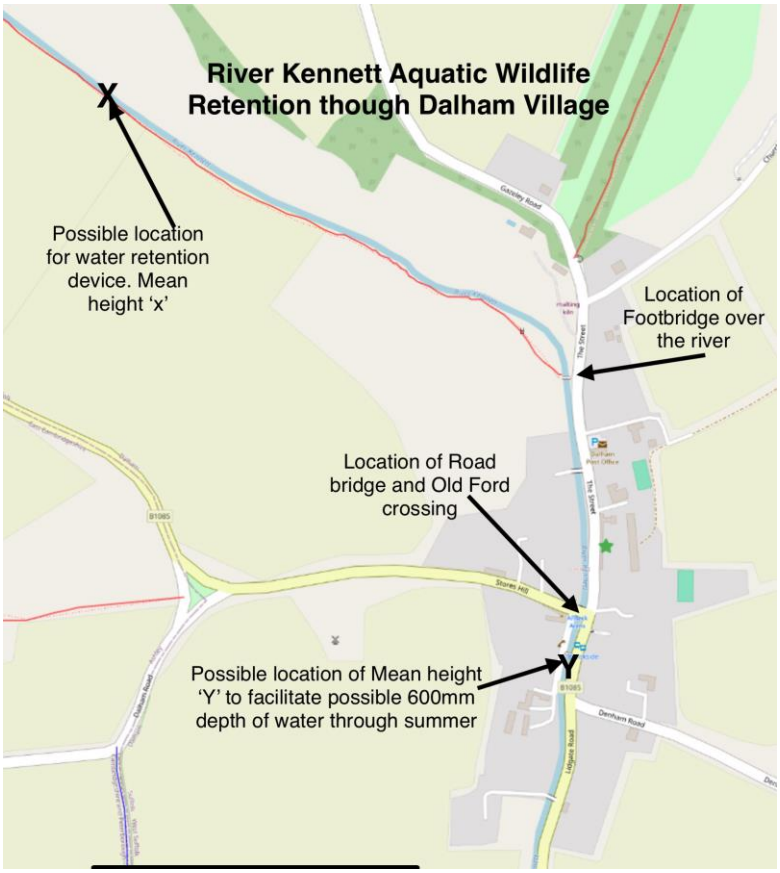
River Kennett Aquatic Wildlife Retention

Objective: To Re-establish a wildlife water habitat along the river Kennett through the village of Dalham in Suffolk.

Summary: The river Kennett flows through the village of Dalham and every year for the past 20+ years it dries up completely through the summer months, normally for around two or three months of the year. However last year was exceptionally wet and water flowed though the village all year. As a consequence villagers witnessed the return of aquatic life for the first time in some 20+ years. Kingfishers, Herons and Egrets were all seen during the summer months, with many photos of the heron and Egrets taken within the village. Proof that riverside biodiversity and aquatic life can be returned and will be sustained if water can be retained in the river.

Background: Following severe flooding in the village in 1968 the then wider and shallower river was heavily deepened to allow water to flow more quickly through the village, necessitating a new road bridge to replace the then Ford crossing *needs verifying – possible proof that it was the actions of the EA that are the root cause of the problem . It is likely that this deepening of the river had a big impact on the elimination of aquatic life and biodiversity in the village, but succeeded in its aim of preventing severe river flooding through the village.

Proposal: An opportunity exists to sustain aquatic life to the river if a method can be introduced to retain water through the year without increasing the risk of flooding. If successful it would likely see the return of fish and water voles to the river and see the retention of last years Herons, Egrets and Kingfishers all through the year. Water voles are endangered in the UK and are considered one of the country's most endangered wild mammals – with it sloping banks, much of the river bank structure through Dalham is ideally suited to water voles.



Action Required: To investigate the feasibility of implementing water retention actions specifically to increase the river biodiversity of the River Kennett through the village of Dalham (for approximately 1 mile) without increasing the risk of flooding within the village or surrounding villages. The river is classified by the EA as a main river.

