

July 2019



**A clear solution
for farmers**
CATCHMENT SENSITIVE FARMING

Arun & Western Rother catchment update

Working with farmers to improve water & air quality



Southern Water's Farm Capital Grant Scheme

Southern Water is now offering capital grants of up to £10,000 per holding per year, for infrastructure improvements and other initiatives, which reduce the risk of pesticides reaching surface waters and so help protect and improve water quality in the Western Rother and Upper Arun catchments.

Funding is available for a range of set items including sprayer or

applicator filling and washdown areas and associated roofing, biobeds and biofilters. Farmers can also suggest alternative ideas for reducing pesticide pollution risk (up to 50% of cost, as agreed).

To find out more, please contact catchmentschemes@southernwater.co.uk or call 01903 272247

Slug control incentives still available!

Southern Water is continuing to offer farmers currently using metaldehyde-based slug control the opportunity to substitute this for ferric phosphate-based control for the 2019-20 cropping year, offering a contribution of £1 per kg ferric phosphate pellets purchased. Free slug peller calibration and PA4s training is also available to those taking up this offer. Contact your local CSFO for more details.

Get in touch with your local Catchment Sensitive Farming Officers (CSFOs):

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Reflecting on our 'year of soils' campaign

Healthy, fertile soils are the foundation for farming and forestry but around a third of soils are degraded, affecting productivity and increasing erosion risk. Crop yields in the UK have plateaued and whilst it is possible to use agrochemicals to support yields this becomes an increasingly expensive and risky business as soil health declines. In the 25 Year Environment Plan, launched last year, the Government acknowledged the problem and sets out an ambition to improve soil health by getting all soils in England into sustainable management by 2030.

Over the last year, Catchment Sensitive Farming has focused on raising the profile of soil health as an important way to boost productivity whilst also delivering environmental benefits. We advised many of you directly and also arranged for many of you to receive specialist advice and soil testing – take a look at our case study below. We also delivered a series of soil-focused events; it was great to see so many of you there. Here's a summary of some of our key messages:

- Healthy soils are more productive, need fewer inputs, have better infiltration and reduce run-off, erosion and flood risk. They make crops more resistant to droughts, floods and pests. They also help protect the environment, reducing the flow of nutrients and pesticides into water and reducing the emission of gases into the atmosphere.
- Good levels of soil organic matter deliver important ecosystem services: boosting yields, storing carbon and reducing flood risk. Healthy soils can store more carbon, so help tackle climate change. But soil carbon can be lost through tillage, excessive use of pesticides and fertilisers, monocropping, over-grazing and removing crop residues.
- Soil biology delivers benefits. Worms increase the capacity of a soil to store air and water and a good earthworm population can increase yields by 25% - but a recent survey found that 40% of fields had poor earthworm diversity. Soil microbes produce glues which stick fine soil particles together, improving soil structure, and a healthy, diverse range of soil microbes can suppress crop diseases and promote crop growth. Improve soil biology by increasing organic matter and minimising tillage.
- Soil health is negatively affected by erosion, compaction and reduced organic matter. You can improve the health of your soils by including cover crops, leaving crop residue in the ground after harvest, employing effective crop rotation and rotational or mob grazing, as well as by reducing tillage and adding organic matter such as compost or manure.

Local livestock farmer benefits from specialist soils advice

Nick Bullen grazes sheep and cattle on permanent grassland in the river Mole catchment. This catchment suffers from a high level of nitrates in the groundwater and pesticides in the surface water.

Nick was interested in gaining a better understanding of his soils. CSF arranged for Nick to receive a specialist soil analysis visit, paid for by CSF. This visit allowed Nick to choose five fields to be analysed and provided him with accurate levels of P, K, Mg, organic matter and pH, as well as a report with recommendations on how to reach the appropriate index. Most importantly, analysing his soils enables Nick to adjust his inputs to ensure he is being as efficient as possible.

The results showed Nick that he has high levels of organic matter in his soils, which reflects the hard work he has put in to increase organic matter in his fields. Good levels of organic matter means that Nick will have a healthy earthworm population, recycling nutrients and maintaining good soil structure across his farm. The information Nick received from this specialist soil analysis visit has confirmed that he can reduce the amount of P, K and Mg fertilisers he uses, which benefits both his bottom line and the environment.

If you would like to receive bespoke, specialist advice, Catchment Sensitive Farming can arrange for a specialist to visit your farm and advise you on a range of topics, including soil husbandry, soil testing and nutrient management planning. This is fully funded by CSF. To find out more, get in touch with your local CSFO.

