



COILLTE
nature

End of Year Report 2020

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Watch a short video documenting
Coillte Nature's first year



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A Message from our Director

Dr Ciarán Fallon

When the Coillte Nature team gathered for the first time back in January in Coillte's headquarters in Co. Wicklow, we knew we had a serious task ahead of us.

As the new, not-for-profit branch of the State forestry company, our objective was to deliver real impact on the climate and biodiversity crises through innovative projects of scale.

Little did we know in March we'd be doing it through a pandemic and that we wouldn't make it back into the office for the rest of the year.

Like everyone, we've had to adapt quickly and figure out new ways of working and connecting with others. Our work has a large surface area and we have lots of stakeholders so we had to think of new ways of connecting.

A silver lining of the lockdown was that it seemed to give people the time and space to reconnect with and

re-appreciate the value of nature. This has helped to generate real momentum behind our work and we've been genuinely heartened by the warm and generous reception our initiative has received.

This year, we started work on three major projects: the Midlands Native Woodland, the Dublin Mountains Makeover, and Restoring Hazelwood.

We produced this end-of year report to share overviews of each project, along with personal reflections from our team on the progress made and what's yet to come. We've also made a short video and set out our plans for 2021. We hope you enjoy it.

Dr Ciarán Fallon Director, Coillte Nature





Restoring Hazelwood

Watch the video for a quick overview



KEY INFORMATION

What are we doing? Removing invasive species from 30 hectares of alluvial woodland and planting new native woodlands in a former conifer plantation.

Where are we doing it? In Hazelwood forest, Co. Sligo; a Special Area of Conservation featuring Annex 1 Priority Alluvial Woodland Habitat.

Why are we doing it? To protect this rare habitat, enhance its biodiversity and improve its resilience for the future.

How are we doing it? By cutting down, chipping and treating rhododendron and Cherry laurel. We're also removing and/or thinning stands of non-native broadleaves and conifers.

When are we doing it? 2020 – 2024.

2020 Progress Update

Dr Declan Little, Ecological Lead



When I heard that Coillte had identified Hazelwood's alluvial forest as a priority for restoration at the National Biodiversity Conference in 2019, I was immediately struck by the merit of selecting this woodland.



Rhododendron stump with eco-plugs

Alluvial native woodlands are Ireland's rarest native woodland type and Hazelwood almost certainly has 'Ancient woodland' fragments that have survived for at least four hundred years, if not longer. This does not mean that the trees are four hundred years old (clearly, they are not), but there would appear to be uninterrupted woodland habitat continuity in parts of the woodland for centuries. This means that the site has very high biodiversity value, since it contains flora and fauna that have survived in a complex woodland community.

As such, Hazelwood ranks very highly in terms of its unique biodiversity value on a national and European scale and is considered one of the 'Jewels in the Crown' of Ireland's native woodland resource. The iconic Hazelwood - put on the map by W.B. Yeats through his poetry and association with the nearby Lake Isle of Inishfree - is part of a wider native oak-dominated woodland area around the shores of Lough Gill.

Our first task was to draw up an outline plan for the site and a schedule for its implementation. A visit to the site by the Coillte Nature team and staff from the Coillte Business

RIGHT Contractors removing and chipping a dense thicket of rhododendron

FAR RIGHT A contractor drills holes in a rhododendron stump and inserts eco-plugs



Area Unit took place last January, and the first notable feature was the 'alluvial' or 'riverine' nature of the woodland. Weeks of continual winter rains meant the woodland was submerged in flood waters in many parts but especially immediately adjacent to the Garavogue River. It reminded me of the Everglades in Florida and all that was missing were the alligators, crocodiles and mosquitoes!

Though we all wore wellingtons, some of the paths were almost impassable and waders would have been more appropriate. To see the site under water like this gave us plenty to think about for future management operations, especially the logistics and methods of removing the thickets of rhododendron and Cherry laurel that have infested the woodland over many years.

Some areas are so badly infested with both that it is impossible to get through the impenetrable jungle of tangled thickets, some of which are up to seven metres tall. In places, they completely obliterate and replace the native shrub and field layers as the sunlight cannot reach the forest floor. This also prevents regeneration of

oak, ash, birch, rowan and all the other trees and shrubs, thereby compromising the very future of the woodland.

Clearly the most immediate and urgent task is to remove and control both these insidious threats to the medium and long term survival of this unique woodland ecosystem. We know this is possible, thanks to a previous EU Life Nature project that was implemented here a decade ago, successfully removed these pernicious and unwanted guests in over half the area beside the river.

