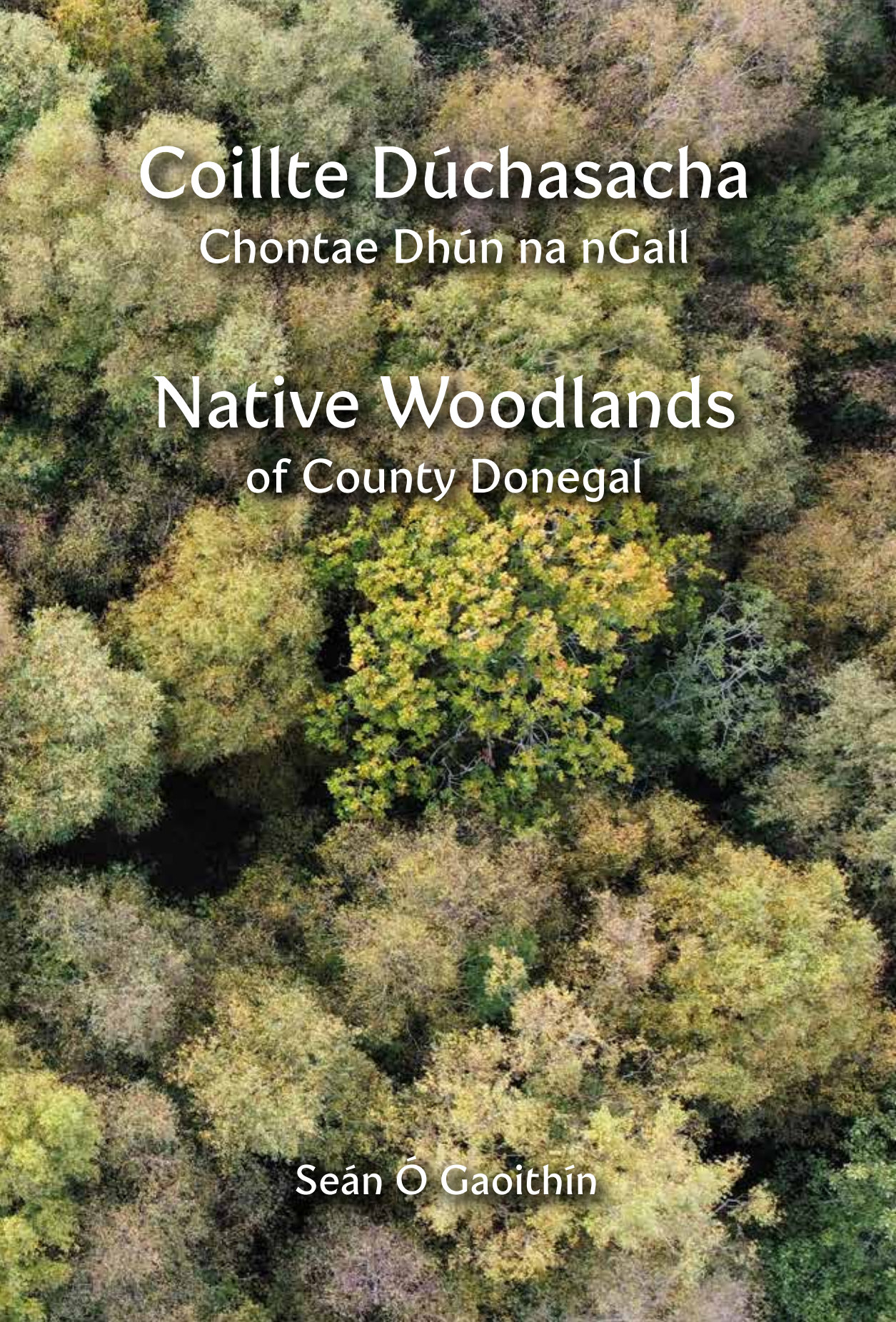

Coillte Dúchasacha
Chontae Dhún na nGall

Native Woodlands
of County Donegal

Seán Ó Gaoithín

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of County Donegal

By Seán Ó Gaoithín
2023

Comhairle Contae Dhún na nGall
Donegal County Council

NPWS
An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra
National Parks and Wildlife Service

Dedicated to the memory of Julie Fossitt
whose paleoecological research contributed greatly to our understanding
of the landscape history of Donegal.

All photography is of woodland biodiversity in Co. Donegal by Seán Ó Gaoithín.

Wildlife photography compliments of Robert Vaughan (pages 7, 87,88, 101, 184, 185, 192, 193, 205)

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Credit: The National Archives UK, ref. Bartlett 1602 Maps

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Contents

Wood-sorrel, Seamsóg, *Oxalis acetosella*

Introduction

The native woodlands of Donegal are one of the county's greatest treasures. Visiting a native woodland is to experience the company of the original inhabitants of this landscape. The sights, sounds, texture, aroma, flavours and memories we experience in these woody interiors, offer us a kind of direct access to our ancestors and the first inhabitants of this landscape.

Our biodiversity, our flora and fauna, gives us the character of our landscape. Our native biodiversity reflects who we are as a nation. Our national emblem, the humble three-leaved "shamrock" comes from our wild flora, in Gaelic it is known as Seamsóg – the common English name is Wood Sorrel, a woodland plant, with its edible trifoliate leaf.

Woods Bay from Ardnamona Wood

Our biodiversity has sustained the life of countless generations of Irish people for thousands of years. We now live in an age when it is time to give back to the land – cherishing the wild and free elements of our biodiversity and moving toward greener more sustainable agriculture and forestry. We are being called upon to make every effort to restore our depleted landscape and to re-invent how we share our beautiful environment with the first inhabitants of this land.

While our native woodlands can be of Hazel, Birch or Ash, the most significant tree species is Oak, and where we find native oak in the Donegal landscape, we can be confident we are in the company of truly wild Irish biodiversity. Oaks like to live in big groups, their growth patterns and longevity make them especially adaptable and resilient to changing climate in a wide variety of landscape settings. County Donegal has some of the finest examples of well-preserved ancient oak woodlands in all of Ireland.

Old moss clad oaks, Crocknakilladerry

Given County Donegal is located in the northwest of Ireland, we can have a sense that this is where trees arrived last. In recent decades our understanding of how plant communities arrange themselves in the Irish landscape has developed. For example, we now know as a result of new genetic mapping that oak spread into Ireland from the south, from northern Spain, and our Birch trees spread West into Ireland and Donegal from the East and Northern Europe. We also now know that our bogs and lakes act as memory banks, recording the succession of trees that have inhabited our landscape over many thousands of years. Trees produce vast quantities of pollen, laid down in layers and preserved in our lakes and peat bogs. Core samples from our bogs provide a time-line of forest development in Ireland over the thousands of years since the last Ice Age and an accurate picture of our ancient forest island flora.

Irish Jay Scréachóg choille

Garrulus glandarius hibernicus

One of our most characteristic woodland birds is the Irish Jay, *Scréachóg choille*. Records show that the Irish Jay was confined to County Wicklow in the early 20th century but has now repopulated the entire country. The Irish Jay differs from its near neighbour in the UK and on continental Europe, by its more colourful pink/brown belly plumage, the Irish Jay being shyer and more elusive in its habits. Regarded as endemic to Ireland, interestingly this race of Jays also now occurs in northwest Scotland.

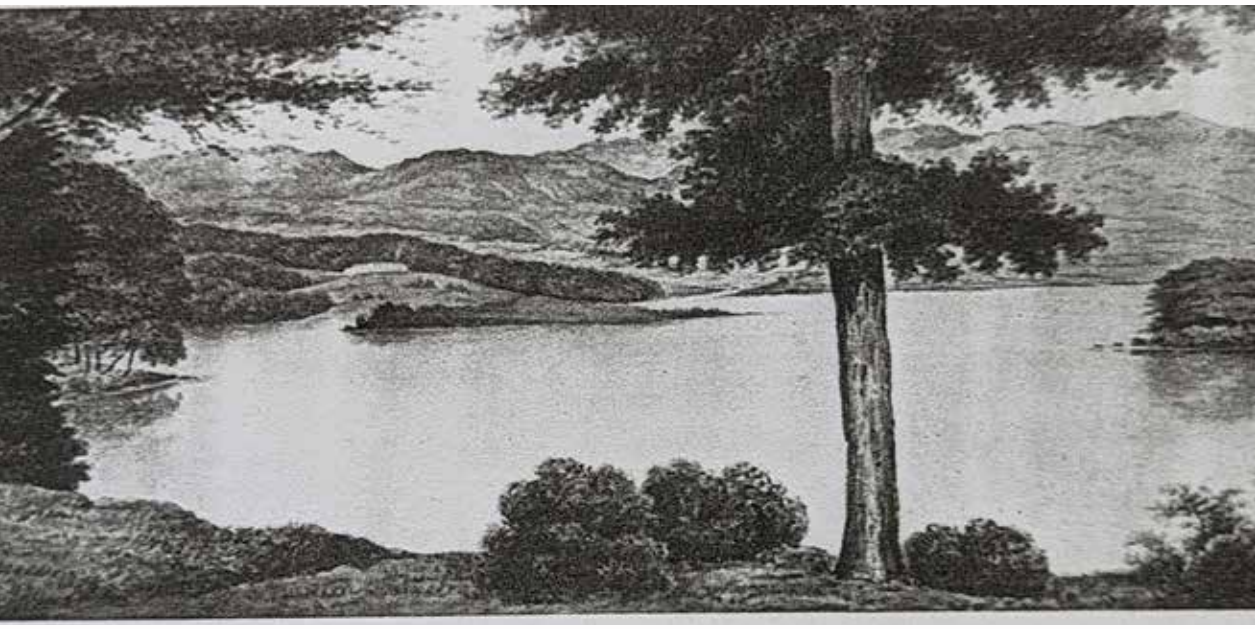
The Irish Jay is now well established with healthy breeding populations throughout the island of Ireland and in many of the native woodlands of Donegal. The Jay is known as the 'Gardener Bird' because it is well known for carrying acorns from where they fall, to concealed "food stash" locations at some distance from their origin, assisting oak with its spread in the landscape.

Irish Jay, Scréachóg choille found in Old Oak Woodlands, Donegal

Irish Spurge, Bainne caoin, *Euphorbia hyberna*, Donegal's rarest woodland plant, known only to Dunree, Inishowen

Sadly, only a tiny portion of the remaining woodland habitats of County Donegal are made up of indigenous woodland. That is just a fact. Before we human beings made Donegal our home, there were massive areas of wildwood covering over 80% of the land. Native forests occupied all the lowland agricultural lands we are now familiar with. In the last 5000 years all the "good" land was cleared of the forest habitat to make way for agriculture. Our ancestors worked the land to feed the growing population. Now our native woodlands need our help. We must do all we can to protect and enhance the fragments of our native woodlands, so that future generations can benefit from the beautiful biodiversity that is in our care. Woodlands such as at Ardnamona, Glenveagh, Ballyarr, Ards, Duntally, Rathmullan and Drumboe can teach us so much about our biodiversity inheritance.

Neolithic stone axe head



Ardnamona from the Fairy Glen by Charlotte Wray 1846

Woodland Magic, painting by AE, Glenveagh Castle

Biodiversity and the Fairy Realm

In Ireland we are enchanted when we visit the wildwoods. There are strong folk traditions in County Donegal that associate the wild woodland habitats with the wee folk, na síogí, the elementals. Several of the woodlands profiled in this book have fairy stories associated with the location.

We find that Charlotte Wray made a watercolour sketch of the wooded demesne of Ardnamona from a spot known as the "Fairy Glen" on Lough Eske.

In the Glenveagh Estate there was a strong tradition of the fairies being present in the wild wooded parts of the Glen, one location near to the Castle was known by locals as the Fairy Glen. AE the mystic painter and poet visited Glenveagh and left some of his enchanted paintings there. Percy French visited Glenveagh in 1908 and penned this rhyme as a dedication:

'For once you heard the fairy bells and saw the little shehogues play and knew at least the magic spells that lead the lover to Glenveagh'. 'O Poet, when the touch of time has turned those auburn locks to grey, still may the Bells of Faerie chime that once re-echoed round Glenveagh'.

There is a Fairy Glen in the woods above Ards Friary associated with the Old Oak Woodland there and the Forest Park has a number of stories that relate the activities of the wee folk with the mill stones found on the nature trail and the enchanted Cashel at Lough Lilly where their music is to be heard.

Carrickbreeny Wood south of Bridgetown in South Donegal has in its place name an association with the "gentle folk", the place name literally meaning the "Fairy Fort" or "Palace".

At Ballyarr and Dunwiley we find the overlap of archaeology and native woodlands, it appears that the ground layer wildflower species are as much an ancient woodland indicator as they are a sign of fairy enchantment, a kind of spiritual inspiration.

History of Ireland's Native Woodlands

The story of our native forests and their decline is a dynamic one, driven by an interplay between ecological processes, changing climate and human activity. I propose 'woodstory' as a name for the narrative associated with our native woodlands. Our earliest historic records about trees and forests in Ireland come from old brehon law tracts and the Annals of the Kingdom of Ireland. These ancient documents together with the nature poetry of the early Christian period help us appreciate how the Irish of the time truly valued the forests that sustained us. We once shared their woodland habitat.

The Scribe in the Woods

All around me greenwood trees
I hear blackbird verse on high
Quavering lines on vellum leaves
Birdsong pours down from the sky
Over and above the wood

The blue cuckoo chants to me
Dear Lord thank you for your word
I write well beneath the trees

from Irish 9th century poem translated by Ciaran Carson

A more detailed scientific understanding of the long history of Ireland's developing flora and fauna has been improved by the study of tree pollen deposits in our bogs since the 1940s. In the deepest bogs and lake sediments, layers of tree pollen are preserved, recording the progressive development of plant communities on the land.

To help grasp the long natural history of our native woodlands in County Donegal we can start with a review since prehistoric times. Evidence of recent glaciations is found in landscape formations and deposits throughout the Irish landscape. Some 30,000 years Before Present (BP) a dramatic cooling of Planet Earth resulted in the most recent Ice Age. Ireland and much of Northern Europe was covered in an ice sheet, up to 1 km thick. Glaciation reached the Alps and Pyrenees in the south, driving all plants and animals south into bio-refuges in the Iberian peninsula, the Italian peninsula and the Balkans.

Some 15,000 years BP the climate warmed and from these southern refuges the flora and fauna of Europe began to advance north, recolonising the bare glaciated landscape of northern Europe eventually reaching Ireland. A land bridge connected northern France to Britain and Ireland. The first plants were soil builders, algae, mosses and lichens along with bacteria, fungi and a multitude of micro-organisms making humus and topsoil. At first a tundra-like flora emerged of dwarf shrubs like Juniper, Heather and Sedges. A similar flora can be found today on the higher elevations of Errigal and Muckish mountains. As the climate warmed, willows established, their seed carried in by the wind, forming the first scrub woodland, grazed by herds of Giant Irish Deer.

Bluebells under Hazel, Gartan

Oak Door, Raphoe Cathedral

By 11,500 BP Ireland became an island, sea levels eventually rose by 100m. Over the next three millennia the flora of Ireland (about 750 species) arranged itself uniformly over the island, so that now when we visit a native woodland in any part of Ireland, we find a similar community of plants and animals. In this sense Ireland became a separate sub-division of the European Temperate Forest Biome with a unique range of plants and animals.

The flora of Ireland gives the country its celebrated green character. In a sense three great powers came together in ancient times. The first major element is the geology of the land, limestones, granites, sandstones, and basalt making the basis of our soils. Our temperate maritime climate influenced by the Gulf Stream is the second major defining element. The third major element was the great migration of plants and animals from neighbouring Britain and continental Europe. This migration gave us heathery mountains, the herb-rich limestone Burren landscape, our fertile fish-full rivers and lakes and the great fertile central plain clad in vast expanses of temperate deciduous forests. For thousands of years Ireland was a vast forested landscape.

By 10,000 BP the first "climax" forests were of Birch, soon to be followed by Hazel woods (by 9,500 BP) along with Aspen on dry soils and alder in wet places. By 9,000 BP our main native trees had developed into vast forests. Pine, Oak and Elm had spread north and west throughout the land. The character of Ireland's biodiversity was determined by this ancient migration, giving this land a unique combination of herbs, shrubs and trees that created assemblages of a special Irish character, inhabited by an equally unique fauna. Ireland had reached 'forest maximum'. The first human inhabitants (Mesolithic-hunter gatherers) were now present.

By 7,000 BP Ireland had about 80% forest cover on land surface, temperate rainforest being the fullest expression of nature on this land. In the lowlands of Ulster vast forests of Oak and Elm grew on the better soils, this included much of the lowlands of Donegal along the Finn and Foyle river catchments, on the coastal lowlands and in the south of the county. Birch, Hazel and Pine forests filled the western uplands, while Willow and Alder flourished in river catchments, flood plains and wetlands. One of the oldest names for Ireland is *Inis na Fidbadh*, meaning "The Isle of Woods".

The beginning of the Neolithic (6,500 BP) marked the first forest clearance for agriculture. Evidence of the earliest neolithic farmers in Donegal is found around Croghan Hill, south of present-day Lifford. These first farmers cleared the great forests to create a pastural landscape like the ancient plain of Magh Itha now known as the Lagan. Wildwood was cleared for cattle and sheep while choice ground was enclosed for cereal cultivation. In South Donegal, Mag Sereth and Mag nÉne were cleared, and Mag Tochair in north Inishowen. Each of these ancient plains was once a great forest. It is estimated that forest cover in Ireland was reduced by 15% to 70%

by our neolithic ancestors. By 5,500 BP the entire elm population disappeared from the pollen record, dying out due to climate change, deforestation and/or disease. A dramatic fall in the neolithic farming population occurred around 5,300 BP that may have been due to over exploitation of forests and climate change. The pollen record indicates that the great pine forests also began to decline in numbers and bogs began to appear in the landscape due to a wetter climate. By 4,500 BP Ash woodlands expanded into the landscape perhaps benefitting from earlier forest clearance.

New human migrations followed. Bronze Age (4,250 BP) people arrived into Ireland from the south (Northern Spain) bringing metal working in bronze and gold. Woodlands were exploited for domestic fuel, farm implements and buildings and clearance for agriculture accelerated. By 2,500 BP the bronze axe reduced forest cover in the country to half the land surface (50%). All virgin **primary** forest in Ireland had been exploited, meaning the remaining forests are regarded as '**secondary**' - that is they had regenerated after significant disturbance to the primary forest and were no longer in a truly wild condition. There are many bronze age settlements around coastal Donegal as well as on the good lands in the south and east of the county.

By 2,500 BP the Iron Age Gaelic speaking people had arrived in Ireland. They built oak houses and massive oak timber ritual structures. Trees in "Celtic Ireland" were a source of wisdom and poetry. Our legends tell us "*the nuts of knowledge fell from the nine magical hazels that grew about the Well of Saigais, the source of the River*

Scots Pine covered by bog in prehistoric times, North Donegal

Boyne, feeding the salmon of wisdom" . *Trefuilngid Tre-eocha* explained the history of Ireland and her division into four quarters with a fifth sacred province centred at Uisneach. There stood *Creab Uisnnig,* a sacred ash tree connecting land with heavens, with four more sacred trees (two Ash, an Oak and a Yew) in each of the provinces.

A dark age occurred in the last centuries BC perhaps due to a deterioration in the Irish climate and continued into the early centuries AD when farming activity declined and woodlands began to expand. It is estimated native woodland cover occupied about 40% of land surface by 450 AD.

By 300 AD the Irish language Ogham alphabet appeared, utilizing native Irish trees to represent each letter. The characters were written on Hazel rods, with tree names corresponding to letters, *beithe* (Birch) = b, *coll* (Hazel) = c and *dair* (Oak) = d. Schools during this period were forest bardic schools with trees extensively used as teaching aids.

Early Christian Ireland, began with Palladius and Patrick 430-460 AD and a further rapid decline in forest cover occurred at this time. The Bardic law known as *Bretha Comaithchesa* or the Laws of Neighbourhood were in use in the 8th century setting out the penalties for unlawful damage to classes of tree species. This indicates trees were regarded as a limited resource and were valued. The noble trees *Airig fedo* were Oak, Hazel, Holly, Yew, Ash, Pine and Apple, while the commoners *Aithig fedo* were Alder, Willow, Hawthorn, Rowan, Birch, Elder and Cherry. The *Bretha Comaithchesa* gives us an accurate ecological picture of the tree flora of Ireland of the time. With population expansion in Ireland between AD 550 and 850, the "cattle culture" of the Irish had become the dominant force on the landscape. Extensive forest clearance occurred and big trees that could be exploited for timber had become very rare.

