



# Flood recovery advice for the agricultural sector

August 2019

We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people's lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.

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# Foreword

Flooding is a natural phenomenon that cannot be prevented. We will work with farmers and landowners to ensure you are able to undertake the necessary works to recover from flooding, using emergency provisions where possible. We will do this provided it is safe for you to do the work and the work doesn't cause any greater risk of flooding.

In planning for the future, we can help you find ways to slow, store and filter flood water on your land.

## Summary of our main advice

It is important to consider your own safety and that of others before carrying out any work during or after a flood. Consider risks from further high tides or high river flows before you start any work.

### Work to river banks and structures

- Talk to us about the environmental impacts of your recovery operations and options for reuse of non-hazardous materials. Phone our National Customer Contact Centre on 03708 506 506 ([call charges apply](#)) to discuss any environmental permits you may require.
- Where possible and appropriate, we will help you restore land after flooding. However, we must take account of the impacts this may have on the environment and others, especially if the recovery will take time.
- If you need to take action under emergency provisions during or immediately after a flood to avoid significant risk, you do not need our permission. You must notify us (and others as necessary) as soon as possible.
- Where your land or the river is designated for nature conservation, or there are protected species (such as water voles and otters), you may also need to speak to Natural England before you do any work.

### Work to remove or dispose of waste

- Material deposited on fields following the floods may be reusable within the catchment or it might be waste. It might be possible to return materials such as river gravels back to rivers - we will give you advice on this.
- Land spreading elsewhere should be done under a waste exemption or permit and deployment authorisation.
- Deposited material is a waste if removed for composting or anaerobic digestion or other treatments and should be done under a waste exemption or permit.
- Burning waste in the open is restricted by quantity and waste type, but can be done under a waste exemption. Otherwise material must be removed to an authorised waste treatment or disposal facility.
- You should seek advice from the Animal and Plant Health Agency (APHA) if you want to dispose of animal carcasses on your farm. Phone APHA via the Defra Rural Services helpline on 03000 200 301 ([call charges apply](#)).

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# Draining land and discharging water

Draining water from land is the responsibility of the landowner. Before you carry out any earthworks or take any other actions to remove water you must consider the potential environmental impacts.

Before carrying out any works, you must:

- ensure that your proposed work will not have an adverse effect on a designated conservation site or protected species
- ensure that the receiving water course can cope with the discharge - a larger, flowing watercourse will generally have more capacity
- ensure that any potential sources of pollution do not get released to the receiving water, such as soil, slurry, sea water or other potentially polluting substances
- ensure that fish do not become stranded
- take care not to make flooding worse elsewhere

As a general guide, where land has been inundated and would normally drain to a watercourse or the sea, pumping to accelerate discharge is not likely to result in any significant impact on the environment. We recommend that you seek expert advice before draining water from the land to make sure appropriate pollution prevention measures are in place. Phone the Environment Agency on 03708 506 506 ([call charges apply](#)) if you have any concerns and would like to discuss your proposals.

## Repair and restoration of defences and channels

Riparian landowners are responsible, under common law, for maintaining the bed and banks of any watercourses that run through their land in a state which avoids flooding on their own, their neighbours' or other land. This common law duty also extends to keeping watercourses and culverts clear of anything that could cause an obstruction or blockage.

De-silting or dredging is costly, disruptive and may not reduce flood risk. You may need a Flood risk activity permit and an Environmental Permit if you want to do watercourse maintenance like this, including work on defences. These permits are needed to protect the environment and prevent flooding upstream and downstream. You should contact us to find out if your proposed action will be effective before you do any work on the watercourse. We will tell you if it is appropriate and if consent is required.

Phone our National Customer Contact Centre on 03708 506 506 (call charges apply) to discuss any consents or environmental permits that you may need.

- [Apply for a flood risk activity permit](#)
- [More information on watercourse maintenance](#)

## Emergencies

If the floods are serious enough to risk human life, health, property or the natural environment, it is an emergency.

