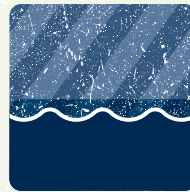


Water management: key actions for farmers



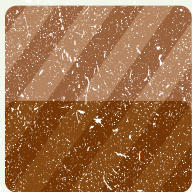
nutrients

Manage your nutrients well



flood risk

Manage your land to
reduce flood risk



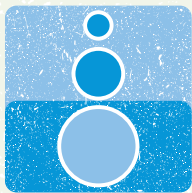
soils

Manage your soil sustainably



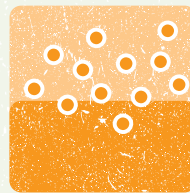
livestock

Manage your livestock
so that they do not freely
access watercourses



water

Manage your water use
effectively and plan
your longer term water
management



pesticides

Use pesticides, including
sheep dip, efficiently.
Store and dispose of
pesticides correctly.

Guidance on purpose and use

Introduction

This document sets out our messages for others to deliver to farmers, including:

- industry intermediaries
- initiatives, such as Campaign for the Farmed Environment
- delivery partners, such as the Farming Advice Service and those in Catchment Partnerships
- third party farm assurance schemes
- industry training and knowledge exchange

These messages and key actions aim to provide clear and consistent information to engage farmers and those who influence them.

Tailoring these messages to suit individual businesses and the local circumstances should help to achieve better environmental outcomes, and improve partnerships with the agriculture sector.

Benefit to the farmer

Our aim is to present a clear set of messages and actions for farmers in a way that focuses on the interests of the farmer.

Why would a farmer take action?

- To make their business more efficient. For example, by minimising waste of valuable resources.
- To reduce the risks to their business. For example, by complying and avoiding financial penalties.
- To build resilience and be better prepared for the future. For example, by being able to deal with extreme weather as a result of a changing climate, meet requirements for funding e.g. grants or loans.
- To leave a legacy. For example, by planning for the future of the farm.
- To enhance credibility. For example, by managing potential impacts on waters used for bathing and drinking.

Effect on the environment

The key actions are a consistent set of integrated actions which farmers can take to manage environmental impacts which will help to:

- improve and protect water quality
- secure water resources
- adapt to a changing climate
- reduce and manage flood risk

Actions

The actions listed are not exhaustive. They are a mix of:

- regulatory requirements
- requirements of farmers claiming Basic Payment
- basic good practice farmers should consider for their business

The suitability of some actions depends on the local situation.

Actions in **bold** are minimum legal requirements or requirements of cross compliance.

Access to advice and support

We have provided links to further advice and support.

Promptly report pollutions to the 24 hour incident hotline 0800 807060 to prevent further harm.

Environment Agency national customer contact centre 03708 506506.



Manage your nutrients well

Benefit to the farmer

Efficient use of nutrients avoids waste and reduces input costs.

Slurry is a valuable source of nutrients for all crops, including grass. Maximising the financial value of your slurry and manure reduces your artificial fertiliser costs.

Increase productivity and profit.

Reduce the risk of uninsured claims resulting from mismanagement.

Increase flexibility and resilience for your business by spreading slurry and manure at the best times.

Have peace of mind your farm is not at risk of polluting your land, that of others and the wider environment.

Reduce the risk to your business of lost earnings from Basic Payment penalties, lost contracts or from enforcement action.

Effect on the environment

Nutrients applied to land, but not taken up by a crop can be lost to ditches, streams, rivers, lakes and groundwater.

An overflowing or leaking slurry store can cause serious pollution.

Slurry is highly polluting if it ends up in the wrong place like watercourses.

Excess weed growth caused by nutrient run-off blocks river channels, adding to costs for weed clearance for flood risk management.

Nitrate and phosphate pollution can impact on fish and other aquatic life.

Where nitrate levels exceed drinking water standards, water must undergo costly treatment.

Applying slurry in the wrong conditions, such as to frozen or waterlogged soil can lead to run-off.

Actions

Analyse the nutrient content of manures, slurry and other materials applied to your land, such as digestate and sewage sludge.