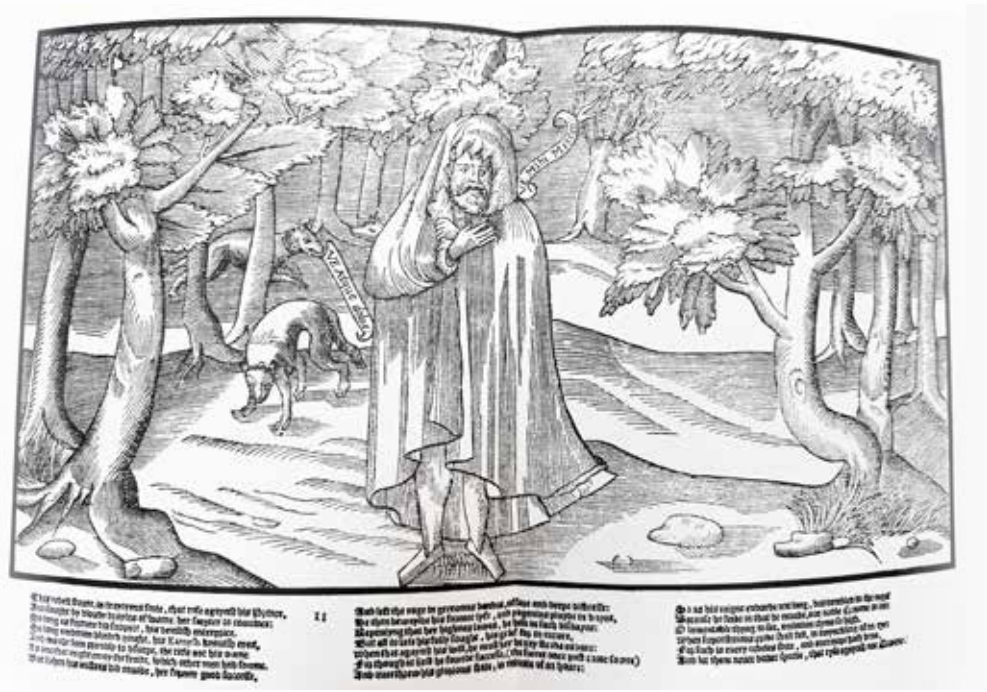
Éicneach, King of Tír Conaill

The ancestral king of Tír Conaill, Éicneach (d.906) was the father of Domnall from whom the O Donnell clan descend, and first of the O Donnell Kings to be crowned at Doon Rock near Kilmacrennan. A bardic poem from the time describes a "friendly" tree felling competition between Éicneach and a recently arrived Viking king. Éicneach was first to swing his axe, but he misses the tree and instead 'fells' the Viking king. Eventually Viking settlements were established at Mulroy Bay and Donegal Bay and it is probable that the Vikings brought shipbuilding skills to Donegal at this time, Oak was used for board work, Willow for nails and Pine for the mast.

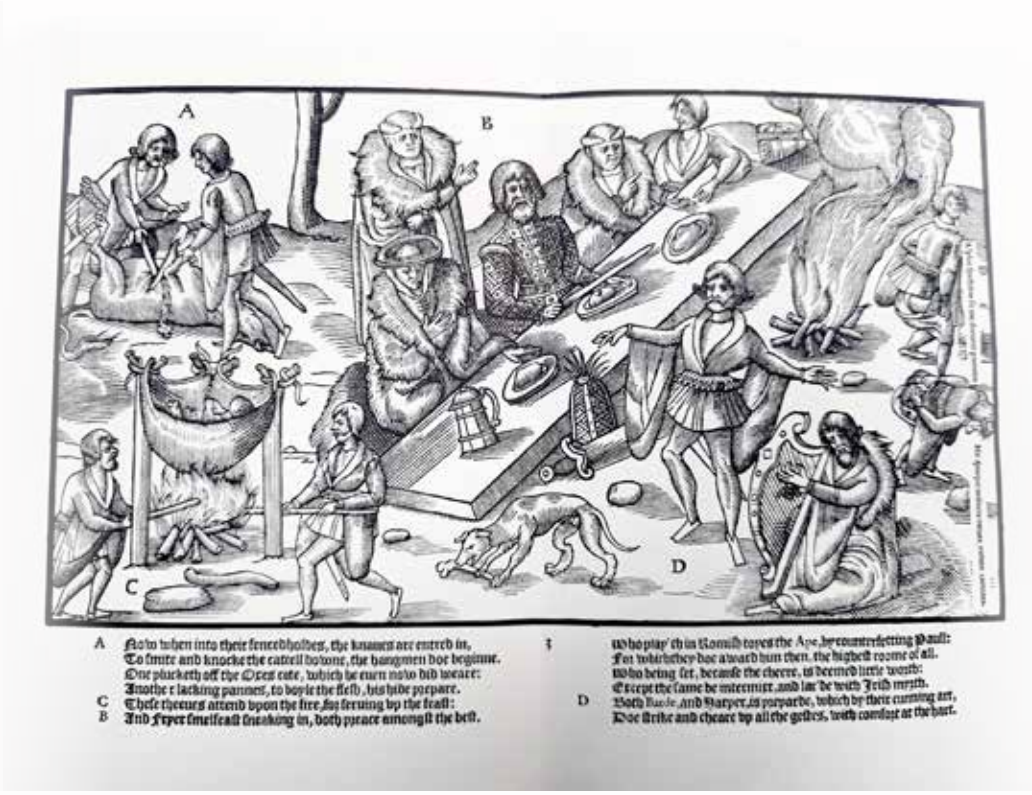
By the turn of the first millennium (1000 AD) woodland cover in Ireland had declined to 20% of land area, it follows that Donegal had lost most of its forest cover to agriculture. Remaining forests were found on wetter marginal land unsuitable for agriculture. The shrinking forests continued to be cleared for agriculture, as well as timber harvesting for charcoal production, bark stripping for tanning leather, timber extraction for construction and firewood. As the population continued to grow more marginal wooded land was cleared of trees for grazing.

Ulster remained largely free of the influence of the Norman invasions that occurred in southern Ireland. In the north the older Gaelic order prevailed, thus a shared ownership of the lands of each clan or Tuatha remained dominant. Townlands, parishes and ecclesiastical baronies were established in the landscape, and the vast majority of the population lived off the land. A type of open 'Gaelic parkland' landscape was common, with scattered woodlands on the marginal uplands with poorer soils whilst shepards (Creaghts, see page 122) herded cattle through pastures of open grassland (free of hedges and ditches), coastal dune systems and upland heath or scrub.

In the late medieval period (1400AD) Donegal saw the establishment of new political powers, with the rise of the O Donnell clan and their control of the central areas of County Donegal with the best land. They built a chain of Castles in the south of the county and on the Finn and Foyle rivers to protect their eastern and southern boundaries.



Depiction of a Wood Kerne – woodland dwelling native Irish 1581, Derrick's *The Image of Ireland*



Outdoor court of Mac Swyne Chieftan, harp, table, jug and platters crafted from wood, Derrick's *The Image of Ireland*

Illustrations in John Derrick's *The Image of Ireland* (1581) depict military campaigns by the English Crown forces in Ireland and Scotland and the subjugation of the native clans. With constant hostilities throughout Ireland the remaining woodlands became a valuable refuge for the Gaelic chieftains where they could hide their cattle (the source of their wealth) and where their armies could shelter in times of conflict. Native woodland clearance was accelerated by Crown forces to deprive the native chieftains of their woodland shelter and cover.

The best recorded evidence, helping to trace the remaining native woodland cover in Ulster for this historic period, are maps produced by Richard Bartlett "the Queen's [Elizabeth I] map maker". Bartlett's 1602/3 maps chart the territory of the ruling Gaelic families, their castles, the coastline and river systems as well as the extant native forests in his "Generalle Description of Ulster." In many cases Bartlett's Donegal coastal locations for woodlands, correspond with surviving Ancient and Long-established woodlands in locations like Rathmullan and Ardnamona.

Richard Bartlett's *Generalle Description of Ulster* 1602 illustrating Donegal's ancient woodland, prior to the plantation of Ulster

Bartlett recorded woodlands in locations in the south of the county around Donegal Bay, along the Finn, Gweebarra, Owencarrow and Leannan rivers and on the shores of Lough Swilly. Throughout the 17th century demand for timber products increased during the Plantation of Ulster. Native woodlands were exploited for domestic buildings, barrel staves, charcoal for glass and iron works and ship building as well as further clearance for agriculture in Donegal. The Irish wolf (the original apex predator vital to a healthy native woodland) was hunted to extinction at this time.

Patterns in land management changed with new landowners. The Donegal landscape changed from an open landscape largely free of field boundaries to one enclosed by hedges and ditches. 18th and 19th century landlords forced tenants to enclose common land with earth banks, stone walls, and hedgerows, thereby establishing control of agricultural lands, subject to rent. Supplies of native timber declined to a new low by the mid-18th century and import of timber into Ireland began. Forest plantations of introduced tree species began to appear as part of the estate 'improvements' by Landlords. The Irish population increased steadily,

Bartlett's Generalle Description of Ulster 1602

Ireland in the 16th and 17th centuries was war-torn, in Ulster the O Neills and O Donnells were resisting the conquest of the English Crown. Up until this period the landscape of County Donegal was poorly understood by outsiders. Landscape surveying in Ulster by the Crown was viewed as part of the conquest by the Gaelic Earls and was discouraged by them in every way. They didn't want their lands to be made known. In this context Richard Bartlett, produced "A Generalle Description of Ulster" in 1602. He mapped the subdivision of lands in Gaelic lordships, their castles, and natural features of the landscape like lakes, rivers and woodlands in the province. His work has been praised for its beauty and detail. Bartlett met a cruel end in 1603 when he was assassinated in Donegal by those opposed to the English conquest at the time.

Bartlett's map gives us the most accurate picture of the distribution of native woodlands of Ulster in 1602. The map shows extensive woodlands around Lough Neagh and in north County Down. In the west of the province forests were mapped by Bartlett around coastal "Tir Connelle". We can trace several of our ancient woodlands using Bartlett's maps around Donegal Bay, on the Gweebarra river, in the Crolly area (Tomellagh), north of Muckish (Ards), around the southern shores of Mulroy Bay, along the Leannan river, west and north of Rathmullan and along the Swilly and Finn rivers. Curiously Bartlett recorded no forests on "Innis-owen".

peaking in the early 19th century at over 8 million, placing enormous pressure on already struggling native woodland biodiversity. Much of the woodland flora and fauna of Donegal was confined to hedgerows established at this time and the tiny remaining pockets of native woodland.

The first (1830) of three land surveys produced by the Ordnance Survey Office, mapped all significant landscape features in Ireland. This included surviving native woodlands and recently established demesne plantations. A revised survey of 1848 (used in Griffiths evaluation) gave greater detail of precise locations of native woodlands in Donegal and the later 1901 OS map recorded the historic development or decline of these remaining woodlands.

Ireland's first forestry school was opened at Avondale, County Wicklow in 1904. With it, the "reafforestation of the waste lands in Ireland" began with the first commercial afforestation plantations on a large scale. The 1928 Forestry Act was a significant development, all tree felling required a licence and forest owners were required to replant. In 1932 Ireland's first National Park with ancient oak woodlands

at Killarney was established. Afforestation was concentrated on poor quality soils on marginal lands (bogs and wasteland) with the Irish State being the largest landowner (50+%). However by 1950 total forest cover in Ireland had seen little change at 120,000 ha.

Bartlett's 1602 map, detail of "Tirconnelle"

National targets of adding 10,000 ha each year were reached by 1960, while avoiding competition with agricultural lands. Blanket bogs became the focus of planting of Sitka Spruce. In 1975 Glenveagh National Park, Ireland's second National Park was founded, the ancient native woodlands at Mullangore are recognised as a significant conservation feature of the Park.

Mullangore Wood, Glenveagh National Park 2023

Plantation establishment in Ireland had reached 440,000 ha by the 1980s, almost 80% of which was State owned. Overall, 51% of all woodland in Ireland is of one species Sitka Spruce (*Picea sitchensis*) and since the 1990s between 70-80% of all new planting has been Sitka Spruce. Conservation work on saving our threatened native woodland began in Wicklow Mountains, Killarney and Glenveagh National Parks in the 1980s.

In 1989 the Irish government created Coillte Teoranta to manage State forests. Afforestation shifted to private landowners, the current estimate is that there are 50,000 private woodland owners (with forest plantations) in Ireland. In the 1990s Coillte passed ownership of important native woodlands in Donegal (Ardnamona and Rathmullan Woods) to National Parks and Wildlife Service.

Imported wooden barrel made with oak staves, Crolly Distillery

Crolly Distillery

Crolly Distillery - whiskey named for oak species

Oak barrels account for whiskey flavour

The European Economic Community (EEC) adopted the Habitats Directive in 1992. This directive required Ireland to protect and conserve the threatened and endangered habitats and species that are listed in the various annexes of the Directive that occur in Ireland. The Irish Government has designated over 430 Special Areas of Conservation (SACs) around the country for the protection of habitats and species listed in Annex I and Annex II of the Directive. Specifically, the Annex I woodland types found in Ireland include Old Sessile Oak Woods (91AO), Alluvial Forests (91EO), Yew Woodlands (91JO) and Bog Woodland (91DO).

In addition, the EU adopted the Birds Directive in 2009 which also requires Ireland to designate areas for the protection and conservation of wild bird species. These sites are known as Special Protection Areas (SPAs) and collectively all European designated sites are known as the Natura 2000 network. County Donegal has one of the highest densities of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) in the country. Furthermore, Donegal is also host to numerous sites of local or national importance known as National Heritage Areas (NHAs).

Between 2003-2008 the first comprehensive National Survey of Native Woodlands in Ireland was undertaken, sponsored by National Parks and Wildlife Service and The Forest Service. Donegal is estimated to have 4037 ha of native woodland, 18% of which (728 ha) is within Special Areas of Conservation.

By 2020 total woodland cover for Ireland, north and south is estimated at 898,000 ha or 10.7% of total land cover. Of this total, just 30% is made up of broad-leaved trees, and of this 30%, less than 9% (16,600 ha) can be traced back (to 1830) as Long Established native woodland. Evidence for surviving Ancient Woodland (pre 1660) is estimated at 6000 ha in the 26 counties and 550 ha in Northern Ireland. The amount of woodland that can "claim an unbroken succession with the Gaelic past is vanishingly small". Many of our native woodlands remain vulnerable requiring conservation interventions.

Caoineadh Choill Chais

The Lament for Kilcash (in County Tipperary)
"Cad a dhéanfaimid feasta gan adhmad, tá deireadh na gcoillte ar lár…"
"What will we do without wood, now that the last of our forests are down…."

Nursery production of native trees at Glenveagh

Woodland Placenames in County Donegal

(from Irish Names of Places, P.W. Joyce, 1920 & Logainm.ie)

We find both history and ecology recorded in the Gaelic placenames of Donegal. Many writers cite the significance of Gaelic placenames that trace historic changes in the landscape. Care must be taken in how we interpret meanings and there are examples where placenames change over time. For example, the older name for the Glenveagh valley, *Gleann Fada Fán na Sealg* translates as "*the long wandering glen of hunting*". This older name describes the elongated valley as a hunting ground in ancient times. The newer name for the National Park originates in a small townland south of Lough Beagh that describes the "glen of Birch" *Gleann B*heatha or *Bheithe*, giving us the townland name Glenveagh. It was in this townland that Glenveagh Cottage stood, where the Adairs stayed before the completion of Glenveagh Castle. The Adairs gave the townland name to their newly created 'sport hunting' estate.

Oak gives its name to more places than any other tree in Ireland. Oak is really well adapted to the Irish environment, no wonder it is known as the 'king tree' in Ireland. There are thousands of examples of oak Derry *Doire* names in Ireland. Here in Donegal in the north of the County, just south of Carndonagh, is *Cnoc na choille daoire* or Crocknakilladerry. This translates as *Hill of the Oakwoods*, an ancient name that accurately describes Ireland's most northerly native Oak woodland. *Daire-Calgaich* is the original name for Derry City, the Oak City. A great Oak Grove grew there that was much loved by Colmcille, so much so that the orientation of *An Dubh Regles* church was altered to fit between the ancient Oaks. To the early Christians, these oaks were sacred. *Doire* or Derry placenames are plentiful in Donegal. Derryconnor and Derry Beg in the northwest of the County no longer have Oaks to grace the landscape, but the memory of their Oak inhabitants remains in the placename.

Fiech-glas or Feddyglas is a small townland east of Raphoe and a possible ancient woodland site. The placename describes the green woodland interior as "*Greenwood"* a very rare ancient woodland in the east of the county. *Fiodh-ghart* or Figart a townland east of Convoy describes a "*Woody enclosure"* where a native woodland makes a townland boundary there yet. *Mín-na-giumhas* or Meenaguse townland in the Bluestack mountains, translates as "*Level place of Pines"*, preserving an ancient name *Giuis* for Scots pine, also known in Donegal as Bog Fir, Pine tree stumps preserved deep in the bog that once made great forests four thousand years ago.

Ancient woods, Killindarragh

Gaelic name	Common English	Placename/meaning
Abhall/ubhall	Apple	
Airne	Sloe	
Aiteann	Furze	
Beith	Birch	
Bile	Large tree	
Caerthain	Rowan	
Cionn an Bheithe	*Kinnaveagh*	*Hill of Birch*
Cnoc-na-choille-daoire	Crocknakilladerry	*Hill of the Oakwoods*
Coill-ruis	*Kilross*	*Wood of the point*
Coll	Hazel	
Coill	Woodland	
Collchoill	*Colehill*	*Hazelwood*
Crann	Tree	
Crannaidhe	Cranny	*A place of trees*
Créacha-dubha	*Creaghadoo*	*Dark shrubbery*
Craebh	Branch or spreading tree	
Creabhaire	*Crevary*	*A branchy place*
Creaght	*Creaght*	*Nomadic herders*
Cró Bheithe	*Crovehy*	*Hollow of Birches*
Cuillion	Holly	
Dair	Oak	
Derk More	*[Great eye] Lake*	
Derk Beg	*Derk Beg Hill*	
	Derk More Lough	
Doire	*Oakwood/woodland*	
Doire-bheatha/bheithe	*Derryveagh*	*(Oak) Wood of Birch*
Doire Bheag	*Derrybeg*	*Little Oakwood*
Daire-Calgaich	*Calga's Oakwood*	*Derry [City]*
Doire-druadh	*Derrydruel*	*Druids Oakwood*
Doire-leathan	*Derrylahan*	*Broad oak-wood*

Gaelic name	Common English	Placename/meaning
Doire Luachán	*Derryloaghan*	
Doire-na-caraaidh	*Derrynacarrow*	*Oakwood of the fishing-weir*
Doire-na-mainséar	*Derrynamansher*	*Oakwood of the mangers*
Doire-na-spall	*Derrynaspal*	*Oakwood of the [ash burning]*
Doire-Ui-Fhrighil	*Derryreel*	*O'Freels Oakwood*
Doire-bheathach	*Derryveagh*	*Wood of Birch trees*
Draeighean	Black-thorn	
Eidhneach	*Eany River*	*Ivy-producing river*
Eidhneán	Ivy	
Eó/iubhar/lúr	Yew	
Fásach	Uncultivated wild place	
Fearn	Alder	
Loch Fearna	Lough Fern	Lake of the alder
Fiech-glas	*Feddyglas*	*[Greenwood]*
Fidh/Fiodh	Woodland	
Fieche	Woodland	
Fiodh-ghart	*Feegart/Figart*	*Woody enclosure*
Fidh-na-dtorc	*Finnadork*	*Wood of the Boars*
Fothar	Forest	
Fuinnseóg	Ash tree	
Geartha	Woodland along a river	
Giumhas/Giuis	Fir [Scots pine]	
Ghleann Bheatha/Bheithe	Glenveagh/Glenbeagh	Glen of Birches
Gort-na-fearna	*Gortnavern*	*Alder field*
Inis-na-bhfiodhblaidh	*Inish-na-veevy*	*Woody Island (Ireland) or island of woods*
Leamh	Elm	
Leamhraidhe	*Lavree*	*A place of elms*
Loch an lúir	*Loughanure*	*Lake of the yew*
Loch Bheatha	*Lough Veagh/Beagh*	*Lake of Birch*

Gaelic name	Common English	Placename/meaning
Mín-na-giumhas	*Meenaguse*	*Level place with Pines*
Mín an cuillean	*Meenachullion*	*Level place of the holly*
Mín-doire	*Meenderry*	*Level place of Oak*
Mín-doire-Erc	*Meenderryherk*	*Erc's oak grove*
Mín-doire-na-sluagh	*Meenderrynasloe*	*Oak grove of the hosts*
Mín-doire-gabhann	*Meenderryowan*	*Oak grove of the smith*
Muine	Shrubbery	
Ráil/ral	Oak	
Ros/Ross	Woodland	
Ros-garbh	*Rossgarrow*	*Rough wood*
Ros-nabhlach	*Rossnowlagh*	*Apple wood, wood of the apples*
Scairt	A thicket	
Sceach Geall	White-thorn	
Skeoge	Bushy [thorny] place	
Spionán	*Speenoge*	*Abounding in gooseberry bushes*
Trom	Elder	

Native woodland on Ray River, North Donegal

Fallen tree covered in Seamsóg, Wood Sorrel, *Oxalis acetosella*, Gartan

Understanding "layers of light" in Native Woodlands

A truly healthy woodland will have evidence of four layers or storeys, visible in the woodland structure as "layers of light". Each of these layers will have a specific habitat occupied by specialist plants and animals. This "multi-storey" native woodland habitat is by far the most biodiverse of our habitat types in Ireland. Native woodland contains the richest combination of flora and fauna in County Donegal and is therefore a priority for habitat conservation. Donegal woodlands contain a mosaic of plant communities in each layer making for a complex woodland ecology.

The **Ground layer** – The ground layer habitat is the soil surface, surface of rocks, dead and dying trees and the surface bark of living trees. This layer is occupied by lichens, mosses, and miniature plants. There will be many kinds of insect in the ground layer feeding on decaying leaves and wood mice foraging for food.

The **Field layer** – is usually knee-height and occupied by flowering herbs and ferns. It tends to be the most colourful woodland layer with sheets of spring wildflowers such as Golden Saxifrage, Wood Anemone, Violet, Primrose, Bluebell, Wild Garlic, Orchids, as well as Ferns and Woodrush, with pollinating insects visiting the abundant wildflowers.

The **Shrub Layer** – is usually occupied by smaller woody plants like Bilberry, Bramble, Hawthorn, Holly, Guelder-rose, Willow, Blackthorn, Hazel and Honeysuckle. Most of these plants are fruit producers that are an important food source for woodland mammals and birds.

