

# Science for Environment Policy

## New guide to help reduce pesticide pollution in aquatic ecosystems

**Pollution from agricultural pesticides** can present a serious threat to aquatic ecosystems. Researchers have now developed a guide to identify the most appropriate measures to reduce pesticides entering waterways. It focuses on reducing pesticide entry via spray drift or runoff.

**In Europe, the Sustainable Use of Pesticides Directive<sup>1</sup>** has established a framework which is designed to reduce the risks and impacts of [pesticide](#) use on human health and the environment. The Directive requires EU Member States to develop National Action Plans with objectives, targets and measures to reduce the [risks](#) associated with applying pesticides.

Measures to reduce pesticide pollution can be grouped into two categories:

- 1.) Those related to applying pesticides, which either reduce their harmful effects or levels of exposure for wildlife. For example, pesticides with lower toxicity can be used, or no-spray zones can be set-up.
- 2.) Those related to changing the landscape structure. These reduce pesticide exposure in surface waters using buffer strips of plants alongside rivers, or by creating retention ponds and ditches.

This study describes a new user guide to identify suitable measures to reduce pesticide pollution at the stream catchment scale. The guide was developed in Germany and it focuses on pesticide contamination via spray drift and surface runoff. Drainage through the soil from [agricultural land](#), which is less of a problem in Germany, was not included in the guide.

The first step in the guide is to survey and map the catchment landscape for relevant features, including vegetation buffer strips, the type of buffer vegetation, the slope of agricultural fields and 'flow paths' that concentrate runoff, for example, gullies formed by soil erosion or drainage ditches.

The next step involves using an 'identification key' to assess the potential for pesticides to enter [water](#) bodies, based on information in the landscape survey. Users answer a series of questions about the landscape features to arrive at recommended mitigation measures. The guide gives details of how effective such measures are in reducing exposure, and how feasible and acceptable such measures are likely to be. Users of the guide can compare the different measures to decide which measure or combination of measures to adopt.

For example, spray drift reducing techniques are highly effective, relatively easy application-related measures that are considered to be readily acceptable by farmers. Planting vegetated buffers on flow paths, such as erosion gullies, is recommended as being a highly effective landscape-related measure that is easy to implement and which would be moderately acceptable to farmers.

Although this guide was developed for use in Germany, the researchers say that it may be suitable for other European countries that have similar agricultural environments.



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1. See: <http://eur-lex.europa.eu/legal-content/EN/ALL/?jsessionid=TqxDTfnTXdSHN2cDNqHnT0fCp8xygGGHkQ52nJTgz79qr5SP1bnq11965766013?uri=CELEX:02009L0128-20091125>