

Key actions for farmers



Manage your nutrients well



flood risk

Manage your land to reduce flood risk

nutrients



Manage your soil sustainably

soils



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

water



Manage your livestock

to protect the environment



livestock

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

pesticides

V.03

Guidance on purpose and use

Introduction

This document sets out our messages to farmers.

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

- industry intermediaries
- industry initiatives
- delivery partners, such as those in Catchment Partnerships
- third party farm assurance schemes
- industry training and knowledge exchange

Tailoring these messages to suit individual businesses and the local circumstances should help to achieve better environmental outcomes, and improve partnerships with the agricultural 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 soil health
- improve and protect water quality
- secure water resources
- reduce and manage flood risk
- protect air quality
- adapt to a changing climate

Actions

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

- regulatory requirements
- requirements of farmers receiving payments
- 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.

Access to advice and support

Hyperlinks provide access to further advice and support. (Please note the Environment Agency has produced all Bit.ly links for this document)

Report pollution incidents to the 24 hour incident hotline: 0800 807060.

Environment Agency National Customer Contact Centre 03708 506506.

Local officers can provide advice and assist you with decision making.



Manage your nutrients well

Benefit to the farmer

Efficient use of nutrients avoids waste and reduces input costs.

Maximising the financial value of your slurry and manure reduces your manufactured fertiliser costs.

Increase productivity and profit.

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

Reduce the risk of uninsured claims resulting from mismanagement of slurry and manure.

Peace of mind your farm is not at risk of polluting your land, that of others, and the wider environment, including air.

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

Actions

Plan your fertiliser use, taking account of nutrients in slurry and manures. Record applications.

Analyse the nutrient content of manures, slurry and other materials, e.g. digestate and sewage sludge.

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

Apply only what fertiliser the crop (including grass) needs.

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

Don't spread close to watercourses, on frozen, waterlogged, snow covered ground or if there is a risk of causing

pollution. Avoid spreading on dry cracked soils especially if under-drained. Be aware of shallow soils and geological features on your farm (e.g. fault lines, sink holes).

Use precision spreading equipment, such as injectors, or work slurry and manures into the soil immediately after spreading.

Maintain and calibrate application equipment.

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

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

Ensure slurry/manure storage meets your needs and complies with the Silage, Slurry and Agricultural Fuel Oil (SSAFO) rules. Notify the Environment Agency at least 14 days before constructing a new or expanded store.

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

Minimise the loss of nitrogen to air by covering slurry and manures. Apply slurry, manures and fertilisers in cool, windless and damp conditions with low emission equipment.

Effect on the environment

Nutrients applied to land, but not taken up by a crop can be lost to watercourses, lakes, estuaries, groundwater and air, causing pollution.

Applying slurry, manures and other organic materials in the wrong conditions can lead to polluting run-off.

An overflowing or leaking slurry store can cause serious pollution. Slurry is highly polluting if it ends up in the wrong place, especially in watercourses.

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

Nutrient pollution can impact on fish and other aquatic life.

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

Access to advice and support

GOV.UK – Nitrate Vulnerable Zones bit.ly/2FW2exT

GOV.UK – Check for Nitrate Vulnerable Zones <u>bit.ly/2GwU8vz</u>

GOV.UK – Farming rules for water: Rules for farmers and land managers to prevent pollution <u>bit.ly/2Eggvjl</u>

GOV.UK – Storing Silage, Slurry and Agricultural Fuel Oil <u>bit.ly/2UFIPp0</u>

Ciria – Livestock manure and silage storage infrastructure for agriculture (C759) <u>bit.ly/2PTqLWD</u>

AHDB – Slurry wizard – bit.ly/2VbC6ll

GOV.UK – Protecting our Water, Soil and Air: A Code of Good Agricultural Practice <u>bit.ly/11qqwW1</u>

GOV.UK – Code of Good Agricultural Practice for reducing ammonia emissions <u>bit.ly/2Bb1MYm</u>

GOV.UK – Sewage sludge in agriculture: code of practice <u>bit.ly/2VEvWuT</u>

AHDB - RB209 - bit.ly/2S1FqDd

Tried and Tested – Think Manures bit.ly/1H2n1nB

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

PLANET – nutrient management <u>bit.ly/1LRlGqo</u>

MANNER-NPK bit.ly/2WORRfC

Championing the Farmed Environment bit.ly/1JRD4qz

Farming Advice Service <u>bit.ly/1SMMGaP</u>

GOV.UK – Catchment Sensitive Farming: reduce water and air pollution <u>bit.ly/1N454KJ</u>

Your local Catchment Partnership <u>bit.ly/1UF4XcM</u> and/or water company may offer advice in your area.

