

A Strategy for Native Woodlands in Ireland 2016-2020

Woodlands of Ireland

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woodlands
OF IRELAND



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The Heritage Council



Summary

Native woodlands are an important part of Ireland's natural heritage, history and culture, and are unique in terms of their biodiversity. They are home to specialised woodland animals, birds, insects and plants, including red squirrel, pine marten, great spotted woodpecker, narrow-leaved helleborine and wood millet, to name but a few. They also provide numerous ecosystem services such as the protection and enhancement of water quality (a function that benefits rivers, streams and lakes and their many inhabitants), the conservation of our indigenous woodland genetic resource, quality native wood production, climate change mitigation (including flood control and carbon storage), social, recreational and educational opportunities, and the creation of corridors between semi-natural habitats at a landscape scale (e.g. between native woodlands and wetlands, bogs and species-rich grasslands). It is estimated that the natural capital of native woodlands is currently worth between €100 and €140 million per annum, and that this is only a fraction of the considerable potential that can be unlocked if the full range of provisioning, regulating, supporting / habitat and cultural services are fully harnessed.

Woodlands of Ireland, a partnership-based environmental charity dedicated to native woodlands, has developed a 5-year native woodland strategy with input from key government bodies and native woodland stakeholders. The key elements of this Strategy for Native Woodlands in Ireland 2016-2020 are as follows:

- The promotion of the ecosystem service values of native woodlands and their potential to deliver these services, amongst policy-makers, the forest industry and the general public.
- To promote the utilisation of available and potential financial resources to conserve existing high value native woodlands (ancient woodland, old or long-established woodland, riparian woodland, and specific types of young emergent (or 'scrub') woodland), and to expand the resource through the establishment of new native woodlands.
- To promote the strategic creation of protective native woodlands on sites adjoining watercourses, in order to maintain and improve water quality and to contribute towards the mitigation of increased flooding predicted as a result of climate change.
- To promote the management of native woodland using continuous cover forestry techniques, to realise high quality, indigenous hardwoods and softwoods, especially birch, alder, oak and Scots pine.
- To advocate the incorporation of non-timber uses, including biodiversity, habitat linkage, the protection of water quality, flood control, carbon storage, recreation, health benefits, eco-tourism and the visual landscape, into native woodland planning and management.
- To ensure that climate change and invasive species (in particular, non-native deer, grey squirrel and rhododendron) are taken into account in native woodland policy, legislation, planning and management.
- To support adaptive measures and research to counteract tree pests and diseases that threaten native woodlands, such as the ash dieback disease and *Phytophthora ramorum*.
- To lobby for native woodland research that will underpin the future sustainability of the resource, and to highlight relevant research by hosting a National Native Woodland Conference.
- To integrate native woodland wood and non-wood values into the relatively new Natural Capital policy agenda.

The achievement of these measures will be supported through government grants and private funding initiatives. The primary funding mechanism is the Forest Service Native Woodland Scheme package under the current Forestry Programme 2014-2020, which has provision of almost €24 million for the conservation of 2,000 hectares of existing native woodland (including conversion from conifer forest to native woodland) and the creation

of 2,700 hectares of new native woodlands. The Forest Programme sets out a target of 1,070 hectares under the 'public woodland' category of the Native Woodland Conservation Scheme. Within this context, this Strategy for Native Woodlands advocates the restoration by the National Parks & Wildlife Service of 500 hectares of woodland designated as Special Areas of Conservation (SACs) and Natural Heritage Areas (NHAs). It also advocates the restoration by Coillte of 300 hectares of old / long-established woodlands, and the conversion of 200 hectares of existing conifer forests into native woodland, in areas adjacent to watercourses important for Freshwater Pearl Mussel and salmonid populations.

Regarding the allocation to the private sector under the Native Woodland Conservation Scheme, this Strategy advocates that 400 hectares is targeted at woodlands listed as priority natural habitats under Annex I of the Habitats Directive. Furthermore, the private sector will be engaged in Freshwater Pearl Mussel catchments in an effort to achieve a target area of 140 hectares between now and 2020, focused on the protection and enhancement of water quality. A further 360 hectares is targeted in the Forestry Programme at emergent or 'scrub' native woodland, to enhance the biodiversity value of this habitat and to create the basis for compatible wood production in the future, in order to generate income for landowners.

With respect to the creation of new native woodlands under the Native Woodland Establishment Scheme, most of this (i.e. 1,200 hectares) should be targeted at greenfield sites adjacent to SAC and NHA woodlands, with a wood production remit on sites with fertile soils, complimenting the primary biodiversity objective. A target area of 1,000 hectares is also advocated for new woodland focused on the protection of water quality.

An exciting new development in the Forestry Programme, and one which this Strategy fully endorses, is the integration of the Native Woodland Scheme package and the NeighbourWood Scheme. This will enable the creation and restoration of new and existing native woodlands equipped with appropriate recreational and interpretative facilities, under partnership projects involving public bodies, landowners and local communities. This will promote healthy outdoor recreation and create

exciting opportunities for learning about woodland ecosystems and for appreciating the associated natural, historical and cultural heritage, particularly in and around urban centres. This Strategy advocates the development of up to 15 of these 'cross-over' projects, with a particular focus on the creation of new native woodlands in urban areas.

The implementation of this Woodlands of Ireland Strategy for Native Woodlands in Ireland 2016-2020 requires an even more intensive application of the partnership approach so evident in recent years across a range of native woodland related initiatives. All relevant stakeholders must work together to unlock the potential of native woodlands highlighted in the Strategy. These stakeholders include public bodies (Forest Service, National Parks & Wildlife Service, Heritage Council, Coillte, Environmental Protection Agency, Loughs Agency and local authorities), the environmental NGO sector, and the private sector (including landowners, professional ecologists and the forestry sector, from nursery growers to forestry companies to hardwood end-users).

If fully implemented by all partners, this Strategy for Native Woodlands in Ireland will not only help to secure the future of our native woodlands, but will also create sustainable indigenous jobs, mostly in the eco-tourism, forestry, wood processing and craft sectors. It will also benefit local communities and assist in realising government policy and in meeting Ireland's obligations to various national, European and international legislation and obligations. In effect, it constitutes a visionary and ambitious approach aimed at reinforcing the 'new dawn' that has occurred in recent years regarding our native woodlands, for the benefit of both current and future generations.

Introduction

Native woodlands are a vital facet of Ireland's natural, historical and cultural heritage, and are unique in terms of their inherent woodland biodiversity and the complex ecosystem services they provide. They support the realisation of wider ecosystem functions including genetic conservation, the protection and enhancement of water quality, aquatic habitats and in-stream species, the creation of linkage between semi-natural habitats at a landscape level, and climate change mitigation. With appropriate management, they also generate quality wood and non-wood products, provide a unique setting for outdoor recreation and environmental learning, and contribute to rural livelihoods and local economies.

Until recent years, Ireland's native woodlands suffered from a lack of coordinated vision, particularly as national forest policy was primarily focused on afforestation due to the country's very low level of forest cover. Old native broadleaf woodland was generally perceived as having little or no timber value, while conservation and other values were generally overlooked. In the late 1970s, the then Forest and Wildlife Service conducted initial site surveys of numerous native woodlands nationally but resources for management were very limited. This was exacerbated by the lack of

a national inventory and classification system for native woodlands at that time. Wood production and conservation values continued to be viewed as separate, unequal entities. As afforestation with predominantly non-native conifer species gathered pace in the 1980s, woodland conservation remained the 'poor cousin' and received little focus until the beginning of the implementation of the EU Habitats Directive and the onset of more favourable economic conditions in the late 1990s. Since then, numerous initiatives, together with positive changes in the wider policy context, have created a far more favourable environment for native woodlands. However, a coherent, cross-sector strategy is now needed, to provide a clear, strategic focus and to ensure that investment and effort are used to best effect in securing a better future for this key national resource.

The Woodlands of Ireland (Wol) project, comprising interested native woodland stakeholders, is an initiative established in 1998 to address the sustainable management and expansion of native woodland. By working closely in partnership with other professional organisations, statutory agencies and individuals, the organisation has been to the forefront in the initiation and development

Photo 1 It is almost certain that upland marginal river catchments, such as the Glencree Valley in Co. Wicklow, were clothed in native woodland for centuries. Today, only small sparse pockets of native woodland remain within these landscapes.



