CASE STUDY 2

# LITTLE HORSLEY FARM

***FARMING FLOODPLAINS for the FUTURE***

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| **Catchment** | Sow (headwaters) |
| **Holding Type** | Livestock-based smallholding |
| **Existing Land Use** | Extensively grazed semi-improved grassland |
| **Project Area** | 1.0ha [Total holding : 9.3ha] |
| **Techniques** | Flood attenuation; wetland habitat creation |

Historic channel before and during works

Works in progress

## Background

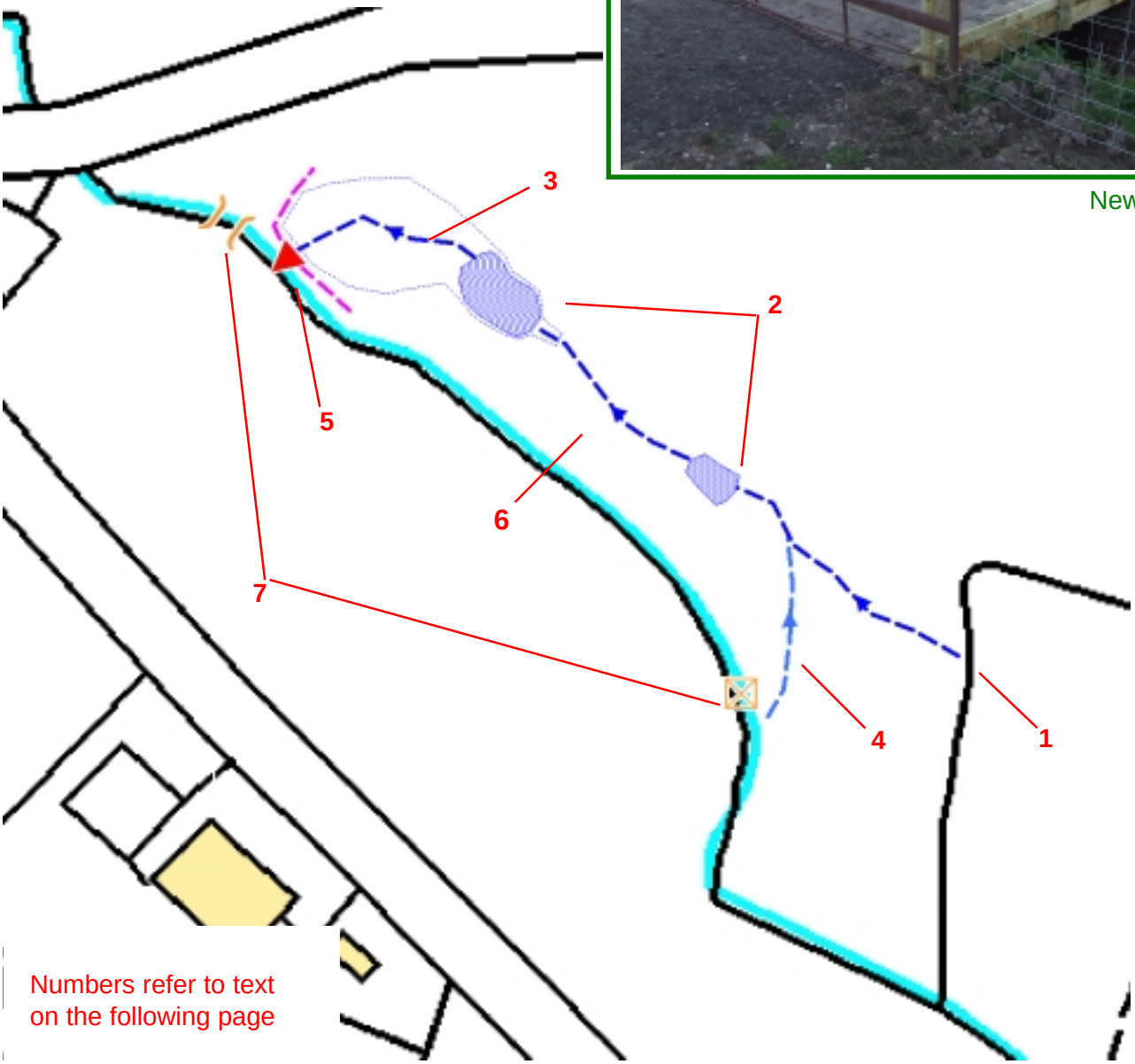
Little Horsley Farm is a small grassland holding of only 9.3ha, located relatively high in the headwaters of the River Sow. The grassland, some of County Wildlife Site quality, is extensively managed through a mix of hay cutting and grazing by sheep.