As we left the site we noticed an area recently clearfelled of Sitka spruce adjacent to the Alluvial woodland and subsequently secured agreement from the Forest Service to replant this area of just over four hectares with a native woodland community appropriate to the soil and site conditions. In April, this was planted with birch, alder, Scots pine, rowan, willow and holly. Similarly, there are stands of conifers and non-native invasive trees in the alluvial woodland that require removal and management, some under Continuous Cover Forestry (CCF), and that will be addressed in the next few years.

As the site is designated as a Special Area of Conservation (SAC) under the EU Habitats Directive and a National Heritage Area (NHA) under the Wildlife Act, it was imperative to address the conservation objectives and operational measures mentioned above through consultation and agreement with the statutory authority responsible for the implementation of conservation and biodiversity legislation, i.e. the National Parks and Wildlife Service (NPWS).

Also, as the Garavogue River is an important habitat for otter, kingfisher, salmon, sea trout and brown trout, it was important to consult with Inland Fisheries Ireland and seek to get as much input from both statutory agencies in order to maximise conservation efforts with minimal site impacts on the woodland itself and on the adjacent Garavogue River.

Though this may sound obvious, there are considerable challenges in controlling rhododendron and laurel on such a sensitive site that is liable to frequent flooding, including the prevention of soil compaction, silt run-off

RIGHT A walking path through Hazelwood's alluvial woodland



and the application of herbicides to prevent regeneration and reinvasion of invasive species. In March, an on-site meeting took place with local and regional NPWS staff to discuss how conservation objectives would be achieved.

It was agreed to develop a 'Natura Conservation Management Statement' in parallel with Appropriate Assessment Screening and a detailed Biodiversity Management Plan for the entire site. Effectively, an Ecological Impact Report was prepared detailing the operations required and how they would be carried out sensitively. These reports were prepared by a consultant ecologist and forester with considerable previous experience of native woodland management planning. After the reports were completed and assessed and approved by NPWS and IFI, a tender to carry out the work was advertised.

Invasive species clearance work commenced in late August and ceased in early November when weather conditions conspired against the contractor as site conditions became too wet to operate. A novel and effective site-sensitive approach to controlling the

regrowth of rhododendron and laurel from cut stumps in this project is the use of 'Ecoplugs', which are capsules of glyphosate that are inserted into holes drilled into the cut stumps. This not only targets the herbicide directly where its required, but also prevents runoff of the chemical into the nearby river and streams.

The cut stems are chipped on site and care is taken to avoid soil compaction through the use of low-impact machinery and to cease operations during very wet weather. Work will recommence next spring and it is expected that full engagement and consultation with all of our stakeholders there will occur once Covid restrictions are lifted.

This is particularly relevant regarding plans to improve recreational pathways and signage. We are aware that this is a very popular recreation woodland for the people of Sligo and its surroundings, and would ask for patience while this work is ongoing as it is slow and meticulous, often requiring pathways to be temporarily closed until operations are completed. The result will be a better recreational experience and a healthier, vibrant woodland.

FREQUENTLY ASKED QUESTIONS

Why is Hazelwood so important?

It is an 'Alluvial native woodland', one Ireland's rarest native woodland types and contains 'Ancient woodland' fragments of very high biodiversity and conservation value.

How will rhododendron and Cherry laurel be removed and controlled?

The stems will be cut by chainsaw and fed into a chipper onsite. Heaps of chipped material will be allowed to decompose gradually while the cut stumps will be kept free of chippings and treated primarily with eco-plugs which are capsules impregnated with glyphosate. This will ensure targeted application with no impact on adjacent vegetation or soil water and prevent leakage to nearby drains and the River Garavogue.

How will non-native trees be managed?

Small stands of Douglas fir, Sitka and Norway spruce will be felled and subsequently replanted with native trees and shrubs. Veteran beech and sycamore will be retained as they potentially have high biodiversity value especially bat roosts, lichens, ferns and mosses. However, younger specimens and seedlings will be removed. Stands of pure, closely-spaced Scots pine will be gradually opened up through thinning operations under Continuous Cover Forestry to allow natural regeneration of native trees and shrubs. Currently there is little or no regeneration occurring under these old stands of plantation Scots pine.



Dublin Mountains Makeover

Watch the video for a quick overview



KEY INFORMATION

What are we doing? We're transforming 910 hectares for people and nature.

Where are we doing it? In nine Coillte forests across the Dublin Mountains, from the Hellfire Club in the west to Carrickgollogan in the east.