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of numerous native woodland initiatives and projects since its inception, including the People's Millennium Forests Project and the Forest Service Native Woodland Scheme. In the context of recent progress, current policy and legislation, and available resources for native woodlands, Wol decided in 2014 that it is now timely to devise a 5-year native woodland strategy to address the future development of this sector. As Wol involves a wide cross-section of native woodland stakeholders, including statutory agencies, native woodland practitioners and landowners, it is uniquely placed to develop, advance and promote such a strategy.

This document sets out the Woodlands of Ireland Strategy for Native Woodlands in Ireland for the next 5-year period, compiled as a result of extensive consultation with stakeholders and drawing together the various legislative, policy and funding opportunities and measures that now exist. It is expected that the strategy will be supported by most native woodland stakeholders, including key government agencies and departments with stated responsibilities and commitments in the area.

Section 1: Towards a National Strategy for Native Woodlands

Overview

The surveying and management of native woodlands have been ongoing since the 1970s, principally on state-owned land, but there has been a major upsurge in activity since the year 2000. Key initiatives have included the People's Millennium Forests (PMF) Project, the Forest Service Native Woodland Scheme, the first National Survey of Native Woodlands by the National Parks & Wildlife Service (NPWS) (Perrin *et al.*, 2008), Coillte's EU LIFE Nature Woodland Restoration Project and Woodland History Survey of its entire estate, and the implementation by NPWS of its ongoing native woodland management programme. Some of these initiatives are described further below.

The advent of the new Millennium was seen as an opportunity to highlight the poor state of Ireland's native woodlands and to act accordingly through a dedicated project. This was initiated by the then-newly established Woodlands of Ireland organisation, which developed a millennium project proposal for corporate and public sponsorship. This subsequently evolved into the PMF Project, a €6.35 million initiative sponsored by the National Millennium Committee, AIB Bank and the Forest

Service. The project was managed by Coillte in partnership with Wol and restored 16 semi-natural woodlands nationwide, totalling over 600 hectares and including six Special Areas of Conservation (SACs). The project also had a significant public relations, outreach and educational remit that directly engaged with school children and the general public, thereby generating considerable public awareness of the value of native woodlands.

Building on a proposal initially developed by Wol, the Forest Service Native Woodland Scheme (NWS) was launched in 2001, offering financial support for the conservation and appropriate restoration management of existing native woodlands, and the establishment of new native woodlands on open greenfield sites. It initially provided resources for both the private and public sectors but in recent years, due to budget restrictions, funding has been largely limited to the establishment of new native woodland by private landowners. Nevertheless, since 2001, over €20 million has been invested in native woodlands through this measure, with many old, biodiversity-rich woodlands being appropriately managed for the first time in centuries.

During the period 2000 to date, approximately



Photo 2 People and landscape: Diverse native woodland on a small lake island, previously a crannóg in pre-Christian times. Loughtown Lough, Lisdromarea, Co. Leitrim. (Photo NPWS)

6,500 hectares of native woodland restoration and 1,500 hectares of native woodland creation have been achieved under all of the above initiatives and projects, the majority under the NWS. In order to professionally 'upskill' the sector, Wol in conjunction with the Forest Service have implemented a programme of NWS targeted training courses since 1999 (most recently, in December 2014 - see www.woodlandsofireland.com/native-woodland-scheme-training). Over 850 people – including foresters and ecologists, landowners, statutory personnel and researchers – have participated in these courses and have gained a shared understanding of native woodland ecology and appropriate management. These courses also provide accreditation to foresters and ecologists who want to develop applications under the NWS. A wide range of technical information notes and publications have also been produced by Wol in partnership with a wide range of relevant experts, to enable informed decision-making by woodland owners and practitioners in relation to native woodland establishment and management.

Since 2000, the level of awareness amongst the general public in relation to native woodland has increased. This has been achieved through the PR and outreach programmes of the PMF Project, the work of environmental non-governmental organisations such as the Native Woodland Trust and Crann, engagement with the public during National Tree Week and Tree Day, features on national radio and television (including the EcoEye programme), publications for schools, and information days. The increasing awareness toward environmental issues generally in recent years has also contributed towards the public's understanding of the value of semi-natural habitats, including native woodlands.

The first National Inventory of Native Woodlands commenced in 2003 and was completed in 2008 under the auspices of the NPWS (Perrin *et al.*, 2008), with co-funding from the Forest Service. Coupled with a new woodland classification system (Cross *et al.*, 2010) and the resources made available for woodland management and creation, this important initiative provides a sound technical basis for developing a detailed national native woodland strategy, by providing a baseline against which future progress can be measured.

A number of related initiatives also contribute toward the development the strategy. Recently, Wol

commissioned a report on the natural capital values of native woodland, including biodiversity, wood production, recreation and carbon sequestration. Native woodlands contribute between €100 million and €140 million to the Irish economy annually, with considerable potential to provide additional value, particularly in relation to water quality, wood production and recreation (Bullock & Hawe, 2014). With regard to hedgerows, and heritage hedgerows in particular (i.e. hedgerows of ecological, historical and landscape significance, particularly those derived from old woodland and predominantly comprising native trees and shrubs), a National Hedgerow Database was established in 2013 at the National Biodiversity Data Centre, with supporting guidance on hedgerow survey and assessment (Foulkes *et al.*, 2012).

All of this work has been underpinned by initiatives to advance the management and operational skills base and to facilitate the production of native provenance trees and shrubs. In essence, the building blocks are now in place to develop a cohesive and detailed national strategy for Ireland's native woodlands. Wol has been centrally involved in most of the initiatives described above and will continue to support the sector in future.

Policy development and the need for a national strategy

In the early years of policy development specifically relating to native woodland, only general targets were set regarding the expansion and restoration of native woodlands. Under the NWS, the Forest Service vision in 2001 was to create 15,000 hectares of new native woodland and to restore 15,000 hectares of existing native woodland within the National Development Plan 2000-2006. These were highly ambitious targets, given that the capacity of the newly-emerging native woodland sector was limited. To date, the NWS has supported the creation and restoration of over 4,000 hectares of native woodland. This progress was based on the ongoing integration of expertise and knowledge regarding woodland ecology and forest planning / management, which is needed to achieve the necessary synergies and to identify best practice in relation to native woodland management. It was also made possible by increasing the supply of

native provenance planting material for native trees and shrubs, from acceptable sources within the island of Ireland.

The first National Biodiversity Plan in 2002 set a general target of increasing the broadleaf component of total annual afforestation to 30% by 2007 (NPWS, 2002). It also set a target for the creation of 15,000 hectares of new native woodland under the NWS. Although very general in nature, these targets can be viewed as the first strategic objectives for native woodlands in Ireland.

This level of expansion and the significant change it will make to the country's landscape must be underpinned by a sound ecological knowledge base. This is also required if Ireland is to meet its obligations to conserve its Annex I woodland habitats under the EU Habitats Directive. In the past, the formulation of any national strategy for native woodlands would have been severely hindered by the lack of an extensive inventory of sites and a detailed classification system, both of which are now in place. The need for these two key resources was recognised by NPWS, as reflected by listed actions in the National Biodiversity Plan (NPWS, 2002). Nevertheless, until recently, there was only a limited, strategic targeting of resources at specific native woodland types, in particular the creation of riparian woodlands. There exists a need for a more cohesive focus or prioritisation in relation to native woodland types - including rare woodland types, ancient woodlands and old woodlands(*) - and in relation to where new native woodlands should be best located to maximise ecosystem services such as landscape-scale habitat linkage (e.g. between existing native woodlands and other semi-natural habitats) and the protection of water. However, this is now being addressed under the Forestry Programme 2014-2020 (DAFM, 2015a), where criteria under the Native Woodland Conservation Scheme are in place to strategically target available funding to defined site types prioritised due to intrinsic biodiversity value and the potential for wider habitat linkage, water protection and the provision of public amenity and environmental interpretation.

