Seirbhís Bainistíochta Abhantraí
River Basin Management Service

A Local Authority Shared Service, funded by the
Department of Housing, Local Government and Heritage

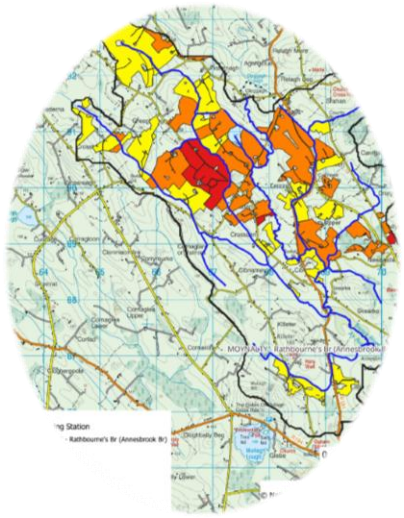
Case Study: Moynalty Catchment Water sampling to identify diffuse losses from slurry spreading

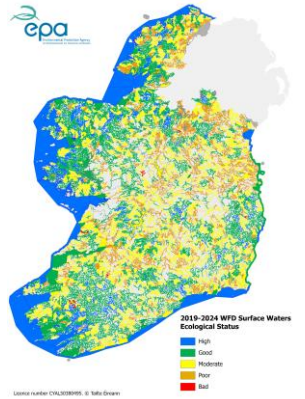


Ruth Hennessy, Catchment Science Team Manager

24 November 2026

“Right measure in the right place”





Status

Characterisation

Desk Study

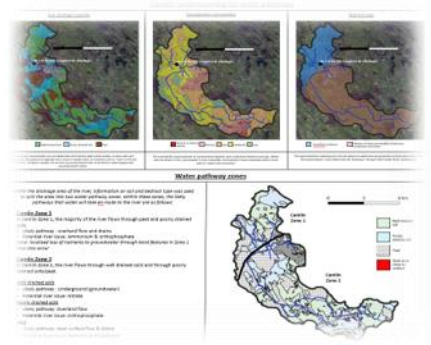
Further characterisation

Local Catchment Assessment

Further characterisation

Referrals and Actions





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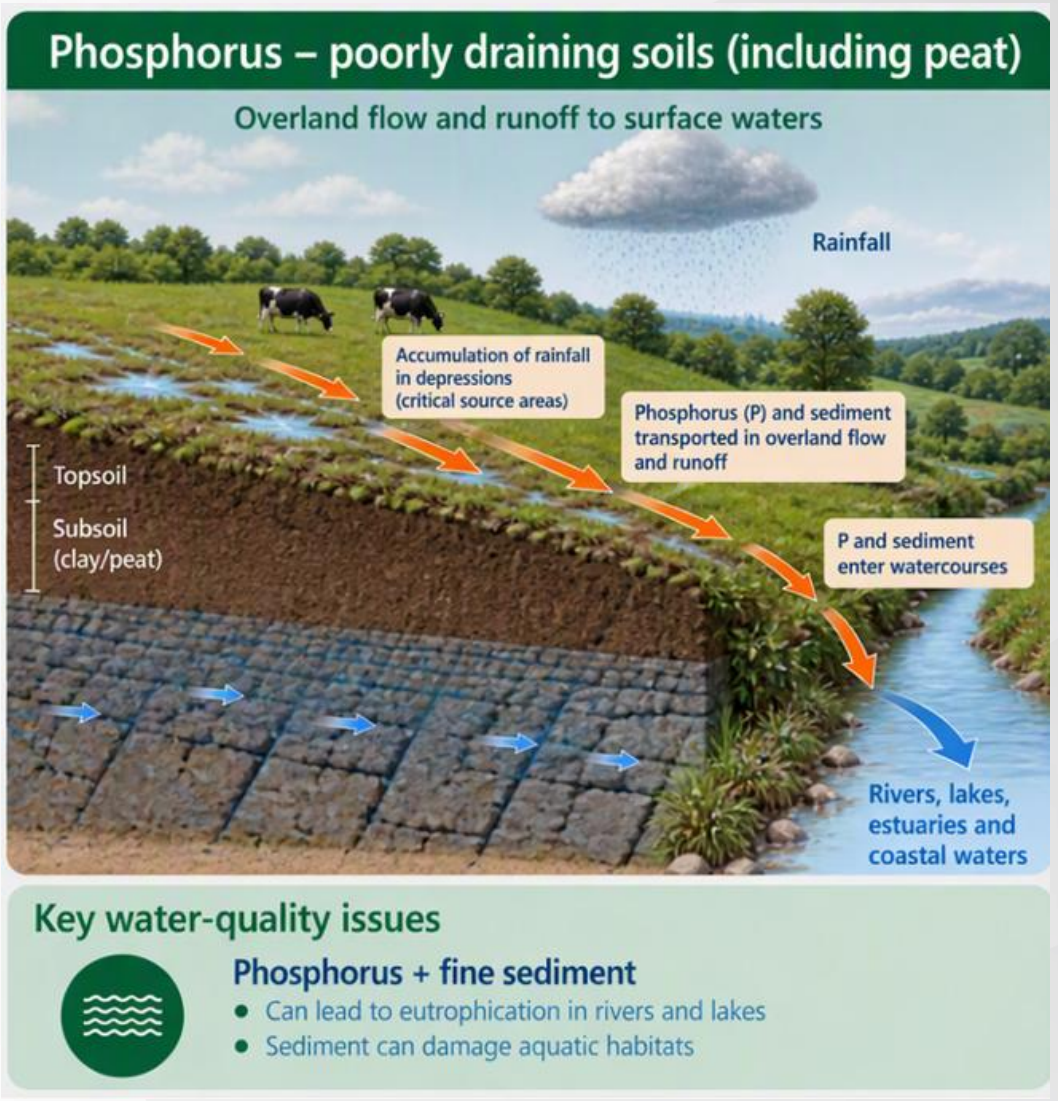
Moynalty Closed Period Sampling

