

Cheshire Agricultural Project | Preventing Water Pollution



# ISSUE 1 Catchment News







# Editorial

## Taking the CAP off

**Exploring a brave new world to fund farming in the post-Brexit landscape.**

**Whether you voted to leave or stay in the European Union last June, we've been told in no uncertain terms by Prime Minister Theresa May that 'Brexit means Brexit'.**

**So how will our environment, our soils, our water and our biodiversity be managed and by whom once we divorce from Europe?**

The Government has given very little detail on its plans for farming post-Brexit, and opinions on what needs to be done vary widely across the sector. The one thing that does seem to be agreed upon is that the Common Agricultural Policy (CAP) can't and won't continue in its current form.



**Annette McDonald**  
**Head of Commercial Services and**  
**Project Development**  
**Reaseheath College**

In the past 15 years farms have been given lots of grants but with thousands of farmers still waiting to receive this year's Basic Payment Scheme, and Pillar 1 and 2 payments only guaranteed until 2020, one message is coming across loud and clear – we need to create a new revenue flow if the subsidies dry up.

Dieter Helm, Professor of Energy Policy at the University of Oxford and Independent Chair of the Natural Capital Committee, gave plenty of food for thought on this subject in his recent Natural Capital Network paper British Agricultural Policy after BREXIT, outlining a number of options for a way forward:

- **Food security and self-sufficiency**
- **Moving income subsidies to environmental subsidies**
- **Public money for public goods**

"There are three main ways forward in designing a British agricultural policy to replace the CAP," says Helm.

"The first is to stay with the existing framework, but to modify it to further promote more 'food security' and 'self-sufficiency'. The second is to stay with the existing level of subsidy but to move it from income support to environmental support – essentially moving from Pillar One to Pillar Two. Option three is to use public funds for public goods directly, ending Pillar One and Pillar Two subsidies."<sup>1</sup>

The first two options do not change the basic mechanisms of support that we will inherit from the CAP, but redirects the money that is assumed will flow to agriculture from central taxation. The third option on the other hand, is a departure from post war models of agricultural support.

This is Helm's preferred proposal which would see subsidies cease and public money used for public goods directly contracted through public bodies.

**A public good is any good or service which when consumed by one person, does not reduce the amount available to others and it is not possible to supply it to one person without supplying it to all - clean water, clean air, productive soils, carbon storage and biodiversity - are public goods that keep us and our planet healthy and alive.**

These goods are known as 'ecosystem services' that flow out of the management of 'natural capital': land, rivers, oceans and our atmosphere. According to The Land Trust, "well managed green spaces over the long term deliver services to the public 'for free', are not usually valued, or their value is not included in decision making."

**In a way it's nothing new as it builds on concepts and practices farmers have used for centuries, only now we have the data and technology that helps us explain in economic language what our 'natural stock' is, what it produces, what it's worth and how much it costs to maintain.**

It's something you'll certainly be hearing a lot more about in Cheshire in the coming months. In February, Cheshire West and Chester's Rural Growth Board hosted a seminar exploring the value of



the natural environment and how Natural Capital relates to sustainable business growth. The outcome of that Valuing Cheshire seminar was to recommend commissioning a Natural Capital audit for Cheshire to find out exactly what our natural assets are.

A lot of the noise in the sector at present centres on the future of the agri-environmental schemes which have been a major source of income, especially for large farms. Natural Capital takes a much broader picture that rewards best practice rather than land size, and if we can keep that wide lens in focus we have more chance to shape our legacy.

### So what's the prize?

Through Natural Capital we can show exactly what green space 'does' for those on either side of the farm gate. This would value the provision of plentiful nutritious food grown in healthy soils, reductions in climate impact or flooding through forest and landscape management, improvements in mental and physical health and wellbeing through access to green spaces, and valuing the leisure opportunities our environment provides.

There is no doubt this is a time of seismic change and for some, the idea of scrapping subsidies as was done in New Zealand in the 1980s will be extremely worrying.

**Brexit is a real opportunity to put farmers at the forefront of creating a policy that will reward for impact, not acreage. And for those who see themselves as food producers as well as custodians of the environment within their farming role, surely this is worth considering?**

#### References:

- 1 British Agricultural Policy After BREXIT; Natural Capital Network – Paper 5; 1st September 2016; Dieter Helm.
- 2 The Hidden Value of Our Green Spaces, The Land Trust, January 2017



Clockwise from back left:  
Chris Meredith, Helen Rowley, Helen Bolland, Rachel Price, Nicola Hall (front right), Jane Atkinson, Beccy Grime.

