

Twenty Years A-Growing

The 2018 Native Woodlands Conference Report

SPECIAL
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REPORT!



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Introduction

On April 30th and May 1st 2018, 200 delegates attended the second national Native Woodland Conference at the Glenview Hotel, Co. Wicklow.

The conference, titled '20 Years A-Growing', was organised by Woodlands of Ireland to celebrate two decades of work to restore, manage and create new native woodlands in Ireland.

Everyone with an interest in native woodlands - including landowners, farmers, the forestry industry, academics, ecologists and NGOs - was encouraged to attend, and the community duly responded: the conference sold out completely, with 200 people attending the plenary talks and parallel sessions on Day 1, and 170 people attending the field excursion on Day 2.

Presentations from leading Irish and international experts covered a wide range of topics, from managing native woodlands and hedgerows to flood management, woodlands for water protection, the recent arrival of the great spotted woodpecker, invasive species and climate change, ecosystem services, seed saving, deer ecology and rewilding.

The field excursion comprised of guided walks around County Wicklow to see first hand the management and establishment of native woodlands. This included visits to Deputy's Pass, Glenealy,

and Ballycoyle, Glencree, both of which have been restored and expanded under the *Native Woodland Scheme*. We also visited an ancient woodland restored under the *People's Millennium Forests* project at Ballygannon Wood, Rathdrum, where the People's Millennium Forests Project Charter was launched by Coillte.

The aim of this report is to bring the abstracts, videos and slides from all the presentations and discussions together and make them accessible, and to report on the Key Performance Indicators that were identified at the outset. Happily, we met our targets and, as you'll see from the results of the event satisfaction survey, the conference was a great success. Many participants commented on the positive energy among the group, and I think we all left feeling optimistic and enthused for the future of the sector, notwithstanding the considerable challenges involved.

I'd like to take this opportunity to thank all the delegates, speakers, organising team, Woodlands of Ireland's Steering Committee, our sponsors, and the fantastic team at the Glenview Hotel for their support and hard work in making this event one to remember.

Dr Declan Little, Project Manager, Woodlands of Ireland

Opening Plenary

The Opening Plenary introduced delegates to a wide range of diverse perspectives from across the native woodland sector, including an academic, a landowner, a policymaker, a field ecologist, a forester and the opening address by the Government Minister with responsibility for Forestry. Click on the links below for presentation slides, videos and abstracts.



Dr Daniel Kelly, Trinity College Dublin
What are native woodlands for? A contested biological, cultural and economic space

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Kevin Collins, Dept Agriculture, Food & Forestry
Ireland's Native Woodland Strategy: Progress, critical mass and momentum

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Katherine Stafford, Landowner
A landowner's perspective of the Native Woodland Scheme

[▶ PLAY VIDEO](#) | [\(NO SLIDES\)](#) | [READ ABSTRACT](#)



John O'Reilly, Greenbelt
Achieving our native woodland afforestation targets

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Dr Maria Long, Independent Ecologist
What are the challenges of managing native woodlands?

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Minister Andrew Doyle, TD
Official opening address

[▶ PLAY VIDEO](#)

Session One: Ecology

The first parallel session focussed on the theme of ecology, with talks covering exciting research on Scots pine, and ecological aspects of woodland cryptogams, birds, mammals and soils. Click on the links below for presentation slides, videos and abstracts.



Dr Alwynne McGeever, Trinity College Dublin
The native status of Scots Pine in Ireland

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Faith Wilson
The great spotted woodpecker and bat habitat creation in Irish woodlands

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Maria Cullen, Independent Ecologist
Hiding in plain sight: Ireland's woodland cryptogamic botany

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Dr Declan Little
Brackloon Wood - the past, present and future

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Hosted by Anja Murray, Independent Ecologist
Our ecology speakers take part in a group discussion and answer audience questions

[▶ PLAY VIDEO](#)

Session Two: Silviculture

The second parallel session explored the topics of silviculture and native woodland classification, with talks on hedgerows, continuous cover and education. Click on the links below for presentation slides, videos and abstracts.



Dr John Cross, ex-NPWS

The 'What, where and why' of native woodlands: a brief look at classification and character

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Jonathan Spazzi, Teagasc

Growing quality timber in native woodlands through Continuous Cover Forestry

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Dr Janice Fuller, Consultant Ecologist

Farm hedgerows: barriers and connectors

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Ian Short, Teagasc

Silvicultural education in Ireland: Challenges and opportunities

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Hosted by Michael Starrett, Heritage Council

Our silviculture speakers take part in a group discussion and answer audience questions

[▶ PLAY VIDEO](#)

Session Three: Challenges

The third parallel session examined the various challenges facing the native woodland sector, from deer management to seeds and stock, climate change and disease. Click on the links below for presentation slides, videos and abstracts.



Dr Tim Burkitt

Deer ecology and management in native woodlands

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Lar Behan, None-So-Hardy Nursery

Native woodlands stock: opportunities and challenges

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Debbie Gillies, True Harvest Seeds

The All-Ireland Seed Saving Project

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Dr Keith Kirby, University of Oxford

Invasive species, climate change and diseases: the elephant in the forest - the UK experience!

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Hosted by Ella McSweeney, Journalist

Our four speakers take part in a group discussion and answer audience questions

[▶ PLAY VIDEO](#)

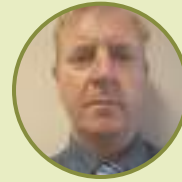
Session Four: Water

The second parallel session explored the topics of silviculture and native woodland classification, with talks on hedgerows, continuous cover and education. Click on the links below for presentation slides, videos and abstracts.



