Supporting guidance for Water Margins in Arable Fields and Water Margins in Grassland Fields

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Introduction

A water margin is an area of uncultivated land next to a ditch, burn, river, pond or loch.

It will protect water from pollutants such as soil, nutrients, pesticides and animal manures. It can also provide valuable wildlife habitat and a corridor for wildlife to move along.

You can manage water margins as areas of grassland or they can contain trees and shrubs or other habitats, such as wetlands (land saturated with water).

Water quality benefits

- water margins help slow, store and filter water and associated soil, nutrients and pesticides flowing overland and through the soil
- excluding livestock helps prevent faecal matter from entering the water
- excluding livestock will help stabilise banksides
- water margins help slow the flow of water during heavy rainfall and reduce the peak flow and flood risk downstream
- small streams and ditches (even ones that may be dry for part of the year) are just as important in protecting water quality as larger watercourses, as their water quality affects the water quality of the larger watercourses they feeds into

Wildlife benefits

- water margins can be habitat refuges for a range of animals and plants
- water margin wildlife can act as natural pest control and support pollinators
- the margin can connect habitats allowing wildlife to move safely between them
- planting or allowing trees and tall herbs to grow will help shade the water and reduce stream temperatures to benefit fish
- protecting water quality protects plants and animals that live in the water

How wide does the water margin have to be?

In a change from the previous programme, measurement of the margin **now starts at the top of the bank** to be consistent with Good Agricultural and Environmental Condition and Scottish Environment Protection Agency guidance under General Binding Rules.

Under GAEC 1 you must not cultivate or apply pesticides within two metres of the top of the bank of a watercourse. The eligible area for payment for this option will start from the edge of this two metre strip.

If you have a current Rural Priorities agreement you may have measured from the water's edge. If you are applying under this new scheme for managing a water margin, the margin will only be eligible if it meets the relevant new minimum width from the top of the bank. Note also that the first two metres from the top of the bank are not eligible for payment.

You can apply to manage any width of margin you like, so long as the required minimum width is met **along the entire length of the margin.** Your margin can also vary in width along its length. For example, you can manage a wider margin at one point to intercept a known overland flow pathway and have a narrower margin elsewhere. You will be paid for the eligible area of the margin.

For example:

- you have a watercourse with a bed width of greater than 1.2 metres
- your margin has to be at least six metres wide at all points from the top of the bank, but you can choose to manage any width beyond this
- payment is for an area with a maximum width of 18 metres (a 20-metre wide margin with the first two metres from the top of the bank ineligible for payment)
- your margin can vary in width along its length provided it is always at least the minimum width, in this case six metres
- your payment is calculated on a hectarage basis by measuring the eligible area, i.e. the area beyond the two metres GAEC / GBR strip and up to the maximum eligible width of 18 metres

How do I know where the top of the bank is?

The location of the top is identified like this:

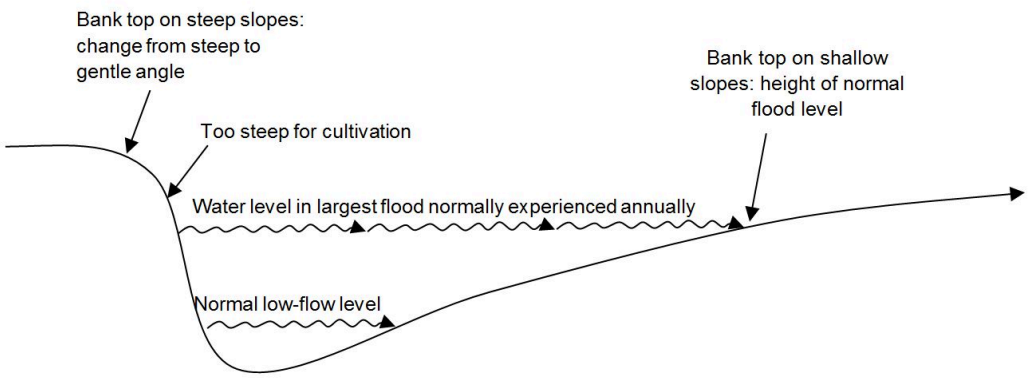
1. Where the bank is fairly steep and an obvious bank face exists, the bank top is the highest part of the bank where the slope angle changes from steep to gentle and cultivation could take place. This is illustrated below.

2. Where the bank face is very shallow and there is no obvious break in slope, the bank top is the height to which water normally reaches during the largest flood normally experienced during the course of a year.

This is also illustrated in the figures below. Note the flood height used here excludes the water height reached during rare major floods.

The normal flood level height may be difficult to identify because there is not a single indicator that can be used to locate it. Depending on the site, the following indicators may be used:

- traces left by high-water including flattened vegetation, deposited sediment (typically sands) or a high-water line of washed-up matter such as twigs or leaves
- exposed coarse sediments such as gravels
- changes in the pattern or type of vegetation



How wide should my margin be?

The main function of a water margin adjacent to arable and grassland fields is to slow the flow of surface water run-off and intercept pollutants.