The **Tree Layer** – or canopy layer, is always occupied by the main tree species such as Oak, Birch, Alder or Ash. The canopy is teeming with bird and insect life especially when the trees are in leaf. Multiple species of moths and butterflies (such as Purple Hairstreak Butterfly) occupy the tree layer feeding on oak foliage and laying eggs. Woodland birds will feed their young with insects and grubs and moths from the tree layer.

The hidden Life of Trees by Peter Wohllenben

"Oaks register pain as soon as some creature starts nibbling on them. When a caterpillar takes a hearty bite out of a leaf, the tissue around the site of the damage changes. In addition, the leaf tissue slowly sends out electrical signals, just as human tissue does only very quickly when it is hurt. Trees live their lives in the really slow lane".

Dr. Suzanne Simard has discovered trees "warn each other using chemical signals sent through fungal networks around their root tips, which operate no matter what the weather..... all the oaks in the area promptly pumped tannins through their veins as a defence from damaging insects".

Sunlight pentrates to Field Layer under Oak canopy

County Donegal's Woodland Biodiversity

There are four main types of woodland community found throughout Ireland. In Donegal we find examples of them all as pure stands or combinations of all four types in a mosaic pattern through native woodlands.

The most common woodland type in Donegal is the **Oak – Woodrush** (*Quercus - Luzula* **QL**) woodland. Most of the woodlands described within this book are of this type – recognised by the predominant presence of Oak (*Quercus*) in the canopy layer and woodrush (*Luzula*) in the field layer. Ardnamona, Glenveagh, Ballyarr and Rathmullan are all excellent examples of this characteristic vegetation type of the Donegal landscape.

Ash-Ivy (*Fraxinus-Hedera* **FH**) is the most common woodland type in Ireland, in Donegal we find ash woodlands in the south of the county over limestone soils, such as at Ardnamona and Carrickbreeny. Regrettably ash is now succumbing to Ash Dieback, which will profoundly alter the ecology of this woodland type. In the ash woodlands the Field Layer tends to be rich in lime-loving plant species such as Hart's-tongue fern, Bluebells and Orchids.

Alder-Meadowsweet (*Alnus-Filipendula* **AF**) woodlands that develop in wet fertile locations along rivers and lakes. Ardnamona again has good examples of this woodland type.

The fourth main woodland type is **Birch-Purple moor-grass** (*Betula-Molinia* **BM**) which is most common on peat soils in uplands throughout Donegal, Glenveagh has good examples of Birch woodlands as does Ards and Carrowdoan.

Out of a total of 35 trees native to the whole of Ireland, County Donegal has 30 tree species in the county flora, which is an excellent representation. The five species that are missing from Donegal are Black Poplar (recorded on riverbanks in the south-east), Alder Buckthorn and Buckthorn (limestone soil specialists found in the south), and two tree species confined to the southwest, Strawberry tree (*Arbutus unedo*) and *Sorbus anglica*, the latter being confined to one location in Kerry.

Terms

Ecology	Is best understood as the science that deals with the "connection and interaction between living creatures and their environment". This includes human beings.
Biodiversity	Is the variety of life on Earth including plants, animals, micro-organisms, fungi and their habitats. This also includes human beings.
Biome	A biogeographical unit, Ireland is part of the European Temperate Forest Biome.
Primary Woodland	Virgin forests untouched by human activity, of which none have survived in Ireland since prehistoric times.
Secondary Woodland	Woodland that has regenerated after significant disturbance to the primary forest. All of Donegal's native woodlands are somehow altered by human activity.
Native Woodland	Woodland dominated by indigenous trees.
Ancient Woodland	Wooded land in Ireland since 1660, these can be of the highest biodiversity conservation value.
Long Established	Native woodland that can be traced back to the first edition Ordnance Survey maps (1830s).
Wildwood	Native woodland in its natural state with no human exploitation.
Restoration	Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.
Rewilding	Rewilding is one approach to restoration. It aims to restore self-sustaining and complex ecosystems, with interlinked ecological processes that promote and support one another while minimising or gradually reducing human interventions.

Native Woodland conservation in Donegal

The regenerative capacity of native woodland habitat, in other words its capacity to persist, to endure and survive in adversity is the main reason for its continued presence in the Donegal landscape. Given time, free from grazing pressure and competing invasive plants, Native Woodland will spread onto new ground, expanding the diverse woodland habitat. Our native woodlands need our intervention on a landscape scale, to re-establish viable and thriving woodland habitat. Our river systems provide the network in Donegal for native woodland establishment that restores ecological connectivity. Nature is not static, native woodland development is a natural phenomenon that is continually developing, a continuum from ancient times. How we act now will determine the shape of our cultural and natural heritage in the years and centuries to come.

Ancient woodlands have often survived in the Donegal landscape because they have grown in remote inaccessible locations, on the poorer rocky soils such as at Glenveagh, Carrowdoan and Derkmore. They have also survived as part of private "designed landscapes" created in the 17th, 18th and 19th centuries, such as at Ardnamona, Glenveagh and Ards. Landowners "improved" their estates by replacing native trees with introduced forest trees like Beech, Sycamore, Scots pine, Fir, Larch and Spruce. Little value was placed in the regeneration of native woods, this resulted in a further decline in native woodland cover. By 1900 native woodland cover in Ireland had reached an all-time-low of approximately 1% of land cover.

In County Donegal the beginning of long-term conservation of native woodland was marked by the declaration of Glenveagh National Park in 1975. This was followed by the establishment of the counties Nature Reserves several of which contain Old Oak Woodlands like at Rathmullan, Ballyarr, Ardnamona, Duntally.

Ireland as a nation is committed to habitat conservation and restoration as an European Union (EU) member. Our progress is reported in the Natura 2000 Viewer that gives an update of sites in all 27 member nations of the EU. Collectively 18% of the EU's land area has been afforded legal protection (Special Areas of Conservation – SACs, Special Protection Areas - SPAs and National Heritage Areas - NHAs) for endangered habitat and rare species conservation.

The Native Woodland Scheme (NWS) was introduced by the Irish Forest Service in the year 2000 to promote native woodland conservation in Ireland and to expand the land area occupied by native trees. Conservation of Donegal's existing native woodlands is best achieved by creating conditions where the woodland habitat can recover and expand naturally into the surrounding landscape. The establishment of new native woodland plantations strengthens biodiversity connectivity. County Donegal has some excellent examples of Native Woodland Scheme projects such as at Glenalla (page 126) and Carnowen (page 148).

Glenveagh acorns collected for nursery production

Woodland Restoration Principles

Native woodland restoration is a recent development in the Irish State. Considerable investment in ancient and long established native woodland conservation has been underway in recent decades in our National Parks; Killarney NP, Glenveagh NP and Wicklow Mountains NP.

Five principles for Ancient Woodland Restoration

(Woodland Trust, UK)

1. Threatened Ancient Woodlands require positive management for biodiversity.
2. Without restoration management Ancient Woodlands may become irreversibly degraded over time.
3. Ancient Woodlands are likely to retain pre-existing archaeological as well as ecological values.
4. Surviving biological elements (flora and fauna) depend on positive management of light levels.
5. Restoration management is a long-term process, requiring prioritised measures preventing further degradation.

Three phases of woodland restoration

1. Halting decline – the highest priority is given to measures that conserve irreplaceable features and vulnerable species, from one-off operations, to many years of gradual interventions.
2. Progressing to semi-natural canopy – making long-term improvements addressing woodland habitat structure and restoring canopy cover.
3. Long-term sustainable management of native woodlands has no end point.

Hart's-tongue Thyme-moss *Plagiothecium undulatum, Anemone* and *Caltha*

Significance of County Donegal's Native Woodlands

The woodland profiles described within this book are mostly chosen from the Ancient and Long Established Woodland Inventory (2010) and The National Survey of Native Woodlands (2003-2008). These surveys are based on field data collected from 1217 sites in the 26 counties. One aspect of the National Survey ranked the conservation value of significant native woodlands in each county, rating them for ecological health and biodiversity. Three of Donegal's native woodlands - Ardnamona, Ards Forest Park and Ballyarr Wood, ranked among the top 12 highest conservation quality woodlands in the 26 counties.

There are several measures used to determine conservation values in the ecology of our native woodlands. Species diversity is very significant, as is evidence of new trees regenerating, tree size, age structure and abundance, presence of deadwood, the extent of the woodland, the proximity of other adjacent woodland habitats, rivers and lakes increase habitat diversity and evidence of past human activity are all valuable attributes. The greater the diversity in species – the older the wood is likely to be and the greater the resilience of the woodland ecology. The **'Woodstory'** of our woodlands will always hold cultural values as well as ecological values. Our native woodlands reflect the activities of our ancestors tracing the cultural and natural history of this land over thousands of years.

Mature Oak acorn at Ards

Our native woodlands maintain the old time forest clock that is attuned to the seasons. The sound of the forest expressed by woodland birds especially in spring is one of the great miracles of Irish nature. Our native woodlands express a 'woodstory' unique to the Irish environment and the journey of Irish biodiversity over thousands of years. St. Colmcille and his people were familiar with the same tapestry of spring flowers in the woods around Gartan lake as we find there today. Our native woodlands continue to give spiritual refuge and relief to the Donegal community.

The following woodland profiles represent a good distribution of native woodlands from around County Donegal. Elements of the ongoing management and conservation of these woodlands are discussed and woodlands with public access are given.

The biodiversity award-winning Carnowen Native Woodland Establishment Project is included, as it is groundbreaking for biodiversity restoration. Glenalla is included as an important example of native woodland restoration where invasive rhododendrons have been successfully controlled and native woodland regeneration is taking place. Drumboe Wood is an excellent example of an urban woodland next to the town of Ballybofey.

Each of our native woodlands is a biodiversity hotspot, a refuge for wild plants and animals. These creatures share their connection to the greater landscape of Ulster and the rest of the island of Ireland. We are moving into a period in our history where there is a shift away from forest exploitation toward a sustainable approach to native woodland conservation and management.

From The Democracy of Species, by Robin Wall Kimmerer

"I come here to listen, to nestle in the curve of the roots in a soft hollow of pine needles, to lean my bones against the column of white pine, to turn off the voice in my head until I hear the voices outside it: the shhh of wind in needles, water trickling over rock, nuthatch tapping, chipmunks digging, beech nut falling, mosquito in my ear, and something more – something that is not me, for which we have no language, the wordless being of others in which we are never alone".

"We must say of the Universe, that it is a communion of subjects, not a collection of objects" – Eco theologian Thomas Berry

Bog fir roof timbers McClure family home near Carndonagh

Oak spinning wheel made by John Shields, Buncrana

Oak sugan chair

McClure cottage near Carndonagh

Native Trees of County Donegal

- from John Cross's *Ireland's Woodland Heritage*

Common Name	Latin Name	Irish Name	Location
Alder	*Alnus glutinosa*	*Fearnóg*	common on wet soils
Ash	*Fraxinus excelsior*	*Fuinnseóg*	common but in decline
Aspen	*Populus tremula*	*Crann Creathach*	scattered throughout the county
Birch – Silver	*Betula pendula*	*Beith gheal*	scattered locations
Birch – Downy	*Betula pubescens*	*Beith chlúmhach*	common, especially in uplands
Blackthorn	*Prunus spinosa*	*Draighean*	common, on clay soils
Cherry – Bird	*Prunus padus*	*Donnroisc*	scattered locations
Cherry – Wild	*Prunus avium*	*Crann silíní*	scattered locations
Crab apple	*Malus sylvestris*	*Fia-úll*	rare, mostly eastern Donegal
Elder	*Sambucus nigra*	*Trom*	common
Wych Elm	*Ulmus glabra*	*Leamhán sleibhe*	rare but scattered throughout
Guelder-rose	*Viburnum opulus*	*Caor chon*	rare but doing well on base rich soils
Whitethorn	*Crataegus monogyna*	*Sceach geal*	common
Hazel	*Corylus avellana*	*Coll*	common
Holly	*Ilex aquifoilium*	*Cuileann*	common
Juniper	*Juniperus communis*	*Aiteal*	rare and vulnerable

Common Name	Latin Name	Irish Name	Location
	Juniperus communis subsp. communis	leaves spreading and prickly, upright or prostrate	Glenveagh
	Juniperus communis subsp. nana	leaves curved, not prickly, always prostrate	Donegal coast
Oak – Hybrid	*Quercus x rosacea*	*Dair*	throughout
Oak – Pedunculate	*Quercus robur*	*Dair ghallda*	especially in the east of the county
Oak – Sessile	*Quercus petraea*	*Dair ghaelach*	the most common Oak in Donegal
Rowan	*Sorbus aucuparia*	*Caorthann*	common
Scots pine	*Pinus sylvestris*	*Giuis*	mostly planted
Spindle	*Euonymus europaeus*	*Feoras*	South Donegal only
Whitebeam – Irish	*Sorbus hibernica*	*Fionncholl gaelach*	1 location (Kilmacrennan)
Whitebeam – rock	*Sorbus rupicola*	*Fionncholl creige*	1 location (Glenveagh)
Willow – Bay	*Salix pentandra*	*Saileach labhrais*	in hedgerows, mostly South Donegal
Willow – Eared	*Salix aurita*	*Crann sníofa*	common in uplands
Willow – Goat	*Salix caprea*	*Sailchearnach*	common in wet ground and hedgerows
Willow – Grey	*Salix cinerea*	*Saileach liath*	common in wet ground and hedgerows
Willow – Rusty	*Salic cinerea subsp. oleifolia*	*Saileach Rua*	most common in hedgerows
Willow – purple	*Salix purpurea*	*Saileach chorcra*	Rare – confined to Donegal Bay area
Yew	*Taxus baccata*	*Iúr*	Rare – mainly Glenveagh

Hedgerows

Hedgerows support the native woodland biodiversity of the Donegal landscape, while our surviving woodlands are the essential biodiversity refuges. According to the County Donegal Heritage Plan, there are more than 10,000 km of hedgerows in the county providing a network of ecological highways, connecting natural woodland habitats. The Hedgerow Survey of Donegal 2009 was commissioned by Donegal County Council. Hedgerow conservation is identified in the County Development Plan as a conservation priority. Donegal's hedgerows are rich in tree species, in total 75 different tree species, native and non-native, were identified in the County's hedges.

The Hedgerow Survey found that the top five woody species to occur in Donegal's hedges are; Hawthorn 48%, Whin 31%, Holly 25%, Ash 23% and Rusty Willow at 20%. In contrast Oak is only found in 2% and Birch 3%.

Ash is by far the most common hedgerow tree and in the last few years Ash Dieback disease (see page 57) has begun to infect trees and has now become very visible. This is a real tragedy for our native biodiversity, as we are losing one of our most important native trees and all the wildlife that depends on Ash is also going to suffer significant habitat loss. After Ash, Sycamore, Holly and Rowan are most common trees in Donegal hedgerows.

The patchwork of green fields bound by hedges defines the cultural landscape of Ireland. Hedgerows have great benefits to agriculture as stock barriers and shelter, while being a habitat substitute for woodland flora and fauna that would otherwise be deprived of habitat.

Hedgerows in East Donegal

Mixed native woodland plantation at Carnowen of Pine, Oak and Cherry

Thugamar Féin

The music collector Edward Bunting regards this song as "probably extremely ancient and was sung about the Dublin area around 1633". The song invokes the coming of summer and celebrates the branchy wood, nut and berry bearing trees and the awakening of nature in May.

Samhradh, samhradh, bainne na ngamhna,
thugamar féin an samhradh linn.
Samhradh buí na nóinín gléigeal,
thugamar féin an samhradh linn
Thugamar linn é ón gcoill chraobhaigh,
Thugamar féin an samhradh linn
Samhradh buí óluí na gréine,
Thugamar féin an samhradh linn
Cuileann is coll is trom is caorthann,
Thugamar féin an samhradh linn
An fuinseog ghléigeal béil an Átha…..

Celtic Rainforest

The term "Celtic Rainforest" is a recently introduced name describing the temperate rainforest woodland habitats of the Celtic (Gaelic) language speaking countries found on the northwest Atlantic fringe. They are Ireland, Scotland, Wales, and Cornwall.

More often described as Atlantic Oak Woodland, these woodlands have a rich moss and lichen flora found mostly in the western Atlantic fringe counties in Ireland, including Donegal. Ireland's temperate climate is shaped by temperatures that are cool and mild, lacking extremes in heat or cold and with high moisture levels that maintain humid temperate rainforest climatic conditions favoured by mosses, lichens, and ferns.

It is worth contemplating what the vast forested landscape of Ireland may have been like 7,000 years ago. The great river systems in the Irish midlands would have had vast forested swamps extending into the landscape. Massive groves of Oak and Elm with spreading crowns grew on free draining soils, interspersed with extensive forest swamps of Alder and Willow that filled the central plain of Ireland. These forests extended into the mountains, climbing hillsides where wolves and wild boar roamed free.

On a landscape scale such vast forests would have released significant moisture into the air, acting as "rain-making" forests. In such circumstances the high moisture conditions associated with the Atlantic Oakwoods of the west of Ireland may have prevailed over much of the Irish landscape, making a vast "Celtic Rainforest" that existed for thousands of years before the advent of man. As these vast forests were cleared in the Neolithic and Bronze Ages for agriculture, the Irish climate may have been modified to a drier climate, more suitable for farming.

Today the tiny pockets of ancient woodland we find in the west of Ireland like at Killarney or Glenveagh National Park, give us some suggestion of what these Primary Temperate Rainforests may have once been like. The temperate rainforests we find in Donegal are extremely important refuges for this unique woodland flora and fauna.

Young Elm on streamside at Duntally Wood

Quercus petraea, leaf stalk with tapering leaf

Dair ghaelach, Sessile Oak *Quercus petraea* and **Dair ghallda, Pedunculate Oak** *Quercus robur* are the tallest growing and longest living of our native woodland trees. Oak was once wide-spread in Donegal but it is now restricted to remote and scattered locations in the county. While there are as many as 600 species of Oak worldwide, Ireland and Donegal have two Oak species and a hybrid form. As the most common climax forest tree in Ireland, Oaks are divided into two species, *Quercus robur* and *Quercus petraea*. These two readily cross producing a hybrid *Quercus x rosacea* that is very common, meaning one is "as likely" to find it (the hybrid) as one of the true species in the wild. All three varieties make up the native Irish Oak population.

Oaks can be readily recognised by the shape of the leaf. The most common type in Donegal is *Quercus petraea*, the Sessile or Irish Oak, that prefers acid soils, it has no acorn stalk, a long leaf stalk, no basal auricle, shallow lobes without veins and clusters of stellate hairs on the undersurface. *Quercus robur* prefers lime rich soils, has a long acorn stalk, a short leaf stalk, auricles at the base of the leaf, deeper lobes with leaf veins and no stellate hairs on the undersurface of the leaf.

Research by Dr Colin Kelleher of the National Botanic Gardens indicates that these two species readily cross (as they are wind pollinated) producing the hybrid form *Quercus x rosacea*, sharing characteristics of both species. This is the case for example in Glenveagh National Park where the Oaks have *Q. x rosacea and Q. petraea* leaf characteristics. Further analysis by Dr Kelleher found that while the Oak samples from Glenveagh are morphologically different, they are in fact all the one genotype = *Quercus petraea*. His work has led to the recent discovery that Ireland's native Oak populations originated in northern Spain.

In general *Quercus petraea* has a more widespread and westerly distribution in Donegal while *Quercus robur* has a more easterly distribution in the County. The best places to enjoy seeing Oak woodland are Ardnamona, Glenveagh, Ballyarr, Rathmullan and Ireland's most northerly Oak woodland at Carndonagh.

Quercus robur, auricles at leaf base, no leaf stalk

Coll, *Corylus avellana*, Hazel

Coll, Hazel, *Corylus avellana* is readily recognised by the branching multiple stems from the stool or central clump. Its leaves are broad and rounded with a heart shape at the base. Its nuts are an important food source for many woodland animals, as they were once for the early human inhabitants of Ireland. In folklore Hazel nuts are associated with Finn Mac Cool and the salmon of wisdom that fed on the sacred nut trees that grew at the source of the river Boyne.

Hazel is a common woodland tree throughout Donegal. Thickets of Hazel occur in coastal settings from Kinnagoe Bay in north of Inishowen, to lakeside places like Kiltooris Lake near Rossbeg, next to the Drumboe Martyrs site with a carpet of bluebells and on limestone pavement in the south of the county near Ballintra. Woodmice and the Irish Jay help to spread this nut bearing tree to grow in new locations.

Beithe, Birch is considered to be a pioneer tree, the first to establish itself as emergent woodland and the first to inhabit Ireland after the last Ice Age about 12,000 BP, completely colonising the country by 9,500 BP. Out of six species known in Europe, Ireland now has two types, **Beith chlúmhach, Downy Birch** *Betula pubescens* is the most common in Ireland and Donegal, it has fine hairs on new shoots, and a rounded leaf shape. It is known for its white bark and purple winter twigs. **Beith gheal Silver Birch** *Betula pendula* has a pointed leaf of a triangular shape and with coarse raised glands on its twigs. Silver Birch is rare as a native tree and mostly found as a planted tree. Like our two oaks, our two Birch species readily hybridise (again they are wind pollinated) making it difficult to locate pure Silver Birch in the wild woodland populations.

Birch woodland is found throughout the county on poor acid upland soils, mostly found growing in association with Hard Fern *Blechnum spicant.*

With a short life cycle, it is suggested that our Birch will adapt rapidly to climate change. Birch *Beithe* corresponds with the letter B in the ancient Irish Ogham alphabet. It is associated with purification, birth and new beginnings.

