

EA-300TH
NEST - BOX
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Ditch management

Why manage ditches?

- The ditch networks in river valleys have been established over the centuries linked with traditional agricultural practices. Today they contribute to the unique landscape character of the area.
- Ditches are important habitats for aquatic plants, animals, insects and birds. For example, well-managed ditches provide feeding sites for wildfowl and ground nesting birds, and habitat for water voles and otters.
- An efficient and maintained ditch system helps drain the land in times of high flows, whilst retaining water during periods of drought.
- Maintaining water levels and flows enables ditches to function as 'wet fences' and provides drinking water for livestock.
- Regular management prevents ditches silting up and the banks becoming scrub covered.
- Financial benefits may be achieved because ditch management can contribute towards premium tier payments under agri-environment schemes.



Managing ditches is a win - win situation!

Ditches for wildlife - best practice management

For ditches to function efficiently they require regular maintenance, so a 'little-and-often' approach is more cost-effective and ecologically sound. If ditches have become redundant, more substantial restoration is needed. Best practice techniques apply to both routine maintenance and the restoration of ditches, for example:

- When vegetation clearing or de-silting, leave parts of the ditch undisturbed to ensure some refuge habitat is kept, enabling wildlife to re-colonise areas disturbed through management.
- Manage ditches in an upstream direction, to help wildlife return to the disturbed length downstream.
- Work from one bank only, avoiding damage to the working bank by careful operation of a machine that is appropriate to the channel size.
- Maintenance or restoration should aim to keep the existing water level - there should be no need to excavate below the present ditch bed level.
- Ditch management in late summer/early autumn avoids disturbance to wildlife whilst access is generally easier because of the drier ground conditions.
- If removing aquatic vegetation, leave cut material adjacent to the watercourse for several hours so wildlife can return to the water. But avoid leaving large amounts of decomposing weed on the banks because the liquor could pollute the water (keep livestock away from dredgings that might contain poisonous plants such as Hemlock, Hemlock-water-dropwort or iris).
- In some circumstances it may be appropriate to control excessive plant growth with a herbicide approved for use in or near water. If considering this option you will need the agreement of your local Agency office. The Agency can also advise on the most environmentally friendly herbicide to use, or alternative methods if necessary.
- Manage banks sympathetically, preferably by light grazing rather than mowing.

Enhancing ditches for wildlife

Ditches that are deep and steep-sided are not livestock or wildlife-friendly, ways to enhance your ditch system are illustrated below.

1 Manage the ditch network on a rotational basis, to ensure some areas of wetland habitat are kept undisturbed for wildlife.
Maintain on a 5-6 year rotation (15-20% per year). Restore over 2-3 years.

Leave one bank and channel margin intact throughout, or leave blocks of ditch habitat undisturbed (approximately 8-10m).

3 If spoil is not removed then spread thinly on adjacent land, at least 2m from the ditch. Aftercare may include harrowing and topping for weed control.

5 Fences cause banks to scrub up. This
 ● increases bank maintenance.
 ● is environmentally poor because it shades the channel inhibiting aquatic plant growth.
 ● conflicts with breeding wader interest.

7 Managing fenced banks: if fences cannot be removed, then mechanical management is desirable. Top or flail (one bank each year), late summer or autumn, raising the cutter bar to the highest setting.

6 With appropriate stocking density and suitably profiled banks, fences are unnecessary. Livestock grazing will prevent scrub and coarser vegetation becoming established.

Adjacent land

Clear scrub to maintain an open landscape for breeding waders, but retain broadleaved trees, like pollard willows, where there are no conflicts with wetland birds.

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12 Create shallow scrapes in ecologically-poor areas of the field. These provide feeding sites for breeding waders and over-wintering birds like snipe.