## Farm Environmental Services Reaseheath Meet the Team

**The role of the Farm Environmental Services (FES) team at RADA is to work with partners and the farming community to support farmers and land managers to access environmental initiatives, stewardship schemes and engage with local catchment projects.**

The FES team is led by Dr Nicola Hall, the lead advisor for projects on Aldford, Salters, Ashton and Milton Brooks. She is supported by Rachel Price working with partners on Gale, Arley and Smoker brooks near Knutsford, and catchments leading to Rookery Brook, and also by Jane Atkinson who is covering the Emral Brook catchment in Wrexham County.

The RADA team also include two United Utilities Catchment Advisors working on two important drinking water Safeguard Zones (SgZ) in the region. Helen Rowley works on the groundwater areas around Delamere, Manley and Frodsham, and Chris Meredith who is out in the Llangollen Canal SgZ. Read more in 'Helen Rowley talks about' on page 7.

Supporting the advisors is Beccy Grime our GIS Mapping and Communications officer, who pulls together our regular RADA News bulletin which has information about all of RADA's events and includes conferences and training courses, ERDF business development funding, farming and technical features. The team is excellently supported by our administrator Helen Bolland, who is the first port of call for all queries.

**For all enquiries contact the office on 01270 613195 or email [hub@reaseheath.ac.uk](mailto:hub@reaseheath.ac.uk)**

**For more information about catchment projects see [www.reaseheath.ac.uk/businesses/rada](http://www.reaseheath.ac.uk/businesses/rada)**



# Catchment News

## Burland, Brindley and Rookery Brook



**Reaseheath Agricultural Development Academy (RADA)** has been working with the Environment Agency and the Weaver Goway Catchment Partnership over the last two years with the aim of improving the water quality of Burland, Brindley and Rookery Brooks.

The Rivers Weaver and Goway provide one of the UK's most significant populations of freshwater eel and important habitat for protected species including water voles, otters, and crayfish. They also provide nationally important waterways including the Weaver Navigation.

The focus of the work funded by the **Environment Agency**, is to reduce sediment and phosphate entering the water course. High phosphate levels in watercourses leads to the rapid growth of aquatic vegetation and increases in algal populations which can cause the death and decay of vegetation and aquatic life due to decreased dissolved oxygen levels (eutrophication).

Phosphate and sediment levels often go hand in hand as phosphate has a strong affinity to bind with the soil particles.

**When plants are not able to utilise all of the phosphate applied to the land, much of it is lost through soil erosion, run-off and via drain flow. Direct inputs of phosphate also occur when cattle access the water for drinking or crossing.**

Rachel has been assisting farmers with soil and manure testing to draw up accurate nutrient management plans and reduce the risk of excess nutrient applications. Part of the project is to measure the impact of the work so we have been completing water monitoring and taking soil samples. Walking the catchments has identified small capital works that could benefit water quality. We are currently funding new watercourse fencing, the stoning of gateways and the construction of small field wetlands.

### Yard Drains Checklist

- ◆ Routinely inspect drains, ditches and ponds for signs of pollution
- ◆ Minimise dirty yard areas with bunds and stock gates
- ◆ Divert all roof water and repair guttering promptly



*Unsealed downspout on dirty yard*



**Rachel Price, FES Advisor**





# Delamere and Manley Pollution Prevention Project

## Silage and Silo Checklist

- ◆ Inspect silos annually and repair cracks and corrosion
- ◆ Wilt silage to increase dry matter content and reduce effluent leaking from the silo
- ◆ Check effluent tank levels daily and empty regularly



Flowing from the Delamere and Manley sandstone hills, **Ashton**, **Salters** and **Milton** brooks travel through intensive grassland farmland to converge with the River Goway at Bridge Trafford. Arising to the west of the sandstone area, **Darley** Brook flows to the River Weaver at Darnhall, and to the north **Cuddington** and **Crowton** Brooks join the Weaver near Acton Bridge.

The sandstone hills are home to nitrate sensitive Groundwater Safeguard Zones, where **United Utilities** abstract water for treatment and supply to the local area. As a result, the area is of great importance for groundwater and rivers.

The aim of this project, funded by the **Environment Agency** and **United**

**Utilities**, is to achieve 'good' ecological status in the brooks, and to reduce nitrate losses into the groundwater aquifer.