Betula pubescens, rounded heart shape leaf

Fuinnseóg, Ash, *Fraxinus excelsior* is regarded as the most common of our native trees, found in hedgerows throughout the country as well as in native woodlands and plantations. It is regarded by some as a weed tree as it occupies spaces cleared of other native trees. Ash is recognised as of significant cultural and economic value for firewood, for furniture making and hurley sticks. Ash is an elegant deciduous tree with smooth grey bark and its characteristic leaf is about 30 cm long, divided into opposite pairs. In autumn the single seeded seed is born in clusters of winged keys. In Irish tradition it has long been celebrated as one of our most sacred "Bile" trees, big old trees considered holy, acting as a meeting place for the tribe.

Sadly, our ash trees throughout the country have succumbed to Ash Dieback disease in recent years, and this will lead to a profound change in our native woodland habitats.

Ash keys, *Fraxinus excelsior*

Ash Dieback, on mature ash tree, with new epicormic growth from main stem bark

Ash Dieback Disease

Ash Dieback is a fungal airborne pathogen that appears on the young green shoots of the tree. It originated in Asia and spread to Europe in the 1990s. The leaves wither and drop, and dark stem legions appear. Over 3-5 years the tree declines, shedding branches and leading to loss of vigour. Where crown dieback occurs, trees may need to be felled for safety reasons. The weakened trees can succumb to secondary fungal infection, like Honey Fungus, that may lead to a rapid decline and death of most of our Ash trees both in forests and hedgerows.

It is expected to cause a serious decline in 85% of our Ash tree population, similar to the decline of Elm in the 1960s. It is believed the disease was introduced into Ireland with imported Ash saplings around 2012. There are significant public safety concerns with dying standing trees over roads, as they are prone to drop dead limbs.

As our most common native woodland tree in Ireland, the expected decline of this fundamental tree in the Irish landscape will result in an enormous loss to Irish culture, the biodiversity of the nation and significant economic loss as the most widely planted broadleaf forest tree. Sadly, we may be witnessing the near extinction of a treasured native tree. As yet we don't know what the outcome will be. An international effort is under way to identify disease resistant strains of Ash for future nursery production. The hope is that such material could contribute to the conservation of this essential native tree. Its loss will lead to significant changes in our landscape and biodiversity.

In short we cannot afford to lose one of our few remaining native trees. The issue of Ash Dieback disease raises important concerns about how the pressing issue of protecting our island flora and fauna is addressed.

Turkey tail fungus and Bilberry

Fearnóg, Common Alder, *Alnus glutinosa* with green cones, Glenveagh

Fearnóg, Common Alder, *Alnus glutinosa* is a common tree of wet locations on riverbanks, lakesides and damp ground. It can grow into a substantial tree and like oak it supports a large amount of woodland flora and especially insect fauna. Its dull green leaf is broad, rounded in shape and course in texture. Unusually for a deciduous tree it produces egg shaped cones filled with orange seeds. Alder wood does not rot when submerged in water making it very useful to early Celtic Peoples who lived in crannogs made from Alder wood. Alder was a favourite wood for making bowls and cups and especially milk buckets. The heart wood was once used to make shields and the timber is associated with protection of the heart.

Lough Fern, south of the town of Milford, is named for Alder *Loch Fearna*. In the past there may have been dense Alder woodlands in the low-lying lands around the lake. Alder can be found as a canopy Tree Layer member, and while it is short lived compared to Oak, Alder hosts a multitude of flora and fauna that rely on it for habitat.

Leamhán sléibhe, Wych Elm *Ulmus glabra* is a very rare native tree, now confined to remote locations in the landscape. County Donegal is regarded as one of it's last refuges, such as at Carrickabreeny, Glenveagh and Ardnamona. Wych Elm grows into a rounded crown, its large leaf is uneven at the base with an ear-like lobe on one side. Elm trees flower early in the year and produce round flake-like seeds in clusters in June.

There are several other Elm species that have been planted in Ireland and all Elms have succumbed to Dutch Elm disease. Like the oak and ash, Elm was regarded as a holy tree in early Christian Ireland. St Patrick blessed and founded churches with holy Elms and holy men, like *Iarnasu* in Mayo and *Secundinus* in Roscommon. Saint Ruadhán of *Lorrha*, County Tipperary had an Elm that produced a nourishing and thirst-quenching sap that the Saint gave to his guests. The sound of the wind through an Elm tree was dear to St Colmcille.

Wych Elm, *Leamhán sléibhe*, Duntally

Iúr, Yew, *Taxus baccata* with ripening fruit, Glenveagh

Iúr, Yew *Taxus baccata* is one of a small group of evergreen trees in Ireland. Because of its symbolic association with resurrection, Yew is often planted in graveyards. As a native wild plant it is very rare in Donegal, the chief location to see it growing in its natural habitat in Donegal is at Glenveagh. The foliage of Yew is of narrow and linear leaves arranged in two ranks on a flattened spray. A red berry with a poisonous seed is produced in autumn. There are a small number of Yew woodlands associated with limestone pavement in the southwest of Ireland.

The Irish Yew with its upright habit found in many graveyards comes from a single specimen that arose on the grounds of the Florence Court estate in County Fermanagh. As such they are all clones of the original, as they are propagated from cuttings. The Irish Yew is planted all over the world.

Aiteal, Juniper - we have two forms of Juniper in Donegal. A ground-hugging prostrate variety *Juniperus communis ssp. nana* is found in the uplands and in coastal locations such as Cruit Island on exposed rocky locations or in similar locations on the Ards Peninsula. This prostrate variety is not found in woodland locations.

The upright form *Juniperus communis ssp. communis* is rarer and may only be associated with Glenveagh where it is found on woodland margins.

Scotland has the same two forms of Juniper and where the upright form is associated with Caledonian woodlands of Scots pine, Birch, and Oak. Juniper is vulnerable to overgrazing, fires and the spread of the fungal disease *Phytophthora austrocedrae*. It merits special conservation measures to protect and boost local populations.

Prostrate Juniper *Aiteal Juniperus communis subsp. nana* at Glenevagh

Juniperus communis ssp. communis Upright Juniper, Glenveagh

Cuileann, Holly *Ilex aquifolium* The prickly evergreen foliage is this tree's most distinctive feature. Holly is dioecious which means the male and female flowers occur on separate plants, only the female Holly has berries, which appear in late autumn. Holly bark is smooth and silvery grey. With ivy it is the traditional decoration for winter solstice and Christmas.

It is common in hedgerows and as a woodland understorey tree. Its seeds are readily spread by berry eating birds. Holly grows in all kinds of soils, and it can typically live to 150 years and in some situations up to 250 years. Its ancient Gaelic name *Tinne* is associated with fire, interpreted as a "rod or bar of metal" – which may refer to its use in cart or chariot shafts.

There was a "holy" Holly associated with St Colmcille at Meenaneary, near Glencolmcille. "Colmcille was instructed by angels to rid Glencolmcille of devils who had surrounded the place with a river of fire and cloaked it in fog. As the Saint approached, a devil hurled a Holly spit (Bior Cuilind) which killed Colmcille's servant Cerc. Colmcille took the spit and hurled it back. The holy missile hit the ground and took root so that today it is a fresh Holly tree and it has not withered from that time till now, and thus it shall be till doomsday".

The Holly tree is very important in the woodland habitat as winter cover for birds and insects. In spring the Holly Blue butterfly lays its eggs on the Holly flowers on which the grub feeds.

Cuileann, Holly, *Ilex aquifolium*, berries ripening in September Glenveagh

Caorthann, Rowan and Fionncholl, Whitebeam – there are three species of *Sorbus* in the native Donegal flora. **Rowan** or Mountain Ash *Sorbus aucuparia* is common throughout the county, growing as a garden and street tree in villages and towns, it is also a wild plant in our native woodlands and grows readily as a solitary tree by the coast and in the mountains. The leaf of rowan is pinnate, with leaflets in opposite pairs. Its sweet-scented flowers emerge in April, like Whitethorn welcoming *Bealtaine* and the coming of summer. Its Gaelic name *Caorthann* translates as - *the bright berried tree*. In Irish culture it is celebrated as a magical tree of protection, planted near the entrance to a home to ward off evil.

We have two very rare **whitebeams** that are known to just one location each in County Donegal. Whitebeams are regarded as micro species due to the fact that they are self-fertile. The **Fionncholl gaelach, Irish Whitebeam** *Sorbus hibernica* is confined to one location near Kilmacrennan where it is found in hedgerows on a private farm. There is a "mother tree" – the oldest and biggest (7m high) of this small population that has reproduced itself, probably spread by birds in neighbouring hedgerows. It has a broad rounded leaf, dark green on the upper surface with a pure white under-surface. Its scarlet red fruits have sparse lenticels like freckles mostly near the base of the fruit. Its occurrence in this single location may be due to a limestone seam near to the surface. The Gaelic name for whitebeam is *Fionncholl*, which translates as *white hazel*, again a magical tree in Irish folklore.

In Glenveagh National Park growing on the lakeshore there is one young **Fionncholl creige, Rock Whitebeam** *Sorbus rupicola*. Its presence in Glenveagh is a mystery, it may have spread to Glenveagh by way of Redstart flocks that migrate into County Donegal from Scandinavia via Scotland where Rock Whitebeam is more plentiful. As a tree it is associated with rocky locations, its leaf is long and pear-shaped, broadest toward the tip and it generally grows to about 5m. It has been propagated by the gardeners at Glenveagh Castle and several new specimens are now established in the Park to protect its long-term presence as part of the flora of Glenveagh.

Fionncholl gaelach, Irish Whitebeam, *Sorbus hibernica* near Kilmacrennan

Caorthann, Rowan, *Sorbus aucuparia* Glenveagh

Rock Whitebeam, Fionncholl creige, *Sorbus rupicola*

Trom, Elder, *Sambucus nigra* with mature berries in September

Trom, Elder *Sambucus nigra* – is found in hedgerows and near human habitations. A small tree or bushy shrub up to 10m tall, its leaf is compound with 4-5 leaflets, its creamy white flowers in flat umbrella-like clusters emerge in June followed by clusters of black berries in September. We rarely, if ever, find Elder as part of a native woodland which suggests it may have been introduced in ancient neolithic times. Its seed is spread by blackbirds and thrushes. Every part of the tree has medicinal uses, while there is also a tradition that it is evil – and this relates to its folk name in Donegal the "bour-tree". *Trom*, Elder was one of *fodla fedo* or lower divisions of the wood, protected by the *Bretha Comaithchesa* laws in early medieval Ireland.

Fia-úll, Crab Apple, *Malus sylvestris* in Rathmullan Wood

Fia-úll, Crab Apple *Malus sylvestris* and **Feoras, Spindle** *Euonymous europaeus* as wild woodland trees are confined to the south of the county, in the Donegal Bay area. Both are found as occasional hedgerow trees and associated with small native woodlands. Both are spread by birds. Crab Apples can grow to 10m, its leaves are simple and oval in shape, its blossoms are 5 petaled, white suffused with pink and its small fruits are yellow-green. Recorded all over Ireland, the Crab Apple is very much part of Irish folk tradition, occurring frequently in folk tales. St Colmcille's well at Durrow, celebrates the blessing of the Saint where the inscription reads "Here angels do dwell, my sloe, my nut, mine apple and my well". Tradition has it that Colmcille blessed an apple tree at Durrow, turning it from sour to sweet.

Feoras, Spindle *Euonymous europaeus* is a small bushy tree growing to 5m. In Donegal it is only found in the south of the county, occasionally in hedgerows and on limestone. Its four-angled green twigs carry greenish white flower clusters that are followed by scarlet berries encased in pink capsules.

Its hard wood was popular for toothpicks, knitting needles, shoemaker's pegs and skewers. Its wood has also been used in Ireland for violin bows and at least one harp was made in part from Spindle. Red, yellow and green dyes have been made from its seeds.

Feoras, Spindle, *Euonymus europaeus* found in South Donegal

Sceach geal, Whitethorn *Crataegus monogyna*, also known as Hawthorn and May Blossom, is mostly found as a hedgerow tree, surrounding fields where it is planted. However it occurs also as a true wild plant found in native woodlands as part of the tree mix and as a lone standing tree where it is revered as a *Fairy-tree* not to be interfered with.

Whitethorn can reach 10m in favourable conditions, its small dark green leaves are divided into 3-7 pointed lobes. The entire tree is covered in white blossoms in May, followed in autumn by masses of dark red berries. It readily seeds itself about with the aid of its fruit eating birds.

Sceach geal, Whitethorn, *Crategus monogyna*

Draighean, Blackthorn, *Prunus spinosa*, Sloes mature on Blackthorn in September

Draighean, Blackthorn *Prunus spinosa* – is readily identified by its small white flowers that emerge in early spring. Blackthorn has black branches ending in stout spines. It forms dense thickets in the understory of a woodland or indeed out in the open as a pioneer tree. Blackthorn foliage appears after flowering and in autumn its bitter black fruits (Sloes) with a blue bloom, mature with the first frosts. Blackthorn affords protection to Oak re-generation as it acts as a natural stock barrier – protecting young seedling oaks with its dense growth.

Crann silíní, Wild Cherry *Prunus avium* – A tree with a broad crown, and an oval shaped leaf, serrated at the edge. Its bark is smooth and shining. Wild Cherry produces large white flowers emerging early (April-May) before the foliage develops, making it stand out in the landscape. Its dark red cherries mature in June and July. The fruit has been eaten in Ireland since bronze age times, and more recently it is popular made into jam, pie and wild cherry brandy. Its wood is popular with furniture makers. Wild Cherry is usually found in hedgerows and on woodland margins. It produces suckers that can lead to thickets in places or a row of cherries in a hedge.

Crann Silín, Wild Cherry, *Prunus avium*, Carrickbreeny

Donnroisc, Bird Cherry, *Prunus padus*

Donnroisc, Bird Cherry *Prunus padus* – Is a rare small tree found in woods and damp rocky places. It develops foliage first, followed by pendent racemes of white flowers that will mature into black cherries in late summer. Its presence within woodland is an indicator of the "ancientness" of a woodland.

Like its close relations, Blackthorn and Wild Cherry, the Bird Cherry also produces suckers, giving it the ability to persist for longer periods as a wild plant in the landscape. It occurs as an occasional shrub or tree in the native woodlands of Donegal in places such as Ardnamona, Glenveagh, Gartan and at Feddyglass where it is abundant as an understory shrub.

Caor chon, Guelder-rose *Viburnum opulus* – Is an attractive deciduous shrub to 4m. The leaf is palmate with 3 or 5 lobes. The flower is a flat-topped cluster with an outer ring of sterile white blossoms, that mature into a cluster of very attractive translucent red berries. The Guelder-rose is a rare woodland shrub associated with limestone pavement habitat in places like the Burren, however in Donegal it is found in places like Gweebarra, Ardnamona, on the River Leannan and at Glenveagh.

Caor chon, Guelder-rose, *Viburnum opulus*, Leannan River bank

Giuis, Scots pine, *Pinus sylvestris*

Giuis, Scots Pine *Pinus sylvestris* – Is readily identified by its orange flaking bark and evergreen, blue-green, two needled foliage. Up until recently, Scots Pine as a native Irish tree was believed to have become extinct in the early-Christian period. Recent research on an isolated population of Scots Pine at Rockforest in the Burren National Park has shown that in this location the pollen record shows a continuous Scots Pine presence in this remote location, contradicting popular belief and establishing a genuine native Irish stock of Scots Pine. In 2022 a new plantation of the Irish origin Rockforest Scots Pine was planted at Glenveagh National Park for long-term conservation purposes.

Saileach, Willow *Salix sp.* There are seven native willows in County Donegal and at least another ten introduced varieties in cultivation. As native woodland trees, we have five types, three of which are very common.

The most common is the Saileach liath, **Grey Willow** *Salix cinerea* also known as Black Sally in Donegal. Growing into a rounded, small tree between 2-6m, its leaf is long (2-3 times as long as broad) and downy beneath and grey-green above. The Rusty Willow is a form of Grey Willow with rust-coloured down on the undersurface of the leaf.

Sailchearnach, **Goat or Great Willow** *Salix caprea* makes a spreading tree up to 10m, has a broad leaf (between one and a quarter times and twice as long as broad) that is dull green underneath and glossy above. Also known as pussy willow, it produces blossoms in March-April before developing foliage.

The third common willow is Crann sníofa, **Eared Willow** *Salix aurita*, a small bushy shrub, growing 1-2m high. It has downy wrinkled leaves, with ear-like stipules at the leaf base. Mostly found in upland locations, along streams and on blanket bog.

Eared Willow, Crann sníofa, *Salix aurita*

Goat Willow, Sailchearnach, *Salix caprea*

Rusty Willow, *Salix cinerea* with rust coloured downy hairs

Grey Willow, *Saileach liath*, *Salix cinerea*

Aspen, Crann Creathach, *Populus tremula*, spring foliage, Glenveagh

Crann Creathach, Aspen *Populus tremula* - The pale green, rounded leaves of Aspen are born on long stalks that tremble in the slightest breeze. The leaf margin has small lobes that form a wavy pattern. Growing to about 15m, Aspen often forms thickets in woodlands or a line in a hedgerow. Male and female flowers are found on separate trees and because it is sparsely distributed in the landscape, Aspen rarely if ever produces viable seed. It appears to survive by reproducing itself by suckers. Together with Birch, Aspen was one of the first trees to colonise the Irish landscape 12,000 BP.

Die-back

By Moya Cannon

for Sabine Springer

Young, spear-leaved birches
have magicked the motorway
into a shimmering, green corridor
and everything is light-drunk May.

Along the narrower roads,
regal beech condescend
to sycamore between
forsaken farmhouses
and fleeing bungalows
as hawthorn shakes out
its white blossom
to frill the small fields.

Some plants, some creatures,
die quietly in corners,
are gone before they are noticed.
A species, even, can disappear discreetly,
with no official count-down,
without the drama
of an asteroid or an ice-age.

It's hard, though,
for an ash tree to hide—
like sycamores,
ashes are sociable and flighty

Yet, as we drive west,
all across the country
they are surrendering—
they are coming out
of the hedges
with their thin hands up.

South Donegal

Around Donegal Bay, in the south of the county the landscape is characterised by low drumlin hills formed by glaciation over limestone. Soils are fertile, favouring the Ash-ivy woodland type. The ancient forests that once grew in this southern part of the county were cleared in pre-historic times. Profiles of three examples of surviving native woodlands in this part of the county follow.

Ardnamona *Ard na Móna* – (high bogland)

Property NPWS **Access – public carpark and 2 km public path.**

Woodstory - Ardnamona Nature Reserve is a living National Monument of outstanding quality. Notable as one of Ireland's finest Old Oak Woodlands in a superb lakeside setting, this large woodland is very old and particularly rich in biodiversity. It is outstanding for its natural condition with little evidence of recent exploitation. Here we can see a mature native Irish oak woodland thriving in its natural setting. It is recommended to take the circular footpath (made by NPWS in 2005) and go right just inside the wood entrance, after the old Gate Lodge. The path leads the visitor on a 2 km trail under a green canopy of veteran oaks taking in all the features of the wood, to the lake edge and returning to the entrance.

Ardnamona Nature Reserve has a strong historical link with adjoining Ardnamona House and its 19th century landscape gardens. The fauna of Ardnamona now includes the Red Squirrel, Great Woodpecker and Wood warbler. Rare plants in its rich flora add to the woodland's biodiversity such as Killarney Fern, Narrow-leaved Helleborine, Six-stamened Waterwort, Whorled Caraway and Bird Cherry.

As a Possible Ancient Woodland, Ardnamona Wood (52.9 ha within SAC) is of exceptional conservation value as Old Oak Woodland of the "oceanic variant habitat", also described as Atlantic Temperate Rainforest. Ardnamona Wood is part of the Lough Eske and Ardnamona Wood SAC. The wider wooded landscape of Lough Eske and the River Eske offers ecological connectivity to free moving birdlife and mammals.

Stay on the path and leave no trace

This Old Oak Woodland is an important habitat for a host of rare woodland plants and animals. It is an example of a biodiversity hotspot not only in County Donegal, but in the whole island of Ireland. On the free draining land, sessile Oak dominates the tree layer, with Ash and Alder in the wetter areas.

Woods Bay and Ardnamona Nature Reserve

Old avenue to Ardnamona House 2km through the wood

Raithneach Chill Airne, *Trichomanes speciosum*, Killarney Fern

Rowan and Downy Birch also occur in the canopy, with an understory of mostly Holly. There are also plenty of Hazel and Willow in the tree mix.

The shrub layer has Ivy and Honeysuckle, while Bilberry is common and some rarer woody plants include the occasional Guelder-rose and Bird Cherry. Young Oak trees are largely absent due to grazing deer.

The field layer features Cow Wheat, Woodrush and Bluebells on drier ground under Oak, with sedges, water mint and wild garlic in the wet areas under Alder, Ash and Hazel. The rich ground layer is a carpet of mosses especially Sphagnum moss, Filmy ferns growing in moss on rocks and tree trunks, carpets of the pale green Tamarisk moss, Liverworts in the darker places, Six-stamened Waterwort on the lake edge, lichens such as *Usnea* covering the trees especially on the Oaks, but also on the Birch and Alder.

There is evidence to suggest Ardnamona Wood is of ancient origin. It is likely oak timbers from around Lough Eske (including Ardnamona) were used by the O Donnells for the construction of their castles in South Donegal from the late 1400s. The earliest historical evidence of Ardnamona Wood is charted on Lough Eske by Richard Bartlett's coastal map of Northwest Ireland in 1602.