Tackling soil erosion in the Western Rother

Soil erosion is a significant issue in the Rother Valley. A range of factors are at play: the catchment lies predominantly on greensand, which is a very light sandy soil which is highly mobile and vulnerable to erosion during rainfall events and summer drought. Growing high risk crops like potatoes and salads also increases the risk of erosion.

Soil is arguably a farmer's most important asset and when soil is lost, so are nutrients and pesticides and yields are also affected. Soil erosion has been estimated to cost at least £88 per hectare per year, not including the cost of inputs, loss of crops and clean up. Taking action to reduce soil erosion also helps to reduce the risk of local flooding and reduces your impact on the environment.

Since September last year your local CSFOs have been working with the Arun and Rother Rivers Trust (ARRT) to develop guidance and provide support to landowners and farmers experiencing soil loss in the Western Rother. The project has funded the installation of filter socks, which can reduce sediment load entering the wider environment, and hosted an event in April on 'Reducing Sediment Loss in The Western Rother'.

Speaker Dr Robert Simmons from Cranfield University emphasised that a combination of measures is required to tackle sediment loss:

- **Agronomic measures** e.g. appropriate rotations, cover cropping, mulches
- **Soil management** e.g. reduced tillage, controlled traffic, increasing soil organic matter
- **Engineered structures** e.g. reduce slope length and steepness through use of buffer strips, bunds, filter socks, grassed waterways

Robert spoke of his experience implementing grassed waterways on asparagus fields as a means to intercept runoff and subsequently reduce the amount of sediment transportation to the wider environment. This is an 'end of pipe' solution which doesn't prevent soil erosion, therefore when addressing soil erosion the focus should always begin with improving infiltration of soil. Mitigation measures should therefore be supplementary in order to prevent sediment being lost into the wider environment.

David Miller, a farmer from Hampshire, spoke about increasing organic matter in his soils through cover cropping, which significantly helps to improve soil structure and therefore reduces the risk of erosion. The key to increasing organic matter in soils when using cover crops is having a diverse and abundant root system; lupins and beans are great for this.

After the presentations we visited Strood Farm to see the filter socks the project had funded. Filter socks are fairly versatile in their use. At Strood Farm, these have been placed in a ditch to filter sediment, reducing the amount of sediment ending up in the river. On another farm, filter socks will be placed in the wheel tracks of an asparagus field to help reduce the velocity of run off and filter sediment. There is ongoing research led by Cranfield University into how filter socks can potentially filter targeted components of runoff such as pesticides, which we hope to implement in the Western Rother.



For more information please take a look at the Arun & Western Streams Catchment Partnership blog page <http://www.arunwesternstreams.org.uk/blog>. If you would like to find out more about how you can reduce the risk of soil erosion, please get in touch with your local CSFO.

Could Conservation Agriculture help you improve your soils?

Conservation agriculture, developed in South America in the 1970s, could be a promising way to rejuvenate soils. It's based on three principles:

1. **Minimum soil disturbance and zero tillage** – replacing mechanical tillage with biological tillage by crop roots and soil fauna
2. **Permanent soil cover** – from crop residues, catch and cover crops and relay planting of main crops
3. **Cropping system diversity** – from rotations and intercropping

This approach can deliver a whole host of benefits: increased soil organic matter, soil porosity and soil biodiversity; improved water absorption and groundwater recharge, reducing run-off, erosion and pollution of watercourses; a reduced need for fertilisers and agrochemicals through increased availability of plant nutrients and control of crop pests and weeds; and fewer mechanical inputs and so reduced fuel costs and compaction risk. For farmers, this can translate into sustained or improved yields with reduced costs and increased profits.

Conservation agriculture is gaining traction around the world, with backing from the United Nations. Two Kent farmers have explored the potential of this approach for the UK, supported by Nuffield farming scholarships. Read Tom Sewell's report on no-till at <http://bit.ly/SewellNoTill> and Andrew Howard's report on companion cropping and intercropping at <http://bit.ly/HowardIntercropping>.

To find out more about conservation agriculture, visit www.conservation-agriculture.uk

If you missed **Groundswell No-Till Show** and would like more information on speakers and topics please get in touch.

