Southern Streams Farm Cluster Monitoring
Summary report by Action for the River Kennet

The Southern Streams farmer cluster tested water quality on the River Kennet's Southern tributaries, monitoring Ammonia, Phosphate and turbidity approximately monthly from June 2024 to May 2025.

This included two tributaries (the Shalbourne Brook and Suddene Stream) and adjoining water bodies (including the Kennet and Avon canal, and two ponds receiving surface water from the surrounding catchment). The sites were chosen to increase the understanding of pollution sources within the catchment, and how this relates to features on the ground.

The collection of monitoring data was coordinated by James Hubbard (Action for the River Kennet - ARK) and Belinda Bowen (Farming and Wildlife Advisory Group), with monitoring methods and analysis led by ARK. Funding was procured by Belinda Bowen from the Rural Payments Agency.

Findings

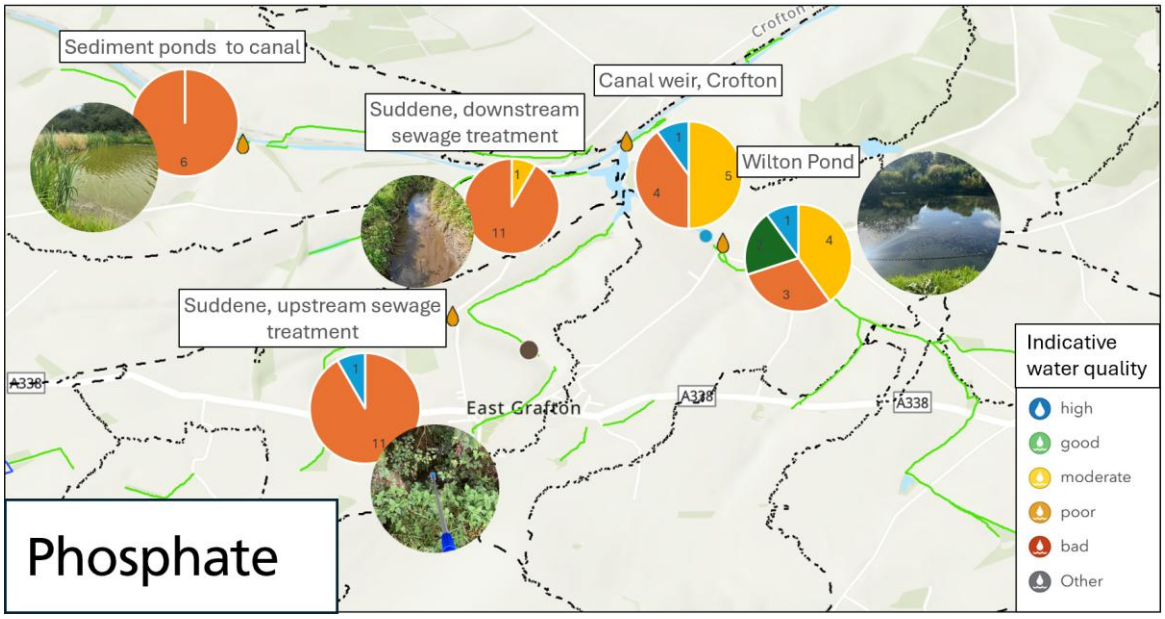
The primary findings were:

1) The sediment pond (flowing to the canal by Dark Lane) has substantially elevated phosphate and ammonia concentrations.
   - Increases in ammonia are particularly strong following over winter rainfall

2) Wilton Pond had the best water quality of all sites over the period, despite historic issues with pollution.
   - ARK's monitoring of the recently constructed Wilton Wetland that flows to the Wilton Pond finds substantial reductions in phosphate concentrations down the wetland complex. Data and analysis of monitoring at Wilton wetland is hosted separately by ARK.

3) The Suddene stream has consistently high concentrations of phosphate, increasing in its lower reaches beneath the sewage treatment works and tributaries.