In summary, a clear and focused strategy for Ireland's native woodland resource is now possible and necessary, given the following factors:

1. Limited resources are available under the Forest Service Native Woodland Scheme package to manage and expand native woodlands, and these resources need to be targeted strategically and effectively to ensure maximum value for the investment involved, in terms of protecting and expanding the resource and delivering associated ecosystem services.
2. The first National Survey of Native Woodlands has now been completed, and this provides 'baseline' information regarding the current state of the resource and threats facing it, and how best to conserve, restore and strategically expand it, through linkage with existing woodlands.
3. The groundwork needed to underpin the development of the sector and to further promote capacity-building in terms of management, knowledge and expertise, is now well-advanced, through the availability of technical support and guidance, the provision of training, the development of a list of NWS Foresters and Ecologists, and increasing supplies of planting material from acceptable sources within the island of Ireland.
4. Recognition is growing of the importance of native woodlands in terms of the range of ecosystem and other services they can deliver to society, over and above biodiversity. These include the protection of water and soil, flood control, carbon sequestration, landscape enhancement, the underpinning of historical and cultural heritage, opportunities for local amenity, tourism and environmental education, the realisation of quality wood and non-wood products, and the promotion of health and well-being. This is creating multiple opportunities for 'buy-in' by other sectors not directly involved in woodlands and forestry. Examples include initiatives to protect water and fisheries, natural capital projects developed by the business

*Ancient woodland sites are those included in the inventories of ancient woodland, based on the oldest reliable national information. This extends back to 1600 for England and Wales. The Republic of Ireland does not currently have an ancient woodland inventory, though estate records and the Civil Survey of 1654-1656 do provide evidence of ancient woodlands. Therefore, a provisional date of 1660 has been set, based on the earliest reliable national records. Based on the first Ordnance Survey of Ireland, woodland dating from 1830 is termed 'old woodland' or 'long-established woodland'.

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community, health sector initiatives to encourage outdoor recreation, and measures adopted to comply with climate change commitments.

Section 2: Legislative Context and Conservation Status

Overview

Ireland is one of the least forested countries in Europe. Only c.11% of its land area is under forest cover, the majority of which comprises commercial conifer plantations. Only c.2% of the country is covered by what is termed 'native' or 'semi-natural' woodland (i.e. woodland dominated by native tree species), and much of this is highly fragmented and modified. This scarcity of native woodland is the result of millennia of human activity (Perrin *et al.*, 2008).

Native woodlands and their conservation, protection and management fall under a number of key national and international legislative instruments, including the Wildlife Act 1976 (amended in 2000), the Birds & Natural Habitats Regulations (S.I. No. 477 of 2011), the EU Habitats Directive (92/43/EEC) and the Convention on Biological Diversity. The National Parks & Wildlife Service (NPWS) of the Department of Arts, Heritage & the Gaeltacht is the government agency primarily responsible for the enactment of conservation and biodiversity legislation. The Forestry Act 1946, which (*inter alia*) controls tree felling, is also pertinent to native woodlands and is implemented by the Forest Service of the Department of Agriculture, Food & the Marine (DAFM). This piece of primary legislation is due to be replaced shortly, with the commencement of the Forestry Act 2014.

The conservation of biodiversity in Ireland, including native woodlands, has been strengthened and expanded by European law, most notably by the Birds Directive (2009/147/EC), the Habitats Directive, the Water Framework Directive (2000/60/EC), the Environmental Impact Assessment (EIA) Directive (85/337/EC, as amended), the Strategic Environmental Assessment (SEA) Directive (2001/42/EC), and the Environmental Liability Directive (2004/35/EC).

These directives all require the consideration, during project development and assessment, of potential impacts on biodiversity. Species listed in Annex II of the Habitats Directive are animal and plant species of Community interest whose conservation requires

the designation of SACs. Outside of SACs, these species are protected (under the Environmental Liability Directive, transposed through S.I. No. 547 of 2008) against damage which impacts their favourable conservation status (or ability to achieve that status) (e.g. damage that reduces the natural range of the species). There are a number of Annex II species, including the Killarney fern (*Trichomanes speciosum*), the yellow marsh saxifrage (*Saxifraga hirculus*) and the river lamprey (*Lampetra fluviatilis*).

The National Biodiversity Plan (NPWS, 2002 & 2011) is the key national policy instrument that underpins legislation relevant to biodiversity, species and habitats, including native woodlands and their associated flora and fauna. National Forestry Programmes operated by the Forest Service, including the current 2014-2020 programme, have also proved crucial in providing grants and premiums in support of native woodland establishment and management, and resources for a range of associated measures that underpin the native woodland sector.

Convention on Biological Diversity

As a contracting party to the Convention on Biological Diversity (CBD), Ireland is committed to measures to conserve biodiversity, including native woodlands, under the following themes:

- Conservation of ecosystems, habitats and species in their natural surroundings, both inside and outside protected areas (*in situ* conservation)
- Conservation of the components of biological diversity outside their natural habitats (*ex situ* conservation)
- Impact assessment
- Identification and monitoring
- Sustainable use of ecosystems, species and other biological resources
- Adoption of incentive measures

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- Research and training
- Public awareness and education
- Policies and mechanisms for equitable sharing of benefits of genetic resources
- Facilitating access and transfer of technology
- Exchange of information
- Technical and scientific cooperation
- Access to and safe use of biotechnology
- Provision of financial resources to achieve the CBDs objectives, both nationally and internationally.

EU legislation

The Habitats Directive and the Birds Directive together form the cornerstone of Europe's nature conservation policy. This policy is built around two pillars: the Natura 2000 network of protected sites (i.e. SACs and Special Protection Areas (SPAs), which are applicable to birds), and a strict system of species protection. The Habitats Directive protects over 1,000 animal and plant species and over 200 'habitat types' (e.g. special types of forests, meadows, wetlands, as listed in Annex I of the Directive) which are of European importance. These Annex I habitat types include five woodland habitats relevant to Ireland: Old Oak Woodland; Bog Woodland; Residual Alluvial Forest; Yew Woodland;

and Hazel/ash scrub/woodland (i.e. woody facies of limestone pavement).

In relation to native woodlands, the basic legal designation for wildlife under the Habitats Directive, transposed into Irish law, is the SAC. These are the prime wildlife conservation areas within the country, and are considered to be important at a European level. Those protected species and habitats giving rise to the designation of an SAC are referred to as 'qualifying interests'. In Ireland, approximately 6,500 hectares of native woodland are designated as SACs under the EU Habitats Directive, including the five Annex I native woodland habitat types listed above. Individual species relevant to native woodland, such as the Killarney fern, can also be listed as a qualifying interest. Conservation management plans are available for many SACs (see www.npws.ie/protected-sites/conservation-planning/available-plans).

In addition, under Article 17 of the Habitats Directive, each Member State is obliged to report to the European Commission on the status of listed habitats and species every 6 years. In particular, maintaining and / or restoring habitats and species to a favourable conservation status is a priority. The latest status report (NPWS, 2013) indicates that there has been some progress since 2007 (NPWS, 2008) with respect to Yew Woodland and Bog Woodland, primarily due to policy and management initiatives. There are also improving trends for other woodland types, even though they still score 'bad'.

Table 1 Summary table showing the assessment summary and overall status for EU Habitats Directive Annex I habitat types relevant to native woodland in Ireland, for the year 2013 (from NPWS, 2013), with the overall status for the year 2007 (from NPWS, 2008) included for comparison. (Priority habitat listed under Annex I indicated by asterisk (*).)

Habitat name and code (as per Annex I)	Range	Area	Structures & Functions	Future Prospects	Overall status 2013	Overall status 2007
Old oak woods (91A0)	Favourable	Bad↑	Bad↑	Bad↑	Bad↑	Bad
Bog woodland* (91D0)	Favourable	Favourable	Favourable	Favourable	Favourable	Inadequate
Residual alluvial forests* (91E0)	Favourable	Bad=	Bad↑	Bad↑	Bad↑	Bad
Yew woods* (91J0)	Bad↑	Bad↑	Bad↑	Inadequate↑	Bad↑	Bad
Limestone pavements* (containing hazel & ash woodland – woody facies of limestone pavement) (8240)	Favourable	Inadequate↓	Inadequate↑	Inadequate↑	Inadequate=	Inadequate

The EU Priority Action Framework underpins the Habitats Directive and addresses the co-financing of Natura 2000 sites, including Priority Woodlands (see ec.europa.eu/environment/life/news/newsarchive2012/documents/n2000paf.pdf).

The European Landscape Convention of the Council of Europe, which sets out to promote the protection, management and planning of European landscapes and to organise European cooperation on landscape issues, came into force in 2004. Subsequently, a National Landscape Strategy for Ireland 2015-2025 was adopted in 2015. Native woodland restoration and expansion are clearly relevant to this National Landscape Strategy, given, for example, the role of native woodlands in underpinning many of our iconic landscapes.

Other legislation that is particularly relevant to native woodlands include the EU Floods Directive (2007/60/EC), which entered into force in 2007. This directive aims to reduce impacts by taking a sustainable, catchment-based approach to the assessment and management of flood risk. The national Catchment Flood Risk Assessment and Management (CFRAM) programme was developed to meet the requirements of the Floods Directive, and native woodlands can play an important, protective role in this process.