We do not require landowners to get a flood risk activity permit under the Environmental Permitting Regulations 2016 to undertake bank repairs or removal of accumulated debris from rivers impacted by flooding, where works are required in order to prevent further flooding from happening.

We will consider these to be emergency works, where they are necessary to avoid a significant risk to human life, health, property or the natural environment and involves the need for immediate action to manage the risk. We and any other statutory consultee (such as Natural England) should be informed at the earliest possible opportunity and ideally prior to the works starting.

Do not try to do any non-emergency works during a flood. Works undertaken when ground conditions are poor may compact soils and cause further damage to the watercourse, banks and the environment and may present a health and safety risk to those undertaking the works.

Dredging is not an emergency activity.

Phone our National Customer Contact Centre on 03708 506 506 ([call charges apply](#)) to notify us of such works or for any points of clarification.

## Blockage removal

If the river bank has collapsed or another obstruction is posing a significant risk, you can remove it without a permit. You can only remove the obstruction - you must not carry out any other work. You will need a flood risk activity permit to fully reinstate the riverbank or failed structure.

Fallen trees in the channel that are not blocking a bridge or culvert can be left in the river. This is because they provide important habitat and can help slow the flow.

## Works to flood defences

Emergency works to defence walls and embankments should be restricted to ensuring structural stability during, or in advance of an imminent flood. You must not raise the height of flood defences without permission from us.

You must have a flood risk activity permit to maintain or repair flood defences, even if you aren't changing the dimension or alignment. Landowners may already have these in place as part of their maintenance agreement. If you already have a permit you don't need to notify us.

## Internal Drainage Boards (IDBs)

We have permissive powers to carry out flood and coastal risk management work and to regulate the actions of others on main rivers and the coast. Local authorities have powers to carry out work on other watercourses and coastal erosion protection assets, except for watercourses within IDB districts and public sewers. These are the responsibility of the IDBs and the water companies.

Where flooding or damage to watercourses has occurred within an IDB area, farmers should contact their IDB for help.

- [Find your local IDB](#)

# Biosecurity - prevent the spread of invasive species

Flood events provide an ideal opportunity for invasive non-native species to escape into the wild. Please do all you can to avoid further spread on equipment and clothing.

Many of these species have the potential to contribute to flood risk. Invasive plants can reduce the capacity of flood channels and block sluices and other structures. Some invasive animals, such as certain non-native crayfish and Chinese mitten crab, burrow into flood banks and increase erosion. Many lakes and ponds contain invasive non-native species that have the potential to do considerable harm if they are allowed to escape into the wild.

Where equipment or materials are entering or leaving the site, please endeavour to follow the steps outlined in the 'check-clean-dry' campaign

- [Help stop the spread of invasive plants and animals: Check, Clean, Dry](#)

## Remediation of land and soils inundated with salt water

The National Farmers Union (NFU) has advised that the length of time salt water is on the land is critical. It is important to remove salt water from the land as soon as possible.

Before you carry out any work you must check whether your land is designated as a Special Area of Conservation, Special Protection Area, Ramsar or Site of Special Scientific Interest. If it is, you must speak to Natural England before you do any work. You must speak to your local Wildlife Trust if your land is (or contains) a Local Wildlife Site.

You must seek specialist advice before you treat the soil. You must understand the implications of diluting saline water and using any treatment with additives (such as gypsum). Agronomists will advise you on treatment methods that don't cause pollution, ensure that nutrients are withheld, and comply with the regulations. When abstracting groundwater, you must ensure that saline water is not introduced.

Any soil treatment that involves the spreading of waste (such as plasterboard derived gypsum) is likely to be subject to Environmental Permitting Regulations 2016. Phone us for advice on 03708 506 506 ([call charges apply](#)) or see our [Environmental Permitting web pages](#).

