

# CLEAN

Catchment Level Environmental Action Network

AFON NYFER

RIVER NEVERN

Thriving waterways support flourishing communities,  
robust businesses and healthy environments.



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## Executive Summary

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The water quality and overall ecological health of waterbodies in Wales, and indeed the UK as a whole, has come increasingly to the fore in recent years. Newspapers and television are frequently reporting individual incidents of sewage pollution and agricultural run-off. Behind the headlines there are a number of other issues and complexities that are not so newsworthy. Often the sources of pollution are more prolonged and cumulative in nature and declines in biodiversity multi-factorial.

The CLEAN project (Catchment Level Environmental Action Network) was developed in response to the challenge of restoring and enhancing healthy habitats in and along the Afon Nyfer. A Steering Group of nature conservation and community organisations was created, co-ordinated through the Growing Better Connections project and including representatives from Pembrokeshire Coast National Park, West Wales Rivers Trust, Pembrokeshire Nature Partnership, Newport Area Environment Group and Community Councillors. PCNPA jointly funded this phase of sampling.

By working together and working at a catchment level to restore habitats we can maximise the benefits to both wildlife and communities. The project is being delivered in two phases and is providing opportunities for local volunteers to get involved.

The initial phases of the project have been focussed on gathering data and engaging communities; utilising the power of citizen science to gather information on water quality and other environmental indicators on the rivers and streams across the Afon Nyfer catchment.

The project was extended over the summer to engage more volunteers and, through working with Earthwatch's FreshWater Watch, linked with similar national and global initiatives. Key aims included wider engagement with volunteers and landowners, and trying to better understand the contribution of sewage treatment works and agricultural run-off to nutrient pollution. It is hoped that this will enable a second phase, supporting practical mitigation and habitat enhancement, and the development of a community-led catchment management plan.

Over three sampling periods 32 volunteers surveyed 211 data points and tested 199 water samples from the myriad small rivers, tributaries, streams, and ditches across the Afon Nyfer's six sub-catchments, most of which are rarely, if ever, visited by monitoring authorities.

In addition, the volunteers gathered information regarding adjacent land use, Invasive Non-Native species (INNS), observations of litter and possible pollution, and wildlife sightings, providing a rare and detailed record of the catchment.

The results show nitrate and phosphate levels were lower overall than during the previous sampling period. In this period 31% showed high or very high levels of nitrate pollution (previously nearly 60%), and 21.7% showed high or very high levels of phosphate pollution (previously 28.2%). These are examined by sub catchment in the full report.

Records of INNS were high, and wildlife sightings were low, observations of litter were also low.

The lower levels of nitrate and phosphate observed after the dry summer of 2022 is likely to be a result of less nutrient-rich run-off and less requirement to use CSO spills. A comparison with

nutrient run off risk maps provided by West Wales Biodiversity Information Centre found many of the streams with higher nutrient levels over the two sampling phases correspond to these high nutrient loss areas.

The management of water resources and run-off is only going to become more important as the impact of climate change continues, specifically more prolonged dry spells and more intense rainfall events.

The support of farmers and landowners is essential, and interventions that intercept, store, and slow the movement of water across landscape and reduce run-off, or provide buffer strips to sensitive habitats would improve ecological health and climate resilience.

The precise impact of CSOs in the study area remains undetermined, although it is clear from Dŵr Cymru/Welsh Water data that spills occur frequently within the catchment and are almost certainly having a negative impact.

Engaging the public in these issues through volunteering opportunities is an effective way of providing agency and a voice for rural communities. In addition, citizen science continues to offer a source of data otherwise unavailable to authorities and is a proven vehicle for such engagement.

## Recommendations

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A full suite of recommendations was included in the Phase 1 CLEAN report and are not repeated here. However, two obvious areas of intervention merit repeating:

1. Engage with the farming community regarding challenges and opportunities affecting water quality and ecological health in the Nyfer catchment, including support to implement best practice in land management and nutrient management.
2. Encourage, and source funding for, the establishment of livestock fencing, riparian and other types of buffer strips.
3. Develop publicly accessible demonstration sites of best practice interventions to improve water quality and habitat networks across the catchment.
4. Engage with Dŵr Cymru/Welsh Water to better understand and address challenges with Combined Sewer Overflows (CSO), including increasing capacity for intense rainfall events, and the more accurate and useful monitoring of spillage duration and volume.
5. Consider a comprehensive awareness-raising programme designed to raise water quality issues and inform members of the public of actions they can take to reduce the risk of CSO spills, water-wise interventions, habitat improvements, etc.
6. Develop a wide variety of roles for volunteers, including community consultation, to work towards a community led catchment management plan.
7. Continue monitoring to assess changes and the impacts of landscape interventions.