

# CLEAN

## Catchment Level Environmental Action Network AFON NYFER RIVER NEVERN

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



# Executive Summary

In the uncertain months of February and March 2021 the CLEAN project, undaunted by the restrictions of the COVID pandemic, enlisted a handful of volunteers to conduct a catchment-wide survey of water quality and the ecological health of the Afon Nyfer, the rather beautiful river flowing through the relatively unspoilt but economically valuable pasturelands and intimate wooded valleys of north Pembrokeshire, South West Wales.

The Afon Nyfer wends its way from its source near Crymych on the slopes of the Preseli Hills in the east, to the estuary at its mouth in Newport/Trefdraeth to the west. From the bare slopes and wide views of Frenni Fawr, 395m above sea level, the Afon Nyfer descends swiftly through the tightly packed fields of Blaenffos, Pontglasier, and Crosswell, then on into the wooded valley that characterises much of its route to the sea.



Despite its largely rural character, large sections of the Nyfer catchment fail to achieve 'Good' status, required by the Water Framework Directive. Sadly, this is far from the exception – less than half of rivers in Wales are in good ecological health. There is understandable concern about the poor health of the country's waterbodies and the CLEAN project provides some timely and important insight into the complex causes of poor water quality in our rivers, streams and springs.

Driven by Growing Better Connections, a Cwm Arian Renewable Energy initiative, with support and funding from Pembrokeshire Coast National Park Authority, West Wales Rivers Trust, Pembrokeshire

Nature Partnership, Newport Area Environment Group (NAEG), Newport Town Council, Nevern Community Council, and others, the project used the invaluable power of citizen science and committed volunteers to provide the feet on the ground, a sharp eye and a sampling tube.

Over three sampling periods 23 individuals surveyed 82 points and tested nearly 300 water samples from the myriad small rivers, tributaries, streams, ditches, and springs across the Afon Nyfer's six sub-catchments, most of which are rarely, if ever, visited by monitoring authorities.

The results show high levels of nutrient pollution – nearly 60% showed High or Very High levels of Nitrate pollution, and almost a quarter (22.3%) showed High or Very High levels of Phosphate pollution, this latter appearing closely related to





the higher rainfall at the start of the sampling period.

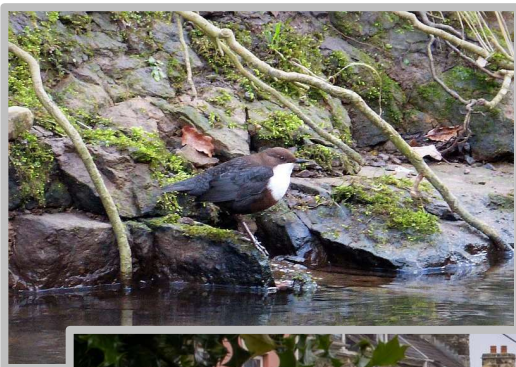
In addition, the volunteers gathered information regarding adjacent land use, Invasive Non-native plants, observations of litter and possible pollution, providing a rare and detailed record of the catchment.

Arguably, it is the nutrient levels that is the most eye-catching component of the survey. There seems little doubt that the pollution levels across the catchment are a cause for concern and further investigation. The presence of several Dŵr Cymru/Welsh Water treatment plants and their associated discharge points merit further investigation, and the contribution of point and diffuse pollution, from agricultural run-off and intensive livestock management practices is widely recognised.

The Nyfer catchment is dominated by improved grassland sward and dairy cattle, rough pasture and roaming sheep. Statistics record a significant increase in the size of the dairy herd in recent years, and a marked intensification of dairy farming. This, in turn, has brought land management challenges, particularly with slurry storage and management, and a likely increase on nutrient loads and run-off, ultimately impacting water quality.

The farming sector is an important contributor the local and national economy, but the battle to maintain margins in an ever more challenging food supply system comes at a cost, often caried by the environment. As discussed in the report, a long-standing, UK-wide policy of cheap food has come at a price to farmers, rural communities, and, above all, the environment.

The results from the CLEAN project demonstrate an urgent need for further investigation and a solution-focussed second phase. The final section of the report provides recommendations for a second phase of the CLEAN project; actions to enhance the Afon Nyfer, working across the whole catchment to restore habitats and maximise the benefits for both communities and wildlife.



# 1 Recommendations and Phase 2

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Phase 1 of the CLEAN project should be viewed as a great success, but from the start it was conceived as only the first part of a more comprehensive and more ambitious project. It is strongly recommended that a second phase should be developed. Phase 2 should have two aims: a more extensive and comprehensive survey of the Nyfer catchment to build a fuller and more useful picture; secondly, and crucially, the development and implementation of solutions, many of which have already been developed and are widely accepted.

This report makes the following recommendations:

- 1. Broaden survey parameters to include a more comprehensive survey of the Nyfer catchment, including assessment of biodiversity, particularly aquatic invertebrate populations, sediment load and turbidity, Invasive Non-Native Species (INNS) and pollution sources, among others.**
- 2. Build on success of Phase 1 by reinvesting time in, and expanding, the existing CLEAN volunteer network.**
- 3. Engage with, and facilitate greater involvement of, local Community Councils, landowners, and other interest groups, thus widening the stakeholder base and gaining greater support for initiatives and implementation.**
- 4. Develop and implement a strategy for monitoring and eradication of INNS.**
- 5. Ensure any Phase 2 activities and implementation makes use of the Fisheries Habitats Survey Report (soon to be published).**
- 6. Engage with the farming community regarding challenges and opportunities affecting water quality and ecological health in the Nyfer catchment. Supporting implementation of best practice in land and nutrient management, to assist compliance with regulation whilst seeking business and efficiency opportunities.**
- 7. Encourage, and source funding for, the establishment and improvement of livestock fencing, riparian buffer strips, and constructed wetlands.**
- 8. 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.**
- 9. Explore creatively the cross-sector benefits and economic opportunities inherent in improving the Afon Nyfer and its catchment; encourage collaboration and cross-fertilisation of ideas, including regarding funding, messaging, resources and synergies.**
- 10. Repeat the CLEAN survey across the Nyfer catchment in the future to observe any potential changes in levels of nutrient pollution, and support transfer to other catchments.**
- 11. Greater use of the Welsh language is required in all project materials and was commented on in the volunteer survey.**