

The Culm: a landscape that works

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Protecting Wildlife for the Future

The Culm: a landscape that's special

The Cul

Land between the moors

The Culm National Character Area is edged by the Atlantic coast and the uplands of Dartmoor and Exmoor.

Its proximity to these National Parks has led many to talk about the Culm as 'the land between the moors', but this is a place with its own unique value and character. Its name refers to the predominance of Culm grassland, a mix of purple moor grass and rush pasture, for which this area is a European stronghold. These pastures combine with ancient woodlands, orchards and hedges to form a pastoral landscape which has been shaped by hundreds of years of traditional farming practice. Today it remains an internationally important haven for wildlife.

The Culm is populated by isolated communities and supports hundreds of small farm and tourism businesses.

It is a place where the beauty, health and resilience of the natural environment is central to the wellbeing of local people and the sustainability of local industries.

It is also a landscape facing enormous challenges. Many elements of modern farming do not support the financial health of the small, mixed farms that predominate in the Culm; tourism is underdeveloped and the area's geographical isolation all means that this is a place of significant economic deprivation.

The unique landscape that is so key to the economic health of the area and to people's well-being is disappearing. 90% of the Culm's unique habitat has been lost since 1950.

The Culm National **Character** Area for wildlir Devon for busine. ourent

The Culm: a landscape that matters to us all

A special place

The dramatic loss of Culm habitat doesn't just affect the fortunes of local communities; it has direct implications for how we manage big impacts linked to climate change and to safeguarding our vital natural resources, as well as to the sustainability of rural economies.

The water storage capacity and filtering properties of Culm grassland reduces flood risk and helps to keep our water clean. Top soils beneath Culm grasslands store two times more carbon than intensively managed farmland.

Farming practice and land management techniques that benefit Culm grassland and its associated habitats support farm businesses to diversify and to increase their environmental quality and sustainability. They result in a landscape that is rich in wildlife and natural beauty, that can be enjoyed by local people and which can attract thousands of visitors to the area every year. These are lessons that are applicable to many rural communities that are facing the same challenges.

Taking up the challenge

Devon Wildlife Trust has been working with partners for many years now to halt the decline of the Culm's unique attributes through two projects: Working Wetlands and the Northern Devon Nature Improvement Area. These have used an innovative mix of landowner advice and training; equipment loans; grazing networks; small grants; cutting edge research and extensive community engagement to promote change on a landscape scale.

To date, over 5,000 hectares of habitat have been restored and re-connected; £10million of investment has been brought to the area; a substantial new nature reserve and local amenity created; and 3,300 local people have been involved in activities to better understand and to shape their natural environment. The projects have attracted international awards and the importance and relevance of this work is reflected by the range of partners and funders who have supported it to date.

But there is much more to do – and we need support to do it.

This document is designed to show you why the Culm should matter to us all and what needs to happen to safeguard its future.



The large-scale restoration of the Devon Culm grasslands is a wonderful example of how conservation bodies, land owners, farmers and a water company can work together to create more land for conservation that is better managed and joined up, for the benefit not only of wildlife but also for vital resources like clean water and thriving farms, and peoples' well-being.

Professor Sir John Lawton CBE, FRS Chair, Making Space for Nature

For business, for communities, for the environment, for wildlife

The Culm is a landscape that works for people and wildlife. It is a haven for unique and threatened nature. Every day it is working on our behalf providing us with vital resources and services. It gives us access to a natural playground; its beauty and diversity are a source of enjoyment and inspiration for local communities and visitors.

Rural business

The Culm supports a vibrant agricultural economy. Three times more people are employed in farming businesses here than the European average. Small, family farms dominate, with 90% being under a 100ha in size. These farmers are the stewards of the local landscape.

Wildlife haven

The Culm is one of the UK's most outstanding wildlife areas. It is a stronghold for two of Europe's most threatened species including marsh fritillary butterflies and freshwater pearl mussels. It supports nationally important breeding populations of curlew and willow tit.

Water resource

The Culm reduces flood risk – Culm grassland stores five times more water than intensively managed grassland. The Culm also produces cleaner water – Culm grassland acts as a giant filter, trapping and removing sediment.



