Upper Aire Habitat and Land Management Improvement Project

Newsletter

January 2015

Background

The ***Upper Aire Habitat and Land Management Improvement Project*** is a partnership between ***Yorkshire Farming and Wildlife Partnership***, ***Yorkshire Wildlife Trust*** and the ***Environment Agency*** which is working with farmers in the Upper Aire catchment between Malham and Keighley.

The Project aims to address the failure of some of the watercourses in the Upper Aire catchment to meet *Good Ecological Status* under the *EU Water Framework Directive*. This failure is adversely affecting water quality, fish and other native wildlife. It is due to sediment and diffuse pollution, particularly phosphates, as well as to the presence of non-native species such as Giant Hogweed. At the start of the Project we carried out comprehensive river corridor surveys to identify the scale of these problems.

Erosion and increased sediment is frequently caused by the lack of fencing and buffer strips and intensive grazing of riverbanks, with stock drinking from watercourses. This is exacerbated by the fine loamy soils which predominate in the catchment and are sensitive to erosion. Invasive plants also increase the risk when they die back in the winter leaving bare ground.

Diffuse pollution inputs from farm manures and fertilisers can be due to a lack of nutrient planning, poor timing of spreading, and farm infrastructure problems including lack of clean and dirty water separation. Dealing with these issues often has double benefits, saving the farmer money as well as benefiting the catchment...

So, what have we been doing..

We have been working with farmers in the Upper Aire since 2011, providing:

- Free advice including Whole Farm Appraisals and Farm Infrastructure Audits.
- Free help with Nutrient Planning by FACTS qualified advisers, including free soil and slurry sampling and analysis.
- Farm events promoting "catchment friendly" farming practices, focusing particularly on grassland and slurry management.
- Carrying out and helping to fund a range of physical improvements on farms including riverbank restoration and fencing, woodland planting and hedge restoration, and providing alternative off-stream stock drinking points, with animal health benefits. To date the project has funded **£56,750** of capital works with more planned.

To help fund the physical improvements on farms we have been able to draw in over **£170,000** of additional funding and support from a range of organisations including the Forestry Commission, Landfill Tax, Woodland Trust, Natural England & Yorkshire Dales Millennium Trust. The work on the ground has been undertaken either by local contractors, or with help from volunteers organised by the Yorkshire Wildlife Trust and from the Forest of Bradford.

Environmental improvements on farms will benefit nationally important wildlife species including *otter*, *brown trout* and *white-clawed crayfish*.

We have a limited number of advisory visits available until March 2015. Contact Phil Lyth for more information on 0771 3333 170.

Look out for details of future events in early 2015.

Achievements to date..

- Advised on 43 farms covering 7,500 hectares (18,500 acres) of land.
- Prepared Nutrient Management Plans on 12 farms.
- Organised 9 farm events.
- Carried out invasive plant control using the Environment Agency's Operations Team & Yorkshire Invasive Species Forum.
- Organised and funded improvement works on 17 individual farms including:
- **250 metres of hedge restoration.**

- **375 metres of "green" riverbank restoration using willow spiling.**

- **Re-graded two badly eroding sections of riverbank on the Aire and Otterburn Beck.**

Before:

After:

- **Excluded stock from over 7km of watercourse by fencing and providing alternative stock drinking.**

Drinking bay on River Aire at Steeton Ings

Before: sediment and livestock faeces could enter the water

After: River was fenced off and pasture pump installed instead of drinking bay. The smaller concrete base allows the whole system to be picked up and moved if required.

- **Created over 24 hectares (nearly 60 acres) of woodland by planting over 27,000 trees.**

Achievements to date..

Bankside poaching on the River Aire around an area used as drinking bay. Before:

After: River bank was fenced and adjacent area re-seeded with astonishing results within one year.

The project has funded 1400m of water pipe and 6 water troughs on one farm on the River Aire to enable fresh water to be brought to the fields from a spring fed reservoir on the adjoining hillside. The river bank has been fenced with flood fencing to prevent livestock from entering the river in the future and an old drinking bay has been piped and filled in.

