Soil Erosion

Advice & support for farmers in the Western Rother

Soil erosion is a significant issue in the Rother Valley, which has been described as the most erodible river catchment in the UK. A range of factors are at play: the catchment lies predominantly on greensand, with very light, sandy soils which are highly mobile and vulnerable to erosion during both small rainfall events and summer drought. Growing high risk crops like potatoes and salads also increases the risk of erosion. Soil is arguably a farmer's most important asset and when soil is lost, so are nutrients and pesticides and yields are also affected. ***Soil erosion has been estimated to cost at least £88 per hectare per year***[1] (not including the cost of crop loss or clean up). Taking action to reduce soil erosion also helps to reduce the risk of local flooding and reduces your impact on the environment.

There are many actions landowners and farmers can take to reduce the risk of soil erosion from their land. Improving soil structure and soil health helps to keep the soil in place and a range of measures are available to capture soil that is lost from the field, allowing you to return it to the field rather than lose it completely.

This leaflet will help you understand your responsibilities to reduce the risk of soil erosion; help you identify whether your fields are experiencing soil erosion; signpost you to sources of support to help you tackle soil erosion; and show you some examples of what local farmers are doing to address the problem.

[1] This figure derives from the Eden Demonstration Test Catchment. For more information see http://www.edendtc.org.uk/what-is-the-cost-to-a-farm-of-diffuse-pollution/

Understanding your responsibilities

Awareness of soil condition and potential loss is an important part of Cross Compliance as well as the Farming Rules for Water.

Cross compliance rules must be followed if you claim for the Basic Payment Scheme, a stewardship scheme such as Environmental Stewardship or Countryside Stewardship, or the English Woodland Grant Scheme. The rules on minimising soil erosion are as follows:

Cross compliance GAEC 5: Minimising soil erosion[2]

You must have minimum land management which reflects site specific conditions to limit erosion.

To minimise soil erosion you must put measures in place to limit soil and bankside erosion caused, for example, by:

- cropping practices and cropping structures
- livestock management, including outdoor pigs and poultry, causing overgrazing and poaching
- wind
- vehicles, trailers and machinery

Where soil compaction may cause soil erosion, you must, where appropriate, cultivate post-harvest land and late harvested crops using primary cultivation methods, such as ploughing.

You could lose some of your scheme payments if you have not taken all reasonable steps to prevent erosion over a single area of 1 or more hectares, or caused by livestock trampling along a continuous stretch of a watercourse that is 20 or more metres long and 2 or more metres wide.

The associated guidance sets out a range of factors that can lead to soil erosion along with a number of approaches to minimising the risk of soil erosion from cropping practices, livestock, vehicles, trailers and machinery. It also makes helpful suggestions around cultivating post-harvest land and late-harvested crops and protecting bare soil from wind blow. For more information, visit https://www.gov.uk/guidance/guide-to-cross-compliance-in-england-2016/gaec-5-minimising-soil-erosion

The Farming Rules for Water, which comprise a set of eight rules – five concerning managing fertilisers and manures and three on managing soils – were introduced in 2018 and apply to all farming and horticultural practices. The rules on preventing erosion are as follows:

[2] https://www.gov.uk/guidance/guide-to-cross-compliance-in-england-2016/gaec-5-minimising-soil-erosion

Farming Rules for Water: preventing erosion[3]

You must take reasonable precautions to prevent soil loss caused by horticultural and farming activities. Soil loss can lead to erosion and allow pollutants to get into watercourses.

Planting, harvesting and soil management

You must take reasonable precautions to reduce the risk of pollution when you carry out activities such as:

- creating farm tracks or gateways
- establishing seedbeds, polytunnels or tramlines
- cleaning out ditches
- installing drainage or irrigation
- irrigating crops
- spraying crops with pesticides, herbicides or fungicides

Examples include:

- planting crops in early autumn and in dry conditions
- planting headland rows and beds across the base of sloping land
- undersowing or sowing a cover crop to stabilise soil after harvest
- breaking up compacted soil
- establishing grass buffer strips in valleys, along contours, slopes, field edges and gateways

Manage livestock

You must make sure you prevent livestock compacting soil by trampling it (poaching) within 5m of an inland freshwater or coastal water.

You must not place livestock feeders:

- within 10m from inland freshwaters or coastal waters
- within 50m of a spring, well or borehole
- where risk factors mean there's a significant risk of pollution

You must take reasonable precautions to prevent pollution from managing livestock. Examples include:

- moving livestock to prevent poaching and bankside erosion
- putting up fences to keep animals away from watercourses
- wintering livestock on well-drained, level fields

[3] https://www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution

Establishing whether soil erosion is an issue for your land[4]

The first step to take is to check for evidence of soil erosion and degradation during routine farm walks and heavy rainfall. Look out for any of the following:

Brown water runoff

Compaction

Poaching by livestock

Rills & gullies

Sediment on roads

Watercourse pollution

Look for runoff pathways – e.g. ditches, vehicle wheelings, farm tracks, natural drainageways, rills, vehicle access gates – between adjacent fields and between fields and watercourses. Pathways concentrate runoff and increase soil loos and damage and the potential for watercourse pollution. Long, steep, bare slopes are likely to generate higher runoff than short, shallow vegetated ones.

If you identify any of these indicators or pathways, map vulnerable areas and high risk crops.

Consider implementing the strategies suggested in the Farming Rules for Water and the Cross Compliance guidance. You may also wish to consider adapting the layout of your farm, matching land use to erosion risk and protecting your soils using best farming practices.