Dr Mary Kelly-Quinn, University College Dublin
Woody riparian buffer: The potential for multiple ecosystem services provision

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



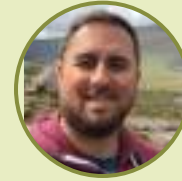
Nathy Gilligan, OPW
Natural Flood Management in Ireland and the potential role for woodlands

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Dr Tom Nisbet, Forest Research
EU Cost Action Woodlands and Water: Current initiatives and approach to PES

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Richard O'Callaghan, KerryLIFE
KerryLIFE adapting forestry policy for the freshwater pearl mussel

[▶ PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Hosted by Dr Catherine Farrell, Bord na Móna
Our silviculture speakers take part in a group discussion and answer audience questions

[▶ PLAY VIDEO](#)

Closing Plenary

The Closing Plenary included an inspiring talk on the topic of rewilding, a personal reflection on 20 years of native woodlands, closing comments from Woodlands of Ireland's Project Manager, Dr Declan Little, and a panel discussion during which the chairs of each session presented their highlights from the conference. Click on the links below for presentation slides, videos and abstracts.



Alan Watson-Featherstone

The restoration of Scotland's Caledonian Forest and its relevance for Ireland

 [PLAY VIDEO](#) | [VIEW SLIDES](#) | [READ ABSTRACT](#)



Michael Starrett

From seed to canopy: a personal reflection on 20 years of native woodlands

 [PLAY VIDEO](#)



Dr Declan Little, Woodlands of Ireland

Closing comments

 [PLAY VIDEO](#)



Hosted by Paddy Woodworth, Journalist

Session hosts Anja Murray, Ella McSweeney, Dr Catherine Farrell, Michael Starrett and Kevin Collins discuss their key observations from the conference.

 [PLAY VIDEO](#)

Field Notes

On the second day of the conference, delegates were taken into the field to explore three native woodland sites in Co. Wicklow.

No conference on native woodlands is complete without a field excursion. After a full day of presentations, delegates were taken on guided walks to woodland sites in Co. Wicklow to learn more about the management and establishment of native woodlands in practice.



The excursion included visits to Deputy's Pass, Glenealy and Ballycoyle, Glencree, both of which have been restored and expanded under the Native Woodland Scheme.

The Ballycoyle site is owned by Katherine Stafford, who had presented on the previous day on the positive experience she has had with the Scheme and her plans to work with others in her catchment area to encourage landowners there to create a critical mass of managed native woodlands.

We also visited a site at Ballygannon, Rathdrum, which was restored under the People's Millennium Forest project (PMF) between 2000 and 2005. The project has since given rise to a vibrant mixed age-class native woodland, and was an appropriate place to launch the PMF Charter with Coillte's Gerard Murphy, Managing Director, Forestry Division.

The excursion generated a lot of debate amongst delegates, especially where wood production is an objective along with the overriding biodiversity objective. Continuous Cover Forestry (CCF) principles and their practice is an area that WoI will explore further with Prosilva Ireland and Teagasc. Other issues included the management of deer and invasive species.

Conclusions & Next Steps

‘Twenty Years A-Growing’ was a great success, bringing Ireland’s native woodland champions together to hear about the state of the sector, discuss key issues and explore practical examples of afforestation and management.

The feedback informed us that the conference had done what we’d hoped it would: bring people from across the sector together, present relevant and diverse talks that people found interesting and explore the practicalities of on-the-ground projects in a relaxed, constructive and positive atmosphere. The question of course is what comes next? Below are our key learnings:

* Considerable **expertise has been developed** over the past two decades, laying the foundations for a thriving sector. It should be supported with more regular, field-based, one-day events.

* The top three **topics of interest** by a significant margin were deer management, continuous funding and management capacity. Other issues included diseases, invasive species, seed supply, and public engagement. WoI will continue to address these topics.

* At least one stand of **native Scots pine** almost certainly survived the woodland devastation of the post-glacial period, and seeds should be collected from this woodland in order to establish native provenance Scots pine in the wider landscape.

* Management guidelines should outline the requirements for standing and lying deadwood especially to accommodate recently-established populations of **Great Spotted Woodpecker**.

* Ash Dieback, Sudden Oak Death and invasive species present significant **threats to native woodlands**. A co-ordinated national approach is needed to control their spread and negative impacts.

* Case studies on the potential for native woodlands to **support flood control** in small upland catchments and floodplains, and support climate mitigation measures are required.

* More research is needed on grazing in native woodlands. Regional and local **deer management** plans that incorporate deer ecology, woodland design, fencing and culling should be developed and integrated with woodland management plans.

* Landowners’ perceptions of **viable woodland establishment incentives** is important, especially as the NWS does not compete with commercial conifer afforestation on purely economic grounds.

* **Payments for ecosystem services** should be made in lieu of revenue from timber in many cases, especially native woodlands for water quality protection and biodiversity.

* It was noted by numerous delegates that there is a **slow turnaround for NWS applications**. Targets will almost certainly be missed unless this issue is resolved quickly within the Forest Service.

A photograph of a dense forest with many trees, overlaid with a semi-transparent green filter. The trees are mostly deciduous with green foliage. The lighting is soft, suggesting a slightly overcast day or a shaded forest interior. The overall mood is serene and natural.

Twenty Years A-Growing

The 2018 Native Woodlands Conference Report

Appendix One: Measuring Impact

The Conference Organising Team took a strategic approach to designing the conference, and made some difficult decisions along the way.

The Woodlands of Ireland Steering Committee made the decision to host a conference in early 2017 and we set up a Conference Sub-Committee with Declan Little, Maria Cullen, Joe Gowran, John Cross and David Fallon. Hannah Hamilton of *A New Leaf Environmental Communications* was employed to coordinate the event.