Magairlín neide éin, *Neottia nidus-avis*, Bird's-nest orchid

Dédhuilleog, *Listera ovata*, Common Twayblade

Dallán coille, *Hymenophyllum tunbrigense*, Tonbridge filmy-fern

Old Oak on streamside with young trees near by

Donnroisc, *Prunus padus*, Bird Cherry in undergrowth

Detail of Bartlett's coastal map showing woods at Cranny Upper and Ardnamona

Bartletts coastal Donegal map, 1602

Great Spotted Woodpecker at Ardnamona

Red Squirrel at Ardnamona

The first edition OS map of 1835 shows Ardnamona Wood centred around Woods Bay on Lough Eske from the Clady River to its south and the Doonan River to its north. The land had been leased (in 1831) by George Cecil Gore Wray who developed the Ardnamona demesne and built the first Ardnamona House. He "improved" the demesne by ploughing the land with oxen as it was too wet for horses. His wife Charlotte painted a watercolour of Ardnamona in 1848 from the 'Fairy Glen', the painting depicts a well wooded landscape around Ardnamona House viewed from Woods Bay. Ardnamona Wood survived exploitation in recent centuries by being in private ownership as part the Ardnamona Demesne.

George Wray was in dispute with the local tenantry who refused to pay rent. He served his tenants notice to quit (eviction) on Christmas eve 1848. "Two days later a keg of gunpowder was lobbed into the drawing room of Ardnamona House, destroying the interior with a massive explosion. A second keg exploded outside, 60ft from the house, ripping a rhododendron from the ground" roots and all! The assumption is that *Rhododendron ponticum* had been planted by this time, together with some of the older conifers. The revised OS map of 1848-51 shows the first Ardnamona house (surrounded by its Old Oak Woodland) with adjacent kitchen garden and some tree planting near to the house. The Wrays later moved to the Leitrim Estate in North Donegal to become the agents there between 1850 and 1869.

Sir Arthur Wallace bought Ardnamona in 1870 as a summer residence for his family. He added a porch, sunroom and bay windows to the house and developed the landscape gardens. A gate lodge was constructed and the long 2 km avenue approach to the house through the wood was created. Plants were supplied to Ardnamona from Glasnevin Botanic Gardens in 1888 and 1898. Many of the rhododendrons were of Himalayan origin, said to have been a gift to Wallace from the Royal Nepalese Court. Along the old avenue from the gate lodge to Ardnamona house through the wood are occasional tree rhododendrons (such as *R. arboreum* and *R. falconeri*) planted by the Wallace family in the late 19th century.

A Mrs West purchased the demesne and ran Ardnamona House as a small hotel, with sport fishing from the 1930s until the 1950s. The Irish Forest Service (later Coillte) took over the management of the demesne and woods in the 1960s. In 1981 Arndamona Wood was entered into the National Heritage Inventory of areas of scientific interest in Ireland. The Ardnamona demesne was divided, part of the ancient woodland remained with Ardnamona House and Gardens, the native woodland staying in State ownership, later to become a Nature Reserve.

By the late 1990s NPWS took on the management of the wood from Coillte. The historic Ardnamona House and Landscape Gardens is currently owned by the Black family, as a private residence.

While overgrazing by deer is an ongoing concern in the woods, the greatest immediate threat to the woodland is from the invasive *Rhododendron ponticum*. The Nature Reserve has been cleared of *Rhododendron ponticum* in recent times but the surrounding lands in private ownership contain thickets that produce seed annually, threatening re-invasion. While there is evidence of planting of tree rhododendrons along the old avenue to Ardnamona House, *Rhododendron ponticum* had spread from the gardens into the woods. This was removed by 2008 and an ongoing control programme to stop re-invasion is in place. Ardnamona Wood is managed for biodiversity, meaning natural woodland processes take precedence in the ongoing management of the site.

Stream under Hazel and Ash

Lugwort lichen, *Lobaria pulmonaria*, an ancient woodland indicator

Carrickbreeny *Carraig Bruighne* – (Rock of the fort or Fairy Palace) Bridgetown

Property – private land **Access – no public access**

Woodstory - Carrickbreeny Wood has persisted on a steep rocky hillside. At 8 ha in extent and of the ash/hazel woodland type, it is one of the largest of its kind in Donegal and worthy of conservation.

The main tree species is Ash, that is now declining due to the recent introduction of **Ash Dieback** disease into Ireland. (see Ash Dieback p. 57) The soil is base rich over limestone, which is common in South Donegal, favouring the development of this predominantly Ash and Hazel tree mix, with smaller amounts of Willow, Hawthorn, Blackthorn, Wild Cherry, Birch and Wych Elm. This kind of woodland habitat favours Elm, at Carrickbreeny there appears to be resistance in the Wych Elm to Dutch Elm disease. This rich tree mix associated with limestone bedrock is very rare in County Donegal, being more common in Fermanagh and Leitrim.

The herb layer differs from the typical acid conditions in oak woodland. Instead lime-loving herbs thrive in this woodland such as Bluebell, Yellow Flag, Hart's-tongue Fern, the two (Hard and Soft) Shield Ferns and Cuckoo Pint. On the higher ground above the steep rock outcrop, the woodland is grazed and there is evidence of bark stripping by grazing animals, nettles are common too due to grazing animals. A conservation intervention is called for here to protect such a unique woodland type, containing many rare species.

Carrickbreeny Wood

Wych Elm with Hazel at Carrickbreeny

Cranny Upper - *Crannaide* – (A place of trees) Inver

Property – private land **Access – no public access**

Woodstory - This small woodland on the Cranny river appears to have been wooded since ancient times. The current woodland is a mixed plantation made up of planted trees and regenerating native species. The planted trees include Beech and Sycamore while the original native trees include Hazel, Alder, Oak, Willow and Ash. The riverside setting corresponds with woodland indicated in Bartlett's 1602 *General Map of Ulster*. The habitat contains riparian woodland along the Eany River, dominated by Alder and Willow and a herb flora that includes Meadowsweet, Wavy hair-grass and Valerian. The mid-summer flowering Common Spotted-orchid is typical of open woodland-edge locations on base rich soils.

Cranny Upper Woods

Tufted Hair-grass, Móinfhéar garbh, *Deschampsia cespitosa* and Valerian, *Caorthann corraigh*, *Valeriana officinalis*

Common Spotted-orchid, Nuacht bhallach, *Dactylorhiza fuchsii*

Meadow Brown Butterfly in a woodland clearing

Northwest Donegal - Gweebarra and Gweedore

The Gweebarra and Gweedore rivers flow west into the Atlantic in the northwest of Donegal. Both are important salmon river systems and both have significant native woodlands in their catchments, providing ecological highways for migrating flora and fauna.

Killindarragh *An Coillín Darach* - (The Little Oakwood) at Crolly pNHA

Property - privately owned **Access – fisherman's path north of Crolly Bridge**

Woodstory - The oaks that give their name to the townland have survived in pockets of boulder-strewn rough land at Killindarragh, land that is too rocky to be cleared for agriculture. Here we find small but very beautiful pockets of the 'Atlantic Rainforest' type Oak woodland, known also as Celtic Rainforest. Almost every surface is clad in blankets of moss, the Oak trees south of the bridge are low growing and spreading in habit. Regarded as a pure native Oak woodland there is little evidence of woodland management, instead here we find a regenerating native woodland in a wild state. Killindarragh Wood is found on both the north and south sides of Crolly Bridge.

Ancient walls from pre-famine times, Killindarragh

Killindarragh from above, Oak, Birch, Hazel, Rowan and Willow canopy

Primrose, Anemone, Celandine, Pignut, Wood Sorrel and Ivy

Stay on the path and leave no trace

The **placenames** for the area attest to native woodlands being long associated with the sheltered Clady/Gweedore river valley. Carraig an Choill - Carrickacull (Rock of Hazels), *An Coillín Darach* - Killendarragh (Little Oakwood), Doire na Mainsear, Derrynamansher (Oakwood of the Mangans), Mín Doire na Slua - Meenderrynasloe (The Oak meadow of the Hosts), Doire Beaga, Derry Beg (Little oakwood) – collectively these placenames correspond with "a small amount of wood near Gweedore" noted by Eileen McCracken in the Donegal Annual 1958 in an article on the ancient woodlands of Donegal. Although not precisely located, a woodland is indicated on Richard Bartlett's map "A general description of Ulster" of 1602/3 at "Tomelagh" suggesting these woods were noted by Bartlett at the time. A decrease in population pressure in the late 19th century resulted in land use change, allowing for the spread of native woodland. Oak, Birch, Hazel, Ash, Rowan, Aspen and Wild Cherry have re-emerged along Gweedore/Crolly river valley. There has been significant native woodland regeneration around the 'Clady Banks' in the past 50 years.

Regeneration in the Gweedore River Valley

The Gweedore river estuary and the streams flowing into it, have pockets of native woodland making up a rich habitat that support a host of native shrubs, ferns, herbs, birds and mammals. Donal Ó Fearraigh whose family home looks out into this wooded valley and the Gweedore Bay and Islands Special Area of Conservation, reports sighting Jay birds throughout the year. He has been watching woodlands of hazel and oak regenerating around where he lives near Cnoc an Stollaire, with oaks spreading into little fields full of brambles. In recent times these enchanting woodlands have been described as 'Celtic Rainforest'. These are rare and exceptional examples of a unique kind of native woodland found in the Celtic countries of Europe, especially western Scotland and Ireland. While Oak and Birch are the main tree species, there are also plenty of Holly, Rowan and Hazel. Donall showed me stashes of acorns and Hazel nuts gathered under rocks by wood mice and Jays. Mouse and Jay activity helps the spread of Oaks. In essence rewilding is already taking place in the Gweedore valley, with Hazel and Oak making it's own come-back.

What makes the woodlands so significant along the Gweedore river is the remarkable spread of native woodland and the relative absence of non-native invasive species like Rhododendron. At the centre of one pocket of woodland, there is a waterfall and an ancient oak which spreads its limbs out over the rocky river. This a kind of 'Mother Tree' is older and longer surviving than most other Oaks. Here we can see in some parts of the wood, small fields defined by stone walls that have returned to woodland, with recolonisation by Oaks and Birch festooned with moss.

"The trees have got bigger"

Maurice Gallagher, aged 90 years old in 2023, living in Killindarragh all his life, remembers the wood when he was a boy, where he would forage for Hazel nuts. He recalls "the trees have got bigger since I was a child". With woodland development advancing in the Crolly area this is really good news for Gweedore, Donegal and Ireland.

Holly and Oak at Killindarragh

Emperor Moth, a day flying moth species in April and May

Hypericum androsaemum, Meas torc allta, Tutsan a typical woodland herb

Gweebarra - *Ghaoth Beara* (the bay of Barra)

Property - Private lands, NPWS **Gweebarra SAC – best viewed from Gweebarra Bridge**

Woodstory – On the Gweebarra estuary we can view connectivity in native woodlands in County Donegal. One of the best places to view this linear woodland is from the Gweebarra bridge, from which a walking and cycle path follows the "Gweebarra Bends" affording a close-up look at native woodland biodiversity. Collectively the chain of native woodlands that extend from Rossbeg (in the west) following the Gweebarra northeast to Lettermacaward and on to Doochary following the Owenwee River as far north as Commeen, forming a linear woodland corridor. It is estimated that this chain of ecologically connected native woodlands of Hazel, Willow, Birch and Oak amount to at least 80 (ha) and some of which are included in the Gweebarra SAC.

Gweebarra Bridge with native woodlands along estuary

Dog-rose, Feirdhris, *Rosa canina,* Gweebarra

Honeysuckle, Féithleann, *Lonicera periclymenum,* Gweebarra

Oak, Hazel, Ash native woodland on the Owenwee River

There are numerous placenames in the area supporting the memory of the ancient origins of the native woodlands of the area. "Derry" and other woodland names found in the locality include, Rosses - *wooded lands,* Lough Derryduff - *Lake of Dark oaks*, Lough Aderry - *Lake of Oaks*, and Derries - *oaks*. Bartlett's 1602 General Map of Ulster gives a substantial wooded area in the "the Rosse" in this western part of County Donegal. This suggests that the native woodlands of the Gweebarra area may be of ancient origins.

Abundant berry crop on Holly in October

Derkmore Wood *Choill na Deirce Móire* (Great Eye or hollow – referring possibly to the shape of Derkmore Lake)

Property – National Parks and Wildlife Service **Access – no public access**

Woodstory – Derkmore Nature Reserve follows the narrative of forestry management in Ireland in the past 70 years. Forestry practice for the period has been focused on timber production in conifer plantations, while also endeavouring to hold onto native woodlands for their conservation value. As our conservation values have developed in the 21st century, actions in favour of native woodlands have become more apparent. Derkmore Wood is ecologically related to the more extensive native woodlands found along the Gweebarra Estuary. The Derkmore Wood Nature Reserve site extends to 13 hectares, half of which (7 ha) may be of ancient origin. It is situated on the southern slope of Cleengort Hill, just east of Derkmore Lough. The Old Oak Woodland occupies steep free draining rocky terrain, with a tree mix of Sessile Oak, Hazel, Downy Birch, Rowan, and Elm. First established as a Nature Reserve in 1988, Derkmore is a rare example of a protected native woodland in the northwestern part of Donegal. Like many old Donegal woodlands, a history of sheep grazing on the site has resulted in many grass species in the herb layer such as Yorkshire Fog, Common Bent, Sweet Vernal Grass and Wavy Hair-grass. In 2005 an ecological survey found 54 vascular plant species at Derkmore Wood, characteristic of a Temperate Atlantic Rainforest. The site has a rich bryophyte and lichen flora (Tamarisk-moss *Thudium tamariscinum*, Big Shaggy-moss *Rhytidiadephus triquetrus*). In recent years, coniferous spruce plantations have been established on surrounding blanket bog. In 2003 a 5 ha section of the coniferous plantation was clear-felled by Coillte to allow for establishment of native trees under the Native Woodland Scheme. From 2005 to 2008 native tree planting was carried out, establishing 15,000 trees of Irish provenance nursery stock. The mix included 5000 Oak, 3500 Birch, 2000 Ash, 2000 Rowan, 1000 Alder, 1000 Hazel and 500 locally sourced native trees including a small amount of Wych Elm. The site is managed for woodland biodiversity conservation.

Stay on the path and leave no trace

Derkmore wood, old wood to right, new wood to left, Derkmore Lake beyond

Owenaltderry - *Abhainn Alt Doire* (River of the Oak ravine)

Property – Private **Access – limited, above Owenaltderry Bridge**

Woodstory As one of the most isolated pockets of native woodland in the county, Owenaltderry has 70 Oaks spread along its ravine, known locally as "*Gleann na Sidhe*" The Fairy Glen. Similar to other isolated wooded mountain ravines the impression here is that this is Oak at the very extremity of its natural range. With no other oaks for miles around, it is hard to understand how these trees got to such a location. They may have been carried by birds (especially the Jay) centuries ago. The Owenaltderry river joins the Ray river, flowing north to Drumnatinny beach. Oak was once known to townlands in the Cloughaneely area of Northwest Donegal like Meenderrry, Derryconnor and Derrybeg. There is no trace of Oaks in these townlands today.

In the uplands in this part of Donegal, blanket bog is typical, beneath which are countless tree stumps, known as "Bog Fir" that are exposed by turf cutting. These "pickled trees" date back to the great Scots pine forests that once graced this landscape around 6,000BP.

Abhainn Alt Doire under Eagla Beag

Abhainn Alt Doire, Owenaltderry, ribbon of Oak following river

Hypotrachyna sp. lichen, Owenaltderry

Cladonia sp. lichen, Owenaltderry

Oak covered in moss, Owenaltderry

Native woodlands of North Central Donegal

River catchments of the Swilly and Leannan rivers and Lough Swilly. The Leannan and Swilly rivers rise in central Donegal at Ardachrinn (the highland of trees). They flow east and north into Lough Swilly. These river systems connect the plant and animal biodiversity that travels back and forth in the river catchment.

The Leannan River may be the best of Donegal's rivers for retaining native woodlands. Rivers and good quality woodlands growing along them are essential wildlife corridors for flora and fauna including fish, birds and mammals to move freely through the landscape. A healthy watershed river system leads to regeneration of woodland habitat and biodiversity. Around the shores of Lough Gartan there are well developed native woodlands, like in the grounds of Gartan Outdoor Pursuit Centre. Pockets of native Alder woodland grow in many places along the Leannan river in the flood zone and on higher marginal soils. This is of course good news for water quality in the Leannan. Close by at Doon Well, Doon Rock the ancient inaugural site of the Tír Conaill kings has developed good 'scrub woodland'. South of Kilmacrennan, Cottian Wood survives, perhaps a remnant of the once extensive Doire Ethna ancient forest for which this area was famous. At Lough Fern the Leannan flows east under Ballyarr Wood and then through Drumonaghan Wood, where the oaks were clear felled and replaced with coniferous trees and beech. There are veteran Oaks growing along the Leanann, opposite the Mall in the town of Ramelton. East of Ray on Lough Swilly is Glenalla wood, just north of Ray is Rathmullan wood and northwest of Rathmullan is the extensive Carrowdoan wood. Best described as emerging woodland this extensive area estimated at 200 ha is the single biggest native woodland in the county in private ownership.

The most important surviving native woodland of considerable size on the Swilly river is at Foxhall. Numerous small native woodlands are found in the Glenswilly valley.

Ancient Oak, Gartan

Bluebells under Hazel and Ash, Gartan

Gartan Wood, *Coille Gartán* - Gartan Outdoor Education and Training Centre

Property – ETD Donegal Education and Training Board *Bord Oideachais agus Oiliúna Dhún na nGall* Access – by permission of Donegal ETB

Woodstory - With a woodland flora of "ancient" quality and some very big old native Oak, the mixed woods (c.30 ha) at Gartan Education Centre are the finest and most biodiverse in the Gartan area. Known as the Bellville demesne in the early 19th century, the estate has native woodland along the shoreline of Lough Gartan. Further planting and recent natural woodland expansion (of Willow, Hazel and Birch) has led the development of "wild" natural woodland of significant ecological diversity.

Woodland profile from above

The combination of planted Beech, Pine, Larch and fir mixed with a full range of indigenous trees, creates a range of habitats for a rich woodland fauna. Of note is the re-appearance of the Red Squirrel to the Gartan woods, due in large part, to the improved and expanded woodland habitat in the area. In these woods grow massive veteran native Oaks together with non-native trees species planted in the 19th century at Lough Veagh House (or Belville) demesne. This woodland is also one of the best locations in the county to find Bird Cherry *Prunus padus*. Bird Cherry is a bio-indicator for ancient woodland, as are herbs such as Bluebell and the Lungwort lichen *Lobaria pulmonaria*. Control measures will be required in the future to manage the parts of the wood infested with *Rhododendron ponticum*, Laurel *Prunus laurocerasus* and Salmon Berry *Rubus spectabilis*.

Ancient Oak, Gartan

Doon Rock and Well *Carraig na Duin* (the rock of the fort)

Property – privately owned Access – public access, carpark and toilet

Woodstory - At Doon Well are the very famous Holy Well, Mass Rock and Doon Rock, the ancient inauguration site for the O Donnell chieftains. Pilgrims and those interested in Donegal history visit the site every day of the year. Around the location and on the steep slopes of the small Doon Rock hill, Oak, Hazel and Holly woodland has regenerated in recent decades. The path to the summit of Doon Rock is clad in native woodland, a beautiful example of the native woodland flora of Donegal re-emerging.

Developing woodland at Doon Rock near Kilmacrennan

Cottian, Kilmacrennan *Doire Eithne* (Eithne's Oakwood)

Property – privately owned Access – no public access

Woodstory - Cottian Wood is at least 200 years old and perhaps of ancient origin. The original name for the area around Kilmacrennan was *Doire Ethne* – the Ancient Wood of Ethna. Cottian Wood may be all that remains of the once extensive forest associated with the mother of Colmcille and dating to early Christian times. The wood does appear on the 1835 OS map, giving these woods "Long-established" status. Given its proximity to the ancient religious foundation of Kilmacrennan Abbey, the wood may have survived for part of its history perhaps because it was included in Church lands associated with the historic Abbey.

Cottian Wood grows on sloping "marginal land" of stony clay soils, facing east immediately above the Leannan River. These woods are rich in flora and fauna associated with native Oakwoods. They are similar in species composition to Ballyarr, oak is the predominant tree, with Birch and Holly in some abundance. Hazel is also plentiful. The age distribution of the trees in the wood is good with mature and semi-mature trees throughout. It is an important native woodland worthy of conservation.

Cottian Wood next to Leannan River, south of Kilmacrennan

Wood Sanicle, Wild Strawberry, Bluebell, Pignut, Tamarisk Moss at Cottian Wood

Ballyarr Wood *Coill Bhaile Áir*

Land owner National Parks and Wildlife Service *Páirceanna Náisiúnta agus Fiadhúlra* **Access – open to public all year round**

Woodstory - Ballyarr Wood may be regarded as a living National Monument of great beauty and outstanding biodiversity value. The Wood is found on a low ridge of hills, 600m from the River Leannan. It is an outstanding native woodland that ranks as one of the finest examples of natural Oak woodlands in Ireland. Of note are the well-formed mature Sessile Oak and the rich mosaic of woodland ground-flora throughout. The Nature Reserve is of significant size, extending to 30 hectares. The site was acquired by NPWS in the late 1980s. A loop trail (1.2 km) was developed in 2004 giving pedestrian access to the visiting public. The site is managed for biodiversity by NPWS.

Please stay on the path and leave no trace to help protect the rare flora and fauna

Ancient Ballyarr Wood with Lough Fern in the distance

Fallen Oak covered in moss, Ballyarr

Ballyarr ranks as one of Ireland's finest mature oak woodlands, because of the excellent health of the woodland's ecology. It has excellent woodland structure with oaks of all ages, from 300 years old to young saplings 1-10 years old. A well-developed shrub layer has Holly, Honeysuckle, Bilberry and Hazel.