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1Db0tG9</u>



Manage your soil sustainably

Benefit to the farmer

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

Healthy soil is essential for nutrient availability and efficiency. Good structure and biological activity increases root development, infiltration, improves yields, captures carbon, promotes biodiversity and reduces run-off.

Well managed soils decrease fuel, labour and machinery costs for cultivations. Prevents loss of productive soil. Reduces watercourse maintenance costs.

Protect your income by optimising yields and lowering input costs. Keep soils healthy and uncontaminated.

Reduce the risk of impacts downstream and uninsured claims. Reduce the risk to your business of lost earnings from penalties, lost contracts or from enforcement action.

Actions

Know your soils so you can get the best out of them and assess if they could cause pollution. Protect your soils by preventing compaction, reducing run-off and soil erosion.

Choose a crop rotation to minimise erosion. Restrict high risk crops to low risk land.

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

During and after harvesting a crop, consider the field's risk in relation to slope, watercourses, roads and compaction. Choose an appropriate post-harvest management technique e.g. plant a cover crop.

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

Test soil every 3-5 years for acidity (pH) and key nutrients, such as phosphorus and potassium. Record and monitor the results and use in your fertiliser planning.

Measure soil organic matter and increase reserves e.g. through planting cover crops, returning straw, adding composts and manures. Count earthworms to assess soil health.

Manage livestock to reduce poaching and soil erosion. Maintain or relocate gateways and tracks where runoff and soil erosion is a risk to watercourses, habitats, roads and property.

Consider constructing a wetland or Sustainable Drainage System (SuDS) to reduce run-off and localised flooding, trap/ treat pollutants and provide a wetland habitat. Consider planting trees and hedgerows to protect soil from erosion, reduce sediment run off and help stabilise river banks.

Prevent contamination. Only certain wastes can be spread to land for agricultural benefit. You must have an exemption, or environmental permit to operate mobile plant for land spreading, and comply with the conditions.

Effect on the environment

Poorly managed compacted soils can increase run-off, strip productive topsoil and can prevent rainfall from replenishing groundwater resources.

Eroded soil can run-off into watercourses and affect how channels work, increasing the risk of localised flooding. Eroded soil can carry nutrients, pesticides and faecal bacteria into watercourses.

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

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

Contaminants e.g. plastics, affect soil health.

Clearing soils off highways can be a significant cost to local authorities.

Access to advice and support

GOV.UK – Farming rules for water: Rules for farmers and land managers to prevent pollution <u>bit.ly/2Eggvjl</u>

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

Environment Agency – Think Soils bit.ly/2HH8UiU

AHDB – GREATsoils <u>bit.ly/2G0DUL6</u>

Cranfield Soil and Agrifood institute – Soilscapes bit.ly/1DkAZXn

British Geological Survey – mySoil app <u>bit.ly/1VWJIF0</u>

Championing the Farmed Environment <u>bit.ly/1JRD4qz</u>

Farming Advice Service <u>bit.ly/1SMMGaP</u>

GOV.UK – Catchment Sensitive Farming: reduce water and air pollution <u>bit.ly/1N454KJ</u>

GOV.UK – Rural Sustainable Drainage Systems (SuDS) <u>bit.ly/1IGDn16</u>

GOV.UK – Owning a watercourse: responsibilities and rules <u>bit.ly/1hfkyS4</u>

Your local Catchment Partnership <u>bit.ly/1UF4XcM</u> and/or water company may offer advice in your area

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1Db0tG9</u>

Woodland Trust – Keeping Rivers Cool <u>bit.ly/2ThZKNg</u>

NFU – Know what's going onto your land – a checklist for landspreading waste <u>bit.ly/1XuWl9L</u>

NFU – Waste volumes and types – what can you spread? <u>bit.ly/2Q5pmMM</u>

GOV.UK – Waste: environmental permits <u>bit.ly/20jbJZ6</u>



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 available at the right time optimises crop yields and livestock production.

Reduce costs of using water on your farm and 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, penalties, lost contracts or from enforcement action.

Actions

Carry out a water audit. Use this to identify where you could save water. Check for leaks, overflows and insulate pipe work.

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

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

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

Plan your cropping so you don't need more water than you have available on your **abstraction licence**. Increase resilience by planting drought or flood tolerant crops.

