



FARMING WITH NATURE AND CLIMATE

TWO CASE STUDIES



INTRODUCTION

During 2022, WWF UK visited a number of farms which are working hard to implement positive measures for climate and nature, such as regenerative practices. This included two farms in Scotland, Littleton Farm in South Ayrshire and Peelham Farm in Berwickshire. We spoke to the farmers about how they farm with climate and nature in mind while running successful businesses.

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Farmers Heather and Philip Close on Littleton Farm.

Littleton Farm: Heather Close, and her father Philip, farm at Littleton Farm in South Ayrshire, marketing their rural business as Balsar Glen. Originally new entrants, the family were inspired after reading about the environmental, nutritional and economic benefits of rearing grass-fed cattle. The farm is now home to a growing suckler herd. The herd currently consists of 46 cows and followers, who live outdoors all year round feeding themselves from the farm's diverse habitat of wildflower-rich meadows, hedgerows and trees. Heather and Philip haven't used fertiliser since 2018, and the cows are 100% grass-fed. They move the cows to fresh pasture regularly, mimicking how wild herds would move when avoiding predators. In doing so they help improve soil health and support and restore ecosystem processes. You can find out more about Balsar Glen via www.balsarglen.com.



From left: Farmers Chris and Denise Walton, with son Angus

Peelham Farm: Denise Walton, and her family, farm at Peelham Farm near Berwickshire. They have transformed the land they manage, never using chemical inputs and moving away from the intensive systems of previous owners. Instead, they have used regenerative methods to become organic and pasture for life certified¹. They have worked to allow nature to thrive by developing a management system that increases biodiversity. Find out more about Peelham Farm via www.peelham.co.uk.

¹ Pasture for Life is a certification scheme for farmers farming in a regenerative way, including measures such as crop diversity, connections to nature, soil health and advocacy: Find out more here: www.pastureforlife.org

Agroecological and regenerative practices are ultimately about creating agricultural systems that rely on healthy ecosystems and not chemical processes (such as artificial fertilisers and pesticides). Regenerative agriculture focuses on improving ecosystem health and resilience by reducing the use of energy and chemical inputs, particularly focusing on soil health. Agroecology has a slightly broader frame to boost the resilience and the wider ecological, socio-economic and cultural sustainability of farming systems, through enhancing knowledge, values, resilience and governance.



**REGENERATIVE FARMING
BRINGS SO MANY
BENEFITS FOR ANIMALS,
NATURE AND THE CLIMATE
WITH HEALTHY SOILS,
HAPPY COWS, NATURE
THRIVING, AND WHERE
GRASS REALLY IS GREENER
ON THE OTHER SIDE.**



DRONE SHOTS OF ABERDEEN ANGUS AND HEREFORD CATTLE GRAZING IN THEIR AFTERNOON Paddock ON LITTLETON FARM.

GREENER ON THE OTHER SIDE

One common feature of regenerative agriculture is rotational grazing with short duration grazing and long rest periods, sometimes referred to as mob grazing.

This practice improves soil health throughout the farm, which ultimately cycles more carbon through the soil and improves the overall health of both livestock and ecosystems.



TRADITIONAL HEREFORD COWS GRAZING AT LITTLETON FARM

We visited **Littleton Farm** during calving season, at that time The Closes split the herd into a few mobs. There is a group of expectant cows, aka the ‘maternity ward’, and a group of cows with calves younger than two weeks old, aka the ‘nursery’. These groups are strip grazed (no back fence) and given fresh pasture daily. The remainder of the herd, are moved on to new pasture twice a day.



AT LITTLETON FARM, HEATHER CHECKS ON THE CATTLE TO SEE HOW CLOSE TO CALVING THEY ARE. SOME BULLS ARE IN WITH THE PREGNANT COWS TO REDUCE THE NUMBER OF GRAZING GROUPS.

The short grazing duration and long recovery periods of mob-grazing mean that young plant shoots aren’t stunted by early grazing – the cows are moved off before that’s a possibility.

