



Newsletter

Winter 2021/22 (No.23)

*Twice a year, the Farming for a Better Climate newsletter keeps you up to date with some of our activities and work happening with the Soil Regenerative Agriculture Group. We share tips and ideas from other farmers that could help you **improve farm efficiency and profitability**, identify practical ways to work towards **net zero** and help to **reduce Scottish agriculture's carbon footprint**.*

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What's been happening?

With lockdown restrictions easing, the autumn and winter months saw us taking a welcome return to getting out on farm, in a socially distanced and careful manner.

Glasgow hosted the international climate change conference COP26 in November 2021. Working with NFU Scotland, Quality Meat Scotland (QMS) and SAC Consulting, we invited MPs, MSPs and local councillors on to farms across Scotland during September and October to show steps farmers are already taking to tackle climate change.

We have been speaking to farmers and recording video for our hugely popular #26days26ways social media campaign, hearing just one of the ways individuals are responding to the climate change challenge, catching up with some of the previous focus farmers and making new acquaintances on the way.

This newsletter outlines some of the activities within Farming for a Better Climate and the Soil Regenerative Agriculture Group, along with picking up on a few other bits and pieces that have been happening over the autumn and winter months along the way. **Read on to see what other farmers are doing to profitably tackle climate change whilst also benefiting both the environment and farm business.**



Politicians hearing first hand from Scottish farmers

On the run up to COP26, we wanted to make sure that our MSPs, MPs and local councillors were aware of some of the challenges faced by the agricultural sector, equipping the visitors with real examples about how farming is already rising to the challenge of climate change.

Working in partnership with QMS and NFU Scotland, we took over 500 decision makers out onto farms within their parliamentary regions to hear from local farmers about their activities, challenges and opportunities around low carbon farming.

This approach was especially welcomed by those decision makers in more urban constituencies, giving them a valuable insight into day to day farming activities.

Thanks are due both to the attendees, but importantly to the farmers who opened their doors and gave up their time to show folk around and answer questions. A huge thank you to John Brown at Gaintykehead, Lanarkshire, Kate and Ed Rowell at Hundleshope, Scottish Borders, Stephen and Sheena MacKenzie, Auchmore, Highland Region, Scott Shearlaw, High Garphar, Ayrshire, David and Nicola Barron, Nether Aden, Aberdeenshire, Steven Sandison, Millburn, Orkney, Willie Harper, Gryffe Wraes, Renfrewshire, Bill Gray, Presonhall, Lothians and Martin Kennedy, Lurgan Farm, Perthshire.

Due to the success of these events and interest from visitors about on-farm activities, we are hoping this is the start of some new relationships with further events and dialogue to follow. You can see more photos and comment on our and partners social media accounts using #farmingforthefuture.





Soil Regenerative Agriculture Group - update

Working together, five farmers interested in regenerative soil techniques are finding ways to adapt and adopt these practices into routine business. Here we take a look at some of the activities over the winter months at two of the farms; we will catch up with the other three in the summer newsletter. If you can't wait that long, you can read more about the group on our webpages at [Soil Regenerative Agriculture Group - Farming for a Better Climate](#), find us on Facebook or follow us on Twitter @SACFarm4Climate.

Terminating cover crops

One of areas Ross Mitchell at Castleton has been looking into is the various ways to terminate cover crops, writes Zach Reilly, Senior Consultant and Soil Regenerative Agriculture Group Facilitator.

Ross has set up an on-farm trial in several fields where some cover crops are grazed; some are flailed; and some are left to be sprayed off with glyphosate. Ross is also planning to use a crimper roller to terminate covers if the weather permits (-4°C or colder is required). The flailed cover crop (first photo right) had little surface residue remaining as the small particle size has allowed the biomass to break down quickly. However, it was noted that the roots of the cover crop are still intact. Ross is planning to leave the flailed areas to see if there is any regrowth before deciding if this area needs desiccated prior to sowing.