The NFU's tidal surge briefing (for NFU members only) also provides a comprehensive overview of requirements and considerations.

To abstract surface water or groundwater you may need an abstraction licence. Phone us on 03708 506 506 ([call charges apply](#)) to discuss your requirements. If you already have an abstraction licence, you must contact us if your proposed activities are not included in that licence.

## Contamination of drinking water and irrigation supplies with salt water

Salt water that enters groundwater for example by flooding of shallow wells or boreholes, entering via irrigation ponds or storage reservoirs or simply draining through overlying soils may contaminate drinking water and irrigation supplies.

If you think your water supply may be contaminated, you may be able to trade water with another licence holder. We can advise you on the licence requirements of any water trade - phone us on 03708 506 506 ([call charges apply](#)).

# Sediment and other materials washed onto farmland

You may need to remove material deposited on fields following the floods for re-use or disposal.

You must assess the classification of the waste before you can decide what to do with it. Do not assume that a waste is hazardous or non-hazardous - you must determine this on a case-by-case basis. Contact us if you are uncertain.

It may be best to return clean gravels to the river, but you must speak to us before you do this. The deposition of fine sediment (soil or silt) on floodplains is a natural process and part of soil building and fertilisation. Materials should only be treated as waste and removed if they are man-made, contaminated, prevent natural recovery of the land or conflict with current land uses.

Other material such as contaminated silt, or anything that conflicts with natural recovery or current land use, may be considered waste. These may be spread and restored to land under a 'waste exemption' or 'permit and deployment authorisation', if it will cause no environmental damage. Waste exemptions are free to register.

- [Register your waste exemptions online](#)

Your local authority may be able to remove large quantities of waste in exceptional circumstances. Local Authorities are responsible for inspecting land in their area to identify contaminated land under Part 2A of Environmental Protection Act 1990.

## Clean stone and gravel

If gravel contains lots of manmade debris it may need to be screened before it can be reused.

If you need our advice please phone us on 03708 506 506 ([call charges apply](#)) or send an e-mail with photographs to [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk). We are unlikely to classify the gravel as hazardous waste due to the large volumes of floodwater involved in their transport and deposition. There will be exceptions where the gravel is removed from an area where there has been heavy contamination of the floodwater by hazardous substances like heating oil or fuel, for example. It may be easy to spot contamination from the appearance and odour. Therefore if it smells or looks oily, it should be tested.

Where clean stone and gravel can be used beneficially without treatment or harm to the environment within the catchment from which they originated (for example, returned to the river or for track, path or road repair) these will not be viewed as a waste and therefore waste transfer notes and Duty of Care legislation will not apply.

Where materials cannot be reused within the catchment or require treatment (such as crushing) then they are viewed as waste and the usual Duty of Care requirements will apply. This includes the use of transfer notes, registered waste carriers and exemptions or permits for the treatment or disposal. Where treatment (such as crushing) takes place within the catchment, you will need to register a waste exemption. Private individuals carrying out these activities on their private land do not need to register the exemption but they must comply with the Duty of Care.

With our approval, landowners can:

- stockpile gravels in a field, on the farm or on private land where they have been deposited (for possible reuse)
- remove the gravels and use them off the farm but within the catchment



You may need a Flood risk activity permit if you want to do any river works or bank repairs. You may also need a consent to stockpile material in the floodplain or return gravels to the river channel. Phone us on 03708 506 506 ([call charges apply](#)) to discuss your requirements. If there are large items such as vehicles or silage bales in the river, the landowner should contact us for advice.

## Other waste debris

Floods may deposit different types of waste material on your land. You can arrange for them to be collected by your local authority or a private contractor.

Landowners have a Duty of Care to make sure that waste they dispose of themselves is taken to a properly authorised site.