The process involved meetings and conversations between the coordinator and the members of the Sub-Committee to understand what we wanted to achieve. This led to the development of five priorities and Key Performance Indicators (KPIs - see opposite). These were addressed subsequently, as outlined in the following text.

The organisers also sought to reduce the environmental impact of the conference by making it paper-free, offering vegetarian lunches, sourcing line-caught fish from sustainable stocks and ensuring that the food was as local as possible. Uneaten food was donated to local charities. The Glenview Hotel's support in accommodating these requests was greatly appreciated.

Initially, the event was scheduled to take place in Oct 2017 in Westport, Co. Mayo. However, registrations were very poor and we made the difficult decision to postpone it.

Much was learned from this setback: over 200 responses to a follow-up survey helped to identify key issues that we were able to address. These included locating it on the east coast and holding it over two days rather than three, and helped to make the 2018 event the success that it was.

Conference Priorities:

- Priority 1: Wide mix of delegates
- Priority 2: Relevant and broad range of talks
- Priority 3: Awareness of native woodlands and Woodlands of Ireland is raised
- Priority 4: Delegates and Steering Committee are satisfied with the event
- Priority 5: The event is within budget

Our Success Metrics

Priorities	Key Performance Indicators	
1: Wide mix of delegates	1a	Decision-makers/senior staff from key agencies and semi states are in attendance (e.g. BnM, Coillte, Forest Service, Teagasc, EPA, IFI, Waterways Ireland, ESRI, OPW, Irish Water, NESC).
	1b	Private sector groups are in attendance (e.g. NWS Ecologists & Foresters, Woodland contractors (IEEM, SIF & ITGA), IFA, Irish Forestry and Forest Products Association, Irish Organic Growers)
	1c	Representatives from DCCAE, DAFM, DAHGRRRA are in attendance
	1d	Representatives from the Irish Environmental Network/Environmental Pillar are in attendance
	1e	Researchers and students from a variety of universities/colleges are in attendance (e.g. UCD Science & Agriculture Depts, TCD Botany, UCC & NUIG)
2: Relevant and broad range of talks	2a	There is a good balance of speakers, from a mix of academic, public and private sectors
	2b	There is a good balance of topics, including mix of academic, applied woodland management, educational, policy-related, and industry-related talks
	2c	The event covers topics deemed important by the WoI Steering Committee (e.g. SFM re native woodlands, seed certification, natural capital values, etc.)
3: Awareness of native woodlands and Woodlands of Ireland is raised	3a	Media coverage is achieved in national and regional/local press and/or radio, e.g. Irish Times, Independent, Farmer's Journal
	3b	Social media is used to promote the event, the organisation and the issues it is focusing on
4: Delegates and Steering Committee are satisfied with the event	4a	Delegates are satisfied with the event, as measured through feedback surveys
	4b	The WoI Steering Committee is satisfied that the event is a success, based on the achievement of these KPIs and alignment with broader ambitions of the organisation
5: The event is within budget	5a	The event is cost-neutral

Priority One

✓ **We achieved our first priority of having a wide mix of delegates attending the conference.**

A broad range of delegates attended the conference, as shown in the table below, and therefore this KPI was adequately achieved. In the figures presented there were four delegates from Northern Ireland: two each from community groups, and the Northern Ireland Forest Service.

A total of 165 paying delegates attended, with a further 35 that included speakers, journalists and organisers. Additional assistance was provided by the site owners at the excursion sites, including NPWS and Coillte staff, and a private landowner.

Ecologists, IEEM	Foresters, SIF, ITGA, ProSilva	ENGOS, local groups (e.g. IEN & IFA)	Academics, researchers & students	Land owners, farmers, individuals	NPWS, DCHG	Forest Service, DAFM	Teagasc, Bord na Mona	Coillte	County Councils, LAWCO, EPA
22	19	25	15	31	25	10	6	8	4

Priority Two

✓ We achieved our second priority of having a broad range of talks and presentations.

The programme covered a range of issues, as requested by the organising sub-group of Woodlands of Ireland Steering Committee. An effort was made from the outset to feature leading experts across all the topics presented at the conference. In addition, we strove for gender balance. Just over 40% of the speakers and session facilitators were women.

The use of parallel sessions facilitated virtually all the presentations that were originally planned for the deferred event. Talks were presented under the following four themes: Ecology, Challenges and Opportunities, Silviculture and Classification, and Native Woodlands and Water.

The four themes were bookended by the opening and closing plenary sessions that featured panel discussions questions and audience question and answer sessions. In addition, a diverse range of research posters and environmental NGO stands were available for delegates to view, and Muintir na Coille provided a stand featuring woodcraft and niche woodland products.

Holding parallel sessions meant that delegates could not attend

all the presentations, so therefore all the indoor sessions were filmed in order to ensure that videos could subsequently be made available online, along with PDFs of the slides. They are now on the Woodlands of Ireland website (www.woodlandsofireland.com/native-woodland-conference-2018), and links to individual presentations and slide decks are featured in this Conference Report.

Priority Three

✓ We achieved our third priority of raising awareness of native woodlands and Woodlands of Ireland as an organisation.

The conference benefitted from coverage in a range of national and regional newspapers, including the Irish Times and the Independent. The launch of the People's Millennium Forest Project Charter also generated media attention.

The following Native Woodland Conference articles were published:

- *Wicklow People* (April 7th)
- *Irish Times* (April 28th)
- *AgriLand* (April 30th)
- *Irish Independent Farming Supplement* (May 11th)
- *Wicklow News* (May 2nd)

Social media also helped to raise the profile of the conference, especially through the Woodlands of Ireland (WoI) Facebook page, which was updated at intervals. Numerous stakeholders also contributed to the event's promotion through their own channels.