THE LONG RECOVERY PERIODS ALLOW PLANTS TO FLOURISH. HEALTHY PLANTS SEND OUT SUGARY DEPOSITS THROUGH THEIR ROOTS WHICH FEED THE SOIL BIOLOGY AND HELP FACILITATE NUTRIENT CYCLING.

As at least thirty days is left between grazing most parasite cycles are broken – the exception being liver fluke. This results in healthier cattle and a booming insect population.

Cow dung that does not contain dewormer residue is a great host for dung beetles and many other insects. These in turn feed birds and other wildlife.

At Littleton Farm, Heather uses electric fencing to move her cattle twice a day to new pasture and rests the paddocks for between 30 days and 12 months.



DURING CALVING HEATHER RAISES THE ELECTRIC FENCE TO ITS HIGHEST LEVEL SO THE CALVES CAN GET UNDER IT EASILY AND ROAM FREELY. THIS FIELD WAS LAST GRAZED 10 MONTHS AGO.



AT LITTLETON FARM, HEATHER COLLECTS THE POLES FOR THE ELECTRIC FENCING AS PART OF THE MOB GRAZING PROCESS.



PHILIP AT LITTLETON FARM PUTS UP POLES TO KEEP THE CATTLE IN SMALL PADDOCKS



CALVES RUN UNDER THE FENCE AND THE HEREFORD HEIFER (MOSTLY) STAYS WITHIN THE Paddock.



ELECTRIC FENCING AT PEELHAM FARM.

Similarly, at Peelham Farm, fencing is used to keep the cows in their paddock and is rotated every three days.

AFTER THE COWS HAVE FINISHED EATING THE GRASS, IT IS THEN SET ASIDE FOR BETWEEN 30 DAYS AND TWO YEARS FOR THE SOIL TO RECOVER AND DEVELOP A HEALTHY ROOT STRUCTURE, AND TO ACHIEVE MAXIMUM CROP DIVERSITY.

The cows eat fresh grass leys for 3 days before moving to new neighbouring pasture. They live outside all year round and calve outside too. The bulls are put into separate roomy paddocks for up to 12 weeks to get “match fit” for the mating season. This practice allows for efficient resource use, minimising the number of inputs and reducing stress on animals.

NATURAL CARBON CAPTURE: TREES AND HEDGEROWS

AT PEELHAM FARM, ABERDEEN ANGUS
COWS PEER OVER THE RECENTLY
PLANTED THICKET HEDGE.





AT LITTLETON FARM, A SMALL GROUP OF ABERDEEN ANGUS CATTLE GRAZE THIS WOODLAND FOR THE FIRST TIME.

Introducing natural carbon capture to farmlands can bring multiple benefits for livestock and the environment – as well as helping to reduce emissions by soaking up carbon, trees and hedgerows provide shelter for livestock, improve water drainage and recycling, and provide habitats for wildlife like bird and insect species. All this adds to the overall biodiversity of the farm.

Agroforestry also provides additional benefits for nature and the environment, and, helps to keep livestock healthy and happy. In agroforestry systems, cows are even provided with an additional and nutritious food source. Tree hay has been fed to cattle for hundreds of years as it contains lots of minerals in the leaves and different tannins. As well as a food source, at Littleton Farm, the trees also provide shelter and scratch posts and shade when the sun is out for the Aberdeen Angus and Hereford cattle. This practice is sometimes known as agroforestry or, when integrated in fields, referred to as silvopasture.

HAPPY COWS, HEALTHY SOIL

An important principle of regenerative agriculture is to integrate livestock – the cattle spend all their time outside in the paddocks. They never go inside.

They eat pasture on a rotational cycle, which in turn encourages new plant growth, stimulating the plants to pump more carbon into the soil. As a result of close contact, the farmers build an amazing relationship with their cattle.



ABERDEEN ANGUS COWS GRAZE ON DIVERSE PERMANENT PASTURE.