Harvest rainwater for reuse, build a water storage reservoir, potentially in conjunction with other abstractors.

Fill water storage reservoirs over the winter when water is available.

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

Set up or join a water abstractor group with your neighbours. Consider trading your water rights with other farmers if you don't need as much water for your business. Buy water from another abstractor and increase the connection between existing water sources.

Check your trickle irrigation licensing needs. **A spray irrigation** licence does not cover trickle irrigation.

Look out for updates from the Environment Agency on irrigation prospects and flexible abstraction.

Enquire if you can 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.

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 water dependent habitats such as wetlands, and sensitive species, such as salmon.

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

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

Access to advice and support

GOV.UK – Water management: abstract or impound water <u>bit.ly/2drnvT4</u>

GOV.UK – Manage your water abstraction or impoundment licence online bit.ly/2GQsnPG

GOV.UK – Water situation reports for England bit.ly/1GmGaHj

DEFRA – Waterwise on the farm bit.ly/1ITSolw

GOV.UK – Planning, designing and building water storage reservoirs <u>bit.ly/2Rsa6Zo</u>

Environment Agency – Help for water trading rights <u>bit.ly/2JETUFm</u>

UK Irrigation Association – Benchmarking tool <u>bit.ly/2I94tfO</u>

UK Irrigation Association – Irrigation booklets <u>bit.ly/2XWyW86</u>

Farming Advice Service bit.ly/1SMMGaP

D-Risk – Cranfield University – A planning tool to manage your irrigation abstraction and drought risks <u>bit.ly/2JcdTLe</u>

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1Db0tG9</u>



Manage your land to reduce flood risk

Benefit to the farmer

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

You can cope better with periods of excessive rainfall and rising sea levels.

Watercourse maintenance improves land drainage and reduces the impact of flooding.

Reduce the risk to your business of lost earnings from flooding, penalties, 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, high flows and rising sea levels.

In wet conditions eroded soil can run-off into watercourses and cause siltation which can affect how channels work, increasing the risk of flooding.

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

Actions

Find out if your land is at risk of flooding and sign up for free flood warnings.

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 them free of debris and obstructions.

Stabilise the banks of watercourses.

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

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, hedges or other measures to slow the flow of run-off, intercept sediment and increase infiltration.

Consider the creation of woody debris dams, or constructing a wetland or Sustainable Drainage System (SuDS) which can reduce localised flooding, trap/treat pollutants and provide a wetland habitat.

Consider implementing Natural Flood Management options to reduce the risk of flooding and coastal erosion.

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

Access to advice and support

GOV.UK – Find out if you're at risk of flooding in England <u>bit.ly/2f1L5Wx</u>

Sign up for free flood warnings in England bit.ly/1sL3t67

GOV.UK – Owning a watercourse: responsibilities and rules bit.ly/lhfkyS4

GOV.UK – Channel management handbook for flood risk management <u>bit.ly/1K23aau</u>

GOV.UK – Rural Sustainable Drainage Systems (SuDS) <u>bit.ly/1IGDn16</u>

Catchment Based Approach – Natural Flood Management <u>bit.ly/2YroZzy</u>

Environment Agency – Think Soils bit.ly/2HH8UiU

GOV.UK – Catchment Sensitive Farming: reduce water and air pollution <u>bit.ly/1N454KJ</u>

The Woodland Trust – Keeping Rivers Cool bit.ly/2ThZKNg

Your local Catchment Partnership <u>bit.ly/1UF4XcM</u> and/or water company may offer advice in your area

Farm Business Resilience Health Check <u>bit.ly/1PY7F89</u>

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1Db0tG9</u>



Manage your livestock to protect the environment

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.

Protect the quality of water abstracted for high risk crops, for example salad crops.

Ensure nutrients in feed and fertiliser are efficiently converted to reduce loss as ammonia.

Keep nutrients within slurry and manures and increase their value as a fertiliser.

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

Actions

Minimise soil and bank side erosion caused by livestock by implementing appropriate measures.

Prevent livestock access to rivers and provide alternative drinking sources, e.g. pasture pumps, solar pumps or mains water supply.

Establish hedges alongside watercourses to prevent access, enhance biodiversity and reduce diffuse pollution.

Obtain a consent/permit to fence along field margins adjacent to watercourses. 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.

Position livestock feeders away from watercourses and move at frequent intervals to minimise poaching and soil erosion.

Maintain farm tracks to reduce soil loss and install cross drains to manage runoff.