4) Water quality was better in the lower reaches of the Shalbourne, downstream of recent habitat restoration works by Action for the River Kennet.
   - No ammonia found downstream of restoration works following rainfall.
   - Substantially reduced phosphate concentrations downstream.



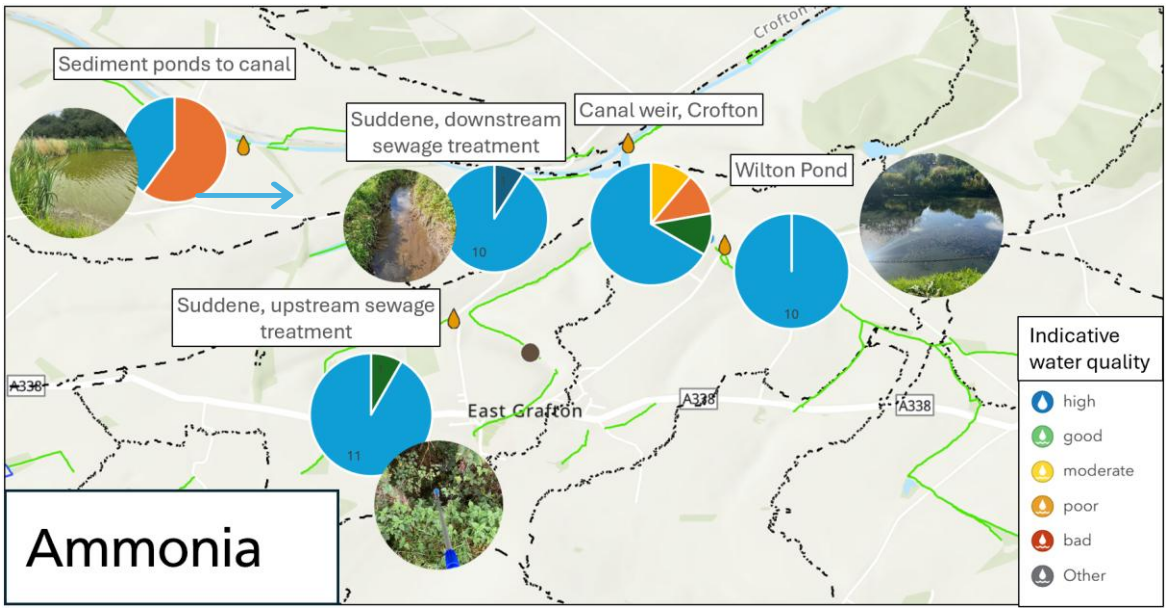
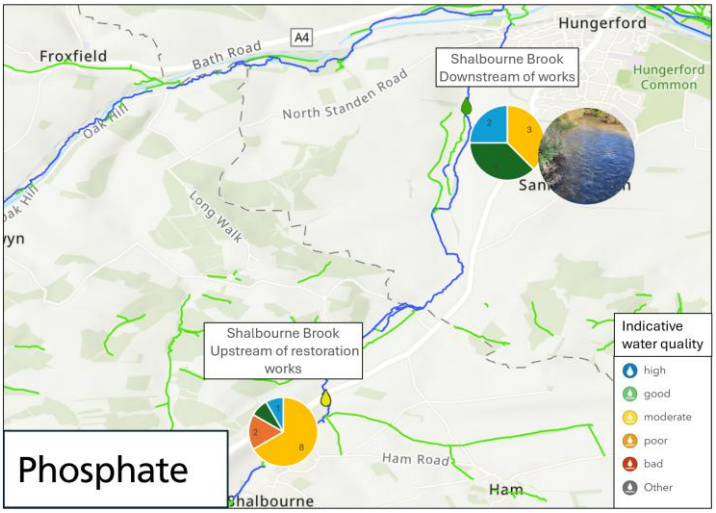


Fig.s 1&2

In figures 1-4 the Kennet flows from West to East, and its tributaries broadly from South to North. Droplets on the map represent water quality monitoring sites tested by the Southern Streams farmers. The brown dot is the Suddene sewage treatment works.

