

Addressing the Nutrient Pollution Crisis

Why river pollution is damming the flow of new housing and how we might unblock it

If you work in real estate, it will have been hard to miss recent reports on the nutrient crisis affecting the UK's rivers, wetlands and coastal waters. Not least because it is now creating a logjam in housing development across 74 of the UK's local authority areas with plans to build 120,000 new homes currently blocked.

To clear the pipeline for new housing, developers must now demonstrate to planners and Natural England that new developments are "nutrient neutral". While there are no quick fixes, there are several different ways you can work to mitigate the negative effects of new housing on aquatic ecosystems. You will need the help and guidance of skilled Environmental Consultants to navigate your way to credible, pragmatic solutions. We'll take a look at the sources of current problems and take you through some of the potential answers.

What's the problem with nutrients?

While Britain's air is far cleaner than it was three decades ago, the story is not so refreshing for our rivers or the wetlands they feed. While atmospheric CO2 emission have fallen 38% since 1990, many of our rivers remain heavily polluted, with only one third rated as good or better by the UK's environment agencies.

One of the biggest problems our waterways and wetlands face is the excessive levels of nitrates and phosphates that are washed into them, either from point sources such as sewage discharges, or through drainage from agricultural land. These nutrients fuel the growth of algae which turn the water green and cloudy in a process called eutrophication. As well as being unsightly, the algae blocks out light, preventing other plants from growing, and generates toxins which threaten animal life. As the algae breaks down, it uses up oxygen in the water which can result in the death of fish and other aquatic animals. Ultimately, this can lead to areas becoming "dead zones" where oxygen levels drop to zero and aquatic or marine life ceases to be viable.

There are many sources of the nutrient pollution affecting our rivers and while it is not the main source, sewage from planned developments is one that can be mitigated for and controlled. That is why new housing has been targeted in this way, especially in those areas where treated sewage will be discharged into protected wetlands, rivers and coastal waterbodies.

Why are wetlands so special?

Wetlands are one of the most important habitats on the planet. Occupying just one percent of the earth's surface, they are home to 10% of its species with 40% of the world's plant and animal species depending on them in some way.

We humans are no exception. Wetlands protect us from extreme weather events and help us recover better from disasters. By storing rain, they act as a vast natural sponge and, by buffering us from the sea, they protect us from floods. They lower the risk of droughts and can reduce air temperatures by as much as 10°C.

However, in the past 100 years, the UK has lost 90% of its wetlands. That is why they are so heavily protected. Many of them are Special Areas of Conservation (SACs) or Sites of Special Scientific Interest (SSSIs).

The Government's conservation watchdog, Natural England, already required developers across 32 local authorities to prove that their developments do not cause additional pollution of protected sites. That number has now increased to 74 with a further 42 being added to their list.



How can we build back better if we can't build at all?

The current restrictions have blown a very large hole in Government plans to build 300,000 new homes a year. Those new homes are seen as a key element in Michael Gove's levelling up agenda and, because they would be built to the latest energy performance standards, the new homes would be contributing to achieving national carbon targets. As a result, there is now a groundswell of political support to explore effective solutions and a willingness to find ways forward that will protect our aquatic and marine ecosystems while still enabling us to enhance our built environment.

Local Authorities, keen to achieve their own housing targets may want to work with developers to find joined up solutions that will operate in everyone's best interests. Key to unlocking them, will be strong evidence-based environmental and ecological assessments coupled with well-managed mitigation strategies and initiatives.

How can we neutralise the nutrients?

There are a number of ways to resolve the issue of nutrient contributions from new housing developments. One is to address the problem at source and stop any additional nutrients leaving the site or the water treatment network serving it. The other is to offset the contribution from development by reducing the quantity of nutrients entering the water system elsewhere.

Both approaches will involve considerable effort and robust evidence – some developers have estimated the cost may be as high as £5,000 per home.

Addressing the problem on site might seem simple but it requires extra space within a development to create on-site wastewater treatment facilities sometimes incorporating natural solutions such as reedbeds. We are working collaboratively with Severn Trent Connect who offer small scale package waste water treatment plants which remove nutrients and have been accepted as a solution to nutrient neutrality in local authority areas across the country.

Nutrient offsetting schemes are the other option. This generally involves acquiring farmland which is currently contributing nutrients to neighbouring water courses through the application of fertilisers to crops. By stopping the application of fertilisers to the land to reduce nutrient run-off and actively pursuing rewilding and wetland creation, the property can generate nutrient credits in much the same way as reforestation and peatland restoration is used to offset carbon impacts. The nutrient reductions from the former agricultural property can be used to offset the impact of houses built elsewhere in the water catchment.



Nutrient credit schemes like this are in development in certain parts of the country. For example, Eastleigh Borough Council is now offering a credit scheme to developers based on removing approximately 80ha of Council owned farmland from agricultural production.

Similar schemes, which simply involve the passive removal of land from agricultural production are also being offered in the Test Valley. However, in other areas where there is less agricultural land available it will be necessary to actively create new habitats such as wetlands which are managed to remove nutrients from the soil at a higher rate.

In all cases, for them to be accepted as mitigation, the land will need to be managed appropriately to deliver the nutrient credit scheme. Similarly, there must be robust data and full environmental and ecological assessments of the properties carried out by environmental consultants with the skill and expertise to monitor, measure and compute every element of the scheme.

While the early schemes took some time to get off the ground, Natural England are keen to help each of the 42 newly affected local authorities by providing a nutrient calculator and £100,000 funding to assist them and their developers to identify robust and credible solutions.



The two elephants in the room

While new housebuilders and developers are suffering the brunt of the reaction to destructive nitrate levels in our aquatic ecosystems, there are two much more significant culprits. While studies suggest that the urban environment only accounts for just 4% of nutrient pollution, the Environment Agency estimates that in England and Wales farming accounts for between 50 and 60% of nutrient pollution.

Finding the precise source of this pollution is difficult and monitoring individual contributors is notoriously hard. However, it is important that farmers step up to play their part in tackling the crisis. More sustainable farming techniques are available and working with environmental consultants will empower farmers to take proactive remedial action before it is forced upon them.

The water companies are also under the spotlight on nutrient pollution. In 2021 England's water companies released raw sewage into rivers and coastal waters for 2.7 million hours. This is costing millions of pounds in fines and the companies are spending billions more to make the infrastructure improvements needed to be able to serve the population and the environment better.

We're here to help

At Thomson environmental consultants we are passionate believers in the preservation, improvement and restoration of the UK's precious wetlands. We also recognise the need for pragmatic solutions to ensure that we can house our population in modern, energy efficient homes. Whether you are a developer looking for the most cost-effective ways to achieve "nutrient neutrality", a local authority wanting to create a nutrient credit scheme or a housebuilder or architect wanting to safeguard future projects, we would love to hear from you.

As a full-service consultancy, we have the complete range of environmental and ecological skills and expertise to assess the lie of the land (and the water) so we can help you move your projects forward and improve our environment in the process.

To talk to our experts about how we can help you prepare your projects and plans for a greener, more sustainable future, get in touch.

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