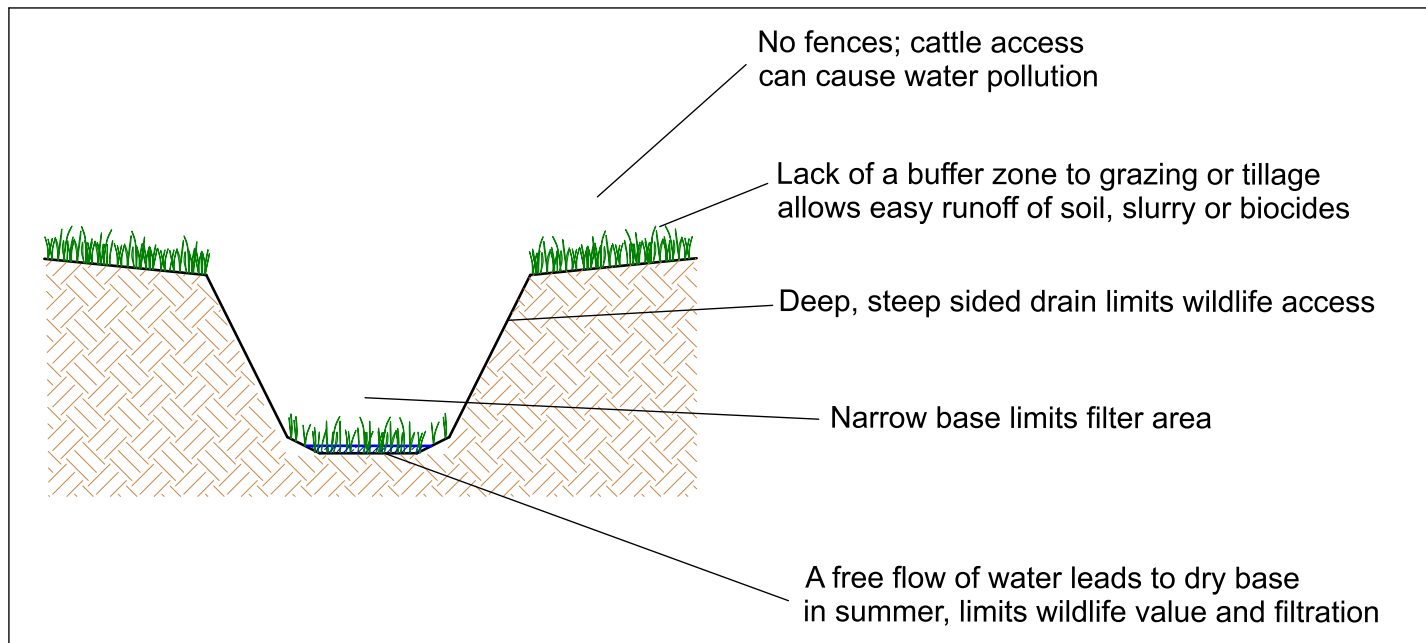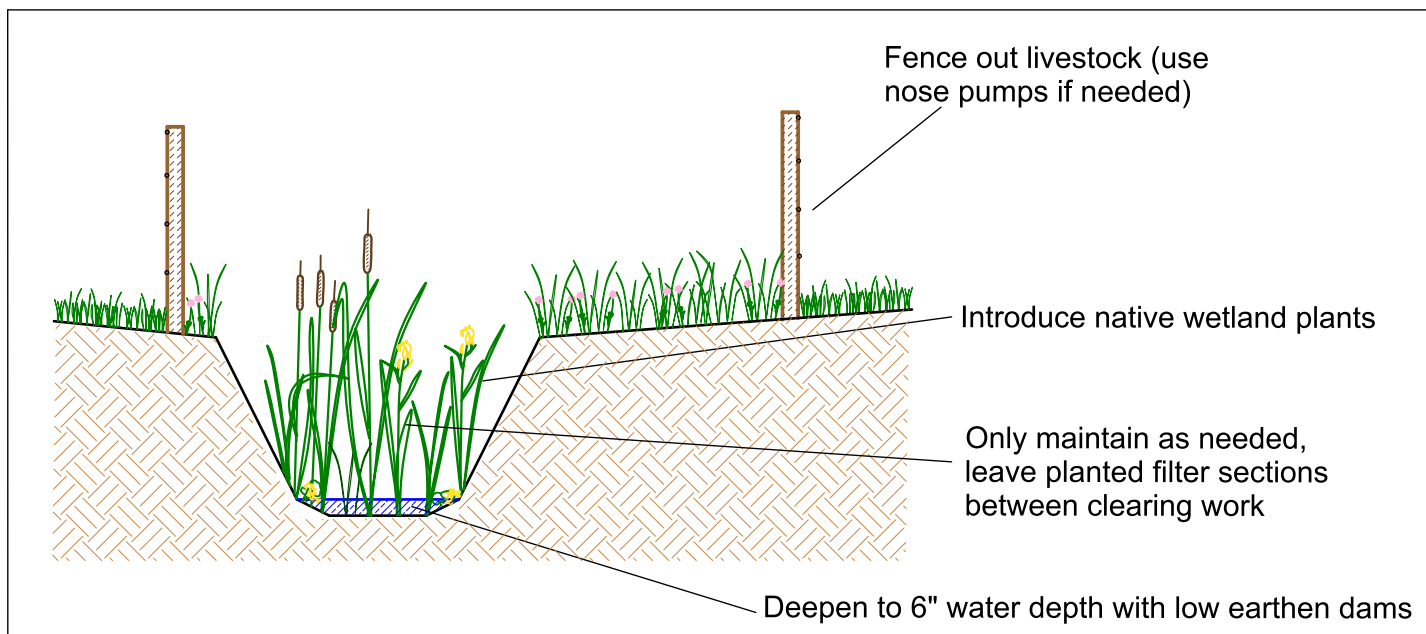# Drain Management for Wildlife and Water Quality