National legislation

The Wildlife Act, which is implemented by the NPWS, provides for the protection and conservation of wild fauna and flora in Ireland, and for the conservation of a representative sample of important ecosystems. Under the Act, the Minister responsible for nature conservation may afford protection to all wild species of fauna and flora. The basic designation for wildlife under the Wildlife Act is the Natural Heritage Area (NHA). Many sites are proposed NHAs (pNHA) as they have not yet been legally designated. NHAs and pNHAs are areas considered important for the habitats and species they contain and which require protection. Examples of important species of flora and fauna afforded protection and found in native woodlands are the narrow-leaved helleborine (*Cephalanthera longifolia*) and pine marten (*Martes martes*). In addition, there are native woodlands protected in designated National Parks and Nature Reserves. There are approximately 23,764 hectares

of woodlands proposed as NHAs, while National Parks and Nature Reserves account for 2,854 hectares and 2,628 hectares, respectively (Fahy & Cross, 2005). (Note that these areas overlap and the figures are not cumulative.)

The Forestry Act 1946, which is implemented by the Forest Service, is the key piece of primary legislation governing forest practice. An important provision of the Act is the system regarding the licensing of tree felling, which is a key activity in bringing about change within a woodland resource. The Forestry Act 1946 is due to be replaced over the coming period upon the commencement of the Forestry Act 2014, which also includes primary provisions for afforestation and other forest activities. It is envisaged that the new Act will strengthen safeguards afforded to protected species and habitats (including native woodlands and related features of forest biodiversity, such as heritage hedgerows) and other environmental receptors such as water, during key forest activities.

Section 3: A Strategy for Native Woodlands

Origins

Following the identification of the necessity and opportunity for developing a national strategy for Ireland's native woodlands, a scoping document was compiled and circulated in February 2014 to the WoI Technical Working Group (TWG), and written submissions were received from a number of individuals (see Appendix). The WoI TWG comprises nearly 40 experts, practitioners and stakeholders from a broad range of disciplines, experience and backgrounds. A meeting of the TWG subsequently took place in March 2014, at which additional suggestions were made. This document incorporates input received from the WoI TWG. In addition, subsequent to a meeting of the WoI Steering Committee in June 2014, further submissions and suggestions were incorporated into the document (Appendix). The publication of the 2014-2020 Forestry Programme in January 2015 allowed for the completion of the strategy, by providing resources for the management and expansion of native woodlands, under the NWS package.

General measures

A number of key measures to underpin the management and expansion of native woodlands are outlined in the following section. Subsequently in Section 4, specific resources for native woodlands allocated under the Forestry Programme 2014-2020 are extrapolated and expanded to address the key measures below and within the context of national forest policy and the National Biodiversity Plan.

A. Promotion

The promotion of native woodlands - including their natural, historical and cultural value, their future potential contribution, and the requirement for ongoing resources - needs to be carried out on an ongoing basis to incrementally increase the general public's awareness and appreciation of this unique resource. Once-off initiatives in this regard have a

limited and transient impact. Raising awareness must therefore be an important element of this Strategy for Native Woodlands. The potential for corporate funding to establish and / or manage native woodlands is also a useful mechanism to generate ongoing publicity.

In addition, native woodlands need to be 're-branded' to bring them into the mainstream of forestry, to tackle their perception as areas of low economic value and as simply providing biodiversity and recreation. For example, Danish foresters regard native broadleaf woodlands as areas for quality timber production. This shift in attitude has begun in Ireland as a result of the increased level of proactive native woodland management in recent years, and due to the promotion of this potential by training undertaken in support of the NWS. However, further effort is required to sustain this trend.

1. WoI will continue to promote native woodlands through written contributions to relevant journals and publications aimed at both the general public and at specific target audiences, including farmers and woodland owners (e.g. regarding opportunities under NWS Establishment and NWS Conservation).
2. Promotion will also be targeted *via* television (e.g. EcoEye) and radio programmes, whenever the opportunity arises.
3. As relevant and appropriate, WoI will also contribute to seminars and field meetings in order to promote native woodland and ways in which the resource can be used to contribute towards particular concerns or objectives of target groups (regarding protected habitats and species, water quality, erosion control, flood mitigation, landscape enhancement, wood production, etc.). Examples include presentations at Water Framework Directive forums and input into forestry field days.



Photo 3 The relaunch of the People's Millennium Forests Project in 2011 at Ballygannon Wood, Rathdrum, Co. Wicklow. This flagship native woodland project is the biggest in this sector to date and has promoted native woodlands widely amongst the general public.

B. Government funding, schemes and corporate sponsorship

The only government-funded initiative to address native woodlands specifically is the Native Woodland Scheme package. This package, available from the Forest Service of the DAFM, under the 2014-2020 Forestry Programme, comprises:

- NWS Conservation, aimed at restoring existing native woodlands and the conversion of non-native conifer forest to native woodland; and
- NWS Establishment (as represented by Grant & Premium Categories 9 and 10 of the general Afforestation Grant & Premium Scheme), which supports the creation of various types of new native woodland on 'greenfield' sites.

See www.agriculture.gov.ie/forests-service/grants-and-premium-schemes-2015-2016/ for details.

Other funding streams will be investigated to address native woodlands, e.g. private funding, key projects / partnerships, and other government schemes, such as the Green, Low-Carbon, Agri-Environment Scheme (GLAS), available from the DAFM under the Rural Development Programme 2014-2020 (see Bullet 5 below).

There may be potential for tapping into private funds to develop native woodland projects, especially under Public / Private Initiatives (PPIs).

1. The scenario of doubling the native woodland cover to c.25% of current forest cover (160,000 hectares), as outlined in the Woodlands of Ireland report *The Natural Capital Values of Ireland's Native Woodland* (Bullock & Hawe, 2014) is considered a realistic target. This can be achieved via the NWS in combination with other schemes and private investment projects over a 30-year period. It is important to highlight that a significant portion of this area will be actively managed for quality wood production, using silvicultural systems compatible with the primary role regarding ecosystem protection and enhancement.
2. NWS Conservation focuses on the restoration of existing native woodlands and the conversion of conifer forest to native woodland, with a focus on areas of greatest biodiversity value and environmental sensitivity. WoI will continue to provide technical support to the Forest Service and to promote the scheme within the public and private sectors. Under NWS Conservation, available resources will be targeted at sites in order of priority / importance, i.e. ancient woodlands, designated woodlands, rare woodland types, old / long-established woodlands, riparian woodlands, and emergent / scrub woodland. NWS Conservation provides the foundation for the critical mass of native woodland management expertise that has been

built up over the past decade. This expertise is a vital component for the sustainable management of the native woodland resource, and has a beneficial 'knock-on' into other aspects of the wider forestry sector. WoI will continue to support the Forest Service in the further development and implementation of NWS Conservation, which in turn will sustain specialised jobs in this sector.

3. The creation of new native woodland should also be promoted in marginal, upland areas for protective, landscape and biodiversity objectives. Low-density tree cover mimics the natural character of native woodland in these landscapes (i.e. scattered, open native woodland cover). Gullies / streams and locally fertile, sheltered areas should be targeted, particularly within Acid Sensitive Areas (ASAs). This would enhance landscape value, create upland woodland habitat, reduce the potential for soil erosion and landslides, contribute to flood control, and enhance and protect aquatic habitats. NWS Establishment may not be applicable to all upland and ASA sites, but WoI will continue to seek opportunities for realising this vision through other projects.
4. In lowland areas, new native woodlands, in conjunction with other flood control measures, may help to alleviate flooding impacts by slowing overland flood waters and by reducing peak flows. There is also considerable potential for converting low-lying conifer plantations within riparian / alluvial areas into native woodland, allowing inundation and reinstating natural floodplain dynamics. Flooding is predicted to become more frequent in the future due to climate change. Working with nature has the potential to be an effective approach where used in combination with other measures (berms, water storage ponds, etc). In order to deliver meaningful results, this approach will require coordination amongst multiple landowners / farmers and with various bodies at a catchment and sub-catchment level.
5. The new DAFM GLAS programme includes an option 'Planting a Grove of Native Trees', to provide a valuable pocket habitat and opportunity for carbon sequestration. The specific requirements are set out in the document entitled *Released GLAS Specification for GLAS Tranche 2* (DAFM, 2015b). WoI will promote the uptake of this option at every opportunity, and remains open to providing technical advice and training in support of its application, if requested.
6. The continuity of supply with respect to the availability of native trees and shrubs is vital to support the restoration of existing woodlands (including sites undergoing conversion from conifer forest to native woodland) and the creation of new native woodlands. Government support measures and annual forecasts of future stock requirements to the nursery sector, are pre-requisite to ensuring adequate supplies. With new funding available under the Forest Service Seed Stand and Seed Orchard Scheme, there is an opportunity to make seed collection in Ireland more efficient, and to mobilise seed to the nurseries. WoI will work with all relevant bodies, including the Forest Service, seed stand owners (both Coillte and private), seed collectors and nursery providers, to increase the collection and mobilisation of seed appropriate for use under the NWS package. Specifically, private sector nurseries need greater access to seed stands, particularly in Coillte woodlands, in order to collect native seed. WoI proposes to address this through its Seed Subgroup in 2016 and 2017.
7. For ecological and genetic biodiversity reasons, heritage hedgerows and hedgerows that are connected to native woodland should utilise Irish provenance planting stock. However, this is not a requirement under the relevant options of the current GLAS programme, i.e. 'Coppicing of Hedgerows', 'Laying of Hedgerows' and 'Planting New Hedgerows'. WoI will continue to highlight this issue with the DAFM in 2016, to seek amendments to the underlying specifications for these options.
8. Through partnership and where appropriate at a site level, the management (*via* continuous cover forestry (CCF)) of publicly-owned native woodlands for quality wood production should be promoted, to expand this market and to advance awareness of sustainable wood production using shelterwood, selection and coppicing systems. This measure is particularly focused on Coillte-owned woodlands (including