Plan your fertiliser use and record applications.

Don't spread slurry on soils with Phosphate index greater than 3.

Apply only what fertiliser the crop (including grass) needs and in the right conditions. Don't spread slurry in the autumn/winter.

Maintain and calibrate application equipment.

Understand the nutrient management advice given in the Code of Good Agricultural Practice.

Find out if you are in a Nitrate Vulnerable Zone (NVZ), and if you are, understand and follow the action programme measures.

Make sure your slurry/manure storage meet your business needs and comply with NVZ and Silage, Slurry & Agricultural Fuel Oil Regulations (SSAFO).

Notify the Environment Agency at least 14 days before you start constructing a new or expanded slurry or silage store.

Reduce volumes of slurry by diverting clean roof or yard water, roofing stores or using a slurry separator.

Establish grass and/or woodland buffer strips alongside watercourses to intercept any overland flow and trap sediment and nutrients.

Access to advice and support

Farming Advice Service bit.ly/1SMMGaP

GOV.UK Cross compliance in England (SMR 1 NVZ) bit.ly/1VN948j

Campaign for the Farmed Environment bit.ly/1JRD4qz

GOV.UK Protecting our Water, Soil and Air: A Code of Good Agricultural Practice bit.ly/1lqqwW1

Think Manures bit.ly/1H2n1nB

Tried and Tested: Nutrient Management Plan bit.ly/1VN4jvr

PLANET (Planning Land Applications of Nutrients for Efficiency and the Environment) bit.ly/1LRIGqo

MANNER-NPK bit.ly/1lrNz7c

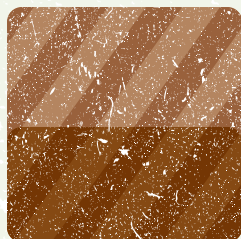
NVZ maps bit.ly/1H2rqgP

GOV.UK Catchment Sensitive Farming: reduce agricultural water pollution bit.ly/1N454KJ

Your local Catchment Partnership bit.ly/1UF4XcM and/or water company may also be offering advice in your area.

Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9

Environment Agency national customer contact centre 03708 506506.



Manage your soil sustainably

Benefit to the farmer

It is cheaper to avoid soil damage than rectifying it afterwards.

Healthy soil with good structure and biological activity increases root development, infiltration and yields.

Poorly managed soils can increase fuel, labour and machinery costs for cultivations.

Protect your income from lower yields, and higher input costs.

Keep your livestock healthy.

Loss of valuable topsoil can increase watercourse maintenance costs.

Reduce the risk of impacts downstream and uninsured claims.

Reduce the risk to your business of lost earnings from Basic Payment penalties, lost contracts or from enforcement action.

Effect on the environment

Compacted soils can increase run-off and strip productive topsoil.

Eroded soil can run-off into watercourses and affect how the channels work increasing risk of localised flooding.

Siltation in watercourses can damage habitats for invertebrates, spawning fish, aquatic plants and affect drinking water quality.

Compacted soils can prevent rainfall from replenishing groundwater supplies.

Nutrients, pesticides and faecal bacteria can be carried to watercourses on eroded soils.

Poor track and livestock management can cause poaching and soil compaction.

Soil organic matter helps carbon capture.

Actions

Protect your soil by preventing compaction, reducing run-off and soil erosion.

Know your soils so you can get the best out of them.

Choose a crop rotation, including cover crops, and manage livestock to reduce erosion.

Carry out field operations at the right time, in the right conditions with the right machinery to protect soil structure.

During and after harvesting a crop, carefully consider the risk of the field in relation to slope, watercourses, road and post harvest compaction. Choose an appropriate post harvest management technique, for example, plant a winter cover crop.

Regularly inspect soils, including grassland, for compaction prior to drilling/planting. Address compaction where necessary.

Test soil every 3-5 years for acidity (pH) and key nutrients, such as phosphorous and potassium. Record and monitor the results.

Maintain farm tracks to reduce soil loss and install cross drains to manage run-off.

