

Buffer zones

Why change?

Soil is the farm's most important resource. By introducing grassed buffer zones to protect your soils from erosion and run-off you could:

- reduce costs
- minimise the risk of watercourse pollution
- improve crop yields whilst reducing crop damage and inputs and increase pest predator populations
- protect habitats, e.g. watercourses and hedgerows and improve wildlife diversity
- increase carbon sequestration.



Buffer zones can intercept and slow run-off

Steps to Success

1. **Review** the current situation by examining the management of soils on your farm. Use a farm map to help consider the condition of your soils on a field-by-field basis and estimate the cost of problems such as soil erosion, run-off and watercourse pollution. Look out for signs of soil damage such as capping, rilling and brown water run-off. Identify the scope for establishing grassed buffer zones alongside important habitats such as watercourses, hedgerows and ancient woodland in order to slow down run-off, increase infiltration, remove nutrients and trap sediment. It is a requirement of cross compliance that every farm in receipt of **Basic Payment Scheme** (BPS) payments and under **Farming Rules for Water** legislation must comply with the Soil Protection Standards.

2. **Calculate** the cost-benefit of these opportunities by considering the benefits of establishing buffer zones versus the cost of problems such as soil and nutrient loss, watercourse pollution, crop damage and reduced yields.

3. **Prioritise** the protection of vulnerable soils that are most at risk of severe or regular erosion, e.g. sandy soils on long steep slopes. Tackle fields adjacent to watercourses first to minimise risk of water pollution.

4. **Develop** an action plan for establishing grassed buffer zones:

- aim to manage soil erosion and run-off at source through good soil management and appropriate land use
- establish grassed buffers of at least 2m width and wider in erosion-prone areas, alongside important habitats such as watercourses, hedgerows and ancient woodland
- create permanent grass strips through regeneration of natural vegetation where soil conditions allow, or by reseeded. Use a native seed mix that includes wild flowers and tussocky species such as Cocksfoot, Yorkshire Fog and Timothy to maximise the interception of run-off and also wildlife potential
- mow strips frequently in the first year to encourage establishment, and control volunteer crops or weeds. Manage buffer strips by mowing annually after mid-July when seeds have set, or alternatively leave strips of uncut tussocky cover for small mammals and insects · avoid spreading buffer zones with pesticides, herbicides, nutrients and fertilisers
- investigate the availability of grants for establishing grassed buffer zones on arable land and grassland. Depending on width the creation of buffer zones attracts a range of payments under Countryside Stewardship Schemes (CS).
- under CS, after establishment, cut between 1m and 3m in years 1 and 2 then buffer strips only need cutting to control woody growth, no more than one year in five. Buffer strips that are 6m require the 3m next to the crop edge to be cut annually and the other 3m only needs cutting to control woody growth, no more than one year in five.

5. **Check** your buffers regularly for injurious weeds, as well as the development of run-off pathways and bypass channels.

New Hedgerows - practical example

Summary of practical aspects

Aim to manage pollution at source through good management practices and appropriate land use. Implement buffer/settlement zones as a second line of defence. Ideally the ratio of dry or wetland buffer zones to farmland should be at least 1:100, i.e. 1 hectare of land should be generally needed to treat the run-off from every 100 hectares of farmland.

- Assess the possibility of using buffer zones for summer grazing, when other pasture might be unproductive during periods of drought.
- Avoid spreading wetland buffer zones with pesticides, herbicides, nutrients and fertilisers.
- Investigate the availability of funding for establishing wetland buffer zones on arable land and grassland. Check your buffers regularly for injurious weeds and development of bypass flow and channels.

Actual examples

Lightly fouled farmyard run-off, previously discharging directly into the main river channel, was directed into a floodplain wetland. The flow was diverted via a small ditch constructed, using a mechanical digger. The costs were negligible. An 80% reduction in phosphorus concentration in surface water was measured and suspended sediment concentrations were also greatly reduced especially in drier tussock areas.

The wetland was not drained and fertilisers and pesticides were not applied. It is self-maintaining with light summer grazing, which brings some economic benefit. The costs are negligible. Such wetlands also remove large amounts of nitrogen originating from fertiliser and manure applied up-slope and minimise the risk of water pollution and therefore the risk of more stringent regulation (e.g. application of Water Protection Zone status to the catchment).



Arable buffers reduce sediment loss



Wetland buffer zones reduce nutrient run-off

Remember

- Buffer zones are not a substitute for good soil management at source.
- Minimise soil erosion and runoff by using appropriate land use practices across your farm.
- Use buffer/settlement zones to intercept runoff, and to protect soils and wildlife habitats such as watercourses, hedgerows and ancient woodland.
- Investigate the availability of funding for establishing wetland areas under Countryside Stewardship and other agri-environment schemes