HOLDING WATER IN THE LANDSCAPE

A new practical deal for farmers and land managers?

Here we introduce the concept of using **5 % of land for holding water measures** as a balance of services that allows continuation of the remaining **95% of land for production** (agriculture, forestry) or developments. This satisfies a **100% commitment** to sustainably reducing flood and drought risk, improving water quality and biodiversity thereby climate proofing our catchments.

Intensifying our farming landscapes has led to excessive water runoff rates and increased problems of floods, droughts and water pollution (Fig. 1, right). Over time, the progressive loss of rainfall infiltration, water storage in soils and increased ditching and draining has resulted in a reduction of the land's water holding capacity thereby lowering deeper recharge. At the same time we also depend on the land for the production of food and clean water supply.

We propose that a targeted 5% of the landscape should be used to physically hold water during and shortly after storms (Fig. 2, below). This is a simple and cost effective way to address many catchment issues.

Water Stewardship delivered by farmers and land managers

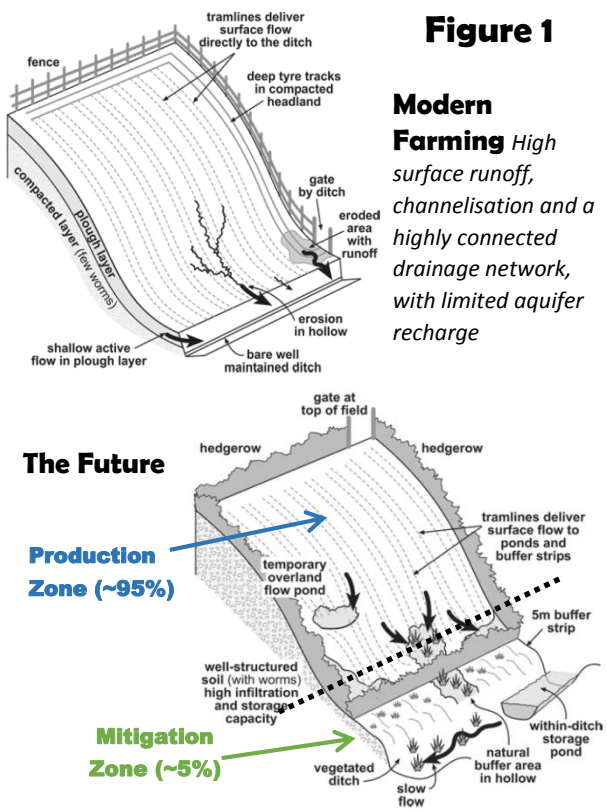

Figure 1

Modern Farming *High surface runoff, channelisation and a highly connected drainage network, with limited aquifer recharge*

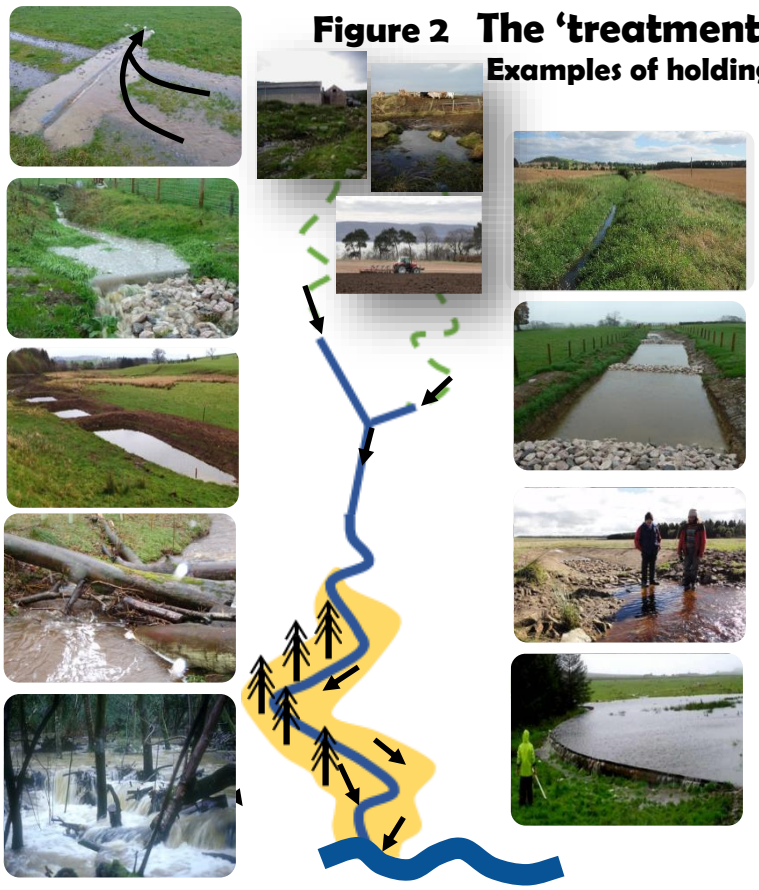

Figure 2 The 'treatment train' approach

Examples of holding water measures and their placement

Sustainable Drainage Features: swales, bunds, ponds and grassy filters.

Buffer Strips: where designed to hold water.

The 'Ditch of the Future': the prime location for holding water and recovering lost top soil through erosion.

Small Headwater Floodplains: storing water, recreating wetlands, woodland, woody debris and new habitats.

The concepts

1. Using the lie of the land

Water flows downhill and most places have a gradient. We know where dominant flow pathways are as we see them during storm events. There are many miles of ditches to be used. Therefore, identifying 5% of land is not difficult. Hence, **slow, store and filter flow** in headwaters before it can impact upon larger rivers.

2. Why 5%?

It is a small amount of land to request from farmers, that works for the environment in return for the high quality food production needed by society.

3. These are simple measures that can be taken cost-effectively now.

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The James Hutton Institute

http://research.ncl.ac.uk/proactive/ http://www.theflowpartnership.org/events/holding-water-5th-nov-2013/ http://www.hutton.ac.uk/research/