



Department  
for Environment  
Food & Rural Affairs

# Cross compliance in England: soil protection standards

# 2015

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# Cross compliance: soil protection standards

To qualify for your full Basic Payment Scheme (BPS) payment or any payments under greening or agri-environmental schemes, you must meet the requirements of GAECs 4, 5 and 6.

This means that you must:

- take all reasonable steps to protect soil by having minimum soil cover unless there is an agronomic justification not to or where establishing a cover would conflict with requirements under GAEC 5 (GAEC 4)
- manage your land to minimise soil erosion (GAEC 5)
- use appropriate practices to maintain the levels of organic matter in soil (GAEC 6)

## Soil standards enforcement

Rural Payments Agency (RPA) inspectors will look for a lack of minimum soil cover, signs of soil erosion and organic matter loss when carrying out cross compliance inspections.

Details of the guidelines that inspectors will use to classify the seriousness of cross compliance failures can be found at [www.gov.uk/government/collections/cross-compliance](http://www.gov.uk/government/collections/cross-compliance)

In some circumstances, your compliance may be affected by exceptional circumstances, also known as 'force majeure'. This could mean that RPA don't have to reduce your payments.

Force majeure is defined as 'exceptional circumstances, outside your control, the consequences of which, in spite of all due care, could not be avoided except at the cost of excessive sacrifice on your part'.

## Where to get advice and grant aid

You can get advice on soil protection from the Farm Advisory Service (FAS) and the Catchment Sensitive Farming (CSF) team.

Grant aid is also available through agri-environment schemes for specific soil and water protection issues that are over and above cross compliance requirements. You can get advice on agri-environment schemes from Natural England. For contact details, see page 13.

## Providing minimum soil cover (GAEC 4)

You must take all reasonable steps to protect soil by having a minimum soil cover unless there is an agronomic justification for not doing so, or where establishing a cover would conflict with requirements under GAEC 5 – Minimising soil erosion.

Minimum soil cover must be provided by:

- vegetative cover by all types of crop, grass and herbaceous forage
- cover crops and leguminous and nitrogen fixing crops (green manures)
- trees, coppice, fruit crops, hops, nursery crops, vines
- overwintered stubble from combinable crops
- other stubbles and crop residues such as vegetable, maize and sugar beet

Agronomic reasons for not providing cover include:

- where doing so would conflict with the requirements to limit or prevent soil erosion
- managed land used for pest, disease and weed control including, for example, land that has been cultivated or ploughed in order to prevent weeds going to seed
- land being used for the installation and maintenance of field drains
- areas created for agri-environment schemes or greening schemes, or for wildlife or biodiversity
- heathland restoration techniques, such as turf stripping
- heather and grass burning
- where the action of frost over winter is used to break down soil naturally to create a seedbed for

spring cropping

- where the land is being prepared as a seedbed and the land is sown within 14 days of preparation, where weather conditions allow
- peatland that is bare for historic reasons
- where the land is used for outdoor pig and poultry production and out-wintered livestock and it is not possible to maintain cover due to the action of the animals
- land which is bare for the purposes of removing turf for non-fuel purposes

For other agronomic reasons not listed here, contact RPA to apply for a derogation.

You may be at risk of failing an inspection if soil cover has not been provided by one of the cover types listed above.

You will not be in breach where an agronomic justification, listed above, is in place or where:

- a derogation has been obtained from the RPA
- there would be a conflict in meeting your obligations to limit soil erosion

## Minimising soil erosion (GAEC 5)

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 may be at risk of failing an inspection and could lose some of your scheme payments if erosion is over a single area greater than 1 hectare, or caused by livestock trampling along a continuous stretch of more than 20m long and 2m wide of a watercourse.

Inspectors will determine compliance on whether soil erosion has occurred. Where soil erosion occurs, this will be considered as non-compliance.

Where measures are in place and soil erosion still occurs, this will also be considered as noncompliance. The penalty in this instance will depend on the scale of the problem.