The field layer is a varied tapestry of colour in springtime. Early to blossom are Golden Saxifrage, Violets and Primrose. The Wild Strawberry is plentiful, as are Wood Sanicle, Enchanters Nightshade, Wood Anemone and Bluebells making a rich carpet of colour in late spring. Germander Speedwell is quite common, Wood Speedwell also occurs, its leaves are pale green and its petals are lilac-coloured. In late April and May there are carpets of the 'queen of woodland flowers' the Bluebell.

Open areas within the woodland of scrub and grassland add to the diversity of the site, increasing the habitat for insects, butterflies and birdlife. Spring is by far the best time for birdsong during mating season. While some of the best singers are Blackbird and Thrush, the strange screech of the Jay is unique to this kind of habitat. Ireland's Jay population thrives in this kind of woodland habitat.

Elf Cup surrounded by Tamarisk moss, Ballyarr

Creaght Stockade

Evidence of Ballyarr Wood being inhabited in the medieval period is found on the 1830 OS map. It shows a circular structure as a possible "ringfort or cashel, 24m in diameter, made up of a double wall on the eastern edge of the woodland". This archaeological structure may be an example of Creaght - *Caoraigheacht (herder or drover)* activity in the woodland in the medieval period. These keepers of cattle, Creaghts were a nomadic community of men, women and children under a chief or head of family who roamed the countryside with the herds in their care. Cattle raiding was common in medieval Ireland and to avoid losing their animals the Creaghts drove their cattle into the woods to hide them. This was an age-old activity in the Irish landscape, so much so that this Creaght activity shaped the ecology of our native woodlands. The double wall structure in Ballyarr Wood may once have been filled with brush wood (Blackthorn, Holly and Hazel) to act as a stockade to keep the herd safe from cattle thieves and wolves.

Ár in Irish translates as 'bloodshed, massacre or slaughter' suggesting some kind of slaughter or battle may have taken place in the locality. *Coill Bhaile Áir* may translate as the Wood of the Place of Bloodletting. *Bhaile Áir* being the older name for the townland and the woodland later assuming the name of the townland. Early owners of the Ballyarr Demesne which included the wood were Thomas Grove in 1794 who later leased the Demesne to a Patterson in 1801 who sold it to Lord George Hill who owned the Demesne between 1842 and 1879. The Griffiths Evaluation of 1847-64 gives George Hill as "occupier" who was leasing "Ballyarr House, offices, corn mill on 42 acres" and a "60 acre plantation" to a Mrs Brooke. Ballyarr House is situated close to the Leannan River, having on its front lawn a group of ancient Oaks forming a circle, like an ancient druid grove. These old Oaks are surely related to the surviving ancient woodland near-by.

In the late 1970s, Julian Burkitt (associated with the management of the Glenveagh Estate) purchased Ballyarr Wood for the purpose of conserving it. He later sold the woodland in the 1980s to the Irish State to be protected and conserved as a Nature Reserve. It is also designated as a Special Area of Conservation (Ballyarr Wood SAC).

Ballyarr House Oak grove on Leannan River

Mulroy Bay *An Maol Rua* (the red bare place)

Ceann Maghair was the name of an ancient woodland that once flourished between Bunlin Bridge and Cranford on Mulroy Bay. In this area is an ancient ringfort known to have been a stronghold of the Cenel Conaill clan. In the 9th century a tree felling contest between Éicneach the King of Irish and the Danish king is said to have taken place (see page 17). Fragments of the ancient forest survive at Woodlands, although most of the native woodland has been replaced with conifer plantations.

Rough Island (3 ha) in the ownership of An Taisce was cleared of Sitka spruce in 2009 and the bare earth was seeded with Downy Birch seed *Betula pubescens* collected in the wild from Glenveagh National Park in 2012. At the time Noel Foley (An Taisce) and Seán Ó Gaoithín from Glenveagh spent an hour spreading the Birch seed on the island. This direct seeding intervention has helped the re-emergence of native Birch woodland. After eleven years native Birch woodland is now emerging on the island along with some-self introduced native holly.

Rough Island re-wooded with Downy Birch, Beith chlúmhach, *Betula pubescens*

Remnants of native Oak and Hazel woodland south of Mulroy Bay

Glenalla *Gleann Eala* (Glen of the Swan)

Property – Private Access – open days on www.donegalgardentrail.com

Woodstory - Glenalla is a secluded 19th century demesne first established about 1815, with a reworking of the present landscape beginning in the 1920s. The demesne extends to c. 100 ha, about half of which is wooded, originally Old Oak Woodland on the western slopes of Ray Hill. The current mixed woodland was planted in the 19th century, with species such as Beech, Sycamore, Pine, Larch, and Fir. The Landscape Garden of 5 ha radiates from Glenalla house. Native woodland restoration was carried out between 2000 and 2003 under the Native Woodland Scheme, clearing the woods of invasive rhododendron and laurel. Every year since, follow-up clearance of invasives species has been carried out. It is an excellent example of nature conservation and restoration, with a land stewardship ethos that is pro-biodiversity.

Glenalla demesne surrounded by its woodlands

Regenerating native wodland after rhododendron clearance, Glenalla

Glenalla House was built in 1790 for Dr Hume, Dean of Derry and later purchased by Reverend George Hart, a prominent landowner in Donegal whose family lived at Glenalla until 1911 when the demesne was purchased by the Franklin family. A tradition of Garden Fetes is associated with the house as a summer fundraising activity for the local St Columb's church.

While the wooded areas of the demesne are "long-established" native woodland, they may well be ancient in their origin, set as they are on marginal land immediately above the better soils that have been farmed since medieval times. Richard Bartlett's map of 1601 indicates woodlands in the area. There are clear links between the woods at Glenalla and Rathmullan Wood and the former oak wood at Drumonaghan on the Leannan river. The 1830s OS map charts this wooded demesne as largely unchanged to the present day.

Oak cot from 1699, Glenalla

From the year 2000, two phases of the Native Woodland Scheme dealt firstly with the clearance of the invasive *Rhododendron ponticum*, and secondly woodland establishment, adding 14.6 ha of native Oak and Birch, increasing the complement of native woodland trees throughout. The recent woodland restoration work sought to maximise the potential of the demesne as restored landscape, this is certainly one of Donegal's best examples of woodland restoration to date. Through the work achieved under the Native Woodland Scheme, Glenalla's woodlands are now recovering with a rich ground flora and young native trees re-emerging – such as Birch, Rowan, Hazel, Holly, Oak and Willow. Invasive laurel and *Rhododendron ponticum* have been successfully cleared allowing for the full regeneration of the native woodland flora. Glenalla is a superb example of what can be achieved by private landowners as land-stewards caring for native Irish biodiversity, a visionary legacy for future generations.

Glenalla Oak, Dair Ghallda, *Quercus robur,* Glenalla

Rathmullan Wood *Coille Ráth Maoláin* (Mullan's Fort)

Property - National Parks and Wildlife Service Access – Public all year round

Woodstory - There is some evidence to suggest that Rathmullan Wood may be of ancient origin. Barlett's map of Ulster (1602) gives accurate locations for existing woodlands in coastal Donegal, and his map clearly indicates woodland in the same location as Rathmullan Wood near to the western shore of Lough Swilly between Rathmullan and Ramelton. There is possible evidence of an enclosure within the wood on the 1901 OS map.

As a very high-quality stand of native Oak woodland, Rathmullan Wood Nature Reserve is a registered seed stand by the Irish Forest Service. The Nature Reserve extends to 33 hectares and is part of the Lough Swilly Special Area of Conservation. It should be noted that the original oakwood here extended to at least twice the lands within the reserve. A looped nature trail provides pedestrian access to the woods.

Rathmullan Wood in April with the town of Rathmullan in the distance

Mixed Oak and Beech canopy from above at Rathmullan in spring

Old Oak Woodland at Rathmullan

Nearest to the entrance, planted Beech predominate, but a stroll into the wood finds the visitor in well-developed mature native oak woodland. The tree mix includes Oak, Alder, Downy Birch, Rowan, Holly, Ash, Hazel and Willow. The openness of the woodland and the absence of shrubs is due to over-grazing by deer. The ground flora is poor under the non-native beech trees planted in the 19th century. Some thinning of beech trees was carried out in 2004 to allow for oak regeneration. The Oaks are producing good seed crops and seedling oaks are evident, however deer grazing is preventing development to young tree stage.

Originally acquired for forestry purposes by the then Forest and Wildlife Service, Rathmullan Wood's management was transferred to National Parks and Wildlife Service for long-term conservation. A report by John Cross in 1984 on Rathmullan Wood noted the quality of its ecosystem and the richness of its flora as a genetic resource. Rathmullan Nature Reserve was established in 1986. Between 1989 and 2004 a long-term plan was implemented to address access, signage, fencing, caretaking, public use and woodland management. All rhododendron and laurel was removed in the early years of the plan, followed by the construction of the roadside carpark and loop trail. Some further thinning of the mature Beech trees would allow Oak woodland to expand naturally.

Dead Moll's Finger Fungus *Xylaria longipes*

Carrowdoan Woods *Coille Ceathrú Domhain* (the dark wooded quarter)

Property – Privately owned Access – no public access – viewed from road

Woodstory - Spanning several townlands, the woods at Carrowdoan are the largest expanse of native woodlands in the county in shared private ownership. This extensive native woodland is of fundamental ecological value as emergent woodland in the Donegal landscape. These woodlands are at least two centuries old as they appear on the 1835 OS map, which gives them "Long-established" status. Described by David Cabot "the old scrub woodland at Carradoan (200 ha) provides a fine example of a vegetation sequence from an open moorland to Birch scrub, to a low straggly sessile Oak community". As Donegal's largest expanse of native woodland, and linked to the oakwoods at Rathmullan on the western shores of Lough Swilly, the long-term conservation of these woods is of vital significance. From a cultural and historical perspective this extensive wooded area offers the viewer a sense of what the upland Donegal landscape may have looked like in the medieval period.

Extensive native woodlands at Carrowdowan

Mixed woodland with Bird Cherry in flower at Carrowdowan

Foxhall Wood (no Irish name available)

Property – Private Farm **Access – No public access**

Woodstory - Foxhall Wood is the largest and most significant of our native woodlands in the Swilly valley. The wood plays a central role in providing refuge for woodland species (plants, birds, insects, mammals) in the wider Swilly landscape. As in other river systems in County Donegal, our native flora and fauna depend on hedgerows, small woodlands along rivers and pockets of regenerating woodland, to protect biodiversity in the farming landscape. Foxhall Wood is a Long-Established Native Woodland, extending to 38 hectares. Since 2022 the first part (12 hectares) of Foxhall Wood has been included in the Native Woodland Scheme. As a privately-owned and managed native woodland the main intervention is the control of invasive *Rhododendron ponticum*, restoring this native woodland to a healthy conservation state.

Foxhall Wood canopy from above in spring

Foxhall Wood and Glenswilly

Rhododendron ponticum 10m tall to be cleared from Foxhall Oakwood

Finn Valley and East Donegal

The Finn River rises in the Bluestack mountains and joins the river Foyle at Lifford. The native woodlands that once grew along the River Finn have been cleared for agriculture and in recent times replaced with coniferous plantations. The few remaining indigenous woodlands found scattered through the landscape, are mostly on marginal land where the soils are poor. Each of these remaining native woodlands is of great ecological value as refuges for our native flora and fauna and as the living heritage of the Irish nation.

Drumboe Woods *Droim Bó* (Ridge of the Cow)

Property - Coillte **Access - Public paths and parking**

Woodstory – Set on the River Finn, Drumboe Woods is a wooded recreational park, serving the towns of Ballybofey and Stranorlar. Managed by Coillte and Donegal County Council this is an excellent example of a productive forest that can also serve as a recreational park for a rural town. Drumboe Wood is a great example of natural woodland and urban environment co-existing for mutual benefit. In Drumboe Woods we find a mixed woodland environment, with massive ancient trees, a place that has been forested for centuries. Once part of the historic Drumboe Castle demesne, with a rich history, that is well documented by Pat Hollands "Drumboe Woods – The ecology and history of an Irish woodland" (2002).

The native woodlands we find at present in the Finn valley are the remnants of great forests that once grew on lands along the river. Evidence from survey maps in the 17th century indicate there were substantial native woodlands in the Finn valley, harvested for charcoal to be used in the nearby iron smelting works operated at the time. This activity reduced native woodland cover to a minimum by 1800. Drumboe Woods holds a central position on the River Finn as part of a sequence of woodlands along the valley that provide an essential ecological corridor for the movement of flora and fauna and a healthy clean Finn River.

Carpets of Celandine and Anemone under recently planted native woodland, Drumboe

River Finn with Drumboe Wood and Ballybofey Town

Bluebells under Hazel wood next to Drumboe Martyrs site

Close by and next to the Drumboe Martyrs commemoration site, is a beautiful native hazelwood (1 ha) with carpets of Bluebells, immediately west of the commemoration site. It is an example of many such smaller hazel woods found along streams and in patches of marginal land. Traces of old roads and embankments feature in this small wood, together with historic introductions of trees such as Beech and Sycamore.

Bluebell at Drumboe in late April

Dunwiley Wood *Dún Mhaoile* (fort of the flat topped hillock)

Property – Private **Access – No public access**

Woodstory - At 11 hectares, Dunwiley Wood is a large native woodland just south of the ancient Dunwiley Fort. Like other Donegal native woodland sites we find folklore, history and archaeology associated with the wood. Given its closeness to Dunwiley Fort (150m) this wood has evidence of human activity over many centuries. Dunwiley Wood has historical, cultural and ecological value to County Donegal and the Irish Nation. About half of the wood has been planted with Beech, the other half is an excellent example of a regenerating native woodland of Oak, Birch and Hazel. At just 2 km north of the historic Drumboe Castle Demesne, this woodland appears on the 1830 OS map – giving it "Long-established" status, that is woodland at least 200 years old.

Dunwiley Fort ramparts

Ancient woodland boundary ditch, Dunwiley

Young Oak and Birch regeneration, Dunwiley

Convoy Wood *Conmhaigh* (Plain of hounds)

Property Coillte **Access by foot, no parking**

Woodstory - Managed by Coillte, Convoy Wood is another fine example of native woodland with a thriving native woodland flora. It is a "Long-established" Oak woodland. Once part of the Convoy demesne and probably a remnant of the ancient woodlands associated with the Finn River valley. A rich ground flora of Bluebells and wild garlic and many of the typical Old Oak Woodland floral species are found within. While the canopy contains planted Beech, there are numerous Birch and native Oak in this woodland. Regarded as one of the best Bluebell woods in Donegal.

Convoy Wood Bluebells

Witches broom caused by fungus *Taphrina betulina*

Coinnle corra, *Hyacinthoides non-scripta*, Bluebell, Convoy

Marsh Marigold and Golden Saxifrage, woodland stream, Convoy

Carnowen *Carn Eoghain* (Owen's cairn)

Property - private **Access - by appointment only**

Woodstory - Set in the rich pastural landscape of East Donegal, Carnowen is a working farm managed by Liz and Ralph Sheppard who have studied the biodiversity of Donegal for decades. Together they have established 8.4 hectares of native woodland as part of their farm management strategy. Their objectives are to grow a timber crop, while emulating nature by planting Irish origin native trees to re-establish climax vegetation and enjoy encouraging greater habitat for native biodiversity.

From the long historical perspective, the Sheppard's woodland establishment project is about working with nature to get the balance right. The very placename of Carnowen evokes ancient Ireland and this area of East Donegal is rich in archaeological remains. The native forests in this part of Donegal were cleared for agriculture in the Bronze Age about 4,000 BP. Dedicating good land to woodland establishment and planting indigenous oak in quantity are extremely worthwhile projects and the resulting woodland establishment at Carnowen is demonstration of the success of the project.

Millenium plantation at Carnowen Farm with Beltony Hill in the distance

In 1990, a 4 ha field was set aside for native woodland establishment, the predominant trees planted being native Sessile Oak (2000), Wild Cherry (1330), Ash (1000), Common Alder (1000) and Scots pine (750). After 30 years this plantation is an impressive mixed woodland where a healthy woodland flora is re-establishing with Holly, Hawthorn and Bramble filling the shrub layer, and several species of ferns and mosses, together with woodland herbs like Bluebells. Herb robert and Wild garlic are naturally introducing themselves into the ground flora of the woodland. Insect and bird habitats have been extended and woodland butterflies are now thriving.

Young Oak plantation at 20 years

Mixed native woodland plantation at Carnowen of Pine, Oak and Cherry

Hedges and Ditches and Pilgrim Paths

Liz and Ralph began in 1980 by planting a triangular plot (0.5 ha planted with Oak, Ash, Alder, Sweet Chestnut, Birch and Larch) next to the ancient pilgrim path that runs through their farm. Recent historical research suggests this track is an ancient pilgrim route, for travellers walking south from the city of Derry to the pilgrim "Mecca" of Lough Derg. The ecological significance of this pilgrim track is in the great ditches on either side, as these are a refuge for a woodland flora and fauna (Hazel, Holly, Hawthorn, Ferns, Mosses, Primrose, Bluebell, Wild Garlic, birds, mice, bees, butterflies, etc.) and act as an ecological highway. Hedgerows connect with woodlands and river banks, providing multiple habitats where the Donegal flora and fauna can flourish.

Ancient pilgrim path with double hedgerow at Carnowen

Ivy, Hart's-tongue fern and Bluebell in hedgerow

Briar, Dris, *Rubus fruticosus*, very valuable to woodland ecology

Geranium robertianum, Ruithéal rí, Herb-Robert a typical woodland herb

Wild Garlic begins to spread in the new plantation, Carnowen

Ralph with one of his 20 year old Oaks

To celebrate the Millenium, Liz and Ralph set aside another 4 ha field on the River Deele in 1999. This time they planted 5050 Sessile Oak, 2500 Downy Birch, 2250 Ash, 2200 Common Alder, 500 Scots pine and 500 Hazel. Like the previous plantations, the trees were mixed in groups and the dividing paths were laid out in natural curves avoiding straight lines. The fast-growing Birch and alder were planted on the edges to give shelter and smaller quantities of 300 Rowan, 200 Grey and Goat Willow, 100 Wild Cherry, 20 Aspen, 50 Crab Apple and 50 Elder were added to increase diversity. Some of the Ash have succumbed to Ash Dieback, while others are being monitored for potential resistance to the disease. Diseased ash is being harvested as fire logs.

Over time Liz and Ralph have consistently recorded species diversity on their farm, demonstrating the remarkable biodiversity to be found. To date the list includes 408 moths, 304 wildflowers, 91 lichens, 81 mosses and liverworts, 76 bird species, 64 fungi, 20 mammals, 15 butterflies, 9 bumblebees and 7 dragonflies, totalling 1,075 different native Donegal species. In contrast to the typical spruce conifer plantation, the Carnowen woodlands demonstrate a more biodiverse and sustainable approach to farm and woodland management. Carnowen farm continues to be a productive Donegal farm with arable field crops of grain, seed potatoes, nursery trees as well as grazing for sheep and cattle. All of this is achieved while playing a leading role in biodiversity conservation in Eastern Donegal.

Primula vulgaris produces a pink sport

An Ogham Alphabet Tree Calendar by Liz Sheppard

YEW tree, ancient and mysterious
Native woodland's oldest member
Link between the past and future
Graveyard sentinel, dark and sombre.

PINE for winter sheltering
Bark of the sunset glow
Cones for easy plundering
Dark green against the snow.

BIRCH tree of the new beginnings
Pioneer of open ground
Graceful "Lady of the Woods"
Silvery bark and airy crown.

ROWAN Red One strong defender
Guardian of the barn and byre
Autumn blaze in hill and hedgerow
Scarlet-berried tree of Fire.

ALDER anchor of the wetlands
Riverbank and Lakeland shore
Magnet for the Tits and Finches
Winter-long a rich seed store.

WILLOW of the river margin
Silvery shiver on the breeze
Token of both joy and sorrow
Early catkins full of bees.

HAWTHORN, Whitethorn, tough protector
Spring cascades of snowy bloom
Thorny backbone of the hedge
Or fairy Bush to stand alone.

ASH tree, graceful, tall and strong
Smooth of bark and light of leaf
Keeper of the Holy Well
Ancient "Tree of Life".

OAK tree, Ruler of the Forest
Living long and stretching wide
Druid tree of sacred grove
Landmark of the countryside.

HOLLY tree of shady shelter
Prickly shiny green
Scarlet berries ripe for Christmas
Lighting the midwinter scene.

HAZEL tree of lore and wisdom
Coppice sprouting fresh and green
Dowsing rod for sourcing water
Plump brown nuts for Hallowe'en.

APPLE tree of hedge and orchard
Cookers, eaters, red and green
Crab apple and all its offspring
Autumn bounty, Harvest Queen.

ELDER spreading in the hedgerow
Here the tree and bush combine
Creamy flowers and juicy berries
Springtime cordial, Autumn wine.

Lesser Celandine, a typical woodland herb in new native woodland plantation, Carnowen

Feddyglass *An Fhaiche Ghlas* (The Green wood)

Property Private land **Access – no access** **Designation pNHA**

Woodstory – An island of biodiversity amid rich agricultural landscape, Feddyglass Wood may represent a remnant of a once extensive forest in East Donegal. This woodland was recently listed as a Possible Ancient Woodland PAW – unusually as it is set on fertile arable farmland. The abundance of Bird Cherry in the understory of the woodland is a strong indicator of this woodland's "ancientness". Currently planted with Beech and Oak, this woodland is one of a few East Donegal woodlands that offer important habitat for Old Oak Woodland.