The landowner approached the project to consider the potential of her land to benefit both the holding (particularly reducing the risk of liver fluke by controlling areas of damp ground) and downstream settlements.

## The Project

Through the utilisation and accentuation of the existing topography, the project involved the creation of shallow pools and associated wet grassland habitat, and an opportunity to divert and attenuate flood flows.

New stock bridge




Numbers refer to text on the following page



## Consultations.....

- Biological Records
- County Archaeologist
- Natural England (re CSS agreement and funding)
- Environment Agency (re need for consent)

## .....& Consents

- None required

Spillway from brook

To promote recovery of the site and aid weed control, but retain sufficient niches to allow colonisation of species from adjacent land, areas of bare earth were cultivated and re-seeded using an off-the-shelf grass-only seed mix suitable for wet sites, broadcast by hand at a rate equivalent to 15Kg/ha.

1. An existing blockage in the field boundary ditch has been retained, thus providing a source of water to supply the wetland habitat.

2. Accentuating existing low areas, two shallow scrapes have been created (respectively 90m$^2$ and 250m$^2$).

3. By deepening an existing historic channel, the feed of water from the boundary ditch is enhanced, flowing through the scrapes to the new outfall to the brook.

4. Utilising another existing area of low ground, a spillway has been created that will carry additional water onto the site during peak flows in the brook.

5. All water leaves the site via a new outfall to the brook, comprising a 150mm pipe with flap valve, built into a shallow bund. During peak flows the valve will be forced shut, trapping water flowing onto the site from upstream and thus creating temporary flood storage. Once brook levels subside, the valve will re-open allowing the draining of surplus water.

6. Spoil generated was used to make up low spots in the brook bank (to ensure effective functioning of the scheme), with surplus landscaped along the edge of higher ground to the north.

7. As a result of the scheme, an existing dilapidated bridge providing stock access across the brook became redundant. This was removed, and replaced with a new livestock bridge constructed downstream of the new wetland.

## Issues

- Although the landowner thought that land drainage had historically been installed, it was considered that it no longer functioned. Shortly after completion however, it became apparent that this was not the case, with the larger scrape rapidly drying out. A break in a land drain was eventually exposed, and effectively plugged with clay and re-buried.
- Initial earthworks were all completed ‘by eye’. A subsequent review of levels on site highlighted the need for minor re-profiling (including re-visiting of the spillway) to ensure effective functioning of the scheme and maximisation of the flood storage benefits.

Outfall - 150mm pipe with flap valve

Upstream pool - six months on

## Future Management

- The flood attenuation element of the scheme should be self-sustaining, although it will be necessary to ensure the outflow pipe is not blocked.
- The habitat created will require continuation of the extensive grazing regime, and long term the scrapes may need periodic de-silting.

## Benefits

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| **HYDROLOGICAL** | New flood attenuation scheme, storage capacity approximately 275m$^3$. |
| **HABITAT** | New wetland habitat adding diversity to the existing semi-improved grassland, with potential to extend the existing County Wildlife Site. Two ponds created together with an anticipated 0.8ha of lowland meadow. |
| **FARM BUSINESS** | Although the holding is in the Countryside Stewardship Scheme, the field in question was not included. The part field affected by the project has been added to the agreement under the grazed pastures (P1) option with raised water level (GW) supplement, earning the landowner an extra £189 per year. |

Downstream pool & scheme outflow (with detail of bund incorporating pipe)

## Costings

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| Earthworks | £ 6153 |
| Bridge & Fencing | £ 1760 |
| Seed | £ 80 |
| Remedial Works | £ 410 |
| **TOTAL** | **£ 8403** |

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| Natural England Grant (via CSS) | £ 3000 |
| Landowner Contribution | £ 145 |
| Farming Floodplains for the Future | £ 5258 |

[Prices excluding VAT]