



## **Clun Unmuddying the Waters Project**

### **Activity Report - April 2019 to March 2020**



Bridge installed over Clunton Brook to replace livestock and vehicle crossing.

Prepared by Alison Jones, Clun Catchment Officer

April 2020

This Project is also supported by:



## Summary

Clun Catchment Officer, Alison Jones, has continued to work with a number of farmers and landowners in the catchment, and progressed practical projects on several holdings. These all include a range of measures which contribute towards the reduction of adverse impacts on water quality and the conservation status of the River Clun SAC.

The main focus for the year has been on two major projects; the installation of a bridge across Clunton Brook and the diversion of a highway drain at Broadward, adjacent to the Clun SAC.

Further works have been completed on the holding adjacent to Clunton Brook, along with holdings in the sub catchments of the Kemp and the Redlake.

With almost continuous rainfall since last September last year, ground conditions for working and access to sites were problematic. The Clun valley was almost constantly waterlogged, with much of it completely flooded for long periods, which delayed some works. Other works have been postponed, until ground conditions are more favourable.

Below is a summary of the outcomes from this year's project activity.

Site	Length of river restoration (km)	New habitat creation	Number of trees planted
Bridge over Clunton Brook at Lyndale Farm	3.0	N/A	N/A
Diversion of highway drain to wetland at Broadward Bridge (Shelderton Farm)	3.5 To be completed	N/A	N/A
Fencing & tree planting at Stag's Head	N/A	0.75ha mixed broadleaf woodland	905
Fencing of wetland at Stag's Head	N/A	0.2ha wetland protected	125
De-culverting at Stags Head	0.5 To be completed	N/A	N/A
Fencing & riparian tree planting at Little Brampton Farm	2.7	0.45ha riparian woodland	720

A detailed report follows, with photographs to illustrate the range of work completed throughout the catchment.

## **Deliverable 1. Installation of alternative drinking water systems**

Where rivers and streams have been fenced to exclude stock, and the watercourse is the only source of drinking water, sustainable drinking water systems have been installed wherever practical to do so.

A number of solar powered livestock drinking systems installed last year have been upgraded, and some new ones installed.

### **1 Twitchen Farm (Clun SAC)**

The existing system was inadequate for the beef cattle that relied on it, resulting in stock continuing to access the river for water. In order that the gate to the drinking bay could be closed, and stock excluded from the river, a more reliable supply of water was required. This was achieved by replacing the old trough with one of greater capacity (300 gallon/1365litres), with a new 60w solar pump system and battery to supply it.

### **2 Lower Coston (River Clun)**

An existing system was upgraded, replacing the 30w panel with a 60w panel, plus a new battery, to increase the reliability of water supply for cattle and sheep. A new 60w system with 300 gallon trough was installed at a separate site, to enable the drinking bay to be closed.

### **3 Bedstone (Redlake sub catchment)**

The system installed last year was unable to cope with the demand from suckler cows and calves. The 30w panel was replaced by a 60w panel, to increase reliability of supply.

### **4 Cwmfrydd (Redlake sub catchment)**

The system installed last year, was not adequate in supplying the demands of grazing beef cattle. The 30w panel was replaced by a 60w panel, to increase reliability of supply.

### **5 Acton Bank (River Kemp)**

An old system was completely replaced with a 60w panel, pump and battery, to improve reliability of water supply for dairy cows.



Trough plus old 30W panel at installation.



60w panel mounted on homemade frame

## Deliverable 2. Installation of bridge and associated works on Clunton Brook

### 6 Lyndale Farm

#### The issues:

This farm is the main holding in the sub catchment of Clunton Brook, which flows into the River Clun at Clunton village, immediately upstream of Recovery Site One (RS1).

