

Water Framework Directive risk assessment

How to assess the risk of your activity

6 April 2016

You need to show us that your activity supports the objectives of your local River Basin Management Plan (RBMP) or meets strict sustainability criteria

Assessing the risk to RBMP objectives

Carrying out some flood risk activities can affect the quality of water within our rivers, as well as physical habitat and the ecology it sustains. Follow the steps below to determine whether or not your activity supports the objectives set out in your local River Basin Management Plan.

Who this guide applies to

You must follow this guide if you are applying for a bespoke permit and one of the following apply:

- you're applying for a flood risk activity permit to carry out one of the following activities on a main river.
 - culverts
 - channel widening, deepening, straightening or realigning
 - impounding structure
 - bed reinforcement
 - sediment management (including dredging and de-silting)
 - bank reinforcement
 - embankments and set-back embankments (over 10m in total length)
 - by-pass channel (over 10m in total length)
 - bank reprofiling (over 10m in total length)
 - woody debris installation or removal (installed / removed over a length of 20m or greater)
 - flow deflectors (installed over a length of 20m or greater)
 - bridges & crossings
 - outfalls
- your activity could affect a water body that is at high status or high status morphology. Environment Agency staff can advise you if this is the case.

How to carry out your assessment

1. You first need to make sure that your existing risk assessment covers the receptors that are protected by WFD. These are set out in the section on environmental standards below.
2. You need to demonstrate that your activity supports the objectives of your local [River Basin Management Plan](#) (RBMP). These are also discussed in the section on environmental standards below.
3. If you are unable to reach a high level of confidence that your activity supports the objectives of your RBMP then you need to carry out more investigation into the risks on WFD receptors and possible ways of managing those risks.
4. If you conclude that your activity does not support RBMP objectives then in order for Environment Agency to permit your activity you need to show that it meets the sustainability criteria set out in Article 4(7) of the WFD. You should contact the Environment Agency for help with this.

Environmental standards

The WFD is a European directive that imposes legal requirements to protect and improve the water environment (including our rivers, coasts, estuaries, lakes, ground waters and canals). Physical works can modify the size and shape of a watercourse, reduce or increase the flow of water, introduce artificial materials or remove sediment and/or vegetation. These can all affect the receptors below:

- physical habitat – the distribution and diversity of habitat including the physical processes that sustain and create new habitat. Physical habitat is essential for fish, macrophytes and invertebrates to live and thrive
- water quality – particularly physico-chemical aspects of water quality - such as levels of dissolved oxygen, phosphorus and ammonia
- fish and eels
- macrophytes - water plants visible to the naked eye, growing in the river
- invertebrates - insects, worms, molluscs, crustacea etc living on the river bed
- diatoms - microscopic diatoms (algae) found on rocks and plants

If your risk assessment shows that these receptors are negatively affected then it is possible that your activity may not support RBMP objectives. Your local RBMP sets out legally binding objectives for each water body in its river basin district. The wider environmental objectives of the RBMPs that are relevant to physical works are:

- to prevent deterioration of the status or potential of surface waters and groundwater
- to aim to achieve good status for all water bodies (or for heavily modified water bodies and artificial water bodies, good ecological potential) and good surface water chemical status

Your WFD risk assessment needs to demonstrate with a high level of confidence that your activity supports these objectives.

In other words, it needs to demonstrate that there is a low risk that the activity will cause deterioration in status / potential or prevent good status / potential being achieved.

Does your activity meet environmental standards?

You need to show how any impact on WFD receptors caused by your activity fits with the objectives of any affected WFD water bodies. After you have amended your works to try and avoid, minimise, mitigate or compensate for the risks to WFD receptors you need to answer the following questions.

- could the activity still cause a water body to deteriorate from one WFD status class to another or cause significant localised impacts that could contribute to this happening?
- could the activity prevent or undermine action to get water bodies to good status?

When answering these questions you need to bear the following in mind:

- a water body deteriorates in status when one WFD receptor (an "element") is affected such that it drops from one WFD status class to another
- a significant localised impact on an element is one that is either long-lasting; causes severe harm; or affects a wide area within a water body. These are likely to contribute to a water body dropping from one status class to another and highly likely to prevent action to get water bodies to good
- you should use information in the 2015 RBMPs as the starting point for your assessment
- elements at high status are very sensitive. You will need to demonstrate that there will be a negligible impact on those aspects of the water environment

- elements at bad status must not be made any worse. You will need to demonstrate that there will be a negligible impact on those aspects of the water environment
- when looking at the risk to elements you need to think about the upstream and downstream impacts of your activity
- some watercourses are not reported on in the RBMPs. These watercourses are still protected under the WFD and as you cannot rely on RBMP data you should take action to ascertain the existing quality of the environment before you carry out your assessment
- some water bodies are designated as Artificial or Heavily Modified in the RBMPs. These are set the objective of good potential rather than good status. Your approach to assessing the significance of impacts should be the same in both types of water body

If you cannot demonstrate with a high level of confidence that your activity supports RBMP objectives then in order for the Environment Agency to permit your activity you need to show that it meets the criteria set out in Article 4(7) of the WFD. Article 4(7) sets out stringent environmental and socio-economic tests to assess if a scheme meets strict environmental and sustainability criteria. You should contact the Environment Agency for help with this.

How to get to high confidence

You need to reach a high level of confidence that your activity supports the objectives of your local RBMP.

Your starting point should be to update your existing risk assessment to include all relevant WFD receptors and then to interpret the risk assessment in terms of RBMP objectives. This may be enough to give you a high level of confidence.

You should follow a proportionate approach to your risk assessment. This means that the greater the uncertainties about the risks from your activity and as to whether or not your design is able to reduce those risks to an acceptable level, the more assessment you should undertake.

By adopting this method, it should ensure that you put the right amount of cost, time and effort into your risk assessment.

Factors that affect uncertainty are the scale, complexity and risk of your activity as well as the sensitivity of local WFD receptors.

To help you, the Environment Agency can advise on the amount of assessment that you will need to undertake. They will base this advice on their knowledge of the sensitivity of the local environment and the WFD receptors that could be affected by your activity. They will also be able to advise you on the WFD receptors that your assessment should concentrate upon.

Further options for assessment are to:

- investigate the risks using readily available sources of data such as WFD data, aerial photography, and historic maps
- collect more existing information and analyse it so you can make an informed assessment of the risk posed by the activity and identify with greater confidence potential ways to reduce that risk. This could include using historic flood records, LiDAR, hydrological records and existing reports
- gather new information and data from site investigations or modelling so that you can fully analyse the risk posed by the activity and understand the most effective ways to reduce that risk. To avoid carrying out too much assessment you should discuss the exact approach with Environment Agency staff

Key sources of WFD data

You can find a guide about how to access WFD data [here](#). This look-up guide will help you navigate the data and information found within the RBMPs and guide you to the detail you require.

We will be producing more tools to help you easily access the data that is relevant to your assessment.

Reporting your findings

It may be that your existing risk assessment can be updated to include WFD risk assessment, but you should as a minimum assess and report on the following considerations. You need to

- identify the likely impacts of the activity on WFD receptors
- estimate the magnitude of those impacts
- estimate the probability of those impacts occurring
- identify the residual risk once action has been undertaken to avoid the risk, minimise it, mitigate it or compensate for it within a water body
- evaluate the significance of the risk with reference to RBMP objectives

You must supply all workings and evidence to support the conclusions that you make. This should include photographs and plans of the site. If you have scoped out some WFD receptors from consideration because they will not be affected then you need to provide an audit trail of the decisions you have made.