old / long-established woodland sites), where the primary aim of wood production is advanced in parallel with the provision of ecosystem services (primarily biodiversity) and amenity. This would require funding from Coillte alone and / or investment through PPIs. The latter could combine private funding and the long-term leasing of property to interest groups.

9. The creation and restoration of new and existing native woodlands in and around urban areas in partnership with local communities, with a focus on the provision of easily-accessible amenities and readily-available opportunities for interpretation and environmental awareness-rising, have a real potential to engage the general public directly. There are multiple opportunities for woodland establishment within the existing land bank (both public and private), including sites within designated greenbelts and along watercourses, former landfill sites and post-industrial 'brownfield' sites, along with sites within existing parks, open spaces, school grounds, etc. The newly-revised Forest Service NeighbourWood Scheme has particular relevance in this regard, and Wol will explore this application with the Forest Service and with urban-based local authorities between now and 2020. Partnerships involving funding for woodland establishment and management, and for the installation of recreational facilities (under the NWS package and the NeighbourWood Scheme), supplemented with additional funding (including the long-term commitment of resources) from local authorities, the corporate sector and other sources (including PPIs), will be explored. Other potential measures include the provision of open access in return for tax breaks. Wol developed a website in 2013 specifically targeted at local community groups and local authorities, to facilitate the creation of new native woodlands and other habitats (see www.eco-landscapes.com), and this online resource will be of particular relevance under this sub-measure.
10. Wol will develop a proposal in 2017 to encourage private sponsorship from the Irish-American community for the creation and restoration of new and existing native woodlands. This may involve PPI projects where privately-owned native woodlands and greenfield sites established

with new native woodlands could potentially be managed with private funds in combination with the NWS package. A proposal along these lines will be presented to US stakeholders in 2017.

C. Native woodlands and water

In recent years, the potential role of new and existing native woodland, including woodland within riparian areas, in the protection and enhancement of water quality, the conservation of instream species of protected status (e.g. Freshwater Pearl Mussel (FPM), salmonids and otter), and the control of flood water and bankside erosion, has come into sharp focus. This role is envisaged both at a site level (e.g. the conversion of existing conifer forest into native woodland to protect a nearby population of FPM) and at a wider strategic level (e.g. the positioning of new native woodland at key points along a watercourse, as part of a wider programme of activities to improve the overall waterbody status under the EU Water Framework Directive).

1. The creation and restoration of new and existing native woodlands should be targeted at aquatic-based SACs designated for FPM and salmonids. Targeting can be strategically achieved at a landscape level, based on close partnership and a shared understanding of native woodland establishment and management, the requirements of the protected species, and the types of landuse pressures (particularly those relating to commercial forestry and agriculture) that can be mitigated. Other related benefits can also be gained, such as landscape enhancement and wider habitat linkage. Wol will support this objective by offering technical support to the EU KerryLIFE Project on FPM throughout the project's duration, and to similar projects and initiatives, as appropriate.
2. Regarding the planning and ongoing management of riparian native woodlands and the management of Forest Service-stipulated Aquatic Buffer Zones (ABZs, also referred to as 'water setbacks'), Wol will cooperate with Inland Fisheries Ireland and the Loughs Agency in selecting sites for the NWS and other related mitigation projects on an ongoing basis until 2020. This work will focus on maximising the water protection role of native woodland and

Photo 4 Sensitive timber harvesting (manual / chainsaw felling) and horse extraction close to an upland stream as part of a research project on riparian zone management, Donard, Co. Wicklow.



also on avoiding potentially negative factors, such as over-shading, potential siltation, the spread of invasive species, and risks associated with windblown trees in riparian zones.

3. Wol will engage with Irish Water regarding its policy on native riparian woodlands and water quality protection, through participation on the Irish Forum on Natural Capital (www.naturalcapitalireland.com) in 2016 and 2017.
4. Wol will also highlight with the Environmental Protection Agency and other relevant bodies, the potential role of new and existing native woodlands (including riparian woodlands) in protecting and enhancing water quality within the context of the second cycle of the Water Framework Directive in Ireland, to promote the use of the NWS in relation to the protection of water.

D. Sustainable management for wood and non-wood products

A cooperative approach is required in order to integrate woodland management, hardwood mobilisation, processing and supply, and downstream product development. Wol will continue to lobby on an ongoing basis to provide seed capital to develop a hardwood cooperative to advance these objectives. An example of this approach

is Coed Cymru, a cooperative in Wales (www.coedcymru.org.uk). This cooperative approach could be mobilised at a national level in Ireland due to the small size of the native woodland estate here.

1. On appropriate sites and as a component of the most appropriate native woodland type, there will be a focus on Scots pine (*Pinus sylvestris*) as a native conifer with potential to yield modest returns *via* timber production.
2. More emphasis on the production and management of minor species such as birch (*Betula pubescens* and *B. pendula*) and alder (*Alnus glutinosa*) is required. This and the preceding action regarding Scots pine will be addressed *via* the seed sub-group of the Wol Technical Working Group, and engagement with seed producers, nurseries, woodland owners, and the expansion of the Registered Seed Stands for these species.
3. With the commercial exploitation of cutaway bogs by Bord na Móna (BnM) in its final phase, a considerable area of cutaway bogs, especially in the Midlands, will be developed into native woodland predominantly comprising birch, Scots pine, alder and willow (*Salix* species). These areas should be managed to maximise woodland biodiversity, wood production, recreation, eco-tourism and landscape enhancement. BnM and Coillte are central to

addressing this issue. A number of Midland bog sites should be developed as native pioneer birch forests. In addition, many production forest restock sites have been inundated by natural regeneration of birch which is suppressing the replanted conifers. Thinning to create birch high forest would create valuable native woodlands at lesser expense than attempting to re-establish conifers, while also creating the basis for the production of merchantable quantities of quality birch timber. Wol will liaise with Coillte and BnM to encourage the adoption of this approach and assist in selecting suitable sites from now until 2020, if adopted.

4. A minimum area of oak and hazel coppice woodlands (regionally distributed) for demonstration purposes is proposed, as this would support sustainable wood production and a focus on this traditional form of woodland management. Wol will advance this measure with the Muintir na Coille (www.muintirnacoille.ie) and other relevant stakeholders in 2017.