Colour shows indicative water quality for either Phosphate (Fig.s 1&4) or Ammonia (Fig.s 2&5), and the proportion of the pie chart that is a given colour shows how often water quality at the site was of that standard over the year. Thresholds for indicative water quality (see legend) were calculated from those used by the Environment Agency, with modification to apply to individual tests.



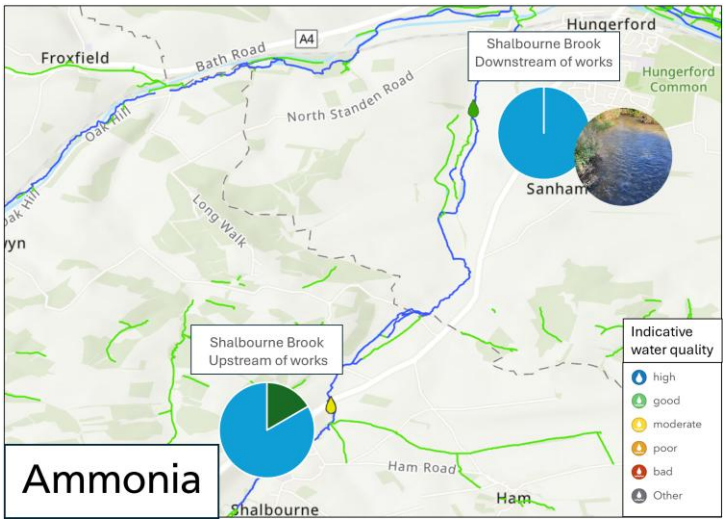


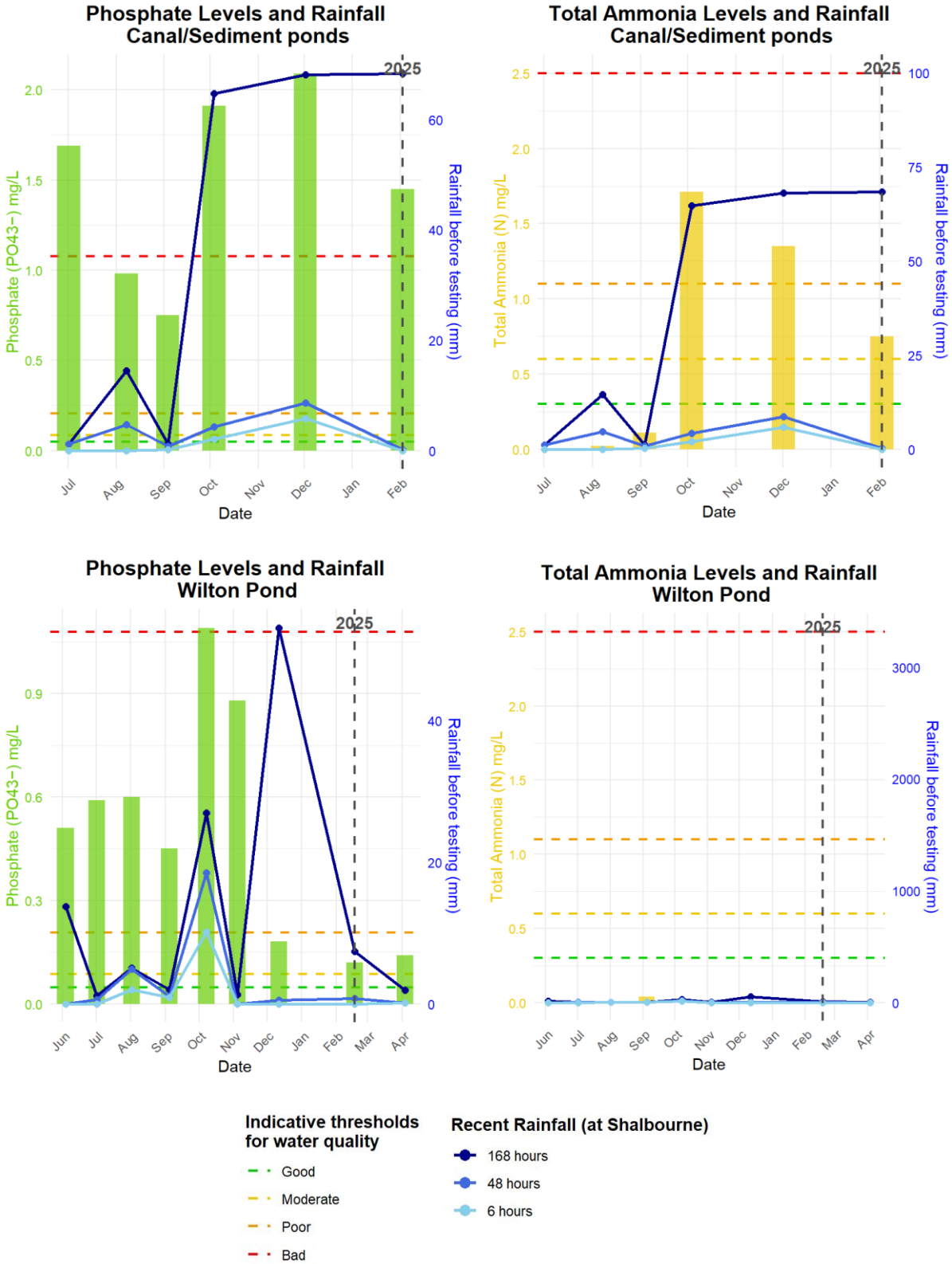
Fig.3&4 – *see description for Fig. 1&2*