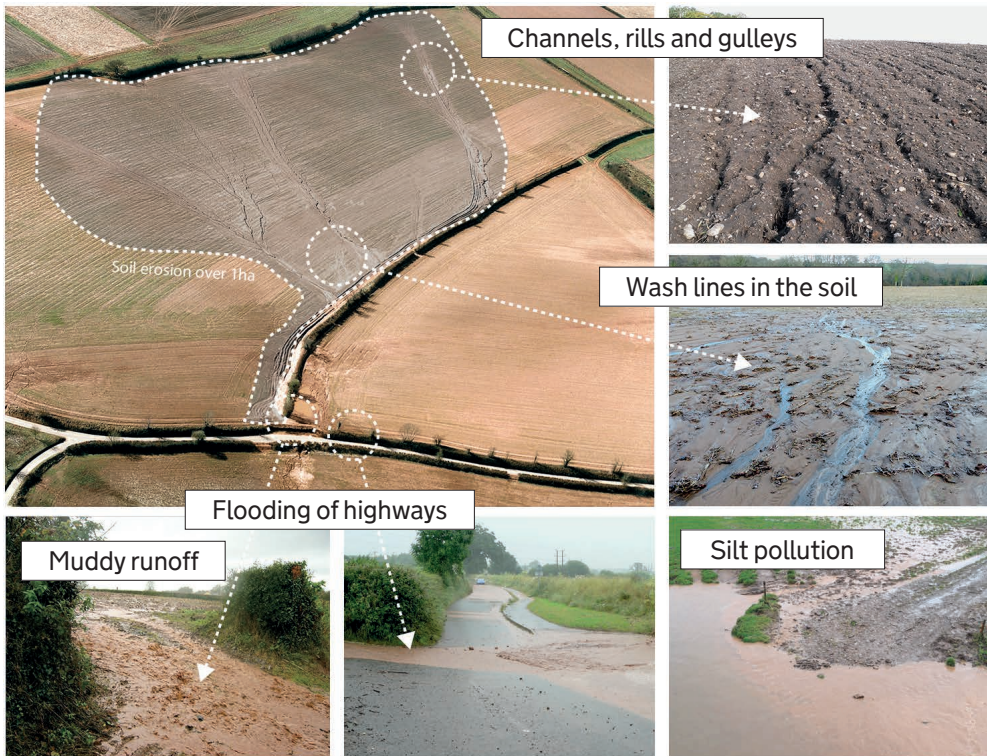
## Identifying erosion

You can recognise soil erosion by the signs in the following table:

Types	Signs
Water erosion	Channels (rills and gulleys) in the soil
	Soil wash or sheet erosion where soil is washed but no channels are formed
	Deposits of eroded soil in valley bottoms, adjacent land, roads, watercourses, semi-natural habitats and/ or property
	Localised flooding and pollution of watercourses with silt or muddy water
Wind erosion	Soil blown over crops, adjacent land, roads, watercourses, semi-natural habitats and /or property

Minor erosion of less than 1 hectare can be found around gateways, ring feeders and corners of fields where there is minimal soil loss. Minor erosion resulting in minimal soil loss will not be penalised.





## Minimising soil erosion from cropping practices

### Soil compaction and capping caused by cultivation

- Soil erosion can occur where the soil has become compacted or capped during and following cultivation and crop establishment
- Compaction can occur if the soil is worked when it is too wet
- Capping can also occur due to the battering of rain drops, particularly on fine sandy and silty soils where the seedbed has been worked to a fine smooth tilth. Soil erosion tends to occur on these soil types when winter crops are established too late in the year, particularly in high-rainfall areas on steep slopes
- Bare soil in worked-down fine seedbeds with an unstable structure can slump and cap, forming a seal that causes runoff and soil erosion
- Particular attention is needed on top headlands. These are a common source of compaction, runoff and soil erosion further down the slope





### **You can limit soil erosion by:**

- establishing crops early in the autumn during dry conditions that ensure good soil structure and good crop cover over the winter
- using coarse seedbeds and/or chopped stubbles on the soil surface
- deep cultivation, such as subsoiling, to remove compaction
- removing compaction from headlands

### **Soil erosion in row crops**

Row crops have an inherently high risk of causing soil erosion.

Soil erosion can occur in crops planted in rows and beds where runoff can be channelled down a slope.

Stone and clod separation, and bed formation in early spring, can destabilise soil structure. This can cause compaction, increasing the risk of soil erosion, particularly if soils are worked when they are not dry enough.