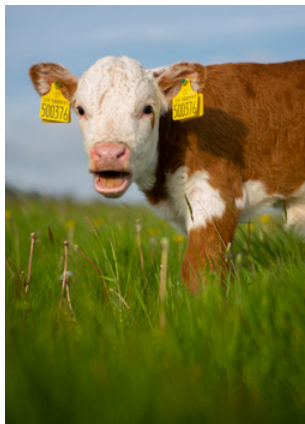
AT LITTLETON FARM, HEATHER CHECKS ON AN ABERDEEN ANGUS CALF.



AT PEELHAM FARM, ANGUS CHECKS ON THE HEALTH OF HIS CATTLE DAILY.



MELLOW AND MUNRO ARE NEWLY BORN HEREFORD CALVES AT LITTLETON FARM.



Mellow and Munro live on a diet of diverse and nutrient grasses on Littleton Farm. They benefit from spending their life outside, rotating into new pastures regularly. Happy cows make for healthy cows and soils, and rich habitats on the farm. This can help the soil capture or retain carbon, which can help to reduce overall emissions of the farm.

HAPPY COWS MAKE FOR HEALTHY COWS AND SOILS, AND RICH HABITATS ON THE FARM.



REGENERATIVE FARMER DENISE WALTON, PEELHAM FARM, HOLDING A "SOD" OF GRASS.



DENISE INSPECTS THE SOIL AND ROOT STRUCTURES.

This sod on Peelham Farm shows the grass diversity, healthy soil and root structures. The sod is teeming with life from different grasses, dandelions, clovers, slugs, bugs, worms and roots. The health of the soil is vital to the regenerative agriculture story. One teaspoon of soil contains more living organisms than there are people in the world. Without this biological diversity there would be no terrestrial life on earth.

The soil is healthy and friable, meaning it has a crumbly texture ideal for the underground activity that is the foundation of success with most crops and grasses. The health of the soil is vital to the regenerative agriculture story.

THE HEALTH OF THE SOIL IS VITAL TO THE REGENERATIVE AGRICULTURE STORY.

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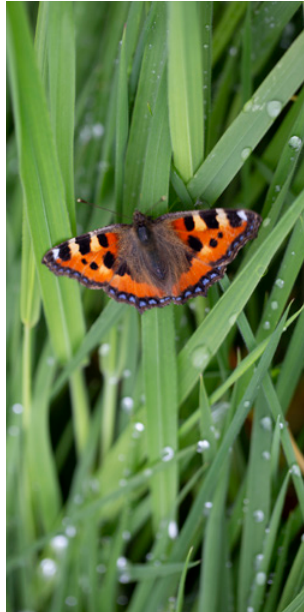
SHIELD BUGS, SPIDERS AND BUTTERFLIES
ON PLANTS AND GRASSES ON LITTLETON
FARM.

THE PERFECT CYCLE FOR NATURE



An important principle of regenerative agriculture is to encourage as much biodiversity as possible on the farm.

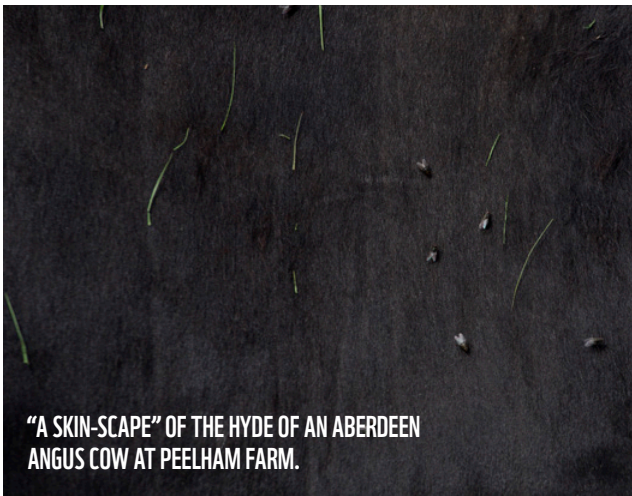
The biggest opportunity to enhance biodiversity is to increase the quality and amount of edge habitat. This is land given over to uncropped areas such as field margins, field corners and buffer zones. These contribute to reversing climate change by rebuilding soil organic matter.