Fig.5

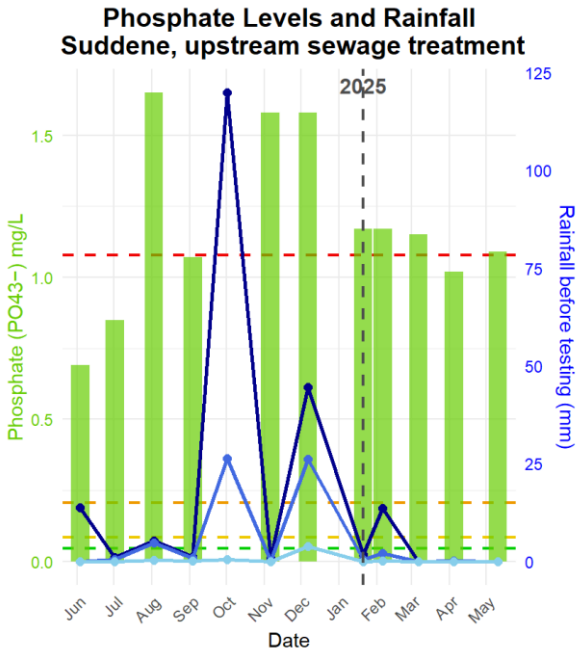
The habitat restoration works at Shalbourne led by ARK, showing the chalk stream restored to its natural floodplain in place of the marginal leat it used to flow through. Monitoring was performed at upstream and downstream sites.

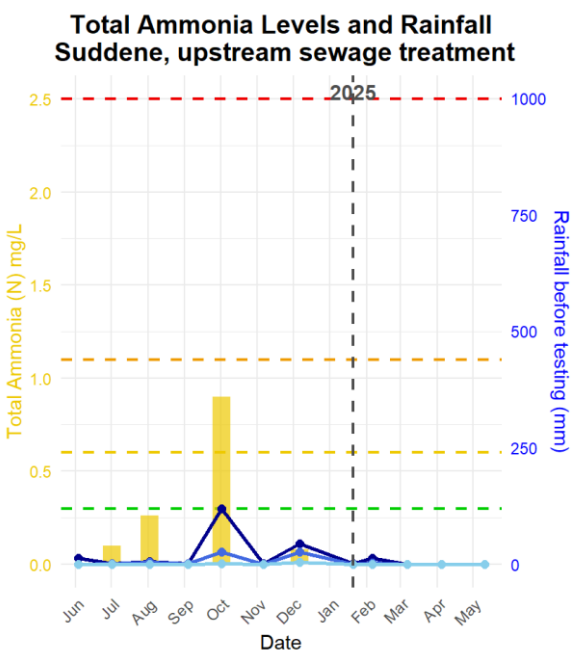
Supporting Figures: Timeline by site and Rainfall