Several areas have been left untouched (second photo); this is to provide a comparison to the grazed and flailed areas. Ross plans to use glyphosate to terminate these areas, however, he is concerned that the high amount of biomass will cause nitrogen lock up in following crops if it has not broken down prior to sowing.

The cover crops have also provided significant grazing between grazing cereals. The third photo on the right shows what is left after grazing, with only straw from the previous crop left on the soil surface. Surprisingly, there is little manure left on the soil surface, instead this has been washed in or incorporated by worms. The soil felt a little wetter on the top, potentially due to some surface capping.

Ross dug soil pits in each of the three treatment areas to see if the grazing or flailing were showing any signs of soil compaction. Although there was not a large difference between each soil block, the grazed soil was more easily broken up and had a higher worm count, even though this area is in a heavier part of the field. There was little difference noted between the flailed and the intact cover crop. All three soil blocks had roots present to the full spade depth and were abundant in worms; there's more information, including photos of the soil blocks, on this and other activities in Ross's update for January 2022 at [Case Study: Ross Mitchell - Farming for a Better Climate](#).



Crop establishment methods at Backboath

Winter can be a quiet time for field work on an arable unit, but there are always jobs to be done, writes SAC Consultant Zach Reilly. Soil Regen group farmer Hugh Black at Backboath has looked at crop establishment methods following potatoes and has used his modified subsoiler drill to break up compaction and sow the subsequent crop of wheat. Hugh has been adapting this system for several years now and has added a third coulter behind each cultivation leg to reduce his row spacing. Using non-inversion tillage after potatoes can help to keep ground keepers on the soil surface to increase the destruction of tubers, preventing volunteer potatoes in future crops. The photo shows a field of wheat at Backboath established after potatoes; potatoes are visible on the soil surface. Read more about Hugh's experience with the modified subsoiler drill and establishing his winter oilseed rape over on our webpages in his December 2021 update [Case Study: Hugh Black - Backboath near Forfar - Farming for a Better Climate](#).



Could soil structure be holding back yields?

Although the soils are a little wet due to recent weather, Hugh has taken some time to investigate his soil structure in the fields planned for spring crops. Through better soil management, Hugh has seen a



large increase in the number of worms he is finding and is also noticing less compaction in his fields. The photos below highlight the difference between a trafficked area of the field and an area which has not been driven on. The left-hand block is angular and has a clear fracture line at a 5cm depth. Additionally, there were fewer worm holes in this block. On the right hand side, the soil from the field has a crumb structure and was easy to break apart.

There is more information on assessing your soils in the Valuing Your Soils brochure, available on the [Farming for a Better Climate](#) webpages.



Five principles of Regen Ag; new Practical Guides

Regenerative agriculture (also referred to as conservation agriculture or ecological farming), is an approach centred around improving and revitalising soil health. The Soil Regenerative Agriculture Group are focusing their work around the following widely accepted regen ag principles and we have produced five new practical guides covering each of the following headings:

- Minimise soil disturbance - help support a healthy soil food web.
- Maximise crop diversity - different crops bring different rooting depths and attributes, supporting a range of biodiversity both above and below ground.
- Provide constant soil cover - protect soils from wind and water erosion; reduces water loss.
- Keep a living root in the system - root exudates benefit microbial populations, supporting soil health.
- Integration of livestock - promoting species diversity from microbes to mammals and putting dung back into the system.

The key, and one of the questions the group is trying to answer, is how we can integrate these five principles into a profitable business in Scotland? Our new Practical Guides are available at [Soil Regenerative Agriculture Group - Farming for a Better Climate](#)

What have other farmers done?

Since our last newsletter, we've added several new farmer case studies in partnership with QMS and NFU Scotland. Read how finisher John Brown at Gaintykehead is embracing the circular economy, using products surplus to other industries; some of the work Davy Smith is doing at Cloffrickford Farm to support the farm business and work with his local community and how Steven Sandison and family at Millburn are reducing the carbon footprint of the beef herd. Case studies are available at [What Have Others Done? - Farming for a Better Climate](#)

You can take a look at our full list of Practical Guides and Case Studies at www.farmingforabetterclimate.org/download/. Follow us on Twitter @SACFarm4Climate and find us on Facebook.