Any proposal will need to be submitted and approved by the Environment Agency, likely through a detailed Bespoke Permit. The full scope of works will need to be ascertained and some positive discussions with potential grant funders having taken place. A hydrologist report will need to to be carried out (to assess flood risks) and land ownership and access established likely before an EA Permit can be raised. Public support will also have to be sought.

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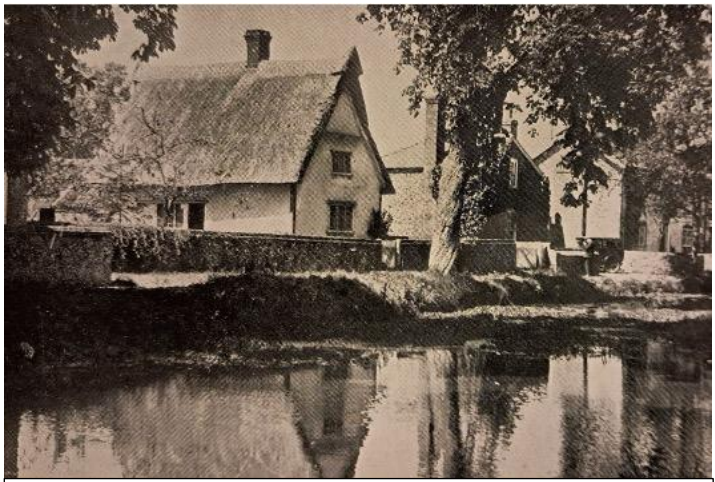
The Kennett at the centre of Dalham Village taken from location 'Y' with the Road Bridge crossing the river (replacing the Ford crossing some 50 years ago) when the river was deepened. The Affleck Arms Public House is on the left.

Depicts typical water levels between October and June. December 2017 and March 2025 photos

The river Kennett at the centre of the village just below location 'Y', with a pedestrian footbridge and the ford outside the Affleck arms (just out of picture on the right). Believed to be take around 1920s. Note the shallow but much high water level.

The river Kennett downstream of the Village pub and road bridge with the Street on the right



Dalham village in 1949. A much shallower and wider river

Egret along the river 21st August 2024 and 3rd March 2025

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The Kennett at proposed location 'X' with a widened river and diagrammatic water retention devise

The Kennett at proposed location 'X' where the water retention devise could be installed

Next Steps

Contact possible grant funders regarding funding of a feasibility study (including Ecological Study, Flood Risk and scope of work).

The Kennett and Dalham is within Northumberland Water Groups Bluespaces catchment area.
https://www.nwg.co.uk/responsibility/environment/bluespaces/

We also come under Anglian Water

If grant funders consider our project as a possibility the next step would be to establish the cost of a feasibility study and and get quotations from companies to do the study. Very appropriate cost around £10k (likely largest cost will be the Hydrological assessment of determining the risk of flooding and whether flood modelling is required).