Bank erosion on Broughton Beck has been caused by water cutting behind bank side trees. To prevent further erosion, trees were coppiced and trunks and brash used to shore up the eroding bank.

Leaky Dams

One of the projects we are currently undertaking on a trial basis, at the top of the Otterburn Beck catchment, is the creation of "leaky dams" with the aim of reducing flood runoff and the associated loss of sediment by erosion. The principle is that a series of small dams which are not fully watertight are created in ditches and where water flows over land in heavy rain. These fill up during the rain providing some flood storage, and then empty slowly, thus reducing the "flood peak" further down the catchment. This type of approach has been used very effectively in Northumberland to reduce the incidence of flooding in the village of Belford. If our initial work is effective, we hope to do more of this in the catchment in the future.

Woodland for Water?

Planting new woodland alongside watercourses, and in other strategic locations within the catchment, can have many benefits, including:

- Protecting riverbanks from erosion.
- Reducing runoff during heavy rain and increasing the amount of water which soaks into the soil.
- Providing a new wildlife and game habitat, and shelter to improve the performance of farm livestock.

In 2013/14 the Forestry Commission "Woodland for Water" scheme offered an attractive £4,800/ha with **no loss of Single Farm Payment** for creating new woodlands in locations which benefited water, and this helped to fund several projects in the catchment. **It is likely that a similar Forestry Commission scheme will be open for applications from January – March 2015, so please contact Phil on 0771 3333 170 as soon as possible if you are interested in help with submitting an application.**

Soil – The Farmers Most Precious Resource

Two farmer events have been delivered through the Upper Aire project focusing on grassland and soil management, held in June 2013 and July 2014. Independent grassland specialist and 'Grassmaster' Charlie Morgan was the main speaker at both events.

The events demonstrated how to assess the condition of soils and grassland and make decisions on how to improve grass yields and sward performance. Low grass yields can be linked to issues such as poor nutrient status (pH, phosphate, potash and magnesium), soil compaction or inappropriate grass varieties in the sward which are not suited to chosen management, i.e., cutting or grazing or long or short term use. These issues need rectifying before spending money on grassland re-seeding, to avoid unnecessary expense with little or no results. Farmers literally need to get to the root of the problem before ploughing up a ley and starting again!

A selection of the latest grassland machinery was on show at both events, including a Browns grass harrow / over-seeder, a Sumo grassland sub-soiler with seeder, a Watson grassland aerator and a Vredo direct drill. The Watson grassland aerator (shown on the right) is relatively new and its trailed roller design allows aerating to be carried out much quicker than mounted equipment. This is especially attractive for contractors, as more ground can be covered at greater speed. Thank you to Ripon Farm Services and Sugdens Agricultural Contractors for providing the machinery and running the working demonstrations. Thanks also to Simon Spensley at High Gate Farm and Richard Brown at Accraplatts Farm for kindly hosting the events on their farms.

The Environment Agency have produced an excellent **Think Soils** manual to help with soil assessment and management. To download a free copy go to: http://adlib.everysite.co.uk/adlib/defra/content.aspx?doc=263232&id=263233 or ring Phil on 0771 333 170.

Compaction

There has been a surge in the development of grassland aerators and sward-lifters with a wide range of equipment now available. However, the key message is to check your soil for compaction before using or purchasing such kit. There have been several farmer accounts of equipment 'not working' - the equipment will not achieve anything, or worse, could damage soil structure if used on soil which is not compacted or in the wrong soil conditions.

Farmers should start by digging a hole 1-2 feet deep to check for signs of compaction, including soil which is hard to break up by hand, horizontal rather than vertical cracks, lack of roots, lack of worms, waterlogging, an unpleasant smell and vegetative / organic matter which is not decomposing.

If compaction is detected, the depth dictates which machine to use: surface compaction in the top 4-6 inches should be tackled by a soil aerator; deeper levels of compaction may require a sward-lifter or grassland sub-soiler. The latter is best carried out in the autumn to allow roots to recover for the next growing season. Aerating can be done in spring, but be careful not to leave soil on the surface particularly in meadows to avoid the risk of listeria.