- [Managing your waste - Duty of Care](#)

## Wood

Virgin timber (such as fallen trees) is not waste. It can provide valuable habitat within river channels. If you have to remove them, for example if they are blocking a culvert or bridge, fallen trees are not subject to waste regulatory controls, as long as you use them for purposes such as firewood.

Untreated wood waste can be burnt in the open under [a waste exemption](#).

## Waste exemptions

Registering your waste exemption is free and lasts for 3 years.

- [Register your waste exemption](#)

By registering, you are confirming that you:

- have read and understood the limits and conditions that allow you to operate without a permit
- are carrying out your waste operation in accordance with those limits and conditions
- are not posing a risk to water, air, soil, plants or endangering human health
- are not causing a nuisance for example through noise or odours

# Disposal of spoilt crops

Spoilt crops can be ploughed back into the fields where they are being grown - they are not regarded as waste.

If spoilt crops are harvested and removed, they will become waste. Environmental Permitting Regulation controls are likely to apply, such as by spreading to land or treatment via composting or anaerobic digestion. Disposal or treatment must take place under a waste exemption or permit.

## Land spreading

Access to land may be a problem if it is saturated. Spreading onto waterlogged land will lead to soil damage and compaction and is likely to cause pollution.

It can also put you at risk of breaking the law and your Cross Compliance responsibilities (see Cross compliance section below). You should have sufficient storage on your farm to cope with typical UK weather conditions, which will include prolonged wet weather and occasional flooding.

You should have contingency plans in place to cope with exceptional conditions, such as temporary stores and off-farm arrangements. Advice on temporary slurry storage is provided in [annex A](#).

You must not accept off-farm materials for spreading on your land if spreading conditions are not suitable, or where you are struggling to manage your own slurry.

If you cannot avoid spreading in such conditions, contact us on 03708 506 506 ([call charges apply](#)). We will advise you on short-term options to minimise pollution, and your long-term options to prevent the situation happening again.

If you need advice you can talk to:

- your farm advisor
- The Environment Agency (03708 506 506 - [call charges apply](#))
- the Farming Advice Service (03000 200 301 - [call charges apply](#))
- the Catchment Sensitive Farming team [Officer Contacts](#)

You can find information on storage in the manual '[Think Manures](#)'.

## Cross compliance in exceptional circumstances

In certain situations you might not meet cross compliance due to 'force majeure' or exceptional circumstances. This could include some flooding events. Defra will decide if an event is 'exceptional' or not. It could mean that the Rural Payments Agency (RPA) don't enforce any reduction in Basic Farm Payments due to flooding related cross compliance breaches.

In an 'exceptional' situation you should contact the RPA within 15 days of the date the exceptional circumstance took place (or the date you first become aware of the exceptional circumstance). You can contact the RPA via the Defra Rural Services helpline on 03000 200 301 ([call charges apply](#)).

For more information see '[The cross compliance guide](#)'.

# Animal carcasses

Where a carcass is found on private land, the owner of the carcass should be identified. They are responsible for collection and disposal.

If ownership cannot be proven then responsibility for disposal rests with the landowner. Where a carcass is deposited elsewhere, including public land or highways, and ownership cannot be proven, the local authority is responsible for disposal.

We will remove a carcass from a watercourse but only if there is pollution or flood risk and the carcass owner or landowner cannot be identified.

The disposal of animal carcasses (excluding wild animals) is controlled by the Animal By-products Regulations (ABPR). The competent authorities for these regulations are the Animal and Plant Health Agency (APHA) and the local authority (generally Trading Standards).

The ABPR imposes a ban on the routine on-farm burial or open burning of carcasses or parts of carcasses. However, there are a limited number of exceptions to this ban, which are only given in exceptional circumstances. Exceptions include fallen stock located in certain 'remote areas', emergency disease control, and where access is not practical due to a geographical or climatic reason, or due to a natural disaster.

- [Fallen stock and safe disposal of dead animals](#)
- [Fallen Stock Guidelines in the event of severe weather and natural disasters](#).