Adapting to a changing climate

Farmers have always worked with the weather, but our changing climate adds another layer of complexity to deal with. Since Storm Arwen swept in in November, taking out approximately one million cubic metres of timber, at time of writing, it's been followed by Storms Barra, Malik and Corrie, further compounding the damage to buildings, forests, power and telecoms infrastructure, travel disruption, and also, sadly, loss of life.

Generic guidance messages such as conducting tree safety surveys to identify and prune/remove problem trees prior to storms occurring, still hold, and could reduce the risk of future damage. However, with climate change projections suggesting an increase in 'extreme weather event intensity', alongside milder and wetter winters and hotter and drier summers, it might pay to consider if there are targeted actions we can all take to be better prepared, whatever the weather throws at us.



There is more information and ideas on our Adaptation to Climate Change pages at www.farmingforabetterclimate.org/adapting-to-climate-change. If you have made changes based on extreme weather events and would be happy to tell other farmers and land managers what you did and how you did it, we would love to hear from you (contact details on back page). Scotland's Farm Advisory Service (FAS) webpages at www.fas.scot have more information around the impact of Storm Arwen on our woodlands and links to Scottish Forestry guidance.

New network to share practical ideas

December saw the exciting announcement of the Agriculture, Biodiversity and Climate Change Network (ABCCN).

The Network aims to showcase how other farmers and crofters are taking greater action around climate change and biodiversity by integrating practical measures into routine farm activities. It's a partnership approach from QMS, Soil Association Scotland, SAC Consulting and NFU Scotland, and the most exciting bit is that we are hosting it on the Farming for a Better Climate website.

Once up and running, farmers and crofters will be able to share a wide range of information, including videos and photos, to detail the measures they have undertaken and the results, sharing ideas with others. We will be announcing more detail and how you can get involved via our and partners social media channels and hope to feature it in the summer newsletter. You can read the Scottish Government announcement at [Showcasing agricultural climate action - gov.scot \(www.gov.scot\)](http://www.gov.scot)



What were the key outcomes from COP26?

A range of pledges have been made as a result of COP26, but we are yet to see what impact these will have on day-to-day farming operations. Two notable agreements were the Global Methane Pledge, to reduce methane emissions at least 30% by 2030 (from 2020 levels) and the inclusion of the term *agroecology* in the full Glasgow Climate Pact text, written in to improve soil health & sequestration. During COP26, Scotland became the latest nation to sign up to the 4 per 1000 initiative, which aims to encourage carbon storage in agricultural soils and reduce the global carbon footprint, yet again demonstrating the important role farm soil can play in our fight against climate change (see below). If you would like to read more about the outcomes from COP26, Scotlands Farm Advisory Service (FAS) pages provide a good starting point at [COP26: 2021 United Nations Climate Change Conference | Helping farmers in Scotland | Farm Advisory Service \(fas.scot\)](#)



Scotland signs up to the 4 per 1000 initiative

Scotland demonstrated its commitment to farm soils during COP26, becoming the latest signatory to the 4 per 1000 initiative. Globally, soils are estimated to contain 2 to 3 times more carbon than the atmosphere. The 4 per 1000 Initiative proposes that if the carbon level in the first 30-40 cm of soil is increased by 0.4%, or 4% per year, the annual increase of carbon dioxide in the atmosphere could be significantly reduced.



You can read more about the 4 per 1000 initiative at www.4p1000.org; follow the progress of our own Soil Regenerative Agriculture Group at [Soil Regenerative Agriculture Group - Farming for a Better Climate](#) or keep up with developments through our social media channels.

Carbon audit puts spotlight on business efficiency

Carbon auditing is an increasingly important management tool for the farm business; for those that have carried out regular carbon audits over the past few years the benefits of doing so will be clear, writes SAC Consultant Séamus Murphy.