Understanding Diffuse P Loss from Agriculture



Water Quality in the Moynalty Priority Area for Action

Issues, Pressures & Pathways

HOW IS WATER QUALITY? – ECOLOGICAL STATUS

Biology



Sensitive

vs.

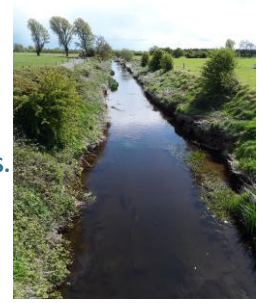


Tolerant

Morphology



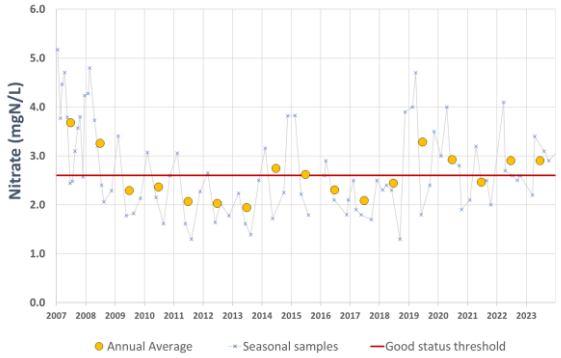
vs.



WATER QUALITY SUPPORTING CONDITIONS

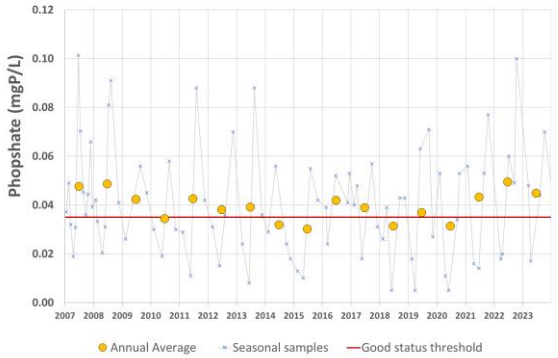
Nitrate

Stream nitrate concentrations at the outlet of the Borora River (Fyanstown Bridge)



Phosphate

Stream phosphate concentrations at the outlet of the Borora River (Fyanstown Bridge)



MOYNALTY PAA – KEY FIGURES & TARGETS

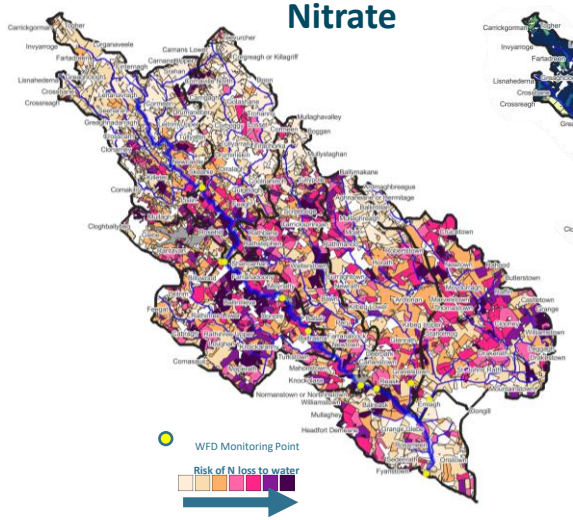
Ecology - Achieve **Good** ecological status in all 8 sections of the Moynalty catchment.
- Currently – **5** sections at **Moderate** Status & **3** sections at **Poor** status