Why are we doing it? To improve biodiversity by creating new habitat, enhancing the landscape's aesthetic qualities by bringing more autumn colour to the hills and increasing structural diversity to boost forest resilience.

How are we doing it? We're using Continuous Cover Forestry and R&R (removing conifers and replanting with native woodlands).

When are we doing it? 2020 – long term.

Who are our partners? Dublin Mountains Partnership.

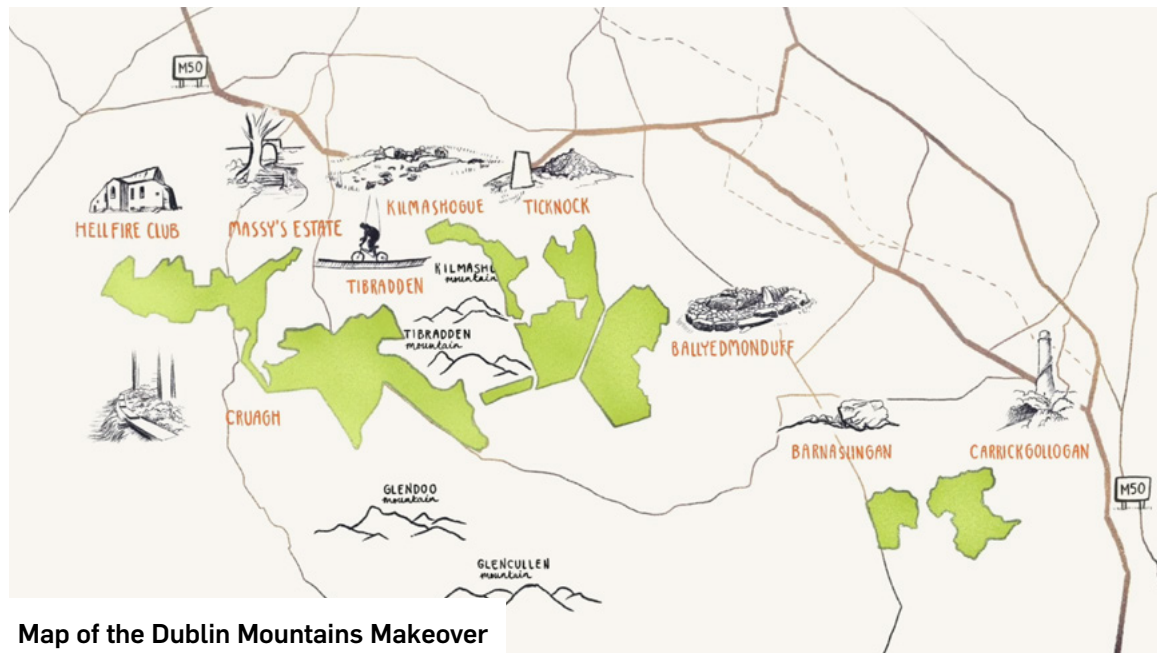
2020 Progress Update

Karen Woods, Operations Manager



For me, the Dublin Mountains Makeover is part of a really exciting journey that started 12 years ago when I became the first Recreation Manager with the Dublin Mountains Partnership (DMP).

Our early work focussed on upgrading existing trails, creating new ones, improving signage and enhancing facilities. Now, I feel we've come full circle: while the amazing recreation work continues through the DMP, I've had the opportunity to turn my attention back to the trees and forests themselves.



Map of the Dublin Mountains Makeover

Coillte Nature is transforming 910 hectares across nine Coillte sites for people and nature through two novel forest management approaches: CCF (Continuous Cover Forestry, learn more) and R&R (Remove & Replant, learn more).

Operations started in June with a CCF thinning in a beautiful stand of mature Sitka spruce at Ballyedmonduff. We removed individual trees to create space and light for seedlings to grow naturally and to increase the structural diversity of the forest stand. In this way, the large cathedral like spruce trees can be maintained on the landscape, enhancing the forests' recreational appeal while also maintaining the vital forest habitat above and below the soil for wildlife, protecting the soil and encouraging the forest to regenerate.

RIGHT Coillte CEO Imelda Hurley plants a native Scots pine in Ticknock as part of the first new native woodland

FAR RIGHT Harvesting machines remove individual mature Sitka spruce trees as part of a CCF thinning in Ballyedmonduff



We also completed another CCF thinning in Cruagh wood in the 70 year old larch stand at the entrance and adjacent spruce. Again, we are trying to open the canopy to allow light to reach the forest floor to encourage natural regeneration. We will also underplant the larch with native trees to gradually convert the forest to a more mixed woodland over time. Due to the high deer populations in Dublin and Wicklow, any native trees we plant in these areas will need protection through either fencing, small exclosures or tree shelters.