Natural playground

The Culm's natural beauty and wildlife are key reasons why local people choose to live there. Access to its unspoilt countryside and its wide ranging leisure opportunities attract tourists boosting its local economy.

Carbon capture

The Culm acts as a huge carbon capture mitigating against the adverse effects of climate change. The top soils beneath Culm grasslands store twice as much carbon than those of intensively managed farmland. At the heart of rural business: the Culm supports a vibrant agricultural economy where small farms dominate.

A natural playground: the Culm's beauty and wildlife are at the heart of local communities and the tourism economy.

A carbon capture store: the Culm's capacity to lock up carbon gives it a vital role in combating climate change. A crucial water resource: the Culm helps to reduce flood risk and produces cleaner water. A wildlife haven: the Culm is one of the UK's most outstanding wildlife areas, home to internationally and nationally endangered species.

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The Culm: a landscape that works

A landscape for the future

a challenge for today



Despite facing significant challenges the Culm continues to be a landscape which provides for local people and wildlife.

During the past 100 years the Culm has experienced damage and degradation. Culm grasslands have become scarcer and more fragmented. They now account for just 1.4% of the Culm National Character Area, a 90% reduction since the 1950s.

Devon Wildlife Trust's 25 years of working in the landscape with local people has slowed this decline. But problems remain: woodlands often lack active management, agricultural pollution means rivers and streams are in poor health, and the link between the welfare of local communities and the natural environment isn't always recognised.

The rewards for tackling these challenges are great. Establishing a healthy Culm means creating a landscape capable of meeting some of the 21st century's biggest issues:

Dealing with the effects of climate change: Culm grasslands can store five times more water than intensively farmed land. Acting as a natural flood defence mechanism, Culm grassland could play an important part in a future where more extreme rainfall and drought events are predicted.

Securing water supplies: acting as a huge natural filter, the Culm landscape can help to provide us with reliable and clean water supplies. Culm grasslands have great potential in reducing water treatment costs. Our approach has been recognised and supported by South West Water as part of its wider Upstream Thinking initiative. This estimates that every £1 invested in landscape scale approaches to water management can yield up to £65 of saving per customer over a 30 year period.

Supporting the rural economy: farming and tourism are the key pillars of the local economy. Both rely on a vibrant and resilient natural environment. The fortunes of the Culm landscape will be a key determinant in local people's future prosperity.

Improving health and well-being: Northern Devon has significant health inequalities, especially mental health (Torridge and North Devon District Councils have the two highest rates of Incapacity Benefit claimants due to mental illness in Devon). The Culm's beautiful and accessible landscape can provide positive impacts on the health and well-being of local people.

Species under threat: the resilience of the Culm landscape holds the key to the future survival of threatened species. Its fate will shape the future of local wildlife including internationally important populations of marsh fritillary butterflies and freshwater pearl mussels, along with nationally important populations of barn owls and willow tits.



The challenges

Damaging land management: the ploughing and drainage of wildlife-rich habitats are reducing the health and resilience of the Culm landscape.

Agricultural pollution: run-off of phosphate laden sediments from surrounding land has left much of the Culm's network of watercourses in poor health.

Fragmented habitats: surviving wildlife-rich Culm grasslands are often small, scattered and isolated. This makes them highly vulnerable to sudden change and loss.

Neglected woodlands: the Culm's broadleaved woodlands often lack active management. An under-developed local woodland economy (eg wood fuel) and low rates of woodland creation are missed opportunities.

Low community awareness: our research shows that the Culm landscape is undervalued, with local people not always making the link between their lives and the health of the natural environment.



Turning a patchwork into a network

Recent Devon Wildlife Trust led work on the Culm has been delivered through two innovative partnership projects: Working Wetlands and the Northern Devon Nature Improvement Area. Both share the conviction that vibrant natural environments support healthy and prosperous communities. Both also apply the same methodology:

A landscape scale approach: we work on a large scale, across many thousands of hectares to restore, re-create and reconnect a mosaic of habitats. The results are a robust ecological network, which is healthy and sustainable.

Investment: we put people on the ground, using a team of experienced advisors to work alongside farmers/land owners, helping them make the right choices for their businesses and for the Culm natural environment. Our advisors generate investment, helping farmers secure funding to carry out vital practical management.

