A clear solution for farmers

CATCHMENT SENSITIVE FARMING

Cinderbarrow Farm – Ecosystem System Services and Catchment Sensitive Farming

Kent Catchment (42)
CSFO: John Osborne

Cinderbarrow Farm is a mixed farm that produces milk from a 120 pedigree Jersey herd, runs a 1000 head flock of mule ewes and has a small herd of pedigree Belted Galloway cattle. In addition to the food produced on the farm, it also provides a number of valuable 'ecosystem services', including:

- Flood alleviation
- Conservation grazing of high value grasslands and ancient woodland, which in turn provides habitat for the rare high brown fritillary butterfly
- Protecting water that flows into Morecambe Bay, an iconic estuary supporting important shell fisheries
- Carbon storage in the peaty mosslands that form the lowest ground on the farm
- Recreational opportunities for walkers and other countryside users
- Conserving genetic resources – native cattle and six pure bred Dales ponies

The Farm

Cinderbarrow Farm is located on the edge of the village of Levens, south of Kendal in Cumbria and is farmed by David Willison and his wife.

On the main farm, which is tenanted from the National Trust, 49 ha of land is located on the low lying mosslands. This land was formerly cut for peat and is now over a metre lower than it once was. A further 100 ha lies over limestone and this is mainly grazed with 25 acres of arable. Wheat or barley is grown and it is all crimped and fed to the dairy cattle. The remainder of the tenancy comprises 81 ha of limestone scar which is a Site of Special Scientific Interest (SSSI).

Additional land at Windermere is extensively grazed semi-improved grassland, with Mr Willison keeping 500 ewes here as well as grazing some of the Jersey heifers. He also produces silage from two of the fields.

The main farm lies within the Kent and Leven Priority Catchment, which is designated because of issues with phosphate, sediment and faecal indicator organisms. The latter is of particular concern because of the impact it is having on the Morecambe Bay shell fisheries and bathing water status.

Farm Enterprises

Mr Willison used to milk 100 Holstein cattle but switched to Jerseys after securing a contract with Dale Farm Dairies in Kendal where his contract was partly constituent based, thus

Mr Willison showing a group of farmers around Cinderbarrow Farm

favouring a breed that produced milk with a higher butterfat content.

"The Jerseys don't cause as much poaching as the Holsteins do as they are so much lighter. That's important here because of the high rainfall and the peaty soil on the mosslands. They are also very good converters of grass which has reduced my concentrate bill significantly. From the welfare perspective, they are easier to get in calf, they have fewer foot problems and they live longer. I'm really pleased with them," Mr Willison comments.

The Belted Galloway herd comprises 15 cows plus followers and a pedigree bull. It is a spring calving herd and they winter out. The Dales ponies are kept close to the farm and young stock are sold from time to time. Store lambs are sold off the flock of mules and Mr Willison lambs in April.

Ecosystem Services

The natural environment provides everyone with clean water, food and fuel, it can help to reduce flood risk, it stores carbon to help combat climate change and it supports biodiversity. It also provides a beautiful landscape enjoyed by people taking part in a wide range of recreational activities. The different services outlined above are referred to as 'ecosystem services' and they all benefit people as well as nature.

Cinderbarrow Farm is an excellent example of a farm that produces high quality food but also provides a range of other services. In relation to some of the benefits provided, Mr Willison is in an agri-environment scheme and the payments from this contribute toward the cost of both the actual work undertaken and the opportunity cost of not producing as much food from this land.

Flood Alleviation

The mosslands are drained by a series of small ditches that feed into main drains that are managed by the Environment Agency (EA). They have a number of pumps that ensure that excess water in these drains are pumped back out to sea so that the grassland does not remain under water for too long. For many years, the EA also managed the feeder ditches by dredging and clearing of vegetation but in recent years, this has ceased so now Mr Willison has taken on this task for which he receives no payment.