Another CCF thinning was planned in the beautiful mixed woodland at Barnaslingan, however the felling licence from the Forest Service is still awaiting approval. However, we have marked the trees for removal with a pink line (P) so are ready to go in the coming months when the licence is granted.

In some parts of the Dublin Mountains, it's not possible to do CCF and in others we want to change the species. That's why – in some places – we've opted for R&R instead: a technique whereby we clearfell the mature spruce and pine forest and replant it with new native woodland. First though,

we survey the site and look at the soil type, ground flora and moisture regime to determine the most appropriate native woodland type and mix of species to plant.

In August, we started two small clearfells in Ticknock: one near the car park, one near the Red Barn. The trees were cut down and brought to the side of the road, where they were picked up by timber lorries and brought to the sawmills.

Then in winter, we started preparing the site for the first native woodland planting. This involved removing some of the heavy branches left over from the felling operation and pulling the brash into piles (windrows) that will gradually decompose over time. Next, a machine came in and prepared the ground for the new seedlings by mixing the soil, and the final step was to erect a deer fence to keep the hungry deer out.

In early December, we planted the two areas with a mix of native trees. In the area closest to the car park we planted birch, Scots pine, oak, rowan and holly, which will develop into a pioneer birch woodland. In the area

near the Red Barn, we planted the same mix of species but in different proportions. This area will develop into an oak-birch-holly woodland. These new native woodlands will see a greater diversity of species in the Dublin Mountains, enhance the habitat for wildlife and bring beautiful autumn colour to the hills. We are working with the DMP to create new walking trails next year.

Also this year, we clearfelled an area of Sitka spruce in Cruagh, opening up the wonderful views over Dublin city. It will be replanted with native woodland next spring. An area of Sitka spruce in Ballyedmonduff was also felled and will be replanted with spruce, birch and rowan next spring.

Our plans to replant a large area of burnt forest in Carrickgollogan with new native woodland were delayed due to a felling licence appeal. In December, the appeal was heard by the Forestry Appeals Committee and the licence approved. Work is due to commence next year to remove the burnt and blown-down trees and replant the area with native oak-birch-holly woodland the following autumn.



"2020 has been a really exciting year for the Dublin Mountains and the importance of the Makeover has been highlighted by the massive increase in visitors, who are getting outdoors and enjoying this wonderful amenity on their doorstep during these challenging Covid times. We're hugely grateful for the support and patience that the public have shown as we progress this long-term project and look forward to continuing the transformation over the coming years"

Karen Woods, Operations Manager

FREQUENTLY ASKED QUESTIONS

Where can I see more detail on the Dublin Mountains Makeover?

We have a dedicated project webpage [here](#), where you'll find an overview of the project and a orange box detailing recent forest interventions. You can also check out our blog [here](#) and sign up to our newsletter [here](#).

What is CCF (Continuous Cover Forestry)?

CCF is a 'close to nature' forest management technique. Instead of clearfelling, we snip out a select few trees at a time. This is good for high recreation value areas because the forest canopy is protected and young trees can grow on their own, leading to a more structurally diverse forest. Read our blog on CCF [here](#) and watch our short explainer video [here](#).

What is R&R (Remove & Replant)?

R&R is another forest management technique that we typically use in areas where CCF isn't appropriate or where we want to change the species. It involves clearfelling small areas of conifer forest, fencing them and planting an ecologically-appropriate mix of Irish tree species to create new native woodlands. Read our blog on R&R [here](#).

What is the current tree species mix in the Dublin Mountains?

92% of the forests in the Makeover are comprised of non-native species: 57% is Sitka spruce, with a further 10% larch, 7% lodgepole pine, 12% firs and other conifers, and a further 6% non-native broadleaves like beech and sycamore. Only 5% is under native conifers (Scots pine) and 3% is under native broadleaves like birch, oak, rowan, ash and alder. We will gradually increase the proportion of native species to c. 25% over the next two decades. Read more about the kinds of trees in the Dublin Mountains [here](#).

Are you doing walks and talks in the Dublin Mountains?

Sadly, the pandemic put paid to our plans for engagement events. So instead, we made a video to bring everyone on a virtual tour and help improve understanding of what we're doing. Watch it [here](#).