If Defra/APHA agree that burial of animal carcasses is acceptable we are likely to require the activity to be carried out in accordance with an Environmental Permit for the protection of groundwater (a risk assessment will be required) to ensure your proposed burial location is suitable. For more information contact our National Customer Contact Centre on 03708 506 506 ([call charges apply](#)).

## Disposal of milk

If flooding prevents road tankers collecting your milk, you may need to dispose of it onto land.

You can do this under a U10 waste exemption, although the exemption is not valid for spreading onto waterlogged soil. During exceptional circumstances we will not take any enforcement action for breach of this exemption provided that:

- there is no risk to a site or species of conservation importance
- you have made use of any temporary storage options available to you
- you have fed the milk back to livestock as far as possible
- you spread at low rates (no more than 20cu m/ha in a 24 hour period on land with the lowest run-off risk) onto the land to reduce the risk of pollution
- the land where the waste milk is spread is at least 50 metres from a watercourse or a conduit leading to surface water, and at least 50 metres from a spring, well or borehole.

If the land is saturated then you must assess the risk of further pollution to water courses from run-off. Alternatively if you are able to hold /store waste milk until it can be moved it can be taken to a permitted anaerobic digestion plant.

If you mix milk with slurry you increase the risk of lethal or explosive gases such as methane, carbon dioxide, ammonia and hydrogen sulphide.

You should contact our National Customer Contact Centre on 03708 506 506 ([call charges apply](#)) to discuss site specific issues.

## Storage of pesticides

During a flood you should do everything you can to keep pesticides secure in line with the Code of Practice for Plant Protection Products.

Damaged pesticide products which cannot be used must be treated as hazardous waste and disposed of safely in line with manufacturers' recommendations.

- [Register as a hazardous waste producer](#)
- [Handling pesticide containers](#)

## Lined biobeds and pesticide washings

Lined biobeds, used to treat non-hazardous pesticides washings, will not operate correctly if they are flooded.

They may also fail to meet the conditions of the T32 waste operation exemption. Potential problems include risk of short circuiting, or anaerobic conditions that limit the ability of the biobed to breakdown pesticides.

If your biobed is waterlogged you must find alternative methods for the safe storage, treatment and lawful disposal of pesticide washings until it has dried out. Empty the post treatment tanks to allow the biobed to drain.

Damaged biomix can be disposed to land under exemption U10, or U11 if you store the affected biomix for 12 months. You can [register for waste exemptions on-line](#).

See [advice on replacement biomix material](#).

## Planning for flooding

You can sign up to receive flood warnings from the Flood Information Service - free flood warnings by phone, text or email.

- [Register for Floodline Warnings Direct](#)
- [Check flood warnings and river levels](#)

### Prepare a flood plan for your business

Preparing and putting a flood plan in place is the most important thing you can do to prepare your business for flooding. You should review and update your plan annually.

The plan should include:

- a list of important contacts, including Floodline 0345 988 1188 ([call charges apply](#)), building services, suppliers and evacuation contacts for staff
- a description or map showing locations of important property, protective materials and service shut-off points
- basic strategies for protecting property, preventing business disruption and assisting recovery
- checklists of procedures that can be quickly accessed by staff during a flood

### Record on a map where there are preferential flow pathways for water so you can identify opportunities to slow, store and filter runoff and floodwater on your land

We can provide advice and examples of rural sustainable drainage systems.

### Prepare your property for flooding

It's impossible to completely flood-proof a property but there are lots of things you can do to reduce flood damage. [Find out what you can do to prepare for flooding](#).

# Annex A - Advice to farmers on temporary slurry storage

## Introduction

This note is for farmers and landowners who are considering providing temporary additional storage to manage livestock slurry through the winter.