Over 1,000 stakeholders on the WoI database were mailed on three occasions and the response was positive, as reflected in delegate registrations.



The system will be discussed by one of its authors, Dr Justice Taylor, at a 2018 conference on Ireland's native woodlands next Monday and Tuesday at the Glenview Hotel, Dalgay, Co Wicklow (www.woodlandofireland.com).

The event celebrates 20 years of work by Woodlands of Ireland to manage existing native woods and create new ones. Their value, with that of hedgerows, to food management is one of the leading topics for the conference, with more than 20 expert speakers.



A financial 'tipping point' is needed to persuade farmers to plant native trees - Greenbelt



Priority Four

✓ We achieved our fourth priority of high event satisfaction ratings.

Q1: How would you rate the conference overall?

- Excellent: 63% | Very good: 35% | Good: 2%

Q2: How would you rate the quality of the talks on Day 1?

- Excellent: 63% | Very good: 30% | Good: 9%

Q3: How would you rate the quality of the field trip on Day 2?

- Excellent: 51% | Very good: 34% | Good: 12%

Q4: How would you rate the quality of the venue?

- Excellent: 51% | Very good: 35% | Good: 7%

Q5: Was the conference good value for money?

- Yes: 88% | Somewhat: 7% | No opinion: 5%

Q6: Were there enough opportunities for conversation and networking?

- Yes: 74% | Somewhat: 21% | No: 5%

Q7: In your opinion, what are the major challenges facing the native woodlands sector? A: Deer: 33% | Funding: 25% | Management Capacity: 25% | Diseases: 7% | Invasive Species: 7%

“Brilliant 2 days. I paid for it personally and took annual leave to attend and it was well worth it. Thanks very much.”

“Really well organised and very professional in its delivery. Well done!”

“It was as good as it could have been.”

“It was very useful and inspiring to hear and talk to other like-minded individuals as well as being up to date on the latest research in this sector.”

“Lots of thought gone in to the two days to make sure that it all ran smoothly.”

“I appreciated the notices on reducing waste/impact of the conference on the environment and attempt to make it generally paper free.”

We were delighted with the results and the feedback, and would like to thank delegates for taking the time to share their views and for the constructive ideas for future events, such as an online forum for delegates to share ideas and a Twitter hashtag.

Priority Five

✓ We achieved our fifth priority by hosting a cost-neutral event.

In 2017, the Woodlands of Ireland Steering Committee approved €10,000 from its own funds towards the conference. Additional funds were sought from its three sponsor bodies and to date, NPWS has committed €5,000. When we include the costs incurred as a result of the deferred event in 2017, we were left with a balance of €381. Given these circumstances the outcome for Woodlands of Ireland, which is not-for-profit, is very satisfactory.

Income is listed below:

Wol Contribution	€10,000
NPWS Contribution	€5,000
Registration Fees	€16,684
TOTAL INCOME:	€31,684

Costs ran as follows:

--- Wicklow event in 2018	€25,568
--- Deferred event in 2017	€5,735
TOTAL COST:	€31,303

BALANCE: €381

Appendix Two: Abstracts

Opening Plenary Session

What are native woodlands for? A contested biological, cultural and economic space

Dr Daniel Kelly, Trinity College Dublin

Economic assets, hotspots of biodiversity, relics of history, embellishments of the landscape or places of recreation: what and who are native woodlands for? Ireland's native woodlands provide a link with the wildwood that once covered much of the island. Ancient woodland has survived, here and there, and in it we still find evidence of traditional management practices. Native woodlands are an economic resource. As well as timber, they may yield a range of non-timber forest products. A woodland canopy may increase soil fertility; it regulates water flow and influences water quality. Trees sequester carbon and may mitigate the effects of climate change. Woods have complex cultural and aesthetic associations. A few existing woods still have historical links to the Ireland of Gaelic rulers. A more widespread association is with the old estates of the Anglo-Irish gentry. Differences in history and ecology combine to make each old wood a unique place. Ancient woodlands ultimately derive from spontaneous seeding, and animals may play a symbiotic role in pollination and/or seed dispersal. However, in many places, the ecological balance has been lost, and seed predation and overgrazing are preventing tree regeneration. Native woodland is a storehouse of indigenous biodiversity. Our woodland communities are poor in higher plants

and animals compared to the European continent, but relatively rich in mosses, liverworts & lichens. Native biotic communities are composed of species that have co-evolved over millennia. The impact of non-native invasive species is particularly acute in islands, and Irish woods are suffering invasions on a massive scale. On top of these, new tree pests and diseases continue to reach our shores. Our native woodlands have unique intrinsic value; they can also satisfy a multiplicity of human needs. The current state of many of these woods is precarious. May this conference prove a clarion call for action to protect, conserve and restore them, for the benefit of both present and future generations.

A landowner's perspective of the Native Woodland Scheme

Katherine Stafford, Landowner

This talk will explore my experiences as a native woodland owner and manager. It will tell the story of my own journey from a tree lover to the custodian of a 30-acre native woodland, attending training courses, getting through paperwork, receiving grant approval, establishing fencing and planting species including Oak, Birch, Hazel, Willow, Alder, Cherry and Scots Pine. The talk will also offer a personal perspective on many of the issues facing the sector, including exploding deer populations and their impact on oakwood regeneration and the potential for



Abstracts

Opening Plenary Session cont.

using native woodlands for educational purposes - and not just for forestry students.

What are the challenges of managing native woodlands?