E. Climate change, legislation and Invasive Alien Species (IAS)

1. Climate change has implications across a broad range of woodland-related interests, including woodland dynamics, water quality, invasive alien species, and tree pests and diseases. The impact of climate change and the robustness of new and existing native woodlands should be addressed, especially with regard to the adaptability of native species and the suitability or otherwise of non-indigenous provenances. The impact of invasive species and pests and diseases on our native woodlands is also an issue related to climate change (coupled with increased international trade) that needs to be addressed.
2. As climate change impacts and mitigation strategies are likely to be similar in both Ireland and Britain, a cooperative approach to associated research and development is therefore appropriate. This is particularly the case in the aftermath of the UK referendum on EU membership. Wol will continue to promote research in this area through its participation on the Forest Service Forest Liaison Group (FLG). The continuation of work between the Forest Service and counterparts in the UK to develop strategies for species and provenance selection, is encouraged. Research projects such as CLIMADAPT and the British and Irish Hardwoods Improvement Programme (BIHIP) are examples of successful cooperative research relevant to the area and beneficial for both jurisdictions. Wol will continue to monitor these initiatives through its participation on the FLG and the Northern Ireland Native Woodland Group.
3. Monitoring of reported flood mitigation benefits associated with newly-established riparian woodlands should be undertaken in order to build up an evidence base to support policy and practice in this regard, especially as climate change research predicts more frequent and more intense rainfall events. Wol will highlight similar initiatives in other countries (e.g. Scotland) and the need for research specific to the Irish context, with the DAFM Research Division, Inland Fisheries Ireland, the Loughs Agency, the Office of Public Works and NPWS.
4. A more proactive and integrated approach is required regarding legislation and subsequent enforcement, and the need for a strategic approach and practical measures, to address the threats to native woodlands posed by IAS, especially rhododendron (*Rhododendron ponticum*), cherry laurel (*Prunus laurocerasus*), Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*). There are also increased risks arising from interactions, e.g. rhododendron infestation and *Phytophthora ramorum*. In addition, the threats posed by naturally regenerating non-native trees such as lodgepole pine (*P. contorta*), Sitka spruce (*Picea sitchensis*), western hemlock (*Tsuga heterophylla*), common beech (*Fagus sylvatica*) and sycamore (*Acer pseudoplatanus*) need to be addressed, as these species pose a threat to woodland viability, depending on soil type and location.
5. The EU Regulation 1143/2014 on Invasive Alien Species came into force in January 2015, and a list of priority IAS concern will be drawn up and managed by Member States by 2016 using risk assessments and scientific evidence. Areas that

will be highlighted by WoI include the following:

- The implementation of the new EU IAS Directive and how this will be translated into action, e.g. the provision of resources and guidance to control and manage IASs.
- The sale of IAS plants and the importation / movement of invasive flora and fauna require strict legal controls that are enforced.
- Ongoing monitoring to identify and assess potential threats of invasive species to native woodlands (and other habitats) is recommended, incorporating a risk assessment approach to identify areas that should be prioritised for remedial treatment. In particular, a national strategy to control rhododendron is required.
- A landscape approach is required to avoid re-infestation of areas cleared of IAS, and to target control at woodlands of highest biodiversity, (e.g. ancient woodlands), followed by those at vulnerable locations in the landscape (e.g. riparian woodland potentially threatened by upstream infestations).

6. IAS fauna also have a negative impact on native woodlands. The introduction of muntjac (*Muntiacus reevesi*) and roe deer (*Capreolus capreolus*) has created a significant threat to the ground flora and to young trees and shrubs. To this end, the following is required:

- The introduction of enforceable measures to prevent further introductions and spread of muntjac, roe deer and Chinese water deer (*Hydropotes inermis*), and other mammals, e.g. wild boar (*Sus scrofa*).
- Effective action to eradicate breeding populations of recently-introduced invasive fauna at an early stage before they become established.
- The expansion of IAS deer is a significant factor driving change in the Irish landscape in recent times. In some areas, deer 'hot spots' pose a massive challenge to successful broadleaf afforestation, while new commercial forests can

provide shelter and 'stepping stones' at a landscape level which facilitates the further expansion of deer. Yet there is still a lack of reliable data on deer numbers and distribution, and agreement on a strategic approach to tackle the issue is required. The Irish Deer Management Forum (IDMF), which was launched early in 2015 and with WoI as a member, will be encouraged to address these issues as a matter of urgency.

With respect to other legislation, the following is pertinent:

7. The practical issues of native woodland management, e.g. protective woodland buffer creation, needs to be used to support the implementation of relevant legislation and strategies, such as the Water Framework Directive, the Floods Directive, the Catchment Flood Risk Assessment and Management (CFRAM) programme, and the National Landscape Strategy for Ireland 2015-2025. WoI will promote and recommend detailed best practice from a riparian woodland management perspective, with respect to supporting the implementation of all of the above. In this regard, WoI will publish guidance on the management of ABZs in plantation forests, arising from its participation in the Combined Research in Riparian Areas (CROW project), a 4-year project funded by DAFM and completed in 2014. This guidance note will include the promotion of the strategic establishment in sub-catchments of native woodland and mitigation measures in commercial forestry and agriculture to protect water quality.
8. Significant concerns were raised during the drafting of the Forestry Act 2014 regarding a perceived lack of adequate protection for native trees along roadways. Under the new Act (to be commenced), a Felling Licence will not be required to fell a tree outside a forest within 10 metres of a public road and which, in the opinion of the owner (being an opinion formed on reasonable grounds), is dangerous to persons using the public road on account of its age or condition. This provision may unintentionally disadvantage roadside trees, due to fears regarding branch or tree fall during storms. Other

provisions in the new Act will allow the felling of certain types of trees on agricultural holdings without a Felling Licence, up to a combined volume of 15 m³ within any 12-month period, and concerns exist regarding the impact of this provision on heritage hedgerows and parkland trees. WoI, working with other stakeholders, will monitor the effectiveness (or otherwise) of the provisions of the Act in this regard, once commenced, and will pursue any additional safeguards required, especially through its participation on the DAFM FLG.

F. Tree pests and diseases

The threat posed by pests and diseases to Ireland's native woodlands and forests in general, has come into sharp focus in recent years, with the advent of *P. ramorum* and ash dieback disease (*Hymenoscyphus fraxineus*). A number of policy changes are suggested, as follows.

1. Currently, common ash has been de-listed by the Forest Service as an approved species under all Afforestation Grant & Premium Scheme support measures. This has major ramifications for afforestation and native woodland creation and management. In the UK, ash dieback disease is widespread in the South-East of England and is present in Scotland and Wales. The current all-Ireland policy is to contain and eradicate localised outbreaks in order to prevent its establishment in the wider environment. This should continue if this approach is successful. However, if this policy fails, it should be reviewed and alternative approaches considered. As older trees do not succumb as readily as younger trees, ash should continue to be managed for biodiversity, especially in mature ash-dominated native woodlands where complex ecological assemblages dependant on ash are at risk.
2. Consideration should be given to continuing timber production in semi-mature and mature ash plantation woodlands to produce quality timber. Thinnings of diseased wood in existing woodlands can either be destroyed or alternatively (if the disease is not present) sold into the firewood market, while quality wood may be processed for value-added products.
3. In the meantime, the development through

research and trials of disease-resistant strains currently underway under the auspices of the Forest Service should be supported, as this is considered to be the most sustainable long-term solution.

4. WoI advocates a promotional campaign to alert woodland owners, farmers and the general public about the need for vigilance regarding the threats posed by diseases and pests such as the ash dieback disease, *P. ramorum*, emerald ash borer (*Agrilus planipennis*) and the oak processionary moth (*Thaumetopoea processionea*).

G. Research and training

The last National Native Woodland Conference was held in Galway in 2004. The staging of another national conference within the next two years would provide a strong focus for the native woodland sector, by presenting recent initiatives, policy developments and research projects, and would highlight many of the issues addressed in this strategy document. WoI will host this event in 2017 or 2018.

Some research areas that require further focus include the following.

1. An assessment of the NWS based on projects undertaken to date under both elements (Conservation and Establishment), to evaluate the success (or otherwise) of the approaches underpinning the scheme in fulfilling its objectives. (An undergraduate study focused on NWS establishment sites was undertaken in 2014 (Boyle, 2015) and this will inform the process.) The Forest Service and WoI will undertake this assessment in 2017.
2. The full extent of Ireland's ancient woodlands should be identified through additional survey work following up on the National Native Woodland Survey. This will be advocated as a task for NPWS.
3. Future native woodland surveys should include hedgerows, as their function regarding species migration, habitat connectivity, biodiversity, carbon sequestration, etc., may be crucial to offset defragmentation and to maintain native woodland at a landscape scale. Also, the Hedgerow Appraisal System (Foulkes *et al.*,

2012) needs to be dovetailed with the National Forest Inventory, and Wol will explore this issue with the Forest Service.