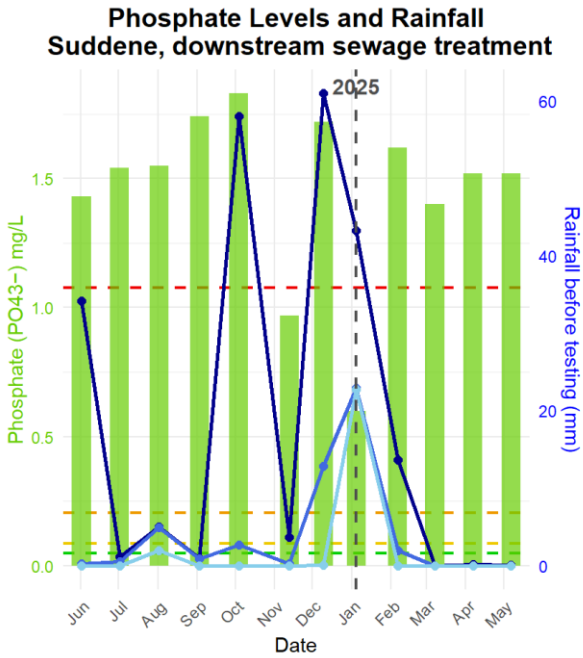
Vertical bars show nutrient concentrations, horizontal dotted lines indicative thresholds for water quality, and blue solid lines rainfall either 6 hours, 2 days, or 1 week before each sampling day took place (from 15 minute rainfall data for the closest rainfall gauge at Shalbourne).

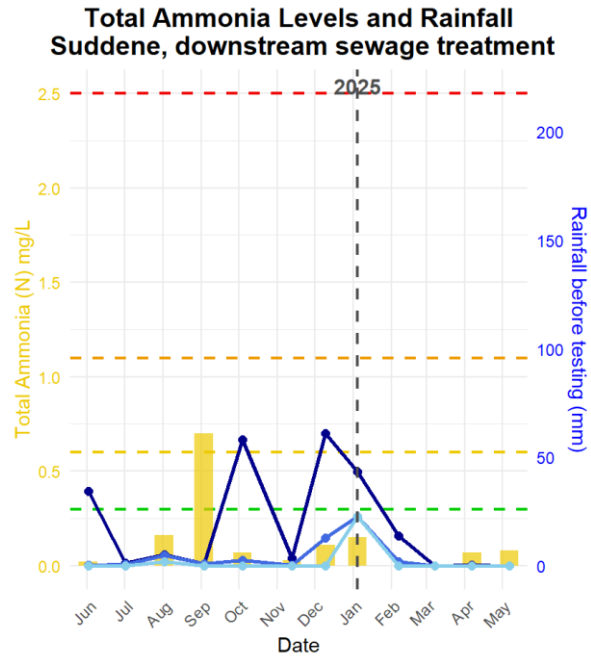


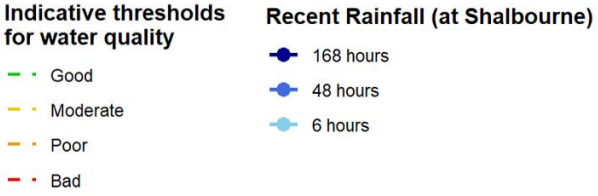
Suddene comparison: Upstream - Downstream