**Both the brook and the aquifer have risks that result from inputs of nutrients arising from farmland.**

A key element of the project is giving nutrient advice to landowners, helping identify high risk parts of their farms which can be managed more efficiently, saving both money and losses. Part of this service includes providing free soil and manure sampling and analysis.

## How can farmers help?

Farm walk-overs have identified a number of areas where cattle have access to the brooks and have badly eroded the banksides. Sediment arising from fields carries phosphate, smothering gravel beds and causing enrichment. We have been offering farmers financial support for fencing and water troughs to reduce the amount of sediment brought into the brooks by livestock. Another risk factor is effluent from silage clamps, which is nutrient rich and can leach into groundwater as well as ditches and brooks.

The Groundwater Safeguard Zones are high priority areas for water quality options under the Mid-Tier Countryside Stewardship Scheme. Contact us for help with your application.



**Nicola Hall, FES Manager**





## Catchment Spotlight

# Aldford Brook on the Middle Dee

The River Dee is one of the UK's premier spawning grounds for Atlantic salmon and sea trout, and at its estuary has a European designation of Special Area of Conservation to protect the saltmarshes and mudflats for wintering wildfowl.

Aldford Brook is a major tributary of the River Dee, draining from a large catchment area that lies to the west side of the Peckforton Hills including the farmed landscape around of Tattenhall, Broxton, Malpas, Shocklach and Coddington in South Cheshire.

Aldford Brook has issues with agricultural pollutants. These are the main reasons why the brook has POOR status under the Water Framework Directive standards.

**The River Dee also provides drinking water supply for more than 2 million people in northeast Wales, Chester, and Merseyside.**

Metaldehyde and herbicides that occur in water impact negatively on aquatic plant life, as well as increasing water treatment costs at the abstraction plant.

Nicky (RADA) and Gareth Foulkes (United Utilities catchment advisor) have been working together to raise awareness of agricultural pollution issues affecting the brook.



Funding from the Environment Agency has helped implement improvement projects in this catchment. United Utilities are providing farmers with advice, training and support with a range of offers to help with pesticide management, such as the free use of weed wipers and sprayer calibration.

For more information on these offers, contact Gareth Foulkes on [gareth@welshdeetrust.com](mailto:gareth@welshdeetrust.com) or Tel: 07496 683333.

## Pesticides Checklist

- ◆ Leave 5m unsprayed strip next to water
- ◆ Fill in a bunded area away from the tap drain
- ◆ Use a weed wiper or non-chemical methods where possible

The Aldford Brook catchment project is a collaborative project between the Welsh Dee Trust, the Environment Agency, United Utilities, Dee Valley Water and Reaseheath College.





# Helen Rowley talks about... Cheshire's drinking water aquifers



**Helen Rowley**  
*United Utilities Catchment  
Advisor for Cheshire Boreholes*

**Cheshire's porous sandstone forms part of one of the most important aquifers in the country and is an integral part of local drinking water supply.**

**Whilst creating ideal conditions for water storage the sandstone also provides a pathway for pollutants from the soil surface to reach the groundwater.**

United Utilities are detecting rising levels of nitrates in some of the groundwater it abstracts from. Before reaching their customers taps, this water is treated and blended with low nitrate water that may travel from as far as Lake Vyrnwy in Wales. To protect these local water supplies for future generations United Utilities are taking a proactive approach by funding support for farmers aimed to help them reduce losses of valuable nutrients from their farm.

If you farm in a groundwater catchment protecting groundwater sources, it is all about improving the nutrient efficiency of your farm. An efficiently running system will not only reduce losses to groundwater but will reduce losses to your pocket too.

Here are a few ways we are helping farmers to fine tune their nutrient management.

## **Fertiliser spreader calibration**

If you farm land in one of the Cheshire Borehole Safeguard Zones you may be eligible to have your fertiliser spreader calibrated for free.

Recent research suggests that many spreaders in operation show too much variation in spreading pattern which leads to striping and reduced crop yields. Losses of nutrients from below the soil are also increased as incorrectly placed fertiliser will not be utilised efficiently by the plant.

## **Know your soils**

Whilst many farmers are starting to see the benefit of standard soil sampling to assist with their nutrient planning, sampling soils for nitrogen is less common practice. However, many successful farms are finding they are reaping the rewards of fine tuning their nutrient management around their soil mineral nitrogen analysis.

This winter we have been out on farms collecting samples for CF Fertiliser's N-Min service. This service not only measures the nitrogen in the soil at the time of sampling but also what will become available to the crop between the spring and harvest. This test enables farmers to optimise nitrogen

utilisation by making the most of additional available nitrogen and potentially saving money by reducing unnecessary fertiliser applications.