4. Native woodland scrub (or emergent woodland) requires a clear focus, especially to offset the destruction of potentially valuable native woodland biodiversity and wood production potential. Research is required into the silvicultural management of scrub as it progresses to high forest, with a particular focus on wood production and securing a commercial return. An assessment of the suite of different native scrub woodland types, and the identification of appropriate treatments for each, would address this area fully.
5. Currently, there is no central depository for research - both current and previous - undertaken in the area of native woodlands in Ireland. A systematic listing and categorisation of native woodland research projects would show where the research effort has been focused to date and will also provide a gap analysis for future direction and priorities. This review should draw on research in all areas, including ecology, genetics, tree breeding, silvicultural management, wood and non-wood production, and the contribution of native woodlands to wider environmental challenges.
6. Research is required into the commercial potential of native woodland management for wood and non-wood products and services.
7. While surveys have been carried out to gauge the public's attitude towards forests and native woodland (e.g. as undertaken in connection with the PMF Project), there has been no attempt made to survey the forest sector, statutory bodies overseeing the protection of the environment, relevant planning professions (e.g. landscape architects) and the education sector, on how they perceive native woodland and the potential role of this resource in advancing their own remit and priorities.
8. Grazing is one of the biggest issues facing woodland management. Overgrazing eliminates natural ground flora and the regeneration of native trees and shrubs, and threatens many of our finest woods. Conversely, the absence of grazing results in a few competitive but browse-sensitive plant species out-competing others, and reduces biodiversity. Trials to ascertain the optimum grazing levels by deer, pigs and other animals in our main woodland types would provide vital data for future woodland management.
9. Research provenance trials undertaken in recent years by Teagasc should continue on all native trees, particularly in relation to the minor species such as downy and silver birch and



Photo 5 Participants at a joint Wol and Forest Service Native Woodland Scheme training day in 2013, Delphi, Leenane, Co. Mayo. (Photo Forest Service)

common alder. This will lead to the emergence and use of indigenous reproductive material with proven form and quality, thereby increasing the scope for quality timber production in new native woodlands in the future. Wol will advocate the production and use of approved provenances of birch and alder nursery stock for wood production (along with the conservation of indigenous woodland genetic resources) through its participation on the Forest Service Forest Genetic Resources Working Group.

Training is a core activity of Wol since its establishment and a number of key areas have been identified.

10. There is an ongoing requirement to train and accredit new practitioners (mainly foresters, but also ecologists and woodland contractors) and to up-skill existing practitioners, landowners and relevant statutory personnel, on the application of the NWS. Training would address changes in the NWS under the new Forestry Programme, and would provide a platform for updating the sector on best practices and research, new technology, regulatory requirements, and opportunities regarding the use of native woodlands (e.g. within the context of the second cycle of the Water Framework Directive). Wol in partnership with the Forest Service will undertake NWS training as the need arises.
11. Regarding the 'Planting a Grove of Native Trees' option available under the DAFM GLAS Programme, Wol will offer to facilitate training in partnership with Teagasc.
12. It is proposed that Wol, in partnership with Muintir na Coille, would develop silvicultural modules for third level institutions / forestry courses from end of 2016 onward.
13. Wol will provide training to others (statutory agencies, community groups, etc.) to advance native woodland policy and objectives, where needs and opportunities arise.

H. Natural capital values of native woodlands

The natural capital values of native woodlands should be utilised effectively to promote the

importance of native woodlands, especially non-timber values, and to access future funding opportunities, especially the development of native woodland adjacent urban areas. The goal would be to highlight the indicative monetary values of native woodland to the general public, and to potential public and private funding organisations who would subsequently be encouraged to invest in the resource. Private and / or corporate funding could be used to improve brand image and by accessing funds for PPI projects in particular. The Wol-commissioned report on this topic, entitled *The Natural Capital Values of Ireland's Native Woodland* (Bullock & Hawe, 2014) is particularly relevant. Key highlights relating to the natural capital values of native woodlands include:

- the promotion of ecotourism and outdoor activities (e.g. angling, hunting, camping, hill-walking, wildlife watching),
- the importance of recreation to health and well-being,
- carbon sequestration to mitigate climate change,
- strategic expansion of woodland biodiversity, and
- water quality protection and flood control.

A native woodland strategy that embraces natural capital values and which targets opportunities within urban and peri-urban landscapes is identified as a key requirement. Such a strategy could target a range of opportunities for woodland creation, including former landfills and 'brownfield' sites, transport corridors, urban watercourses, and existing green areas, and would involve local authorities, the National Roads Authority, and other public and private entities.

1. Wol will advance native woodland natural capital and ecosystem services through its participation on the Irish Forum on Natural Capital, launched in 2015.
2. The integration between NWS and the NeighbourWood Scheme under the current Forestry Programme is a valuable measure that compliments numerous natural capital assets, especially social amenity, recreation, interpretation and education. It introduces the possibility of 'hybrid' projects focused on the creation and management of native woodlands



Photo 6 Former Minister for the Arts, Heritage & the Gaeltacht, Jimmy Deenihan, with speakers and organisers of the national conference entitled 'Natural Capital: Ireland's Hidden Wealth', held in April 2014 at the National Botanic Gardens, Glasnevin, Dublin.

equipped with appropriate recreation and interpretive facilities. These woodlands provide a valuable mechanism to engage people in urban and rural communities and to foster an appreciation for local native woodlands. Wol will assist the Forest Service in promoting this measure from now until 2020, under the Forestry Programme 2014-2020.

Section 4: Specific Policy Targets and Resources

Overview

The preceding section outlined key measures in this Strategy for Native Woodlands in Ireland 2016-2020. The following section specifically details how these, along with policy objectives in the National Biodiversity Plan and the Forestry Programme 2014-2020, can be addressed, primarily with funding available under the latter. This Strategy supports government policy primarily, with specific measures to underpin targets and goals outlined in:

- the second National Biodiversity Plan (NPWS, 2011); and
- the current Forestry Programme (DAFM, 2015a).

The following targets and actions within the second National Biodiversity Plan are most relevant to native woodlands:

- *To expand and improve on the management of protected areas and legally protected species*
- *Natura 2000 network established, safeguarded, designated by 2012 and under effective conservation management by 2016*
- *A priority is to implement a range of positive measures to assist recovery of habitats and species that have suffered declines*
- *Continue to implement measures to improve the status of habitats and species assessed as “bad” in the 2007 [Habitats Directive Article 17] report to the EU on the status of protected habitats and species*
- *Continue to update the inventory of native woodlands, review and, where appropriate, incorporate the results of the Native Woodland Survey into the conservation and expansion of the native woodland cover*
- *Continue to promote the Native Woodland Scheme which features establishment and conservation elements aimed at encouraging the development and conservation of native woodlands*
- *New methods of forestry management will be*

considered during the lifetime of the Plan, with the aim of achieving multiple benefits (e.g. timber production, biodiversity conservation, recreation, landscape, non-timber forest products)

- *By 2015 strengthen the coherence, connectivity and resilience (including resilience to climate change) of the protected areas network using, as appropriate, tools that may include flyways, buffer zones, corridors and stepping stones*
- *Maintain target of 30% broadleaf planting in afforestation*
- *Review options on regulation of removal and / or management of hedgerows and scrub*
- *Production of guidance documents on scrub and hedgerows*

The following measures contained in the Forestry Programme 2014-2020 are most relevant to native woodlands:

- NWS Establishment is a biodiversity and ecosystem delivery focused measure aimed at supporting the creation of new native woodland on ‘greenfield’ sites, to expand Ireland’s native woodland resource and associated biodiversity. It will focus on creating important native woodland types and opportunities for habitat linkage, and on environmentally sensitive areas, to realise wider ecosystem services, especially water protection.
- NWS Conservation supports the protection and enhancement of existing native woodlands (especially the restorative management of ancient woodlands, Annex I woodlands, old woodlands and emerging native woodlands under threat from ‘scrubbing out’) and, where appropriate, the conversion of conifers forest to native woodlands.
- NWS Establishment and Conservation will also provide for the protection of endangered species such as FPM.
- Wood production realised through CCF silviculture is allowed under both NWS

Establishment and NWS Conservation, where compatible with the ecological objectives.

- A requirement is being introduced whereby all conifer afforestation applications with stream / river / lake frontage within certain water-sensitive catchments must include a NWS Establishment plot at least 20 metre wide adjoining the ABZ (where broadleaves are suitable).

Targets attached to these measures, to be achieved over the Forestry Programme's lifetime, are as follows:

- 1,950 hectares for NWS Conservation, focusing on the restoration of existing ancient, old and recent native woodlands (and the conversion from conifer forest to native woodland), and
- 2,700 hectares for NWS Establishment, focused on the establishment of new native woodlands.

