



Best Practice Soil Management

Sheet 20.0a

Field Drainage

Why change?

Good management of field drainage systems can save you money and protect the environment by helping to:

- maintain optimum conditions for crop growth
- provide summer grazing
- reduce soil damage, soil erosion and nutrient losses
- reduce the risk of watercourse pollution
- highlight pollution problems early
- improve wildlife habitats
- options for stewardship
- increase carbon sequestration



Poor agricultural areas can be good for wildlife

Steps to Success

1. **Review** the current situation by examining the field drainage system on your farm. Consider your field drainage requirements, and maintenance programme, the presence of waterlogged areas, pollution and the quality of water flowing through and from your holding to habitats and fisheries.
2. **Identify** potential opportunities for improvements to your field drainage system. Identify poorly drained marginal areas and create or improve specific wetlands that would add value to the farm through stewardship and habitat. For example, look out for significant or frequent brown water run-off or sewage fungus in ditches, signs of soil damage and poor crop growth in wetter areas.
3. **Calculate** the cost-benefit of these opportunities by considering the benefits of improved field drainage and better crop growth versus the costs of undertaking the work, maintenance, soil erosion, and pollution.
4. **Prioritise** fields, remembering that wetlands and areas adjacent to watercourses are important as buffer zones. Be aware of the pathways that your field drains and ditches follow, to avoid rapid run-off of pollutants such as nutrients and pesticides. Be aware that problems up-slope can be easily transmitted downstream.
5. **Develop** an action plan for improvements to your field drainage system:
 - review your field drainage system and identify the need for improvement on a field-by-field basis using a farm map. Take into account the need to apply for an Environmental Impact Assessment (EIA) from Natural England if the area of unimproved or uncultivated land is above 2ha. It is a requirement of cross compliance and Farming Rules for Water regulations that every farm in receipt of Basic Payment Scheme (BPS) must comply with Soil Protection Standards (GAECs 5 and 6)
 - plan new field drainage, e.g. where drainage is inadequate but is required for timely and productive crop growth, or to reduce the potential for soil damage by livestock poaching
 - maintain existing field drainage, e.g. where drainage is adequate and necessary. Maintain land drain outfalls regularly. Consider making field drains stop short of watercourses to buffer them from soil and nutrient inputs
 - sacrifice field drainage where the benefits of improvements, (e.g. to enable crop growth) are outweighed by the costs. Suitable areas may include land adjacent to watercourses, natural wetlands and ribbon areas at the base of steep slopes. These can be managed as buffer zones, wetlands, and to provide summer 'bite'
 - consider creating small ponds and wetland areas at ditch junctions or by drainage outlets to help manage run-off and increase wildlife diversity
 - avoid nutrient losses and the risk of watercourse pollution. Do not spread fertilisers, manures, slurries, dirty water and liquid wastes such as dilute pesticides onto land that is well-drained or has shallow drains in wet conditions.
6. **Check** your fields for signs of brown water run-off or sewage fungus, particularly during or after rain.



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Sheet 20.0b

Field drainage - practical examples

Managing wetland for conservation

The costs of land drainage can exceed the extra income gained. More benefit may result from protecting wetlands for a dry weather bite and conservation. Funding may be available as part of Countryside Stewardship or other agri-environment schemes. Benefits could include:

- Managing wetland - annual payments
- Grant for fencing and culverts
- Creating wildlife ponds
- Creating buffer strips can access considerable funding through Countryside Stewardship agreements
- potential carbon capture and trading



Poorly drained areas could access environmental payments

Animal welfare

In this worked example, a farmer was considering whether to drain an area of low-lying wet ground and took advice on the alternatives. He made an application for Countryside Stewardship (CS). Fencing was completed on 500m of ditches and streams to exclude beef cows and other livestock from the boggy area, although access was retained for controlled grazing. The fencing reduced lameness, injury, infection, loss and time spent retrieving wandering stock.

The fencing, using farm labour, cost £4/m. Reduced lameness/injury and straying costs of £4 per animal in a herd of 100 saved £400 a year.

Payback was less than five years even without the un-costed benefits of increased growth rates, easier stock control, improved wildlife habitat and the Countryside Stewardship grant.



Wetlands offer summer grazing

Remember

- Good management of field drainage can improve crop growth, reduce nutrient losses and pollution risk, increase workability, lengthen the grazing period and reduce the chance of soil damage due to agricultural operations.
- It may not be cost effective to drain new areas or maintain existing field drainage. Poorly drained soils may be better suited to wetland or buffer zone creation to provide summer 'bite' and reduce the risk of pollution.
- You may be liable to prosecution if you cause watercourse pollution.



This information sheet is part of a series produced by Westcountry Rivers Trust providing farmers with advice on land management practices to protect water bodies. The advice enables farmers to use farm resources more efficiently, helping to meet Nitrate Vulnerable Zone, Cross Compliance, Farming Rules for Water and other regulations while protecting our environment and natural resources.

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