In general, the wider the margin, the better the protection it offers both water quality and wildlife.

When deciding what width of water margin to establish, consider:

- the slope
- the soil drainage properties of the adjacent field
- the type of crop

In general, the longer the slope, the steeper the slope and the less free draining the adjacent field is, and the wider the margin you will need to slow the surface water flow.

Some crops are more prone to erosion than others, such as potatoes or winter cereals without cover crops, and they may need wider margins.

Consider how you will manage the water margin. You may want to choose a width which will allow you easy access for machinery to cut the vegetation, or will help you graze the margin.

Looking after your water margin

- the margin will work most effectively when the vegetation is long enough to slow the flow of water and trap sediment. Ideally it will be at least 10 to 15 centimetres tall
- phosphorus is carried in soil sediment, and can therefore accumulate in water margins. It is therefore useful to cut the vegetation (and remove cuttings) or graze the margin to help reduce the levels of phosphorus so that the margin does not become a source of pollutants.
  Wildlife habitats also benefit from low levels of nutrients and cutting or grazing will maintain a greater range of plants and animals in a grassy water margin
- grazing levels should be light enough to avoid poaching, and to maintain the grass at about 10 to 15 centimetres. Sheep will cause less damage to banksides than cattle. Allowing stock to have access to the adjoining field whilst grazing the margin will help prevent poaching
- you may already have some trees along your watercourse, or wish to plant some more. In these cases you should gain approval at the application stage that you are not going to cut or graze that part of the margin
  Planting native trees or shrubs adds habitat diversity to a water margin and provides benefits for fish by adding leaf matter to the freshwater and providing shade
- you should control any invasive non-native species if they are present or colonise the water margin
- you can choose to bring field drains and culverts to the surface to form wet areas in the water margin. This will prevent nutrients draining directly to water
- water margins should be thought of as one of several measures to protect water quality.
  Water margins intercept water and pollutants from fields but they can be complemented by other measures and practices in the field itself to protect water quality
- nutrient management planning for all fields will help you avoid applying excess fertiliser or manure

- ploughing across the slope or creating grass strips across the slope are two examples of ways of cultivating arable fields to reduce run-off
- keeping the neighbouring arable field free of compaction and maintaining levels of organic matter will help water to soak into the cropped soils and help reduce the amount of sediment likely to flow into a water margin
- you should look to see if there are any overland flow pathways that should be intercepted so that a large flow of water doesn't overwhelm your water margin

Why are there different management requirements and dates in the option?

Requirements for smaller watercourses

It is beneficial to have water margins on watercourses of all sizes, including ditches, but it is recognised that it may not be feasible to have the same size of margin on all watercourses.

A narrower minimum width has been allowed on watercourses with a bed width of less than 1.2 metres because of this. Also, narrower margins are harder to cut or graze. Grazing is not allowed because of the greater risk of poaching in the smaller margin. Cutting is not required on these narrower margins (although you can cut them if you're able to).

You can manage a wider margin on a small watercourse if you want. If the margin is six metres or wider, then the management requirements for a six metre or larger margin apply.

Requirements for bathing water catchments

A number of catchments across Scotland have been designated as bathing water catchments.

This means that the land drains to the sea or freshwater that is used by a significant number of people for recreation. Bathing waters need to be protected from contamination with faeces in order to protect people from illness.

If a water margin is in a bathing water catchment, livestock should be excluded during the bathing water season (1 May to 15 September). This is a very effective measure in protecting bathing waters. In some catchments an earlier end to the stock exclusion period (15 August) is set.

Please note

Where farm livestock are prevented from accessing traditional watering places by the water margin option, you can apply to install alternative watering points, the cost of which can be supported as a capital item.

You can apply for payment for planting trees in a water margin using the Small-scale Tree and Shrub Planting capital item.

This option covers margins next to water. There are separate options for creating or managing grass strips within an arable field or adjacent to other field boundaries, for example hedges.

How to increase the success of the option

- all watercourses and standing waters will benefit from water margins. Some margins will be more beneficial for reducing the effects of diffuse pollutants. Use the information in your environmental audit to identify the highest risks and most relevant measures to address the risk
- for arable fields, the steepest slopes and crops most likely to disintegrate or die easily will benefit most from margins and from wider margins
- for grassland fields, creating water margins and alternative watering where livestock have access to watercourses or standing water is most beneficial to prevent bank erosion or preventing faecal contamination in bathing water and shellfish water catchments
- use other measures in conjunction with water margins to slow flow and trap sediment or distance livestock from water
- bring field drains up into water margins or direct them to rural SuDS (sustainable drainage systems) rather than leaving them to discharge directly into a watercourse
- for biodiversity, use water margins to create physical links between other existing habitats such as woodland, grassland, wetlands and hedgerows

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- planting trees to benefit wildlife and diffuse pollution. Cutting or grazing a grassy water margin to remove nutrients is also of benefit

It may be possible to combine these two management regimes by planting trees or shrubs in part of the margin or on the banking and still cutting the remainder of the margin or from the top of the bank.

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