Feddyglass wood looking toward Craigadoo, April 2023

Wild Cherry in flower on the edge of Feddyglass Wood

Feddyglass green interior, dense shade of Oak and Beech

Glenveagh to Sheephaven catchment

As in other river catchments, there are strong ecological connections linking the woodlands of Glenveagh with woodlands downstream and north to the Ards peninsula. Indeed, the salmon that spawn in the riverbeds of Glenveagh, swim under Ards Friary as they migrate to and from the ocean. Birds will also follow river systems, using them as migratory routes, feeding, nesting and overwintering in the shelter of riverside woodland.

Where one ecology meets another, like land and water on the river edge, there is an accumulation of organic matter, making the riverside an especially fertile location. Trees and woodlands benefit from the increased availability of nutrients in these situations.

In this river system the Owenbeagh rises in the Derryveagh mountains, flowing into Lough Beagh. At its northern end, the Owencarrow river flows out of Glenveagh into Glen Lough and this lake empties as the Lackagh river into Sheephaven Bay, past Doe Castle and Ards Friary. We find an interconnected biodiversity along this catchment, a fauna and flora adapted to this northern Donegal landscape.

Ancient oakwood on Lough Beagh, Glenveagh

Birch *Polypore*, a bracket fungus common on Birch trees

Glenveagh National Park *Gleann Bheatha (Bheithe)* - Glen of Birches

Property - National Parks and Wildlife Service *Pairceanna Náisiúnta agus an Fiadhúlra* Public Access dawn to dusk, everyday of the year

Woodstory -The Ancient Oak Woodland of Mullangore *Maolan na nGabhar* (Bare hilltop of the goats) is 90 hectares in size, the largest of Donegal's protected native woodlands. Glenveagh National Park currently has a total of 123 ha of broadleaved woodland within the 28,000 ha Park.

On arrival at Glenveagh National Park, the visitor encounters conifers planted to disguise the Visitor Centre built in the 1980s. Nearby a mature Scots pine forest is found on the Derrylaghan Nature Trail planted in the early 1860s. The first pockets of native woodland are found on the approach to the Castle, mostly Oak mixed with Birch growing on rising ground along the lake shore. The main oakwood begins just before the Castle and continues beyond it, along the lake to the ancient Mullangore Wood. Here the visitor can walk under an Oak canopy for some 4 km along the lake.

Mullangore Wood, Glenveagh

Reddish female Oak flowers where acorns arise

One of the outstanding features of the native woodlands of Glenveagh is their extent at 123 ha, ranking them as one of Ireland's largest native oakwoods, giving it international significance. Another remarkable feature of the woodland is the abundance of the native Yew trees scattered throughout the oakwood. These Yew trees are one of a number of ecological elements that indicate Mullangore Wood is of a great age.

The older Gaelic name for Glenveagh – *Gleann Fada Fán na Sealg,* translates as "*the long wandering valley of hunting"*. The earliest historical reference to the ancient woods of Glenveagh, comes from O Sullivan Beare in 1608, who is quoted by John O Donovan in his OS letters stating that Cahir O Doherty "concealed himself with much riches [his cattle herds] in the wood of Gleann Beatha". O Donovan concludes his letter with "Gleann Beatha is a grand and picturesque glen… which presents all the appearance of its having once been a forest, and Mullangore wood yet adorns the north easterly extremity".

We find the place name Glenveagh associated with the townland at the southern end of the Park. It means "valley of Birch" *Gleann Bheithe*, eventually giving its name to the Adair's Estate of the 1800s and in later years the National Park.

The main reason for the survival of the ancient woodlands at Glenveagh is their remoteness and the extremely rough terrain. The main woodland of Mullangore, grows on very steep Boulder Field – a glacial deposit of massive boulders that is almost impossible to traverse.

The first edition Ordnance Survey map of 1830, shows significant amounts of native woodland around Lough Veagh. The 1848 OS revision charts the precise locations for native woodland with the newly constructed "glen road" that gave access to the two ends of the valley for the first time. The second edition OS map of 1901 shows little change in the extent of native woodland in the valley of Glenveagh.

Down Survey General Map showing lake and woodland (under Ray) at head of river flowing to Doe Castle, ancient Glenveagh Wood

Male Oak flowers in April

Robin, most familiar of woodland birds

Mullangore woodland mosaic, Yew trees are olive green

For a significant part of its recent history, Glenveagh was managed as a sport hunting estate. This began when John George Adair purchased four large tracts of land around Lough Beagh for the purpose of establishing his new 25,000 acre sport hunting estate. He married a wealthy American heiress, Cornelia Wadsworth Ritchie in 1867. From 1868 – 1873 the original part of Glenveagh Castle (a tower house or keep with adjoining wing) was constructed for the Adairs. John George died unexpectedly in 1885, leaving his wife Mrs Adair as sole owner of their properties in Ireland, England and the United States. Mrs Adair added to the Castle, doubling its accommodation with two major extensions, in 1888 and 1901. In 1891 Mrs Adair ordered the construction of a 45 km fence around the Estate to enclose the recently reintroduced red deer herd and the Deer Forest within. Around the same time the 10 ha Castle Gardens were landscaped and fenced to exclude the deer. Mrs Adair entertained her high society friends at Glenveagh Castle each autumn for the deer shoot. Her guests included Lord Kitchener, and the Duke and Duchess of Connaught. The Irish Weekly Times reported in 1903 "His Royal Highness the Duke of Connaught shot three fine stags in the Deer Forest of Glenveagh".

Derrybeg wood, Glenveagh

Grazing deer prevent woodland regeneration at Glenveagh

Mrs Adair's legacy in Glenveagh is enormous, her Castle and Gardens are world famous, the red deer she introduced have now spread to all parts of Donegal, and historic plant introductions from her time such as *Rhododendron ponticum* and *Gaultheria mucronata* are now seriously invasive species in our native woodlands and are very difficult to control.

Mrs Adair died in 1921, Glenveagh was inherited by her grandson Montie Ritchie. In 1929 the Estate was sold to two new Americans, Arthur Kingsley Porter and his wife Lucy. They set about restoring the estate, spending considerable sums on the Castle and Gardens and on major repairs to the 45 km deer fence. In 1937 Lucy Porter sold Glenveagh to a young Philadelphian, Henry P. McIlhenny who had studied with Arthur Kingsley at Harvard in Boston. Henry McIlhenny bought Glenveagh to act as his summer residence and European base for his art collecting pursuits. McIlhenny became world famous for his collection of French 19th century paintings now in the Philadelphia Museum of Art. He loved to entertain in his richly-decorated Donegal castle and spent 46 years developing his beloved Castle Gardens. McIlhenny sold the estate to the Irish Government in 1975 for the purpose of creating Ireland's second National Park. In 1983 he gifted his Castle and Gardens to the Irish people.

Common Frog, also a woodland dweller

Degelia atlantica on Aspen, Glenveagh

Thelotrema lepadinum on Holly, Glenveagh (with barnacle-like apothecium)

Foxglove visited by Bumble Bee Glenveagh

For the period from 1858 until 1975, Glenveagh was managed as a private sport hunting estate. Prior to and during this period, grazing pressure and mountain fires restricted the Old Oak Woodlands allowing for no woodland regeneration. Since 1975 and the establishment of the National Park the control of deer numbers has been undertaken by Park staff . The major conservation intervention since the 1980s has been a control programme of *Rhododendron ponticum*. Like many other locations this species of rhododendron has invaded our native woodlands, completely taking over and displacing the native woodland flora and causing the decline of the Oak woodland habitat. *Rhododendron ponticum* forms dense thickets of evergreen foliage 10 m high blocking out virtually all light. Intense clearance programmes from the 1980s to the present have resulted in some positive native woodland flora regeneration in the Park. Fences to exclude deer from key woodlands in the Park have allowed for habitat regeneration in Mullangore, Derry Beg, New Brogans and Sruhanacullia woods.

Because of its ecological significance Glenveagh has been the subject of several scientific studies. One of the most valuable has been Michael Telford's PhD thesis *Glenveagh National Park – The Past and Present Vegetation*. Telford carried out core sampling to determine the development of the natural vegetation of the Glenveagh landscape since the last glaciation and found that a similar pattern is present in the pollen layers laid down in the Glenveagh bogs to those found in other Irish locations. Telford also found evidence of woodland exploitation for charcoal production at a location in Mullangore Wood from the mid 14th century, illustrating the kind of pressure our native woodlands were under 600 years ago. Again, this is in keeping with the kind of native woodland exploitation that was happening in other parts of Donegal and throughout Ireland.

Woodland Management Strategy 2023

A Woodland Management Strategy has been drafted for Glenevagh by NPWS. The strategy presents a 100-year vision for the future conservation of Glenveagh's ancient woodlands. It sets out how habitat restoration on a landscape scale will be achieved, balancing conservation objectives for the wide variety of habitats occurring in the Park. A historical map review revealed native woodland loss in the Park since 1830 at 0.74 ha per year on average, stressing the urgency of the Strategy. Three major conservation interventions are highlighted to restore the woodlands to a healthy sustainable state, these are - ongoing invasive species control (especially *Rhododendron ponti*cum), reducing the numbers of deer to allow for natural regeneration of seedling native trees and habitat restoration measures that speed regeneration where concentrations of invasive species have severely impacted upon the woodland ground flora.

Beech fern, Glenveagh

The Old Oak Woodlands of Glenveagh are part of a landscape-wide distribution of indigenous vegetation. The Glenveagh Oaks have characteristics of the two native oak species, *Quercus robur* and *Quercus petraea*, leading some to regard the Glenveagh Oaks as *Quercus x rosacea*. When we look at Birch in Glenveagh a similar situation arises, some of the Birch look more like Downy Birch *Betula pubescens* while others have characteristics of Silver Birch *Betula pendula*. In both these cases, the ancient Oak and Birch populations are mixing or crossing as they produce each new generation. The Oaks are trending toward Sessile Oak *Quercus petraea*, while the Birch is trending toward Downy Birch *Betula pubescens*.

The Glen Road that follows the lake to Mullangore wood offers good access to the woodland. Oak, Birch and Holly are the characteristic woodland trees, the Tree Layer mix also contains Aspen and Alder. Rowan, Yew, and three species of Willow, as well as Bird Cherry, Wild Cherry, Blackthorn, Hawthorn, and a scattering of individual Juniper are found in the Shrub Layer. Due to the very thin soil in the wooded areas of the Park and centuries of grazing animals, the Field Layer has many grassy species. Bilberry and Woodrush are present, while ferns, especially Hay Scented Buckler fern are common. Rarities found in the Field Layer in Mullangore include the Beech Fern *Phegopteris connectilis* and Intermediate Wintergreen *Pyrola media*. The Ground Layer is very rich in mosses, Filmy Ferns and lichens. This is a unique combination unlike any other woodland flora in the county.

Due to overgrazing and invasive *Rhododendron ponticum*, the field and shrub layers of the woodlands are poorly developed. Where grazing animals are excluded by exclosure fences, ivy is more abundant, as is honeysuckle with occasional roses appearing. Stag Island in Lough Beagh has been deer free for several decades and as a result it is newly colonised by Holly, Birch, Hawthorn and Willow. Nearby, Still-House Island has remained deer and rhododendron free for centuries, resulting in a diverse woodland flora that includes Oak, Birch, Holly, Yew and rarities like Guelder-rose *Viburnum opulus* and Burnet Rose *Rosa pimpinellifolia*.

In woodland edge situations we find the upright growing Juniper *Juniperus communis ssp. communis*. In Scotland this form of juniper is associated with Pine, Birch and Oak woodland. In Glenveagh the upright Juniper occurs on the woodland edge at a low altitude. One very big upright Juniper next to the pedestrian bridge over the Garman stream has a girth of 86 cm and before it collapsed to its current state, stood at 8 m tall.

Earthstar mushroom, Glenveagh

Wintergreen and Cow wheat, Glenveagh

Mossy floor of Mullangore, Glenveagh

A single specimen of Rock Whitebeam *Sorbus rupicola* grows on the lake shore in the hedge separating the access road and lake. It was first noted by Caesar Otway in Glenveagh in the 1820s. Whitebeams usually make micro populations of self-fertilising trees. This Rock Whitebeam is the only known specimen in County Donegal making it our rarest tree. Speculatively it may have spread here with flocks of Redstarts, that migrate to Donegal from Scandinavia in autumn to feed on Rowan berries.

Yew and Holly under Oak in early spring, Mullangore, Glenveagh

Beech Fern colony, Mullangore Wood

The Bird Cherry *Prunus padus* has a mainly Western Ulster distribution in Ireland, occurring as a native tree particularly in Fermanagh and Tyrone. A small population of Bird Cherry grows along the Glenlack stream above Mullangore Wood where it is vulnerable to deer grazing.

The Woodstory of Glenveagh reflects the wider story of Ulster's ancient woodlands. In the decades to come, we hope to witness Nature Restoration of all our endangered habitats.

Lough Beagh from woodland road, Glenveagh

Rosa canina at Glenveagh

The Green Shield Bug at Glenveagh

Native Woodland Plant list Glenveagh

Trees

Alnus glutinosa

Betula pubescens

Corylus avellana

Crataegus monogyna

Ilex aquifolium

Juniperus communis ssp. communis

Juniperus communis ssp. nana

Populus tremula

Prunus avium

Prunus padus

Prunus spinosa

Salix aurita

Salix caprea

Salic cinerea

Sorbus aucuparia

Sorbus rupicola

Quercus petraea

Quercus x rosacea

Taxus baccata

Ulmus glabra

Shrubs

Calluna vulgaris

Erica cinerea

Hedera helix

Lonicera periclymenum

Rubus spp.

Vaccinium myrtillus

Viburnum opulus

Rosa canina

Rosa sherardii

Rosa pimpinellifolia

Herbs, Graminoids & Ferns

Agrostis canina

Agrostis stolonifera

Agrostis tenuis

Ajuga reptans

Allium ursinum

Anthoxanthum odoratum

Anemone nemorosa
Athyrium filix-femina

Arctostaphyllus uva-ursi

Blechnum spicant

Brachypodium sylvaticum

Callitriche stagnalis

Carex pallescens

Cardamine flexuosa

Carex binervis

Carex viridula ssp. oedocarpa

Carex echinata

Carex flacca

Carex laevigata

Carex lepidocarpa

Carex nigra

Carex pallescens

Carex pulicaris

Carex remota

Carex sylvatica

Circaea x intermedia

Circaea lutetiana

Cirsium dissectum

Cirsium palustre

Chrysosplenium oppositifolium

Conopodium majus

Crepis paludosa

Dactylis glomerata

Deschampsia caespitosa

Deschampsia flexuosa

Digitalis purpurea

Dryopteris aemula

Epilobium nerterioides

Festuca altissima

Festuca gigantea

Galium saxatile

Glyceria fluitans

Hedera helix

Holcus lanatus

Holcus mollis

Hyacinthoides non-scripta

Hypericum androsaemum

Hypericum pulchrum
Hymenophyllum tunbridgense
Hymenophyllum wilsonii
Hypochoeris radicata
Juncus acutiformis
Juncus bulbosus
Juncus bufonius
Juncus conglomeratus
Juncus effusus
Juncus tenuis
Listera cordata
Luzula multiflora
Luzula sylvatica
Lysimachia nemorum
Milium effusum
Molinia caerulea
Oreopteris limbosperma
Oxalis acetosella
Phegopteris connectilis
Polygonum persicaria
Potentilla erecta
Potentilla sterilis
Primula vulgaris
Prunella vulgaris
Pyrola media
Ranunculus acris
Ranunculus flammula
Ranunculus repens
Sanicula europaea
Senecio jacobaea
Danthonia decumbens
Stellaria alsine
Succsia pratensis
Taraxacum palustre
Umbilicus rupestris
Veronica chamaedrys
Veronica officinalis
Veronica montana
Viola riviniana

The earth boring Dung beetle or Dor beetle that feeds on deer droppings!

Dunnock a shy woodland bird, Glenveagh

Small Tortoiseshell found throughout County Donegal

Duntally Wood *Coille Dún Taithligh* (The Fort of Taichlich – a fairy gentleman!)

Property – NPWS **Access – Parking and 2.5 km trail**

Designation – Included in Sheephaven SAC

Woodstory - Duntally Wood Nature Reserve is a long-established native woodland of Oak, Ash, Hazel and the very rare Wych Elm. Holly, Rowan, Willow, Blackthorn and Birch are abundant, with a rich and varied ground flora throughout, managed now for biodiversity. Duntally forms part of an extended woodland that runs from Doe Castle south toward Glenveagh, providing a wooded wildlife corridor. Duntally Wood is a biodiversity hub for the wider Sheephaven Special Area of Conservation. Birdlife is diverse with breeding birds that include Woodpigeon, Collared Dove, Jays, Tree-creepers, Raven, Buzzard and Sparrowhawk. Unfortunately, Ash Dieback has infected the Ash trees of Duntally and, as they decline, light levels in the understory will increase. Dutch Elm disease has caused the decline of Duntally's mature Wych Elm in the past 20 years, however there is regeneration of young Elms along the central stream. Restoration is well underway at Duntally Wood, a precious resource to the people of nearby Creeslough.

Duntally Wood, with Ash not yet in leaf

Carpet of Lus na gaoithe, Wood Anemone, *Anemone nemerosa* under Hazel, Coll, *Corylus avellana,* Duntally

Ards *An Ardaigh* (the heights) Ards Forest Park

Property – Coillte **Access – public, all year round**

Woodstory – The beautiful coastal landscape setting of Ards Forest Park make this location a popular visitor attraction. The area is rich in natural habitats such as dune systems, Mediterranean salt meadows, machairs, Old Oak Woodland and rare flora and fauna. A substantial portion of the peninsula is designated as part of the Sheephaven Special Area of Conservation. Coillte manage the site as commercial forestry and amenity woodland that is publicly accessible. The Forest Park extends to 480 hectares, most of the plantation is coniferous forestry for commercial purposes.

The entire Ards peninsula was managed as a private estate firstly by the Wray family from 1700. The first Ards House was built by Humphrey Wray in 1708, who chose a south facing slope overlooking Sheephaven Bay, perhaps one of the finest "big house" locations in all of Donegal. His son William Wray was the first to plant trees at Ards, some of the big sycamores next to Ards Friary are believed to have been planted in his time. Alexander Stewart bought the estate in 1782, he rebuilt the house – a two storied Italianate mansion with an elaborate façade. Extensive improvements to the estate included a parkland landscape in the approach to the house, a massive walled garden and extensive plantation in the Old Oak Woodland. In effect the native oak was replaced with Beech, Sycamore, Sweet and Spanish Chestnut, Larch and Fir.

Ancient Oak woodland over planted with conifers, Ards Forest Park

Ards Forest Park main avenue

Stone Bramble, *Rubus saxatile* at Ards Forest Park

Regrettably the Old Oak Woodland habitat is in very poor condition, due to competition from coniferous plantations, invasive *Rhododendron ponticum* smothering any regeneration and overgrazing by deer. Significant conservation interventions are required to prevent permanent irreversible damage to the Old Oak Woodland habitat.

A unique willow and hazel woodland habitat is found in the dunes where an extraordinary ecology occurs. In winter the hollow floods while in summer it is dry. In the ground layer a combination of Stone bramble *Rubus saxatilis*, Sweet Woodruff *Galium odoratum* and the parasitic Thyme Broomrape *Orobanche alba* occur.

Nearby in fragments of Old Oak Woodland, the rare Bird's-nest Orchid *Neottia nidus-avis* flowers, in a struggling ground flora, vulnerable to the invasive *Rhododendron ponticum*.