Practical help: we provide specialist equipment and grazing animals to where they are most needed. We support large scale capital works and develop networks among local farmers to share ideas and expertise.

Working with communities: we strengthen the links between local people and the Culm. Running local activities ranging from art installations to citizen science projects, we provide opportunities for people to experience and enjoy their natural heritage.

Evidence and innovation: we test our working methods. Working with the University of Exeter we have researched the effectiveness of our land management approaches and the evidence to support its claims.

Partnership: we do not work alone. Collaboration is a central part of what we do. We value the expertise and resources of others including South West Water, Natural England, Environment Agency, Torridge District Council, Northern Devon Biosphere, the University of Exeter, Westcountry Rivers Trust and others.



A healthy and wildlife-rich natural environment is essential for north Devon's economy and the health and well-being of its communities. Torridge District Council fully supports Devon Wildlife Trust's wide-ranging work in the Culm - long may it continue.

Gaye Tabor, Lead Member for the Natural and Built Environment at Torridge District Council

What we've done so far

5,000ha of Culm grassland and other seminatural habitat have been restored or recreated for wildlife – an area equivalent in size to the city of Exeter.

183ha of native woodland and 370kms of hedges have been restored or created on the Culm, providing vital wildlife habitat and 'corridors' linking wildlife hotspots.

Improved local farm businesses. Our team has made 3,800 visits to local farms, helping 600 landowners with practical advice and securing them £10 million of new grant funding investment.

Increased the water storage capacity potential of the local landscape by 8,300 mega litres of water, equivalent to 3,320 Olympic-sized swimming pools.

Increased the carbon carrying capacity of the local landscape by 622,000 tonnes, equivalent to the annual carbon emissions of 100,000 family cars. Increased the sustainability of rare and threatened species. Nine new populations of marsh fritillary have been recorded, breeding snipe have returned to land managed with our help.

Showcased the Culm by opening a new 140ha nature reserve at Meeth Quarry. With bike tracks, easy access paths and visitor facilities this popular site has attracted 30,000 visitors in its first year.

Secured £100,000 to research and test our methods in measuring the water storage, water filtration and carbon storage capacities of Culm grassland.

We've won recognition: our success on the Culm working as part of South West Water's Upstream Thinking initiative has been recognised with the winning of the Water Industry Achievement Awards (2012) and the CIWEM Living Wetlands Award (2013).

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We now have irrefutable evidence of the vital role that extensive healthy wetlands in our upper catchments can play for society. The Devon Wildlife Trust has been at the cutting edge of wetland restoration for 25 years now and their ground-breaking research into water storage in Culm grasslands has been invaluable for organisations like the Environment Agency which are striving to promote more natural approaches to land and water management.

Alastair Driver FCIEEM, National Biodiversity Manager, Environment Agency



Attracting investment

Traditional livestock farming defines the Culm landscape, but it faces significant challenges in the modern agricultural world. Funding for landowners is vital in helping them to continue to farm and to diversify. Without these financial incentives many landowners are unable to carry out measures for wildlife. Devon Wildlife Trust plays a key part in securing this funding for the Culm's farmers:

- Agri-environment schemes form the cornerstone of support. Devon Wildlife Trust helps farmers negotiate the complex and demanding requirements of these schemes, securing investment for wildlife-friendly land management.
- Where agri-environment money isn't available, Devon Wildlife Trust is adept at accessing other grants for specific capital projects including fencing, stream restoration and wetland creation.



What we've done so far

- Devon Wildlife Trust advisors have brought more than £10million of agri-environment investment into Culm farms since 2007.
- 79 small-scale capital projects including wetland creation and hedge restoration have been carried out after securing investment amounting to £225,000 from Devon Waste Mangement, Biffa Award, Devon County Council, the Environment Agency and others.
- More than £400,000 of Catchment Sensitive Farming (Natural England) investment has been directed to the farmers of the Culm to improve water quality.

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The NIA advisors helped me come up with a really good planting scheme and get all the paperwork approved before the Forestry Commission deadline. They also ran a great workshop on how to implement the planting scheme and look after the trees once they were planted. I really appreciate knowing that they are always available to answer any questions. I'm looking forward to seeing my woodland develop and to harvesting the hazel coppice in due course.