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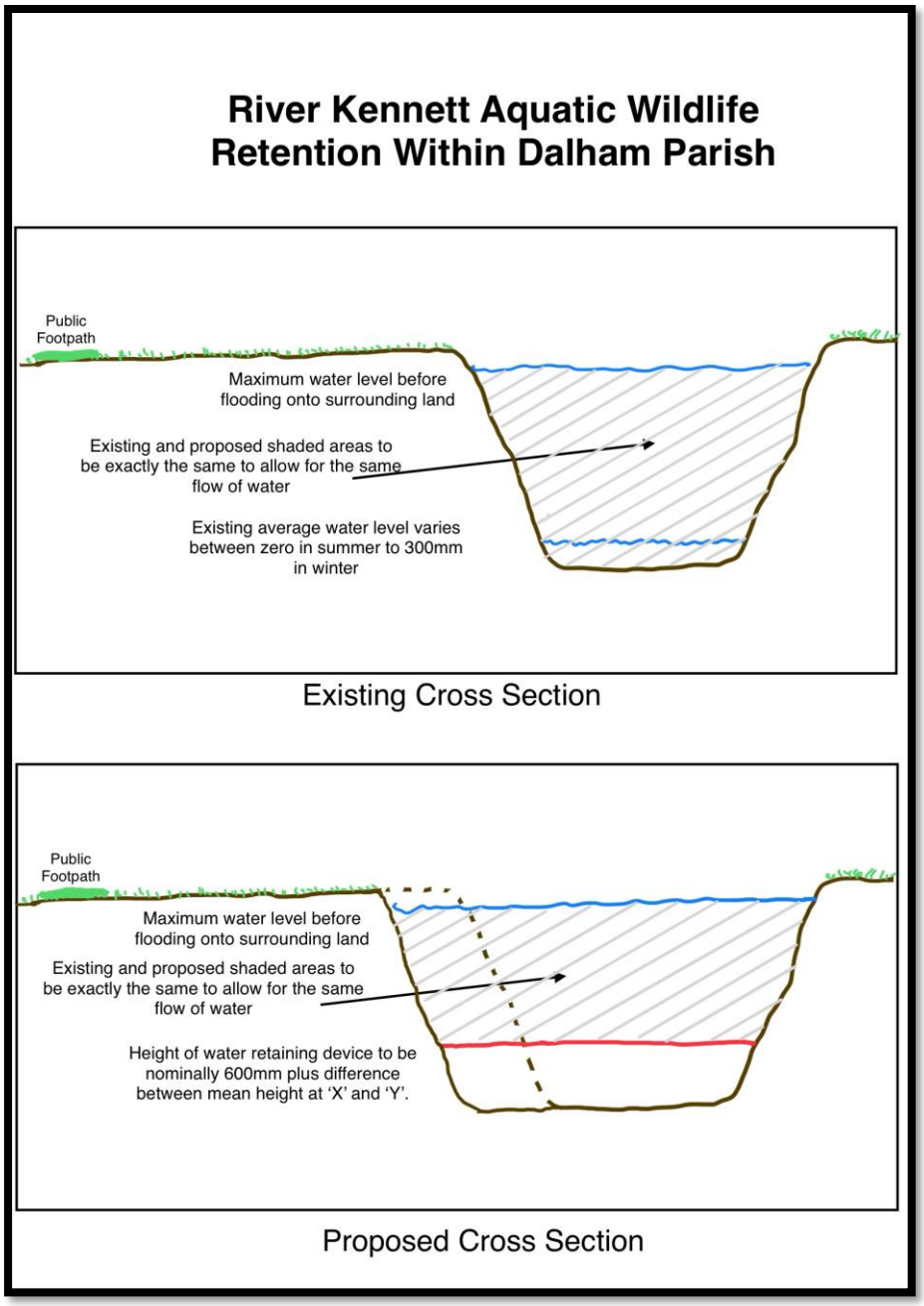
Draft proposal of possible Scope of Work to achieve objectives:

To install a water retaining device structure within the Parish of Dalham, approximately 500m downstream of the public footbridge that crosses the river from the Street leading to Moulton.

The width of the retaining device will be greater than the current width of the river at its installation point to facilitate the exact same flow of water through this point just prior to when the river is in flood (flood being defined as a high river that bursts its banks and floods the surrounding area). The height and width of the retaining device shall be determined through the accurate measurement of the drop of water levels using satellite Altimetry equipment (or similar).



The 'drop' will likely be measured at the location of the Affleck Arms (Y) and the location of the retaining device (X). The retaining device will likely be around 600mm higher than the difference measured. The calculated retaining structure height will determine the width of the structure needed to ensure exactly the same water volume can flow above the retaining device just prior to when the river is in flood.

If the proposed area formed is larger it will likely increase the risk of flood downstream (at Moulton), if the area formed is smaller it will likely increase the risk of flooding upstream within Dalham. .