Flooded fields on the mosslands at Cinderbarrow Farm

During periods of heavy rainfall, the mosslands flood and this holds some water back which would otherwise rush down and cause damage to the estuary and neighbouring environs. For many years, the mosslands were ploughed and wheat and barley grown there. Mr Willison has reverted this land to extensive grazing and so the land is able to lie wetter than it once did, thus functioning more effectively to alleviate flood risk.

Carbon Storage

Centuries ago, before any peat cutting took place, the pristine mosslands would have functioned as very effective carbon sinks. As over a metre of peat was removed from this area over many years, the capacity of this land to store carbon has reduced. This was further exacerbated when the land was ploughed to grow arable crops as each time this carbon rich peaty soil was cultivated, greenhouse gases such as nitrous oxide were released. As peat cutting has now ceased, there is now an opportunity for the peat to re-form over a long period of time and this process will facilitate additional carbon sequestration.

Improved water quality

The main drains that run through the mosslands on Cinderbarrow Farm feed into the River Kent which flows out to Morecambe Bay. As referred to earlier, Morecambe Bay has been identified as a site that is failing under the Shellfisheries and the Bathing Waters Directive, largely due to contamination by faecal indicator organisms.

Mr Willison decided to take advantage of a farm visit from Catchment Sensitive Farming and a Whole Farm Appraisal was undertaken. One of the risks identified during the appraisal was that of the cattle entering the ditches and streams that run across the mosslands to drink. Mr Willison subsequently submitted an application to the CSF Capital Grants Scheme for 3,000 metres

of fencing to prevent cattle from entering the water. His application was successful and as a result, almost 3 kilometres of water course will be protected from faecal contamination and the water quality of the tributaries of the River Kent will improve considerably.

Mr Willison also opted to have a nutrient management plan completed for the farm, which he found very useful.

"The soil analysis did show up a low pH on some of the fields so we have applied some lime to tackle this. I was pleased to see that the potash and phosphate levels have held up across most of the farm as a result of the slurry which is applied by a contractor using an umbilical system. This means that I won't have to buy in expensive compound fertiliser," Mr Willison added.

Nature Conservation

The limestone grassland on land at Heslington Barrows forms part of the Scout and Cunswick SSSI. This important site contains limestone pavement and Mr Willison grazes his small herd of Belted Galloway cattle there.

"Grazing the site with cattle rather than the sheep that were up there before has definitely benefitted the land. We're seeing a lot more flowering plants now, especially orchids."

Mr Willison also grazes the neighbouring ancient woodland site. A few Belted Galloway cattle graze it lightly in early summer and then the Dales ponies graze the site in autumn. This grazing regime ensures that the grass species do not become too vigorous and it also opens up the sward so that more desirable flowering plants can become established in the ground layer of the woodland. Butterfly Conservation are particularly interested in the woodland because of its importance as a known site for the high brown fritillary butterfly which is restricted to just two areas in England.

Wader habitat: tussocky wet grassland on the mosslands

The mosslands, as well as serving as flood meadows and a carbon sink are also important for breeding waders such as curlew, lapwing and snipe. In the spring, the area is home to many pairs of these declining species which flock to the area because of the open landscape that is free of predators and the wet ground which allows for easy feeding.

By grazing the meadows with cattle, Mr Willison is creating ideal breeding conditions for these birds because of the tussocky vegetation, the micro-topography caused by light poaching and the plentiful dung which attracts invertebrates which the waders feed to their chicks.

Summary

Cinderbarrow Farm produces high quality local food including milk for dairy products made near Kendal, beef from slow growing native cattle and lamb. In addition to these valued food products, it also provides a wide range of other ecosystem services that benefit people across Cumbria and beyond. By managing the land in a sustainable manner, Mr Willison ensures that vital resources such as water, carbon and fragile flora and fauna are protected for future generations.

Catchment Sensitive Farming Officer (CSFO)
John Osborne
Natural England
0300 060 2872
john.osborne@naturalengland.org.uk

Catchment Sensitive Farming (CSF) is delivered in partnership by Natural England, the Environment Agency and Defra.

Department for Environment Food & Rural Affairs

NATURAL ENGLAND

Environment Agency

Funding is from the European Agricultural Fund for Rural Development: Europe investing in rural areas.