The management of small watercourses and farm drains has a large impact on the water quality in the wider catchment and on wildlife. Careful management filters water, protects against downstream flooding and droughts and provides shelter and food for wetland birds, dragonflies, frogs, and other wildlife.
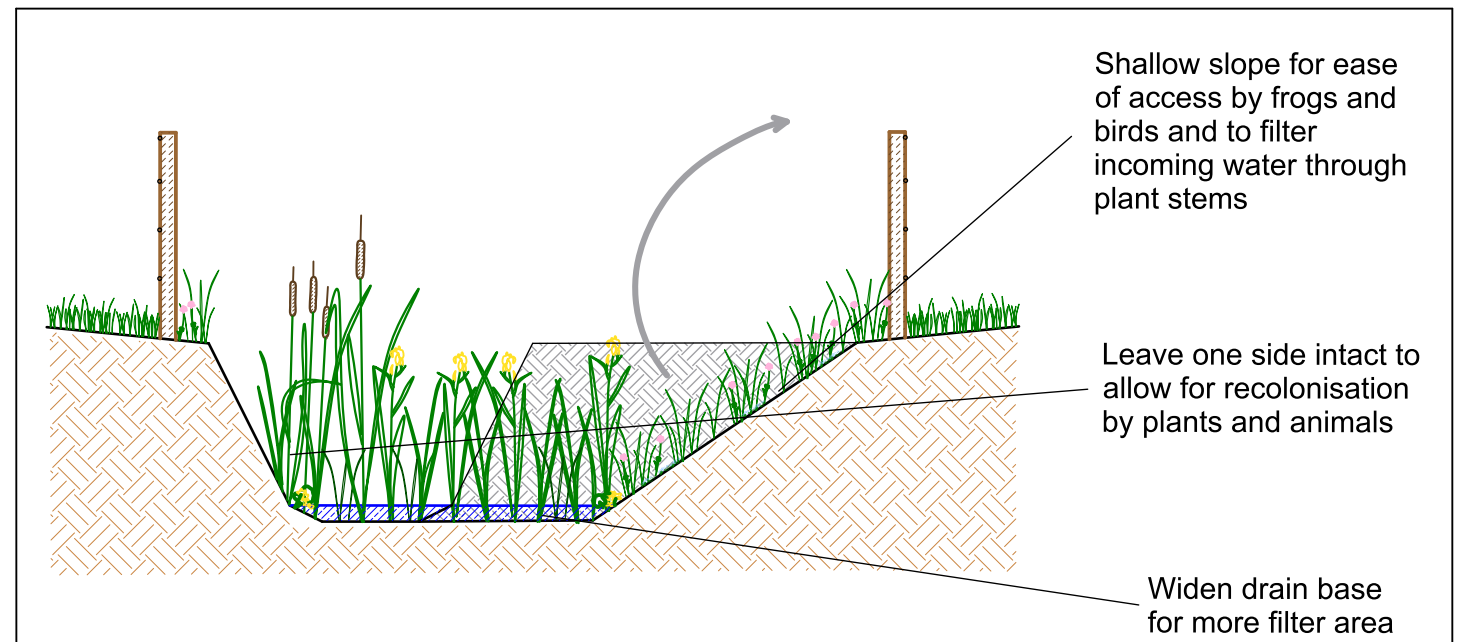
1 - Common drain profile:

No fences; cattle access can cause water pollution

Lack of a buffer zone to grazing or tillage allows easy runoff of soil, slurry or biocides

Deep, steep sided drain limits wildlife access

Narrow base limits filter area

A free flow of water leads to dry base in summer, limits wildlife value and filtration

2 - Basic Measures: Fencing. Low dams. Planting. Leaving filter sections.