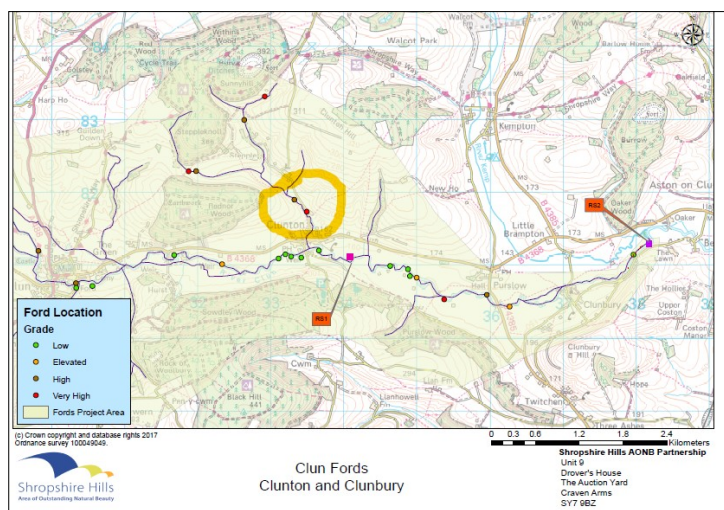
Crossings on this holding were included in the “*River Clun Watercourse Crossing Survey*”, in February 2017, and 5 were identified as causing adverse impact on water quality. Over the last two years, one has been upgraded, another culverted and a third closed altogether. Of the two remaining, (circled in yellow on the map below), one is having a “Very High” overall impact and the other “High” overall impact. Both therefore require some form of mitigation. See map below, extracted from the Report.

#### Map: Fords at Clunton & Clunbury.

Site circled in yellow:

**Site 1** (red) is the location for a new bridge.

**Site 2** (brown) is due to be culverted.



Heavy use by vehicles at site 1, combined with uncontrolled stock access to the crossing has resulted in poaching and erosion of the banks, and siltation and faecal contamination of the watercourse itself. This is contributing sediment laden runoff to the brook, which flows into the Clun at Clunton, and ultimately into the River Clun SAC and Teme SSSI.

#### What Environment Agency funded

The site was unsuitable for a culvert, so the decision was made to construct a bridge to replace the degraded crossing point. The bridge was designed with the capability of carrying a maximum load up to 20 tonnes and was constructed in September 2019.

**Consents:** An Ordinary Watercourse Consent was applied for and issued by Shropshire Council.

White clawed crayfish are known to be present on this tributary, so a licensed Ecologist was on site, and carried out a hand survey prior to the excavation and construction work commencing. Any crayfish found would have been relocated further upstream, but none were found.





BEFORE: Crossing from right bank



BEFORE: Crossing from left bank



AFTER: New bridge from right bank



AFTER: New bridge viewed from left bank

### **Agri-environment agreement status:**

This farm is not in an agri-environment scheme.

### **Further work:**

Site 2, upstream from the new bridge, is scheduled for culverting. An application for an Ordinary Watercourse Consent is in progress, and the aim is to carry out the work in July or August 2020.