## **Testing nutrient efficiency and evidencing losses**

Over the last few months we have also been busy trialling the Nitrate Leaching Tool developed by the Environment Agency and AMEC. The tool uses farm data on land use and nutrient applications along with soil and rainfall data to calculate potential losses of N from beneath the soil zone. The tool identifies high risk fields and suggest land management options such as cover cropping to reduce nitrate losses.

We also have installed five sets of 'porous pot' samplers at different locations last autumn. Porous pots are samplers inserted a metre below the surface which collect soil water as it leaves the soil zone. The data from the samples provides evidence on how different land management options can affect the amount of nitrate being lost from the soil.

## **Equipment Checklist**

- ◆ **Get your equipment calibrated now for the season ahead**
- ◆ **Calibrating your spreader could potentially save you around £15/ha at current fertiliser prices**



*Fertiliser spreader calibration saves £££s*





# Meet the regulator



## Can you tell us about your job?

I am Paul Furse, Senior environmental Officer and I am the technical lead for a team of Environment Officers who regulate farms across Greater Manchester, Merseyside and Cheshire. I help to target our officers' efforts in areas where our monitoring tells us that agriculture is causing pollution of watercourses and I work with colleagues in other organisations to make sure we aren't duplicating effort. I also carry out farm visits, where I work with farmers to improve their compliance with regulations and make sure they aren't polluting watercourses. In the twelve years I've been at the Environment Agency I've visited around 500 farms from Rossendale to Market Drayton.

## What are the main issues you find on farms?

Nationally, agriculture is now the biggest single cause of pollution incidents; recently overtaking the water industry.

Our evidence shows that this is dominated by the dairy industry, with silage clamps and slurry lagoons being the biggest cause of incidents.

## Why do you think dairy has such a big problem?

I think it's to do with aging infrastructure and the fact that silage and slurry are such strong pollutants; silage effluent is 200 times more polluting than raw domestic sewage, so even a small amount of effluent can have devastating effects on a stream.

## How do farmers respond to your visits?

At first, farmers can be nervous about a visit from the Environment Agency but we do aim to work with farmers to protect the environment, as the vast majority of farmers care about it and want to do the right thing. If we find issues or non-compliance we can normally come to an agreed plan for improvements with reasonable timescales.

## What's your top tip for protecting the environment?

The biggest problem we find on farms is that silage clamps don't have a perimeter drain to contain the effluent – check your clamp today, so that if there is a problem you can put together a plan to sort it out. Consider making bagged silage as an alternative.

If you want any advice, call us on our hotline number and one of specialist agriculture officers will give you a call back. General enquiries: 03708 506506

## Local Catchment Partnership Update



### Middle Dee Catchment Partnership

The Aldford Brook Catchment work is one part of the actions driven by the Middle Dee Catchment Partnership (MDCP). Chaired and hosted by the Welsh Dee Trust, the MDCP has brought together NGOs, regulators, water companies, councils and colleges to work with landowners and their representatives to fulfil its vision that the Middle Dee Catchment is clean, healthy, full of wildlife and enjoyed by people and enables sustainable economic growth. Our Action Plan (2015) outlines current projects and future aspirational interventions to achieve this. Visit: [welshdeetrust.com](http://welshdeetrust.com)

**We are holding an event at Lea Manor Farm, Aldford, CH3 6QU, Thursday April 6th 2017 at 7pm to share achievements to date, and future plans. A buffet will be available.**

**To book please contact: Richard Lucas  
email [rmlukas@msn.com](mailto:rmlukas@msn.com)**

### The Weaver Gowy Catchment Partnership

hosted by Groundwork CLM, is committed to improving rivers for the benefit of the environment, local economy and the people.

Addressing pollution in the catchment through work on the Brindley Burnley and Rookery Brook is one of key priorities in our Action plan. Visit: [groundwork.org.uk](http://groundwork.org.uk)

In the Weaver Gowy catchment, agricultural and septic tank pollution are common problems. In the lower catchment near Runcorn and Ellesmere Port this changes to issues relating to industrial activity. The catchment is also known for its salt mines which supply salt for industrial use and for road gritting. Our Saltscape project, funded by the Heritage Lottery Fund, based in Northwich, is a great example of a project which engages the community and volunteers whilst helping to protect, enhance and celebrate the unique salt landscape of the Weaver Valley in mid-Cheshire. It is one of Cheshire's best kept secrets!

Follow what we are doing on twitter @salt\_scape