



Agriculture

The catchment is a heavily farmed landscape where the farming interests change in conjunction with the different soil types. From the heavy clay soils in the upper parts of the catchment to the lighter sandy soils in the lower, the catchment supports everything from intensive dairy production to vast arable enterprises and everything in between. There is a huge pressure on farmers and the agricultural industry to produce more and at the same time remain compliant with regulations, minimising the environmental impact and still be cost effective.



With all farming practices there is always the risk of both diffuse and point source pollution but as production is increased and farms become more intensive, those risks can be increased. Whilst dairy and livestock farms will have different risks and issues to a farm which is solely arable, there is a common theme on how the farming activity can impact the water quality and environment when things go wrong.

In order to determine what type of action and prevention is best, it is important to know the extent to which different sources of pollution impact upon water quality and where, when and how they impact.

Diffuse pollution

Agriculture is one of the main sources of diffuse water pollution. By working with landowners and farmers to ensure land is managed in a way that is sensitive to the water environment, we can mitigate the impact of farming on the water quality. Diffuse pollution from agriculture is a widespread issue and action to tackle it is required throughout the catchment and throughout the UK. Everyday agricultural activities have a huge impact on the amount of nutrients and pesticides reaching watercourses. Spraying, muck spreading, field cultivation, machinery movement and field drainage all contribute to how much

sediment, nitrate, phosphate and faecal matter enters our rivers and streams. Yard areas of farms can also pose a risk due to various elements but predominantly where there is a concentration of livestock and storage of various materials and substances. Correct management of all the above is essential to ensure these risks are minimised.



Point source pollution

This type of pollution risk or occurrence will usually arise from an isolated incident. An example in agriculture would be the failure of slurry storage facilities with the slurry finding access into the watercourse. Another could be agricultural chemicals getting into drains which are directly transported into the watercourse. Where diffuse pollution can be accumulative and from various sources, and therefore often difficult to pinpoint, point source can be very impacting but is also easier to identify.





Nutrient enrichment

Nitrogen, phosphates and potassium in either chemical (fertiliser pellets and sprays) or organic forms (manure) are routinely added to agricultural land. Rainfall can wash a proportion of fertiliser off fields and farm yards into the watercourse, or cause soluble nutrients to filter into groundwater. Nutrients can fuel unusually high growth rates in microorganisms and plants, which at low levels cause a loss of biodiversity, and at high levels can cause algal blooms that can produce high concentrations of toxins and remove all the oxygen (eutrophication). In extreme cases, eutrophication can lead to the widespread death of aquatic animals and insects.

Sediment

Erosion and run off washes soil particles into watercourses, where it causes problems in channels downstream, increasing flood risk, smothering fish breeding grounds and reducing biological diversity in riverbed gravels. Soils can also carry large amounts of phosphate and agri-chemicals that bond to clay particles which then has a nutrient enrichment impact as above. The degree of erosion and soil loss varies widely depending on land use, geology and land management practices.



Faecal matter

Animal manure and slurry stores on farms are sources of faecal matter. The presence of faecal matter in water (identified by the presence of faecal 'indicator organisms') affects drinking water processing, and can have significant impacts on the aquatic ecology of the river.

Pesticides

On arable crops and to a lesser extent pasture, the application of insecticides, fungicides and herbicides is common for pest control. These can be washed into watercourses by rainwater, or

may enter them directly if spraying close to water. They can also enter groundwater via soil infiltration.

Pesticides are hard to remove during water treatment, and there are stringent limits on the concentration of pesticides allowed in drinking water (0.1 µg/l).

The extent of pesticide impacts can be very extensive

- Environmental impacts, e.g. pollinator decline (Bees)
- Fish kills
- Human consumption (drinking water)
- Livestock consumption
- Chemical contamination
- River ecology – Aquatic plants and insects



What can be done?

It can be simple and cheap to address any problems and help improve water quality and the profitability of the farm. Often improvements or adjustments made to benefit water quality will also improve farm efficiencies and bring cost benefits.

There are several measures and advice streams available to reduce pollution from agriculture:

- Ensure all cross compliance and statutory regulations are met
- Follow the Code of Good Agricultural Practice
- Nutrient management advice and training
- Soil husbandry and management
- Use of SuDS (sustainable drainage systems)
- Sediment traps
- Cover crop establishment
- Appropriate timings of all applications and field works
- Follow LERAP guidance
- Check application rates/settings
- Calibration of machinery including sprayers and fertiliser spreaders
- Secure storage and handling of Pesticides
- Consult your Agronomist



See further advice from:

Catchment Sensitive Farming

www.gov.uk/catchment-sensitive-farming-reduce-agricultural-water-pollution

Catchment Sensitive Farming (CSF) delivers practical solutions and targeted support to enable farmers and land managers to take voluntary action to reduce diffuse water pollution from agriculture to protect water bodies and the environment.

Environment Agency

www.environment-agency.gov.uk

For advice and information on all matters including regulation and compliance including Nitrate Vulnerable Zones -NVZ's and SSAFO regulations

Natural England

www.gov.uk/government/organisations/natural-england

We are the government's adviser on the natural environment, providing practical scientific advice on how to look after England's landscapes and wildlife.

Metaldehyde Stewardship Group

www.getpelletwise.co.uk

The Metaldehyde Stewardship Group (MSG) represents 100% of the UK agricultural market for metaldehyde slug pellets.

The Voluntary Initiative

www.voluntaryinitiative.org.uk

The farming and crop protection industry promoting responsible pesticide use to minimise the environmental impacts from pesticides.

Farm Advice Service

www.gov.uk/government/groups/farming-advice-service

The Farming Advice Service (FAS) is a service funded by the Department for Environment, Food and Rural Affairs (Defra) to help farms understand and meet the requirements of Cross Compliance, Greening (the Basic Payments Scheme) and the European Directives on both water protection and sustainable pesticide use.

Campaign for the Farmed Environment

www.cfeonline.org.uk/home

CFE is a partnership approach, supported by organisations engaged in agriculture and the environment and voluntary industry-led initiatives (Greenhouse Gas Action Plan, Tried & Tested and The Voluntary Initiative), demonstrating how the industry takes responsibility for addressing environmental issues alongside profitable farming.

Stour

Catchment Initiative

Agriculture & Horticulture Development Board

www.ahdb.org.uk/slugcontrol

Our purpose is to make our agriculture and horticulture industries more competitive and sustainable through factual, evidence-based advice, information and activity.