Dr Maria Long, Independent Ecologist

Two of the biggest challenges facing semi-natural habitats across Ireland are intensification of management on the one hand, and lack of management on the other. Sadly, one of the consequences of conservation designations can be that landowners/managers seem to feel that they must no longer manage a piece of land, regardless of the habitat. Or sometimes they lack the guidance or incentive to do so. Similarly, unless an area of land can be intensively used for agriculture, it is increasingly ignored. But how are our native woodlands faring? This talk will review recent findings and research, and present some of the main trends and issues. The results of experimental work on the effects of changes in management will be presented. To conclude, the main challenges facing woodland managers, as well as relevant policy makers and researchers will be outlined.

Ireland's Native Woodland Strategy: Progress, critical mass and momentum

Kevin Collins, Dept Agriculture, Food & Forestry

The story of Ireland's native woodlands up to the late 1990s is not a particularly happy tale, despite their status as a key part of Ireland's natural, historical and cultural heritage. Apart from the creation of protected areas, pioneering research work and the efforts of Crann and other voices such as Éamon de Buitléar and Freda Rountree, native woodlands remained very much as a niche interest. However, sparked by key visionaries and the convenient sense of occasion afforded by the turn of the century, a host of initiatives took place in the late 1990s and early 2000s. These included the establishment of Woodlands of Ireland (WoI), the People's Millennium Forests Project, Coillte's Old Woodland Survey, woodland restoration by the National Parks & Wildlife Service (NPWS), and the Forest Service Native Woodland Scheme (NWS), developed and implemented in partnership with WoI, NPWS, Heritage Council, Inland Fisheries Ireland and others. This strong focus on native woodlands has carried through to the present day. This is primarily due to the work of WoI and the ongoing implementation of the NWS, currently under the 2014-2020 Forestry Programme, which together support – and are supported by – a dense and intricate 'mycorrhiza' of stakeholders, initiatives and applications. This collective effort is driving native woodland expansion in Ireland and is pioneering new opportunities, particularly in the areas of water and natural capital. However, has Ireland's native woodland sector reached a critical mass? Various



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Opening Plenary Session cont.

critical factors still need to be addressed to ensure this, including the following: Shift the perception of landowners and foresters regarding the value of native woodlands. Realise the potential of native woodlands to contribute to farm income. Continue to link in with wider environmental, social and economic priorities, such as water, landscape, tourism, and health and wellbeing, to widen the stance of the native woodland sector. Boost research exploring the values of native woodland. Ensure that professional capacity and know-how match the intricacies of native woodland management. Address existing legislative, policy and support pinch-points. Ensure that supports are broadened out to include other sources, and are effectively targeted at creating and expanding opportunities. Expand the availability of native planting material, and increase resilience to climate change, pests and diseases. Will future observers see the current focus on native woodlands as the first half of a boom-bust cycle, or as the initial phase of a sustainable arc towards achieving the targets set out in the National Strategy for Native Woodland in Ireland, for 2020 and beyond? Given the highly nuanced and increasingly multi-faceted nature of the Ireland's native woodland sector, the latter outcome is well within our reach.

Achieving our native woodland afforestation targets

John O'Reilly, Greenbelt

Since the introduction of the current Programme for Forestry 2014-2020, the targeted levels of the Native Woodland Scheme (NWS) have not been achieved. Across the 2015 -16 planting seasons, the national target was the establishment of 900 ha of new native woodlands however only 293 ha of NWS establishment actually took place. This market failure is, in my opinion, due to the perceived lack of commerciality that land owners associate with native woodland planting. To address this anomaly we must look to corporate CSR budgets and design schemes and supports that incentivise the establishment of native woodlands. To this end Microsoft have agreed to co-fund, with the Irish Forest Service, the establishment of 137 ha of new native forests across the 2017 and 2018 planting programme. Green Belt have been successful in achieving the planting targets set by Microsoft and feel that the improved payments now available to land owners has led to a significant uptake in NWS planting. Understanding the correct level of support and incentives is the key to driving the establishment of our native woodlands.



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Session One: Ecology

The native status of Scots Pine in Ireland

Dr Alwynne McGeever, Trinity College Dublin

5000 years before 1950 AD (cal BP) Scots Pine (*Pinus sylvestris*) experienced a major population decline across Europe, which is believed to have led to its ultimate extirpation in Ireland about 1500 cal BP. The current populations of *P. sylvestris* in Ireland originate from Scotland, introduced as plantations during the 18th century. Since the original Irish *P. sylvestris* is believed to have become extinct and the current *P. sylvestris* populations were introduced by humans, the native status of this species is disputed. This work presents the paleo record of a forest of *P. sylvestris* in the Burren, Co. Clare. A sediment core was taken from a site in the Burren, and fossil pollen was extracted and counted to determine how the tree population had changed since 1600 cal BP. The data suggests that *P. sylvestris* survived and recovered from the national population decline, and has maintained a continuous presence at this location, right up to the present day. Hence this could be a native Irish population of *P. sylvestris*, having persisted in the unique Burren landscape independent of the population collapse 5000-1500 cal BP and originates from before the re-introduction 200 years ago. Identifying a native Irish Scots Pine population gives new opportunity for changes in the future conservation of biodiversity in Ireland, most particularly by contributing to ongoing efforts to restore native Irish woodlands.