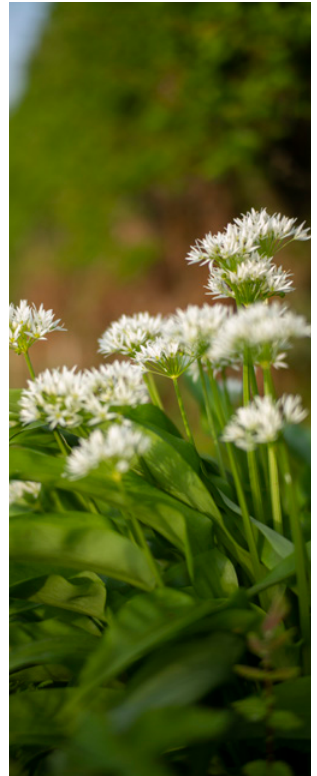
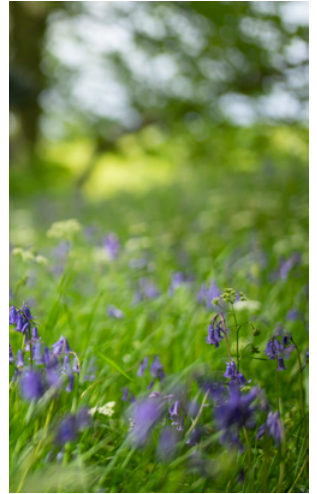


FLOWERS BLOOMING IN THE DIVERSE PASTURES, HEDGES AND EDGES OF LITTLETON FARM.

This intimate close-up shows the cycling of nature with flies feeding off the proteins in the cows hyde, which in turn will provide food for swallows.



“A SKIN-SCAPE” OF THE HYDE OF AN ABERDEEN ANGUS COW AT PEELHAM FARM.





CROP DIVERSITY

Crop diversity is a fundamental principle of regenerative agriculture. It helps to enrich the soil, protects the water and increases biodiversity and nutrition. Increasing the range of grasses used for the pasture for cattle also decreases pest and disease pressure, which in turns means farmers do not need to give cattle dewormers or antibiotics.



REGENERATIVE FARMER ANGUS WALTON, FROM PEELHAM FARM, CHECKS THE PASTURE FOR MAXIMUM DIVERSITY.



AN OPPORTUNITY FOR CHANGE

Three quarters of Scotland's land area is farmland. The way we currently use this land to produce food has a significant impact on nature and the climate. Members of the Scottish Parliament will soon have opportunity to change this, through the forthcoming Agriculture Bill. Scotland needs a system that supports more farmers and crofters to adopt regenerative farming practices on their land, like Littleton and Peelham Farm.

DENISE LOOKS OUT OVER PEELHAM FARM WITH HER DOG.

To put the urgency of action into context, almost a fifth of Scotland's emissions come from agriculture and reduction trends are not where they need to be.

Many practices are also causing pollution and severely depleting wildlife. Until this year, the sector's emissions had remained static for over a decade and last year a report² from WWF Scotland showed that policies proposed for agriculture would get us less than halfway to where we need to be for Scotland to remain on track to reach net zero. We now have 10 years to reduce emissions by 24% (by 2032) to meet targets, and that will require transformative action.

And it's not just about the future. Our changing climate is already impacting Scottish farming right now. Research from WWF found that extreme weather in 2017 contributed to losses of up to £161 million³ for Scotland's farmers. With the recent record-breaking temperatures, along with water scarcity and drought warnings, it is clear that the sector is having to play catch-up to the changing climate, rather than taking proactive measures to drive down emissions.