Kay Callis, local landowner, 1.7ha of new woodland planted

Case study: investment into action

Commercial farming on the steep slopes around Roadford Reservoir is always going to be difficult without impacting on water quality. Fortunately grants and support provided through South West Water's Upstream Thinking programme have enable forward thinking farmer and businessman Simon Kerslake to adapt his land use.

By restoring the steeper slopes to wildflower meadows, fencing watercourses, separating and harvesting rainwater and creating a range of balancing ponds he has changed the nature of his farm completely. Not only has this benefitted the wildlife and the reservoir, the hay crop is now an important extra harvest product from the farm.

Simon says: 'I farm right on the banks of Roadford Reservoir, and am being encouraged to take my steeper fields out of intensive production in order to help protect the water supply. Creating meadows like this still gives us a good crop for our equine business as it is high in roughage, and low in sugars. It has also been amazing to see how good it is for the bees and other pollinating insects on the farm.'

Providing practical help

Alongside advice and investment Devon Wildlife Trust also provides practical support to those that manage the Culm landscape.

- The unique landscape of the Culm demands specialist farming machinery. Devon Wildlife Trust operates a successful Machinery Ring, making equipment and expertise available to farmers who need it for habitat management and water quality improvement.
- A lack of grazing animals in the right place and at the right time has been a major factor in the loss of Culm grassland. Devon Wildlife Trusts Grazing Links project has helped remedy this introducing livestock where it is most needed.
- Devon Wildlife Trust has made better use of local skills and knowledge. A programme of landowner workshops has led to a sharing of expertise and the establishing of a network of support.



Since using the soil aerators, I have noticed a significant difference in the quantity of grass growth, as well as seeing less water sitting on the surface of the fields. I would recommend using these machines as they will improve the condition of your soil.

Ed Strawbridge, farmer near Beaford

Hedge laying: just one of the rural skills Devon Wildlife Trust has promoted

What we've done so far

- Since 2008 we've worked with 600 landowners. This has meant our advisors have conducted 3,800 visits to Culm farms.
- Our Grazing Links initiative has meant grazing animals have been introduced to 1,400ha across 87 landholdings.
- Our Machinery Ring has supplied specialist equipment and expertise to more than 100 Culm grassland sites.
- More than 200 local landowners have attended 33 workshops, learning and sharing skills in Culm management.





Case study: practical help into action

When marsh fritillary butterflies are on the wing in the late spring their first impulse is to hunt for sources of nectar to keep their energy levels up. One of the few plants in flower in the Culm at this time is the meadow thistle. In late May, Speccott Moor (near Hatherleigh) provides a carpet of this unusual plant. It came as little surprise then, that marsh fritillaries were recorded at the site for the first time during a Devon Wildlife Trust survey in 2014.

Speccott Moor has probably had more support with grazing and machinery from Devon Wildlife Trust than any other site. Before our intervention its 24ha block of Culm grassland was in desperate need of grazing and cutting to break up the dominance of soft rush and thicker grasses. Only with this kind of active management would a wider range of Culm wildflowers return.

Since Devon Wildlife Trust's first involvement in 2008, the site has been visited more than 70 times by our advisors, with light summer grazing re-instated as part of our Grazing Links initiative. Where more commercial breeds of cattle would have struggled to survive, traditional breeds including English Longhorns, White Parks and Ruby Reds now thrive on the Moor's rough ground.

Devon Wildlife Trust's Machinery Ring has also made a difference. Our versatile low ground pressure tractors have allowed flails and toppers to access the Moor's wet ground and deal with encroaching scrub and soft rush. Meanwhile, volunteers drawn from the local communities have helped clear gateways and made the task of rounding-up animals for transport and TB testing easier.

Speccott Moor's landowners have been delighted with the transformation. Their enthusiasm coupled with our support has been vital in securing the management of this fabulous Culm grassland and establishing its new marsh fritillary population.

Communities that care

Landscape scale projects like that of the Culm can only work if they carry the will of local people.