This represents a projected investment of c.€7.26 million and €16.5 million up to the year 2020 under NWS Conservation and NWS Establishment, respectively. NWS Conservation is further divided to target the private and public sectors over this period, as follows:

- Private sector: 520 hectares of 'high forest' native woodland (including conversion from conifer forest to native woodland) and 360 hectares of native emergent woodlands ('scrub').
- Public sector: 1,070 hectares of 'high forest' native woodland (including conversion from conifer forest to native woodland).

Specific criteria are set out under NWS Conservation to target available resources at sites with the highest potential in relation to native woodland biodiversity (e.g. designated woodlands, ancient and old woodland sites) and the delivery of other ecosystem services (such as water protection and habitat linkage at a landscape level).

Measures and targets arising from the National Biodiversity Plan and the Forestry Programme 2014-2020

The goals, measures and targets outlined above, together with the resources allocated to native woodlands under the Forestry Programme 2014-2020, provide an effective basis for focusing on key aspects regarding native woodlands in Ireland. They will benefit native woodlands in a strategic and cost-effective manner, and will maximise the return on the national investment in terms of protecting and expanding native woodlands and delivering wider ecosystem services. It should also be noted that there is considerable overlap between the target areas in the public and private sectors, and the measures outlined, i.e. the NWS and the NeighbourWood Scheme. To this end, the following areas will be addressed.

A. Woodlands designated as SACs and NHAs

Four woodland types relevant to Ireland are listed as Habitats Directive Annex I habitats (i.e. natural habitat types of Community interest whose conservation requires the designation of SACs). These are: old oak woodland with holly and hard-fern, bog woodland, alluvial forests and yew woods. The latter three woodlands are also listed as priority habitat types.

In addition, limestone pavements are listed under Annex I, conferring protection on hazel and ash woodland occurring on this habitat type.

For the public sector, resources have been allocated under NWS Conservation to facilitate the restoration and management of 1,070 hectares of existing woodland up to 2020. The majority of this allocation will be taken up by NPWS and Coillte. Therefore, approximately 500 hectares of woodlands under NPWS ownership should be targeted on a regional basis and managed under NWS Conservation over the next five years. Mixed semi-natural woodlands and non-native forests owned by Coillte (or any state body) that lie adjacent to designated woodlands should also be targeted for conversion to native woodland under NWS Conservation.

Under the private sector component of NWS Conservation, 400 hectares up to the year 2020 should be targeted at SAC and NHA woodlands, with priority woodland types under Annex I of the Habitats Directive receiving first preference.

B. Expansion of protected woodland types

Under NWS Establishment, resources for the creation of 2,700 hectares of new native woodland primarily on privately-owned land have been allocated up to the year 2020. NWS Establishment applications that lie adjacent to SAC and NHA woodlands (in particular, priority woodland types under Annex I of the Habitats Directive) should be prioritised to maximise woodland biodiversity through the expansion of these woodlands. A wood production objective should be advanced along with woodland biodiversity enhancement, especially on fertile soils. A target area of approximately 500 hectares per year up to 2020 is realistic, but this will require the promotion of NWS Establishment in suitable locations by NPWS ground staff and personnel from other relevant agencies, i.e. Heritage Officers.

Similarly, under NWS Conservation, Coillte-owned forests that lie adjacent to SAC and NHA woodlands (in particular, priority woodland types under Annex

I of the Habitats Directive) should be targeted for conversion to appropriate native woodland. A target of 300 hectares by 2020 is realistic for Coillte in this regard.

C. Protection and enhancement of water quality and protected aquatic-based species and habitats, and expansion of riparian native woodland

Under NWS Establishment, there is considerable potential to create new native woodlands, especially riparian woodland along aquatic corridors, to capitalise on the numerous water-related ecosystem services. Particular focus should be placed on realising new native woodland on the following site types:

- sites within and adjoining aquatic-based SACs designated for FPM;
- sites within and adjoining aquatic-based SACs designated for salmonids;
- sites within the riparian zone, specifically for the creation of new riparian woodland; and
- sites adjoining watercourses within high status waterbodies, as designated under the Water Framework Directive.

Photo 7 Riparian native woodland, Bandon, Co. Cork. Such woodlands buffer watercourses from sediment and nutrient runoff from surrounding landuses, retain flood water, and represent an ecologically important but highly threatened and rare component of our inland waters.



A target area of 1,000 hectares of new native woodland focused on water quality, is recommended between now and 2020.

Existing scheme requirements deliberately target the NWS Conservation on sites adjoining sensitive watercourses, where native woodland restoration can contribute to the protection of water quality and aquatic habitats and species.

Sites restored under NWS Conservation regain natural attributes that benefit adjoining water. For example, the removal of rhododendron and / or Himalayan balsam facilitates natural ground flora, thereby enhancing the woodland's role in buffering water from sediment and nutrients in overland flow. NWS Conservation can also be deployed to facilitate the conversion of conifer forest to native woodland on sites adjoining sensitive watercourses (i.e. rivers, streams and lakes). Regarding this latter application of the scheme, Coillte could target 200 hectares in FPM and salmonid catchments by 2020. Similarly, the private sector could target a further 120 hectares in FPM and salmonid catchments for conversion under NWS Conservation.

The above targets will require coordination between multiple landowners and also between various bodies, including the Forest Service, NPWS, Coillte, Inland Fisheries Ireland and the Environmental Protection Agency. WoI will play a central role in this process.

D. Wood production, habitat 'stepping stones', landscape aesthetics and carbon sequestration

Using NWS Establishment, new native woodlands on fertile sites that lie adjacent to other semi-natural habitats and commercial forest plantations should be created with the objective of producing quality wood using CCF silvicultural systems. These woodlands will also enhance biodiversity by providing wildlife 'stepping stones' within the landscape, enhance landscape aesthetics, and sequester carbon as a climate change mitigation measure. A target area of 1,200 hectares is considered realistic under this measure up to 2020.

E. Emergent woodland

Under NWS Conservation, an allocation of 360 hectares has been set aside up to 2020 for the management of young, naturally-regenerating semi-natural woodland (or 'scrub'). The objective is to undertake appropriate management to protect emergent native woodland and associated biodiversity and ecosystem services, and to create the conditions for potential future wood production. To maximise the return on the management of these woodlands, priority should be afforded to emergent woodland located on mineral soils and within 2 km of exiting designated woodlands.

F. Native woodlands and local communities

The creation of new native woodlands and the development of existing native woodlands can be realised on appropriate sites in and around cities, towns and villages. The integration of the NWS package and the NeighbourWood Scheme under the Forestry Programme greatly facilitates this, creating the potential for the development of attractive and readily-accessible native woodland amenities equipped with appropriate facilities (paths, signage, seating, etc.) specifically for public access, recreation and enjoyment, and for environmental awareness-raising and interpretation. Up to 15 projects can be funded in this way, up to 2020.

Conclusion

The Native Woodland Strategy 2016-2020 outlined in this document sets out the key measures that need to be addressed using current policy instruments and legislation pertinent to native woodlands. Some measures clearly overlap with other policy areas (e.g. water quality, climate change, invasive species, the provision of outdoor recreation), yet the focus on native woodlands has been maintained as far as possible. It is clear that, under the current economic climate, resources are likely to be limited in the medium term at least. However, the new Forestry Programme 2014-2020 provides a basic level of resourcing to address key measures, and more can be achieved through corporate and private funding, especially through PPI woodland projects.

In order to realise the goals outlined, a co-ordinated partnership approach is crucial. Public entities such as the Forest Service, the National Parks & Wildlife Service, Inland Fisheries Ireland, the Environmental Protection Agency, Coillte, the Loughs Agency, Local Authorities and the Heritage Officer network, will be required to actively promote native woodlands in numerous ways, in collaboration with Woodlands of Ireland and other environmental non-governmental organisations and native woodland stakeholders. The benefits will extend far beyond the native woodland resource, to also encompass water quality, wider habitat linkage, landscape enhancement, climate change mitigation, increased choice for landowners, wood and non-wood production, amenity and tourism, public health and well-being, community enrichment, and the protection of a key component of Ireland's natural, historical and cultural heritage. The partnership approach that has underpinned numerous native woodland initiatives in recent years, and which was adopted in developing and endorsing this strategy for native woodland in Ireland, is a positive indicator that Ireland can achieve this wide-reaching potential from its native woodlands, as well as securing a future for this vital resource.

It is recommended that this Strategy is revisited in early 2018 to monitor and review progress regarding its implementation. This would not rule out making some alterations in order to secure the best possible outcomes.

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Appendix

During the formulation of this Strategy for Native Woodlands in Ireland, written contributions were received from the following individuals on the WoI Technical Working Group and Steering Committee.

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