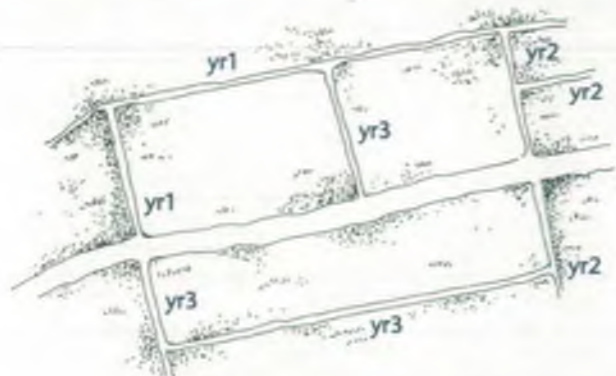
11 Excavate shallow scalloped drinking bays for livestock. This helps limit erosion and increases habitat diversity.

13 Do not fill in wetland features with spoil from ditch works.

9 Avoid producing or adding to a raised spoil bank (levee), previously created through repeated de-silting works. Levees can be removed at intervals (or entirely) to re-connect the ditch to the flood plain.
If suitable, material from levees can be placed back in the channel:
 ● to raise the bed level.
 ● to act as a water control mechanism.
 ● to retain water in the ditch during dry weather.

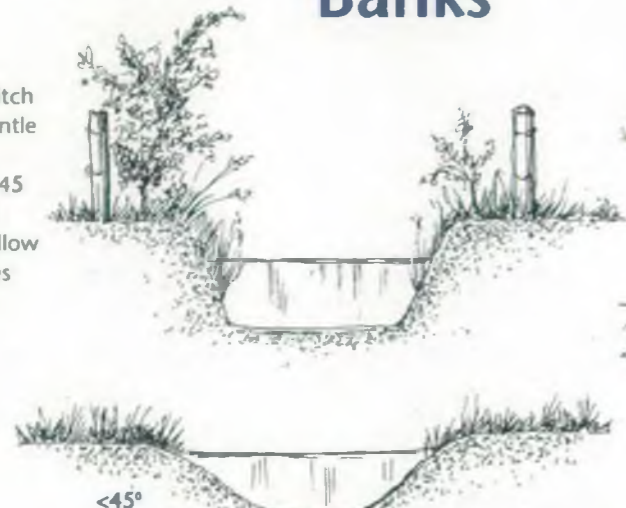
10 Maintaining the linkage between ditches helps wildlife to disperse or recolonise throughout the system.

Do not deepen beyond the original profile. Ideally summer water levels should be no less than 300mm below mean field level.