A carbon audit shows your business in a new light and can highlight areas where money and carbon can be saved that may not be obvious without it. There are plenty these 'win-win' scenarios where changes can be made to increase profitability and reduce carbon emissions although they are just one of the reasons why a carbon audit is beneficial.

Going forward, carbon audits could be a requirement for all farms, so carrying one out now and getting a good understanding of what's involved could put your farm ahead of the game. It could be the case that new payment schemes may determine a payment level off the back of where your farm currently is in terms of numerous different metrics, meaning that farm businesses that have taken positive action in terms of carbon emission reductions could receive a higher payment. This possibility makes carrying out a carbon footprint now and acting on it, a long-term investment in the business.

Another area where the carbon audit could be of great benefit in the future is when it comes to obtaining finance from banks. Financial institutions are looking more closely at the types of companies that they support in terms of environmental credentials. This is beginning to slowly make its way into agriculture and is a definite prospect for the future. Carbon audits can help you tell the right story and reap the benefit of the work you have done.

Carbon footprinting is not going to go away, and whilst one carbon audit is good, the real benefit is found in annual audits which can tell a longer story of your farm's journey. The first step of any journey is to make a start. Funding to support a carbon audit is available at [Carbon audits | Helping farmers in Scotland |](#)



Farmers star in #26days26ways social media campaign

On the run up to COP26, we wanted to highlight the range of things farmers across Scotland are already doing to combat climate change and help Scotland towards its net zero ambitions by 2045. So 26 days from the start of COP26, we featured a short, daily video from a farmer in Scotland, speaking about one of the ways they are responding to the climate challenge and have adopted climate friendly practices.

We got a great response, and would like to say a big thank you to the following farmers who took part: Stephen MacKenzie at Auchmore, Ross Paton at Torr, Hugh Black at Backboath, John Brown at Gaintykehead, Scott Shearlaw at High Garphar, Ross Mitchell at Castleton, Sam Parsons at Balkaskie Estate, Jimmy Ireland at Feoch, Stewart Wilson at Coldcothill, John Kerr at Woodhead, David Barron at Nether Aden (pictured, top), , Rebecca McBain at Stoneyhill, Hugh Greirson at Newmiln, Neil Butler at Stewart Tower Dairy (pictured, middle), Iain Graham at Killochires Fold, Bill Gray at Preston Hall Farms, George Baikie at SRUC Farms (pictured, bottom) and Willie Harper at Gryffe Wraes.

All the videos are at [Farming For a Better Climate \(@SACFarm4Climate\) / Twitter](#) and [Farming for a Better Climate - Home | Facebook](#) Our last video was a short summary featuring a line from everyone's contribution – see [COP26 and #26days26ways - Farming for a Better Climate](#) or you can view them on our webpage at [COP26 and #26days26ways - Farming for a Better Climate](#)



COP26 brings Californian visitors

Part of the COP26 Californian delegation in Glasgow in November were really keen to get a look around a farm whilst they were in Scotland. We were only too happy to help facilitate this for Karen Ross California Secretary of Food & Agriculture and Lianne Randolph, Chair of the California Air Resources Board and their team.

Following a few phone calls and diary re-shuffles, SAC Consulting's Robert Ramsay and farmer Willie Harper at Gryffe Wraes Farm near Bridge of Weir in Renfrewshire were very happy to help us.

Willie and daughter Emma did an excellent job showing the visitors round their farm, highlighting some of the challenges and opportunities brought as part of a changing climate. With pressure on water resources in California, and water-hungry nut, fruit and livestock sectors, its worth noting how envious the visitors were of the green landscape and plentiful grass growth at Gryffe Wraes (alongside marveling at Scotland's annual rainfall statistics).



Continuing the journey towards net zero

Farming for a Better Climate was invited by NFU Scotland to attend a meeting at Woodhead near Newmilns in Ayrshire with Cabinet Secretary Mairi Gougeon, MSP Willie Coffey and local farmers.