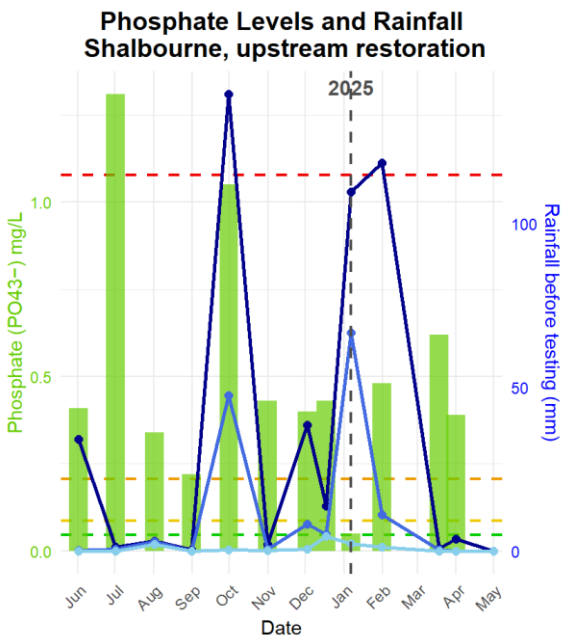


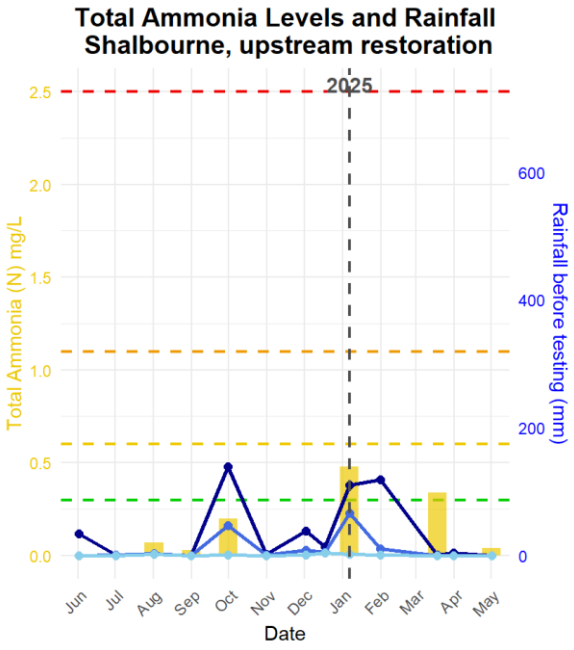


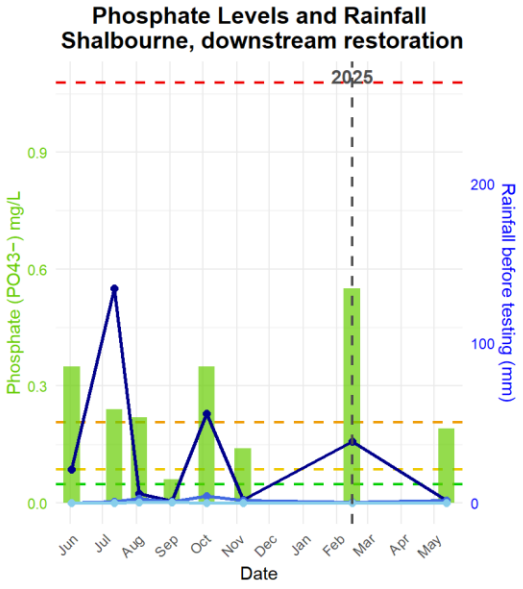


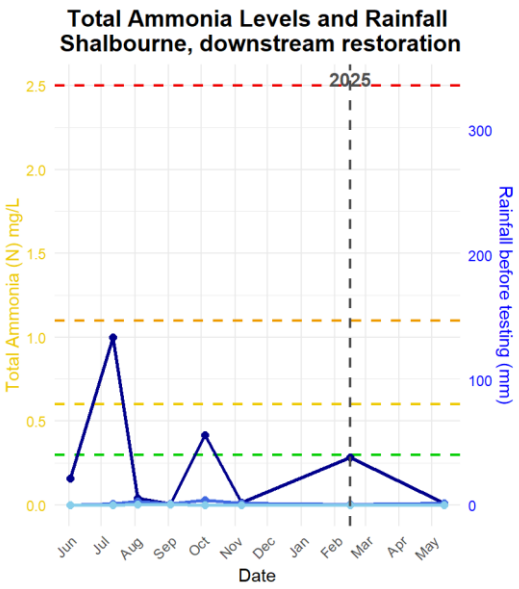


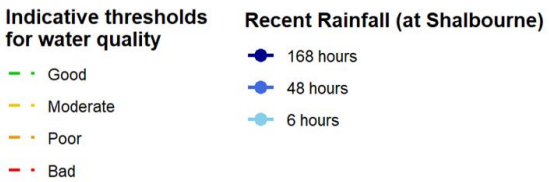
Shalbourne comparison: Upstream – Downstream

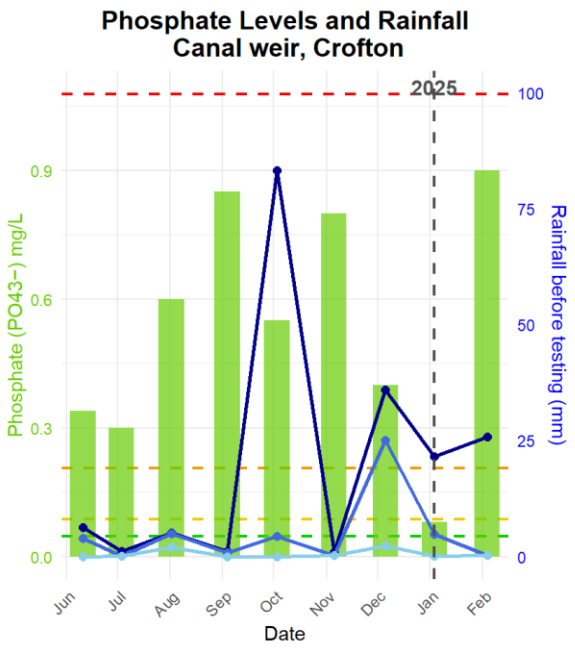


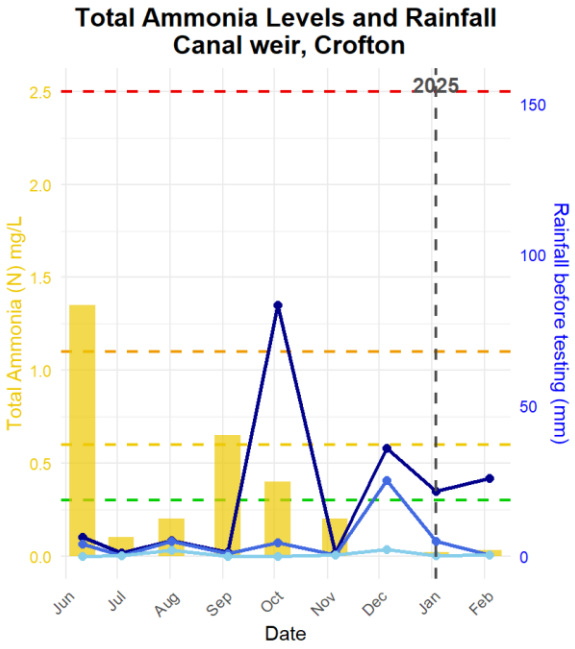









Phosphate Levels and Rainfall
Canal weir, Crofton
2025
Phosphate (PO43−) mg/L
Rainfall before testing (mm)
0.0
0.3
0.6
0.9
0
25
50
75
100
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Date


Total Ammonia Levels and Rainfall
Canal weir, Crofton
2025
Total Ammonia (N) mg/L
Rainfall before testing (mm)
0.0
0.5
1.0
1.5
2.0
2.5
0
50
100
150
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Date