Regulation

From 2015, the Soil Protection Review will no longer be a requirement of Cross Compliance. Three new measures will be introduced in its place:

GAEC 4 – Maintain minimum soil cover

GAEC 5 – Minimum land management reflecting site-specific conditions to limit erosion

Farmers must put measures in place to **limit soil and bankside erosion**. A reduction in a farmer's agricultural payments could happen where erosion is over a single area greater than 1 hectare, or along a continuous stretch of more than 20 metres long and 2 metres wide of a bankside or a watercourse.

GAEC 6 – Maintenance of soil organic matter level through appropriate practices, including a ban on burning arable stubble except for plant health reasons.

Farmers must not plough, cultivate or intensify species-rich and semi-natural habitats, or improve land which has not been cultivated for 15 years, without consent from Natural England (Environmental Impact Assessment).

Nutrient Management

Knowing your soils...

Soil sampling is key to preparing a nutrient plan. It is the starting point to planning future slurry, manure and fertiliser applications.

Approx 50% of the fields sampled prior to producing a nutrient plan through the project had a low pH, some as low as pH 5.2 on medium to heavy soils, highlighting the need for lime and regular testing. Generally the soils in the area are high in magnesium so avoid using magnesian limestone (unless there is a risk of grass staggers). Excess magnesium in the soil may cause potash deficiency in crops.

The optimum pH for continuous grassland is 6.0. On peat soils pH should be 5.3.
If soil is acidic this can affect root growth and thus limit nutrient and water uptake. This will adversely affect yield and can increase likelihood of nutrient run off and leaching as the crop cannot utilise applied nutrients. At pH 5 only 43% of applied nitrogen, 34% phosphate and 52% of potassium is utilised by grass.

Clover is more sensitive to soil acidity than grass. If you are planning to re-seed any fields with a clover ley allow at least 1 year for soil pH to increase before seeding.

The Importance of nutrient planning:

The aim of a nutrient plan is to:

- Limit applications of excess nutrients.
- Optimise grass / crop growth from nutrient inputs.
- Minimise environmental impact from nutrients – (Phosphates a problem as much as nitrates – algal blooms).
- Save money / growing costs! Summer applications of slurry via dribble bar / trailing shoe can vastly cut down on aftercut fertilisers.

To plan your nutrient applications you need to know:

- Soil type, pH and nutrient analyses and annual rainfall
- Required grass / crop yield
- Previous nutrient applications and management
- The nutrient value of organic manures
- Soil nitrogen supply (how much available nitrogen is there in your soil?)

Winter is a good time to take soil and manure samples and produce a plan for next year – before you buy your fertiliser. Please ring Karen on 0771 3333 185 if you would like some help to put together a nutrient plan for your farm.

At current fertiliser prices, every 2000 gallon tanker load of cattle slurry is worth approximately £20 in equivalent nutrients.
Cattle FYM is an excellent source of potassium with around 7kg available potash per tonne applied. An application of 4t/acre of cattle FYM is worth around £20/acre in equivalent nutrients.

GAEC 19 – Cross compliance requirement

GAEC 19 was introduced back in January 2012 and is applicable to everyone:

You must not:

- apply manufactured nitrogen (inorganic) fertiliser within 2 metres of surface water
- apply organic manure within 10 metres of surface water. Limit reduced to 6m when using precision application equipment.
- apply organic manure within 50 metres of a spring, well or borehole.

If you apply organic manure you must:

- produce and keep a **map** of your holding showing:
  - all surface waters on your holding and land within 10 metres of them;
  - all springs, wells and boreholes on your holding, and within 50 metres of the boundary of your holding, and land within 50 metres of them;
  - update the map with any changes within 3 months from the date of the change.

The use of an umbilical cord system reduces the risk of soil compaction. Dribble bars such as this place the slurry, reducing smell / ammonia losses and limiting leaf contamination.

