

# thinksoils

## Introduction

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The ‘think soils’ manual is a practical guide to soil assessment. It aims to help farmers, land managers, government and non-government advisers to recognise problems with erosion and runoff from agricultural land. Our changing climate makes this issue increasingly important.

Diagnosing the state of soils on the farm is often not simple. Every field is unique. Soil condition can vary considerably within the field and at different depths, and it can also vary through the year depending on land management. Taking the time to look at soil structure is fundamental to achieving better land management, which supports profitable farming and helps protect the environment.

This guide was developed with help from farmers, soil surveyors, Environment Agency staff and agriculture advisers. With their help we have tried to make the guide accessible, practical and relevant. It covers agricultural soils in England and Wales and considers how weather conditions, landscape, land use and soils can combine to increase the risk of erosion and runoff. Specific guidance is given on how to examine soil in the field. Good and poor soil structure is illustrated and described on a range of soils. The manual also includes an overview of general land management principles. For different soils, case studies illustrate the diagnosis of soil problems and provide remedial options. To supplement the manual we have provided a list of further information sources and contacts at the back of the guide.

The ‘think soils’ manual is intended to support a variety of training and advice initiatives. For more information about this and any other enquiries, please contact our National Customer Contact Centre on 08708 506 506.

# Problems associated with erosion and runoff



## Soil on roads

Soil can be deposited on roads where there is erosion and runoff from fields. Wind can also blow soil onto roads.

Soil sediment can be subsequently washed into drains and watercourses.



## Flooding

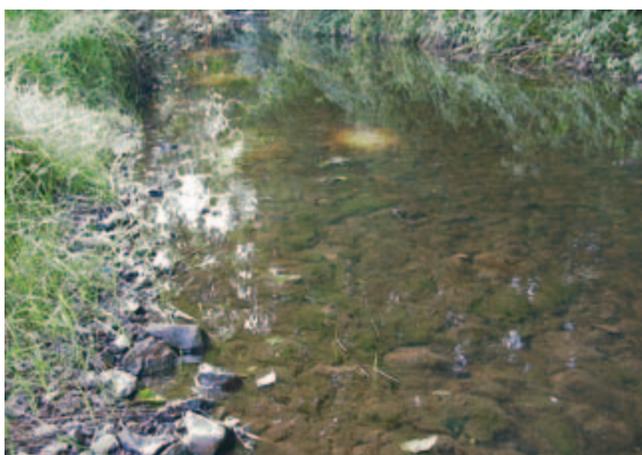
Runoff from fields can flow into property. This type of localised flooding does not necessarily involve a watercourse.

Where excessive runoff enters nearby watercourses, these can become overwhelmed causing flooding downstream.



## Water pollution

Field runoff can contain soil sediment, organic matter, nutrients and farm chemicals. These have the potential to pollute water.



## Degradation of river habitats

Soil sediment can smother river gravel, affecting fish and aquatic life. Salmon and trout eggs are particularly vulnerable to suffocation from sediment deposited in river gravel.

Organic matter and nutrients associated with sediment can also cause excessive bacterial and fungal growth and nuisance algae.