[4] This information is based on guidance published in PINPOINT Best Practice Information Sheet 18 on Soil Management. You can find copies of all PINPOINT information sheets online at https://www.theriverstrust.org/pinpoint-best-practice-advice-sheets/

Sources of support

Southern Water Western Rother Capital Grant Scheme

Southern Water is offering capital grants of up to £10,000 per holding per year for infrastructure improvements to help reduce the risk of water pollution from agriculture. In order to qualify, farmers and land managers using metaldehyde-based slug control must also join the metaldehyde mitigation scheme, which offers a contribution of £1000 per tonne of ferric phosphate pellets used instead of metaldehyde-based pellets.

For more information, contact Southern Water. Email catchmentschemes@southernwater.co.uk or call 01903 272 247.

Countryside Stewardship

A range of options available in both mid-tier and higher-tier will help address soil erosion:

Soil and water options

- SW1: 4-6m buffer strips on cultivated land
- SW2: 4-6m buffer strips on intensive grassland
- SW3: Infield grass strips
- SW4: 12-24m watercourse buffer strip on cultivated land
- SW6: Winter cover crops
- SW7: Arable reversion to grassland with low fertiliser input
- SW11: Riparian management strip

Arable options

- AB3: Beetle banks
- AB8: Flower-rich margins and plots
- AB10: Unharvested cereal headlands
- AB15: Two year sown legume fallow

Woodland & scrub options

- WD3: Woodland edges on arable land (enhancing the buffer between woodland and the field by allowing the development of scrub)

Wetland options

- WT1: Buffering in-field ponds and ditches in improved grassland
- WT2: Buffering in-field ponds and ditches in arable land
- WT3: Management of ditches of high environmental value

In addition, several capital items are available that can help address soil erosion:

- RP2: Gateway relocation*
- RP7: Sediment ponds and traps*
- RP9: Earth banks and soil bunds*
- RP10: Silt filtration dams/seepage barriers*
- RP11: Swales*
- RP12: Check dams*
- BN7: Hedgerow gapping-up
- BN11: Planting new hedges

Items marked with an asterisk (*) are only available in areas targeted for the reduction of water pollution from agriculture and require endorsement from your Catchment Sensitive Farming Officer. Other criteria may also apply and vary with each option. Check https://www.gov.uk/countryside-stewardship-grants for details.

Please note that if you already have a Countryside Stewardship agreement covering some of your land parcels, you cannot apply for another Countryside Stewardship multi-year options or capital works agreement on the same land parcels. You could however enter into another agreement if this was on parcels not already included in an existing agreement.

Specialist advice is available from Catchment Sensitive Farming

Catchment Sensitive Farming can pay for specialists to visit your holding and provide you with detailed advice on the following:

- *Water management* – to identify the main pollutant pathways linking the farm to surrounding watercourses, including a review of soil management practices and taking into account a range of factors including soil type, topography, soil compaction and flooding risk to help identify actions to address any issues
- *Soil husbandry* - to provide detailed advice on soil management practices that will reduce the risk of erosion into surrounding watercourses, including best practice, connectivity of pathways to watercourses and the impacts that sediment has on water quality
- *Countryside Stewardship* – access specialist advice on which options will be most beneficial for your situation
- *Soil testing* – a range of soil tests are available, including tests for soil organic matter

Get in touch with contact Tom Edwards (07979 855 806 / Thomas.Edwards@naturalengland.org.uk) or Sammy Read (0208 0269 827 / Samantha.Read@naturalengland.org.uk), your local Catchment Sensitive Farming Officers, to find out more.

Arun and Rother Rivers Trust (ARRT)

ARRT acts as a champion for rivers and streams across West Sussex, including the River Arun, River Rother, River Lavant, River Ems, the River Hamble in Hampshire and all of their related tributary streams. We host both the Arun and Western Streams Catchment Partnership, and the Rother Valley Farmers Group. We can offer support and advice around river and water management, and all aspects of river health, and have a broad range of experience of both land and river based restoration work including:

- Increasing fish passage by removing or by-passing weirs;
- Reducing sediment issues;
- Improving the health and diversity of species and habitats;
- Bankside and floodplain tree planting;
- Floodplain meadows;
- Enhancing water quality in both rural and urban settings.

We also undertake a range of surveys and monitoring work. Get in touch if you have a problem or an idea or just want some unbiased advice.

Visit our website at www.arrt.org.uk or contact our Project Officer Sandra Manning-Jones tel: 07795 116880 / sandramanningjones@gmail.com

Local farmers are already taking action to reduce soil erosion in the Western Rother

The Rother Valley Sediment Project has enabled several local farmers to trial measures to reduce soil erosion.

A grassed waterway has been created through the centre of a field at Cowdray Estate where soil erosion was a persistent issue and the cause of poor productivity. Tussocky grass has been allowed to develop and logs have been laid at intervals, significantly reducing soil erosion in this field.

Above: a grassed waterway with logs to impede flow at Cowdray Estate

At Kilsham Farm, linseed bales have been trialled to prevent sediment escaping through an old gateway:

> *"This autumn we placed a row of linseed straw bales in a valley bottom at the edge of one of our most vulnerable fields. It proved very effective at stopping the soil, which collected next to the bales and let water filter through. I will be able to take the soil back out onto the field after harvest." - Philip Andreozzi, Kilsham Farm*

A range of other local farm business have also installed sediment traps and other measures. If you would like to make a visit to see these in action please get in touch!

Above: straw bale at Kilsham Farm