Fine, smooth seedbeds are vulnerable to capping on sandy and silty soils, and compacted wheelings can generate and channel water. Excessive or inappropriately timed irrigation also causes soil erosion.

The problem is most acute in wet summers and with heavy downpours of rain when soils are bare before crop cover is established.

Polytunnels and vehicle traffic on headlands and tracks are also a common cause of compaction and runoff which can lead to soil erosion.

Wherever possible, you should choose relatively flat fields for growing row crops.

Capped seedbeds  
polytunnels and  
compacted wheelings  
can be a source of runoff  
that causes soil erosion



### **To limit soil erosion in row crops you can also:**

- plant headland rows and beds across the base of the slope to intercept runoff from high-risk ground
- remove compaction in some wheelings to allow water to penetrate into the soil (although care is needed not to make the soil erosion worse)
- use specialised equipment to leave ridges and indentations in the soil to trap runoff
- establish grass strips in valleys or along contours or slopes to reduce runoff
- create banks and diversion ditches within the field to intercept and slow down runoff





Compacted wheel ruts in light soil can be loosened where this does not interfere with crops

## Minimising soil erosion from livestock

### Compaction caused by poaching

Compaction develops where hooves press into the soil – this is known as poaching. Where regular poaching occurs, a compacted layer may form over large areas of a field, causing runoff which can lead to soil erosion. This is a particular risk where soil cover has been damaged.

Vehicle traffic when supplementary feeding livestock is also a common cause of soil compaction which can also lead to soil erosion.



Out-wintering and the grazing of winter forage crops can cause soil erosion and soil loss on trampled river banks





To avoid soil erosion when out-wintering livestock, where possible:

- choose well-drained, relatively flat fields
- move stock regularly and use back fencing
- fence watercourses, where appropriate, to avoid excessive bankside erosion
- loosen the soil as soon as conditions allow, for example by ploughing, subsoiling and sward lifting, to help water to penetrate the soil

### Outdoor pigs and poultry

Pigs and vehicle movement compact soils, particularly during the winter, which can lead to runoff and soil erosion. Outdoor poultry farming can cause similar problems where there are heavy volumes of farm traffic.

A combination of sloping land and high rainfall will lead to soil damage, runoff and erosion. The ideal site for outdoor pigs and poultry is flat or gently sloping, freely drained and in a low-rainfall area. Pigs and poultry can be kept on sites which are less than ideal, but these will require careful management, especially for outdoor pigs.

Outdoor pigs can cause compaction, runoff and soil erosion. Tracks can also be a common cause of soil erosion when keeping outdoor pigs and poultry



To limit soil erosion you can:

- lay out paddocks so as not to channel runoff
- move pigs onto well established grass
- use large troughs to reduce soil damage
- use grass strips to intercept runoff
- use tracks across the contour where possible
- regularly divert runoff into field margins or soak away areas to prevent build up of runoff down slopes
- locate weaner sites, which have high volumes of farm traffic, away from slopes and watercourses
- reduce numbers on high risk steep slopes particularly in the winter
- rotate to avoid severe compaction



## Preventing erosion in the uplands

In the uplands, erosion occurs when vegetation is removed, for example by burning, overgrazing or traffic, and where bare soil is exposed to rain and wind.

Erosion is most severe on peat soils and steep slopes, where it may take years for the vegetation to recover.

Supplementary feeding and the use of tracks, particularly on slopes and next to watercourses, can increase the risk of erosion.



Out-wintering, supplementary feeding of stock, and use of sacrifice fields in upland areas can cause soil erosion.



To minimise the risks of erosion:

- use low ground pressure vehicles and machinery
- use established tracks to avoid vegetation damage
- adjust stocking rates to conserve vegetation cover and to avoid trampling of the soil and creation of sheep scars
- where possible, carry out supplementary feeding on level, freely drained ground and away from watercourses



Choice of well drained, flat fields for out-wintering stock reduces the risk of soil erosion

You only need to take steps to limit soil and riverbank erosion where it occurs due to current practices and not where it occurs for historic reasons. Historic reasons may include gulleys caused by old drainage grips and ditches, and peat erosion due to vegetation loss caused by air pollution.