Hiding in plain sight: Ireland's woodland cryptogamic botany

Maria Cullen, Independent Ecologist

The study of cryptogams (spore-producing plants) such as algae, fungi (lichenised and non-lichenised), mosses, liverworts and ferns in Irish woodlands informs our understanding of the longevity of woodland cover, ecological continuity, regional air and water quality, changes to hydrology and biodiversity, as well as woodland and habitat health. We outline current threats to cryptogamic biodiversity in Irish woodlands and what we can do to avert certain crises and to protect cryptogamic species through surveys, education, legislation, pollution controls, herbarium supports and phytosanitary measures. Our vegetation studies and recording efforts from Ireland during the past 25 years will evidence our assertions about native trees and their cryptogamic biodiversity. Extensive data from the lichen flora of Northern Ireland allows for an All-Ireland overview. Results generated from individual tree inventories, plot-based ground flora vegetation relevés, quadrat data made by tree climbing, general surveys and intensive regional sampling efforts provide insights into the biological needs and distributions of these species. Synthesis allows for constructive proposals that will meet international obligations and better conserve thousands of spore producing species and their native woodland habitats into the future.



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Session One: Ecology cont.

Brackloon Wood - the past, present and future

Dr Declan little, Woodlands of Ireland

Management and restorative native woodland planning needs to consider land use history and past climate as they have a significant impact on soil development, successional patterns and current animal and plant assemblages. Intensive research and monitoring under a COFORD-sponsored project at Brackloon Wood, Westport, Co. Mayo in the 1990s provides direct and circumstantial evidence that climate change and human impact have affected woodland development substantially over the past ca. 13,000 years. Investigations included soil surveys and mineralogical analyses, radiocarbon dating and palynological studies, historical accounts, vegetation (vascular plants, bryophytes and lichens), vertebrate (birds, bats and mammals) and invertebrate (earthworm and arthropod species) surveys. Climate change over the past ca. 4,500 years has resulted in cooler, wetter conditions so that soils are progressively leached, with consequent acidification and, in susceptible soils as at Brackloon, eventual podzolisation. Human impact – first evident from ca. 5,500 years ago and continually since ca. 3,000 years ago – tends to accelerate podzolisation (soil acidification) by opening the canopy and exposing soils to increased leaching. As a result, patchiness and habitat fragmentation at a small spatial scale are clearly evident. Past extinctions, recent

introductions and diseases, current and future climate change are crucial factors that should be considered in planning future woodland development. The implications for how woodland managers influence the direction of woodland succession, composition and subsequent management are discussed.

The great spotted woodpecker and bat habitat creation in Irish woodlands

Faith Wilson, Ecological Consultant

Great spotted woodpecker have returned to Ireland of their own accord and have been documented as a breeding species in Ireland for almost a decade now. The return of this charismatic bird to our landscape offers new opportunities and challenges for how we manage our woodlands and their native fauna, much of which remains rare, under-recorded and elusive. Through extensive field surveys and various technologies we are beginning to gain an insight into what's going on in our woodlands and how various species such as birds, bats and other fauna may interact with each other. This talk will provide some updates on our current understanding of same.



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Session Two: Silviculture

The 'What, where and why' of native woodlands: a brief look at classification and character

Dr John Cross, ex-NPWS

Surveys and research over the past 20 years have greatly improved our knowledge of the diversity, character and distribution of our native woodlands, at both a national and international level. Four major woodland types - sessile oak, ash, alder and birch - and several minor types are recognised. Each major type has several sub-types which have a different structure and species composition. This presentation briefly examines these different woodland types and looks at the various factors responsible for the variation, including the climate, soil, hydrology, topography, age of the woodland, past management and land use history. This information provides valuable background and serves as guidance for current and future woodland management.

Farm hedgerows: barriers and connectors

Dr Janice Fuller, Consultant Ecologist

Native woodlands do not exist in isolation; part of their ecological function is dependent on how they connect with the wider environment. Farm hedgerows are a natural extension of native woodlands and allow them to interface with the wider countryside.

Hedgerows themselves can be seen as mini-strips of native woodland. Hedgerows, Scrub and Non-Forest Trees cover 6.4% of the country; this is significantly more than that covered by native woodland. Most of this network is over 100 years old and some of it considerably older. But what do we know about the qualitative value and condition of our hedgerows? With this question in mind, in 2013 Woodlands of Ireland, in conjunction with the Hedge Laying Association of Ireland, published the Hedgerow Appraisal System (HAS). The System has three elements; a standard survey methodology, a national open-source database and an appraisal method that determines hedgerow significance (historical, species diversity, structural, habitat connectivity and landscape) including condition scoring. The standard survey methodology ensures consistency of recording of hedgerow data. The national database, maintained by the National Biodiversity Data Centre (NBDC), has correlated and standardised the data from 17 county and regional hedgerow surveys and provides a baseline for those areas. In addition, further hedgerow surveys will be added to this database in time. The appraisal element is a tool that can be used in planning, research, monitoring and ultimately to inform policy development. The Hedgerow Appraisal System has huge potential for use in agri-environment Schemes but to date has been under-utilised. With increased use, further refinements and developments could be adopted to suit the various potential applications.



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Session Two: Silviculture cont.

Growing quality timber in native woodlands through Continuous Cover Forestry

Jonathan Spazzi, Teagasc

The Native Woodland Scheme is supporting the development of new native woodlands across the landscape to be managed, long term, for essential Ecosystems Services and, where suitable, for sustainable timber production through Close-to-Nature/Continuous-Cover Silviculture. Selecting and managing high quality individual trees at an early stage are an essential part of this approach in order to develop irregular woodland structures that will form the basis for sustainability by continuous renewal. As woodlands mature, the aim will be to create conditions, through selective thinning, that mimics natural woodland patterns conducive to natural regeneration. In the long term, it is within these diffuse light conditions that the best quality individuals will be selected and recruited from regeneration stage into mature stage. The objective in irregular Silviculture management is to attain a state of equilibrium where regeneration, sapling, poles, small trees, medium trees and large trees of various species are present across the woodland and where sustainability is achieved by continuous renewal within a stable ecosystem. This approach ensures continued high quality timber production through selective felling and, most importantly, high level of structural diversity and Ecosystem Resilience. Having a suitable inventory/monitoring

protocol, incorporating diameter class, quality assessment, and ecological assessments is essential to inform the owner/manager of woodland structure changes towards a state of dynamic equilibrium.