Nitrate - Reduce average N concentration in the catchment from **2.8** to **2.3 mgN/L**.
- Currently – **297 tonnes** of N are lost to the river each year
- We need to stop **53 tonnes** ***(14 kg/Ha/Yr)*** from getting there to reach 2.3mgN/L

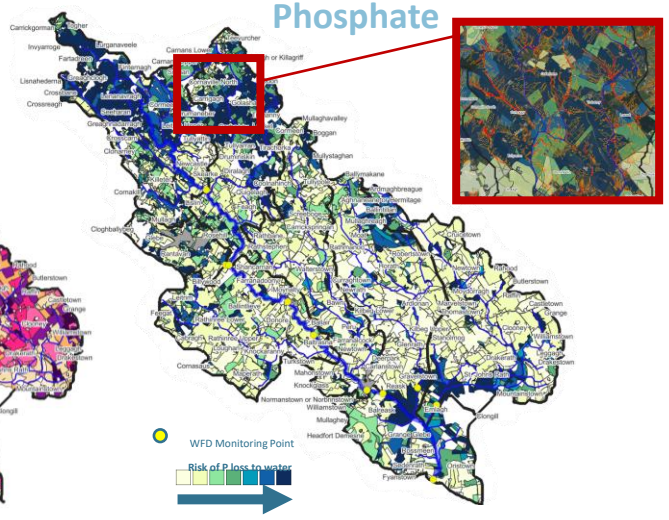
Phosphate - Reduce average P concentration in the catchment from **0.046** to **0.030 mgP/L**.
- Currently – **4.9 tonnes** of P are lost to the river each year
- We need to stop **1.7 tonnes** ***(0.45 kg/Ha/Yr)*** from getting there to reach 0.030mgP/L.

NITROGEN & PHOSPHATE PATHWAYS

Nitrate



Phosphate



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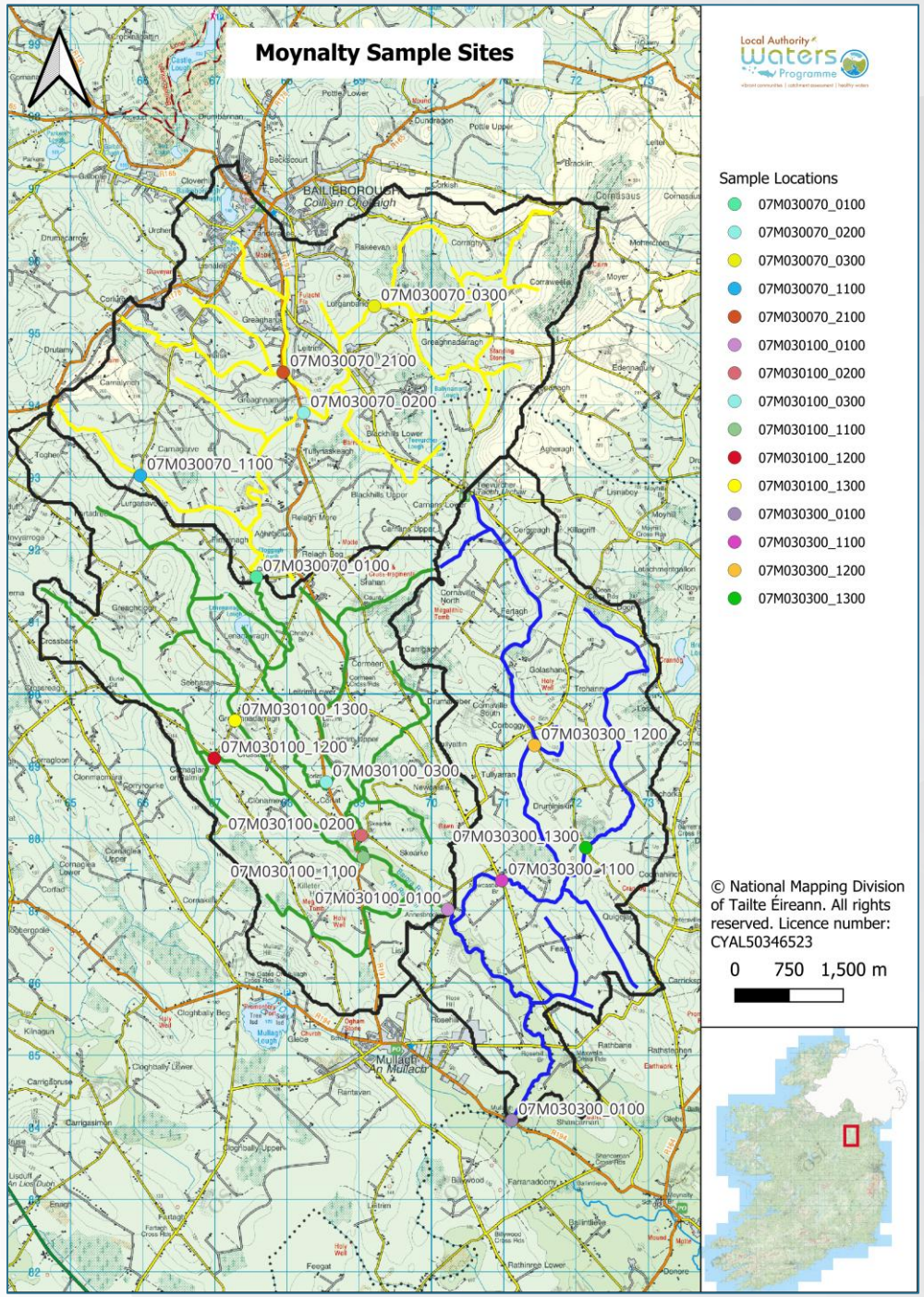
- Focused on the headwaters of the Moynalty PAA
- Steeply sloped and have poorly draining soils
- Agriculture is the main land use
- Diffuse P issues identified from the desk study
- In 2024 the Catchment Science team sampled a week prior to the closed period, every fortnight during the closed period, and then weekly when the open periods commenced
- Sampled 15 sites across three waterbodies on each occasion