## Deliverable 3. Highway drainage diverted into Broadward Meadow

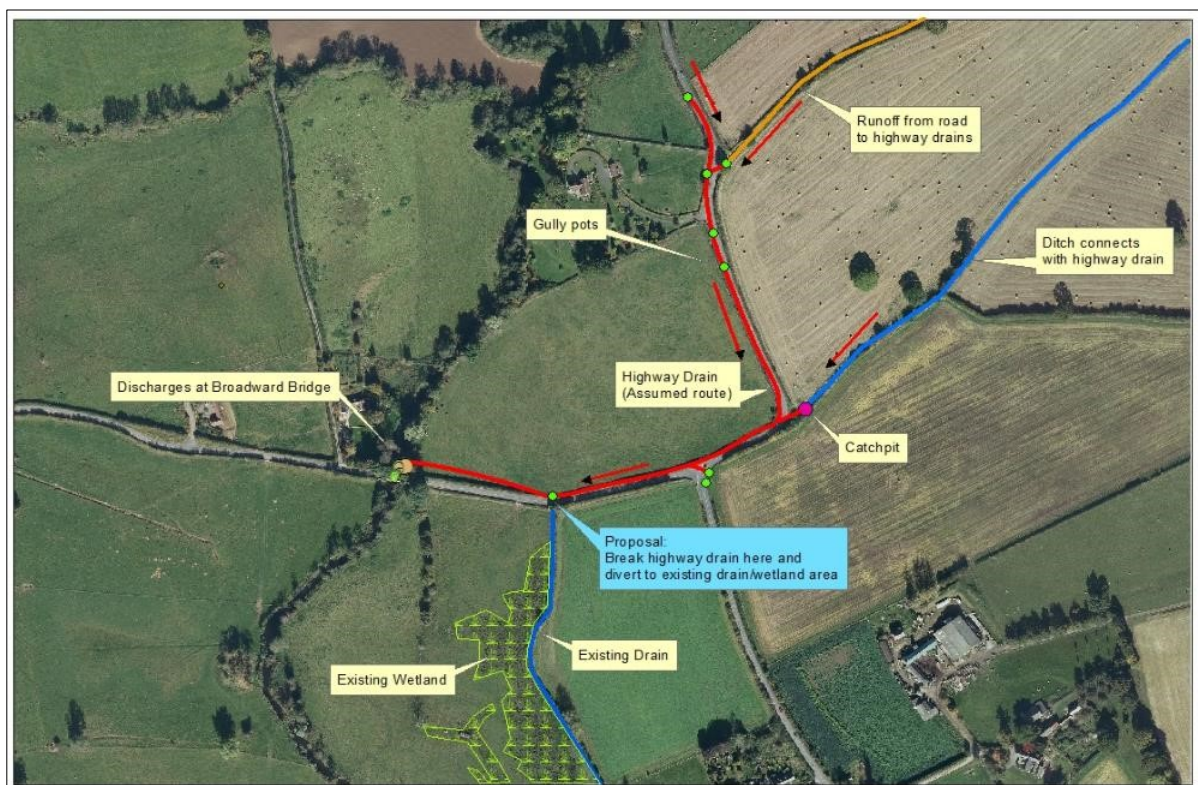
### 7 Shelderton Farm

#### The issue:

The majority of this holding is situated on sloping ground adjacent to Shelderton Brook, which joins the River Clun immediately upstream of the Clun SAC/River Teme SSSI. Soil mobilised from fields after heavy or prolonged rainfall is transported via the brook, roads and highway drains, directly into the river, and is known to be contributing to the “unfavourable condition” of the Clun SAC.

A programme of measures to address runoff and erosion, documented in “*A Proposal to Address Agricultural Runoff near Shelderton and Marlow*”, were agreed between AONB staff, EA and NE officers and the farm manager (representing the landowner), and the tenant.

The map below is extracted from this document and shows how this area is a collection point for runoff. Multiple highway gully pots and ditches intercept sediment laden runoff and vehicle overrun, all of which is routed into a highway drain outfall at Broadward Bridge, at the head of the Clun SAC.



An agreement was reached between all parties concerned to intercept the highway drain and reroute it under the road, to discharge into the wetland area. An existing drain or ditch (marked on OS maps) provides a conduit to the wetland area, and plans included reprofiling this to create a wide shallow swale. The area is already subject to flooding, but the expectation is that existing and regenerating vegetation will capture any sediment conveyed to site.



## What Shropshire Council funded

WSP were commissioned by Shropshire Council, to design the highway drain diversion, making use of a topographical survey completed by Council staff, to provide them with accurate levels. The brief for WSP was to *"Design and procure a suitable drainage system inclusive of road crossing and manhole construction to enable sediment from highway drainage to be deposited in swale on the south side of the B4385."*

Closure of the road was necessary for a week, which was organised and funded by the Council.

## What Environment Agency funded

Progress on this project was delayed until the winter months, by which time ground conditions were less than ideal. Since the in-field work could only be completed when ground conditions were dry enough for safe and effective working, the Project was split into two phases.