Silvicultural education in Ireland: Challenges and opportunities

Ian Short, Teagasc

Knowledge of silviculture is crucial to the successful production of timber and societal products and services from our forests. Formal silvicultural education provides the basis for practitioners to manage our forests. As the context in which forests are grown changes, management and applied silviculture should adapt and, to support this, so should silvicultural education. The majority of those employed in the forest industry will have received some education in silviculture, and continue to do so through continuous professional development, but there is also a need for forest owners to be educated in an appropriate way. A good working knowledge of the wide range of silvicultural systems and techniques applicable to Irish forests is required by all involved to service the implementation of multi-functional forestry. This presentation will discuss opportunities and challenges to silviculture education in Ireland and draw some comparisons with international experiences.



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Session Three: Challenges

Deer ecology and management in native woodlands

Dr Tim Burkitt

The management of deer in native woodlands depends on the overriding management objectives of the woodland (conservation, wood production, hunting, recreation), woodland type, deer species and deer ecology. To be successful and effective, the management of deer requires intimate knowledge and understanding of their ecology. There are specific aspects of deer ecology (density, population dynamics, diet and habitat use) that can be skillfully managed as these are most likely to affect their role as keystone species within native woodland ecosystems. Other aspects of deer ecology, such as migration, range size, disturbance, weather and seasonality, can also completely alter the way in which deer can exploit and impact on woodland habitats on a daily, seasonal and annual basis. These are less easily managed and are entirely dependent on a comprehensive, well-informed and collaborative deer management strategy. Deer management however, is technically complex and not only requires a thorough knowledge of deer ecology but also a clear understanding of the interacting dynamics between deer and their habitat. Specifically it demands the skills, knowledge and technical expertise required to ensure that deer presence is compatible with the overall strategic objectives of woodland conservation management. Therefore, the three main species of deer (red, fallow and sika) each require different management approaches.

The All-Ireland Seed Saving Project

Debbie Gillies, True Harvest Seeds

Ireland's unique set of plants has been separated from the rest of the world by c. 14,000 years of isolated evolution. True Harvest Seeds (THS) has created and is populating a seed bank with orthodox seed species native to the island of Ireland to protect this important resource. Like all banks, there are deposits and withdrawals: the deposits are highly scientific collections, comprising seeds, data, photographs, DNA material and herbarium specimens. The withdrawals may be seeds for restoration projects or information or plant material for research and study and can be applied for by suitable individuals or organisations. Making accessions into the seed bank to represent species and habitats in all counties will require around 45,000 collections. Because of increasing plant and seed imports, there is some urgency to carry out this work. To achieve this goal, THS is engaging with public and private landowners and providing training to enable local landowners, staff or volunteers to make collections suitable for long term storage, thus safeguarding the long term survival of these species. Seeds held in this way can retain viability for centuries.



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Session Three: Challenges cont.

Native woodlands stock: opportunities and challenges

Lar Behan, None-So-Hardy Nursery

The Native Woodland Scheme is of increasing importance to the future of the national afforestation programme and is an important component of our nursery stock programme at None-So-Hardy Nurseries (Forestry) Ltd. We collect and supply native trees and shrubs, including oak, birch, Scots pine, hazel, guelder rose, rowan, hawthorn and spindle. A very important species of this scheme is oak (*Quercus petraea* and *Q. robur*). A major obstacle to the continuity of supply is the paucity of native oak seed stands coupled with the infrequency of good mast years. Therefore, we decided to collect our own acorns, and to ensure continuity of oak plant supplies we compensate by managing crops for one and two-year plants when we gather a significant acorn crop during good mast years. Tomnafinnogue Wood is the last surviving remnant of the famous Shillelagh woods in southern county Wicklow. In September 2006, we surveyed, located and marked 100+ potentially good seed producing trees based on crown spread and area and observe them every August to project the likely acorn crop for the autumn. Collecting native acorns is now a very important part of the nursery's annual programme and forms the basis of our native oak plant supply that we need to maximise each year to ensure continuity of supply.

Invasive species, climate change and diseases: the elephant in the forest - the UK experience!

Dr Keith Kirby, University of Oxford

The UK has 3.17 million hectares of woodland totalling 13% the land area, of which only 1.2% is ancient semi-natural woodland. Deer, rhododendron, Chalara and sudden oak death are amongst a growing list of problems blighting woodlands and forestry in the UK. Throw climate change into the mix and the loss of climatic barriers to pests and diseases (e.g., cold winters) and increasing severity of weather events are challenging the resilience of the UK's sparse woodland. A Tree and Plant Health Biosecurity Expert Taskforce was established in 2012 to deal with these threats, along with an £8 million investment in tree health research from 2012/12 to 2016/17, and £23 million on a 5-year Phytophthora programme ending in 2014. The status of Phytophthora and rhododendron in the UK will be reviewed, and the impacts of biosecurity measures on wildlife highlighted. Case studies will consider whether historically high populations of native and non-native deer mark the end of the ancient Caledonian pinewoods in Scotland and whether Chalara signifies the end of the ash tree in the UK. The UK's woodlands are going through a massive process of change, but with vigilance and appropriate management we can ensure the continued presence of trees on the landscape.