We have worked hard with local communities to build the connections between people and their landscape. Devon Wildlife Trust's belief is that strengthening the links between people and landscape is mutually beneficial, leading to the greater health and well-being of both.

Since 2011 we have joined with communities in the River Torridge catchment organising activities and events that help local people to discover and explore the wildlife riches of the Culm. Demonstrating the health and quality of life benefits (eco-system services) delivered by the local landscape have been at the forefront of these.

The methods used have been varied, ranging from school visits to farms, through mass citizen science projects, to practical volunteering clearing local ponds, planting trees and laying hedges. Working with our partner, Beaford Arts, has also meant developing different methods, including art installations and theatre, to strengthen the link between people and nature.

Devon Wildlife Trust's new nature reserve in the heart of the Culm at Meeth Quarry has provided a focus point for our work. Its 140ha have become a huge outdoor venue at which people, schools and volunteer groups can come to explore and celebrate the local landscape.





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We ran a pond dipping day as part of this year's Hatherleigh Festival, and realised just how serious the spread of parrot's feather had become. We are pleased to be working with DWT and other groups to do something about it.

Barrie Lewis, Brandis Corner Wildlife Group talking about parrot's feather removal at Hatherleigh pond, September 2013

What we've done so far

Since 2011 we have been building the connections between people and their landscape in the Culm.

- We have staged 101 community events and 33 school visits, helping local people to discover and explore the Culm.
- We have run seven citizen science projects undertaking wildlife counts, water quality audits and soil testing. The projects have proved a wonderful way to get people to investigate and value the natural world around them.
- 17 volunteering challenges have taken place improving the health and appearance of the local landscape. The time spent by volunteers equates to more than 3,000 hours.
- 30,000 people have visited Devon Wildlife Trust's Meeth Quarry nature reserve, exploring its wildlife and mix of habitats.
- 1,750 adults and 1,378 children have participated in our activities and events show-casing the Culm landscape and its wildlife.

Case study: communities into action

The Riverfly project was begun in the Torridge in 2014 to involve local people with the future of their local rivers.

The River Torridge was the setting for Henry Williamson's iconic tale of nature *Tarka the Otter*, but in recent decades the river and its wildlife have suffered from problems associated with diffuse pollution. In this project we asked for volunteers who would carry out surveys, looking for stream invertebrates (riverflies) to monitor the watercourse's ecological health.

We were overwhelmed with the local response and were able to quickly establish a network of citizen scientists. 34 people attended Riverfly training courses in Hatherleigh and are now conducting monthly surveys on their local streams.

The project is not only producing data which is valuable to the Environment Agency, as a way of keeping track of pollution, but it has also forged a closer connection between local people and their river catchment.

A landscape supported by science

Working for people and wildlife

Evidence based research is at the root of Devon Wildlife Trust's

work on the Culm. It helps us to understand its impact and to target our resources to locations where we know they will produce most benefit. The evidence we have amassed also allows us to present a compelling case to local people and partners for the importance of what we do.

Water resources and carbon – independent research led by the University of Exeter with support from the Environment Agency has scrutinised our work on the Culm. It has identified the importance of Culm grassland in reducing flood risk, enhancing water quality and storing carbon. Research from the University of Exeter has shown that if Culm grassland were to be restored to its geographical range of 1900 it would produce a landscape capable of storing 750% more water and carbon than its present capacities.

People and the landscape – independent research commissioned by our Northern Devon Nature Improvement Area and conducted by the University of Exeter showed for the first time how much, and in what ways, people value, benefit and access the Culm landscape. The research has allowed us to refine our community-based work, strengthening the connections between people and wildlife.

Funded by Defra, this Cultural Ecosystem Services study told us more about people's relationship with their landscape. It told us how they value its tranquillity, beauty and wildness. The research revealed how they benefit from the health, relaxation and inspiration that the landscape provides them. But the research also told us how limited access to the countryside means that the potential connection between local people and the Culm remains unrealised.

Habitats and species – we have made researching, collecting and monitoring the core of our own work in supporting rare and threatened species. For example, in 2014 our annual marsh fritillary survey of Culm grassland sites revealed seven new populations of the butterfly which is one of Europe's top ten most threatened species. Research like this provides us with a measure of our success and a justification for its continuation. ... if Culm grassland were to be restored to its geographical range of 1900 it would produce a landscape capable of storing 750% more water and carbon than its present capacities.