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- Between September 2024 and February 2025, 14 rounds of chemistry were collected
- The first chemistry sampling round was carried out on the 27th September 2024. Approximately 30.6 mm of rain had fallen the previous seven days with 29.2 mm falling the two days prior to sampling.
- All 15 samples collected on the day exceeded the AA-EQS for ammonium, orthophosphate and BOD. Poorly draining soil and heavy rainfall indicated that these losses were driven by diffuse runoff from the land surface during rainfall immediately preceding the closed period.
- During the closed period there were two instances when the ammonium, phosphate and BOD collectively exceeded the EQS at three of the sites through the sampling period



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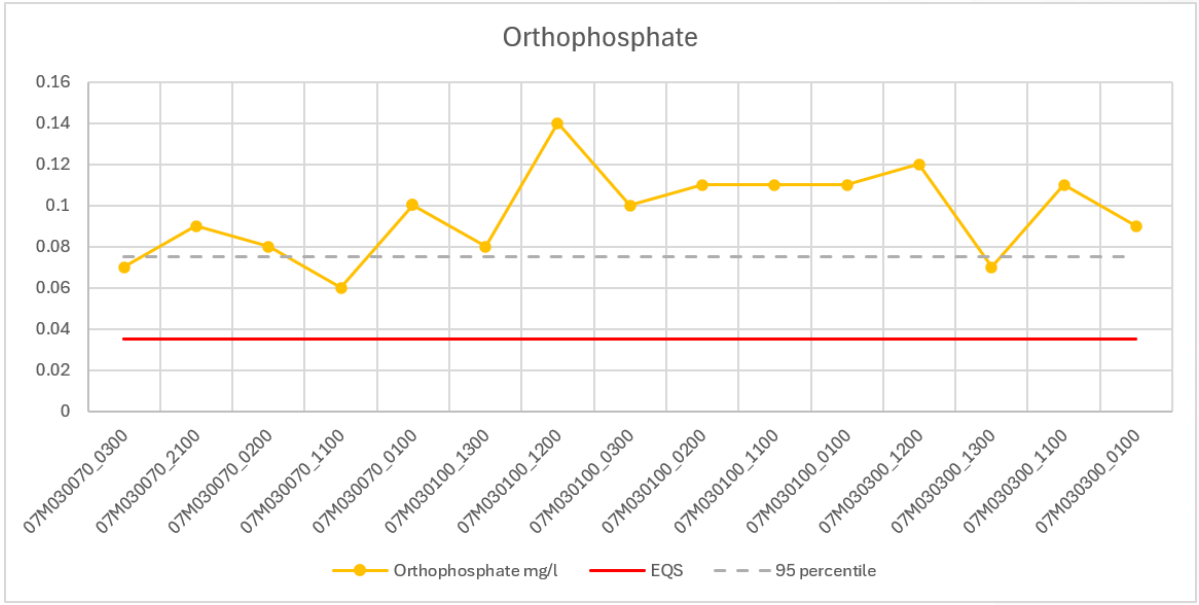
- Monitoring confirmed overland flow pathways are active, particularly following heavy rainfall. Pathway interception measures and compliance with GAP Regs are required to mitigate these losses.