During the visit, Chair of NFU Scotland's Kilmarnock Branch, John Kerr, spoke about the steps the family business has taken to reduce emissions during and since Woodhead's time as a Climate Change Focus



Farm from 2014 to 2018. Most recently, John has focussed on regenerative steps to make the most from grass and its carbon sequestering properties, using a dribble bar for slurry applications and more efficient milk cooling systems, along with other tweaks to routine operations.

Speaking to NFU Scotland, John said: "Whilst all eyes have been on the COP26 climate change conference taking place in the city of Glasgow, we were delighted to meet the Cabinet Minister and show first-hand how Ayrshire's dairy and livestock farmers are taking action on climate change". John noted how he is minimising his impact on the environment, sequestering carbon in pastures whilst continuing to produce nutritious food and

underpinning the local economy. It is estimated that John and Anne reduced their farm carbon footprint by around 6% and saved £63,000, with no loss of production during their time as focus farmers with Farming for a Better Climate initiative. The Kerrs received a grant through the pilot Sustainable Agricultural Grant Scheme for a Dribble Bar slurry spreading attachment. Pictured (L to R) Anne Kerr, Cabinet Secretary Mairi Gougeon, John Kerr and MSP Willie Coffey.

The climate challenge; benefitting beef and business?

With a focus on the environmental impact of beef production, SAC Senior Agricultural Consultant, Robert Ramsay took a look at how we can start to shift the balance.

The word efficiency comes up a lot with regards to the environment, writes Robert. However, farmers should be mindful that most of the on-farm climate change mitigation options they have at their disposal will also have a positive impact on their pockets. When COP26 was running, farmers were preparing for and heading into winter, the most expensive time of year for most. It is therefore important both in terms of efficiency and profitability to lighten the load and avoid carrying any passengers through the winter. A simple pregnancy diagnosis of suckler cows will cost a few pounds, provide excellent management information which could help reduce environmental impact and save you a lot of money. Any empty cows found in the autumn should be culled out of the system, releasing their capital value and avoiding the burden of their wintering costs. This year, silage and straw stocks are limited in some parts of the country, so it is even more important to remove passengers from the system. While the environmental impact of methane emissions from cattle is argued by many, no one can argue that an empty cow is an efficient one. The Working Towards Net Zero guides are available at www.farmingforabetterclimate.org



Further information and contact details

You can read more about the Soil Regenerative Agriculture Group, previous work with the Climate Change Focus Farms and download practical guides and case studies at www.farmingforabetterclimate.org

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Other useful links and information

At the time of writing, the ongoing COVID19 pandemic easing, but still with us. Don't be afraid to make contact with other organisations that could help you; sharing your experience and information could also help others too. A few good starting places include:

- [FAS website](http://fas.scot) - From emergency planning to keeping children safe on farm, the FAS webpages host a range of practical advice with more being added on a daily basis. Phone 0300 323 0161 or email advice@fas.scot
- [NFU Scotland](http://nfu.scot) - Host of useful pages on COVID19 ranging from Employment opportunities on farms to Frequently Asked Questions.
- [RSABI](http://rsabi.org.uk) - Providing emotional, practical and financial support to individuals and their families across the agricultural sector including farming and crofting. Number of useful resources on their pages (including the [FarmWell](#) document with host of useful contacts), plus a support helpline on 0300 111 4166.

Thank you for reading the newsletter.

To be notified of future newsletters, or to suggest topics that you would like to learn more about, email climatechange@sac.co.uk. We will only email you occasionally and your email details won't be shared with anyone else.

Keep up to date with the project via Twitter [@SACfarm4climate](https://twitter.com/SACfarm4climate) or find us on [Facebook](#).

Farming for a Better Climate (FFBC) is funded by Scottish Government and delivered by SAC Consulting.
Some photos in this publication were taken pre-COVID19 and social distancing requirements.