Relocate gateways, tracks and feeders where runoff and soil erosion is a risk to watercourses, habitats, roads and property.

To help manage run-off consider constructing a wetland or sustainable drainage system (SuDS) to reduce localised flooding, trap/treat pollutants and provide a wetland habitat.

Only spread industrial waste to land where you know it will be beneficial to soils and do not use it as route for disposal.

Incorporate beneficial sources of organic matter into soils to improve biological activity and soil structure.

Access to advice and support

Think Soils bit.ly/1OKzncP

GOV UK Cross compliance in England: soil protection standards 2015 (GAEC 4,5,6) bit.ly/1VN948j

Campaign for the Farmed Environment bit.ly/1JRD4qz

Farming Advice Service bit.ly/1SMMGaP

GOV.UK Catchment Sensitive Farming: reduce agricultural water pollution bit.ly/1N454KJ

GOV.UK Rural Sustainable Drainage System (SuDS) bit.ly/1IGDnI6

GOV.UK Riverside ownership: rights and responsibilities bit.ly/1hfkyS4

Soilscapes bit.ly/1DkAZXn

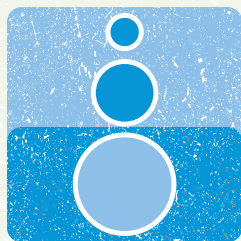
British Geological Survey: Mysoil app bit.ly/1VWJlFO

Know what's going on to your land bit.ly/1XuWl9L

Your local Catchment Partnership bit.ly/1UF4XcM and/or water company may also be offering advice in your area.

Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9

Environment Agency National Permitting Service Tel. 03708 506506.



Manage your water use effectively and plan your longer term water management

Benefit to the farmer

Understanding the risks to your business of changing water availability (too little or too much) allows you to plan and protect your interests for a profitable business.

Having water at the right time optimises crop yields and livestock production.

Reduce costs of using water on your farm.

Reduce your reliance on mains or abstracted water.

Investing in infrastructure protects your business in the longer term.

Increase the prospect of your abstraction licence being renewed.

Reduce the risk to your business of lost earnings from water shortages, Basic Payment penalties, lost contracts or from enforcement action.

Effect on the environment

Water is a valuable resource. Using excessive amounts deprives others and the environment of much needed water.

Over abstraction can impact on the water dependent habitats and sensitive species such as wetlands and salmon.

Climate change threatens to change availability of water you can abstract. For example, we may experience more droughts or sudden high flows.

Over watering can erode soil and can increase the risk of diffuse pollution.

Actions

Carry out a water audit. Check for leaks, overflows and insulate pipe work.

Use more efficient irrigation techniques, such as scheduling and applying at night.

Record the volume of water you use with a well-maintained meter. Investigate any unusual readings.

Find out about the risks to your business if water becomes less available. Make a plan to prepare for possible drought.

Plant drought tolerant crops, harvest rainwater, build a storage reservoir, especially in conjunction with other abstractors.

Set up or join a water abstractor group with your neighbours.

Buy water from another abstractor and increase the connection between existing water sources.

Apply to extend your licensed abstraction season to match your irrigation season.

If you are at risk of exceeding your licensed volumes, speak to the Environment Agency straightaway.

Apply to take high flows when available, for storage and subsequent use when flows are lower or restricted.

Access to advice and support

DEFRA: Waterwise on the farm bit.ly/1TSolw

UK Irrigation Association (UKIA) benchmarking tool bit.ly/1eNjuhF

DEFRA: Cross compliance guidance (GAEC2) bit.ly/1DkN1jo

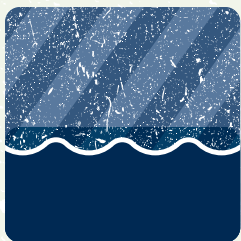
Farming Advice Service bit.ly/1SMMGaP

Rainwater harvesting : an on farm guide bit.ly/1P3cvAZ

Farming Advice Service webinar on Managing Business Risks in a Changing Climate bit.ly/1MK7EHV

Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9

Environment Agency National Permitting Service Tel. 03708 506506.