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Session Four: Water

Woody riparian buffer: The potential for multiple ecosystem services provision

Dr Mary Kelly-Quinn, University College Dublin

There is growing interest in the use of strategically planted deciduous woodland to intercept and help reduce diffuse pollution input but also to contribute other ecosystem services that protect water quality and the aquatic ecosystem. Woody riparian buffers can intercept nutrients, sediment and pesticides. They also contribute energy inputs to aquatic food webs in the form of leaf and woody debris, and have important roles in flood control, water retention/infiltration, water temperature regulation through shading, habitat provision, including corridors for wildlife movement, and amenity. This paper will present the range of ecosystem services delivered by woody riparian buffers and where challenges remain in capitalising on those benefits.

EU Cost Action Woodlands and Water: Current initiatives and approach to PES and relevance to native woodlands

Dr Tom Nisbet, Forest Research

The EU Water Framework Directive (WFD) aims to restore Europe's water bodies to "Good Ecological Status" by 2027, but many Member States are struggling to achieve this target. Around half

of EU river catchments report below standard water quality, with diffuse pollution from agriculture representing a major pressure affecting over 90% of river basins. Accumulating evidence shows that recent improvements to agricultural practices are benefiting water quality but in many cases will be insufficient to achieve WFD objectives. There is growing support for land use change to help bridge the gap, with a particular focus on targeted tree planting to intercept and reduce the delivery of diffuse pollutants to water. This form of integrated catchment management offers multiple benefits to society but a significant cost to landowners and managers. New economic instruments, in combination with spatial targeting, need to be developed to ensure cost-effective solutions. Payments for Ecosystem Services (PES) are flexible, incentive-based mechanisms that could play an important role in promoting land use change to deliver water quality targets. This is the subject of the EU COST Action "Payments for Ecosystem Services (Forests for Water) (PESFOR-W)". Starting in October 2016, the four-year Action is tasked with consolidating learning from existing woodlands for water PES schemes in Europe and helping to standardize approaches to evaluating the environmental effectiveness and cost-effectiveness of woodland measures. This talk will describe the approach and progress made to date, including plans for creating a European network through which PES schemes can be facilitated, extended and improved.



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Natural Flood Management in Ireland and the potential role for woodlands

Nathy Gilligan, OPW

Flooding has become a major issue in Ireland, with flood events predicted to become more frequent and greater in intensity. Public expenditure is being ramped up and a substantial programme of work will be implemented in the coming years to respond to this increased flood risk. The freshwater ecosystem is one of the most negatively impacted by humans in terms of both biodiversity and water quality, with many protected species and wetland habitats showing trends of ongoing decline. In this context, the OPW implements a series of flood risk management activities such as ongoing river maintenance operations, infrastructural flood relief projects, and strategic Flood Risk Management Plans. This approach to water sector activities is evolving in the direction of more integrated catchment management, guided by requirements from the European Commission. This talk will discuss the role of forestry in Natural Flood Management (NFM), an approach that works by storing water in the environment, allowing it to be released slowly - either as run-off to rivers and streams, or by soakage to the water-table. NFM measures provide multiple benefits, including flood control, improved water quality, and habitat creation. However, while NFM can be effective for frequent, lower peak floods, the approach is less effective for more severe floods. Its potential role

in the future of flood management is evolving as the concept of integrated catchment management becomes more established in Ireland. Soft engineering solutions such as aquatic buffers and soakage areas will be discussed in terms of their potential for building resilience to extreme flooding events and reducing the need for more traditional hard engineering approaches.

KerryLIFE adapting forestry policy for the freshwater pearl mussel

Richard O'Callaghan, KerryLIFE

The KerryLIFE project is demonstrating the effectiveness of forest management practices to support the restoration and conservation of the critically endangered freshwater pearl mussel, *Margaritifera margaritifera*. Current management practices such as clear-felling in moderate to high risk settings, may lead to siltation and nutrient enrichment of the mussel's habitat. KerryLIFE has adopted the source-pathway- receptor model and has developed an integrated risk assessment linking the potential sources of sediment and nutrients with the hydrology and the management practices. Novel and existing management practices such as birch over-sowing, halo-thinning, cabling, long-top brush mat, log dams, sediment controls, alternative firebreaks and drain



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management are being trialled and adapted for use in freshwater pearl mussel catchments. The effectiveness of these measures in reducing/eliminating the risk of silt and nutrient losses and improving the freshwater pearl mussel's habitat is being evaluated through an extensive monitoring programme. The project is also working to restructure 175 ha of commercial conifer woodland to long-term retention woodland, and establish up to 40 ha of native woodland. The outcomes of these trials will inform future forest policy to conserve the freshwater pearl mussel in Ireland.

Closing Plenary Session

The restoration of Scotland's Caledonian Forest and its relevance for Ireland

Alan Watson-Featherstone

The Caledonian Forest formerly covered much of the Highlands of Scotland, but by the 20th century it had been reduced to a few scattered remnants consisting of old trees at the end of their lives. Overgrazing by deer and sheep had prevented the growth of any new trees for about 200 years, leaving the ecosystem as a geriatric woodland, missing many of its species and with key ecological processes no longer functional. This presentation will focus on the work of Trees for Life in the past three decades to address this problem by assisting the ecological recovery of the forest and its associated species. It will elucidate the three key elements and 13 principles used to guide the ecological restoration process, and will feature dramatic before and after images that demonstrate the results that have been achieved as the forest ecosystem recovers. It will highlight the importance and necessity of other restoration actions including the reinstatement of apex predators such as the Eurasian lynx and the wolf, and the re-establishment of critical ecological processes such as disturbance and natural succession. It will also indicate the relevance of the work for Ireland, which has experienced comparable levels of deforestation to Scotland.



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