



# NATURAL FLOOD MANAGEMENT

Natural flood management (NFM) involves using various techniques to restore or mimic natural functions of rivers, floodplains and the wider catchment. It aims to store water in the catchment and slow the rate at which water runs off the landscape into rivers, to help reduce flood risk to communities downstream. NFM can also be known as working with natural processes, slow the flow, sustainable land management or upstream management.

## AGRICULTURAL LAND MANAGEMENT

Farmland can create rapid water runoff due to the 'poaching' or compacting of soils by livestock and machinery. Agricultural land management aims to reduce compaction, improve soil structure, and increase soil permeability in order to increase the capacity of the land to store water. Agricultural land is valuable and it is important that landowners are given incentives to encourage them to change the way they manage their land, such as through Catchment Sensitive Farming grants.

### Soil land management

Cover crops can be utilised to protect and improve soil quality whilst reducing water runoff. Machinery practices can help to reduce soil compaction, such as by minimising loads and using flexible tyres on weak or saturated soils. This will also improve soil aeration which is useful for increasing infiltration and vegetation growth.

### Cross drains in farm tracks

Cross drains collect runoff and diverts water off a track or path, which reduces the volume and velocity of runoff. A cross drain can also be used to trap soil and sediment to prevent it entering watercourses or be washed onto grassland.



### Run off control

Techniques vary from in-field buffer strips and hedgerows which stabilise banks and intercept surface flow paths, to contour cultivation across fields instead of up and down fields to reduce surface water runoff.

### Farm yard techniques

These techniques help to improve runoff management and related diffuse pollution issues. Sediment ponds can manage and store runoff from roofing and tracks, along with strategic placement of field entrances and the construction of check dams.

### Benefits

- Enhances soil productivity by increasing aeration and relieving compaction.
- Increases biodiversity by planting buffer strips and farm woodland.
- Reduces diffuse pollution through decreasing sediment transportation and fertiliser runoff.
- Reduces soil erosion which in turn improves soil quality and productivity.

## CASE STUDY: Roe and Ive

This project is being carried out by Roe Catchment Community Water Management Group in partnership with various other agencies and groups. The project is ongoing with the aim of reducing the amount and rate of surface water runoff, and storing water in the wider catchment.



### Issues

- Local community has flooded three times since 2005.
- In 2005 and 2013, some resulting property
- repairs took over a year.

### Further solutions

- Convert catchment land to deciduous woodland.
- Construct more woody debris dams.
- Help farmers understand potential NFM options.

### Completed so far

- Soil aeration and subsoiling across 63 hectares.
- 25 woody debris dams installed.

### Benefits

- Store water in the wider catchment, reduce runoff and delay peak flooding.
- Reduce sediment runoff into watercourses.
- Benefits to habitat creation from tree planting and offline storage areas.