## Minimising soil erosion from vehicles, trailers and machinery

There is a high risk of soil compaction causing soil erosion if you:

- harvest crops late in the year when conditions are wet
- spread slurry and manure during the winter
- carry out supplementary feeding of out-wintered stock
- use vehicles in wet conditions including non-agricultural use such as temporary car parks

Where possible, it is best to avoid high risk practices on land at high risk of compaction, runoff and soil erosion (such as steep land in high rainfall areas).

In many cases, hard tracks with good drainage are needed for vehicle access with use of gates at the top of the hill.

You can also choose tyres that allow lower pressures, reducing damage to the soil.

Soil compaction can be treated by:

- cultivation to shatter the soil when it is suitably dry
- subsoiling in some cases to shatter deep compaction
- providing land drainage on heavy land to allow water to drain away underneath and avoiding compaction in the first place

Digging to look at the soil will help you decide whether subsoiling is needed and whether shattering has been effective across and down the soil profile.

## Cultivating post-harvest land and late harvested crops

Crops harvested late in the year and during the winter, such as maize and field vegetables, are a common cause of compaction causing runoff and soil erosion.

Where land is compacted with wheel ruts and especially where there is a risk of soil erosion, it should be cultivated to remove compaction and allow water infiltration into the soil.

To do this, you can use either mouldboard or chisel ploughing, deep tines and /or subsoiling, where conditions allow.

Chisel ploughing (on the left of the picture) has been carried out to prevent runoff following harvesting of swedes in the winter. Runoff causing soil erosion in the centre and foreground is from compacted wheel ruts



Land with a rough surface can be left over the winter, or another crop established if conditions allow.



However, crops sown late in the year including grass reseed can be a source of runoff if the seedbed soil is compacted or becomes capped. Here, it may be better to establish the crop in the spring.

Try and work land immediately after harvesting late crops (or soon after) if possible to prevent erosion. If the land is too wet for cultivation, you should cultivate it as soon as conditions allow so as to prevent soil erosion. Worst damaged parts of a field should be dealt with initially and then further treatment applied under more appropriate dry conditions. It is important to take care not to make the situation worse.

With slow draining, heavy soils on slopes it may be better not to grow high risk crops that will be harvested late in the year.



Compacted land can be loosened by mouldboard ploughing, chisel ploughing and subsoiling where appropriate



## Protecting bare soil from wind blow

Wind erosion can be a problem in some years in the flat, drier parts of England, especially on sandy and peaty soils.

The risk of wind erosion tends to be high during the spring in crops such as onions, carrots and sugar beet where the soil is bare for a relatively long period before there is protective crop cover.

Problems occur with fine, smooth seedbeds and loose soils where blown soil can abrade and bury crops. Soil loss can also affect neighbouring land, roads, ditches and watercourses.



Unstable, loose sandy soils, with naturally very low levels of organic matter are at risk of wind erosion. Dry peaty soils are also at risk. Blown soil can affect neighbouring land, tracks, roads and watercourses



### **Wind erosion can be limited by:**

- creating coarse seedbeds where possible
- sowing nurse barley crops to protect the soil where appropriate
- using a fleece over vegetable crops
- applying regular applications of organic wastes to improve soil stability
- planting shelter belts to break the speed of the wind

Sugar beet drilled at an angle to furrow pressed, ploughed land can reduce the risk of significant wind erosion





## Maintaining the level of organic matter in soil (GAEC 6)

To maintain the level of organic matter in soil, you must not burn cereal straw or stubble or certain crop residues except for plant health reasons, where a notice has been served under the Plant Health (England) Order 2005.<sup>1</sup>

The burning of broken bales where they are not on stubble is allowed, provided stubble is not burned as well.

### Burning crop residues

If straw, stubble or crop residue is burnt for plant health reasons, there are restrictions on where and when you can do it:

- The area to be burned must be at least 150 metres from any other area in which crop residues are being burned
- You must not burn crop residues less than 100 metres from any motorway, A-road, dual carriageway or railway line
- You must not burn crop residues on any weekend or bank holiday or during the period between one hour before sunset and the following sunrise
- Intervening land must be cleared of crop residue or the residues must be incorporated into the land before burning

Some restrictions depend on the type of crop residue that you are burning, as shown in this table:

Restriction	Crop residue	
	Cereal straw or stubble	Residue of oil-seed rape, field beans harvested dry or peas harvested dry
Firebreak	must be at least 10 metres wide	must be at least 5 metres wide
Limit of burning area	no more than 10 ha	no more than 20 ha
Minimum distance from the trunk of any tree, any hedgerow, any fence not the property of the occupier of the land upon which the burning is carried out, any pole or pylon which is or may be used to carry telegraph or telephone wires and any electricity pole, pylon or substation	At least 15 metres	At least 5 metres
Minimum distance from any building, any scheduled monument which could be set alight, any stack of hay or straw, any accumulation of combustible material other than crop residues removed in the making of a fire-break, any mature standing crop, any woodland or land managed as a nature reserve, any structure containing livestock and any oil or gas installation on or above the surface of the ground	At least 50 metres	At least 15 metres

1: [www.legislation.gov.uk/ukxi/2005/2530/contents/made](http://www.legislation.gov.uk/ukxi/2005/2530/contents/made)

At least an hour before burning crop residues, as far as reasonably practicable, you must warn:

- the environmental health department of the district council in whose district the burning is to take place
- the occupiers of all premises adjacent to the area to be burned
- the air traffic control at any aerodrome with a perimeter fence within 800 metres of the area to be burned

When burning crop residues, you must make sure that you have at least 1,000 litres of water available in one or more mobile containers and a means of dispensing it in a spray or jet at a rate of 100 litres per minute. You must also provide at least 5 fire beaters. Any vehicles you use in connection with burning must be equipped with a fire extinguisher.

All persons concerned with the burning must be familiar with the regulations. Except where emergency makes this impractical, each area to be burned must be supervised by two responsible adults, one of whom has experience of burning crop residues.

Ash from burnt cereal straw or cereal stubble must be incorporated into the soil within 24 hours of starting burning. If this is not possible due to wind conditions or the risk of causing a nuisance, you should do it as soon as conditions allow.

### **Burning heather or grass**

To comply with the Heather and Grass Burning Regulations (2007), you must make sure that you:

- don't burn specific vegetation (heather, rough grass, bracken, gorse or vaccinium) outside the burning season. The burning season is from 1st October to 15th April for uplands, and from 1st November to 31st March for land not within an upland area
- have enough people and equipment to control burning
- take all reasonable precautions not to injure or damage any neighbouring land, or to any person or thing on it

You may need a licence if you want to burn in certain conditions or at particular times of the year. You can find out about these online by going to [www.gov.uk/heather-and-grass-burning-apply-for-a-licence](http://www.gov.uk/heather-and-grass-burning-apply-for-a-licence).

### **Environmental Impact Assessment (EIA)**

To comply with Environment Impact Assessment Regulations (2006), you must not plough, cultivate or intensify species-rich and semi-natural habitats so as to keep organic matter and carbon levels in soils. To comply with the Environmental Impact Assessment Regulations (2006) you must:

- not carry out projects on uncultivated land when thresholds or screening notices apply
- not begin or carry out a project on uncultivated land without permission from Natural England
- not breach stop notice
- meet a remediation notice

For forestry, you must:

- not carry out afforestation on agricultural land or deforestation projects on existing woodland unless you have permission from the Forestry Commission (FC)
- comply with enforcement notices to stop work
- meet consent and enforcement notices given by the FC



# Contacts

## **Rural Payments Agency**

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RG1 3YD

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Main switchboard: 0345 603 7777

(Official correspondence only)

## **The Catchment Sensitive Farming team**

Catchment Sensitive Farming Customer Services Team

Natural England, Apex Court,

City Link,

Nottingham

NG2 4LA

Email: [catchmentsensitivefarming@naturalengland.org.uk](mailto:catchmentsensitivefarming@naturalengland.org.uk)

Telephone: 0300 060 1111

## **The Cross Compliance Helpline**

In England, the Farm Advisory Service advises farmers about cross compliance.

For further information, call the Cross Compliance Helpline on 0845 345 1302.

## **Natural England**

Natural England

Block B, Government Buildings, Whittington Road

Worcester

WR5 2LQ

Email: [enquiries@naturalengland.org.uk](mailto:enquiries@naturalengland.org.uk)

Telephone: 0300 060 3900

## **Environment Agency**

Environment Agency

National Customer Contact Centre

PO Box 544

Rotherham

S60 1BY

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

Telephone: 03708 506 506

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## **Forestry Commission**

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