Phase 1 involved three main stages:

1. Building 2 catchpits with manholes and installing the connecting 300mm pipe.
2. Installing 2 x 300m pipes under the road, from the second catchpit to the headwall.
3. Building the headwall; concrete shuttering, bag wall and gabion mattress for erosion control.

Due to the difficult ground conditions, a new track was constructed from the field gate to enable the contractors access to the field corner, to construct the outfall and headwall.



Delivery of concrete catchpits



Catchpit with new supply pipe installed



Catchpit with manhole cover and new pipe backfilled and covered with soil.



Culverted road crossing showing two 300mm twin wall pipes





Road crossing completed, with tarmac covering



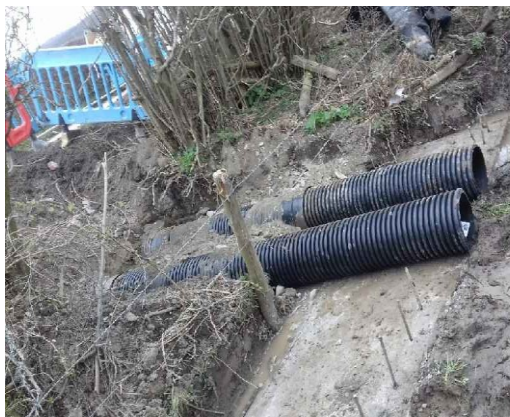
New culvert, showing temporary outfall



Location for new access track to headwall & outfall



Track laying in progress



Base for headwall complete and culvert pipes extended



New outfall with headwall completed





Headwall with gabion mattress apron for erosion control



Temporary fence to protect new outfall and headwall

**Consents:** N/A.

**Agri-environment agreement status:** This farm is not in an agri-environment scheme.

**Further work:**

Phase 2 will commence once ground conditions are suitable, and will involve:

1. Excavation of the swale / spillway.
2. Use material generated to top up the backfill to the shuttered headwall.
3. Disconnection of existing highway drain & connection to new system

## Deliverable 4. Delivery of other work identified during 2018-2019.

### 8 Lyndale Farm

#### The issues:

Stock have access to the majority of the watercourse between the two crossings already described. This has led to poaching and erosion of the banks, and limited natural regeneration of bankside cover. Tree cover is dominated by mature and over mature Alder, many showing signs of alder disease (*Phytophthora alni*), with occasional Ash, Willow and Hazel.

#### What Environment Agency funded:

When plans for the new bridge had been agreed, some tree surgery was deemed necessary prior to construction. A semi mature Ash tree to the left of bridge, already showing signs of disease, was considered to be a risk as it might destabilise the bridge foundations. To the right of the bridge, a mature Alder was coppiced, as the overhanging branches would be damaged by vehicles using the bridge. The regrowth can be managed to prevent this in future.



BEFORE: Approach to crossing; semi mature Ash on left & Alder on right.



AFTER: New bridge with Ash stump to left and coppiced Alder to the right.

In preparation for fencing of the watercourse, selective coppicing of Alder, Ash & Hazel and Willow pollarding was carried out, focussing on vulnerable, unstable and diseased trees.



Tree coppicing in progress



Selective coppicing of Alder and Ash



After completion of the main phase of bridge construction, some additional work was discussed and agreed on, to complete the job, as illustrated below.



BEFORE: Railings with large gap



AFTER: Additional rails installed to make stockproof for sheep & lambs



BEFORE: Rutting and compaction created during bridge installation



AFTER: Roadside gate realigned, to meet reggraded track with new stone surface.

**Consents:** A Felling Licence was obtained from the Forestry Commission.

**Agri-environment agreement status:** The holding is not in an agri-environment scheme.

**Further work:**

Winter weather conditions delayed the coppicing of the trees until December.

Ground conditions then worsened, preventing the completion of the watercourse fencing. Now schedule for completion in May, both banks of the watercourse will be fenced upstream of the bridge to further protect the watercourse and close off other crossing points.