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The results of our monitoring programme highlight the huge potential the unimproved grassland and wet woodlands have to mitigate flooding in areas that are currently dominated by intensively managed grasslands.

Professor Richard Brazier, University of Exeter

A landscape for the future

A vision for the Culm

Devon Wildlife Trust's vision for the Culm is one in which its nature is flourishing and secure, its communities are healthy and connected to their landscape, and its businesses are productive and growing.

To achieve this over the next ten years we have set ourselves a series of challenges to:

- Restore and re-create a further 5,000ha of Culm grassland and other semi-natural habitat and through this deliver Biodiversity 2020 targets.
- Increase the number of landowners that we work with by 50%, providing advice and support to deliver sustainable land management that works for farmers, communities and wildlife.
- Significantly increase the water storage capacity of the landscape, reducing the risk of downstream flooding and protecting against the impacts of drought.

- Improve water quality and deliver Water Framework Directive targets through the restoration and re-creation of Culm grassland in areas with failing water bodies.
- Significantly increase the carbon storage capacity of the landscape, locking up carbon and helping in the race to stabilise and reduce carbon dioxide levels.
- Secure the status and extend the range of rare and threatened species, increasing marsh fritillary populations by 75%, doubling the number of breeding curlew and securing the first breeding population of freshwater pearl mussel in more than 60 years.

- Secure £10million for the local economy through agri-environment and land management schemes.
- Pilot new financial incentives payments for ecosystem services
 which pay farmers to manage their land to deliver other key services including water and carbon storage.
- Tackle health inequalities within local communities by creating and encouraging access to community woodlands, local nature reserves, and improving links to the Tarka Trail and South West Coast Path. We will work with Local Health Authorities to offer 'green prescriptions' for pressing public health issues including obesity and poor mental health.

- Create a network of Community Wildlife Champions in local parishes and securing 1,000 hours of volunteer time per year.
- Expand and broaden our knowledge and evidence base, to ensure that we capture and quantify the full value of the investment in the landscape for both people and wildlife.

Your role in our vision?

The Culm is one of the most beautiful and distinctive bits of natural heritage that Devon has to offer. The Culm is also one of nature conservation's real success stories. Our work over the past five years has restored significant amounts of natural habitat and helped threatened species to survive.

We have shown just how valuable these natural wetlands are to us in so many ways, and we have built up an enviable knowledge base about the Culm landscape. Perhaps most of all, I am incredibly proud of the strong partnership of dedicated people and organisations that we have built up to help achieve all of this.

The job is far from complete though. Culm grassland still covers a tiny fraction of what it used to only a few decades ago, and a great deal more needs to be done if our rarest species are to survive. Despite five very successful years, we have only just begun.

The ambition we have laid out in this brochure is ambitious and can't be achieved by Devon Wildlife Trust alone. Whether you are an arts organisation, a school or a local landowner, there is almost certainly a role for you to play. If you would like to be part of this continuing success, here are some of the things you can do.

- If you live in north Devon, please tell your local councillors and decision makers how important you think this work is.
- If you are a farmer or landowner, please talk to us about how we can work together and help to make this happen on the ground.
- If you can support the project through funding, we would love to hear from you. We have an impressive record of levering funds to match those granted to us many times over.

Restoring the Culm is a very good investment.

Thank you for your support.

Harry Barton, Chief Executive, Devon Wildlife Trust

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Finding out more

You can learn more about Devon Wildlife Trust's work with local Culm communities, economies and landscapes through the on-line resources of two current projects:

Northern Devon Nature Improvement Area www.northerndevonnia.org

Working Wetlands www.devonwildlifetrust.org/working-wetlands

Our partners

The people of Devon's Culm National Character Area, Beaford Arts, Butterfly Conservation, Department for Environment Food & Rural Affairs, Devon Biodiversity Records Centre, Devon County Council, Environment Agency, Forestry Commission, Met Office, Mole Valley Farmers, Natural England, North Devon Biosphere, Plymouth University, Torridge District Council, University of Exeter, Westcountry Rivers Trust and Woodland Trust