The proposed location of the water retention device has been chosen where there is good access, no trees and where the public footpath is already some 20ft away from the river. Depending on the fall height of the river (to be measured) it will likely retain water for around 1km length of the river. Around half the retained water length will be in a non built up, rural area, the other half will be alongside the residential road, The Street.

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River Kennett Background Information

It is believed that the River Kennett last severely flooded the village of Dalham in 1968, when it was recorded the the water level reached the top of the Affleck Arms public House bar. Until then the road into the village the from Moulton (the now B1085) crossed the river Kennett by a Ford, just outside the Affleck Arms.

The lack of water was reported in the Dalham Parish Plan 2009 - 2014

- It's action plan stated that 'Maintaining the River Kennett enhancing, and subsequently maintaining, the level, and quality, of water in the River Kennett was down to the Parish Council and the Environment Agency and was a Medium-term plan.
- Appendix 8. Looked at a project to retain water levels through Dalham during periods of zero, or severely reduced, river flow.

    - It reported that until winter 2001 kingfishers had become regular winter migrants. The protracted drought during August/September 2002 and again in 2003 led to a complete crash in riverside biodiversity. As a consequence kingfishers no longer inhabit the site
    - To circumvent all of this it was decided to explore whether the spring-fed pond could be used to feed the River during drought periods
    - An initial discussion with a hydrologist determined that the quantity of water required to keep the River flowing was beyond the scope of any possible scheme
    -

Some Key points about water restrictions in rivers (taken from Google searches on the web)

Water restrictions in rivers are generally considered bad for the environment, as they can significantly disrupt aquatic ecosystems by lowering water levels, impacting fish migration, reducing oxygen levels, and concentrating pollutants, which can harm wildlife and plants that depend on the river system; however, in situations of extreme drought, carefully managed restrictions can be necessary to prevent complete depletion and protect the long-term health of the river.

- **Negative impacts:**
    - **Reduced habitat:** Lower water levels can significantly shrink the available habitat for aquatic life, affecting fish spawning grounds and other vital areas.
    - **Oxygen depletion:** When water levels drop, the amount of dissolved oxygen can decrease, which is crucial for aquatic organisms to survive.
    - **Concentrated pollutants:** As water levels decrease, pollutants can become more concentrated, further harming wildlife.
    - **Disrupted migration patterns:** Many fish species rely on specific water flows to migrate, which can be disrupted by reduced water levels.
- **When restrictions might be necessary:**
    - **Extreme drought:** In severe drought situations, carefully managed water restrictions can be implemented to prevent the complete drying up of a river and protect its long-term health.

- **Sustainable water management:** Restrictions can be part of a broader strategy to manage water usage and ensure sustainable water supplies for both human needs and the environment.

Note. All of the negative impacts assume constant water levels in the river through the year. With no water there can be no reduction of aquatic life as there isn't any, same with oxygen depletion, pollutant's and fish migration. If there is no aquatic life, there can be no 'reduction'.

Note. Water voles are endangered in the UK and are considered one of the country's most endangered wild mammals.

The Environment Agency

The Environment Agency (EA) is a non-departmental public body, established in 1996 (taking over from the National Rivers Authority) and sponsored by the United Kingdom government's Department for Environment, Food and Rural Affairs, with responsibilities relating to the protection and enhancement of the environment in England.

The EA's roles include: Regulator, Operator, Adviser, Responder, and Research centre.

The following points have been copied from;

https://assets.publishing.service.gov.uk/media/5a820510ed915d74e62355a0/LIT_10104.pdf

- We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.
- We make sure there is enough water for people and wildlife
- The Environment Agency is responsible for safeguarding water resources in England and protecting the environment.
- It is the role of the Environment Agency to monitor, report and act to reduce the impact of drought on the natural environment. We take specific actions to manage environmental droughts, where low river flows and lake levels have the potential to cause damage to the natural environment and ecology.
- We have a duty to safeguard water resources in England and make sure there is enough water available for people and the environment. Some of the actions will include;-
    - responding to and advising on environmental incidents
    - reporting on the situation and impacts to government, partners, abstractors and the media