Subject to funding being available from the Woodland Trust, a mix of native broadleaved trees and shrubs will be planted where space allows, to increase bank stability and habitat diversity.

## 9 Stag's Head

### The issue:

This holding is in the sub catchment of the River Redlake, and a minor watercourse (unnamed), flows through the holding and into the Redlake. It is piped for the majority of its length, but the outfall empties into a small pool just within the holding boundary.

The outfall has been identified as a "red flag" site, in the *"Survey of the River Redlake Sub-Catchment Highway Drainage Network"*, carried out by Mike Kelly in March 2017. It was considered to be causing a disproportionate adverse impact. See photographs below, extracted from the survey report.



Outfall into pool. Shows colouration from sediment laden run-off



Outfall of road culvert. Shows sediment plume

Recommendations in the Survey Report were to remove a section of pipe and so allow the outflow to discharge over a larger area, and for this wetland to be stock fenced to reduce the impact of poaching by livestock.

From this initial proposal, a more comprehensive plan for the whole site has been developed by the landowners, in partnership with the EA and the Woodland Trust and Alison Jones, as Project Manager.

Aerial view of holding, with boundary in green.

A copse and shelterbelt has been planted next to north west boundary.

The wetland is to the south of the holding.





**What Environment Agency funded:**

Two lengths of internal fencing were erected; one protects the newly planted copse and shelterbelt from grazing livestock. The second protects the wetland area from poaching damage and will enable the creation of wet woodland, planned for the autumn.

A solar powered pump system supplies drinking water for stock from a reused trough.



Track through new copse to new fence  
& gate



Newly fenced woodland with gated access



New fencing to protect wetland from  
livestock poaching



Livestock drinking trough supplied by  
solar powered pump

**Agri-environment agreement status:** The holding is not in an agri-environment scheme.

**Consents:** An Ordinary Watercourse Consent has been obtained from Shropshire Council for the pipe removal or deculverting on this holding.

**Further work:**

The pipe removal, or deculverting, is now scheduled, to take place in July or August. It has been necessary to postpone until then, to minimise the impact of any works on the protected White-clawed Crayfish, which are known to be present close by in the River Redlake.

## 10 Little Brampton

### The issues

The riverbanks on this holding, in the sub catchment of the River Kemp, were subject to uncontrolled stock access by livestock, which was limiting natural regeneration. Tree cover was sparse, mainly due to losses resulting from Alder dieback, (*Phytophthora alni*).

We have been working in partnership with the landowner, EA and the Woodland Trust for 4 years, with Alison Jones as Project Manager, and created significant stretches of new riparian woodland adjacent to the Kemp.

### What Environment Agency funded

Two lengths of internal fencing were erected; one to protect young trees planted a year ago, to create a buffer strip adjacent to a ditch. The second protects a newly planted riparian woodland next to the River Kemp, adding to the significant area of new riparian woodland already established along this stretch of the river.



New fence to protect scrub and new tree planting



New fence to protect new riparian woodland

**Agri-environment agreement status:** The holding has a current Mid-Tier Countryside Stewardship Agreement.

**Consents:** None required.

### Further work:

Further projects under discussion with the landowner for this holding include:

- Fencing to enable new woodland planting to attenuate run-off.
- Pool creation for attenuation and flood alleviation



## **11 Other:**

### **Learn more about our project:**

The project has a dedicated webpage on the AONB website:

<https://www.shropshirehillsaonb.co.uk/our-work/projects/unmuddying-the-waters>

This webpage showcases the work of the project and links to the River Clun strategies and reports undertaken by partner organisations. As the project builds the webpage will be updated. This is complemented by updates via Facebook and Twitter, both accessible via the Shropshire Hills AONB website.

### **Working in partnership:**

Our project is a partnership with the Environment Agency and their "Unmuddying the Waters" fund. We are working together to return the Clun to favourable condition, along with other organisations, including Shropshire Council, Woodland Trust, Natural England and Severn Rivers Trust.