Short term extra storage may be provided on a farm or group of farms. Options could include:

- re-using/reinstating disused stores on farms, including tanks reclaimed from elsewhere
- installing new tanks or lagoon

## Regulatory matters

- Farmers should check with the Local Planning Authority for any planning requirements, making clear that this is a temporary arrangement.
- For temporary installations we can consider reduced requirements for slurry storage compliance with the SSAFO Regulations, as described in the guidance below.
- Farmers must de-commission all temporary facilities as soon as the current difficulties are resolved.
- If farmers intend to retain the store for long term use it must be re-assessed for full SSAFO compliance, and planning approval (if that is appropriate).
- Farmers must protect the H&S of all users. HSE sheet AIS9 provides advice on safety fencing.

## Practical matters

- If a farmer needs new or additional permanent storage, then it needs careful planning to avoid wasting money.
- We anticipate that earth bank lagoons, lined lagoons or possibly slurry bags will be the most likely installations for temporary storage.
- For shared facilities:
  - farmers will need to consider any biosecurity risks
  - the management arrangements, and where the ultimate responsibility lies, must be agreed between the parties and written down
  - farming organisations may be able to help to broker shared facilities.

## Legal requirements

Facilities that store slurry must normally comply with the [SSAFO](#) Regulations. However, the full requirements will be waived for stores that are used for less than 12 months. Temporary stores are expected to meet the requirements set out below.

The requirements of temporary stores are that:

- the Environment Agency must be notified before construction
- it is the best solution available to avoid pollution
- temporary storage must only be considered where existing facilities are inadequate
- each location must be agreed with us (although generic designs may be used)

- tanks and slurry bags must be installed to manufacturer's instructions
- the base of earth bank lagoons must be above the water table - we recommend at least one metre of clay subsoil beneath the proposed base
- a trial pit is needed to confirm the required one metre clay layer; the resulting hole must be backfilled and puddled in
- liners must be used where there is any doubt about earth bank permeability
- low grade liners should suffice for temporary storage (provided the site is not a high groundwater risk area); use higher grade liners for high risk areas
- careful monitoring must confirm the integrity of the store
- site stores are at least 10 metres from watercourses and land drains and 50 metres from groundwater sources
- temporary trial trenches are recommended if there is any doubt about the presence of land drains

## Permeability and liners

Refer to the Construction Industry Research and Information Association (CIRIA Report C759b (section 7)) for detailed guidance. Generally, soil needs to have a clay content of at least 20% to be suitably impermeable. An initial assessment of soil suitability can be made by digging test pits (filled in immediately after sampling), or by using a narrow-bore soil auger or similar device.

Clay content can be assessed by hand texturing, however it is recommended that soil texture is assessed by a person with adequate experience and training, or samples are sent to an approved soil testing laboratory.

There are a wide range of liners available for lining storage lagoons. Plastic liners such as polythene or PVC are widely available, and generally cheaper than the butyl rubber alternatives.

The thickness of liner used needs to be appropriate to the particular on-site conditions (site sensitivity, soil porosity and so on). CIRIA C759b recommends a minimum of 1.5 millimetre thickness for plastic liners, but this is for liners expected to perform for several years. Liner thicknesses in the range of 0.5 to 1.0 millimetre thickness should be suitable in most cases for temporary stores.

Where sheets have to be joined to cover a large area, the supplier can advise on minimum thickness and methods to ensure that joints are properly sealed. Take extra care during installation of thinner liners. Thin liners are more susceptible to puncturing, so they must be laid on top of approximately 50 millimetres of sand, or a geotextile membrane. Treat soil with weed killer prior to installation to prevent puncturing from below.

## Above ground storage

Unless earth banks are fully engineered, filling earth bank stores above the original ground level is best avoided. In any case, a 750 millimetres freeboard must be maintained.

## CIRIA C759 Report

Guideline on livestock manure and silage storage infrastructure is available on the CIRIA website: <https://www.ciria.org/ItemDetail?iProductCode=C759F&Category=FREEPUBS>

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