This all shows that Scotland desperately needs a new and more ambitious system to support farming. While we want to maintain the amount of funding Scottish agriculture receives, we believe this could be directed in a fairer way that supports sustainable food production while protecting and restoring nature, and reducing emissions.

With this new legislation comes a once-in-a-lifetime opportunity to reframe how the £500 million of farm subsidies each year is spent.



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² 'Reaching Net Zero in Scotland – Emissions Reductions in Agriculture' – (Ricardo, October 2022)

³ Figure from 'The Economic Impact of Extreme Weather on Scottish Agriculture' (EcoSulis, February 2019)

This funding currently comes with few strings attached, benefits the most agriculturally productive and intensely farmed areas, and in some cases supports damage to the environment and nature. Meanwhile, those who are farming in a nature and climate-friendly way already, aren't being rewarded or supported adequately to continue. This is why WWF Scotland are supporting Scottish Environment LINK's '[Farm for Scotland's Future](#)'⁴ campaign calling on the Scottish Government to use its forthcoming Agriculture Bill to develop a rural support system that works for climate, nature, and people.

Changing the funding system is just one part of the puzzle, however, and to ensure uptake of new and existing measures, there needs to be an urgent upscaling and realignment of the farm advisory service with a fast-track workstream for knowledge and skills. These actions would help provide the support and outreach needed to help farmers understand how to transition to more nature and climate-friendly farming outcomes on their land.

We also agree with the Just Transition Commission's calls⁵ for an ambitious farm-payment scheme and would like to see a proposed Just Transition Plan for Agriculture brought forward before the introduction of legislation. This would give businesses and communities the guidance they need to invest in their future and receive the support necessary for the transition to regenerative farming systems while the Scottish Government frames how future support will guarantee reduced emissions, restore nature, and ensure that benefits are more fairly shared.



**ALMOST A FIFTH
OF SCOTLAND'S
EMISSIONS COME
FROM AGRICULTURE**


4 Find out more about the campaign at: www.farmforscotlandsfuture.scot

5 'Making the Future – Initial Report of the 2nd Just Transition Commission' (July 2022)

Scotland has the opportunity to lead the way by creating a system that helps achieve our climate ambitions, as well as for people and nature. That is why the Scottish Government must make sure that the forthcoming Agriculture Bill is fit for the future. By using a greater share of public money to support nature and climate-friendly farming practices, we can help biodiversity thrive, lock in carbon and assist climate adaptation. Alongside investment and action in knowledge transfer, advice, and skills development, more opportunities will be created for resilient rural businesses and communities.

Unless we take seriously the pressures that land, nature, and climate are facing now, we will exacerbate problems for future generations of land managers by locking-in increasing problems from pollution and the decline of nature. And without urgent action we will fail to deliver a Just Transition for Scottish agriculture.

**BY USING A
GREATER SHARE OF
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SUPPORT NATURE
AND CLIMATE-
FRIENDLY FARMING
PRACTICES, WE CAN
HELP BIODIVERSITY
THRIVE, LOCK
IN CARBON AND
ASSIST CLIMATE
ADAPTATION**

An aerial drone photograph of a farm. A herd of dark-colored cows is gathered in a triangular area formed by green electric fencing. A blue tractor is parked on a dirt path to the left of the herd. The surrounding area is green grass with some brown patches. The text is overlaid on the left side of the image.

DRONE IMAGE OF ABERDEEN
ANGUS AND LIVING COWS MOVING
PADDOCKS ON THE REGENERATIVE
FARM AT PEELHAM FARM,
BERWICKSHIRE.

**WITHOUT URGENT
ACTION WE WILL
FAIL TO DELIVER A
JUST TRANSITION
FOR SCOTTISH
AGRICULTURE**

WWF Scotland
The Tun
4 Jackson's Entry
Holyrood Road
Edinburgh
EH8 8PJ
0131 659 9100

wwfscotland.org.uk
@WWFScotland

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