Midlands Native Woodland

KEY INFORMATION

What are we doing? Helping to establish native woodland on 340 hectares of cutaway bog that is unsuitable for rewetting, as part of a mosaic of peatland and wetland habitats.

Where are we doing it? Across a number of sites within the Littleton Bog complex, in counties Tipperary and Kilkenny, as part of a wider rehabilitation programme.

Why are we doing it? To support biodiversity, help reduce carbon emissions and stabilise soils to minimise soil erosion.

How are we doing it? By sowing native tree seeds and planting native tree cuttings, seedlings and young saplings in order to mimic natural vegetation establishment processes in high, dry areas and on slopes.

When are we doing it? 2020 – long term.

2020 Progress Update

Dr Declan Little, Ecological Lead



The prospect of leading on this project was very exciting and also somewhat daunting. Having visited the cutaway raised bogs on numerous occasions over the last 25 years or so armed me with the knowledge that native woodland is appropriate under specific circumstances as evidenced by the presence of native scrub, some at least 30 years of age.



Trial plot at Baunmore bog

These occur 'above the waterline' where it is not possible to restore raised bog or wetland habitats. However, to underestimate the challenge of achieving successful native woodland establishment by assisting natural regeneration through seeding and planting would be foolish. The cutaway bogs are generally harsh environments with sparse vegetation, very little shelter if any, and exposed to frequent dust storms as the loose peaty surface – along with most of the seed bank deposited the previous autumn – is picked up carried away in mini vortex-like tornadoes twisting away toward the horizon.

The first task was to co-ordinate the Environmental Impact Assessment (EIA) for this ambitious project located at the Littleton Bog complex on the Tipperary-Kilkenny border. At nearly 340 hectares, this would be the only the second EIA ever applied for in the forestry sector to date. In January, McCarthy, Keville, O'Sullivan were contracted to undertake this task with particular emphasis on the ecological, archaeological and water quality impacts. This enormous piece of work was supplemented with a Natura Impact Statement and delivered in mid-July.

RIGHT Students from Waterford Institute of Technology monitoring biodiversity

FAR RIGHT Alder saplings growing in tree shelters on Baunmore bog



As the EIA was in train, two other related tasks were addressed: the establishment of native woodland planting and seeding trials, and a consultation process to feed into both the EIA and the project itself.

The trials were established based on previous research projects on forest establishment on cutaways here in Ireland and elsewhere in Northern Europe but the Coillte Nature team felt that it was vital to hear the views of all concerned on the viability of the proposed woodland establishment project and to harness the expertise available in designing the establishment methods. Researchers, practitioners and environmentalists were consulted online in late March (due to Covid restrictions), contributing to a very useful discussion.

Meanwhile, March also saw the establishment of planting trials on three alternative scenarios at Baunmore Bog in the Littleton Bog complex. The weather early that month was a sharp reminder of the hostile environment we are working in: driving sleet and snow showers in a howling gale. Nonetheless, with the very considerable expertise and experience of staff at Coillte Nurseries and

retired silvicultural expertise from Coillte Research, we managed to plant downy birch, alder, Scots pine, rowan and willow cuttings (cut from mature willow on the bog perimeter) on (1) deep peat (2) moderately deep peat, and (3) very shallow peat (over mineral outwash) with the help of planting contractors. The establishment rate was excellent at over 90%, while the willow cuttings did very well despite the attention they received from hares who relish the sweet sap beneath the bark.

The Arctic-like weather of early March was followed by a spring drought. This forced us into watering the trial plots in May and early June until the weather finally broke mid-month. All hands to the pump resulted in the entire team carrying watering cans to and from adjacent bog drains to ensure the thirsty trees were adequately sated. The drought also delayed the planned spring seeding trials from April till late May, followed by frequent watering.

Some of the planted and seeded plots were subsequently fertilised with half the commercial rate of phosphate and potash, as previous experience indicates that the trees will run out of nutrients and stop growing, eventually

dying. There was considerable excitement and relief when the first of the seedlings appeared in July, Scots pine to begin with, followed by birch, alder and rowan.

Autumn seeding followed in November and though drought is unlikely to hamper germination (as occurs with increasing regularity in recent decades during spring), the challenges of winter gales and heavy rain will test the survival of these babes of the wood. In order to assess the various methods and replicates in these trials, two final year students from Waterford Institute of Technology braved the elements in November and December to measure growth rates, survival, ground vegetation development and community composition.

