

## Best Practice Information Sheet

# Managing wetlands

# Sheet 42.0a

## Wetlands for water quality

### Why change?

Wetlands can act as buffer zones to reduce the impact of farming on streams, rivers and lakes. Good wetland management linked with good agricultural practice can reduce diffuse pollution by removing nutrients and sediment in drainage waters and run-off, and reduce risks of downstream flooding. Wetland buffers potentially have a wide range of benefits, which include:

- cost-effective pollution control
- reduced runoff and flooding risk
- good source of dry weather grazing
- better habitat and wildlife diversity.



*Wetlands can have big impacts on water quality*

## Steps to success

- 1. Review the current situation by** identifying any causes of potential pollution on your farm. Map any point source and diffuse pollution sources that might carry sediment, nutrients (N&P), and pesticides. Additionally map the routes taken to reach the river channel via run-off over land, ditches and drains. Rivers Trusts are equipped with tools to help you do this.
- 2. Identify potential opportunities** for wetland buffer zones that could intercept pollution. Remember that wetlands are not always adjacent to river channels. If you have wetlands on your farm that are suitably located, they could be managed to intercept and treat water draining a wide area. However, seek advice on whether this would be detrimental to the wetland habitat. Investigate funding available for creating, restoring or managing wetlands under Environmental Stewardship and other agri-environment schemes
- 3. Calculate the cost-benefit of these opportunities** by evaluating the type of pollution that needs to be controlled, as well as the pollutant pathway, against the costs of changing your management techniques. Wetland buffer strips are only one method of reducing diffuse pollution and improving water quality. The main benefits other than reducing pollution include supporting conservation and fisheries, and increasing the opportunities for diversification. You will also be helping to protect and conserve wetlands, which are an important and diminishing natural resource.
- 4. Develop an action plan** for establishing wetland buffer zones:
  - aim to manage pollution at source through good management practices and appropriate land use. Implement wetland buffer zones as a second line of defence
  - ideally the ratio of wetland buffer zone to farmland should be at least 1:100, i.e., one hectare of wetland should be used to treat the run-off from every 100 hectares of farmland
  - assess the possibility of using wetland buffer zones for summer grazing, when other pasture might be unproductive during drier periods
  - avoid spreading wetland buffer zones with pesticides, herbicides, nutrients and fertilisers
  - investigate the availability of grants for establishing wetland buffer zones on arable land and grassland.
  - make use of freely available advice from Rivers Trusts and other organisations in identifying and planning wetland restoration and management
- 5. Check** your buffers regularly for injurious weeds that are harmful on contact e.g. ragwort. Try to ensure that the flow through the wetland is across the whole width i.e. sheet flow. Take any necessary steps to prevent the development of bypass flow and channelisation, which will result in the water passing through the wetland rapidly in one or more streams and thus reduce potential water quality benefits.

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## Sheet 42.0b

# Wetlands for water quality - Practical examples

### Ditch diversion

*Location* – River catchment, Devon.

*Technique* – diversion of a ditch carrying farmyard runoff into a linear floodplain wetland from previously discharging directly into the main river channel.

*Costs* – negligible. The original ditch was diverted via a small ditch constructed using a mechanical digger while other operations were taking place, e.g. ditch clearance.

*Benefits* – an 80% reduction in phosphorus concentration in surface water was measured. Suspended sediment concentrations were also greatly reduced.

**NB. This should not be done if the ditch system is of high environmental value.**



*Fenced ditches encourage vegetation regrowth proving natural filtration of runoff*

### Intercepting runoff

*Location* – River catchment, Cornwall.

*Technique* – maintenance of a footslope wetland below permanent pasture, where it has the opportunity to intercept runoff. The wetland is self maintaining with light summer grazing. It has no draining and no fertiliser application.

*Costs* – negligible. The footslope is left undrained, and fertilisers and pesticides are not applied.

*Benefits* – wetlands such as this are known to remove large amounts of nitrogen originating from fertiliser and manure applied to pasture upslope. The wetland is preferentially grazed by livestock during summer months, which acts to restrict scrubbing-up, as well as providing economic benefits through grazing.



*Footslope wetlands - cheap to establish and maintain*

## Remember

- Wetland buffer zones are not a substitute for good practice elsewhere on the farm.
- Seek advice on whether using the wetland as a buffer zone would be detrimental to the wetland habitat before using it for this purpose
- Use wetland buffer zones specifically designed to intercept runoff and to protect watercourses from pollution.
- A ratio of wetland buffer zone to agricultural land of at least 1:100 is recommended.
- Grant aid for buffer zones is available under agri-environment schemes such as Entry Level Stewardship (ELS) or Higher Level Stewardship (HLS)

For further information: Defra ([www.defra.gov.uk](http://www.defra.gov.uk)), Environment Agency ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)), ECSFDI (<http://www.defra.gov.uk/foodfarm/landmanage/water/csf/delivery-initiative.htm>), Natural England ([www.naturalengland.org.uk](http://www.naturalengland.org.uk)), Cross Compliance Helpline 0845 345 1302 ([www.crosscompliance.org.uk](http://www.crosscompliance.org.uk)) and ART ([www.associationofrivertrusts.org.uk](http://www.associationofrivertrusts.org.uk))



This information sheet is part of a series providing farmers with advice on land management practices to protect water bodies, produced by Association of Rivers Trusts with support from the England Catchment Sensitive Farming Delivery Initiative. The advice will also enable farmers to use farm resources more efficiently and help meet Nitrate Vulnerable Zone and Soil Protection Review requirements under Cross Compliance and environmental regulation.



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