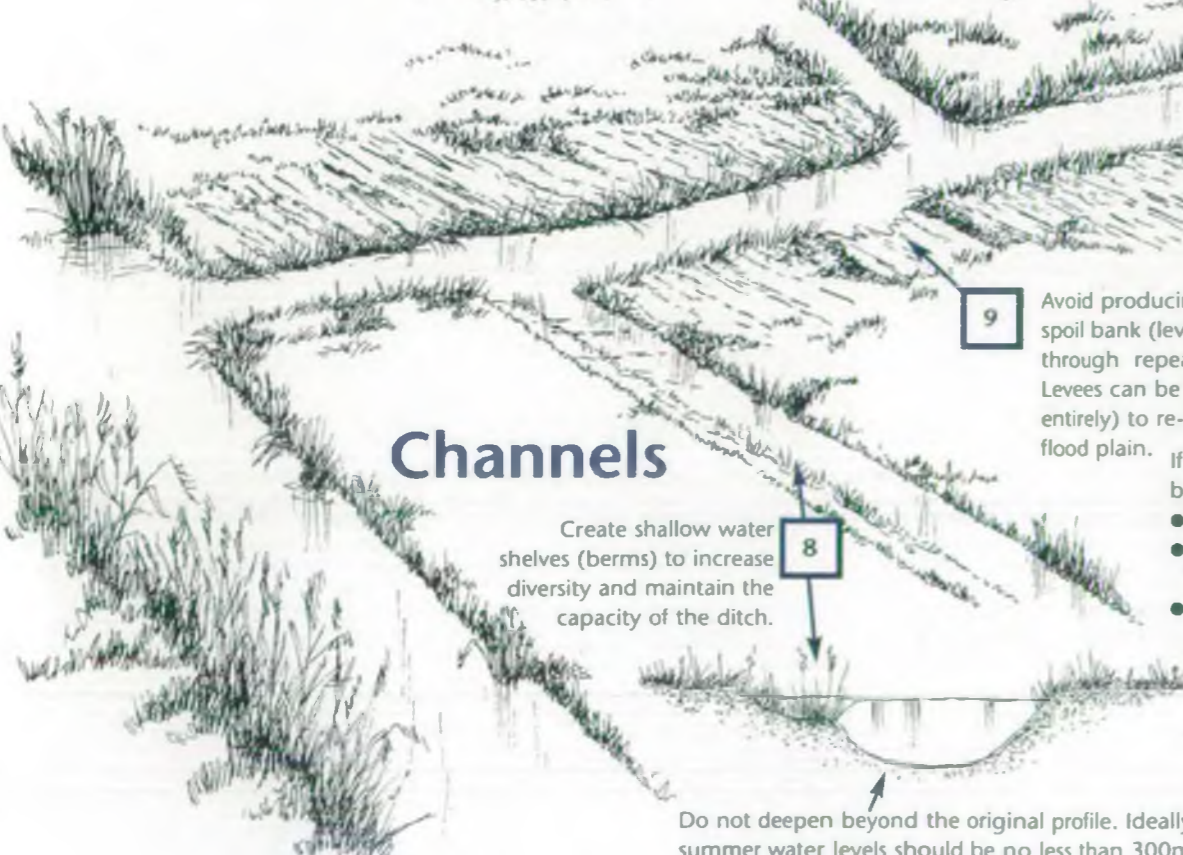
Banks

2 Re-profile ditch banks to gentle gradients (maximum 45 degrees) to provide shallow water fringes for aquatic plants and wildlife.



Channels

8 Create shallow water shelves (berms) to increase diversity and maintain the capacity of the ditch.



Things to consider

- **Pollution prevention:** Ditch work will result in silt release. Silt can cause damage to river life, for example, by smothering clean gravels used for fish spawning; affecting plant growth and insect life. Water containing silt loads should never be allowed to flow directly into a stream or river, this can be controlled with simple pollution prevention measures. Securing straw bales or suitable geotextile material at the downstream end of a drain during de-silting will help filter out much of the silt and prevent it flowing into adjacent rivers. These can be removed when the silty water has settled.
- **Spoil disposal:** In areas liable to flood, the Environment Agency recommends that spoil arising from de-silting works is removed to prevent the creation of raised banks which could obstruct flood flows.
- **Water voles:** The water vole is the UK's most rapidly declining mammal species. They favour wetland habitats such as rivers, ditches canals and ponds particularly with dense fringing vegetation like reeds, rushes and sedges. They typically construct burrow systems within the banks or in the absence of suitable bank habitat, may create nests in tussocky vegetation. If water vole burrows are present within ditch systems every effort should be made to conserve and enhance this habitat. Indeed, under the Wildlife and Countryside Act 1981, it is an offence to damage, destroy or obstruct access to water vole burrows or disturb water voles whilst they are using such a place. If in any doubt, please seek advice from English Nature.



- **Archaeology:** The presence of earthworks or former sluices, bridges or weirs may indicate historic water meadow features. Important archaeological information can be obtained from these sites, revealing the evolution and operation of old water meadows. The potential for wetland archaeology to be present should be a consideration if significant ditch restoration works are intended - be aware that you may need to seek the guidance of your local County Archaeologist.



- **Recreation:** Care needs to be taken to ensure that public footpaths and bridleways within floodplains are not adversely affected through ditch management works. Please plan your work to ensure minimum disruption.

What should I do now?

Before proceeding with ditch management involving de-silting works you may need the approval of the Environment Agency and English Nature. It is therefore recommended that you first make contact with the Technical Team (Fisheries, Recreation and Biodiversity) at your Environment Agency Area office (see back page), who will guide you to the most appropriate contact depending upon local circumstances. The Agency can also provide guidance, for example in relation to the creation of livestock drinking bays or otter holts.

For specific advice on capital grants for restoration programmes within agri-environmental schemes contact your local DEFRA office, or the DEFRA National Helpline.

DEFRA National Helpline
www.defra.gov.uk

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