If successful, this project will add to the mosaic of habitat development on the abandoned cutaways – especially wetlands, raised bog and wet heath - and help stabilise the bog surface, preventing unchecked wind and water erosion. However, though initial indications of both seeding and planting are very good, especially on moderately deep and shallow peat over mineral outwash trials, one swallow does not make a summer!



LEFT Scots pine grown from mini-plug, surrounded by rowan and birch in tree shelters

"It will be a couple of years before we really know what works and what doesn't. If we can mimic the naturally occurring predominantly birch, pine and willow woodlands that occur elsewhere on the cutaways that will constitute success"

Dr Declan Little, Ecological Lead



LEFT A fertilised, seeded trial plot showing signs of early growth

FREQUENTLY ASKED QUESTIONS

Where can I see more detail on the Midlands Native Woodland?

We have a dedicated project webpage [here](#), where you'll find an overview of the project. You can also check out our blog [here](#) and sign up to our newsletter [here](#).

Why are you supporting natural regeneration of native woodlands on these sites?

Our aim is to accelerate the development of native woodland on the cutaways, where appropriate. Without help, natural regeneration is patchy, irregular and very slow. Shelter is a major contributing factor in its success: this is due to the sites' extreme exposure to the elements, as well as the underlying soil conditions. Through seeding and planting, we hope to expand the patches of native woodland that already exist and create additional pockets of shelter that will enable and accelerate natural regeneration of ground flora, shrubs and – eventually – trees. This will also help to stabilise the peat surface.

Why are you fertilising the sites?

Fertiliser is potentially a useful tool, as previous experience has shown that the trees are likely to run out of nutrients and die after a few years, so by giving them a boost of potash and phosphate, they stand a better chance of thriving. Additionally, fertiliser will encourage other ground vegetation species (rushes, reed grasses, bent grasses, etc) to germinate and thrive, thereby stabilising the peat surface and creating additional pockets of shelter to further support natural regeneration through vegetation succession processes. We're using half the commercial amount of fertiliser on these sites in order to minimise run off and mitigate the risk of negative consequences for waterways.

Are you doing walks and talks at the Midlands Native Woodland?

Sadly, the pandemic put paid to our plans for engagement events in 2020. We hope to hold a site visit as soon as it's safe to do so in 2021.

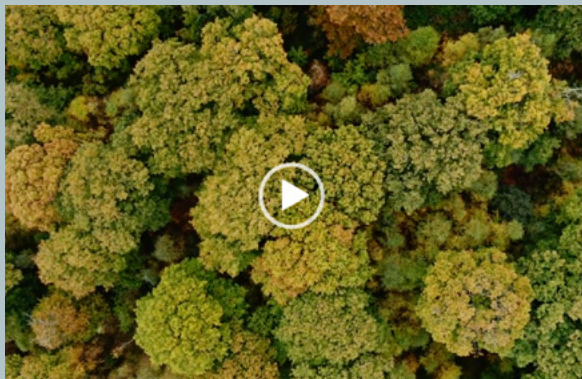
Looking ahead to 2021

The coming year promises to be a busy period for Coillte Nature. Work will continue on our three flagship projects, and take on two more: the Wild Western Peatlands and the Nature Trust.



Coillte and Forestry Partners are exploring an opportunity to develop a new initiative to deliver new non-commercial native woodlands in communities across Ireland. The Nature Trust aims to create new native woodlands at scale by leveraging the growing interest in ESG investment and carbon reporting within the private sector.

Watch the video for a quick overview



In July, funding was announced for a major project on Ireland's western seaboard. The Wild Western Peatlands project will see Coillte Nature restore and rehabilitate approximately 2,100 hectares of Atlantic blanket bog that is currently planted with commercial spruce and pine forests. The project is at an early stage of development and we look forward to working in close collaboration and partnership with local communities, environmental NGOs, specialists and State Agencies in 2021.



Links and Contact Information

FIND US ONLINE

Sign up for our newsletter – mailchi.mp/b853046871d5/coillte-nature-newsletter

Read our blog – www.coillte.ie/coillte-nature/news/

Find out more about us – www.coillte.ie/coillte-nature/

Dublin Mountains Makeover – www.coillte.ie/coillte-nature/ourprojects/dublinmountainmakeover/

Midlands Native Woodland – www.coillte.ie/coillte-nature/ourprojects/midlandsnativewoodland/

Restoring Hazelwood – www.coillte.ie/coillte-nature/ourprojects/restoringhazelwood/

The Wild Western Peatlands – www.coillte.ie/coillte-nature/ourprojects/wildwesternpeatlands/

The Nature Trust – www.naturetrust.ie

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