



With thanks to
ASDA

Reducing diffuse pollution in the Broadland Rivers Catchment

1. Introduction

The Water Sensitive Farming (WSF) Initiative has been working with ASDA, as part of the Courtauld 2025 Water Ambition, to deliver water quality and quantity improvements in East Anglia – along with protecting the aquatic environment.

Between 2019 and 2020, the Upper Thurne and Muckfleet sub-catchments of the wider Broadland Rivers Catchment were targeted as a key focus area, following the occurrence of considerable surface run-off events from gentle sloping arable fields.

Work was undertaken at three farm sites where diffuse pollution issues were recorded - with heavy rainfall occurring just after the potato and root crop harvest (Figure 1).

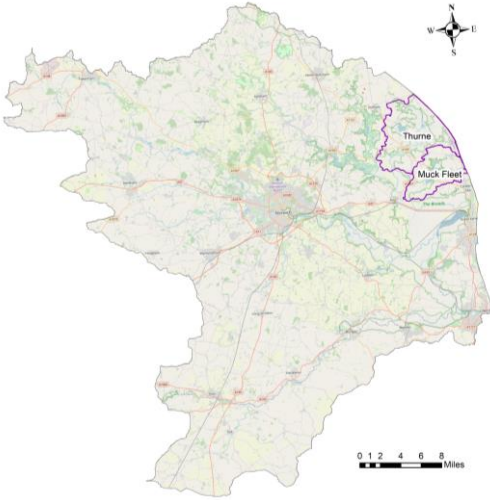


Figure 1. The Broadland Rivers Catchment, and Thurne and Muckfleet sub-catchments (outlined in purple) © OpenStreetMap (and) contributors, CC-BY-SA

Muckfleet Sub-Catchment Issues
Surface water run-off was reaching Lily Broad, a shallow lake that is part of the Trinity Broads SSSI, Broads SAC, Broadland SPA and Ramsar site.

Upper Thurne Sub-Catchment Issues
Sediment and nutrient-laden run-off was leaving fields and travelling along roads and drains, reducing the quality of water flowing into an internationally important tidal shallow lake - Martham Broad - part of the Upper Thurne Broads and Marshes Site of Special Scientific Interest (SSSI), Broads Special Area of Conservation (SAC) and Broadland Special Protection Area (SPA) and Ramsar site.



Figure 2. Bund during construction in June 2020 © Neil Punchard

2a. Mitigation – Upper Thurne Sub-Catchment

Site 1: Winterton-On-Sea

A field corner bund was constructed in Winterton-on-sea in June 2020 to protect a wildlife pond and reduce sediment and nutrient enriched run-off from entering the pumped drainage system that flows into Martham Broad SSSI (Figure 2 & 3).



Figure 3. Bund after construction and following heavy rain in October 2020 © Neil Punchard



Figure 5. Field corner bund after rainfall, Fleggburgh

Site 2: West Somerton

A field corner bund was constructed in December 2019, and this was then enlarged in March 2020 in response to continued substantial run-off from the sloping corner of the field, even after deep cultivation has taken place (Figure 4). Further advice was given to the landowners and contractor to sub-soil in late summer, and to voluntarily take the corner of the field out of crop production, and consider alternative fields for root crop production.



Figure 4. Field corner bund, West Somerton



Figure 6. After heavy rain in October 2020 © Matt Philpot

3. Outcome

In total, the interventions drain an area of 94.3 hectares, which replenish 38,085,390 litres back to the environment – equivalent to approximately 15 Olympic-sized swimming pools!

These measures provide a form of Natural Flood Management (NFM) by slowing water movement from land to watercourse, and reduce the need for river dredging to remove sediment.

4. Next steps

WSF advisers have identified further opportunities for diffuse pollution mitigation work within the two sub-catchments, and hope to build on this to improve water quality and quantity for the wider Broadland Rivers Catchment.

2b. Mitigation – Muckfleet Sub-Catchment

Site 3: Fleggburgh

Field corner bund constructed in late September 2019 by local contractor and delivered through Norfolk Rivers Internal Drainage Board (IDB) with design agreed by project engineer and farmer (Figure 5 and 6).

A collaborative, multi-partner project

This work was supported by the Water Sensitive Farming initiative and funded by ASDA. Norfolk Rivers Trust would like to express their thanks to the three landowners for enabling this work to take place on their land, the partner organisations represented below, and the Norfolk Rivers IDB for their designs and practical work at the Fleggburgh site.