Manage your land to reduce flood risk

Benefit to the farmer

Understanding the risks to your business from flooding allows you to plan and protect your interests and assets.

You can cope better with periods of excessive rainfall.

Watercourse maintenance can reduce the impact of flooding and improve land drainage.

Reduce the risk to your business of lost earnings from flooding, Basic Payment penalties from compacted soils, lost contracts or from enforcement action.

Reduce disruption to your business from extreme weather events.

Effect on the environment

Climate change means we may experience more sudden and intense rainfall and high flows.

In wet conditions eroded soil can run-off into watercourses, cause siltation which can affect how channels work.

Compacted soils can increase run-off, cause localised flooding and prevent rainfall from replenishing groundwater supplies.

Actions

Find out if your land is at risk of flooding.

Plan and prepare for intense and excessive rainfall and potential floods.

Manage your land to minimise soil erosion.

Remove any compaction post-harvest and prior to planting.

Be aware of your responsibilities as a landowner near a watercourse.

Monitor and maintain field drains and ditches.

Keep any structures such as culverts, trash screens and weirs clear of debris.

Get advice from the Environment Agency; **you may need permission to carry out work on or near a watercourse.**

Identify places where accelerated run-off happens and where it may increase flood risk to you and your neighbours. Mitigate the impacts.

Consider the creation of new woodland or hedges to slow the flow of run-off, intercept sediment and increase infiltration.

Consider constructing a wetland or sustainable drainage system (SuDS) which can reduce localised flooding, trap/treat pollutants and provide a wetland habitat.

Access to advice and support

Find out if your land is at risk of flooding and to sign up for free flood warnings bit.ly/1IJRnB1

GOV.UK Riverside ownership: rights and responsibilities bit.ly/1hfkyS4

GOV.UK Cross compliance in England: soil protection standards 2015 (GAEC 4,5,6) bit.ly/1VN948j

GOV.UK River maintenance and drainage charges: farmers and landowners bit.ly/1IVPEun

GOV.UK Channel management handbook for flood risk management bit.ly/1K23aaU

GOV.UK Rural Sustainable Drainage System (SuDS) bit.ly/1IGDnI6

Think Soils bit.ly/1OKzncP

GOV.UK Catchment Sensitive Farming: reduce agricultural water pollution bit.ly/1N454KJ

Your local Catchment Partnership bit.ly/1UF4XcM and/or water company may also be offering advice in your area.

Farm resilience health check bit.ly/1PY7F89

Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9

Environment Agency national customer contact centre 03708 506506.



Manage your livestock so that they do not freely access watercourses

Benefit to the farmer

- Reduce the impact of livestock-induced erosion to your land.
- Reduce the risk to your livestock from water-borne diseases, injury or loss.
- Reduce the risk to your business of lost earnings from Basic Payment penalties, lost contracts and from enforcement action.
- Protect the quality of water abstracted for high risk crops , for example salad crops.

Effect on the environment

- Unmanaged access can cause collapse of banks which can increase flood risk and loss of productive land.
- Additional sediment may be released into rivers which can cause pollution, and damage habitats for invertebrates and spawning fish.
- In wet conditions eroded soil can run-off into watercourses, cause siltation and affect how channels work.
- Animal wastes can be deposited directly into the water. Faecal bacteria pose a risk to human and animal health and impact on bathing and shellfish water quality.

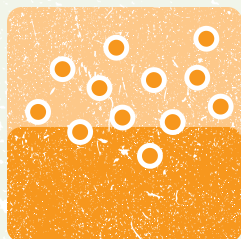
Actions

Minimise soil and bank side erosion by implementing appropriate measures (GAEC 5).

- Find out if your farm is in a catchment for bathing or shellfish waters.
- Provide an alternative water supply, for example troughs or pasture pumps, if the primary concern is bank trampling.
- Position livestock feeders away from watercourses.
- Adjust stocking levels on fields adjacent to watercourses to minimise risk of stock access.
- Establish hedges and woodland alongside watercourses to prevent access and enhance biodiversity.
- Fence along the margins of fields adjacent to watercourses especially where there are sensitive bathing and shellfish waters. If the field is at risk of flooding use temporary fencing or post and rail fence to allow water to flow through.
- Apply for consent to construct bridges to allow livestock to cross watercourses.