Bird's-nest orchid, *Neottia nidis-avis* at Ards Forest Park

Ivy broomrape, *Orobanche hederae* at Ards Forest Park

Painted Lady a regular migrant from North Africa to County Donegal

Common Lizard, *Lacerta vivipara*, Ireland's only reptile, a woodland dweller

Ards Capuchin Friary – *Ard Mhuire*

Property – Capuchin Franciscans Province of Ireland

Access – open to public

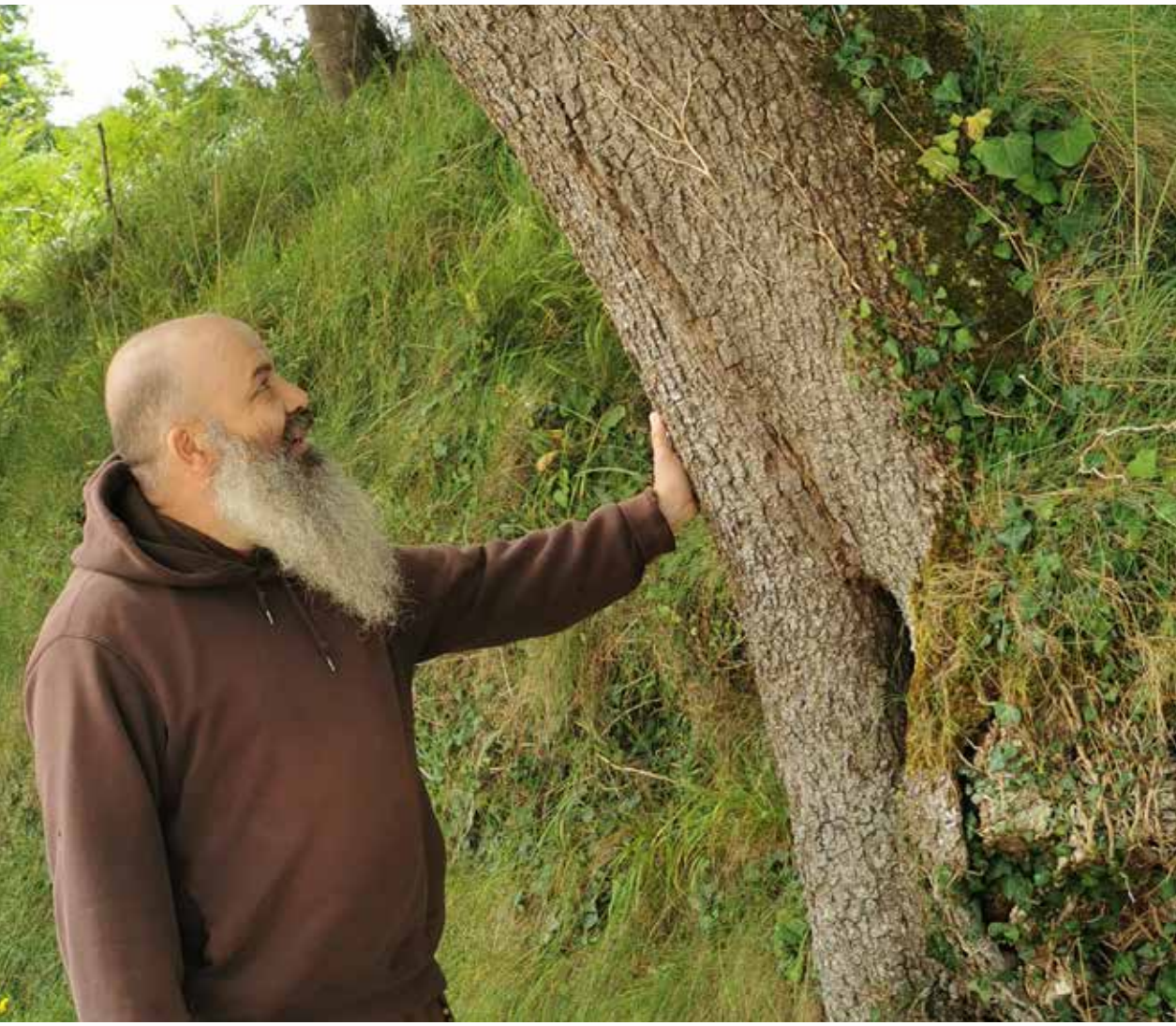
Woodstory - The coastal setting of Ards affords the location great scenic beauty. Nature trails and woodland walks afford the visitor a direct experience of the uplifting beauty of the location. Originally an historic private demesne associated with the Wray and Stewart families, since 1930 the property is known as Ard Mhuire Ards Capuchin Friary, one of six establishments of the Franciscan Capuchin Order in Ireland. The wooded Friary grounds (70 ha) also contain Old Oak Woodland, one of the qualifying interests of the Sheephaven Special Area of Conservation.

Ards is a biodiversity hotspot according to Aldwell and Smyth in their *Butterflies of Donegal*, with an assemblage that includes the rare Cryptic Wood White, Small Blue, Dark Fritillary, Grayling and Small Heath.

Wooded Grounds of Ards Friary

Woodland and coastal setting of Ards Friary

Ancient Oak on Ards shore line



Brother Ade at Ards Friary with a mature Oak

The wooded parkland landscaping of Beech, Spanish Chestnut, Lime, Oak, Horse Chestnut and Pine, fill the tree space that once had native Old Oak Woodland. Fragments of this original native woodland persist in small pockets throughout the Friary grounds with thickets of Willow, Hazel, Bird Cherry and Aspen in several locations. At Horse Park Point, natural woodland regeneration is already under way with native oak appearing above thickets of Blackthorn.

The Friars are currently developing a plan to "rewild" the Friary grounds, returning the woodlands to native woodland habitat. "Our stewardship of the land will be informed by best practice in sustainable and ecological land management". A nature led vision for Ards Contemplative Ecology Retreat Centre is currently in development.

Parkland Oak, *Quercus robur* at Ards Friary

Inishowen *Inis Eoghain*

The Inishowen peninsula contrasts significantly with central Donegal in how few native woodlands have survived into modern times. Bartlett's 1602 map noted no woodlands there and subsequent Ordnance Surveys repeat this trend. That said, small pockets of native woodland are found throughout the peninsula. Larger native woodlands are found at Porthaw Glen, Lisnagra and Crocknakilladerry.

Porthaw Glen, *Port Átha* (Port, bank or fort of the Ford)

Ballynarry part of Lough Swilly Special Area of Conservation

Property –- private land **Access – no access**

Woodstory - Porthaw Wood is a wild woodland at its best in Donegal, found above the coastal path from Buncrana to Fr Hegarty's rock. This predominantly Oak and Hazel scrub woodland is indicated on the 1830 OS map north of the stream, and is therefore Long Established. This is a remarkable example of regenerating native woodland, of the oak-holly-hazel type, that has been expanding into free-draining surrounding land to the northwest and southeast. There is a rich tree mix and thriving understorey flora. The wet woodland has Alder, Birch and Willow, while Oak, Hazel and Holly occur on the free draining slopes. This small but very old native woodland is teeming with native biodiversity. Porthaw holy well is near to where the stream meets Lough Swilly on the 1902 OS map.

Porthaw Glen on Lough Swilly

Tree canopy, Porthaw Glen, planted Scots pine at centre

Lisnagra - ("lovers meeting place")

Property - Coillte **Access - Pedestrian access only, roadside parking**

Woodstory - Not far from the village of Muff, Lisnagra Wood has a majesty about it. This is an old plantation woodland, dating to the 18th century. Most of the mature trees are Beech, Scots pine and Larch, making it a mixed conifer and broadleaf plantation. At 52 hectares Lisnagra is a very important 'semi-natural' woodland habitat on the Inishowen peninsula supporting native Irish biodiversity. While the oldest parts of Lisnagra wood are on the free draining good soils to the north, much of the southern half (wet heath) has developed into wet scrub woodland (Willow and Birch), a very rich habitat for wildlife. From the road we can see that the predominant tree is Beech, with its copper orange leaf litter. Mixed in are Scots pine, Larch and Sycamore planted around 1800. Native trees in the mix include Oak, Birch, Holly and Hazel. Lisnagra is managed by Coillte as a commercial woodland in conjunction with NPWS for the benefit of wildlife and biodiversity. The Red squirrel has made its home here and the wood supports a wide selection of native woodland birds. Thirteen bird species were recorded in one evening, on May 4th 2023: Robin, Blackbird, Blackcap, Wood Pigeon, Willow Warbler, Blue Tit, Great Tit, Song Thrush, Wren, Chiffchaff, Goldfinch, Coal Tit and Bullfinch.

Ancient Beech and Pine at Lisnagra

Climax forest of Beech at Lisnagra

Crocknakilladerry *Cnoc na Coille Darrach* (The Hill of the Oak Wood) Carndonagh Wood

Property private land Access – limited to pedestrian access to Mass rock

Woodstory - Ancient forests cleared in early Christian times (900AD) created *Domnach Móir Maige Tochair* The Plain of the Causeway, converting the northern end of the Inishowen peninsula into an agricultural landscape. Crocknakilladerry Wood or Carndonagh Wood is Ireland's most northerly Old Oak Wood. The current wood extends to 30 ha on the eastern flank of the hill of Crocknakilladerry. The historical evidence shows that this is a long-established native woodland at least 200 years old, unquestionably of great heritage and ecological value for Donegal. The proximity of the wood to the monastic remains (500m) and Carndonagh town (1.3 km) is very interesting. The presence of a Mass Rock within the wood links its history to the Penal Laws and the suppression of the Catholic religion in the 17th century. It is probable that the wood was part of Church lands associated with the early Christian monastery at Carndonagh, a kind of contemplative place or sacred woodland. The rich biodiversity of this substantial woodland and the historic placename provide evidence in favour of the woodland being of ancient origin.

Crocknakilladerry Carndonagh

Ancient Oaks, Crocknakilladerry

The northern half of this old oakwood has been replaced in the 20th century with coniferous plantation and housing development. Currently about 30 ha of the original old oakwood remains intact. Oak-birch-holly is the main woodland type on the lower more fertile eastern area, while on the higher ground with blanket bog, Birch is prominent.

The Inishowen Rivers Trust and Eco Carn have proposed to conserve the wood by entering it in the Native Woodland Scheme, subject to the private landowner's agreement. Their conservation plan lists 61 plant species, 12 of which are associated with Old Oak Woodlands. These are Woodrush, Downy Birch, Hazel, Oak, Holly, Rowan, Bluebell, Honeysuckle, Bilberry, Polypody fern, Hard fern and Wood sorrel. 43 bird species are recorded for the area, together with 9 butterflies and 6 native mammals.

Mass Rock in Crocknakilladerry Wood

Coal Tit, Meantán dubh, *Periparus ater* common in Donegal woodlands

Ferns of Donegal Woodlands

Asplenium scolopendrium	Hart's-tongue	Creamh na muice fia	Common, tongue shaped leaf, preferring lime rich soils, under hazel and ash
Athyrium filix-femina	Lady-fern	Raithneach Mhuire	Common, fronds arising in dense tufts, sori j-shaped, stalk with many dark brown scales
Blechnum spicant	Hard-fern	Raithneach chrua	Common, tufted fern with overwintering leaves, often under Birch
Dryopteris affinis	Scaly Male-fern	Raithneach ghainneach	Common, shuttlecock-like, black patch at pinna junction, stalk covered in shaggy orange-brown scales
Dryopteris aemula	Hay-scented Buckler-fern	Raithneach chumhra	Winter-green, tuft-like clumps, dried leaf hay scented, typical of Old Oak Woodland
Dryopteris carthusiana	Narrow Buckler-fern	Raithneach chaol	Narrow leaf, pale brown scales, uncommon, in wet woodland
Dryopteris dilatata	Broad Buckler-fern	Raithneach leathan	Clump forming, 3-pinnate, scales dark-brown or dark centred, common
Dryopteris filix-mas	Male-fern	Raithneach mhadra	Common, moderately few straw-coloured scales, shuttlecock-like clusters
Hymenophyllum wilsonii	Wilson's Filmy-fern	Dallán sléibhe	Wet mossy woods, spore
Hymenophyllum tunbrigense	Tunbridge Filmy-fern	Dallán coille	Wet mossy woods, spore case toothed
Oreopteris limbosperma	Lemon-scented fern Raithneach bhuí		Rare – with lemon scented leaves, open woodland
Osmunda regalis	Royal fern	Raithneach riúil	Woodland edge near water, distinct foliage
Phegopteris connectilis	Beech fern	Raithneach feá	Rare - Pale green fronds, arising in colonies, lowest pinna pair reflexed
Polypodium interjectum	Intermediate Polypody	Scim mheánach	Less common, leaf 2-2.5 times as long as broad, sori oval
Polypodium vulgare	Common Polypody	Scim chaol	Common on trees and walls, leaf 3-3.5 times as long as broad, sori round
Polystichum aculeatum	Hard Shield-fern	Ibheag chrua	Wet woodland slopes, 30-90 cm high, pinna with bristle stalk, red-brown scales
Polystichum setiferum	Soft Shield-fern	Ibheag bhog	Wet woodland slopes, 30-150 cm high, soft to touch, golden-brown scales
Pteridium aquilinum	Bracken	Raithneach mhór	Common, often in the open but also in woodlands
Trichomanes speciosum	Killarney fern	Raithneach Chill Airne	Very rare, Ardnamona and Glenveagh only

Historical notes from Henry Chichester Hart's Flora of County Donegal 1898.

Of the three filmy-ferns associated with Old Oak Woodland - "Tunbridge Filmy-fern is very local, recorded at Carradoan Wood, Glenveagh and Lough Eske. Wilson's Filmy-fern is recorded at Ballyarr Wood, Glenveagh, Glenalla, Carradoan and Drummonaghan Woods. Killarney Fern is recorded at Poison Glen (1884) and Ardnamona Woods. Bracken is very common as is Hard-fern. Lady-fern is common in damp shady places. Hart's Tongue is frequent in rocky shady places. Broad Buckler-fern is abundant in woods and shady banks, while the evergreen Hay-scented Buckler-fern is frequent in places like Rathmullan, Glenalla and Glenveagh. Male-fern is abundant in hedges, ditches and woods. The polypodys are common, being found on walls, trees, rocks and dry banks. The Royal Fern is typical of wet moors by lakes and streams and woodland edge. Soft Shield-fern is local to shady banks and woods on Lough Swilly near Glenvar, Lough Eske and at Ards. Hard Shield-fern is recorded in Glentogher, Glenalla, on the Finn and Eske Rivers and at Brownhall."

Dryopteris aemula, Hay-scented Buckler-fern, Raithneach chumhra

Dryopteris aemula, Hay-scented Buckler-fern, Raithneach chumhra, Ardnamona Wood

Osmunda regalis, Royal Fern, Rathneach riúil

Common polypody, Scim chaol, *Polypodium vulgare*

Bracken, *Pteridium aquilinum*, Rathneach mhór

Athyrium filix-femina, Lady-fern, Ratchneach Mhuire

Dryopteris affinis, Scaly Male-fern, Raithneach ghainneach

Phegopteris connectilis, Beech Fern, Raithneach feá

Blechnum spicant, Hard-fern, Raithneach chrua

Light seeps through Oak canopy supporting rich plant biodiversity

Native Woodlands of Donegal Designations

pNHA proposed National Heritage Area SAC Special Area of Conservation SNR Statutory Nature Reserve

Region of County Donegal	Site name	Ownership	Public Access	Area (ha)	Type	Status	Richard Bartlett 1602	Civil Survey1654	Down Survey 1656	Ordnance Survey 6" 1829-41	Ordnance Dsurvey 25" 1897 - 1913
South Donegal	Ardnamona NR	NPWS	Access	46.6	Oak	pNHA, SAC, SNR	1602			1829-41	1897-1913
	Lough Eske Demesne	Private		30.7	Oak, mixed	pNHA, SAC		p72		1829-41	1897-1913
	Carrickbreeny	private		c.6	Ash/hazel PAW					1829-41	1897-1913
	Cranny Upper, Keeloges	private		c.7	Oak PAW	pNHA, SAC	1602	p73		1829-41	1897-1913
Finn Valley/East Donegal	Drumboe	Donegal Co. Co./Coillte	Access	?	Mixed	SAC	1602			1829-41	1897-1913
	Convoy	Coillte		c.8	Oak/ Beech		1602			1829-41	1897-1913
	Carnowen	Private		20	Mixed						
	Feddyglass	Private		c.7	Oak PAW	pNHA		p25		1829-41	1897-1913

Region of County Donegal	Site name	Ownership	Public Access	Area (ha)	Type	Status	Richard Bartlett 1602	Civil Survey1654	Down Survey 1656	Ordnance Survey 6" 1829-41	Ordnance Dsurvey 25" 1897 - 1913
Lennon/ Swilly	Woodlands Manor	Private		c.25	Oak, mixed	pNHA				1829-41	1897-1913
	Foxhall	Private		40	Oak, mixed	pNHA		p119?		1829-41	1897-1913
	Gartan/ Bellville	NPWS/ Private		c.30	Mixed PAW	pNHA, SAC				1829-41	1897-1913
	Cottian Massreagh	Private		c.40	Oak	pNHA		p95		1829-41	1897-1913
	Ballyarr NR	NPWS	Access	30	Oak	pNHA, SAC, SNR		p102		1829-41	1897-1913
	Glenalla	Private		40	Mixed			p97		1829-41	1897-1913
	Rathmullan Nature Reserve	NPWS	Access	33	Mixed	pNHA, SAC, SNR	1602	p103		1829-41	1897-1913
	Carrowdoan, Rathmullan north	Private		200	Oak, Hazel	pNHA, SAC	1602	p130		1829-41	1897-1913
Glenveagh Sheephaven	Mullangore, Glenveagh NP	NPWS	Access	90	Oak, AW	pNHA, SAC	1608	p93. p121	1656	1829-41	1897-1913
	Duntally NR	NPWS	Access	15	Ash Hazel	pNHA, SAC				1829-41	1897-1913
	Glen Lough	Private		c.40	Oak	SAC				1829-41	1897-1913

Region of County Donegal	Site name	Ownership	Public Access	Area (ha)	Type	Status	Richard Bartlett 1602	Civil Survey1654	Down Survey 1656	Ordnance Survey 6" 1829-41	Ordnance Dsurvey 25" 1897 - 1913
	Ards Forest Park & Friary	Coillte	Access		Mixed	pNHA, SAC		p88, p111		1829-41	1897-1913
	Rough Island	An Taisce		2.8	Birch						
Inishowen	Kilderry, Muff	Private		21	Birch					1829-41	1897-1913
	Lisnagra, Muff	Coillte	Access	52	Mixed					1829-41	1897-1913
	Porthaw Glen, Ballynarry, Buncrana	Private		c.45	Oak	SAC				1829-41	1897-1913
	Carndonagh	Private		30	Oak	pNHA				1829-41	1897-1913
Northwest	Owenaltderry	Private		1	Oak						
	Crolly Gweedore SAC	Private		c.4 c.40	Oak, hazel	pNHA, SAC	1602	p116			
	Derkmore NR	NPWS		7	Oak	pNHA				1829-41	
	Gweebarra/ Lettermacaward	Private	Access	c.80	Oak, Hazel	pNHA, SAC	1602	p76, p82		1829-41	

Restored Oak timber roof Donegal Castle

The Brooke fireplace Donegal Castle

Donegal Castle

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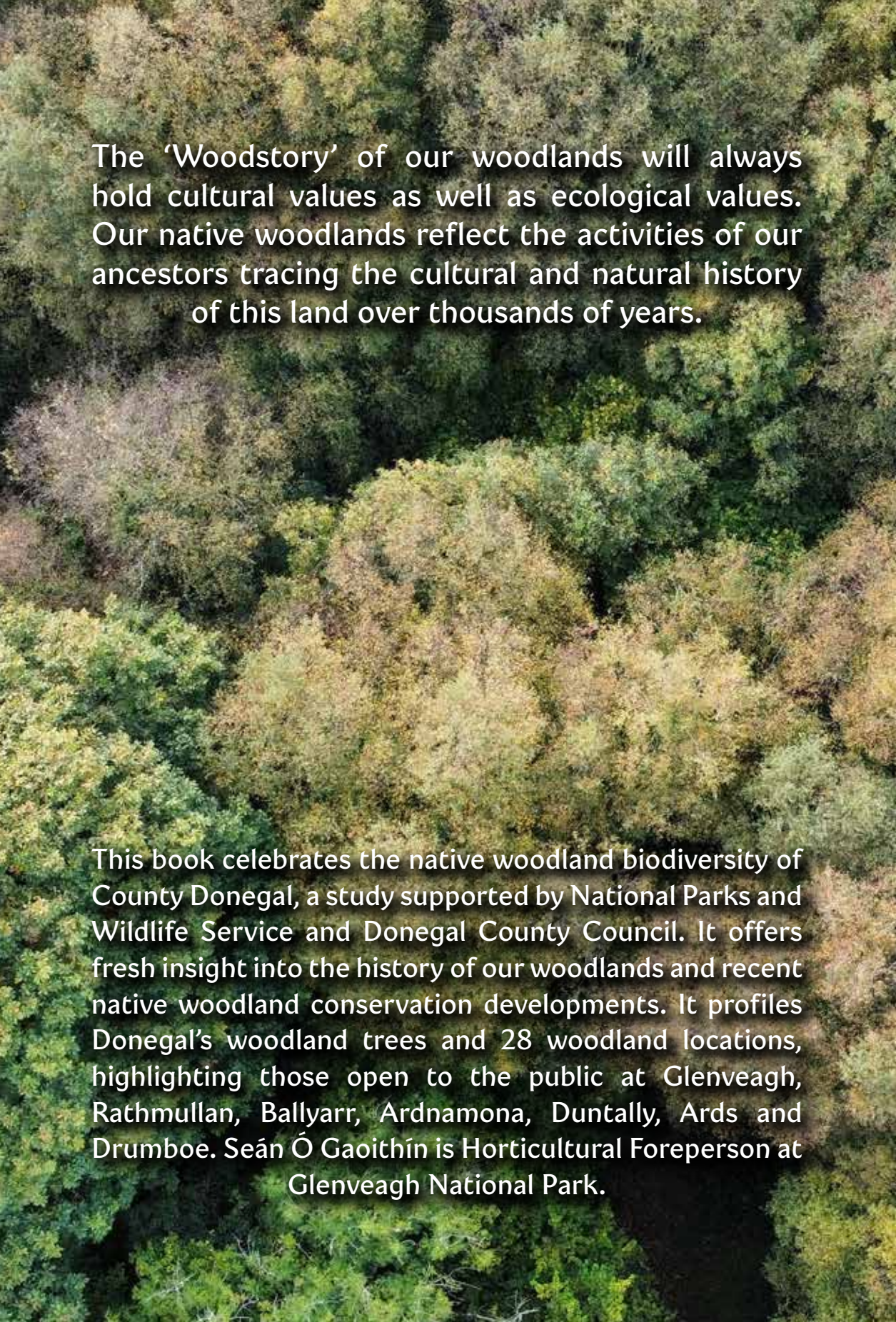

The ‘Woodstory’ of our woodlands will always hold cultural values as well as ecological values. Our native woodlands reflect the activities of our ancestors tracing the cultural and natural history of this land over thousands of years.

This book celebrates the native woodland biodiversity of County Donegal, a study supported by National Parks and Wildlife Service and Donegal County Council. It offers fresh insight into the history of our woodlands and recent native woodland conservation developments. It profiles Donegal’s woodland trees and 28 woodland locations, highlighting those open to the public at Glenveagh, Rathmullan, Ballyarr, Ardnamona, Duntally, Ards and Drumboe. Seán Ó Gaoithín is Horticultural Foreperson at Glenveagh National Park.