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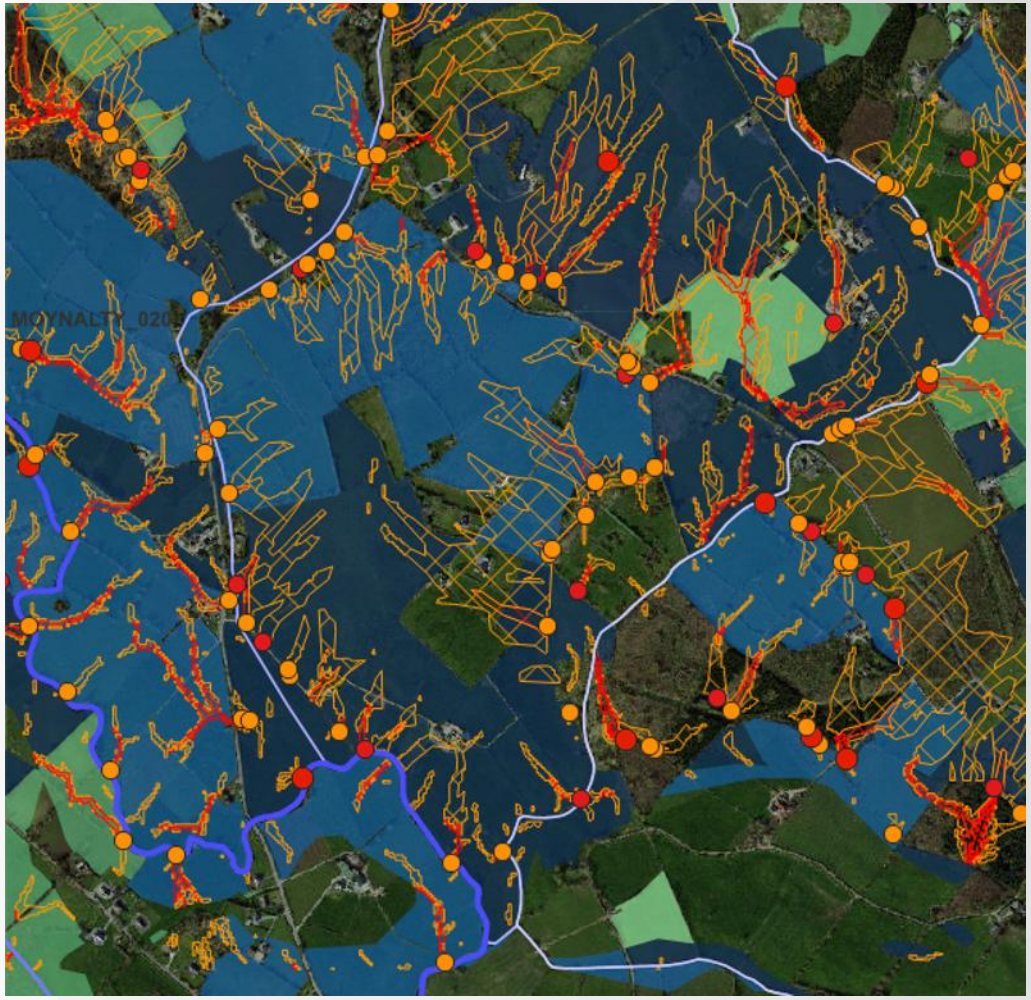
- Based on these findings, a targeted agricultural referral was made to ASSAP
- Targeted Effort: Farm visits focusing on high-risk areas for nutrient losses from slurry spreading using tools like the PIP maps and diffuse tools maps to target the areas where we know losses are occurring
- Actions required on farms:
    - Compliance with Good Agricultural Practice Regulations – closed period / weather conditions / waterlogged or frozen ground
    - Measures to “break pathway” and prevent P losses to water
    - Farmyard & roadway management



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Thank you

Acknowledgements:
Erika Fitzpatrick and the Midlands
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