Herbal leys for soil and livestock health

Herbal leys, traditionally used as a break crop in arable rotations, are another way you can improve your soils. More diverse mixes – incorporating up to 17 legume, herb and grass species – deliver the most benefits, including:



Image source: smallholder.co.uk

- **Soil health** – 5 year herbal leys deliver increased soil organic carbon, lower bulk density and greater earthworm populations. Including species with a range of rooting depths enables plants to access more nutrients and water, increases organic matter at different depths and feeds soil biology.
- **Nitrogen fixing** – where legumes (e.g. white clover, red clover, birdsfoot trefoil and sainfoin) make up a third of the mix, they can fix up to 250kg N/ha, completely cutting out the need for artificial N fertiliser.

- **Improved yields** – the overlapping growth habits and patterns of different varieties throughout the year can achieve up to a 50% increase in yield compared to a standard grass ley.
- **Improved drought tolerance** – deep rooting species (e.g. cocksfoot) can draw on water lower down the soil profile whilst other species (e.g. ryegrass) recover quickly after a drought.
- **Nutritional & medicinal benefits to livestock** – forage herbs like chicory, ribgrass and burnet provide micronutrients and minerals. Some species can also help to control parasites – sainfoin, birdsfoot trefoil and chicory act as anthelmintics – reducing supplementary feeding requirements and reliance on artificial wormers.
- **Wider environmental benefits** – diverse mixes provide a food source and habitat for crop pollinators, birds, mammals and beneficial invertebrates. Good soil structure increases water infiltration, reduces run-off, reduces soil erosion and assists in natural flood management.

Support for herbal leys is available in Countryside Stewardship, in option GS4 (legume and herb-rich swards).

If you're interested in herbal leys, consider joining the **Grass and Herbal Leys Farm Network** launched by ADAS, AHDB and Defra. It's free to join – find out more at <http://bit.ly/ADASHerbalLeysNetwork>

Countryside Productivity Small Grant Scheme Now Open!

The second round of the CPSG scheme opened on 9th July 2019, with a further £15 million of funding available until the **3rd September**. It supports investment for specific, off-the-shelf pieces of agricultural equipment intended to improve animal welfare, resource efficiency and/or nutrient management. Many items are available that could benefit water and air quality, including:

- Slurry application and management kit (e.g. trailing shoe slurry system with macerators, flow rate monitoring of slurry, hose reeler umbilical, trailed compartmented reeler, dribble bar, shallow injection, robotic slurry pusher / collector, robotic silage scraper)
- Soil / crop management equipment (e.g. direct drill 3m, grassland sward lifters, cover crop rollers 3m and 6m)
- Precision farming equipment (e.g. canopy reflectance sensor, chlorophyll meter, yield monitoring, pasture plate meter, variable rate controller for sprayers and fertiliser spreaders, GPS linked to auto steer and implement control)
- Monitoring equipment (e.g. portable ammonia analyser, portable carbon dioxide analyser, GPS light bar)

Grants of **£3,000-£12,000** are available, covering up to 40% eligible costs, with standard costs set for each item so there's no need to get competitive quotes. Visit <http://bit.ly/CountrysideProductivity> for details.

Have you heard about the Farming Advice Service?

Catchment Sensitive Farming isn't the only source of free, confidential advice for farmers – the Farming Advice Service (FAS) is also here to help, specialising in advice on cross compliance, greening, water protection and pesticide use. FAS produces a bi-monthly email newsletter which includes practical guidance, updates on upcoming legislative changes and handy reminders about key dates to help you comply with relevant regulations. Visit <http://bit.ly/FASnewsletters> to read back issues of FAS newsletters and sign up to receive them.

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Catchment Sensitive Farming is a successful partnership between Natural England, Defra and Environment Agency; working together with farmers and organisations in priority catchments across England to improve the quality of our water and air.

CSF provides free expert advice, training for farmers and grant support to enable farmers to take voluntary action to improve the environment and their farm business.

Since 2006, CSF has worked with nearly 20,000 farms and helped farmers take more than 133,000 positive actions to reduce pollution. 92% of the farmers CSF has worked with are satisfied with its one-to-one advice and by working together this has contributed to a reduction in pollution in our rivers.

In 2018, as part of Defra's Clean Air Strategy, the Government committed an additional £3m to CSF, focussing on working with the agricultural industry to improve air quality.

For more information search GOV.UK for Catchment Sensitive Farming.

How do we use your data?

Your data is only used by us so we can email, call, write or text you about our Catchment Sensitive Farming work. This will include advice, access to grants, events and campaigns.

You can change your communication preferences by emailing us on catchmentsensitivefarming@naturalengland.org.uk

Our Information Charter is at bit.ly/naturalenglandinfo
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Catchment Sensitive Farming (CSF) is delivered in partnership by Natural England, the Environment Agency and Defra.



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The European Agricultural Fund
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