



NON-AGRICULTURAL

PROTECTING WATER QUALITY NON-AGRICULTURAL SOURCES OF NITRATE

NITRATE VULNERABLE ZONES

Nitrate Vulnerable Zones (NVZs) are designated by the Department for Environment, Food and Rural Affairs (Defra) to protect rivers, lakes and groundwaters at risk from agricultural sources of nitrate. Currently, 55% of land in England is designated an NVZ, these designations are reviewed by Defra every four years. Although NVZs are focused on agricultural pollution, their presence highlights the vulnerability of an area to nitrate pollution from other sources too.

Find out if you are within an NVZ on the Environment Agency website.

THE NITRATE ISSUE

Nitrate is an important source of nitrogen, an essential nutrient for plant growth. It is formed naturally in soil by microorganisms, but problems can arise when additional nitrate runs off into watercourses or leaches into groundwater. Common sources of additional nitrate include fertilisers (artificial and organic), waste from livestock (including horses and sheep), wastewater treatment works discharges and unsewered properties. Excess nitrate can have negative impacts on the environment, promoting algal blooms and suffocating aquatic life. It can also pollute drinking water sources.

Diffuse nitrate pollution is an ongoing problem for many water companies in the UK. High nitrate concentrations in water can be harmful to health, in particular infants, which is why water companies must comply with strict drinking water standards for nitrate of 50 mg/l (milligrams per litre). Removal of nitrate at water treatment works is expensive and energy-intensive; instead, preventing deterioration of raw water quality at source offers a far more sustainable approach and can also have benefits for the environment and surrounding community.

THINGS YOU CAN DO

TO REDUCE THE IMPACT OF NITRATE ON WATER QUALITY

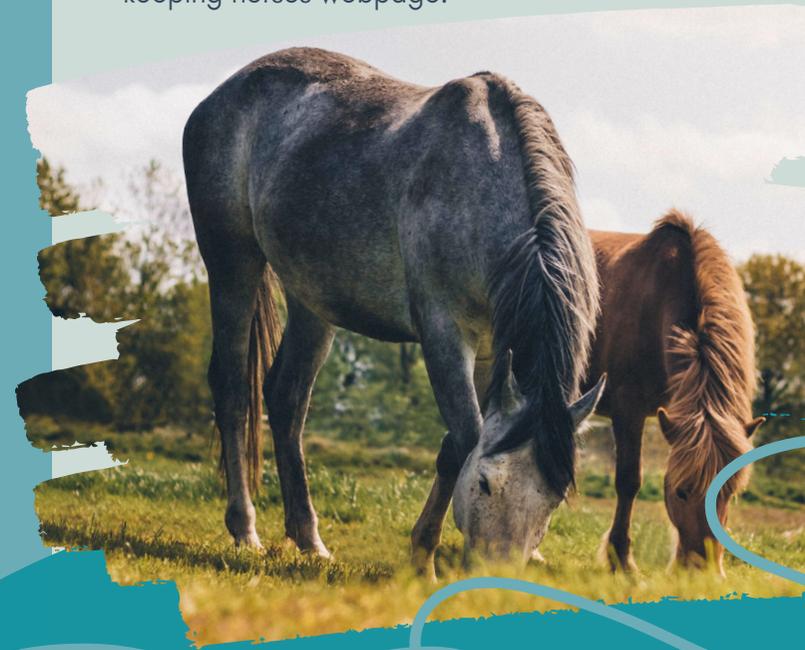
Although NVZs are focused on agricultural pollution, their presence highlights the vulnerability of an area to nitrate pollution from other sources too and there are things other users/producers of nitrate can do to help protect water quality and the environment.

EQUESTRIAN

Horse manure is a source of nitrate, therefore establishments in NVZs need to follow the Government's NVZ guidelines. This includes not storing piles of manure...

- Near field drains
- Within 10 m of a watercourse
- Within 50 m of a spring, well or borehole

Further advice on dealing with horse waste can be found on the Government's keeping horses webpage.



**DALCOUR
MACLAREN**



SPORTS GROUNDS/GOLF COURSES

Fertilisers are key to sports ground and golf course maintenance, however the nitrogen requirement of turf can vary considerably. Testing soil to determine its nutrient requirements allows optimum product choice and timing of applications to get the most out of the turf whilst minimising excess application. This saves on fertiliser costs and reduces the risk of nutrient run-off by rainfall or watering. An agronomist can also provide specialised advice to get the most out of your ground. If the land is well-drained, this can increase the speed of nitrate travelling down into groundwater or transported away through the drainage system to a nearby drain or ditch. The British and International Golf Greenkeepers Association has resources and advice on managing turf and optimal fertiliser application.

GARDEN CENTRES/NURSERIES

Avoid applying nitrogen fertiliser in excess. Not only can this avoid damaging the plant, it can also save on fertiliser costs as any nutrient not taken up by the plant can leach into the environment. Overwatering can enhance the leaching of nutrients from soil, increasing the risk of pollution.

It's recommended to avoid applications of fertiliser before heavy rain to reduce the risk of nitrate run-off and allow the plant to take up the nutrient. Consider where drainage runs, ensuring it is not flowing into watercourses or draining near wells/boreholes.



ALLOTMENTS

The National Allotment Society and Royal Horticultural Society have advice on using organic matter to provide nutrients for plant growth, including nitrogen, which therefore reduces the need for artificial fertilisers. Compost has many other benefits for your soil including improving soil structure and water holding capacity. However, it can be a source of nitrate in groundwater if not stored and used carefully.

- Avoid applying organic matter in summer when warm soils speed up the breakdown of nutrients which can then be washed off during winter rainfall
- Carefully consider where your compost heap is stored, keeping it well away from rivers, ditches, wells and boreholes

As with garden centres/nurseries, avoid applying fertiliser in excess. The Agriculture and Horticulture Development Board (AHDB) Nutrient Management Guide contains information in sections 6 and 7 regarding nutrient requirements of a variety of fruit, vegetables and bulbs.



Photo by Jade Brough and Sam Champion

UNSEWERED PROPERTIES

If your property is not connected to the mains sewerage network, you likely rely on an on-site package treatment plant, septic tank or cesspit to dispose of wastewater. If these systems are not properly constructed or maintained they can release untreated sewerage, a source of nitrate, into the environment and local waterbodies. Correct installation and servicing reduces the risk of leakage. It is also important to be mindful of the amount of water you are using to ensure excess wastewater does not overwhelm the system. The Government's website has advice on current requirements for package treatment plants, septic tanks and cesspits.

Report any suspected pollution incidents to the Environment Agency using their 24-hour incident hotline (0800 80 70 60)

OTHER ADVICE AND SUPPORT

SES Water's Catchment Management Team engages with landowners, farmers and other stakeholders to address water quality at source to help ensure wholesome drinking water. For more information, visit the SES Water website or email catchment@seswater.co.uk.

This document was produced by Dalcour Maclaren and SES Water, with input from Catchment Sensitive Farming, to help raise awareness on NVZs. We do not accept any liability for its use. Please be aware updates to NVZ requirements may be issued following the publication of this leaflet; the latest, most up to date guidance in full is published by Defra and available on the www.gov.uk website.