Access to advice and support

- GOV UK Cross compliance in England: soil protection standards 2015 (GAEC 4,5,6) bit.ly/1VN948j
- Farming Advice Service bit.ly/1SMMGaP
- Environment Agency: Bathing waters quality bit.ly/1HS1iAv
- Environment Agency: Catchment Data Explorer bit.ly/1J1GIXU
- Campaign for the Farmed Environment bit.ly/1JRD4qz
- Catchment Sensitive Farming: reduce agricultural water pollution bit.ly/1N454KJ
- GOV.UK Riverside ownership: rights and responsibilities bit.ly/1hfkyS4
- GOV.UK River maintenance and drainage charges: farmers and landowners bit.ly/1IVPEun
- Your local Catchment Partnership bit.ly/1UF4XcM and/or water company may also be offering advice in your area.
- Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9



Use pesticides, including sheep dip, efficiently. Store and dispose of pesticides correctly.

Benefit to the farmer

Reduce the risk of pollution which may lead to cleanup costs and damage your reputation.

Pesticides that are lost to the environment are a waste. Optimise the use of expensive chemicals.

Protect beneficial insects to improve your business.

Reduce the risk to your business of lost earnings from Basic Payment penalties, lost contracts or from enforcement action.

Help reduce the risk of restrictions on pesticides that are repeatedly found in the environment above legal limits.

Effect on the environment

Poor storage, use and disposal of pesticides (including sheep dip) can pollute the environment, drinking water supplies and harm wildlife.

Inappropriate pesticide use can affect important insects.

Where pesticide levels exceed drinking water standards, water must undergo costly treatment. Treatment has a large carbon footprint and costs are reflected in consumer water bills.

Actions

Follow the manufacturer's instructions to ensure you minimise environmental risk.

Ensure staff and contractors are trained and hold required qualifications before they work with pesticides.

Find out if your farm is in a catchment used to supply drinking water, and subject to a Safeguard Zone Action Plan because of pesticides.

Complete an Integrated Pest Management plan to identify particular pesticide risks on your farm and how to manage them.

Ensure staff and contractors are aware of the risks, such as drainage routes.

Check local weather reports before applying pesticides.

Implement best practice measures provided by the Voluntary Initiative, Metaldehyde Stewardship Group and other product stewardship initiatives.

Ensure stores, handling, filling and wash-down areas do not allow pesticides to be lost to drains or to the ground.

Consider installing a lined biobed or biofilter.

Routinely maintain and calibrate your sprayer. Sign up to the National Sprayer Testing Scheme.

Follow best practice for sheep dip use and disposal. After dipping contain sheep.

If you hold a groundwater permit for disposal of pesticides, comply with the conditions of the permit.

Establish grass and/or woodland buffer strips alongside watercourses, or sensitive habitats, to intercept any overland flow and trap sediment and pesticides.

Access to advice and support

Locations of Safeguard Zones for drinking water bit.ly/1JJRnB1

Voluntary Initiative on Pesticides bit.ly/1TuXS1A

Voluntary Initiative on Pesticides : Integrated Pest Management Plans bit.ly/1TPsNli

National Register of Sprayer Operators bit.ly/1lOavBC

Get Pelletwise campaign bit.ly/1L849J4

Campaign for the Farmed Environment bit.ly/1JRD4qz

GOV UK Cross compliance in England: soil protection standards 2015 (GAEC 4,5,6) bit.ly/1VN948j

Catchment Sensitive Farming: reduce agricultural water pollution bit.ly/1N454KJ

Your local Catchment Partnership bit.ly/1UF4XcM and/or water company may also be offering advice in your area.

Grants may be available from the Rural Development Programme for England (RDPE) bit.ly/1Db0tG9