewes and Pevensey Levels (East Sussex), Kent Marshes, Norfolk Broads, and the Somerset Levels	Buglife species management sheet http://www.buglife.org.uk/Resources/Buglife/Shining%20Ram_s-horn%20snail%20sheet.pdf
Medicinal leech (<i>Hirudo medicinalis</i>)	Romney Marsh (Kent/East Sussex)	Strong preference for ditches running through grassland instead of arable, with gently sloping banks and a high cover of submerged vegetation
Little whirlpool ram's-horn snail (<i>Anisus vorticulus</i>)	Norfolk Broads, the Arun Valley and Pevensey Levels, Sussex.	Prefers cattle poached ditches with shallow margins and submerged and floating vegetation
Lesser silver water beetle (<i>Hydrochara caraboides</i>)	Somerset Levels	Shallow water 15 to 30 cm deep is required, with floating leaves to provide cover for the egg cocoons and the larvae. Ditches should be cleaned periodically
Norfolk Hawker dragonfly (<i>Aeshna isosceles</i>)	East Norfolk and East Suffolk	Norfolk Hawker – British Dragonfly Society Management Fact File www.british-dragonflies.org.uk/sites/default/files/aeshna%20isosceles.pdf
Large-mouthed valve snail (<i>Valvata macrostoma</i>)	The fenland basin (East Suffolk, East and West Norfolk, Cambridgeshire and South Lincolnshire), the Pevensey Levels (East Sussex), a few sites in the Somerset Levels and Hampshire Avon valley	Late successional ditches with moderately hard water that are shallow, and retain at least some water throughout the year. They also prefer shallow, cattle poached margins that, although choked by emergent plants such as <i>Glyceria</i> species, are not over-shaded
Lesser water-measurer (<i>Hydrometra gracilentia</i>)	East Norfolk and the Pevensey Levels	Prefers well vegetated ditches flooded or surface wet fen with dense vegetation
Fen raft spider (<i>Dolomedes plantarius</i>)	Pevensey Levels (East Sussex)	For more information about this species see the Fen Raft Spider website, www.dolomedes.org.uk

Entry Level Stewardship (ELS) options

For less intensive management of ditches, to create good wildlife ditches, ELS management options can be adopted. These are summarised below.

EB6 Ditch management

This option is intended for ditches forming field boundaries in their own right and aims to establish ditches rich in wildlife by having a varied bank-side and aquatic vegetation, and an undisturbed wildlife habitat adjacent to the ditch. If you undertake this option there is a set of requirements and eight management rules you must comply with – see ELS management handbook for more information.

EB7 Half ditch management

This option is similar to EB6 but is available for ditches where you only have control over the management of one side of the ditch.

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 1 - **An important habitat for invertebrates**
- Sheet 2 - **Creation and restoration for invertebrates**
- Sheet 3 - **Management for invertebrates**
- Sheet 5 - **Coastal realignment for invertebrates**

For this option, you must comply with 5 management requirements – see ELS management handbook for more information.

Where a ditch runs alongside a hedge and you can include both in the scheme, use options EB8, EB9 and EB10 (see below), rather than the separate hedge and ditch options.

EB8/9/10 Combined hedge and ditch management options

These options are available for hedgerows adjacent to a ditch that meets the eligibility criteria of EB6 or 7 (see above). The aim is to establish a diverse hedgerow, and bank side and aquatic vegetation within the ditch. You must have control over the management of adjacent land on both sides of the hedge and ditch and there are 4 management requirements you must comply with for these options – see ELS management handbook for more information.

Further information

The Buglife grazing marsh project produced a technical report, which is available on Buglife's website 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

Environmental Stewardship - Natural England website

<http://www.naturalengland.org.uk/ourwork/farming/funding/es/default.aspx>

ELS management handbook

<http://naturalengland.etraderstores.com/NaturalEnglandShop/NE226>

HLS management handbook

<http://naturalengland.etraderstores.com/NaturalEnglandShop/NE227>



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Registered in England at First Floor, 90 Bridge Street, Peterborough, PE1 1DY.
Company no. 4132695. Registered charity no. 1092293. Scottish charity no. SC040004.

This leaflet has been sponsored by the Esmée Fairbairn Foundation