Adjust stocking levels on fields adjacent to watercourses to minimise risk of stock access. Reduce stocking rates when soils are wet and susceptible to poaching or compaction.

Locate outdoor pigs in the most suitable area to minimise erosion.

Match nutrient content of feed to livestock requirements at different production stages.

Ensure waste materials used for animal bedding are appropriate and uncontaminated and you have a relevant permit or exemption registered.

Regularly clean housing and yards and remove manure. Keep manures dry, for example by storing indoors or covering. Ensure stores comply with the Silage, Slurry and Agricultural Fuel Oil (SSAFO) rules.

Effect on the environment

Livestock access to watercourses can collapse banks which increases flood risk and loss of productive land.

Sediment in rivers 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.

Excess nitrogen, emitted to the air as ammonia, is deposited onto soils and into water. This has negative impacts on water quality and habitats.

Access to advice and support

GOV.UK – Farming rules for water: Rules for farmers and land managers to prevent pollution <u>bit.ly/2Eggvjl</u>

GOV.UK – Storing silage, slurry and agricultural fuel oil <u>bit.ly/2UFIPp0</u>

Ciria – Livestock manure and silage storage infrastructure for agriculture (C759) $\underline{bit.ly/2PTqLWD}$

AHDB – Slurry wizard bit.ly/2VbC6ll

GOV.UK – Protecting our Water, Soil and Air: A Code of Good Agricultural Practice <u>bit.ly/11qqwW1</u>

GOV.UK – Code of Good Agricultural Practice for reducing ammonia emissions <u>bit.ly/2Bb1MYm</u>

GOV.UK – Owning a watercourse: responsibilities and rules <u>bit.ly/1hfkyS4</u>

Defra – MagicMap: Shellfish and Bathing waters bit.ly/2TV3IRS

Environment Agency – Catchment Data Explorer bit.ly/1J1GIXU

Farming Advice Service bit.ly/1SMMGaP

Championing the Farmed Environment bit.ly/1JRD4qz

Woodland Trust – Keeping Rivers Cool bit.ly/2ThZKNg

GOV.UK – Catchment Sensitive Farming: reduce water and air pollution $\underline{bit.ly/1N454KJ}$

Your local Catchment Partnership (CaBA) <u>bit.ly/1UF4XcM</u> and/ or water company may offer advice in your area

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1DbOtG9</u>

GOV.UK – Waste: environmental permits <u>bit.ly/20jbJZ6</u>

Find out if your farm is in a catchment for bathing or shellfish waters.



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 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 beneficial insects, including bees and other pollinators.

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

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

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.

Follow product labels and use pesticides in a manner to minimise environmental risk.

Ensure staff and contractors are trained, aware of the risks, such as drainage routes, and hold required qualifications before they work with pesticides.

Check local weather reports before applying pesticides and don't apply during times of high risk.

Implement best practice measures provided by the Voluntary Initiative, and product stewardship initiatives.

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

Ensure stores are resilient to a changing climate e.g. not at risk of flooding or impacted by extreme temperatures.

Consider installing a lined biobed or biofilter.

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

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

Follow best practice for sheep dip use. After dipping contain sheep away from watercourses or water sources.

Store, treat and/or dispose of waste sheep dip carefully to avoid the risk of pollution. **You must have an environmental permit to dispose of waste sheep dip to land.**

If you hold an environmental permit for disposal of pesticides, comply with the conditions of the permit.

Access to advice and support

Environment Agency – Check for Drinking Water Safeguard Zones bit.ly/2GwU8vz

GOV.UK – Protecting our Water, Soil and Air: A Code of Good Agricultural Practice <u>bit.ly/1IqqwW1</u>

GOV.UK – Sheep dip: Groundwater protection code <u>bit.ly/2sVwqR6</u>

Voluntary Initiative – Promoting responsible pesticide use <u>bit.ly/1TuXS1A</u>

Voluntary Initiative – Integrated Pest Management Plans <u>bit.ly/1TPsNli</u>

National Register of Sprayer Operators bit.ly/1lOavBC

Championing the Farmed Environment bit.ly/1JRD4qz

GOV.UK – Rural grants and payments bit.ly/2Fmf2L0

Rural Development Programme for England (RDPE) grants <u>bit.ly/1Db0tG9</u>

GOV.UK – Catchment Sensitive Farming: reduce water and air pollution <u>bit.ly/1N454KJ</u>

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Woodland Trust – Keeping Rivers Cool <u>bit.ly/2ThZKNg</u>