Increasing farming and forestry productivity:

Grants are expected to be available for the following from 2015:

£140 million support for farming and forestry businesses. You will need to apply for a share of this funding to:

- help you innovate, use new technology and use the latest research in your business
- improve your skills and training
- co-operate and collaborate with other farmers, foresters and others in the land-based sectors
- support projects that benefit the environment in a number of ways. EG: to help you tackle environmental problems as well as improve the amount or quality of your agricultural produce

More information about this scheme and how to apply will be available on GOV.UK in December 2014.

Slurry, Silage and Fuel Oil Regulations 2010

The SSAFO regulations are enforced by the Environment Agency and are applicable to all farms. Below are the main points of the regulations, refer to the booklet for more details – it can be downloaded from https://www.gov.uk/government/collections/water-resources-control-of-pollution-silage-slurry-and-agricultural-fuel-oil-england-regulations-2010-and-as-amended-2013-ssafo

Slurry Stores:

- Check existing stores regularly for signs of corrosion / cracking – are they fit for purpose?
- There should be sufficient storage for 4 months slurry production including rainfall.
- Since the **15th June 2013**, farmers are required to notify the EA of new, or substantially enlarged / reconstructed facilities 14 days **before** commencing construction.
- New stores must have a durable life of at least 20 years and be built to certain specifications.
- Run-off from yard middens / muck heaps is classed as slurry and must be contained.

Silage clamps / stores:

- Check existing stores and concrete aprons regularly for signs of corrosion / cracking – are they fit for purpose?
- There should be some form of drainage / collection system around outside edge of concrete apron/ clamp walls to catch all run off and contain it.
- Is there sufficient storage for effluent – minimum 2 days at peak flow?
- New stores must have a durable life of 20 years with maintenance and be built to certain design specifications. They must have an impermeable base.

Agricultural Fuel Oil:

- Regulations applicable if over 1500 litres fuel stored on farm.
- Fuel stores must be surrounded by impermeable barrier / bund– including any taps, valves or pipes.
- Even if the store is exempt from regulations it is the farmers responsibility to ensure fuel is stored safely.

Safety Zones:

- Silage, effluent, slurry and fuel oil must not be stored within 10m of a watercourse (includes rivers, lakes, reservoirs and smaller watercourses such as streams and ditches as well as perforated drainage pipes) where any leakage could enter.
- Baled silage must not be made, stored, opened or unwrapped within 10m of a watercourse which effluent could enter.

Exempt structures:

- Any stores in use or built before September 1991 are "exempt structures" but the EA can specify further works to be undertaken to bring them up to standard if they are considered a risk. If an exempt store is dramatically altered eg extended, roofed it has to be brought in line with SSAFO standards.
  "Protecting our Water, Soil and Air- A Code of Good Agricultural Practice (CoGAP) gives further guidance on buildings and structures on farms that could cause pollution of water, air or soil.

New Countryside Stewardship:

It will replace:

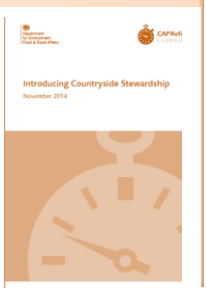
- Environmental Stewardship (ES)
- the English Woodland Grant Scheme (EWGS)
- capital grants from the Catchment Sensitive Farming (CSF) programme

It is hoped new applications can be submitted from July 2015. Agreements and payments will begin in 2016. **Water capital grants** and woodland creation grants likely to be available at the start of 2015.

The new scheme will help:

- **Wildlife and nature**: by restoring habitats, protecting hedges, providing food and nesting resources for birds, insects and other animals, and creating farmed areas for rare flowering plants.
- **Pollinators**: by providing pollen and nectar sources and nesting places. Farmers will be able to provide the right resources for pollinators where they are most needed.
- **Forestry**: by funding the planting of new trees and supporting the management of woodlands.
- **Water/flooding** – making water cleaner and reducing risk of flooding by supporting changes to farming practice (such as crop management), improving farm infrastructure and creating woodland.

More information is available in the booklet on https://www.gov.uk/government/publications/cap-reform-introducing-countryside-stewardship and there will be further updates in December.



Please contact Phil Lyth on 0771 3333 170 if you are interested in advice on any of the topics covered in this newsletter.

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Yorkshire Farming and Wildlife Partnership

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