Fence out livestock (use nose pumps if needed)

Introduce native wetland plants

Only maintain as needed, leave planted filter sections between clearing work

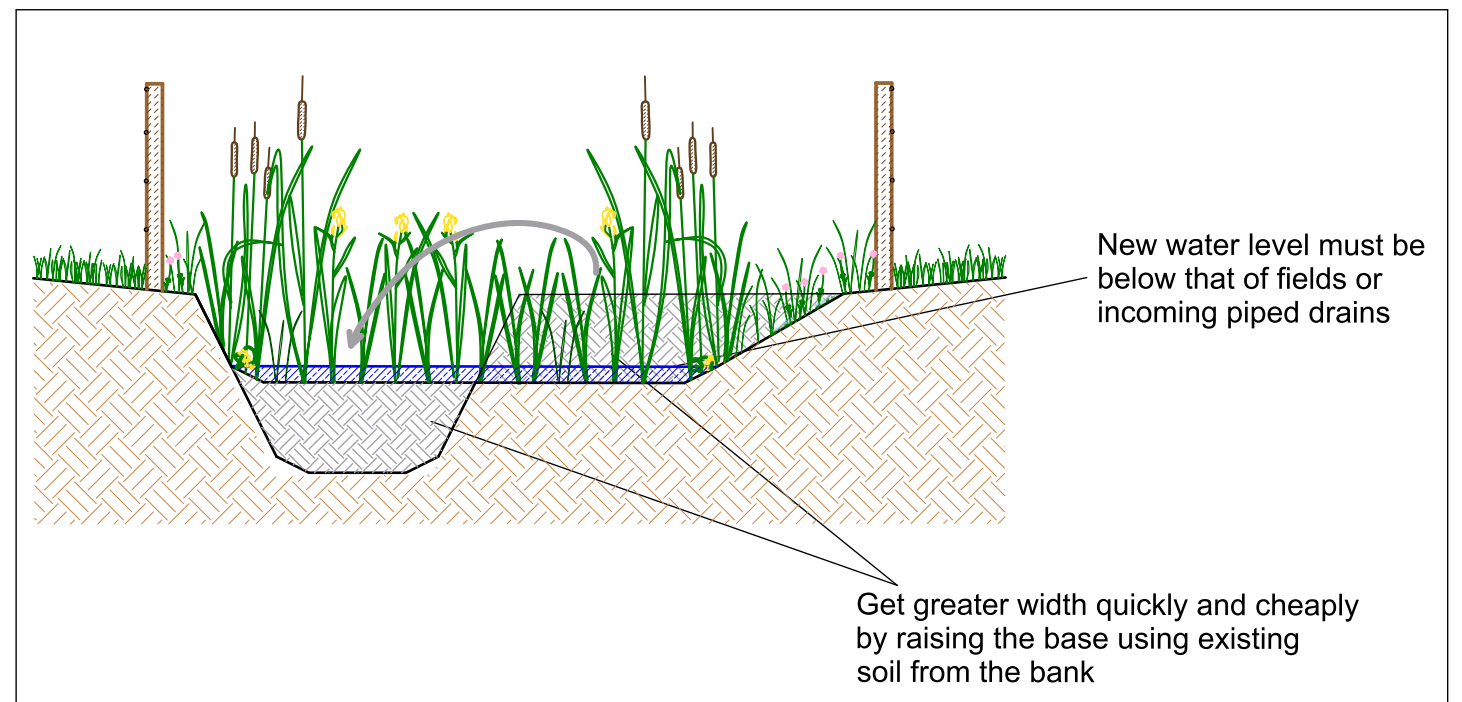Deepen to 6" water depth with low earthen dams

Drain Maintenance for Wildlife and Water Quality:

- Minimal intervention to minimise habitat disturbance and generation of silt.
- Clear from one side only to permit rapid recolonisation of plants and insects.
- Leave 20-50m at the lower end of drain as a planted filter.
- For long drains, leave 10-20m of planted sections intact for recolonisation and filtration.
- Reinstate or work around earthen dams to ensure that the drain holds water for ongoing habitat and filtration.
- Note that works in steams and rivers requires more baseline assessments and permissions than outlined here.

3 - Additional Measures: Widen drain. Soften edge slope.

Shallow slope for ease of access by frogs and birds and to filter incoming water through plant stems

Leave one side intact to allow for recolonisation by plants and animals

Widen drain base for more filter area

4 - Widening Option: Gain further width by raising the drain base

New water level must be below that of fields or incoming piped drains

Get greater width quickly and cheaply by raising the base using existing soil from the bank

Riparian and Field Margin Buffer Zones for Habitat and Filtration:

- Wooded buffer zones of native trees provide uptake of nutrients, wildlife habitat and a firewood or timber crop.
- Ideally wooded or grassed buffer zones should be gently sloped and fenced off from livestock with a width of 5-10m or more.
- Buffer zones at the lower edge of field margins also help to filter water, even if they are a long way from the drain or stream.
- Wetland buffer zones filter soil, slurry and biocides and provide habitat for insects and birdlife.
- For wetland buffer zones use minimal digger work to achieve maximum water-holding on the site, to allow water to settle in hollows or wet corners of fields.

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